VRV 5 heat pump Air Conditioning Technical Data

RXYA-A

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RXYA10A7Y1B
RXYA12A7Y1B
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EEDEN23

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The sustainability champion

- Reduced CO2 equivalent thanks to the use of lower GWP R-32 refrigerant and lower refrigerant charge
- Top sustainability over the entire lifecycle, thanks to market leading real-life seasonal efficiency
- Tackle small room applications without any additional measures, thanks to Shîrudo technology
- Specially designed indoor units for R-32, ensuring low sound and maximum efficiency
- Provides highly efficient heating or cooling
- Incorporates VRV 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

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Technical Specifications					RXYA8A	RXYA10A	RXYA12A	RXYA14A
Recommended combination					4 x FXFA50A2VEB	4 x FXFA63A2VEB	6 x FXFA50A2VEB	1 x FXFA50A2VEB + 5 x FXFA63A2VEB
Recommended combination 2					4 x FXSA50A2VEB	4 x FXSA63A2VEB	6 x FXSA50A2VEB	1 x FXSA50A2VEB + 5 x FXSA63A2VEB
Cooling capacity	Prated,c			kW	22.4 (1)	28.0 (1)	33.5 (1)	40.0 (1)
Heating capacity	Nom.	6°CWB		kW	22.4 (2)	28.0 (2)	33.5 (2)	40.0 (2)
	Prated,h			kW	22.4 (2)	28.0 (2)	33.5 (2)	40.0 (2)
	Max.	6°CWB		kW	25.0 (2)	31.5 (2)	37.5 (2)	45.0 (2)
Power input	Heating	Nom.	6°CWB	kW	5.85 (2)	8.12 (2)	9.69 (2)	11.20 (2)
COP at nom. capacity	6°CWB			kW/kW	3.83 (2)	3.45 (2)	3.46 (2)	3.57 (2)
SCOP					4.11	4.33	4.49	4.28
SCOP recommended combination 2					4.10	4.34	4.56	4.33
SEER					7.26	7.06	7.04	7.63
SEER recommended combination 2					6.97	6.85	6.62	7.40
ηs,c				%	287.3	279.3	278.7	302.2
ηs,c recommended combination 2				%	275.9	270.9	261.9	292.9
ηs,h				%	161.5	170.2	176.4	168.3
ηs,h recommended combination 2				%	161.1	170.4	179.5	170.2
Space cooling	A Condition	EERd			3.09	3.06	3.05	3.11
	(35°C - 27/19)	Pdc		kW	22.4	28.0	33.5	40.0
	B Condition	EERd			5.13	4.95	4.49	4.84
	(30°C - 27/19)	Pdc		kW	16.5	20.6	24.7	29.5
	C Condition	EERd			9.12	8.51	8.34	8.74
	(25°C - 27/19)	Pdc		kW	10.6	13.3	15.9	18.9
	D Condition	EERd			15.3	14.8	17.5	22.5
	(20°C - 27/19)	Pdc		kW	8.13	8.19	8.57	10.93
Space cooling recommended combination 2	A Condition	EERd			3.02	2.93	2.89	3.02
	(35°C - 27/19)	Pdc		kW	22.4	28.0	33.5	40.0
	B Condition	EERd			4.99	4.82	4.32	4.78
	(30°C - 27/19)	Pdc		kW	16.5	20.6	24.8	29.5
	C Condition	EERd			8.58	8.23	7.64	8.33
	(25°C - 27/19)	Pdc		kW	10.6	13.3	15.9	18.9
	D Condition	EERd			14.58	14.40	16.23	21.53
	(20°C - 27/19)	Pdc		kW	7.82	7.97	8.20	10.6
Space heating (Average climate)	TBivalent	COPd (declared COP)			2.80	2.28	2.38	2.57
		Pdh (declared heating cap)		kW	13.7	16.0	18.4	20.6
		Tbiv (bivalent temperature)		°C	-10			
	TOL	COPd (declared COP)			2.80	2.28	2.38	2.57
Space heating (Average climate)	TOL	Pdh (declared heating cap)		kW	13.7	16.0	18.4	20.6
		Tol (temperature operating limit)		°C	-10			
	A Condition	COPd (declared COP)			3.06	2.67	2.84	2.94
	(-7°C)	Pdh (declared heating cap)		kW	12.1	14.2	16.3	18.2
	B Condition	COPd (declared COP)			3.81	4.23	4.15	3.86
	(2°C)	Pdh (declared heating cap)		kW	7.38	8.62	9.89	11.1
	C Condition	COPd (declared COP)			5.27	5.70	6.32	6.31
	(7°C)	Pdh (declared heating cap)		kW	4.76	5.54	6.36	7.14
	D Condition	COPd (declared COP)			7.04	7.92	9.14	6.68
	(12°C)	Pdh (declared heating cap)		kW	4.51	5.46	5.52	5.15
Space heating (Average climate) recommended combination 2	A Condition	COPd (declared COP)			3.00	2.62	2.83	2.95
	(-7°C)	Pdh (declared heating cap)		kW	12.1	14.2	16.3	18.2
	B Condition	COPd (declared COP)			3.80	4.24	4.26	3.89
	(2°C)	Pdh (declared heating cap)		kW	7.45	8.61	9.89	11.1
	C Condition	COPd (declared COP)			5.35	5.79	6.39	6.45
	(7°C)	Pdh (declared heating cap)		kW	4.76	5.54	6.36	7.14
	D Condition	COPd (declared COP)			7.04	7.91	9.39	6.94
	(12°C)	Pdh (declared heating cap)		kW	4.71	5.60	5.80	5.33
	TBivalent	COPd (declared COP)			2.73	2.32	2.38	2.58
		Pdh (declared heating cap)		kW	13.7	16.0	18.4	20.6
		Tbiv (bivalent temperature)		°C	-10			
	TOL	COPd (declared COP)			2.73	2.32	2.38	2.58
		Pdh (declared heating cap)		kW	13.7	16.0	18.4	20.6
		Tol (temperature operating limit)		°C	-10			
Capacity range				HP	8	10	12	14
PED	Category				Category III			
	Most critical part	Name			Liquid receiver			
		Ps*V		Bar*l	508			612
Maximum number of connectable indoor units					64 (3)			
Indoor index connection	Min.				100	125	150	175
	Max.				260	325	390	455

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Technical Specifications					RXYA8A	RXYA10A	RXYA12A	RXYA14A
Dimensions	Unit	Height		mm	1,685			
		Width		mm	930			1,240
		Depth		mm	765			
	Packed unit	Height		mm	1,820			
		Width		mm	995			1,305
		Depth		mm	860			
Weight	Unit			kg	214			297
	Packed unit			kg	225			310
Packing	Material				Carton			
	Weight			kg	1.5			1.8
Packing 2	Material				Wood			
	Weight			kg	8.9			11.0
Packing 3	Material				Plastic			
	Weight			kg	0.6			0.7
Casing	Colour				Daikin White			
	Material				Painted galvanized steel plate			
Heat exchanger	Type				Cross fin coil			
	Indoor side				Air			
	Outdoor side				Air			
	Air flow rate	Cooling	Rated	m^3/h	9,145	9,709	10,823	11,576
		Heating	Rated	m^3/h	9,145	9,709	10,823	13,124
Fan	Quantity				1			2
	External static pressure	Max.		Pa	78			
Fan motor	Quantity				1			2
	Type				DC motor			
	Output			W	550			750
Compressor	Quantity				1			
	Type				Hermetically sealed scroll compressor			
	Crankcase heater			W	33			
Operation range	Cooling	Min.		°CDB	-5			
		Max.		°CDB	46			
	Heating	Min.		°CWB	-20			
		Max.		°CWB	16			
Sound power level	Cooling	Nom.		dBA	78.3 (4)	78.8 (4)	82.5 (4)	79.5 (4)
	Heating	Nom.		dBA	79.4 (4)	80.7 (4)	83.3 (4)	82.9 (4)
Sound pressure level	Cooling	Nom.		dBA	56.3 (5)	58.0 (5)	60.8 (5)	59.0 (5)
	Heating			dBA	58.1 (5)	58.8 (5)	61.9 (5)	61.3 (5)
Refrigerant	Type				R-32			
	GWP				675.0			
	Charge			kg	9.00			10.6
	Charge			tCO2Eq	6.08			7.16
Refrigerant oil	Type				FW68DE			
Piping connections	Liquid	Type			Braze connection			
Piping connections	Liquid	OD		mm	9.52		12.70	
	Gas	Type			Braze connection			
		OD		mm	19.1		22.2	
	Total piping length	System	Actual	m	1,000 (6)			
Defrost method					Reversed cycle			
Capacity control	Method				Inverter controlled			
Indication if the heater is equipped with a supplementary heater					No			
Supplementary heater	Back-up capacity	Heating	elbu	kW	0.0			
Power consumption in other than active mode	Crankcase heater mode	Cooling	PCK	kW	0.000			
		Heating	PCK	kW	0.053			0.058
	Off mode	Cooling	POFF	kW	0.050			0.058
		Heating	POFF	kW	0.053			0.058
	Standby mode	Cooling	PSB	kW	0.050			0.058
		Heating	PSB	kW	0.053			0.058
	Thermo-stat-off mode	Cooling	PTO	kW	0.001			
		Heating	PTO	kW	0.053			0.058
Cooling	Cdc (Degradation cooling)				0.25			
Heating	Cdh (Degradation heating)				0.25			
Safety devices	Item	01			High pressure switch			
		02			Fan driver overload protector			
		03			Inverter overload protector			

Technical Specifications	RXYA16A	RXYA18A	RXYA20A
Recommended combination	4 x FXFA63A2VEB + 2 x FXFA80A2VEB	3 x FXFA50A2VEB + 5 x FXFA63A2VEB	8 x FXFA63A2VEB

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Technical Specifications					RXYA16A	RXYA18A	RXYA20A
Recommended combination 2					4 x FXSA63A2VEB + 2 x FXSA80A2VEB	3 x FXSA50A2VEB + 5 x FXSA63A2VEB	8 x FXSA63A2VEB
Cooling capacity	Prated,c			kW	45.0 (1)	50.4 (1)	56.0 (1)
Heating capacity	Nom.	6°CWB		kW	45.0 (2)	50.4 (2)	56.0 (2)
	Prated,h			kW	45.0 (2)	50.4 (2)	56.0 (2)
	Max.	6°CWB		kW	50.0 (2)	56.5 (2)	63.0 (2)
Power input	Heating	Nom.	6°CWB	kW	12.78 (2)	13.79 (2)	16.61 (2)
COP at nom. capacity	6°CWB			kW/kW	3.52 (2)	3.66 (2)	3.37 (2)
SCOP					4.26	4.39	4.14
SCOP recommended combination 2					4.33		4.11
SEER					6.99	6.87	6.52
SEER recommended combination 2					6.88	6.74	6.42
ηs,c				%	276.6	271.6	257.6
ηs,c recommended combination 2				%	272.0	266.7	254.0
ηs,h				%	167.5	172.5	162.7
ηs,h recommended combination 2				%	170.2		161.4
Space cooling	A Condition	EERd			2.97	2.52	2.36
	(35°C - 27/19)	Pdc		kW	45.0	50.4	56.0
	B Condition	EERd			4.65	5.01	4.65
	(30°C - 27/19)	Pdc		kW	33.2	37.1	41.3
	C Condition	EERd			8.15	7.92	7.20
	(25°C - 27/19)	Pdc		kW	21.3	23.9	26.5
	D Condition	EERd			16.5	14.8	16.1
	(20°C - 27/19)	Pdc		kW	11.10	11.19	11.79
Space cooling recommended combination 2	A Condition	EERd			2.88	2.44	2.28
	(35°C - 27/19)	Pdc		kW	45.0	50.4	56.0
	B Condition	EERd			4.60	4.41	
	(30°C - 27/19)	Pdc		kW	33.2	37.1	41.3
	C Condition	EERd			7.98	7.83	7.41
	(25°C - 27/19)	Pdc		kW	21.3	23.9	26.5
	D Condition	EERd			16.23	18.25	15.94
	(20°C - 27/19)	Pdc		kW	10.8	10.9	11.8
Space heating (Average climate)	TBivalent	COPd (declared COP)			2.53	2.36	2.23
		Pdh (declared heating cap)		kW	23.2	27.9	31.0
		Tbiv (bivalent temperature)		°C	-10		
	TOL	COPd (declared COP)			2.53	2.36	2.23
Space heating (Average climate)	TOL	Pdh (declared heating cap)		kW	23.2	27.9	31.0
		Tol (temperature operating limit)		°C	-10		
	A Condition	COPd (declared COP)			2.87	2.70	2.60
	(-7°C)	Pdh (declared heating cap)		kW	20.5	24.7	27.4
	B Condition	COPd (declared COP)			3.93	4.19	3.84
	(2°C)	Pdh (declared heating cap)		kW	12.5	15.0	16.7
	C Condition	COPd (declared COP)			6.21	6.22	5.92
	(7°C)	Pdh (declared heating cap)		kW	8.03	9.66	10.7
	D Condition	COPd (declared COP)			6.04	6.85	7.53
	(12°C)	Pdh (declared heating cap)		kW	5.07	6.24	7.16
Space heating (Average climate) recommended combination 2	A Condition	COPd (declared COP)			2.89	2.62	2.54
	(-7°C)	Pdh (declared heating cap)		kW	20.5	24.7	27.5
	B Condition	COPd (declared COP)			3.96	4.07	3.79
	(2°C)	Pdh (declared heating cap)		kW	12.5	15.0	16.7
	C Condition	COPd (declared COP)			6.41	6.19	5.98
	(7°C)	Pdh (declared heating cap)		kW	8.04	9.65	10.7
	D Condition	COPd (declared COP)			6.47	8.15	7.81
	(12°C)	Pdh (declared heating cap)		kW	5.36	7.68	7.62
	TBivalent	COPd (declared COP)			2.54	2.28	2.18
		Pdh (declared heating cap)		kW	23.2	27.9	31.0
		Tbiv (bivalent temperature)		°C	-10		
	TOL	COPd (declared COP)			2.54	2.28	2.18
		Pdh (declared heating cap)		kW	23.2	27.9	31.0
		Tol (temperature operating limit)		°C	-10		
Capacity range				HP	16	18	20
PED	Category				Category III		
	Most critical part	Name			Liquid receiver		
		Ps*V		Bar*l	612	764	
Maximum number of connectable indoor units					64 (3)		
Indoor index connection	Min.				200	225	250
	Max.				520	585	650
Dimensions	Unit	Height		mm	1,685		
		Width		mm	1,240		
		Depth		mm	765		
	Packed unit	Height		mm	1,820		
		Width		mm	1,305		
		Depth		mm	860		

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Technical Specifications					RXYA16A	RXYA18A	RXYA20A
Weight	Unit			kg	297	320	
	Packed unit			kg	310	333	
Packing	Material				Carton		
	Weight			kg	1.8		
Packing 2	Material				Wood		
	Weight			kg	11.0		
Packing 3	Material				Plastic		
	Weight			kg	0.7		
Casing	Colour				Daikin White		
	Material				Painted galvanized steel plate		
Heat exchanger	Type				Cross fin coil		
	Indoor side				Air		
	Outdoor side				Air		
	Air flow rate	Cooling	Rated	m^3/h	14,315	12,351	14,893
		Heating	Rated	m^3/h	14,315	12,351	14,893
Fan	Quantity				2		
	External static pressure	Max.		Pa	78		
Fan motor	Quantity				2		
	Type				DC motor		
	Output			W	750		
Compressor	Quantity				1		
	Type				Hermetically sealed scroll compressor		
	Crankcase heater			W	33		
Operation range	Cooling	Min.		°CDB	-5		
		Max.		°CDB	46		
	Heating	Min.		°CWB	-20		
		Max.		°CWB	16		
Sound power level	Cooling	Nom.		dBA	83.7 (4)	83.4 (4)	87.9 (4)
	Heating	Nom.		dBA	86.3 (4)	85.1 (4)	89.6 (4)
Sound pressure level	Cooling	Nom.		dBA	61.6 (5)	63.0 (5)	67.0 (5)
	Heating			dBA	64.5 (5)	64.0 (5)	68.0 (5)
Refrigerant	Type				R-32		
	GWP				675.0		
	Charge			kg	10.6		
	Charge			tCO2Eq	7.16		
Refrigerant oil	Type				FW68DE		
Piping connections	Liquid	Type			Braze connection		
Piping connections	Liquid	OD		mm	12.70		
	Gas	Type			Braze connection		
		OD		mm	28.6		
	Total piping length	System	Actual	m	1,000 (6)		
Defrost method					Reversed cycle		
Capacity control	Method				Inverter controlled		
Indication if the heater is equipped with a supplementary heater					No		
Supplementary heater	Back-up capacity	Heating	elbu	kW	0.0		
Power consumption in other than active mode	Crankcase heater mode	Cooling	PCK	kW	0.000		
		Heating	PCK	kW	0.058		
	Off mode	Cooling	POFF	kW	0.058		
		Heating	POFF	kW	0.058		
	Standby mode	Cooling	PSB	kW	0.058		
		Heating	PSB	kW	0.058		
	Thermo-stat-off mode	Cooling	PTO	kW	0.001		
		Heating	PTO	kW	0.058		
Cooling	Cdc (Degradation cooling)				0.25		
Heating	Cdh (Degradation heating)				0.25		
Safety devices	Item	01			High pressure switch		
		02			Fan driver overload protector		
		03			Inverter overload protector		

Standard accessories: Installation and operation manual;Quantity: 1;

Standard accessories: Connection pipes;Quantity: 1;

Electrical Specifications			RXYA8A	RXYA10A	RXYA12A	RXYA14A
Power supply	Name		Y1			
	Phase		3N~			
	Frequency	Hz	50			
	Voltage	V	380-415			

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Electrical Specifications				RXYA8A	RXYA10A	RXYA12A	RXYA14A
Power supply intake				Both indoor and outdoor unit			
Voltage range	Min.		%	-10			
	Max.		%	10			
Power Performance	Power factor	Cooling	Nom.	1			
Current - 50Hz	Nominal running current (RLA)	Cooling	A	10.5 (8)	13.4 (8)	15.7 (8)	18.8 (8)
	Starting current (MSC) - remark			See note 9			
	Zmax	List		No requirements			
	Minimum Ssc value		kVa	2,789 (10)	3,810 (10)	4,157 (10)	4,676 (10)
	Minimum circuit amps (MCA)		A	16.1 (11)	22.0 (11)	24.0 (11)	27.0 (11)
	Maximum fuse amps (MFA)		A	20 (12)	25 (12)	32 (12)	
Wiring connections - 50Hz	For power supply	Quantity		5G			
	For connection with indoor	Quantity		2			
		Remark		F1,F2			
Compressor	Crankcase heater		W	33			

Electrical Specifications				RXYA16A	RXYA18A	RXYA20A
Power supply	Name			Y1		
	Phase			3N~		
	Frequency		Hz	50		
	Voltage		V	380-415		
Power supply intake				Both indoor and outdoor unit		
Voltage range	Min.		%	-10		
	Max.		%	10		
Power Performance	Power factor	Cooling	Nom.	1		
Current - 50Hz	Nominal running current (RLA)	Cooling	A	21.4 (8)	27.8 (8)	32.8 (8)
	Starting current (MSC) - remark			See note 9		
	Zmax	List		No requirements		
	Minimum Ssc value		kVa	5,369 (10)	6,062 (10)	7,274 (10)
	Minimum circuit amps (MCA)		A	31.0 (11)	35.0 (11)	42.0 (11)
	Maximum fuse amps (MFA)		A	40 (12)		50 (12)
Wiring connections - 50Hz	For power supply	Quantity		5G		
	For connection with indoor	Quantity		2		
		Remark		F1,F2		
Compressor	Crankcase heater		W	33		

