DAIKIN

Air Conditioning

Technical Data

VRVIII-S heat pump

EEDEN15-100

RXYSQ-P8V1

TABLE OF CONTENTS

RXYSQ-P8V1

1 Features

Space saving solution without compromising on efficiency

- For residential and light commercial applications
- Space saving design for flexible installation
- Wide range of indoor units: either connect VRV or stylish indoor units such as Daikin Emura, Nexura ...
- Energy efficient heating system based on air source heat pump technology, lowering energy bills and CO2 emmisions
- Connect up to 9 indoor units, which can all be individually controlled
- Possibility to combine different types of indoor units: wall mounted, floor standing, concealed ceiling, ceiling suspended, round flow or 4-way blow cassettes
- 3 steps in night quiet mode: step 1: 47dBA, step 2: 44 dBA, step 3: 41 dBA
- Simplified installation & guaranteed optimal efficiency with automatic charging & testing
- The ability to control each conditioned zone individually keeps VRV system running costs to an absolute minimum
- Spread your installation cost by phased installation
- Possibility to limit peak power consumption between 30 and 80%, for example during periods with high power demand
- Keep your system in top condition via our ACNSS 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					RXYSQ4P8V1	RXYSQ5P8V1	RXYSQ6P8V1
Capacity range				HP	4	5	6
Cooling capacity	Nom.			kW	12.6 (1)	14.0 (1)	15.5 (1)
Heating capacity	Nom.			kW	14.2 (2)	16.0 (2)	18.0 (2)
Power input - 50Hz	Cooling	Nom.		kW	3.24	3.51	4.53
	Heating	Nom.		kW	3.12	3.86	4.57
Capacity control	Method				Inverter controlled		
	Steps			%	24 ~ 100		
EER					3.89	3.99	3.42
COP					4.55	4.15	3.94
Maximum number of connectable indoor units					8 (3) / 8 (4)	10 (3) / 9 (4)	12 (3) / 9 (4)
Indoor index connection	Min.				50	62.5	70
	Nom.				-		
	Max.				130	162.5	182
Dimensions	Unit	Height		mm	1,345		
		Width		mm	900		
		Depth		mm	320		
	Packed unit	Height		mm	1,524		
		Width		mm	980		
		Depth		mm	420		
Weight	Unit			kg	120		
	Packed unit			kg	130		
Packing	Material				Carton / Wood / EPS		
	Weight			kg	8		
Casing	Colour				Daikin White		
	Material				Painted galvanized steel plate		
Heat exchanger	Length			mm	857		
	Rows	Quantity			2		
	Fin pitch			mm	2		
	Passes	Quantity			10		
	Face area			m²	1.131		
	Stages	Quantity			60		
	Empty tubeplate hole	Quantity			0		
	Tube type				ø8 Hi-XSS		
	Fin	Type			Non-symmetric waffle louvre		
		Treatment			Corrosion resistant		
Compressor	Quantity				1		
	Model				JT100G-VDL		
	Type				Hermetically sealed scroll compressor		
	Speed			rpm	6,480		
	Output			W	2,500	3,000	3,500
	Starting method				Direct on line		
	Crankcase heater			W	33		
Fan	Type				Propeller fan		
	Quantity				2		
	Air flow rate	Cooling	Nom.	m³/min	106		
		Heating	Nom.	m³/min	102	105	
	External static pressure	Max.		Pa	-		
	Discharge direction				Horizontal		
Fan motor	Quantity				2		
	Model				Brushless DC motor		
	Speed	Cooling	Nom.	rpm	850		
		Heating	Nom.	rpm	820	840	
	Drive				Direct drive		
	Output			W	70		

2 Specifications

2-1 Technical Specifications					RXYSQ4P8V1	RXYSQ5P8V1	RXYSQ6P8V1
Fan motor 2	Model				Brushless DC motor		
	Speed	Cooling	Nom.	rpm	815		
		Heating	Nom.	rpm	785	805	
	Drive				Direct drive		
	Output			W	70		
Sound power level	Cooling	Nom.		dBA	66	67	69
Sound pressure level	Cooling	Nom.		dBA	50	51	53
	Heating	Nom.		dBA	52	53	55
Operation range	Cooling	Min.~Max.		°CDB	-5~46		
	Heating	Min.~Max.		°CWB	-20~15.5		
Refrigerant	Type				R-410A		
	Charge			kg	4.0		
				TCO_2eq	8.4		
	Control				Expansion valve		
	GWP				2,087.5		
	Circuits	Quantity			1		
Refrigerant oil	Type				Daphne FVC68D		
	Charged volume			l	1.5		
Piping connections	Liquid	Type			Flare connection		
		OD		mm	9.52		
	Gas	Type			Flare connection (VRV®) / Braze connection (RA)		Braze connection
		OD		mm	15.9 (3) / 19.1 (4)		19.1
	Drain	Quantity			3		
		OD		mm	26x3		
	Heat insulation				Both liquid and gas pipes		
	Piping length	OU - BP	Total	m	55 (4)		
		BP - IU	Max.	m	15 (4)		
			Total	m	60 (4)	80 (4)	90 (4)
	Total piping length	System	Actual	m	300 (3) / 115 (4)	300 (3) / 135 (4)	300 (3) / 145 (4)
	Level difference	OU - IU	Outdoor unit in highest position	m	-		
			Indoor unit in highest position	m	-		
Defrost method					Reversed cycle		
Defrost control					Sensor for outdoor heat exchanger temperature		
Safety devices	Item	01			HPS		
		02			Fan motor thermal protection		
		03			Inverter overload protector		
		04			PC board fuse		
PED	Category				Category I		

Standard Accessories : Installation manual; Quantity : 1;

Standard Accessories : Operation manual; Quantity : 1;

Standard Accessories : Connection pipes; Quantity : 3;

2-2 Electrical Specifications				RXYSQ4P8V1	RXYSQ5P8V1	RXYSQ6P8V1
Power supply	Name			V1		
	Phase			1N~		
	Frequency		Hz	50		
	Voltage		V	220-240		
Voltage range	Min.		%	-10		
	Max.		%	10		
Current	Zmax	Text		-		
	Nominal running current (RLA) - 50Hz	Cooling	A	15.9	20.2	22.2

2 Specifications

2-2 Electrical Specifications				RXYSQ4P8V1	RXYSQ5P8V1	RXYSQ6P8V1
Current - 50Hz	Maximum running current		A	27.0		
	Starting current (MSC)		A	15.9	20.2	22.2
	Zmax	List		No requirements		
	Minimum circuit amps (MCA)		A	27.0		
	Maximum fuse amps (MFA)		A	32.0		
	Full load amps (FLA)	Fan motor	A	0.3		
		Fan motor 2	A	0.3		
Wiring connections - 50Hz	For power supply	Quantity		3		
		Remark		Earth wire included		
	For connection with indoor	Quantity		2		
		Remark		F1,F2		
Power supply intake				Both indoor and outdoor unit		
Field earth leakage breaker			mA	300		

Notes

(1) Cooling: indoor temp. 27°CDB, 19.0°CWB; outdoor temp. 35°CDB; equivalent piping length: 5m; level difference: 0m

(2) Heating: indoor temp. 20°CDB; outdoor temp. 7°CDB, 6°CWB; equivalent refrigerant piping: 5m; level difference: 0m

(3) In case VRV indoor units are connected

(4) In case RA indoors are connected

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

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

Sound values are measured in a semi-anechoic room.

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

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%.

Select wire size based on the value of MCA

Instead of a fuse, use a circuit breaker

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

MSC means the maximum current during start up of the compressor

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

Contains fluorinated greenhouse gases

3 Options

3 - 1 Options

RXYSQ-P8V1

No	Item	RXYSQ4	RXYSQ5	RXYSQ6
1	Cool / Heat selector	KRC19-26A6		
2	Fixing box	KJB111A		
3	Refnet header	KHRQ22M29H		
4	Refnet joint	KHRQ22M20TA		
5	Central drain plug	KKPJ5F180		
6	Branch provider (2 rooms)	BPMKS967B2B		
7	Branch provider (3 rooms)	BPMKS967B3B		

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NOTES

Note: All options are kits.

4 Capacity tables

4 - 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.
  → http://extranet.daikineurope.com/captab
- 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.
  → http://extranet.daikineurope.com/en/software/downloads/default.jsp

4 Capacity tables

4 - 2 Integrated Heating Capacity Correction Factor

RXYSQ-P8V1

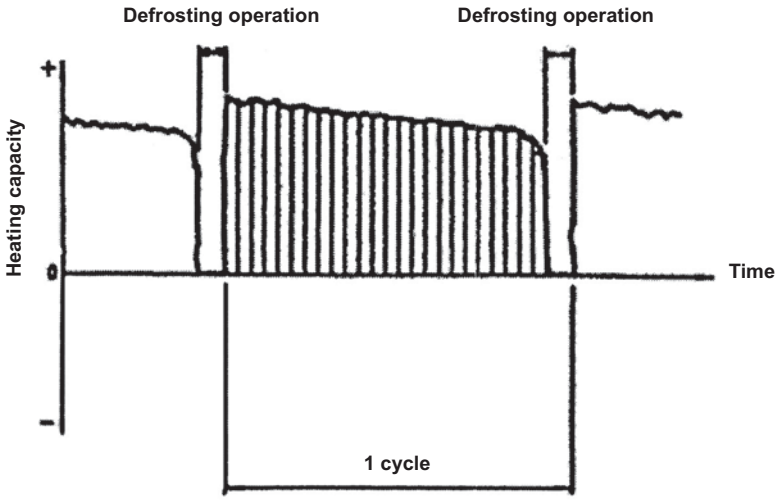
INTEGRATED HEATING CAPACITY COEFFICIENT

The heating capacity tables do not take account of the reduction in capacity, when frost has accumulated or while the defrosting operation is in progress.
The capacity values, which take these factors into account, in other words, the integrated heating capacity values, can be calculated as follows:

Formula:
Integrated heating capacity = A
Value given in table of capacity characteristics = B
Integrating correction factor for frost accumulation (kW) = C
A = B x C

Correction factor for finding integrated heating capacity.

