

Air Conditioning
Technical Data

SB.RKXYQ-TA

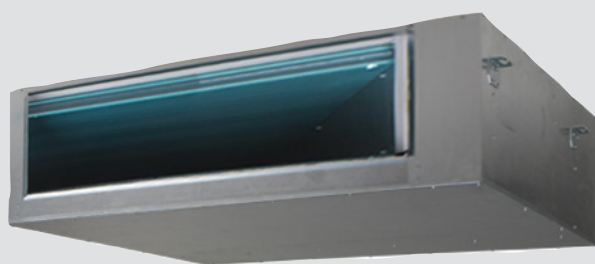


TABLE OF CONTENTS

SB.RKXYQ-TA

1	Features	2
	RDXYQ-TA	2
	RKXYQ-TA	3
	SB.RKXYQ-TA	4
2	Specifications	5
	Technical Specifications	5
	Electrical Specifications	5
	Technical Specifications	6
	Electrical Specifications	6
3	Options	8
4	Combination table	9
5	Capacity tables	10
	Capacity Table Legend	10
	Integrated Heating Capacity Correction Factor	11
	Capacity Correction Factor	12
6	Dimensional drawings	13
7	Centre of gravity	14
8	Piping diagrams	15
9	Wiring diagrams	16
	Wiring Diagrams - Single Phase	16
	Wiring Diagrams - Three Phase	17
10	External connection diagrams	18
11	Sound data	19
	Sound Power Spectrum	19
	Sound Pressure Spectrum	20
12	Installation	21
	Installation Method	21
	Refrigerant Pipe Selection	22
13	Operation range	23
	Correction Factors	23

1 Features

1 - 1 RDXYQ-TA

- Heat exchanger module for VRV IV i-series
- Unique VRV heat pump for indoor installation
- Unique V-shape heat exchanger results in compact dimensions (h/e unit only 400mm high) allowing false ceiling installation, while ensuring top efficiency
- Super efficient centrifugal fans (over 50% efficiency increase compared to sirocco fan)

1 Features

1 - 2 RKXYQ-TA

- Compressor module for VRV IV i-series
- Unique VRV heat pump for indoor installation
- Lightweight units (max. 105kg) can be installed by two people
- Small footprint compressor unit (760 x 554 mm) maximizing useable floor space



Inverter

1 Features

1 - 3 SB.RKXYQ-TA

- Unique VRV heat pump for indoor installation
- Unrivalled flexibility because the unit is split up into two elements: the heat exchanger and the compressor
- Highly suited to densely populated areas thanks to the low operation sound and seamless integration into surrounding architecture as only the grille is visible
- Incorporates VRV IV standards & technologies: Variable Refrigerant Temperature, VRV configurator and full inverter compressors
- Covers all thermal needs of a building via a single point of contact: accurate temperature control, ventilation, air handling units and Biddle air curtains
- Customize your VRV for best seasonal efficiency & comfort with the weather dependant Variable Refrigerant Temperature function. Increased seasonal efficiency with up to 28%. No more cold draft by supply of high outblow temperatures
- VRV configurator software for the fastest and most accurate commissioning, configuration and customisation
- Lightweight units (max. 105kg) can be installed by two people
- Unique V-shape heat exchanger results in compact dimensions (h/e unit only 400mm high) allowing false ceiling installation, while ensuring top efficiency
- Super efficient centrifugal fans (over 50% efficiency increase compared to sirocco fan)
- Small footprint compressor unit (760 x 554 mm) maximizing useable floor space
- Connectable to all VRV control systems
- Keep your system in top condition via our i-Net service: 24/7 monitoring for maximum efficiency, extended lifetime, immediate service support thanks to failure prediction and a clear understanding of operability and usage



Inverter

2 Specifications

2-1 Technical Specifications					SB.RKXYQ5TA	
System	Heat exchanger unit				RDXYQ5TA	
	Compressor unit				RKXYQ5TA	
Capacity range			HP	5		
Cooling capacity	Nom.	35°CDB	kW	14.0 (1)		
Heating capacity	Nom.	6°CWB	kW	14.0 (2)		
	Max.	6°CWB	kW	16.0 (2)		
Power input - 50Hz	Cooling	Nom.	35°CD B	kW	4.38 (1)	
		Heating	Nom.	6°CWB	kW	3.68 (2)
	Max.		6°CWB	kW	4.71 (2)	
Capacity control	Method				Inverter controlled	
EER at nom. capacity	35°CDB			kW/kW	3.20 (1)	
COP at nom. capacity	6°CWB			kW/kW	3.80 (2)	
COP at max. capacity	6°CWB			kW/kW	3.40 (2)	
Maximum number of connectable indoor units					10 (3)	
Indoor index connection	Min.				100	
	Nom.				125	
	Max.				162.5	
Fan	External static pressure	Max.		Pa	150	
		Nom.		Pa	60	
Piping connections	Between Compressor module (CM) and heat exchanger module (HM)	Liquid	Type		Braze connection	
			OD	mm	12.7	
		Gas	Type		Braze connection	
			OD	mm	22.2	
		Piping length	Max.	m	30.0	
		Level difference	CM below HM	m	10.0	
			CM above HM	m	10.0	
		Between Compressor module (CM) and indoor units (IU)	Liquid	Type		Braze connection
				OD	mm	9.52
			Gas	Type		Braze connection
	OD			mm	15.9	
	Level difference		CM below IU	m	30.0	
			CM above IU	m	30.0	
	Liquid	OD		mm	-	
	Total piping length	System	Actual	m	140 (4)	
	Level difference	IU - IU	Max.	m	15	
Defrost method					Reversed cycle	

Standard Accessories : Installation and operation manual; Quantity : 1;

Standard Accessories : Drain hose; Quantity : 1;

Standard Accessories : Screws; Quantity : 1;

Standard Accessories : Tie-wraps; Quantity : 1;

Standard Accessories : Hose band; Quantity : 1;

Standard Accessories : Connection pipes; Quantity : 5;

Standard Accessories : Declaration of conformity; Quantity : 1;

Standard Accessories : Refrigerant label for F-gas regulation; Quantity : 1;

2-2 Electrical Specifications					SB.RKXYQ5TA
Current - 50Hz	Zmax		List		No requirements
	Minimum Ssc value		kVa		3,329 (5)

2 Specifications

Notes

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

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

(3) Actual number of units depends on the indoor unit type (VRV DX indoor, etc.) and the connection ratio restriction for the system (being; $50\% \leq CR \leq 130\%$).

