

VRV 5 S-series Air Conditioning Technical Data RXYS-AAY1



RXYS4A7Y1B
RXYS5A7Y1B
RXYS6A7Y1B

TABLE OF CONTENTS

RXYSA-AY1

1	Features	5
	RXYSA-AY1	5
2	Specifications	6
3	Options	9
4	Combination table	10
5	Capacity tables	11
	Capacity Table Legend	11
	Capacity Correction Factor	12
6	Exchange efficiency	14
7	Dimensional drawings	15
8	Centre of gravity	16
9	Piping diagrams	17
10	Wiring diagrams	18
	Notes & Legend	18
	Wiring Diagrams - Three Phase	19
11	External connection diagrams	20
12	Sound data	21
	Sound Power Spectrum	21
	Sound Pressure Spectrum - Cooling	24
	Sound Pressure Spectrum - Heating	26
	Sound power spectrum at high ESP	28
	Sound level data Quiet mode	29
13	Installation	30
	Installation Method	30
	Refrigerant Pipe Selection	33
14	Operation range	35
15	Appropriate Indoors	36

1 Features

1 - 1 RXYSA-AY1

Lower CO2 equivalent and market-leading flexibility

1

- › 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
- › Offering like-for-like R-410A installation flexibility
- › Specially designed indoor units for R-32, ensuring low sound and maximum efficiency



Inverter

2 Specifications

1 - 1 RXYS-AAY1

Technical Specifications					RXYS4AY1	RXYS5AY1	RXYS6AY1
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	8.4	9.7	10.7
	Max.	6°CWB		kW	14.2 (2)	16.0 (2)	18.0 (2)
Power input - 50Hz	Heating	Nom.	6°CWB	kW	2.69 (2)	3.33 (2)	3.78 (2)
COP at nom. capacity	6°CWB			kW/kW	4.49	4.20	4.10
SCOP					4.9	4.5	
SEER					7.9	7.4	7.3
ηs,c				%	312.5	294.8	289.9
ηs,h				%	193.1	178.8	176.8
Space cooling	A Condition (35°C - 27/19)	EERd			3.4	3.1	3.0
		Pdc		kW	12.1	14.0	15.5
	B Condition (30°C - 27/19)	EERd			5.6	5.1	4.8
		Pdc		kW	8.9	10.3	11.4
	C Condition (25°C - 27/19)	EERd			10.4	9.5	9.3
		Pdc		kW	5.7	6.6	7.3
	D Condition (20°C - 27/19)	EERd			17.5		17.9
		Pdc		kW	4.9	4.5	4.9
Space heating (Average climate)	TBivalent	COPd (declared COP)			2.7	2.5	2.4
		Pdh (declared heating cap) kW			8.4	9.7	10.7
		Tbiv (bivalent temperature) °C				-10	
	TOL	COPd (declared COP)			2.7	2.5	2.4
		Pdh (declared heating cap) kW			8.4	9.7	10.7
		Tol (temperature operating limit) °C				-10	
	A Condition (-7°C)	COPd (declared COP)			3.3	2.8	
		Pdh (declared heating cap) kW			7.4	8.5	9.5
	B Condition (2°C)	COPd (declared COP)			4.7	4.3	4.1
		Pdh (declared heating cap) kW			4.5	5.2	5.8
	C Condition (7°C)	COPd (declared COP)			6.8	6.5	
		Pdh (declared heating cap) kW			3.3		3.7
Capacity range	PED	Category			4	5	6
		Most critical part				Category III Accumulator	
PED	Most critical part	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	
Packing 2	Weight		kg			4	
	Material					Wood	
Packing 3	Weight		kg			6	
	Material					Plastic	
Casing	Weight		kg			1	
	Colour					Ivory white	
Heat exchanger	Material					Painted galvanized steel plate	
	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

2 Specifications

1 - 1 RXYSA-AY1

Technical Specifications					RXYSA4AY1	RXYSA5AY1	RXYSA6AY1
Fan	Quantity					1	
	External static pressure	Max.	Pa			45	
Fan motor	Quantity					1	
	Type					DC motor	
	Output		W			234	
Compressor	Quantity					1	
	Type					Hermetically sealed swing compressor	
	Crankcase heater		W			33	
Operation range	Cooling	Min.	°CDB			-5	
		Max.	°CDB			46	
	Heating	Min.	°CWB			-20	
		Max.	°CWB			16	
Sound power level	Cooling	Nom.	dBA		67.0 (4)	68.1 (4)	69.0 (4)
	Heating	According to ENER LOT21	dBA		57.0 (5)	59.0 (5)	60.0 (5)
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		TCO2Eq			2.30	
	Charge		kg			3.40	
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	Cooling	PCK	kW		0.000	
		Heating	PCK	kW		0.031	
	Off mode	Cooling	POFF	kW		0.038	
		Heating	POFF	kW		0.013	
	Standby mode	Cooling	PSB	kW		0.038	
		Heating	PSB	kW		0.013	
	Thermo-stat-off mode	Cooling	PTO	kW		0.006	
		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	
		07				High pressure switch (automatic)	
Safety devices	Item	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					RXYSA4AY1	RXYSA5AY1	RXYSA6AY1
Power supply	Name					Y1	
	Phase					3N~	
	Frequency		Hz			50	
	Voltage		V			380-415	
Power supply intake						Both indoor and outdoor unit	

2 Specifications

1 - 1 RXYSA-AY1

Electrical Specifications				RXYSA4AY1	RXYSA5AY1	RXYSA6AY1
Voltage range	Min.		%	-10		
	Max.		%	10		
Current	Nominal running current (RLA)	Cooling	A (2)	5.4 (8)	6.8 (8)	7.6 (8)
Current - 50Hz	Nominal running current (RLA)	Combina- tion A	Cooling A	-		
		Combina- tion B	Cooling A	-		
	Starting current (MSC) - remark			See note 13		
	Zmax List			No requirements		
	Minimum circuit amps (MCA)			13.6 (9)		
	Maximum fuse amps (MFA)			16 (10)		
	Total overcurrent amps (TOCA)			13.6 (11)		
	Full load amps (FLA)			1.3 (12)		
Power Performance	Power factor	Combina- tion B	35°C ISO - Full load	-		
			46°C ISO - Full load	-		
Wiring connections - 50Hz	For power supply	Quantity		5G		
	For connection with indoor	Quantity		2		
		Remark		F1,F2		

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

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

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

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

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

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

3 Options

3 - 1 Options

RXYSA-AV1

RXYSA-AY1

3

VRV5-S Heat pump

Option list

Nr.	Item	RXYSA4~6A7V1B	RXYSA4~6A7Y1B
1	Refnet header	KHRQ22M29H	KHRQ22M29H
2	Refnet joint	KHRQ22M20TA	KHRQ22M20TA
3a	Cool/heat selector (switch)	KRC19-26	KRC19-26
3b	Cool/heat selector (fixing box)	KJB111A	KJB111A
4	VRV configurator	EKPCCAB4	EKPCCAB4
5	Bottom plate heater	EKBPH250D	EKBPH250D

Notes

- 1 All options are kits
- 2 Cool/Heat selector PCB is standard in unit.
- 3 To mount option ·3a·, option ·3b· is required.

3D127872A

4 Combination table

4 - 1 Combination Table

RXYSA-AV1

RXYSA-AY1

VRV5-S Heat pump

Indoor unit combination restrictions

Combination table	RXYSA4~6A7V1B	RXYSA4~6A7Y1B
·VRV* R32 DX· indoor unit	O	O
·RA DX· indoor unit	X	X
Hydrobox unit	X	X
Air handling unit (AHU)	X	X

O : Allowed

X : Not allowed

3D127866

RXYSA-AV1

RXYSA-AY1

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

Units in scope: ·FXZA15A· and ·FXAA15A·.

- In case the system contains these indoor units and the total connection ratio (·CR·) ≤ ·100·%: no special restrictions.
Follow the restrictions that apply to regular ·VRV DX· indoor units.
- In case the system contains these indoor units and the total connection ratio (·CR·) > ·100·%: special restrictions apply.
 - 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.
 - 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 ·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.

4D127900

5 Capacity tables

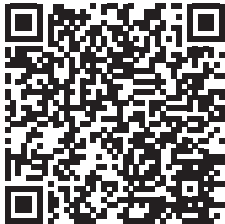
5 - 1 Capacity Table Legend

5

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:

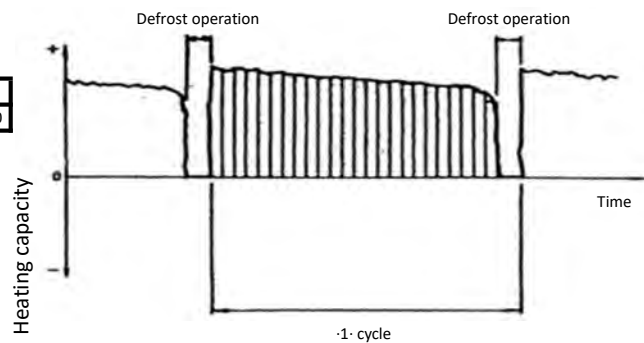
Formula

- 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.