(1)Cooling: indoor temp. 27°CDB, 19°CWB; outdoor temp. 35°CDB; equivalent piping length: 7.5m; level difference: 0m |
(2)Heating: indoor temp. 20°CDB; outdoor temp. 7°CDB, 6°CWB; equivalent refrigerant piping: 7.5m; level difference: 0m |
(3)The actual number of units depends on the connection ratio (CR) and the restrictions for the system. |
(4)Air Flow Rate (AFR) of multi outdoor systems is sum of AFR of the individual systems it consists of |
(5)Sound power level is an absolute value that a sound source generates. |
(6)Sound pressure level is a relative value, depending on the distance and acoustic environment. For more details, please refer to the sound level drawings. |
(7)Refer to refrigerant pipe selection or installation manual |
(8)RLA is based on following conditions: indoor temp. 27°CDB, 19°CWB; outdoor temp. 35°CDB |
(9)MSC means the maximum current during start up of the compressor. This unit uses only inverter compressors. Starting current is always ≤ max. running current. |
(10)In accordance with EN/IEC 61000-3-12, it may be necessary to consult the distribution network operator to ensure that the equipment is connected only to a supply wih Ssc ≥ minimum Ssc value |
(11)MCA must be used to select the correct field wiring size. The MCA can be regarded as the maximum running current. |
(12)MFA is used to select the circuit breaker and the ground fault circuit interrupter (earth leakage circuit breaker). |
(13)Maximum allowable voltage range variation between phases is 2%. |
(14)Voltage range: units are suitable for use on electrical systems where voltage supplied to unit terminal is not below or above listed range limits. |
(15)Sound values are measured in a semi-anechoic room. |
(16)EN/IEC 61000-3-12: European/international technical standard setting the limits for harmonic currents produced by equipment connected to public low-voltage system with input current > 16A and ≤ 75A per phase |
(17)Ssc: Short-circuit power |
(18)For detailed contents of standard accessories, see installation/operation manual |
(19)Multi combination (10~20HP) data is corresponding with the standard multi combination

Technical specifications System				RXYA10A	RXYA13A	RXYA16A	RXYA18A	RXYA20A
System	Outdoor unit module 1			RYMA5A		RXYA8A		
	Outdoor unit module 2			RYMA5A	RXYA8A		RXYA10A	RXYA12A
Recommended combination				4 x FXFA63A2VEB	3 x FXFA50A2VEB + 3 x FXFA63A2VEB	4 x FXFA63A2VEB + 2 x FXFA80A2VEB	4 x FXFA50A2VEB + 4 x FXFA63A2VEB	10 x FXFA50A2VEB
Recommended combination 2				4 x FXSA63A2VEB	3 x FXSA50A2VEB + 3 x FXSA63A2VEB	4 x FXSA63A2VEB + 2 x FXSA80A2VEB	4 x FXSA50A2VEB + 4 x FXSA63A2VEB	10 x FXSA50A2VEB
Continuous heating				Yes				
Cooling capacity	Prated,c		kW	28.0 (1)	36.4 (1)	44.8 (1)	50.4 (1)	55.9 (1)
Heating capacity	Nom.	6°CWB	kW	28.0 (2)	36.4 (2)	44.8 (2)	50.4 (2)	55.9 (2)
	Prated,h		kW	28.0 (2)	36.4 (2)	44.8 (2)	50.4 (2)	55.9 (2)
	Max.	6°CWB	kW	32.0 (2)	41.0 (2)	50.0 (2)	56.5 (2)	62.5 (2)

2 Specifications

2 - 1 Specifications

Technical specifications System					RXYA10A	RXYA13A	RXYA16A	RXYA18A	RXYA20A
Power input	Heating	Nom.	6°CWB	kW	7.66 (2)	9.69 (2)	12.05 (2)	13.97 (2)	15.54 (2)
COP at nom. capacity	6°CWB			kW/kW	3.66 (2)	3.76 (2)	3.72 (2)	3.61 (2)	3.60 (2)
SCOP					4.09	4.11	4.35	4.34	4.38
SCOP recommended combination 2					4.13	4.19	4.38	4.40	4.48
SEER					7.55	7.42	7.12	7.18	7.16
SEER recommended combination 2					7.23	7.08	6.87	6.85	6.86
ηs,c				%	299.1	293.8	281.9	284.1	283.2
ηs,c recommended combination 2				%	286.1	280.1	271.8	270.9	271.2
ηs,h				%	160.6	161.5	170.9	170.5	172.2
ηs,h recommended combination 2				%	162.2	164.8	172.2	173.0	176.2
Space cooling	A Condition	EERd			3.68	3.39	3.17	3.19	3.12
	(35°C - 27/19)	Pdc		kW	28.0	36.4	44.8	50.4	55.9
	B Condition	EERd			7.57	5.94	5.18		4.88
	(30°C - 27/19)	Pdc		kW	20.6	26.8	33.0	37.1	41.2
	C Condition	EERd			8.99	9.04	8.63	8.59	8.53
	(25°C - 27/19)	Pdc		kW	13.5	18.0	21.2	23.9	26.5
	D Condition	EERd			11.5	13.9	14.8	14.9	16.3
	(20°C - 27/19)	Pdc		kW	14.10	15.50	15.90	16.30	16.70
Space cooling recommended combination 2	A Condition	EERd			3.53	3.27	3.05	3.17	3.02
	(35°C - 27/19)	Pdc		kW	28.0	36.4	44.8	50.4	55.9
	B Condition	EERd			7.14	5.65	4.97	4.91	4.68
	(30°C - 27/19)	Pdc		kW	20.6	26.8	33.0	37.1	41.2
	C Condition	EERd			8.53		8.32	8.11	8.09
	(25°C - 27/19)	Pdc		kW	13.4	17.8	21.2	23.9	26.5
	D Condition	EERd			11.19	13.26	14.20	14.04	15.50
	(20°C - 27/19)	Pdc		kW	13.8	15.0	15.5	15.8	16.0
Space heating (Average climate)	TBivalent	COPd (declared COP)			2.69	2.74	2.87	2.51	2.55
Space heating (Average climate)	TBivalent	Pdh (declared heating cap)		kW	16.0	21.7	23.2	27.9	31.0
		Tbiv (bivalent temperature)		°C			-10		
	TOL	COPd (declared COP)			2.69	2.74	2.87	2.51	2.55
		Pdh (declared heating cap)		kW	16.0	21.7	23.2	27.9	31.0
		Tol (temperature operating limit)		°C			-10		
	A Condition	COPd (declared COP)			3.00	3.03	3.18	2.87	2.95
	(-7°C)	Pdh (declared heating cap)		kW	14.2	19.2	20.5	24.7	27.4
	B Condition	COPd (declared COP)			4.37	4.02	4.17	4.20	4.09
	(2°C)	Pdh (declared heating cap)		kW	8.60	11.7	12.5	15.0	16.7
	C Condition	COPd (declared COP)			4.70	5.11	5.45	5.60	5.90
	(7°C)	Pdh (declared heating cap)		kW	7.17	8.40	8.05	9.66	10.7
	D Condition	COPd (declared COP)			5.57	6.47	6.93	7.49	8.06
	(12°C)	Pdh (declared heating cap)		kW	8.74	8.93	9.04	9.97	10.0
Space heating (Average climate) recommended combination 2	A Condition	COPd (declared COP)			3.02	3.05	3.18	2.86	2.96
	(-7°C)	Pdh (declared heating cap)		kW	14.2	19.2	20.5	24.7	27.4
	B Condition	COPd (declared COP)			4.42	4.12	4.18	4.27	4.21
	(2°C)	Pdh (declared heating cap)		kW	8.64	11.7	12.5	15.0	16.7
	C Condition	COPd (declared COP)			4.76	5.24	5.57	5.78	6.07
	(7°C)	Pdh (declared heating cap)		kW	7.31	8.54	8.08	9.65	10.7
	D Condition	COPd (declared COP)			5.62	6.58	6.97	7.59	8.30
	(12°C)	Pdh (declared heating cap)		kW	8.87	9.17	9.24	10.3	10.5
	TBivalent	COPd (declared COP)			2.70	2.75	2.87	2.27	2.34
		Pdh (declared heating cap)		kW	16.0	21.7	23.2	27.9	31.0
		Tbiv (bivalent temperature)		°C			-10		
	TOL	COPd (declared COP)			2.70	2.75	2.87	2.27	2.34
		Pdh (declared heating cap)		kW	16.0	21.7	23.2	27.9	31.0
		Tol (temperature operating limit)		°C			-10		
Capacity range				HP	10	13	16	18	20
PED	Category						Category III		
Maximum number of connectable indoor units							64 (3)		
Indoor index connection	Min.				125	163	200	225	250
	Max.				325	423	520	585	650
Heat exchanger	Indoor side						Air		
	Outdoor side						Air		
	Air flow rate	Cooling	Rated	m^3/h		18,290 (4)		18,854 (4)	19,968 (4)
		Heating	Rated	m^3/h		18,290 (4)		18,854 (4)	19,968 (4)
Sound power level	Cooling	Nom.		dBA		81.3 (5)		81.6 (5)	83.9 (5)
Sound power level	Heating	Nom.		dBA		82.4 (5)		83.1 (5)	84.8 (5)
Sound pressure level	Cooling	Nom.		dBA		59.3 (6)		60.2 (6)	62.1 (6)
	Heating			dBA		61.1 (6)		61.5 (6)	63.4 (6)
Refrigerant	Type						R-32		
	GWP						675.0		
Refrigerant oil	Type						FW68DE		

2 Specifications

2 - 1 Specifications

Technical specifications System					RXYA10A	RXYA13A	RXYA16A	RXYA18A	RXYA20A
Piping connections	Liquid	Type			Braze connection				
		OD		mm	9.50	12.70			
	Gas	Type			Braze connection				
		OD		mm	19.1	22.2	28.6		
	Equalizing	Type			Braze connection				
		OD		mm	19.1				
	Total piping length	System	Actual	m	500 (7)				
Defrost method					Reversed cycle				
Capacity control	Method				Inverter controlled				
Indication if the heater is equipped with a supplementary heater					No				
Supplementary heater	Back-up capacity	Heating	elbu	kW	0.0				
Power consumption in other than active mode	Crankcase heater mode	Cooling	PCK	kW	0.000				
		Heating	PCK	kW	0.106				
	Off mode	Cooling	POFF	kW	0.100				
		Heating	POFF	kW	0.106				
	Standby mode	Cooling	PSB	kW	0.100				
		Heating	PSB	kW	0.106				
	Thermo-stat-off mode	Cooling	PTO	kW	0.002				
		Heating	PTO	kW	0.106				
Cooling	Cdc (Degradation cooling)				0.25				
Heating	Cdh (Degradation heating)				0.25				

Electrical specifications System				RXYA10A	RXYA13A	RXYA16A	RXYA18A	RXYA20A
Power supply	Name			Y1				
	Phase			3N~				
	Frequency		Hz	50				
	Voltage		V	380-415				
Power supply intake				Both indoor and outdoor unit				
Voltage range	Min.		%	-10				
	Max.		%	10				
Power Performance	Power factor	Cooling	Nom.	1				
Current - 50Hz	Nominal running current (RLA)	Cooling	A	11.2 (8)	16.1 (8)	21 (8)	23.9 (8)	26.2 (8)
	Starting current (MSC) - remark			See note 9				
	Zmax	List		No requirements				
	Minimum Ssc value		kVa	5,196 (10)	5,387 (10)	5,577 (10)	6,599 (10)	6,945 (10)
	Minimum circuit amps (MCA)		A	30.0 (11)	31.1 (11)	32.2 (11)	38.1 (11)	40.1 (11)
	Maximum fuse amps (MFA)		A	40 (12)			50 (12)	
Wiring connections - 50Hz	For power supply	Quantity		5G				
	For connection with indoor	Quantity		2				
		Remark		F1,F2				

Technical specifications Module				RYMA5A
Cooling capacity	Prated,c		kW	14.0 (1)
Heating capacity	Max.	6°CWB	kW	16.0 (2)
Capacity range			HP	5
PED	Category			Category III
	Most critical part	Name		Liquid receiver
		Ps*V	Bar*l	508
Maximum number of connectable indoor units				64 (3)
Indoor index connection	Min.			63
	Max.			163
Dimensions	Unit	Height	mm	1,685
		Width	mm	930
		Depth	mm	765
	Packed unit	Height	mm	1,820
		Width	mm	995
		Depth	mm	860
Weight	Unit		kg	214
	Packed unit		kg	225
Packing	Material			Carton
	Weight		kg	1.5
Packing 2	Material			Wood
	Weight		kg	8.9

2 Specifications

2 - 1 Specifications

Technical specifications Module					RYMA5A
Packing 3	Material				Plastic
	Weight			kg	0.6
Casing	Colour				Daikin White
	Material				Painted galvanized steel plate
Heat exchanger	Type				Cross fin coil
	Indoor side				Air
	Outdoor side				Air
	Air flow rate	Cooling	Rated	m^3/h	9,145
		Heating	Rated	m^3/h	9,145
Fan	Quantity				1
	External static pressure	Max.		Pa	78
Fan motor	Quantity				1
	Type				DC motor
	Output			W	550
Compressor	Quantity				1
Compressor	Type				Hermetically sealed scroll compressor
	Crankcase heater			W	33
Operation range	Cooling	Min.		°CDB	-5
		Max.		°CDB	46
	Heating	Min.		°CWB	-20
		Max.		°CWB	16
Sound power level	Cooling	Nom.		dBA	78.3 (5)
	Heating	Nom.		dBA	79.4 (5)
Sound pressure level	Cooling	Nom.		dBA	56.3 (6)
	Heating			dBA	58.1 (6)
Refrigerant	Type				R-32
	GWP				675.0
	Charge			kg	9.00
	Charge			tCO2Eq	6.08
Refrigerant oil	Type				FW68DE
Piping connections	Liquid	Type			Braze connection
		OD		mm	9.52
	Gas	Type			Braze connection
		OD		mm	19.1
Defrost method					Reversed cycle
Capacity control	Method				Inverter controlled

Electrical specifications Module					RYMA5A
Power supply	Name				Y1
	Phase				3N~
	Frequency			Hz	50
	Voltage			V	380-415
Power supply intake					Both indoor and outdoor unit
Voltage range	Min.			%	-10
	Max.			%	10
Current - 50Hz	Nominal running current (RLA)	Combination A	Cooling		-
		Combination B	Cooling		-
		Cooling		A	5.6 (8)
	Starting current (MSC) - remark				See note 9
	Zmax	List			No requirements
	Minimum Ssc value			kVa	2,598 (10)
	Minimum circuit amps (MCA)			A	15.0 (11)
	Maximum fuse amps (MFA)			A	20 (12)
Power Performance	Power factor	Combination B	35°C ISO - Full load		-
			46°C ISO - Full load		-
Wiring connections - 50Hz	For power supply	Quantity			5G
	For connection with indoor	Quantity			2
		Remark			F1,F2
Compressor	Crankcase heater			W	33

(1)Cooling: indoor temp. 27°CDB, 19°CWB; outdoor temp. 35°CDB; equivalent piping length: 7.5m; level difference: 0m |
(2)Heating: indoor temp. 20°CDB; outdoor temp. 7°CDB, 6°CWB; equivalent refrigerant piping: 7.5m; level difference: 0m |
(3)The actual number of units depends on the connection ratio (CR) and the restrictions for the system. |
(4)Air Flow Rate (AFR) of multi outdoor systems is sum of AFR of the individual systems it consists of |
(5)Sound power level is an absolute value that a sound source generates. |
(6)Sound pressure level is a relative value, depending on the distance and acoustic environment. For more details, please refer to the sound level drawings. |
(7)Refer to refrigerant pipe selection or installation manual |
(8)RLA is based on following conditions: indoor temp. 27°CDB, 19°CWB; outdoor temp. 35°CDB |
(9)MSC means the maximum current during start up of the compressor. This unit uses only inverter compressors. Starting current is always ≤ max. running current. |
(10)In accordance with EN/IEC 61000-3-12, it may be necessary to consult the distribution network operator to ensure that the equipment is connected only to a supply wih Ssc ≥ minimum Ssc value |
(11)MCA must be used to select the correct field wiring size. The MCA can be regarded as the maximum running current. |
(12)MFA is used to select the circuit breaker and the ground fault circuit interrupter (earth leakage circuit breaker). |

2 Specifications

2 - 1 Specifications

(13)Maximum allowable voltage range variation between phases is 2%. |
(14)Voltage range: units are suitable for use on electrical systems where voltage supplied to unit terminal is not below or above listed range limits. |
(15)Sound values are measured in a semi-anechoic room. |
(16)EN/IEC 61000-3-12: European/international technical standard setting the limits for harmonic currents produced by equipment connected to public low-voltage system with input current > 16A and ≤ 75A per phase |
(17)Ssc: Short-circuit power |
(18)For detailed contents of standard accessories, see installation/operation manual |
(19)Multi combination (10~20HP) data is corresponding with the standard multi combination

3 Options

3 - 1 Options

RXYA-A
RYMA5A

VRV5	R32 models
Heat Pump	
Option list	

Nr.	Description		Option	RXYA*A* 8	10	12	14	16	18	20	RYMA*A* 5	Multi ·2· unit
1	Bottom Plate heater		EKBPH012TA	O	O	O	-	-	-	-	O	O (*1)
	Bottom Plate heater		EKBPH020TA	-	-	-	O	O	O	O	-	-
2	Demand adaptor kit	(*2)	DTA104A61/62*	O	O	O	O (*3)	O (*3)	O (*3)	O (*3)	O	O
3	External control adapter	(*2)	DTA109A51	O	O	O	O (*3)	O (*3)	O (*3)	O (*3)	O	O
4	Demand PCB Mounting Plate		EKSB26B2	-	-	-	O	O	O	O	-	-
5	Cool/heat selector (switch)		KRC19-26	O (*4)	O (*4)	O (*4)	O (*4)	O (*4)	O (*4)	O (*4)	O (*4)	O (*4) (*5)
6	Cool/heat selector (PCB)		EKBRP2A81	O	O	O	O	O	O	O	O	O (*5)
7	Cool/heat selector (fixing box)		KJB111A	O	O	O	O	O	O	O	O	O (*5)
8a	Refnet header	(*6)	KHRQ22M29H	O	O	O	O	O	O	O	O	O
			KHRA22M65H	-	-	O	O	O	O	O	O	O
	Refnet joint	(*6)	KHRQ22M20TA	O	O	O	O	O	O	O	O	O
			KHRQ22M29T9	O	O	O	O	O	O	O	O	O
			KHRA22M65T	-	-	O	O	O	O	O	O	O
8b	Refnet header	(*6)	KHRQM22M29H9	O	O	O	O	O	O	O	O	O
			KHRAM22M65H	-	-	O	O	O	O	O	O	O
	Refnet joint	(*6)	KHRQM22M20T	O	O	O	O	O	O	O	O	O
			KHRQM22M29T	O	O	O	O	O	O	O	O	O
			KHRAM22M65T	-	-	O	O	O	O	O	O	O
9a	Refrigerant branch kit	(*7)	BHFA22P1007	-	-	-	-	-	-	-	-	O
9b	Refrigerant branch kit	(*7)	BHFAM22P1007	-	-	-	-	-	-	-	-	O

*1 ·1· option kits are required per unit.
2 Because both adaptor PCBs have the same installation location, it is only possible to install either ·DTA104A61/62· or ·DTA109A51·.
*3 These options require mounting plate ·EKSB26B2·.
*4 To mount option ·KRC19-26·, option ·KJB111A· is required.
*5 Connection only to the master unit
*6 ·8a· is branch piping for imperial pipe sizes, ·8b· for metric pipe sizes.
*7 ·9a· is branch piping for imperial pipe sizes, ·9b· for metric pipe sizes.

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RXYA-A
RYMA5A

Remote controllers and centralised controllers with R32 safety system functionality

Nr.	Item		Sound pressure level of built-in alarm	Mode: Fully functional	Mode: Alarm only	Mode: Supervisor	
				Built-in alarm	Built-in alarm	Built-in alarm	External alarm connection
1	BRC1H52/82*		·65· dBA at ·1· m	O	O	O	-
2	DCM601A51	(*8)	NA	-	-	-	O (*10)
3	DCM601B51	(*9)	·65· dBA at ·1· m	-	-	O	O (*10)

*8 From software version ·1.28.00· onwards.
*9 From software version ·1.28.00· onwards.
*10 via WAGO module

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4 Combination table

4 - 1 Combination Table

RXYA-A
RYMA5A

4

VRV5
Heat pump
Multi-unit standard combinations table

		5HP	8HP	10HP	12HP	14HP	16HP	18HP	20HP
	RYMA5* (*1)	1							
Non-continuous heating	RXYA8*		1						
	RXYA10*			1					
	RXYA12*				1				
	RXYA14*					1			
	RXYA16*						1		
	RXYA18*							1	
	RXYA20*								1
Continuous heating ·2· outdoor units	RXYA10*	2							
	RXYA13*	1	1						
	RXYA16*		2						
	RXYA18*		1	1					
	RXYA20*		1		1				

Notes

1. The ·RYMA5*· unit cannot be used as a standalone unit and may only be used in standard combinations.
2. Never combine more than ·2· units to create a multi-combination.
3. The total capacity of the system must never exceed ·20 HP·

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RXYA-A
RYMA5A

Unit combination restrictions: ·VRV5· outdoor units (all models) + ·10 / 15·-class indoor units

Indoor unit in the system	
FXDA10A	FXZA15A and/or FXAA15A
Yes	Yes

1. In case the system contains the indoor unit situation as shown in the table above, and the total connection ratio (·CR·)≤ ·85·%: no special restrictions.
   Follow the restrictions that apply to regular ·VRV DX· indoor units.