(4) Refer to refrigerant pipe selection or installation manual

(5) In accordance with EN/IEC 61000-3-12, it may be necessary to consult the distribution network operator to ensure that the equipment is connected only to a supply with Ssc $\geq$ minimum Ssc value

The sound power level is an absolute value indicating the power which 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. Nominal air flow rate, ESP 60 Pa.

Sound values are measured in a semi-anechoic room.

Contains fluorinated greenhouse gases

2-3 Technical Specifications					RKXYQ5TA		RDXYQ5TA	
Dimensions	Unit	Height		mm	701		397	
		Width		mm	760		1,456	
		Depth		mm	554		1,044	
	Packed unit	Height		mm	825		1,245	
		Width		mm	875		1,604	
		Depth		mm	660		470	
	Ducting	Height		mm	-		298	
		Width		mm	-		1,196	
Weight	Unit			kg	105		103	
	Packed unit			kg	116		123	
Packing	Material				Carton			
	Weight			kg	2.2		4.9	
Packing 2	Material				Wood			
	Weight			kg	8.5		14.0	
Packing 3	Material				Plastic		-	
	Weight			kg	0.3		-	
Casing	Colour				Daikin White		Unpainted	
	Material				Painted galvanized steel plate		Galvanised steel	
Compressor	Quantity				1		-	
	Type				G-type scroll compressor		-	
	Crankcase heater			W	33		-	
Fan	Quantity				-		3	
	Air flow rate	Cooling	Nom.	m³/min	-		100	
Fan motor	Quantity				-		3	
	Output			W	-		500	
Sound power level	Cooling		Nom.	dBA	64		81	
Sound pressure level	Cooling		Nom.	dBA	48		54	
Refrigerant	Type				R-410A			
	GWP				2,087.5		-	
	Charge			TCO ₂ eq	8.35		-	
				kg	4.00		-	
Refrigerant oil	Type				Daphne FVC68D			
Piping connections	Drain		OD	mm	-		32	
2-4 Electrical Specifications					RKXYQ5TA		RDXYQ5TA	
Power supply	Name				Y1		V1	
	Phase				3N~		1N~	
	Frequency			Hz	50			
	Voltage			V	380-415		220-240	
Voltage range	Min.			%	-10			
	Max.			%	10			

2 Specifications

2-4 Electrical Specifications				RKXYQ5TA	RDXQ5TA
Current	Nominal running current (RLA) - 50Hz	Cooling	A	8.6	4.6
Current - 50Hz	Minimum circuit amps (MCA)		A	17.4	7.0
	Maximum fuse amps (MFA)		A	20	10
	Total overcurrent amps (TOCA)		A	17.4	7.0
	Full load amps (FLA)	Total	A	-	6.6
Wiring connections - 50Hz	For power supply	Quantity		5G	3G
	For connection with indoor	Quantity		2	-
		Remark		F1,F2	-

3 Options

3 - 1 Options

3

SB.RKXYQ5TA

VRV4-i
Heat pump
Option list

Nr.	Item	SB.RKXYQ5TA	
		Heat exchanger unit	Compressor unit
I.	Refnet header	KXRQJ22M29H	
II.	Refnet joint	KXRQJ22M20T	
III.	Refnet joint	KXRQJ22M29T9	
1a.	Cool/heat selector (switch)	-	KRC19-26
1b.	Cool/heat selector (flang box)	-	KR111A
1c.	Cool/heat selector (cable)	-	-
1d.	Cool/heat selector (PCB)	-	BRP2A81
2.	VRV configurator	-	EXFCCAB*
3.	Demand PCB	DTA10AA61/62*	-
4.	Drain pan heater	EXDPH18DX	-

Notes

1. All options are kits.
2. To mount option 1a, option 1b is required.
3. VRV4-i only: To operate the cool/heat selector function, options 1a and 1d are both required.
4. If the outdoor temperature can drop below -7°C for more than 24 hours, it is recommended to install drain pan heater kit EXDPH18DX.

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4 Combination table

4 - 1 Combination Table

SB.RKXYQ5TA

VRV4-i

Heat pump

Indoor unit combination restrictions

System pattern	Capacity [%]	DX [%]	AHU [%]	FXMQ*MF [%]
VRV DX indoor unit	50 - 130	50 - 130	-	-
RA indoor unit	-	-	-	-
Hydrobox unit	-	-	-	-
DX + AHU See note 1.	50 - 110	50 - 110	0 - 60	-
Air handling unit only See note 1.	90 - 110	-	90 - 110	-
FXMQ*MF	50 - 100	-	-	50 - 100

AHU: Air handling unit (AHU)

Notes

1. AHU = CYV (biddle) air curtain OR EKEXV + EKEQM

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5 Capacity tables

5 - 1 Capacity Table Legend

In order to fulfill more your requirements on quick access of data in the format you require, we have developed a tool to consult capacity tables.

Below you can find the link to the capacity table database and an overview of all the tools we have to help you select the correct product:

- Capacity table database: lets you find back and export quickly the capacity information you are looking for based upon unit model, refrigerant temperature and connection ratio.

[Click here to access the capacity table viewer.](#)



- For more information about all our tools we offer [click here to see the overview](#) on my.daikin.eu



5 Capacity tables

5 - 2 Integrated Heating Capacity Correction Factor

SB.RKXYQ5TA

VRV4-i
Heat pump
Integrated heating capacity coefficient

The heating capacity tables do not take into account the capacity reduction in case of frost accumulation or defrost operation.
The capacity values that take these factors into account, or in other words, the integrated heating capacity values, can be calculated as follows:

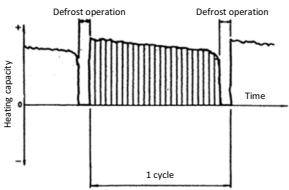
Formula

- A = Integrated heating capacity
- B = Capacity characteristics value
- C = Integrated correction factor for frost accumulation (see table)

$A = B \times C$

Inlet air temperature of heat exchanger

(°CDB/°CWB)	-7/-7.6	-5/-5.6	-3/-3.7	0/-0.7	3/2.2	5/4.1	7/6
5 HP	0,88	0,86	0,80	0,75	0,76	0,82	1,00



Notes

1. The figure shows the integrated heating capacity for a single cycle (from one defrost operation to the next).

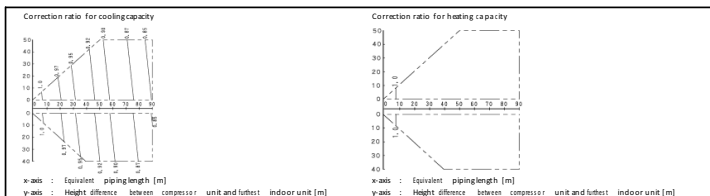
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5 Capacity tables