Inlet port temperature of heat exchanger (°C/RH 85%)	-7	-5	-3	0	3	5	7
Integrating correction factor for frost accumulation	0,88	0,86	0,8	0,75	0,76	0,82	1.0



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NOTES

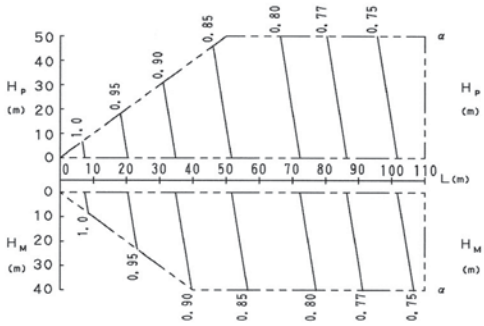
1. The figure shows that the integrated heating capacity expresses the integrated capacity for a single cycle (from defrost operation to defrost operation) in terms or time.
2. Whe there is an accumulation of snow against the outside surface of the outdoor unit heat exchanger, ther will always be a temporary reduction in capacity, although this will of course vary in degree in accordance with a number of other factors, such as the outdoor temperature (°CDB), relative huminity (RH) and the amount of frosting which occurs.

4 Capacity tables

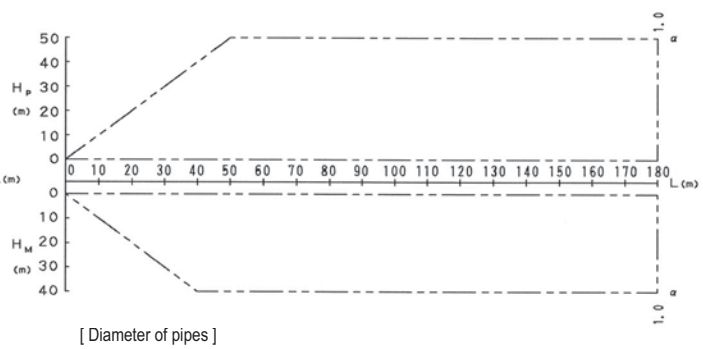
4 - 3 Capacity Correction Factor

RXYSQ4,5P8V1

1. Rate of change in cooling capacity



2. Rate of change in heating capacity



[Explanation of symbols]

Hp: Level difference (m) between indoor and outdoor units where indoor unit in inferior position

Hm: Level difference (m) between indoor and outdoor units where indoor unit in superior position

L: Equivalent pipe length (m)

α: Capacity correction factor

[Diameter of pipes]

Model	Gas	Liquid
RXYSQ4, 5P8V1 RXYSQ4, 5P8Y1	ø 15.9	ø 9.5

3TW33622-3

NOTES

1. These figures illustrate the rate of change in capacity of 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 from the rate of change in capacity shown in the above figures.
2. With this outdoor unit, evaporating pressure constant control when cooling, and condensing pressure constant control when heating is carried out.
3. Method of calculating cooling/heating capacity (max. capacity for combination with standard indoor unit)

   cooling / heating capacity = cooling / heating capacity obtained from performance characteristics table x each capacity rate of change

   In the case lenght of piping differs depending on the indoor unit, maximum capacity of aech unit during simultaneous operation is:

   cooling / heating capacity = cooling / heating capacity of each unit x capacity rate of change for each piping length

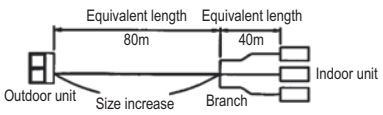
   <As for RXYSQ4, 5P8V1 - RXYSQ4, 5P8Y1>
4. When overall equivalent pipe length is 90m or more, the diameter of the main gas pipes (outdoor unit-branch sections) must be increased.
   [Diameter of above case]

Model	Gas	Liquid
RXYSQ4, 5P8V1 RXYSQ4, 5P8Y1	ø 19.1	Not increased

5. When the main sections of the interunit gas pip diameters are increased the overall equivalent length should be calculated as follows.

   Overall equivalent length = Equivalent length to main pipe x 0,5 + Equivalent length after branching

   Example: (RXYSQ4, 5P8V1 / RXYSQ4, 5P8Y1)



   In the above case (Cooling)
   Overall equivalent length = 80m x 0.5 + 40m = 80m
   The correction factor in capacity when Hp = 0m is thus approximately 0.78
6. For RXYSQ: use these correction factors in case of vrv indoor unit.

4 Capacity tables

4 - 3 Capacity Correction Factor

RXYSQ-P8V1 - for combination with RA and Sky Air indoor units

Capacity Correction Factor by the Length of Refrigerant Piping

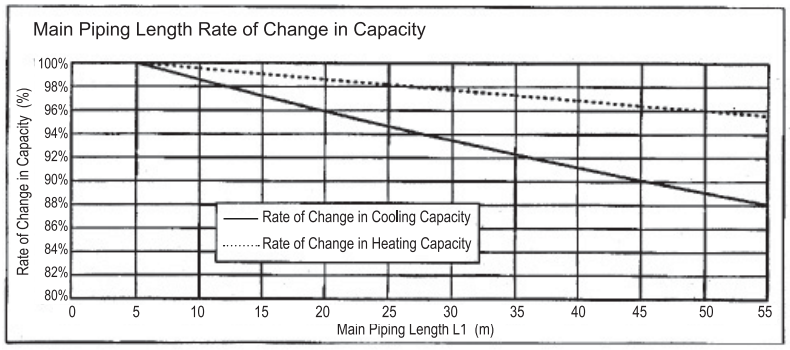
- Rate of Change in Capacity by the Main Piping Length

Rate of Change in Cooling Capacity

Main Piping Length	5	10	15	20	25	30	35	40	45	50	55
Rate of Change in Cooling Capacity	100.0%	98.6%	97.2%	95.9%	94.7%	93.5%	92.3%	91.2%	90.1%	89.1%	88.1%

Rate of Change in Heating Capacity

Main Piping Length	5	10	15	20	25	30	35	40	45	50	55
Rate of Change in Heating Capacity	100.0%	99.5%	99.1%	98.6%	98.2%	97.7%	97.3%	96.9%	96.4%	96.0%	95.6%



Both cases outdoor unit in inferior or superior for indoor unit, the rate of change in capacity is same

- Rate of Change in Capacity by Branch Piping Length

(1) Refrigerant Piping Connection Diameter
liquid ø 6.4
gas ø 15.9

piping length	Rate of Change in Capacity	
	Cooling	Heating
3	100.0%	100.0%
5	99.6%	99.9%
10	98.7%	99.6%
15	97.9%	99.3%

(2) Refrigerant Piping Connection Diameter
liquid ø 6.4
gas ø 12.7

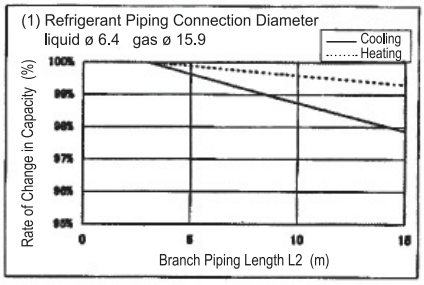
piping length	Rate of Change in Capacity	
	Cooling	Heating
3	100.0%	100.0%
5	99.1%	99.5%
10	96.9%	98.2%
15	94.8%	97.0%

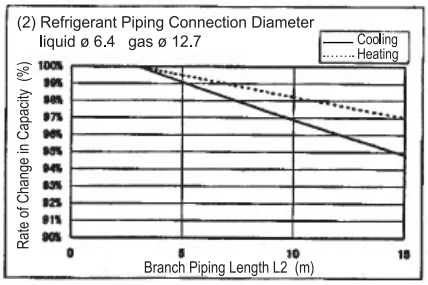
(3) Refrigerant Piping Connection Diameter
liquid ø 6.4
gas ø 9.5

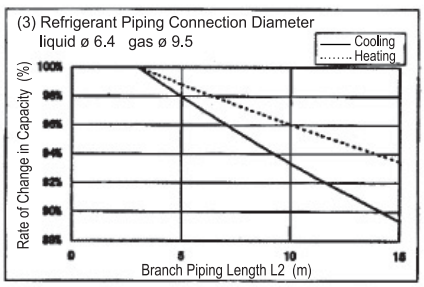
piping length	Rate of Change in Capacity	
	Cooling	Heating
3	100.0%	100.0%
5	98.0%	98.8%
10	93.4%	96.0%
15	89.3%	93.5%

Piping size for field connection (mm)

		RA		SA	
		Liquid	Gas	Liquid	Gas
Class (kW)	15	ø 6.4	ø 9.5		
	20				
	25			ø 6.4	ø 9.5
	35				
	42				
	50		ø 12.7		ø 12.7
	60				
	71		ø 15.9		







[Method of calculating cooling/heating capacity]
Total capacity from capacity tables x (Rate of change in capacity by main piping length x Rate of change in capacity by branch piping length)

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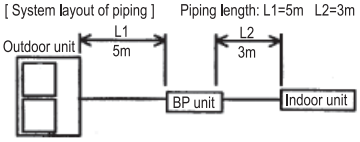
NOTES

1. These figures illustrate the rate of change in capacity of 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 from the rate of change in capacity shown in the above figures.
2. With the outdoor unit, evaporating pressure constant control when cooling and condensing pressure constant control when heating is carried out.
3. For RXYSQ: use these correction factors in case of installation with bp unit.

