

VRV IV S-series heat pump Technical data book RXYSQ-TV9



RXYSQ4T8VB9
RXYSQ5T8VB9
RXYSQ6T8VB9

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RXYSQ-TV9

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1 Features

1 - 1 RXYSQ-TV9

Space saving solution without compromising on efficiency

1

- › By choosing a LOOP by Daikin product you support the reuse of refrigerant, for more information visit www.daikin.eu/loop-by-daikin
- › Space saving trunk design for flexible installation
- › Covers all thermal needs of a building via a single point of contact: accurate temperature control, ventilation, air handling units and Biddle air curtains
- › Wide range of indoor units: either connect VRV or stylish indoor units such as Daikin Emura, Perfera ...
- › 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
- › 3 steps in night quiet mode to reduce sound levels at night
- › 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, extended lifetime and immediate service support thanks to failure prediction



Inverter

2 Specifications

1 - 1 RXYSQ-TV9

Technical Specifications					RXYSQ4TV9	RXYSQ5TV9	RXYSQ6TV9
Recommended combination					3 x FXSQ25A2VEB + 1 x FXSQ32A2VEB	4 x FXSQ32A2VEB	2 x FXSQ32A2VEB + 2 x FXSQ40A2VEB
Cooling capacity	Prated,c		kW		12.1 (1)	14.0 (1)	15.5 (1)
Heating capacity	Nom.	6°CWB	kW		12.1 (2)	14.0 (2)	15.5 (2)
	Prated,h		kW		8.0	9.2	10.2
	Max.	6°CWB	kW		14.2 (2)	16.0 (2)	18.0 (2)
Power input - 50Hz	Heating	Nom.	6°CWB	kW	2.68 (2)	3.27 (2)	3.97 (2)
COP at nom. capacity	6°CWB		kW/kW		4.52	4.28	3.90
ESEER - Automatic					7.89	7.49	6.73
ESEER - Standard					6.18	5.77	5.23
SCOP					4.4	4.6	4.9
SEER					7.0	6.8	7.0
ηs,c				%	278.9	270.1	278.0
ηs,h				%	171.6	182.9	192.8
Space cooling	A Condition (35°C - 27/19)	EERd			3.1	2.7	
		Pdc	kW		12.1	14.0	15.5
	B Condition (30°C - 27/19)	EERd			5.3	4.9	
		Pdc	kW		8.9	10.3	11.4
	C Condition (25°C - 27/19)	EERd			9.6	9.2	9.5
		Pdc	kW		5.7	6.6	7.3
	D Condition (20°C - 27/19)	EERd			14.0	15.3	16.4
Space heating (Average climate)	TBivalent	COPd (declared COP)			2.6		2.7
		Pdh (declared heating cap)			8.0	9.2	10.2
		Tbiv (bivalent temperature) °C			-10		
	TOL	COPd (declared COP)			2.6		2.7
		Pdh (declared heating cap)			8.0	9.2	10.2
		Tol (temperature operating limit) °C			-10		
	A Condition (-7°C)	COPd (declared COP)			2.9	3.0	3.1
		Pdh (declared heating cap)			7.0	8.1	9.0
	B Condition (2°C)	COPd (declared COP)			4.3	4.5	4.7
		Pdh (declared heating cap)			4.3	5.0	5.5
	C Condition (7°C)	COPd (declared COP)			6.0	6.4	6.8
		Pdh (declared heating cap)			3.4	3.5	3.6
	D Condition (12°C)	COPd (declared COP)			7.3	7.9	8.5
		Pdh (declared heating cap)			4.1		4.3
Capacity range	HP				4	5	6
PED	Category				Category I		
	Most critical part	Name			Compressor		
		Ps*V	Bar*I			167	
Maximum number of connectable indoor units					64 (3)		
Indoor index connection	Min.				50.0	62.5	70.0
	Max.				130.0	162.5	182.0
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		104			
	Packed unit	kg		114			
Packing	Material				Carton		
	Weight				3.9		
Packing 2	Material				Wood		
	Weight				5.6		
Packing 3	Material				Plastic		
	Weight				0.5		
Casing	Colour				Daikin White		
	Material				Painted galvanized steel plate		
Heat exchanger	Type				Cross fin coil		
	Indoor side				Air		
	Outdoor side				Air		
	Air flow rate	Cooling	Rated	m³/h	6,360		
Fan	Heating				6,360		
	Quantity				2		

2 Specifications

1 - 1 RXYSQ-TV9

2

Technical Specifications					RXYSQ4TV9	RXYSQ5TV9		RXYSQ6TV9
Fan motor	Quantity				2			
	Type				DC motor			
	Output W				70			
Compressor	Quantity				1			
	Type				Hermetically sealed swing compressor			
	Crankcase heater W				33			
Operation range	Cooling	Min.	°CDB		-5.0			
		Max.	°CDB		46.0			
	Heating	Min.	°CWB		-20.0			
Operation range	Heating	Max.	°CWB		15.5			
Sound power level	Cooling	Nom.	dBA		68.0 (4)	69.0 (4)	70.0 (4)	
Sound pressure level	Cooling	Nom.	dBA		50.0 (5)	51.0 (5)		
Refrigerant	Type				R-410A			
	GWP				2,087.5			
	Charge TCO2Eq				7.5			
	Charge kg				3.6			
Refrigerant oil	Type				Synthetic (ether) oil FVC50K			
Piping connections	Liquid	Type			Flare connection			
		OD	mm		9,52			
	Gas	Type			Flare connection		Braze connection	
		OD	mm		15.9		19.1	
	Total piping length	System	Actual	m		300 (6)		
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	Cooling	PCK	kW	0.000			
		Heating	PCK	kW	0.049			
	Off mode	Cooling	POFF	kW	0.039			
		Heating	POFF	kW	0.049			
	Standby mode	Cooling	PSB	kW	0.039			
		Heating	PSB	kW	0.049			
	Thermostat-off mode	Cooling	PTO	kW	0.000			
		Heating	PTO	kW	0.049			
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				RXYSQ4TV9	RXYSQ5TV9	RXYSQ6TV9
Power supply	Name			V1		
	Phase			1N~		
	Frequency Hz			50		
	Voltage V			220-240		
Power supply intake				Both indoor and outdoor unit		
Voltage range	Min.		%	-10		
	Max.		%	10		
Current	Nominal running current (RLA)	Cooling	A	14.00 (7)	17.30 (7)	21.20 (7)
Current - 50Hz	Starting current (MSC) - remark			See note 8		
	Zmax	List		No requirements		
	Minimum	Remark		Equipment complies with EN/IEC 61000-3-12		
	Ssc value					
	Minimum circuit amps (MCA)		A	29.1 (8)		
	Maximum fuse amps (MFA)		A	32 (9)		
	Total overcurrent amps (TOCA)		A	29.1 (10)		
	Full load amps (FLA)	Total	A	0.6 (11)		
Wiring connections - 50Hz	For power supply	Quantity		3G		
	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 Specifications

