HEAT RECLAIM VENTILATION

OUTDOOR AIR PROCESSING UNIT

VRV® AIR HANDLING APPLICATIONS

VENTILATION SYSTEMS R-410A

www.daikin.eu

A WIDE VARIETY OF DAIKIN SOLUTIONS
FOR THE PROVISION OF FRESH AIR AND VENTILATION

Daikin Europe N.V.

ABOUT DAIKIN

Daikin has a worldwide reputation based on almost 85 years' experience in the successful manufacture of high quality air conditioning equipment for industrial, commercial and residential use.

Daikin quality

Daikin's much envied quality quite simply stems from the close attention paid to design, production and testing as well as aftersales support. To this end, every component is carefully selected and rigorously tested to verify its contribution to product quality and reliability.

ENVIRONMENTAL AWARENESS

Air Conditioning and the Environment

Air conditioning systems provide a significant level of indoor comfort, making **optimum working and living conditions** possible in the most extreme climates.
In recent years, motivated by a global awareness of the need to reduce the burdens on the environment, Daikin has invested enormous efforts in limiting the negative effects associated with the production and the operation of air conditioners.
Hence, models with **energy saving** features and improved **eco-production** techniques have seen the light of day, making a significant contribution to limiting the impact on the environment.

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INTRODUCTION

Daikin offers a variety of solutions for the provision of fresh air ventilation to offices, hotels, stores and other commercial outlets – each one complementary to and as flexible as both Sky Air® and VRV® systems themselves.

Heat Reclaim Ventilation

Proper ventilation is a key component of climate control in buildings, offices and shops. In its basic function, it ensures a flow of incoming fresh air and outgoing stale air. Our HRV (heat reclaim ventilation) solution can do much more. It can recover heat and OPTIMISE THE BALANCE BETWEEN INDOOR AND OUTDOOR TEMPERATURE AND HUMIDITY, thus reducing the load on the system and increasing efficiency.

Outdoor air processing in a single unit

Our FXMQ-MF air processing solution uses heat pump technology to COMBINE FRESH AIR TREATMENT AND AIR CONDITIONING IN A SINGLE SYSTEM, thereby eliminating the usual design problems associated with balancing air supply and discharge. Total system cost is reduced and design flexibility enhanced because the indoor air conditioning fan coil units and an outdoor air treatment unit can be connected to the same refrigerant line.

ERQ and VRV® air handling applications

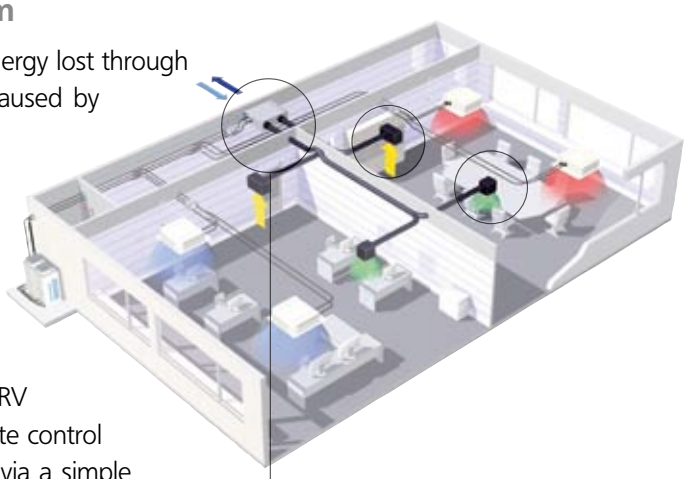
for small, medium and large commercial spaces, we offer a range of R-410A inverter condensing units that provide air handling and air conditioning. This approach combines the flexibility of our ERQ and VRV® units with Air Handling Applications, resulting in a simple, reliable design for OPTIMUM CONTROL OF INDOOR AIR QUALITY AND MAXIMUM EFFICIENCY.

For more information contact your local dealer.

HRV - HEAT RECLAIM VENTILATION

HRV helps create a high quality environment by interlocking with the air conditioning system

The Daikin HRV (Heat Reclaim Ventilation) recovers heat energy lost through ventilation and holds down room temperature changes caused by ventilation, thereby maintaining a comfortable and clean environment. This also reduces the load on the air conditioning system and conserves energy.



Ventilation, humidification & air processing

In addition, the HRV interlocks with Daikin's air conditioning systems (for example VRV® and Sky Air®) and automatically switches over ventilation mode, further increasing the effects of energy conservation. HRV operation has been centralised on the air conditioner remote control allowing total control over air conditioning and ventilation via a simple configuration.

The current line-up includes models with or without DX coil and/or humidifier - the DX coil helps prevent the direct impact of cold airflow upon personnel during the heating cycle and vice versa. High static pressure enhances design flexibility.

Type	name	Components of indoor air quality		Air flow rate (m³/h) 0 200 400 600 800 1,000 1,500 2,000
HEAT RECLAIM VENTILATION[1]	VAM-FA	1 Ventilation		
	VKM-GM	1 Ventilation 2 Humidification 3 Air processing		
	VKM-G	1 Ventilation 3 Air processing		
OUTDOOR AIR PROCESSING UNIT[2]	FXMQ-MF	1 Ventilation 3 Air processing		

[1] VKM-GM and VKM-G are not connectable to RXYQ-PR
[2] Not connectable to RXYQ-PR and VRV®III-S (RXYSQ-PAV, RXYSQ-PAY)
› Air processing refers to active cooling or heating of fresh air
› The ventilation range is not connectable to RXYQ-PR

1 Ventilation
2 Humidification
3 Air processing

GENERAL FEATURES (VAM+VKM)

1. ENERGY EFFICIENCY

OVER 30% SIZE REDUCTION

Use of the high efficiency paper (HEP) element and optimized design of the fan and airflow passages have resulted in matchless compactness in addition to the reduction in air conditioning load. A reduction of up to 40mm in height allows the main unit to fit easily into limited spaces such as ceilings.
On average 28% air conditioning load reduction (maximum 40%):

- 20% by operating in total heat exchange mode (in comparison with normal ventilation fans)
- another 6% by auto-ventilation mode changeover switching
- a further 2% by pre-cool, pre-heat control (reduces air conditioning load by not running the HRV while air is still clean soon after the air conditioner is switched on.)

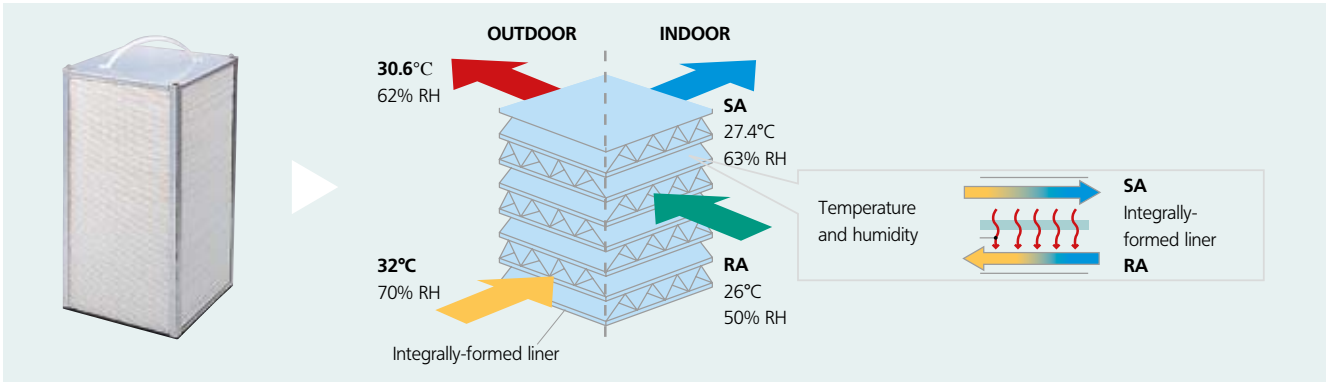
Note: the values mentioned above may vary according to weather and other environmental conditions at the location of the unit's installation

PROPRIETARY DEVELOPED HEP ELEMENT

The heat exchange element uses a high efficiency paper (HEP) possessing superior moisture absorption and humidifying properties. The heat exchange unit speedily recovers heat contained in latent heat (vapour). The element is made of a material with flame resistant properties and is treated with an anti-moulding agent.

OPERATION OF THE HEAT EXCHANGER ELEMENT

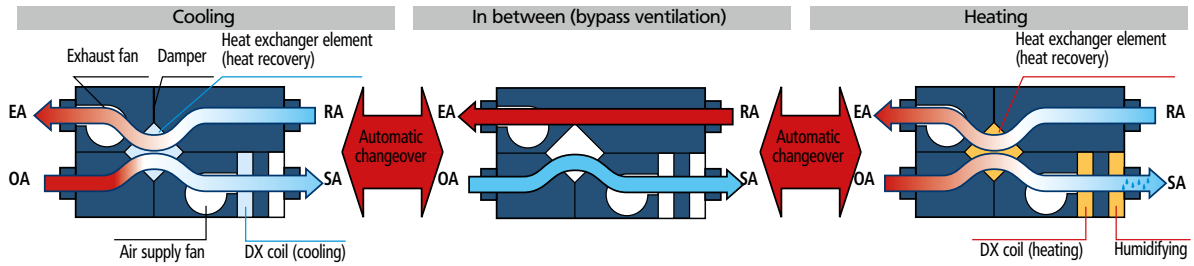
High Efficiency Paper



RH: Relative Humidity
SA: Supply Air (to room)
RA: Return Air (from room)

AUTOMATIC CHANGEOVER TO EFFICIENT OPERATION PATTERNS

Operation automatically switches to the optimum pattern to suit prevailing conditions



EA: exhaust air
OA: outdoor air
RA: return air (from room)
SA: supply air (to room)

2. DESIGN FLEXIBILITY

OUTDOOR OPERATION TEMPERATURE DOWN TO -15°C

If the outdoor air suction temperature falls below -10°C, the unit switches to intermittent operation to prevent freezing of the heat exchanger element and dew condensation within the unit.
A thermistor (standard equipment) within the unit detects the outdoor air temperature. Unit operation varies according to the detected temperature.

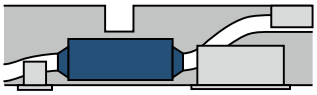
SLIM DESIGN

The slim design of the HRV unit enables it to be mounted in narrow ceiling voids and irregularly shaped spaces.

Installation under the floor of a small building

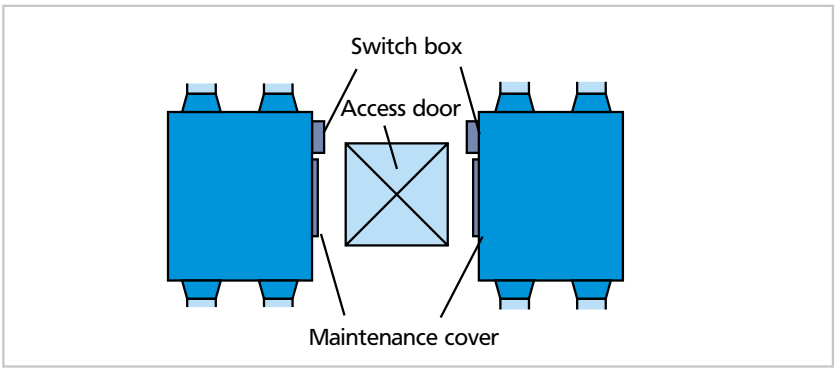
Installation under a beam

Installation in an irregular space



SIMPLE DESIGN AND CONSTRUCTION

The unit can be installed either horizontally or upside down in accordance with the conditions of the location. A 450mm square inspection hatch enables maintenance and heat exchange element replacement to be performed with ease.



QUIET OPERATION

Sound pressure levels are remarkable low at 20.5dBA (VAM150FA)

dB(A)	Perceived loudness	Sound
0	Treshold of hearing	-
20	Extremely soft	Rustling leaves
40	Very soft	Quiet room
60	Moderately loud	Normal conversation
80	Very loud	City traffic noise
100	Extremely loud	Symphonic orchestra
120	Threshold of feeling	Jet taking off

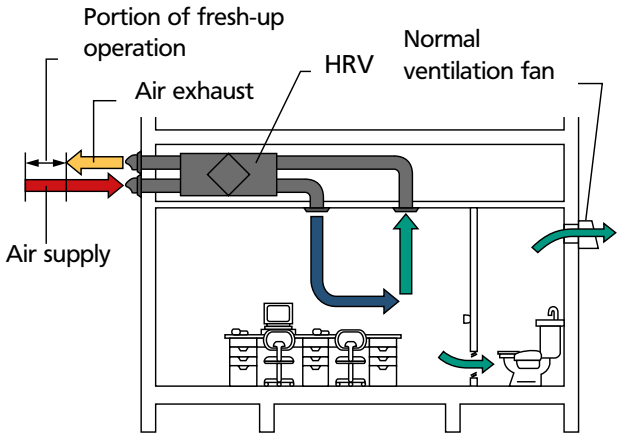
Daikin indoor units

FRESH-UP OPERATION

The user can select between 2 fresh-up modes via the remote control.