5 - 3 Capacity Correction Factor

SB.RKXYQ5TA

VRV4-i
Heat pump



- Note**
- These figures illustrate the capacity correction factor due to the piping length for a standard indoor unit system at maximum load (with the thermostat set to minimum), under standard conditions. However, under partial load conditions, there is only a minor deviation. For the capacity correction ratio, see the above figure.
 - With this VRV4-i system, the following control is used: in case of cooling, constant evaporating pressure control; in case of heating, constant condensing pressure control.
 - Method of calculating the capacity of the outdoor units**
The maximum capacity of the system will be either the total capacity of the indoor units or the maximum capacity delivered by the compressor unit plus the heat exchanger unit, whichever is less.

$$\text{Maximum capacity of outdoor units} = \frac{\text{Capacity from capacity table at 100\% correction ratio}}{\text{Correction ratio of piping to furthest indoor unit}}$$

$$\text{Indoor connection ratio} > 100\%$$

$$\text{Maximum capacity of outdoor units} = \frac{\text{Capacity from capacity table at installed correction ratio}}{\text{Correction ratio of piping to furthest indoor unit}}$$
 - If the equivalent pipe length between the heat exchanger unit and the furthest indoor unit is 19m, it is recommended to increase the size of the main gas pipe between the compressor unit and the first refrigerant branch kit. If the recommended gas pipe (with increased size) is not available, you must use the standard size (which might result in a small capacity decrease).
If the equivalent pipe length between the heat exchanger unit and the furthest indoor unit is 20m, you MUST increase the size of the main liquid pipe between the compressor unit and the first refrigerant branch kit.

Model	Standard liquid side Ø	Increased liquid side Ø	Standard gas side Ø	Increased gas side Ø
5-WF	9.5	12.7	19.1	22.2
 - Overall equivalent length**

$$\text{Overall equivalent length} = \text{Equivalent length of the main pipe} \times \text{Correction factor} + \text{Equivalent length of the branch pipes}$$

Choose the correction factor from the following table:

	Standard size	Size increase
Cooling (gas pipe)	1.0	0.5
Heating (liquid pipe)	1.0	0.3

Example

Overall equivalent length

 - Cooling mode: $10\text{ m} + 10\text{ m} \times 1 + 40\text{ m} = 60\text{ m}$
 - Heating mode: $10\text{ m} + 10\text{ m} \times 1 + 40\text{ m} = 60\text{ m}$

Capacity correction ratio (branch difference (m))

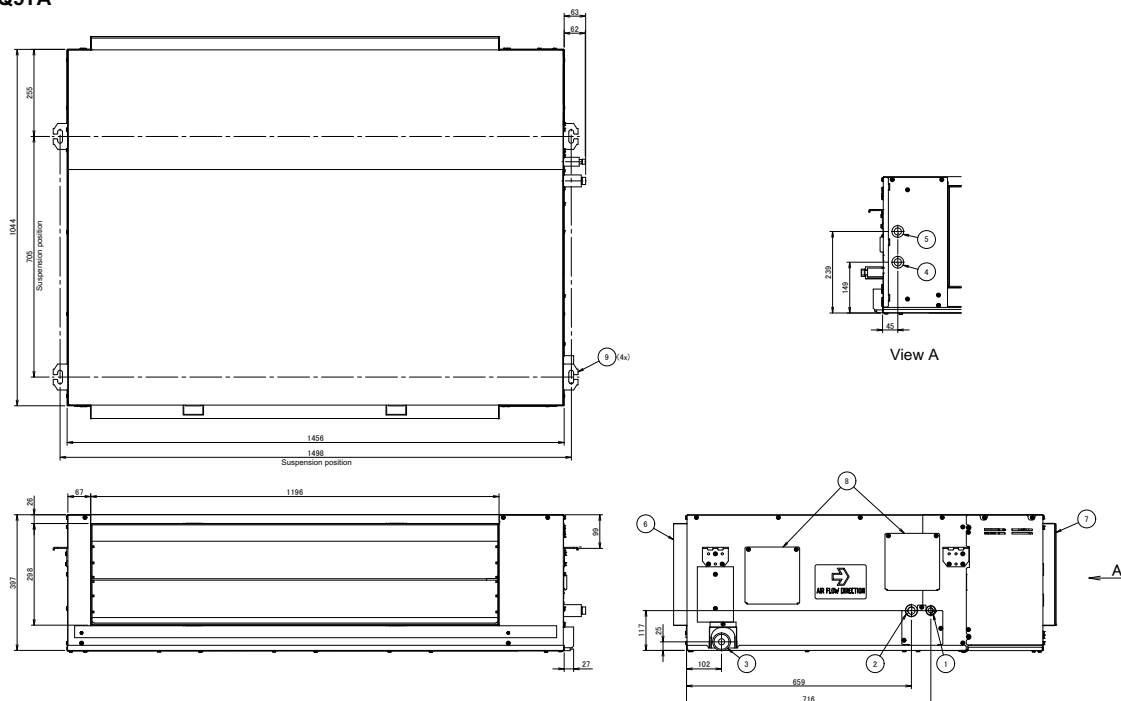
 - Cooling mode: $= 0.89$
 - Heating mode: $= 1.00$

