

Air Conditioning Technical Data

RXYSQ-TY1



- > RXYSQ4T7Y1B
- > RXYSQ5T7Y1B
- > RXYSQ6T7Y1B
- > RXYSQ8TMY1B
- > RXYSQ10TMY1B
- > RXYSQ12TMY1B

TABLE OF CONTENTS

RXYSQ-TY1

1	Features	2
2	Specifications	3
	Technical Specifications	3
	Electrical Specifications	4
3	Options	6
4	Combination table	7
5	Capacity tables	9
	Capacity Table Legend	9
	Integrated Heating Capacity Correction Factor	10
	Capacity Correction Factor	11
6	Dimensional drawings	13
7	Centre of gravity	15
8	Piping diagrams	18
9	Wiring diagrams	20
	Wiring Diagrams - Three Phase	20
10	External connection diagrams	23
11	Sound data	24
	Sound Power Spectrum	24
	Sound Pressure Spectrum	27
12	Installation	30
	Installation Method	30
	Refrigerant Pipe Selection	36
13	Operation range	38

1 Features

Space saving solution without compromising on efficiency

- Space saving trunk design for flexible installation
- Covers all thermal needs of a building via a single point of contact: accurate temperature control, ventilation, air handling units and Biddle air curtains
- Wide range of indoor units: either connect VRV or stylish indoor units such as Daikin Emura, Nexura ...
- Wide range of units (4 to 12HP) suitable for projects up to 200m² with space limitations
- Incorporates VRV IV standards & technologies: Variable Refrigerant Temperature and full inverter compressors
- Customize your VRV for best seasonal efficiency & comfort with the weather dependant Variable Refrigerant Temperature function. Increased seasonal efficiency with up to 28%. No more cold draft by supply of high outblow temperatures
- VRV configurator software for the fastest and most accurate commissioning, configuration and customisation
- 3 steps in night quiet mode: step 1: 47dBA, step 2: 44 dBA, step 3: 41 dBA
- Possibility to limit peak power consumption between 30 and 80%, for example during periods with high power demand
- Connectable to all VRV control systems
- Keep your system in top condition via our i-Net service: 24/7 monitoring for maximum efficiency, extended lifetime, immediate service support thanks to failure prediction and a clear understanding of operability and usage



Inverter

2 Specifications

2-1 Technical Specifications				RXYSQ4TY1	RXYSQ5TY1	RXYSQ6TY1	RXYSQ8TY1	RXYSQ10TY1	RXYSQ12TY1	
Capacity range			HP	4	5	6	8	10	12	
Cooling capacity	Nom.	35°C AHRI	kW	-			22.4 (1)	28.0	33.5	
			Btu/h	-			76,400	95,500	114,300	
		35°CDB	kW	12.1 (1)	14.0 (1)	15.5 (1)	-			
			Btu/h	-			58,000	68,200	81,850.0	
		46°C AHRI	kW	-			17.0	20.0	24.0	
			Btu/h	-			58,000	68,200	81,850.0	
		48°C AHRI	kW	-			15.0	17.0	20.0	
			Btu/h	-			51,150	58,000	68,200.0	
		Eurovent	kW	-			22.4	28.0	33.5	
			Btu/h	-			76,400.0	95,500	114,300.0	
Heating capacity	Nom.	6°CWB	kW	12.1 (2)	14.0 (2)	15.5 (2)	22.4 (2)	28.0 (2)	33.5 (2)	
	Max.	6°CWB	kW	14.2 (2)	16.0 (2)	18.0 (2)	25.0 (2)	31.5 (2)	37.5 (2)	
Power input - 50Hz	Cooling	Nom.	35°C AHRI	kW	-			6.78	8.54	10.2
			35°CDB	kW	3.03 (1)	3.73 (1)	4.56 (1)	-		
			46°C AHRI	kW	-			5.80	7.02	8.60
			48°C AHRI	kW	-			5.34	6.80	7.97
			Eurovent	kW	-			6.12	8.24	10.2
			Heating	Nom.	6°CWB	kW	2.68 (2)	3.27 (2)	3.97 (2)	5.20 (2)
	Max.	6°CWB	kW	3.43 (2)	4.09 (2)	5.25 (2)	6.22 (2)	8.33 (2)	10.2 (2)	
	Capacity control	Method			Inverter controlled					
	EER at nom. capacity	35°C AHRI	Btu/h		-			11.3	11.2	
			kW/kW		4.00 (1)	3.75 (1)	3.40 (1)	3.30 (1)	3.28 (1)	
35°CDB		kW/kW		-						
46°C AHRI		Btu/h		-			10.0	9.72	9.52	
		kW/kW		-			2.93	2.85	2.79	
48°C AHRI		Btu/h		-			9.58	8.53	8.56	
		kW/kW		-			2.81	2.50	2.51	
Eurovent		Btu/h		-			11.60	11.3		
		kW/kW		-			3.66	3.40	3.30	
ESEER - Automatic				7.89	7.49	6.73	6.72	6.41	6.18	
ESEER - Standard				6.18	5.77	5.23	5.63	5.02	4.87	
COP at nom. capacity	6°CWB	Btu/h		-			12.5	-		
		kW/kW		4.52 (2)	4.28 (2)	3.90 (2)	4.31 (2)	4.24 (2)	4.09 (2)	
COP at max. capacity	6°CWB	kW/kW		4.14 (2)	3.91 (2)	3.43 (2)	4.02 (2)	3.78 (2)	3.66 (2)	
Dimensions	Unit	Height	mm	1,345			1,430	1,615		
		Width	mm	900			940			
		Depth	mm	320			460			
	Packed unit	Height	mm	1,524			1,615	1,745		
		Width	mm	980			1,030	1,015		
		Depth	mm	420			575			
Maximum number of connectable indoor units				64 (3)						
Indoor index connection	Min.	50			62.5	70	100	125	150	
	Nom.	-								
	Max.	130			162.5	182	260	325	390	
Weight	Unit	kg		104			144	175	180	
	Packed unit	kg		114			158	191	196	
Packing	Material			Carton						
	Weight		kg	3.9			5.6	8.2		
Packing 2	Material			Wood						
	Weight		kg	5.6			5.5	8.8		
Packing 3	Material			Plastic						
	Weight		kg	0.5			0.3	0.4		
Casing	Colour			Daikin White						
	Material			Painted galvanized steel plate						

2 Specifications

2

2-1 Technical Specifications				RXYSQ4TY1	RXYSQ5TY1	RXYSQ6TY1	RXYSQ8TY1	RXYSQ10TY1	RXYSQ12TY1	
Heat exchanger	Type			Cross fin coil						
	Fin	Treatment		Anti-corrosion treatment						
Compressor	Quantity			1						
	Type			Hermetically sealed swing compressor			Hermetically sealed scroll compressor			
	Crankcase heater		W	-			33			
Fan	Quantity			2						
	Air flow rate	Cooling	Nom.	m ³ /min	106		140	182		
	External static pressure	Max.		Pa	-					
	Discharge direction			Horizontal						
	Type			Propeller fan						
Fan motor	Quantity			2						
	Output		W	70			200			
	Model			Brushless DC motor						
Sound power level	Cooling	Nom.	dBA	68 (4)	69 (4)	70 (4)	73 (4)	74 (4)	76 (4)	
Sound pressure level	Cooling	Nom.	dBA	50 (5)	51 (5)		55 (5)		57 (5)	
Operation range	Cooling	Min.-Max.		°CDB	-5~46			-5~52		
	Heating	Min.-Max.		°CWB	-20~15.5					
Refrigerant	Type			R-410A						
	GWP			2,087.5						
	Charge		TCO _{2eq}	kg	7.5		9.4	14.6	16.7	
Refrigerant oil	Type			Synthetic (ether) oil FVC50K			Synthetic (ether) oil FVC68D			
	Charged volume		l	1.4			2.6	3.2	3.4	
Piping connections	Liquid	Type		Flare connection			Braze connection			
		OD	mm	9.52			12.7			
	Gas	Type		Flare connection			Braze connection			
		OD	mm	15.9		19.1		22.2	25.4	
	Total piping length	System	Actual	m	-					
	Level difference	OU - IU	Outdoor unit in highest position	m	-					
			Indoor unit in highest position	m	-					
Heat insulation			Both liquid and gas pipes							
Piping length	OU - IU	Max.	m	300						
Defrost method				Reversed cycle						
Safety devices	Item	01		High pressure switch						
		02		Fan driver overload protector						
		03		Inverter overload protector						
		04		PC board fuse						
PED	Category			Category I			Category II			
	Most critical part	Name		Compressor			Accumulator			
		Ps*V	Bar*I	167			202	279		

Standard Accessories : Installation manual;

Standard Accessories : Operation manual;

Standard Accessories : Connection pipes;

2-2 Electrical Specifications				RXYSQ4TY1	RXYSQ5TY1	RXYSQ6TY1	RXYSQ8TY1	RXYSQ10TY1	RXYSQ12TY1
Power supply	Name			Y1					
	Phase			3N~					
	Frequency		Hz	50					
	Voltage		V	380-415					
Voltage range	Min.		%	-10					
	Max.		%	10					

4

2 Specifications

2-2 Electrical Specifications				RXYSQ4TY1	RXYSQ5TY1	RXYSQ6TY1	RXYSQ8TY1	RXYSQ10TY1	RXYSQ12TY1
Current	Nominal running current (RLA) - 50Hz	Cooling	A	4.44 (6)	5.55 (6)	6.84 (6)	9.6 (6)	10.7 (6)	13.4 (6)
Current - 50Hz	Zmax	List		No requirements			-		
	Minimum Ssc value		kVa	-			910	564	615
	Minimum circuit amps (MCA)		A	14.1			18.5	22.0	24.0
	Maximum fuse amps (MFA)		A	16			25		32
	Total overcurrent amps (TOCA)		A	14.1 (7)			16.5 (7)	25.0 (7)	27.0 (7)
	Full load amps (FLA)	Total	A	0.6			1.4		
Wiring connections - 50Hz	For power supply	Quantity		5G					
	For connection with indoor	Quantity		2					
		Remark		F1,F2					
Power supply intake				Both indoor and outdoor unit					

Notes

(1) Nominal cooling capacities are based on: indoor temperature: 27°CDB, 19°CWB, outdoor temperature: 35°CDB, equivalent refrigerant piping: 5m, level difference: 0m. Data for standard efficiency series. Eurovent 2015 tolerances are used.