2. In case the system contains the indoor unit situation as shown in the table above, and the total connection ratio (·CR·) > ·85·%: special restrictions apply.
   A. When the connection ratio (·CR1·) of the sum of all ·FXDA10A· units in the system ≤ ·65·%, and ALL other ·VRV DX·indoor units have an individual capacity class > ·50·: no special restrictions.

   B. When the connection ratio (·CR1·) of the sum of all ·FXDA10A· units in the system ≤ ·65·%, and NOT ALL other ·VRV DX·indoor units have an individual capacity class > ·50·: the restrictions below apply.
   - ° 85% < CR ≤ 95% -> ·CR1· of the sum of all ·FXDA10A· indoor units in the system must be ≤ ·65·%.
   - ° 95% < CR ≤ 100% -> ·CR1· of the sum of all ·FXDA10A· indoor units in the system must be ≤ ·55·%.
   - ° 100% < CR ≤ 105% -> ·CR1· of the sum of all ·FXDA10A· indoor units in the system must be ≤ ·40·%.
   - ° 105% < CR ≤ 130% -> ·FXDA10A· cannot be used

Remark
Only the ·10 / 15·-class indoor units explicitly mentioned on this page are in scope. Other indoor units follow the rules that apply to regular ·VRV DX· indoor units.

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4 Combination table

4 - 1 Combination Table

RXYA-A
RYMA5A

Unit combination restrictions: ·VRV5· outdoor units (all models) + ·10 / 15·-class indoor units

Indoor unit in the system	
FXDA10A	FXZA15A and/or FXAA15A
Yes	No

1. In case the system contains the indoor unit situation as shown in the table above, and the total connection ratio (·CR·) ≤ ·85·%: no special restrictions.
   Follow the restrictions that apply to regular ·VRV DX· indoor units.

2. In case the system contains the indoor unit situation as shown in the table above, and the total connection ratio (·CR·) > ·85·%: special restrictions apply.
   A. When the connection ratio (·CR1·) of the sum of all ·FXDA10A· units in the system ≤ ·65·%, and ALL other ·VRV DX·indoor units have an individual capacity class > ·50·: no special restrictions.

   B. When the connection ratio (·CR1·) of the sum of all ·FXDA10A· units in the system ≤ ·65·%, and NOT ALL other ·VRV DX·indoor units have an individual capacity class > ·50·: the restrictions below apply.
   - ° 85% < CR ≤ 95% -> ·CR1· of the sum of all ·FXDA10A· indoor units in the system must be ≤ ·65·%.
   - ° 95% < CR ≤ 100% -> ·CR1· of the sum of all ·FXDA10A· indoor units in the system must be ≤ ·55·%.
   - ° 100% < CR ≤ 105% -> ·CR1· of the sum of all ·FXDA10A· indoor units in the system must be ≤ ·40·%.
   - ° 105% < CR ≤ 110% -> ·CR1· of the sum of all ·FXDA10A· indoor units in the system must be ≤ ·30·%.
   - ° 110% < CR ≤ 115% -> ·CR1· of the sum of all ·FXDA10A· indoor units in the system must be ≤ ·20·%.
   - ° 115% < CR ≤ 120% -> ·CR1· of the sum of all ·FXDA10A· indoor units in the system must be ≤ ·10·%.
   - ° 120% < CR ≤ 125% -> ·CR1· of the sum of all ·FXDA10A· indoor units in the system must be ≤ ·5·%.
   - ° 125% < CR ≤ 130% -> ·FXDA10A· cannot be used

Remark
Only the ·10 / 15·-class indoor units explicitly mentioned on this page are in scope. Other indoor units follow the rules that apply to regular ·VRV DX· indoor units.

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RXYA-A
RYMA5A

Unit combination restrictions: ·VRV5· outdoor units (all models) + ·10 / 15·-class indoor units

Indoor unit in the system	
FXDA10A	FXZA15A and/or FXAA15A
No	Yes

1. In case the system contains the indoor units situation which as shown in the table above, and the total connection ratio (·CR·) ≤ ·100·%: no special restrictions.
   Follow the restrictions that apply to regular ·VRV DX· indoor units.

2. In case the system contains the indoor units situation which as shown in the table above, and the total connection ratio (·CR·) > ·100·%: special restrictions apply.
   A. When the connection ratio (·CR1·) of the sum of all ·FXZA15A· and/or ·FXAA15A· units in the system ≤ ·70·%, and ALL other ·VRV DX· indoor units have an individual capacity class > ·50·: no special restrictions.

   B. When the connection ratio (·CR1·) of the sum of all ·FXZA15A· and/or ·FXAA15A· units in the system ≤ ·70·%, and NOT ALL other ·VRV DX· indoor units have an individual capacity class > ·50·: the restrictions below apply.
   - ° 100% < CR ≤ 105% -> ·CR1· of the sum of all ·FXZA15A· and/or ·FXAA15A· indoor units in the system must be ≤ ·70·%.
   - ° 105% < CR ≤ 110% -> ·CR1· of the sum of all ·FXZA15A· and/or ·FXAA15A· indoor units in the system must be ≤ ·60·%.
   - ° 110% < CR ≤ 115% -> ·CR1· of the sum of all ·FXZA15A· and/or ·FXAA15A· indoor units in the system must be ≤ ·40·%.
   - ° 115% < CR ≤ 120% -> ·CR1· of the sum of all ·FXZA15A· and/or ·FXAA15A· indoor units in the system must be ≤ ·25·%.
   - ° 120% < CR ≤ 125% -> ·CR1· of the sum of all ·FXZA15A· and/or ·FXAA15A· indoor units in the system must be ≤ ·10·%.
   - ° 125% < CR ≤ 130% -> ·FXZA15A· and ·FXAA15A· cannot be used.

Remark
Only the ·10 / 15·-class indoor units explicitly mentioned on this page are in scope. Other indoor units follow the rules that apply to regular ·VRV DX· indoor units.

4D141206

5 Capacity tables

5 - 1 Capacity Table Legend

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

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

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

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

5 Capacity tables

5 - 2 Integrated Heating Capacity Correction Factor

RXYA-A
RYMA5A

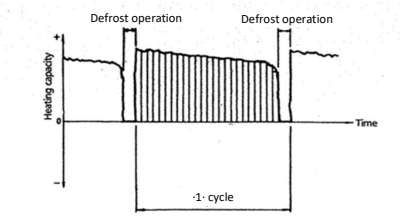
VRV5
Heat pump
Integrated heating capacity coefficient

	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)·							
For single unit installation	**8HP**	0,90	0,88	0,83	0,80	0,81	0,85	1,00
	10HP	0,90	0,88	0,82	0,75	0,76	0,83	1,00
	12HP	0,90	0,87	0,82	0,71	0,72	0,81	1,00
	14HP	0,90	0,87	0,81	0,68	0,69	0,80	1,00
	16HP	0,90	0,87	0,81	0,68	0,68	0,79	1,00
	18HP	0,90	0,88	0,83	0,80	0,81	0,85	1,00
	20HP	0,90	0,88	0,83	0,80	0,81	0,85	1,00
For multi-unit installation	**10HP**	0,90	0,88	0,83	0,80	0,81	0,85	1,00
	13HP	0,90	0,88	0,83	0,80	0,81	0,85	1,00
	16HP	0,90	0,88	0,83	0,80	0,81	0,85	1,00
	18HP	0,90	0,88	0,83	0,77	0,78	0,84	1,00
	20HP	0,90	0,88	0,83	0,75	0,76	0,83	1,00

The heating capacity tables do not take into account the capacity reduction in case of frost accumulation or defrost operation.

The capacity values that take these factors into account, or in other words, the integrated heating capacity values, can be calculated as follows:

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



Notes
1. The figure shows the integrated heating capacity for a single cycle (from one defrost operation to the next).
2. When there is an accumulation of snow against the outdoor unit heat exchanger, there will always be a temporary reduction in capacity depending on the outdoor temperature (°C DB), relative humidity (RH) and the amount of frosting which occurs.
3. The multi-combination data ·VRV5· corresponds with the standard multi-combination of drawing ·4D149887·.

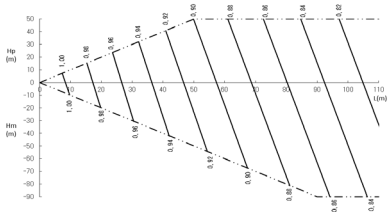
4D149885

5 Capacity tables

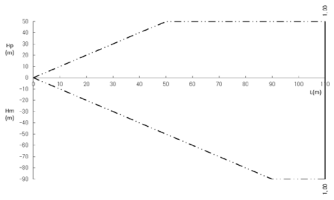
5 - 3 Capacity Correction Factor

RXYA8A

Correction ratio for cooling capacity



Correction ratio for heating capacity



Legend

Hp: Maximum level difference (m) between outdoor and indoor units when the outdoor unit is positioned higher than the indoor units.

Hm: Maximum level difference (m) between outdoor and indoor units when the outdoor unit is positioned lower than the indoor units.

L: Equivalent piping length [m]

Notes

1. These figures illustrate the capacity correction factor due to the piping length for a standard indoor unit system at maximum load (with the thermostat set to maximum), under standard conditions. Moreover, under partial load conditions, there is only a minor deviation for the capacity correction ratio, as shown it the above figures.
2. Method of calculating the capacity of the outdoor units.
   The maximum capacity of the system will be either the total capacity of the indoor units or the maximum capacity of the outdoor units as mentioned below, whichever is less.

Indoor connection ratio ≤ 100%.

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

Indoor connection ratio > 100%.

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

3. If the equivalent piping length is >90 m, size up the main liquid and gas piping.

Model	Standard liquid side Ø	Increased liquid side Ø	Standard gas side Ø	Increased gas side Ø
8HP	9,5	12,7	19,1	22,2

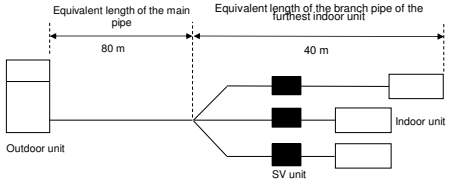
4. Overall equivalent length

Overall equivalent length	=	Equivalent length of the main pipe	X	Correction factor	+	Equivalent length of the branch pipes

Choose the correction factor from the following table.

Model	Correction ratio for cooling capacity		Correction ratio for heating capacity	
	Standard size	Size increase	Standard size	Size increase
8HP	1	0,5	1	0,2

5. Example 8HP



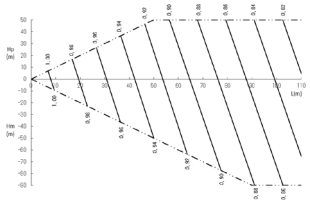
Overall equivalent length
- Cooling mode = 80 m x 0,5 + 40 m = 80 m
- Heating mode = 80 m x 0,2 + 40 m = 56 m

Capacity correction ratio (height difference = 0)
- Cooling mode = 0,86
- Heating mode = 1,00

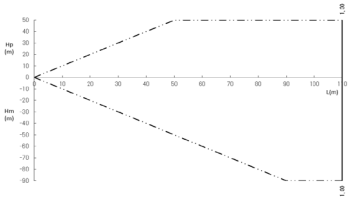
4D150023

RXYA10A

Correction ratio for cooling capacity



Correction ratio for heating capacity



Legend

Hp: Maximum level difference (m) between outdoor and indoor units when the outdoor unit is positioned higher than the indoor units.

Hm: Maximum level difference (m) between outdoor and indoor units when the outdoor unit is positioned lower than the indoor units.

L: Equivalent piping length [m]

Notes

1. These figures illustrate the capacity correction factor due to the piping length for a standard indoor unit system at maximum load (with the thermostat set to maximum), under standard conditions. Moreover, under partial load conditions, there is only a minor deviation for the capacity correction ratio, as shown it the above figures.
2. Method of calculating the capacity of the outdoor units.
   The maximum capacity of the system will be either the total capacity of the indoor units or the maximum capacity of the outdoor units as mentioned below, whichever is less.

Indoor connection ratio ≤ 100%.

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

Indoor connection ratio > 100%.

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

3. If the equivalent piping length is >90 m, size up the main liquid and gas piping.

Model	Standard liquid side Ø	Increased liquid side Ø	Standard gas side Ø	Increased gas side Ø
10HP	9,5	12,7	19,1	22,2

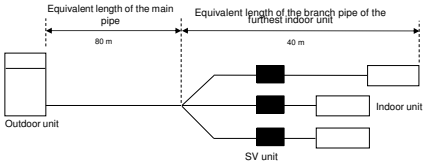
4. Overall equivalent length

Overall equivalent length	=	Equivalent length of the main pipe	X	Correction factor	+	Equivalent length of the branch pipes

Choose the correction factor from the following table.

Model	Correction ratio for cooling capacity		Correction ratio for heating capacity	
	Standard size	Size increase	Standard size	Size increase
10HP	1	0,5	1	0,2

5. Example 10HP



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

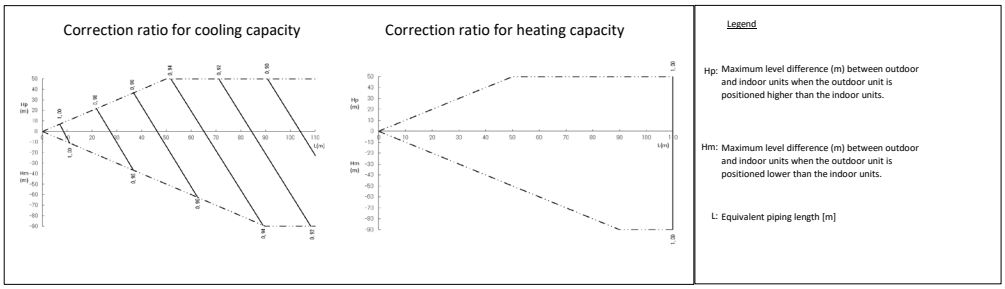
Capacity correction ratio (height difference = 0)
- Cooling mode = 0,87
- Heating mode = 1,00

4D150023

5 Capacity tables

5 - 3 Capacity Correction Factor

RXYA12A



Notes

1. These figures illustrate the capacity correction factor due to the piping length for a standard indoor unit system at maximum load (with the thermostat set to maximum), under standard conditions. Moreover, under partial load conditions, there is only a minor deviation for the capacity correction ratio, as shown it the above figures.
2. Method of calculating the capacity of the outdoor units.
   The maximum capacity of the system will be either the total capacity of the indoor units or the maximum capacity of the outdoor units as mentioned below, whichever is less.

   Indoor connection ratio ≤ 100%.

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

   Indoor connection ratio > 100%.

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

3. If the equivalent piping length is >·90· m, size up the main liquid and gas piping.

Model	Standard liquid side Ø	Increased liquid side Ø	Standard gas side Ø	Increased gas side Ø
12HP	12,7	15,9	22,2	28,6

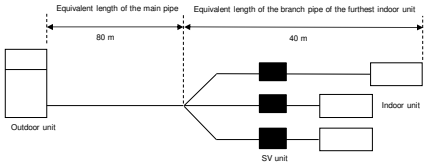
4. Overall equivalent length

Overall equivalent length	=	Equivalent length of the main pipe	X	Correction factor	+	Equivalent length of the branch pipes

   Choose the correction factor from the following table.

Model	Correction ratio for cooling capacity		Correction ratio for heating capacity	
	Standard size	Size increase	Standard size	Size increase
12HP	1	0,5	1	0,3

5. Example ·12HP·

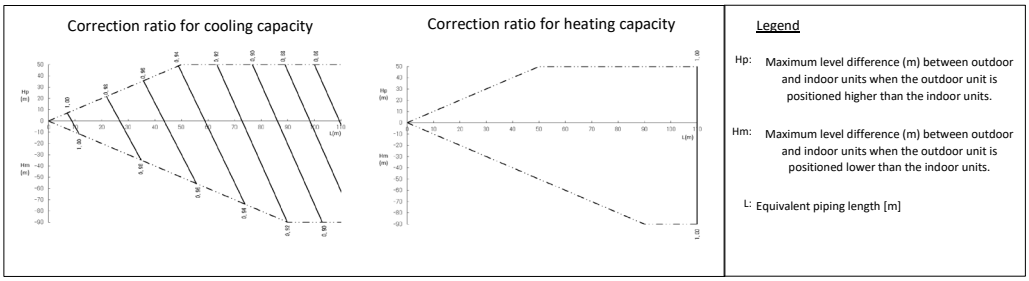


Overall equivalent length
- Cooling mode = 80 m x 0,5 + 40 m = 80 m
- Heating mode = 80 m x 0,3 + 40 m = 64 m

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

4D150023

RXYA13A
RXYA14A



Notes

1. These figures illustrate the capacity correction factor due to the piping length for a standard indoor unit system at maximum load (with the thermostat set to maximum), under standard conditions. Moreover, under partial load conditions, there is only a minor deviation for the capacity correction ratio, as shown it the above figures.
2. Method of calculating the capacity of the outdoor units.
   The maximum capacity of the system will be either the total capacity of the indoor units or the maximum capacity of the outdoor units as mentioned below, whichever is less.

   Indoor connection ratio ≤ 100%.

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

   Indoor connection ratio > 100%.

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

3. If the equivalent piping length is >·90· m, size up the main liquid and gas piping.

Model	Standard liquid side Ø	Increased liquid side Ø	Standard gas side Ø	Increased gas side Ø
13+14HP	12,7	15,9	22,2	28,6

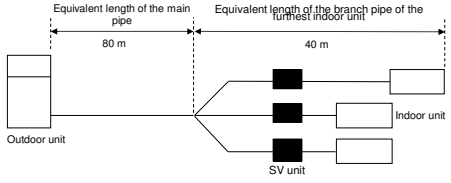
4. Overall equivalent length

Overall equivalent length	=	Equivalent length of the main pipe	X	Correction factor	+	Equivalent length of the branch pipes

   Choose the correction factor from the following table.

Model	Correction ratio for cooling capacity		Correction ratio for heating capacity	
	Standard size	Size increase	Standard size	Size increase
13+14HP	1	0,5	1	0,3

5. Example ·14HP·



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

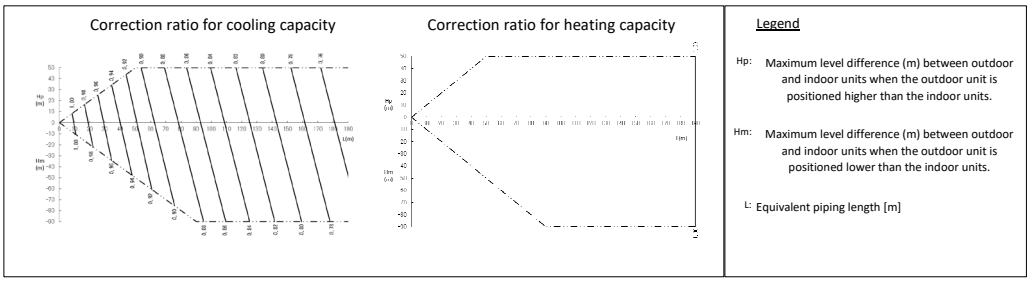
Capacity correction ratio (height difference = 0)
- Cooling mode = 0,91
- Heating mode = 1,00

4D150023

5 Capacity tables

5 - 3 Capacity Correction Factor

RXYA16A



Notes

1. These figures illustrate the capacity correction factor due to the piping length for a standard indoor unit system at maximum load (with the thermostat set to maximum), under standard conditions. Moreover, under partial load conditions, there is only a minor deviation for the capacity correction ratio, as shown it the above figures.