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6 Dimensional drawings

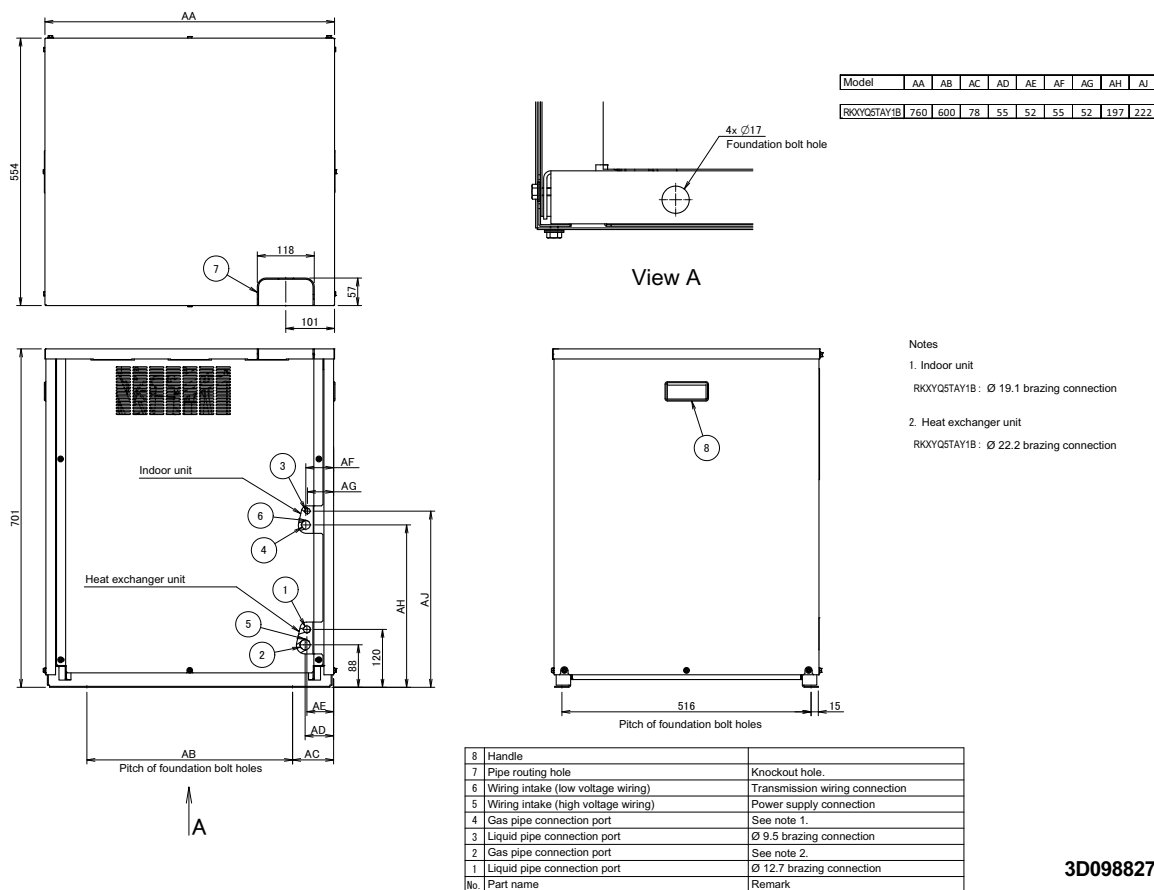
6 - 1 Dimensional Drawings

RDXYQ5TA



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RKXYQ5TA



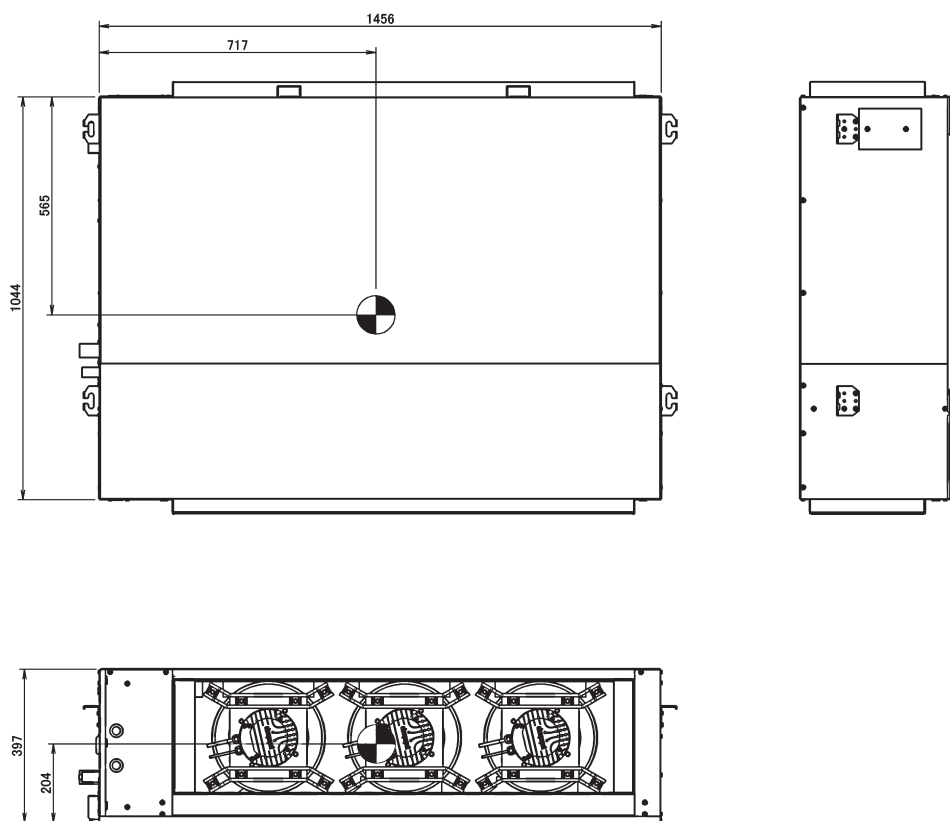
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7 Centre of gravity

7 - 1 Centre of Gravity

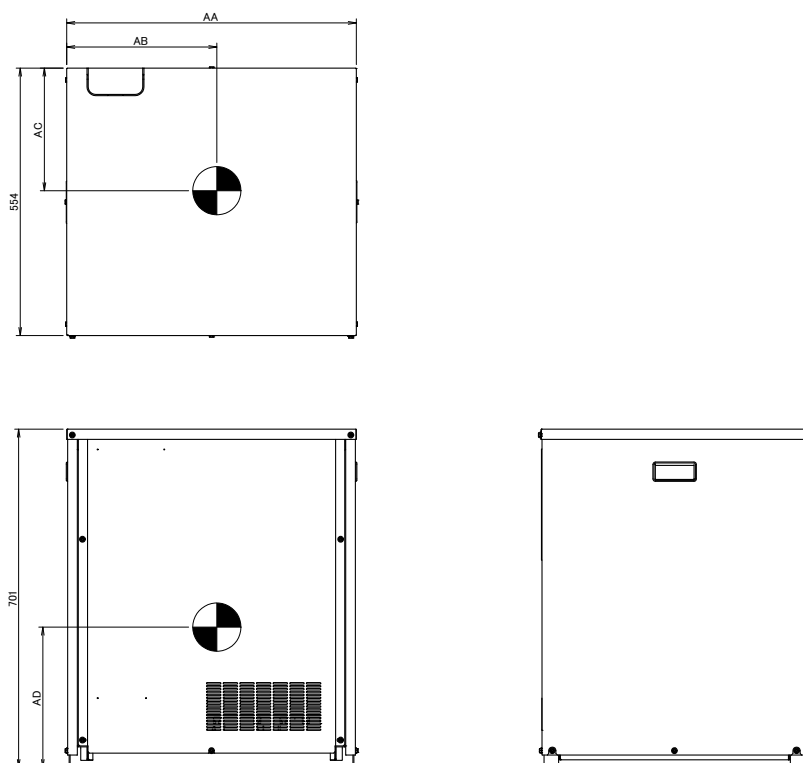
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RDXYQ5TA



