DAIKIN

Air Conditioning Technical Data

RYYQ-T(8)

> RYYQ8T7Y1B8
> RYYQ10T7Y1B
> RYYQ12T7Y1B
> RYYQ14T7Y1B
> RYYQ16T7Y1B
> RYYQ18T7Y1B
> RYYQ20T7Y1B

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RYYQ-T(8)

1 Features

1 - 1 RYYQ-T

- Covers all thermal needs of a building via a single point of contact: accurate temperature control, ventilation, hot water, air handling units and Biddle air curtains
- Wide range of indoor units: possibility to combine VRV with stylish indoor units (Daikin Emura, Nexura, ...)
- Incorporates VRV IV standards & technologies: Variable Refrigerant Temperature, continuous heating, VRV configurator, 7 segment display and full inverter compressors, 4-side heat exchanger, refrigerant cooled PCB, new DC fan motor
- 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
- Continuous comfort: Unique continuous heating technology makes VRV IV the best alternative to traditional heating systems
- VRV configurator software for the fastest and most accurate commissioning, configuration and customisation
- Outdoor unit display for quick on-site settings and easy read out of errors together with the indication of service parameters for checking basic functions.
- Free combination of outdoor units to meet installation space or efficiency requirements
- Fits any building as also indoor installation is possible as a result of high external static pressure of up to 78.4 Pa. Indoor installation leads to less piping length, lower installation costs, increased efficiency and better visual aesthetics
- Simplified installation & guaranteed optimal efficiency with automatic charging & testing
- Easy compliance with F-gas regulation thanks to automated refrigerant containment check
- Wide piping flexibility: 30m indoor height difference, maximum piping length: 190m, total piping length: 1,000m
- The ability to control each conditioned zone individually keeps VRV system running costs to an absolute minimum
- Spread your installation cost by phased installation
- Keep your system in top condition via our i-Net service: 24/7 monitoring for maximum efficiency, extended lifetime, immediate service support thanks to failure prediction and a clear understanding of operability and usage
- Available as heating only by irreversible field setting

Inverter

1 Features
1 - 2 RYYQ-T8

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Inverter

2 Specifications

2-1 Technical Specifications					RYYQ8T8	RYYQ10T	RYYQ12T	RYYQ14T	RYYQ16T	RYYQ18T	RYYQ20T
Capacity range				HP	8	10	12	14	16	18	20
Cooling capacity	Nom.	35°CDB		kW	22.4 (1)	28.0 (1)	33.5 (1)	40.0 (1)	45.0 (1)	50.4 (1)	56.0 (1)
Heating capacity	Nom.	6°CWB		kW	22.4 (2)	28.0 (2)	33.5 (2)	40.0 (2)	45.0 (2)	50.4 (2)	56.0 (2)
	Max.	6°CWB		kW	25.0 (2)	31.5 (2)	37.5 (2)	45.0 (2)	50.0 (2)	56.5 (2)	63.0 (2)
Power input - 50Hz	Cooling	Nom.	35°CDB	kW	5.21 (1)	7.29 (1)	8.98 (1)	11.0 (1)	13.0 (1)	15.0 (1)	18.5 (1)
	Heating	Nom.	6°CWB	kW	4.75 (2)	6.29 (2)	7.77 (2)	9.52 (2)	11.1 (2)	12.6 (2)	14.5 (2)
		Max.	6°CWB	kW	5.51 (2)	7.38 (2)	9.10 (2)	11.2 (2)	12.8 (2)	14.6 (2)	17.0 (2)
Capacity control	Method				Inverter controlled						
EER at nom. capacity	35°CDB			kW/kW	4.30 (1)	3.84 (1)	3.73 (1)	3.64 (1)	3.46 (1)	3.36 (1)	3.03 (1)
COP at nom. capacity	6°CWB			kW/kW	4.72 (2)	4.45 (2)	4.31 (2)	4.20 (2)	4.05 (2)	4.00	3.86
COP at max. capacity	6°CWB			kW/kW	4.54 (2)	4.27 (2)	4.12 (2)	4.02 (2)	3.91 (2)	3.87	3.71
ESEER - Automatic					7.53	7.20	6.96	6.83	6.50	6.38	5.67
Maximum number of connectable indoor units					64 (3)						
Indoor index connection	Min.				100	125	150	175	200	225	250
	Nom.				200	250	300	350	400	450	500
	Max.				260	325	390	455	520	585	650
Dimensions	Unit	Height		mm	1,685						
		Width		mm	930			1,240			
		Depth		mm	765						
	Packed unit	Height		mm	1,820						
		Width		mm	1,000			1,310			
		Depth		mm	835						
Weight	Unit			kg	243	252		356		391	
	Packed unit			kg	250	259		363		397	
Packing	Material				Carton						
	Weight			kg	2.00			3.00			
Packing 2	Material				Wood						
	Weight			kg	17.00			18.50			
Packing 3	Material				Plastic						
	Weight			kg	0.50						
Casing	Colour				Daikin White						
	Material				Painted galvanized steel plate						
Heat exchanger	Type				Cross fin coil						
	Fin	Treatment			Anti-corrosion treatment						
Compressor	Quantity				1			2			
	Type				Hermetically sealed scroll compressor						
	Crankcase heater			W	33						
Fan	Quantity				1			2			
	Air flow rate	Cooling	Nom.	m^3/min	162	175	185	223	260	251	261
	External static pressure	Max.		Pa	78						
	Discharge direction				Vertical						
	Type				Propeller fan						
Fan motor	Quantity				1			2			
	Output			W	750						
	Model				Brushless DC motor						
Sound power level	Cooling	Nom.		dBA	78	79	81		86		88
Sound pressure level	Cooling	Nom.		dBA	58		61		64	65	66
Operation range	Cooling	Min.~Max.		°CDB	-5~43						
	Heating	Min.~Max.		°CWB	-20~15.5						
Refrigerant	Type				R-410A						
	GWP				2,087.5						
	Charge			TCO_2eq	12.3	12.5	13.2	21.5	21.7	24.4	24.6
				kg	5.9	6	6.3	10.3	10.4	11.7	11.8
Refrigerant oil	Type				Synthetic (ether) oil						
	Charged volume			l	0.8	0.5	0.7	1.8		1.7	1.9

2 Specifications

2-1 Technical Specifications					RYYQ8T8	RYYQ10T	RYYQ12T	RYYQ14T	RYYQ16T	RYYQ18T	RYYQ20T
Piping connections	Liquid	Type			Braze connection						
		OD		mm	9.52		12.7			15.9	
	Gas	Type			Braze connection						
		OD		mm	19.1	22.2	28.6				
	Total piping length	System	Actual	m	1,000 (4)						
	Level difference	OU - IU	Outdoor unit in highest position	m	90 (4)						
			Indoor unit in highest position	m	90 (4)						
		IU - IU	Max.	m	30 (4)						
	Heat insulation				Both liquid and gas pipes						
	Piping length	After branch	Max.	m	90 (4)						
		OU - IU	Max.	m	165 (4)						
Defrost method					Reversed cycle						
Safety devices	Item	01			High pressure switch						
		02			Fan driver overload protector						
		03			Inverter overload protector						
		04			PC board fuse						
PED	Category				Category II						
	Most critical part	Name			Accumulator						
		Ps*V		Bar*l	325			415		492.5	

Standard Accessories : Installation and operation manual;

Standard Accessories : Connection pipes;

2-2 Electrical Specifications				RYYQ8T8	RYYQ10T	RYYQ12T	RYYQ14T	RYYQ16T	RYYQ18T	RYYQ20T
Power supply	Name			Y1						
	Phase			3N~						
	Frequency		Hz	50						
	Voltage		V	380-415						
Voltage range	Min.		%	-10						
	Max.		%	10						
Current	Nominal running current (RLA) - 50Hz	Cooling	A	7.2 (5)	10.2 (5)	12.7 (5)	15.4 (5)	18.0 (5)	20.8 (5)	26.9 (5)
Current - 50Hz	Minimum Ssc value		kVa	1,216 (6)	564 (6)	615 (6)	917 (6)	924 (6)	873 (6)	970 (6)
	Minimum circuit amps (MCA)		A	16.1	22.0	24.0	27.0	31.0	35.0	39.0
	Maximum fuse amps (MFA)		A	20	25	32		40		50
	Total overcurrent amps (TOCA)		A	17.3	24.6		35.4		42.7	
	Full load amps (FLA)	Total	A	1.2	1.3	1.5	1.8	2.6		
Wiring connections - 50Hz	For power supply	Quantity		5G						
	For connection with indoor	Quantity		2						
		Remark		F1,F2						
Power supply intake				Both indoor and outdoor unit						

2 Specifications

Notes

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

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

(3) Actual number of connectable indoor units depends on the indoor unit type (VRV indoor, Hydrobox, RA indoor, etc.) and the connection ratio restriction for the system (50% \<= CR \<= 130%)

(4) Refer to refrigerant pipe selection or installation manual

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

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

For more details on operation range see TW drawing

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%.

For more details on standard accessories refer to Installation/operation manual

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

Select wire size based on the value of MCA. The MCA can be regarded as the maximum running current.

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

TOCA means the total value of each OC set.

FLA means the nominal running current of the fan

In accordance with EN/IEC 61000-3-11, respectively EN/IEC 61000-3-12, it may be necessary to consult the distribution network operator to ensure that the equipment is connected only to a supply with Zsys ≤ Zmax, respectively Ssc ≥ minimum Ssc value.

European/International Technical Standard setting the limits for voltage changes, voltage fluctuations and flicker in public low-voltage supply systems for equipment with rated current ≤ 75A.

European/International Technical Standard setting the limits for harmonic currents produced by equipment connected to public low-voltage systems with input current \>16A and \<= 75A per phase

Short-circuit power

system impedance

Multi combination (22~54HP) data is corresponding with the standard multi combination as mentioned on 3D079534

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.

The STANDARD ESEER value corresponds with normal VRV4 Heat Pump operation, not taking into account advanced energy saving operation functionality

The AUTOMATIC SEER value corresponds with normal VRV4 Heat Pump operation, taking into account advanced energy saving operation functionality (variable refrigerant temperature control operation)

Nominal cooling capacities are based on: indoor temperature: 27°CDB, 19°CWB, outdoor temperature: 35°CDB, equivalent refrigerant piping: 5m, level difference: 0m. Data for high efficiency series, Eurovent certified

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

Contains fluorinated greenhouse gases

Cooling: indoor temp. 27°CDB, 19°CWB; outdoor temp. 35°CDB; equivalent piping length: 5m; level difference: 0m

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

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

Sound values are theoretical values based on sound results of individual installed units. Possible deviations due to variety of installation patterns are not taken into account.

Soundpressure system [dBA] = 10*log[10^(A/10)+10^(B/10)+10^(C/10)] , with Unit A = A dBA, Unit B = B dBA, Unit C = C dBA

Cooling: indoor temp. 27°CDB, 19°CWB; outdoor temp. 35°CDB; equivalent piping length: 5m (horizontal); level difference: 0m

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

2 Specifications

2-3 Technical Specifications					RYYQ22T	RYYQ24T	RYYQ26T	RYYQ28T	RYYQ30T	RYYQ32T	RYYQ34T	RYYQ36T	RYYQ38T	RYYQ40T
System	Outdoor unit module 1				RYMQ10T	RYMQ8T	RYMQ12T			RYMQ16T			RYMQ8T	RYMQ10T
	Outdoor unit module 2				RYMQ12T	RYMQ16T	RYMQ14T	RYMQ16T	RYMQ18T	RYMQ16T	RXYQ18T	RYMQ20T	RYMQ10T	RYMQ12T
	Outdoor unit module 3				-								RYMQ20T	RYMQ18T
Capacity range				HP	22	24	26	28	30	32	34	36	38	40
Cooling capacity	Nom.	35°CDB		kW	61.5 (1)	67.4 (1)	73.5 (1)	78.5 (1)	83.9 (1)	90.0 (1)	95.4 (1)	101.0 (1)	106.3 (1)	111.9 (1)
Heating capacity	Nom.	6°CWB		kW	61.5 (2)	67.4 (2)	73.5 (2)	78.5 (2)	83.9 (2)	90.0 (2)	95.4 (2)	101.0 (2)	106.3 (2)	111.9 (2)
	Max.	6°CWB		kW	69.0 (3)	75.0 (3)	82.5 (3)	87.5 (3)	94.0 (3)	100.0 (3)	106.5 (3)	113.0 (3)	119.0 (3)	125.5 (3)
Power input - 50Hz	Cooling	Nom.	35°CDB	kW	16.27 (1)	18.2 (1)	20.0 (1)	22.0 (1)	24.0 (1)	26.0 (1)	28.0 (1)	31.5 (1)	29.2 (1)	31.3 (1)
	Heating	Nom.	6°CWB	kW	14.06 (2)	15.85 (2)	17.29 (2)	18.87 (2)	20.4 (2)	22.2 (2)	23.7 (2)	25.6 (2)	25.1 (2)	26.7 (2)
		Max.	6°CWB	kW	16.48 (3)	18.31 (3)	20.30 (3)	21.90 (3)	23.7 (3)	25.6 (3)	27.4 (3)	29.8 (3)	29.2 (3)	31.1 (3)
EER at nom. capacity	35°CDB			kW/kW	3.77 (1)	3.70 (1)	3.68 (1)	3.57 (1)	3.5 (1)	3.46 (1)	3.4 (1)	3.21 (1)	3.6 (1)	
COP at nom. capacity	6°CWB			kW/kW	4.37	4.25		4.16	4.1	4.05	4.0	3.95	4.2	
COP at max. capacity	6°CWB			kW/kW	4.19	4.10	4.06	4.00		3.91	3.9	3.79	4.1	4.0
ESEER - Automatic					7.07	6.81	6.89	6.69	6.60	6.50	6.44	6.02	6.36	6.74
Maximum number of connectable indoor units					64 (4)									
Indoor index connection	Min.				275	300	325	350	375	400	425	450	475	500
	Nom.				550	600	650	700	750	800	850	900	950	1,000
	Max.				715	780	845	910	975	1,040	1,105	1,170	1,235	1,300
Piping connections	Liquid	OD		mm	15.9		19.1							
	Gas	OD		mm	28.6	34.9						41.3		
	Total piping length	System	Actual	m	1,000 (5)									
	Level difference	OU - IU	Outdoor unit in highest position	m	90 (5)									
			Indoor unit in highest position	m	90 (5)									
		IU - IU	Max.	m	30 (5)									
	Heat insulation				Liquid, gas and equalizing pipe									
	Piping length	After branch	Max.	m	90 (5)									
		OU - IU	Max.	m	165 (5)									
PED	Category				Category II									

Standard Accessories : Installation and operation manual;

Standard Accessories : Connection pipes;

2-4 Technical Specifications					RYYQ42T	RYYQ44T	RYYQ46T	RYYQ48T	RYYQ50T	RYYQ52T	RYYQ54T
System	Outdoor unit module 1				RYMQ10T	RYMQ12T	RYMQ14T	RYMQ16T			RYMQ18T
	Outdoor unit module 2				RYMQ16T					RYMQ18T	
	Outdoor unit module 3				RYMQ16T				RYMQ18T		
Capacity range				HP	42	44	46	48	50	52	54
Cooling capacity	Nom.	35°CDB		kW	118.0 (1)	123.5 (1)	130.0 (1)	135.0 (1)	140.0 (1)	145.8 (1)	151.2 (1)
Heating capacity	Nom.	6°CWB		kW	118.0 (2)	123.5 (2)	130.0 (2)	135.0 (2)	140.0 (2)	145.8 (2)	151.2 (2)
	Max.	6°CWB		kW	131.5 (3)	137.5 (3)	145.0 (3)	150.0 (3)	156.0 (3)	163.0 (3)	169.5 (3)
Power input - 50Hz	Cooling	Nom.	35°CDB	kW	33.3 (1)	35.0 (1)	37.0 (1)	39.0 (1)	40.7 (1)	43.0 (1)	45.0 (1)
	Heating	Nom.	6°CWB	kW	28.49 (2)	29.97 (2)	31.72 (2)	33.3 (2)	34.6 (2)	36.3 (2)	37.8 (2)
		Max.	6°CWB	kW	32.98 (3)	34.70 (3)	36.8 (3)	38.4 (3)	40.0 (3)	42.0 (3)	43.8 (3)
EER at nom. capacity	35°CDB			kW/kW	3.54 (1)		3.51 (1)	3.46 (1)	3.44 (1)	3.4 (1)	3.40 (1)

2 Specifications

2-4 Technical Specifications					RYYQ42T	RYYQ44T	RYYQ46T	RYYQ48T	RYYQ50T	RYYQ52T	RYYQ54T
COP at nom. capacity	6°CWB			kW/kW	4.14	4.12	4.10	4.05		4.0	
COP at max. capacity	6°CWB			kW/kW	3.99	3.96	3.94	3.91	3.90		
ESEER - Automatic					6.65	6.62	6.60	6.50	6.46	6.42	6.38
Maximum number of connectable indoor units					64 (4)						
Indoor index connection	Min.				525	550	575	600	625	650	675
	Nom.				1,050	1,100	1,150	1,200	1,250	1,300	1,350
	Max.				1,365	1,430	1,495	1,560	1,625	1,690	1,755
Piping connections	Liquid	OD		mm	19.1						
	Gas	OD		mm	41.3						
	Total piping length	System	Actual	m	1,000 (5)						
	Level difference	OU - IU	Outdoor unit in highest position	m	90 (5)						
			Indoor unit in highest position	m	90 (5)						
		IU - IU	Max.	m	30 (5)						
	Heat insulation				Liquid, gas and equalizing pipe						
	Piping length	After branch	Max.	m	90 (5)						
		OU - IU	Max.	m	165 (5)						
PED	Category				Category II						

Standard Accessories : Installation and operation manual;

Standard Accessories : Connection pipes;

2-5 Electrical Specifications				RYYQ22T	RYYQ24T	RYYQ26T	RYYQ28T	RYYQ30T	RYYQ32T	RYYQ34T	RYYQ36T	RYYQ38T	RYYQ40T
Voltage range	Min.		%	-10									
	Max.		%	10									
Current	Nominal running current (RLA) - 50Hz	Cooling	A	22.9 (6)	25.2 (6)	28.1 (6)	30.7 (6)	33.5 (6)	36.0 (6)	38.8 (6)	44.9 (6)	44.3 (6)	43.7 (6)
Current - 50Hz	Minimum Ssc value		kVa	1,179 (7)	2,140 (7)	1,532 (7)	1,539 (7)	1,488 (7)	1,848 (7)	1,797 (7)	1,894 (7)	2,750 (7)	2,052 (7)
	Minimum circuit amps (MCA)		A	46.0		51.0	55.0	59.0	62.0	66.0	70.0	76.0	81.0
	Maximum fuse amps (MFA)		A	63				80				100	
Wiring connections - 50Hz	For power supply	Quantity		5G									
	For connection with indoor	Quantity		2									
		Remark		F1,F2									
Power supply intake				Both indoor and outdoor unit									

2-6 Electrical Specifications				RYYQ42T	RYYQ44T	RYYQ46T	RYYQ48T	RYYQ50T	RYYQ52T	RYYQ54T
Voltage range	Min.		%	-10						
	Max.		%	10						
Current	Nominal running current (RLA) - 50Hz	Cooling	A	46.2 (6)	48.7 (6)	51.4 (6)	54.0 (6)	56.8 (6)	59.6 (6)	62.4 (6)
Current - 50Hz	Minimum Ssc value		kVa	2,412 (7)	2,463 (7)	2,765 (7)	2,772 (7)	2,721 (7)	2,670 (7)	2,619 (7)
	Minimum circuit amps (MCA)		A	84.0	86.0	89.0	93.0	97.0	101.0	105.0
	Maximum fuse amps (MFA)		A	100			125			
Wiring connections - 50Hz	For power supply	Quantity		5G						
	For connection with indoor	Quantity		2						
		Remark		F1,F2						
Power supply intake				Both indoor and outdoor unit						

2 Specifications

Notes

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

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

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

(4) Actual number of connectable indoor units depends on the indoor unit type (VRV indoor, Hydrobox, RA indoor, etc.) and the connection ratio restriction for the system (50% \<= CR \<= 130%)

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

(6) For more details on operation range see TW drawing

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

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%.

Refer to refrigerant pipe selection or installation manual

For more details on standard accessories refer to Installation/operation manual

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

Select wire size based on the value of MCA. The MCA can be regarded as the maximum running current.

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

TOCA means the total value of each OC set.

FLA means the nominal running current of the fan

In accordance with EN/IEC 61000-3-11, respectively EN/IEC 61000-3-12, it may be necessary to consult the distribution network operator to ensure that the equipment is connected only to a supply with Zsys ≤ Zmax, respectively Ssc ≥ minimum Ssc value.

European/International Technical Standard setting the limits for voltage changes, voltage fluctuations and flicker in public low-voltage supply systems for equipment with rated current ≤ 75A.

European/International Technical Standard setting the limits for harmonic currents produced by equipment connected to public low-voltage systems with input current \>16A and \<= 75A per phase

Short-circuit power

system impedance

Multi combination (22~54HP) data is corresponding with the standard multi combination as mentioned on 3D079534

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.

The STANDARD ESEER value corresponds with normal VRV4 Heat Pump operation, not taking into account advanced energy saving operation functionality

The AUTOMATIC SEER value corresponds with normal VRV4 Heat Pump operation, taking into account advanced energy saving operation functionality (variable refrigerant temperature control operation)

Nominal cooling capacities are based on: indoor temperature: 27°CDB, 19°CWB, outdoor temperature: 35°CDB, equivalent refrigerant piping: 5m, level difference: 0m. Data for high efficiency series, Eurovent certified

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

Contains fluorinated greenhouse gases

Cooling: indoor temp. 27°CDB, 19°CWB; outdoor temp. 35°CDB; equivalent piping length: 5m; level difference: 0m

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

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

Sound values are theoretical values based on sound results of individual installed units. Possible deviations due to variety of installation patterns are not taken into account.