1. Supply rich mode:

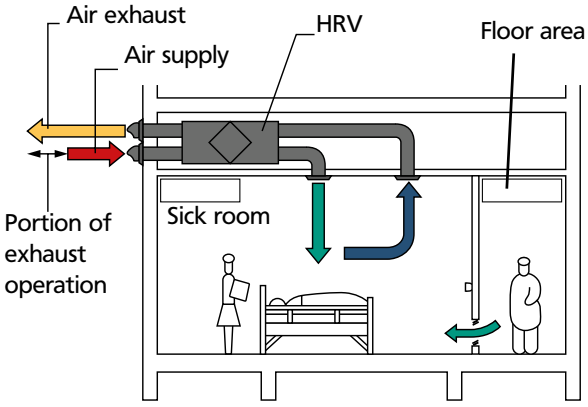
Raising the air supply maintains proper room pressure to prevent back-flow of toilet/kitchen odours or moisture inflow.



eg. Office

2. Exhaust fresh-up:

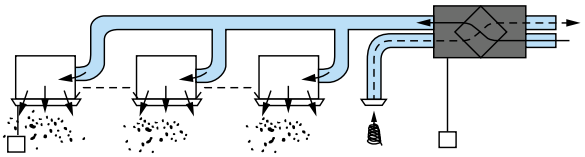
Raising exhaust air decreases room pressure to prevent the leaking of odours or floating bacteria into other rooms.



eg. Hospital

DUST PREVENTION

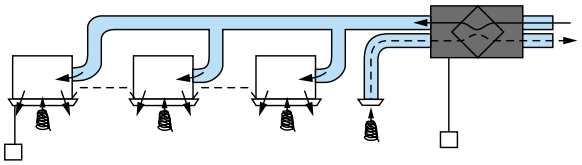
Prevents dust from falling thanks to directly mounted ducts.



OFF Dust

With Competitors' Products

When conventional total heat exchange units, which are independently operated using a dedicated remote control, are directly connected by a duct, there is a possibility of dust falling from the air filter of the indoor unit when the air conditioner is OFF.



Blowing mode No dust is blown out

With HRV

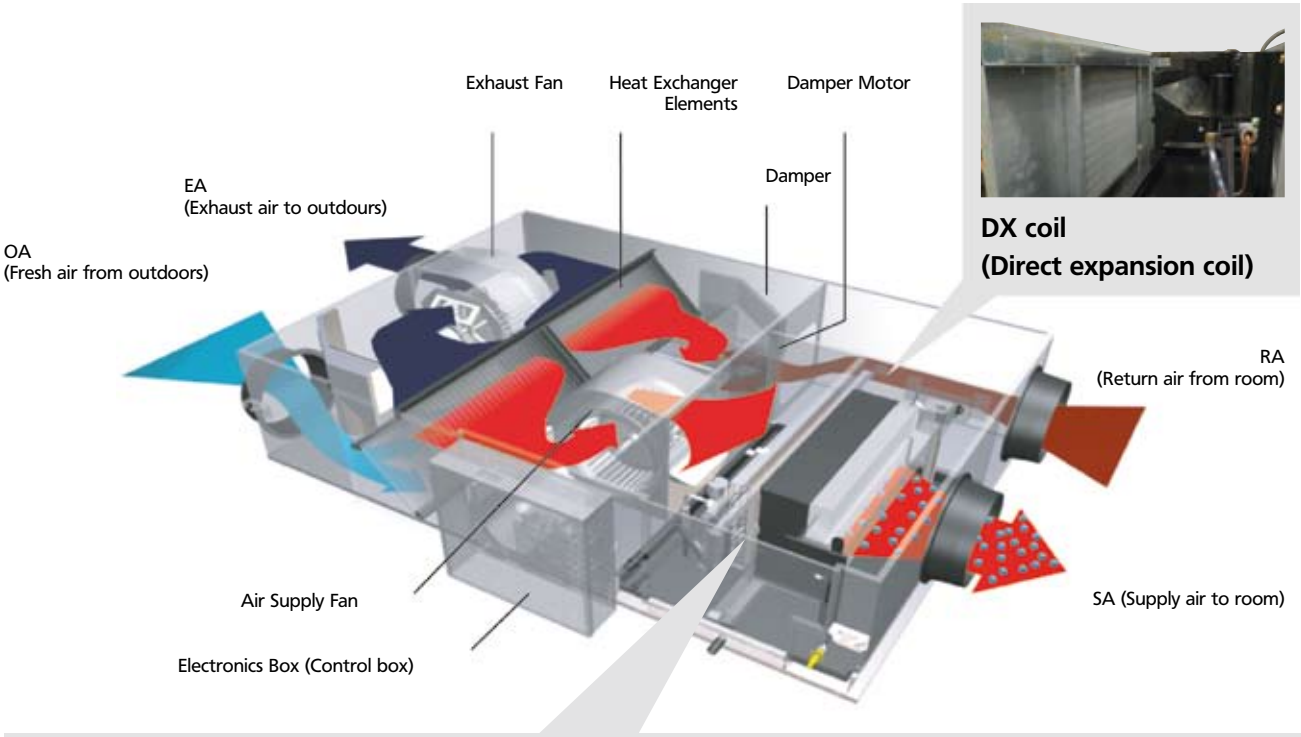
When the HRV is operating independently, the fan in an interlocked indoor unit continues turning, so dust does not fall from the air filter.

FILTER CLEANING

A signal on the remote control indicates when the air filter needs cleaning.

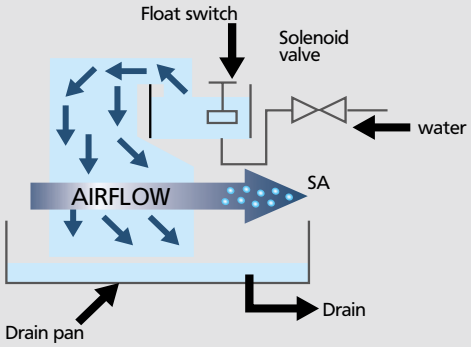
VKM FEATURES

OPERATION EXAMPLE OF HUMIDIFICATION AND AIR PROCESSING IN HEATING MODE (VKM-GAM)



Humidifier element:

Utilizing the principle of capillary action, water is permeated throughout the humidifier element. The heated air from the DX coil passes through the humidifier and absorbs the moisture.

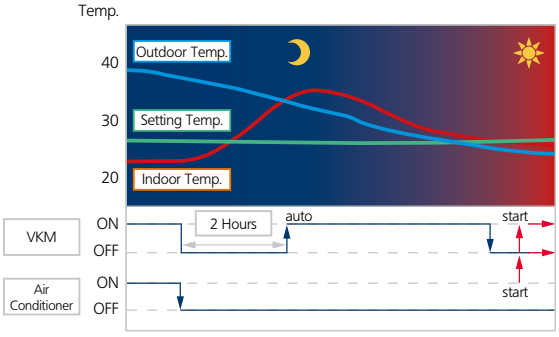


1. ENERGY EFFICIENCY

NIGHTTIME FREE COOLING OPERATION

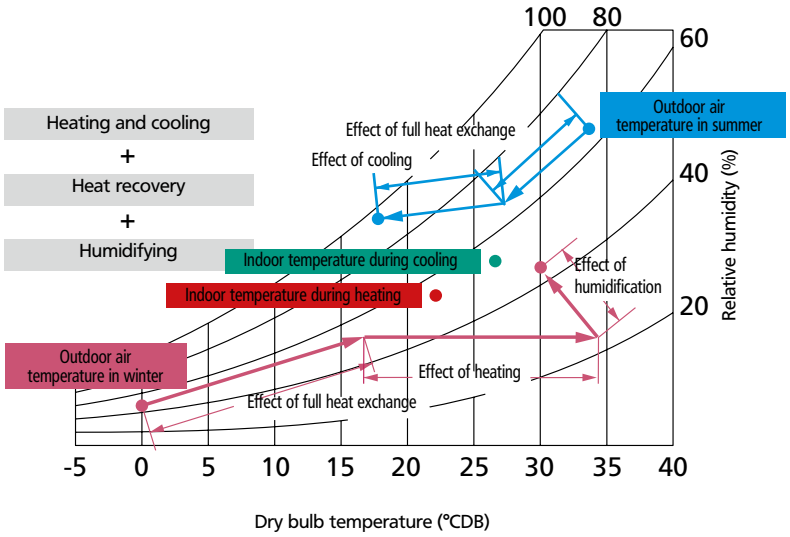
Nighttime free cooling operation is an energy conserving function operating at night when the air conditioning is switched off. By ventilating rooms containing office equipment that increases room temperature, night purge reduces the cooling load when air conditioning is switched on in the morning.

- Nighttime free cooling operation works only if connected to Multi or VRV® systems.
- Nighttime free cooling operation is factory set to "off" but can be activated by your Daikin dealer on request.



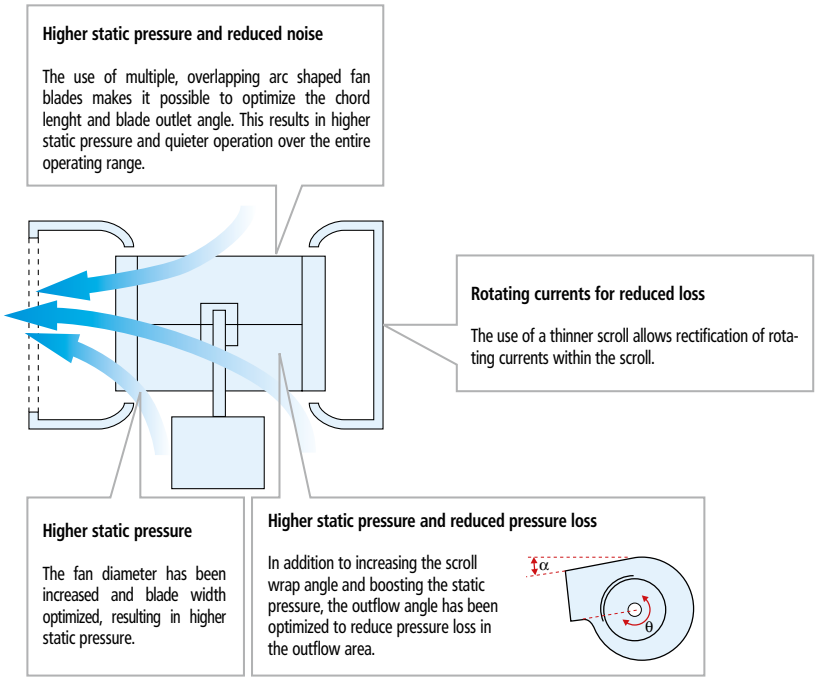
EFFICIENT OUTDOOR AIR INTRODUCTION WITH HEAT EXCHANGER AND COOLING/HEATING OPERATION

Indoor unit with outdoor air treatment.
The temperature can be brought close to room temperature with minimal cooling capacity through the use of outdoor air.



2. DESIGN FLEXIBILITY

HIGH STATIC PRESSURE



INDOOR UNIT CONNECTABILITY

The indoor unit is connectable up to 130% of outdoor unit capacity.

SPECIFICATIONS

VAM-FA

VAM800FA

Ventilation

VAM-FA			150	250	350	500	650	800	1000	1500	2000
Temperature exchange efficiency (%)		ultra-high	74	72	75	74	74	74	75	75	75
		high	74	72	75	74	74	74	75	75	75
		low	79	77	80	77	77	76	76.5	78	78
Enthalpy exchange efficiency (%)	for heating	ultra-high	64	64	65	62	63	65	66	66	66
		high	64	64	65	62	63	65	66	66	66
		low	69	68	70	67	66	67	68	68	70
	for cooling	ultra-high	58	58	61	58	58	60	61	61	61
		high	58	58	61	58	58	60	61	61	61
		low	64	62	67	63	63	62	63	64	66
Power supply		VE	1 ~, 220~240V, 50Hz								
Sound pressure level dB(A)	heat exchange mode	ultra-high	27-28.5	28-29	32-34	33-34.5	34.5-35.5	36-37	36-37	39.5-41.5	40-42.5
		high	26-27.5	26-27	31.5-33	31.5-33	33-34	34.5-36	35-36	38-39	38-41
		low	20.5-21.5	21-22	23.5-26	24.5-26.5	27-28	31-32	31-32	34-36	35-37
	bypass mode	ultra-high	27-28.5	28-29	32-34	33.5-34.5	34.5-35.5	36-37	36-37	40.5-41.5	40-42.5
		high	26.5-27.5	27-28	31-32.5	32.5-33.5	34-35	34.5-36	35.5-36	38-39	38-41
		low	20.5-21.5	21-22	24.5-26.5	25.5-27.5	27-28.5	31-33	31-32	33.5-36	35-37
Casing			Galvanised steel plate								
Insulation material			Self-extinguishable urethane foam								
Dimensions	H x W x D	mm	285 x 776 x 525		301 x 828 x 816		364 x 1,004 x 868		364x1,004x1,156	726x1,514x868	726x1,514x1,156
Weight		kg	24		33		48		61	132	158
Heat exchange system			Air to air cross flow total heat (sensible heat + latent heat) exchange								
Heat exchange element material			Specially processed non-flammable paper								
Air filter			Multidirectional fibrous fleeces								
Fan	type		Sirroco fan								
	air flow rate (m/h)	ultra-high	150	250	350	500	650	800	1,000	1,500	2,000
		high	150	250	350	500	650	800	1,000	1,500	2,000
		low	110	155	230	350	500	670	870	1,200	1,400
	external static pressure (Pa)	ultra-high	69	64	98	98	93	137	157	137	137
		high	39	39	70	54	39	98	98	98	78
		low	20	20	25	25	25	49	78	49	59
Motor output		kW	0.030 x 2		0.090 x 2		0.140 x 2	0.230 x 2		0.230 x 4	
Connection duct diameter		mm	Ø 100	Ø 150		Ø 200		Ø 250		Ø 350	
Unit ambient Unit acondition			-15°C ~ +50°CDB, 80% RH or less								

Notes:
- Air flow rate can be changed over to low mode or high mode.
- Sound pressure level is measured at 1.5m below the center of the body.
- Sound pressure level is measured in an anechoic chamber.
- Sound pressure levels generally become higher than this value depending on the operating conditions, reflected sound, and peripheral noise.
- The sound pressure level at the air discharge port is about 8dB higher than the unit's sound level.
- Even when the outdoor temperature is below -15°C, the system is operable down to -20°C with the preheater installed at the outdoor air intake side.