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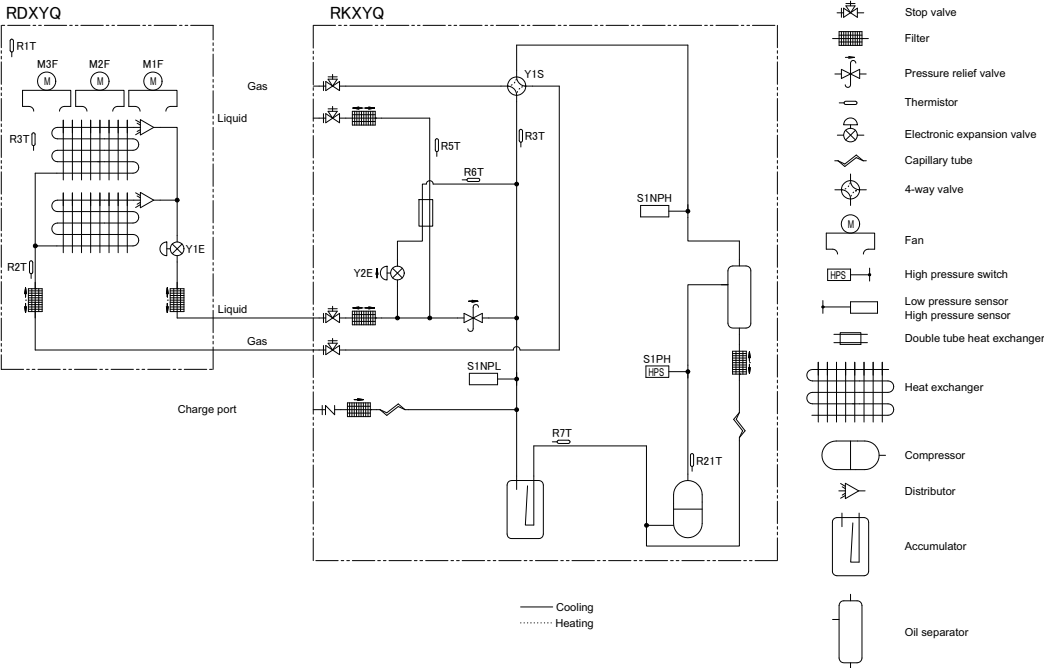


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8 Piping diagrams

8 - 1 Piping Diagrams

SB.RKXYQ5TA



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9 - 1 Wiring Diagrams - Single Phase

	: Main terminal		
	: Earth wiring		
	: Wire number 15		
	: Field wire		
	: Field cable		
	: Connection ** continues on page 12 column 2		
	: Several wiring possibilities		
	: Option		: Not mounted in switch box
	: Wiring depending on model		: PCB

Part n°	Description
A1P	main PCB
A2P	adapter PCB
C1 (A1P)	capacitor
D1A	* drain pan heater
F1U	* fuse F 1 A 250 V
F1U (A1P)	fuse T 6.3 A 250 V for PCB
HAP (A1P)	running LED (service monitor-green)
K1A	* auxiliary relay
M*F	motor (fan)
Q1D	# earth leakage circuit breaker
PS (A1P)	switching power supply
R1T	thermistor air
R2T	thermistor gas
R3T	thermistor coil
V1R (A1P)	diode module
X1M	main terminal
X2M	field wiring terminal
X*Y	connector
Y1E	electric expansion valve
Z1C	ferrite core
Z1F (A1P)	noise filter

* : optional
: field supply

A schematic diagram showing the layout of the A1P and A2P regions. A large rectangle on the left is labeled A1P. To its right is a smaller rectangle labeled A2P. Inside the A2P region, there is a box labeled K1A, and above and below it are boxes labeled MDX.

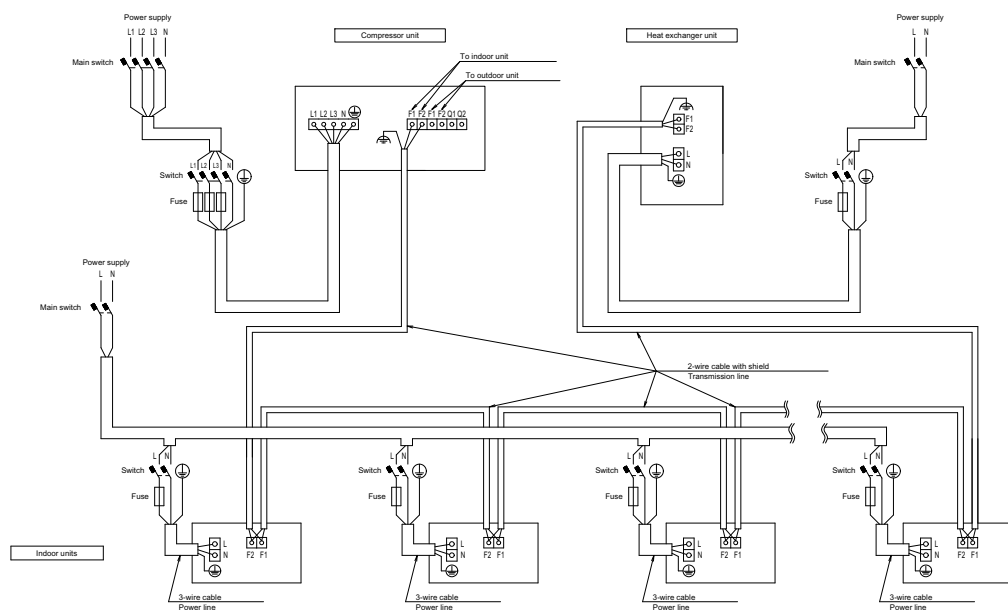
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10 External connection diagrams

