



VRV 5 S-series Air Conditioning Technical Data RXYSA-AV1



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RXYSA-AV1

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15 Appropriate Indoors

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1 Features

1 - 1 RXYSA-AV1

Lower CO2 equivalent and market-leading flexibility

- › Reduced CO2 equivalent thanks to the use of lower GWP R-32 refrigerant and lower refrigerant charge
- › Top sustainability over the entire lifecycle, thanks to market leading real-life seasonal efficiency
- › Compact (870mm high) and lightweight single fan design makes the unit unobtrusive, saves space and is easy to install
- › Easy to transport thanks to lightweight and compact design
- › Market-leading serviceability and handling, thanks to wide access area, 7-segment display and additional handle
- › Tackle small room applications without any additional measures, thanks to Shîrudo technology
- › Specially designed indoor units for R-32, ensuring low sound and maximum efficiency



INVERTER

Inverter

2 Specifications

2 - 1 Specifications

2

Technical Specifications					RXYSA4AV1	RXYSA5AV1	RXYSA6AV1
Recommended combination					3 x FXSA25A2VEB + 1 x FXSA32A2VEB	4 x FXSA32A2VEB	2 x FXSA32A2VEB + 2 x FXSA40A2VEB
Cooling capacity	Prated,c		kW		12.1 (1)	14.0 (1)	15.5 (1)
Heating capacity	Nom.	6°CWB	kW		12.1 (2)	14.0 (2)	15.5 (2)
	Prated,h		kW		12.1 (2)	14.0 (2)	15.5 (2)
	Max.	6°CWB	kW		14.2 (2)	16.0 (2)	18.0 (2)
COP at nom. capacity	6°CWB		kW/kW		4.49	4.20	4.10
SCOP					5.1		4.7
SEER					8.2	7.7	7.6
ηs,c			%		324.5	306.1	301.0
ηs,h			%		200.5	185.7	183.6
Space cooling	A Condition	EERd			3.4	3.1	3.0
	(35°C - 27/19)	Pdc	kW		12.1	14.0	15.5
	B Condition	EERd			5.8	5.3	5.0
	(30°C - 27/19)	Pdc	kW		8.9	10.3	11.4
	C Condition	EERd			10.9		9.8
	(25°C - 27/19)	Pdc	kW		5.7	6.6	7.3
	D Condition	EERd			18.5	19.4	19.0
	(20°C - 27/19)	Pdc	kW		4.9	4.5	4.9
Space heating (Average climate)	TBivalent	COPd (declared COP)			2.8	2.6	2.5
		Pdh (declared heating cap)	kW		8.4	9.7	10.7
		Tbiv (bivalent temperature)	°C			-10	
	TOL	COPd (declared COP)			2.8	2.6	2.5
		Pdh (declared heating cap)	kW		8.4	9.7	10.7
		Tol (temperature operating limit)	°C			-10	
	A Condition	COPd (declared COP)			3.4		2.9
	(-7°C)	Pdh (declared heating cap)	kW		7.4	8.5	9.5
	B Condition	COPd (declared COP)			4.9	4.5	4.3
	(2°C)	Pdh (declared heating cap)	kW		4.5	5.2	5.8
	C Condition	COPd (declared COP)			7.0	6.7	7.0
	(7°C)	Pdh (declared heating cap)	kW			3.3	3.7
	D Condition	COPd (declared COP)				8.9	9.0
	(12°C)	Pdh (declared heating cap)	kW			3.9	
Capacity range			HP		4	5	6
PED	Category					Category III	
	Most critical part	Name				Accumulator	
		Ps*V	Bar*l			257	
Maximum number of connectable indoor units					13 (3)	16 (3)	18 (3)
Indoor index connection	Min.				50.0	62.5	70.0
	Nom.				100	125	140
	Max.				130.0	162.5	182.0
Dimensions	Unit	Height	mm			869	
		Width	mm			1,100	
		Depth	mm			460	
	Packed unit	Height	mm			1,050	
		Width	mm			1,205	
		Depth	mm			569	
Weight	Unit		kg			102	
	Packed unit		kg			115	
Packing	Material					Carton	
	Weight		kg			4	
Packing 2	Material					Wood	
	Weight		kg			6	
Packing 3	Material					Plastic	
	Weight		kg			1	
Casing	Colour					Ivory white	
	Material					Painted galvanized steel plate	
Heat exchanger	Type					Cross fin coil	
	Indoor side					Air	
	Outdoor side					Air	
	Air flow rate	Cooling	Rated	m³/h		5,342	
		Heating	Rated	m³/h	5,519		6,204
Fan	Quantity					1	
	External static pressure	Max.		Pa		45	
		Nom.		Pa		0	
Fan motor	Quantity					1	
	Type					DC motor	
	Output			W		234	
Compressor	Quantity					1	
	Type					Hermetically sealed swing compressor	
	Crankcase heater			W		33	

2 Specifications

2 - 1 Specifications

Technical Specifications					RXYSA4AV1	RXYSA5AV1	RXYSA6AV1
Operation range	Cooling	Min.	°CDB			-5	
		Max.	°CDB			46	
	Heating	Min.	°CWB			-20	
Operation range	Heating	Max.	°CWB			16	
Sound power level	Cooling	Nom.	dBA		67.0 (4)	68.1 (4)	69.0 (4)
	Heating	Prated,h	dBA		69.0 (5)	70.0 (5)	71.0 (5)
		Nom.	dBA		68.0 (4)	69.2 (4)	70.0 (4)
Sound pressure level	Cooling	Nom.	dBA		49.0 (6)	51.0 (6)	
	Heating		dBA		50.0 (6)	52.0 (6)	
Refrigerant	Type					R-32	
	GWP					675.0	
	Charge		kg			3.40	
	Charge		tCO ₂ Eq			2.30	
Refrigerant oil	Type					FW68DE	
	Charged volume		l			1.9	
Piping connections	Liquid	Type				Braze connection	
		OD	mm			9.52	
	Gas	Type				Braze connection	
		OD	mm			15.9	
	Total piping length	System	Actual	m		300 (7)	
	Level difference	OU - IU	Outdoor unit in highest position	m		50	
			Indoor unit in highest position	m		40	
	Defrost method					Reversed cycle	
Capacity control	Method					Inverter controlled	
Indication if the heater is equipped with a supplementary heater						No	
Supplementary heater	Back-up capacity	Heating	elbu	kW		0.000	
Power consumption in other than active mode	Crankcase heater mode	Cooling	PCK	kW		0.000	
		Heating	PCK	kW		0.031	
	Off mode	Cooling	POFF	kW		0.040	
		Heating	POFF	kW		0.015	
	Standby mode	Cooling	PSB	kW		0.040	
		Heating	PSB	kW		0.015	
	Thermo-stat-off mode	Cooling	PTO	kW		0.004	
		Heating	PTO	kW		0.049	
Cooling	Cdc (Degradation cooling)					0.25	
Heating	Cdh (Degradation heating)					0.25	
Safety devices	Item	03				Inverter overload protector	
		04				Compressor motor thermal protector	
		05				Fan driver overload protector	
		06				PC board fuse	
Safety devices	Item	07				High pressure switch (automatic)	
		08				High pressure switch (manual)	

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

Standard accessories: General safety precautions;Quantity: 1;

Standard accessories: Peel off F-gas label;Quantity: 1;

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

Standard accessories: Tie-wraps;Quantity: 2;

Standard accessories: Auxiliary piping set;Quantity: 1;

Standard accessories: Caution label;Quantity: 1;

Electrical Specifications				RXYSA4AV1	RXYSA5AV1	RXYSA6AV1
Power supply	Name			V1		
	Phase			1~		
	Frequency		Hz	50		
	Voltage		V	220-240		
Power supply intake				Both indoor and outdoor unit		
Voltage range	Min.		%	-10		
	Max.		%	10		
Current	Nominal running current (RLA)	Cooling	A	16.2 (8)	20.3 (8)	22.8 (8)

2 Specifications

2 - 1 Specifications

Electrical Specifications				RXYSA4AV1	RXYSA5AV1	RXYSA6AV1
Current - 50Hz	Nominal running current (RLA)	Combina- tion A	Cooling	-		
		Combina- tion B	Cooling	-		
	Starting current (MSC) - remark			See note 9		
	Zmax	List		No requirements		
	Minimum Ssc value	kVa		123 (9)	154 (9)	173 (9)
	Minimum circuit amps (MCA)	A		27.0 (10)		
	Maximum fuse amps (MFA)	A		32 (11)		
	Total overcurrent amps (TOCA)	A		27.0 (12)		
	Full load amps (FLA)	Total A		1.3 (13)		
Power Performance	Power factor	Combina- tion B	35°C ISO - Full load	-		
			46°C ISO - Full load	-		
Wiring connections - 50Hz	For power supply	Quantity		3G		
	For connection with indoor	Quantity		2		
		Remark		F1,F2		
Compressor	Crankcase heater	W		33		

(1)Cooling: indoor temp. 27°CDB, 19°CWB; outdoor temp. 35°CDB; equivalent piping length: 7.5m; level difference: 0m |

(2)Heating: indoor temp. 20°CDB; outdoor temp. 7°CDB, 6°CWB; equivalent refrigerant piping: 7.5m; level difference: 0m |

(3)The actual number of units depends on the connection ratio (CR) and the restrictions for the system. |

(4)Sound power level is an absolute value that a sound source generates. |

(5)According to ENER Lot 21 |

(6)Sound pressure level is a relative value, depending on the distance and acoustic environment. For more details, please refer to the sound level drawings. |

(7)Refer to refrigerant pipe selection or installation manual |

(8)RLA is based on following conditions: indoor temp. 27°CDB, 19°CWB; outdoor temp. 35°CDB |

(9)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 ≥ minimum Ssc value |

(10)MCA must be used to select the correct field wiring size. The MCA can be regarded as the maximum running current. |

(11)MFA is used to select the circuit breaker and the ground fault circuit interrupter (earth leakage circuit breaker). |

(12)TOCA means the total value of each OC set. |

(13)FLA means the nominal running current of the fan |

MSC means the maximum current during start up of the compressor. This unit uses only inverter compressors. Starting current is always ≤ max. running current.

3 Options

3 - 1 Options

RXYSA-AY1

VRV5-S Heat pump
Option list

Nr.	Item	RXYSA4~6A7V1B	RXYSA4~6A7Y1B	RXYSA8~12AMY1B
1	Refnet header	KHRQ22M29H	KHRQ22M29H	KHRQ22M29H
		-	-	KHRA22M65H
2	Refnet joint	KHRQ22M20TA	KHRQ22M20TA	KHRQ22M20TA
		-	-	KHRQ22M29T9
		-	-	KHRA22M65T
3a	Cool/heat selector (switch)	KRC19-26	KRC19-26	KRC19-26
3b	Cool/heat selector (fixing box)	KJB111A	KJB111A	KJB111A
4	VRV configurator	EKPCCAB4	EKPCCAB4	-
5	Bottom plate heater	EKBPH250D	EKBPH250D	-
6	Sound reduction enclosure	EKLN140A1	EKLN140A1	-
7	Demand PCB	-	-	DTA104A61/62* (4)
8	-SV- units	-	-	SV1A25A
				SV4A14A
				SV6A14A
				SV8A14A

Remote controllers and centralised controllers with R32 safety system functionality

Nr.	Item	Sound pressure level of built-in alarm	Mode			
			Fully functional	Alarm only	Supervisor	
			Built-in alarm	Built-in alarm	Built-in alarm	External alarm connection
1	BRC1H52/82*	-65· dBA at -1· m	O	O	O	-
2	DCM601A51 (5)	Not applicable	-	-	-	O (7)
3	DCM601B51 (6)	-65· dBA at -1· m	-	-	O	O (7)

Notes

- All options are kits
- Cool/Heat selector PCB is standard in unit.
- To mount option -3a-, option -3b- is required.
- RXYSA8~12AMY1B- is compatible with the option, but the option has to be installed inside an indoor unit.
- From software version -1.28.00- onwards.
- From software version -1.32.00- onwards.
- via WAGO module

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4 Combination table

4 - 1 Combination Table

RXYSA-AY1

VRV5-S

Heat pump

Indoor unit combination restrictions

Indoor unit combination pattern	·VRV·R32 DX· indoor unit	·RA DX· indoor unit	Hydrobox unit	Air handling unit (AHU) ⁽³⁾
·VRV· R32 DX· indoor unit	O	X	X	O ₂
·RA DX· indoor unit	X	X	X	X
Hydrobox unit	X	X	X	X
Air handling unit (AHU) (·EKEQ*+EKE XV·) ⁽³⁾	X	X	X	X
Air handling unit (AHU) (·EKEACBVE+EKE XVA·) ⁽³⁾	O ₂	X	X	O ₁

O: Allowed

X: Not allowed

Notes

1. O₁

Combination of ·AHU· only + control box ·EKEACBVE· (not combined with ·VRV DX· indoor units)

→ ·X·-control is possible [·EKEAXVA + EKEACBVE· boxes]. No Variable Refrigerant Temperature control possible.

→ ·Y·-control is possible [·EKEAXVA + EKEACBVE· boxes]. No Variable Refrigerant Temperature control possible.

→ ·W·-control is possible [·EKEAXVA + EKEACBVE· boxes]. No Variable Refrigerant Temperature control possible.

→ ·Z,Z'·-control is possible [·EKE XVA + EKEACBVE· boxes].

2. O₂

Combination of ·AHU· and ·VRV DX· indoor units

→ ·Z,Z'·-control is possible [·EKE XVA + EKEACBVE· boxes].

3. The following units are considered AHUs:

→ (·EKE XVA + EKEACBVE) + AHU· coil

→ ·Biddle· air curtain

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RXYSA-AY1

Unit combination restrictions: ·VRV5· outdoor units (all models) + ·10 / 15·-class indoor units

Indoor unit in the system	
FXDA10A	FXZA15A and/or FXAA15A
Yes	Yes

1. In case the system contains the indoor unit situation as shown in the table above, and the total connection ratio (·CR·) ≤ ·85·%: no special restrictions.

Follow the restrictions that apply to regular ·VRV DX· indoor units.

2. In case the system contains the indoor unit situation as shown in the table above, and the total connection ratio (·CR·) > ·85·%: special restrictions apply.

A. When the connection ratio (·CR1·) of the sum of all ·FXDA10A· units in the system ≤ ·65·%, and ALL other ·VRV DX· indoor units have an individual capacity class > ·50·: no special restrictions.

B. When the connection ratio (·CR1·) of the sum of all ·FXDA10A· units in the system ≤ ·65·%, and NOT ALL other ·VRV DX· indoor units have an individual capacity class > ·50·: the restrictions below apply.

° 85% < CR ≤ 95% → ·CR1· of the sum of all ·FXDA10A· indoor units in the system must be ≤ ·65·%.

° 95% < CR ≤ 100% → ·CR1· of the sum of all ·FXDA10A· indoor units in the system must be ≤ ·55·%.

° 100% < CR ≤ 105% → ·CR1· of the sum of all ·FXDA10A· indoor units in the system must be ≤ ·40·%.

° 105% < CR ≤ 130% → ·FXDA10A· cannot be used

Remark

Only the ·10 / 15·-class indoor units explicitly mentioned on this page are in scope. Other indoor units follow the rules that apply to regular ·VRV DX· indoor units.