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

Indoor connection ratio ≤ 100%.

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

Indoor connection ratio > 100%.

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

3. If the equivalent piping is > ·90·m, size up the main liquid piping.

Model	Standard liquid side Ø	Increased liquid side Ø	Standard gas side Ø	Increased gas side Ø
16HP	12,7	15,9	28,6	-

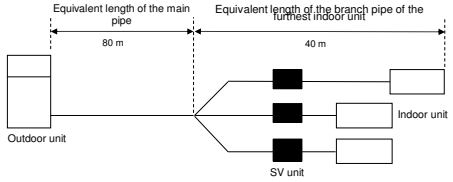
4. Overall equivalent length

Overall equivalent length	=	Equivalent length of the main pipe	X	Correction factor	+	Equivalent length of the branch pipes

Choose the correction factor from the following table.

Model	Correction ratio for cooling capacity		Correction ratio for heating capacity	
	Standard size	Size increase	Standard size	Size increase
16HP	1	-	1	0,3

5. Example ·16HP·

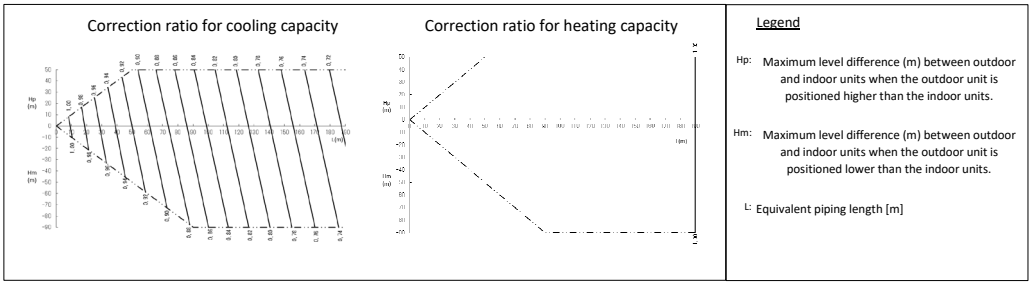


Overall equivalent length
- Cooling mode = 80 m x 1 + 40 m = 120 m
- Heating mode = 80 m x 0,3 + 40 m = 64 m

Capacity correction ratio (height difference = 0)
- Cooling mode = 0,83
- Heating mode = 1,00

4D150023

RXYA18A



Notes

1. These figures illustrate the capacity correction factor due to the piping length for a standard indoor unit system at maximum load (with the thermostat set to maximum), under standard conditions. Moreover, under partial load conditions, there is only a minor deviation for the capacity correction ratio, as shown it the above figures.

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

Indoor connection ratio ≤ 100%.

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

Indoor connection ratio > 100%.

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

3. If the equivalent piping is > ·90·m, size up the main liquid piping.

Model	Standard liquid side Ø	Increased liquid side Ø	Standard gas side Ø	Increased gas side Ø
18HP	12,7	15,9	28,6	-

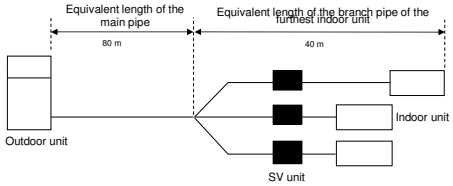
4. Overall equivalent length

Overall equivalent length	=	Equivalent length of the main pipe	X	Correction factor	+	Equivalent length of the branch pipes

Choose the correction factor from the following table.

Model	Correction ratio for cooling capacity		Correction ratio for heating capacity	
	Standard size	Size increase	Standard size	Size increase
18HP	1	-	1	0,3

5. Example ·18HP·



Overall equivalent length
- Cooling mode = 80 m x 1 + 40 m = 120 m
- Heating mode = 80 m x 0,3 + 40 m = 64 m

Capacity correction ratio (height difference = 0)
- Cooling mode = 0,81
- Heating mode = 1,00

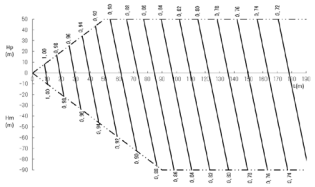
4D150023

5 Capacity tables

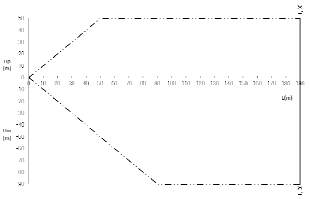
5 - 3 Capacity Correction Factor

RXYA20A

Correction ratio for cooling capacity



Correction ratio for heating capacity



Legend

Hp: Maximum level difference (m) between outdoor and indoor units when the outdoor unit is positioned higher than the indoor units.

Hm: Maximum level difference (m) between outdoor and indoor units when the outdoor unit is positioned lower than the indoor units.

L: Equivalent piping length [m]

Notes

1. These figures illustrate the capacity correction factor due to the piping length for a standard indoor unit system at maximum load (with the thermostat set to maximum), under standard conditions. Moreover, under partial load conditions, there is only a minor deviation for the capacity correction ratio, as shown it the above figures.
2. Method of calculating the capacity of the outdoor units.
   The maximum capacity of the system will be either the total capacity of the indoor units or the maximum capacity of the outdoor units as mentioned below, whichever is less.

Indoor connection ratio ≤ 100%.

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

Indoor connection ratio > 100%.

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

3. If the equivalent piping is > ·90·m, size up the main liquid piping.

Model	Standard liquid side Ø	Increased liquid side Ø	Standard gas side Ø	Increased gas side Ø
20HP	12,7	15,9	28,6	-

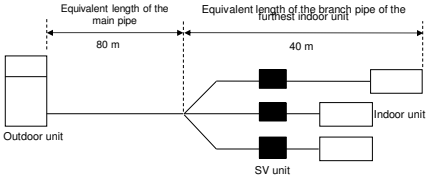
4. Overall equivalent length

Overall equivalent length	=	Equivalent length of the main pipe	X	Correction factor	+	Equivalent length of the branch pipes

Choose the correction factor from the following table.

Model	Correction ratio for cooling capacity		Correction ratio for heating capacity	
	Standard size	Size increase	Standard size	Size increase
20HP	1	-	1	0,3

5. Example ·20HP·



Overall equivalent length
- Cooling mode = 80 m x 1 + 40 m = 120 m
- Heating mode = 80 m x 0,3 + 40 m = 64 m

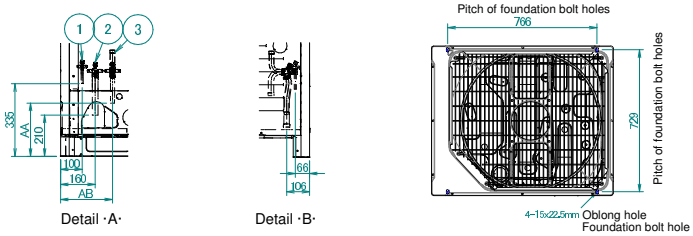
Capacity correction ratio (height difference = 0)
- Cooling mode = 0,80
- Heating mode = 1,00

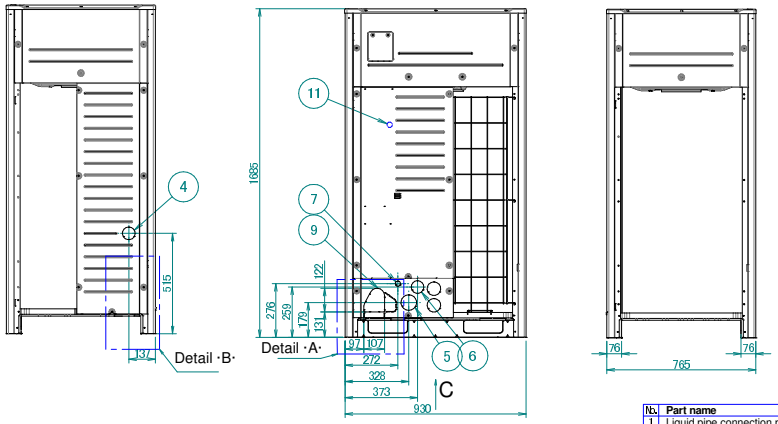
4D150023

6 Dimensional drawings

6 - 1 Dimensional Drawings

RXYA8-12A
RYMA5A





Notes

1. Detail ·A· and detail ·B· indicate the dimensions after fixing the attached piping.
2. Items ·4 - 10·: Knockout hole.
3. **Gas pipe**
   - RYYQ8U, RYMQ8U, RXYQ8U, RXYQQ8U, RXYTQ8U, RYMA5A, RXYA8-12A: Ø ·19.1· brazing connection
   - RYYQ10U, RYMQ10U, RXYQ10U, RXYQQ10U: Ø ·22.2· brazing connection
   - REMQ5U, REMA5A, REYQ8-12U, REYA8-12A: Ø ·25.4· brazing connection
   - RYYQ12U, RYMQ12U, RXYQ12U, RXYQQ12U: Ø ·28.6· brazing connection

   Liquid pipe
   - RYYQ8-10U, RYMQ8-10U, RXYQ8-10U, RXYQQ8-10U, REMQ5U, REMA5A, REYQ8-12U, REYA8-12A, RXYTQ8U: Ø ·9.5· brazing connection
   - RYMA5A, RXYA8-12A
   - RYYQ12U, RYMQ12U, RXYQ12U, RXYQQ12U: Ø ·12.7· brazing connection

   Equalising pipe
   - RYMQ8-10U: Ø ·19.1· brazing connection
   - RYMQ12U: Ø ·22.2· brazing connection
   - RYMA5A, RXYA8-12A: Ø ·25.4· brazing connection

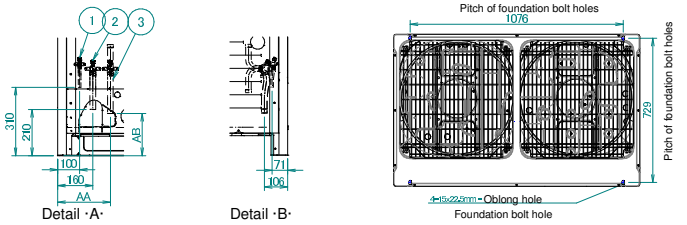
   High pressure/low pressure gas pipe
   - REMQ5U, REMA5A, REYQ8-12U, REYA8-12A: Ø ·19.1· brazing connection

Model	AA	AB
RYYQ8-12U, RXYQ8-12U, RXYQQ8-12U, RXYTQ8U	–	–
REMQ5U, RYMQ8-12U, REYQ8-12U, REMA5A, REYA8-12A, RYMA5A, RXYA8-12A	240	240

No.	Part name		Remark
1	Liquid pipe connection port		See note ·3·.
2	Gas pipe connection port Equalising pipe connection port	RYMA5A, RXYA8-12A	See note ·3·.
3	Equalising pipe connection port High pressure/low pressure gas pipe Gas pipe connection port	RYMA5A, RXYA8-12A	See note ·3·.
4	Power cord routing hole (side)		Ø65
5	Power cord routing hole (front)		Ø80
6	Power cord routing hole (front)		Ø65
7	Power cord routing hole (front)		Ø27
8	Power cord routing hole (bottom)		Ø65
9	Pipe routing hole (front)		
10	Pipe routing hole (bottom)		
11	Grounding terminal		Inside of the switch box (·M8·)

2D119001B

RXYA14-20A



No.	Part name		Remark
1	Liquid pipe connection port		See note ·3·.
2	Gas pipe connection port Equalising pipe connection port	RXYA14-20A	See note ·3·.
3	Equalising pipe connection port High pressure/low pressure gas pipe Gas pipe connection port	RXYA14-20A	See note ·3·.
4	Power cord routing hole (side)		Ø65
5	Power cord routing hole (front)		Ø80
6	Power cord routing hole (front)		Ø65
7	Power cord routing hole (front)		Ø27
8	Power cord routing hole (bottom)		Ø65
9	Pipe routing hole (front)		
10	Pipe routing hole (bottom)		
11	Grounding terminal		Inside of the switch box (·M8·)

Notes

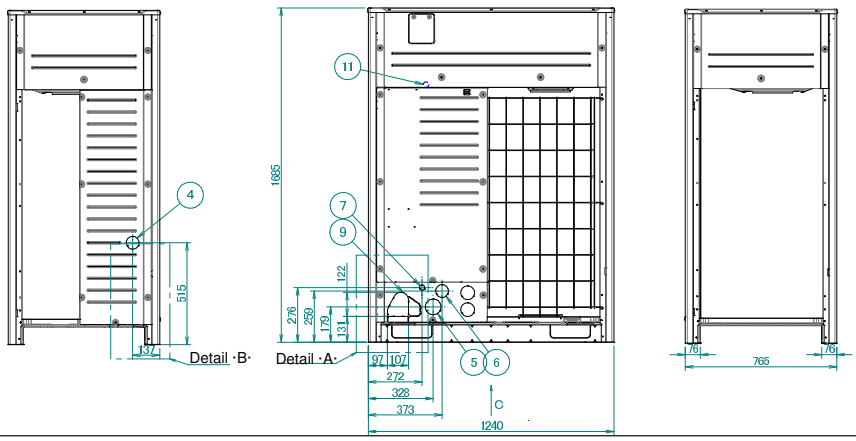
1. Detail ·A· and detail ·B· indicate the dimensions after fixing the attached piping.
2. Items ·4 - 10·: Knockout hole.
3. **Gas pipe**
   - RXYTQ10U, REYQ14-20U, REYA14-20A: Ø ·22.2· brazing connection
   - RYYQ14-20U, RYMQ14-20U RXYQ14-20U, RXYQQ14-20U, RXYTQ12-16U: Ø ·25.4· brazing connection
   - RXYA14-20A: Ø ·28.6· brazing connection
   - RXYA14-20A: Ø ·19.1· brazing connection

   Liquid pipe
   - RXYTQ10U: Ø ·9.5· brazing connection
   - RYYQ14-16U, RYMQ14-16U, RXYQ14-16U, RXYQQ14-16U, REYQ14-20U, REYA14-20A, RXYTQ12-16U, RXYA14-20A: Ø ·12.7· brazing connection
   - RYYQ18-20U, RYMQ18-20U, RXYQ18-20U, RXYQQ18-20U: Ø ·15.9· brazing connection

   Equalising pipe
   - RYMQ14-16U: Ø ·22.2· brazing connection
   - RYMQ18-20U: Ø ·28.6· brazing connection
   - RXYA14-20A: Ø ·25.4· brazing connection

   High pressure/low pressure gas pipe
   - REYQ14-20U, REYA14-20A: Ø ·19.1· brazing connection

Model	AA	AB
RXYQ14-20U, RYYQ14-20U, RXYQ014-20U, RXYTQ10-16U	–	–
RYMQ14-16U, REYQ14-20U, REYA14-20A, RXYA14-20A	240	240
RYMQ18-20U	240	192



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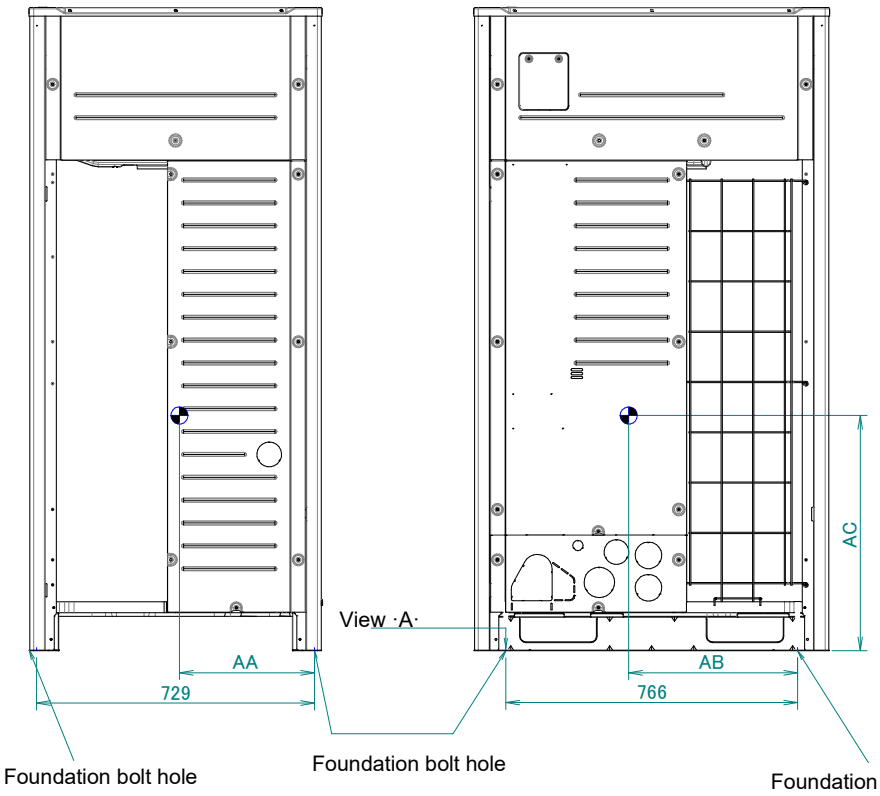
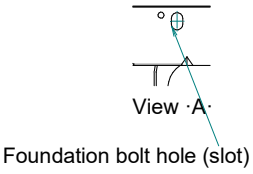
7 Centre of gravity

7 - 1 Centre of Gravity

RXYA8-12A
RYMA5-A



Unit	AA	AB	AC
RYYQ8-12U	328	366	565
REMQ5U / REYQ8-12U			
RYMQ8-12U	354	443	565
RXYQ8-12U	339	448	565
RXYQQ8-12U			
RXYTQ8U			
REMA5A / REYA8-12A	353	426	690
RYMA5A / RXYA8-12A	353	426	690



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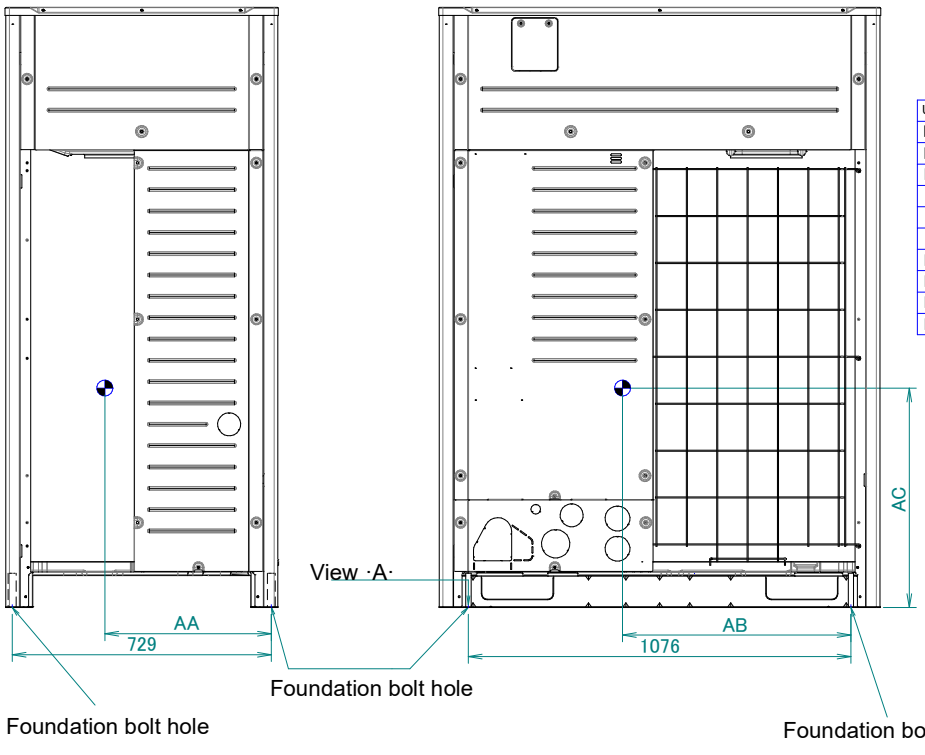
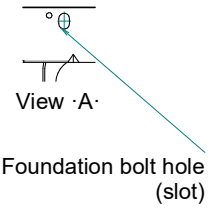
RXYA14-20A



Unit	AA	AB	AC
RYYQ14-20U	334	470	610
REYQ14-20U	334	470	610
RYMQ14-20U	360	569	610
RXYQ(Q)14-20U	345	575	610
RXYTQ10-12U	350	610	810
RXYTQ14-16U	351	565	610
REYA14-16A	339	596	758
REYA18-20A	350	587	752
RXYA14-16A	339	596	758
RXYA18-20A	350	587	752