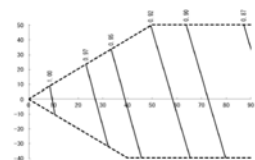
4D127879

RXYSA4AV1

RXYSA4AY1

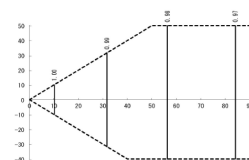
RXYSA4A7(V/Y)1B

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				

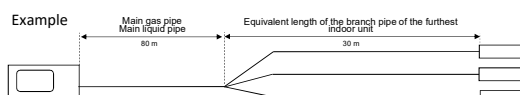
- Equivalent length of the main pipe

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

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

4D127880

5 Capacity tables

5 - 2 Capacity Correction Factor

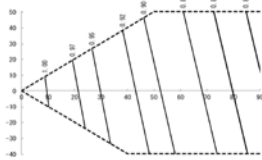
5

RXYSA5AV1

RXYSA5AY1

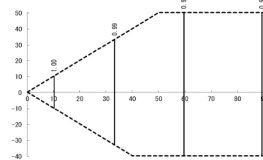
RXYSA5A7(V/Y)1B

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

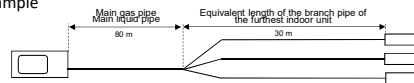
5. Equivalent length of the main pipe

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

Choose the correction factor from the following table.

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

Example



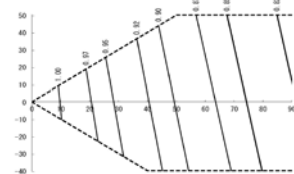
4D127880

RXYSA6AV1

RXYSA6AY1

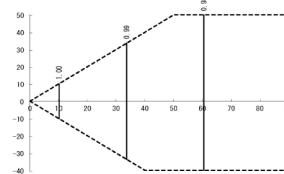
RXYSA6A7(V/Y)1B

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.

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
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

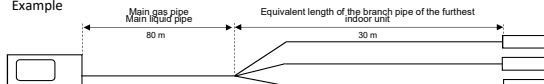
5. Equivalent length of the main pipe

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

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

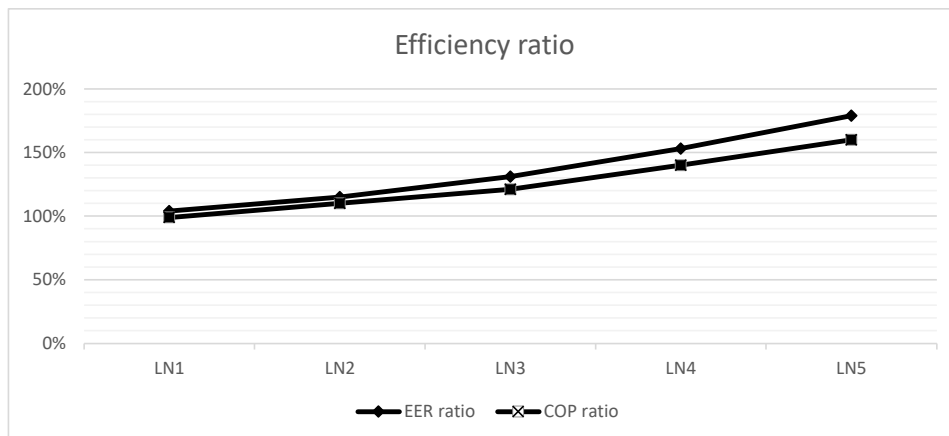
RXYSA-AV1

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·

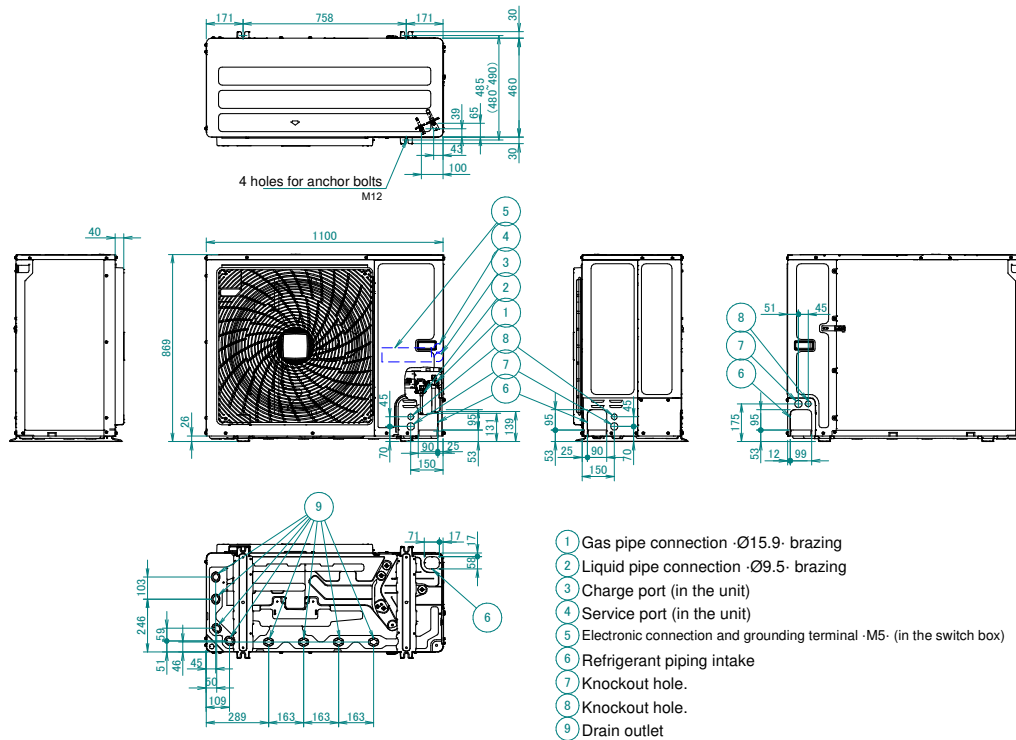
	Capacity ratio
LN1	90%
LN2	75%
LN3	60%
LN4	45%
LN5	30%

4D127867

7 Dimensional drawings

7 - 1 Dimensional Drawings

RXYSA-AV1
RXYSA-AY1



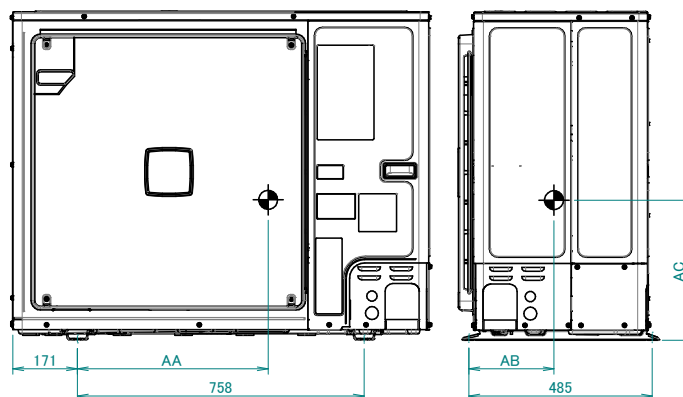
3D127871A

8 Centre of gravity

8 - 1 Centre of Gravity

RXYSA-AV1

RXYSA-AY1



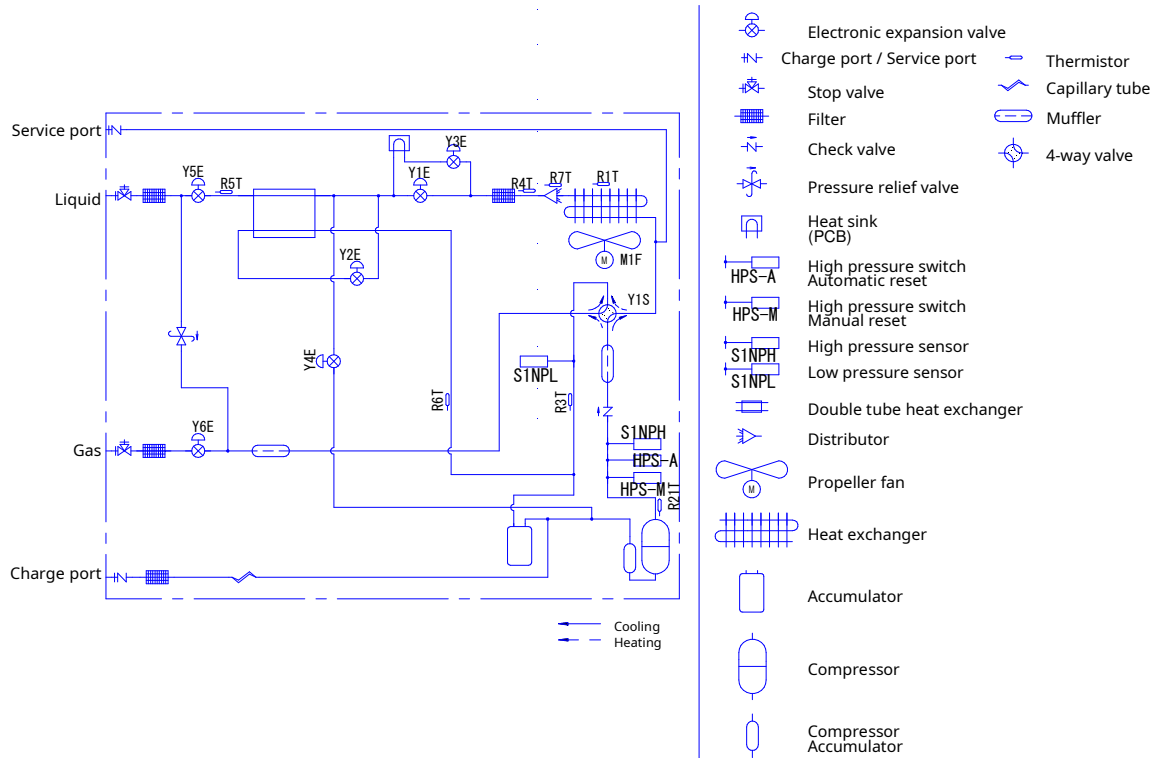
Model	AA	AB	AC
RZAG71N7V1B	520.3	238.7	357.8
RZAG71N7Y1B	525.9	224.7	359.8
RZAG100N7V1B	499.7	239.3	367.6
RZAG100N7Y1B	511.2	223.5	362.5
RZAG125/140N7V1B	486.3	229.2	371.8
RZAG125/140N7Y1B	493.4	215.8	372.2
RXYSA4/5/6A7V1B	530.4	249.9	389.0
RXYSA4/5/6A7Y1B			