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4 Combination table

4 - 1 Combination Table

RXYSA-AY1

4

Unit combination restrictions: ·VRV5· outdoor units (all models) + ·10 / 15·-class indoor units

Indoor unit in the system	
FXDA10A	FXZA15A and/or FXAA15A
Yes	No

1. In case the system contains the indoor unit situation as shown in the table above, and the total connection ratio (·CR·) ≤ ·85·%: no special restrictions. Follow the restrictions that apply to regular ·VRV DX· indoor units.
2. In case the system contains the indoor unit situation as shown in the table above, and the total connection ratio (·CR·) > ·85·%: special restrictions apply.
 - A. When the connection ratio (·CR1·) of the sum of all ·FXDA10A· units in the system ≤ ·65·%, and ALL other ·VRV DX· indoor units have an individual capacity class > ·50·: no special restrictions.
 - B. When the connection ratio (·CR1·) of the sum of all ·FXDA10A· units in the system ≤ ·65·%, and NOT ALL other ·VRV DX· indoor units have an individual capacity class > ·50·: the restrictions below apply.
 - * 85% < CR ≤ 95% -> ·CR1· of the sum of all ·FXDA10A· indoor units in the system must be ≤ ·65·%.
 - * 95% < CR ≤ 100% -> ·CR1· of the sum of all ·FXDA10A· indoor units in the system must be ≤ ·55·%.
 - * 100% < CR ≤ 105% -> ·CR1· of the sum of all ·FXDA10A· indoor units in the system must be ≤ ·40·%.
 - * 105% < CR ≤ 110% -> ·CR1· of the sum of all ·FXDA10A· indoor units in the system must be ≤ ·30·%.
 - * 110% < CR ≤ 115% -> ·CR1· of the sum of all ·FXDA10A· indoor units in the system must be ≤ ·20·%.
 - * 115% < CR ≤ 120% -> ·CR1· of the sum of all ·FXDA10A· indoor units in the system must be ≤ ·10·%.
 - * 120% < CR ≤ 125% -> ·CR1· of the sum of all ·FXDA10A· indoor units in the system must be ≤ ·5·%.
 - * 125% < CR ≤ 130% -> ·FXDA10A· cannot be used

Remark

Only the ·10 / 15·-class indoor units explicitly mentioned on this page are in scope. Other indoor units follow the rules that apply to regular ·VRV DX· indoor units.

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RXYSA-AY1

Unit combination restrictions: ·VRV5· outdoor units (all models) + ·10 / 15·-class indoor units

Indoor unit in the system	
FXDA10A	FXZA15A and/or FXAA15A
No	Yes

1. In case the system contains the indoor units situation which as shown in the table above, and the total connection ratio (·CR·) ≤ ·100·%: no special restrictions. Follow the restrictions that apply to regular ·VRV DX· indoor units.
2. In case the system contains the indoor units situation which as shown in the table above, and the total connection ratio (·CR·) > ·100·%: special restrictions apply.
 - A. When the connection ratio (·CR1·) of the sum of all ·FXZA15A· and/or ·FXAA15A· units in the system ≤ ·70·%, and ALL other ·VRV DX· indoor units have an individual capacity class > ·50·: no special restrictions.
 - B. When the connection ratio (·CR1·) of the sum of all ·FXZA15A· and/or ·FXAA15A· units in the system ≤ ·70·%, and NOT ALL other ·VRV DX· indoor units have an individual capacity class > ·50·: the restrictions below apply.
 - * 100% < CR ≤ 105% -> ·CR1· of the sum of all ·FXZA15A· and/or ·FXAA15A· indoor units in the system must be ≤ ·70·%.
 - * 105% < CR ≤ 110% -> ·CR1· of the sum of all ·FXZA15A· and/or ·FXAA15A· indoor units in the system must be ≤ ·60·%.
 - * 110% < CR ≤ 115% -> ·CR1· of the sum of all ·FXZA15A· and/or ·FXAA15A· indoor units in the system must be ≤ ·40·%.
 - * 115% < CR ≤ 120% -> ·CR1· of the sum of all ·FXZA15A· and/or ·FXAA15A· indoor units in the system must be ≤ ·25·%.
 - * 120% < CR ≤ 125% -> ·CR1· of the sum of all ·FXZA15A· and/or ·FXAA15A· indoor units in the system must be ≤ ·10·%.
 - * 125% < CR ≤ 130% -> ·FXZA15A· and ·FXAA15A· cannot be used.

Remark

Only the ·10 / 15·-class indoor units explicitly mentioned on this page are in scope. Other indoor units follow the rules that apply to regular ·VRV DX· indoor units.

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5 Capacity tables

5 - 1 Capacity Table Legend

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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.
- You can access the capacity table viewer here:
https://my.daikin.eu/content/denv/en_US/home/applications/software-finder/capacity-table-viewer.html



- An overview of **all software tools** that we offer can be found here:
https://my.daikin.eu/denv/en_US/home/applications/software-finder.html



5 Capacity tables

5 - 2 Capacity Correction Factor

RXYSA-AV1

RXYSA-AY1

VRV5-S 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:

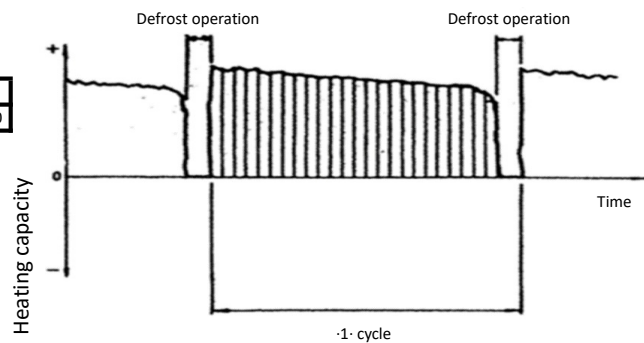
Formula

- 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
RXYSA4A7V1B	0,79	0,74	0,73	0,72	0,73	0,74	1,00



Notes

- The figure shows the integrated heating capacity for a single cycle (from one defrost operation to the next).
- When there is an accumulation of snow against the outdoor unit heat exchanger, there will always be a temporary reduction in capacity depending on the outdoor temperature (°C DB), relative humidity (RH) and the amount of frosting which occurs.

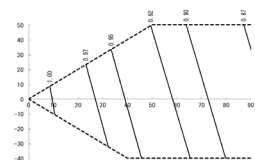
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RXYSA4AV1

RXYSA4AY1

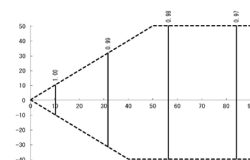
RXYSA4A7(V/Y)1B

Correction ratio for cooling capacity



x-axis : Equivalent length of the main pipe [m]
y-axis : Height difference between outdoor unit and furthest indoor unit [m]

Correction ratio for heating capacity



x-axis : Equivalent length of the main pipe [m]
y-axis : Height difference between outdoor unit and furthest indoor unit [m]

Notes

- 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 maximum), under standard conditions. Moreover, under partial load conditions, there is only a minor deviation for the capacity correction ratio, as shown in the above figures.
- With this outdoor unit, 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 of the outdoor units as mentioned below, whichever is less.

Indoor connection ratio ≤ 100%.

$$\text{Maximum capacity of outdoor units} = \text{Capacity of outdoor units from capacity table at 100\% connection ratio.} \times \left[\begin{array}{l} \text{Correction factor for main pipe} \\ \text{Longest branch length} \\ 40 \text{ m} \end{array} \right] \times 0,02$$

Indoor connection ratio > 100%.

$$\text{Maximum capacity of outdoor units} = \text{Capacity of outdoor units from capacity table at installed connection ratio.} \times \left[\begin{array}{l} \text{Correction factor for main pipe} \\ \text{Longest branch length} \\ 40 \text{ m} \end{array} \right] \times 0,02$$

The correction factor for the main pipe can be found in graph above.
The correction factor for the longest branch is calculated separately. The maximum allowed branch length of 40- m corresponds with correction factor 0,02.

- If the equivalent piping length between the outdoor unit and the furthest indoor unit is ≥ 90- m, the size of the main gas pipe (between outdoor unit and first refrigerant branch kit) must be increased. For the new diameters, see below.

Model	Standard liquid side Ø	Increased liquid side Ø	Standard gas side Ø	Increased gas side Ø
RXYSA4A7V1B	9,5	Not increased	15,9	19,1
RXYSA4A7Y1B				

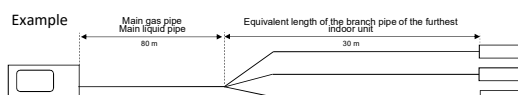
- Equivalent length of the main pipe

$$\text{Equivalent length of the main pipe} = \text{Equivalent length of the main pipe} \times \text{Correction factor}$$

Choose the correction factor from the following table.

	Standard size	Size increase
Cooling	1,0	0,5
Heating	1,0	1,0

Example



Equivalent length of the main pipe

- Cooling mode = 80 m x 0,5 = 40 m
- Heating mode = 80 m x 1,0 = 80 m

Capacity correction ratio (height difference = 0)

- Cooling mode = 0,95 - (30/40) x 0,02 = 0,935
- Heating mode = 0,972 - (30/40) x 0,02 = 0,957

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5 Capacity tables

5 - 2 Capacity Correction Factor

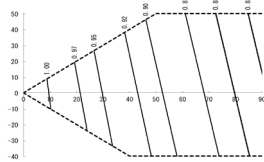
5

RXYSA5AV1

RXYSA5AY1

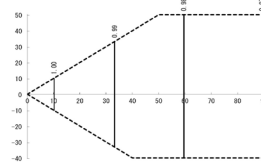
RXYSA5A7(V/Y)1B

Correction ratio for cooling capacity



x-axis : Equivalent length of the main pipe [m]
y-axis : Height difference between outdoor unit and furthest indoor unit [m]

Correction ratio for heating capacity



x-axis : Equivalent length of the main pipe [m]
y-axis : Height difference between outdoor unit and furthest indoor unit [m]

Notes

1. 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 maximum), under standard conditions. Moreover, under partial load conditions, there is only a minor deviation for the capacity correction ratio, as shown in the above figures.

2. With this outdoor unit, the following control is used:- in case of cooling: constant evaporating pressure control- in case of heating: constant condensing pressure control

3. 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 of the outdoor units as mentioned below, whichever is less.

Indoor connection ratio ≤ 100%.

$$\text{Maximum capacity of outdoor units} = \text{Capacity of outdoor units from capacity table at 100\% connection ratio.} \times \left[\text{Correction factor for main pipe} - \frac{\text{Longest branch length}}{40 \text{ m}} \times 0,02 \right]$$

Indoor connection ratio > 100%.

$$\text{Maximum capacity of outdoor units} = \text{Capacity of outdoor units from capacity table at installed connection ratio.} \times \left[\text{Correction factor for main pipe} - \frac{\text{Longest branch length}}{40 \text{ m}} \times 0,02 \right]$$

The correction factor for the main pipe can be found in graphs above.

The correction factor for the longest branch is calculated separately. The maximum allowed branch length of 40-m corresponds with correction factor -0,02.

4. If the equivalent piping length between the outdoor unit and the furthest indoor unit is ≥ 90-m, the size of the main gas pipe (between outdoor unit and first refrigerant branch kit) must be increased.

For the new diameters, see below.

Model	Standard liquid side Ø	Increased liquid side Ø	Standard gas side Ø	Increased gas side Ø
RXYSA5A7V1B	9,5	Not increased	15,9	19,1
RXYSA5A7Y1B				

Equivalent length of the main pipe
• Cooling mode = 80 m x 0,5 = 40 m
• Heating mode = 80 m x 1,0 = 80 m

Capacity correction ratio (height difference = 0)

• Cooling mode = 0,928 - (30/40) x 0,02 = 0,913
• Heating mode = 0,973 - (30/40) x 0,02 = 0,958

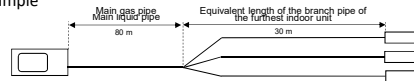
5. Equivalent length of the main pipe

$$\text{Equivalent length of the main pipe} = \text{Equivalent length of the main pipe} \times \text{Correction factor}$$

Choose the correction factor from the following table.

	Standard size	Size increase
Cooling	1,0	0,5
Heating	1,0	1,0

Example



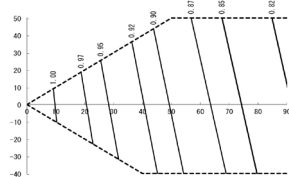
4D127880

RXYSA6AV1

RXYSA6AY1

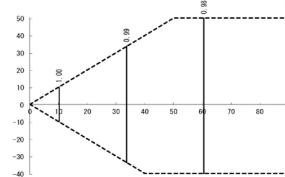
RXYSA6A7(V/Y)1B

Correction ratio for cooling capacity



x-axis : Equivalent length of the main pipe [m]
y-axis : Height difference between outdoor unit and furthest indoor unit [m]

Correction ratio for heating capacity



x-axis : Equivalent length of the main pipe [m]
y-axis : Height difference between outdoor unit and furthest indoor unit [m]

Notes

1. 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 maximum), under standard conditions. Moreover, under partial load conditions, there is only a minor deviation for the capacity correction ratio, as shown in the above figures.

2. With this outdoor unit, the following control is used:- in case of cooling: constant evaporating pressure control- in case of heating: constant condensing pressure control

3. 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 of the outdoor units as mentioned below, whichever is less.

$$\text{Maximum capacity of outdoor units} = \text{Capacity of outdoor units from capacity table at 100\% connection ratio.} \times \left[\text{Correction factor for main pipe} - \frac{\text{Longest branch length}}{40 \text{ m}} \times 0,02 \right]$$

Indoor connection ratio > 100%.

$$\text{Maximum capacity of outdoor units} = \text{Capacity of outdoor units from capacity table at installed connection ratio.} \times \left[\text{Correction factor for main pipe} - \frac{\text{Longest branch length}}{40 \text{ m}} \times 0,02 \right]$$

The correction factor for the main pipe can be found in graphs above.

The correction factor for the longest branch is calculated separately. The maximum allowed branch length of 40-m corresponds with correction factor -0,02.

4. If the equivalent piping length between the outdoor unit and the furthest indoor unit is ≥ 90-m, the size of the main gas pipe (between outdoor unit and first refrigerant branch kit) must be increased.

For the new diameters, see below.

Model	Standard liquid side Ø	Increased liquid side Ø	Standard gas side Ø	Increased gas side Ø
RXYSA6A7V1B	9,5	Not increased	15,9	19,1
RXYSA6A7Y1B				

Equivalent length of the main pipe
• Cooling mode = 80 m x 0,5 = 40 m
• Heating mode = 80 m x 1,0 = 80 m

Capacity correction ratio (height difference = 0)

• Cooling mode = 0,92 - (30/40) x 0,02 = 0,905
• Heating mode = 0,973 - (30/40) x 0,02 = 0,958

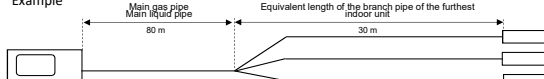
5. Equivalent length of the main pipe

$$\text{Equivalent length of the main pipe} = \text{Equivalent length of the main pipe} \times \text{Correction factor}$$

Choose the correction factor from the following table.