[System layout of piping] Piping length: L1=5m L2=3m

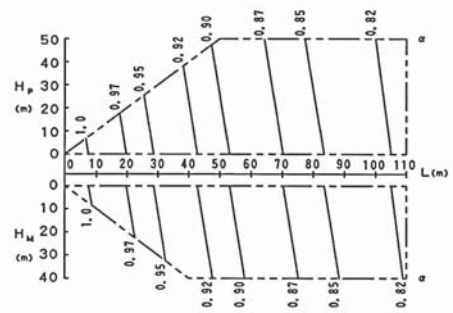


4 Capacity tables

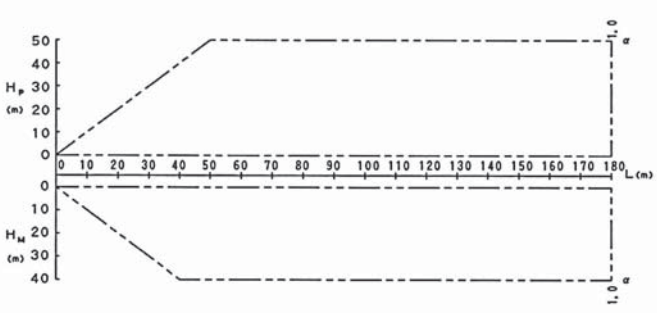
4 - 3 Capacity Correction Factor

RXYSQ6P8V1

1. Rate of change in cooling capacity



2. Rate of change in heating capacity



[Explanation of symbols]

Hp: Level difference (m) between indoor and outdoor units where indoor unit in inferior position

Hm: Level difference (m) between indoor and outdoor units where indoor unit in superior position

L: Equivalent pipe length (m)

α: Capacity correction factor

[Diameter of pipes]

Model	Gas	Liquid
RXYSQ6P8V1	ø 19.1	ø 9.5

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NOTES

1. These figures illustrate the rate of change in capacity of 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 from the rate of change in capacity shown in the above figures.
2. With this outdoor unit, evaporating pressure constant control when cooling, and condensing pressure constant control when heating is carried out.
3. Method of calculating cooling/heating capacity (max. capacity for combination with standard indoor unit)

   cooling / heating capacity = cooling / heating capacity obtained from performance characteristics table x each capacity rate of change

   In the case lenght of piping differs depending on the indoor unit, maximum capacity of aech unit during simultaneous operation is:

   cooling / heating capacity = cooling / heating capacity of each unit x capacity rate of change for each piping length

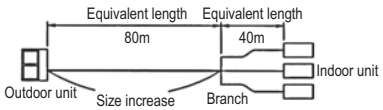
   <As for RXYMQ6MV4A - RXYSQ6M7V3B - RXYMQ6MVLT - RXYMQ6PV4A - RXYMQ6PVE - RXMQ6PVE - RXYSQ6P7V3B - RXYSQ6P7Y1B - RXYSQ6PA7V1B - RXYSQ6PA7Y1B - RXYSQ6P8V1B - RXYSQ6P8Y1B>
4. When overall equivalent pipe length is 90m or more, the diameter of the main gas pipes (outdoor unit-branch sections) must be increased.
   [Diameter of above case]

Model	Gas	Liquid
RXYSQ6P8V1B	ø 22.2	Not increased

5. When the main sections of the interunit gas pip diameters are increased the overall equivalent length should be calculated as follows.

   Overall equivalent length = Equivalent length to main pipe x 0,5 + Equivalent length after branching

   Example: RXYSQ6P8V1B



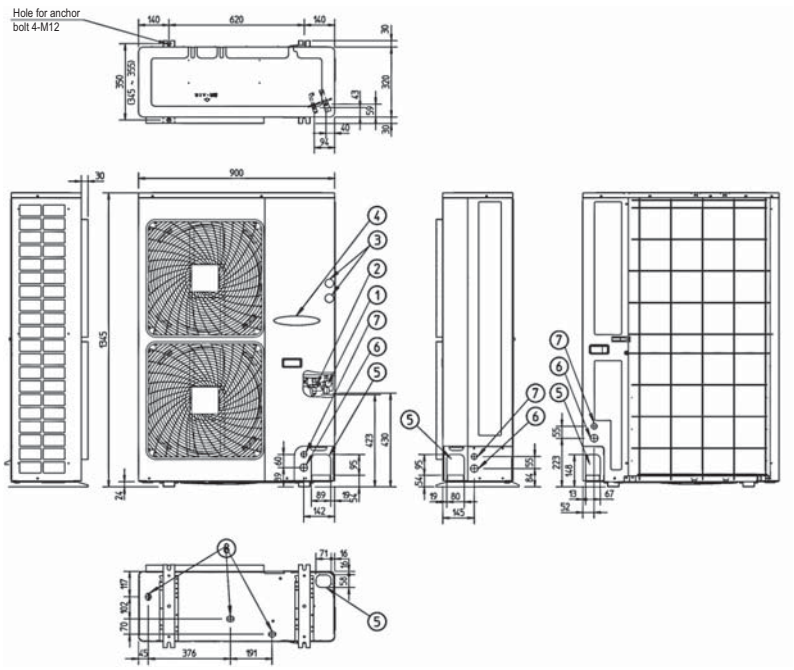
   In the above case (Cooling)
   Overall equivalent length = 80m x 0.5 + 40m = 80m
   The correction factor in capacity when Hp = 0m is thus approximately 0.86

6. For RXYSQ: use these correction factors in case of VRV indoor unit.

5 Dimensional drawings

5 - 1 Dimensional Drawings

RXYSQ-P8V1



1	Gas pipe connection A
2	Liquid connection pipe Ø9.5 flare
3	Service port (in the unit) (2x)
4	Electronic connection and grounding terminal M5 (in switch box)
5	Refrigerant piping intake
6	Power supply wiring intake (knock hole Ø34)
7	Control wiring intake (knock hole Ø27)
8	Drain outlet

MODEL	A	
	With RA connection	With VRV correction
RXYSQ4P8V1	Ø19.1 Brazing	Ø15.9 Flare
RXYSQ5P8V1	Ø19.1 Brazing	Ø15.9 Flare
RXYSQ6P8V1	Ø19.1 Brazing	Ø19.1 Brazing

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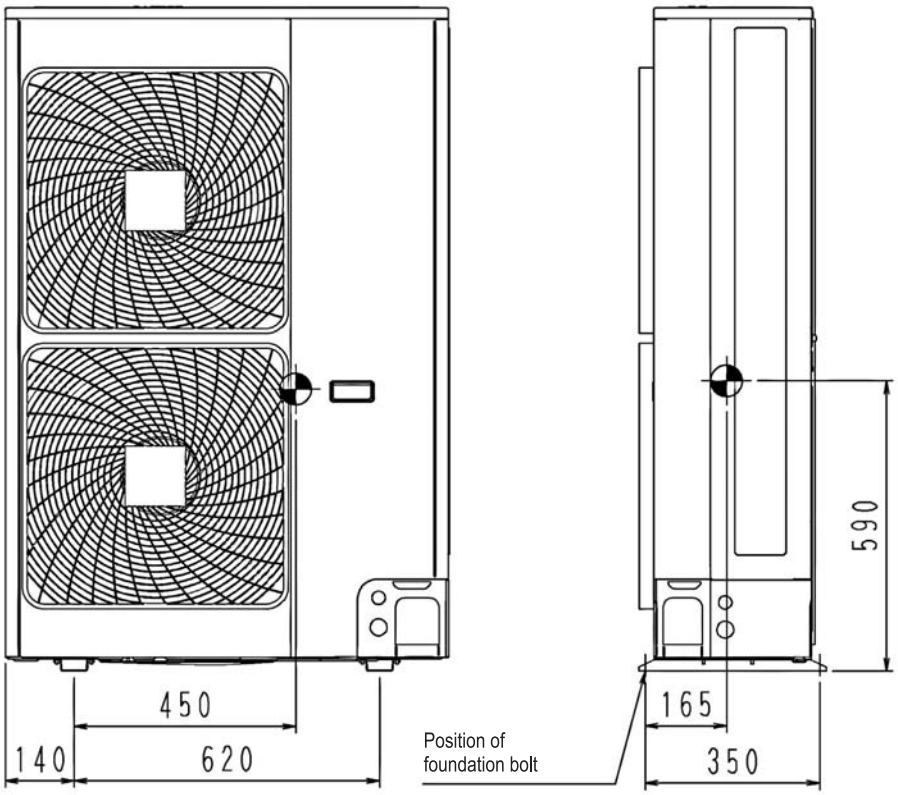
6 Centre of gravity