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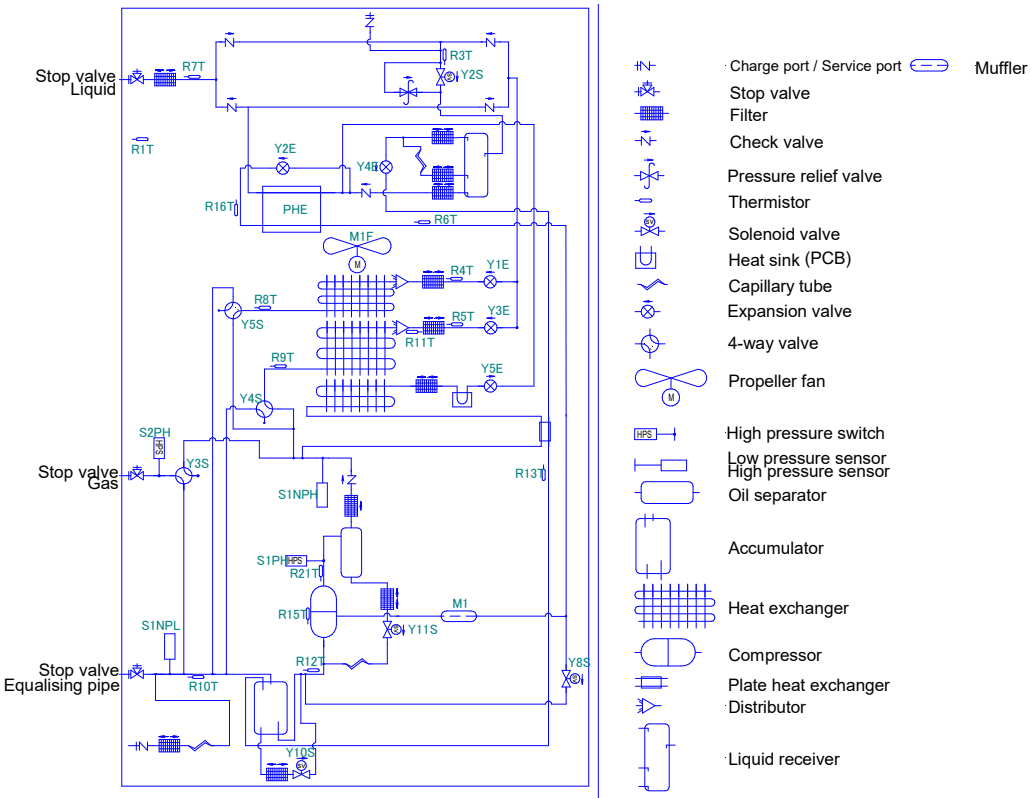
8 Piping diagrams

8 - 1 Piping Diagrams

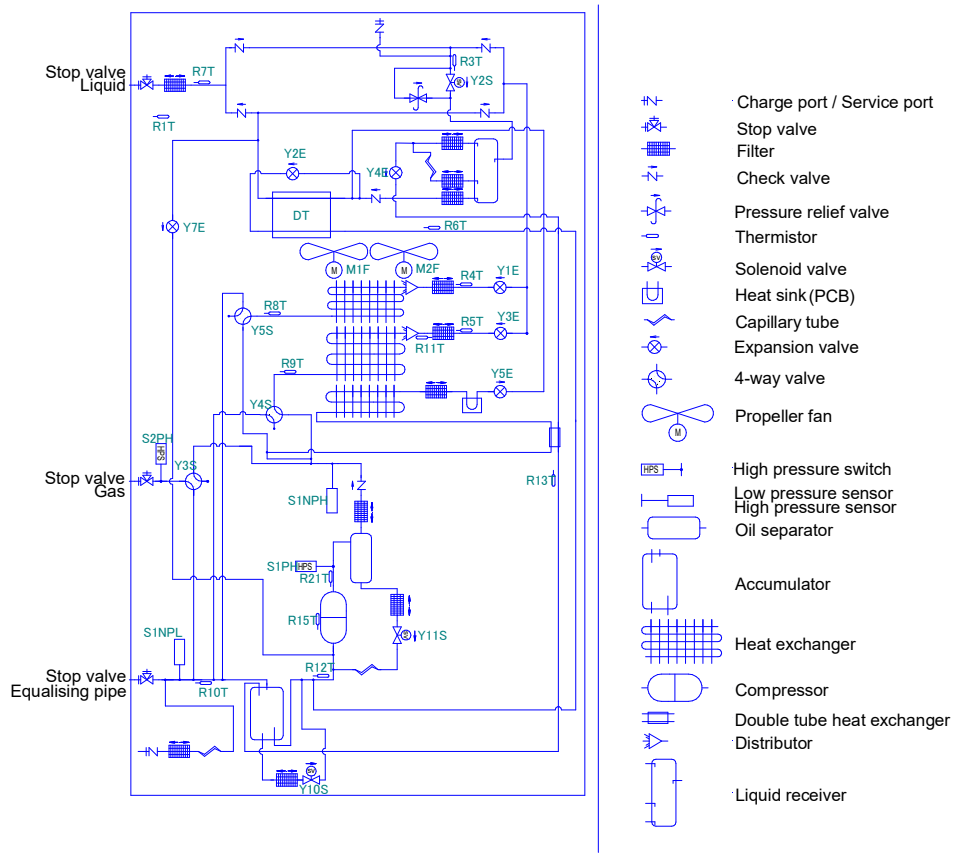
RXYA8-12A

RYMA5A



3D149875

RXYA14-20A



3D149874

9 Wiring diagrams

9 - 1 Wiring Diagrams - Three Phase

RYMA5A / RXYA8-12A

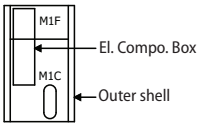
NOTES to go through before starting the unit

1. Symbols:

X1M : Main terminal
: Earth wiring
: Field wire
: Field cable
: Screened conductor
① : Several wiring possibilities
: Option
: Wiring depending on model
: Not mounted in switch box
: PCB

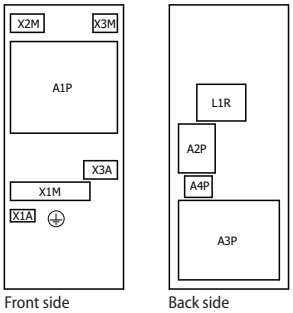
2. Refer to the installation or service manual on how to use BS1 ~ BS3 push buttons and DS1 ~ DS2 DIP switches.
3. Do not operate the unit by short-circuiting protection device(s) S*PH.
4. Refer to the installation manual for indoor-outdoor transmission F1-F2 and outdoor-multi transmission Q1-Q2 wiring.
5. When using the central control system, connect outdoor-outdoor transmission F1-F2.
6. The capacity of the contact is 220~240V AC - 0,5A (Rush current needs 3A or less).
7. Use dry contact for micro-current (10mA or less, 15V DC).
8. When using the optional adapter, refer to the installation manual of the optional adapter.

LAYOUT OF M1C, M1F



TERMINAL OF M1C

POSITION IN SWITCH BOX



LEGEND

Part n°		Description
A1P		Printed circuit board (main)
A2P		Printed circuit board (noise filter)
A3P		Printed circuit board (inverter)
A4P		Printed circuit board (fan)
BS* (A1P)		Push button switch
DS* (A1P)		Dipswitch
E1HC		Crank case heater
E3H	*	Bottom plate heater
F1U (A1P)		Fuse T 10 A 250 V
F1U, F2U		Fuse T 1 A 250 V
F3U	#	Field fuse
HAP (A1P)		Running LED (service monitor-green)
K*R (A*P)		Relay on PCB
L1R		Reactor
M1C		Motor (compressor)
M1F		Motor (fan)
Q1DI	#	Earth leakage circuit breaker
R1T		Thermistor (Air)
R3T		Thermistor (Liquid main)
R4T		Thermistor (Heat exch. liquid upper)
R5T		Thermistor (Heat exch. liquid lower)
R6T		Thermistor (Subcool heat exch. gas)
R7T		Thermistor (Subcool heat exch. liquid)
R8T		Thermistor (Heat exch. gas upper)
R9T		Thermistor (Heat exch. gas lower)
R10T		Thermistor (Suction)
R11T		Thermistor (Heat exch. de-icer)
R12T		Thermistor (Suction compressor)

Part n°		Description
R13T		Thermistor (Receiver gas)
R15T		Thermistor (M1C body)
R16T		Thermistor (Gas injection)
R21T		Thermistor (M1C discharge pipe)
S1NPH		High pressure sensor
S1NPL		Low pressure sensor
S*PH		High pressure switch
SEG* (A1P)		7-segment display
SFB	#	Mechanical ventilation error input
T1A		Current sensor
X*A		Connector
X*M		Terminal strip
Y1E		Electronic exp. valve (Heat exch. upper)
Y2E		Electronic exp. valve (Subc. heat exch.)
Y3E		Electronic exp. valve (Heat exch. lower)
Y4E		Electronic exp. valve (Receiver gas)
Y5E		Electronic exp. valve (Inverter cooling)
Y2S		Solenoïd valve (Liquid pipe)
Y3S		Solenoïd valve (HP/LP gas pipe)
Y4S		Solenoïd valve (Heat exchanger lower)
Y5S		Solenoïd valve (Heat exchanger upper
Y8S		Solenoïd valve (Gas injection)
Y10S		Solenoïd valve (Accu oil return)
Y11S		Solenoïd valve (M1C oil return)
Y13S	#	Error operation output (SVEO)
Y14S	#	Leak sensor output (SVS)
Z*C		Noise filter (ferrite core)

* : optional #: field supply

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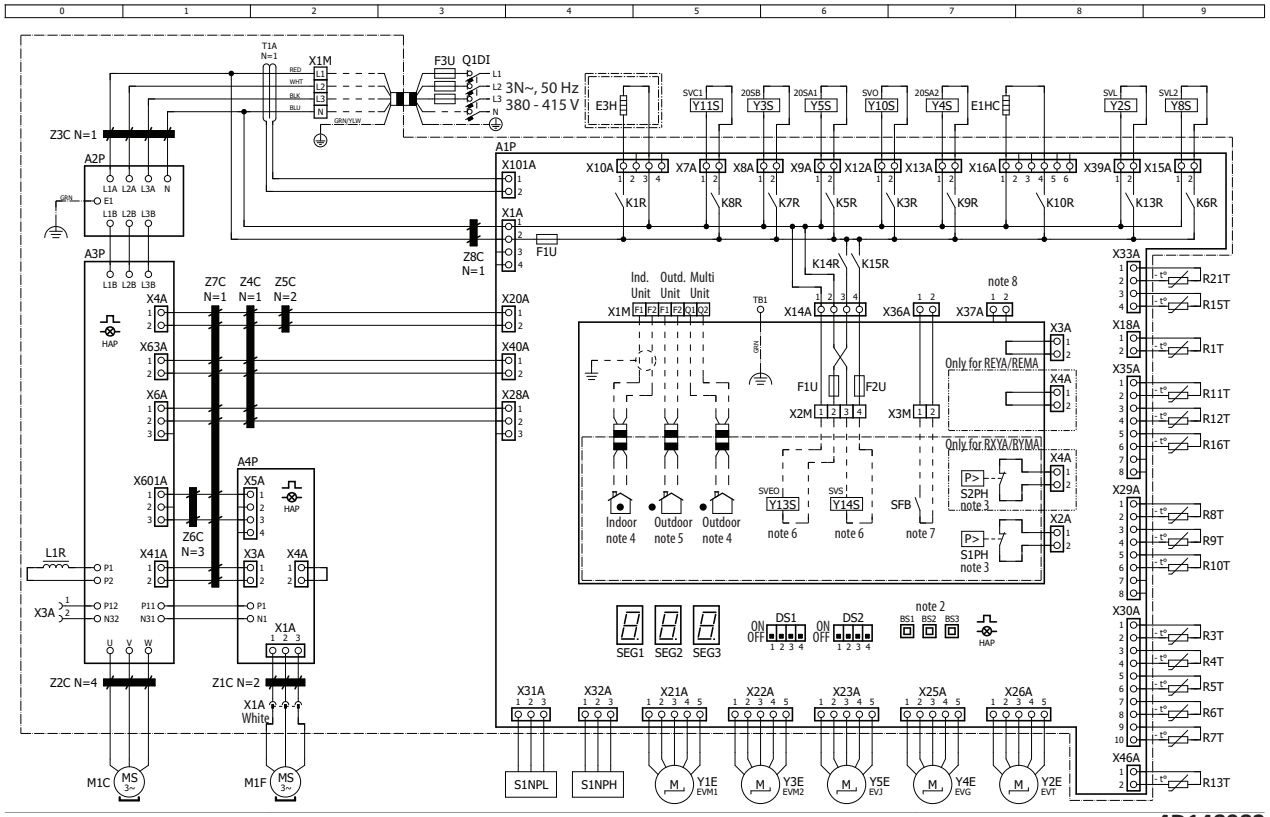
RYMA5A
RXYA8-12A



4D148982

9 Wiring diagrams

9 - 1 Wiring Diagrams - Three Phase

RXYA14-20A

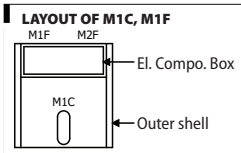
NOTES to go through before starting the unit

1. Symbols:

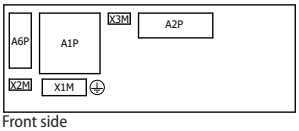
X1M : Main terminal
: Earth wiring
: Field wire
: Field cable
: Screened conductor
① : Several wiring possibilities
: Option
: Wiring depending on model
: Not mounted in switch box
: PCB

2. Refer to the installation or service manual on how to use BS1 ~ BS3 push buttons and DS1 ~ DS2 DIP switches.
3. Do not operate the unit by short-circuiting protection device(s) S1PH and S2PH.
4. Refer to the installation manual for indoor-outdoor transmission F1-F2 and outdoor-multi transmission Q1-Q2 wiring.
5. When using the central control system, connect outdoor-outdoor transmission F1-F2.
6. The capacity of the contact is 220~240V AC - 0,5A (Rush current needs 3A or less).
7. Use dry contact for micro-current (10mA or less, 15V DC).
8. When using the optional adapter, refer to the installation manual of the optional adapter.

LAYOUT OF M1C, M1F

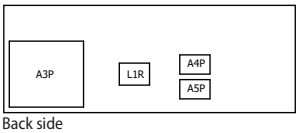


POSITION IN SWITCH BOX



Front side

TERMINAL OF M1C



Back side

LEGEND

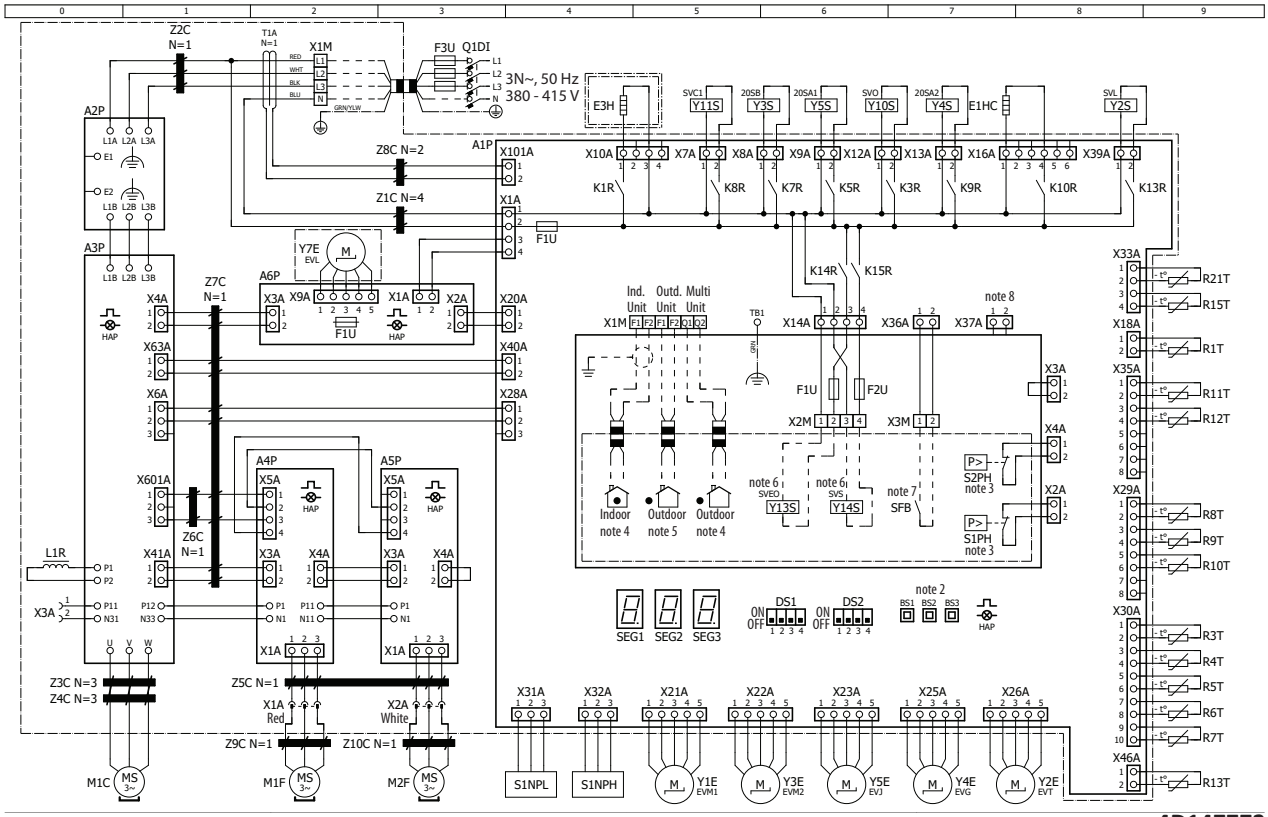
Part n°		Description
A1P		Printed circuit board (main)
A2P		Printed circuit board (noise filter)
A3P		Printed circuit board (inverter)
A4P, A5P		Printed circuit board (fan)
A6P		Push button switch
BS* (A1P)		Push button switch
DS* (A1P)		Dipswitch
E1HC		Crank case heater
E3H	*	Bottom plate heater
F1U (A1P)		Fuse T 10 A 250 V
F1U (A6P)		Fuse 3.15 A 250 V
F1U, F2U		Fuse T 1 A 250 V
F3U	#	Field fuse
HAP (A1P)		Running LED (service monitor-green)
K*R (A*P)		Relay on PCB
L1R		Reactor
M1C		Motor (compressor)
M1F, M2F		Motor (fan)
Q1DI	#	Earth leakage circuit breaker
R1T		Thermistor (Air)
R3T		Thermistor (Liquid main)
R4T		Thermistor (Heat exch. liquid upper)
R5T		Thermistor (Heat exch. liquid lower)
R6T		Thermistor (Subcool heat exch. gas)
R7T		Thermistor (Subcool heat exch. liquid)
R8T		Thermistor (Heat exch. gas upper)
R9T		Thermistor (Heat exch. gas lower)
R10T		Thermistor (Suction)
R11T		Thermistor (Heat exch. de-icer)

Part n°		Description
R12T		Thermistor (Suction compressor)
R13T		Thermistor (Receiver gas)
R15T		Thermistor (M1C body)
R21T		Thermistor (M1C discharge pipe)
S1NPH		High pressure sensor
S1NPL		Low pressure sensor
S*PH		High pressure switch
SEG* (A1P)		7-segment display
SFB	#	Mechanical ventilation error input
T1A		Current sensor
X*A		Connector
X*M		Terminal strip
Y1E		Electronic exp. valve (Heat exch. upper)
Y2E		Electronic exp. valve (Subc. heat exch.)
Y3E		Electronic exp. valve (Heat exch. lower)
Y4E		Electronic exp. valve (Receiver gas)
Y5E		Electronic exp. valve (Inverter cooling)
Y2S		Solenoïd valve (Liquid pipe)
Y3S		Solenoïd valve (HP/LP gas pipe)
Y4S		Solenoïd valve (Heat exchanger lower)
Y5S		Solenoïd valve (Heat exchanger upper
Y10S		Solenoïd valve (Accu oil return)
Y11S		Solenoïd valve (M1C oil return)
Y13S	#	Error operation output (SVEO)
Y14S	#	Leak sensor output (SVS)
Z*C		Noise filter (ferrite core)

* : optional #: field supply

4D147772

RXYA14-20A



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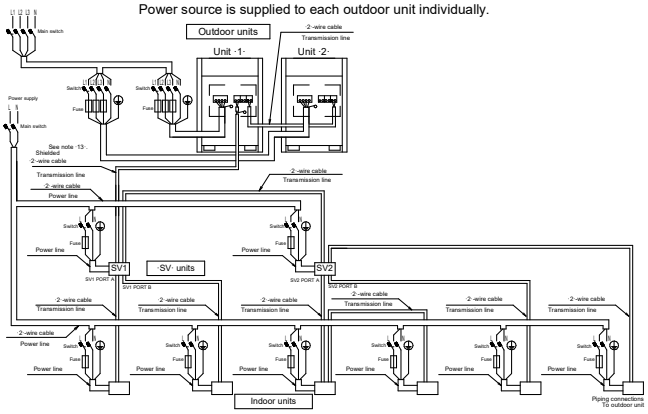
10 External connection diagrams

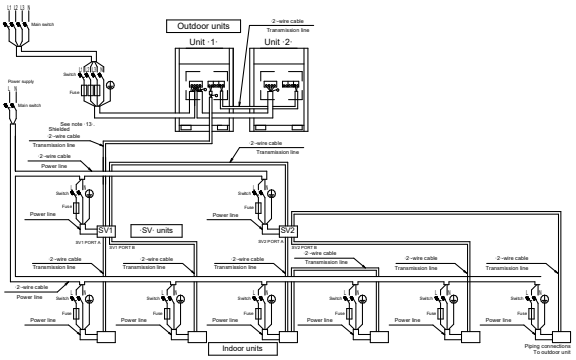
10 - 1 External Connection Diagrams

RXYA-A
RYMA5A **VRV5 Heat pump**
External connection diagram

Power source is supplied to each outdoor unit individually.