VKM80-100GM

Ventilation, DX coil & humidifier

					VKM50GM	VKM80GM	VKM100GM
DX coil capacity	cooling			kW	4.71	7.46	9.12
	heating			kW	5.58	8.79	10.69
Casing	material				Galvanised steel plate		
Dimensions	height			mm	387	387	387
	width			mm	1,764	1,764	1,764
	depth			mm	832	1,214	1,214
Weight				kg	102	120	125
Fan	type				Sirocco fan		
	air flow rate	heat exchange mode	ultra-high	m/h	500	750	950
			high	m/h	500	750	950
			low	m/h	440	640	820
		bypass mode	ultra-high	m/h	500	750	950
			high	m/h	500	750	950
			low	m/h	440	640	820
	external static pressure		ultra-high	Pa	160	140	110
			high	Pa	120	90	70
			low	Pa	100	70	60
	motor	output		W	2 x 280	2 x 280	2 x 280
Temperature exchange efficiency		ultra-high		%	76	78	74
			high	%	76	78	74
			low	%	77.5	79	76.5
Enthalpy exchange efficiency	cooling		ultra-high	%	64	66	62
			high	%	64	66	62
			low	%	67	68	66
	heating		ultra-high	%	67	71	65
			high	%	67	71	65
			low	%	69	73	69
Humidifier	system				Natural evaporating type		
	amount			kg/h	2.7	4.0	5.4
	feed water pressure			MPa	0.02 ~ 0.49	0.02 ~ 0.49	0.02 ~ 0.49
	N° of elements				1	1	2
Operation range	around unit				0°C ~ 40°CDB, 80% RH or less		
	outdoor air				-15°C ~ 40°CDB, 80% RH or less		
	return air				0°C ~ 40°CDB, 80% RH or less		
Sound level - 230V	heat exchange mode	sound pressure	ultra-high	dBA	37.5	39	39.5
			high	dBA	35.5	37	37.5
			low	dBA	33	34	34.5
	bypass mode	sound pressure	ultra-high	dBA	37.5	39	39.5
			high	dBA	35.5	37	37.5
			low	dBA	33	34	34.5
Piping connection	liquid	type			flare connection	flare connection	flare connection
		diameter		mm	6.4	6.4	6.4
	gas	type			flare connection	flare connection	flare connection
		diameter		mm	12.7	12.7	12.7
	water supply		mm		6.4	6.4	6.4
	drain				PT3/4 external thread		
Insulation material					Self-extinguishable urethane foam		
Heat exchange system					Air to air cross flow total heat (sensible + latent heat) exchange		
Heat exchange element					Specially processed non-flammable paper		
Air filter					Multidirectional fibrous fleeces		
Connection duct diameter			mm		Ø 200	Ø 250	Ø 250
Power supply				V1	1 ~, 50Hz, 220-240V		

Notes:
- Indoor temperature: 27°CDB, 19°CWB, outdoor temperature: 35°CDBIndoor temperature: 20°CDB, outdoor temperature: 7°CDB, 6°CWB
- Humidifying capacity is based on: Indoor temperature: 20°CDB, 15°CWB, outdoor temperature: 7°CDB, 6°CWB
- Operation sound is measured at 1.5m below the center of the body.
- Sound values are measured in an anechoic chamber built in accordance with JIS C 1502 condition. Operating sound level generally becomes higher than this value depending on the operating conditions, reflected sound, and peripheral noise.
- The sound level at the air discharge port is about 8dB higher than the unit's operating sound.
- For operation in a quiet room, it is required to take measures to lower the sound, for example install more than 2m soft duct near the air discharge grill.
- Air flow rate can be changed over to Low mode or High mode.
- Normal amplitude, input, efficiency depend on the other above conditions

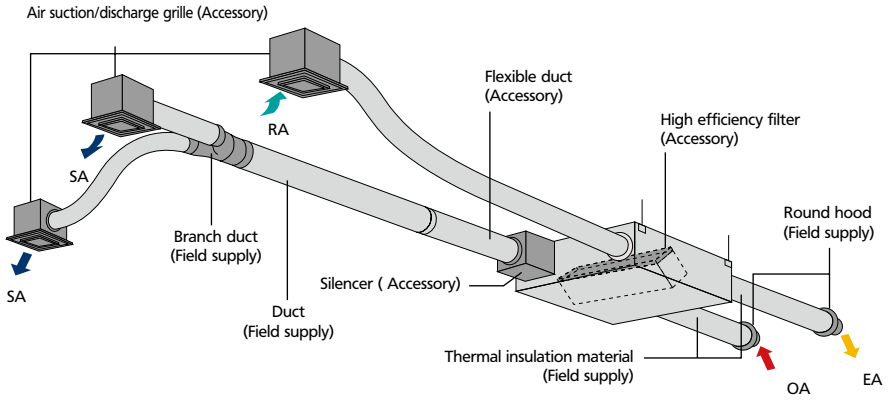
Ventilation & DX coil

VKM80-100G

					VKM50G	VKM80G	VKM100G
DX coil capacity	cooling			kW	4.71	7.46	9.12
	heating			kW	5.58	8.79	10.69
Casing	material				Galvanised steel plate		
Dimensions	height			mm	387	387	387
	width			mm	1,764	1,764	1,764
	depth			mm	832	1,214	1,214
Weight				kg	96	109	114
Fan	type				Sirocco fan		
	air flow rate	heat exchange mode	ultra-high	m/h	500	750	950
			high	m/h	500	750	950
			low	m/h	440	640	820
		bypass mode	ultra-high	m/h	500	750	950
			high	m/h	500	750	950
			low	m/h	440	640	820
	external static pressure		ultra-high	pa	180	170	150
			high	pa	150	120	100
			low	pa	110	80	70
	motor	output		W	2 x 280	2 x 280	2 x 280
Temperature exchange efficiency		ultra-high		%	76	78	74
			high	%	76	78	74
			low	%	77.5	79	76.5
Enthalpy exchange efficiency	cooling		ultra-high	%	64	66	62
			high	%	64	66	62
			low	%	67	68	66
	heating		ultra-high	%	67	71	65
			high	%	67	71	65
			low	%	69	73	69
Operation range	around unit				0°C ~ 40°CDB, 80% RH or less		
	outdoor air				-15°C ~ 40°CDB, 80% RH or less		
	return air				0°C ~ 40°CDB, 80% RH or less		
Sound level - 230V	heat exchange mode	sound pressure	ultra-high	dBA	38.5	41	40.5
			high	dBA	36.5	38	38.5
			low	dBA	34.5	36	36
	bypass mode	sound pressure	ultra-high	dBA	38.5	41	40.5
			high	dBA	36.5	38	38.5
			low	dBA	34.5	36	36
Piping connection	liquid	type			flare connection	flare connection	flare connection
		diameter		mm	6.4	6.4	6.4
	gas	type			flare connection	flare connection	flare connection
		diameter		mm	12.7	12.7	12.7
	drain				PT3/4 external thread		
Insulation material					Self-extinguishable urethane foam		
Heat exchange system					Air to air cross flow total heat (sensible + latent heat) exchange		
Heat exchange element					Specially processed non-flammable paper		
Air filter					Multidirectional fibrous fleeces		
Connection duct diameter				mm	Ø 200	Ø 250	Ø 250
Power supply				V1	1~, 50Hz, 220-240V		

Notes:
- Cooling: indoor temperature: 27°CDB, 19°CWB, outdoor temperature: 35°CDB
- Heating: indoor temperature: 20°CDB, outdoor temperature: 7°CDB, 6°CWB
- Operation sound is measured at 1.5m below the center of the body.
- Sound values are measured in an anechoic chamber built in accordance with JIS C 1502 condition. Operating sound level generally becomes higher than this value depending on the operating conditions, reflected sound, and peripheral noise.
- The sound level at the air discharge port is about 8dB higher than the unit's operating sound.
- Air flow rate can be changed over to Low mode or High mode.
- Normal amplitude, input, efficiency depend on the other above conditions

OPTIONS

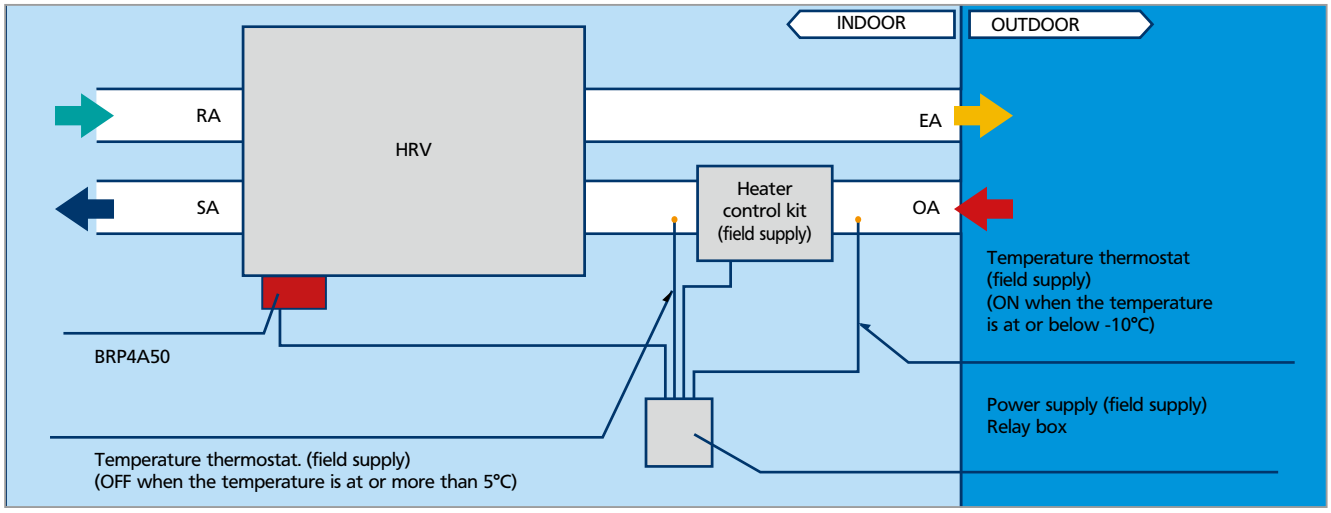


PC board adapter	wiring adapter for electrical appendices		KRP2A61													
	for humidifier (running ON signal output)		KRP50-2													
	for heater control kit		BRP4A50													
	for wiring	indoor unit	FXFQ	FXZQ	FXCQ	FXKQ	FXDQ-M9	FXDQ-PB FXDQ-NB	FXSQ	FXMQ-P	FXMQ-MA	FXAQ	FXUQ	FXHQ	FXLQ	FXNQ
		reference	-	KRP1B57*	KRP1B61 *	KRP1B61		KRP1B56	-	KRP1C64 (Note 4)	KRP1B61	-	KRP4A53	KRP1B3	KRP1B61	
	installation box for adapter PCB		KRP1H98	KRP1BA101	KRP1B96 (Notes 2,3)	-		KRP1BA101	KRP4A96 (Notes 2,3)		-	KRP4A93	KRP1B97	KRP1C93 **	-	

Notes:
1. Installation box is necessary for each adapter marked with *
2. Up to 2 adapters can be fixed per installation box
3. Only 1 installation box can be installed per indoor unit
4. Up to 2 installation boxes can be installed per indoor unit
5. Installation box is necessary for second adapter

PC BOARD ADAPTER FOR HEATER CONTROL KIT - BRP4A50

When the installation of an electric heater is required in a cold region, this adapter with an internal timer function eliminates the complicated timer connecting work necessary with conventional heaters.



Notes when installing:

- Examine fully installation location and specification for using the electric heater based on the standards and regulations of each country.
- Supply the electric heater and safety production devices (such as a relay and a thermostat etc) which meet the on site standards and regulations of each country.
- Use a non-flammable connecting duct to the electric heater. Be sure to allow 2m or more between the electric heater and HRV for safety.
- For the HRV units, use a different power supply from that of the electric heater and install a circuit breaker for each of them.

Silencer

Duct adapter

Description		VAM150FA	VAM250FA	VAM350FA
High efficiency filter		YAFM323F15	YAFM323F25	YAFM323F35
Replacement for air filter		YAFF323F15	YAFF323F25	YAFF323F35

Description		VAM500FA	VAM650FA	VAM800FA
Silencer	reference	KDDM24A50	KDDM24A100	
	nom. piping diameter	Ø 200mm	Ø 200mm	Ø 250mm
High efficiency filter		YAFM323F50	YAFM323F65	
Replacement for air filter		YAFF323F50	YAFF323F65	

Description		VAM1000FA	VAM1500FA	VAM2000FA
Silencer	reference	KDDM24A100	KDDM24A100 x 2	
	nom. piping diameter	Ø 250mm		
High efficiency filter		YAFM323F100	YAFM323F65 x 2	YAFM323F100 x 2
Replacement for air filter		YAFF323F100	YAFF323F65 x 2	YAFF323F100 x 2
Duct adapter	reference	-	YDFA25A1	
	nom. piping diameter	-	Ø 250mm	

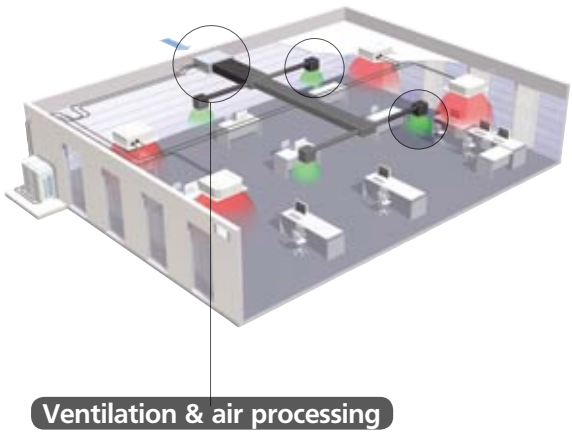
Description		VKM50GA(M)	VKM80GA(M)	VKM100GA(M)
Silencer	reference	-	KDDM24B100	
	nom. piping diameter	-	Ø 250mm	
High efficiency filter		KAF241G80M	KAF241G100M	
Replacement for air filter		KAF242G80M	KAF242G100M	

FXMQ-MF
OUTDOOR AIR PROCESSING UNIT

FEATURES

Combined fresh air treatment and air conditioning via a single system.

