VRV IV S-series heat pump Air Conditioning Technical Data

RXYSQ-TY1

RXYSQ8TMY1B
RXYSQ10TMY1B
RXYSQ12TMY1B

EEDEN21

Table of contents

RXYSQ-TY1

1 Features

1 - 1 RXYSQ-TY1

Space saving solution without compromising on efficiency

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- 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 cutains
- 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 200m^2 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 the Daikin Cloud Service: 24/7 monitoring for maximum efficiency, extented lifetime and immediate service support thanks to failure prediction

INVERTER
Inverter

2 Specifications

1 - 1 RXYSQ-TY1

Technical Specifications					RXYSQ8TY1	RXYSQ10TY1	RXYSQ12TY1
Recommended combination					4 x FXMQ50P7VEB	4 x FXMQ63P7VEB	6 x FXMQ50P7VEB
Cooling capacity	Prated,c			kW	22.4 (1)	28.0 (1)	33.5 (1)
	Combination A	35°C AHRI		Btu/h	76,400 (2)	95,500 (2)	114,300 (2)
		35°C AHRI		kW	22.4 (2)	28.0 (2)	33.5 (2)
		46°C ISO		Btu/h	58,000 (3)	68,200 (3)	81,850 (3)
		46°C ISO		kW	17.0 (3)	20.0 (3)	24.0 (3)
		48°C AHRI		Btu/h	51,150 (4)	58,000 (4)	68,200 (4)
		48°C AHRI		kW	15.0 (4)	17.0 (4)	20.0 (4)
Heating capacity	Nom.	6°CWB		kW	22.4 (5)	28.0 (5)	33.5 (5)
	Prated,h			kW	14.9	19.6	23.5
	Max.	6°CWB		kW	25.0 (5)	31.5 (5)	37.5 (5)
Power input - 50Hz	Cooling	Combination A	35°C AHRI	kW	6.78 (2)	8.54 (2)	10.20 (2)
			46°C ISO	kW	5.80 (3)	7.02 (3)	8.60 (3)
			48°C AHRI	kW	5.34 (4)	6.80 (4)	7.97 (4)
	Heating	Nom.	6°CWB	kW	5.82 (5)	6.60 (5)	8.19 (5)
EER	Combination A	35°C AHRI		Btu/h/W	11.30 (2)	11.20 (2)	
		35°C AHRI		kW/kW	3.30 (2)	3.28 (2)	
		46°C ISO		Btu/h/W	10.00 (3)	9.72 (3)	9.52 (3)
		46°C ISO		kW/kW	2.93 (3)	2.85 (3)	2.79 (3)
		48°C AHRI		Btu/h/W	9.58 (4)	8.53 (4)	8.56 (4)
		48°C AHRI		kW/kW	2.81 (4)	2.50 (4)	2.51 (4)
COP at nom. capacity	6°CWB			kW/kW	3.85	4.24	4.09
SCOP					4.2	4.1	4.3
SEER					6.3		6.5
ηs,c				%	247.3	247.4	256.5
ηs,h				%	165.8	162.4	169.6
Space cooling	A Condition (35°C - 27/19)	EERd			2.6	2.8	2.7
		Pdc		kW	22.4	28.0	33.5
	B Condition (30°C - 27/19)	EERd			4.2	4.3	
		Pdc		kW	16.5	20.6	24.7
	C Condition (25°C - 27/19)	EERd			7.7		7.9
		Pdc		kW	10.6	13.3	15.9
	D Condition (20°C - 27/19)	EERd			13.7	12.2	13.6
		Pdc		kW	6.4	7.1	7.3
Space heating (Average climate)	TBivalent	COPd (declared COP)			2.4	2.2	
		Pdh (declared heating cap)		kW	14.9	19.6	23.5
Space heating (Average climate)	TBivalent	Tbiv (bivalent temperature)		°C	-10		
	TOL	COPd (declared COP)			2.4	2.2	
		Pdh (declared heating cap)		kW	14.9	19.6	23.5
		Tol (temperature operating limit)		°C	-10		
	A Condition (-7°C)	COPd (declared COP)			2.6	2.4	
		Pdh (declared heating cap)		kW	13.2	17.4	20.8
	B Condition (2°C)	COPd (declared COP)			4.0	4.1	4.3
		Pdh (declared heating cap)		kW	8.0	10.6	12.7
	C Condition (7°C)	COPd (declared COP)			5.9		6.3
		Pdh (declared heating cap)		kW	5.0	6.8	8.1
	D Condition (12°C)	COPd (declared COP)			7.8	6.3	6.7
		Pdh (declared heating cap)		kW	5.8	6.4	6.6
Capacity range				HP	8	10	12
PED	Category				Category II		
	Most critical part	Name			Accumulator		
		Ps*V		Bar*l	202	279	
Maximum number of connectable indoor units					64 (6)		
Indoor index connection	Min.				100.0	125.0	150.0
	Max.				260.0	325.0	390.0
Dimensions	Unit	Height		mm	1,430	1,615	
		Width		mm	940		
		Depth		mm	320	460	
	Packed unit	Height		mm	1,615	1,745	
		Width		mm	1,030	1,015	
		Depth		mm	420	575	
Weight	Unit			kg	144	175	180
	Packed unit			kg	158	191	196

2 Specifications

1 - 1 RXYSQ-TY1

Technical Specifications					RXYSQ8TY1	RXYSQ10TY1	RXYSQ12TY1
Packing	Material				Carton		
	Weight			kg	5.6	8.2	
Packing 2	Material				Wood		
	Weight			kg	5.5	8.8	
Packing 3	Material				Plastic		
	Weight			kg	0.3	0.4	
Casing	Colour				Daikin White		
	Material				Painted galvanized steel plate		
Heat exchanger	Type				Cross fin coil		
	Indoor side				Air		
Heat exchanger	Outdoor side				Air		
	Air flow rate	Cooling	Rated	m^3/h	8,400	10,920	
		Heating	Rated	m^3/h	8,400	10,920	
Fan	Quantity				2		
Fan motor	Quantity				2		
	Type				DC motor		
	Output			W	200		
Compressor	Quantity				1		
	Type				Hermetically sealed scroll compressor		
	Crankcase heater			W	33		
Operation range	Cooling	Min.		°CDB	-5.0		
		Max.		°CDB	52.0		
	Heating	Min.		°CWB	-20.0		
		Max.		°CWB	15.5		
Sound power level	Cooling	Nom.		dBA	73.0 (7)	74.0 (7)	76.0 (7)
Sound pressure level	Cooling	Nom.		dBA	55.0 (8)		57.0 (8)
Refrigerant	Type				R-410A		
	GWP				2,087.5		
	Charge			TCO2Eq	11.5	14.6	16.7
	Charge			kg	5.5	7.0	8.0
Refrigerant oil	Type				Synthetic (ether) oil FVC68D		
Piping connections	Liquid	Type			Braze connection		
		OD		mm	9,52		12.7
	Gas	Type			Braze connection		
		OD		mm	19.1	22.2	25.4
	Total piping length	System	Actual	m	300 (9)		
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	0.0		
Power consumption in other than active mode	Crankcase heater mode	Cooling	PCK	kW	0.000		
		Heating	PCK	kW	0.040	0.046	
	Off mode	Cooling	POFF	kW	0.035	0.046	
		Heating	POFF	kW	0.040	0.046	
	Standby mode	Cooling	PSB	kW	0.035	0.046	
		Heating	PSB	kW	0.040	0.046	
	Thermostat-off mode	Cooling	PTO	kW	0.015	0.013	
Power consumption in other than active mode	Thermostat-off mode	Heating	PTO	kW	0.055	0.059	
Cooling	Cdc (Degradation cooling)				0.25		
Heating	Cdh (Degradation heating)				0.25		
Safety devices	Item	01			High pressure switch		
		02			Fan driver overload protector		
		03			Inverter overload protector		
		04			PC board fuse		

Standard accessories: Installation manual; Quantity: 1;

Standard accessories: Operation manual; Quantity: 1;

Standard accessories: Connection pipes; Quantity: 1;

Electrical Specifications			RXYSQ8TY1	RXYSQ10TY1	RXYSQ12TY1
Power supply	Name		Y1		
	Phase		3N~		
	Frequency	Hz	50		
	Voltage	V	380-415		
Power supply intake			Both indoor and outdoor unit		
Voltage range	Min.	%	-10		
	Max.	%	10		

2 Specifications

1 - 1 RXYSQ-TY1

Electrical Specifications					RXYSQ8TY1	RXYSQ10TY1	RXYSQ12TY1
Current - 50Hz	Nominal running current (RLA)	Combination A	Cooling	A	-		
		Combination B	Cooling	A	-		
	Starting current (MSC) - remark				See note 15		
	Zmax	List			No requirements		
	Minimum Ssc value			kVa	910 (10)	564 (10)	615 (10)
	Minimum circuit amps (MCA)			A	18.5 (11)	22.0 (11)	24.0 (11)
	Maximum fuse amps (MFA)			A	25 (12)		32 (12)
	Total overcurrent amps (TOCA)			A	16.5 (13)	25.0 (13)	27.0 (13)
	Full load amps (FLA)	Total		A	1.4 (14)		
Power Performance	Power factor	Combination 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)Cooling: T1: indoor temp. 26,7°CDB, 19,4°CWB, outdoor temp. 35°CB, AHRI 1230:2010, power input indoor units (duct type) included |
(3)Cooling: T3: indoor temp. 29,0°CDB, 19,0°CWB, outdoor temp. 46°CB, ISO15042:2011, power input indoor units (duct type) included |
(4)Cooling: T2: indoor temp. 26,6°CDB, 19,4°CWB, outdoor temp. 48°CB, AHRI 1230:2010, power input indoor units (duct type) included |
(5)Heating: indoor temp. 20°CDB; outdoor temp. 7°CDB, 6°CWB; equivalent refrigerant piping: 7.5m; level difference: 0m |
(6)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%). |
(7)Sound power level is an absolute value that a sound source generates. |
(8)Sound pressure level is a relative value, depending on the distance and acoustic environment. For more details, please refer to the sound level drawings. |
(9)Refer to refrigerant pipe selection or installation manual |
(10)n 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 wih Ssc ≥ minimum Ssc value |
(11)MCA must be used to select the correct field wiring size. The MCA can be regarded as the maximum running current. |
(12)MFA is used to select the circuit breaker and the ground fault circuit interrupter (earth leakage circuit breaker). |
(13)TOCA means the total value of each OC set. |
(14)FLA means the nominal running current of the fan |
(15) MSC means the maximum current during start up of the compressor. This unit uses only inverter compressors. Starting current is always ≤ max. running current. |
RLA is based on following conditions: indoor temp. 27°CDB, 19°CWB; outdoor temp. 35°CDB |
Maximum allowable voltage range variation between phases is 2%. |
Voltage range: units are suitable for use on electrical systems where voltage supplied to unit terminal is not below or above listed range limits. |
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. |
Sound values are measured in a semi-anechoic room. |
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 |
For detailed contents of standard accessories, see installation/operation manual