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

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

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

(5) Sound values are measured in a semi-anechoic room.

(6) MSC means the maximum current during start up of the compressor. VRV IV uses only inverter compressors. Starting current is always ≤ max. running current.

(7) FLA: nominal running current fan

For detailed contents of standard accessories, see installation/operation manual

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

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

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

TOCA means the total value of each OC set.

Voltage range: units are suitable for use on electrical systems where voltage supplied to unit terminal is not below or above listed range limits.

Maximum allowable voltage range variation between phases is 2%.

The automatic ESEER value corresponds with normal VRV IV-S heat pump operation, including the advanced energy saving functionality (variable refrigerant temperature control).

The standard ESEER value corresponds with normal VRV IV-S heat pump operation, not taking into account the advanced energy saving functionality.

Nominal heating capacities are based on: indoor temperature: 20°CDB, outdoor temperature: 7°CDB, 6°CWB, equivalent refrigerant piping: 5m, level difference: 0m. Data for standard efficiency series. Eurovent 2015 tolerances are used.

FLA means the nominal running current of the fan

In accordance with EN/IEC 61000-3-11, respectively 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 $Z_{sys} \leq Z_{max}$, respectively $S_{sc} \geq \text{minimum } S_{sc} \text{ value}$.

EN/IEC 61000-3-11: European/international technical standard setting the limits for voltage changes, voltage fluctuations and flicker in public low-voltage supply systems for equipment with rated ≤ 75A

EN/IEC 61000-3-12: European/international technical standard setting the limits for harmonic currents produced by equipment connected to public low-voltage system with input current > 16A and ≤ 75A per phase

Ssc: Short-circuit power

Zsys: system impedance

3 Options

3 - 1 Options

3

RXYSQ-TV1
 RXYSQ-TV1
 RXYSQ-TY1

Nr.	Item	RXYSQ4~5TMV1B	RXYSQ4~6T7V1B	RXYSQ4~6T7Y1B	RXYSQ8~12TMY1B	RXYSQ6T7Y1B9
I.	Refnet header	KHRQ22M29H				
		-	-	-	KHRQ22M64H	-
II.	Refnet joint	KHRQ22M20T				
		-	-	-	KHRQ22M29T9	-
		-	-	-	KHRQ22M64T	-
1a.	Cool/heat selector (switch)	-	KRC19-26		-	KRC19-26
1b.	Cool/heat selector (fixing box)	-	KJB111A		-	KJB111A
1c.	Cool/heat selector (PCB)	-	EBRP2B	-	-	-
1d.	Cool/heat selector (cable)	-	-	EKCHSC	-	EKCHSC
2.	Drain plug kit	-	EKDK04		-	EKDK04
3.	VRV configurator	EKPCCB*				
4.	Demand PCB	DTA104A61/62*				
5.	Branch provider - 2 rooms	BPMKS967A2				-
6.	Branch provider - 3 rooms	BPMKS967A3				-

Notes

1. All options are kits
2. To mount option 1a, option 1b is required.
3. For RXYSQ4~6T7Y1B
 To operate the cool/heat selector function, options 1a and 1c are both required.
4. For RXYSQ4~6T7Y1B
 To operate the cool/heat selector function, options 1a and 1d are both required.

3D097778A

4 Combination table

4 - 1 Combination Table

RXYSQ-TV1
RXYSQ-TV1
RXYSQ-TY1

Indoor unit combination pattern	VRV* DX box + indoor unit	RA DX box + indoor unit	Hydrobox unit	Air handling unit (AHU) (1)
VRV* DX box + indoor unit	O	X	X	O
RA DX box + indoor unit	X	O	X	X
Hydrobox unit (1)	X	X	X	X
Air handling unit (AHU)	O ₁	X	X	O ₁

O: Allowed
 X: Not allowed

Notes

- O₁
 - Combination of AHU only + control box EKEQFA (not combined with VRV DX indoor units)
 - X-control is possible (up to 3x [EKEV+EKEQFA* boxes] can be connected to one outdoor unit (system)). No Variable Refrigerant Temperature control possible.
 - Y-control is possible (up to 3x [EKEV+EKEQFA* boxes] can be connected to one outdoor unit (system)). No Variable Refrigerant Temperature control possible.
 - W-control is possible (up to 3x [EKEV+EKEQFA* boxes] can be connected to one outdoor unit (system)). No Variable Refrigerant Temperature control possible.
 - Combination of AHU only + control box EKEQMA (not combined with VRV DX indoor units)
 - Z-control is possible (the allowed number of [EKEV + EKEQMA boxes] is determined by the connection ratio (90-110%) and the capacity of the outdoor unit.
- Combination of AHU and VRV DX indoor units
 - Z-control is possible (EKEQMA* boxes are allowed, but with a limited connection ratio).
- (1) The following units are considered AHUs:
 - EKEV + EKEQ(MA/FA) + AHU coil
 - Biddle air curtain
 - FXMQ_MF units

Information

- VKM units are considered to be regular VRV DX indoor units.

3D097983

RXYSQ-TV1
RXYSQ-TV1
RXYSQ-TY1

Combination table	RXYSQ4~5TMV1B	RXYSQ4~6T7V1B	RXYSQ4~6T7Y1B	RXYSQ8~12TMY1B
VRV* DX box + indoor unit	O	O	O	O
RA DX box + indoor unit	O	O	O	O
Hydrobox unit	X	X	X	X
Air handling unit (AHU) (2)	O	O	O	O

O: Allowed
 X: Not allowed

Notes

- (2) The following units are considered AHUs:
 - EKEV + EKEQ(MA/FA) + AHU coil
 - Biddle air curtain
 - FXMQ_MF units

3D097983

4 Combination table

4 - 1 Combination Table

4

RYSCQ-TV1
RXYSQ-TV1_TY1

VRV4-S
Heat pump
RA/SA DX indoor unit
Compatibility list

Configuration			Indoor unit type
RA indoor unit	Wall-mounted	Emura	FTXG20L (W/S)
			FTXG25L (W/S)
			FTXG35L (W/S)
			FTXG50L (W/S)
		FTXS	FTXS20K
			FTXS25K
			FTXS35K
			FTXS42K
			FTXS50K
			FTXS60G
	CTXS	FTXS71G	
		CTXS15K	
		CTXS35K	
	Floor-standing Ceiling-mounted	Flex	FLXS25B
			FLXS35B
			FLXS50B
			FLXS60B
	Floor-standing	FVXS	FVXS25F
			FVXS35F
			FVXS50F
		Nexura	FVXG25K
			FVXG35K
			FVXG50K
FNQ		FNQ25A	
		FNQ35A	
		FNQ50A	
		FNQ60A	
Duct	FDXS	FDXS25F	
		FDXS30F	
		FDXS50F9	
		FDXS60F	

Configuration		Indoor unit type
SA indoor unit	Cassette	Fully Flat 2x2
		FFQ25C
		FFQ35C
		FFQ50C
		FFQ60C
	Roundflow 3x3	FCQG35F
		FCQG50F
		FCQG60F
		FCQG71F
		PHQ35C
Ceiling-suspended	PHQ50C	
	PHQ60C	
	PHQ71C	
Duct	FBQ35D	
	FBQ50D	
	FBQ60D	
	FBQ71D	

Remark

1. The limitations on the use of RA/SA indoor units with the VRV4-S Heat Pump are subject to the rules set out in drawings 3D097983 and 3D097984.

3D097777A

RXYSQ-TV1/TY1

Unit combination restrictions: VRV4 outdoor units (all models)+ 15-class indoor units

Units in scope: FXZQ15A and FXAQ15A.

1. 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.
2. In case the system contains these indoor units and the total connection ratio (CR) > 100 %: special restrictions apply.
 - A. When the connection ratio (CR1) of the sum of all FXZQ15A and/or FXAQ15A 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 FXZQ15A and/or FXAQ15A 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 FXZQ15A and/or FXAQ15A indoor units in the system must be ≤ 70%.
 - 105% < CR ≤ 110% → CR1 of the sum of all FXZQ15A and/or FXAQ15A indoor units in the system must be ≤ 60%.
 - 110% < CR ≤ 115% → CR1 of the sum of all FXZQ15A and/or FXAQ15A indoor units in the system must be ≤ 40%.
 - 115% < CR ≤ 120% → CR1 of the sum of all FXZQ15A and/or FXAQ15A indoor units in the system must be ≤ 25%.
 - 120% < CR ≤ 125% → CR1 of the sum of all FXZQ15A and/or FXAQ15A indoor units in the system must be ≤ 10%.
 - 125% < CR ≤ 130% → FXZQ15A and FXAQ15A 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.