10 - 1 External Connection Diagrams

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External connection diagram



Notes

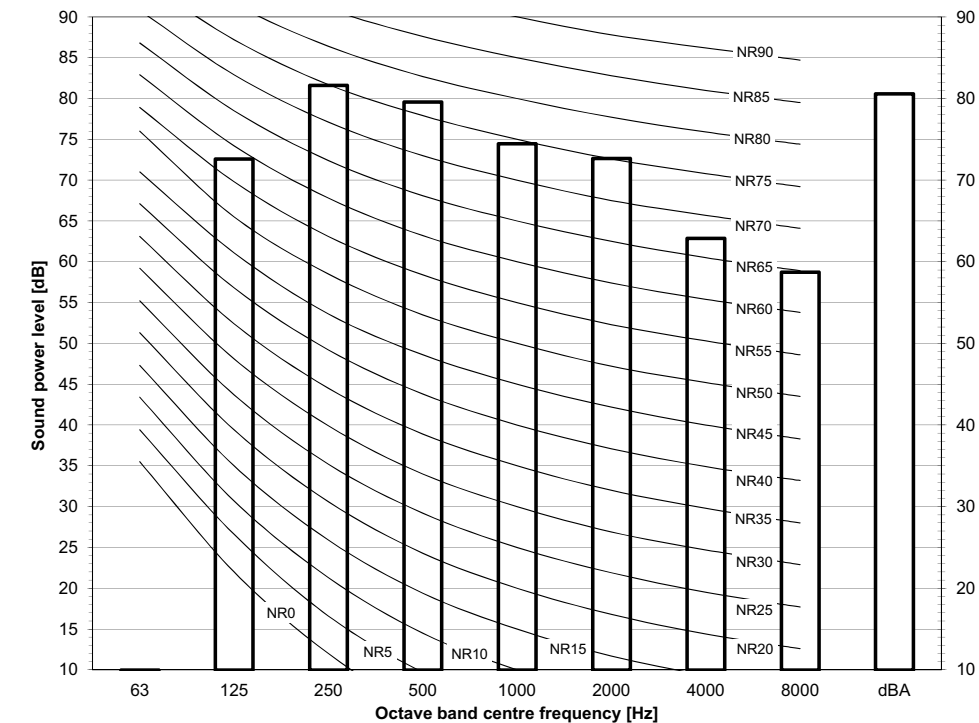
1. All wiring, components and materials to be procured on-site must comply with the applicable legislation.
2. Use copper conductors only.
3. For more details, refer to the wiring diagram of the unit.
4. Install a circuit breaker for safety.
5. All field wiring and components must be provided by an authorized electrician.
6. Unit has to be grounded in compliance with the applicable legislation.
7. The wiring shown is a general points-of-connection guide and is not intended to include all details for a specific installation.
8. Make sure to install the switch and the fuse to the power line of each equipment.
9. Install a main switch to (if necessary) immediately interrupt all the system's power sources.
10. If there exists the possibility of reversed phase, loose phase or momentary blackout, or if the power goes on and off while the product is operating, attach a reversed phase protection circuit locally.
Running the product in reversed phase may break the compressor and other parts.
11. Install an earth leakage circuit breaker.
12. To ensure proper earthing, connect the shields of the incoming and outgoing transmission wiring of each indoor unit to each other.
13. The main line is the line to which the transmission wiring of the heat exchanger unit is connected.

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11 Sound data

11 - 1 Sound Power Spectrum

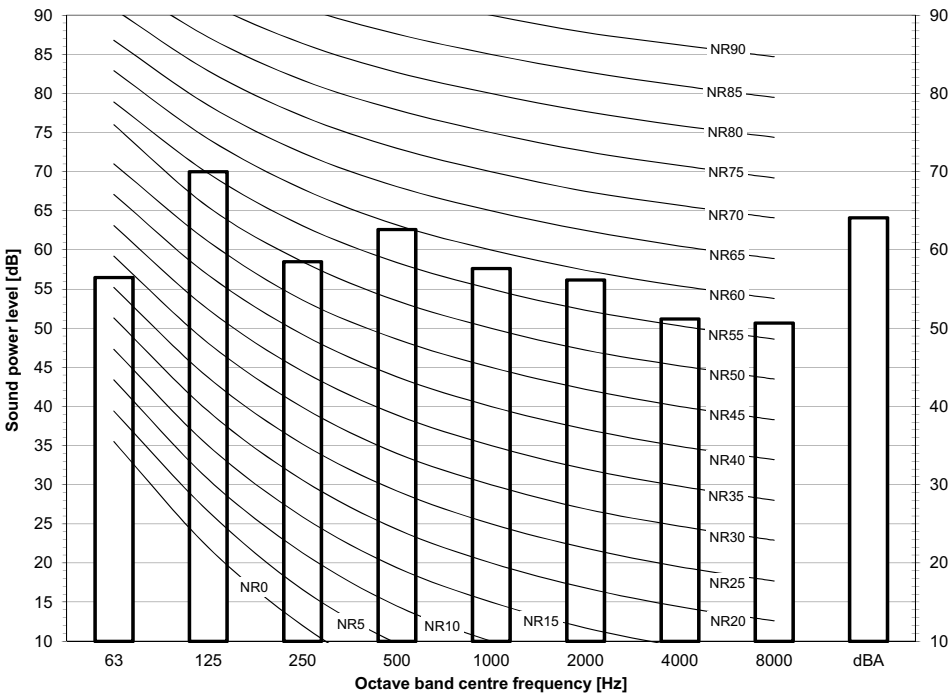
RDXYQ5TA



Notes
- dBA = A-weighted sound power level (A scale according to IEC).
- Reference acoustic intensity 0dB = 10E-6μW/m²
- Measured according to ISO 3744