3 Options

3 - 1 Options

RXYSQ-TY1

VRV4-S
Heat pump
Option list

Nr.	Item	RXYSCQ4~6TMV1B	RXYSQ4~6T7V1B RXYSQ4~6T8VB(9)	RXYSQ4~6T7Y1B RXYSQ4~6T8YB(9)	RXYSQ8~12TMY1B	RXYSQ6T7Y1B9 RXYSQ6T8Y1B9	RXYSQ6TMYFK
I.	Refnet header	KHRQ22M29H					
		-	-	-	KHRQ22M64H	-	KHRQ22M64H
II.	Refnet joint	KHRQ22M20T					
		-	-	-	KHRQ22M29T9	-	KHRQ22M29T9
		-	-	-	KHRQ22M64T	-	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	EKPCCAB*					
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 ·RXYSQ4~6T7V1B·
   For ·RXYSQ4~6T8VB·
   To operate the cool/heat selector function, options ·1a· and ·1c· are both required.
4. For ·RXYSQ4~6T7Y1B·
   For ·RXYSQ4~6T8YB·
   To operate the cool/heat selector function, options ·1a· and ·1d· are both required.

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4 Combination table

4 - 1 Combination Table

RXYSQ-TY1

VRV4-S
Heat pump
Indoor unit combination restrictions

Indoor unit combination pattern	·VRV* DX· indoor unit	·RA DX· indoor unit	Hydrobox unit	Air handling unit (AHU)(1)
·VRV* DX· indoor unit	O	X	X	O
·RA DX· indoor unit	X	O	X	X
Hydrobox unit	X	X	X	X
Air handling unit (AHU) (1)	O	X	X	O_1

O: Allowed
X: Not allowed

Notes

1. O_1
- *Combination of ·AHU· only + control box ·EKEQFA· (not combined with ·VRV DX· indoor units)*
  → ·X·-control is possible [·EKEXV+EKEQFA*· boxes]. No Variable Refrigerant Temperature control possible.
  → ·Y·-control is possible [·EKEXV+EKEQFA*· boxes]. No Variable Refrigerant Temperature control possible.
  → ·W·-control is possible [·EKEXV+EKEQFA*· boxes]. 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 [·EKEXV + EKEQMA· boxes] is determined by the connection ratio (·90-110%·) and the capacity of the outdoor unit.

2. Combination of ·AHU· and ·VRV DX· indoor units
→ Z-control is possible (·EKEQMA*· boxes are allowed, but with a limited connection ratio).

3. (1) The following units are considered AHUs:
→ ·EKEXV + EKEQ(MA/FA) + AHU· coil
→ ·Biddle· air curtain
→ ·FXMQ_MF· units

Information
- ·VKM· units are considered regular ·VRV DX· indoor units.

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RXYSQ-TY1

VRV4-S
Heat pump
Indoor unit combination restrictions

Combination table	RXYSCQ4~6TMV1B	RXYSQ4~6T7V1B	RXYSQ4~6T7Y1B	RXYSQ8~12TMY1B
·VRV* DX· indoor unit	O	O	O	O
·RA DX· 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:
→ ·EKEXV + EKEQ(MA/FA) + AHU· coil
→ ·Biddle· air curtain
→ ·FXMQ_MF· units

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4 Combination table

4 - 1 Combination Table

RXYSQ-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.

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RXYSQ-TY9
RXYSQ-TV9
RXYSQ-TY1
RXYSCQ-TV1

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

Configuration			Indoor unit type
·RA· indoor unit	**Wall-mounted**	*Emura*	FTXJ20M (W/S)
			FTXJ25M (W/S)
			FTXJ35M (W/S)
			FTXJ50M (W/S)
		FTXM	FTXM20N
			FTXM25N
			FTXM35N
			FTXM42N
			FTXM50N
			FTXM60N
			FTXM71N
		CTXM	CTXM15M
		Stylish	FTXA20
			FTXA25
			FTXA35
			FTXA42
			FTXA50
	Floor-standing **Ceiling-mounted**	*Flex*	FLXS25B
			FLXS35B
			FLXS50B
			FLXS60B
	Floor-standing	*FVXM*	FVXM25F
			FVXM35F
			FVXM50F
			CVXM20A
			FVXM25A
			FVXM35A
			FVXM50A
			FVXM60A
		Nexura	FVXG25K
			FVXG35K
			FVXG50K
	Duct	*FDXM*	FDXM25F
			FDXM35F
			FDXM50F
			FDXM60F

Configuration			Indoor unit type
·SA· indoor unit	**Cassette**	*Fully Flat 2x2*	FFA25A
			FFA35A
			FFA50A
			FFA60A
		Roundflow 3x3	FCAG35A
			FCAG50A
			FCAG60A
			FCAG71A
	Ceiling-suspended		FHA35A
			FHA50A
			FHA60A
			FHA71A
	Duct		FBA35A
			FBA50A
			FBA60A
			FBA71A
	Floor-standing	*FNA*	FNA25A
			FNA35A
			FNA50A
			FNA60A

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·.

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5 Capacity tables

5 - 1 Capacity Table Legend

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

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

- **Capacity table database:** lets you find back and export quickly the capacity information you are looking for based upon unit model, refrigerant temperature and connection ratio.
- You can access the capacity table viewer here:
  https://my.daikin.eu/content/denv/en_US/home/applications/software-finder/capacity-table-viewer.html

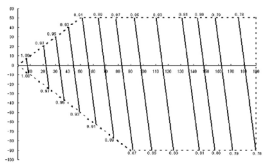
- An overview of **all software tools** that we offer can be found here:
  https://my.daikin.eu/denv/en_US/home/applications/software-finder.html

5 Capacity tables

5 - 2 Capacity Correction Factor

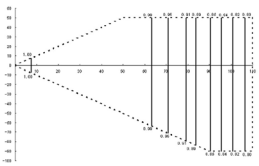
RXYSQ10TY1

Correction ratio for cooling capacity



x-axis : Equivalent piping length [m]
y-axis : Height difference between outdoor unit and furthest indoor unit [m]

Correction ratio for heating capacity



x-axis : Equivalent piping length [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 it 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%.
Maximum capacity of outdoor units = Capacity of outdoor units from capacity table at 100% connection ratio. x 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. x 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
RXYSQ8TMY1B	9,5	12,7	22,2	25.4 *

* If not available on-site, do not increase the piping diameter.
If not increased, do not apply a correction factor to the equivalent piping length (see note ·5·).

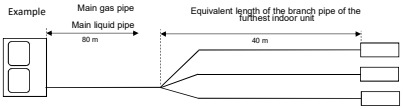
5. Overall equivalent length

Overall equivalent length = Equivalent length of the main pipe x 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	0,2

Example



Overall equivalent length
- Cooling mode = 80 m x 0,5 + 40 m = 80 m
- Heating mode = 80 m x 0,2 + 40 m = 56 m

Capacity correction ratio (height difference = 0)
- Cooling mode = 0,87
- Heating mode = 0,99

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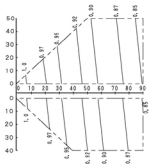
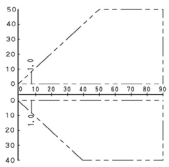
Correction ratio for cooling capacity



x-axis : Equivalent piping length [m]
y-axis : Height difference between outdoor unit and furthest indoor unit [m]

Correction ratio for heating capacity



x-axis : Equivalent piping length [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 it 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%.
Maximum capacity of outdoor units = Capacity of outdoor units from capacity table at 100% connection ratio. x 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. x 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
RXYSQ8TMY1B	9,5	12,7	19,1	22,2

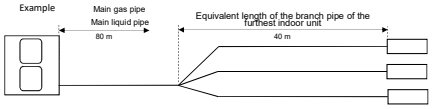
5. Overall equivalent length

Overall equivalent length = Equivalent length of the main pipe x 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

Example



Overall equivalent length
- Cooling mode = 80 m x 0,5 + 40 m = 80 m
- Heating mode = 80 m x 0,3 + 40 m = 64 m

Capacity correction ratio (height difference = 0)
- Cooling mode = 0,87
- Heating mode = 1,00

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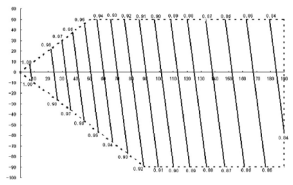
5 Capacity tables

5 - 2 Capacity Correction Factor

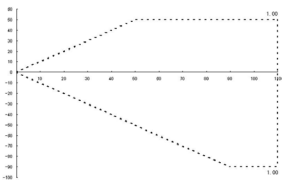
RXYSQ12TY1

Correction ratio for cooling capacity



x-axis : Equivalent piping length [m]
y-axis : Height difference between outdoor unit and furthest indoor unit [m]

Correction ratio for heating capacity



x-axis : Equivalent piping length [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 it 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%.