Soundpressure system [dBA] = 10*log[10^(A/10)+10^(B/10)+10^(C/10)] , with Unit A = A dBA, Unit B = B dBA, Unit C = C dBA

Cooling: indoor temp. 27°CDB, 19°CWB; outdoor temp. 35°CDB; equivalent piping length: 5m (horizontal); level difference: 0m

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

2 Specifications

2-7 Technical Specifications					RYMQ10T	RYMQ12T	RYMQ14T	RYMQ16T	RYMQ18T	RYMQ20T	RYMQ8T
Capacity control	Method				Inverter controlled						
Dimensions	Unit	Height		mm	1,685						
		Width		mm	930		1,240				930
		Depth		mm	765						
	Packed unit	Height		mm	1,820						
		Width		mm	1,000		1,310				1,000
		Depth		mm	835						
Weight	Unit			kg	195		309		319		188
	Packed unit			kg	213		329		339		206
Packing	Material				Carton						
	Weight			kg	2.00		3.00				2.00
Packing 2	Material				Wood						
	Weight			kg	17.00		18.50				17.00
Packing 3	Material				Plastic						
	Weight			kg	0.50						
Casing	Colour				Daikin White						
	Material				Painted galvanized steel plate						
Heat exchanger	Fin	Treatment			Anti-corrosion treatment						
Compressor	Quantity				1		2				1
	Type				Hermetically sealed scroll compressor						
	Crankcase heater			W	33						
Fan	Quantity				1		2				1
	Air flow rate	Cooling	Nom.	m^3/min	175	185	223	260	251	261	162
	External static pressure	Max.		Pa	78						
	Discharge direction				Vertical						
	Type				Propeller fan						
Fan motor	Quantity				1		2				1
	Output			W	750						
	Model				Brushless DC motor						
Sound power level	Cooling	Nom.		dBA	79	81		86		88	78
Sound pressure level	Cooling	Nom.		dBA	58	61		64	65	66	58
Operation range	Cooling	Min.~Max.		°CDB	-5~43						
	Heating	Min.~Max.		°CWB	-20~15.5						
Refrigerant	Type				R-410A						
	GWP				2,087.5						
	Charge			TCO_2eq	12.5	13.2	21.5	21.7	24.4	24.6	12.3
				kg	6	6.3	10.3	10.4	11.7	11.8	5.9
Refrigerant oil	Type				Synthetic (ether) oil						
	Charged volume			l	1.2	1.4	2.4	3.3			1.0
Piping connections	Liquid	Type			Braze connection						
		OD		mm	9.52	12.7			15.9		9.52
	Gas	Type			Braze connection						
		OD		mm	22.2	28.6					19.1
	Total piping length	System	Actual	m	1,000						
	Level difference	OU - IU	Outdoor unit in highest position	m	90						
			Indoor unit in highest position	m	90						
		IU - IU	Max.	m	30						
	Heat insulation				Liquid, gas and equalizing pipe						
	Oil equalizing	OD		mm	19.1	22.2			28.6		19.1
		Type			Braze connection						
	Piping length	After branch	Max.	m	90						
		OU - IU	Max.	m	165						

2 Specifications

2-7 Technical Specifications			RYMQ10T	RYMQ12T	RYMQ14T	RYMQ16T	RYMQ18T	RYMQ20T	RYMQ8T
Defrost method			Reversed cycle						
Safety devices	Item	01	High pressure switch						
		02	Fan driver overload protector						
		03	Inverter overload protector						
		04	PC board fuse						

2-8 Electrical Specifications				RYMQ10T	RYMQ12T	RYMQ14T	RYMQ16T	RYMQ18T	RYMQ20T	RYMQ8T
Power supply	Name			Y1						
	Phase			3N~						
	Frequency		Hz	50						
	Voltage		V	380-415						
Voltage range	Min.		%	-10						
	Max.		%	10						
Current	Nominal running current (RLA) - 50Hz	Cooling	A	10.2	12.7	15.4	18.0	20.8	26.9	7.2
Current - 50Hz	Minimum circuit amps (MCA)		A	22.0	24.0	27.0	31.0	35.0	39.0	16.1
	Maximum fuse amps (MFA)		A	25	32		40		50	20
	Total overcurrent amps (TOCA)		A	24.6		35.4		42.7		17.3
	Full load amps (FLA)	Total	A	1.3	1.5	1.8	2.6			1.2
Wiring connections - 50Hz	For power supply	Quantity		5G						
	For connection with indoor	Quantity		2						
		Remark		F1,F2						

3 Options

3 - 1 Options

RXYQ-T(8)
RYYQ-T(8)
RYMQ-T
RXYQQ-T

VRV4 Heat Pump Option list

No	Item	RXYQ8T RYYQ8T RXYQQ8T	RXYQ10-12T RYYQ10-12T RXYQQ10-12T	RXYQ14-18T RYYQ14-18T RXYQQ14-18T	RXYQ20T RYYQ20T RXYQQ20T	RYYQ22~54T RXYQ22~54T RXYQQ22~42T
I.	REFNET HEADER	KHRQ22M29H				
		---	KHRQ22M64H			
		---	---	---	KHRQ22M75H	
II.	REFNET JOINT	KHRQ22M20T				
		KHRQ22M29T9				
		---	KHRQ22M64T			
		---	---	---	KHRQ22M75T	
III.	OUTDOOR MULTI CONNECTION KIT *(see note 2)*	---	---	---	---	BHFQ22P1007
IV.	OUTDOOR MULTI CONNECTION KIT *(see note 2)* FOR 3 OUTDOOR UNITS	---	---	---	---	BHFQ22P1517

No	Item	8HP	10HP	12HP	14HP	16HP	18HP	20HP
1a	COOL/HEAT SELECTOR (SWITCH)	KRC19-26A						
1b	COOL/HEAT SELECTOR (PCB)	BRP2A81						
1c	COOL/HEAT SELECTOR (SWB MOUNTING PLATE)	---			KKSA26A560*			
1d	COOL/HEAT SELECTOR (FIXING BOX)	KJB111A						
2	VRV CONFIGURATOR	EKPCCAB*						
3	HEATER TAPE KIT *(see note 6)*	EKBPH012T*			EKBPH020T*			
4	HEATER TAPE KIT PCB	EKBPHPCBT*						
5	DEMAND PCB *(see note 7)*	DTA104A61/62*						
6	DEMAND PCB (MOUNTING PLATE)	---			KKSB26B1*			

Notes

1. All options are kits
2. Only for multi units
3. Option **1a** and **1b** are both required to operate the COOL/HEAT SELECTOR function on a VRV4 Heat Pump system
4. Option **1d** is required to mount **1a**
5. **1c** is only required when combining **1b** with **3** on a VRV4 Heat Pump system
6. To install the HEATER TAPE KIT, a HEATER TAPE KIT PCB is required
7. To install the DEMAND PCB on the Large casing type, the DEMAND PCB (MOUNTING PLATE) is required

Medium casing type VRV4 Heat Pump: modules 8~12HP
Large casing type VRV4 Heat Pump: modules 14 ~ 20HP

3D079531F

4 Combination table

4 - 1 Combination Table

RXYQ-T(8)
RYYQ-T(8)
RYMQ-T

VRV4 Heat Pump RA DX indoor unit compatibility list

Configuration		Unit type
Wall mounted	*Emura*	FTXG25J FTXG35J FTXG50J
		FTXS20K FTXS25K FTXS35K FTXS42K FTXS50K FTXS60G FTXS71G
		CTXS15K CTXS35K
Floor/Ceiling	*Flex*	FLXS25B FLXS35B FLXS50B FLXS60B
Floor standing	*FVXS*	FVXS25F FVXS35F FVXS50F
	Nexura	FVXG25K FVXG35K FVXG50K

NOTES

1. Limitations on use of RA DX indoor units with VRV4 Heat Pump is subject to rules mentioned in 3D079543 and 3D079540.
2. Use VRV DX indoor equivalent in case RA/SA DX Cassette, Ceiling mounted or Duct type is needed.

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4 Combination table

4 - 1 Combination Table

RXYQ-T(8)
RYYQ-T(8)
RYMQ-T
RXYQQ-T

VRV4 Heat Pump Standard combination table (multi)

See **Remark** concerning base model type

		8HP	10HP	12HP	14HP	16HP	18HP	20HP
Heat PUMP	RXYQ8* / RYYQ8* / RXYQQ8*	1						
	RXYQ10* / RYYQ10* / RXYQQ10*		1					
	RXYQ12* / RYYQ12* / RXYQQ12*			1				
	RXYQ14* / RYYQ14* / RXYQQ14*				1			
	RXYQ16* / RYYQ16* / RXYQQ16*					1		
	RXYQ18* / RYYQ18* / RXYQQ18*						1	
	RXYQ20* / RYYQ20* / RXYQQ20*							1
Multi combination with 2 outdoor units	RXYQ22* / RYYQ22* / RXYQQ22*		1	1				
	RXYQ24* / RYYQ24* / RXYQQ24*	1				1		
	RXYQ26* / RYYQ26* / RXYQQ26*			1	1			
	RXYQ28* / RYYQ28* / RXYQQ28*			1		1		
	RXYQ30* / RYYQ30* / RXYQQ30*			1			1	
	RXYQ32* / RYYQ32* / RXYQQ32*					2		
	RXYQ34* / RYYQ34* / RXYQQ34*					1	1	
	RXYQ36* / RYYQ36* / RXYQQ36*					1		1
Multi combination with 3 outdoor units	RXYQ38* / RYYQ38* / RXYQQ38*	1	1					1
	RXYQ40* / RYYQ40* / RXYQQ40*		1	1			1	
	RXYQ42* / RYYQ42* / RXYQQ42*		1			2		
	RXYQ44* / RYYQ44*			1		2		
	RXYQ46* / RYYQ46*				1	2		
	RXYQ48* / RYYQ48*					3		
	RXYQ50* / RYYQ50*					2	1	
	RXYQ52* / RYYQ52*					1	2	
	RXYQ54* / RYYQ54*						3	

Remarks

RYYQ8~20 = single continuous heating model
RYYQ22~54 = multi continuous heating model
RXYQ8~20 = single non-continuous heating model
RXYQ22~54 = multi non-continuous heating model
RXYQQ8~20= single non-continuous heating replacement model (VRV4-Q)
RXYQQ22~42 = multi non-continuous heating replacement model (VRV4-Q)
1) Single unit can be chosen: RYYQ* model (continuous heating) and RXYQ* model (non-continuous heating)
2) Multi combinations "non-continuous heating" consist out of RXYQ8~20 modules. Eg RXYQ36* = RXYQ16* + RXYQ20*
3) Multi combinations "continuous heating" consist out of **RYMQ8~20** modules. Eg RYYQ36* = RYMQ16* + RYMQ20*
→multi modules RYMQ* cannot be used as stand alone units (RYMQ8~20HP)
4) Multi combinations can never contain RYYQ8~20 models
5) Multi "continuous heating" RYYQ* combinations can never contain RXYQ* models
6) Multi "non-continuous heating" RXYQ* combinations can never contain RYMQ* models
7) Multi "non-continuous heating" replacement models only consist out of RXYQQ8~20 modules. Eg RXYQQ36* = RXYQQ16* + RXYQQ20*
8) Replacemant models can never be combined with other models

3D079534B

4 Combination table

4 - 1 Combination Table

RXYQ-T(8)
RYYQ-T(8)
RYMQ-T

VRV4
Heat pump
Indoor unit combination restrictions
(1/2)

Indoor unit combination pattern	·VRV* DX· indoor unit	·RA DX· indoor unit	Hydrobox unit	Air handling unit (AHU) (3)
·VRV* DX· indoor unit	O	O	O	O
·RA DX· indoor unit	O	O	X	X
Hydrobox unit	O	X	O_1	X
Air handling unit (AHU) (3)	O	X	X	O_2

O: Allowed
X: Not allowed

Notes

1. **·VRV* DX· indoor unit**
- When combining ·VRV DX· indoor units with other types of indoor units, respect the following combination patterns:

Example
Allowed : *(·VRV DX· indoor unit + ·Hydrobox· unit)* **or** *(·VRV DX· indoor unit + ·RA DX· indoor unit)* **or** *(·VRV DX· indoor unit + ·AHU·)*
Not allowed : *[·VRV DX· indoor unit + (·RA DX· indoor unit & (·Hydrobox· unit or ·AHU·))]* **or** *[·VRV DX· indoor unit + (·Hydrobox· unit & (·RA DX· indoor unit or ·AHU·))]*

2. **O_1**
- Only connect ·Hydrobox· units to a ·VRV IV· Heat Pump in combination with a ·VRV DX· indoor unit.
  → Refer to the connection ratio restrictions (·3D079540·).
  → Connection with only Hydrobox units: refer to the Daikin Altherma solutions.
- Only connect ·Hydrobox· units of the ·HXY*· series.
  → ·HXHD*· series ·Hydrobox· units are not allowed.

3. **O_2**
- *Combination of ·AHU· only + control box ·EKEQFA· (the combination with ·VRV DX· indoor units is not allowed; maximum ·54·HP for ·400 + 2x500· class ·EKEXV· kit)*
  → ·X·-control is possible (up to ·3x· [·EKEXV+EKEQFA*· boxes] can be connected to one outdoor unit (system)). No Variable Refrigerant Temperature control possible.
  → ·Y·-control is possible (up to ·3x· [·EKEXV+EKEQFA*· boxes] can be connected to one outdoor unit (system)). No Variable Refrigerant Temperature control possible.
  → ·W·-control is possible (up to ·3x· [·EKEXV+EKEQFA*· boxes] can be connected to one outdoor unit (system)). No Variable Refrigerant Temperature control possible.

- *Combination of ·AHU· only + control box ·EKEQMA· (not combined with ·VRV DX· indoor units)*
  → Z-control is possible (the allowed number of [·EKEXV + EKEQMA· boxes] is determined by the connection ratio (·90-110%·) and the capacity of the outdoor unit.

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

5. The combination of ·AHU· with ·Hydrobox· units or ·RA DX· indoor units is not allowed.

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

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

3D079543E

Page 1

RXYQ-T(8)
RYYQ-T(8)
RYMQ-T

VRV4
Heat pump
Indoor unit combination restrictions
(2/2)

Combination table	RYYQ* Single continuous heating	RYYQ* Multi continuous heating	RXYQ* Single non-continuous heating	RXYQ* Multi non-continuous heating
·VRV* DX· indoor unit	O	O	O	O
·RA DX· indoor unit	O	X	O	X
Hydrobox unit	O	O_1	O	O_1
Air handling unit (AHU) (2)	O	O	O	O

O: Allowed
X: Not allowed

Notes

1. **O_1**
- Available upon request through the ·SPN· procedure.

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

3D079543E

Page 1

5 Capacity tables

5 - 1 Capacity Table Legend

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

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

- Capacity table database: lets you find back and export quickly the capacity information you are looking for based upon unit model, refrigerant temperature and connection ratio.
  → webtools.daikin.eu
- E-data app: gives a complete overview of the Daikin products available in your country, with all engineering data and commercial info in your own language. Download the app now!
  → https://itunes.apple.com/us/app/daikin-e-data/id565955746?mt=8
- Selection software: allows you to do load calculations, equipment selections and energy simulations for our VRV, Daikin Altherma, refrigeration and applied systems products.
  → my.daikin.eu

5 Capacity tables

5 - 2 Integrated Heating Capacity Correction Factor

RXYQ-T(8)
RYYQ-T(8)
RXYQQ-T

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

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

Integrated correction factor for frost accumulation (C)

0.95	0.93	0.88	0.84	0.85	0.90	1.00

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. Note that, when there is an accumulation of snow against the outside surface of the outdoor unit heat exchanger, there 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 humidity (RH) and the amount of frosting which occurs.
3. Multi combination (22~54HP) data is corresponding with the standard multi combination as mentioned on 3D079534

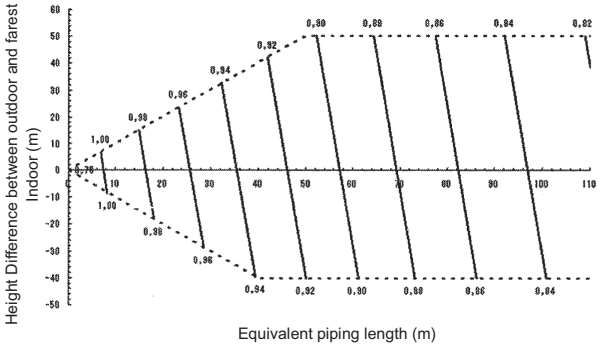
3D079898

5 Capacity tables

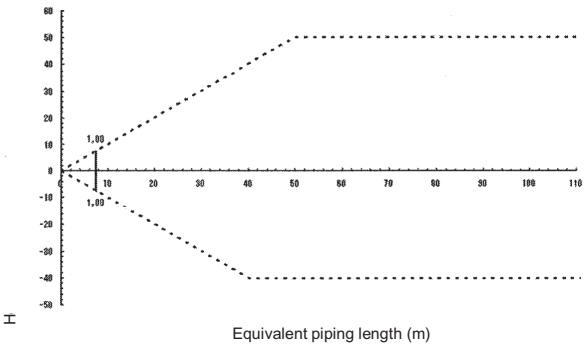
5 - 3 Capacity Correction Factor

RYYQ8T8
RXYQ8T8
RXYQQ8T

Correction ratio for cooling capacity



Correction ratio for heating capacity



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NOTES

1. These figures illustrate the correction ratio for piping length in capacity 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, shown it the above figures.

2. With this outdoor unit, constant evaporating pressure control when cooling and constant condensing pressure control when heating is carried out.

3. Method of calculating the capacity of the outdoor units
The maximum capacity of the system will be either the total capacity of the indoor units or the maximum capacity of the outdoor units as mentioned below, whichever is smaller.

Condition: Indoor connection ratio does not exceed 100%.

Maximum capacity of outdoor units	=	Capacity of outdoor units from capacity table at the 100% connection ratio
	x	Correction ratio of piping to furthest indoor

Condition: Indoor connection ratio exceeds 100%.

Maximum capacity of outdoor units	=	Capacity of outdoor units from capacity table at installed connection ratio
	x	Correction ratio of piping to furthest indoor

4. When level difference is 50 m or more (see installation manual and 3D079540 / 3D079543) and equivalent pipe length is 90 m or more, the diameter of the main gas and liquid pipes (outdoor unit - branch sections) must be increased.
For new diameters, see below.

Model	Gas	Liquid
8HP	22.2	12.7

5. When the pipe length after the first refrigerant branch kit is more than 40 m, pipe size between first and final branch kit must be increased (only for VRV DX indoor units; details see installation manual).
*Refer to the installation manual for allowed system setups and rules for deicated indoor connection types.

Diameter of main pipes (standard size)

Model	Gas	Liquid
8HP	19.1	9.5

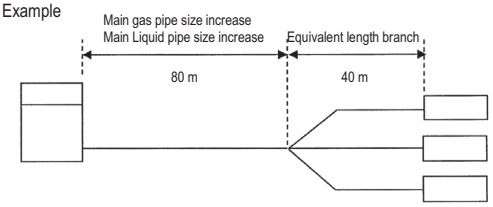
6. Equivalent length used in the above figures is based upon the following equivalent length

Equivalent piping length	=		
Equivalent length of main pipe	x	Correction factor	
+			
Equivalent length of branch pipes			

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

	Correction factor	
	Standard size	Size increase
Cooling (gas pipe)	1.0	0.5
Heating (liquid pipe)	1.0	0.5

Example



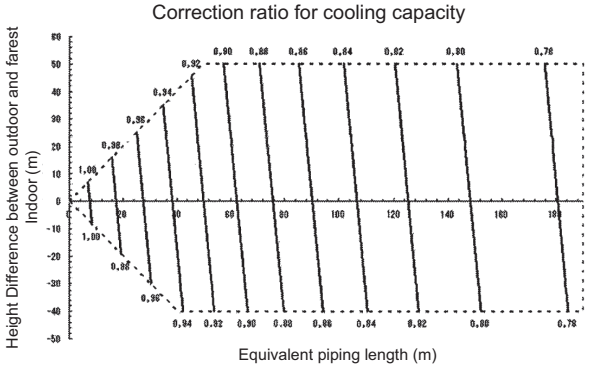
In the above case (Cooling) Overall equivalent length = 80 m x 0.5 + 40 m = 80 m
(Heating) Overall equivalent length = 80 m x 0.5 + 40 m = 80 m
The rete of change in cooling capacity when height difference = 0 is thus approximately 0.86
heating capacity when height difference = 0 is thus approximately 1.0

5 Capacity tables

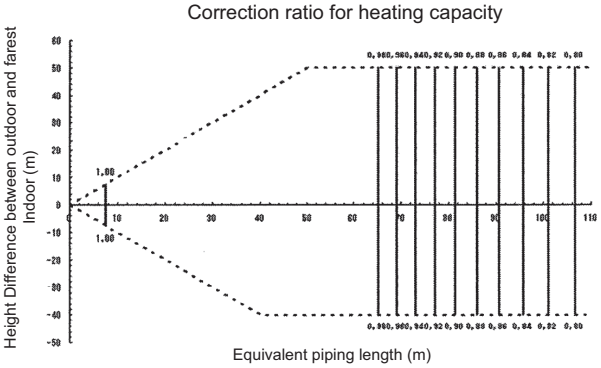
5 - 3 Capacity Correction Factor

RYYQ10T
RXYQ10T
RXYQQ10T

Correction ratio for cooling capacity



Correction ratio for heating capacity



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NOTES

1. These figures illustrate the correction ratio for piping length in capacity 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, shown it the above figures.

2. With this outdoor unit, constant evaporating pressure control when cooling and constant condensing pressure control when heating is carried out.

3. Method of calculating the capacity of the outdoor units
The maximum capacity of the system will be either the total capacity of the indoor units or the maximum capacity of the outdoor units as mentioned below, whichever is smaller.

   Condition: Indoor connection ratio does not exceed 100%.

   Maximum capacity of outdoor units = Capacity of outdoor units from capacity table at the 100% connection ratio
   x Correction ratio of piping to furthest indoor

   Condition: Indoor connection ratio exceeds 100%.

   Maximum capacity of outdoor units = Capacity of outdoor units from capacity table at installed connection ratio
   x Correction ratio of piping to furthest indoor

4. When level difference is 50 m or more (see installation manual and 3D079540 / 3D079543) and equivalent pipe length is 90 m or more, the diameter of the main gas and liquid pipes (outdoor unit - branch sections) must be increased. For new diameters, see below.

Model	Gas	Liquid
RXYQ10P	25.4*	12.7

   *If not available on site, do not increase. If not increased correction factor should be applied to the equivalent length (see note 6).

5. When the pipe length after the first refrigerant branch kit is more than 40 m, pipe size between first and final branch kit must be increased (only for VRV DX indoor units; details see installation manual).
   *Refer to the installation manual for allowed system setups and rules for dedicated indoor connection types.
   Diameter of main pipes (standard size)

Model	Gas	Liquid
10 HP	22.2	9.5

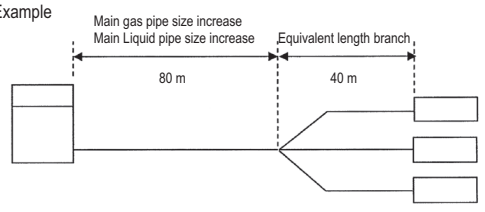
6. Equivalent length used in the above figures is based upon the following equivalent length

   Equivalent piping length =
   Equivalent length of main pipe x Correction factor
   +
   Equivalent length of branch pipes

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

	Correction factor	
	Standard size	Size increase
Cooling (gas pipe)	1.0	0.5
Heating (liquid pipe)	1.0	0.5

   Example



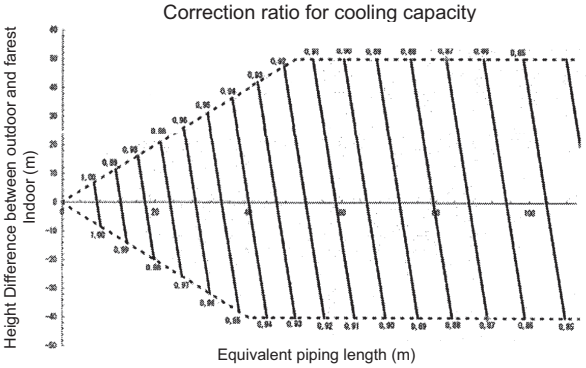
   In the above case (Cooling) Overall equivalent length = 80 m x 0.5 + 40 m = 80 m
   (Heating) Overall equivalent length = 80 m x 0.5 + 40 m = 80 m
   The rete of change in cooling capacity when height difference = 0 is thus approximately 0.87
   heating capacity when height difference = 0 is thus approximately 0.90

5 Capacity tables

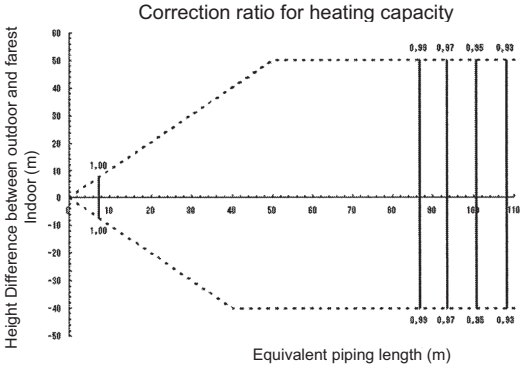
5 - 3 Capacity Correction Factor

RYYQ16T
RXYQ16T
RXYQQ16T

Correction ratio for cooling capacity



Correction ratio for heating capacity



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NOTES

1. These figures illustrate the correction ratio for piping length in capacity 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, shown it the above figures.
2. With this outdoor unit, constant evaporating pressure control when cooling and constant condensing pressure control when heating is carried out.
3. Method of calculating the capacity of the outdoor units
   The maximum capacity of the system will be either the total capacity of the indoor units or the maximum capacity of the outdoor units as mentioned below, whichever is smaller.

   Condition: Indoor connection ratio does not exceed 100%.

   Maximum capacity of outdoor units = Capacity of outdoor units from capacity table at the 100% connection ratio
   x Correction ratio of piping to furthest indoor

   Condition: Indoor connection ratio exceeds 100%.

   Maximum capacity of outdoor units = Capacity of outdoor units from capacity table at installed connection ratio
   x Correction ratio of piping to furthest indoor
4. When level difference is 50 m or more (see installation manual and 3D079540 / 3D079543) and equivalent pipe length is 90 m or more, the diameter of the main gas and liquid pipes (outdoor unit - branch sections) must be increased. For new diameters, see below.

Model	Gas	Liquid
16 HP	31.8*	15.9

   *If not available on site, do not increase. If not increased correction factor should be applied to the equivalent length (see note 6).
5. When the pipe length after the first refrigerant branch kit is more than 40 m, pipe size between first and final branch kit must be increased (only for VRV DX indoor units; details see installation manual).
   *Refer to the installation manual for allowed system setups and rules for dedicated indoor connection types.

   Diameter of main pipes (standard size)

Model	Gas	Liquid
16 HP	28.6	12.7

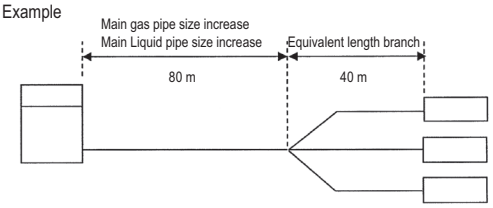
6. Equivalent length used in the above figures is based upon the following equivalent length

   Equivalent piping length =
   Equivalent length of main pipe x Correction factor
   +
   Equivalent length of branch pipes

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

	Correction factor	
	Standard size	Size increase
Cooling (gas pipe)	1.0	0.5
Heating (liquid pipe)	1.0	0.5

   Example



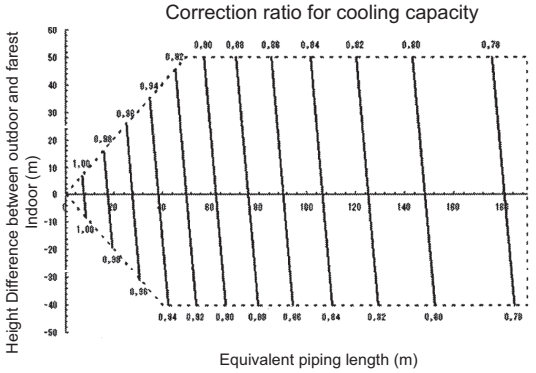
   In the above case (Cooling) Overall equivalent length = 80 m x 1.0 + 40 m = 80 m
   (Heating) Overall equivalent length = 80 m x 0.5 + 40 m = 80 m
   The rate of change in cooling capacity when height difference = 0 is thus approximately 0.88
   heating capacity when height difference = 0 is thus approximately 0.99

5 Capacity tables

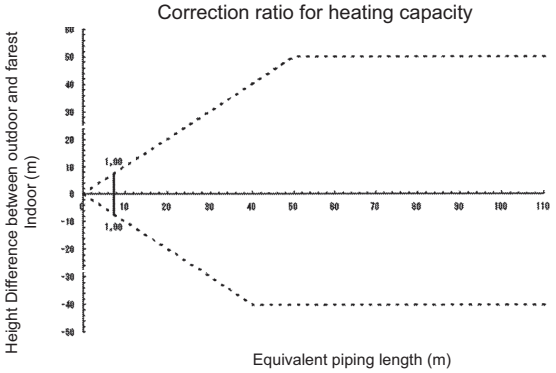
5 - 3 Capacity Correction Factor

RYYQ20,32,34T
RXYQ20,32,34T
RXYQQ20,32,34T

Correction ratio for cooling capacity



Correction ratio for heating capacity



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NOTES

1. These figures illustrate the correction ratio for piping length in capacity 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, shown it the above figures.
2. With this outdoor unit, constant evaporating pressure control when cooling and constant condensing pressure control when heating is carried out.
3. Method of calculating the capacity of the outdoor units
   The maximum capacity of the system will be either the total capacity of the indoor units or the maximum capacity of the outdoor units as mentioned below, whichever is smaller.