Power source is connected in series between the units.

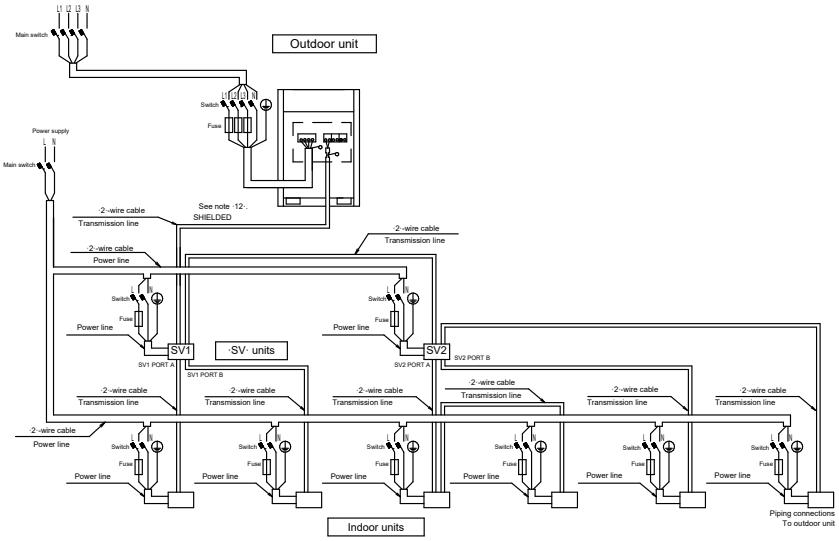


1. All wiring, components and materials to be procured on-site must comply with the applicable legislation.
2. Use copper conductors only
3. For more details, refer to the wiring diagram of the unit.
4. Install a circuit breaker for safety.
5. All field wiring and components must be provided by an authorised electrician.
6. Unit has to be grounded in compliance with the applicable legislation.
7. The wiring shown is a general points-of-connection guide and is not intended to include all details for a specific installation.
8. Make sure to install the switch and the fuse to the power line of each equipement.
9. Install a main to switch to (if necessary) immediately interrupt all the system's power sources.
10. If there exists the possibility of reversed phase, loose phase or momentary blackout, or if the power goes on and off while the product is operating, attach a reversed phase protection circuit locally.

    Running the product in reversed phase may break the compressor and other parts.
11. Install an earth leakage circuit breaker.
12. The capacity of UNIT1 must be larger than that of UNIT2 when the power source is connected in series between the units.
13. See outdoor unit manual for shielding the ·F1F2· wire

3D149883

RXYA-A
RYMA5A VRV5 Heat pump
External connection diagram



1. All wiring, components and materials to be procured on-site must comply with the applicable legislation.
2. Use copper conductors only
3. For more details, refer to the wiring diagram of the unit.
4. Install a circuit breaker for safety.
5. All field wiring and components must be provided by an authorised electrician.
6. Unit has to be grounded in compliance with the applicable legislation.
7. The wiring shown is a general points-of-connection guide and is not intended to include all details for a specific installation.
8. Make sure to install the switch and the fuse to the power line of each equipement.
9. Install a main to switch to (if necessary) immediately interrupt all the system's power sources.
10. If there exists the possibility of reversed phase, loose phase or momentary blackout, or if the power goes on and off while the product is operating, attach a reversed phase protection circuit locally.
    Running the product in reversed phase may break the compressor and other parts.
11. Install an earth leakage circuit breaker.
12. See outdoor unit manual for shielding the ·F1F2· wire

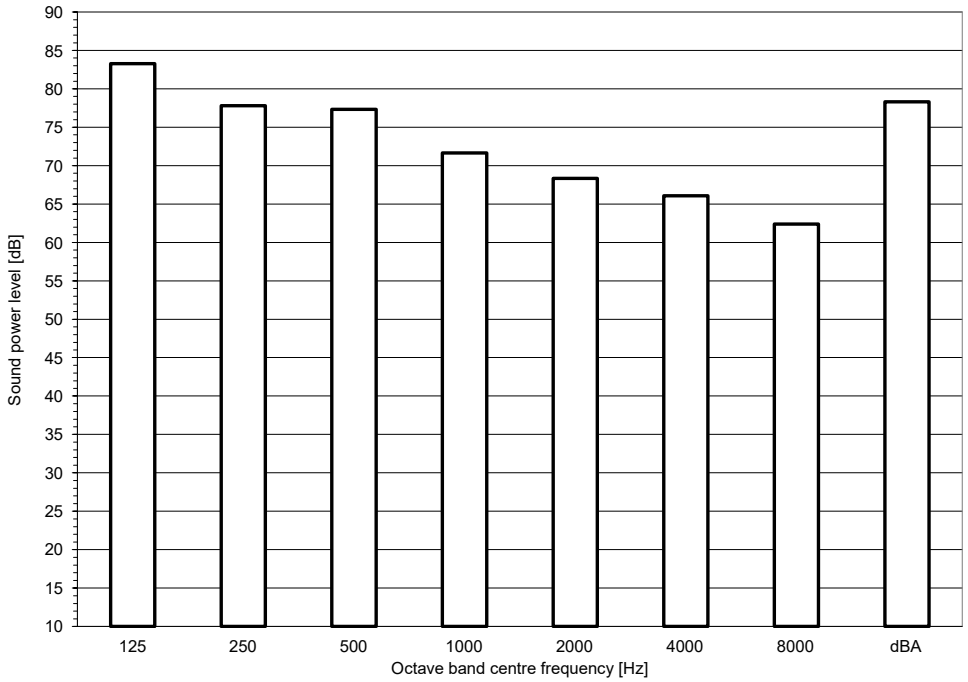
3D149884

11 Sound data

11 - 1 Sound Power Spectrum - Cooling

RXYA8A
RYMA5A

Cooling
Sound power

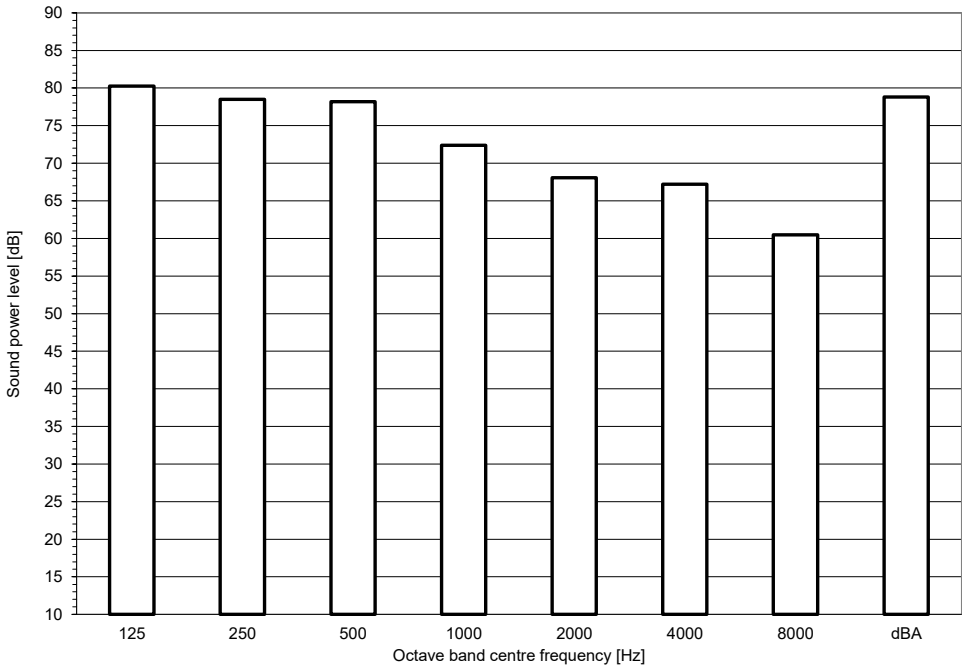


Notes
- dBA = A-weighted sound power level (A scale according to IEC).
- Reference acoustic intensity 0dB = ·10^ -12 W·
- Measured according to ISO 3744

4D150004

RXYA10A

Cooling
Sound power



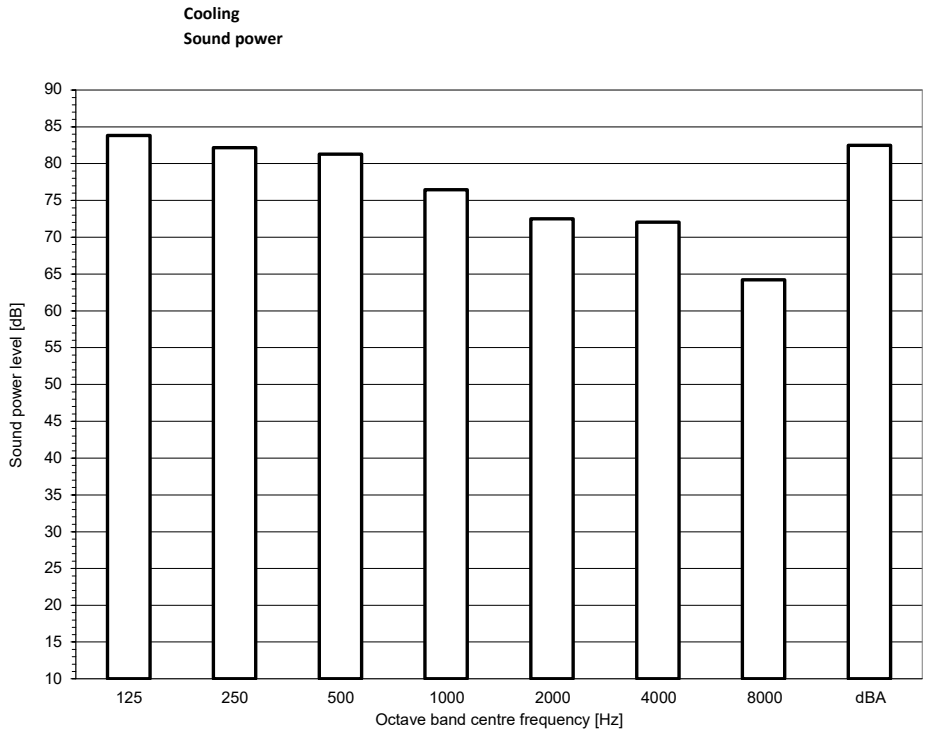
Notes
- dBA = A-weighted sound power level (A scale according to IEC).
- Reference acoustic intensity 0dB = ·10^ -12 W·
- Measured according to ISO 3744

4D150005

11 Sound data

11 - 1 Sound Power Spectrum - Cooling

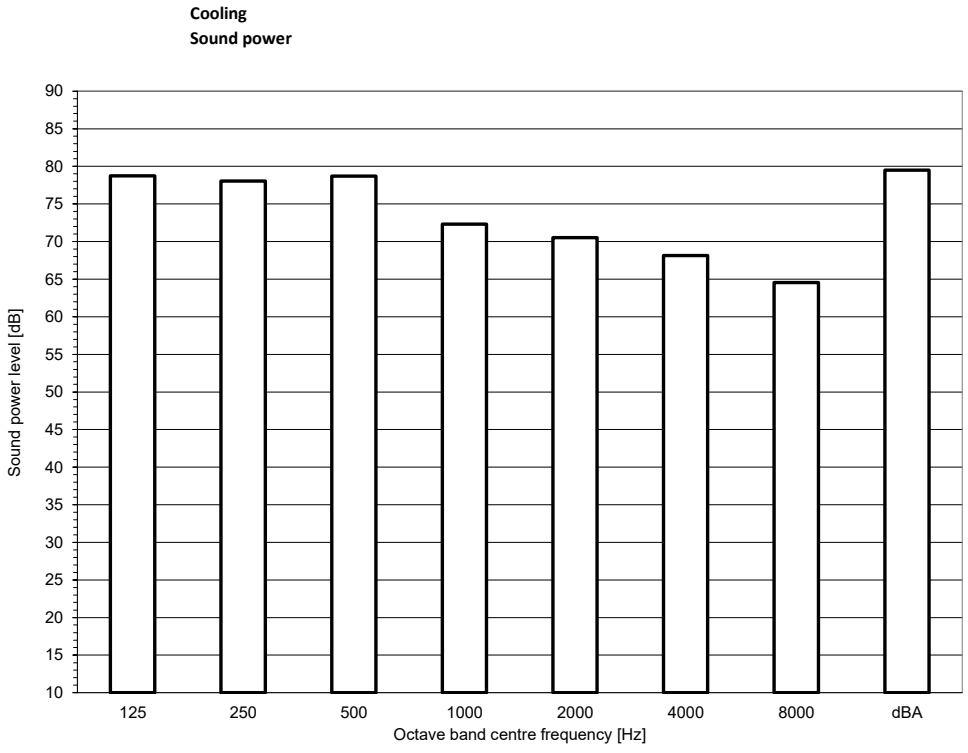
RXYA12A



Notes
- dBA = A-weighted sound power level (A scale according to IEC).
- Reference acoustic intensity 0dB = ·10^ -12 W·
- Measured according to ISO 3744

4D150006

RXYA14A



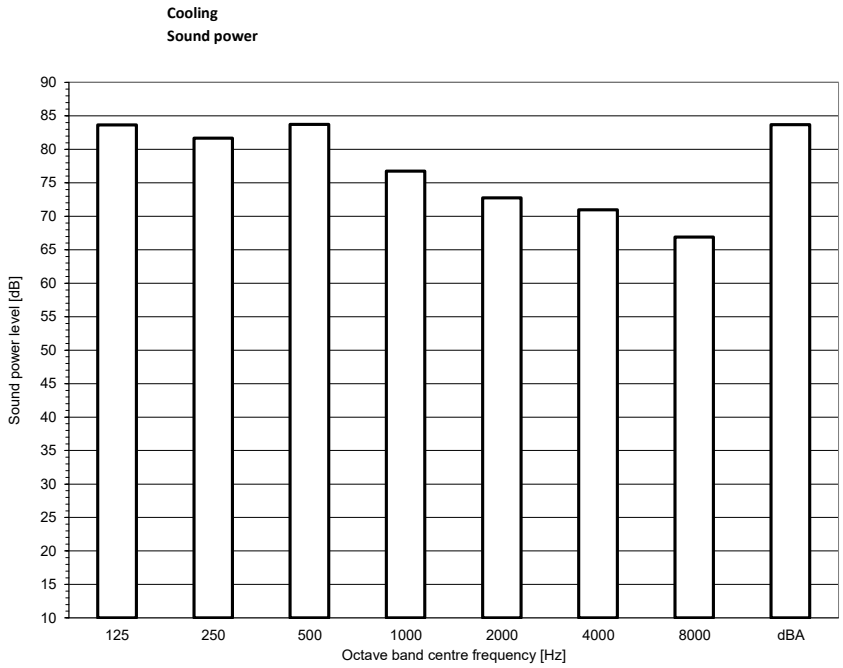
Notes
- dBA = A-weighted sound power level (A scale according to IEC).
- Reference acoustic intensity 0dB = ·10^ -12 W·
- Measured according to ISO 3744

4D150007

11 Sound data

11 - 1 Sound Power Spectrum - Cooling

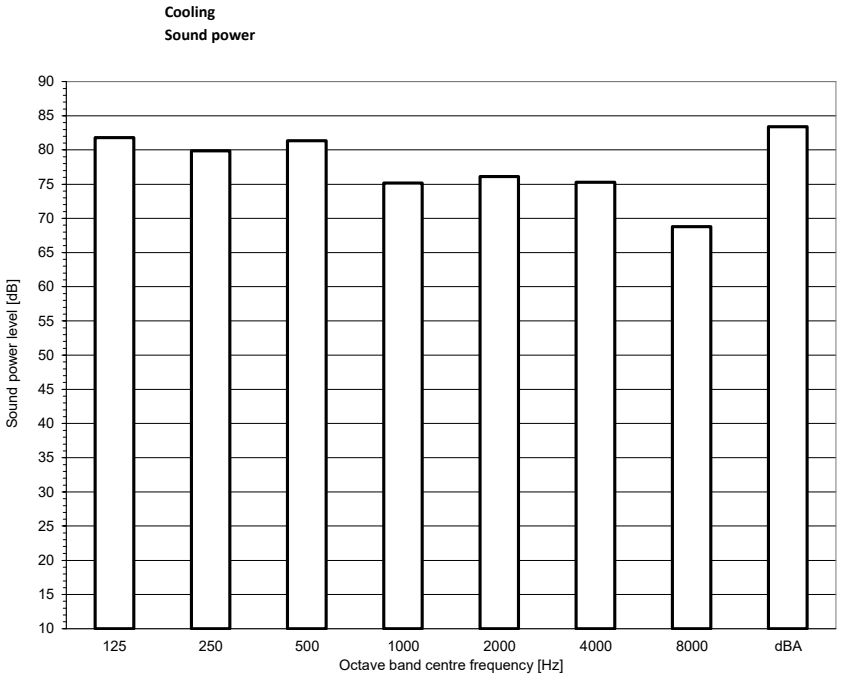
RXYA16A



Notes
- dBA = A-weighted sound power level (A scale according to IEC).
- Reference acoustic intensity 0dB = ·10^ -12 W·
- Measured according to ISO 3744

4D150008

RXYA18A



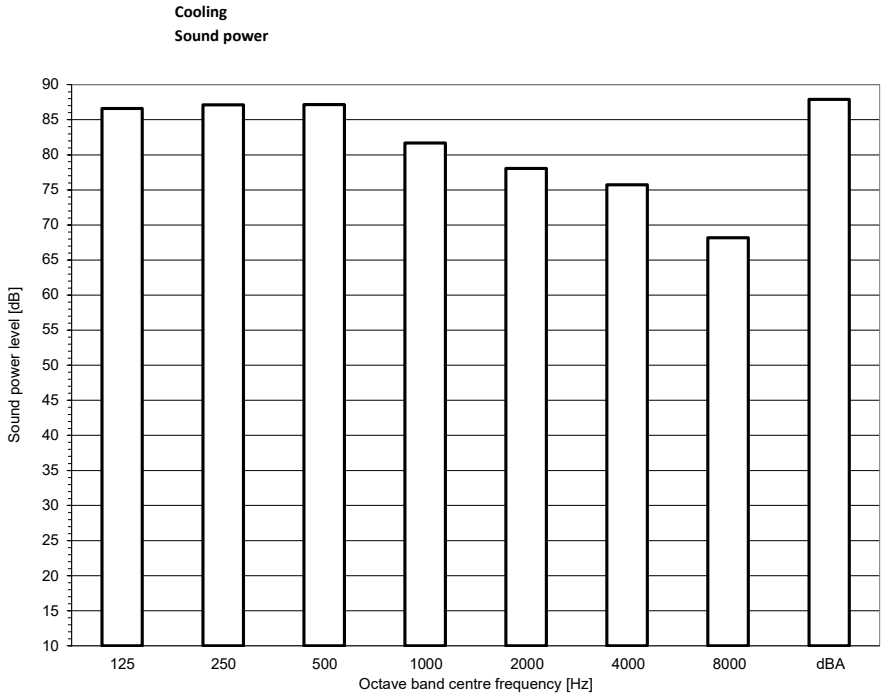
Notes
- dBA = A-weighted sound power level (A scale according to IEC).
- Reference acoustic intensity 0dB = ·10^ -12 W·
- Measured according to ISO 3744