Maximum capacity of outdoor units	=	Capacity of outdoor units from capacity table at 100% connection ratio.	x	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.	x	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
RXYSQ8TMY1B	12,7	15,9	25,4	28,6

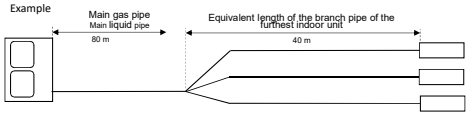
5. Overall equivalent length

Overall equivalent length	=	Equivalent length of the main pipe	x	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

Example



Overall equivalent length
- Cooling mode = 80 m x 0,5 + 40 m = 80 m
- Heating mode = 80 m x 0,2 + 40 m = 64 m

Capacity correction ratio (height difference = 0)
- Cooling mode = 0,92
- Heating mode = 1,00

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5 Capacity tables

5 - 2 Capacity Correction Factor

RXYSQ-TY1

5

MINI VRV

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:

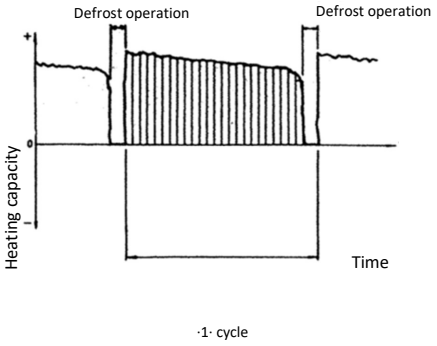
Formula

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
RXYSCQ4TMV1B RXYSCQ5TMV1B RXYSCQ6TMV1B RXYSQ4T7V1B RXYSQ5T7V1B RXYSQ6T7V1B RXYSQ4T7Y1B RXYSQ5T7Y1B RXYSQ6T7Y1B RXYSQ6T7Y1B9 RXYSQ4T8VB RXYSQ5T8VB RXYSQ6T8VB RXYSQ4T8YB RXYSQ5T8YB RXYSQ6T8YB RXYSQ6T8Y1B9 RXYSQ4T8VB9 RXYSQ5T8VB9 RXYSQ6T8VB9 RXYSQ4T8YB9 RXYSQ5T8YB9 RXYSQ6T8YB9	0,88	0,86	0,80	0,75	0,76	0,82	1,00
RXYSQ8TMY1B	0,95	0,93	0,88	0,84	0,85	0,90	1,00
RXYSQ10TMY1B RXYSQ6TMYFK	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.

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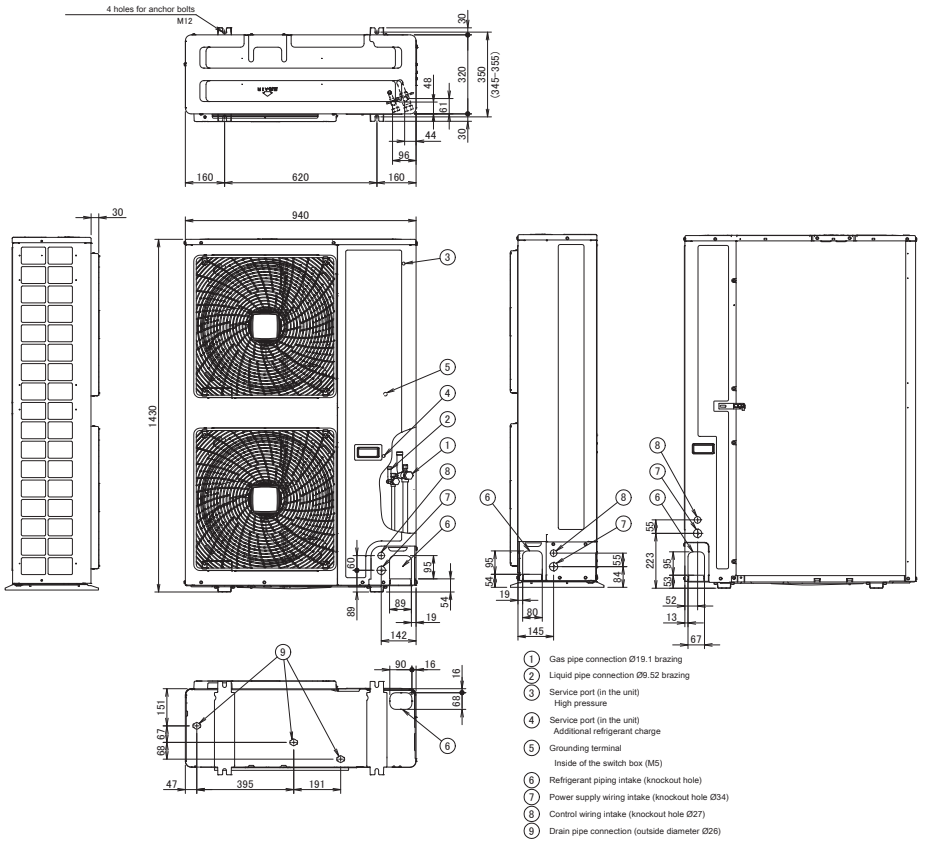
6 Dimensional drawings

6 - 1 Dimensional Drawings

RXYSQ8TY1



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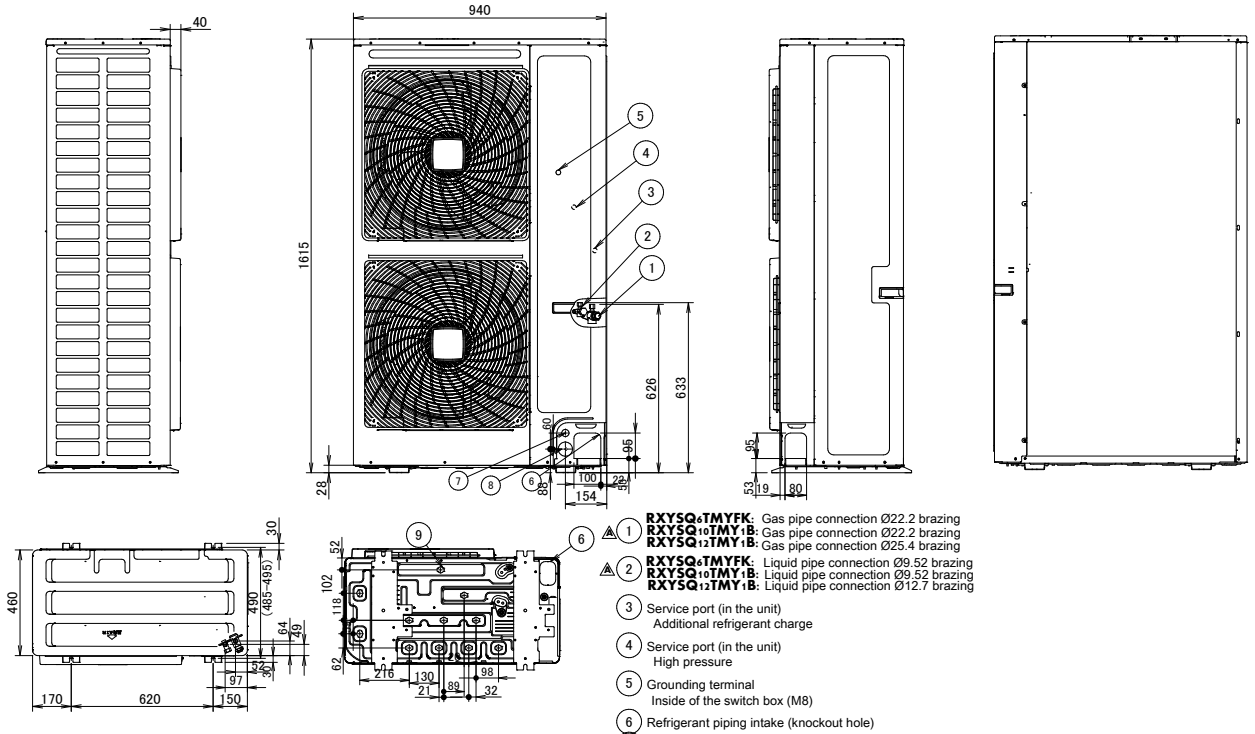
RXYSQ10-12TY1



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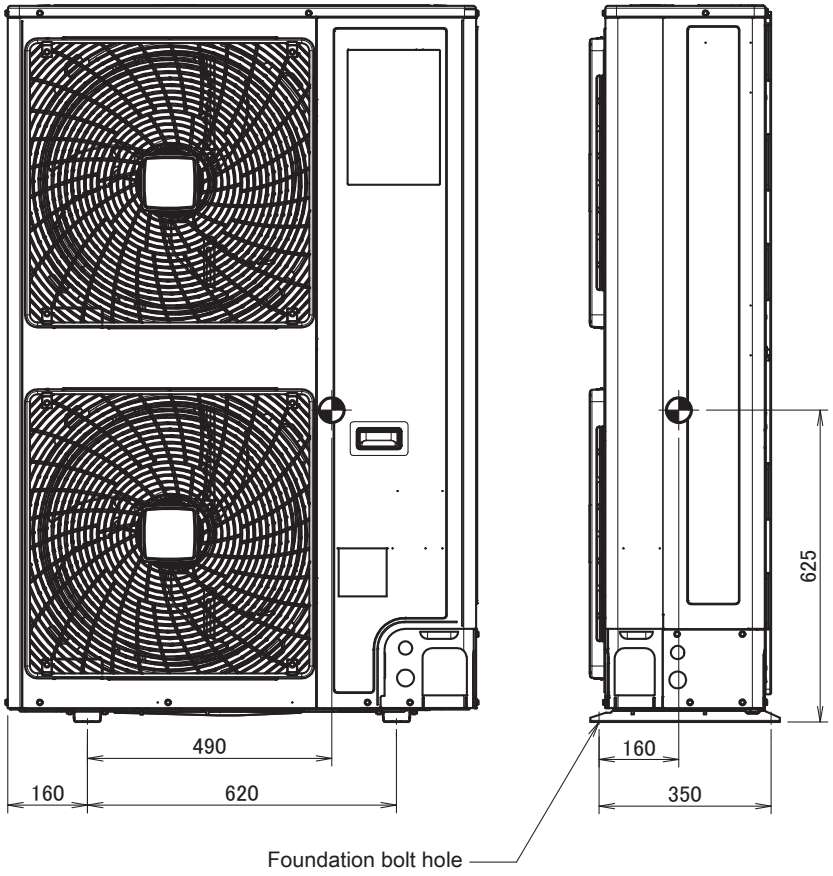
7 Centre of gravity