1 - 1 RXYSQ-TV9

- (2) Heating: indoor temp. 20°CDB; outdoor temp. 7°CDB, 6°CWB; equivalent refrigerant piping: 7.5m; level difference: 0m |
- (3) 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; $50\% \leq CR \leq 130\%$). |
- (4) Sound power level is an absolute value that a sound source generates. |
- (5) Sound pressure level is a relative value, depending on the distance and acoustic environment. For more details, please refer to the sound level drawings. |
- (6) Refer to refrigerant pipe selection or installation manual |
- (7) RLA is based on following conditions: indoor temp. 27°CDB, 19°CWB; outdoor temp. 35°CDB |
- (8) MCA must be used to select the correct field wiring size. The MCA can be regarded as the maximum running current. |
- (9) MFA is used to select the circuit breaker and the ground fault circuit interrupter (earth leakage circuit breaker). |
- (10) TOCA means the total value of each OC set. |
- (11) FLA means the nominal running current of the fan |
- MSC means the maximum current during start up of the compressor. VRV IV uses only inverter compressors. Starting current is always $\leq$ max. running current. |
- 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. |
- 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. |
- For detailed contents of standard accessories, see installation/operation manual |
- 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 $\leq 75A$ per phase |
- Ssc: Short-circuit power

3 Options

3 - 1 Options

3

RXYSQ-TY1

RXYSQ-TY9

RXYSQ-TV9

VRV4-S

Heat pump

Option list

Nr.	Item	RXYSQ4~6TMV1B	RXYSQ4~6T7V1B RXYSQ4~6T8VB(9)	RXYSQ4~6T7Y1B RXYSQ4~6T8YB(9)	RXYSQ8~12TMY1B	RXYSQ6T7Y1B9 RXYSQ6T8Y1B9	RXYSQ6TMYFK
I.	Refnet header	-	-	-	KHRQ22M64H	-	KHRQ22M64H
					KHRQ22M20T		
II.	Refnet joint	-	-	-	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-TY9
RXYSQ-TV9
RXYSQ-TY1
RXYSQ-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
	Floor-standing	Flex	FLXS25B
			FLXS35B
			FLXS50B
			FLXS60B
	Ceiling-mounted	FVXM	FVXM25F
			FVXM35F
			FVXM50F
			CVXM20A
			FVXM25A
			FVXM35A
			FVXM50A
			FVXM60A
		Nexura	FVXG25K
			FVXG35K
		FDXM	FVXG50K
			FDXM25F
	Duct	FDXM	FDXM35F
			FDXM50F
			FDXM60F
			FDXM60F

Remark

- 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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RXYSQ-TY9
RXYSQ-TV9
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. O₁

- Combination of ·AHU· only + control box ·EKEQFA· (not combined with ·VRV DX· indoor units)
 - ·X·-control is possible [·EKEQV+EKEQFA*· boxes]. No Variable Refrigerant Temperature control possible.
 - ·Y·-control is possible [·EKEQV+EKEQFA*· boxes]. No Variable Refrigerant Temperature control possible.
 - ·W·-control is possible [·EKEQV+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 [·EKEQV + EKEQMA· boxes] is determined by the connection ratio (·90-110%·) and the capacity of the outdoor unit).
- Combination of ·AHU· and ·VRV DX· indoor units
 - Z-control is possible (·EKEQMA*· boxes are allowed, but with a limited connection ratio).
- (1) The following units are considered AHUs:
 - ·EKEQV + 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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4 Combination table

4 - 1 Combination Table

4

RXYSQ-TY9

RXYSQ-TV9

RXYSQ-TY1 VRV4-S

Heat pump

Indoor unit combination restrictions

Combination table	RXYSQ4~6TMV1B	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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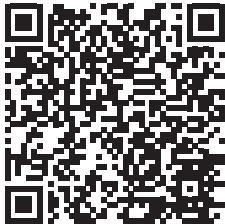
5 Capacity tables

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



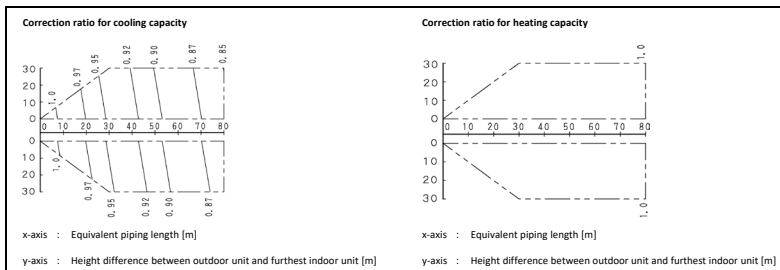
- An overview of **all software tools** that we offer can be found here:
https://my.daikin.eu/denv/en_US/home/applications/software-finder.html



5 Capacity tables

5 - 2 Capacity Correction Factor

RXYSQ4-6TV
RXYSQ4-6TY
RXYSQ4-6TV1
RXYSQ4-6TY1
RXYSQ4-6TV9
RXYSQ4-6TY9



Notes

- These figures illustrate the capacity correction factor due to the piping length for a standard indoor unit system at maximum load (with the thermostat set to maximum), under standard conditions. Moreover, under partial load conditions, there is only a minor deviation for the capacity correction ratio, as shown in the above figures.
- With this outdoor unit, the following control is used:- in case of cooling: constant evaporating pressure control- in case of heating: constant condensing pressure control
- Method of calculating the capacity of the outdoor units.**
The maximum capacity of the system will be either the total capacity of the indoor units or the maximum capacity of the outdoor units as mentioned below, whichever is less.

Indoor connection ratio ≤ 100%.

$$\text{Maximum capacity of outdoor units} = \text{Capacity of outdoor units from capacity table at 100\% connection ratio.} \times \text{Correction ratio of piping to furthest indoor unit}$$

Indoor connection ratio > 100%.

$$\text{Maximum capacity of outdoor units} = \text{Capacity of outdoor units from capacity table at installed connection ratio.} \times \text{Correction ratio of piping to furthest indoor unit.}$$

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

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

- Overall equivalent length

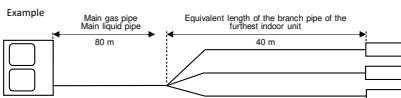
$$\text{Overall equivalent length} = \text{Equivalent length of the main pipe} \times \text{Correction factor} + \text{Equivalent length of the branch pipes}$$

Choose the correction factor from the following table.