   Condition: Indoor connection ratio does not exceed 100%.

   Maximum capacity of outdoor units = Capacity of outdoor units from capacity table at the 100% connection ratio
   x Correction ratio of piping to furthest indoor

   Condition: Indoor connection ratio exceeds 100%.

   Maximum capacity of outdoor units = Capacity of outdoor units from capacity table at installed connection ratio
   x Correction ratio of piping to furthest indoor
4. When level difference is 50 m or more (see installation manual and 3D079540 / 3D079543) and equivalent pipe length is 90 m or more, the diameter of the main gas and liquid pipes (outdoor unit - branch sections) must be increased.
   For new diameters, see below.

Model	Gas	Liquid
20 HP	31.8*	19.1
32/34 HP	38.1*	22.2

   *If not available on site, do not increase. If not increased correction factor should be applied to the equivalent length (see note 6).
5. When the pipe length after the first refrigerant branch kit is more than 40 m, pipe size between first and final branch kit must be increased (only for VRV DX indoor units; details see installation manual).
   *Refer to the installation manual for allowed system setups and rules for dedicated indoor connection types.
   Diameter of main pipes (standard size)

Model	Gas	Liquid
20 HP	28.6	15.9
32/34 HP	34.9	19.1

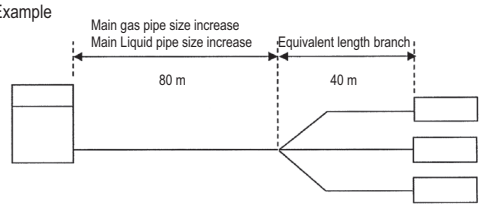
6. Equivalent length used in the above figures is based upon the following equivalent length

   Equivalent piping length =
   Equivalent length of main pipe x Correction factor
   +
   Equivalent length of branch pipes

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

	Correction factor	
	Standard size	Size increase
Cooling (gas pipe)	1.0	0.5
Heating (liquid pipe)	1.0	0.5

   Example



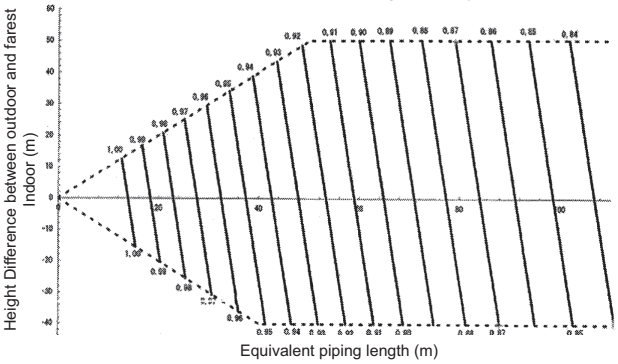
   In the above case (Cooling) Overall equivalent length = 80 m x 0.5 + 40 m = 80 m
   (Heating) Overall equivalent length = 80 m x 0.5 + 40 m = 80 m
   The rate of change in cooling capacity when height difference = 0 is thus approximately 0.88
   heating capacity when height difference = 0 is thus approximately 1.0

5 Capacity tables

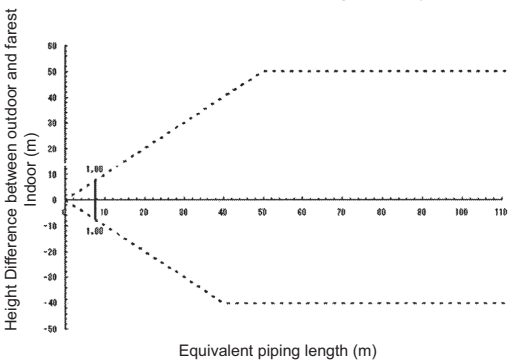
5 - 3 Capacity Correction Factor

RYYQ22T
RXYQ22T
RXYQQ22T

Correction ratio for cooling capacity



Correction ratio for heating capacity



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NOTES

1. These figures illustrate the correction ratio for piping length in capacity 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, shown it the above figures.
2. With this outdoor unit, constant evaporating pressure control when cooling and constant condensing pressure control when heating is carried out.
3. Method of calculating the capacity of the outdoor units
   The maximum capacity of the system will be either the total capacity of the indoor units or the maximum capacity of the outdoor units as mentioned below, whichever is smaller.

   Condition: Indoor connection ratio does not exceed 100%.

Maximum capacity of outdoor units	=	Capacity of outdoor units from capacity table at the 100% connection ratio
	x	Correction ratio of piping to furthest indoor

   Condition: Indoor connection ratio exceeds 100%.

Maximum capacity of outdoor units	=	Capacity of outdoor units from capacity table at installed connection ratio
	x	Correction ratio of piping to furthest indoor

4. When level difference is 50 m or more (see installation manual and 3D079540 / 3D079543) and equivalent pipe length is 90 m or more, the diameter of the main gas and liquid pipes (outdoor unit - branch sections) must be increased.
   For new diameters, see below.

Model	Gas	Liquid
22 HP	31.8*	19.1

   * If not available on site, do not increase, if not increased, no correction factor should be applied to the equivalent length (see note 6).

5. When the pipe length after the first refrigerant branch kit is more than 40 m, pipe size between first and final branch kit must be increased (only for VRV DX indoor units; details see installation manual).
   *Refer to the installation manual for allowed system setups and rules for dedicated indoor connection types.
   Diameter of main pipes (standard size)

Model	Gas	Liquid
22 HP	28.6	15.9

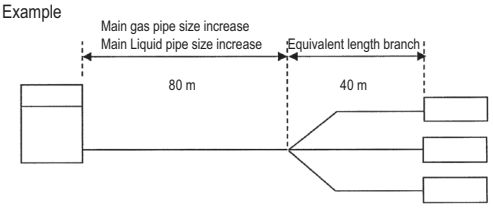
6. Equivalent length used in the above figures is based upon the following equivalent length

   Overal equivalent length =
   Equivalent length of main pipe x Correction factor
   +
   Equivalent length of branch pipes

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

	Correction factor	
	Standard size	Size increase
Cooling (gas pipe)	1.0	0.5
Heating (liquid pipe)	1.0	0.5

   Example

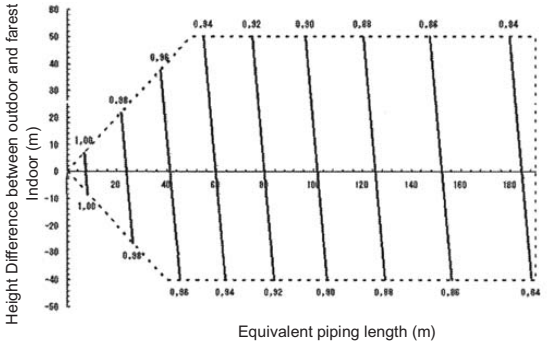
   In the above case (Cooling) Overall equivalent length = 80 m x 0.5 + 40 m = 80 m
   (Heating) Overall equivalent length = 80 m x 0.5 + 40 m = 80 m
   The rate of change in cooling capacity when height difference = 0 is thus approximately 0.88
   heating capacity when height difference = 0 is thus approximately 1.0

5 Capacity tables

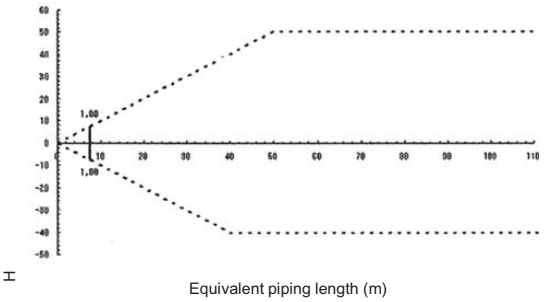
5 - 3 Capacity Correction Factor

RXYQ24T8
RXYQ12,14,36T
RXYQ12,14,24,36T
RXYQQ12,14,24,36T

Correction ratio for cooling capacity



Correction ratio for heating capacity



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NOTES

1. These figures illustrate the correction ratio for piping length in capacity 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, shown it the above figures.
2. With this outdoor unit, constant evaporating pressure control when cooling and constant condensing pressure control when heating is carried out.
3. Method of calculating the capacity of the outdoor units
   The maximum capacity of the system will be either the total capacity of the indoor units or the maximum capacity of the outdoor units as mentioned below, whichever is smaller.

   Condition: Indoor connection ratio does not exceed 100%.

   Maximum capacity of outdoor units = Capacity of outdoor units from capacity table at the 100% connection ratio
   x Correction ratio of piping to furthest indoor

   Condition: Indoor connection ratio exceeds 100%.

   Maximum capacity of outdoor units = Capacity of outdoor units from capacity table at installed connection ratio
   x Correction ratio of piping to furthest indoor
4. When level difference is 50 m or more (see installation manual and 3D079540 / 3D079543) and equivalent pipe length is 90 m or more, the diameter of the main gas and liquid pipes (outdoor unit - branch sections) must be increased. For new diameters, see below.

Model	Gas	Liquid
12 HP	28.6	15.9
14 HP	28.6	15.9
24 HP	34.9	19.1
36 HP	41.3	22.2

5. When the pipe length after the first refrigerant branch kit is more than 40 m, pipe size between first and final branch kit must be increased (only for VRV DX indoor units; details see installation manual).
   *Refer to the installation manual for allowed system setups and rules for dedicated indoor connection types.

   Diameter of main pipes (standard size)

Model	Gas	Liquid
12 HP	28.6	12.7
14 HP	28.6	12.7
24 HP	34.9	15.9
36 HP	41.3	19.1

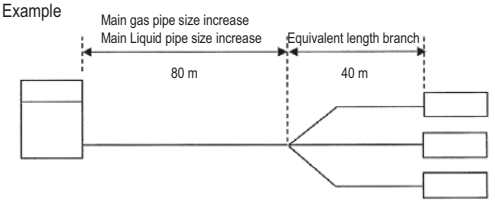
6. Equivalent length used in the above figures is based upon the following equivalent length

   Equivalent piping length =
   Equivalent length of main pipe x Correction factor
   +
   Equivalent length of branch pipes

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

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

   Example



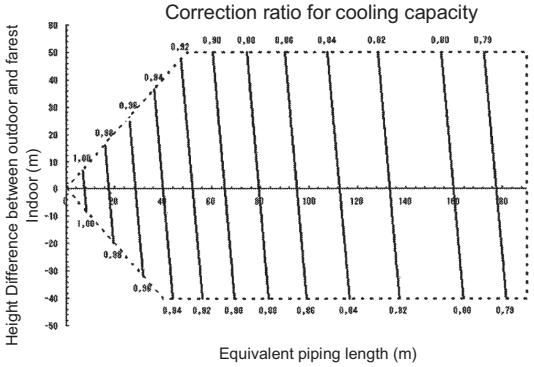
   In the above case (Cooling) Overall equivalent length = 80 m x 1.0 + 40 m = 120 m
   (Heating) Overall equivalent length = 80 m x 0.5 + 40 m = 80 m
   The rate of change in cooling capacity when height difference = 0 is thus approximately 0.89
   heating capacity when height difference = 0 is thus approximately 1.0

5 Capacity tables

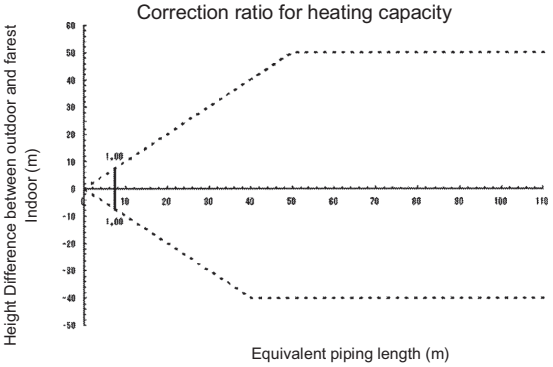
5 - 3 Capacity Correction Factor

RXYQ38T8
RYYQ18,26,28,30,38,40,42,44T
RXYQ18,26,28,30,38,40,42,44T
RXYQQ18,26,28,30,38,40,42T

Correction ratio for cooling capacity



Correction ratio for heating capacity



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NOTES

1. These figures illustrate the correction ratio for piping length in capacity 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, shown it the above figures.
2. With this outdoor unit, constant evaporating pressure control when cooling and constant condensing pressure control when heating is carried out.
3. Method of calculating the capacity of the outdoor units
   The maximum capacity of the system will be either the total capacity of the indoor units or the maximum capacity of the outdoor units as mentioned below, whichever is smaller.

   Condition: Indoor connection ratio does not exceed 100%.

   Maximum capacity of outdoor units = Capacity of outdoor units from capacity table at the 100% connection ratio
   x Correction ratio of piping to furthest indoor

   Condition: Indoor connection ratio exceeds 100%.

   Maximum capacity of outdoor units = Capacity of outdoor units from capacity table at installed connection ratio
   x Correction ratio of piping to furthest indoor
4. When level difference is 50 m or more (see installation manual and 3D079540 / 3D079543) and equivalent pipe length is 90 m or more, the diameter of the main gas and liquid pipes (outdoor unit - branch sections) must be increased.
   For new diameters, see below.

Model	Gas	Liquid
18 HP	31.8*	19.1
26~30 HP	38.1*	22.2
38~44 HP	41.3	22.2

   *If not available on site, do not increase. If not increased correction factor should be applied to the equivalent length (see note 6).
5. When the pipe length after the first refrigerant branch kit is more than 40 m, pipe size between first and final branch kit must be increased (only for VRV DX indoor units; details see installation manual).
   *Refer to the installation manual for allowed system setups and rules for dedicated indoor connection types.
   Diameter of main pipes (standard size)

Model	Gas	Liquid
18 HP	28.6	15.9
26~30 HP	34.9	19.1
38~44 HP	41.3	19.1

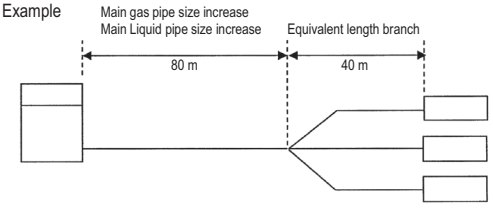
6. Equivalent length used in the above figures is based upon the following equivalent length

   Equivalent piping length =
   Equivalent length of main pipe x Correction factor
   +
   Equivalent length of branch pipes

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

	Correction factor	
	Standard size	Size increase
Cooling (gas pipe)	1.0	0.5
Heating (liquid pipe)	1.0	0.5

   Example



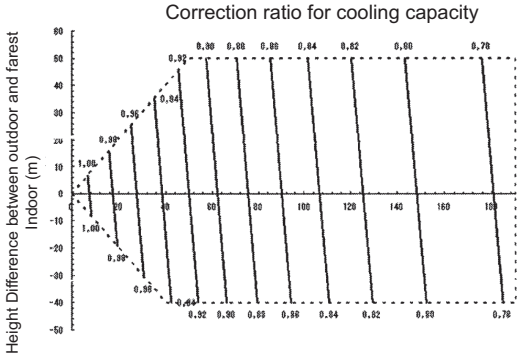
   In the above case (for RXYQ38-44) (Cooling) Overall equivalent length = 80 m x 1.0 + 40 m = 120 m
   (Heating) Overall equivalent length = 80 m x 0.5 + 40 m = 80 m
   The rate of change in cooling capacity when height difference = 0 is thus approximately 0.83
   heating capacity when height difference = 0 is thus approximately 1.0

5 Capacity tables

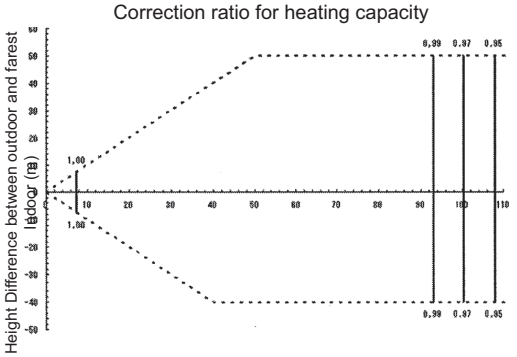
5 - 3 Capacity Correction Factor

RYYQ46T
RXYQ46T

Correction ratio for cooling capacity



Correction ratio for heating capacity



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NOTES

1. These figures illustrate the correction ratio for piping length in capacity 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, shown it the above figures.
2. With this outdoor unit, constant evaporating pressure control when cooling and constant condensing pressure control when heating is carried out.
3. Method of calculating the capacity of the outdoor units
   The maximum capacity of the system will be either the total capacity of the indoor units or the maximum capacity of the outdoor units as mentioned below, whichever is smaller.

   Condition: Indoor connection ratio does not exceed 100%.

   Maximum capacity of outdoor units = Capacity of outdoor units from capacity table at the 100% connection ratio
   x Correction ratio of piping to furthest indoor

   Condition: Indoor connection ratio exceeds 100%.

   Maximum capacity of outdoor units = Capacity of outdoor units from capacity table at installed connection ratio
   x Correction ratio of piping to furthest indoor
4. When level difference is 50 m or more (see installation manual and 3D079540 / 3D079543) and equivalent pipe length is 90 m or more, the diameter of the main gas and liquid pipes (outdoor unit - branch sections) must be increased.
   For new diameters, see below.

Model	Gas	Liquid
46 HP	41.3	22.2

5. When the pipe length after the first refrigerant branch kit is more than 40 m, pipe size between first and final branch kit must be increased (only for VRV DX indoor units; details see installation manual).
   *Refer to the installation manual for allowed system setups and rules for dedicated indoor connection types.
   Diameter of main pipes (standard size)

Model	Gas	Liquid
46 HP	41.3	19.1

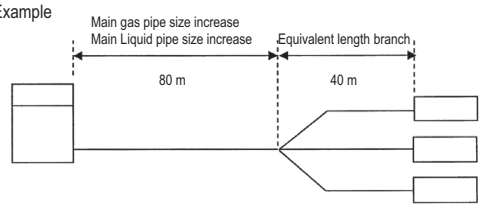
6. Equivalent length used in the above figures is based upon the following equivalent length

   Equivalent piping length =
   Equivalent length of main pipe x Correction factor
   +
   Equivalent length of branch pipes

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

	Correction factor	
	Standard size	Size increase
Cooling (gas pipe)	1.0	
Heating (liquid pipe)	1.0	0.5

   Example



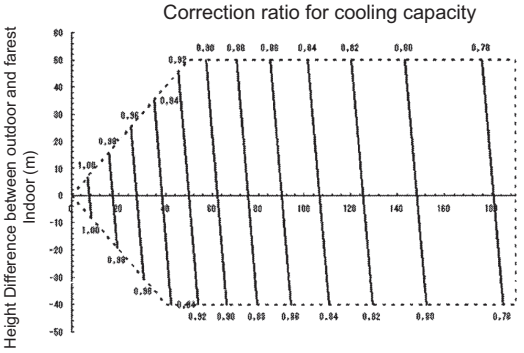
   In the above case (Cooling) Overall equivalent length = 80 m x 1.0 + 40 m = 120 m
   (Heating) Overall equivalent length = 80 m x 0.5 + 40 m = 80 m
   The rate of change in cooling capacity when height difference = 0 is thus approximately 0.83
   heating capacity when height difference = 0 is thus approximately 1.0

5 Capacity tables

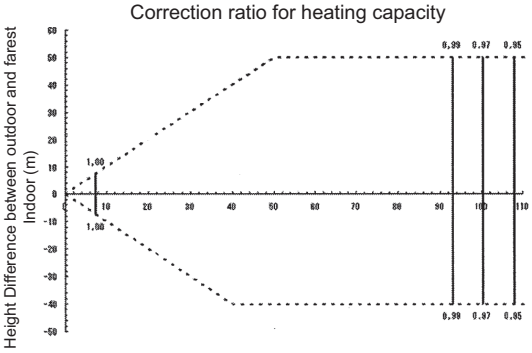
5 - 3 Capacity Correction Factor

RYYQ48T
RXYQ48T

Correction ratio for cooling capacity



Correction ratio for heating capacity



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NOTES

1. These figures illustrate the correction ratio for piping length in capacity 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, shown it the above figures.
2. With this outdoor unit, constant evaporating pressure control when cooling and constant condensing pressure control when heating is carried out.
3. Method of calculating the capacity of the outdoor units
   The maximum capacity of the system will be either the total capacity of the indoor units or the maximum capacity of the outdoor units as mentioned below, whichever is smaller.

   Condition: Indoor connection ratio does not exceed 100%.

Maximum capacity of outdoor units	=	Capacity of outdoor units from capacity table at the 100% connection ratio
	x	Correction ratio of piping to furthest indoor

   Condition: Indoor connection ratio exceeds 100%.

Maximum capacity of outdoor units	=	Capacity of outdoor units from capacity table at installed connection ratio
	x	Correction ratio of piping to furthest indoor

4. When level difference is 50 m or more (see installation manual and 3D079540 / 3D079543) and equivalent pipe length is 90 m or more, the diameter of the main gas and liquid pipes (outdoor unit - branch sections) must be increased.
   For new diameters, see below.

Model	Gas	Liquid
48 HP	41.3	22.2

5. When the pipe length after the first refrigerant branch kit is more than 40 m, pipe size between first and final branch kit must be increased (only for VRV DX indoor units; details see installation manual).
   *Refer to the installation manual for allowed system setups and rules for dedicated indoor connection types.
   Diameter of main pipes (standard size)

Model	Gas	Liquid
48 HP	41.3	19.1

6. Equivalent length used in the above figures is based upon the following equivalent length

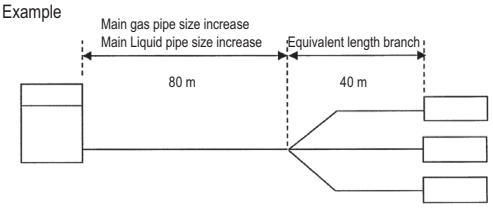
   Equivalent piping length =

   Equivalent length of main pipe x Correction factor
   +
   Equivalent length of branch pipes

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

	Correction factor	
	Standard size	Size increase
Cooling (gas pipe)	1.0	
Heating (liquid pipe)	1.0	0.5

   Example



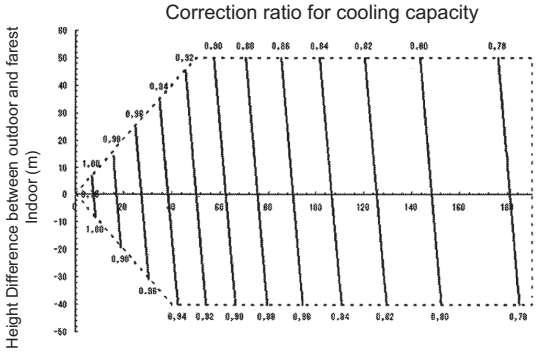
   In the above case (Cooling) Overall equivalent length = 80 m x 1.0 + 40 m = 120 m
   (Heating) Overall equivalent length = 80 m x 0.5 + 40 m = 80 m
   The rate of change in cooling capacity when height difference = 0 is thus approximately 0.83
   heating capacity when height difference = 0 is thus approximately 0.97

5 Capacity tables

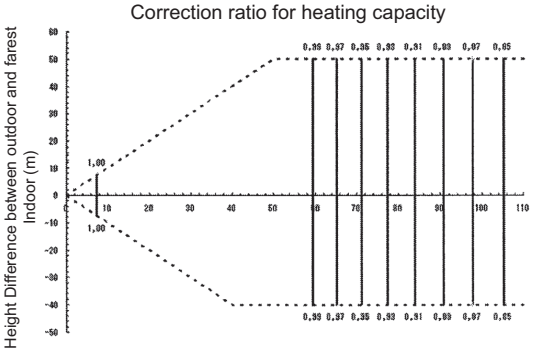
5 - 3 Capacity Correction Factor

RYYQ50T
RXYQ50T

Correction ratio for cooling capacity



Correction ratio for heating capacity



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NOTES

1. These figures illustrate the correction ratio for piping length in capacity 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, shown it the above figures.
2. With this outdoor unit, constant evaporating pressure control when cooling and constant condensing pressure control when heating is carried out.
3. Method of calculating the capacity of the outdoor units
   The maximum capacity of the system will be either the total capacity of the indoor units or the maximum capacity of the outdoor units as mentioned below, whichever is smaller.

   Condition: Indoor connection ratio does not exceed 100%.

   Maximum capacity of outdoor units = Capacity of outdoor units from capacity table at the 100% connection ratio
   x Correction ratio of piping to furthest indoor

   Condition: Indoor connection ratio exceeds 100%.

   Maximum capacity of outdoor units = Capacity of outdoor units from capacity table at installed connection ratio
   x Correction ratio of piping to furthest indoor
4. When level difference is 50 m or more (see installation manual and 3D079540 / 3D079543) and equivalent pipe length is 90 m or more, the diameter of the main gas and liquid pipes (outdoor unit - branch sections) must be increased.
   For new diameters, see below.