7 - 1 Centre of Gravity

RXYSQ8TY1



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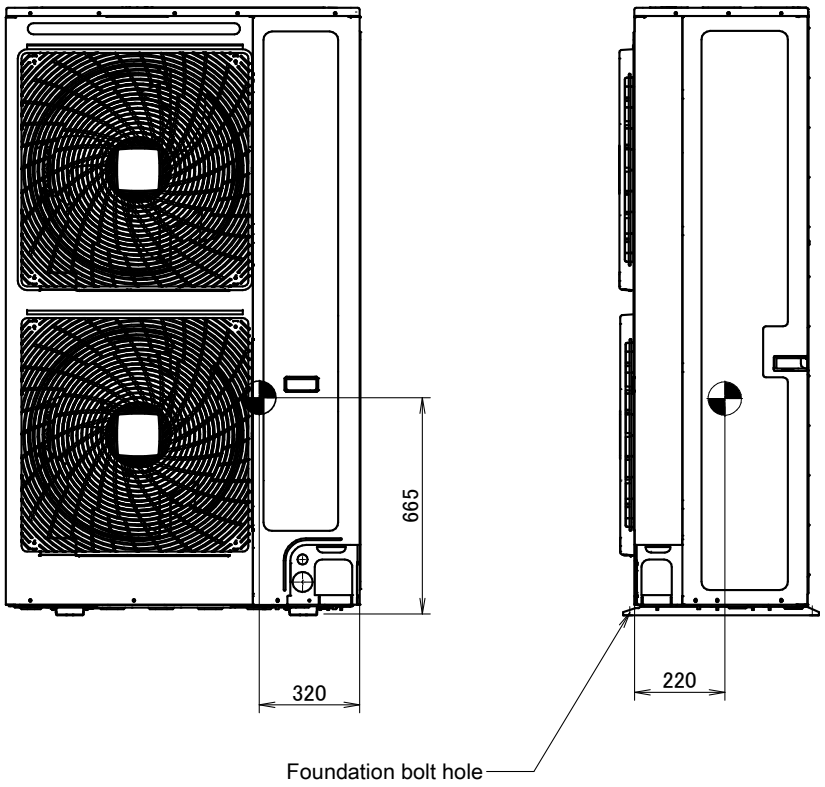
7 Centre of gravity

7 - 1 Centre of Gravity

RXYSQ10-12TY1



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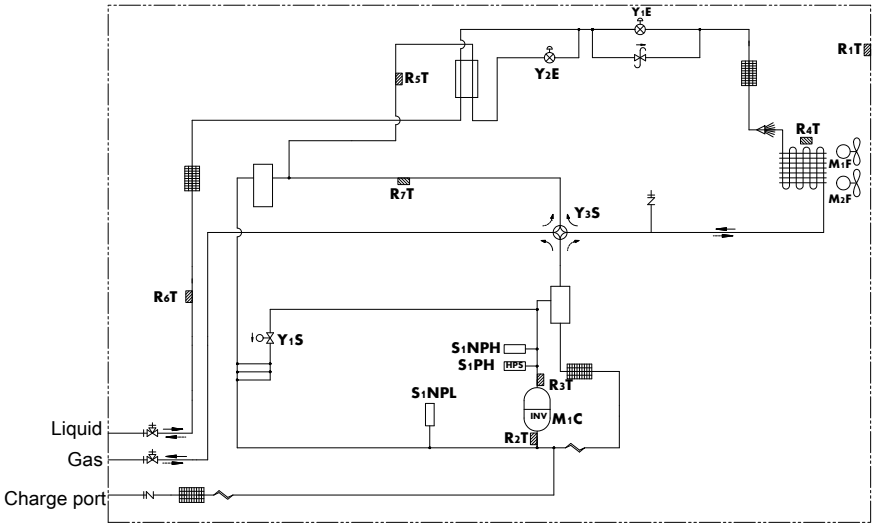
8 Piping diagrams

8 - 1 Piping Diagrams

8

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

Heating
Cooling

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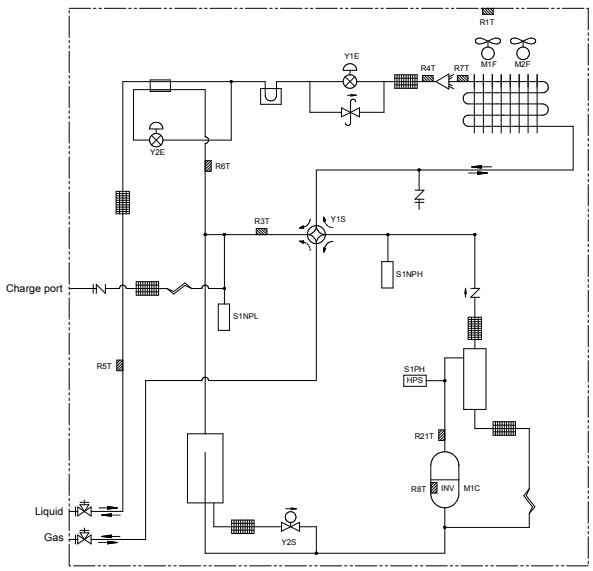
RXYSQ10-12TY1



·Charge port / Service port
·Stop valve
·Filter
·Check valve
·Pressure relief valve
·Thermistor
·Heat sink (PCB)
·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

Heating
Cooling

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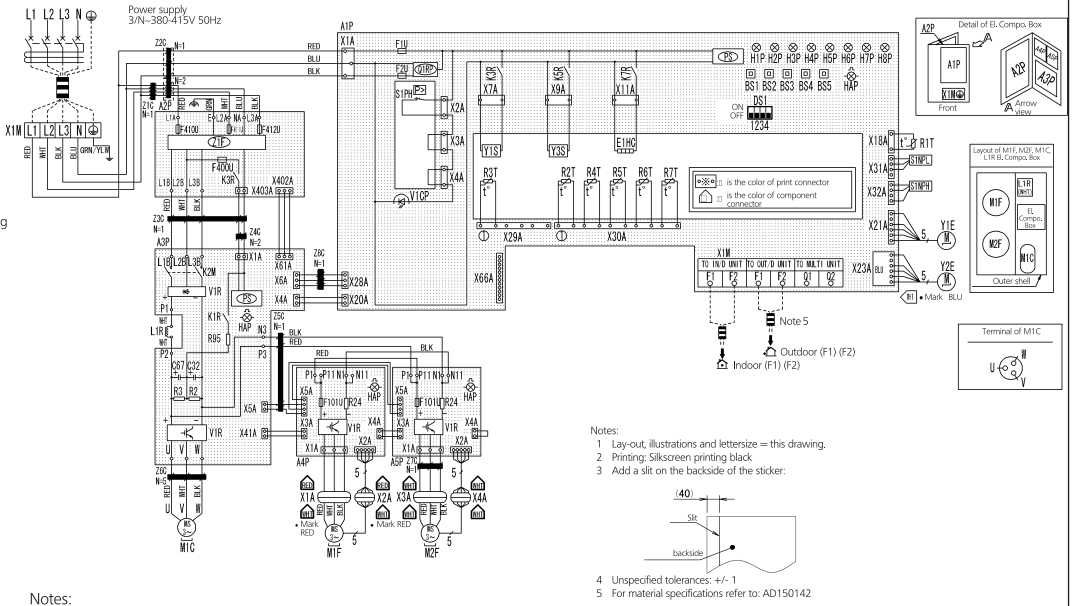
9 Wiring diagrams

9 - 1 Wiring Diagrams - Three Phase

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 input
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 Lay-out, illustrations and lettersize = this drawing.
2 Printing: Silkscreen printing black
3 Add a slit on the backside of the sticker:
4 Unspecified tolerances: +/- 1
5 For material specifications refer to: AD150142

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-BS5 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

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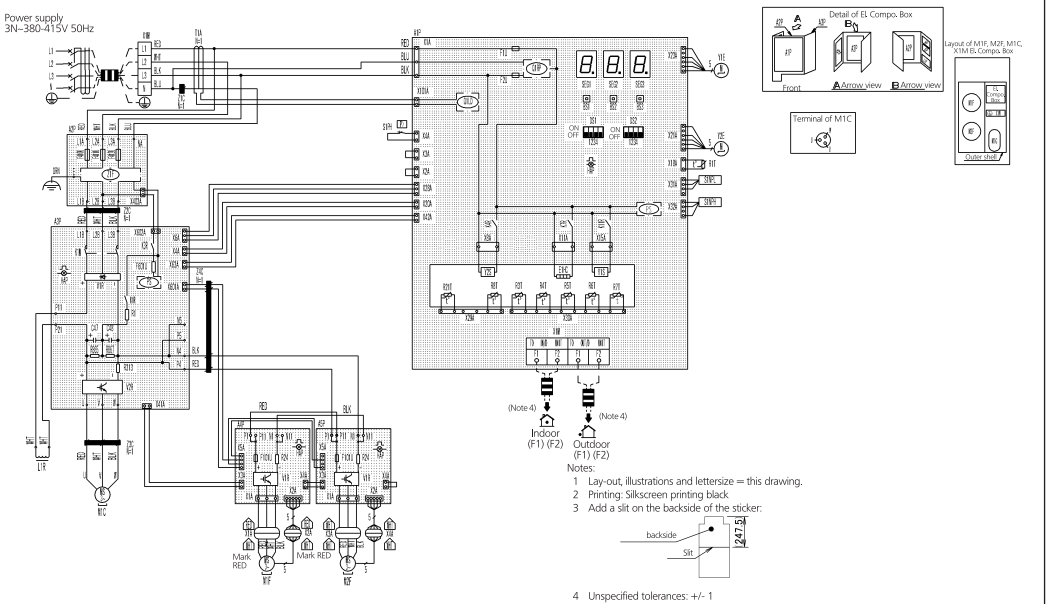
RXYSQ10-12TY1