When calculating the cooling capacity: gas pipe size

When calculating the heating capacity: liquid pipe size

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



Overall equivalent length

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

Capacity correction ratio (height difference = 0)

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

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5 Capacity tables

5 - 2 Capacity Correction Factor

RXYSQ-TY1

RXYSQ-TY9

RXYSQ-TV9

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

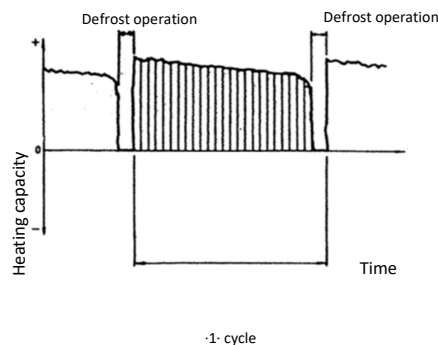
B = Capacity characteristics value

C = Integrated correction factor for frost accumulation (see table)

$$A = B \cdot C$$

Inlet air temperature of heat exchanger

[°CDB/°CWB]	-7/-7.6	-5/-5.6	-3/-3.7	0/-0.7	3/2.2	5/4.1	7/6
RXYSQ4TMV1B							
RXYSQ5TMV1B							
RXYSQ6TMV1B							
RXYSQ4T7V1B							
RXYSQ5T7V1B							
RXYSQ6T7V1B							
RXYSQ4T7Y1B							
RXYSQ5T7Y1B							
RXYSQ6T7Y1B							
RXYSQ6T7Y1B9							
RXYSQ4T8VB							
RXYSQ5T8VB	0,88	0,86	0,80	0,75	0,76	0,82	1,00
RXYSQ6T8VB							
RXYSQ4T8YB							
RXYSQ5T8YB							
RXYSQ6T8YB							
RXYSQ6T8Y1B9							
RXYSQ4T8VB9							
RXYSQ5T8VB9							
RXYSQ6T8VB9							
RXYSQ4T8YB9							
RXYSQ5T8YB9							
RXYSQ6T8YB9							
RXYSQ8TMY1B	0,95	0,93	0,88	0,84	0,85	0,90	1,00
RXYSQ10TMY1B	0,95	0,93	0,87	0,79	0,80	0,88	1,00
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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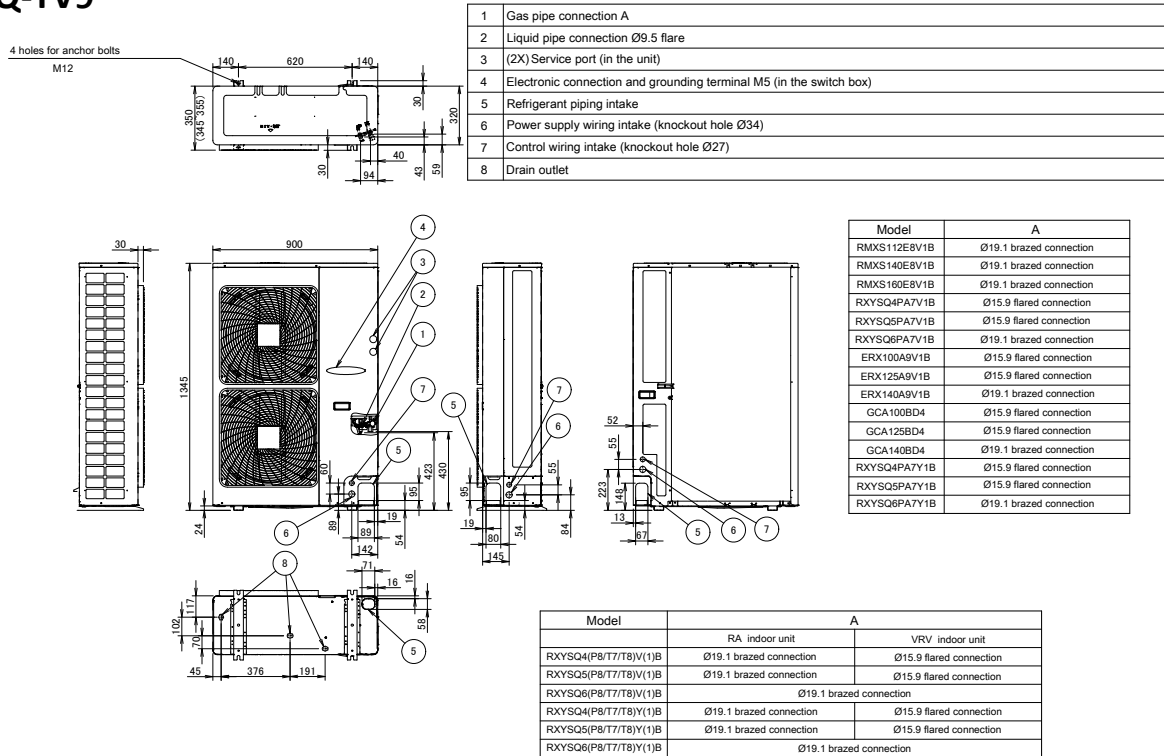
6 Dimensional drawings