6 - 1 Centre of Gravity

RXYSQ-P8V1



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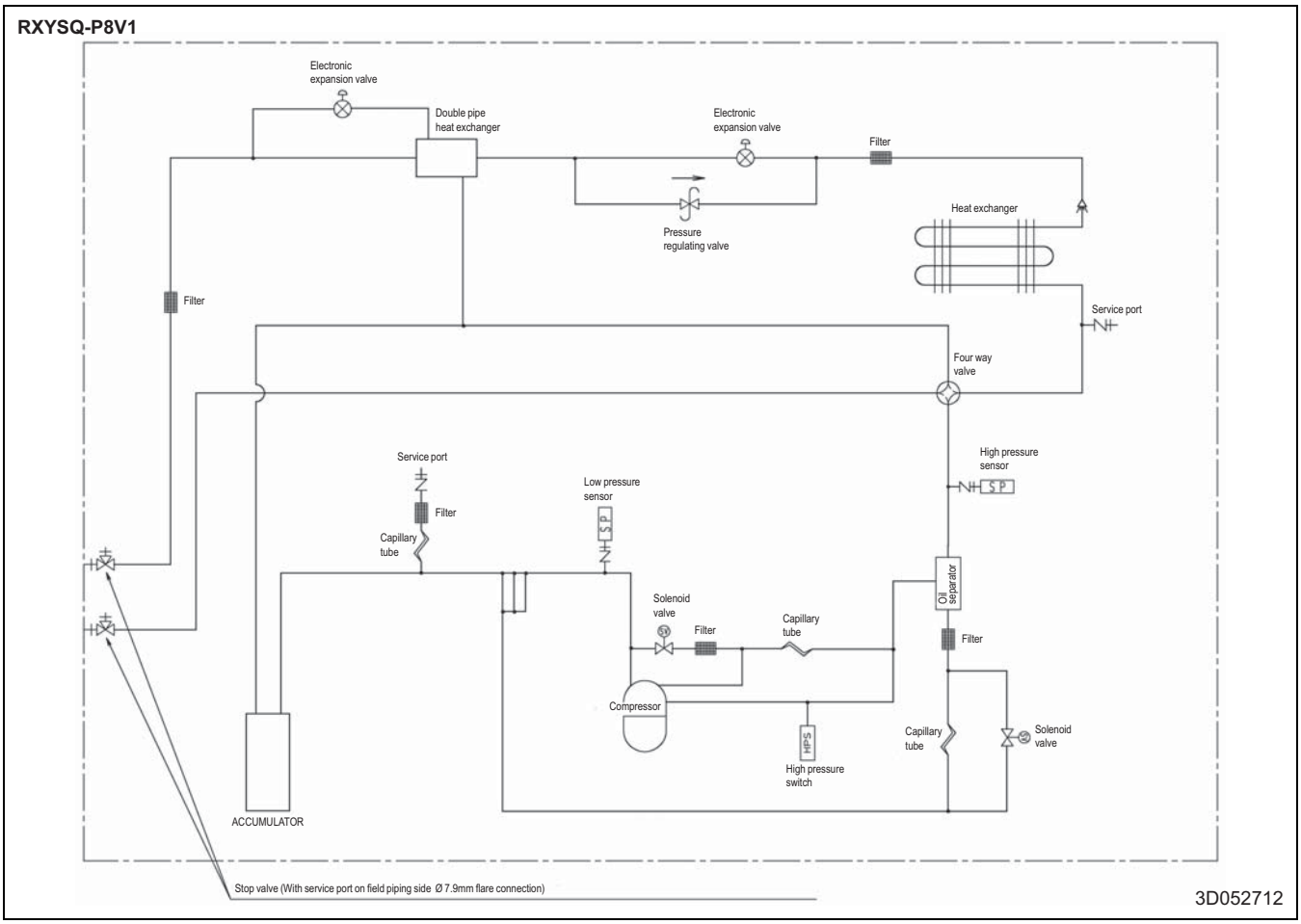
7 Piping diagrams