	Standard size	Size increase
Cooling	1,0	0,5
Heating	1,0	1,0

Example



4D127880

6 Exchange efficiency

6 - 1 Exchange efficiency

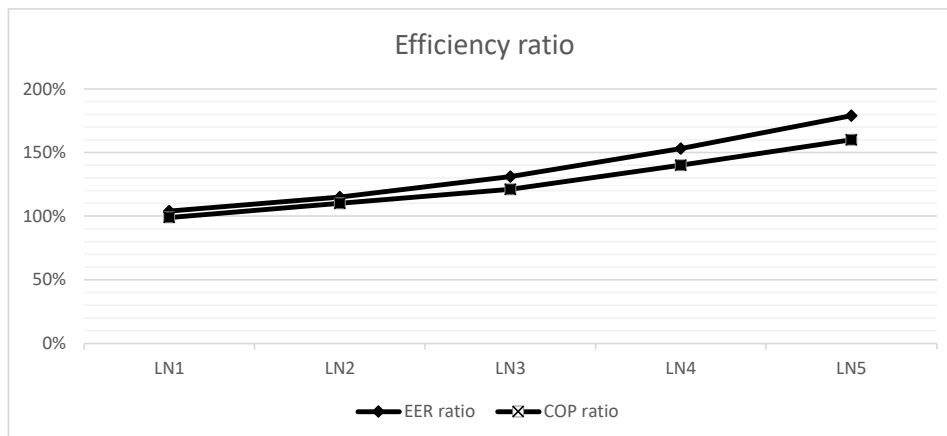
RXYSA-AV1

RXYSA-AY1

VRV5-S

Heat pump

Low noise operation performance specifications



The capacity and efficiency ratios are calculated with reference to the nominal operation specifications.

LN1: Low noise level ·1·

LN2: Low noise level ·2·

LN3: Low noise level ·3·

LN4: Low noise level ·4·

LN5: Low noise level ·5·

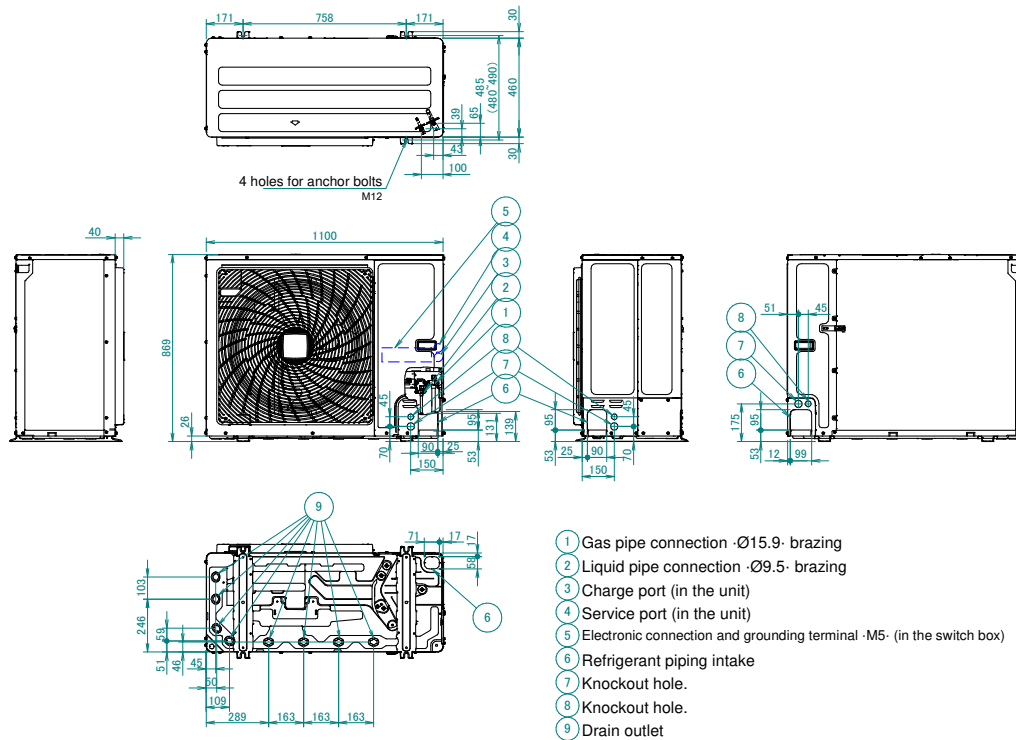
	Capacity ratio
LN1	90%
LN2	75%
LN3	60%
LN4	45%
LN5	30%

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7 Dimensional drawings

7 - 1 Dimensional Drawings

RXYSA-AV1
RXYSA-AY1



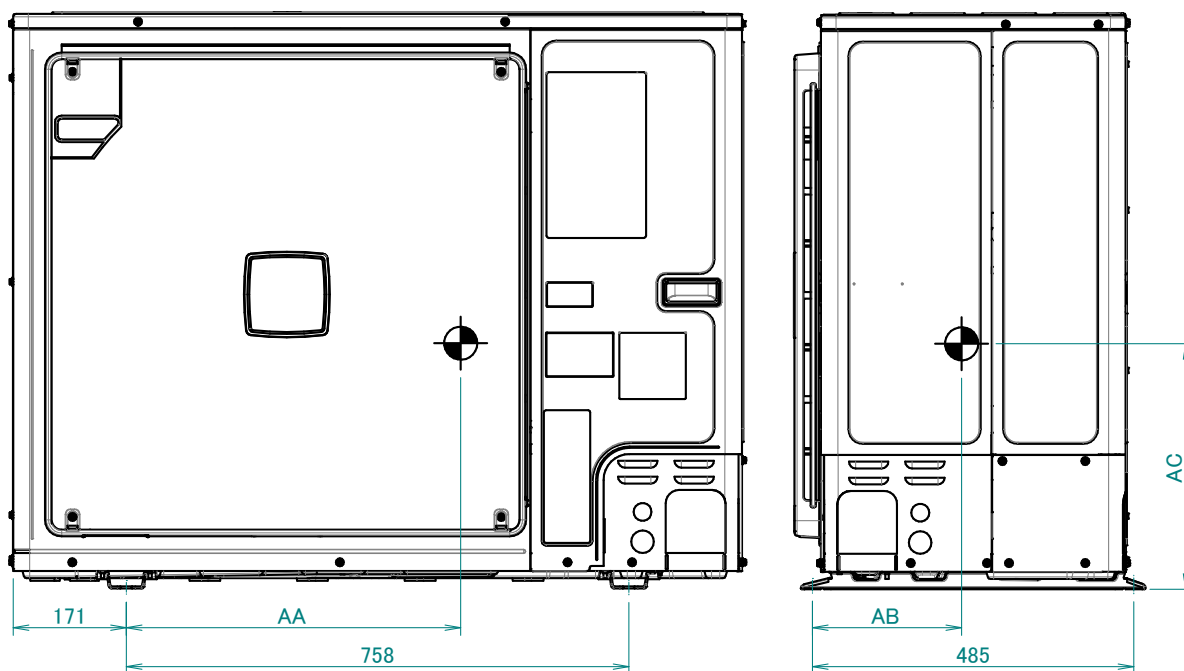
3D127871A

8 Centre of gravity

8 - 1 Centre of Gravity

RXYSA-AV1
RXYSA-AY1

8



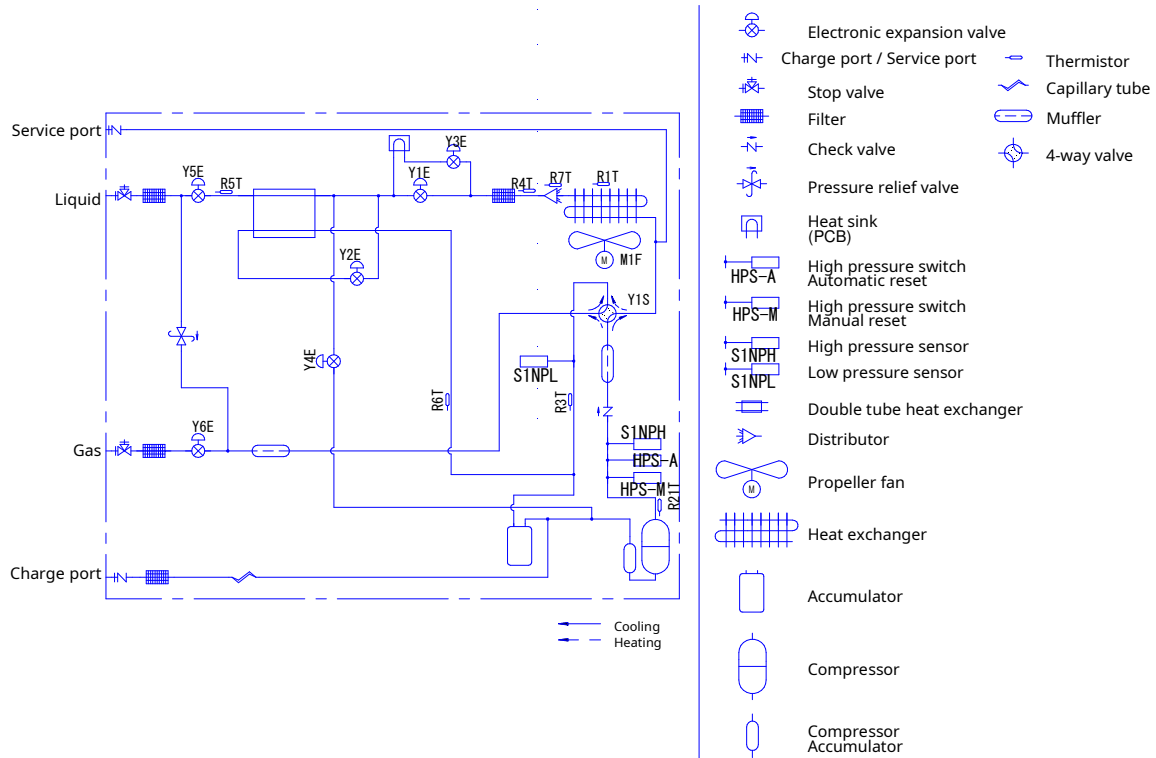
Model	AA	AB	AC
RZAG71N2/7V1B	520.3	238.7	357.8
RZAG71N2/7Y1B	525.9	224.7	359.8
RZAG100N2/7V1B	499.7	239.3	367.6
RZAG100N2/7Y1B	511.2	223.5	362.5
RZAG125/140N2/7V1B	486.3	229.2	371.8
RZAG125/140N2/7Y1B	493.4	215.8	372.2
RXYSA4/5/6A7V1B	530.4	249.9	389.0
RXYSA4/5/6A7Y1B	530.4	249.9	389.0
ERA100/125/140A7V1B	530.4	249.9	389.0
ERA100/125/140A7Y1B	530.4	249.9	389.0

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9 Piping diagrams

9 - 1 Piping Diagrams

RXYSA-AV1
RXYSA-AY1



3D127852

10 Wiring diagrams

10 - 1 Notes & Legend

RXYSA-AV1

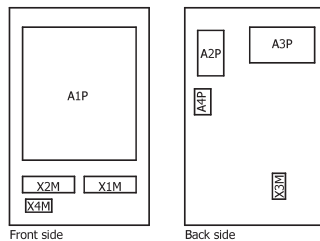
NOTES to go through before starting the unit

1. Symbols :

X1M	: Main terminal		: Option
15	: Wire number 15		: Wiring depending on model
	: Field wire		: Not mounted in switch box
	: Field cable		: PCB
	: Screened conductor		
	: Several wiring possibilities		

- Refer to the installation or service manual on how to use BS1 ~ BS3 push buttons and DS1-1 ~ DS1-2 DIP switches.
- Do not operate the unit by short-circuiting protection device S1PH. S1PH-A automatically resets after high pressure has been exceeded, S1PH-M has to be manually reset after high pressure has been exceeded.
- Refer to the installation manual for indoor-outdoor transmission F1-F2 wiring.
- When using the central control system, connect outdoor-outdoor transmission F1-F2.
- The capacity of the contact is 220~240V AC - 0,5A (Rush current needs 3A or less).
- Use dry contact for micro-current (1 mA or less 12V DC).
- Digital output: max 40V DC - 0,025A. Refer to installation manual for how to use this output.
- For X27A refer to the installation manual of the option.

POSITION IN SWITCH BOX



LEGEND



Translation can be found in the installation manual.

Part n°	Description	Part n°	Description
A1P	main PCB	R7T	thermistor (heat exchanger)
A2P	sub PCB	R10T	thermistor (fin)
A3P	back up PCB	R21T	thermistor (discharge)
A4P	cool / heat selector PCB	R*T (A*P)	PTC thermistor
BS* (A1P)	push button switch	S1NPH	high pressure sensor
DS* (A1P)	dipswitch	S1NPL	low pressure sensor
E1H	* bottom plate heater	S1PH*	high pressure switch
E1HC	crank case heater	S1S	* air control switch
F1U (A1P)	fuse M 56 A 250 V	S2S	* cool / heat switch
F1U (A2P)	fuse T 3.15 A 250 V	SEG* (A1P)	7-segment display
F1U	fuse T 1.0 A 250 V	SFB	# mechanical ventilation error input
F2U (A1P)	fuse T 6.3 A 250 V	V1R, V2R (A1P)	IGBT power module
F3U (A1P)	fuse T 6.3 A 250 V	V3R (A1P)	diode module
F6U (A1P)	fuse T 5 A 250 V	X*A	PCB connector
F101U (A3P)	fuse T 2.0 A 250 V	X*M	# terminal strip
HAP (A1P,A3P)	running LED (service monitor-green)	X*Y	connector
K*M (A1P)	contactor on PCB	Y1E	electronic exp. valve (main - EVM1)
K*R (A*P)	relay on PCB	Y2E	electronic exp. valve (EVT)
M1C	motor (compressor)	Y3E	electronic exp. valve (main - EVM2)
M1F	motor (fan)	Y4E	electronic exp. valve (EVL)
PS* (A*P)	switching power supply	Y5E	electronic exp. valve (EVSL)
Q1	overload switch	Y6E	electronic exp. valve (EVSG)
Q1DI	# earth leakage circuit breaker	Y1S	solenoid valve (4-way valve)
R1T	thermistor (ambient)	Y3S	# error operation output (SVEO)
R3T	thermistor (suction)	Y4S	# leak sensor output (SVS)
R4T	thermistor (liquid)	Z*C	noise filter (ferrite core)
R5T	thermistor (subcool)	Z*F (A*P)	noise filter
R6T	thermistor (superheat)		