Model	Gas	Liquid
50 HP	41.3	22.2

5. When the pipe length after the first refrigerant branch kit is more than 40 m, pipe size between first and final branch kit must be increased (only for VRV DX indoor units; details see installation manual).
   *Refer to the installation manual for allowed system setups and rules for dedicated indoor connection types.
   Diameter of main pipes (standard size)

Model	Gas	Liquid
50 HP	41.3	19.1

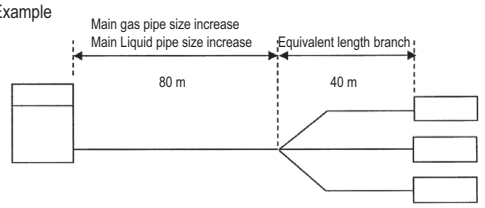
6. Equivalent length used in the above figures is based upon the following equivalent length

   Equivalent piping length =
   Equivalent length of main pipe x Correction factor
   +
   Equivalent length of branch pipes

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

	Correction factor	
	Standard size	Size increase
Cooling (gas pipe)	1.0	
Heating (liquid pipe)	1.0	0.5

   Example



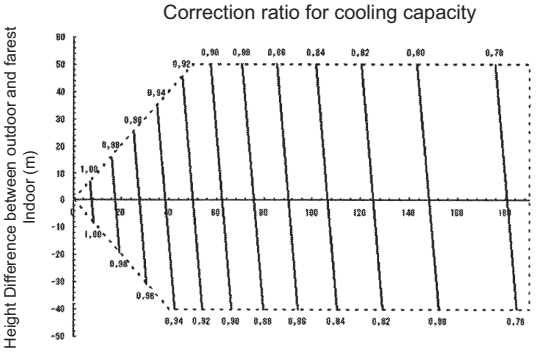
   In the above case (Cooling) Overall equivalent length = 80 m x 1.0 + 40 m = 120 m
   (Heating) Overall equivalent length = 80 m x 0.5 + 40 m = 80 m
   The rate of change in cooling capacity when height difference = 0 is thus approximately 0.83
   heating capacity when height difference = 0 is thus approximately 0.92

5 Capacity tables

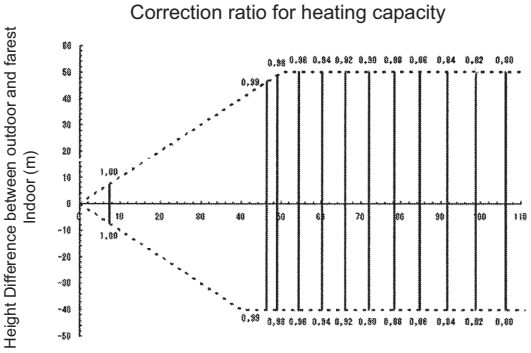
5 - 3 Capacity Correction Factor

RYYQ52T
RXYQ52T

Correction ratio for cooling capacity



Correction ratio for heating capacity



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NOTES

1. These figures illustrate the correction ratio for piping length in capacity 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, shown it the above figures.
2. With this outdoor unit, constant evaporating pressure control when cooling and constant condensing pressure control when heating is carried out.
3. Method of calculating the capacity of the outdoor units
   The maximum capacity of the system will be either the total capacity of the indoor units or the maximum capacity of the outdoor units as mentioned below, whichever is smaller.

   Condition: Indoor connection ratio does not exceed 100%.

Maximum capacity of outdoor units	=	Capacity of outdoor units from capacity table at the 100% connection ratio
	x	Correction ratio of piping to furthest indoor

   Condition: Indoor connection ratio exceeds 100%.

Maximum capacity of outdoor units	=	Capacity of outdoor units from capacity table at installed connection ratio
	x	Correction ratio of piping to furthest indoor

4. When level difference is 50 m or more (see installation manual and 3D079540 / 3D079543) and equivalent pipe length is 90 m or more, the diameter of the main gas and liquid pipes (outdoor unit - branch sections) must be increased.
   For new diameters, see below.

Model	Gas	Liquid
52 HP	41.3	22.2

5. When the pipe length after the first refrigerant branch kit is more than 40 m, pipe size between first and final branch kit must be increased (only for VRV DX indoor units; details see installation manual).
   *Refer to the installation manual for allowed system setups and rules for dedicated indoor connection types.
   Diameter of main pipes (standard size)

Model	Gas	Liquid
52 HP	41.3	19.1

6. Equivalent length used in the above figures is based upon the following equivalent length

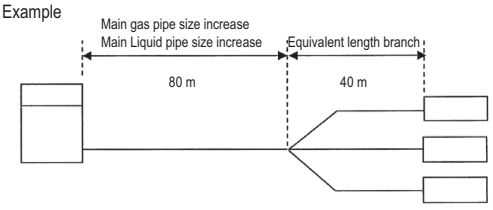
   Equivalent piping length =

   Equivalent length of main pipe x Correction factor
   +
   Equivalent length of branch pipes

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

	Correction factor	
	Standard size	Size increase
Cooling (gas pipe)	1.0	
Heating (liquid pipe)	1.0	0.5

   Example



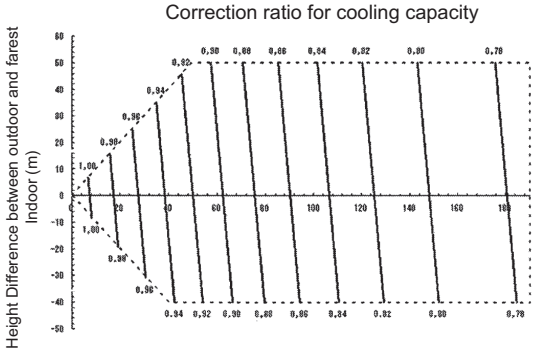
   In the above case (Cooling) Overall equivalent length = 80 m x 1.0 + 40 m = 120 m
   (Heating) Overall equivalent length = 80 m x 0.5 + 40 m = 80 m
   The rate of change in cooling capacity when height difference = 0 is thus approximately 0.83
   heating capacity when height difference = 0 is thus approximately 0.88

5 Capacity tables

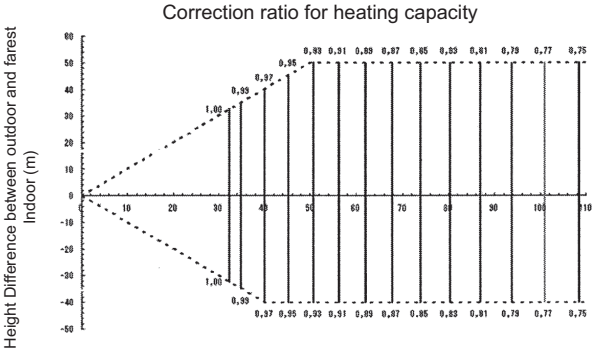
5 - 3 Capacity Correction Factor

RYYQ54T
RXYQ54T

Correction ratio for cooling capacity



Correction ratio for heating capacity



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NOTES

1. These figures illustrate the correction ratio for piping length in capacity 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, shown it the above figures.
2. With this outdoor unit, constant evaporating pressure control when cooling and constant condensing pressure control when heating is carried out.
3. Method of calculating the capacity of the outdoor units
   The maximum capacity of the system will be either the total capacity of the indoor units or the maximum capacity of the outdoor units as mentioned below, whichever is smaller.

   Condition: Indoor connection ratio does not exceed 100%.

   Maximum capacity of outdoor units = Capacity of outdoor units from capacity table at the 100% connection ratio
   x Correction ratio of piping to furthest indoor

   Condition: Indoor connection ratio exceeds 100%.

   Maximum capacity of outdoor units = Capacity of outdoor units from capacity table at installed connection ratio
   x Correction ratio of piping to furthest indoor
4. When level difference is 50 m or more (see installation manual and 3D079540 / 3D079543) and equivalent pipe length is 90 m or more, the diameter of the main gas and liquid pipes (outdoor unit - branch sections) must be increased.
   For new diameters, see below.

Model	Gas	Liquid
54 HP	41.3	22.2

5. When the pipe length after the first refrigerant branch kit is more than 40 m, pipe size between first and final branch kit must be increased (only for VRV DX indoor units; details see installation manual).
   *Refer to the installation manual for allowed system setups and rules for dedicated indoor connection types.

   Diameter of main pipes (standard size)

Model	Gas	Liquid
54 HP	41.3	19.1

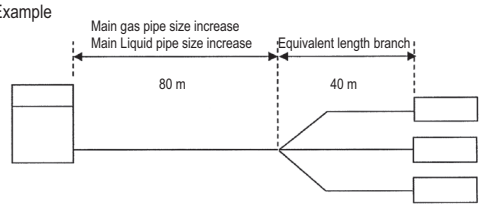
6. Equivalent length used in the above figures is based upon the following equivalent length

   Equivalent piping length =
   Equivalent length of main pipe x Correction factor
   +
   Equivalent length of branch pipes

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

	Correction factor	
	Standard size	Size increase
Cooling (gas pipe)	1.0	
Heating (liquid pipe)	1.0	0.5

   Example



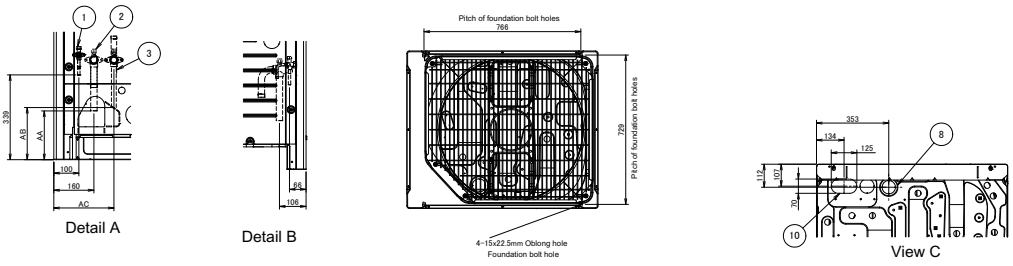
   In the above case (Cooling) Overall equivalent length = 80 m x 1.0 + 40 m = 120 m
   (Heating) Overall equivalent length = 80 m x 0.5 + 40 m = 80 m

   The rate of change in cooling capacity when height difference = 0 is thus approximately 0.83
   heating capacity when height difference = 0 is thus approximately 0.83

6 Dimensional drawings

6 - 1 Dimensional Drawings

RXYQ8T8
RXYQ10-12T
RYYQ8T8
RYYQ10-12T
RXYQQ8-12T
RYMQ8-12T



Notes

1. Detail A and detail B indicate the dimensions after fixing the attached piping.
2. Items 4 - 10: Knockout hole.
3. Gas pipe
   - RYYQ8T, RYMQ8T, RXYQQ8T, RXYTQ8T : Ø 19.1 brazing connection
   - RYYQ10T, RYMQ10T, RXYQ10T, RXYQQ10T : Ø 22.2 brazing connection
   - REMQ5T, REYQ8-12T : Ø 25.4 brazing connection
   - RYYQ12T, RYMQ12T, RXYQ12T, RXYQQ12T : Ø 28.6 brazing connection

   Liquid pipe
   - RYYQ8-10T, RYMQ8-10T, RXYQ8-10T, RXYQQ8-10T, REMQ5T, REYQ8-12T, RXYTQ8T : Ø 9.5 brazing connection
   - RYYQ12T, RYMQ12T, RXYQ12T, RXYQQ12T : Ø 12.7 brazing connection

   Equalising pipe
   - RYMQ8-10T : Ø 19.1 brazing connection
   - RYMQ12T : Ø 22.2 brazing connection

   High pressure/low pressure gas pipe
   - REMQ5T, REYQ8-12T : Ø 19.1 brazing connection

Model	AA	AB	AC
RYYQ8T, RXYQ8T, RXYQQ8T, RXYTQ8T	248	–	–
RYYQ10-12T, RXYQ10-12T, RXYQQ10-12T	195	–	–
RYMQ8T	248	208	240
REMQ5T, RYMQ10-12T, REYQ8-12T	195	208	240

No.	Part name	Remark
11	Grounding terminal	Inside of the switch box (M8)
10	Pipe routing hole (bottom)	
9	Pipe routing hole (front)	
8	Power cord routing hole (bottom)	Ø65
7	Power cord routing hole (front)	Ø27
6	Power cord routing hole (front)	Ø65
5	Power cord routing hole (front)	Ø80
4	Power cord routing hole (side)	Ø65
3	Equalising pipe connection port High pressure/low pressure gas pipe	See note 3.
2	Gas pipe connection port	See note 3.
1	Liquid pipe connection port	See note 3.

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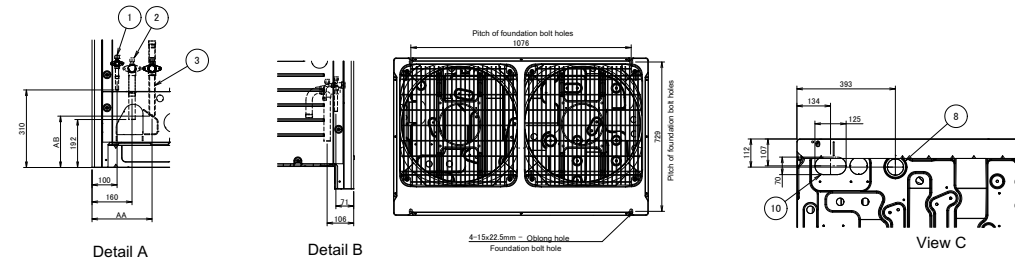
RXYQ14-20T
RYYQ14-20T
RYMQ14-20T
RXYQQ14-20T



Notes

1. Detail A and detail B indicate the dimensions after fixing the attached piping.
2. Items 4 - 10: Knockout hole.
3. Gas pipe
   - RXYTQ10T : Ø 22.2 brazing connection
   - REYQ14-20T : Ø 25.4 brazing connection
   - RYYQ14-20T, RYMQ14-20T, RXYQ14-20T, RXYQQ14-20T, RXYTQ12-16T : Ø 28.6 brazing connection

   Liquid pipe
   - RXYTQ10T : Ø 9.5 brazing connection
   - RYYQ14-16T, RYMQ14-16T, RXYQ14-16T, RXYQQ14-16T, REYQ14-20T, RXYTQ12-16T : Ø 12.7 brazing connection
   - RYYQ18-20T, RYMQ18-20T, RXYQ18-20T, RXYQQ18-20T : Ø 15.9 brazing connection

   Equalising pipe
   - RYMQ14-16T : Ø 22.2 brazing connection
   - RYMQ18-20T : Ø 28.6 brazing connection

   High pressure/low pressure gas pipe
   - REYQ14-20T : Ø 22.2 brazing connection

Model	AA	AB
RYMQ14-16T, RXYQQ14-16T, REYQ14-20T	240	205
RYMQ18-20T, RXYQQ18-20T	240	210

No.	Part name	Remark
11	Grounding terminal	Inside of the switch box (M8)
10	Pipe routing hole (bottom)	
9	Pipe routing hole (front)	
8	Power cord routing hole (bottom)	Ø65
7	Power cord routing hole (front)	Ø27
6	Power cord routing hole (front)	Ø65
5	Power cord routing hole (front)	Ø80
4	Power cord routing hole (side)	Ø65
3	Equalising pipe connection port High pressure/low pressure gas pipe	See note 3.
2	Gas pipe connection port	See note 3.
1	Liquid pipe connection port	See note 3.

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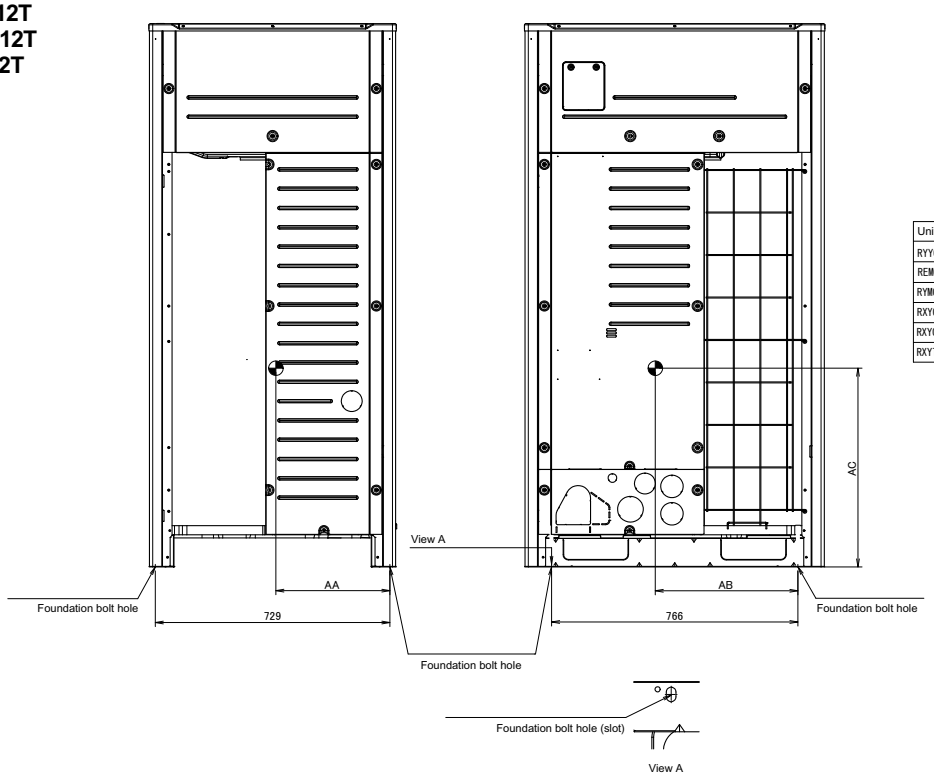
7 Centre of gravity

7 - 1 Centre of Gravity

RXYQ8T8
RXYQ10-12T
RYYQ8T8
RYYQ10-12T
RXYQQ8-12T
RYMQ8-12T



Unit	AA	AB	AC
RYYQ8-12T	328	366	565
REMQ5T / REYQ8-12T			
RYMQ8-12T	354	443	565
RXYQ8-12T	339	448	565
RXYQ8-12T			
RXYTQ8T			

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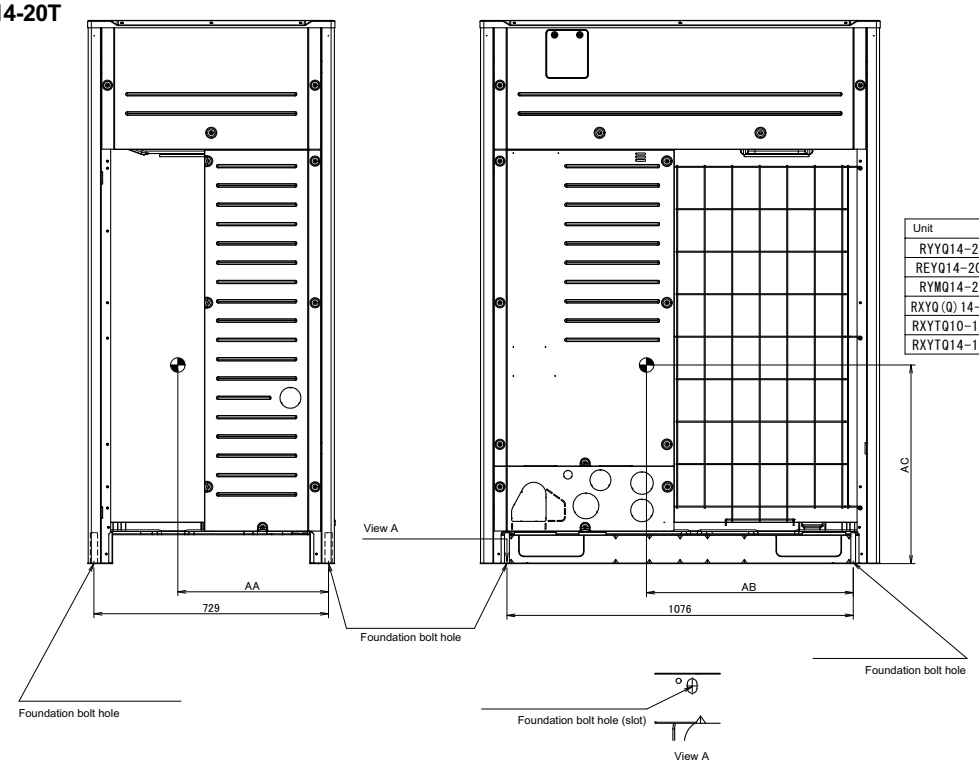
RXYQ14-20T
RYYQ14-20T
RYMQ14-20T
RXYQQ14-20T



Unit	AA	AB	AC
RYYQ14-20	334	470	610
REYQ14-20T	334	470	610
RYMQ14-20	360	569	610
RXYQ(Q)14-20	345	575	610
RXYTQ10-12T	350	610	810
RXYTQ14-16T	351	565	610

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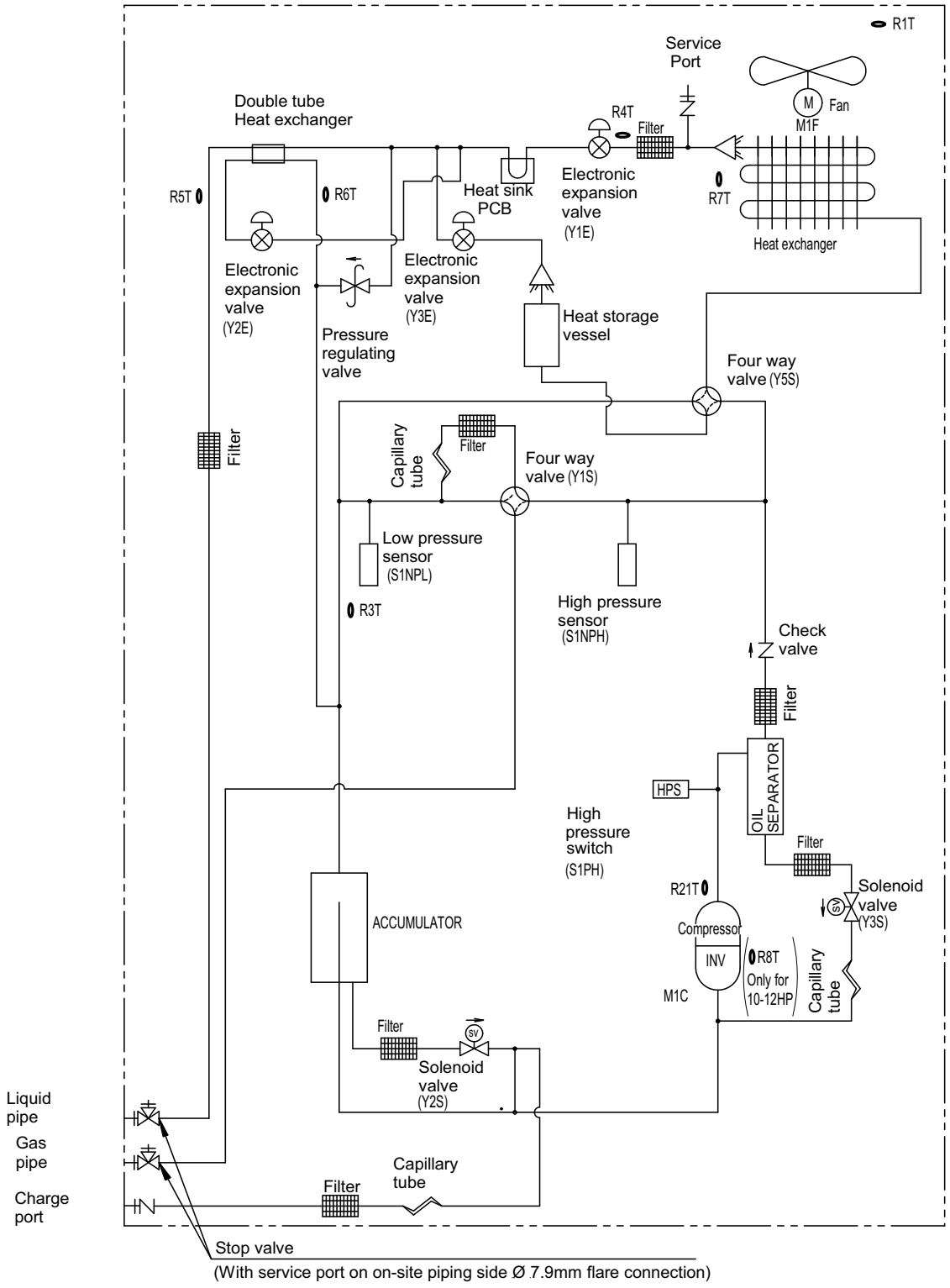
8 Piping diagrams

8 - 1 Piping Diagrams

RYYQ8T8
RYYQ10-12T



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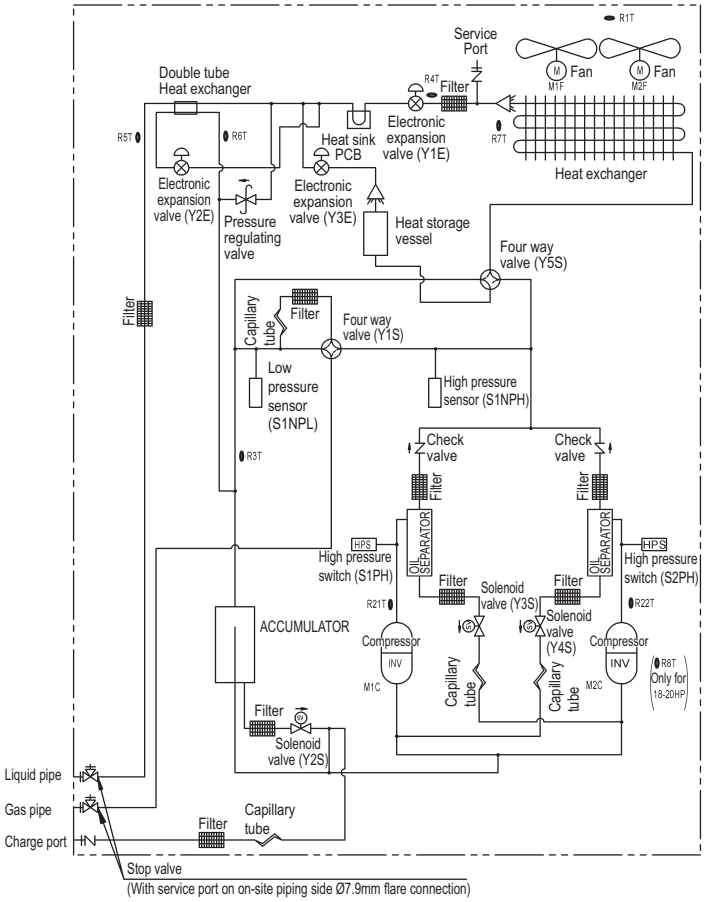
8 Piping diagrams