Both fresh air treatment and air conditioning can be achieved successfully in a single system via heat pump technology without the usual design problems associated with balancing air supply and discharge. Air conditioning fan coil units and an outdoor air treatment unit can be connected to the same refrigerant line, resulting in enhanced design flexibility and a significant reduction in total system costs.



1. COMBINED FRESH AIR TREATMENT AND AIR CONDITIONING VIA A SINGLE SYSTEM

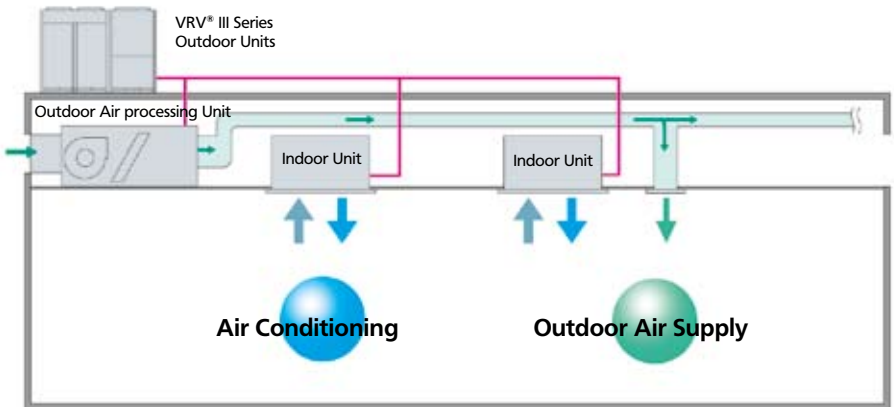
CONNECTION CONDITIONS

The following restrictions must be observed in order to maintain the indoor units' connection to the same system.

› The total connected capacity of the standard indoor units and fresh air treatment units must be between 50% and 100% of the capacity of the air conditioning outdoor units. The connected capacity of the fresh air treatment units must not exceed 30% of the capacity of the air conditioning outdoor units.

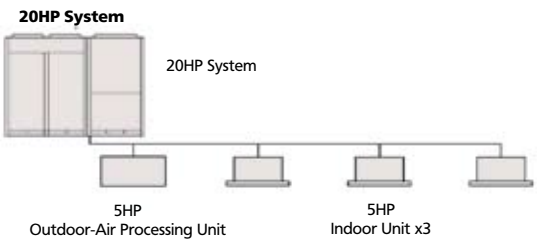
› A fresh air treatment unit can also be used exclusively. The connected capacity of the fresh air treatment unit must be between 50% and 100% of the capacity of the air conditioning outdoor unit.

› Only connectable to RXY(H)Q-P(A)(8) - except 5HP) - and to RTSYQ-P



SYSTEM EXAMPLE

Check that system connected capacity is within the appropriate range.



› Total connected capacity of standard indoor units and fresh air treatment unit does not exceed 100%.
› System capacity of 20 HP = indoor unit capacity of 20 HP.
› Connected capacity of fresh air treatment unit does not exceed 30% of this.
› Since system capacity of 20 HP x 0.3 = 6 HP > fresh air treatment unit capacity = 5 HP.

2. 100% FRESH AIR INTAKE POSSIBLE

By introducing outdoor air into the room and adjusting the outdoor air temperature via fixed discharge temperature control, the system reduces the load on the air conditioner.

SPECIFICATIONS

FXMQ-MF

Ventilation

FXMQ200-250MF

					FXMQ125MF	FXMQ200MF	FXMQ250MF
Capacity	cooling			kW	14.0	22.4	28.00
	heating			kW	8.9	13.9	17.40
Power Input	cooling			kW	0.359	0.548	0.638
	heating			kW	0.359	0.548	0.638
Casing	material				Galvanised steel	Galvanised steel	Galvanised steel
Dimensions	unit	height		mm	470	470	470
		width		mm	744	1380	1380
		depth		mm	1100	1100	1100
Weight	unit			kg	86	123	123
Heat Exchanger	dimensions	nr of rows			3	3	3
		fin pitch		mm	2.00	2.00	2.00
		face area		m²	0.28	0.65	0.65
		nr of stages			26	26	26
	fin	fin type			Cross fin coil	Cross fin coil	Cross fin coil
Fan	type				Sirocco fan	Sirocco fan	Sirocco fan
	air flow rate	cooling	medium	m³/min	18.0	28.0	35.0
		heating	medium	m³/min	18.0	28.0	35.0
	external static pressure	standard		Pa	185	225	205
	motor	model			D13/4G2DA1	D13/4G2DA1	D13/4G2DA1
		output (high)		W	380	380	380
		drive			Direct drive	Direct drive	Direct drive
Piping connections	liquid (OD)	type			Flare connection	Flare connection	Flare connection
		diameter		mm	9.5	9.5	9.5
	gas	type			Flare connection	Brazing/Brazing connection	Brazing/Brazing connection
		diameter		mm	15.9	19.1	22.2
	drain	diameter		mm	PS1B	PS1B	PS1B
	heat insulation				Glass fiber	Glass fiber	Glass fiber
Air Filter					As option	As option	As option
Refrigerant control				Temperature control	Electronic expansion valve	Electronic expansion valve	Electronic expansion valve
				Safety devices	Microprocessor thermostat for cooling and heating	Microprocessor thermostat for cooling and heating	Microprocessor thermostat for cooling and heating
					Fuse	Fuse	Fuse
Safety devices					Fan motor thermal protector	Fan motor thermal protector	Fan motor thermal protector
Power Supply	frequency			Hz	50	50	50
	voltage			V	220-240	220-240	220-240
Current	minimum circuit amps (MCA)			A	1.90	3.30	3.80
	maximum fuse amps (MFA)		A		15	15	15
	full load amps (FLA)			A	1.50	2.60	3.00
Voltage range	minimum			V	-10%	-10%	-10%
	maximum			V	10%	10%	10%

Notes:
- Nominal cooling capacities are based on : outdoor temperature : 33°CDB, 28°CWB (68%RH), discharge set temperature : 18°CDB, equivalent piping length 7.5m (horizontal)
- Nominal heating capacities are based on : outdoor temperature : 0°CDB, -2.9°CWB (50%RH), discharge set temperature : 25°CDB, equivalent piping length 7.5m (horizontal)
- Capacities are net, including a deduction for cooling (an addition for heating) for indoor fan motor heat.
- Air filter is not standard accessory, but please mount it in the duct system of the suction side. Select its colorimetric method(gravity method) 50% or more.
- Voltage range : units are suitable for use on electrical systems where voltage supplied to unit terminals is not below or above listed range limits.
- Maximum allowable voltage range variation between phases is 2%.
- MCA/MFA : MCA = 1.25 x FLA
- MFA <= 4 x FLA
- Next lower standard fuse rating minimum 15A
- Select wire size based on the MCA
- Instead of a fuse, use a circuit breaker

OPTIONS

Description			FXMQ125MF	FXMQ200MF	FXMQ250MF
Filters	Long-life replacement filter		KAFJ371L140	KAFJ371L280	
	High-efficiency filter	65%	KAFJ372L140	KAFJ372L280	
		90%	KAFJ373L140	KAFJ373L280	
Filter chamber *1			KDJ3705L140	KDJ3705L280	
Drain pump kit			KDU30L250VE		
Adapter for wiring			KRP1B61		

Notes :
*1 Filter chamber has a suction-type flange. (Main unit does not).
Dimensions and weight of the equipment may vary depending on the options used.
Some options may not be usable due to the equipment installation conditions. Please confirm prior to ordering.
Some options may not be used in combination.
Operating sound may increase somewhat depending on the options used.

CONTROL SYSTEMS

Operation of the air conditioner using the remote control is interlocked with HRV operation, greatly simplifying overall system control. The same remote control centralizes air conditioning and ventilation operations, obviating any need for ventilation remote control installation work. Using a centralized remote control also frees the user to choose from a wide range of control systems that integrate air conditioning and ventilation. By incorporating a variety of centralized control equipment, the user can build a large, high grade centralized control system.

1. “SUPER WIRING” SYSTEM

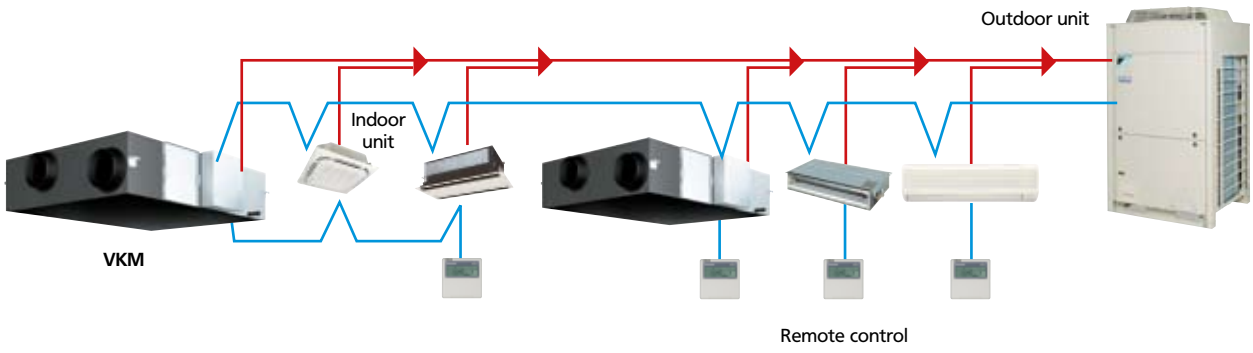
A Super Wiring system is used to enable the shared use of wiring between indoor units, outdoor units and the centralised remote control.

This system makes it easy for the user to retrofit the existing system with a centralised remote control, simply by connecting it to the outdoor units.

Thanks to a non polarity wiring system, incorrect connections become impossible and installation time is reduced.

Note:
Linked control of FXMQ-MF and HRV is not supported.

HRV / FXMQ-MF can also be connected to these network solutions:
DS-net
intelligent Touch Controller
intelligent Manager
BACnet Interface
LonWorks Interface



5 individual control systems give the user control over the VRV® system and the combined ventilation.

› BRC1D52 and BRC1E51A are wired remote controllers, giving access to room temperature settings, schedule timer, … Next to that they also have user friendly HRV functions.
› BRC301B61 is a wired controller especially designed for VAM units.
› BRC2C51 and BRC3A61 are compact, easy to use remote controllers, ideal for use in hotel bedrooms.
› BRC4*/BRC7* infrared remote controllers combine the comfort of an infrared controller with the possibilities of a wired remote controller.

Description	HRV	FXMQ125MFV1	FXMQ200MFV1	FXMQ250MFV1
VAM remote control	BRC301B61	–	–	–
Air conditioner remote control / Operation remote control	BRC1D52 / BRC1E51			
Centralised remote control	DCS302C51			
Unified on/off control	DCS301B51			
Schedule timer	DST301B51			
Wiring adapter for electrical appendices (1)	KRP2A61			
Wiring adapter for electrical appendices (2)	–	KRP4A51		

VAM remote control
BRC301B61

Wired remote control
BRC1E51A
BRC1D52

Centralised remote control
DCS302C51

Unified ON/OFF control
DCS301B51

Schedule timer
DST301B51

2. INDIVIDUAL CONTROL SYSTEMS

- Simultaneous ON/OFF of HRV and air conditioner (BRC1D52/BRC1E51A)
- Airflow rate switching (initial setting)
- Ventilation mode switching (initial setting)
- Self diagnostic functions
- Filter sign display and reset
- Timer settings, simultaneous control with air conditioner (BRC1D52/BRC1E51A)
- ON/OFF of VAM (BRC301B61)
- Independent operation of HRV
- Timer settings (BRC301B61)
- Fresh-up mode switching (HRV only)
  (Selectable: supply rich mode, exhaust rich mode; initial setting)

Notes:

- The remote control wired to the FXMQ-MF cannot be set as master remote control. Otherwise, when set to 'auto', the operation mode will switch according to outdoor air conditions, regardless of indoor temperature.

BRC1E51A

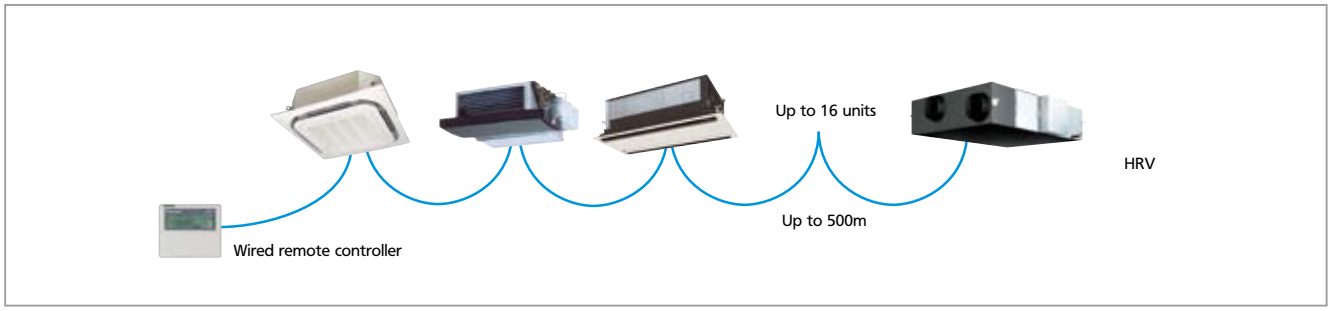
BRC1D52

BRC301B61

A variety of units can be controlled using only the BRC1D52 or the BRC1E51A (HRV only)

GROUP CONTROL

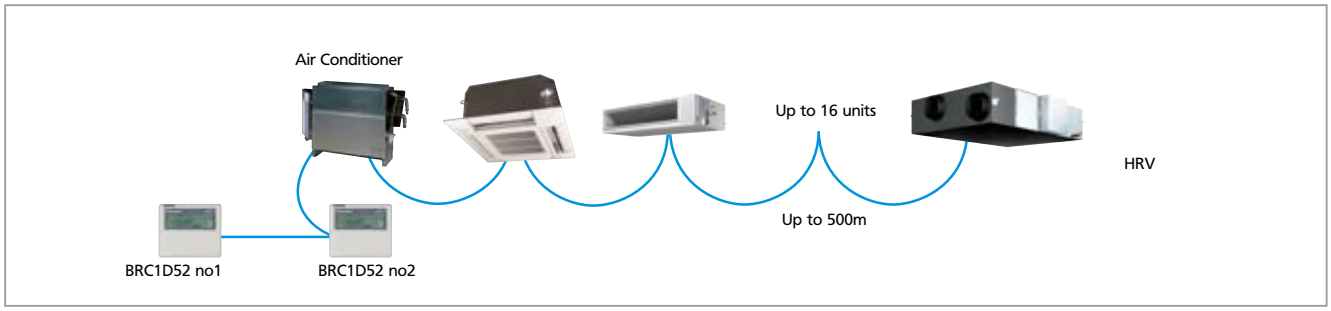
One air conditioner remote control simultaneously controls up to 16 air conditioning and HRV units.