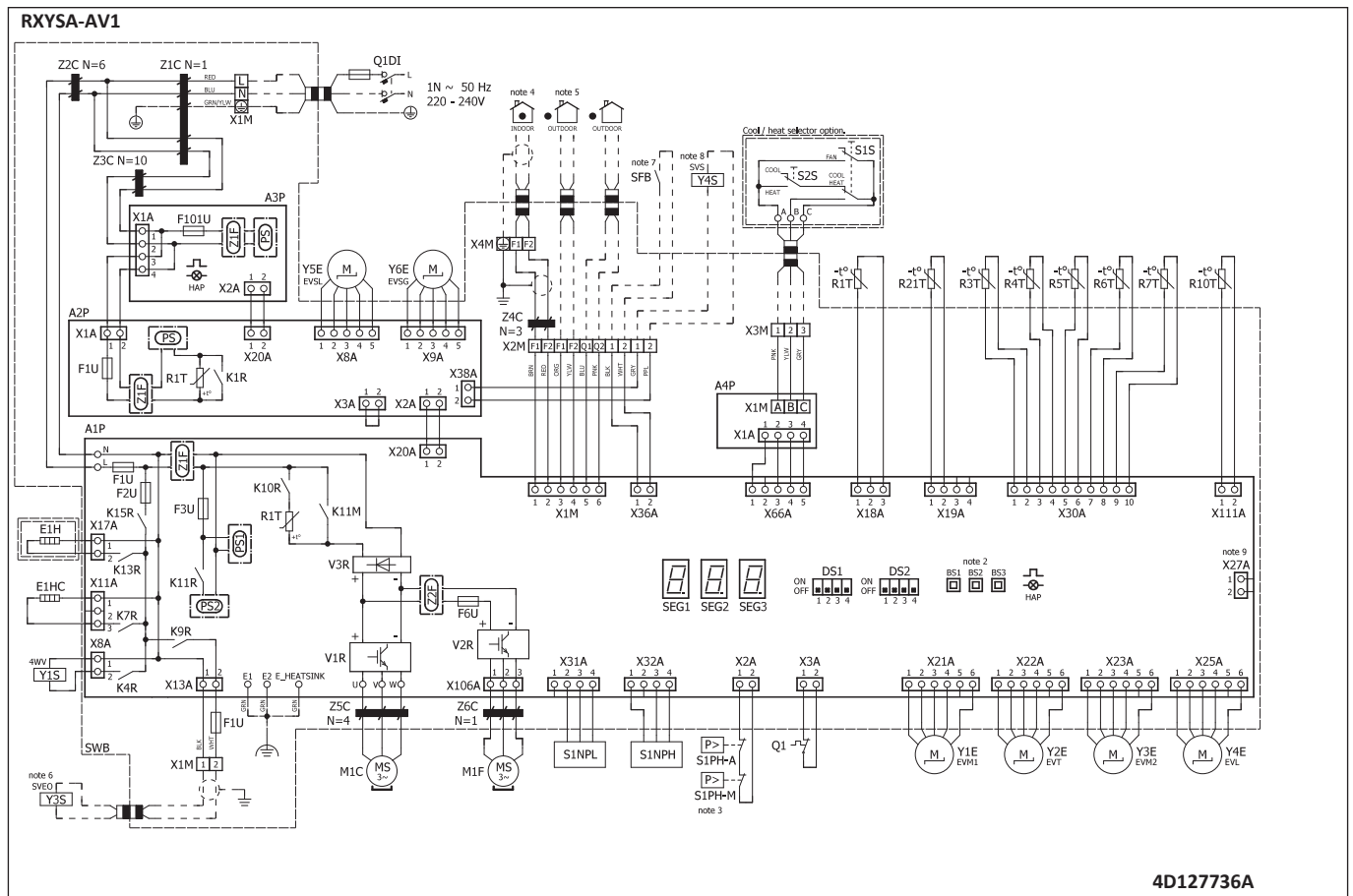
* : optional # : field supply

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10 Wiring diagrams

10 - 2 Wiring Diagrams - Single Phase

10



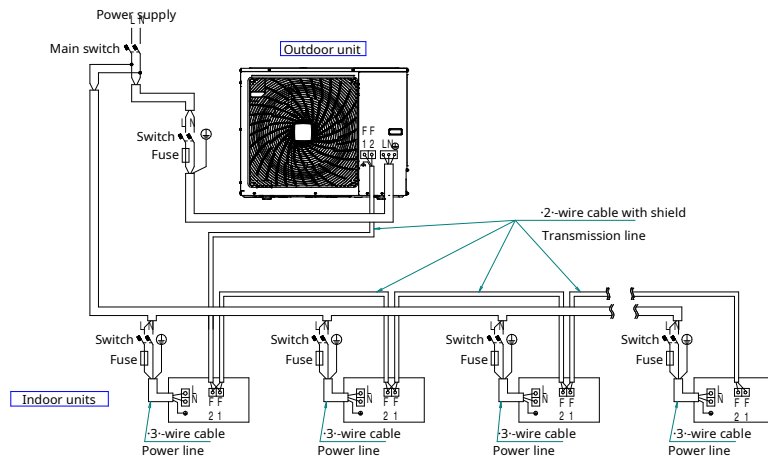
11 External connection diagrams

11 - 1 External Connection Diagrams

RXYS-AV1

External connection diagram

·VRV· indoor unit



Notes

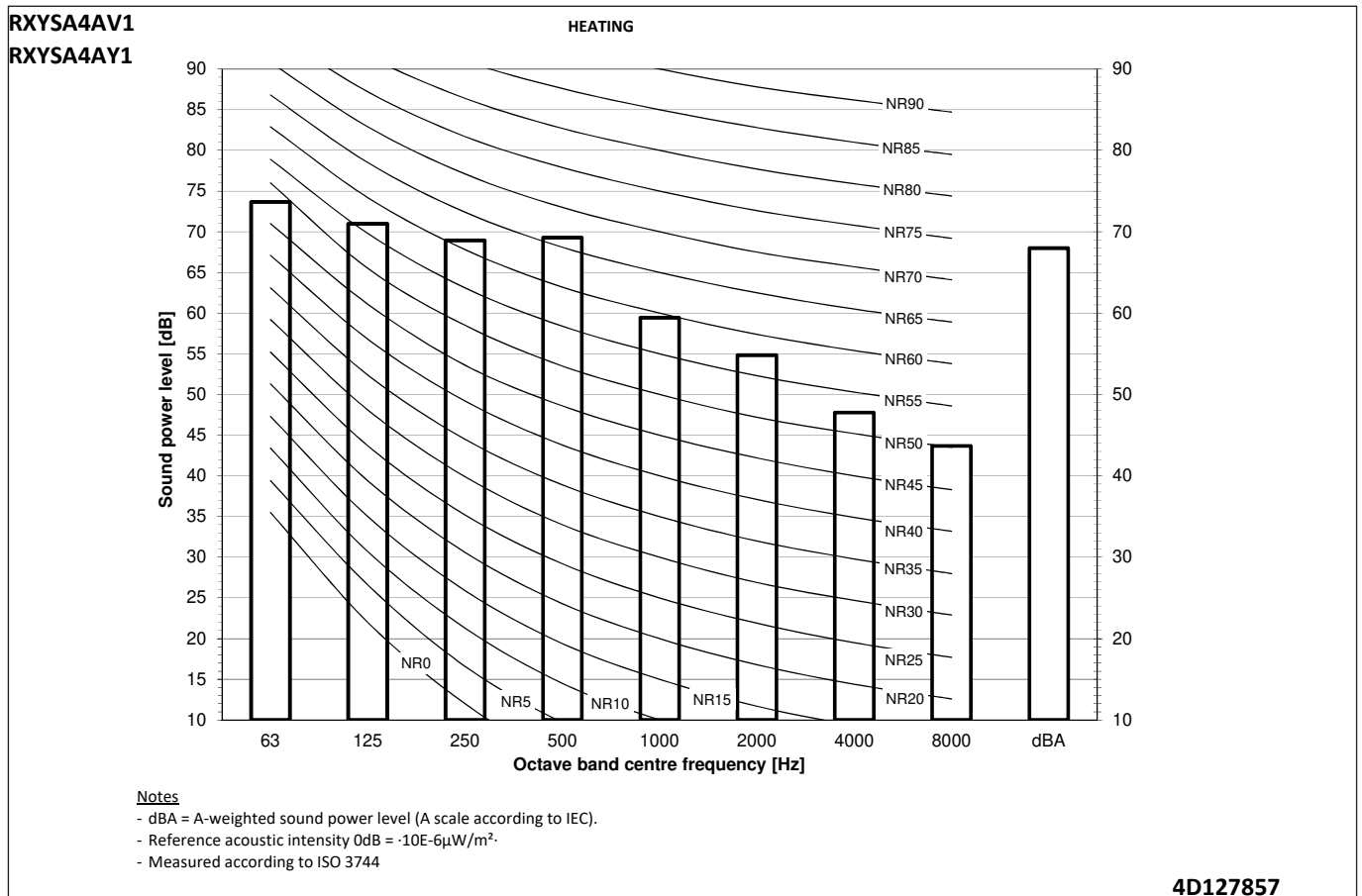
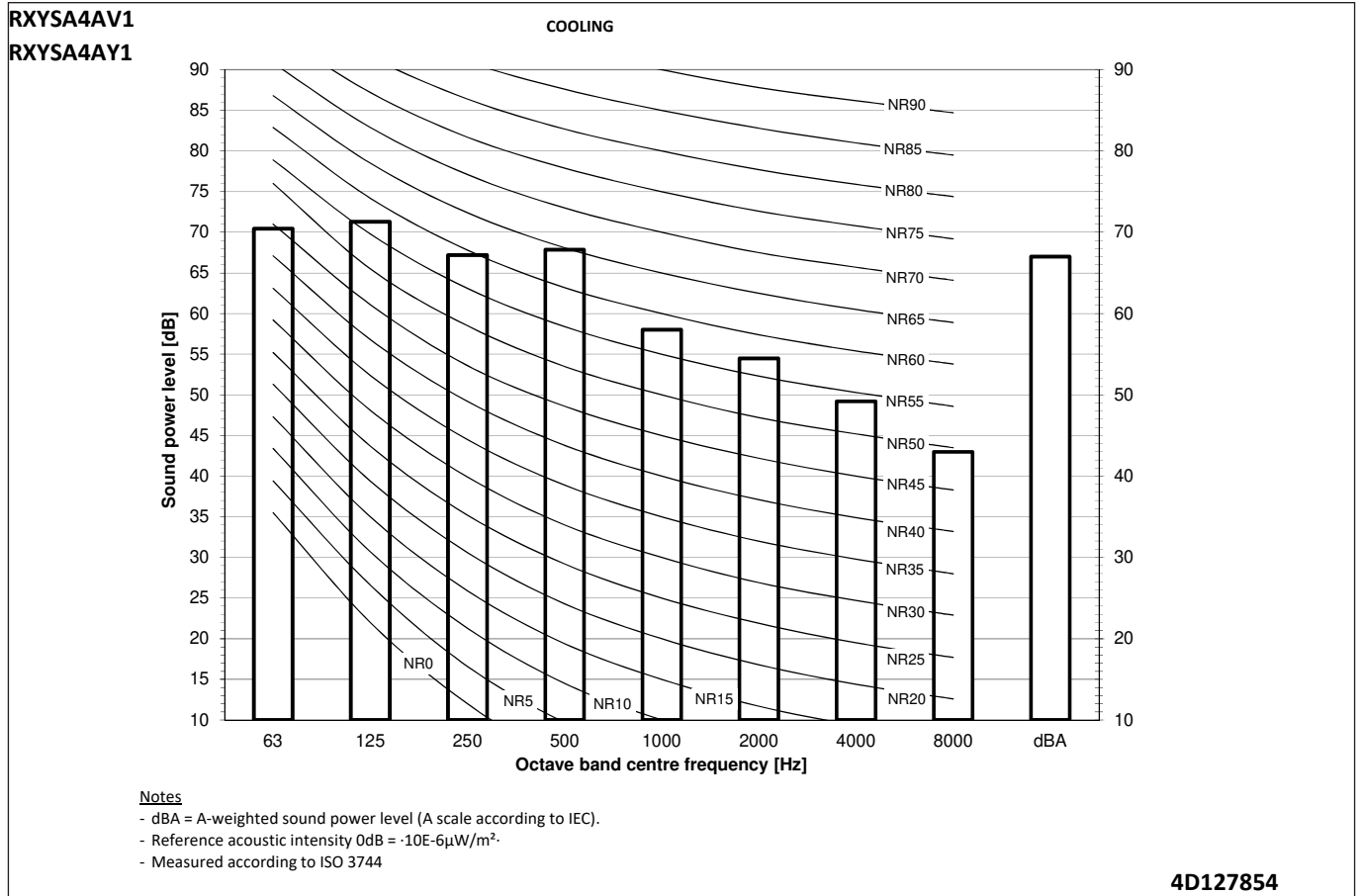
1. All wiring, components and materials to be procured on-site must comply with the applicable legislation.
2. Use copper conductors only.
3. For more details, refer to the wiring diagram of the unit.
4. Install a circuit breaker for safety.
5. All field wiring and components must be provided by an authorised 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. Install an earth leakage circuit breaker.
11. To ensure proper earthing, connect the shields of the incoming and outgoing transmission wiring of each indoor unit to each other.
12. The unit is equipped with a refrigerant leak detection system for safety.
To be effective, the unit MUST be electrically powered at all times after installation, except for maintenance.

2D127869

12 Sound data

12 - 1 Sound Power Spectrum

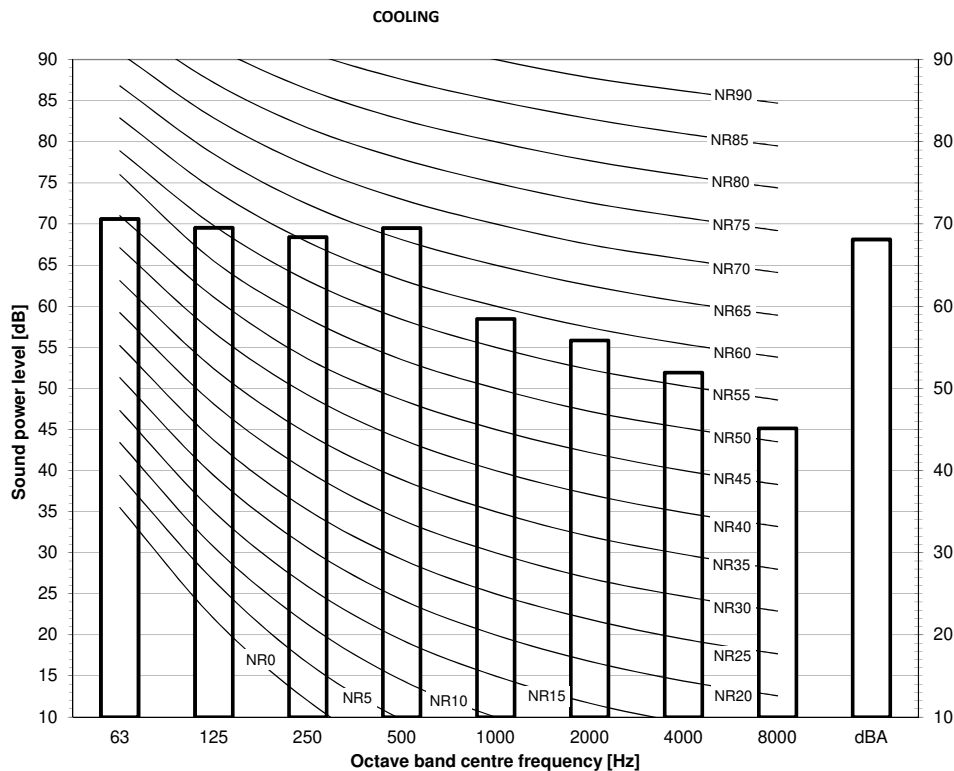
12



12 Sound data

12 - 1 Sound Power Spectrum

RXYS-A5AV1
RXYS-A5AY1

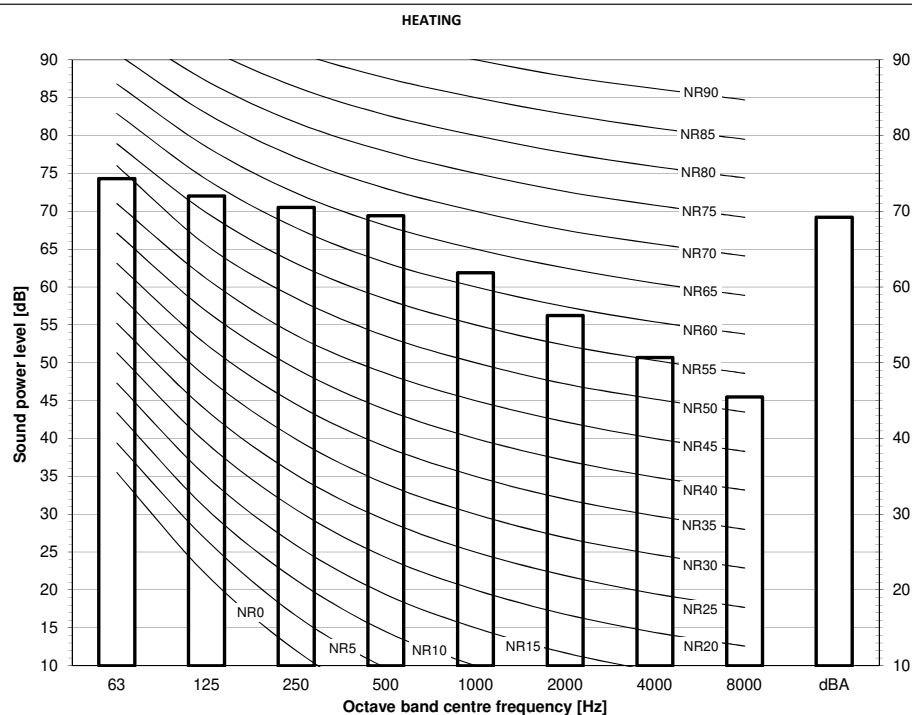


Notes

- dBA = A-weighted sound power level (A scale according to IEC).
- Reference acoustic intensity 0dB = $-10E-6\mu W/m^2$.
- Measured according to ISO 3744