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RKXYQ5TA



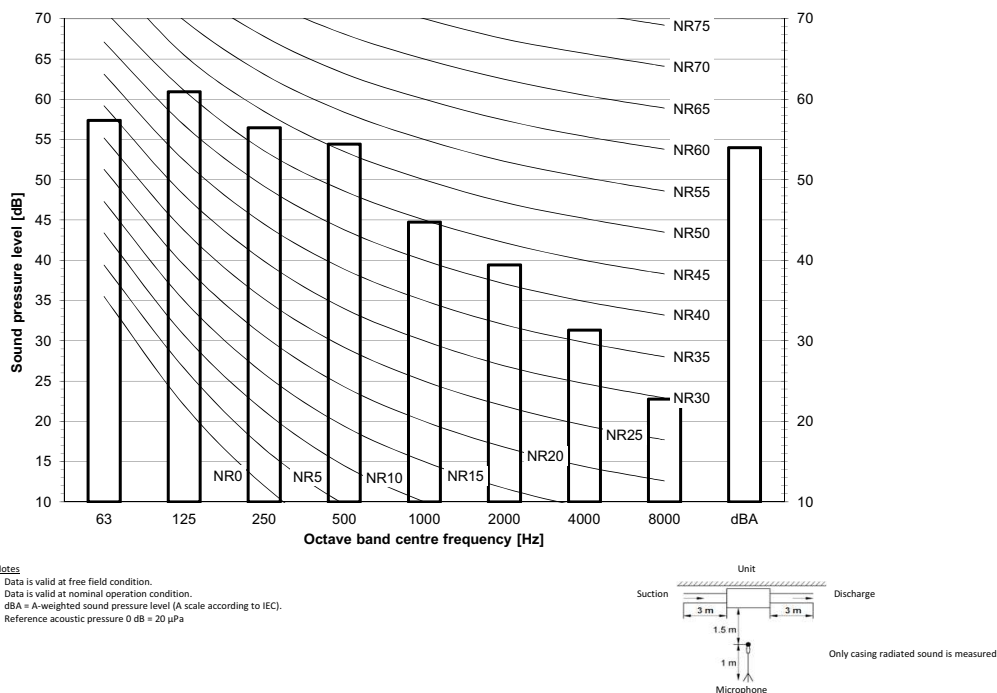
Notes
- dBA = A-weighted sound power level (A scale according to IEC).
- Reference acoustic intensity 0dB = 10E-6μW/m²
- Measured according to ISO 3744