4D120933B

9 Piping diagrams

9 - 1 Piping Diagrams

RXYSA-AV1
RXYSA-AY1



3D127852

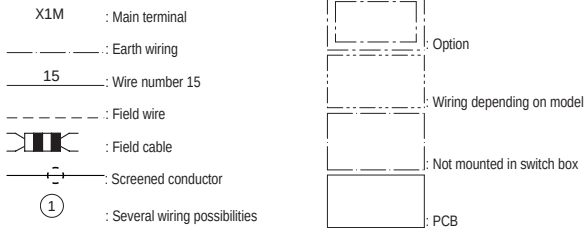
10 Wiring diagrams

10 - 1 Notes & Legend

RXYSA-AY1

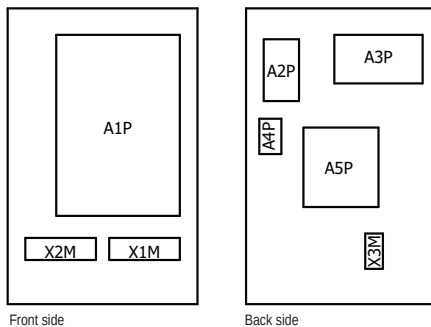
NOTES to go through before starting the unit

1. Symbols



- 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

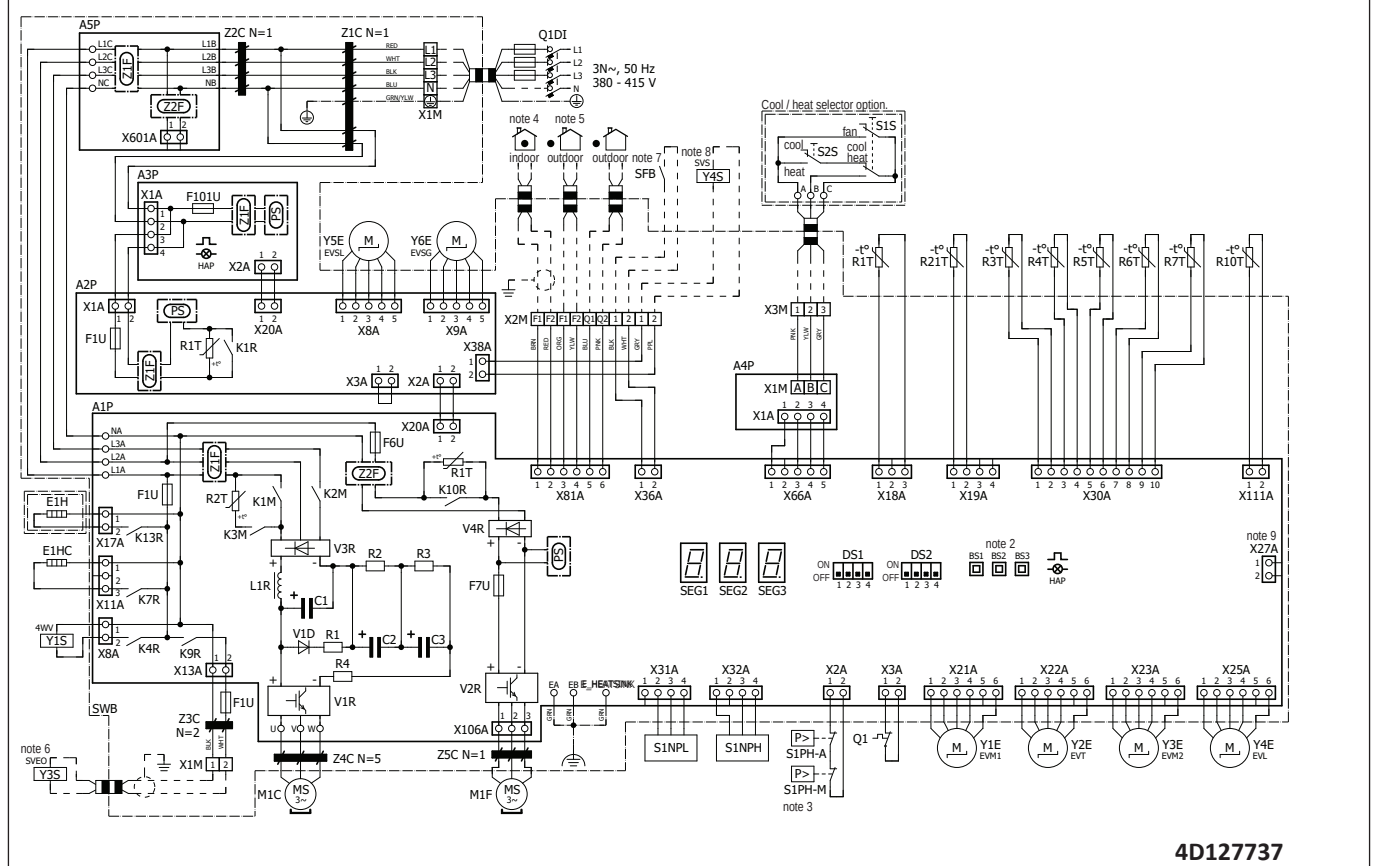
Part n°	Description	Part n°	Description
A1P	main PCB	S1NPL	low pressure sensor
A2P	sub PCB	S1PH*	high pressure switch
A3P	back up PCB	S1S	* air control switch
A4P	cool / heat selector PCB	S2S	* cool / heat switch
A5P	noise filter PCB	SEG*	7-segment display
BS* (A1P)	push button switch	SFB	# mechanical ventilation error input
C* (A1P)	capacitors	V*D	diode
DS* (A1P)	dipswitch	V1R, V2R (A1P)	IGBT power module
E1H	* bottom plate heater	V3R, V4R (A1P)	diode module
E1HC	crank case heater	X*A	PCB connector
F1U (A1P)	fuse T 6.3 A 250 V	X*M	terminal strip
F1U (A2P)	fuse T 3.15 A 250 V	X*Y	connector
F1U	fuse T 1.0 A 250 V	Y1E	electronic exp. valve (main - EVM1)
F6U (A1P)	fuse T 6.3 A 250 V	Y2E	electronic exp. valve (EVT)
F7U (A1P)	fuse T 5 A 250 V	Y3E	electronic exp. valve (main - EVM2)
F101U (A3P)	fuse T 2.0 A 250 V	Y4E	electronic exp. valve (EVL)
HAP (A1P/A3P)	running LED (service monitor-green)	Y5E	electronic exp. valve (EVSL)
K*M (A1P)	contactor on PCB	Y6E	electronic exp. valve (EVSG)
K*R (A*P)	relay on PCB	Y1S	solenoid valve (4-way valve)
L1R (A1P)	reactor	Y3S	# error operation output (SVEO)
M1C	motor (compressor)	Y4S	# leak sensor output (SVS)
M1F	motor (fan)	Z*C	noise filter (ferrite core)
PS* (A*P)	switching power supply	Z*F (A*P)	noise filter
Q1	overload switch		
Q1DI	# earth leakage circuit breaker		
R* (A1P)	resistor		
R1T	thermistor (ambient)		
R3T	thermistor (suction)		
R4T	thermistor (liquid)		
R5T	thermistor (subcool)		
R6T	thermistor (superheat)		
R7T	thermistor (heat exchanger)		
R10T	thermistor (fin)		
R21T	thermistor (discharge)		
R*T (A*P)	PTC thermistor		
S1NPH	high pressure sensor		