4D127855

RXYS-A5AV1
RXYS-A5AY1



Notes

- dBA = A-weighted sound power level (A scale according to IEC).
- Reference acoustic intensity 0dB = $-10E-6\mu W/m^2$.
- Measured according to ISO 3744

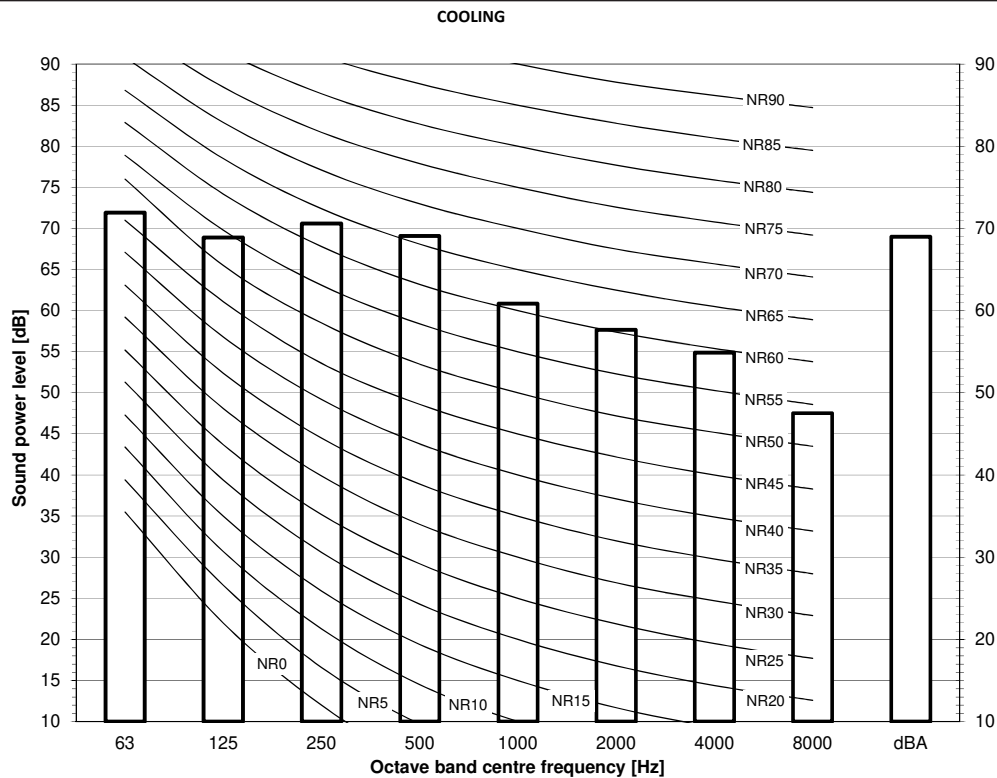
4D127858

12 Sound data

12 - 1 Sound Power Spectrum

12

RXYSA6AV1
RXYSA6AY1

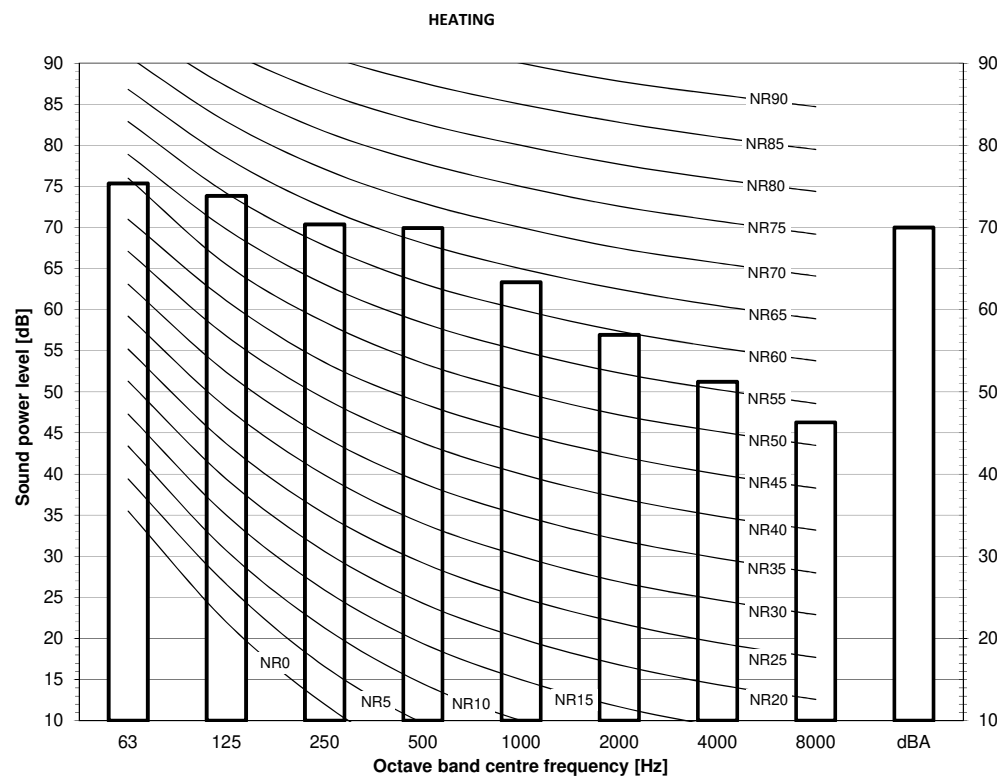


Notes

- dBA = A-weighted sound power level (A scale according to IEC).
- Reference acoustic intensity 0dB = 10^{-6} W/m².
- Measured according to ISO 3744

4D127856

RXYSA6AV1
RXYSA6AY1



Notes

- dBA = A-weighted sound power level (A scale according to IEC).
- Reference acoustic intensity 0dB = 10^{-6} W/m².
- Measured according to ISO 3744

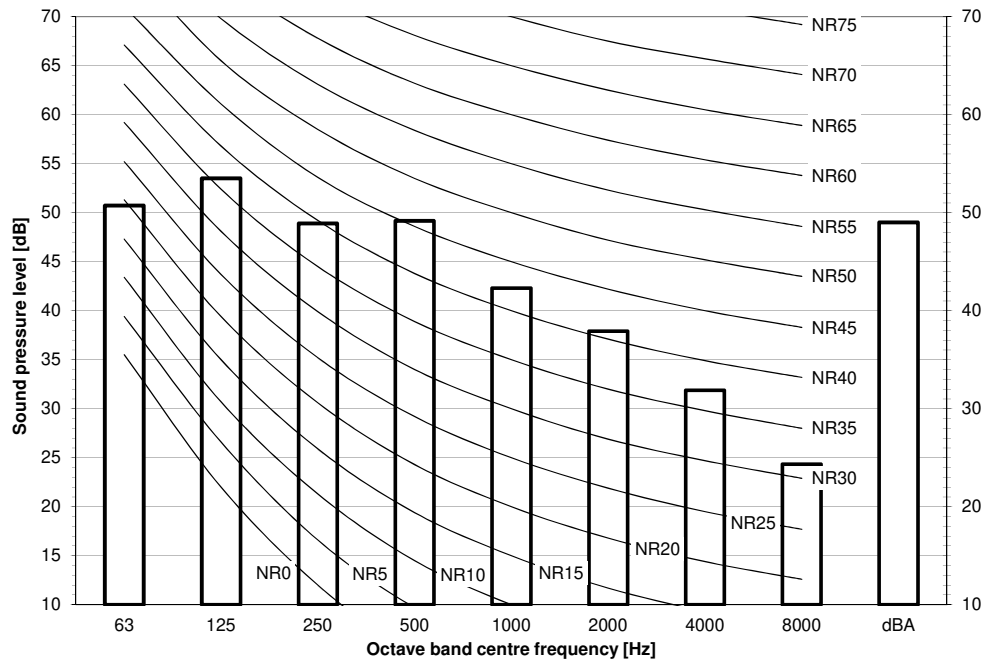
4D127859

12 Sound data

12 - 2 Sound Pressure Spectrum - Cooling

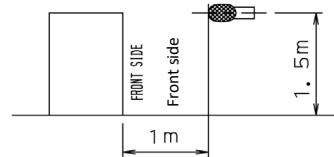
RXYS4AV1

RXYS4AY1



Notes

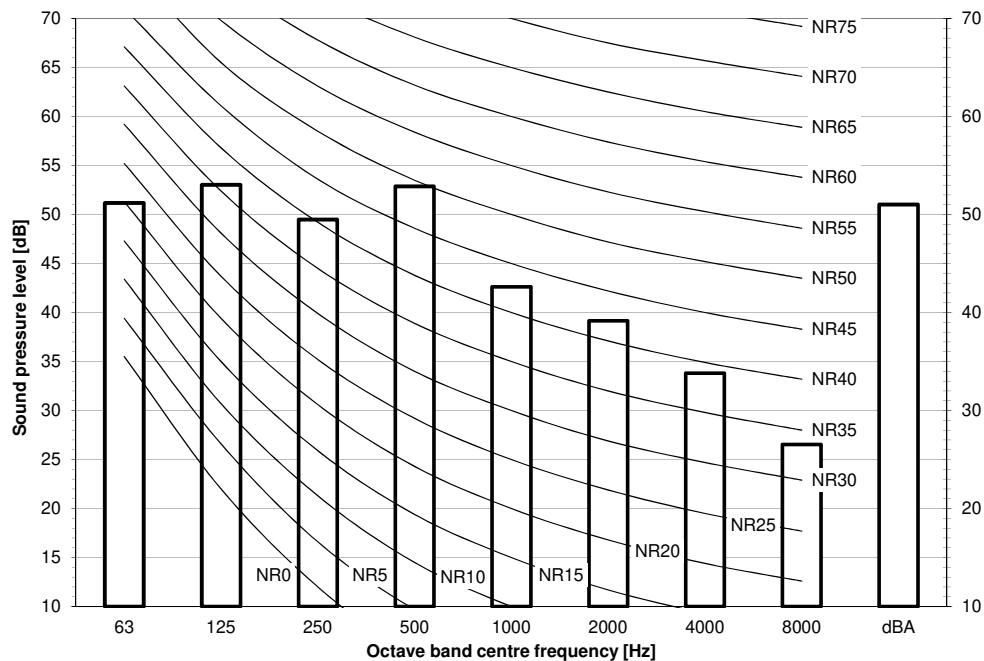
- Data is valid at free field condition.
- Data is valid at nominal operation condition.
- dBA = A-weighted sound pressure level (A scale according to IEC).
- Reference acoustic pressure 0 dB = 20 μ Pa



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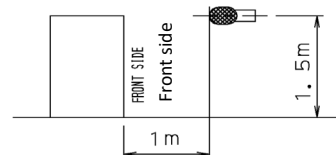
RXYS5AV1

RXYS5AY1



Notes

- Data is valid at free field condition.
- Data is valid at nominal operation condition.
- dBA = A-weighted sound pressure level (A scale according to IEC).
- Reference acoustic pressure 0 dB = 20 μ Pa



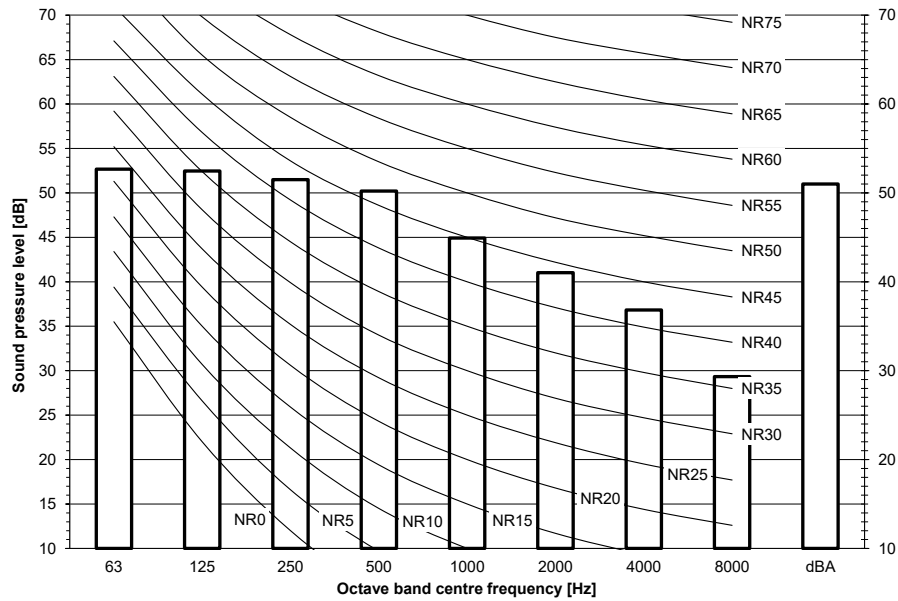
4D127861

12 Sound data

12 - 2 Sound Pressure Spectrum - Cooling

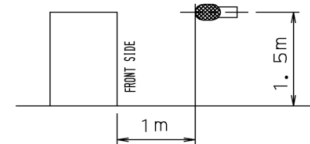
RXYSA6AV1

RXYSA6AY1



Notes

- Data is valid at free field condition.
- Data is valid at nominal operation condition.
- dBA = A-weighted sound pressure level (A scale according to IEC).
- Reference acoustic pressure 0 dB = 20 μ Pa