*1: Count VKM unit as two air conditioners. For details, see Table 1 on page 27.

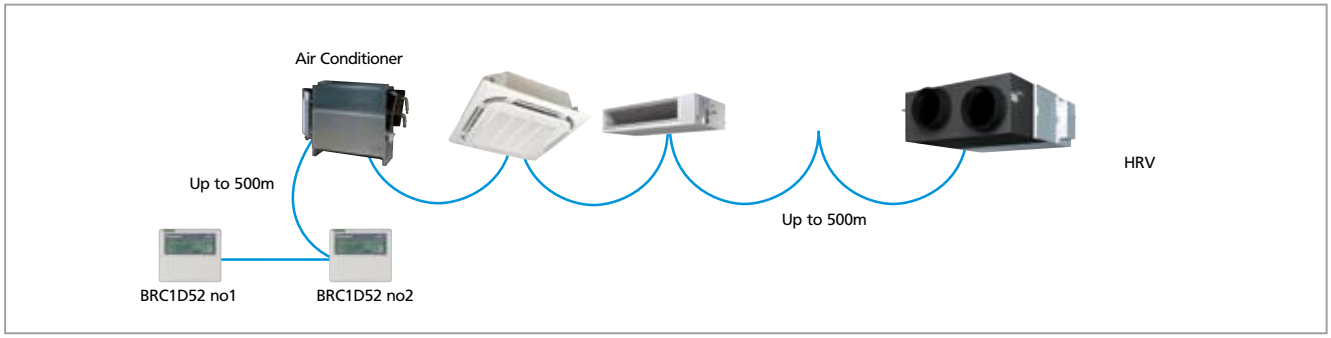
CONTROL USING 2 REMOTE CONTROLS

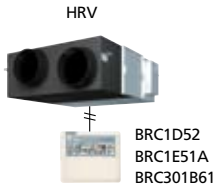
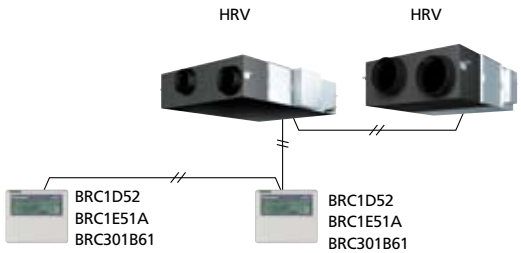
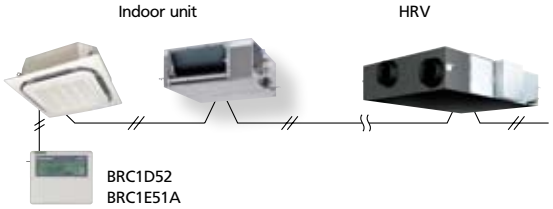
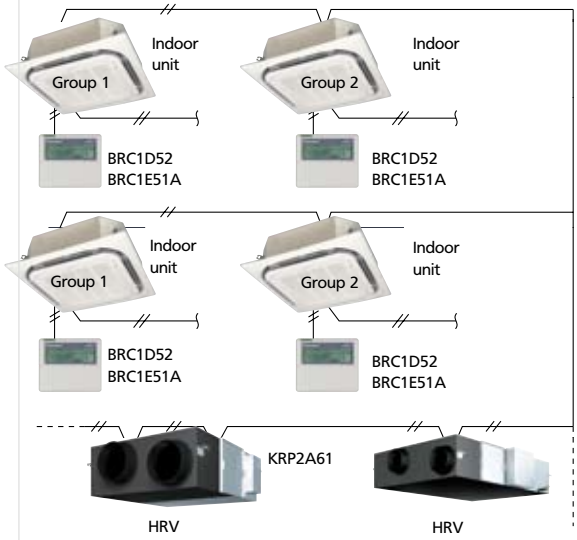
Allows control of air conditioning and HRV units from two locations by connecting two air conditioner remote controls. (group control is possible)



LONG-DISTANCE REMOTE CONTROL

Remote operation control - from a distant control room for example - is possible thanks to wiring of up to 500 m. (2 remote controllers possible)



SYSTEM CONSTRUCTION (HRV only)			SYSTEM CHARACTERISTICS	NECESSARY ACCESSORIES
INDEPENDENT OPERATION SYSTEM	INDEPENDENT OPERATION		› Independent operation of HRV is possible › Air conditioner remote control can be used	BRC1D52 or BRC1E51A or BRC301B61
	SIMULTANEOUS OPERATION OF MULTIPLE UNITS		› Operation is possible using 2 remote controls › Multiple HRV units can be simultaneously controlled in batch. (Up to 8 HRV units can be connected)	BRC1D52 or BRC1E51A or BRC301B61
AIR CONDITIONING INTERLOCKED CONTROL (VRV®, SKY AIR) SYSTEM	STANDARD SYSTEM	 During group control operation, the VKM unit has a capacity equivalent to 2 standard indoor units. Up to 16 standard indoor units can be connected at the same time. Connectable indoor units: VKM 0 1 2 3 4 5 6 7 8 Max. no. of VRV® 16 14 12 10 8 6 4 2 0 Note: The VKM uses 2 remote controller addresses per unit. The number of units that can be group controlled is shown above.	› Multiple VRV® indoor units or HRV units can be connected and controlled in batches, with inter-locked operation of HRV and air conditioners by using the air conditioner remote control. › The HRV unit can also be operated independently using the remote control for the indoor unit, even if the indoor unit is not in operation	BRC1D52 or BRC1E51A
	MULTIPLE GROUPS INTERLOCKED OPERATION SYSTEM		› Can control interlocked operation of multiple groups of VRV® or Sky Air® indoor units › When one of the multiple groups operates, HRV units are interlocked and operate simultaneously	BRC1D52 or BRC1E51A

BRC301B61 only available for VAM-FA

Note:

- Group control is not possible between FXMQ-MF and standard type indoor units. Connect remote controllers to each unit.
- Not all FXMQ-MF functions are available when using centralised control. Please refer to your local installer for detailed information.
- The remote control wired to the FXMQ-MF cannot be set as master remote control. Otherwise, when set to 'auto', the operation mode will switch according to outdoor air conditions, regardless of indoor temperature.
- Temperature setting and PPD are not possible, even when Intelligent Touch Controller or Intelligent Manager are installed.

3. CENTRALISED CONTROL SYSTEMS

By combining the (optional) centralised control equipment listed below, the user can achieve a wide range of comprehensive centralised control systems for air conditioning and ventilation.

DCS302C51

CENTRALISED REMOTE CONTROL - DCS302C51

- 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
- Group control (up and down buttons are added for group selection)
- Zone control
- Malfunction code display
- Max. wiring length 1,000 m (total : 2,000 m)
- Combination with unified ON/OFF control, schedule timer and BMS system
- Airflow volume and direction can be controlled individually for indoor units in each group operation.
- Ventilation volume and mode can be controlled for Heat Reclaim Ventilation (VKM).
- Up to 4 'operation/stop' pairs can be set per day by connecting a schedule timer.

DCS301B51

UNIFIED ON/OFF CONTROL - DCS301B51

Enabling 64 groups to be programmed

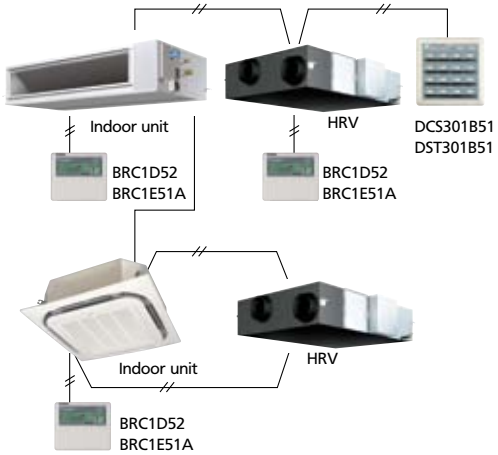
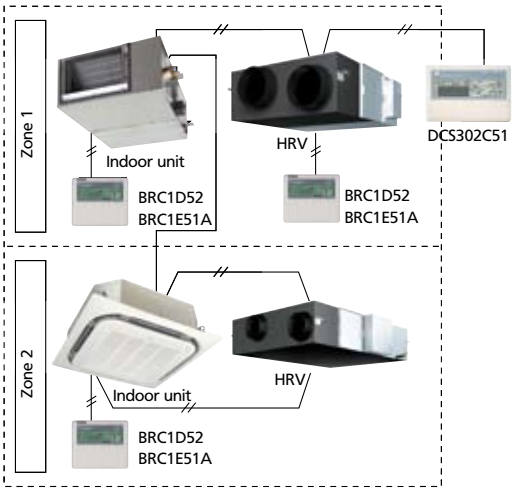
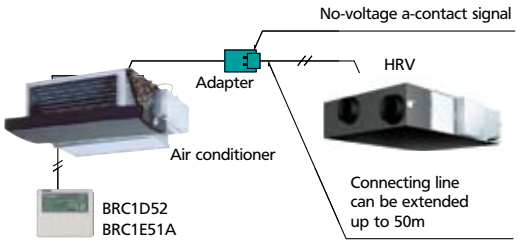
- One unit can turn ON/OFF up to 16 groups (128 units) of HRV and air conditioner units individually or in a batch.
- Lamps display operation and failure status of the connected HRV and air conditioner units.
- 2 remote controls in separate locations can be used
- centralised control indication
- Maximum wiring length of 1,000m (total: 2,000m)

DST301B51

SCHEDULE TIMER - DST301B51

- One unit can control the operation of up to 128 HRV and air conditioner units on a weekly schedule.
- Can set two ON/OFF operations per day for a period of one week.
- 8 types of weekly schedule
- A maximum of 48 hours back-up power supply
- Maximum wiring length of 1,000m (total: 2,000m)

Number of HRV units that can be connected per system	
Centralised remote control	2 units
Unified on/off control	8 units
Schedule timer	1 unit

SYSTEM CONSTRUCTION (HRV only)			SYSTEM CHARACTERISTICS	NECESSARY ACCESSORIES
AIR CONDITIONING INTERLOCKED CENTRALISED CONTROL SYSTEM	BATCH / INDIVIDUAL CONTROL SYSTEM		**Unified ON/OFF control - DCS301B51** › One controller can control the on/off operation of 16 groups of units collectively or individually › Up to 8 controllers can be installed in one centralised transmission line (in one system), which enables control of up to 128 groups. (16 groups x 8 = 128 groups) **Schedule timer - DST301B51** › One schedule timer can control the weekly sche-dule of up to 128 units › HRV remote control can set the individual operation of each HRV unit › Control system can be expanded depending on its purposes by combining a variety of centralised control equipment	DCS301B51 or DST301B51, BRC1D52 or BRC1E51A If necessary: DCS302C51
	ZONE CONTROL SYSTEM		**Centralised remote control - DCS302C51** › The centralised remote control provides settings and monitoring functions and can control up to 128 VRV® and HRV units. A special adapter is required to connect Sky Air to the centralised line. › Control is possible in 3 different patterns: individual, batch or zone › Multiple groups can be controlled within the same zone › Multiple HRV units can be operated independently › System without air condi-tioning or HRV remote controls can be constructed › Control system can be expanded depending on requirements by combining a variety of centralised control systems	DCS302C51, BRC1D52 or BRC1E51A If necessary: DSC301B51 or DST301B51
COMBINATION WITH OTHER TYPES OF AIR CONDITIONERS			› Simultaneous operation of HRVs and air conditioners is possible via BRC1D52/ BRC1E51A › Use of the HRV remote control enables to change settings or operate HRVs independently	Connection adapter (no-voltage-a-contact-signal)

ERQ AND VRV® AIR HANDLING APPLICATIONS

Daikin's range of R-410A air cooled condensing units is specially designed to provide ventilation and air conditioning for air handling installations in commercial premises. The range comprises single and three phase inverter controlled units for Sky Air® and VRV® applications. ERQ units for air handling applications offer flexible control opportunities and meet the usual high standard of Daikin products.