7 - 1 Piping Diagrams

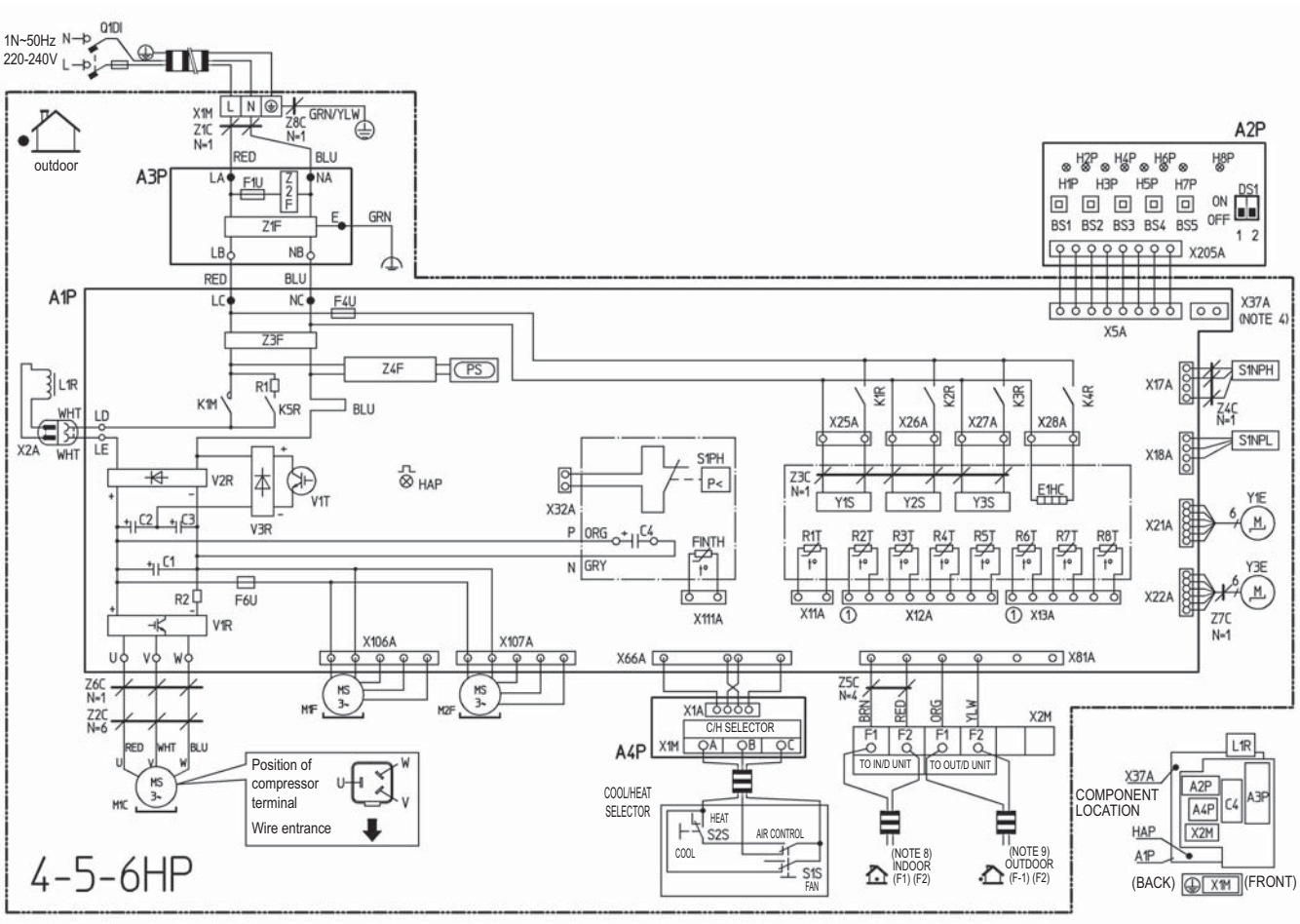
RXYSQ-P8V1



8 Wiring diagrams

8 - 1 Wiring Diagrams - Single Phase

RXYSQ-P8V1



Cool/heat selector		K1M	Magnetic contactor (M1C)	R6T	Thermistor (subcooling H.Ex)
S1S	Selector switch (fan/cool-heat)	K1R	Magnetic relay (Y1S)	R7T	Thermistor (liquid pipe 1)
S2S	Selector switch (cool-heat)	K2R	Magnetic relay (Y2S)	R8T	Thermistor (liquid pipe 2)
Connector of option adapter		K3R	Magnetic relay (Y3S)	S1NPH	Pressure sensor (high)
X37A (note 4)	Connector (opton adapter power supply)	K4R	Magnetic relay (E1HC)	S1NPL	Pressure sensor (low)
A1P	Printed circuit board (Main)	K5R	Magnetic relay	S1PH	Pressure switch (high)
A2P	Printed circuit board (Inv.)	L1R	Reactor	V1R	Power module
A3P	Printed circuit board (Noise filter)	M1C	Motor (compressor)	V2R, V3R	Diode module
A4P	Printed circuit board (C/H selector)	M1F	Motor (fan) (upper)	V1T	IGBT
BS1~BS5	Push button switch (mode, set, return, test, reset)	M2F	Motor (fan) (lower)	X1M	Terminal strip (power supply 4)
C1~C4	Capacitor	PS	Switching power supply	X2M	Terminal strip (control)
DS1	Dip switch	Q1D1	Field earth leakage breaker (300mA)	X1M	Terminal strip (C/H selector) (A4P)
E1HC	Crankcase heater	R1	Resistor	Y1E	Electronic expansion valve (main)
F1U, F4U	Fuse (T 6.3A / 250 V)	R2	Resistor	Y3E	Electronic expansion valve (subcool)
F6U	Fuse (T 5.0A / 250 V)	R1T	Thermistor (air)	Y1S	Solenoid valve (4 way valve)
Finth	Thermistor (fin)	R2T	Thermistor (discharge)	Y2S	Solenoid valve (Hot gas)
H1P~H8P	Light emit. diode (serv. monitor-orange) [H2P] Prepare, test ---------- flickering Malfunction detection ---------- light up	R3T	Thermistor (suction 1)	Y3S	Solenoid valva (U/L circuit)
		R4T	Thermistor (heat exchanger)	Z1C~Z8C	Noise filter (ferrity core)
		R5T	Thermistor (suction 2)	Z1F~Z4F	Noise filter
Hap (A1P)	Light emitting diode (service monitor green)				

2TW30376-1

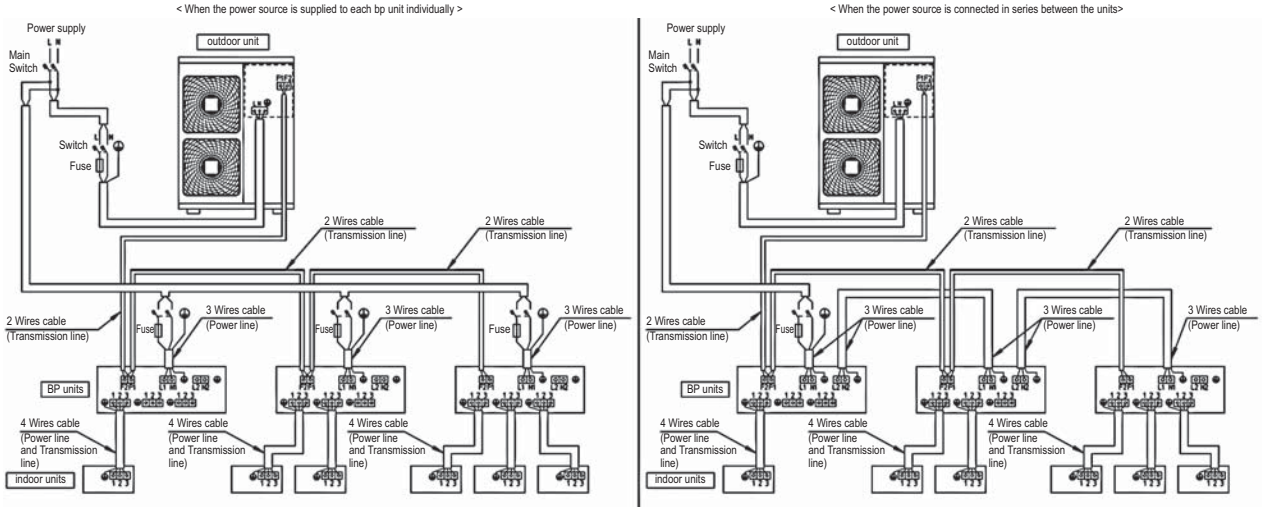
NOTES

1. This wiring diagram only apllies to the outdoor unit.
2. L: Live, N: Neutral : Field wiring
3. : Terminal strip : Connector : Connection : Protective earth (screw) : Relay connector : Noiseless earth : Terminal
4. When using the option adapter, refer to the installation manual
5. Refer to the 'wiring diagram sticker' (On back of front plate) on how to use BS1 ~ BS5 and DS1, DS2 switch.
6. Do not operate the unit by short-circuiting protection device S1PH.
7. Colors: BLU = BLUE, BRN = BROWN, GRN = GREEN, RED = RED, WHT = WHITE, YLW = YELLOW, ORG = ORANGE
8. Refer to the installation manual, for connection wiring to indoor-outdoor, transmission F1-F2
9. When using the central control system, connect outdoor-outdoor transmission F1-F2.

9 External connection diagrams

9 - 1 External Connection Diagrams

RXYSQ-P8V1

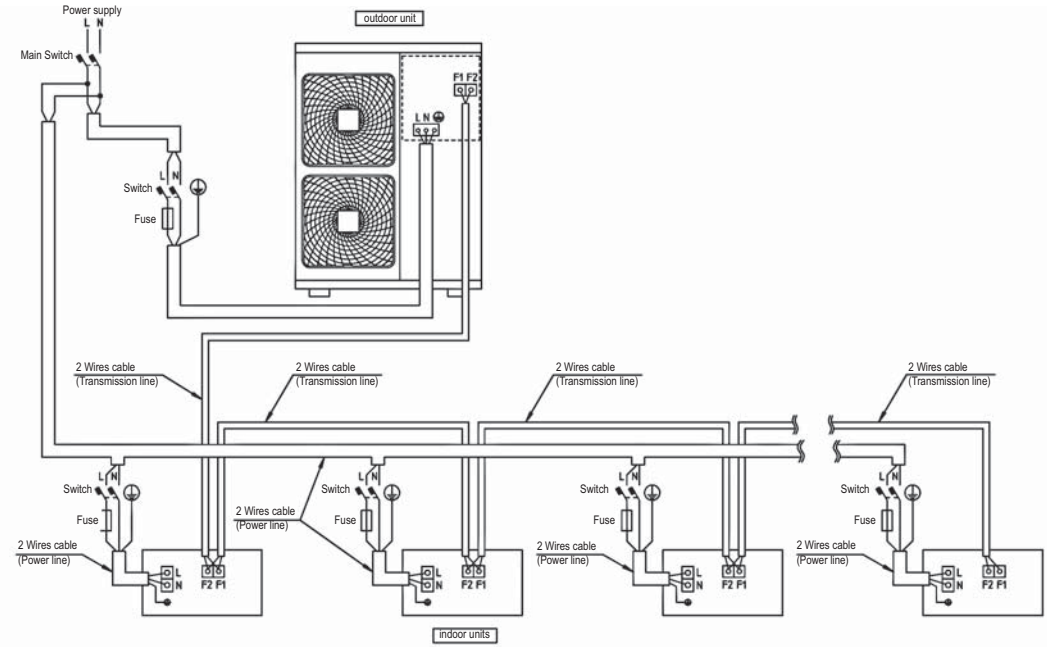


3TW33626-1

NOTES

1. All wiring, components and materials to be procured on the site must comply with the applicable local and national codes.
2. Use copper conductors only.
3. As for details, see wiring diagram.
4. Install circuit breaker for safety.
5. All field wiring and components must be provided by licensed electrician.
6. Unit shall be grounded in compliance with the applicable local and national codes.
7. Wiring shown are general points-of-connection guides only and are not intended for or to include all details for a specific installation.
8. Be sure to install the switch and the fuse to the power line of each equipement.
9. Install the main switch that can interrupt all the power sources in an integrated manner because this system consists of the equipment utilizing the multiple power sources.

RXYSQ-P8V1



3TW33626-2

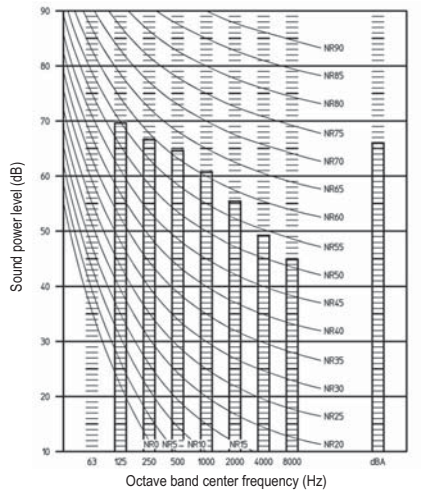
NOTES

1. All wiring, components and materials to be procured on the site must comply with the applicable local and national codes.
2. Use copper conductors only.
3. As for details, see wiring diagram.
4. Install circuit breaker for safety.
5. All field wiring and components must be provided by licensed electrician.
6. Unit shall be grounded in compliance with the applicable local and national codes.
7. Wiring shown are general points-of-connection guides only and are not intended for or to include all details for a specific installation.
8. Be sure to install the switch and the fuse to the power line of each equipement.
9. Install the main switch that can interrupt all the power sources in an integrated manner because this system consists of the equipment utilizing the multiple power sources.