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~BS3	: Push button switch (Mode, Set, Return)
C47, C48	: Capacitor (A3P)
DS1, DS2	: Dip switch (A1P)
E1HC	: Crankcase heater
F1U, F2U	: Fuse (T 3.15A / 250V) (A1P)
F101U	: Fuse (A4P) (A5P)
F411U~F412U	: Fuse (A2P)
F601U	: Fuse (A3P)
HAP	: Pilotlamp (service monitor - green) (A1P) (A3P) (A4P) (A5P)
K1M	: Magnetic contactor (A3P)
K1R	: Magnetic relay (A3P)
K3R	: Magnetic relay (A3P)
K4R	: Magnetic relay (Y2S) (A1P)
K7R	: Magnetic relay (E1HC) (A1P)
K11R	: Magnetic relay (Y1S) (A1P)
L1R	: Reactor
M1C	: Motor (compressor)
M1F, M2F	: Motor (fan)
PS	: Switching power supply (A1P) (A3P)
Q1LD	: Leakage detection circuit (A1P)
Q1RP	: Phase reversal detect circuit (A1P)
R1T	: Thermistor (Air) (A1P)
R21T	: Thermistor (M1C Discharge)
R3T	: Thermistor (Accumulator)
R4T	: Thermistor (Heat exchanger liq. Pipe)
R5T	: Thermistor (Subcool liq. Pipe)
R6T	: Thermistor (Heat exchanger gas pipe)
R7T	: Thermistor (heat exchanger deicer)
R8T	: Thermistor (M1C body)
R1	: Resistor (current limiting) (A3P)
R24	: Resistor (current sensor) (A4P)
R313	: Resistor (current sensor) (A3P)
R865, R867	: Resistor (A3P)
S1NPH	: Pressure sensor (High)
S1NPL	: Pressure sensor (low)
S1PH	: High pressure switch
SEG1~SEG3	: 7-segment display (A1P)
T1A	: current sensor
V1R	: Power module (A3P) (A4P) (A5P)
V2R	: Power module (A3P)
X1A, X2A	: Connector (M1F)
X3A, X4A	: Connector (M2F)
X1M	: Terminal block (Power supply)
X1M	: Terminal block (Control) (A1P)
Y1E	: Electronic expansion valve (Main)
Y2E	: Electronic expansion valve (injection)
Y1S	: Solenoid valve (Main)
Y2S	: Solenoid valve (Accumulator oil return)
Z1C~Z4C	: Noise filter (ferrite core)
Z1F	: Noise filter (with surge absorber) (A2P)



Notes:
1 Lay-out, illustrations and lettersize = this drawing.
2 Printing: Silkscreen printing black
3 Add a slit on the backside of the sticker:
4 Unspecified tolerances: +/- 1
5 For material specifications refer to: AD150142

Notes:
1. This wiring diagram only applies to the outdoor unit.
2. :Field wiring :Terminal block, : Connector, : Terminal, :Protective earth (screw)
3. Refer to the installation manual, for connection wiring to indoor-outdoor transmission F1 - F2, outdoor-outdoor transmission F1 - F2.
4. How to use BS1-BS3 switch, refer to the installation manual.
5. When operating, do not short circuit for protection device. (S1PH)
6. Colours: BLK: Black, RED: Red, BLU: Blue, WHT: White, GRN: Green

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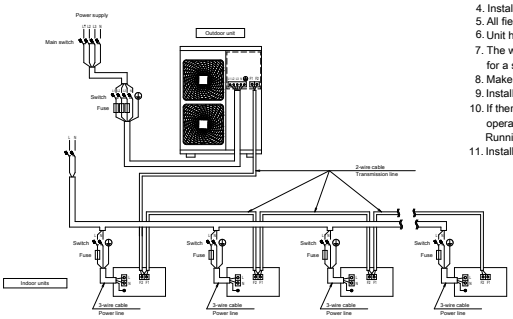
10 External connection diagrams

10 - 1 External Connection Diagrams

RXYSQ8~12TY1

External connection diagram

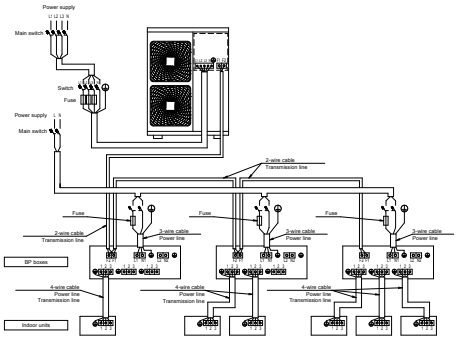
VRV indoor unit



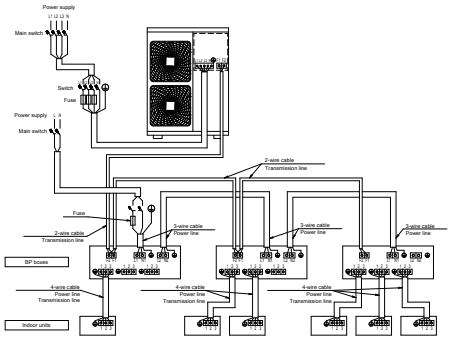
Notes

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 equipement.
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.

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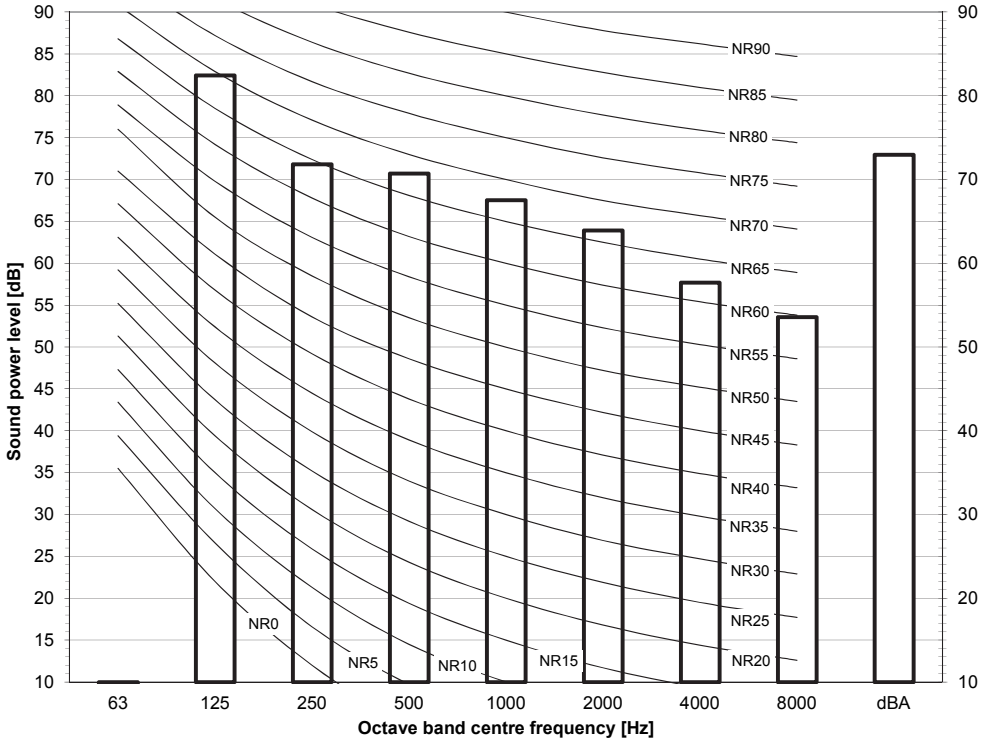
11 Sound data

11 - 1 Sound Power Spectrum

RXYSQ8TY1



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

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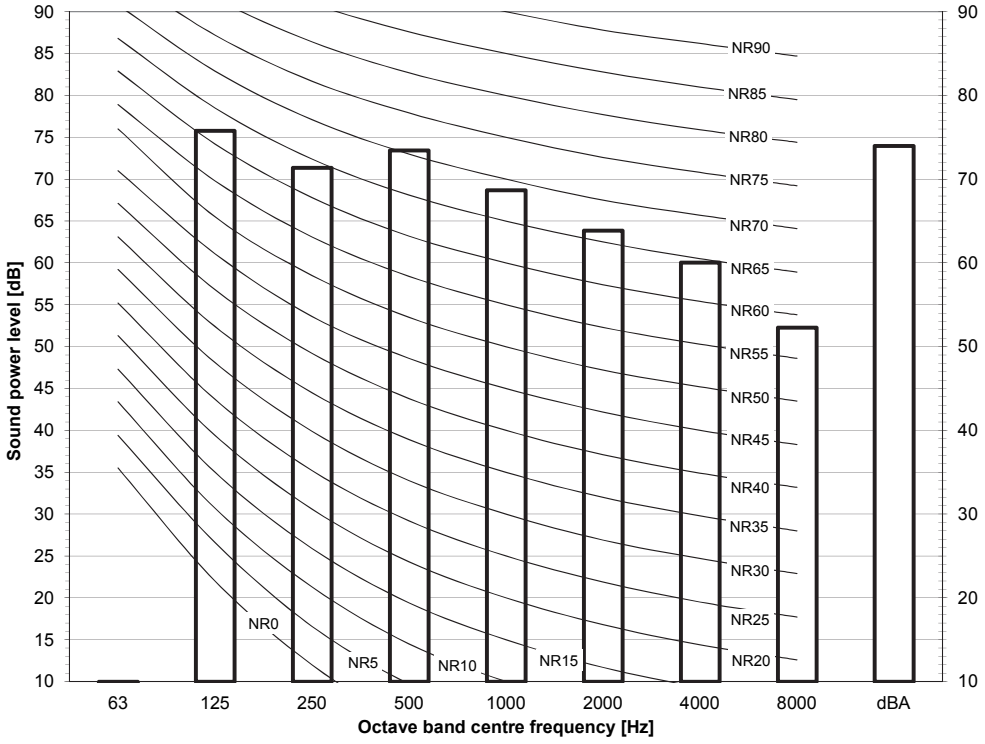
RXYSQ10TY1