6 - 1 Dimensional Drawings

RXYSQ-TY9

RXYSQ-TV9

6

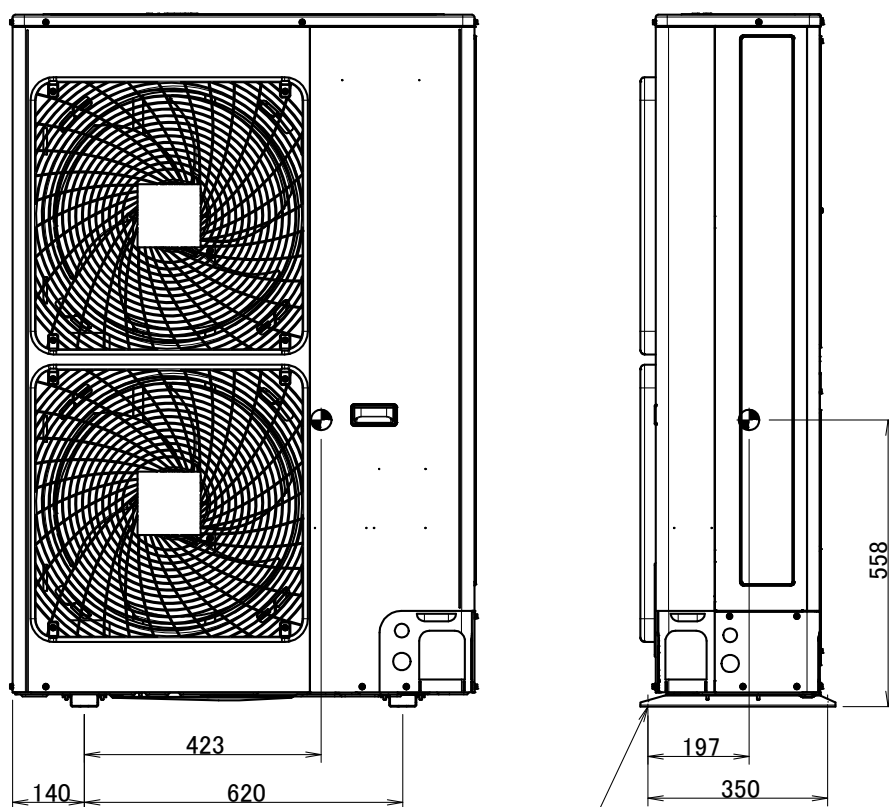


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7 Centre of gravity

7 - 1 Centre of Gravity

RXYSQ-TV9



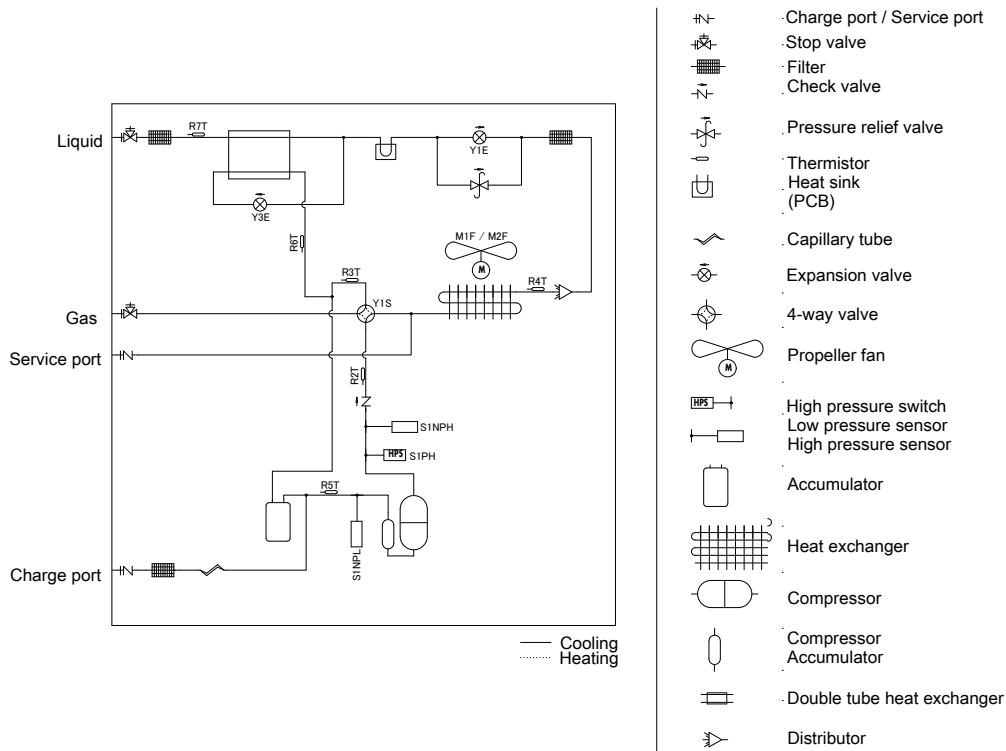
Foundation bolt hole

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8 Piping diagrams

8 - 1 Piping Diagrams

RXYSQ-TV9



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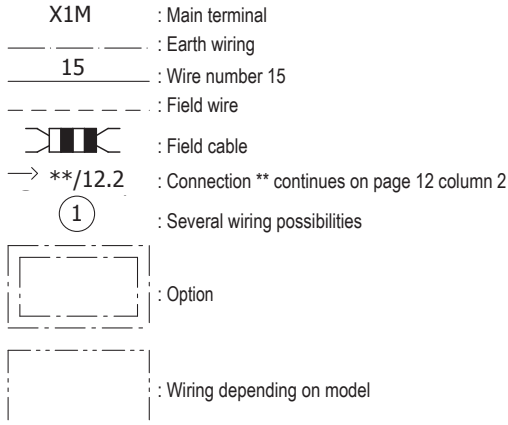
9 Wiring diagrams

9 - 1 Notes & Legend

RXYSQ-TV9

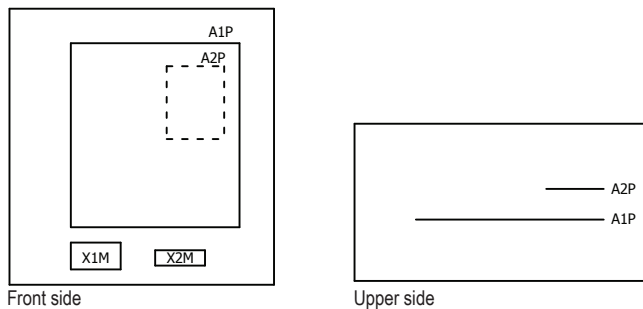
NOTES to go through before starting the unit

1. Symbols:



- For X37A refer to the installation manual of the option.
- Refer to the installation or service manual on how to use BS1 ~ BS5 push buttons and DS1-1 ~ DS1-2 DIP switches.
- Do not operate the unit by short-circuiting protection device S1PH.
- Refer to the installation manual for indoor-outdoor transmission F1-F2 wiring.
- When using the central control system, connect outdoor-outdoor transmission F1-F2.

POSITION IN SWITCH BOX



LEGEND

Part n°	Description	Part n°	Description
A1P	main PCB	R3T	thermistor (suction1)
A2P	filter PCB	R4T	thermistor (heat exchanger)
A3P	* cool / heat selector PCB	R5T	thermistor (suction 2)
BS* (A1P)	push buttons (mode, set, return, test, reset)	R6T	thermistor (subcool heat ex)
C1 (A1P)	capacitor	R7T	thermistor (liquid)
DS1 (A1P)	dipswitch	FINTH	thermistor (fin)
E1HC	crankcase heater	S1NPH	high pressure sensor
F1U (A2P)	fuse T 56 A 250 V	S1NPL	low pressure sensor
F3U (A2P)	fuse T 6.3 A 250 V	S1PH	high pressure switch
F4U (A2P)	fuse T 6.3 A 250 V	S1S	* air control switch
F6U (A1P)	fuse T 5 A 250 V	S2S	* cool / heat switch
HAP (A1P)	running LED (service monitor-green)	V1R (A1P)	IGBT power module
HBP (A1P)	frequency LED (service monitor-green)	V2R (A1P)	diode module
H*P (A1P)	LED (service monitor-orange)	V*T (A1P)	IGBT N-channel
K4R (A1P)	magnetic relay (E1HC)	V*D (A1P)	diodes
K11M (A1P)	magnetic contactor	X37A	connector (power supply for option PCB)
K*R (A1P)	magnetic relay	X*A	PCB connector
L*R (A1P)	reactor	X*M	terminal strip
M1C	motor (compressor)	X*Y	connector
M1F	fan motor (upper)	Y1E	electronic expansion valve (main)
M2F	fan motor (lower)	Y3E	electronic expansion valve (subcool)
PS (A1P)	switching power supply	Y1S	solenoid valve (4-way valve)
Q1DI	# earth leakage circuit breaker	Z1C ~ Z7C	noise filter (ferrit core)
R* (A1P)	resistor	Z*F (A*P)	noise filter
R1T	thermistor (air)		
R2T	thermistor (discharge)		