5 Capacity tables

5 - 1 Capacity Table Legend

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

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

- Capacity table database: lets you find back and export quickly the capacity information you are looking for based upon unit model, refrigerant temperature and connection ratio.
→ webtools.daikin.eu
- E-data app: gives a complete overview of the Daikin products available in your country, with all engineering data and commercial info in your own language. Download the app now!
→ <https://itunes.apple.com/us/app/daikin-e-data/id565955746?mt=8>



- Selection software: allows you to do load calculations, equipment selections and energy simulations for our VRV, Daikin Altherma, refrigeration and applied systems products.
→ my.daikin.eu



5 Capacity tables

5 - 2 Integrated Heating Capacity Correction Factor

5

RXYSQ-TV1
 RXYSQ-TV1
 RXYSQ-TY1

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:

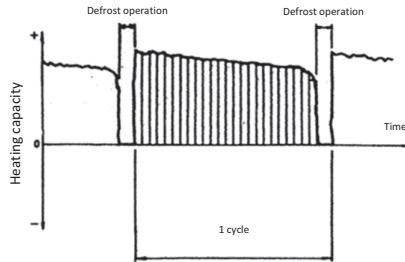
Formula

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

$$A = B * C$$

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
RXYSQ4TMV1B							
RXYSQ5TMV1B							
RXYSQ4TV1B							
RXYSQ5TV1B							
RXYSQ6TV1B	0,88	0,86	0,80	0,75	0,76	0,82	1,00
RXYSQ4TY1B							
RXYSQ5TY1B							
RXYSQ6TY1B							
RXYSQ6TY1B9							
RXYSQ8TMY1B	0,95	0,93	0,88	0,84	0,85	0,90	1,00
RXYSQ10TMY1B	0,95	0,93	0,87	0,79	0,80	0,88	1,00
RXYSQ12TMY1B	0,95	0,92	0,87	0,75	0,76	0,85	1,00



Notes

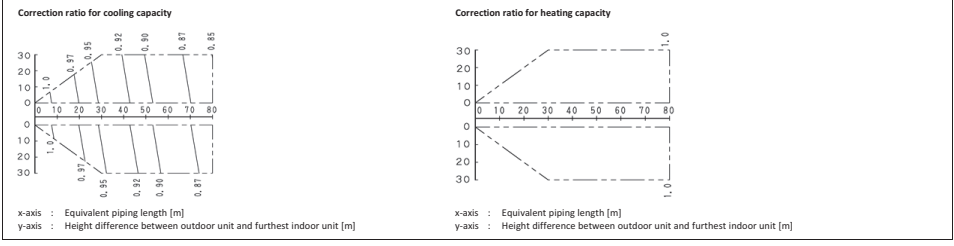
- (1) The figure shows the integrated heating capacity for a single cycle (from one defrost operation to the next).
- (2) When there is an accumulation of snow against the outdoor unit heat exchanger, there will always be a temporary reduction in capacity depending on the outdoor temperature (°C DB),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

3D094659

5 Capacity tables

5 - 3 Capacity Correction Factor

RXYSQ-TV1 RXYSQ4-6TY1



- 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%.
 Maximum capacity of outdoor units = Capacity of outdoor units from capacity table at 100% connection ratio. × Correction ratio of piping to furthest indoor unit

Indoor connection ratio > 100%.
 Maximum capacity of outdoor units = Capacity of outdoor units from capacity table at installed connection ratio. × Correction ratio of piping to furthest indoor unit

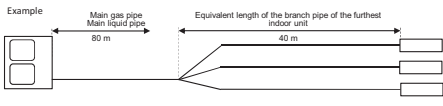
4. When the overall equivalent piping length is 90 m or more, the diameter of the main gas pipes (outdoor unit - branch sections) must be increased. For the new diameters, see below.

Model	Standard liquid side Ø	Increased liquid side Ø	Standard gas side Ø	Increased gas side Ø
4HP / SHP	9,5	Not increased	15,9	19,1
6 HP	9,5	Not increased	19,1	22,2

5. Overall equivalent length
 Overall equivalent length = Equivalent length of the main pipe × Correction factor + Equivalent length of the branch pipes

Choose the correction factor from the following table.
 When calculating the cooling capacity: gas pipe size
 When calculating the heating capacity: liquid pipe size

	Standard size	Size increase
Cooling (gas pipe)	1,0	0,5
Heating (liquid pipe)	1,0	0,5



Overall equivalent length

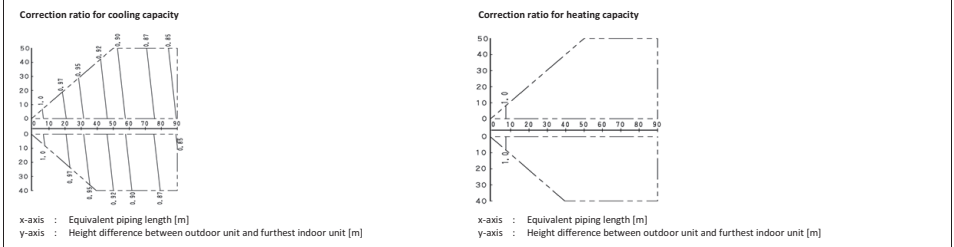
- Cooling mode = 80 m × 0,5 + 40 m = 80 m
- Heating mode = 80 m × 0,5 + 40 m = 80 m

Capacity correction ratio (height difference = 0)

- Cooling mode = 0,86
- Heating mode = 1,00

3D094660

RXYSQ8TY1



- 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%.
 Maximum capacity of outdoor units = Capacity of outdoor units from capacity table at 100% connection ratio. × Correction ratio of piping to furthest indoor unit

Indoor connection ratio > 100%.
 Maximum capacity of outdoor units = Capacity of outdoor units from capacity table at installed connection ratio. × Correction ratio of piping to furthest indoor unit

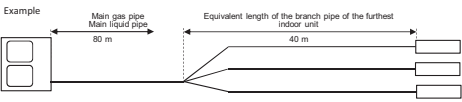
4. When the overall equivalent piping length is 90 m or more, the diameter of the main gas pipes (outdoor unit - branch sections) must be increased. For the new diameters, see below.

Model	Standard liquid side Ø	Increased liquid side Ø	Standard gas side Ø	Increased gas side Ø
RXYSQ8TY1B	9,5	12,7	19,1	22,2

5. Overall equivalent length
 Overall equivalent length = Equivalent length of the main pipe × Correction factor + Equivalent length of the branch pipes

Choose the correction factor from the following table.
 When calculating the cooling capacity: gas pipe size
 When calculating the heating capacity: liquid pipe size

	Standard size	Size increase
Cooling (gas pipe)	1,0	0,5
Heating (liquid pipe)	1,0	0,3



Overall equivalent length

- Cooling mode = 80 m × 0,5 + 40 m = 80 m
- Heating mode = 80 m × 0,3 + 40 m = 64 m

Capacity correction ratio (height difference = 0)

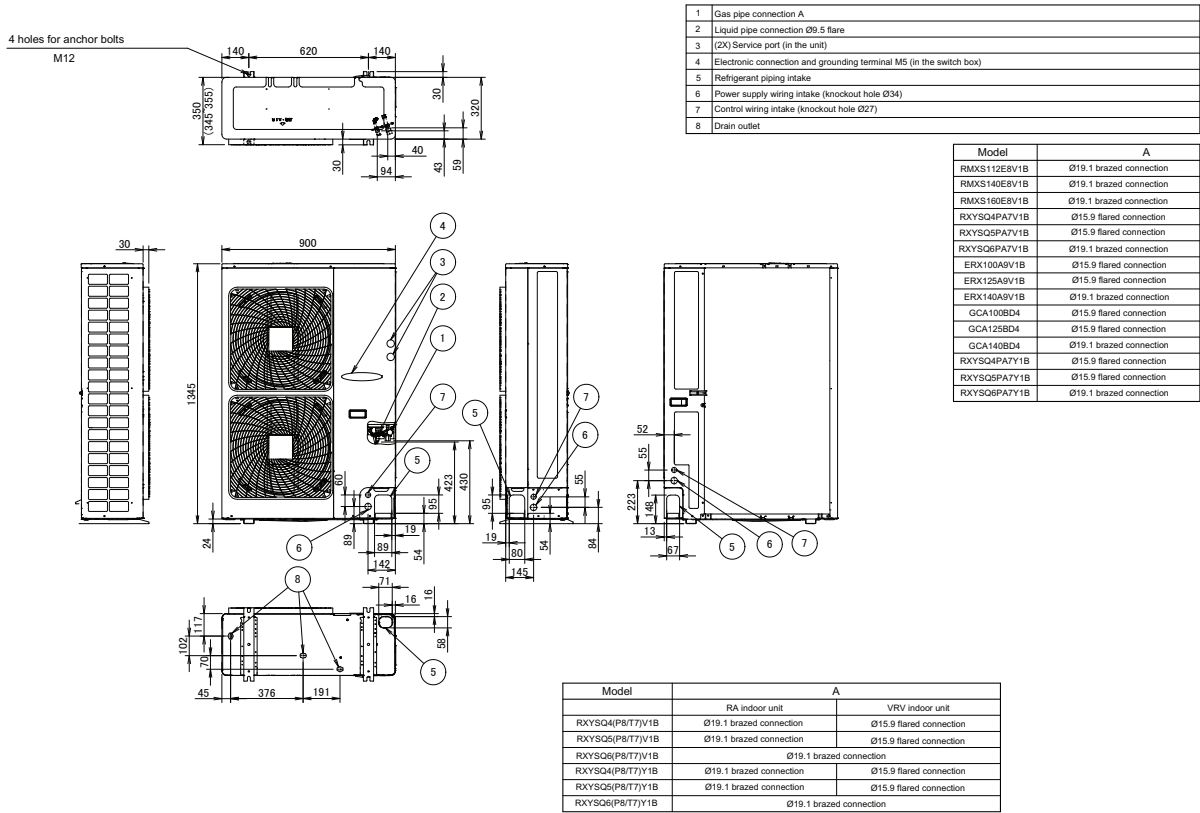
- Cooling mode = 0,87
- Heating mode = 1,00