8 - 1 Piping Diagrams

RYYQ14-20T



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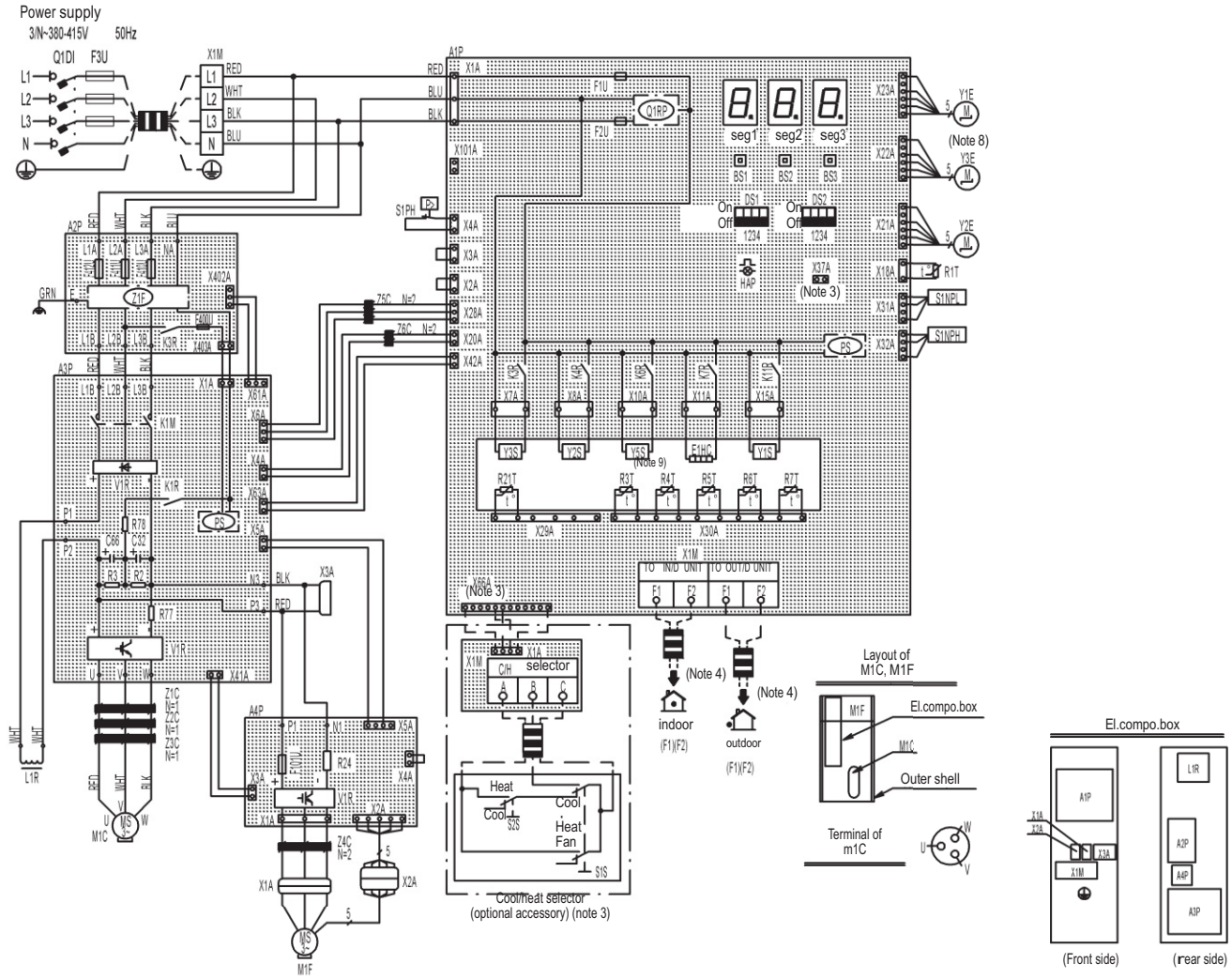
9 Wiring diagrams

9 - 1 Wiring Diagrams - Three Phase

RXYQ8T8
RYYQ8T8
RYMQ8T



A1P	Printed circuit board (main)	K11r	magnetic relay (y1s) (A1P)	seG1~seG3	7-segment display (A1P)
A2P	Printed circuit board (noise filter)	L1r	reactor	V1r	Power module (A3P) (A4P)
A3P	Printed circuit board (inv)	m1C	motor (compressor)	X1A, X2A	Connector (m1F)
A4P	Printed circuit board (fan)	m1F	Motor (fan)	X3A	Connector (check the residual charge)
bs1~3	Push button, switch (A1P) (mode, set, return)	Ps	Switching power supply (A1P, A3P)	X1m	Terminal block (power supply)
C32, C66	Capacitor (A3P)	q1DI	Field earth leakage breaker	X1m	Terminal block (control) (A1P)
DS1, DS2	Dip switch (A1P)	qr1P	Phase reversal detect circuit (A1P)	y1e	Electronic expansion valve (main)
e1HC	Crankcase heater	r1T	Thermistor (Air) (A1P)	y2e	Electronic expansion valve (injection)
F1U, F2U	Fuse (T, 3, 15A, 250V) (A1P)	r21T	Thermistor (m1C discharge)	y3e	Electronic expansion valve (storage vessel) (note 8)
F3U	Field fuse	r3T	Thermistor (accumulator)	y1s	solenoid valve (main)
F101U	Fuse (A4P)	r4T	Thermistor (heat exc, liq, pipe)	y2s	solenoid valve (accumulator oil return)
F400U	Fuse (A2P)	r5T	Thermistor (subcool liq, pipe)	y3s	solenoid valve (OIL1)
F410U ~ F412U	Fuse (A2P)	r6T	Thermistor (heat exc, gas pipe)	y5s	solenoid valve (sub) (note 9)
HAP	Pilotlamp (service monitor-green) (A1P)	r7T	Thermistor (heat exc, deicer)	Z1C~Z6C	Noise filter (ferrite core)
K1m	magnetic relay (A3P)	R2, R3	resistor (A3P)	Z1F	Noise filter (A2P) (with surge absorber)
K1r	magnetic relay (A3P)	r24	resistor (current sensor) (A4P)		
K3r	magnetic relay (A2P)	r77	resistor (current sensor) (A3P)		
K3r	magnetic relay (y3s) (A1P)	r78	resistor (current limiting) (A3P)		
K4r	magnetic relay (y2s) (A1P)	s1NPH	Pressure sensor (high)	Connector for optional accessories	
K6r	magnetic relay (y5s) (A1P)	s1NPL	Pressure sensor (low)	X37A	Connector (power adapter)
K7r	magnetic relay (e1HC) (A1P)	s1PH	Pressure switch (disch)	X66A	Connector (remote switching cool/heat selector)

NOTES

1. This wiring diagram applies only to the outdoor unit.
2. - ▮▮▮ - :field wiring, ☐☐☐☐: terminal block, ⊙⊙: connector, –○–: terminal, ⏚: Protective earth (srew)
3. When using the optional adapter, refer to the installation manual of the optional adapter.
4. For connection wiring to indoor-outdoor transmission F1-F2, outdoor-outdoor transmission F1-F2, refer to the installation manual.
5. How to use bs1~3 switch. Refer to "service precaution" label on el, compo, box cover.
6. When operating, don't shortcircuit the protection device (s1PH)
7. Colors blk: black, red: red, blu: blue, wht: white, grn: green.
8. Only for ryyq model.
9. Only for ryyq/rymq model.

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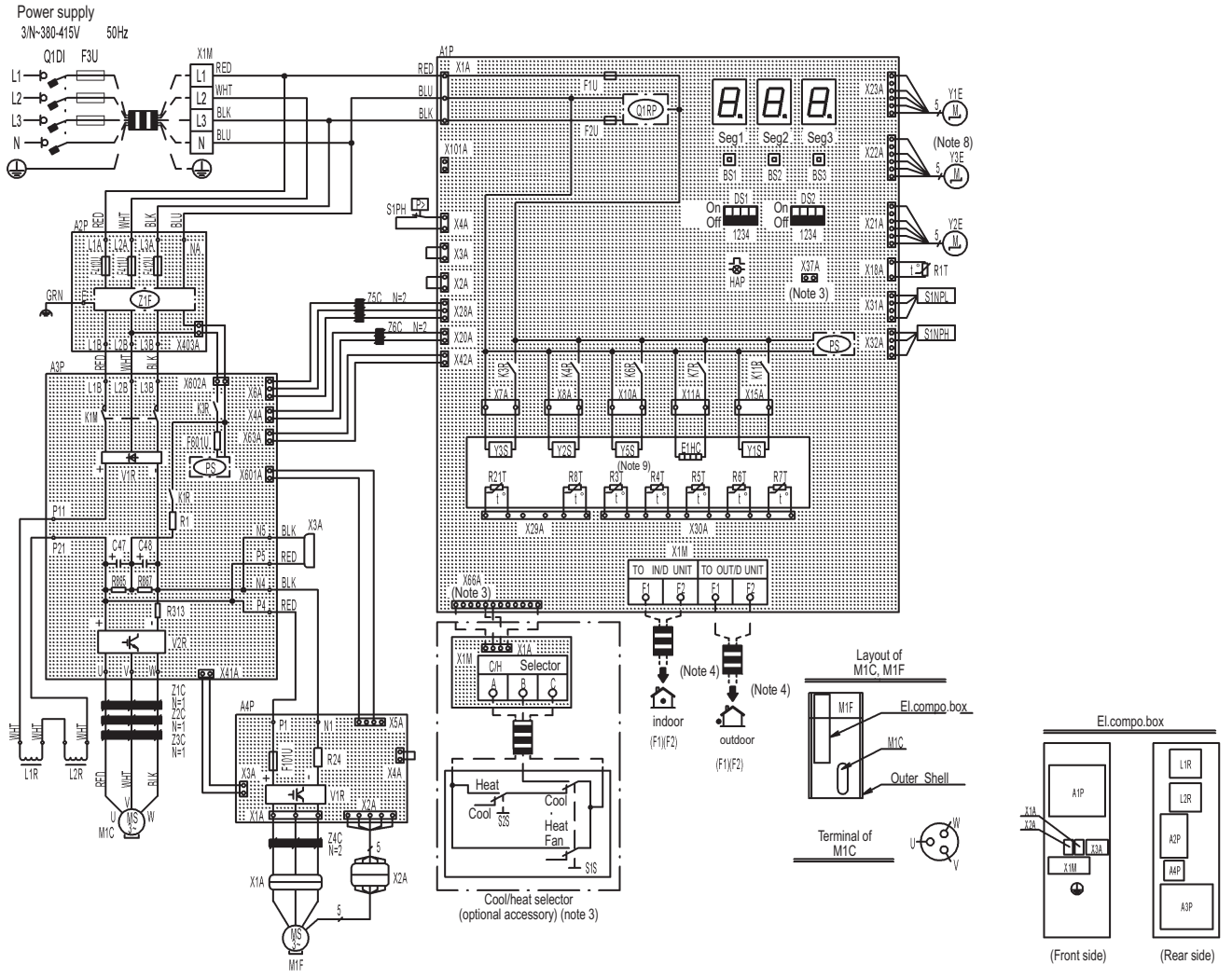
9 Wiring diagrams

9 - 1 Wiring Diagrams - Three Phase

RYYQ10-12T
RYMQ10-12T
RXYQ10-12T



A1P	Printed circuit board (main)	K11R	Magnetic relay (Y1S) (A1P)	S1PH	Pressure switch (disch)
A2P	Printed circuit board (noise filter)	L1R, L2R	Reactor	SEG1~SEG3	7-segment display (A1P)
A3P	Printed circuit board (inv)	M1C	Motor (compressor)	V1R	Power module (A3P) (A4P)
A4P	Printed circuit board (fan)	M1F	Motor (fan)	V2R	Power module (A3P)
BS1~3	Push button, switch (A1P) (mode, set, return)	PS	Switching power supply (A1P, A3P)	X1A, X2A	Connector (M1F)
C47, C48	Capacitor (A3P)	Q1DI	Field earth leakage breaker	X3a	Connector (check the residual charge)
DS1, DS2	Dip switch (A1P)	QR1P	Phase reversal detect circuit (A1P)	X1M	Terminal block (power supply)
E1HC	Crankcase heater	R1T	Thermistor (AIR) (A1P)	X1M	Terminal block (control) (A1P)
F1U, F2U	Fuse (T, 3, 15A, 250V) (A1P)	R21T	Thermistor (M1C discharge)	Y1E	Electronic expansion valve (main)
F101U	Fuse (A4P)	R3T	Thermistor (accumulator)	Y2E	Electronic expansion valve (injection)
F3U	Field fuse	R4T	Thermistor (heat exc, liq, pipe)	Y3E	Electronic expansion valve (storage vessel) (note 8)
F410U ~ F412U	Fuse (A2P)	R5T	Thermistor (subcool liq, pipe)	Y1S	Solenoid valve (main)
F601U	Fuse (A3P)	R6T	Thermistor (heat exc, gas pipe)	Y2S	Solenoid valve (accumulator oil return)
HAP	Pilotlamp (service monitor-green) (A1P)	R7T	Thermistor (heat exc, deicer)	Y3S	Solenoid valve (OIL1)
K1M	Magnetic contactor (A3P)	R8T	Thermistor (M1C body)	Y5S	Solenoid valve (sub) (note 9)
K1R	Magnetic relay (A3P)	R1	Resistor (current limiting) (A3P)	Z1C~Z6C	Noise filter (ferrite core)
K3R	Magnetic relay (A3P)	R24	Resistor (current sensor) (A4P)	Z1F	Noise filter (A2P) (with surge absorber)
K3R	Magnetic relay (Y3S) (A1P)	R313	Resistor (current sensor) (A3P)		
K4R	Magnetic relay (Y2S) (A1P)	R865, R867	Resistor (A3P)	Connector for optional accessories	
K6R	Magnetic relay (Y5S) (A1P)	S1NPH	Pressure sensor (high)	X37A	Connector (power adapter)
K7R	Magnetic relay (E1HC) (A1P)	S1NPL	Pressure sensor (low)	X66A	Connector (remote switching cool/heat selector)

NOTES

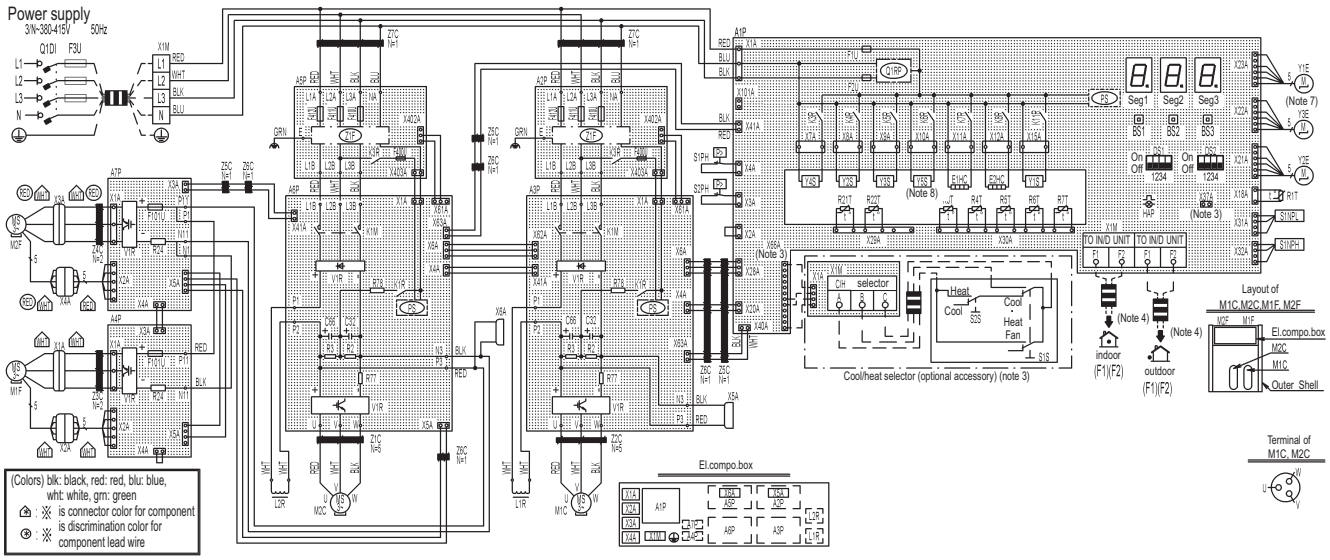
1. This wiring diagram applies only to the outdoor unit.
2. - - :field wiring, : terminal block, : connector, : terminal, : Protective earth (SREW)
3. When using the optional adapter, refer to the installation manual of the optional adapter.
4. For connection wiring to indoor-outdoor transmission F1-F2, outdoor-outdoor transmission F1-F2, refer to the installation manual.
5. How to use BS1~3 switch. Refer to “service precaution” label on el, compo, box cover.
6. When operating, don’t shortcircuit the protection device (S1PH)
7. Colors blk: black, red: red, blu: blue, wht: white, grn: green.
8. Only for RYYQ model.
9. Only for RYYQ/RYMQ model.

2D083678

9 Wiring diagrams

9 - 1 Wiring Diagrams - Three Phase

RYYQ14-16T
RYMQ14-16T
RXYQ14-16T



A1P	Printed circuit board (main)	K8R	Magnetic relay (E2HC) (A1P)	SEG1~SEG3	7-segment display (A1P)
A2P, A5P	Printed circuit board (noise filter)	K11R	Magnetic relay (Y1S) (A1P)	V1R	Power module (A3P, A6P)
A3P, A6P	Printed circuit board (inv)	L1R, L2R	Reactor	V1R	Power module (A4P, A7P)
A4P, A7P	Printed circuit board (fan)	M1C, M2C	Motor (compressor)	X1A~4A	Connector (M1F, M2F)
BS1~3	Push button, switch (A1P) (mode, set, return)	M1F, M2F	Motor (fan)	X5A~X6A	Connector (check the residual charge)
C32, C66	Capacitor (A3P), (A6P)	PS	Switching power supply (A1P, A3P, A6P)	X1M	Terminal block (power supply)
DS1, DS2	Dip switch (A1P)	Q1DI	Field earth leakage breaker	X1M	Terminal block (control) (A1P)
E1HC, E2HC	Crankcase heater	QR1P	Phase reversal detect circuit (A1P)	Y1E	Electronic expansion valve (main)
F1U, F2U	Fuse (T, 3, 15A, 250V) (A1P)	R2, R3	Resistor (A3P, A6P)	Y2E	Electronic expansion valve (injection)
F101U	Fuse (A4P, A7P)	R24	Resistor (current sensor) (A4P, A7P)	Y3E	Electronic expansion valve (storage vessel) (note 7)
F3U	Field fuse	R77	Resistor (current sensor) (A3P, A6P)	Y1S	Solenoid valve (main)
F400U	Fuse (A2P, A5P)	R78	Resistor (current limiting) (A3P, A6P)	Y2S	Solenoid valve (accumulator oil return)
F410U ~ F412U	Fuse (A2P, A5P)	R1T	Thermistor (AIR) (A1P)	Y3S	Solenoid valve (OIL1)
HAP	Pilotlamp (service monitor-green) (A1P)	R21T, R22T	Thermistor (M1C, MC2 discharge)	Y4S	Solenoid valve (OIL2)
K1M	Magnetic contactor (A3P, A6P)	R3T	Thermistor (accumulator)	Y5S	Solenoid valve (sub) (note 8)
K1R	Magnetic relay (A3P, A6P)	R4T	Thermistor (heat exc, liq, pipe)	Z1C~Z7C	Noise filter (ferrite core)
K3R	Magnetic relay (A2P, A6P)	R5T	Thermistor (subcool liq, pipe)	Z1F	Noise filter (A2P, A5P) (with surge absorber)
K3R	Magnetic relay (Y4S) (A1P)	R6T	Thermistor (heat exc, gas pipe)		
K4R	Magnetic relay (Y2S) (A1P)	R7T	Thermistor (heat exc, deicer)		
K5R	Magnetic relay (Y3S) (A1P)	S1NPH	Pressure sensor (high)	Connector for optional accessories	
K6R	Magnetic relay (Y5S) (A1P)	S1NPL	Pressure sensor (low)	X37A	Connector (power adapter)
K7R	Magnetic relay (E1HC) (A1P)	S1PH, S2PH	Pressure switch (disch)	X66A	Connector (remote switching cool/heat selector)

NOTES

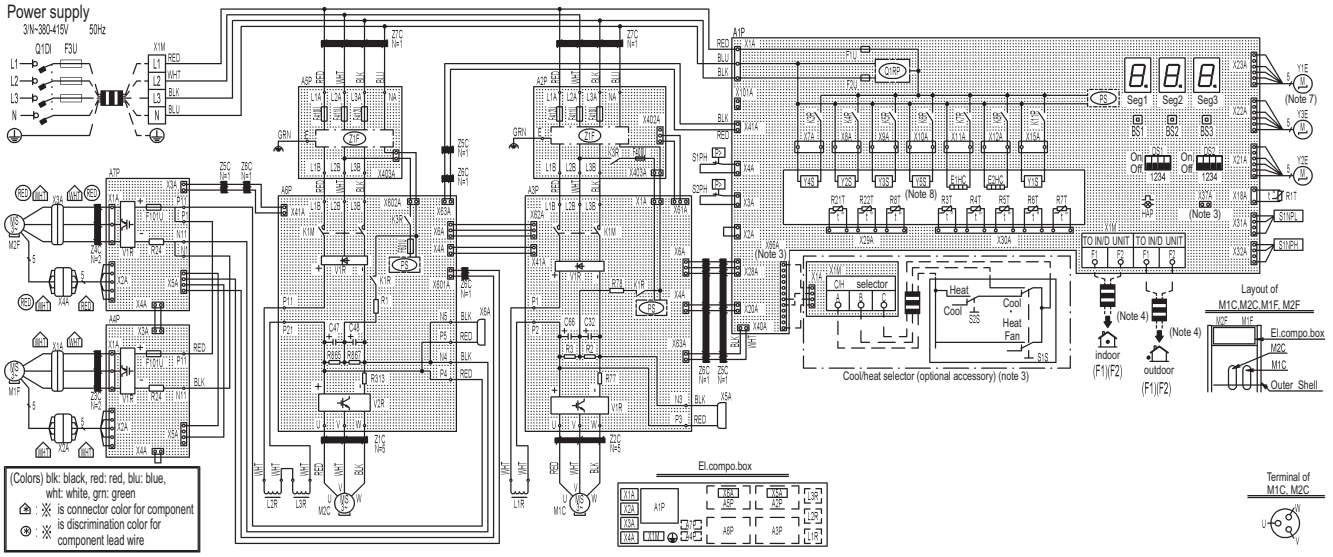
1. This wiring diagram applies only to the outdoor unit.
2. -▮▮▮- :field wiring, ☐☐☐☐: terminal block, ⊙⊙: connector, –○–: terminal, ⏚: Protective earth (SREW)
3. When using the optional adapter, refer to the installation manual of the optional adapter.
4. For connection wiring to indoor-outdoor transmission F1-F2, outdoor-outdoor transmission F1-F2, refer to the installation manual.
5. How to use BS1~3 switch. Refer to “service precaution” label on el, compo, box cover.
6. When operating, don’t shortcircuit the protection device (S1PH, S2PH)
7. Only for RYYQ model.
8. Only for RYYQ/RYMQ model.