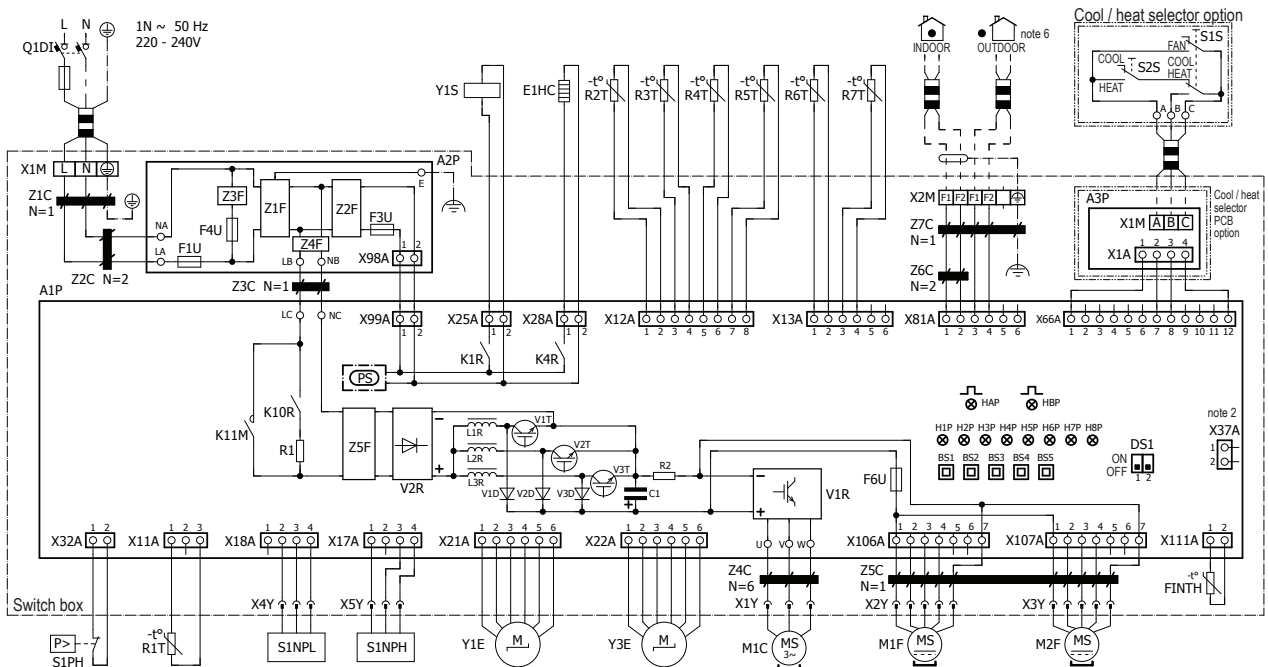
* : optional
: field supply

4D094013A

9 Wiring diagrams

9 - 2 Wiring Diagrams - Single Phase

RXYSQ-TV9



4D094013A

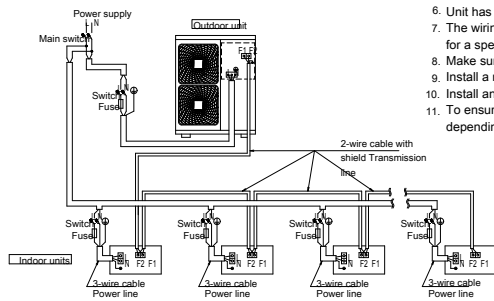
10 External connection diagrams

10 - 1 External Connection Diagrams

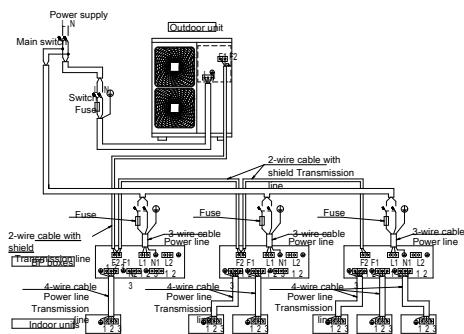
RXYSQ-TV9

External connection diagram

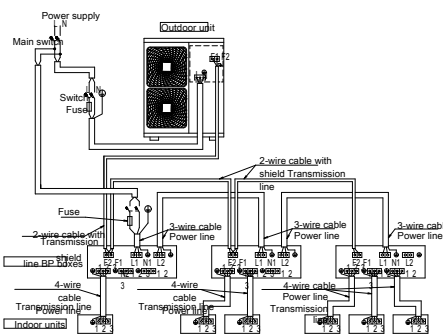
VRV indoor unit



BP box + RA/SA indoor unit



Power source is supplied to each BP box individually.



Power source is connected in series between the units.

Notes

1. All wiring, components and materials to be procured on-site must comply with the applicable legislation.
2. Use copper conductors only
3. For more details, refer to the wiring diagram of the unit.
4. Install a circuit breaker for safety.
5. All field wiring and components must be provided by an authorised electrician.
6. Unit has to be grounded in compliance with the applicable legislation.
7. The wiring shown is a general points-of-connection guide and is not intended to include all details for a specific installation.
8. Make sure to install the switch and the fuse to the power line of each equipment.
9. Install a main to switch to (if necessary) immediately interrupt all the system's power sources.
10. Install an earth leakage circuit breaker.
11. To ensure proper earthing, connect the shields of the incoming and outgoing transmission wiring of each indoor unit (or each BP box, depending on the system layout) to each other.