3D094660

6 Dimensional drawings

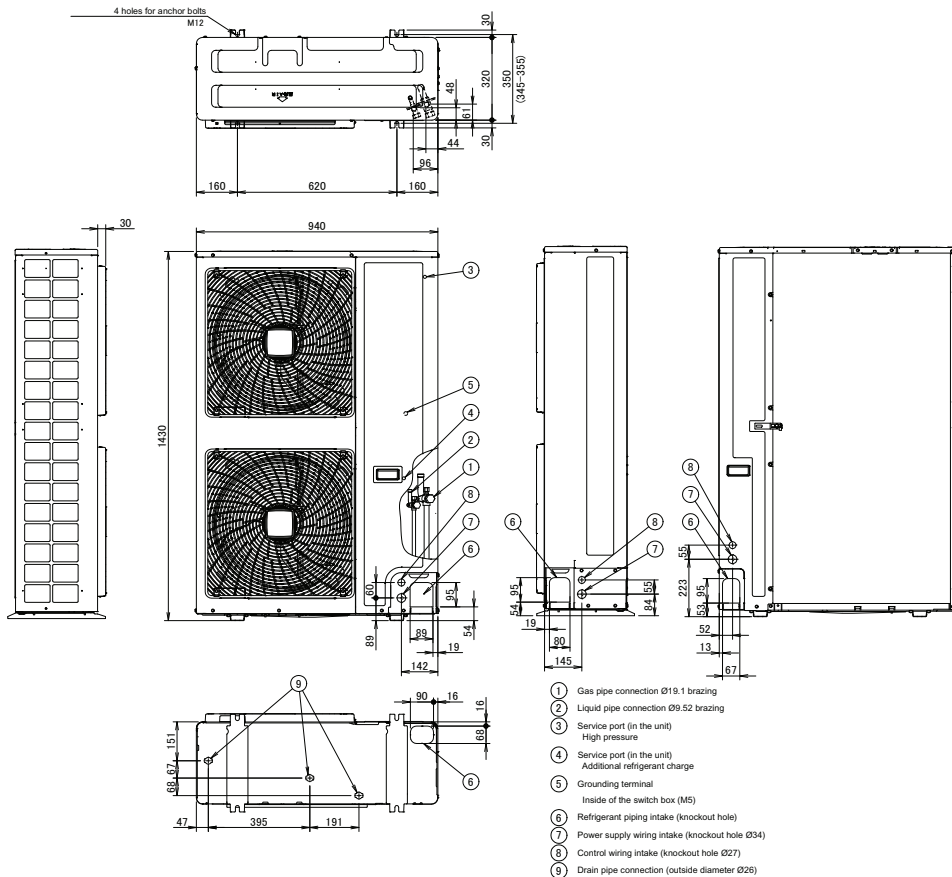
6 - 1 Dimensional Drawings

RXYSQ4-6TV1
RXYSQ4-6TY1



3TW30374-1D

RXYSQ8TY1

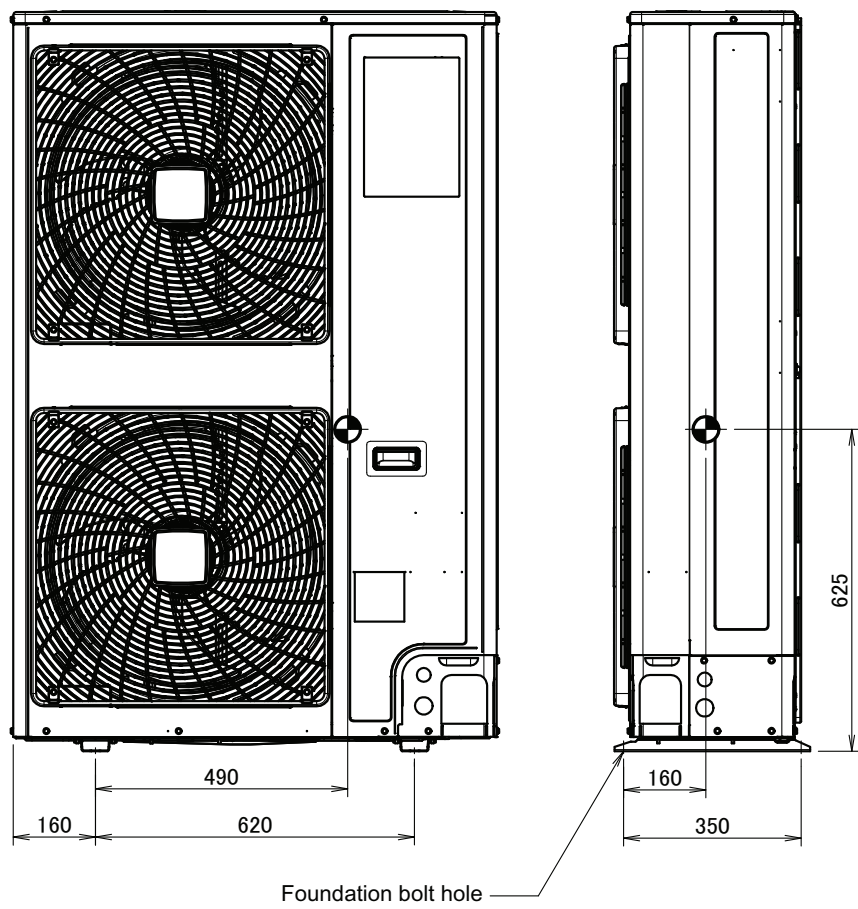


3D098108

7 Centre of gravity

7 - 1 Centre of Gravity

RXYSQ8TY1

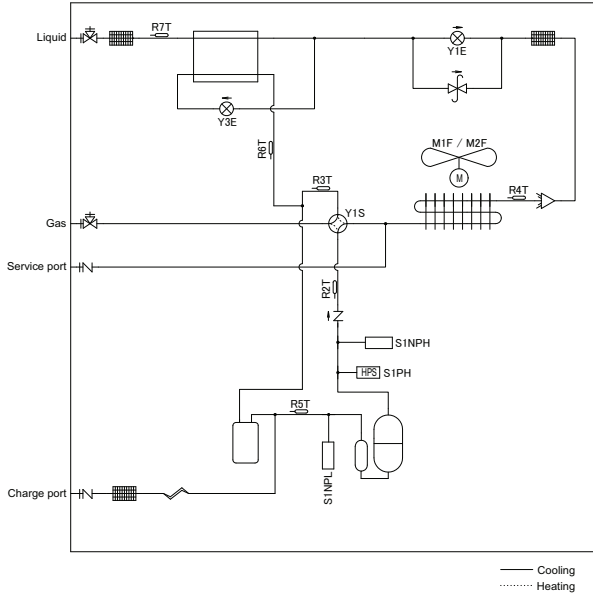


4D098084

8 Piping diagrams

8 - 1 Piping Diagrams

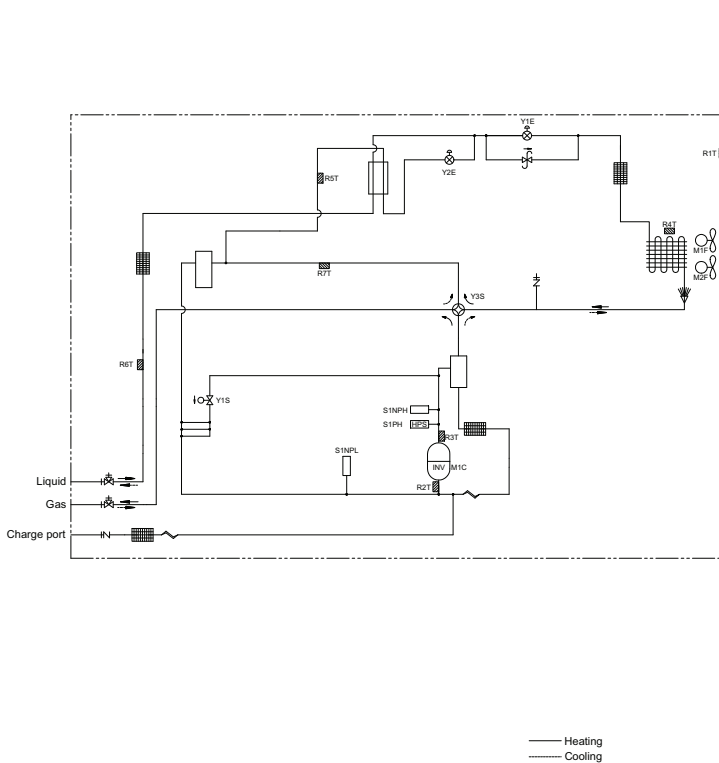
RXYSQ4-6TY1



- Charge port / Service port
- Stop valve
- Filter
- Check valve
- Pressure relief valve
- Thermistor
- Capillary tube
- Expansion valve
- 4-way valve
- Propeller fan
- High pressure switch
- Low pressure sensor
- High pressure sensor
- Accumulator
- Heat exchanger
- Compressor
- Compressor
· Accumulator
- Double tube heat exchanger
- Distributor