* : optional # : field supply

4D127737

10 - 2 Wiring Diagrams - Three Phase

10



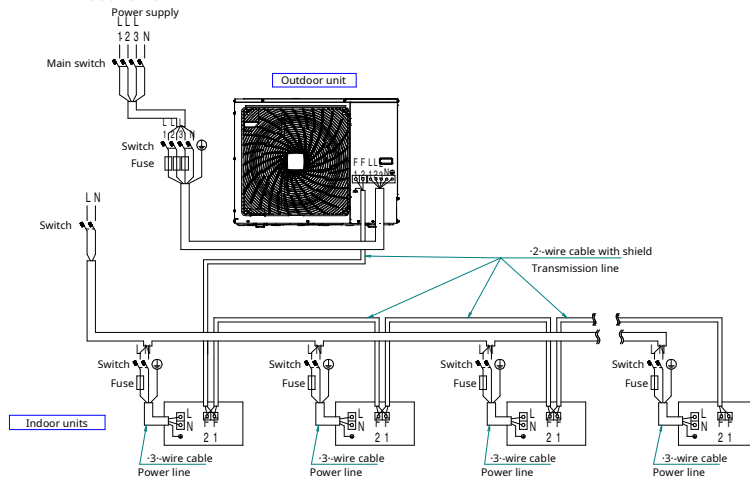
11 External connection diagrams

11 - 1 External Connection Diagrams

RXYSA-AY1

External connection diagram

VRV indoor unit



Notes

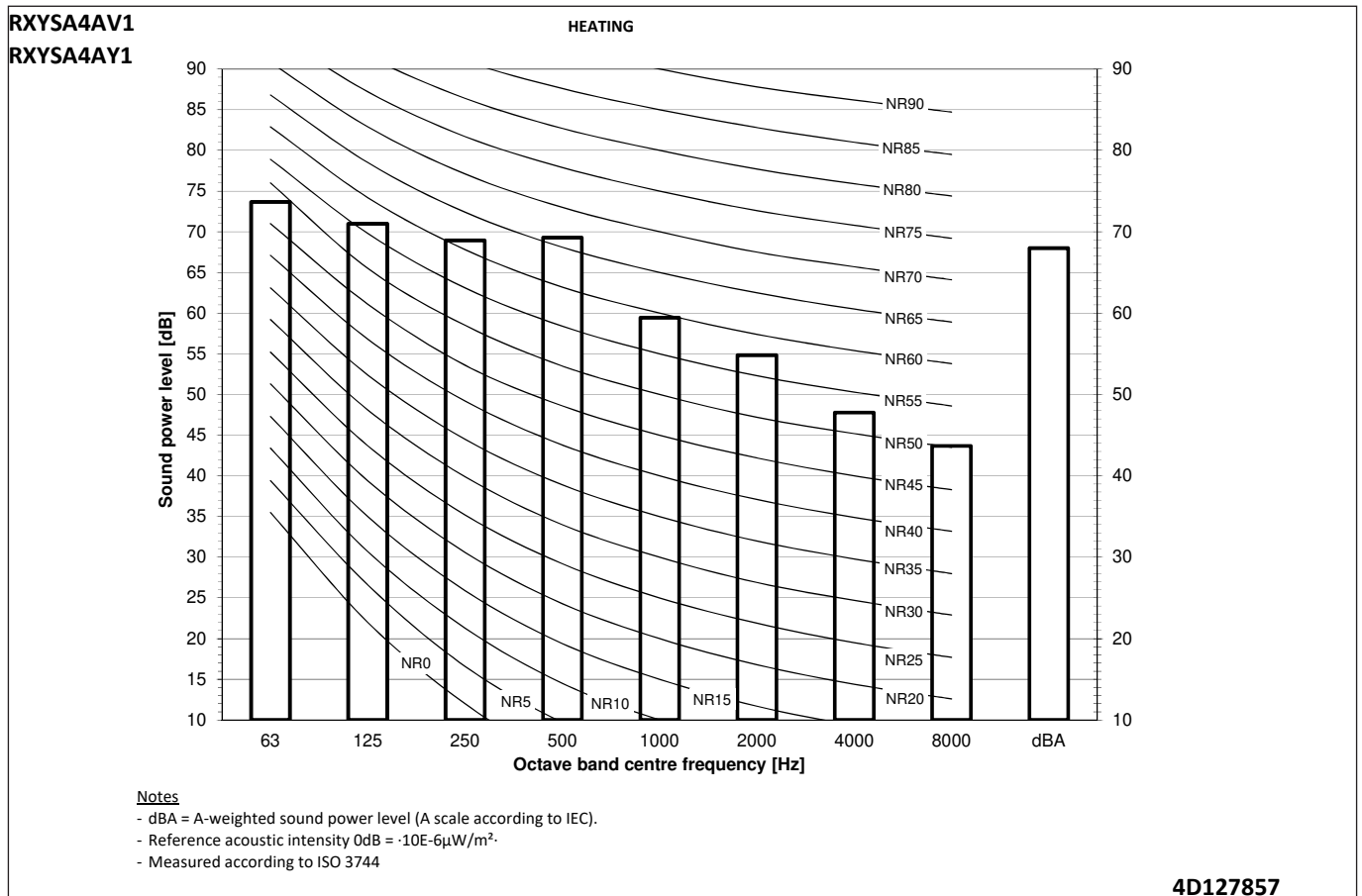
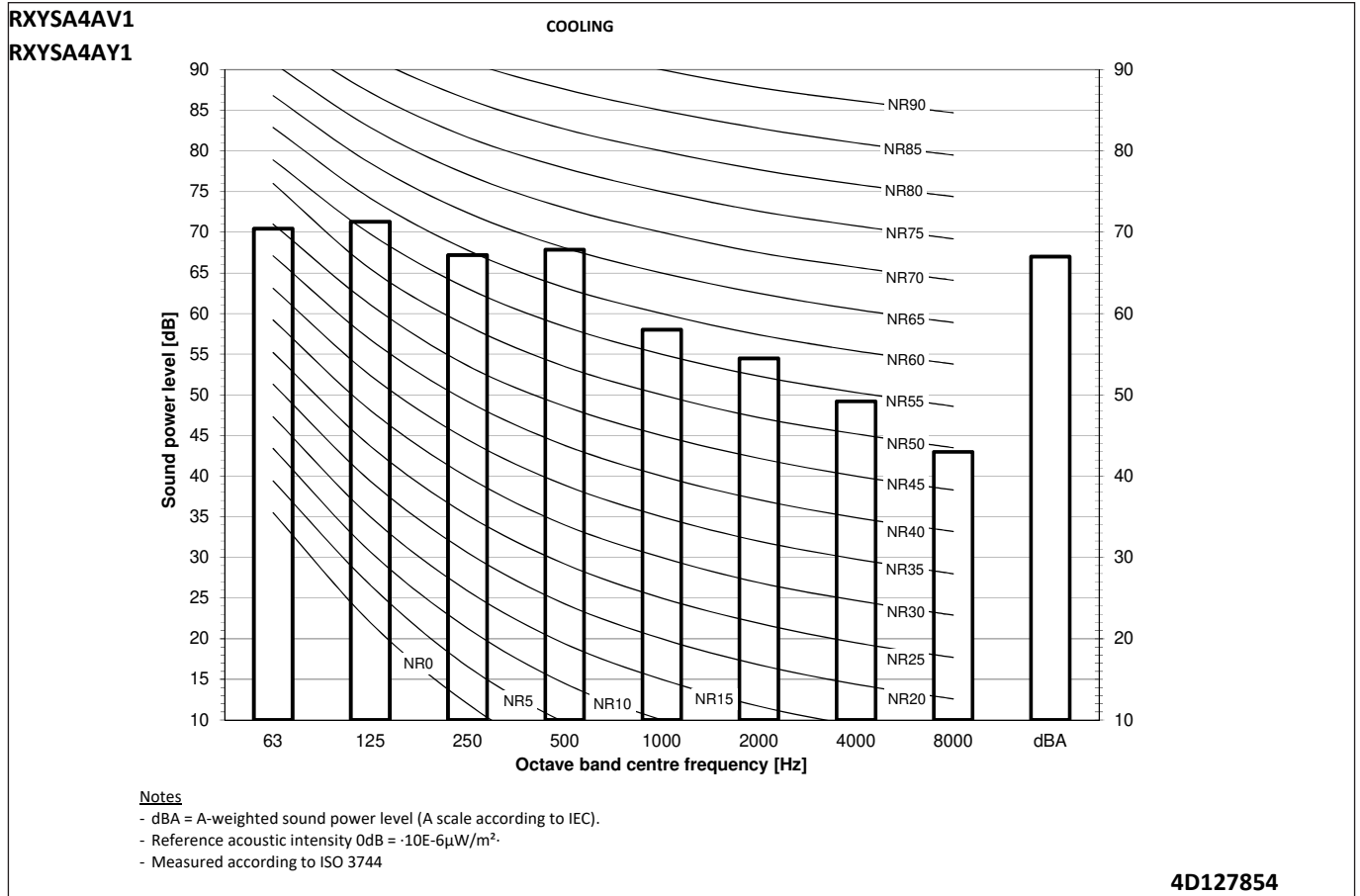
1. All wiring, components and materials to be procured on-site must comply with the applicable legislation.
2. Use copper conductors only.
3. For more details, refer to the wiring diagram of the unit.
4. Install a circuit breaker for safety.
5. All field wiring and components must be provided by an authorised 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. 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 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.