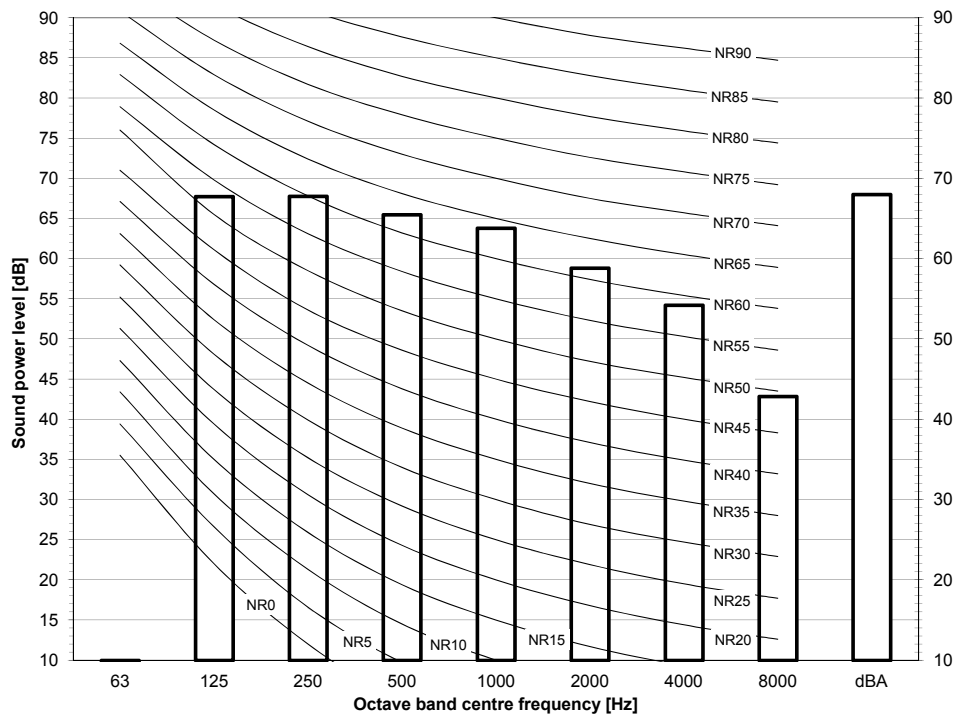
1D094666

11 Sound data

11 - 1 Sound Power Spectrum

11

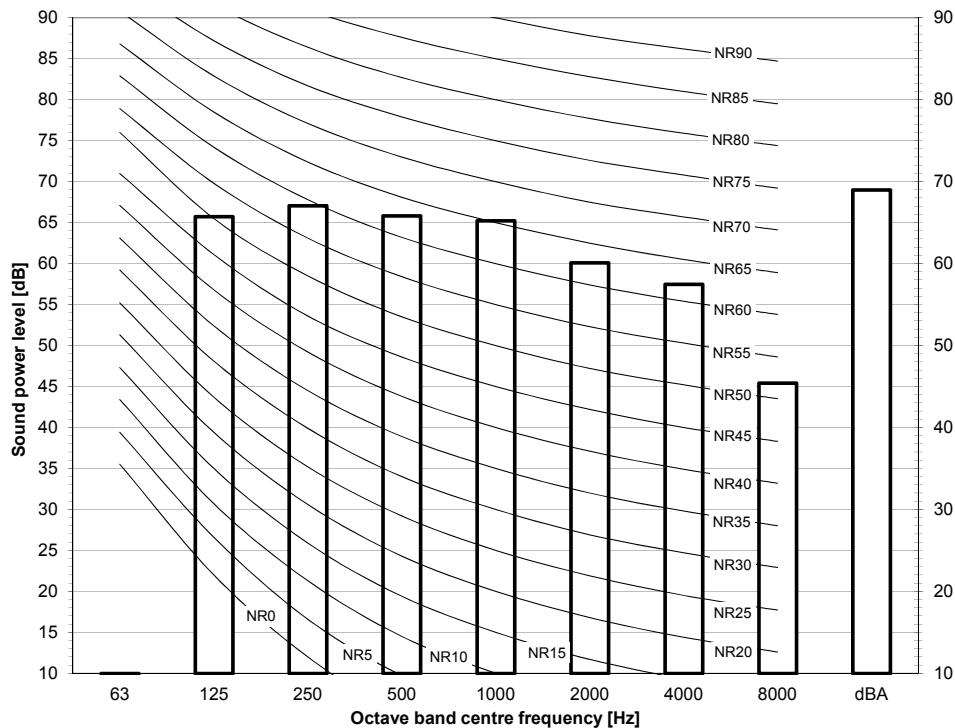
RXYSQ4TY9
RXYSQ4TV9



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

3D098212

RXYSQ5TY9
RXYSQ5TV9



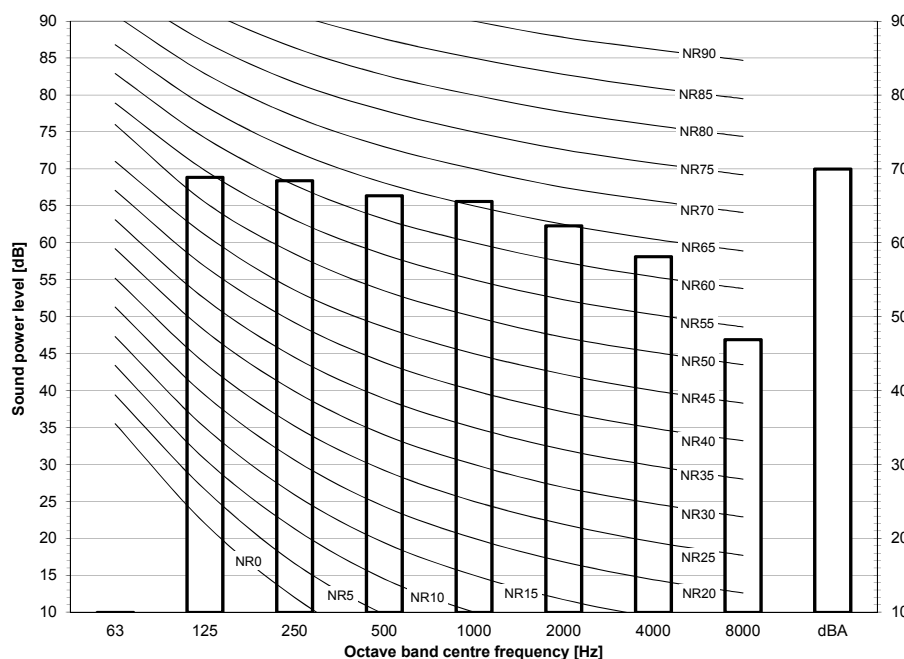
Notes
- dBA = A-weighted sound power level (A scale according to IEC).
- Reference acoustic intensity 0dB = 10E-6μW/m²
- Measured according to ISO 3744