3D094631A

RXYSQ8TY1



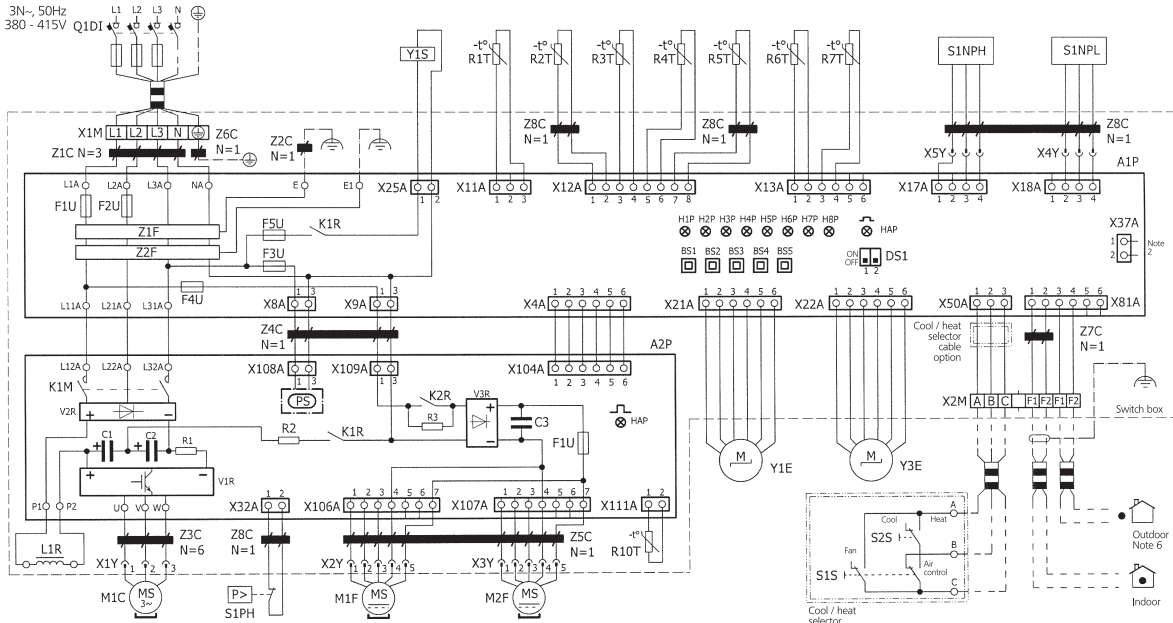
- Charge port / Service port
- Stop valve
- Filter
- Pressure relief valve
- Thermistor
- Capillary tube
- Expansion valve
- 4-way valve
- Propeller fan
- High pressure switch
- Low pressure sensor
- High pressure sensor
- Accumulator
- Heat exchanger
- Compressor
- Oil separator
- Double tube heat exchanger
- Distributor
- Solenoid valve

3D097887

9 Wiring diagrams

9 - 1 Wiring Diagrams - Three Phase

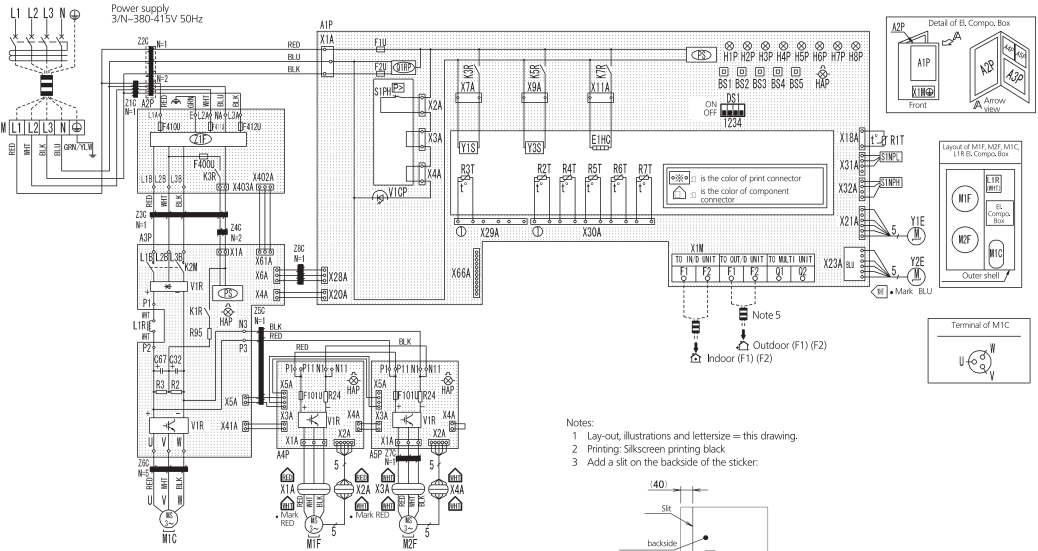
RXYSQ4-6TY1



4D094014D

RXYSQ8TY1

- A1P : Printed circuit board (Main)
- A2P : Printed circuit board (Noise filter)
- A3P : Printed circuit board (INV)
- A4P : Printed circuit board (Fan 1)
- A5P : Printed circuit board (Fan 2)
- BS1~BS5 : Push button switch (Mode, set, return, test, reset)
- C32, C67 : Capacitor
- DS1 : Dip switch
- E1HC : Crankcase heater
- F101U : Fuse (5A, DC650V) (A4P) (A5P)
- F1U, F2U : Fuse (T 3.15A / 250V) (A1P)
- F400U : Fuse (T 6.3A / 250V) (A2P)
- H1P~H8P : Pilot lamp (service monitor-orange) (H2P) Prepare, Test ----- Flickering Malfunction Detection - Light up
- HAP : Pilotlamp (service monitor - green)
- K1R : Magnetic relay (A3P)
- K2M : Magnetic contactor (M1C) (A3P)
- K3R : Magnetic relay (A2P)
- K3R : Magnetic relay (Y1S)
- K5R : Magnetic relay (Y3S)
- K7R : Magnetic relay (E1HC)
- L1R : Reactor
- M1C : Motor (compressor)
- M1F, M2F : Motor (fan)
- PS : Switching power supply (A1P) (A3P)
- Q1RP : Reverse phase protector
- R24 : Resistor (current sensor) (A4P) (A5P)
- R2, R3 : Resistor
- R95 : Resistor (current limiting)
- R1T : Thermistor (Air)
- R2T : Thermistor (Suction)
- R3T : Thermistor (M1C Discharge)
- R4T : Thermistor (heat exchanger deicer)
- R5T : Thermistor (heat exchanger outlet)
- R6T : Thermistor (Liquid pipe)
- R7T : Thermistor (Accumulator)
- S1NPH : Pressure sensor (High)
- S1NPL : Pressure sensor (low)
- S1PH : High pressure switch
- V1CP : Safety devices (Main)
- V1R : IGBT Module (A4P) (A5P)
- V1R : Diode bridge IGBT Module (A3P)
- X1A, X2A : Connector (M1F)
- X3A, X4A : Connector (M2F)
- X1M : Terminal strip (Power supply)
- X1M : Terminal strip (Control) (A1P)
- Y1E : Electronic expansion valve (Main)
- Y2E : Electronic expansion valve (Subcool)
- Y1S : Solenoid valve (hot gas)
- Y3S : Solenoid valve (4 way valve)
- Z1C~8C : Noise filter (ferrite core)
- Z1F : Noise filter (with surge absorber)



- Notes:
1. This wiring diagram only applies to the outdoor unit.
 2. ■■■■■ : Field wiring
 3. □ : Terminal, ○ : Connector, ⊖ : Movable connector, ⊕ : Fixed connector, ⊚ : Terminal strip, ⊕ : Protective earth (screw), ⊕ : Noiseless earth
 4. Refer to the installation manual, for connection wiring to indoor-outdoor transmission F1 - F2, outdoor-outdoor transmission F1 - F2.
 5. Refer to 'installation manual' (on back front plate). How to use BS1-B55 and DS1 switch.
 6. When operating, do not short circuit for protection device. (S1PH)
 7. Colours: BLK: Black, RED: Red, BLU: Blue, WHT: White, GRN: Green, BRN: Brown, YLW: Yellow

2D094434D

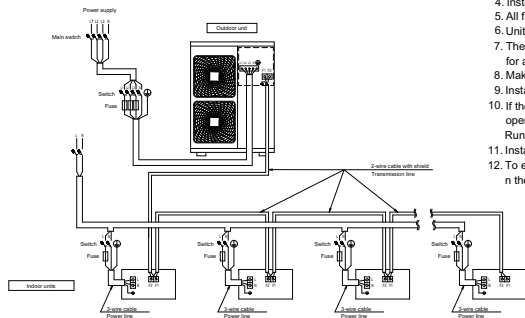
10 External connection diagrams

10 - 1 External Connection Diagrams

RXYSQ4-6TY1

External connection diagram

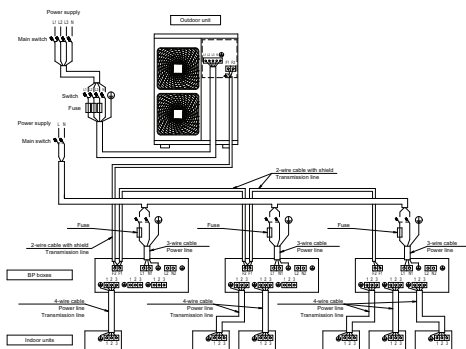
VRV indoor unit



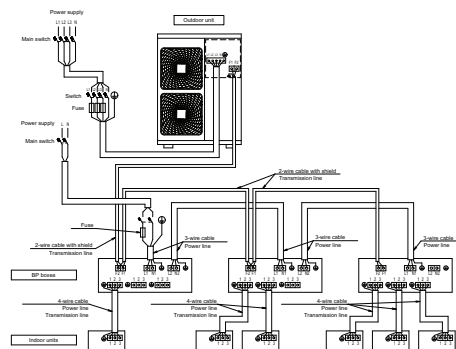
Notes

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 to 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 (or each BP box, depending on the system layout) to each other.

BP box + RA/SA indoor unit



Power source is supplied to each BP box individually.



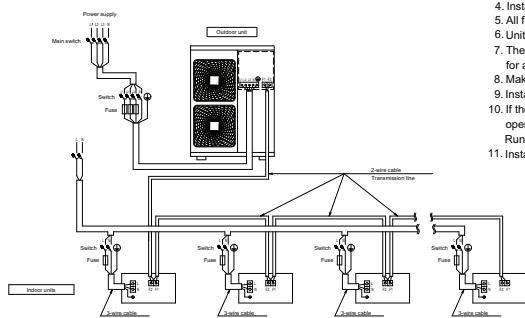
Power source is connected in series between the units.