2D127870

12 Sound data

12 - 1 Sound Power Spectrum

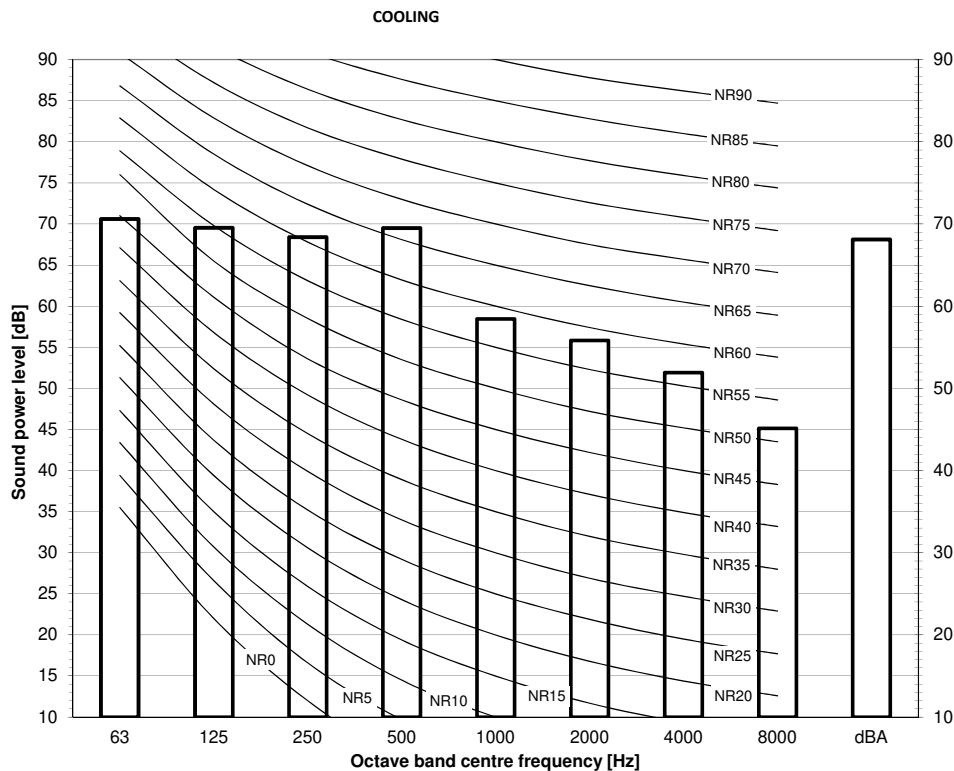
12



12 Sound data

12 - 1 Sound Power Spectrum

RXYSA5AV1
RXYSA5AY1

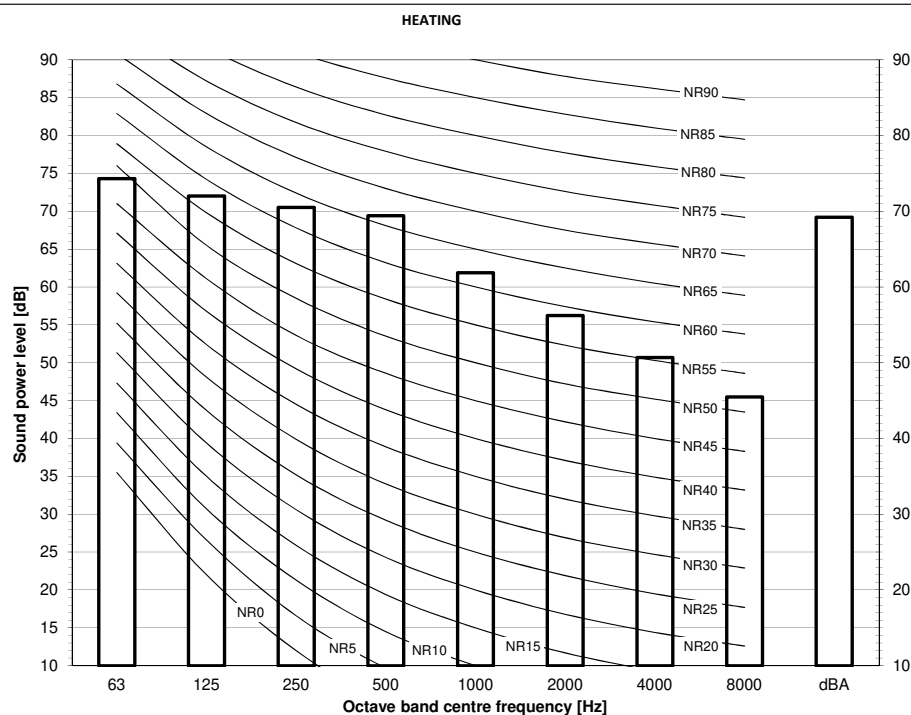


Notes

- 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

RXYSA5AV1
RXYSA5AY1



Notes

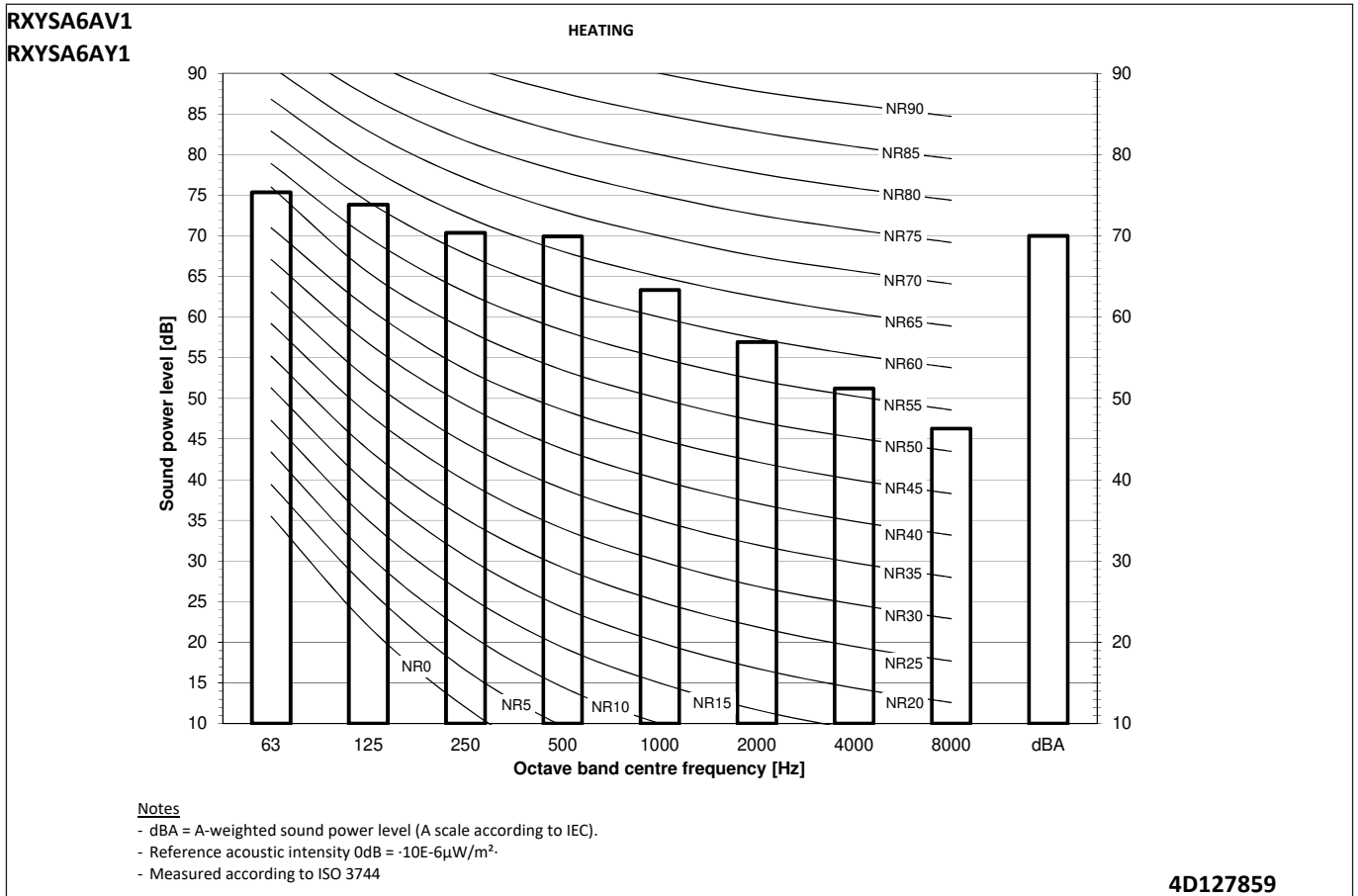
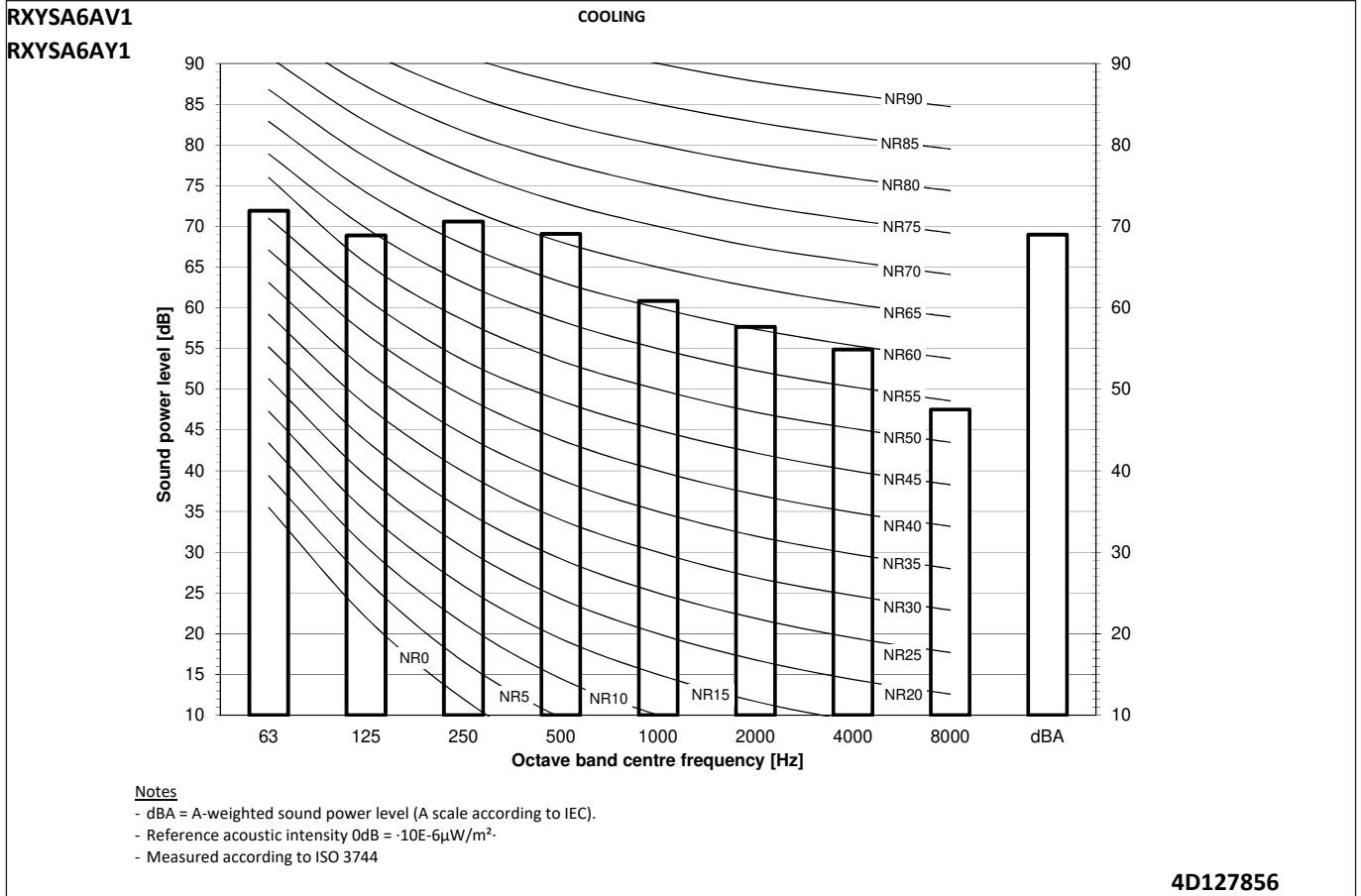
- dBA = A-weighted sound power level (A scale according to IEC).
- Reference acoustic intensity 0dB = $-10E-6\mu W/m^2$.
- Measured according to ISO 3744