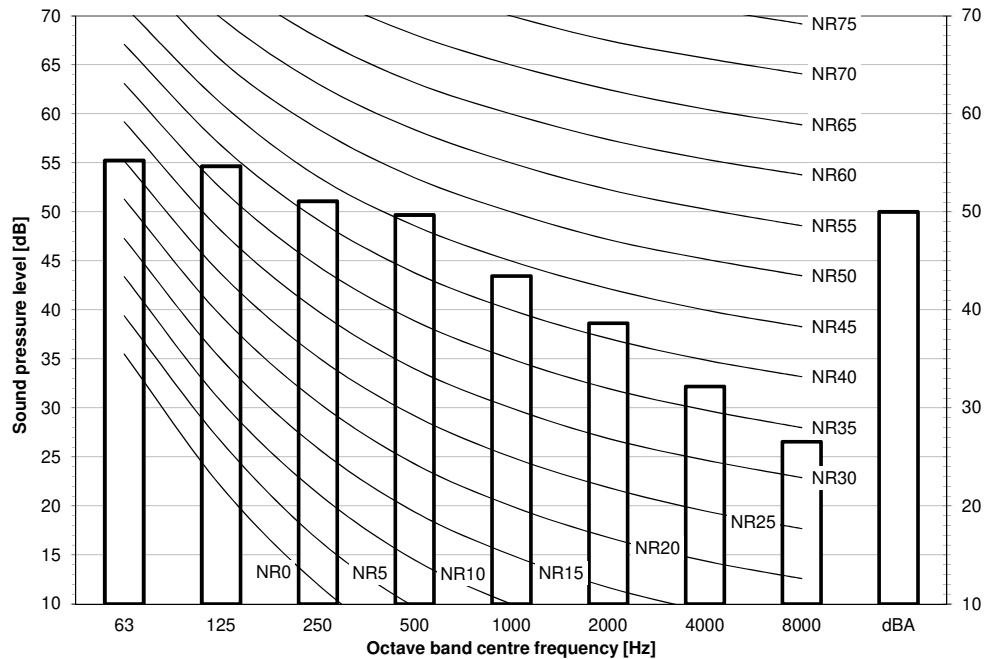
4D127862

12 Sound data

12 - 3 Sound Pressure Spectrum - Heating

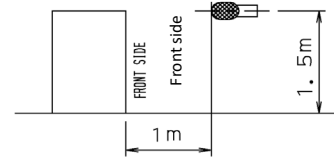
RXYSA4AV1

RXYSA4AY1



Notes

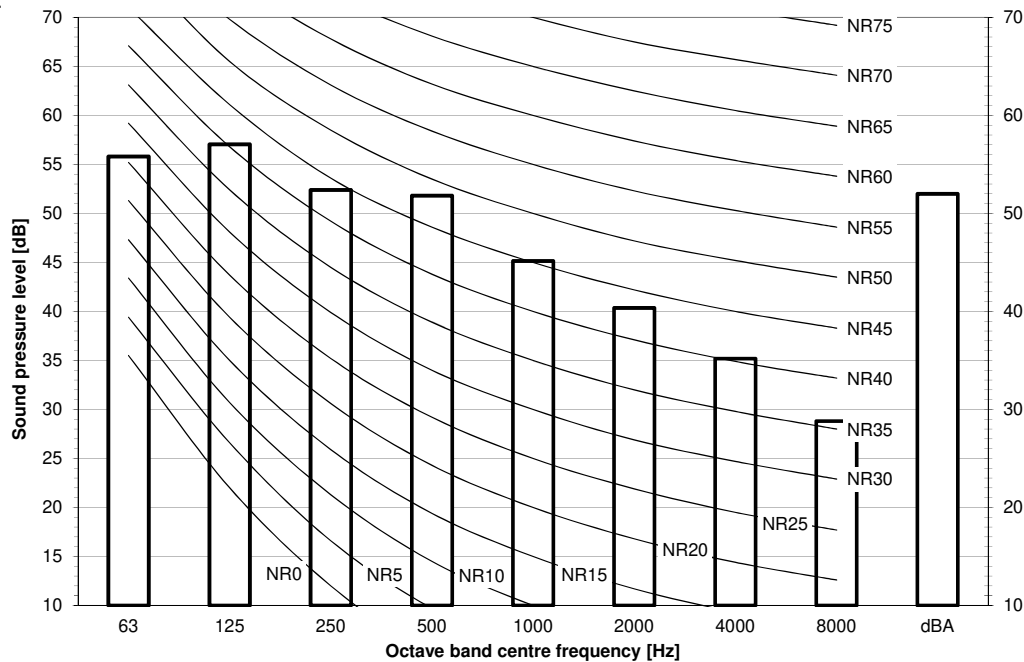
- Data is valid at free field condition.
- Data is valid at nominal operation condition.
- dBA = A-weighted sound pressure level (A scale according to IEC).
- Reference acoustic pressure 0 dB = 20 μ Pa



4D127863

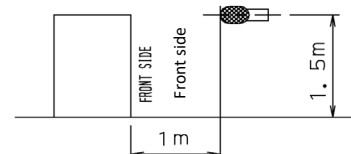
RXYSA5AV1

RXYSA5AY1



Notes

- Data is valid at free field condition.
- Data is valid at nominal operation condition.
- dBA = A-weighted sound pressure level (A scale according to IEC).
- Reference acoustic pressure 0 dB = 20 μ Pa



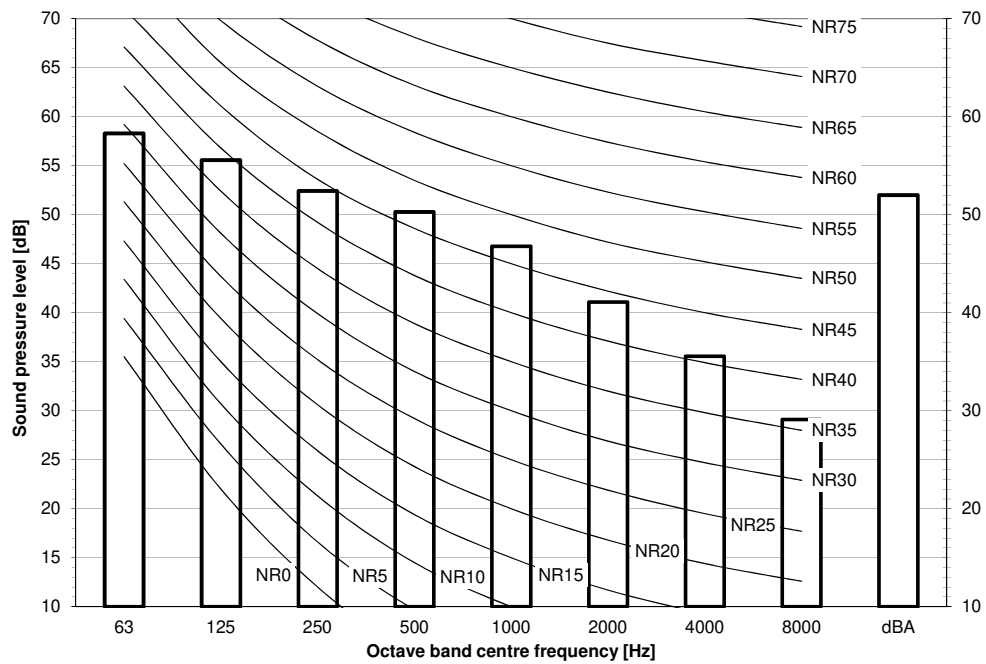
4D127864

12 Sound data

12 - 3 Sound Pressure Spectrum - Heating

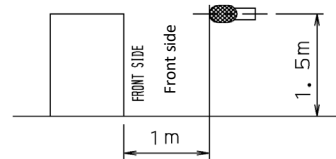
RXYSA6AV1

RXYSA6AY1



Notes

- Data is valid at free field condition.
- Data is valid at nominal operation condition.
- dBA = A-weighted sound pressure level (A scale according to IEC).
- Reference acoustic pressure 0 dB = 20 μ Pa



4D127865

12 Sound data

12 - 4 Sound Pressure Spectrum Quiet Mode

RXYSA-AV1
RXYSA-AY1
VRV5-S Heat pump
Low noise data (level ·1-5·)

4HP	Cooling		Heating	
	Sound pressure [dBa]	Sound power [dBA]	Sound pressure [dBa]	Sound power [dBA]
LN1	47	65	48	66
LN2	45	64	46	64
LN3	43	62	44	62
LN4	41	59	42	60
LN5	39	57	40	58

5HP	Cooling		Heating	
	Sound pressure [dBa]	Sound power [dBA]	Sound pressure [dBa]	Sound power [dBA]
LN1	48	66	51	68
LN2	46	64	48	66
LN3	44	62	46	64
LN4	42	60	44	62
LN5	40	58	42	60

6HP	Cooling		Heating	
	Sound pressure [dBa]	Sound power [dBA]	Sound pressure [dBa]	Sound power [dBA]
LN1	49	67	51	69
LN2	47	65	49	67
LN3	45	63	47	65
LN4	43	61	45	63
LN5	41	59	43	61

	Capacity ratio
LN1	90%
LN2	75%
LN3	60%
LN4	45%
LN5	30%

LN1: Low noise level ·1·

LN2: Low noise level ·2·

LN3: Low noise level ·3·

LN4: Low noise level ·4·

LN5: Low noise level ·5·

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12 Sound data

12 - 5 Sound power spectrum at high ESP

12

RXYSA-AY1

VRV5-S
Heat pump
High ESP

4HP	Cooling	Heating
	Sound power [dBA]	Sound power [dBA]
ESP1	70	72
ESP2	75	77

5HP	Cooling	Heating
	Sound power [dBA]	Sound power [dBA]
ESP1	71	76
ESP2	75	77

6HP	Cooling	Heating
	Sound power [dBA]	Sound power [dBA]
ESP1	71	78
ESP2	75	78

8HP	Cooling	Heating
	Sound power [dBA]	Sound power [dBA]
ESP1	73,2	73,5

10HP	Cooling	Heating
	Sound power [dBA]	Sound power [dBA]
ESP1	76,1	76

12HP	Cooling	Heating
	Sound power [dBA]	Sound power [dBA]
ESP1	76,1	76

Sound power is measured on a freestanding unit.
Actual sound is depending on the installation of the duct.

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13 Installation

13 - 1 Installation Method

RXYSA-AV1

RXYSA-AY1

Single unit () | Single row of units ()

Suction side

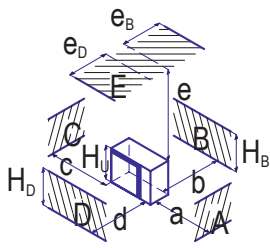
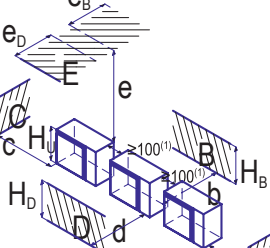
In the illustration below, the service space at the suction side is based on 35°C DB and cooling operation. Foresee more space in the following cases:

- When the suction side temperature regularly exceeds this temperature.
- When the heat load of the outdoor units is expected to regularly exceed the maximum operating capacity.

Discharge side

Take refrigerant piping work into account when positioning the units. If your lay out does not match with any of the layouts below, contact your dealer.

Single unit () | Single row of units ()

	A-E	Hb Hd Hu	(mm)						
			a	b	c	d	e	e _B	e _D
	B	-		≥ 100					
	A,B,C	-	≥ 100(1)	≥ 100	≥ 100				
	B,E	-		≥ 100			≥ 1000		≤ 500
	A,B,C,E	-	≥ 150(1)	≥ 150	≥ 150		≥ 1000		≤ 500
	D	-				≥ 500			
	D,E	-				≥ 500	≥ 1000	≤ 500	
	B,D	Hd>Hu		≥ 100		≥ 500			
		Hd≤Hu		≥ 100		≥ 500			
	B,D,E	Hb≤½Hu		≥ 250		≥ 750	≥ 1000	≤ 500	
		½Hu>Hb≤Hu		≥ 250		≥ 1000	≥ 1000	≤ 500	
		Hb>Hu				⊘			
		Hd≤½Hu		≥ 100		≥ 1000	≥ 1000		≤ 500
		½Hu<Hd≤Hu		≥ 200		≥ 1000	≥ 1000		≤ 500
	A,B,C	-	≥ 200(1)	≥ 300	≥ 1000				
	A,B,C,E	-	≥ 200(1)	≥ 300	≥ 1000		≥ 1000		≤ 500
	D	-				≥ 1000			
	D,E	-				≥ 1000	≥ 1000	≤ 500	
	B,D	Hd>Hu		≥ 300		≥ 1000			
		Hd≤½Hu		≥ 250		≥ 1500			
		½Hu<Hd≤Hu		≥ 300		≥ 1500			
	B,D,E	Hb≤½Hu		≥ 300		≥ 1000	≥ 1000	≤ 500	
		½Hu<Hb≤Hu		≥ 300		≥ 1250	≥ 1000	≤ 500	
		Hb>Hu				⊘			
		Hd≤½Hu		≥ 250		≥ 1500	≥ 1000		≤ 500
		½Hu<Hd≤Hu		≥ 300		≥ 1500	≥ 1000		≤ 500
		Hd>Hu				⊘			

- (1) For better serviceability, use a distance ≥ 250 mm
- A,B,C,D Obstacles (walls/baffle plates)
- E Obstacle (roof)
- a,b,c,d,e Minimum service space between the unit and obstacles A, B, C, D and E
- e_B Maximum distance between the unit and the edge of obstacle E, in the direction of obstacle B
- e_D Maximum distance between the unit and the edge of obstacle E, in the direction of obstacle D
- Hu Height of the unit
- Hb,Hd Height of obstacles B and D
- 1 Seal the bottom of the installation frame to prevent discharged air from flowing back to the suction side through the bottom of the unit.
 - 2 Maximum two units can be installed.
- ⊘ Not allowed

1D128513

13 Installation

13 - 1 Installation Method

RXYSA-AV1

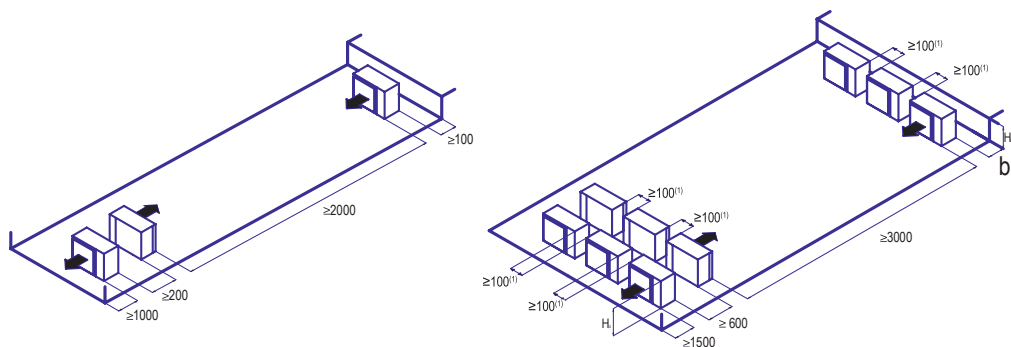
RXYSA-AY1

13

Multiple rows of units (

)

Multiple rows of units (

)


Hb Hu	b (mm)
$Hb \leq \frac{1}{2}Hu$	$b \geq 250$
$\frac{1}{2}Hu < Hb \leq Hu$	$b \geq 300$
$Hb > Hu$	⊘

(1) For better serviceability, use a distance ≥ 250 mm

⊘ Not allowed

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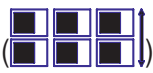
13 Installation

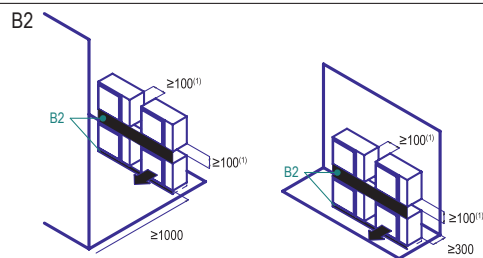
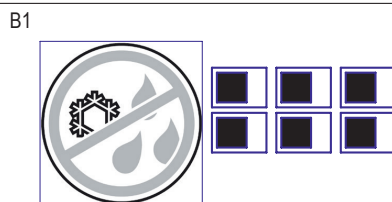
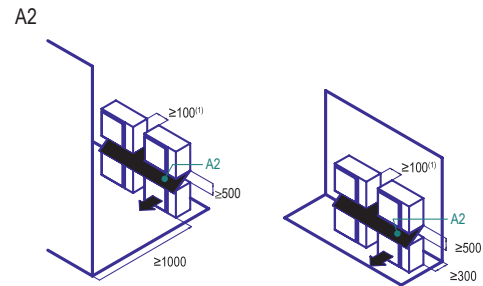
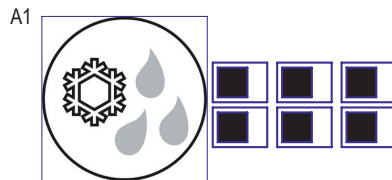
13 - 1 Installation Method

RXYSA-AV1

RXYSA-AY1

Stacked units (max.2 levels) ()

Stacked units (max.2 levels) ()



(1) For better serviceability, use a distance ≥ 250 mm

A1=>A2 (A1) If there is danger of drainage dripping and freezing between the upper and lower units...