4D150009

11 Sound data

11 - 1 Sound Power Spectrum - Cooling

RXYA20A



Notes

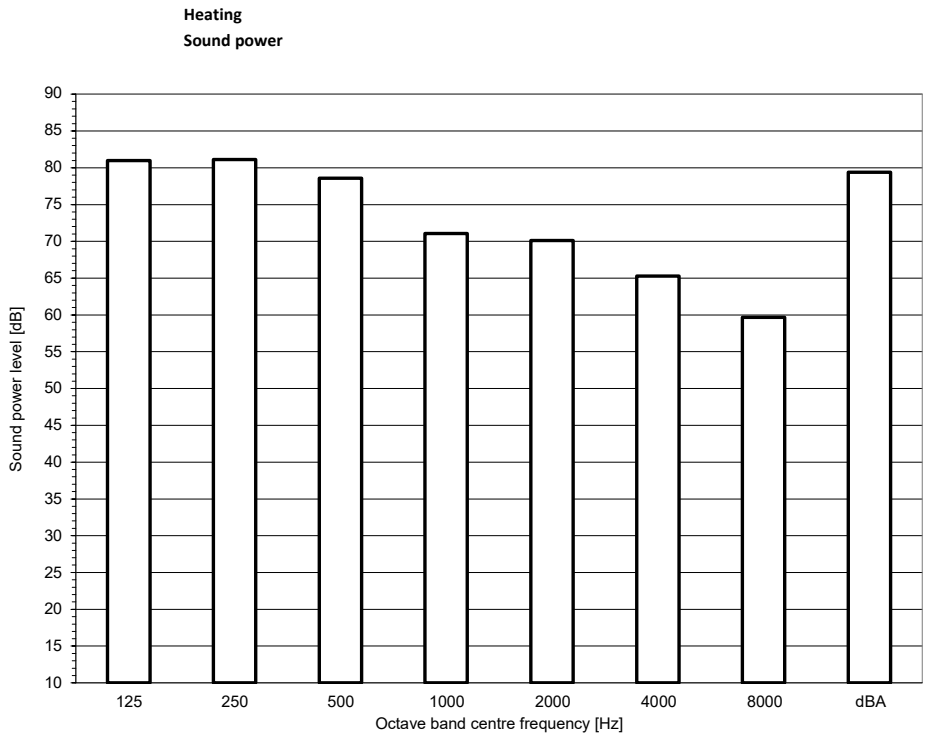
- dBA = A-weighted sound power level (A scale according to IEC).
- Reference acoustic intensity 0dB = ·10^ -12 W·
- Measured according to ISO 3744

4D150010

11 Sound data

11 - 2 Sound Power Spectrum - Heating

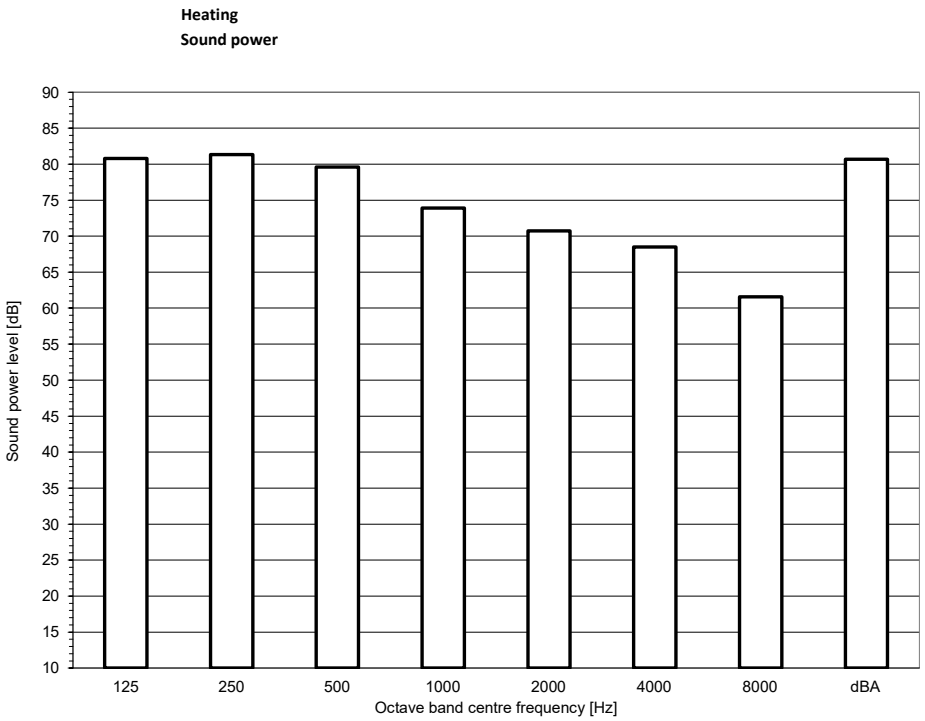
RXYA8A
RYMA5A



Notes
- dBA = A-weighted sound power level (A scale according to IEC).
- Reference acoustic intensity 0dB = ·10^ -12 W·
- Measured according to ISO 3744

4D150004

RXYA10A



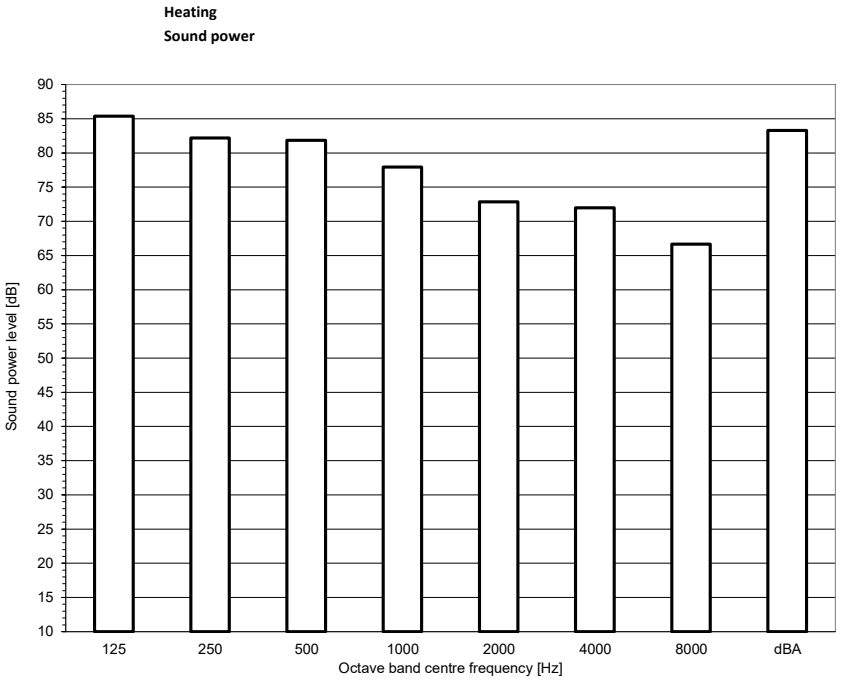
Notes
- dBA = A-weighted sound power level (A scale according to IEC).
- Reference acoustic intensity 0dB = ·10^ -12 W·
- Measured according to ISO 3744

4D150005

11 Sound data

11 - 2 Sound Power Spectrum - Heating

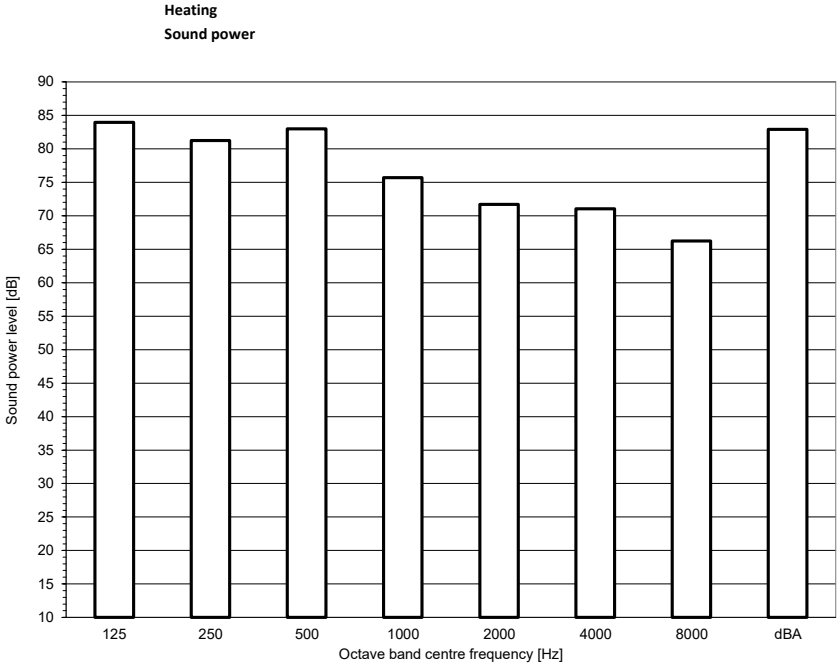
RXYA12A



Notes
- dBA = A-weighted sound power level (A scale according to IEC).
- Reference acoustic intensity 0dB = ·10^ -12 W·
- Measured according to ISO 3744

4D150006

RXYA14A



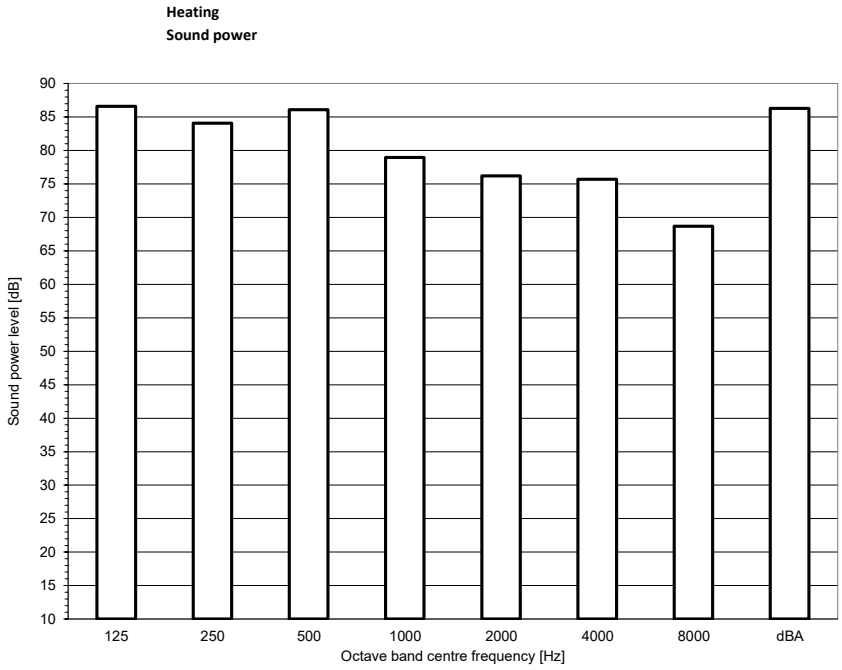
Notes
- dBA = A-weighted sound power level (A scale according to IEC).
- Reference acoustic intensity 0dB = ·10^ -12 W·
- Measured according to ISO 3744

4D150007

11 Sound data

11 - 2 Sound Power Spectrum - Heating

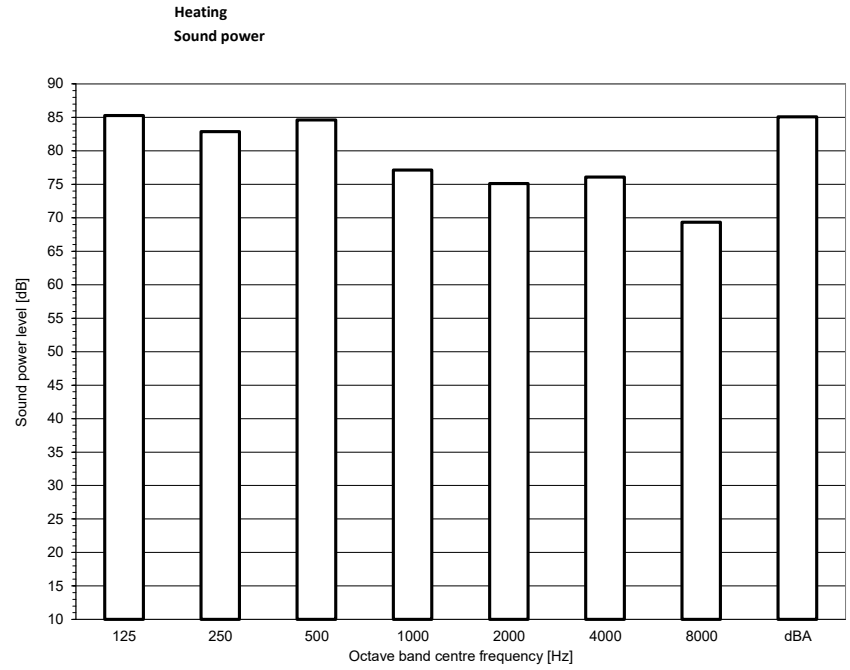
RXYA16A



Notes
- dBA = A-weighted sound power level (A scale according to IEC).
- Reference acoustic intensity 0dB = ·10^ -12 W·
- Measured according to ISO 3744

4D150008

RXYA18A



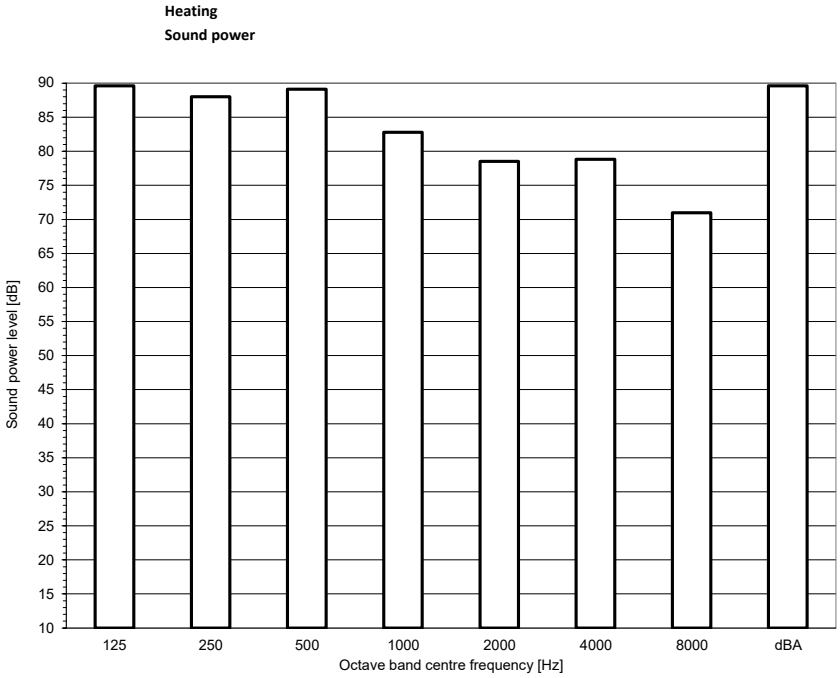
Notes
- dBA = A-weighted sound power level (A scale according to IEC).
- Reference acoustic intensity 0dB = ·10^ -12 W·
- Measured according to ISO 3744

4D150009

11 Sound data

11 - 2 Sound Power Spectrum - Heating

RXYA20A



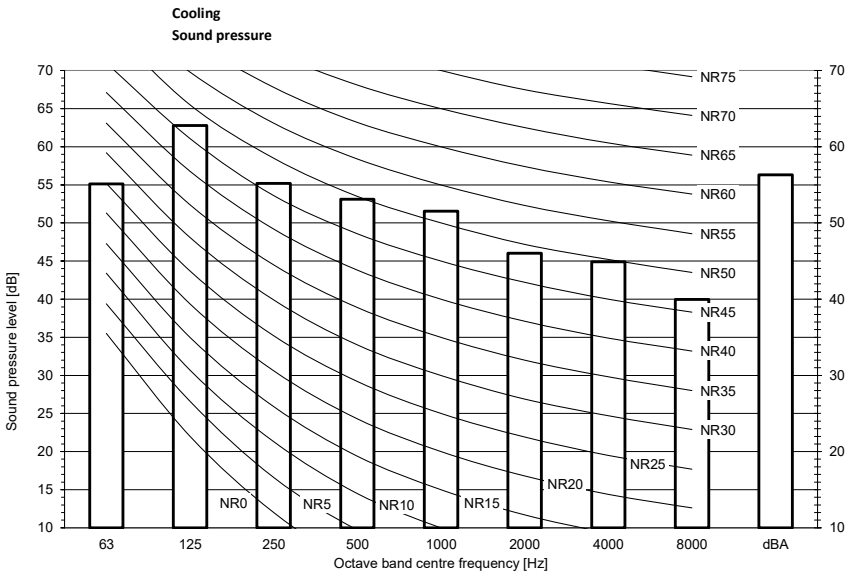
Notes
- dBA = A-weighted sound power level (A scale according to IEC).
- Reference acoustic intensity 0dB = ·10^ -12 W·
- Measured according to ISO 3744

4D150010

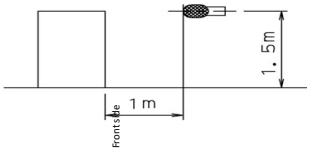
11 Sound data

11 - 3 Sound Pressure Spectrum - Cooling

RXYA8A
RYMA5A

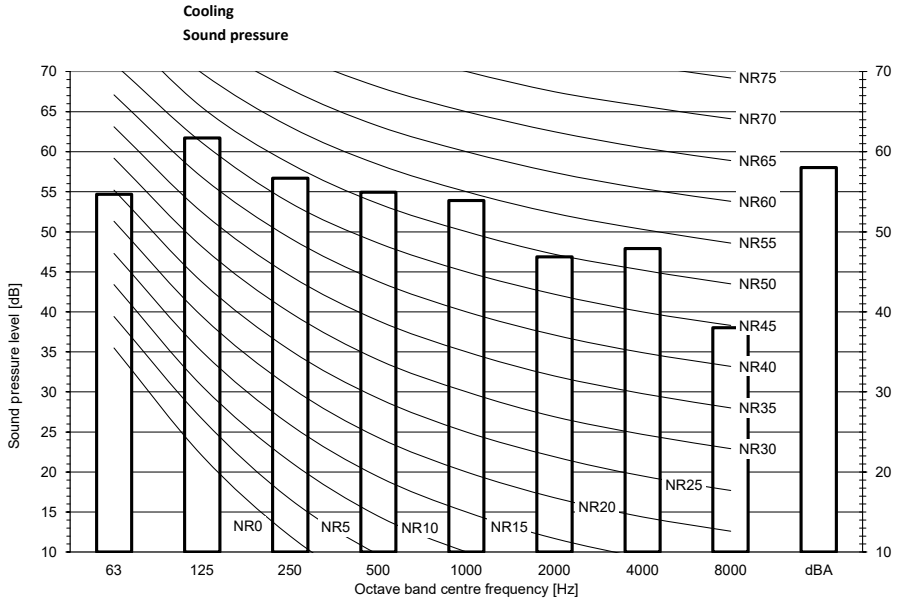


Notes
- Data is valid at free field condition.
- Data is valid at nominal operation condition.
- dBA = A-weighted sound pressure level (A scale according to IE
- Reference acoustic pressure 0 dB = 20 µPa