FEATURES

1. WIDE RANGE OF DAIKIN UNITS OFFERS MAXIMUM APPLICATION POTENTIAL PLUS FLEXIBLE CONTROL OPTIONS

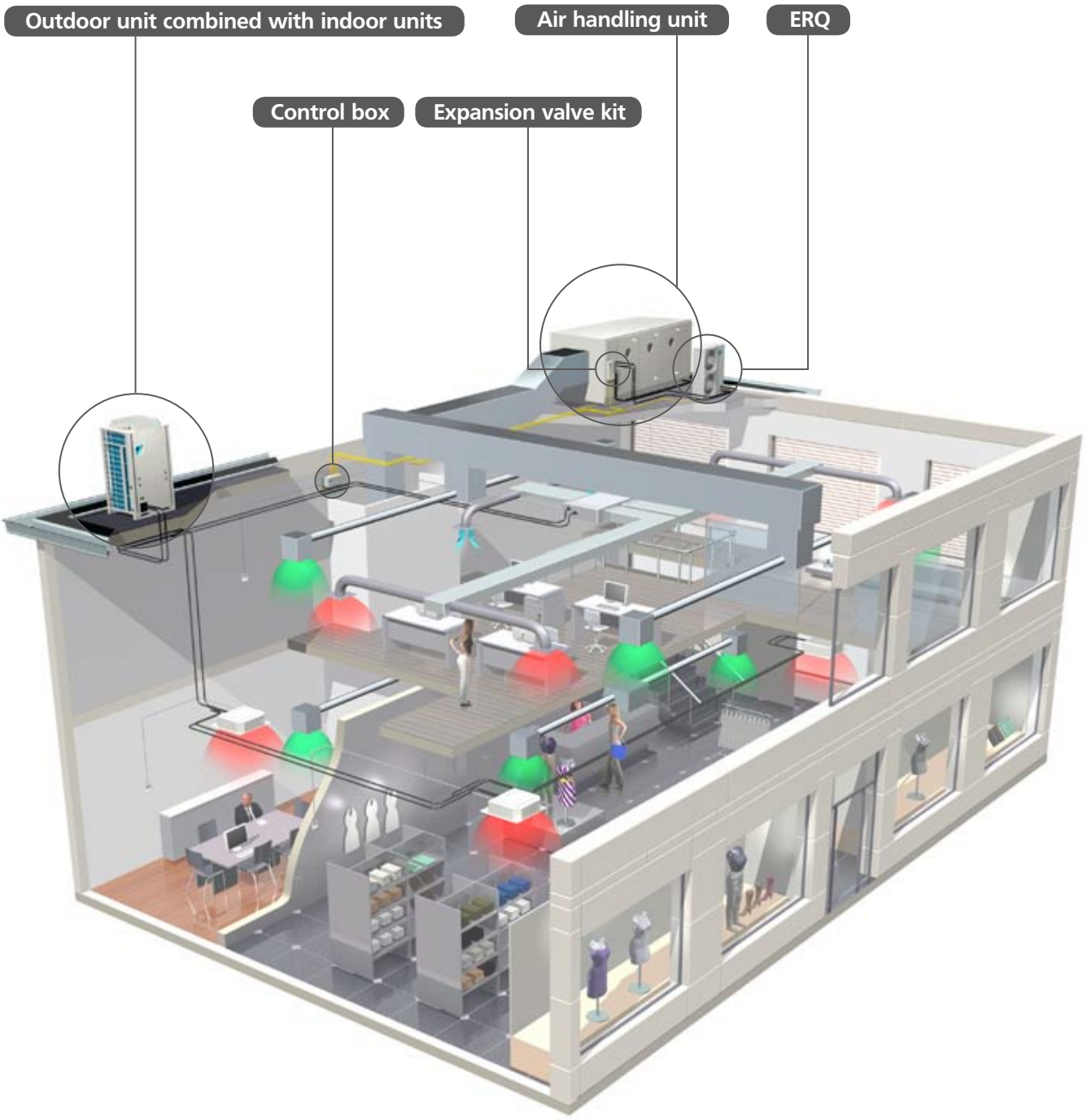
• ERQ units are available in a range of heat pump models for pair application. The system provides optimized air conditions such as fresh air and humidity control, both in heating and in cooling, and can be used in small shops, warehouses, showrooms and offices.

• VRV® units for air handling applications are available in heat pump models (applicable ranges: RTSYQ-P, RXYQ-P, RXYSQ-P, RWEYQ-P) and can be used in combination with VRV® indoor units for 'multi' applications. This represents an ideal solution, combining ventilation and air conditioning in a single system, which is suitable for use in offices and large buildings.

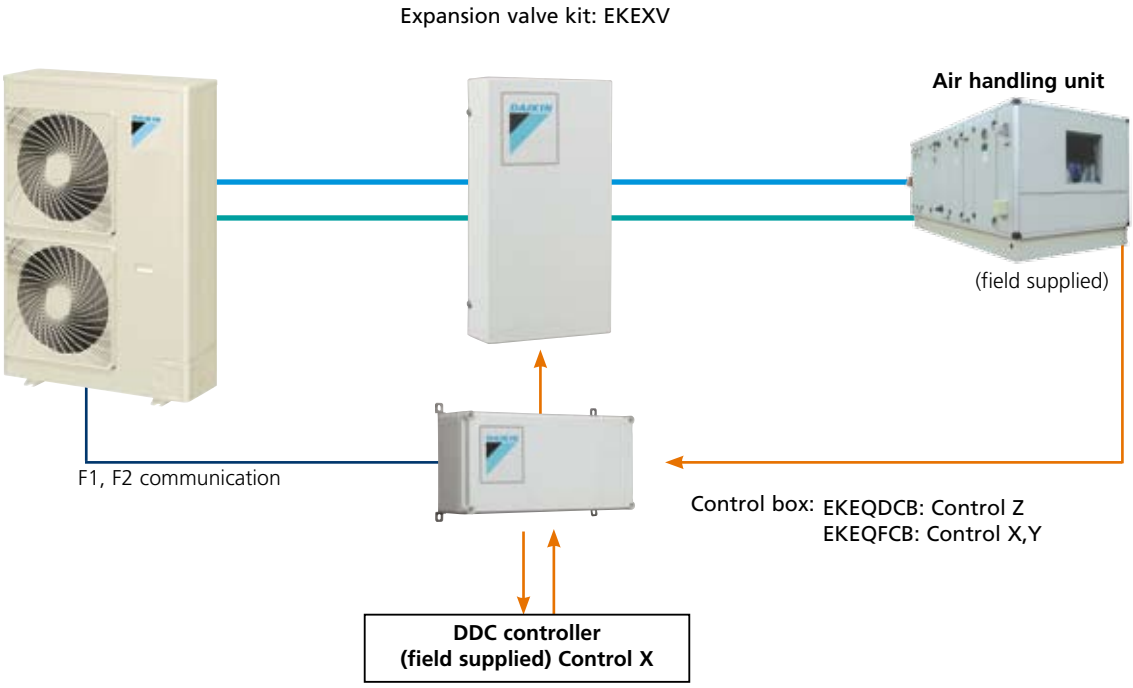
System	Type	4	5	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54
Air-cooled	VRV® Heat pump	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Water-cooled	VRV® Heat pump				■	■			■	■	■		■	■	■	■												
Cooling capacity (kW)		**11.2**	**14.0**	**15.5**	**22.4**	**28.0**																						
Heating capacity (kW)		**12.5**	**16.0**	**18.0**	**25.0**	**31.5**																						
Air-cooled	ERQ-AV1	■	■	■																								
	ERQ-AW1		■		■	■																						

2. SYSTEM OVERVIEW

In order to maximise combination potential, Daikin offers 'pair' and 'multi' combination plus several expansion kits and control systems. Control box and expansion valve kits are required for each combination plus an air handling unit or VRV® unit. Both option kits are designed for indoor and outdoor installation and can be wall mounted.



Pair application: ERQ



Daikin communication wire

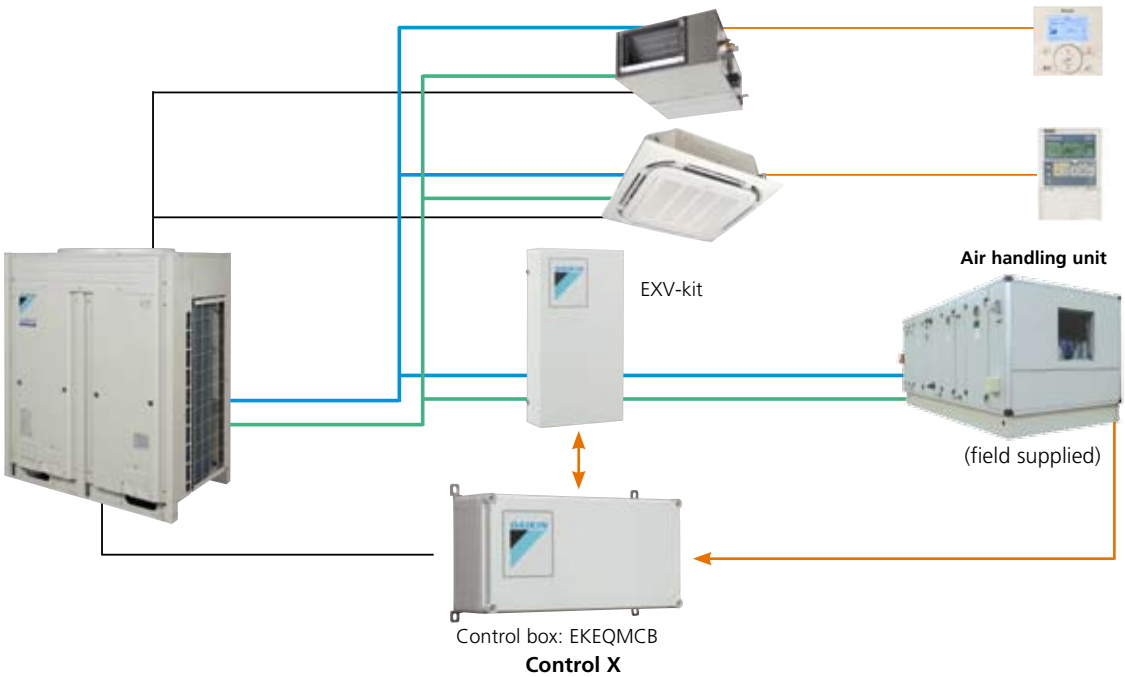
(F1, F2 communication)

Other communication wire

Liquid pipe

Gas pipe

Multi application: VRV®



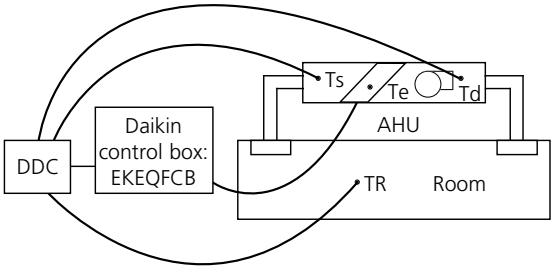
3. CONTROL POSSIBILITIES

In order to maximise installation flexibility, 3 types of control systems are offered:

Possibility X (Td/Tr control):

Air temperature control via an external DDC controller (field supplied)

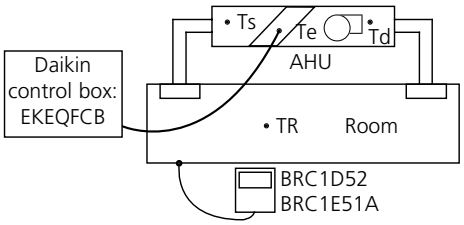
Room temperature is controlled as a function of the air handling unit suction or discharge air (customer selection). The DDC controller is translating the temperature difference between set point and air suction temperature (or air discharge temperature or room temperature) into a reference voltage (0-10V) 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 temperature

A fixed target evaporating temperature of between 3°C and 8°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 wired remote controller (BRC1D52 or BRC1E51A - optional) can be connected for error indication.

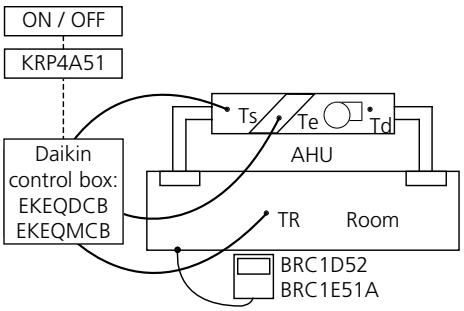


Possibility Z (Td/Tr control):

Using Daikin wired remote controller (BRC1D52 or BRC1E51A - optional)

Set point can be fixed via standard Daikin wired remote controller. 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
Td = Air discharge temperature
Tr = Room temperature
Te = Evaporating temperature
AHU = Air Handling Unit
DDC = Digital Display Controller

	OPTION KIT	FEATURES
Possibility x	EKEQFCB	Field supplied DDC controller is required Temperature control using air suction or air discharge temperature
Possibility y		Using fixed evaporating temperature, no set point can be set using remote controller
Possibility z	EKEQDCB EKEQMCB*	Using Daikin wired remote controller BRC1D52 or BRC1E51A Temperature control using air suction temperature

* EKEQMCB (for 'multi' application)

4. SELECTION OF AIR HANDLING UNITS

Pair application

Step 1: Select required capacity of AHU

Based on the required capacity of the AHU please select the expansion valve

	Allowed heat exchanger volume (dm³)		Allowed heat exchanger capacity (kW)	
EKEXV class	Minimum	Maximum	Minimum	Maximum
63	1.66	2.08	6.3	7.8
80	2.09	2.64	7.9	9.9
100	2.65	3.3	10	12.3
125	3.31	4.12	12.4	15.4
140	4.13	4.62	15.5	17.6
200	4.63	6.6	17.7	24.6
250	6.61	8.25	24.7	30.8

Saturated suction temperature (SST) = 6°C, Superheat (SH) = 5K
Air temperature = 27°CDB/19°CWB

The heat exchanger capacity has priority over the volume of the heat exchanger and is therefore the determining factor for the selection of the expansion valve. More information on the volume can be found in the data book and service manual.

Eg: If you need 14kW, you will require an expansion valve of 125class (EKEXV125).

Step 2: Select outdoor unit

Pair combinations with ERQ outdoor units are possible based on the same principle as standard DX units. The capacity of the AHU unit is indicated by the capacity of the expansion valve and can be connected as indicated in below table.