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

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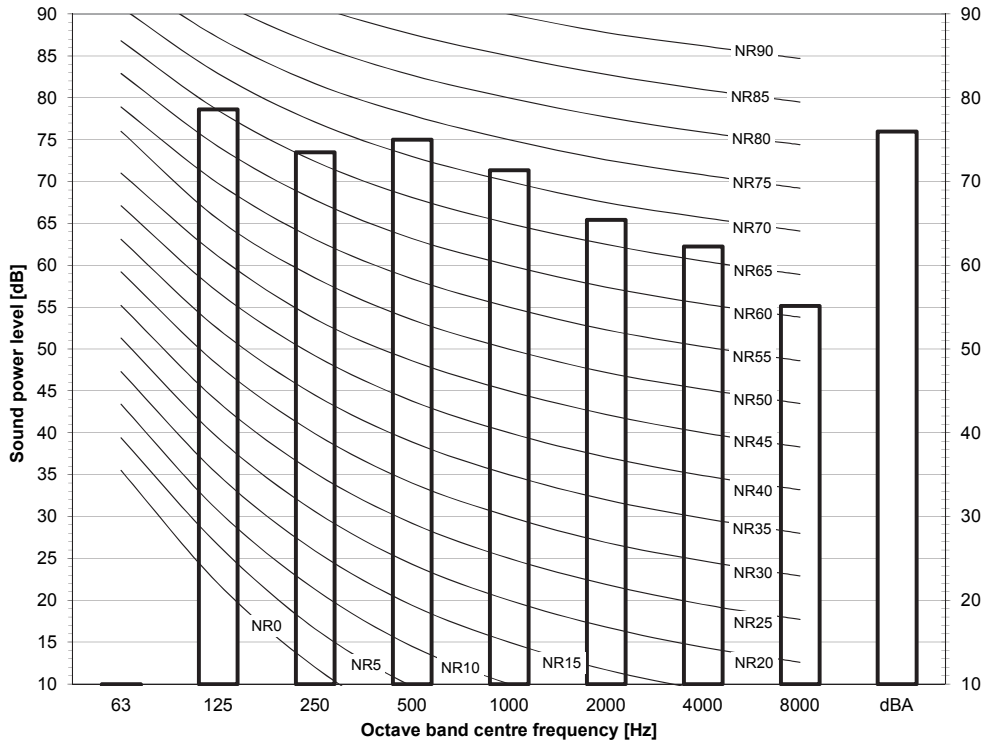
11 Sound data

11 - 1 Sound Power Spectrum

RXYSQ12TY1



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

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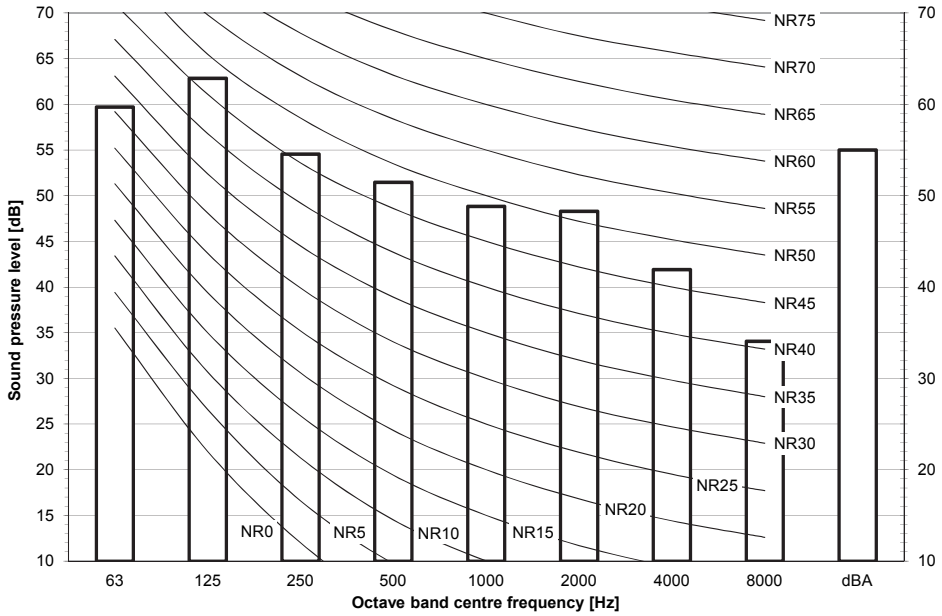
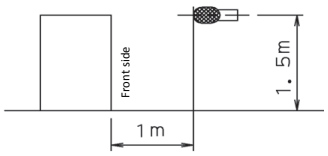
11 Sound data

11 - 2 Sound Pressure Spectrum

RXYSQ8TY1

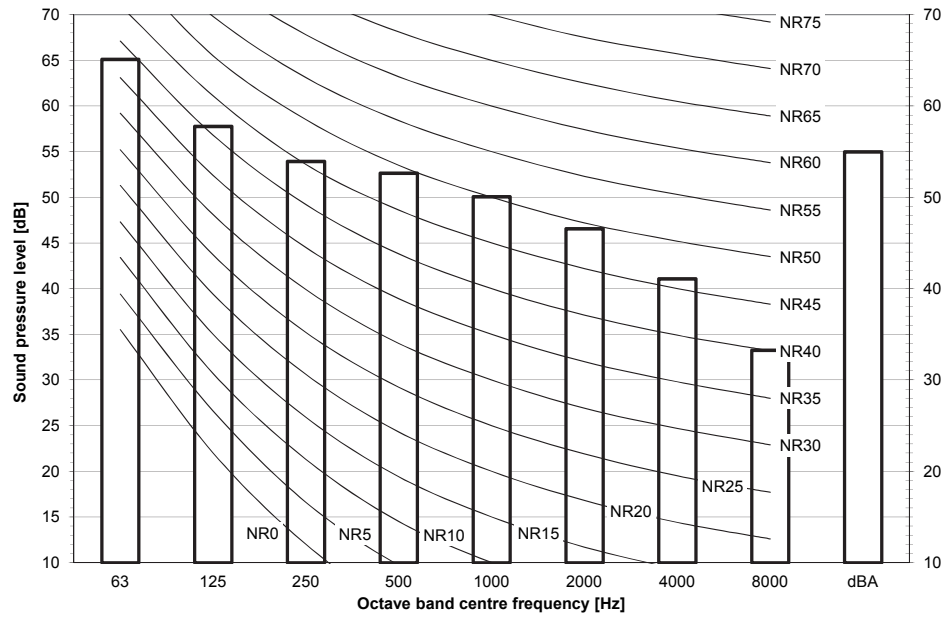


Notes
- Data is valid at free field condition.
- Data is valid at nominal operation condition.
- dBA = A-weighted sound pressure level (A scale according to IEC).
- Reference acoustic pressure 0 dB = 20 µPa

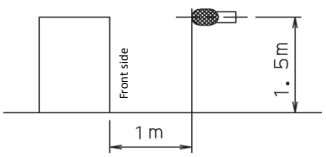


3D098245

RXYSQ10TY1



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 µPa

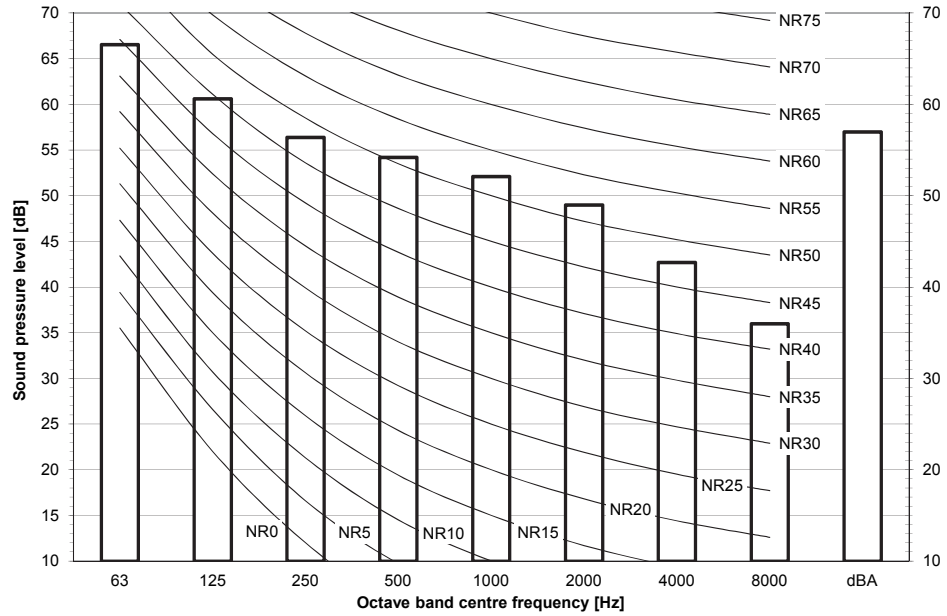


3D098246

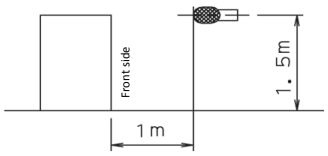
11 Sound data

11 - 2 Sound Pressure Spectrum

RXYSQ12TY1



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 µPa



3D098247

12 Installation

12 - 1 Installation Method

RXYSQ8TY1

Required installation space

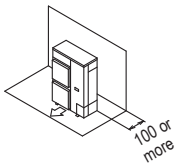
The unit of the values is mm.

1. Where there is an obstacle on the suction side:

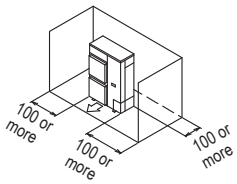
(a) No obstacle above

(1) Stand-alone installation

• Obstacle on the suction side only

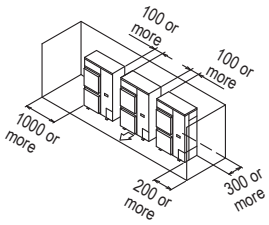


• Obstacle on both sides



(2) Series installation (2 or more) (note)

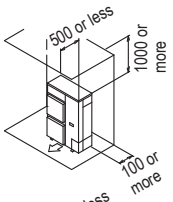
• Obstacle on both sides



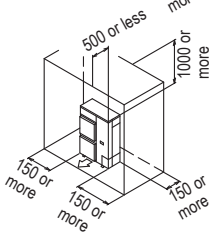
(b) Obstacle above, too

(1) Stand-alone installation

• Obstacle on the suction side, too

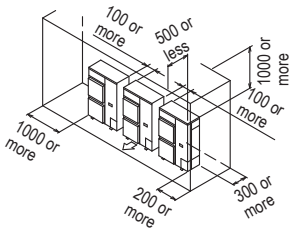


• Obstacle on the suction side and both sides



(2) Series installation (2 or more) (note)

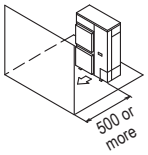
• Obstacle on the suction side and both sides



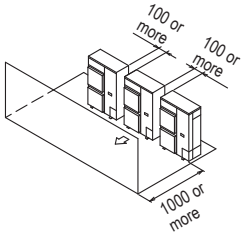
2. Where there is an obstacle on the discharge side:

(a) No obstacle above

(1) Stand-alone installation

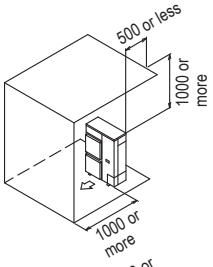


(2) Series installation (2 or more) (note)

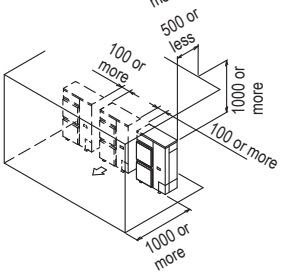


(b) Obstacle above, too

(1) Stand-alone installation



(2) Series installaton (2 or more) (note)



3. Where there are obstacles on both suction and discharge sides:

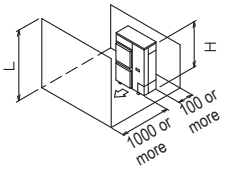
Pattern 1

Where the obstacles on the discharge side is higher than the unit:
(There is no height limit for obstructions on the intake side.)