3D098213

11 Sound data

11 - 1 Sound Power Spectrum

RXYSQ6TY9
RXYSQ6TV9



Notes

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

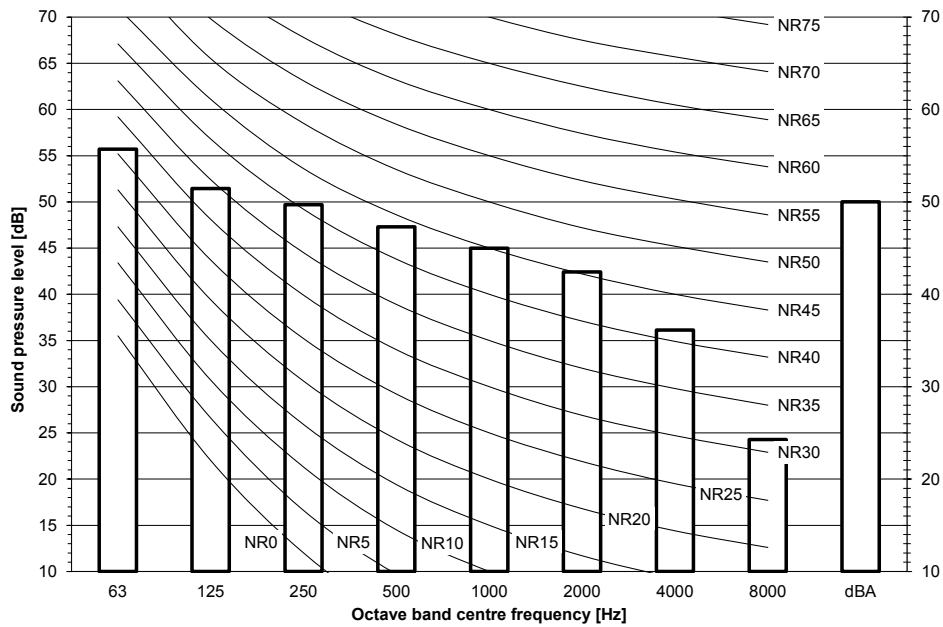
3D098214

11 Sound data

11 - 2 Sound Pressure Spectrum

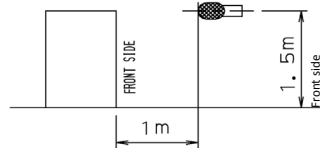
11

RXYSQ4TY9 RXYSQ4TV9



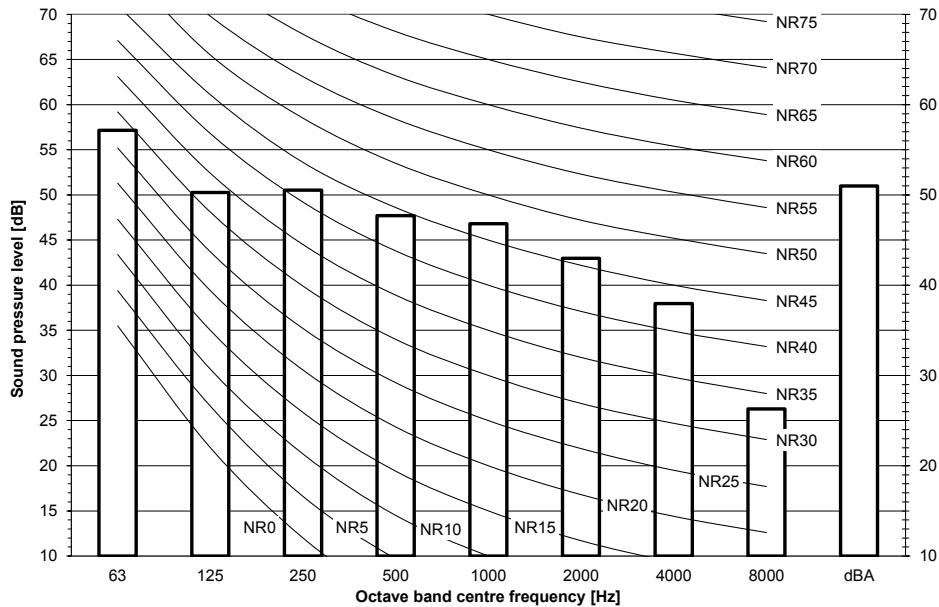
Notes

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



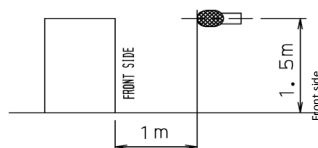
3D098215

RXYSQ5TY9 RXYSQ5TV9



Notes

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

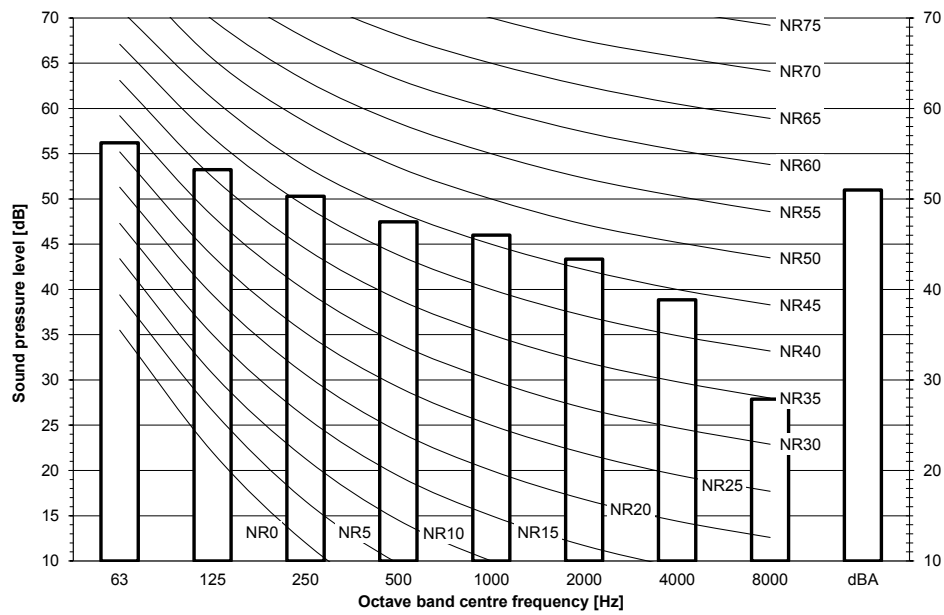


3D098216

11 Sound data

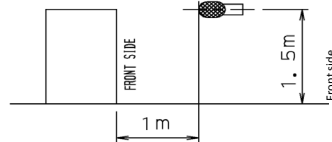
11 - 2 Sound Pressure Spectrum

RXYSQ6TY9
RXYSQ6TV9



Notes

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



3D098217

12 Installation

12 - 1 Installation Method

12

RXYSQ-TY9 RXYSQ-TV9

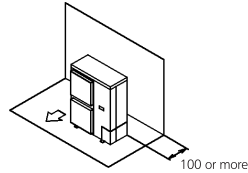
Required installation space

The unit of the values is mm.

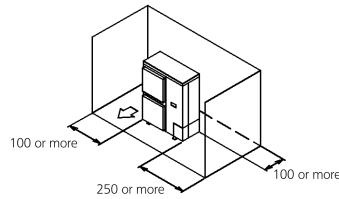
(A) When there are obstacles on suction sides.

• No obstacle above

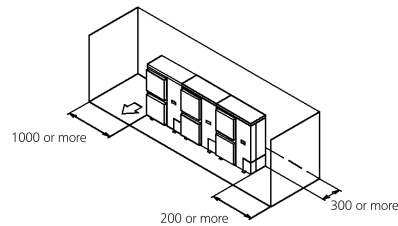
- ① Stand-alone installation
 - Obstacle on the suction side only



- Obstacle on both sides

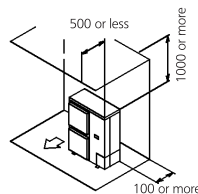


- ② Series installation (2 or more)
 - Obstacle on both sides

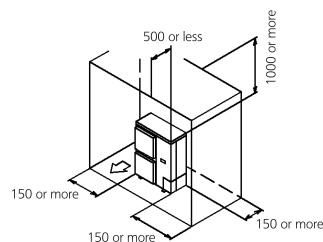


• Obstacle above, too.

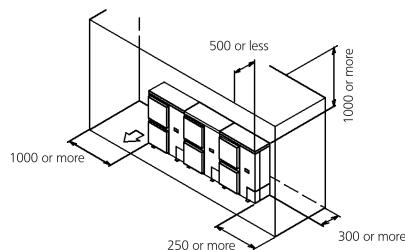
- ① Stand-alone installation
 - Obstacle on the suction side, too



- Obstacle on the suction side and both sides



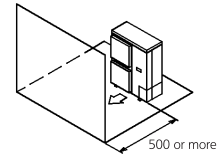
- ② Series installation (2 or more)
 - Obstacle on the suction side and both sides



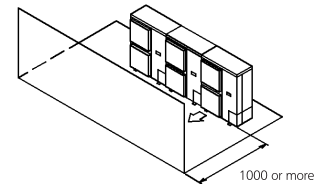
(B) When there are obstacles on discharge sides.