10094667

RXYSQ8-12TY1

External connection diagram

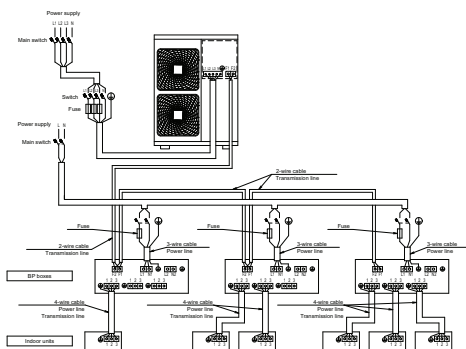
VRV indoor unit



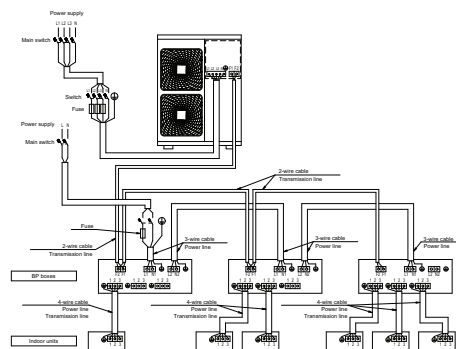
Notes

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 to 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.

BP box + RA/SA indoor unit



Power source is supplied to each BP box individually.

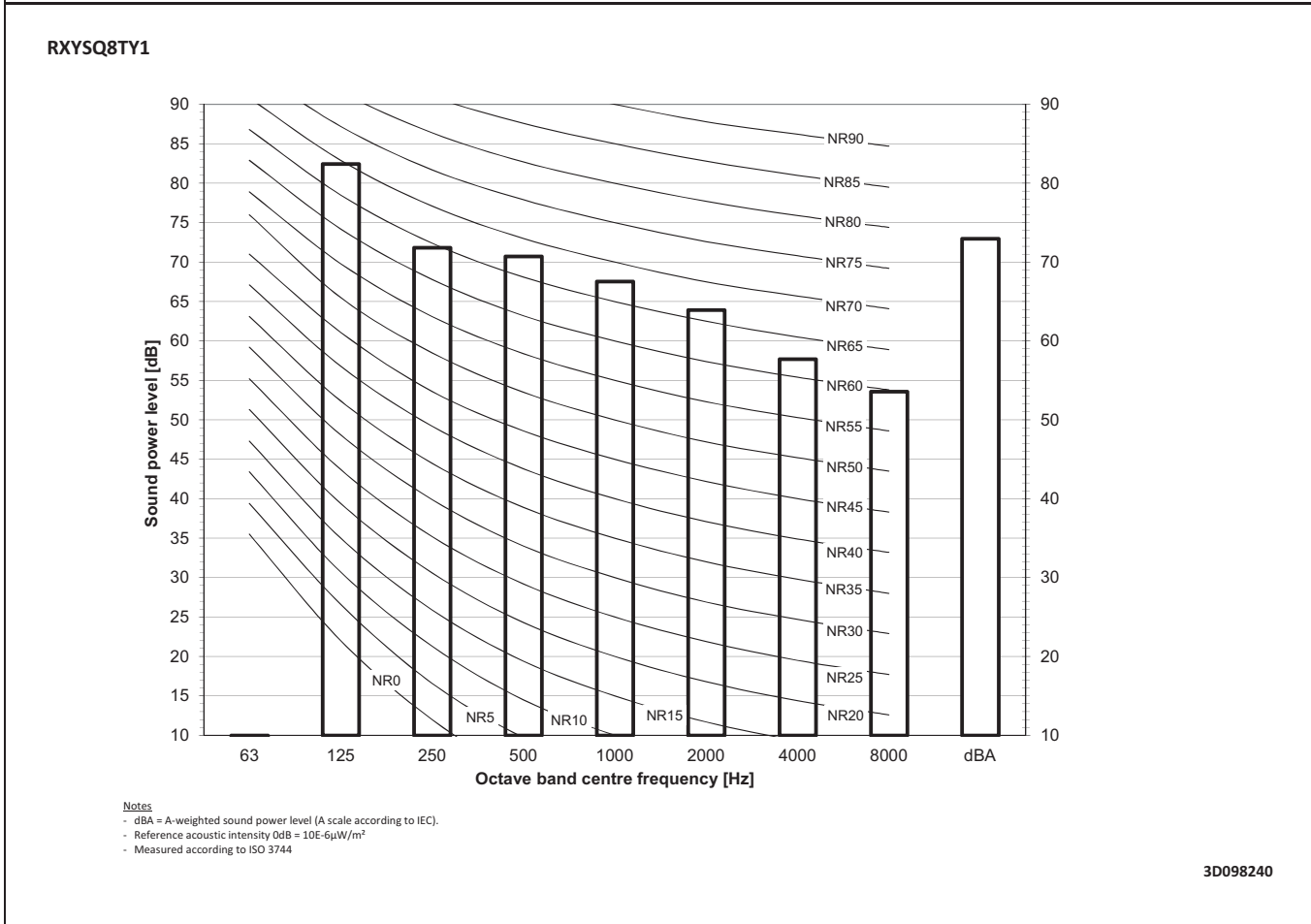
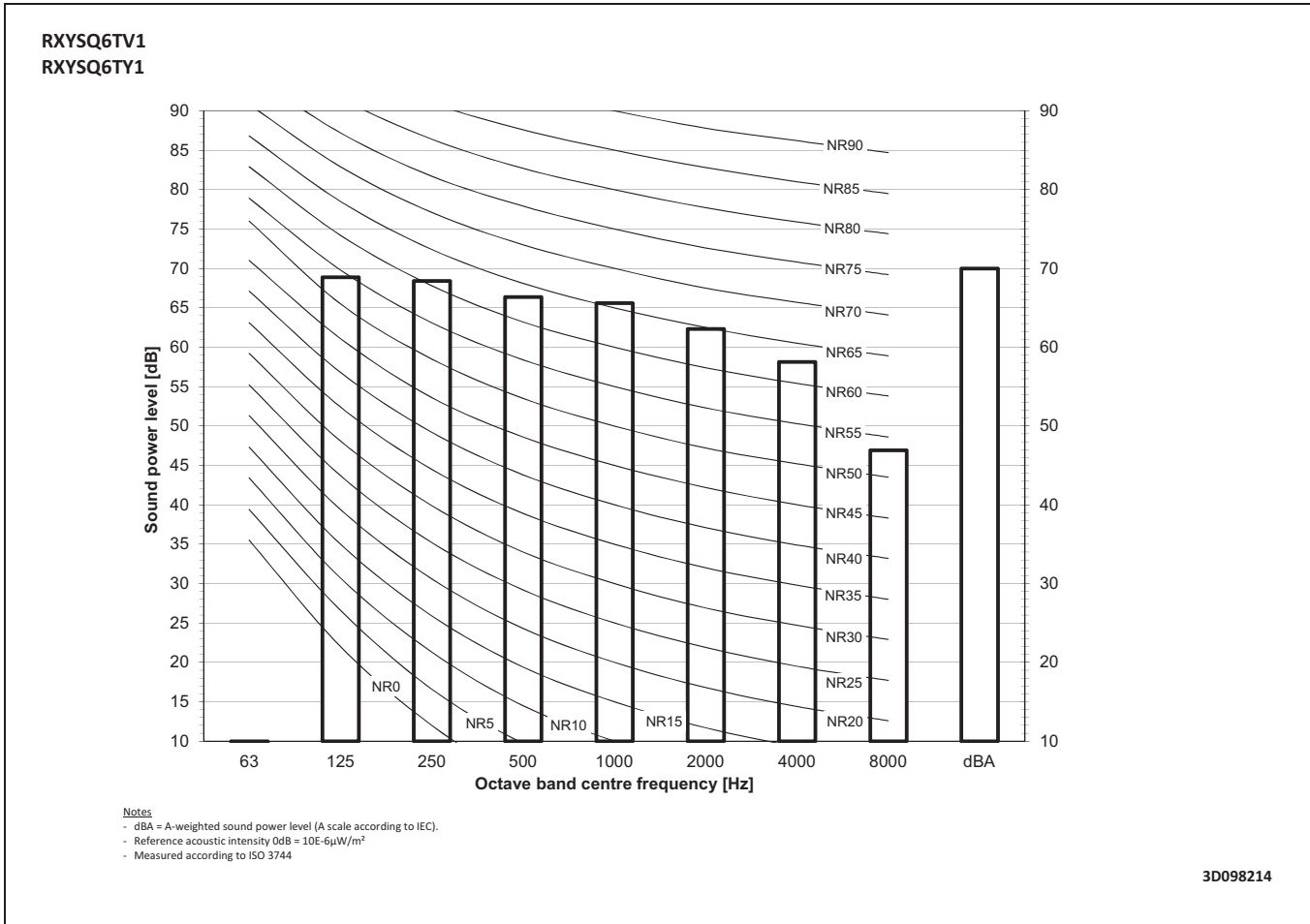


Power source is connected in series between the units.