OUTDOOR UNIT			CONTROL BOX		EXPANSION VALVE KIT						
			Control z	Control x or y	Class 63	Class 80	Class 100	Class 125	Class 140	Class 200	Class 250
			EKEQDCB	EKEQFCB	EKEXV63	EKEXV80	EKEXV100	EKEXV125	EKEXV140	EKEXV200	EKEXV250
ERQ	1~	ERQ100AV1	P	P	P	P	P	P	-	-	-
		ERQ125AV1	P	P	P	P	P	P	P	-	-
		ERQ140AV1	P	P	-	P	P	P	P	-	-
	3~	ERQ125AW1	P	P	P	P	P	P	P	-	-
		ERQ200AW1	P	P	-	-	P	P	P	P	P
		ERQ250AW1	P	P	-	-	-	P	P	P	P

P: Pair, combination depending on AHU coil volume and capacity

Eg: Based on above selected expansion valve, the EKEXV125 has a capacity of class 125. Therefore we can choose to connect it in pair with all outdoor units indicated in the table above with P.

Step 3: Control box selection

Please make your selection of the control box based on your requirements. All the different control possibilities are mentioned on page 34.
More information on the selection is available in the service manual.

Multi application

Step 1: Select required capacity of AHU

Based on the required capacity of the AHU please select the expansion valve

EKEXV class	Allowed heat exchanger capacity (kW)		
	Minimum	Standard	Maximum
50	5.0	5.6	6.2
63	6.3	7.1	7.8
80	7.9	9.0	9.9
100	10	11.2	12.3
125	12.4	14.0	15.4
140	15.5	16.0	17.6
200	17.7	22.4	24.6
250	24.7	28.0	30.8

The heat exchanger capacity has priority over the volume of the heat exchanger and is therefore the determining factor for the selection of the expansion valve. More information on the volume can be found in the data book and service manual.
Eg: If the required capacity of the AHU is 6.9kW, which lies between 6.3 and 7.8, the EKEXV63 can be selected.

Step 2: Select outdoor unit

Multiple AHU can be connected to VRV® and the connection principle is similar as for ERQ. Connection of the full system can be up till 110% including at least 1 Daikin indoor unit (cassette, duct, …) The capacity of the AHU needs to be calculated based on the indicated capacity of the selected expansion valve and the actual capacity.
The AHU capacity index = capacity class (expansion valve) * ratio (actual capacity AHU / standard capacity expansion valve)

Eg: AHU has a capacity requirement of 6.9kW and the selected expansion valvue is the EKEXV63 with a standard capacity of 7.1kW. So the AHU capacity = 63 * (6.9kW / 7.1kW) = 61 class
In case that in the system 2 FXSQ50 class are connected, the total sum of capacity would be 61 + 2*50 = 161 class
Based on the 161 class a 10 HP is required as outdoor unit.

Step 3: Control box selection

EKEQM is the control box which is required to control the communication between the AHU and the VRV® system beside the standard communication of the Dx indoor units (cassette, duct, wall…).
More information on the selection is available in the service manual.

SPECIFICATIONS

ERQ				ERQ100AV1	ERQ125AV1	ERQ125AW1	ERQ140AV1	ERQ200AW1	ERQ250AW1
Dimensions		HxWxD	mm	1,345x900x320		1,680x635x765	1,345x900x320	1,680x930x765	
Weight			kg	127	127	157	127	185	238
Sound pressure level	cooling	nominal	dB(A)	50	51	54	53	57	58
	heating			52	53	54	55	57	58
Sound power level	cooling	nominal	dB(A)	66	67	72	69	78	
Operation range	cooling	min-max	°CDB	-5~46*		-5~43*	-5~46*	-5~43*	
	heating		°CWB	-20~15.5*		-20~15*	-20~15.5*	-20~15*	
Refrigerant type				R-410A					
Piping connections		liquid	mm	ø9.52		ø9.5	ø9.52	ø9.5	
		gas	mm	ø15.9		ø15.9	ø19.1		ø22.2
		drain	mm	ø26x3		-	ø26x3	-	-
Piping length		min	m	5		5		5	
		max	m	50		50		50	
Power supply			V3/W1	1~, 230V, 50Hz		3N~, 400V, 50Hz	1~, 230V, 50Hz	3N~, 400V, 50Hz	

* Ambient air temperature of the air handling unit:
- Minimum air entering temperature: 17°CWB
- Maximum air entering temperature: 25°CWB/35°CDB (28°CWB/35°CDB in pump-down operation)

VRV® Heat pump - High COP combination

RXYHQ-P8				12	16	18	20	22	24
Modules	RXYQ8P8				2	1	1		3
	RXYQ10P					1		1	
	RXYHQ12P8			1			1	1	
Nominal capacity	cooling		kW	33.5	45.0	49.0	55.9	61.5	67.0
	heating		kW	37.5	50.0	56.5	62.5	69.0	75.0
COP	heating			4.37	4.50	4.27	4.42	4.24	4.29
EER	cooling			3.89	4.29	4.00	4.05	3.84	4.50
Capacity range			HP	12	16	18	20	22	24
Max n° of indoor units to be connected				19	26	29	32	35	39
Indoor index connection	minimum			150	200	225	250	275	300
	maximum			390	520	585	650	715	780
Dimensions	unit	height	mm	1,680	-	-	-	-	-
		width	mm	1,240	-	-	-	-	-
		depth	mm	765	-	-	-	-	-
Weight	unit		kg	281	-	-	-	-	-
Fan	air flow rate (nominal at 230V)	cooling	m^3/min	233	171 + 171	171 + 185	171 + 233	185 + 233	171 + 171 + 171
		heating	m^3/min	233	171 + 171	171 + 185	171 + 233	185 + 233	171 + 171 + 171
Operation range	cooling	minimum	°CDB	-5.0					
		maximum	°CDB	43.0					
	heating	minimum	°CWB	-20.0					
		maximum	°CWB	15.0					
Refrigerant	type			R-410A					
Piping Connections	liquid	diameter (OD)	mm	12.7	12.7	15.9	15.9	15.9	15.9
	gas	diameter (OD)	mm	28.6	28.6	28.6	28.6	28.6	34.9
	max. total length		m	1,000					

Notes: Nominal cooling capacities are based on : indoor temperature : 27°CDB, 19°CWB, outdoor temperature : 35°CDB, equivalent refrigerant piping : 7.5m, level difference : 0m.
Nominal heating capacities are based on : indoor temperature : 20°CDB, outdoor temperature : 7°CDB, 6°CWB, equivalent refrigerant piping : 7.5m, level difference : 0m
Sound level of a multi system is determined by the individual outdoor unit and installation condition.

RXYHQ-P8				26	28	30	32	34	36
Modules	RXYQ8P8			2	1	1	1		
	RXYQ10P			1	2	1		1	
	RXYHQ12P8					1	2	2	3
Nominal capacity	cooling		kW	71.4	77.0	82.5	89.0	94.0	98.0
	heating		kW	81.5	88.0	94.0	102.0	107.0	113.0
COP	heating			4.09	4.12	3.96	3.99	3.85	3.89
EER	cooling			4.34	4.44	4.31	4.40	4.29	4.37
Capacity range			HP	26	28	30	32	34	36
Max n° of indoor units to be connected				42	45	48	52	55	58
Indoor index connection	minimum			325	350	375	400	425	450
	maximum			845	910	975	1,040	1,105	1,170
Dimensions	unit	height	mm	-	-	-	-	-	-
		width	mm	-	-	-	-	-	-
		depth	mm	-	-	-	-	-	-
Weight	unit		kg	-	-	-	-	-	-
Fan	air flow rate (nominal at 230V)	cooling	m^3/min	171 + 171 + 185	171 + 185 + 185	185 + 185 + 233	171 + 233 + 233	185 + 233 + 233	233 + 233 + 233
		heating	m^3/min	171 + 171 + 185	171 + 185 + 185	185 + 185 + 233	171 + 233 + 233	185 + 233 + 233	233 + 233 + 233
Operation range	cooling	minimum	°CDB	-5.0					
		maximum	°CDB	43.0					
	heating	minimum	°CWB	-20.0					
		maximum	°CWB	15.0					
Refrigerant	type			R-410A					
	charge		kg	7.7 + 7.7 + 8.4	7.7 + 8.4 + 8.4	7.7 + 8.4 + 10	7.7 + 10 + 10	8.4 + 10 + 10	10 + 10 + 10
	control			Expansion valve (electronic type)					
Piping Connections	liquid	type		Braze connection					
		diameter (OD)	mm	19.1	19.1	19.1	19.1	19.1	19.1
	gas	type		Braze connection					
		diameter (OD)	mm	34.9	34.9	34.9	34.9	34.9	41.3
	max. total length		m	1,000					

Notes: Nominal cooling capacities are based on : indoor temperature : 27°CDB, 19°CWB, outdoor temperature : 35°CDB, equivalent refrigerant piping : 7.5m, level difference : 0m.
Nominal heating capacities are based on : indoor temperature : 20°CDB, outdoor temperature : 7°CDB, 6°CWB, equivalent refrigerant piping : 7.5m, level difference : 0m
Sound level of a multi system is determined by the individual outdoor unit and installation condition

VRV® Heat pump optimised for heating

System				RTSYQ10P	RTSYQ14P	RTSYQ16P	RTSYQ20P
Outdoor Unit				RTSQ10P	RTSQ14P	RTSQ16P	RTSQ8P
Outdoor Unit							RTSQ12P
Function unit				BTSQ20P	BTSQ20P	BTSQ20P	BTSQ20P
Capacity	Cooling		kW	28.0	40.0	45.0	56.0
	Heating (outdoor temp. 7°CDB/6°CWB)		kW	31.5	45.0	50.0	63.0
	Heating (outdoor temp. -10°CWB)		kW	28.0	40.0	45.0	56.0
Dimensions	Unit	Height	mm	1,680			
		Width	mm	930	1,24	1,24	930 + 930
		Depth	mm	765			
	Function unit	Height	mm	1,570			
		Width	mm	460			
		Depth	mm	765			
Weight	Unit		kg	257	338	344	205 + 257
	Function unit		kg	110			
Fan	Air Flow Rate (nominal at 230V)	Cooling	m³/min	185	233	239	(185+200)
		Heating	m³/min	185	233	239	(185+200)
	Motor	Drive		Direct drive			
		Output motor	W	0.75x1	0.35x2	0.75x2	(0.75)+ (0.75)
Compressor	Motor	Type		Hermetically sealed scroll compressor			
Sound level	Cooling	Starting method		Soft start			
		Sound Pressure (Maximum)	dBA	62	63	65	65
		Sound Pressure (Nominal)	dBA	60	61	63	63
		Starting Method		Soft start			
Refrigerant	Name			R-410A			
Piping Connections	Liquid (OD)	Diameter (OD)	mm	9.52	12.7	12.7	15.9
	Gas	Diameter (OD)	mm	22.2	28.6	28.6	28.6
	Oil equalizing	Diameter (OD)	mm	-	-	-	19.1

Nominal cooling capacities are based on: indoor temperature: 27°CDB, 19°CWB; outdoor temperature 35°CDB; equivalent piping length: 7.5m; level difference 0m; function unit length: 6m
Nominal heating capacities are based on: indoor temperature: 20°CDB; outdoor temperature 7°CDB,6°CWB; equivalent piping length: 7.5m; level difference 0m; function unit length: 6m
Nominal heating capacities are based on: indoor temperature: 20°CDB; outdoor temperature -10°CWB; equivalent piping length: 7.5m; level difference 0m; function unit length: 6m
RTSYQ10P combined with 5x FXFQ50P, RTSYQ14P combined with 7x FXFQ50P, RTSYQ16P combined with 8x FXFQ50P, RTSYQ20P combined with 10x FXFQ50P

VRV® Heat pump - Small footprint combination

RXYQ-P(A)/P8(A)				5	8	10	12	14	16	18
Nominal capacity	cooling		kW	14.0	22.4	28.0	33.5	40.0	45.0	49.0
	heating		kW	16.0	25.0	31.5	37.5	45.0	50.0	56.5
COP	heating			4.00	4.50	4.09	3.97	3.98	3.88	3.69
EER	cooling			3.98	4.29	3.77	3.48	3.23	3.17	3.02
Capacity range			HP	5	8	10	12	14	16	18
Max n° of indoor units to be connected				8	13	16	19	23	26	29
Indoor index connection	minimum			62.5	100	125	150	175	200	225
	maximum (130%)			162.5	260	325	390	455	520	585
Dimensions	unit	height	mm	1,680	1,680	1,680	1,680	1,680	1,680	1,680
		width	mm	635	930	930	930	1,240	1,240	1,240
		depth	mm	765	765	765	765	765	765	765
Weight	unit		kg	159	187	240	240	316	316	324
Fan	air flow rate (nominal at 230V)	cooling	m³/min	95	171	185	196	233	233	239
		heating	m³/min	95	171	185	196	233	233	239
Operation range	cooling	minimum	°CDB	-5.0						
		maximum	°CDB	43.0						
	heating	minimum	°CWB	-20.0						
		maximum	°CWB	15.0						
Sound level (nominal)	cooling	sound power	dBA	72	78	78	80	80	80	83
		sound pressure	dBA	54	57	58	60	60	60	63
Refrigerant	type			R-410A						
Piping Connections	liquid	diameter (OD)	mm	9.52	9.52	9.52	12.7	12.7	12.7	15.9
	gas	diameter (OD)	mm	15.9	19.1	22.2	28.6	28.6	28.6	28.6
	max. total length		m	1,000	1,000	1,000	1,000	1,000	1,000	1,000

Notes: Nominal cooling capacities are based on : indoor temperature : 27°CDB, 19°CWB, outdoor temperature : 35°CDB, equivalent refrigerant piping : 7.5m, level difference: 0m.
Nominal heating capacities are based on : indoor temperature : 20°CDB, outdoor temperature : 7°CDB, 6°CWB, equivalent refrigerant piping : 7.5m, level difference: 0m
Sound power level is an absolute value that a sound source generates.
Sound pressure level is a relative value, depending on the distance and acoustic environment.
Sound values are measured in a semi-anechoic room.