(A2) Then install a roof between the upper and lower units. Install the upper unit high enough above the lower unit to prevent ice buildup at the upper unit's bottom plate.

B1=>B2 (B1) If there is no danger of drainage dripping and freezing between the upper and lower units...

(B2) Then it is not required to install a roof, but seal the gap between the upper and lower units to prevent discharged air from flowing back to the suction side through the bottom of the unit.

1D128513

13 Installation

13 - 2 Refrigerant Pipe Selection

13

RXYSA-AV1

RXYSA-AY1

VRV5-S

Heat pump

Piping restrictions ·1/3·

	Maximum piping length		Maximum height difference		Total piping length
	Longest pipe (A+B, A+H) Actual / (Equivalent)	After first branch (B, C, H) Actual	Indoor-to-outdoor (H1) Outdoor above indoor / (indoor above outdoor)	Indoor-to-indoor (H2)	
·VRV DX· indoor units only	See note ·1·.				See note ·2·.
	120/(150)m	40m	50/(40)m	15m	300m
·AHU· connection	Pair	50/(55)m ⁽³⁾	40/(40)m	-	150m ⁽⁶⁾
	Multi ⁽⁴⁾			15m	300m
	Mix ⁽⁵⁾			15m	300m

Notes

1. Assume equivalent piping length of refnet joint = ·0.5· m and refnet header = ·1· m (for calculation purposes of equivalent piping length, not for refrigerant charge calculations).
2. Maximum total piping length also depends on refrigerant charge limitations. See ·4D128599·.
3. The allowable minimum length is ·5· m.
4. Multiple air handling units (·AHU·)(·EKEXVA· + ·EKEACBVE· kits).
5. Mix of air handling units (·AHU·) and ·VRV R32 DX· indoor units.
6. Up to ·3· piping branches are possible in case of an AHU with an interlaced heat exchanger.

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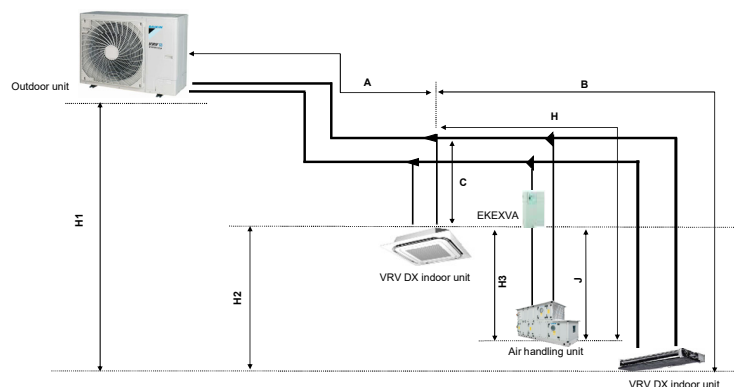
RXYSA-AV1

RXYSA-AY1

VRV5-S

Heat pump

Piping restrictions ·2/3·



Notes

1. Schematic indication
Illustrations may differ from the actual appearance of the unit.
2. This is only to illustrate piping length limitations.
Refer to combination table ·3D127866· for details about the allowed combinations.

		Allowed piping length	Maximum height difference
		·EKEXVA· to ·AHU· (J)	·EKEXVA· to ·AHU· (H3)
Air handling unit (AHU) Connection	Pair	≤5m	5m
	Multi ⁽¹⁾	≤5m	5m
	Mix ⁽²⁾	≤5m	5m

Notes

1. Multiple air handling units (·AHU·)(·EKEXVA· + ·EKEACBVE· kits).
2. Mix of air handling units (·AHU·) and ·VRV DX· indoor units.

4D127886A

13 Installation

13 - 2 Refrigerant Pipe Selection

RXYSA-AV1

RXYSA-AY1

VRV5-S

Heat pump

Piping restrictions :3/3:

System pattern	Total		Allowed capacity	
Allowed connection ratio (CR)	Capacity	Maximum allowed amount of connectable indoor units (·VRV, AHU·)	VRV DX indoor unit	Air handling unit (AHU)
·VRV R32 DX· indoor units only	50 ~ 130%	64	50 ~ 130%	-
·VRV R32 DX· indoor unit + ·AHU(EKEXVA +EKEACBVE)· (1)	50 ~ 110% (3)	64 (4)	50 ~ 110%	0 ~ 60% (1)
Mix				
AHU only (·EKEXVA + EKEACBVE·) (1)	65/75 (2) ~ 110% (3)	64 (4)(5)	-	65/75 (2) ~ 110% (3)
Pair + multi				

- (1) Pair AHU = system with 1 air handling unit connected to one outdoor unit system
Multi AHU = system with multiple air handling units connected to one outdoor unit system
Mixed AHU = mix of AHU units and ·VRV DX· indoor units connected to one outdoor system

- (2) ·75% ~ 110%·: default situation

·65% ~ 75%·: Allowed if stricter AHU volume limitations are valid.
Refer to the databook of ·EKEACBVE· for details.

- (3) Restrictions regarding the air handling unit capacity

- (4) ·EKEXVA· kits are also considered indoor units.

- (5) Number of AHUs that can be connected in case of pair or multi layout depends on the control types:

→ ·X·-control is possible (up to ·3· [·EKEXVA + EKEACBVE· boxes] can be connected to one outdoor unit (system)). No Variable Refrigerant Temperature control possible.

→ ·Y·-control is possible (up to ·3· [·EKEXVA + EKEACBVE· boxes] can be connected to one outdoor unit (system)). No Variable Refrigerant Temperature control possible.

→ ·W·-control is possible (up to ·3· [·EKEXVA + EKEACBVE· boxes] can be connected to one outdoor unit (system)). No Variable Refrigerant Temperature control possible.

→ ·Z,Z'·-control is possible (the allowed number of [·EKEXVA + EKEACBVE· boxes] is determined by the connection ratio and the capacity of the outdoor unit.

About ventilation applications

- I. ·Biddle· air curtains are considered air handling units, following air handling unit limitations:

For information on the operation range, refer to the documentation of the ·Biddle· unit.

- II. ·EKEXVA +EKEA· units combined with an air handling unit are considered air handling units, following air handling unit limitations.

For information on the operation range, refer to the documentation of the ·EKEXVA· ·EKEACBVE· unit.

- III. Because there is no refrigerant connection with the outdoor unit (only communication F1/F2), ·VAM· units do not have connection limitations.

However, since there is communication via F1/F2, count them as regular indoor unit when calculating the maximum allowed number of connectable indoor units.

4D127886A

13 Installation

13 - 3 Refrigerant Charge Information

13

RXYS-AV1
RXYS-AY1

Refrigerant charge restrictions

The total amount of refrigerant in the system shall be less than or equal to the maximum allowed total refrigerant amount.

For more information, refer to the installation manual.

Step 1-

Determine the area:

- of the rooms where an indoor unit is installed
- AND of the area of the rooms served by a ducted indoor unit installed in a different room

Step 2-

Use the graph or table to determine the total refrigerant charge limit in the system for each indoor unit AND for each room served by a ducted indoor unit.
Determine the value for both the lowest underground floor AND the other floors.

The total refrigerant charge limit depends on the effective installation height, measured between:

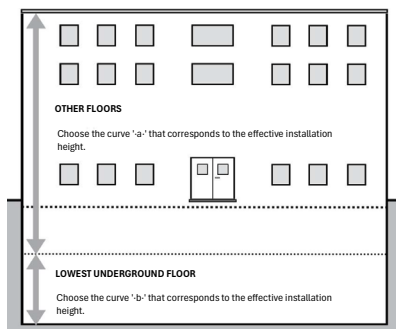
- the bottom side of the indoor unit and the lowest point of the floor, in case the indoor unit is installed in the same room.
- the bottom of the duct opening and the lowest point of the floor, for rooms served by a ducted indoor unit installed in a different room.

Step 3-

The total refrigerant charge in the system MUST be less than the lowest value of the refrigerant charge limit for each room where an indoor unit is installed or that is served by a ducted indoor unit installed in a different room.

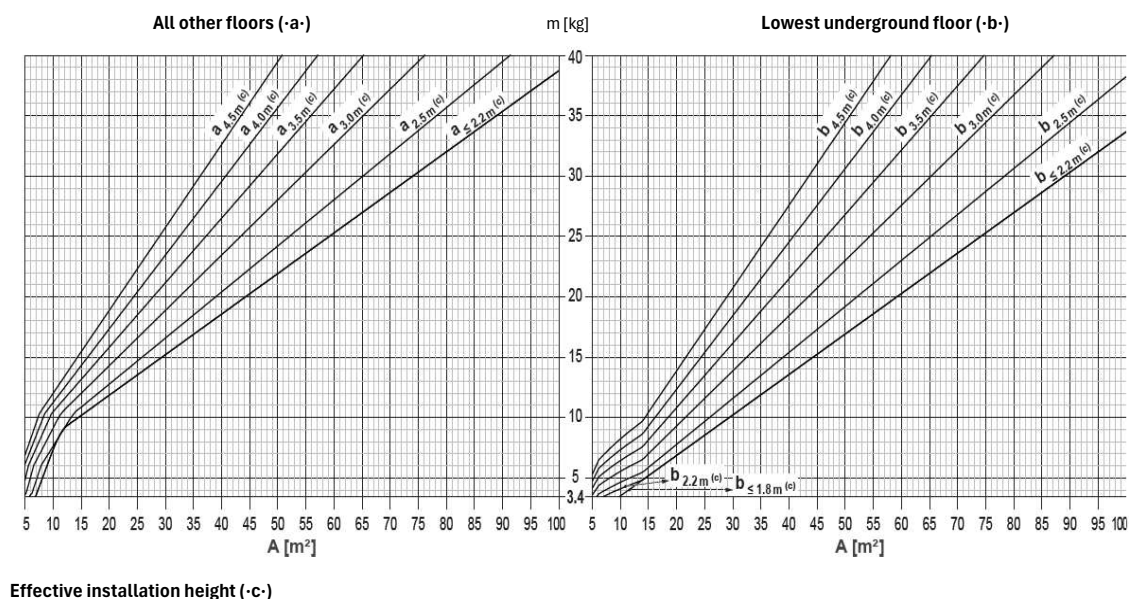
If NOT, change the installation (see choices below) and repeat all of the above steps.

- 1 Increase the area of the room restricting the total charge.
- OR
- 2 Decrease the piping length by changing the system layout.
- OR
- 3 Increase the installation height of the unit or duct.
- OR
- 4 Add additional countermeasures as described in applicable legislation.
- OR
- 5 Finetune system with more detailed calculations in VRV Xpress.