2D083679

9 Wiring diagrams

9 - 1 Wiring Diagrams - Three Phase

RYYQ18-20T
RYMQ18-20T
RXYQ18-20T



A1P	Printed circuit board (main)	K11R	Magnetic relay (Y1S) (A1P)	SEG1~SEG3	7-segment display (A1P)
A2P, A5P	Printed circuit board (noise filter)	L1R ~ L3R	Reactor	V1R	Power module (A3P, A6P)
A3P, A6P	Printed circuit board (inv)	M1C, M2C	Motor (compressor)	V1R	Power module (A4P, A7P)
A4P, A7P	Printed circuit board (fan)	M1F, M2F	Motor (fan)	V2R	Power module (A6P)
BS1~3	Push button, switch (A1P) (mode, set, return)	PS	Switching power supply (A1P, A3P, A6P)	X1A~4A	Connector (M1F, M2F)
C32, C66	Capacitor (A3P)	Q1DI	Field earth leakage breaker	X5A~X6A	Connector (check the residual charge)
C47, C48	Capacitor (A6P)	QR1P	Phase reversal detect circuit (A1P)	X1M	Terminal block (power supply)
DS1, DS2	Dip switch (A1P)	R1	Resistor (current limiting) (A6P)	X1M	Terminal block (control) (A1P)
E1HC, E2HC	Crankcase heater	R2, R3	Resistor (A3P)	Y1E	Electronic expansion valve (main)
F1U, F2U	Fuse (T, 3, 15A, 250V) (A1P)	R24	Resistor (current sensor) (A4P, A7P)	Y2E	Electronic expansion valve (injection)
F3U	Field fuse	R77	Resistor (current sensor) (A3P)	Y3E	Electronic expansion valve (storage vessel) (note 7)
F101U	Fuse (A4P, A7P)	R78	Resistor (current limiting) (A3P)	Y1S	Solenoid valve (main)
F400U	Fuse (A2P)	R313	Resistor (current censor) (A6P)	Y2S	Solenoid valve (accumulator oil return)
F410U ~ F412U	Fuse (A2P, A5P)	R865, R867	Resistor (A6P)	Y3S	Solenoid valve (OIL1)
F601U	Fuse (A6P)	R1T	Thermistor (AIR) (A1P)	Y4S	Solenoid valve (OIL2)
HAP	Pilotlamp (service monitor-green) (A1P)	R21T, R22T	Thermistor (M1C, MC2 discharge)	Y5S	Solenoid valve (sub) (note 8)
K1M	Magnetic contactor (A3P, A6P)	R3T	Thermistor (accumulator)	Z1C~Z7C	Noise filter (ferrite core)
K1R	Magnetic relay (A3P, A6P)	R4T	Thermistor (heat exc, liq, pipe)	Z1F	Noise filter (A2P, A5P) (with surge absorber)
K3R	Magnetic relay (A2P, A6P)	R5T	Thermistor (subcool liq, pipe)		
K3R	Magnetic relay (Y4S) (A1P)	R6T	Thermistor (heat exc, gas pipe)		
K4R	Magnetic relay (Y2S) (A1P)	R7T	Thermistor (heat exc, deicer)		
K5R	Magnetic relay (Y3S) (A1P)	R8T	Thermistor (M2C, body)		
K6R	Magnetic relay (Y5S) (A1P)	S1NPH	Pressure sensor (high)	Connector for optional accessories	
K7R	Magnetic relay (E1HC) (A1P)	S1NPL	Pressure sensor (low)	X37A	Connector (power adapter)
K8R	Magnetic relay (E2HC) (A1P)	S1PH, S2PH	Pressure switch (disch)	X66A	Connector (remote switching cool/heat selector)

NOTES

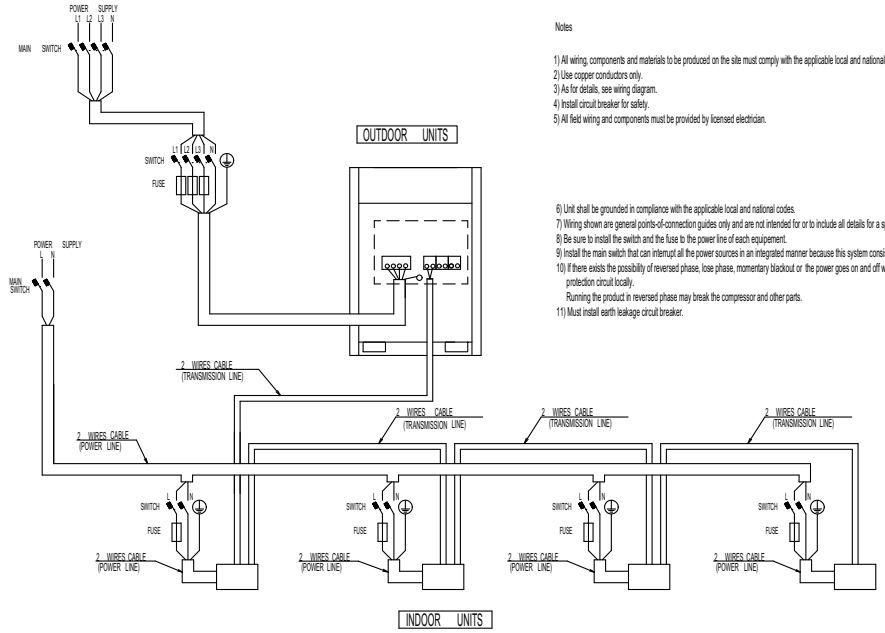
1. This wiring diagram applies only to the outdoor unit.
2. --▮▮▮-- :field wiring, ☐☐☐☐ : terminal block, ⊙⊙ : connector, –○– : terminal, ⏚ : Protective earth (SREW)
3. When using the optional adapter, refer to the installation manual of the optional adapter.
4. For connection wiring to indoor-outdoor transmission F1-F2, outdoor-outdoor transmission F1-F2, refer to the installation manual.
5. How to use BS1~3 switch. Refer to “service precaution” label on el, compo, box cover.
6. When operating, don’t shortcircuit the protection device (S1PH, S2PH)
7. Only for RYYQ model.
8. Only for RYYQ/RYMQ model.

2D083680

10 External connection diagrams

10 - 1 External Connection Diagrams

RXYQ8T8
RXYQ10-20T
RYYQ8T8
RYYQ10-20T
RXYQQ8-20T



Notes

1) All wiring, components and materials to be produced 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) If there exists the possibility of reversed phase, lose phase, momentary blackout or the power goes on and off while the product is operating, attach a reversed phase protection circuit locally.
Running the product in reversed phase may break the compressor and other parts.
11) Must install earth leakage circuit breaker.

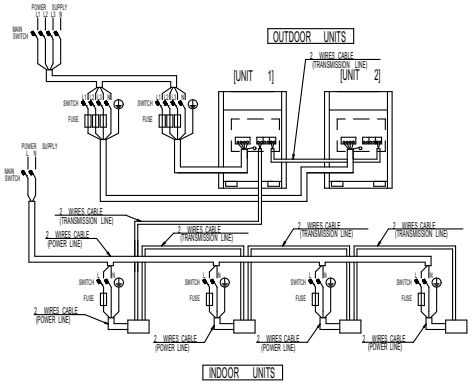
3d079576

RXYQ20-22T
RXYQ24T8
RXYQ26-36T
RYYQ22-36T
RXYQQ22-36T

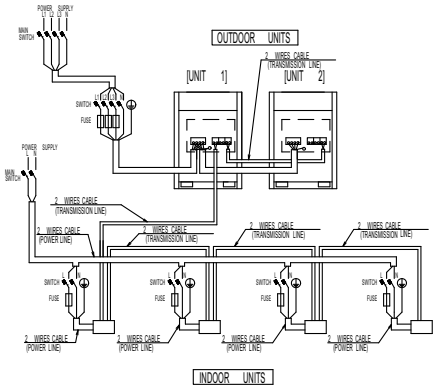
Notes

1) All wiring, components and materials to be produced 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) The capacity of UNIT1 must be larger than UNIT2 when the power source is connected in series between the units.
11) If there exists the possibility of reversed phase, lose phase, momentary blackout or the power goes on and off while the product is operating, attach a reversed phase protection circuit locally.
Running the product in reversed phase may break the compressor and other parts.
12) Must install earth leakage circuit breaker.

< When the power source is supplied to each outdoor unit individually. >



< When the power source is connected in series between the units. >



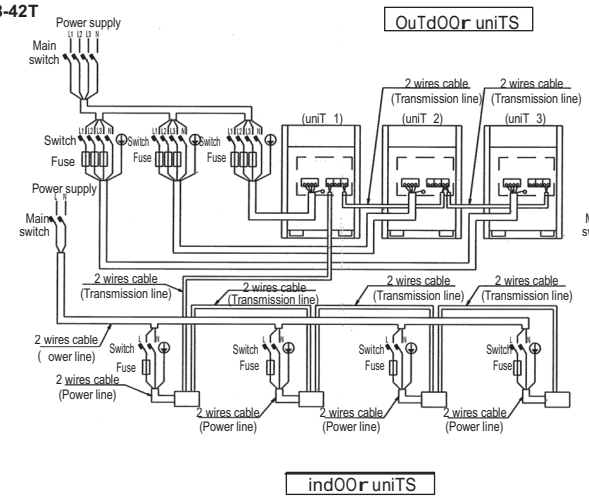
3D079577

10 External connection diagrams

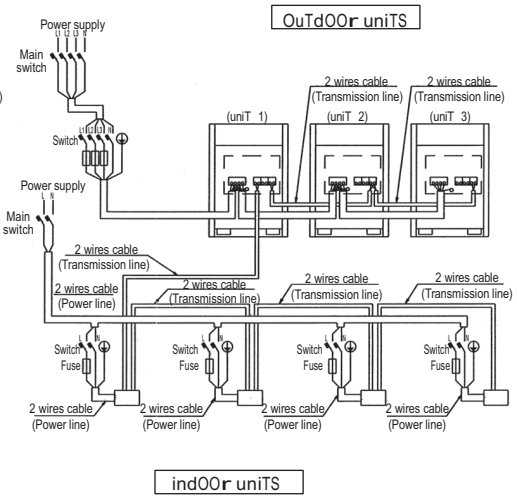
10 - 1 External Connection Diagrams

RXYQ38T8
RYYQ38-54T
RXYQ40-54T
RXYQQ38-42T

<When the power source is supplied to each outdoor unit individually>



<When the power sourse is connected in series between the units>



3D079578

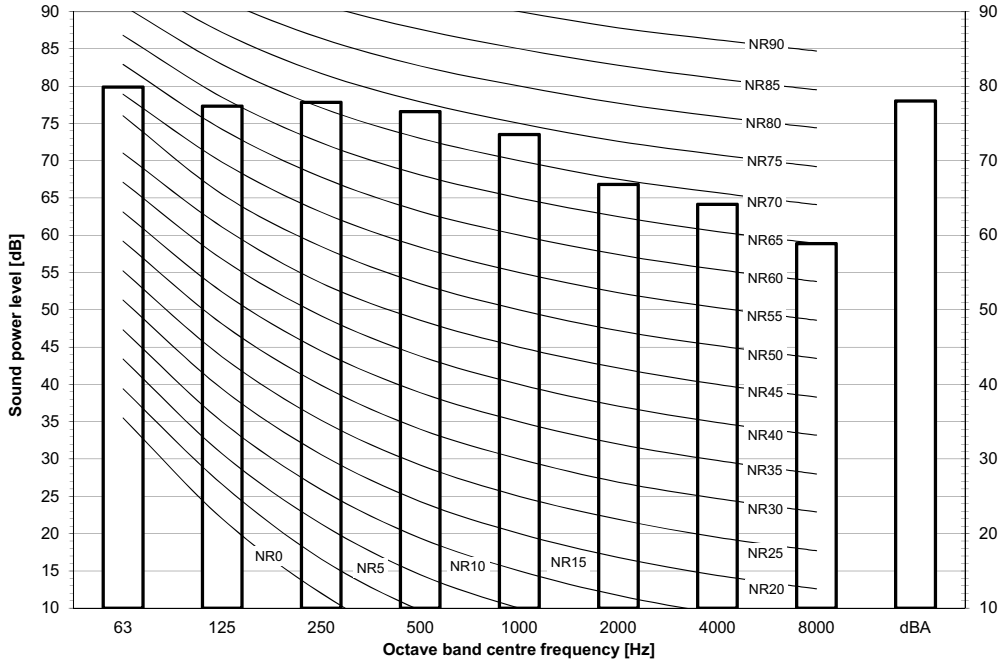
NOTES

1. All wiring, components and materials to be produced 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. The capacity of uniT1 must be larger than uniT2 when the power source is connected in series between the units.
11. if there exists the possibility of reversed phase, lose phase, momentary blackout or the power goes on and off while the product is operating, attach a reversed phase protection circuit locally. running the product in reversed phase may break the compressor and other parts.
12. Must install earth leakage circuit breaker.

11 Sound data

11 - 1 Sound Power Spectrum

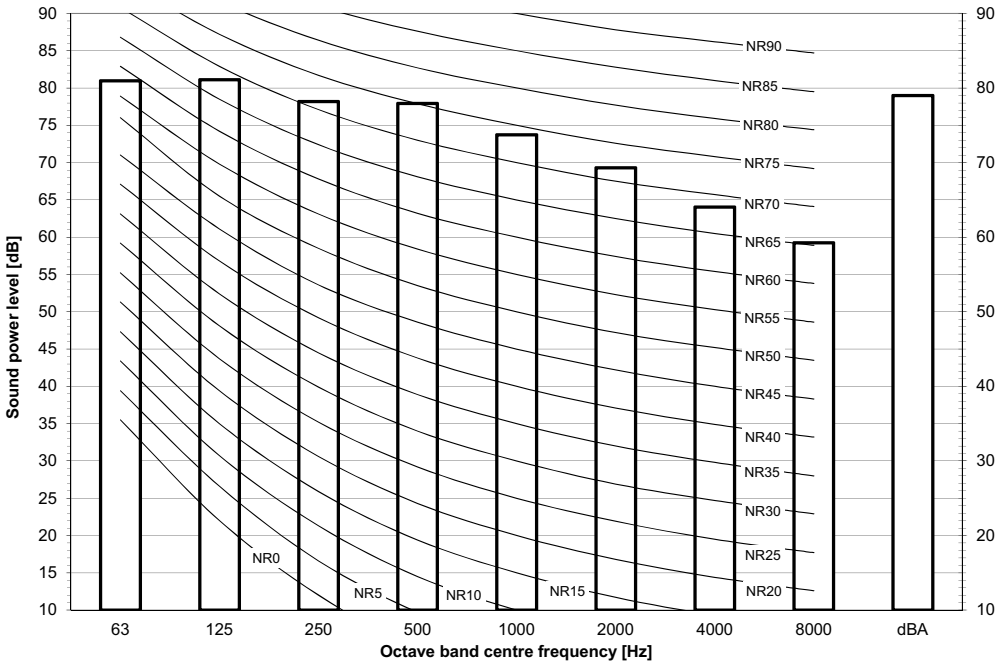
RXYQ8T8
RYYQ8T8
RYMQ8T
RXYQQ8T



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

3D079537D

RXYQ10T
RYYQ10T
RYMQ10T
RXYQQ10T



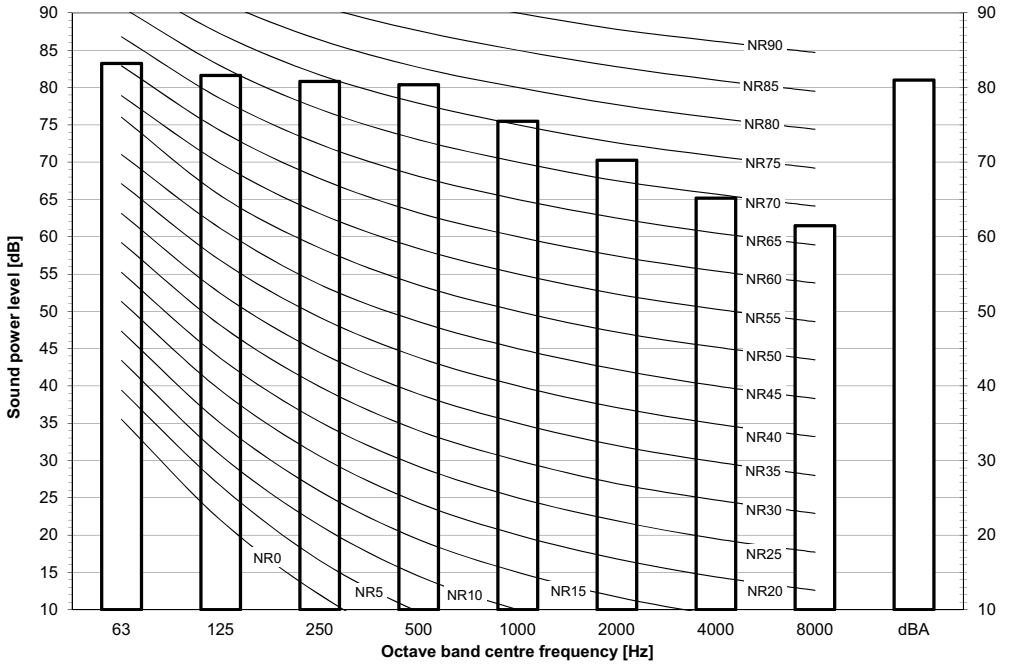
Notes
- dBA = A-weighted sound power level (A scale according to IEC).
- Reference acoustic intensity 0dB = 10E-6μW/m²
- Measured according to ISO 3744

3D079908D

11 Sound data

11 - 1 Sound Power Spectrum

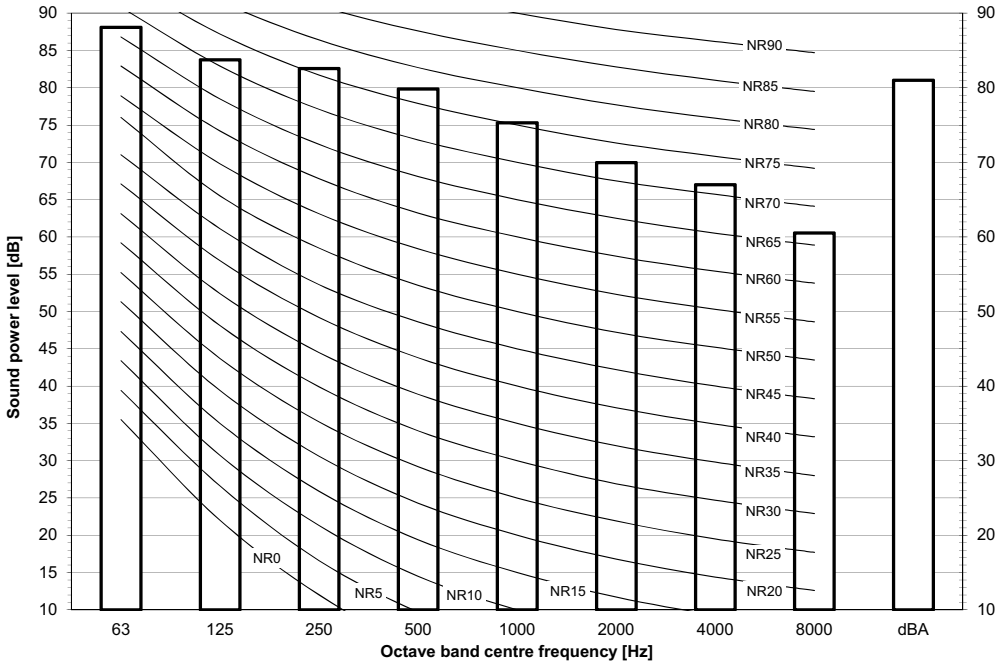
RXYQ12T
RYYQ12T
RYMQ12T
RXYQQ12T



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

3D079909D

RXYQ14T
RYYQ14T
RYMQ14T
RXYQQ14T



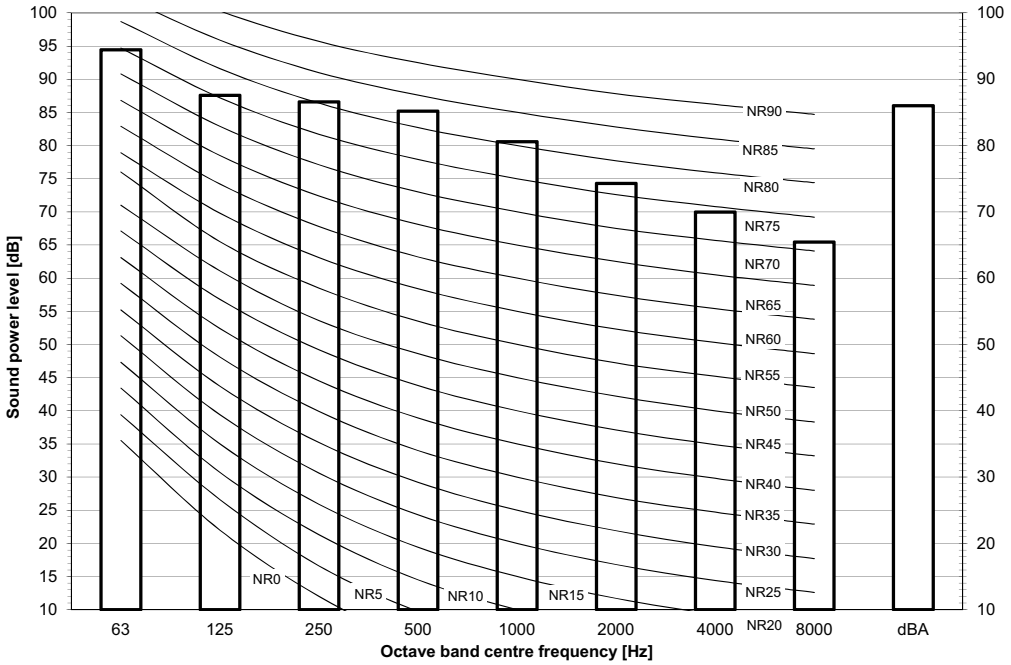
Notes
- dBA = A-weighted sound power level (A scale according to IEC).
- Reference acoustic intensity 0dB = 10E-6µW/m²
- Measured according to ISO 3744

3D079910D

11 Sound data

11 - 1 Sound Power Spectrum

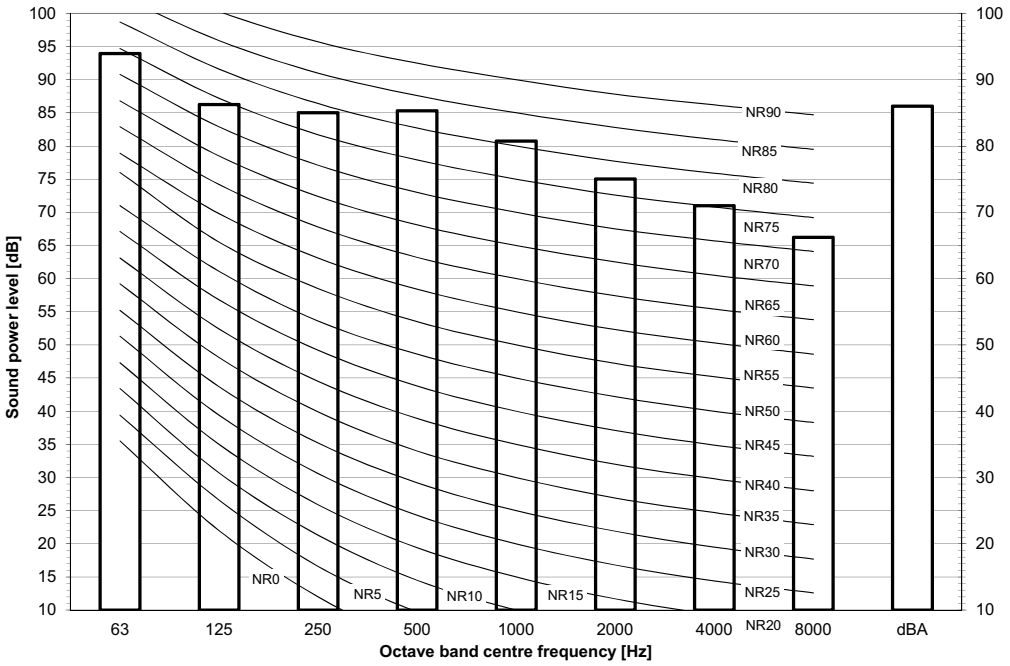
RXYQ16T
RYYQ16T
RYMQ16T
RXYQQ1T



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

3D079911D

RXYQ18T
RYYQ18T
RYMQ18T
RXYQQ18T



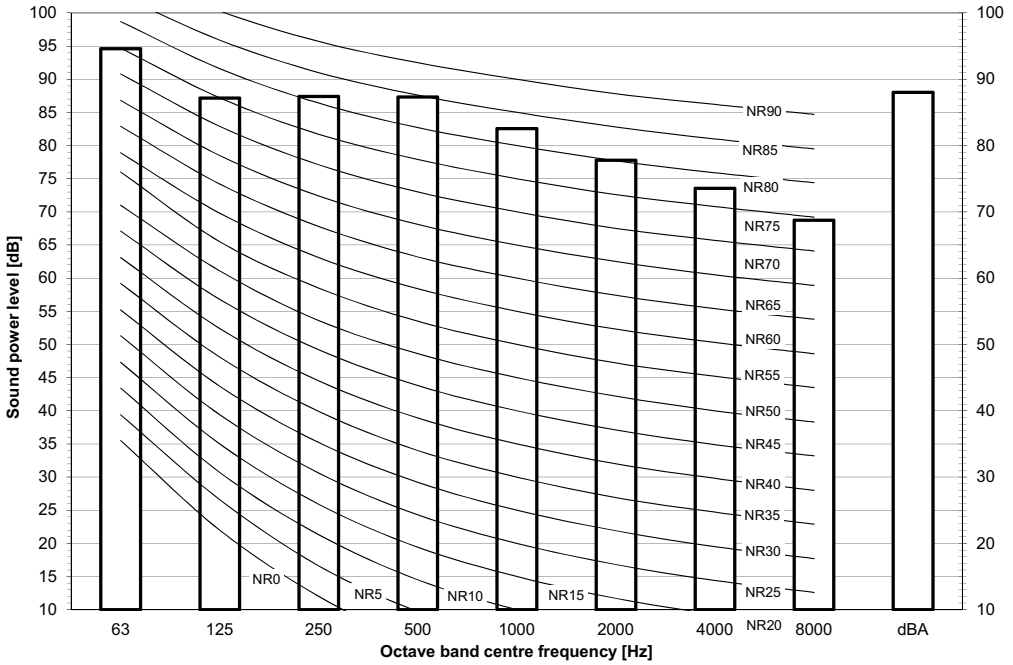
Notes
- dBA = A-weighted sound power level (A scale according to IEC).
- Reference acoustic intensity 0dB = 10E-6μW/m²
- Measured according to ISO 3744