• No obstacle above

- ① Stand-alone installation

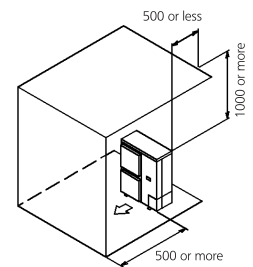


- ② Series installation (2 or more)

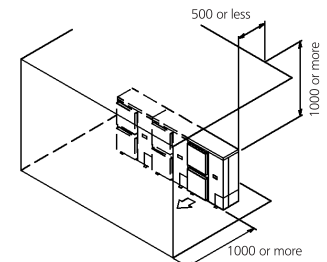


• Obstacle above, too

- ① Stand-alone installation



- ② Series installation (2 or more)



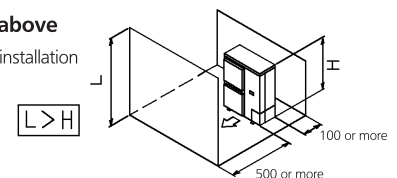
(C) When there are obstacles on both suction and discharge sides.:

Pattern 1

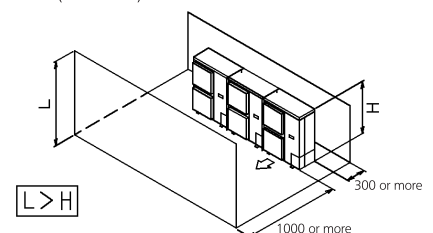
When the obstacles on the discharge side is higher than the unit.
(There is no height limit for obstructions on the intake side.)

• No obstacle above

- ① Stand-alone installation



- ② Series installation (2 or more)



3D045696D

12 Installation

12 - 1 Installation Method

RXYSQ-TY9 RXYSQ-TV9

● Obstacle above, too

① Stand-alone installation

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

	L	A
$L \leq H$	$0 < L \leq 1/2 H$	750
	$1/2 H < L \leq H$	1000
$H < L$	Set the stand as : $L \leq H$	

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

② Series installation (2 or more)

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

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

Close the bottom of the installation frame to prevent the discharged air from being bypassed.
Only two units can be installed for this series.

Pattern 2

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

● No obstacle above

① Stand-alone installation

$L \leq H$

② Series installation (2 or more)

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

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

● Obstacle above, too

① Stand-alone installation

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

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

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

② Series installation

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

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

Close the bottom of the installation frame to prevent the discharged air from being bypassed.
Only two units can be installed for this series.

(D) Double-decker installation

① 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 unit.

② 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 unit.

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

① One row of stand-alone installation

② Rows of series installation (2 or more)

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

	L	A
$L \leq H$	$0 < L \leq 1/2 H$	250
	$1/2 H < L \leq H$	300
$H < L$	Can not be installed	

3D045696D

12 Installation

12 - 2 Refrigerant Pipe Selection

12

RXYSQ-TY9
RXYSQ-TV9

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

For the reference drawing, see page ·2/3·.

		Maximum piping length		Maximum height difference		Total piping length
		Longest pipe (A+[B,D+E,H]) Actual / (Equivalent)	After first branch (B,D+E,H) Actual	Indoor-to-outdoor (H1) Outdoor above indoor / (indoor above outdoor)	Indoor-to-indoor (H2)	
Standard ·VRV DX· indoor units only	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	100/(130)m	40m	50/(40)m	15m	300m
	RXYSQ8TMY1B	120/(150)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	80/(100)m	40m	30/(30)m	15m	140m
	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

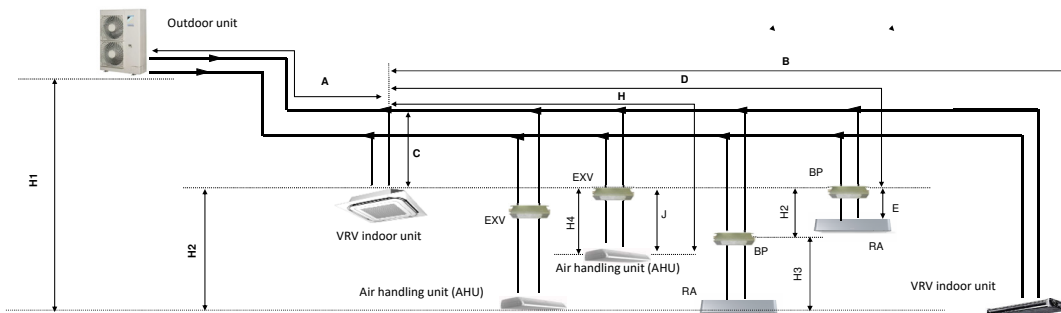
Notes

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

3D097984B

RXYSQ-TY9
RXYSQ-TV9

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

Notes

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

3D097984B

12 Installation

12 - 2 Refrigerant Pipe Selection

RXYSQ-TY9 RXYSQ-TV9

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

- There is no restriction on the number of connectable ·BP· boxes.
- EKEXV· kits are also considered indoor units.
- Restrictions regarding the air handling unit capacity
- 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

- 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.
- 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.
- 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.
- 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.
- 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

RXYSQ-TY1 RXYSQ-TV9

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

Units in scope: ·FXZQ15A· and ·FXAQ15A·.

- In case the system contains these indoor units and the total connection ratio (·CR·) ≤ ·100·%: no special restrictions.
Follow the restrictions that apply to regular ·VRV DX· indoor units.
- In case the system contains these indoor units and the total connection ratio (·CR·) > ·100·%: special restrictions apply.
 - When the connection ratio (·CR1·) of the sum of all ·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.
 - 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.

3D104665A

13 Operation range

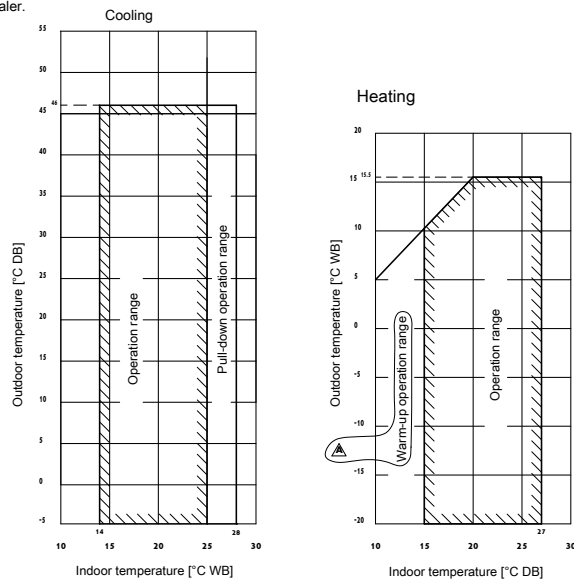
13 - 1 Operation Range

RXYSQ-TY9

RXYSQ-TV9

Notes

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



3D094664A

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

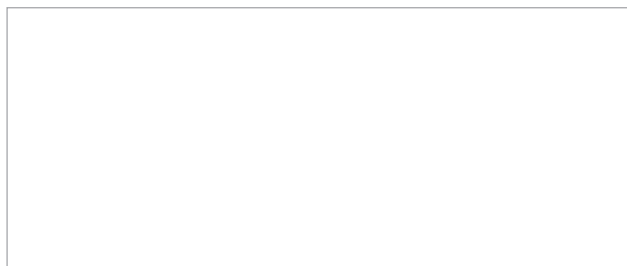
Outside the scope of ·ENER LOT21·

EKEXV50-63-80-100-125-140-200-250 + EKEQM / EKEQF
 VKM50-80-100
 CYV5100-150-200-250
 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
 CTXIM15
 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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10/2020



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