4D127858

12 Sound data

12 - 1 Sound Power Spectrum

12

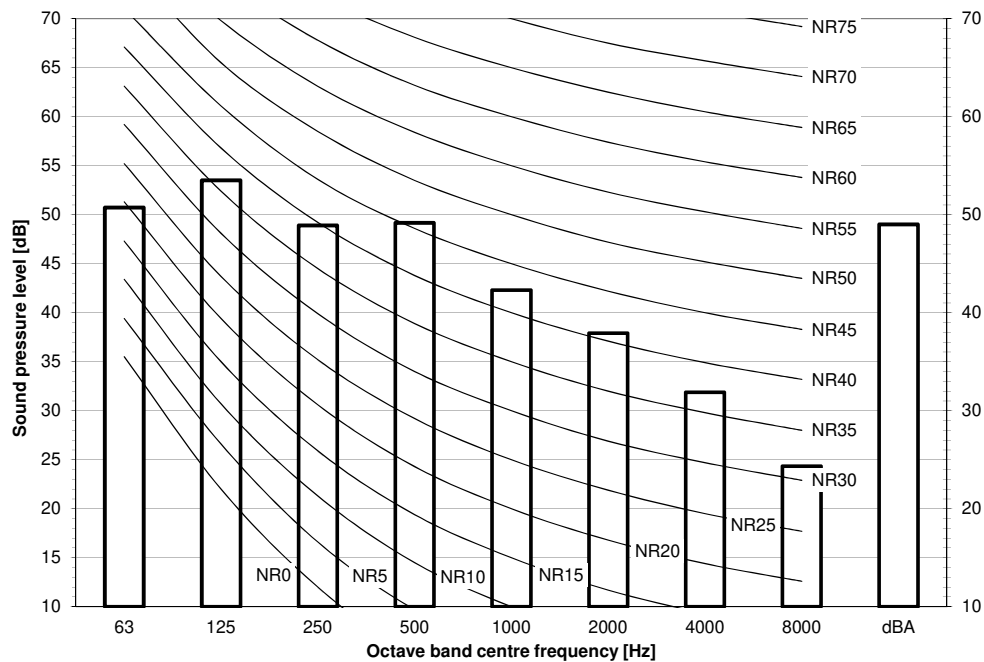


12 Sound data

12 - 2 Sound Pressure Spectrum - Cooling

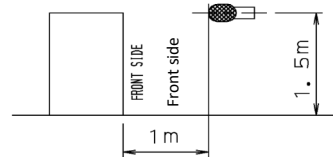
RXYSA4AV1

RXYSA4AY1



Notes

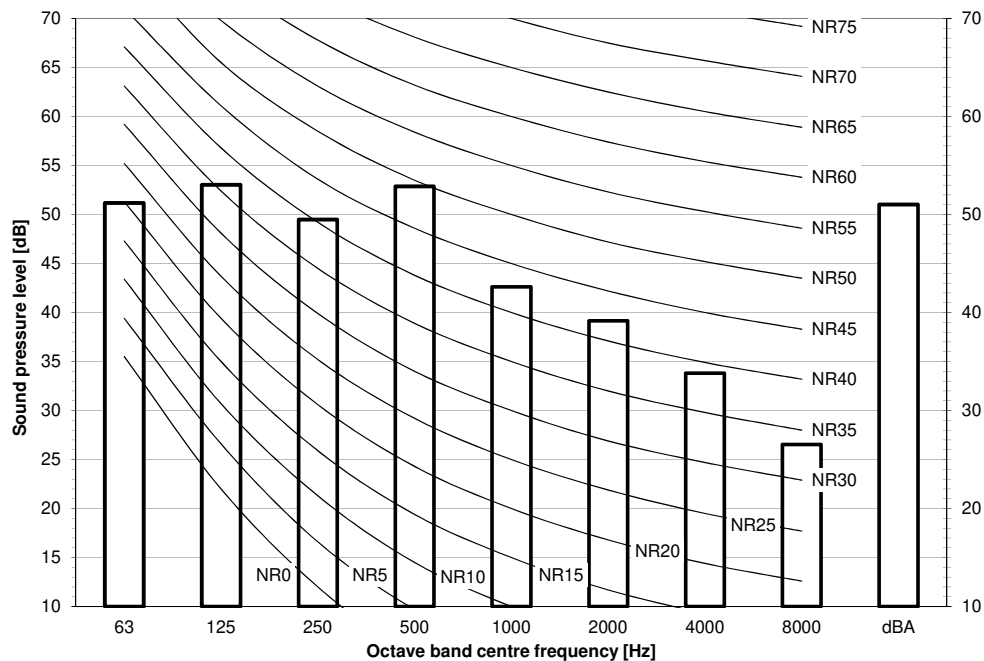
- Data is valid at free field condition.
- Data is valid at nominal operation condition.
- dBA = A-weighted sound pressure level (A scale according to IEC).
- Reference acoustic pressure 0 dB = 20 μ Pa