(a) No obstacle above

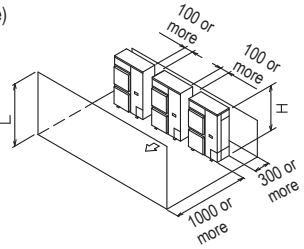
(1) Stand-alone installation

L > H



(2) Series installation (2 or more) (note)

L > H



3D068442T

12 Installation

12 - 1 Installation Method

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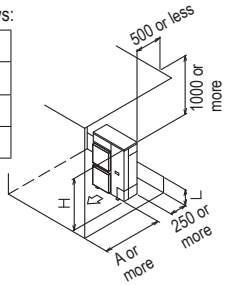
(b) Obstacle above, too

(1) Stand-alone installation

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

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

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



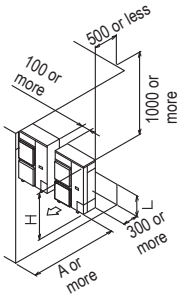
(2) Series installation (2 or more) (note)

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

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



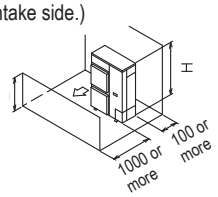
Pattern 2

Where the obstacles on the discharge side is lower than the unit:
(There is no height limit for obstructions on the intake side.)

(c) No obstacle above

(1) Stand-alone installation

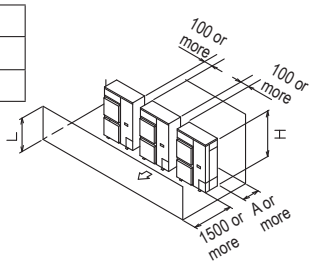
L ≤ H



(2) Series installation (2 or more) (note)

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

L	A
0 < L ≤ 1/2H	250
1/2H < L ≤ H	300



(d) Obstacle above, too

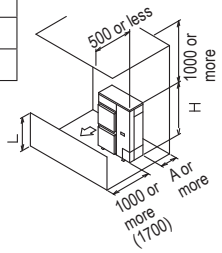
(1) Stand-alone installation

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

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

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

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

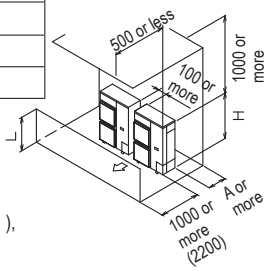


(2) Series installation (note)

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

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

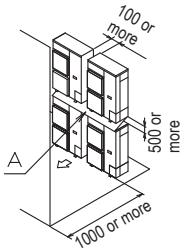
Close the bottom of the installation frame to prevent the discharged air from being bypassed.
Only two units can be installed for this series.
If the distance exceed the figure in the ( ), then it's no need to set the stand.



4. Double-decker installation

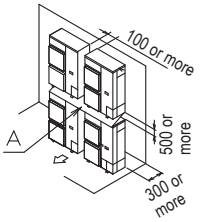
(a) Obstacle on the discharge side (note)

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 unit.
Set the board (field supply) as the detail A between two units to prevent the drainage from frozing.
Leave the enough space between the layer one and the board.



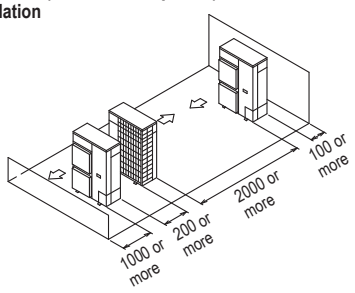
(b) Obstacle on the suctions side (note)

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 unit.
Set the board (field supply) as the detail A between two units to prevent the drainage from frozing.
Leave the enough space between the layer one and the board.



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

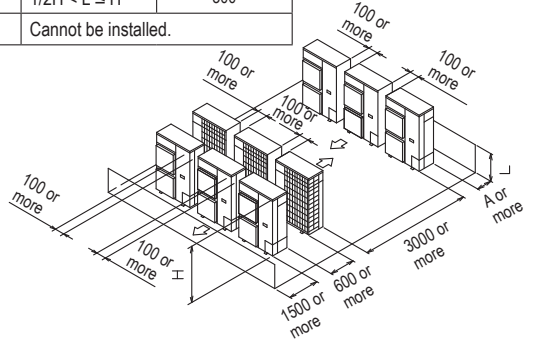
(a) One row of stand-alone installation



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

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

	L	A
L ≤ H	0 < L ≤ 1/2H	250
	1/2H < L ≤ H	300
H < L	Cannot be installed.	



OUTDOOR UNIT FOR VRV SYSTEM

NOTES

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

3D068442T

12 Installation

12 - 1 Installation Method

RXYSQ10-12TY1

Required installation space

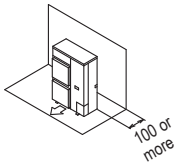
The unit of the values is mm.

1. Where there is an obstacle on the suction side:

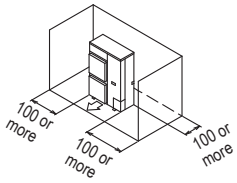
(a) No obstacle above

(1) Stand-alone installation

• Obstacle on the suction side only

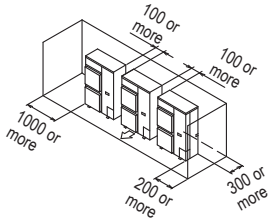


• Obstacle on both sides



(2) Series installation (2 or more) (note)

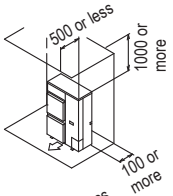
• Obstacle on both sides



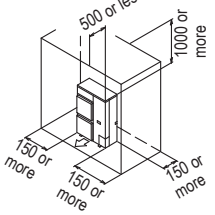
(b) Obstacle above, too

(1) Stand-alone installation

• Obstacle on the suction side, too

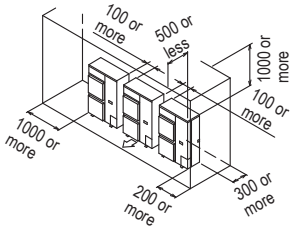


• Obstacle on the suction side and both sides



(2) Series installation (2 or more) (note)

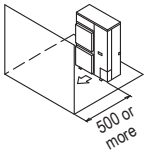
• Obstacle on the suction side and both sides



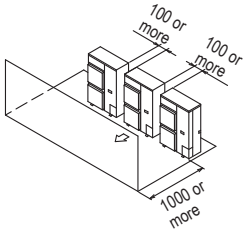
2. Where there is an obstacle on the discharge side:

(a) No obstacle above

(1) Stand-alone installation

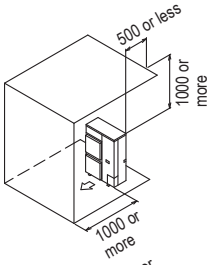


(2) Series installation (2 or more) (note)

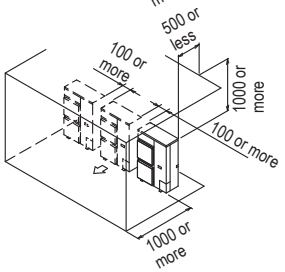


(b) Obstacle above, too

(1) Stand-alone installation



(2) Series installaton (2 or more) (note)



3. Where there are obstacles on both suction and discharge sides:

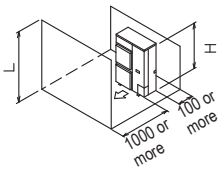
Pattern 1

Where the obstacles on the discharge side is higher than the unit:
(There is no height limit for obstructions on the intake side.)

(a) No obstacle above

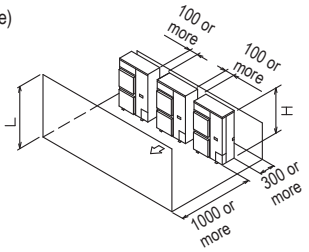
(1) Stand-alone installation

L > H



(2) Series installation (2 or more) (note)

L > H



3D083122P

12 Installation

12 - 1 Installation Method

RXYSQ10-12TY1

12

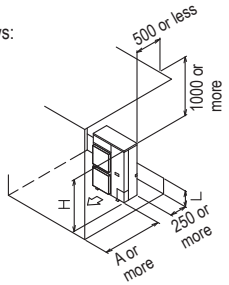
(b) Obstacle above, too

(1) Stand-alone installation

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

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

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



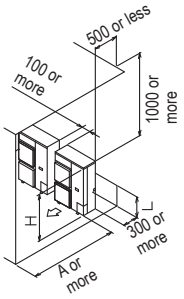
(2) Series installation (2 or more) (note)

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

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



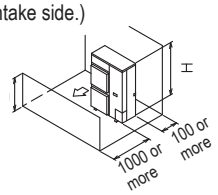
Pattern 2

Where the obstacles on the discharge side is lower than the unit:
(There is no height limit for obstructions on the intake side.)