10 Sound data

10 - 1 Sound Power Spectrum

RXYSQ4P8V1

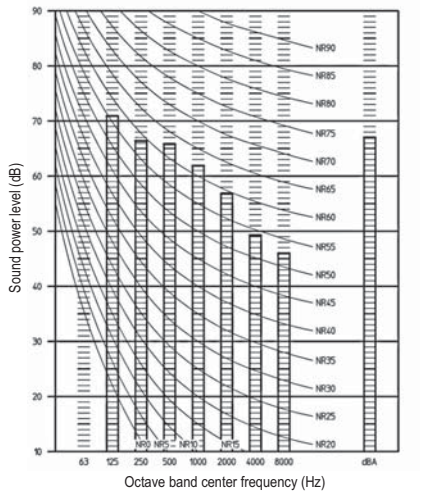


3TW27637-3

NOTES

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

RXYSQ5P8V1

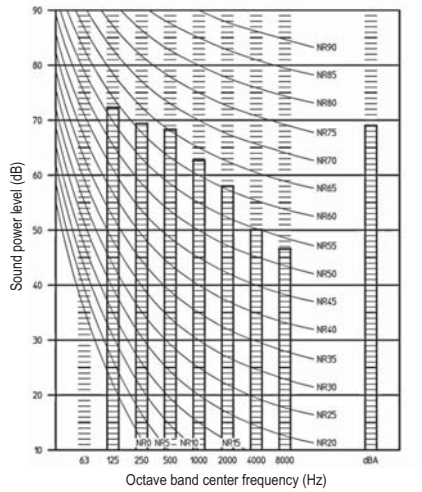


3TW27647-3

NOTES

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

RXYSQ6P8V1



3TW27657-3

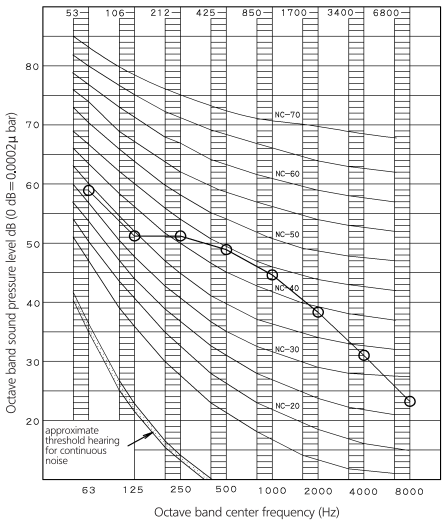
NOTES

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

10 Sound data

10 - 2 Sound Pressure Spectrum - Cooling

RXYSQ4P8V1B - Cooling

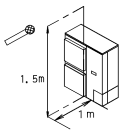


NOTES

1 Overall (dB)

Scale A	50,0
Scale B	62,0

(B,G,N is already rectified)



2 Operating conditions:
Power source 220-240V 50Hz/220V 60Hz
Cooling:
Return air temperature: 27°CDB, 19,0 CWB
Outdoor temperature: 35°CDB, 24°CWB

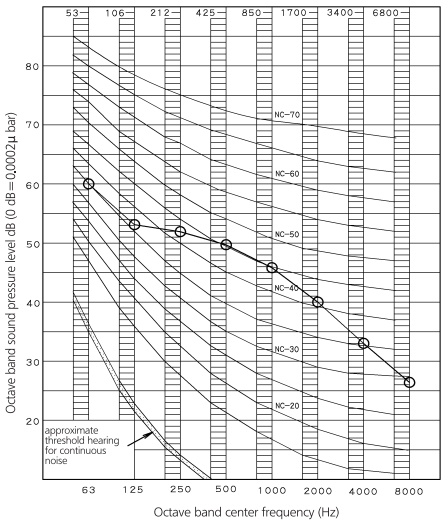
3 Measuring place: Measure in anechoic room

4 The operating sound is measured in anechoic chamber, if it is measured under the actual installation conditions, it is normally over the set value due to enviromental noise and sound reflection.

5 Location of microphone:

4D052713E

RXYSQ5P8V1B - Cooling

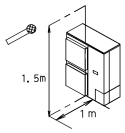


NOTES

1 Overall (dB)

Scale A	51,0
Scale B	63,5

(B,G,N is already rectified)



2 Operating conditions:
Power source 220-240V 50Hz/220V 60Hz
Cooling:
Return air temperature: 27°CDB, 19,0 CWB
Outdoor temperature: 35°CDB, 24°CWB

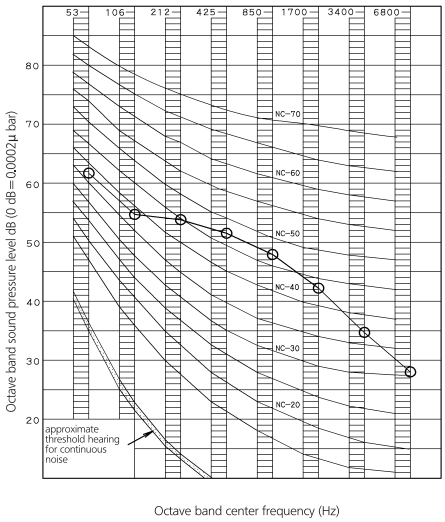
3 Measuring place: Measure in anechoic room

4 The operating sound is measured in anechoic chamber, if it is measured under the actual installation conditions, it is normally over the set value due to enviromental noise and sound reflection.

5 Location of microphone:

4D052714K

RXYSQ6P8V1B - Cooling

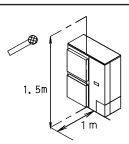


NOTES

1 Overall (dB)

Scale A	53,0
Scale B	64,5

(B,G,N is already rectified)



2 Operating conditions:
Power source 220-240V 50Hz/220V 60Hz
Cooling:
Return air temperature: 27°CDB, 19,0 CWB
Outdoor temperature: 35°CDB, 24°CWB

3 Measuring place: Measure in anechoic room

4 The operating sound is measured in anechoic chamber, if it is measured under the actual installation conditions, it is normally over the set value due to enviromental noise and sound reflection.

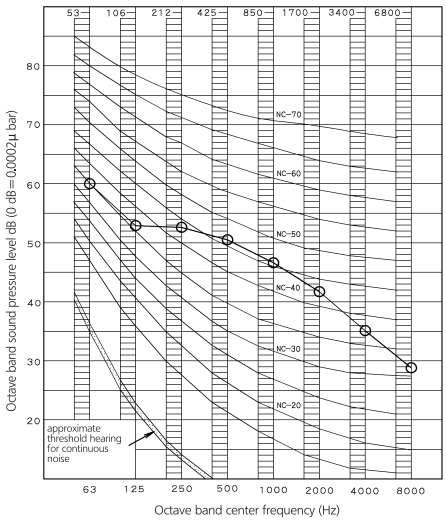
5 Location of microphone:

4D052716J

10 Sound data

10 - 3 Sound Pressure Spectrum - Heating

RXYSQ4P8V1B - Heating

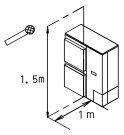


NOTES

1 Overall (dB)

Scale A	52,0
Scale B	63,5

(B,G,N is already rectified)



2 Operating conditions:
Power source 220-240V 50Hz/220V 60Hz
Heating:
Return air temperature: 20°CDB
Outdoor temperature: 7°CDB, 6°CWB

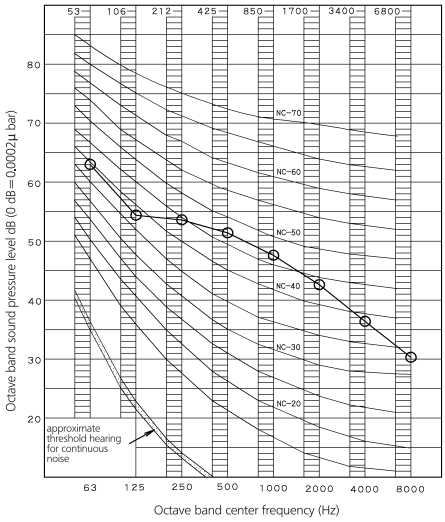
3 Measuring place: Measure in anechoic room

4 The operating sound is measured in anechoic chamber, if it is measured under the actual installation conditions, it is normally over the set value due to enviromental noise and sound reflection.

5 Location of microphone:

4D052719E

RXYSQ5P8V1B - Heating

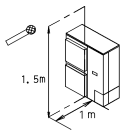


NOTES

1 Overall (dB)

Scale A	53,0
Scale B	65,3

(B,G,N is already rectified)



2 Operating conditions:
Power source 220-240V 50Hz/220V 60Hz
Heating:
Return air temperature: 20°CDB
Outdoor temperature: 7°CDB, 6°CWB

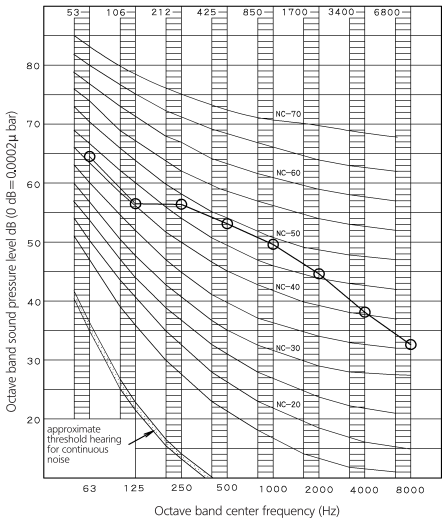
3 Measuring place: Measure in anechoic room

4 The operating sound is measured in anechoic chamber, if it is measured under the actual installation conditions, it is normally over the set value due to enviromental noise and sound reflection.