4D127860

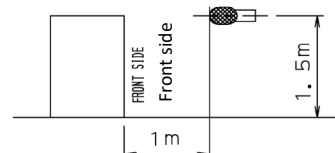
RXYSA5AV1

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



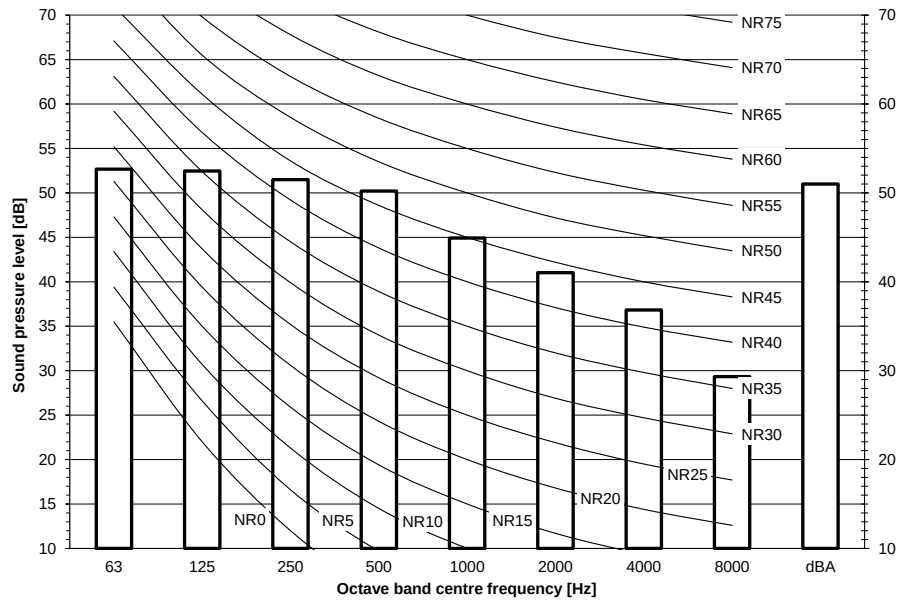
4D127861

12 Sound data

12 - 2 Sound Pressure Spectrum - Cooling

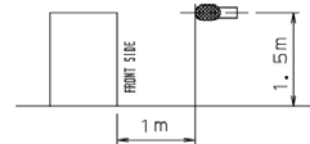
RXYSA6AV1

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



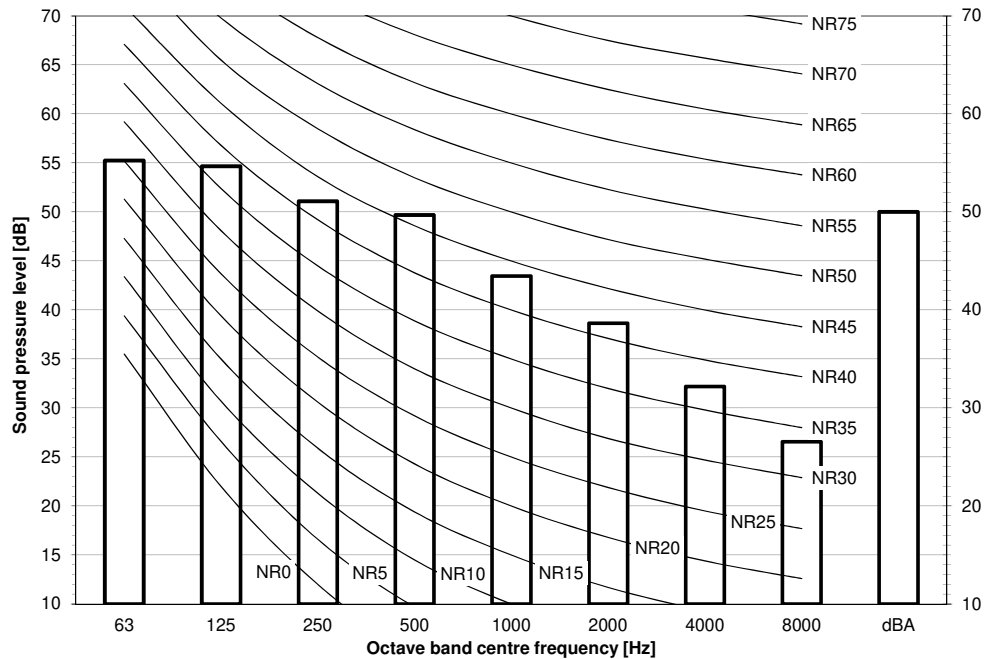
4D127862

12 Sound data

12 - 3 Sound Pressure Spectrum - Heating

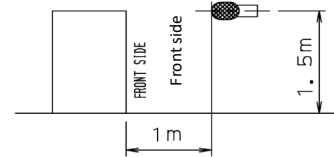
RXYS4AV1

RXYS4AY1



Notes

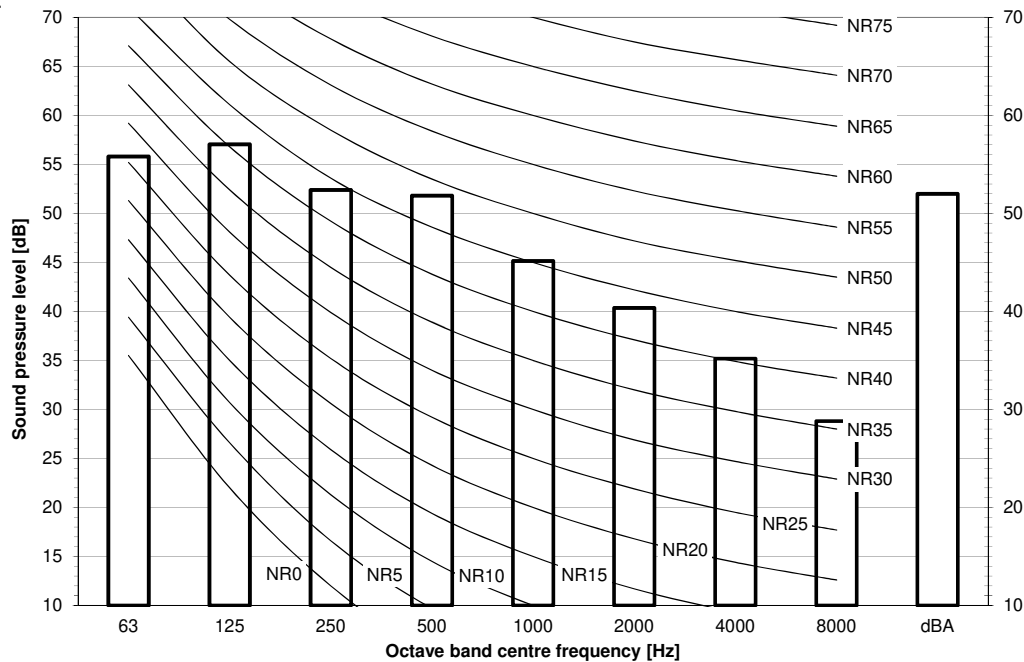
- Data is valid at free field condition.
- Data is valid at nominal operation condition.
- dBA = A-weighted sound pressure level (A scale according to IEC).
- Reference acoustic pressure 0 dB = 20 μ Pa



4D127863

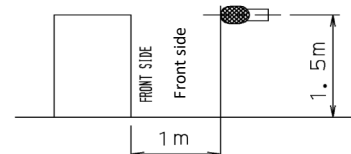
RXYS5AV1

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



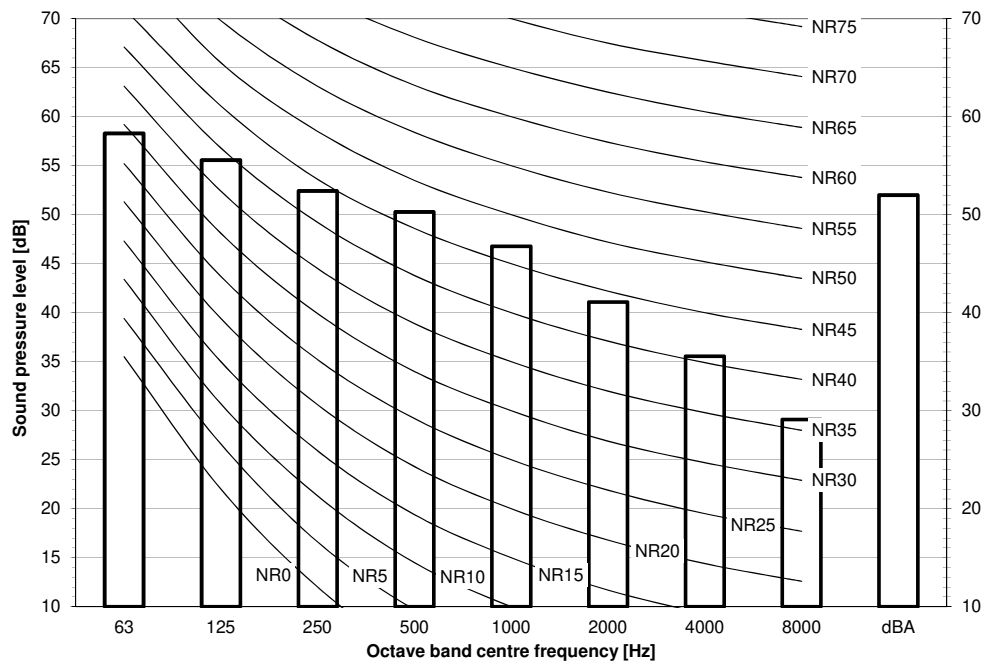
4D127864

12 Sound data

12 - 3 Sound Pressure Spectrum - Heating

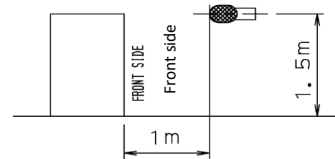
RXYSA6AV1

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 power spectrum at high ESP

RXYSA-AV1

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

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

4D127882

12 Sound data

12 - 5 Sound level data Quiet mode

12

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·

4D127868

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>Hu		≥ 250		≥ 750	≥ 1000	≤ 500	
		1/2Hu>Hb≤Hu		≥ 250		≥ 1000	≥ 1000	≤ 500	
		Hb>Hu				⊘			
		Hd≤1/2Hu		≥ 100		≥ 1000	≥ 1000		≤ 500
		1/2Hu<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≤1/2Hu		≥ 250		≥ 1500			
		1/2Hu<Hd≤Hu		≥ 300		≥ 1500			
	B,D,E	Hb>Hu		≥ 300		≥ 1000	≥ 1000	≤ 500	
		1/2Hu<Hb≤Hu		≥ 300		≥ 1250	≥ 1000	≤ 500	
		Hb>Hu				⊘			
		Hd≤1/2Hu		≥ 250		≥ 1500	≥ 1000		≤ 500
		1/2Hu<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