10094669

11 Sound data

11 - 1 Sound Power Spectrum

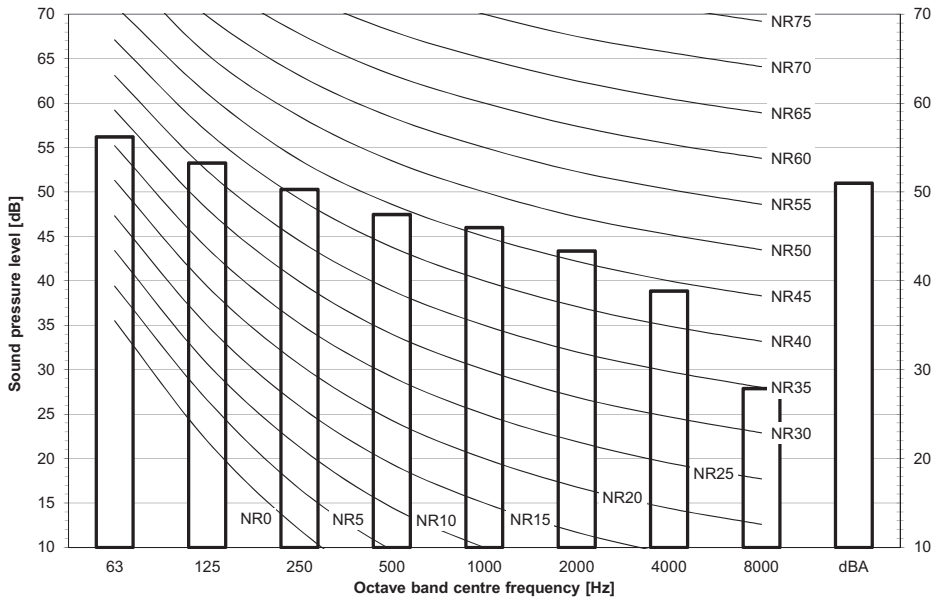


11 Sound data

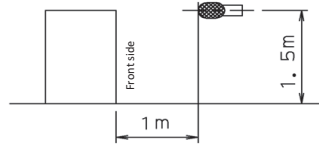
11 - 2 Sound Pressure Spectrum

11

RXYSQ6TV1
RXYSQ6TY1

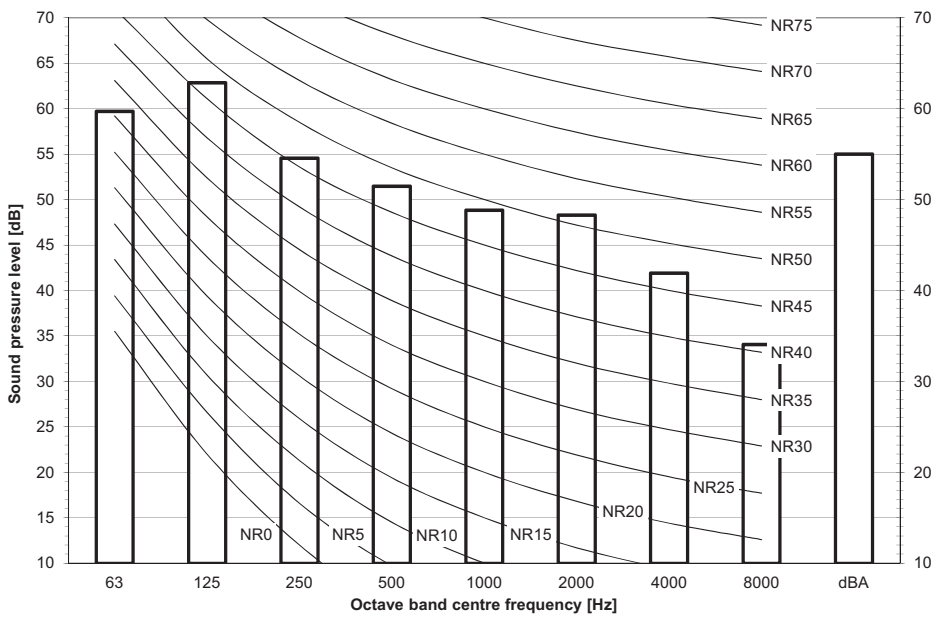


- Notes**
- Data is valid at free field condition.
 - Data is valid at nominal operation condition.
 - dBA = A-weighted sound pressure level (A scale according to IEC).
 - Reference acoustic pressure 0 dB = 20 μ Pa

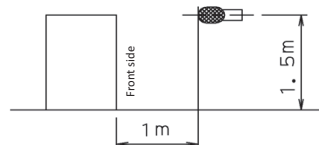


3D098217

RXYSQ8TY1



- 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



3D098245

12 Installation

12 - 1 Installation Method

RXYSQ8TY1

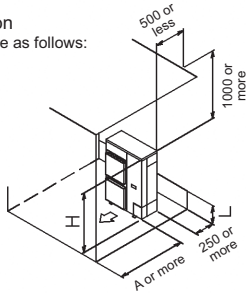
(b) Obstacle above, too

(1) Stand-alone installation

The relations between H, A and L are as follows:

	L	A
$L \leq H$	$0 < L \leq 1/2 H$	1000
	$1/2 H < L \leq H$	1250
$H < L$	Set the stand as: $L \leq H$.	

Close the bottom of the installation frame to prevent the discharged air from being bypassed.



(2) Series installation

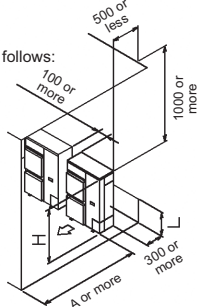
(2 or more) (NOTE)

The relations between H, A and L are as follows:

	L	A
$L \leq H$	$0 < L \leq 1/2 H$	1000
	$1/2 H < L \leq H$	1250
$H < L$	Set the stand as: $L \leq H$.	

Close the bottom of the installation frame to prevent the discharged air from being bypassed.

Only two units can be installed for this series.



Pattern 2

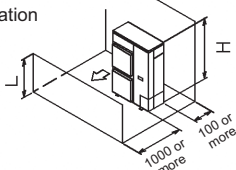
Where the obstacle on the discharge side is lower than the unit:

(There is no height limit for obstructions on the intake side)

(a) No obstacle above

(1) Stand-alone installation

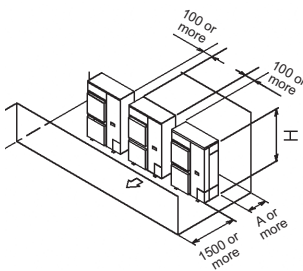
$$L \leq H$$



(2) Series installation (2 or more) (NOTE)

The relations between H, A and L are as follows:

	L	A
$0 < L \leq 1/2 H$		250
$1/2 H < L \leq H$		300



(b) Obstacle above, too

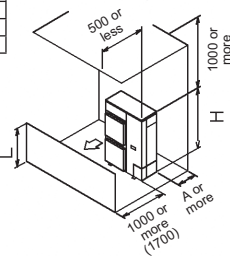
(1) Stand-alone installation

The relations between H, A and L are as follows:

	L	A
$L \leq H$	$0 < L \leq 1/2 H$	100
	$1/2 H < L \leq H$	200
$H < L$	Set the stand as: $L \leq H$.	

Close the bottom of the installation frame to prevent the discharged air from being bypassed.

If the distance exceeds the figure in the (), then it's no need to set the stand.



(2) Series installation (NOTE)

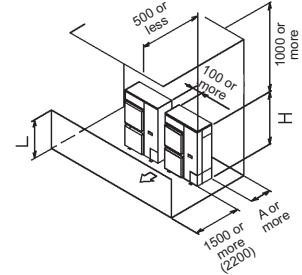
The relations between H, A and L are as follows:

	L	A
$L \leq H$	$0 < L \leq 1/2 H$	250
	$1/2 H < L \leq H$	300
$H < L$	Set the stand as: $L \leq H$.	

Close the bottom of the installation frame to prevent the discharged air from being bypassed.

Only two units can be installed for this series.

If the distance exceeds the figure in the (), then it's no need to set the stand.



4. Double-decker installation

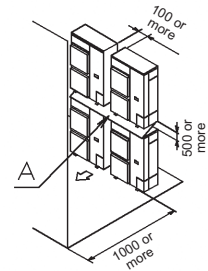
(a) Obstacle on the discharge side (NOTE)

Close the gap A (the gap between the upper and lower outdoor units) to prevent the discharged air from being bypassed.

Do not stack more than two units.

Set the board (field supply) as the detail A between two units to prevent the drainage from freezing.

Leave the enough space between the layer one and the board.



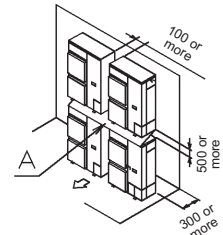
(b) Obstacle on the suction side (NOTE)

Close the gap A (the gap between the upper and lower outdoor units) to prevent the discharged air from being bypassed.

Do not stack more than two units.

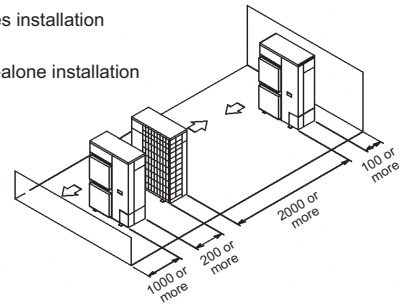
Set the board (field supply) as the detail A between two units to prevent the drainage from freezing.

Leave the enough space between the layer one and the board.



5. Multiple rows of series installation (on the rooftop, etc.)

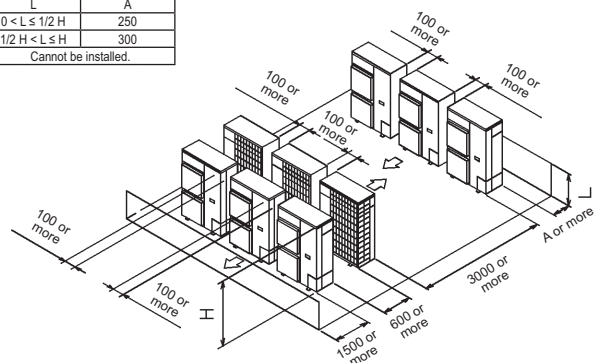
(a) One row of stand-alone installation



(b) Rows of series installation (2 or more)

The relations between H, A and L are as follows:

	L	A
$L \leq H$	$0 < L \leq 1/2 H$	250
	$1/2 H < L \leq H$	300
$H < L$	Cannot be installed.	