5 Location of microphone:

4D052718K

RXYSQ6P8V1B - Heating

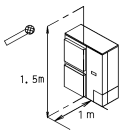


NOTES

1 Overall (dB)

Scale A	55,0
Scale B	67,0

(B,G,N is already rectified)



2 Operating conditions:
Power source 220-240V 50Hz/220V 60Hz
Heating:
Return air temperature: 20°CDB
Outdoor temperature: 7°CDB, 6°CWB

3 Measuring place: Measure in anechoic room

4 The operating sound is measured in anechoic chamber, if it is measured under the actual installation conditions, it is normally over the set value due to enviromental noise and sound reflection.

5 Location of microphone:

4D052717J

11 Installation

11 - 1 Installation Method

RXYSQ-P8V1

Required installation space

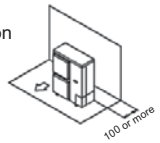
(The unit of these values is 'mm')

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

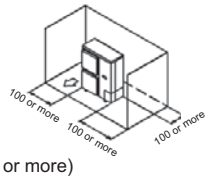
(a) No obstacle above

(1) Stand-alone installation

• Obstacle on the suction side only

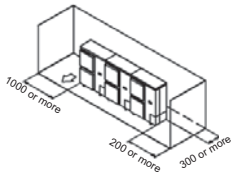


• Obstacle on both sides



(2) Series installation (2 or more)

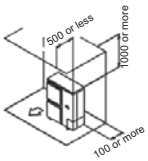
• Obstacle on both sides



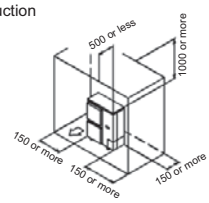
(b) Obstacle above, too

(1) Stand-alone installation

• Obstacle on the suction side, too

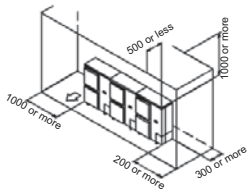


• Obstacle on the suction side and both sides



(2) Series installation (2 or more)

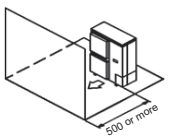
• Obstacle on the suction side and both sides



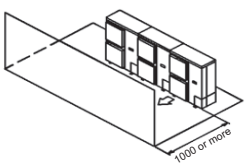
2. Where there is an obstacle on the discharge side:

(a) No obstacle above

(1) Stand-alone installation

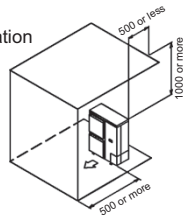


(2) Series installation (2 or more)

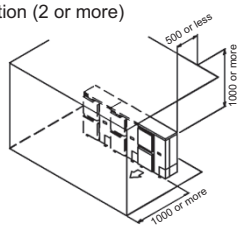


(a) Obstacle above, too

(1) Stand-alone installation



(2) Series installation (2 or more)



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

Pattern 1

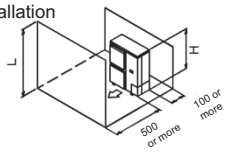
Where the obstacle on the discharge side is higher than the unit:

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

(a) No obstacle above

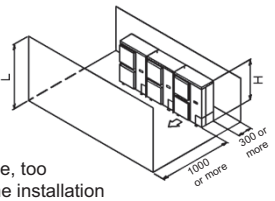
(1) Stand-alone installation

L > H



(2) Series installation (2 or more)

L > H



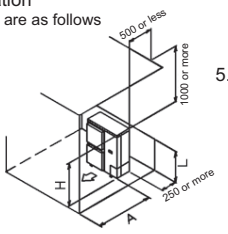
(b) Obstacle above, too

(1) Stand-alone installation

The relations between H, A and L are as follows

	L	A
L ≤ H	0 < L ≤ 1/2 H	750
	1/2 H < L ≤ H	1000
H < L	Set the stand as: L ≤ H	

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



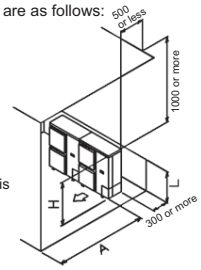
(2) Series installation (2 or more)

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

	L	A
L ≤ H	0 < L ≤ 1/2 H	1000
	1/2 H < 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

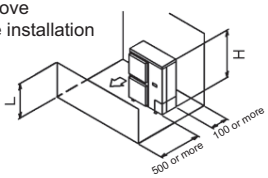
Where the obstacle on the discharge side is lower than the unit:

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

(a) No obstacle above

(1) Stand-alone installation

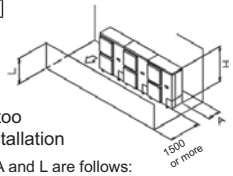
L ≤ H



(2) Series installation (2 or more)

The relations between H, A and L are as follows

	L	A
0 < L ≤ 1/2 H		250
1/2 H < L ≤ H		300



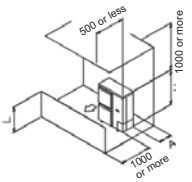
(b) Obstacle above, too

(1) Stand-alone installation

The relations between H, A and L are follows:

	L	A
L ≤ H	0 < L ≤ 1/2 H	100
	1/2 H < 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.



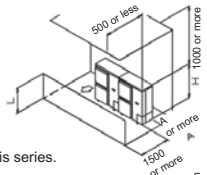
(2) Series installation

The relations between H, A and L are as follows

	L	A
L ≤ H	0 < L ≤ 1/2 H	250
	1/2 H < L ≤ H	300
H < L	Set the stand as: L ≤ H Refer to the column of L ≤ H for A	

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

Only two units can be installed for this series.



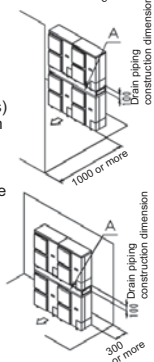
4. Double-decker installation

(a) Obstacle on the discharge side 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.

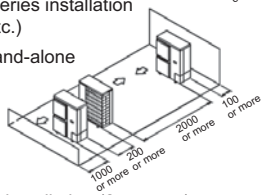
(b) Obstacle on the suction side close the gap A (the gap between the upper and lower outdoor units) to prevent the discharged air from being bypassed.

Do not stack more than two units.



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

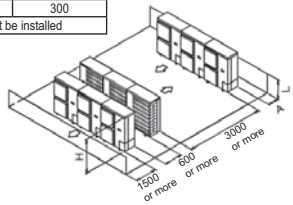
(a) One row of stand-alone installation



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

The relations between H, A and L are as follows

	L	A
L ≤ H	0 < L ≤ 1/2 H	250
	1/2 H < L ≤ H	300
H < L	Can not be installed	



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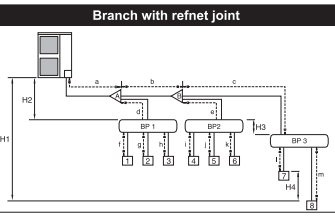
11 Installation

11 - 2 Refrigerant Pipe Selection

RXYSQ-P8V1B

Example of connection (Connection of 8 units heat pump system)			Branch with refnet joint
1 indoor unit refrigerant branch kit (refnet joint) BP 1 BP unit NOTE The refrigerant branch kits must be positioned as close to the BP units as possible (c, d, e must be as short as possible).			
Maximum allowable length	Between outdoor and BP units	Total pipe length	Pipe length between outdoor and BP units ≤55 m [Example] 3 BP units: a+b+c+d+e≤55 m
	Between BP and indoor units	Total pipe length	Piping length between BP and indoor units: RXYSQ4≤60 m, RXYSQ5≤80 m, RXYSQ6≤90 m [Example] RXYSQ5: f+g+h+i+j+k+l+m≤80 m
	Between BP and an indoor unit	1 room length	Pipe length between BP and an indoor unit: ≤15 m [Example] f, g, h, i, j, k, l, m≤15 m
Minimum allowable length(*)	Between outdoor unit and the first refrigerant branch kit	Pipe length	Pipe length between outdoor unit and first refrigerant branch kit: ≥5 m [Example] a≥5 m
Allowable height	Between outdoor and indoor units	Difference in height	Difference in height between outdoor and indoor units (H1)≤30 m
	Between outdoor and BP units	Difference in height	Difference in height between outdoor and BP units (H2)≤30 m
	Between BP and BP units	Difference in height	Difference in height between BP and BP units (H3)≤15 m
	Between indoor and indoor units	Difference in height	Difference in height between indoor and indoor units (H4)≤15 m
Allowable length after the branch		Pipe length	Pipe length from first refrigerant branch kit (refnet joint) to indoor unit ≤40 m [Example] unit 8: b+c+m≤40 m [Example] unit 6: b+e+k≤40 m [Example] unit 3: d+h≤40 m
Refrigerant branch kit selection Refrigerant branch kits can only be used with R410A.			Use the following refnet joint: KHRQ22M20T.

(*) The refrigerant sound from the outdoor unit can be transmitted.