RXYQ-P(A)/P8(A)					20	22	24	26	28	30	32	34	36
Modules	RXYQ8P8				1			1					
	RXYQ10P					1			1				
	RXYQ12P				1	1	2			1			
	RXYQ14PA										1		
	RXYQ16PA											1	
	RXYQ18PA							1	1	1	1	1	2
Nominal capacity	cooling			kW	55.9	61.5	67.0	71.4	77.0	82.5	89.0	94.0	98.0
	heating			kW	62.5	69.0	75.0	81.5	88.0	94.0	102.0	107.0	113.0
COP	heating				4.18	4.04	3.97	3.94	3.83	3.81	3.83	3.79	3.69
EER	cooling				3.80	3.62	3.49	3.41	3.26	3.20	3.11	3.09	3.02
Capacity range				HP	20	22	24	26	28	30	32	34	36
Max n° of indoor units to be connected					32	35	39	42	45	49	52	55	58
Indoor index connection	minimum				250	275	300	325	350	375	400	425	450
	maximum (130%)				650	715	780	845	910	975	1,040	1,105	1,170
Dimensions	unit	height		mm	-	-	-	-	-	-	-	-	-
		width		mm	-	-	-	-	-	-	-	-	-
		depth		mm	-	-	-	-	-	-	-	-	-
Fan	air flow rate (nominal at 230V)	cooling		m3/min	171 + 196	185 + 196	196 + 196	171 + 239	185 + 239	196 + 239	233 + 239	233 + 239	239 + 239
		heating		m3/min	171 + 196	185 + 196	196 + 196	171 + 239	185 + 239	196 + 239	233 + 239	233 + 239	239 + 239
Operation range	cooling	minimum		°CDB	-5.0								
		maximum		°CDB	43.0								
	heating	minimum		°CWB	-20.0								
		maximum		°CWB	15.0								
Refrigerant	type				R-410A								
Piping Connections	liquid	diameter (OD)		mm	15.9	15.9	15.9	19.1	19.1	19.1	19.1	19.1	19.1
	gas	diameter (OD)		mm	28.6	28.6	34.9	34.9	34.9	34.9	34.9	34.9	41.3
	max. total length			m	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000

Notes: Nominal cooling capacities are based on : indoor temperature : 27°CDB, 19°CWB, outdoor temperature : 35°CDB, equivalent refrigerant piping : 7.5m, level difference: 0m.
Nominal heating capacities are based on : indoor temperature : 20°CDB, outdoor temperature : 7°CDB, 6°CWB, equivalent refrigerant piping : 7.5m, level difference: 0m
Sound level of a multi system is determined by the individual outdoor unit and installation condition
The refrigerant charge of the system must be less than 100 kg. This means that in case the calculated refrigerant charge is equal to or more than 95 kg,
you must divide your multiple outdoor system into smaller independent systems,
each containing less than 95 kg refrigerant charge. For factory charge, refer to the namplate of the unit.

RXYQ-P(A)/P8(A)					38	40	42	44	46	48	50	52	54
Modules	RXYQ8P8				1			1					
	RXYQ10P					1			1				
	RXYQ12P				1	1	2			1			
	RXYQ14PA										1		
	RXYQ16PAA											1	
	RXYQ18PA				1	1	1	2	2	2	2	2	3
Nominal capacity	cooling			kW	105.0	111.0	116.0	120.0	126.0	132.0	138.0	143.0	147.0
	heating			kW	119.0	126.0	132.0	138.0	145.0	151.0	158.0	163.0	170.0
COP	heating				3.95	3.89	3.86	3.84	3.79	3.78	3.77	3.75	3.70
EER	cooling				3.43	3.34	3.28	3.25	3.17	3.14	3.08	3.07	3.02
Capacity range				HP	38	40	42	44	46	48	50	52	54
Max n° of indoor units to be connected					61	64	64	64	64	64	64	64	64
Indoor index connection	minimum				475	500	525	550	575	600	625	650	675
	maximum (130%)				1,235	1,300	1,365	1,430	1,495	1,560	1,625	1,690	1,755
Dimensions	unit	height		mm	-	-	-	-	-	-	-	-	-
		width		mm	-	-	-	-	-	-	-	-	-
		depth		mm	-	-	-	-	-	-	-	-	-
Fan	type				Propeller								
	air flow rate (nominal at 230V)	cooling		m3/min	171 + 196 + 239	185 + 196 + 239	196 + 196 + 239	171 + 239 + 239	185 + 239 + 239	196 + 239 + 239	233 + 239 + 239	233 + 239 + 239	239 + 239 + 239
		heating		m3/min	171 + 196 + 239	185 + 196 + 239	196 + 196 + 239	171 + 239 + 239	185 + 239 + 239	196 + 239 + 239	233 + 239 + 239	233 + 239 + 239	239 + 239 + 239
Operation range	cooling	minimum		°CDB	-5.0								
		maximum		°CDB	43.0								
	heating	minimum		°CWB	-20.0								
		maximum		°CWB	15.0								
Refrigerant	type				R-410A								
Piping Connections	liquid	diameter (OD)		mm	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1
	gas	diameter (OD)		mm	41.3	41.3	41.3	41.3	41.3	41.3	41.3	41.3	41.3

Notes: Nominal cooling capacities are based on : indoor temperature : 27°CDB, 19°CWB, outdoor temperature : 35°CDB, equivalent refrigerant piping: 7.5m, level difference: 0m.
Nominal heating capacities are based on : indoor temperature : 20°CDB, outdoor temperature : 7°CDB, 6°CWB, equivalent refrigerant piping: 7.5m, level difference: 0m
Sound level of a multi system is determined by the individual outdoor unit and installation condition

VRV®III-S Heat pump

RXYSQ-PAV/RXYSQ-PAY					4	5	6
Nominal capacity	cooling			kW	11.2	14.0	15.5
	heating			kW	12.5	16.0	18.0
COP	heating				4.56 / 4.43	4.15 / 4.03	3.94 / 3.83
EER	cooling				3.99 / 3.88	3.99 / 3.88	3.42/ 3.33
Capacity range				HP	4	5	6
Max n° of indoor units to be connected					6	8	9
Indoor index connection	minimum				50	62.5	70
	maximum				130	162.5	182
Dimensions	unit	height		mm	1,345		
		width		mm	900		
		depth		mm	320		
Fan	air Flow Rate (nominal at 230V)	cooling		m/min	106	106	106
		heating		m/min	102	105	105
Operation range	cooling	minimum		°CDB	-5.0		
		maximum		°CDB	46		
	heating	minimum		°CWB	-20		
		maximum		°CWB	15.5		
Sound level (nominal)	cooling	sound power		dBA	66	67	69
		sound pressure		dBA	50	51	53
	heating	sound pressure		dBA	52	53	55
Refrigerant	type				R-410A		
Piping Connections	liquid	diameter (OD)		mm	9.52 (Flare)	9.52 (Flare)	9.52 (Flare)
	gas	diameter (OD)		mm	15.9 (Flare)	15.9 (Flare)	19.1 (Braze)
	max. total length			m	300		

Notes: Nominal cooling capacities are based on: indoor temperature: 27°CDB, 19°CWB, outdoor temperature: 30°C, equivalent refrigerant piping: 7.5m, level difference: 0m.
Nominal heating capacities are based on: indoor temperature: 20°CDB, outdoor temperature: 7°CDB, 6°CWB, equivalent refrigerant piping: 7.5m, level difference: 0m.
Sound power level is an absolute value that a sound source generates.
Sound pressure level is a relative value, depending on the distance and acoustic environment. For more details, please refer to sound level drawings.
Sound values are measured in a semi-anechoic room.

CONTROL BOX

EKEQ				EKEQFCB	EKEQDCB	EKEQMCB
Casing colour				White grey		
Dimensions		HxWxD	mm	132x400x200		
Weight				3.8	3.5	
Operation range	cooling	min-max	°CDB	-5~46		
Power supply			V3	1~, 230V, 50Hz		

EXPANSION VALVE KIT

EXV-kit				EKEXV50	EKEXV63	EKEXV80	EKEXV100	EKEXV125	EKEXV140	EKEXV200	EKEXV250
Casing colour				Ivory white							
Dimensions		HxWxD	mm	401x215x78							
Weight			kg	2,9							
Sound pressure level		nominal	dB(A)	45 (max. at 10cm from motor)							
Piping connection		liquid	mm	ø9.52							
Operation range	cooling	min-max	°CDB	-5~46							

OPTIONS

ERQ	ERQ100AV1	ERQ125AV1	ERQ125AW1	ERQ140AV1	ERQ200AW1	ERQ250AW1
Central drain pan	-	-	KWC26B160	-	KWC26B280	
Central drain plug	KKPJ5F180		-	KKPJ5F180	-	-
Cool/heat selector	KRC19-26A6					
Fixing box	KJB111A					

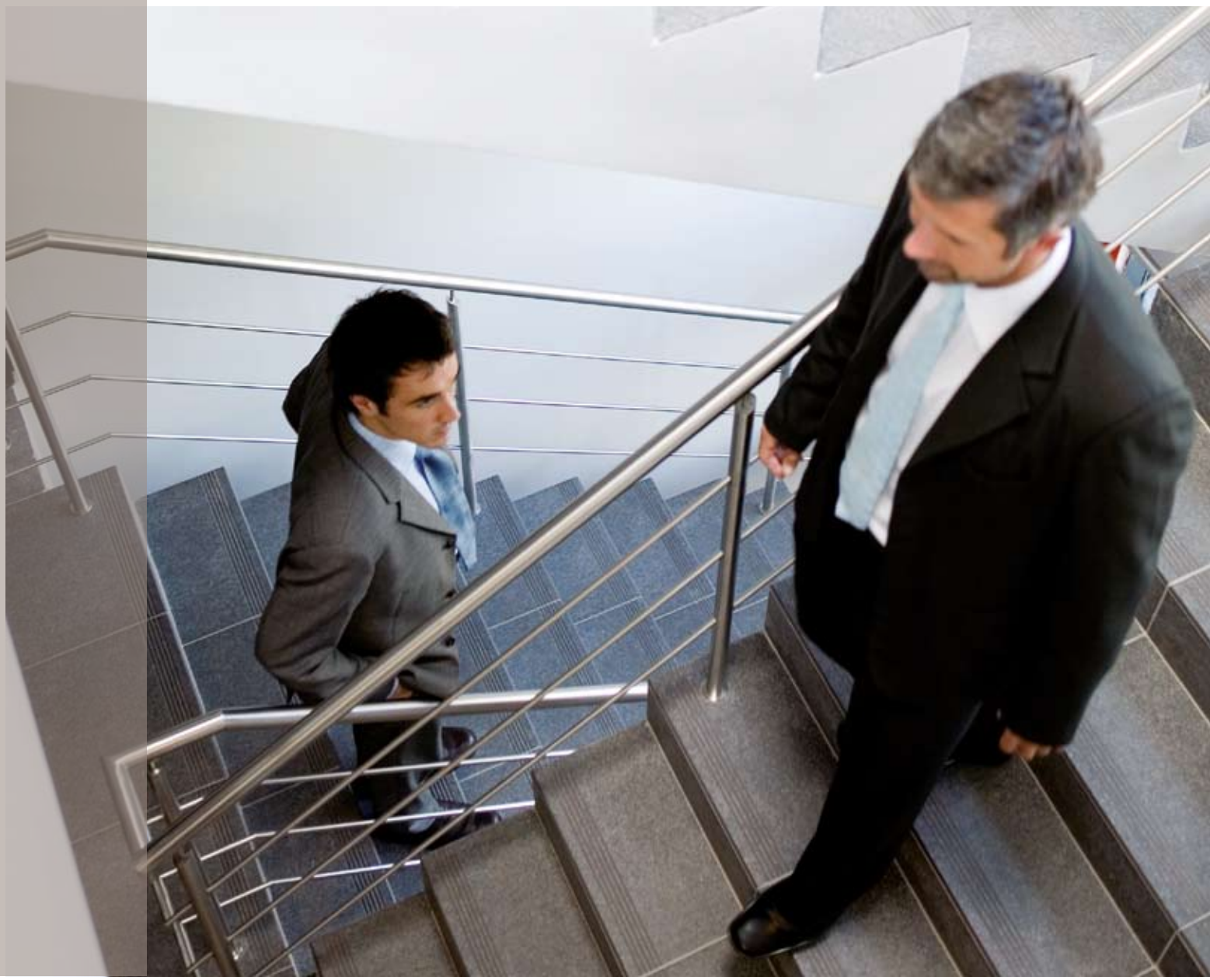
EKEQ	EKEQDCB	EKEQDCB	EKEQMCB
Wired remote control	BRC1D52 / BRC1E51A	BRC1D52 / BRC1E51A*	
Wiring adapter for electrical appendices	-	KRP4A516	
Remote sensor	-	KRC501-1	

* Cool/heat selector: required for operation.

Caution for options

- Do not connect the system to DIII-net devices (Intelligent Controller, Intelligent Manager, LonWorks interface, BACnet interface…). This could result in malfunction or breakdown of the total system.
- Only use this system in combination with a field supplied air handling unit. Do not connect this system to other indoor units.

NOTES



In all of us, a green heart

Daikin's unique position as a manufacturer of air conditioning equipment, compressors and refrigerants has led to its close involvement in environmental issues.
For several years Daikin has had the intention to become a leader in the provision of products that have limited impact on the environment.
This challenge demands the eco design and development of a wide range of products and an energy management system, resulting in energy conservation and a reduction of waste.

Daikin Europe N.V. is approved by LRQA for its Quality Management System in accordance with the ISO9001 standard. ISO9001 pertains to quality assurance regarding design, development, manufacturing as well as to services related to the product.

ISO14001 assures an effective environmental management system in order to help protect human health and the environment from the potential impact of our activities, products and services and to assist in maintaining and improving the quality of the environment.

CE

Daikin units comply with the European regulations that guarantee the safety of the product.

VRV® products are not within the scope of the Eurovent certification programme

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