(c) No obstacle above

(1) Stand-alone installation

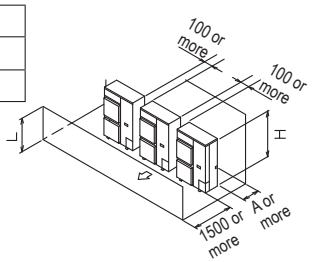
L ≤ H



(2) Series installation (2 or more) (note)

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

L	A
0 < L ≤ 1/2H	250
1/2H < L ≤ H	300



(d) Obstacle above, too

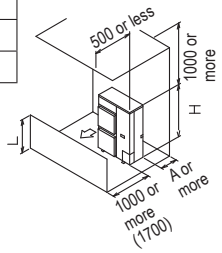
(1) Stand-alone installation

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

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

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

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



(2) Series installation (note)

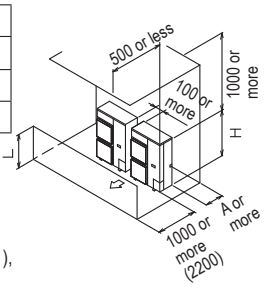
The relations between H, A and L are as follows.

	L	A
L ≤ H	0 < L ≤ 1/2H	250
	1/2H < L ≤ H	300
H < L	Set the stand as: L ≤ 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 exceed the figure in the ( ), then it's no need to set the stand.



4. Double-decker installation

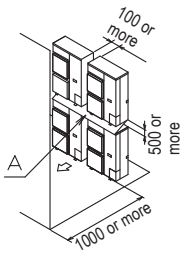
(a) Obstacle on the discharge side (note)

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 unit.

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

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



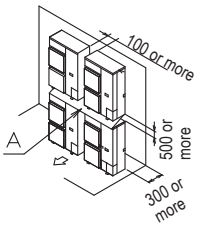
(b) Obstacle on the suctions side (note)

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

Do not stack more than two unit.

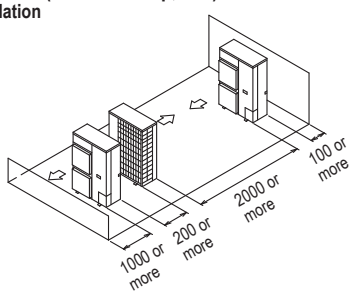
Set the board (field supply) as the detail A between two units to prevent the drainage from frozing.

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



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

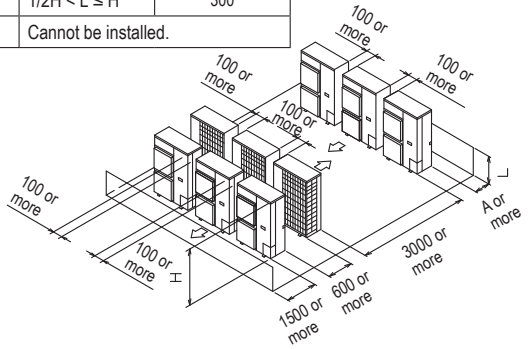
(a) One row of stand-alone installation



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

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

	L	A
L ≤ H	0 < L ≤ 1/2H	250
	1/2H < L ≤ H	300
H < L	Cannot be installed.	



OUTDOOR UNIT FOR VRV SYSTEM

NOTES

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

3D083122P

12 Installation

12 - 2 Refrigerant Pipe Selection

RXYSQ-TY1

VRV4-S
Heat pump
Piping restrictions ·1/3·

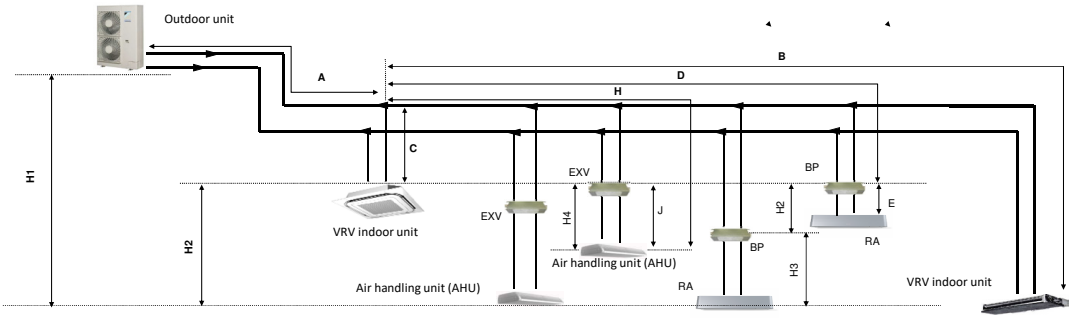
For the reference drawing, see page ·2/3·.		Maximum piping length: Longest pipe (A+[B,D+E,H]) Actual / (Equivalent)	Maximum piping length: After first branch (B,D+E,H) Actual	Maximum height difference: Indoor-to-outdoor (H1) Outdoor above indoor / (indoor above outdoor)	Maximum height difference: Indoor-to-indoor (H2)	Total piping length
Standard ·VRV DX· indoor units only	RXYSCQ4~6TMV1B	70/(90)m	40m	30/(30)m	15m	300m
	RXYSQ4~6T7(V/Y)1B	120/(150)m	40m	50/(40)m	15m	300m
	RXYSQ4~6T8(V/Y)B					
	RXYSQ8TMY1B	100/(130)m	40m	50/(40)m	15m	300m
	RXYSQ10~12TMY1B	120/(150)m	40m	50/(40)m	15m	300m
·RA· connection	RXYSCQ4~6TMV1B	35/(45)m	40m	30/(30)m	15m	140m
	RXYSQ4~6T7(V/Y)1B	65/(85)m	40m	30/(30)m	15m	140m
	RXYSQ4~6T8(V/Y)B					
	RXYSQ8TMY1B	80/(100)m	40m	30/(30)m	15m	140m
	RXYSQ10~12TMY1B	80/(100)m	40m	30/(30)m	15m	140m
Air handling unit (·AHU·) connection	Pair	50/(55)m (1)	-	40/(40)m	-	-
	Multi (2)	50/(55)m (1)	40m	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·)(·EKEXV· + ·EKEQ· kits).
3. Mix of air handling units (·AHU·) and ·VRV DX· indoor units.

3D097984B

RXYSQ-TY1

VRV4-S
Heat pump
Piping restrictions ·2/3·



Notes
1. Schematic indication
   Illustrations may differ from the actual appearance of the unit.
2. This is only to illustrate piping length limitations.
   Refer to combination table ·3D097983· for details about the allowed combinations.

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

Notes
1. Multiple air handling units (·AHU·)(·EKEXV· + ·EKEQ· kits).
2. Mix of air handling units (·AHU·) and ·VRV DX· indoor units.

3D097984B

12 Installation

12 - 2 Refrigerant Pipe Selection

RXYSQ-TY1

VRV4-S
Heat pump
Piping restrictions ·3/3·

System pattern Allowed connection ratio (CR) Other combinations are not allowed.	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)
·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. ·Biddle· air curtains are considered air handling units, following air handling unit limitations:
For information on the operation range, refer to the documentation of the ·Biddle· unit.

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.

V. ·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.

3D097984B

13 Operation range

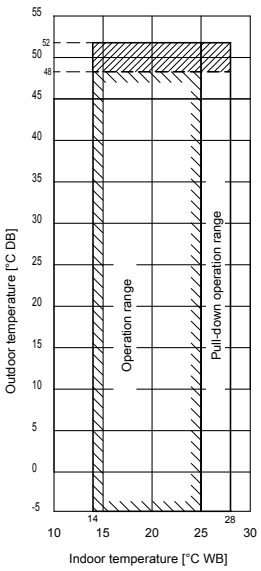
13 - 1 Operation Range

RXYSQ8-12TY1

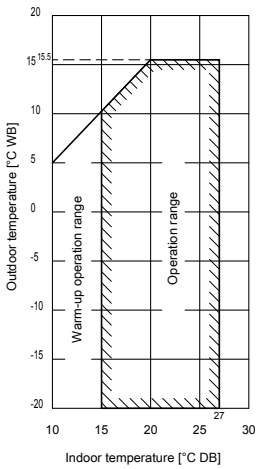
Notes

1. These figures assume the following operation conditions
   Indoor and outdoor units
   Equivalent piping length: 5m
   Level difference: 0m
2. Depending on operation and installation conditions, the indoor unit can change over to freeze-up operation (indoor de-icing).
3. To reduce the freeze-up operation (indoor de-icing) frequency, it is recommended to install the outdoor unit in a location not exposed to wind.
4. 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.
5. ////: Unit operation is possible, but no guaranteed capacity
6. 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



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14 Appropriate Indoors

14 - 1 Appropriate Indoors

RXYSQ-TY1
RXYSQ-TY9
RXYSQ-TV9
RXYSCQ-TV1

Recommended indoor units for ·RXYSQ*T* AND RXYSCQ*T*· outdoor units

·· HP	4	5	6	8	10	12
	3xFXSQ25 1xFXSQ32	4xFXSQ32	2xFXSQ32 2xFXSQ40	4xFXMQ50	4xFXMQ63	6xFXMQ50

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

Appropriate indoor units for ·RXYSQ*T* AND RXYSCQ*T*· outdoor units

Covered by ·ENER LOT21·

FXFQ20-25-32-40-50-63-80-100-125
FXZQ15-20-25-32-40-50
FXCQ20-25-32-40-50-63-80-125
FXKQ25-32-40-63
FXDQ15-20-25-32-40-50-63
FXSQ15-20-25-32-40-50-63-80-100-125-140
FXMQ50-63-80-100-125-200-250
FXAQ15-20-25-32-40-50-63
FXHQ32-63-100
FXUQ71-100
FXNQ20-25-32-40-50-63
FXLQ20-25-32-40-50-63

Outside the scope of ·ENER LOT21·

EKEXV50-63-80-100-125-140-200-250 + EKEQM / EKEQF
VKM50-80-100
CYVS100-150-200-250
CYVM100-150-200-250
CYVL100-150-200-250

Covered by ·ENER LOT10·

FTXJ25-35-50
FTXA20-25-35-42-50
FTXM20-25-35-42-50-60-71
CTXM15
FLXS25-35-50-60
FVXM25-35-50
FVXG25-35-50
FNA25-35-50-60
FDXM25-30-50-60
FFA25-35-50-60
FCAG35-50-60-71
FHA35-50-60-71
FBA35-50-60-71
CVXM20A
FVXM-25A-35A-50A-60A

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