3D079912D

11 Sound data

11 - 1 Sound Power Spectrum

RXYQ20T
RYYQ20T
RYMQ20T
RXYQQ20T



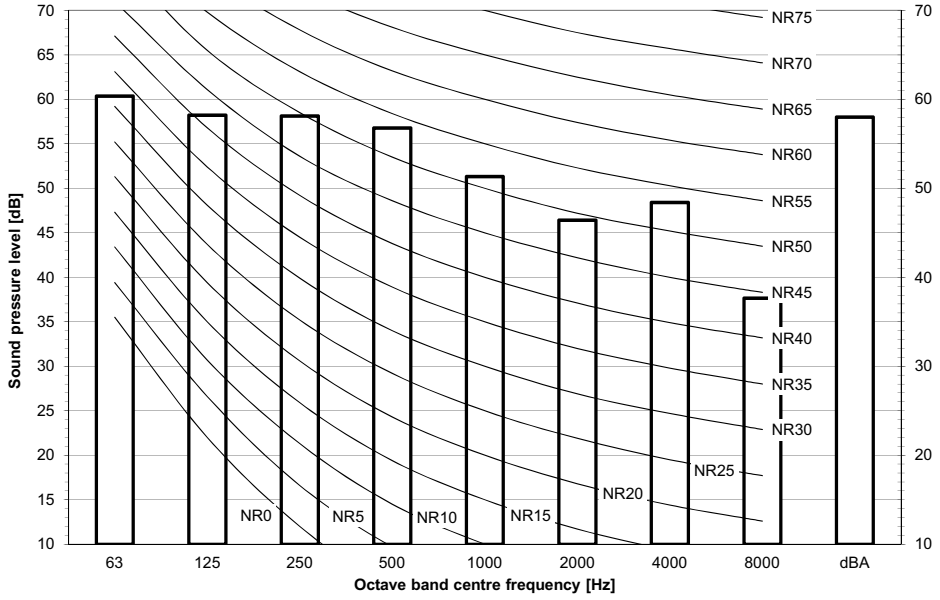
Notes
- dBA = A-weighted sound power level (A scale according to IEC).
- Reference acoustic intensity 0dB = 10E-6µW/m²
- Measured according to ISO 3744

3D079913D

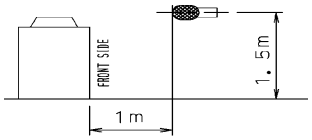
11 Sound data

11 - 2 Sound Pressure Spectrum

RXYQ8T8
RYYQ8T8
RYMQ8T
RXYQQ8T

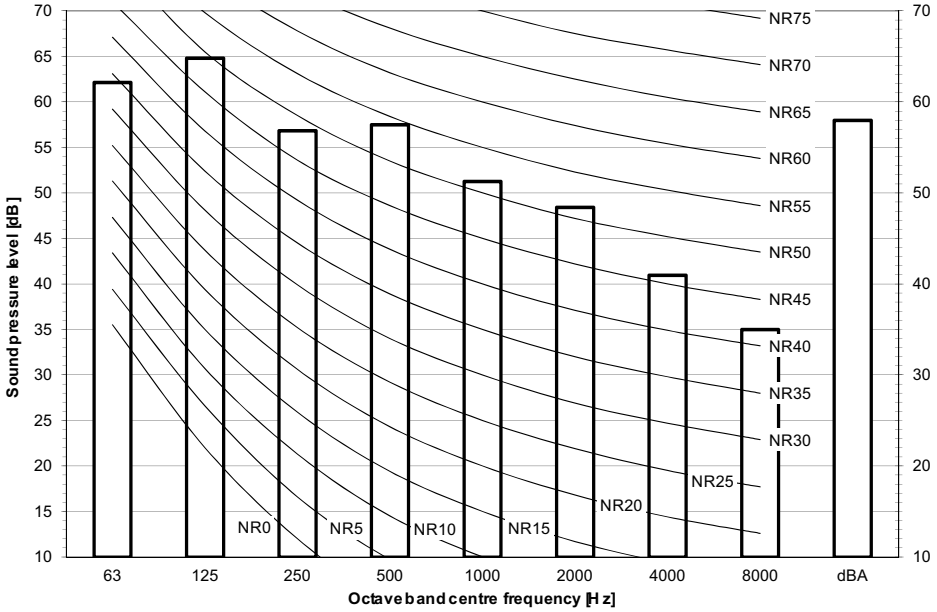


Notes
- Data is valid at free field condition.
- Data is valid at nominal operation condition.
- dBA = A-weighted sound pressure level (A scale according to IEC).
- Reference acoustic pressure 0 dB = 20 µPa

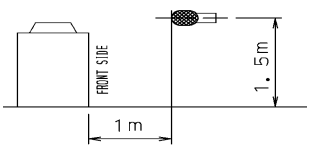


3D079536D

RXYQ10T
RYYQ10T
RYMQ10T
RXYQQ10T



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

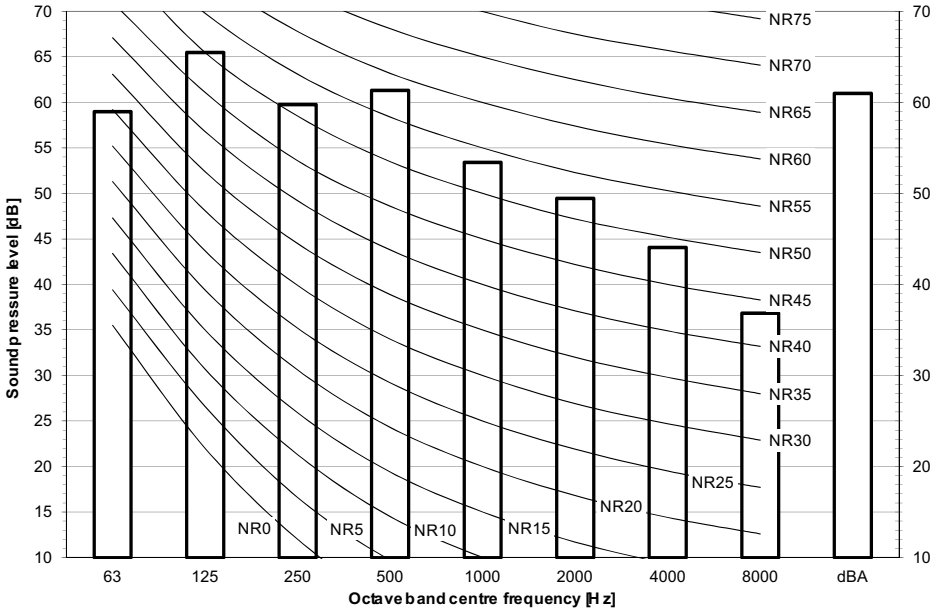


3D079902D

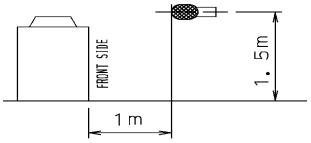
11 Sound data

11 - 2 Sound Pressure Spectrum

RXYQ12T
RYYQ12T
RYMQ12T
RXYQQ12T

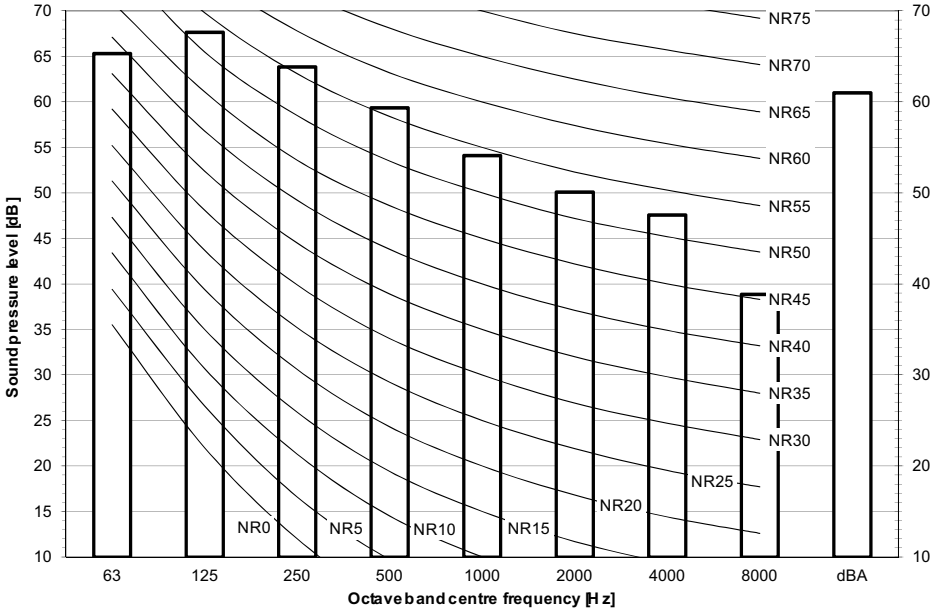


Notes
- Data is valid at free field condition.
- Data is valid at nominal operation condition.
- dBA = A-weighted sound pressure level (A scale according to IEC).
- Reference acoustic pressure 0 dB = 20 µPa

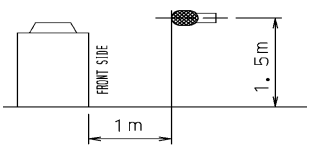


3D079903D

RXYQ14T
RYYQ14T
RYMQ14T
RXYQQ14T



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

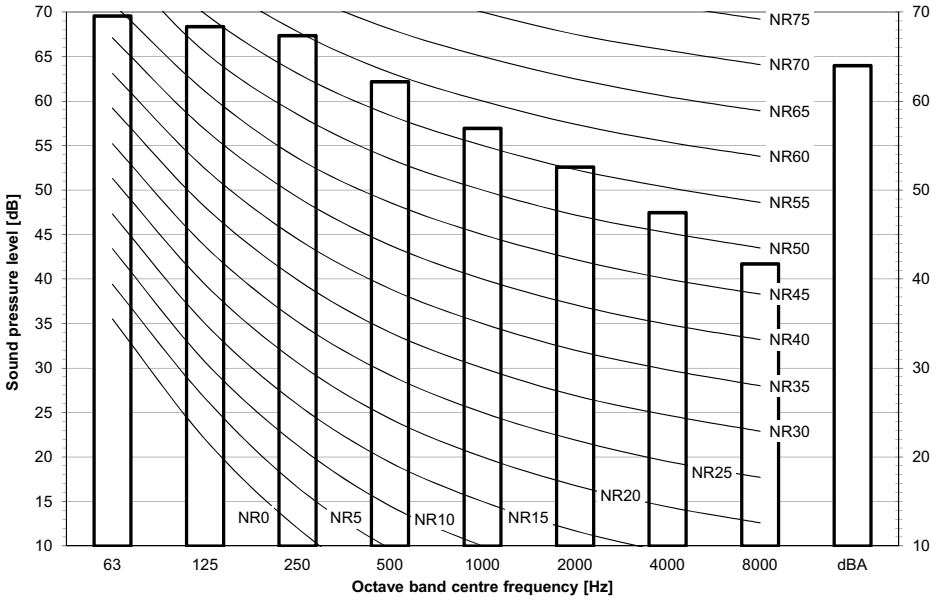


3D079904D

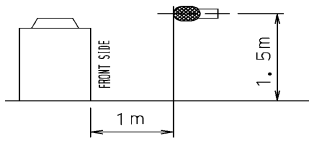
11 Sound data

11 - 2 Sound Pressure Spectrum

RXYQ16T
RYYQ16T
RYMQ16T
RXYQQ16T

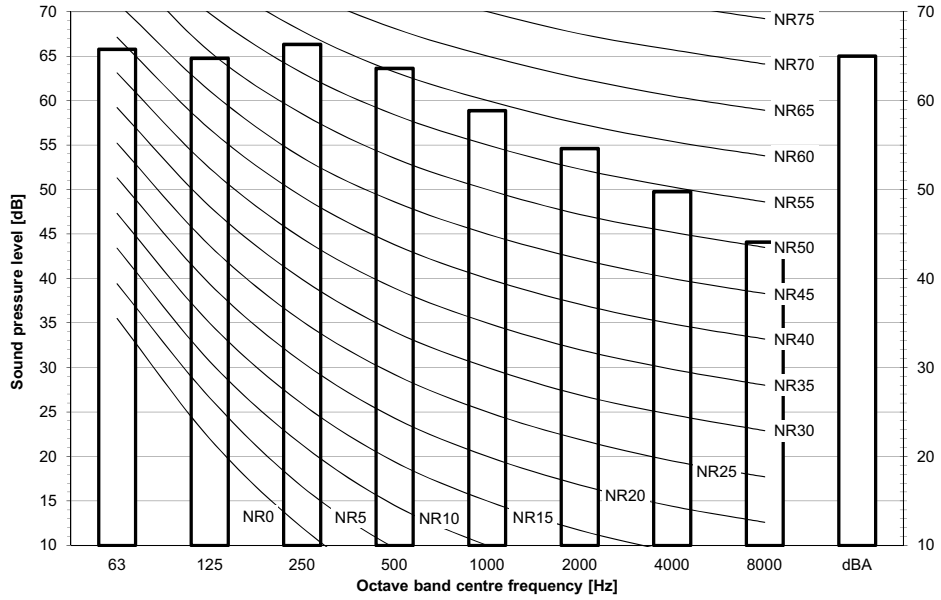


Notes
- Data is valid at free field condition.
- Data is valid at nominal operation condition.
- dBA = A-weighted sound pressure level (A scale according to IEC).
- Reference acoustic pressure 0 dB = 20 µPa

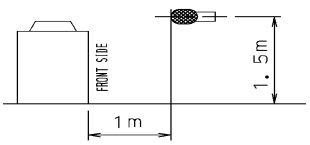


3D079905D

RXYQ18T
RYYQ18T
RYMQ18T
RXYQQ18T



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

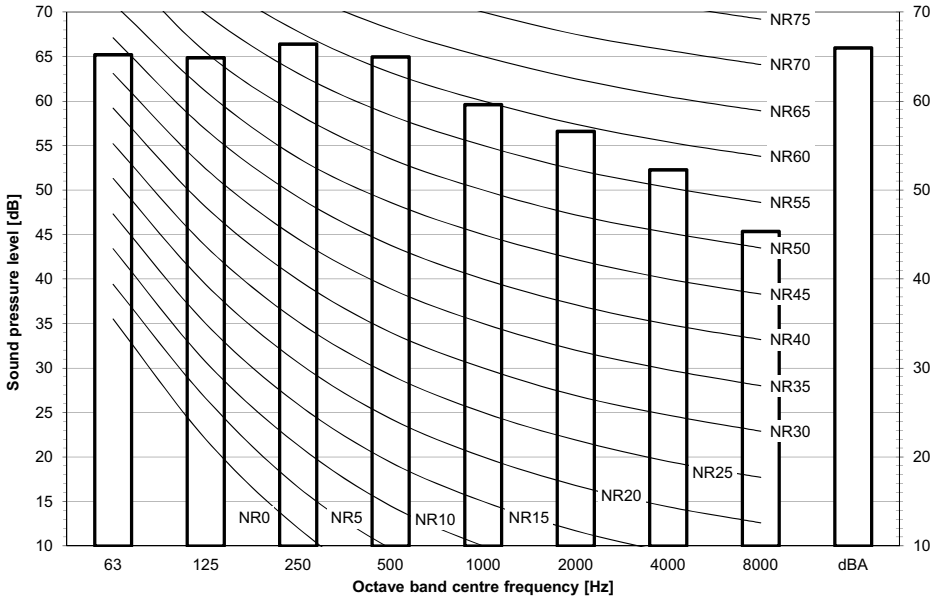


3D079906D

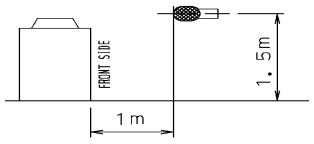
11 Sound data

11 - 2 Sound Pressure Spectrum

RXYQ20T
RYYQ20T
RYMQ20T
RXYQQ20T



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



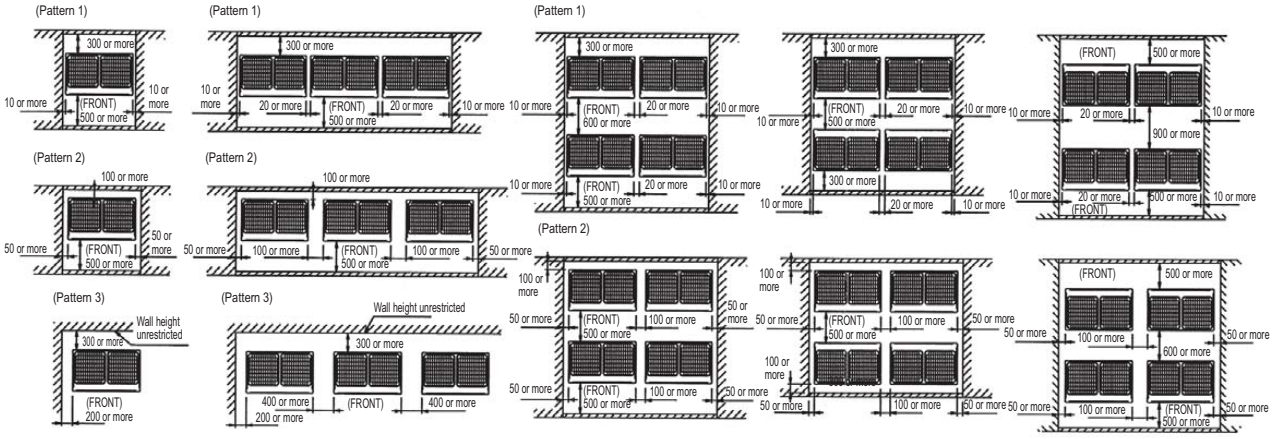
3D079907D

12 Installation

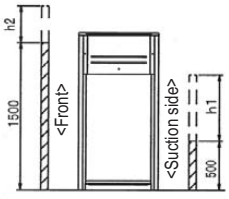
12 - 1 Installation Method

RXYQ-T(8)
RYYQ-T(8)
RYMQ-T
RXYQQ-T

For single unit installation | For installation in rows | For centralized group layout



<Unit = mm>



NOTES

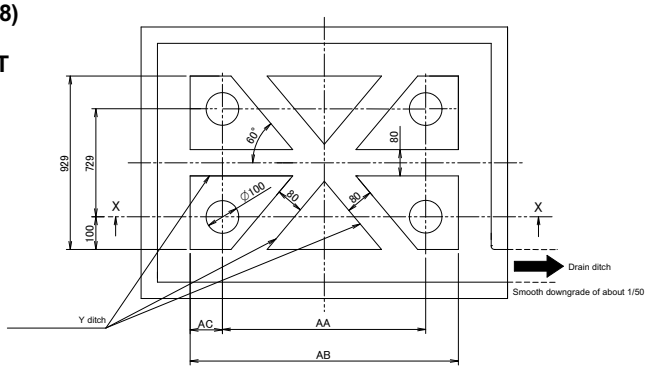
1. Heights of walls in case of patterns 1 and 2:
   Front: 1500mm
   Suction side: 500mm
   Side: Height unrestricted
   Installation space as shown on this drawing is based on the cooling operation at 35 degrees outdoor air temperature.
   When the design outdoor air temperature exceeds 35 degrees or the load exceeds maximum ability of much generation load of heat in all outdoor unit, take the suction side space more broadly than the space as shown on this drawing.
2. If the above wall heights are exceeded then h2/2 and h1/2 should be added to the front and suction side service spaces respectively as shown in the figure on the right.
3. When installing the units most appropriate pattern should be selected from those shown above in order to obtain the best fit in the space available. Always keep in mind the need to leave enough space for a person to pass between units and wall and also for the air to circulate freely.
   (If more units are to be installed than are catered for in the above patterns your layout should take account of the possibility of short circuits).
4. The units should be installed to leave sufficient space at the front for the on site refrigerant piping work to be carried out comfortably.

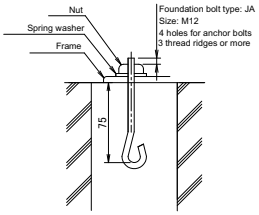
3D079542

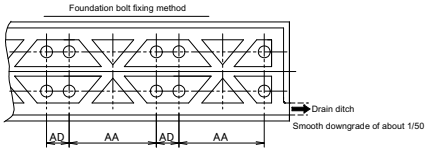
12 Installation

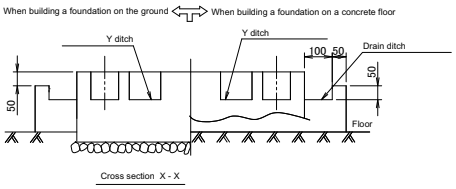
12 - 2 Fixation and Foundation of Units

RXYQ-T(8)
RYYQ-T(8)
RYMQ-T
RXYQQ-T









For multi-unit installation

Model	AA	AB	AC	AD
RYYQ8-12T RYMQ8-12T RXYQ8-12T RXYQQ8-12T REMQ5T/REYQ8-12T RXYTQ8T	766	992	113	185
RYYQ14-20T RYMQ14-20T RXYQ14-20T RXYQQ14-20T REYQ14-20T RXYTQ10-16T	1076	1076		
RXYCQ8	497	697	100	160
RXYCQ10-14	792	992		
RXYCQ16-20	1102	1302		

Notes

1. Provide a drain ditch around the foundation to drain water from the installation area.
2. The surface has to be finished with mortar. The corner edges have to be chamfered.
3. Build the foundation on a concrete floor or, if not possible, make sure the foundation surface has a rough finish.
4. Use a cement/sand/gravel ratio of 1/2/4 for the concrete, and a diameter of 10 mm for the reinforcement bars (approximately, 300mm intervals).
5. When installing the equipment on a roof, make sure to check the strength of the floor and take adequate water proofing measures.

3D079547E

12 Installation

12 - 3 Refrigerant Pipe Selection

RXYQ-T(8)
RYYQ-T(8)
RYMQ-T

VRV4 Heat Pump Field Piping Restrictions (1/3)

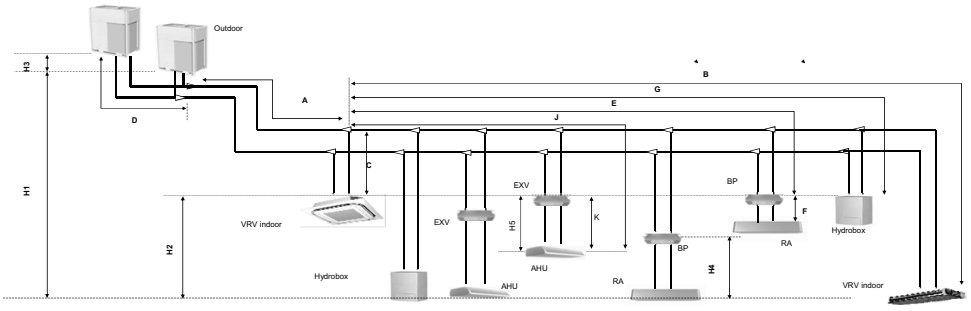
Reference drawing see Page2/3		Maximum piping length: Longest pipe (A+[B,G,E,J]) Actual / (Equivalent)	Maximum piping length: After first branch (B,G,E,J) Actual	Maximum piping length: After first branch for outdoor multi (D) Actual / (Equivalent)	Maximum height difference: Indoor to outdoor[3] (H1) outdoor above indoor / (indoor above outdoor)	Maximum height difference: Indoor to indoor (H2)	Maximum height difference: Outdoor to outdoor (H3)	Total Piping Length
Standard *Only* ***VRV DX indoor*** *connected* *Standard multi combination*		165/(190)m	40m[1]	10/(13)m	50/(40)m[3]	30m	5m	1000m
Free multi combination (=all, except standard multi combination)		135/(160)m	40m[1]	10/(13)m	50/(40)m[3]	30m	5m	500m
Hydrobox *connection*		135/(160)m	40m	10/(13)m	50/(40)m	15m	5m	300-500m[5]
RA *connection*		100/(120)m	50m[2]	-	50/(40)m	15m	-	250m
AHU *connection*	Pair	50/(55)m[4]	-	-	40/(40)m	-	-	-
	Multi[6]	165/(190)m	40m	10/13m	40/(40)m	15m	5m	1000m
	Mix[7]	165/(190)m	40m	10/13m	40/(40)m	15m	5m	1000m

Remarks
For standard multi combinations; see 3D079534
(1) Extension is possible if all below conditions are met (limitation can be extended up to 90m)
a. The piping length between all indoor to the nearest branch kit is ≤ 40m.
b. It is necessary to increase the pipe size of the gas and liquid piping if the pipe length between the first and the final branch kit is over 40m
If the increased pipe size is larger than the pipe size of the main pipe, then the pipe size of the main pipe has to be increased as well
c. When the piping size is increased (b), the piping length has to be counted as double. The total piping length has to be within limitations (see table above).
d. The piping length difference between the nearest indoor from first branch to the outdoor unit and farthest indoor to the outdoor unit is ≤ 40m
(2) If the piping length between first branch and BP box or VRV indoor is over 20m, it's necessary to increase the gas and liquid piping size between first branch and BP box or VRV indoor
(3) Extension up till 90m is possible without additional option kit
→ In case the outdoor location is higher than indoor: extension is possible up till 90m under following conditions
- Liquid piping size up (details in installation manual)
- Dedicated setting on outdoor unit is required (details in installation manual)
→ In case the outdoor location is lower than indoor: extension is possible up till 90m under following conditions
- 40~60m: minimum connection ratio connected: 80%
- 60~65m: minimum connection ratio connected: 90%
- 65~80m: minimum connection ratio connected: 100%
- 80~90m: minimum connection ratio connected: 110%
+
- Liquid piping size up (details in installation manual)
- Dedicated setting on outdoor unit is required (details in installation manual)
(4) The allowable minimum length is 5 m.
(5) In case of multi connection
(6) Using several AHU (EKEXV+ EKEQ - kits)
(7) Mix of AHU and VRV DX indoor

3D079540D

RXYQ-T(8)
RYYQ-T(8)
RYMQ-T

VRV4 Heat Pump Field Piping Restrictions (2/3)



REMARKS
1) Schematic indication: illustrations may vary from real unit outlook.
2) Displayed system is only to illustrate piping length limitations!
Combination of displayed indoor unit types is not allowed. See 3D079543 for allowed combinations.