Pipe size selection

Symbol			Piping size (outer diameter x minimum thickness) Gas pipe	Liquid pipe
Between outdoor and first refrigerant branch kit	a		Ø19.1x1.0	Ø9.5x0.8
Between refrigerant branch kit and refrigerant branch kit	b		Ø15.9x1.0	
Between refrigerant branch kit and BP unit	c, d, e	**Total indoor capacity Q**	**Gas pipe**	**Liquid pipe**
		Qc, Qd, Qe ≤5.0 kW	Ø12.7x0.8	Ø6.4x0.8
		Qc, Qd, Qe >5.0 kW	Ø15.9x1.0	Ø9.5x0.8

NOTE ■ Qc, Qd, Qe is total connected indoor capacity. ■ c, d, e indicates the symbols in the figure.

Example
Indoor 4: 2.5 kW
Indoor 5: 3.5 kW
Indoor 6: 5.0 kW
} Qe=11.0 kW
➡ (Gas pipe) Ø15.9x1.0 and (liquid pipe) Ø9.5x0.8

How to calculate the additional refrigerant to be charged
Additional refrigerant to be charged R (kg)
R should be rounded off in units of 0.1 kg

$$R = \left(\text{Total length (m) of liquid piping size at Ø9.5} \right) \times 0.054 + \left(\text{Total length (m) of liquid piping size at Ø6.4} \right) \times 0.022$$

Example for refrigerant branch using refnet joint

a: Ø9.5x10 m	d: Ø9.5x10 m	g: Ø6.4x10 m	j: Ø6.4x10 m	m: Ø6.4x8 m
b: Ø9.5x10 m	e: Ø9.5x10 m	h: Ø6.4x10 m	k: Ø6.4x5 m	
c: Ø6.4x10 m	f: Ø6.4x10 m	i: Ø6.4x10 m	l: Ø6.4x5 m	

R=[40 x 0.054] + [78 x 0.022] = 3.876 ⇒ 3.9 kg

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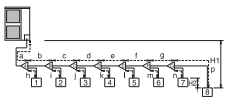
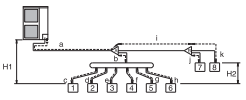
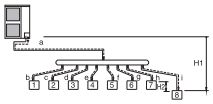
RXYSQ-P8V1B

Example of connection (Connection of 8 indoor units Heat pump system)			Branch with refnet joint	Branch with refnet joint and refnet header	Branch with refnet header
1 indoor unit refnet joint refnet header					
Maximum allowable length	Between outdoor and indoor units	Actual pipe length	Pipe length between outdoor and indoor units ≤150 m		
			[Example] unit 8: a+b+c+d+e+f+g+p ≤150 m	[Example] unit 6: a+b+h ≤ 150m, unit 8: a+i+k ≤150 m	[Example] unit 8: a+i ≤150 m
		Equivalent length	Equivalent pipe length between outdoor and indoor units ≤175 m (Assume equivalent pipe length of refnet joint to be 0.5 m and of the refnet header to be 1.0 m. (for calculation purposes))		
		Total extension length	Total piping length from outdoor unit to all indoor units between 10 m and 300 m		
Allowable height	Between outdoor and indoor units	Difference in height	Difference in height between outdoor and indoor units (H1) ≤50 m (≤40 m if outdoor unit is located in a lower position).		
	Between indoor and indoor units	Difference in height	Difference in height between adjacent indoor units (H2) ≤15 m		
Allowable length after the branch		Actual pipe length	Pipe length from first refrigerant branch kit (either refnet joint or refnet header) to indoor unit ≤40 m		
			[Example] unit 8: b+c+d+e+f+g+p ≤40 m	[Example] unit 6: b+h40 m, unit 8: i+k ≤40 m	[Example] unit 8: i ≤40 m

Refrigerant branch kit selection
Refrigerant branch kits can only be used with R410A.

Use the following refnet joint

Outdoor unit capacity type	Refrigerant branch kit name
RXYSQ4~6	KHRQ22M20T

Use the following refnet header

Outdoor unit capacity type	Refrigerant branch kit name
RXYSQ4~6	KHRQ22M29H

Pipe size selection
Caution on selecting connection pipes
If the overall equivalent piping length is ≥90 m, be sure to enlarge the pipe diameter of the gas-side main piping. If the recommended pipe size is not available, stick to the original pipe diameter (which may result in a small capacity decrease).
[Gas side]
RXYSQ4+5: → Ø15.9 Ø19.1
RXYSQ6: → Ø19.1 Ø22.2

1 Main pipe (enlarge)
2 First refrigerant branch kit
3 Indoor unit

A. Piping between outdoor unit and refrigerant branch kit
• Match to the size of the connection piping on the outdoor unit.

Outdoor unit connection piping size

Outdoor unit capacity type	Piping size (outer diameter x minimum thickness) Gas pipe	Liquid pipe
RXYSQ4+5	Ø15.9x1.0 (Ø19.1x1.0)	Ø9.5x0.8
RXYSQ6	Ø19.1x1.0 (Ø22.2x1.0)	

B. Piping between refrigerant branch kits
• Use the pipe size from the following table.

Piping size (outer diameter x minimum thickness) Gas pipe	Liquid pipe
Ø15.9x1.0	Ø9.5x0.8

C. Piping between refrigerant branch kit and indoor unit
• Pipe size for direct connection to indoor unit must be the same as the connection size of indoor unit.

Indoor capacity index	Piping size (outer diameter x minimum thickness) Gas pipe	Liquid pipe
20+25+32+40+50	Ø12.7x08	Ø6.4x0.8
63+80+100+125	Ø15.9x1.0	Ø9.5x0.8

How to calculate the additional refrigerant to be charged
Additional refrigerant to be charged R (kg)
R should be rounded o in units of 0.1 kg

$$R = \left(\text{Total length (m) of liquid piping size at Ø9.5} \right) \times 0.054 + \left(\text{Total length (m) of liquid piping size at Ø6.4} \right) \times 0.022$$

Example for refrigerant branch using refnet joint and refnet header

a: Ø9.5x3 m	d: Ø9.5x13 m	g: Ø6.4x10 m	j: Ø6.4x10 m
b: Ø9.5x10 m	e: Ø6.4x10 m	h: Ø6.4x20 m	k: Ø6.4x9 m
c: Ø9.5x10 m	f: Ø6.4x10 m	i: Ø9.5x10 m	

R=[73 x 0.054] + [69 x 0.022] = 5.46 ⇒ 5.5 kg

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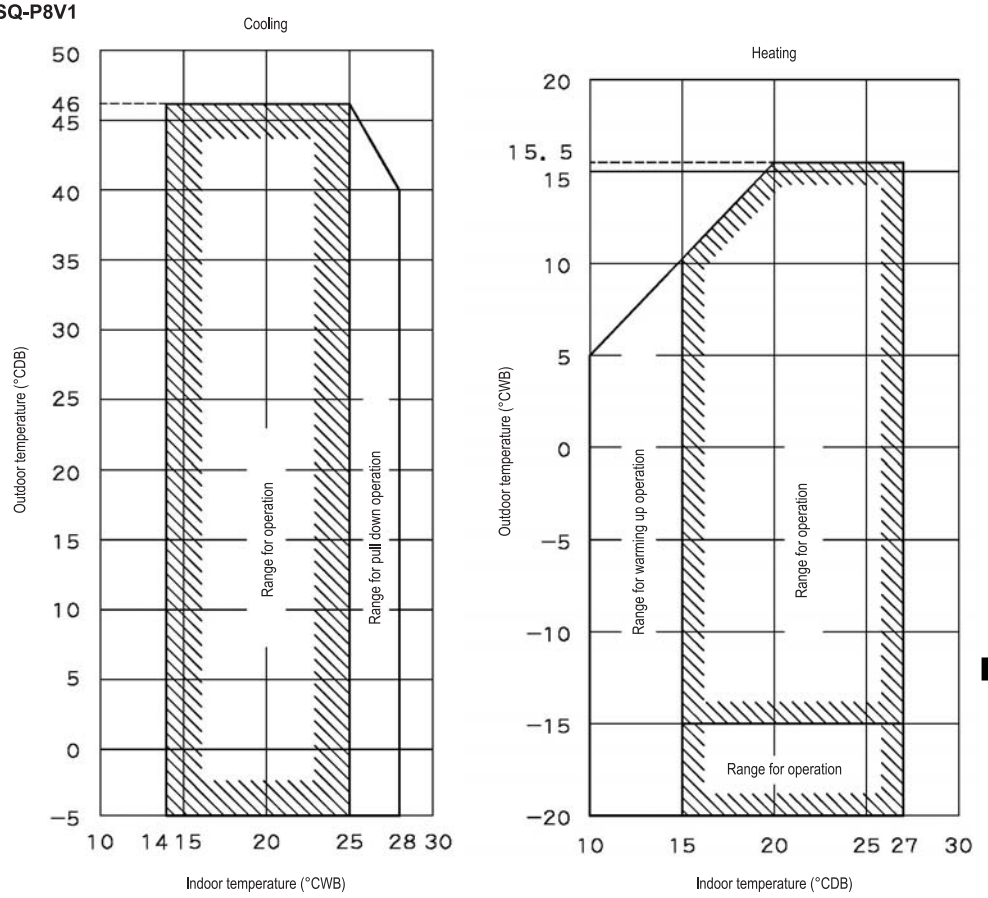
12 Operation range

12 - 1 Operation Range

RXYSQ-P8V1



NOTE

These figures assume the following operating conditions.

Indoor and outdoor units:

- Equivalent pipe length: 7.5 m
- Level difference: 0 m

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