NOTE

When install the units in a line, have to leave the distance over 100 mm between the two units.

3D068442L

12 Installation

12 - 2 Refrigerant Pipe Selection

12

RXYSQ-TV1
RXYSQ-TV1
RXYSQ-TY1

For the reference drawing, see page -2/3-

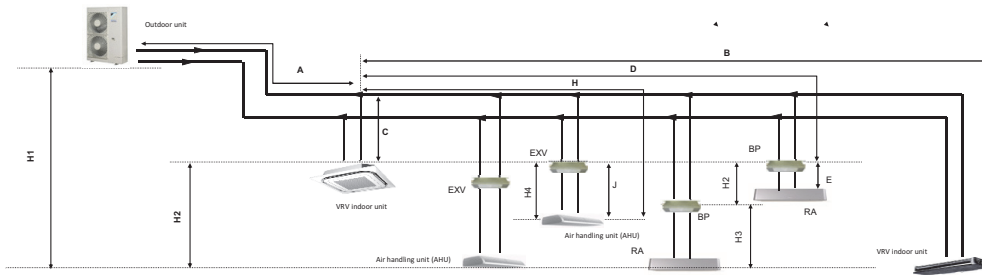
		Maximum piping length		Maximum height difference		Total piping length
		Longest pipe (A+B,D+E,H) Actual / (Equivalent)	After first branch (B,D+E,H) Actual	Indoor-to-outdoor (H1) Outdoor above indoor / (indoor above outdoor)	Indoor-to-indoor (H2)	
Standard -VRV DX- indoor units only	RXYSQ4~5TMV1B	70/(90)m	40m	30/(30)m	15m	300m
	RXYSQ4~6T7(V/Y)1B	120/(150)m	40m	50/(40)m	15m	300m
	RXYSQ8TM1B	100/(130)m	40m	50/(40)m	15m	300m
RA- connection	RXYSQ10~12TM1B	120/(150)m	40m	50/(40)m	15m	300m
	RXYSQ4~5TMV1B	35/(45)m	40m	30/(30)m	15m	140m
	RXYSQ4~6T7(V/Y)1B	65/(85)m	40m	30/(30)m	15m	140m
	RXYSQ8TM1B	80/(100)m	40m	30/(30)m	15m	140m
Air handling unit (-AHU-) connection	RXYSQ10~12TM1B	80/(100)m	40m	30/(30)m	15m	140m
	Pair	50/(55)m (1)	-	40/(40)m	-	-
	Multi	(2)	50/(55)m (1)	40/(40)m	15m	300m
Mix	(3)	50/(55)m (1)	40m	40/(40)m	15m	300m

Notes

1. The allowable minimum length is 5- m.
2. Multiple air handling units (-AHU-)(-EKEV- + -EKEQ- kits).
3. Mix of air handling units (-AHU-) and -VRV DX- indoor units.

3D097984

RXYSQ-TV1
RXYSQ-TV1
RXYSQ-TY1



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 -3D097983- for details about the allowed combinations.

		Allowed piping length		Maximum height difference	
		BP- to -RA- (E)	-EXV- to -AHU- (J)	BP- to -RA- (H3)	-EXV- to -AHU- (H4)
RA- connection		2~15m	-	5m	-
Air handling unit (AHU) connection	Pair	-	≤5m	-	5m
	Multi	(1)	-	-	5m
Mix	(2)	-	≤5m	-	5m

Notes

1. Multiple air handling units (-AHU-)(-EKEV- + -EKEQ- kits).
2. Mix of air handling units (-AHU-) and -VRV DX- indoor units.

3D097984

12 Installation

12 - 2 Refrigerant Pipe Selection

RXYSQ-TV1
RXYSQ-TV1
RXYSQ-TY1

System pattern Allowed connection ratio (CR)	Total		Allowed capacity		
	Capacity	Maximum allowed amount of connectable indoor units (-VRV, RA, AHU) Excluding -BP- units and including -EXV- kits.	VRV DX indoor unit	-RA DX- indoor unit	Air handling unit (AHU)
Other combinations are not allowed.					
-VRV DX- indoor units only	50~130%	Maximum -64-	50~130%	-	-
-RA DX- indoor units only	80~130%	Maximum -32- (1)	-	80~130%	-
-VRV DX- indoor unit + -AHU- Mix	50~110% (3)	Maximum -64- (2)	50~110%	-	0~110%
-AHU- only Pair + multi (4)	90~110% (3)	Maximum -64- (2)	-	-	90~110%

Notes

1. There is no restriction on the number of connectable -BP- boxes.
2. -EKEXV- kits are also considered indoor units.
3. Restrictions regarding the air handling unit capacity
4. Pair AHU = system with 1 air handling unit connected to one outdoor unit
Multi AHU = system with multiple air handling units connected to one outdoor unit

About ventilation applications

- I. -FXMQ_MF- units are considered air handling units, following air handling unit limitations.
 - Maximum connection ratio when combined with -VRV DX- indoor units: -CR ≤ 30%
 - Maximum connection ratio when only air handling units are connected: -CR ≤ 100%
 - Minimum connection ratio when only -FXMQ_MF- units are connected: -CR ≥ 50%
 For information on the operation range, refer to the documentation of the -FXMQ_MF- unit.
- II. -Bidle- air curtains are considered air handling units, following air handling unit limitations:
For information on the operation range, refer to the documentation of the -Bidle- unit.
- III. -EKEXV + EKEQ- 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 -EKEXV-EKEQ- unit.
- IV. -VKM- units are considered to be regular -VRV DX- indoor units.
For information on the operation range, refer to the documentation of the -VKM- unit.
- V. 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.

3D097984

13 Operation range

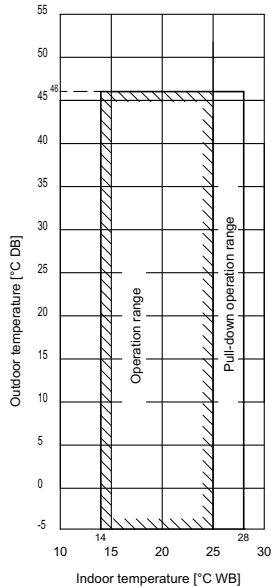
13 - 1 Operation Range

13

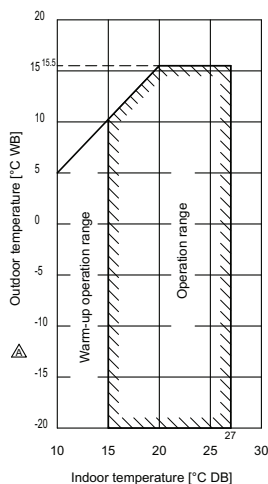
RXYSQ-TV1
RXYSQ-TV1
RXYSQ4-6TY1

- 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.

Cooling



Heating

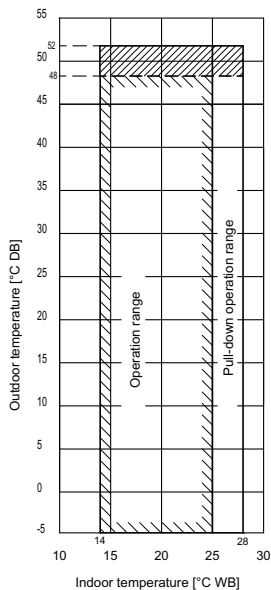


3D094664A

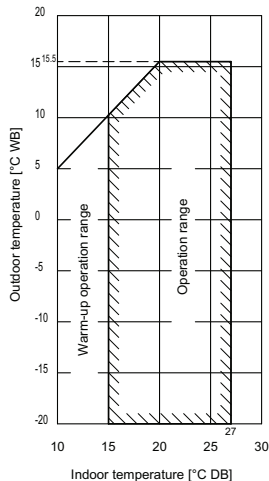
RXYSQ8-12TY1

- 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.
 - //////: Unit operation is possible, but no guaranteed capacity
 - 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.

Cooling



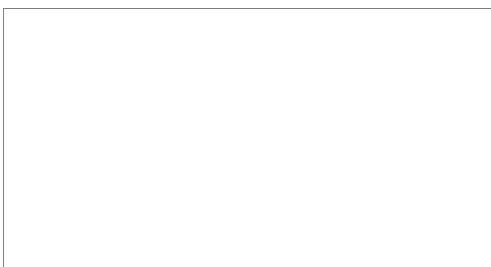
Heating



3D094665A



Daikin Europe N.V. Naamloze Vennootschap - Zandvoordestraat 300, B-8400 Oostende - Belgium - www.daikin.eu - BE 0412 120 336 - RPR Oostende



EEDEN XXX-06/16



Daikin Europe N.V. participates in the Eurovent Certification programme for Liquid Chilling Packages (LCP), Air handling units (AHU), Fan coil units (FCU) and variable refrigerant flow systems (VRF) Check ongoing validity of certificate online: www.eurovent-certification.com or using: www.certiflash.com



The present leaflet is drawn up by way of information only and does not constitute an offer binding upon Daikin Europe N.V.. Daikin Europe N.V. has compiled the content of this leaflet to the best of its knowledge. No express or implied warranty is given for the completeness, accuracy, reliability or fitness for particular purpose of its content and the products and services presented therein. Specifications are subject to change without prior notice. Daikin Europe N.V. explicitly rejects any liability for any direct or indirect damage, in the broadest sense, arising from or related to the use and/or interpretation of this leaflet. All content is copyrighted by Daikin Europe N.V.