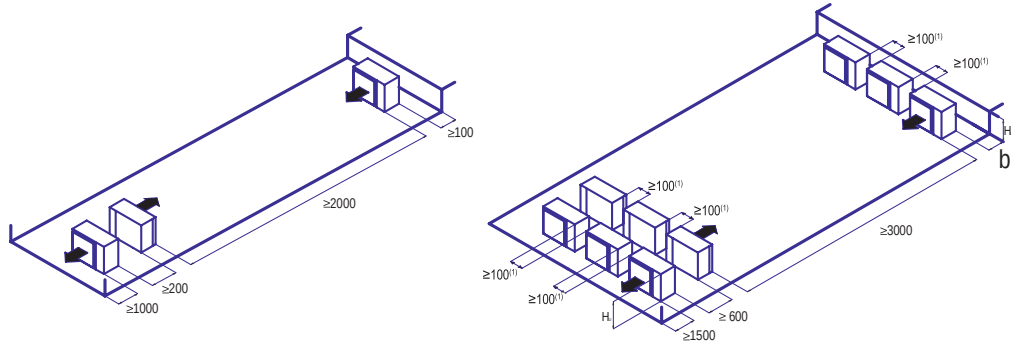
RXYSA-AY1

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

1D128513

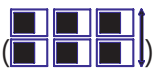
13 Installation

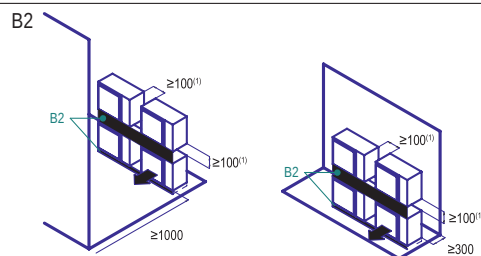
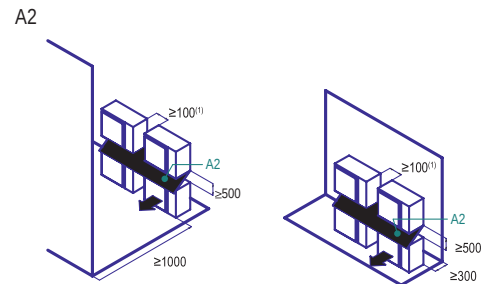
13 - 1 Installation Method

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

RXYS-AV1

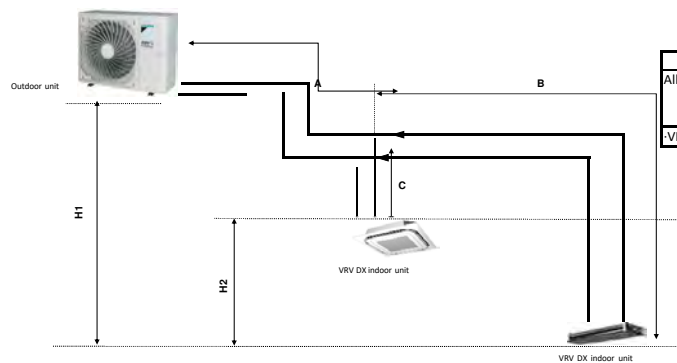
RXYS-AAY1

VRV5-S Heat pump
Piping restrictions ·1/2·

		Maximum piping length		Maximum height difference		Total piping length
		Longest pipe (A+B) Actual / (Equivalent)	After first branch (B, C) Actual	Indoor-to-outdoor (H1) Outdoor above indoor / (indoor above outdoor)	Indoor-to-indoor (H2)	
		See note ·1·				
VRV DX indoor unit	RXYSA4~6A7V1B RXYSA4~6A7Y1B	120/(150)m	40m	50/(40)m	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·.



System pattern	Allowed capacity
Allowed connection ratio (CR)	VRV DX indoor unit
·VRV DX· indoor units only	50~130%

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.

4D127886

RXYS-AV1

RXYS-AAY1

VRV5-S
Heat pump
Piping restrictions ·2/2·

System pattern	Allowed capacity
Allowed connection ratio (CR)	VRV DX indoor unit
·VRV DX· indoor units only	50~130%

4D127886

13 Installation

13 - 2 Refrigerant Pipe Selection

RXYSA-AV1 Refrigerant charge restrictions

RXYSA-AY1

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 smallest room in order to derive the total refrigerant charge limit in the system.

Step ·2·

Depending on the installation height of the indoor units, different values may be used in the next step IF:

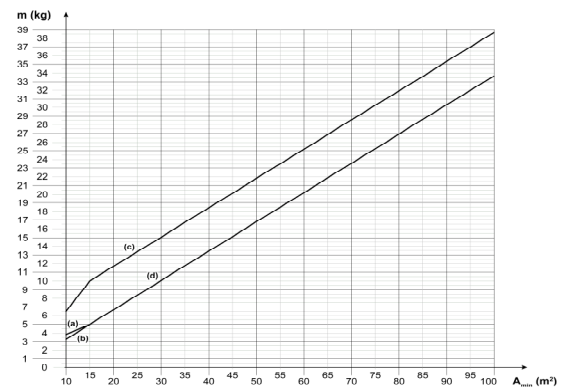
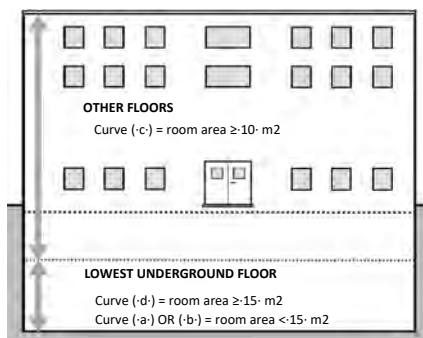
- Installation height is $\cdot 1.8 \leq x < 2.2 \cdot$ m, then use the charge limit of the graph for wall-mounted units.
- Installation height is $\geq 2.2 \cdot$ m, then use the charge limit of the graph for ceiling-mounted units.

Step ·3·

Use the graph or table to determine the total refrigerant charge limit in the system.

In case there are any underground floors in the building, there are special requirements for the maximum allowable charge.

- The maximum allowable charge is determined by using graph (·a·), (·b·) or (·d·) for room with the smallest area on the lowest underground floor.
- The maximum allowable charge has to be assessed for the room with the smallest room area in both the lowest underground floor and the other floors.
- The lowest maximum allowable charge of both MUST be used.



- (a) Ceiling-mounted
- (b) Wall-mounted
- (c) Smallest room not in underground floor
- (d) Smallest room in underground floor

4D128599

14 Operation range

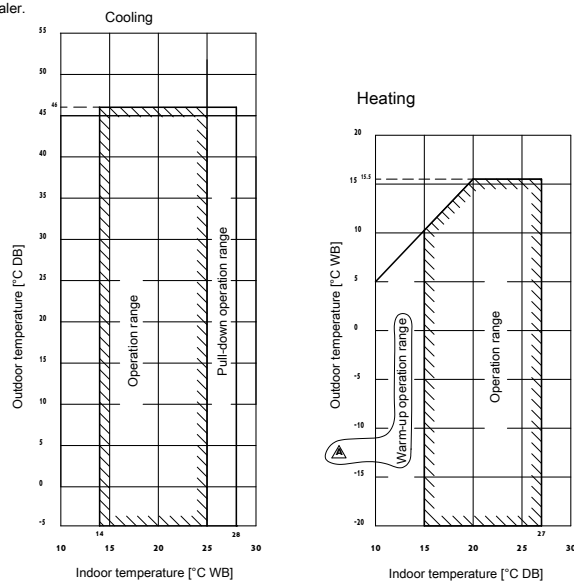
14 - 1 Operation Range

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 $< -5^{\circ}\text{C}$ 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.



3D094664A

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

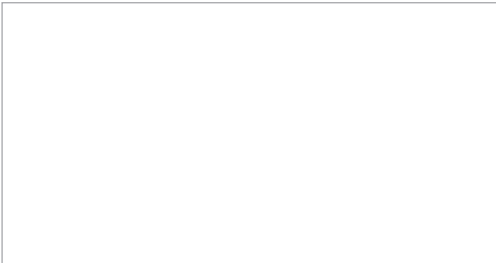
FXDA10-15-20-25-32-40-50-63

FXSA15-20-25-32-40-50-63-80-100-125-140

FXAA15-20-25-32-40-50-63

4D127887

Daikin Europe N.V. Naamloze Vennootschap · Zandvoordestraat 300 · 8400 Oostende · Belgium · BE 0412 120 336 · RPR Oostende (Responsible Editor)



EEDEN21

06/2021



ok



Daikin Europe N.V. participates in the Eurovent Certified Performance programme for Fan Coil Units and Variable Refrigerant Flow systems. Check ongoing validity of certificate