4D128599C

RXYS-AV1
RXYS-AY1



4D128599C

13 Installation

13 - 3 Refrigerant Charge Information

RXYSA-AV1
RXYSA-AV1

A [m ²]	m [kg]													
	All other floors							Lowest underground floor						
	Effective installation height							Effective installation height						
	≤1.8m	2.2m	2.5m	3.0m	3.5m	4.0m	4.5m	≤1.8m	2.2m	2.5m	3.0m	3.5m	4.0m	4.5m
5	—	—	—	3.5	4.7	6.0	6.8	—	—	—	3.5	4.0	4.6	5.2
6	—	—	3.5	4.9	6.3	7.2	8.1	—	—	3.5	4.1	4.8	5.5	6.2
7	3.5	3.5	4.7	6.3	7.4	8.4	9.5	—	—	3.8	4.5	5.3	6.0	6.8
8	4.7	4.7	6.0	7.2	8.4	9.6	10.5	—	3.6	4.0	4.8	5.7	6.5	7.3
9	6.0	6.0	6.8	8.1	9.5	10.5	11.2	—	3.8	4.3	5.1	6.0	6.9	7.7
10	7.2	7.2	7.5	9.0	10.4	11.1	11.9	3.4	4.0	4.5	5.4	6.3	7.2	8.1
11	8.3	8.3	8.3	9.9	10.9	11.8	12.6	3.7	4.2	4.7	5.7	6.6	7.6	8.5
12	9.0	9.0	9.0	10.5	11.4	12.4	13.3	4.1	4.4	4.9	5.9	6.9	7.9	8.9
13	9.4	9.4	9.8	11.0	12.0	13.0	14.0	4.4	4.5	5.1	6.2	7.2	8.2	9.3
14	9.7	9.7	10.4	11.4	12.5	13.6	14.7	4.7	4.7	5.4	6.4	7.5	8.6	9.7
15	10.1	10.1	10.8	11.9	13.1	14.2	15.4	5.1	5.1	5.8	6.9	8.1	9.2	10.4
16	10.4	10.4	11.1	12.4	13.6	14.8	16.1	5.4	5.4	6.1	7.4	8.6	9.8	11.1
17	10.7	10.7	11.5	12.8	14.1	15.4	16.7	5.7	5.7	6.5	7.8	9.1	10.4	11.7
18	11.1	11.1	11.9	13.3	14.7	16.1	17.4	6.1	6.1	6.9	8.3	9.7	11.1	12.4
19	11.4	11.4	12.3	13.7	15.2	16.7	18.1	6.4	6.4	7.3	8.7	10.2	11.7	13.1
20	11.8	11.8	12.7	14.2	15.7	17.3	18.8	6.8	6.8	7.7	9.2	10.7	12.3	13.8
21	12.1	12.1	13.1	14.7	16.3	17.9	19.5	7.1	7.1	8.1	9.7	11.3	12.9	14.5
22	12.4	12.4	13.4	15.1	16.8	18.5	20.2	7.4	7.4	8.4	10.1	11.8	13.5	15.2
23	12.8	12.8	13.8	15.6	17.4	19.1	20.9	7.8	7.8	8.8	10.6	12.4	14.1	15.9
24	13.1	13.1	14.2	16.1	17.9	19.7	21.6	8.1	8.1	9.2	11.1	12.9	14.7	16.6
25	13.4	13.4	14.6	16.5	18.4	20.4	22.3	8.4	8.4	9.6	11.5	13.4	15.4	17.3
26	13.8	13.8	15.0	17.0	19.0	21.0	23.0	8.8	8.8	10.0	12.0	14.0	16.0	18.0
27	14.1	14.1	15.4	17.4	19.5	21.6	23.7	9.1	9.1	10.4	12.4	14.5	16.6	18.7
28	14.5	14.5	15.7	17.9	20.0	22.2	24.3	9.5	9.5	10.7	12.9	15.0	17.2	19.3
29	14.8	14.8	16.1	18.4	20.6	22.9	25.0	9.8	9.8	11.1	13.4	15.6	17.8	20.0
30	15.1	15.1	16.5	18.8	21.1	23.4	25.7	10.1	10.1	11.5	13.8	16.1	18.4	20.7
31	15.5	15.5	16.9	19.3	21.7	24.0	26.4	10.5	10.5	11.9	14.3	16.7	19.0	21.4
32	15.8	15.8	17.3	19.7	22.2	24.6	27.1	10.8	10.8	12.3	14.7	17.2	19.6	22.1
33	16.1	16.1	17.7	20.2	22.7	25.3	27.8	11.1	11.1	12.7	15.2	17.7	20.3	22.8
34	16.5	16.5	18.0	20.7	23.3	25.9	28.5	11.5	11.5	13.0	15.7	18.3	20.9	23.5
35	16.8	16.8	18.4	21.1	23.8	26.5	29.2	11.8	11.8	13.4	16.1	18.8	21.5	24.2
36	17.2	17.2	18.8	21.6	24.3	27.1	29.9	12.2	12.2	13.8	16.6	19.3	22.1	24.9
37	17.5	17.5	19.2	22.0	24.9	27.7	30.6	12.5	12.5	14.2	17.0	19.9	22.7	25.6
38	17.8	17.8	19.6	22.5	25.4	28.3	31.2	12.8	12.8	14.6	17.5	20.4	23.3	26.2
39	18.2	18.2	20.0	23.0	26.0	28.9	31.9	13.2	13.2	15.0	18.0	21.0	23.9	26.9
40	18.5	18.5	20.4	23.4	26.5	29.6	32.6	13.5	13.5	15.4	18.4	21.5	24.6	27.6
41	18.8	18.8	20.7	23.9	27.0	30.2	33.3	13.8	13.8	15.7	18.9	22.0	25.2	28.3
42	19.2	19.2	21.1	24.3	27.6	30.8	34.0	14.2	14.2	16.1	19.3	22.6	25.8	29.0
43	19.5	19.5	21.5	24.8	28.1	31.4	34.7	14.5	14.5	16.5	19.8	23.1	26.4	29.7
44	19.9	19.9	21.9	25.3	28.8	32.0	35.4	14.9	14.9	16.9	20.3	23.6	27.0	30.4
45	20.2	20.2	22.3	25.7	29.2	32.6	36.1	15.2	15.2	17.3	20.7	24.2	27.6	31.1
46	20.5	20.5	22.7	26.2	29.7	33.2	36.8	15.5	15.5	17.7	21.2	24.7	28.2	31.8
47	20.9	20.9	23.0	26.6	30.3	33.9	37.5	15.9	15.9	18.0	21.6	25.3	28.9	32.5
48	21.2	21.2	23.4	27.1	30.8	34.5	38.2	16.2	16.2	18.4	22.1	25.8	29.5	33.2
49	21.5	21.5	23.8	27.6	31.3	35.1	38.8	16.5	16.5	18.8	22.6	26.3	30.1	33.8
50	21.9	21.9	24.2	28.0	31.9	35.7	39.5	16.9	16.9	19.2	23.0	26.9	30.7	34.5
51	22.2	22.2	24.6	28.5	32.4	36.3	40.2	17.2	17.2	19.6	23.5	27.4	31.3	35.2
52	22.6	22.6	25.0	28.9	32.9	36.9	40.9	17.6	17.6	20.0	23.9	27.9	31.9	35.9

A	Smallest room area
m	Total refrigerant charge limit in the system

A [m ²]	m [kg]													
	All other floors							Lowest underground floor						
	Effective installation height							Effective installation height						
	≤1.8m	2.2m	2.5m	3.0m	3.5m	4.0m	4.5m	≤1.8m	2.2m	2.5m	3.0m	3.5m	4.0m	4.5m
53	22.9	22.9	25.3	29.4	33.5	37.5	41.6	17.9	17.9	20.3	24.4	28.5	32.5	36.6
54	23.2	23.2	25.7	29.9	34.0	38.2	42.3	18.2	18.2	20.7	24.9	29.0	33.2	37.3
55	23.6	23.6	26.1	30.3	34.5	38.8	43.0	18.6	18.6	21.1	25.3	29.5	33.8	38.0
56	23.9	23.9	26.5	30.8	35.1	39.4	43.7	18.9	18.9	21.5	25.8	30.1	34.4	38.7
57	24.2	24.2	26.9	31.2	35.6	40.0	44.4	19.2	19.2	21.9	26.2	30.6	35.0	39.4
58	24.6	24.6	27.3	31.7	36.2	40.6	45.1	19.6	19.6	22.3	26.7	31.2	35.6	40.1
59	24.9	24.9	27.6	32.2	36.7	41.2	45.8	19.9	19.9	22.6	27.2	31.7	36.2	40.8
60	25.3	25.3	28.0	32.6	37.2	41.8	46.4	20.3	20.3	23.0	27.6	32.2	36.8	41.4
61	25.6	25.6	28.4	33.1	37.8	42.5	47.1	20.6	20.6	23.4	28.1	32.8	37.5	42.1
62	25.9	25.9	28.8	33.6	38.3	43.1	47.8	20.9	20.9	23.6	28.6	33.3	38.1	42.8
63	26.3	26.3	29.2	34.0	38.8	43.7	48.5	21.3	21.3	24.2	29.0	33.8	38.7	43.5
64	26.6	26.6	29.6	34.5	39.4	44.3	49.2	21.6	21.6	24.6	29.5	34.4	39.3	44.2
65	27.0	27.0	29.9	34.9	39.9	44.9	49.9	22.0	22.0	24.9	29.9	34.9	39.9	44.9
66	27.3	27.3	30.3	35.4	40.5	45.5	50.6	22.3	22.3	25.3	30.4	35.5	40.5	45.6
67	27.6	27.6	30.7	35.9	41.0	46.1	51.3	22.6	22.6	25.7	30.9	36.0	41.1	46.3
68	28.0	28.0	31.1	36.3	41.5	46.8	52.0	23.0	23.0	26.1	31.3	36.5	41.8	47.0
69	28.3	28.3	31.5	36.8	42.1	47.4	52.7	23.3	23.3	26.5	31.8	37.1	42.4	47.7
70	28.6	28.6	31.9	37.2	42.6	48.0	53.4	23.6	23.6	26.9	32.2	37.6	43.0	48.4
71	29.0	29.0	32.2	37.7	43.1	48.6	54.0	24.0	24.0	27.2	32.7	38.1	43.6	49.0
72	29.3	29.3	32.6	38.2	43.7	49.2	54.7	24.3	24.3	27.6	33.2	38.7	44.2	49.7
73	29.7	29.7	33.0	38.6	44.2	49.8	55.4	24.7	24.7	28.0	33.6	39.2	44.8	50.4
74	30.0	30.0	33.4	39.1	44.8	50.4	56.1	25.0	25.0	28.4	34.1	39.8	45.4	51.1
75	30.3	30.3	33.8	39.5	45.3	51.1	56.8	25.3	25.3	28.8	34.5	40.3	46.1	51.8
76	30.7	30.7	34.2	40.0	45.8	51.7	57.5	25.7	25.7	29.2	35.0	40.8	46.7	52.5
77	31.0	31.0	34.5	40.5	46.4	52.3	58.2	26.0	26.0	29.5	35.5	41.4	47.3	53.2
78	31.3	31.3	34.9	40.9	46.9	52.9	58.9	26.3	26.3	29.9	35.9	41.9	47.9	53.9
79	31.7	31.7	35.3	41.4	47.4	53.5	59.6	26.7	26.7	30.3	36.4	42.4	48.5	54.6
80	32.0	32.0	35.7	41.8	48.0	54.1	60.3	27.0	27.0	30.7	36.8	43.0	49.1	55.3
81	32.4	32.4	36.1	42.3	48.5	54.7	61.0	27.4	27.4	31.1	37.3	43.5	49.7	56.0
82	32.7	32.7	36.5	42.8	49.1	55.3	61.6	27.7	27.7	31.5	37.8	44.1	50.3	56.6
83	33.0	33.0	36.9	43.2	49.6	56.0	62.3	28.0	28.0	31.9	38.2	44.6	51.0	57.3
84	33.4	33.4	37.2	43.7	50.1	56.6	63.0	28.4	28.4	32.2	38.7	45.1	51.6	58.0
85	33.7	33.7	37.6	44.1	50.7	57.2	63.7	28.7	28.7	32.6	39.1	45.7	52.2	58.7
86	34.0	34.0	38.0	44.6	51.2	57.8	64.4	29.0	29.0	33.0	39.6	46.2	52.8	59.4
87	34.4	34.4	38.4	45.1	51.7	58.4	65.1	29.4	29.4	33.4	40.1	46.7	53.4	60.1
88	34.7	34.7	38.8	45.5	52.3	59.0	65.8	29.7	29.7	33.8	40.5	47.3	54.0	60.8
89	35.1	35.1	39.2	46.0	52.8	59.6	66.5	30.1	30.1	34.2	41.0	47.8	54.6	61.5
90	35.4	35.4	39.5	46.4	53.4	60.3	67.2	30.4	30.4	34.5	41.4	48.4	55.3	62.2
91	35.7	35.7	39.9	46.9	53.9	60.9	67.9	30.7	30.7	34.9	41.9	48.9	55.9	62.9
92	36.1	36.1	40.3	47.4	54.4	61.5	68.5	31.1	31.1	35.3	42.4	49.4	56.5	63.5
93	36.4	36.4	40.7	47.8	55.0	62.1	69.2	31.4	31.4	35.7	42.8	50.0	57.1	64.2
94	36.8	36.8	41.1	48.3	55.5	62.7	69.9	31.7	31.7	36.1	43.3	50.5	57.6	64.9
95	37.1	37.1	41.5	48.7	56.0	63.3	70.6	32.1	32.1	36.5	43.8	51.0	58.2	65.6
96	37.4	37.4	41.8	49.2	56.6	63.9	71.3	32.4	32.4	36.8	44.2	51.6	58.8	66.3
97	37.8	37.8	42.2	49.7	57.1	64.6	72.0	32.8	32.8	37.2	44.7	52.1	59.6	67.0
98	38.1	38.1	42.6	50.1	57.7	65.2	72.7	33.1	33.1	37.6	45.1	52.7	60.2	67.7
99	38.4	38.4	43.0	50.6	58.2	65.8	73.4	33.4	33.4	38.0	45.6	53.2	60.8	68.4
100	38.8	38.8	43.4	51.1	58.7	66.4	74.1	33.8	33.8	38.4	46.1	53.7	61.4	69.1

14 Operation range

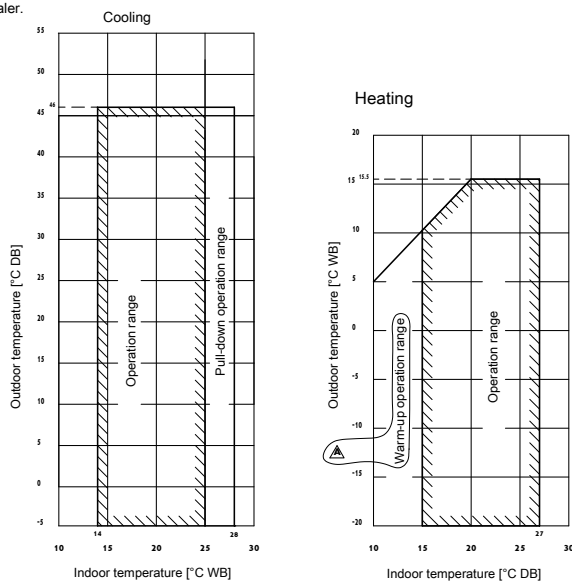
14 - 1 Operation Range

RXYSA-AV1

RXYSA-AY1

Notes

- These figures assume the following operation conditions
Indoor and outdoor units
Equivalent piping length: 5m
Level difference: 0m
- Depending on operation and installation conditions, the indoor unit can change over to freeze-up operation (indoor de-icing).
- To reduce the freeze-up operation (indoor de-icing) frequency, it is recommended to install the outdoor unit in a location not exposed to wind.
- Operation range is valid in case direct expansion indoor units are used.
If other indoor units are used, refer to the documentation of the respective indoor units.
- If the unit is selected to operate at ambient temperatures <-5°C for 5 days or more, with relative humidity levels >95%, it is recommended to apply a Daikin range specifically designed for such application.
For more information, contact your dealer.



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15 Appropriate Indoors

15 - 1 Appropriate Indoors

RXYSA-AV1

RXYSA-AY1

Recommended indoor units for ·RXYSA*A*· outdoor units

· HP	4	5	6
	3xFXSA25 1xFXSA32	4xFXSA32	2xFXSA32 2xFXSA40

For details about the allowed combinations, see the engineering databook.

Appropriate indoor units for ·RXYSA*A*· outdoor units

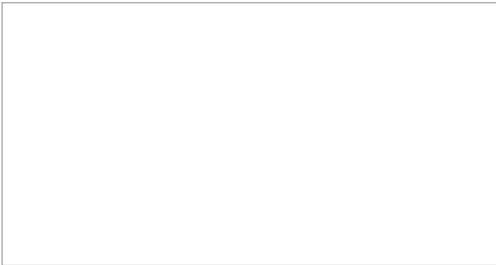
Covered by ·ENER LOT21·

FXFA20-25-32-40-50-63-80-100-125
FXZA15-20-25-32-40-50
FXDA10-15-20-25-32-40-50-63
FXSA15-20-25-32-40-50-63-80-100-125-140
FXAA15-20-25-32-40-50-63
FXHA32-50-63-100
FXUA50-71-100
FXMA50-63-80-100-125
FXKA20-25-32-40-50-63
FXNA20-25-32-40-50-63

Outside the scope of ·ENER LOT21·

EKVDX32-50-80-100 + VAMJ8
EKEXVA50-63-80-100-125-140 + EKEACBVE
CYAS100*80, CYAS150*80, CYAS200*100, CYAS250*140
CYAM100*80, CYAM150*80, CYAM200*100, CYAM250*140
CYAL100*125

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