		Allowable piping length: BP to RA (F)	Allowable piping length: EXV to AHU (K)	Max. height difference: BP to RA (H4)	Max. height difference: EXV to AHU (H5)
RA connection		2~15m	-	5m	-
AHU connection	**Pair**	-	≦5m	-	5m
	Multi[1]	-	≦5m	-	5m
	Mix[2]	-	≦5m	-	5m

Remarks
(1) Using several AHU (EKEXV + EKEQ - kits)
(2) Mix of AHU and VRV DX indoor

3D079540D

12 Installation

12 - 3 Refrigerant Pipe Selection

RXYQ-T(8)
RYYQ-T(8)
RYMQ-T

VRV4 Heat Pump Field Piping Restrictions (3/3)

System pattern Allowed connection ratio (CR) *Other combinations are N.A.	Total		Allowable capacity			
	capacity	Indoor unit quantity (VRV, RA, AHU, Hydrobox) (excl. BP box and EXV kits)	VRV DX indoor	RA DX indoor	Hydrobox	AHU
Only VRV DX indoor	50~130%	Max.64	50~130%	-	-	-
VRV DX indoor + RA DX indoor	80~130%	Max.32(1)	0~130%	0~130%	-	-
Only RA DX indoor	80~130%	Max.32(1)	-	80~130%	-	-
VRV DX indoor + LT hydrobox	50~130%	Max.32	50~130%	-	0~80%	-
VRV DX indoor + AHU (mix)	50~110%(3)	Max.64(2)	50~110%	-	-	0~110%
Only AHU (pair AHU + multi AHU)(4)	90~110%(3)	Max.64(2)	-	-	-	90~110%

Remarks
(1) There is no restriction for the number of connectable BP boxes
(2) When using AHU connection: see EKEXV kit as an indoor unit for counting the total number of indoor units
(3) Restrictions by air handling unit capacity
(4) Pair AHU = system with 1 AHU connected to one outdoor unit // Multi AHU = system with several AHU connected to 1 outdoor unit system

Special information regarding ventillation applications
I. FXMQ_MF model is considered as an AHU, following AHU limitations and respecting additional limitations:
- Maximum FXMQ_MF connection ratio (CR) when combined with VRV DX indoor units: CR ≤ 30%
- Maximum FXMQ_MF connection ratio (CR) when only AHU is used: CR ≤ 100%
(operation range information: see specifications of FXMQ_MF unit)

II. Biddle aircurtain is considered as an AHU, following AHU limitations
(operation range information: see specifications of Biddle unit)

III. [EKEXV + EKEQ] combined with AHU is considered as an AHU, following AHU limitations
(operation range information: see specifications of EKEXV-EKEQ unit)

IV. VKM is considered to be a regular VRV DX indoor unit
(operation range information: see specifications of VKM unit)

V. VAM does not have limitations on connection as there is no refrigerant connection with the outdoor unit (only communication F1/F2; so counting in # indoor units)

3D079540D

12 Installation

12 - 3 Refrigerant Pipe Selection

RXYQ-T(8)
RYYQ-T(8)
RYMQ-T

1. Refrigerant pipe size and allowable pipe length

1.1. General information

NOTICE

The refrigerant R410A requires strict cautions for keeping the system clean, dry and tight.

- Clean and dry: foreign materials (including mineral oils or moisture) should be prevented from getting mixed into the system.
- Tight: R410A does not contain any chlorine, does not destroy the ozone layer, and does not reduce earth's protection against harmful ultraviolet radiation. R410A can contribute slightly to the greenhouse effect if it is released. Therefore we should take special attention to check the tightness of the installation.

1.2. Selection of piping material

NOTICE

Piping and other pressure containing parts shall comply with the applicable legislation and shall be suitable for refrigerant. Use phosphoric acid deoxidised seamless copper for refrigerant.

NOTICE

Installation shall be done by a licensed installer, the choice of materials and installation shall conform completely with the applicable national and international codes.

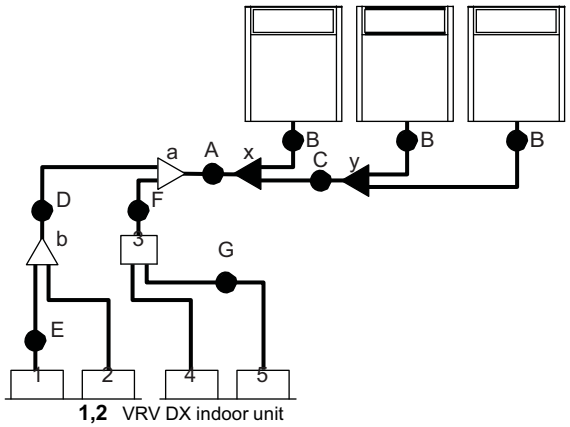
In Europe, EN 378 is the applicable standard that shall be used.

- Foreign materials inside pipes (including oils for fabrication) must be ≤30 mg/10 m.
- Temper grade: use piping with temper grade in function of the pipe diameter as listed in table below.

Pipe Ø (mm)	Temper grade of piping material
≤15.9	O (annealed)
≥19.1	1/2H (half hard)

1.3. Selection of piping size

Determine the proper size referring to following tables and reference figure (only for indication).



1,2 VRV DX indoor unit
3 BP box
4,5 RA DX indoor unit
a,b Indoor branch kit
x,y Outdoor multi connection kit

1.3.1. Piping between outdoor unit and (first) refrigerant branch kit: A, B, C

Choose from the following table in accordance with the outdoor unit total capacity type, connected downstream.

Outdoor unit capacity type (HP)	Piping outer diameter size (mm)	
	Gas pipe	Liquid pipe
8	19.1	9.5
10	22.2	
12~16	28.6	12.7
18~22		15.9
24	34.9	
26~34		19.1
36~54	41.3	

1.3.2. Piping between refrigerant branch kits: D

Choose from the following table in accordance with the indoor unit total capacity type, connected downstream. Do not let the connection piping exceed the refrigerant piping size chosen by the general system model name.

Indoor unit capacity index	Piping outer diameter size (mm)	
	Gas pipe	Liquid pipe
<150	15.9	9.5
150≤x<200	19.1	
200≤x<290	22.2	
290≤x<420	28.6	12.7
420≤x<640		15.9
640≤x<920	34.9	19.1
>920	41.3	19.1

Example:

Downstream capacity for E=capacity index of unit 1
Downstream capacity for D=capacity index of unit 1+capacity index of unit 2

1.3.3. Piping between refrigerant branch kit and BP unit: F

Pipe size for direct connection on BP unit must be based on the total capacity of the connected indoor units (only in case RA DX indoor units are connected).

Total capacity index of connected indoor units	Gas pipe (mm)	Liquid pipe (mm)
20-62	12.7	6.4
63-149	15.9	9.5
150-208	19.1	

Example:

Downstream capacity for F=capacity index of unit 4+capacity index of unit 5

1.3.4. Piping between BP unit and RA DX indoor unit: G

Only in case RA DX indoor units are connected.

Indoor unit capacity index	Gas pipe (mm)	Liquid pipe (mm)
20, 25, 30	9.5	6.4
50	12.7	
60		9.5
71	15.9	

4P329765-1C (1/5)

12 Installation

12 - 3 Refrigerant Pipe Selection

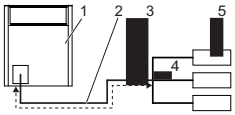
RXYQ-T(8)
RYYQ-T(8)
RYMQ-T

1.3.5. Piping between refrigerant branch kit and indoor unit: E

Pipe size for direct connection to indoor unit must be the same as the connection size of the indoor unit (in case indoor unit is VRV DX indoor or Hydrobox).

Indoor unit capacity index	Piping outer diameter size (mm)	
	Gas pipe	Liquid pipe
15, 20, 25, 32, 40, 50	12.7	6.4
63, 80, 100, 125	15.9	9.5
200	19.1	
250	22.2	

■ When the equivalent pipe length between outdoor and indoor units is 90 m or more, the size of the main pipes (both gas side and liquid side) must be increased. Depending on the length of the piping, the capacity may drop, but even in such a case it is possible to increase the size of the main pipes.



1 Outdoor unit
2 Main pipes
3 Increase
4 First refrigerant branch kit
5 Indoor unit

HP Class	Size up	
	Gas side (mm)	Liquid size (mm)
8	19.1 → 22.2	9.5 → 12.7
10	22.2 → 25.4(a)	
12+14	28.6(b)	12.7 → 15.9
16	28.6 → 31.8(a)	
18~22	28.6 → 31.8(a)	15.9 → 19.1
24	34.9(b)	15.9 → 19.1
26~34	34.9 → 38.1(a)	19.1 → 22.2
36~54	41.3(b)	

(a) If size is NOT available, increase is NOT allowed.
(b) Increase is NOT allowed.

■ The pipe thickness of the refrigerant piping shall comply with the applicable legislation. The minimal pipe thickness for R410A piping must be in accordance with the table below.

Pipe Ø (mm)	Minimal thickness t (mm)
6.4	0.80
9.5	
12.7	
15.9	0.99
19.1	0.80
22.2	
28.6	0.99
34.9	1.21
41.3	1.43

■ In case the required pipe sizes (inch sizes) are not available, it is also allowed to use other diameters (mm sizes), taken the following into account:
- Select the pipe size nearest to the required size.
- Use the suitable adapters for the change-over from inch to mm pipes (field supply).

In this case, the additional refrigerant calculation has to be adjusted as mentioned in "14. Charging refrigerant".

1.4. Selection of refrigerant branch kits

Refrigerant refnets

For piping example, refer to "9.3. Selection of piping size".

■ When using refnet joints at the first branch counted from the outdoor unit side, choose from the following table in accordance with the capacity of the outdoor unit (example: refnet joint a).

Outdoor unit capacity type (HP)	2 pipes
8-10	KHRQ22M29T9
12-22	KHRQ22M64T
24-54	KHRQ22M75T

■ For refnets joints other than the first branch (example refnet joint b), select the proper branch kit model based on the total capacity index of all indoor units connected after the refrigerant branch.

Indoor unit capacity index	2 pipes
<200	KHRQ22M20T
200≤x<290	KHRQ22M29T9
290≤x<640	KHRQ22M64T
≥640	KHRQ22M75T

■ Concerning refnet headers, choose from the following table in accordance with the total capacity of all the indoor units connected below the refnet header.

Indoor unit capacity index	2 pipes
<200	KHRQ22M29H
200≤x<290	KHRQ22M29H
290≤x<640	KHRQ22M64H(a)
≥640	KHRQ22M75H

(a) If the pipe size above the refnet header is Ø34.9 or more, KHRQ22M75H is required.

INFORMATION

Maximum 8 branches can be connected to a header.

■ How to choose an outdoor multi connection piping kit (needed if the outdoor unit capacity type is 22 HP or more). Choose from the following table in accordance with the number of outdoor units.

Number of outdoor units	Branch kit name
2	BHFQ22P1007
3	BHFQ22P1517

The RYYQ22~54 models, consisting of two or three RYMQ modules, require a 3-pipe system. There is an additional equalizing pipe for such modules (in addition to the conventional gas and liquid piping). This equalizing pipe does not exist for RYYQ8~20 or RYXQ8~54 units.

The equalizing pipe connections for the different RYMQ modules are mentioned in below table.

RYMQ	Equalizing pipe Ø (mm)
8	19.1
10	22.2
12	
14	
16	
18	28.6
20	

4P329765-1C (2/5)

12 Installation

12 - 3 Refrigerant Pipe Selection

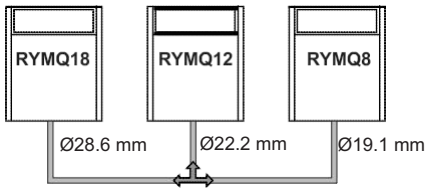
RXYQ-T(8)
RYYQ-T(8)
RYMQ-T

Deciding the equalizing pipe diameter:

- In case of 3 multi units: the connection diameter of outdoor to T-joint has to be kept.
- In case of 2 multi units: the connection pipe has to have the largest diameter.

There is never a connection of the equalizing pipe with the indoor units.

Example (free multi combination): RYMQ8+RYMQ12+RYMQ18. Largest connection is Ø28.6 (RYMQ18); Ø22.2 (RYMQ12) and Ø19.1 (RYMQ8). In figure below only equalizing pipe is shown.



INFORMATION

Reducers or T-joints are field supplied.

NOTICE

Refrigerant branch kits can only be used with R410A.

INFORMATION

Equalizing pipe for RYMQ has to be connected between the outdoor modules of multi continuous heating models: RYYQ22~54 consisting of 2 or 3 RYMQ8~20 modules. The equalizing pipe should never have a connection to any indoor unit.

1.5. System piping (length) limitations

1.5.1. Piping length restrictions

Make sure to perform the piping installation within the range of the maximum allowable pipe length, allowable level difference and allowable length after branching as indicated below. Three patterns will be discussed, including VRV DX indoor units combined with Hydrobox units or RA DX indoor units.

Definitions

Actual piping length: pipe length between outdoor(1) and indoor units.

Equivalent piping length(2): pipe length between outdoor(1) and indoor units.

Total piping length: total piping length from the outdoor(1) to all indoor units.

Difference in height between outdoor and indoor units: H1.

Difference in height between indoor and indoor units: H2.

Difference in height between outdoor and outdoor units: H3.

Difference in height between outdoor and BP unit: H4.

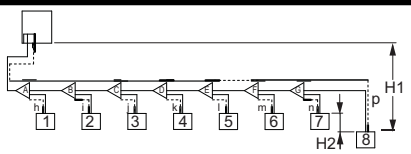
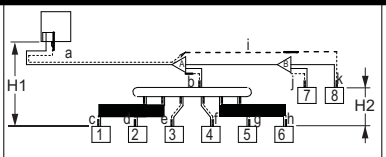
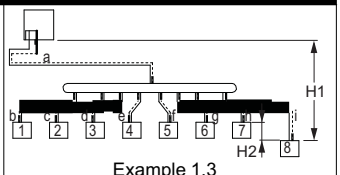
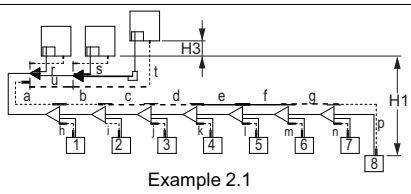
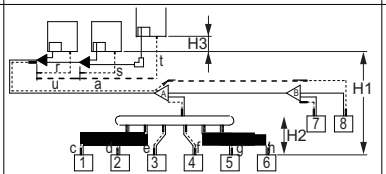
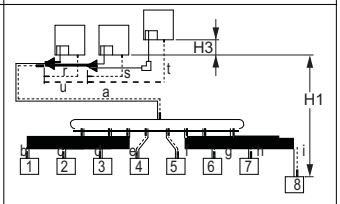
Difference in height between BP unit and BP unit: H5.

Difference in height between BP unit and RA DX indoor unit: H6.

(1) If the system capacity is >20HP, re-read "the first outdoor branch as seen from the indoor unit".
(2) Assume equivalent piping length of refnet joint=0.5 m and refnet header=1 m (for calculation purposes of equivalent piping length, not for refrigerant charge calculations).

1.5.2. System only containing VRV DX indoor units

System setup

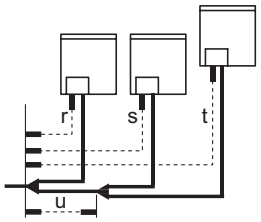
	Branch with refnet joint	Branch with refnet joint and refnet header	Branch with refnet header
Single outdoor	 Example 1.1	 Example 1.2	 Example 1.3
Multi outdoor 1 Indoor unit A Refnet joint Refnet header ◄ Outdoor multi connection piping kit	 Example 2.1		

12 Installation

12 - 3 Refrigerant Pipe Selection

RXYQ-T(8)
RYYQ-T(8)
RYMQ-T

Example 3: with standard multi layout



Maximum allowable length

■ Between outdoor and indoor units (standard multi/free multi combinations)

Actual piping length	**165 m**/135 m	Example 1.1 unit 8: a+b+c+d+e+f+g+p≤165 m Example 2.1 unit 8: a+b+c+d+e+f+g+p≤135 m	Example 1.2 unit 6: a+b+h≤165 m unit 8: a+i+k≤165 m	Example 1.3 unit 8: a+i≤165 m
Equivalent length(2)	**190 m**/160 m	—	—	—
Total piping length	**1000 m**/500 m	Example 1.1 a+b+c+d+e+f+g+h+i+j+k+l+m+n+p≤1000 m Example 2.1 a+b+c+d+e+f+g+h+i+j+k+l+m+n+p≤500 m	—	—

■ Between outdoor branch and outdoor unit (only in case >20 HP)

Actual piping length	10 m	Example 3 r, s, t≤10 m; u≤5 m
Equivalent length	13 m	—

Maximum allowable height difference

H1	≤50 m (40 m)(a) (if outdoor is located below indoor units)
H2	≤30 m
H3	≤5 m

(a) Conditional extension up till 90 m is possible without additional option kit:
In case the outdoor location is higher than indoor: extension is possible up till 90 m and following 2 conditions must be fulfilled:
Liquid piping size up (see table "Size up").
Dedicated setting on outdoor unit is required (see "[2-49]").
In case the outdoor location is lower than indoor: extension is possible up till 90 m and following 6 conditions must be fulfilled:
40~60 m: minimum connection ratio connected: 80%.
60~65 m: minimum connection ratio connected: 90%.
65~80 m: minimum connection ratio connected: 100%.
80~90 m: minimum connection ratio connected: 110%.
Liquid piping size up (see table "Size up").
Dedicated setting on outdoor unit is required (see "[2-35]").

Maximum allowable length after branch

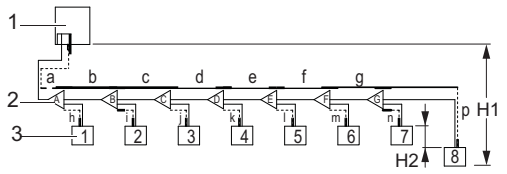
The pipe length from the first refrigerant branch kit to the indoor unit ≤40 m.

Example 1.1: unit 8: b+c+d+e+f+g+p≤40 m

Example 1.2: unit 6: b+h≤40 m, unit 8: i+k≤40 m

Example 1.3: unit 8: i≤40 m

However, extension is possible if all below conditions are met. In this case limitation can be extended up to 90 m.



1 Outdoor units
2 Refnet joints (A~G)
3 Indoor unit (1~8)

a. The piping length between all indoor to the nearest branch kit is ≤40 m.
Example: h, I, j … p≤40 m

b. It is necessary to increase the pipe size of the gas and liquid piping if the pipe length between the first and the final branch kit is over 40 m.
If the increased pipe size is larger than the pipe size of the main pipe, then the pipe size of the main pipe has to be increased as well.
Increase the pipe size as follows:
9.5 → 12.7; 12.7 → 15.9; 15.9 → 19.1; 19.1 → 22.2; 22.2 → 25.4(1); 28.6 → 31.8(3); 34.9 → 38.1(3)
Example: unit 8: b+c+d+e+f+g+p≤90 m and b+c+d+e+f+g >40 m; increase the pipe size of b, c, d, e, f, g.

(1) If available on the site. Otherwise it cannot be increased.

12 Installation

12 - 3 Refrigerant Pipe Selection

RXYQ-T(8)
RYYQ-T(8)
RYMQ-T

12

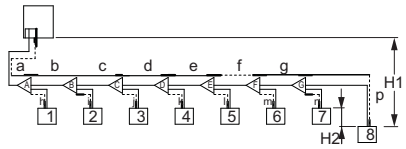
c. When the piping size is increased (step b), the piping length has to be counted as double (except for the main pipe and the pipes that are not increased in pipe size).
The total piping length has to be within limitations (see table above). Example:
a+b*2+c*2+d*2+e*2+f*2+g*2+h+i+j+k+l+m+n+p≤1000 m
(500 m).

d. The piping length difference between the nearest indoor from first branch to the outdoor unit and farthest indoor to the outdoor unit is ≤40 m.
Example: The farthest indoor unit 8. The nearest indoor unit 1 → (a+b+c+d+e+f+g+p)–(a+h)≤40 m.

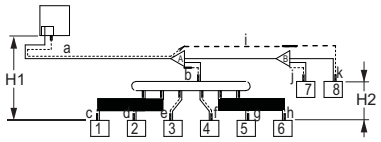
1.5.3. System containing VRV DX indoor units and Hydrobox

System setup

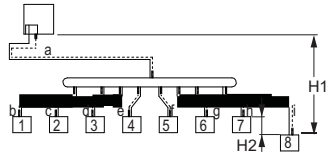
Example 1: Branch with refnet joint.



Example 2: Branch with refnet joint and refnet header.



Example 3: Branch with refnet header



1~7 VRV DX indoor units
8 Hydrobox unit (HXY*)

Maximum allowable length

Between outdoor and indoor units.

Actual piping length	135 m	Example 1: a+b+c+d+e+f+g+p≤135 m a+b+c+d+k≤135 m
		Example 2: a+i+k≤135 m a+b+e≤135 m
		Example 3: a+i≤135 m a+d≤135 m
Equivalent length(a)	160 m	—
Total piping length	300 m	Example 3: a+b+c+d+e+f+g+h+i≤300 m

(a) Assume equivalent piping length of refnet joint=0.5 m and refnet header=1 m (for calculation purposes).

Maximum allowable height difference (on Hydrobox indoor unit)

H1	≤50 m (40 m) (if outdoor is located below indoor units)
H2	≤15 m

Maximum allowable length after branch

The pipe length from the first refrigerant branch kit to the indoor unit ≤40 m.

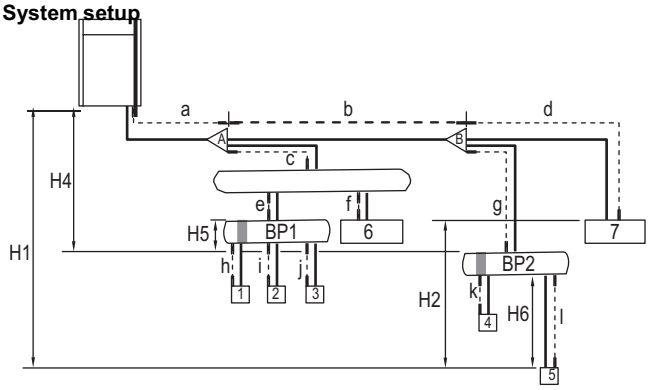
Example 1: unit 8: b+c+d+e+f+g+p≤40 m

Example 2: unit 6: b+h≤40 m, unit 8: i+k≤40 m

Example 3: unit 8: i≤40 m, unit 2: c≤40 m

1.5.4. System containing VRV DX indoor units and RA DX indoor units

System setup



Header
BP box
1~5 RA DX indoor units
6,7 VRV DX indoor units

Maximum allowable length

■ Between outdoor unit and indoor unit.

Actual piping length	100 m	Example: a+b+g+l≤100 m
Equivalent length(a)	120 m	—
Total piping length	250 m	Example: a+b+d+g+l+k+c+e+f+h+i+j≤250 m

(a) Assume equivalent piping length of refnet joint=0.5 m and refnet header=1 m (for calculation purposes).

■ Between BP unit and indoor unit.

Indoor unit capacity index	Pipe length
<60	2~15 m
60	2~12 m
71	2~8 m

Remark:

Minimum allowable length between outdoor unit and first refrigerant branch kit>5 m (the refrigerant noise from the outdoor unit can be transmitted).

Example: a>5 m

Maximum allowable height difference

H1	≤50 m (40 m) (if outdoor is located below indoor units)
H2	≤15 m
H4	≤40 m
H5	≤15 m
H6	≤5 m

Maximum allowable length after branch

The pipe length from the first refrigerant branch kit to the indoor unit ≤50 m.

Example: b+g+l≤50 m

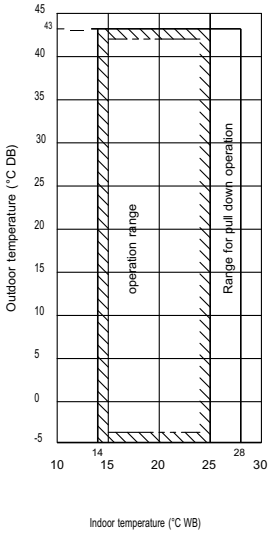
If the piping length between the first branch and BP unit or VRV DX indoor unit is over 20 m, it is necessary to increase the gas and liquid piping size between the first branch and BP unit or VRV DX indoor unit. If the piping diameter of the sized up piping exceeds the diameter of the piping before the first branch kit, than the latter also requires a liquid piping and gas piping size up.

13 Operation range

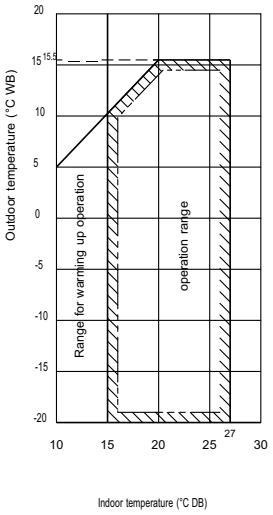
13 - 1 Operation Range

RXYQ-T(8)
RYYQ-T(8)
RYMQ-T
RXYQQ-T

Cooling



Heating



NOTES:

1. THESE FIGURES ASSUME THE FOLLOWING OPERATION CONDITIONS:

   INDOOR AND OUTDOOR UNITS:
   EQUIVALENT PIPE LENGTH: 5m
   LEVEL DIFFERENCE: 0m

2. DEPENDING ON OPERATION AND INSTALLATION CONDITIONS, THE INDOOR UNIT CAN CHANGE OVER TO FREEZE-UP OPERATION (INDOOR DE-ICING).

3. TO REDUCE THE FREEZE-UP OPERATION (INDOOR DE-ICING) FREQUENCY IT IS RECOMMENDED TO INSTALL THE OUTDOOR UNIT IN A LOCATION NOT EXPOSED TO WIND.

4. OPERATION RANGE IS VALID IN CASE DIRECT EXPANSION INDOOR UNITS ARE USED. IN CASE SPECIAL INDOOR UNITS ARE USED, (eg. HYDROBOX), REFER TO TECHNICAL SPECS OF THE DEDICADED UNIT.

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