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11 Sound data

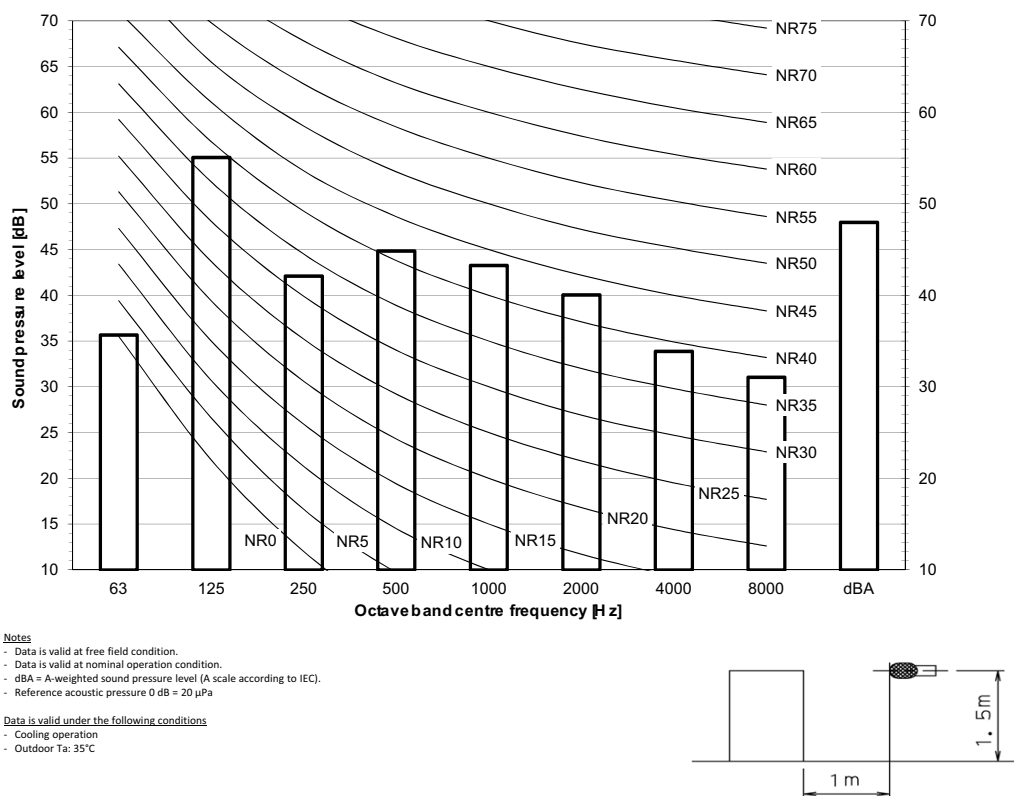
11 - 2 Sound Pressure Spectrum

RDXYQ5TA



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RKXYQ5TA

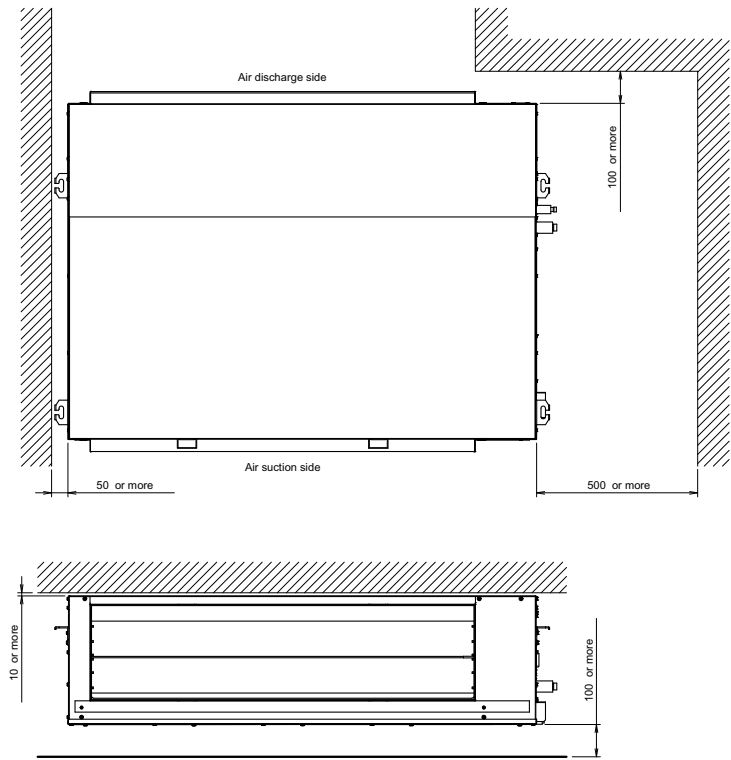


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12 Installation

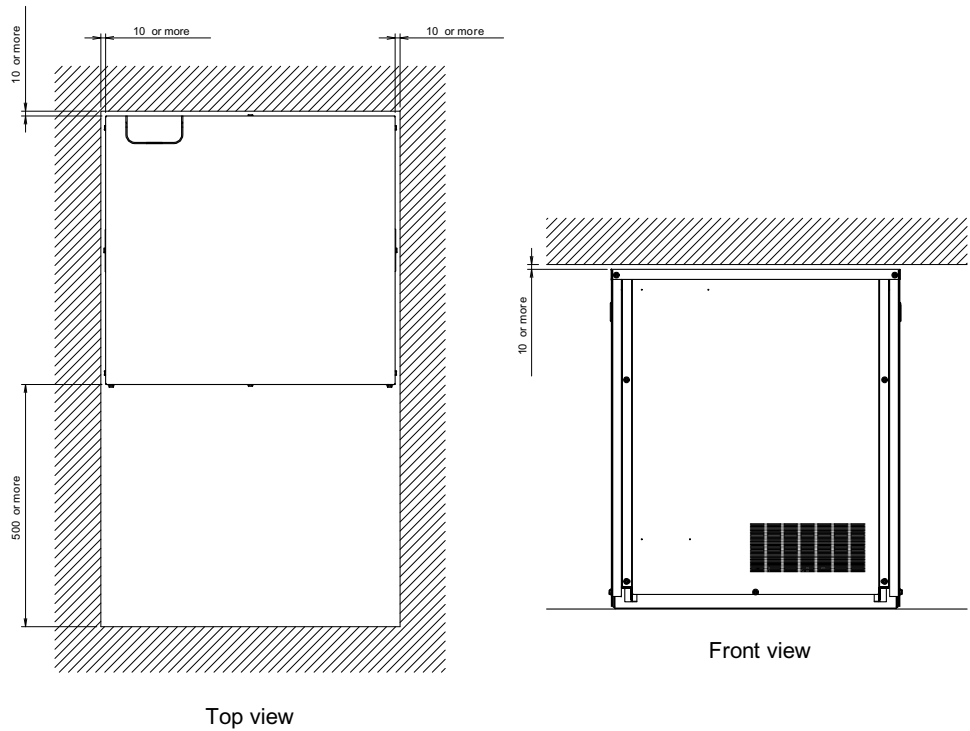
12 - 1 Installation Method

RDXYQ5TA



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RKXYQ-TA



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12 Installation

12 - 2 Refrigerant Pipe Selection

12

SB.RKXYQ5TA

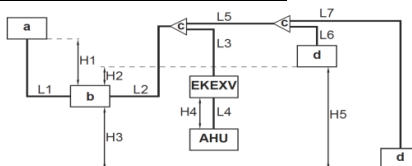
VRV4-i
Heat pump
Piping restrictions

Longest pipe		Maximum piping length [m]		After first branch		EKEV ↔ AHU	
Actual	a ↔ b	Actual / (Equivalent)	b ↔ d	Actual	c ↔ d/AHU		
L1	30	L2+L3+L4	70(100)	L3+L4	40	L4	5
		L2+L3+L6	70(100)	L5+L6	40		
		L2+L5+L7	70(100)	L5+L7	40		

See note 1.

Maximum height difference [m]		Maximum height difference [m]		Maximum height difference [m]		EKEV ↔ AHU	
a ↔ b		b ↔ d		d ↔ d			
H1	±10	H2	±30	H5	±15	H4	±5
		H3	±30				

Model	Total piping length [m]	
	a ↔ b	a ↔ b + b ↔ d
	L1	L1+L2+L3+L4+L5+L6+L7
VRV4-i SHP	-	300



a: Heat exchanger unit
b: Compressor unit
c: Refrigerant branch kit
d: VRV DX indoor unit
EKEV: Expansion valve kit
AHU: Air handling unit (AHU)
H1-H5: Height difference
L1-L7: Piping length

Notes

1. VRV4-i-SHP:

If the equivalent pipe length between the heat exchanger unit and the furthest indoor unit is ≥90m, it is recommended to increase the size of the main gas pipe (between compressor unit and first refrigerant branch kit).

If the recommended gas pipe (with increased size) is not available, you must use the standard size (which might result in a small capacity decrease).

If the equivalent pipe length between the heat exchanger unit and the furthest indoor unit is ≥90m, you MUST increase the size of the main liquid pipe (between compressor unit and refrigerant branch kit).

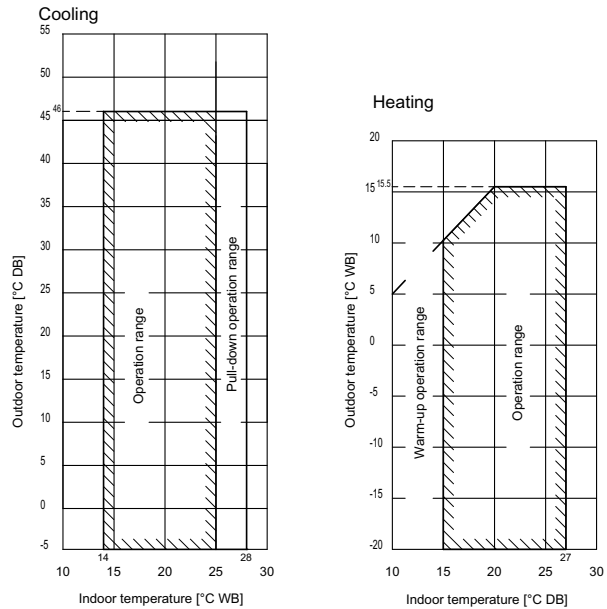
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13 Operation range

13 - 1 Correction Factors

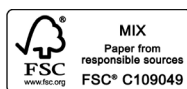
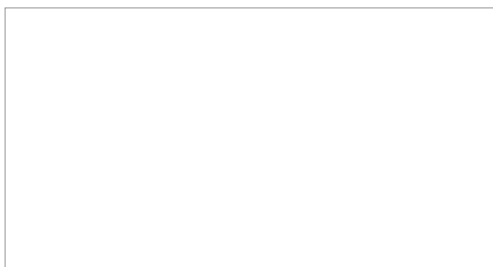
SB.RKXYQ5TA

- Notes
1. These figures assume the following operation conditions
Equivalent piping length: 10m
Level difference: 0m
 2. Depending on operation and installation conditions, the indoor unit can change over to freeze-up operation (indoor de-icing).
 3. To reduce the freeze-up operation (indoor de-icing) frequency, it is recommended to install the heat exchanger unit in a location not exposed to wind.
 4. If the outdoor temperature can drop below -7°C for more than 24 hours, it is recommended to install drain pan heater kit _____ (EKJDPH1RDX) ____.



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