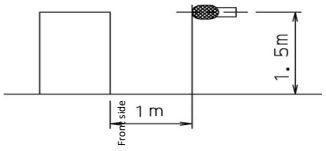


4D150004

RXYA10A



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

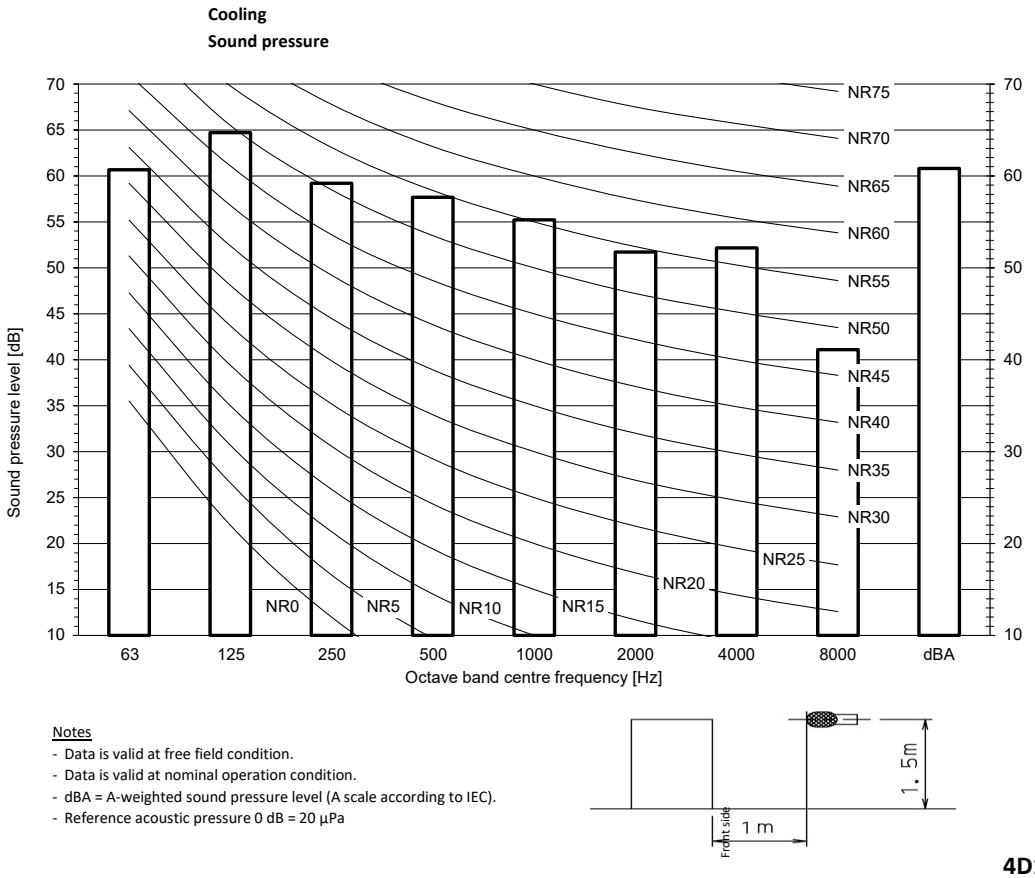


4D150005

11 Sound data

11 - 3 Sound Pressure Spectrum - Cooling

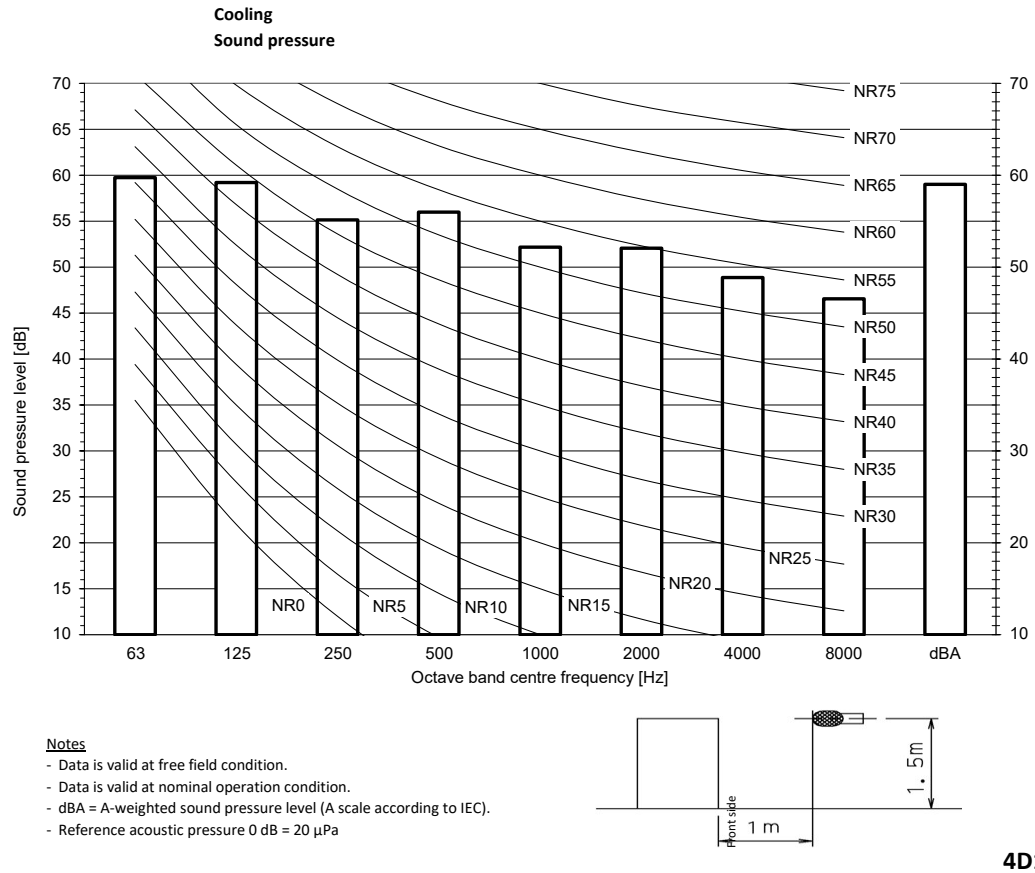
RXYA12A



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

4D150006

RXYA14A



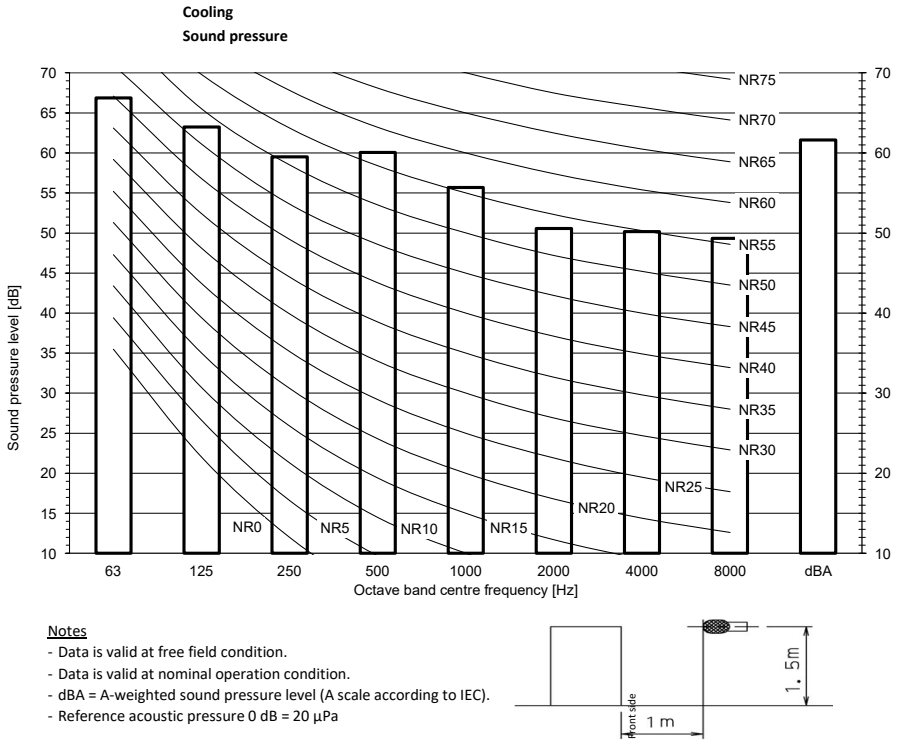
Notes
- Data is valid at free field condition.
- Data is valid at nominal operation condition.
- dBA = A-weighted sound pressure level (A scale according to IEC).
- Reference acoustic pressure 0 dB = 20 µPa

4D150007

11 Sound data

11 - 3 Sound Pressure Spectrum - Cooling

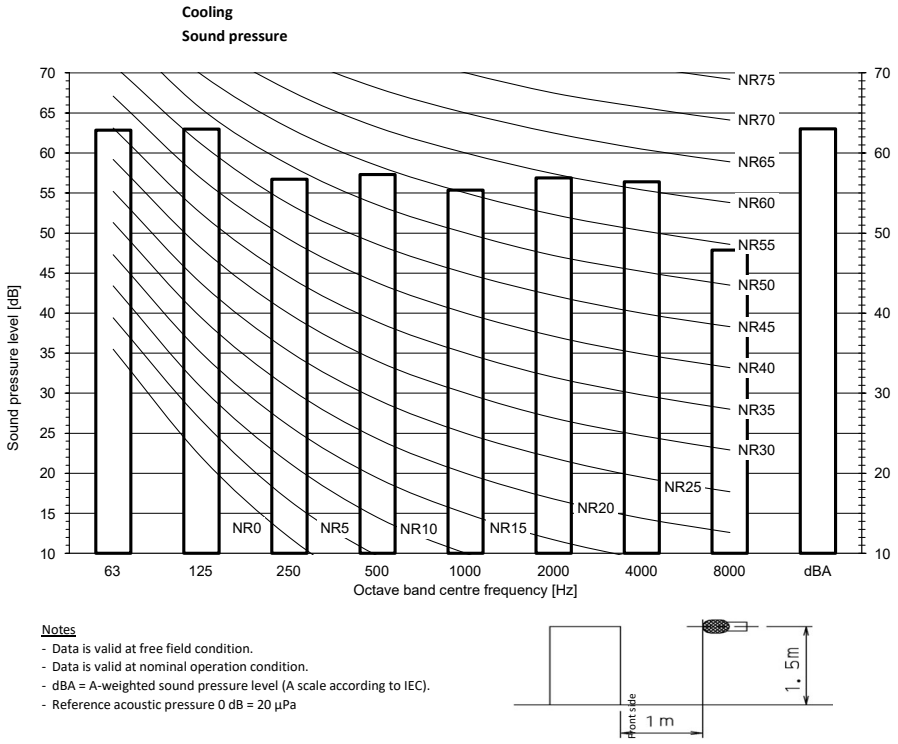
RXYA16A



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

4D150008

RXYA18A



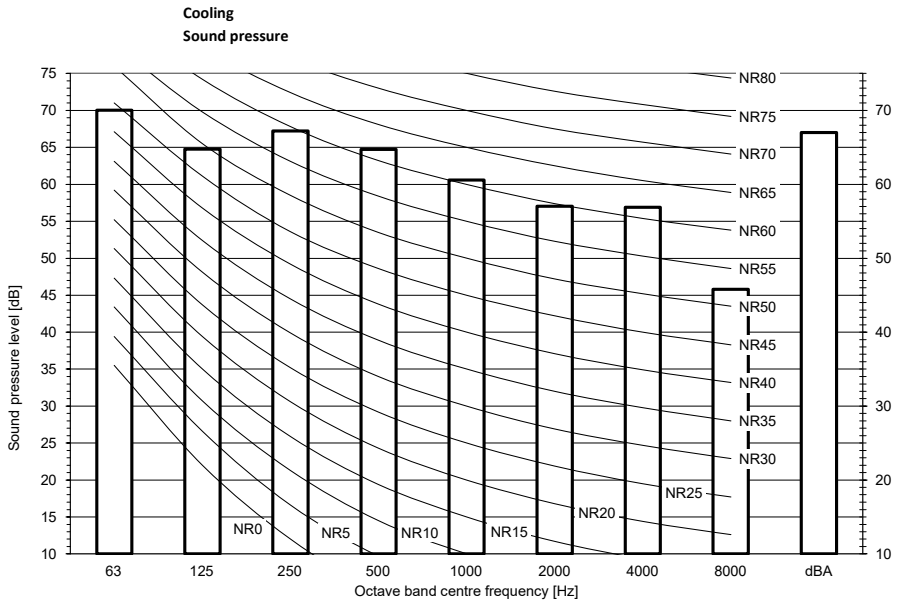
Notes
- Data is valid at free field condition.
- Data is valid at nominal operation condition.
- dBA = A-weighted sound pressure level (A scale according to IEC).
- Reference acoustic pressure 0 dB = 20 µPa

4D150009

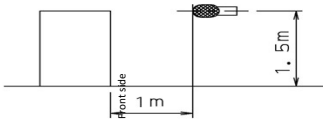
11 Sound data

11 - 3 Sound Pressure Spectrum - Cooling

RXYA20A



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



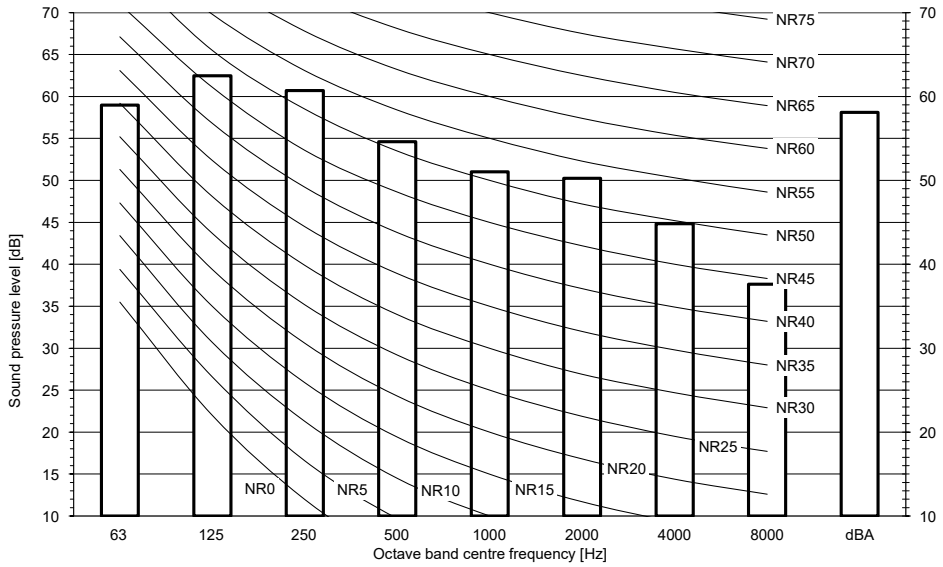
4D150010

11 Sound data

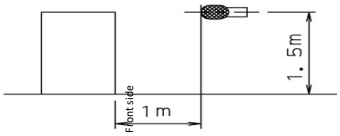
11 - 4 Sound Pressure Spectrum - Heating

RXYA8A
RYMA5A

Heating
Sound pressure



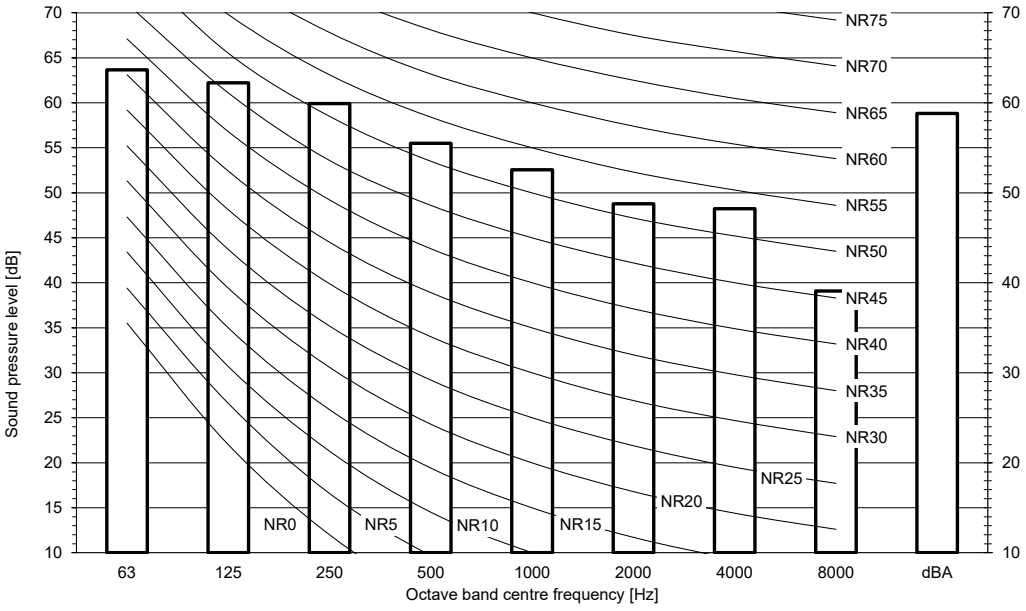
Notes
- Data is valid at free field condition.
- Data is valid at nominal operation condition.
- dBA = A-weighted sound pressure level (A scale according to IEC).
- Reference acoustic pressure 0 dB = 20 µPa



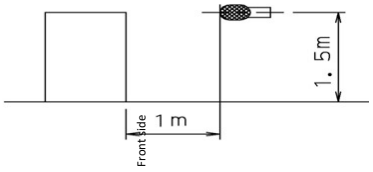
4D150004

RXYA10A

Heating
Sound pressure



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

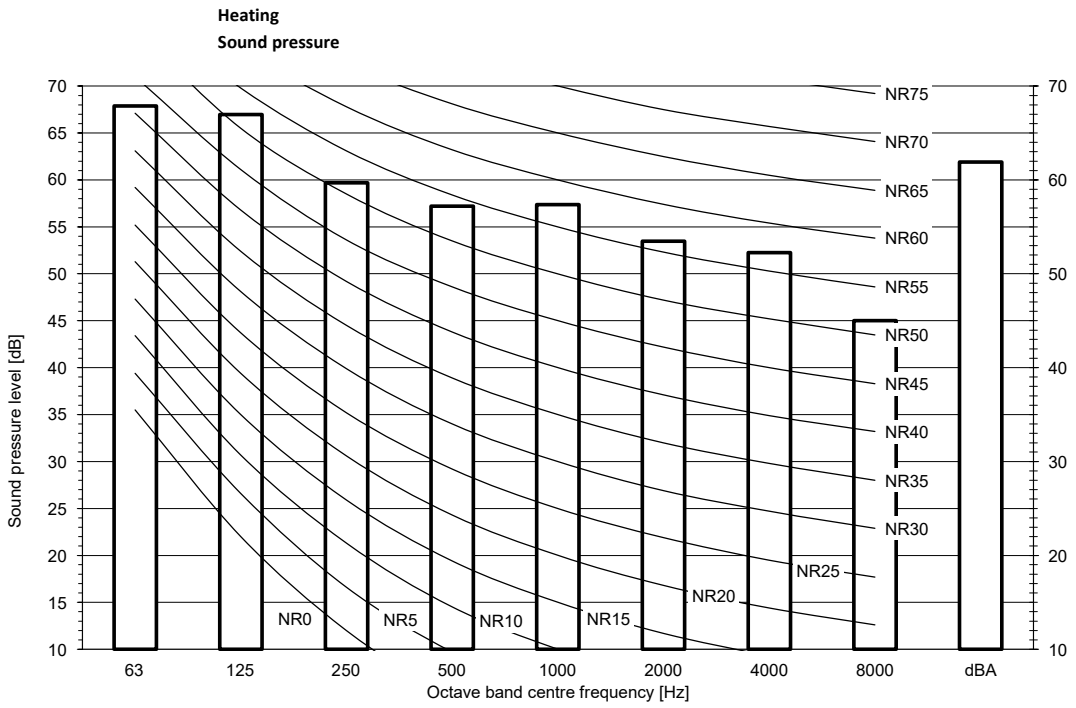


4D150005

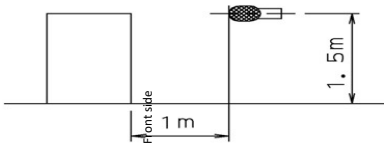
11 Sound data

11 - 4 Sound Pressure Spectrum - Heating

RXYA12A

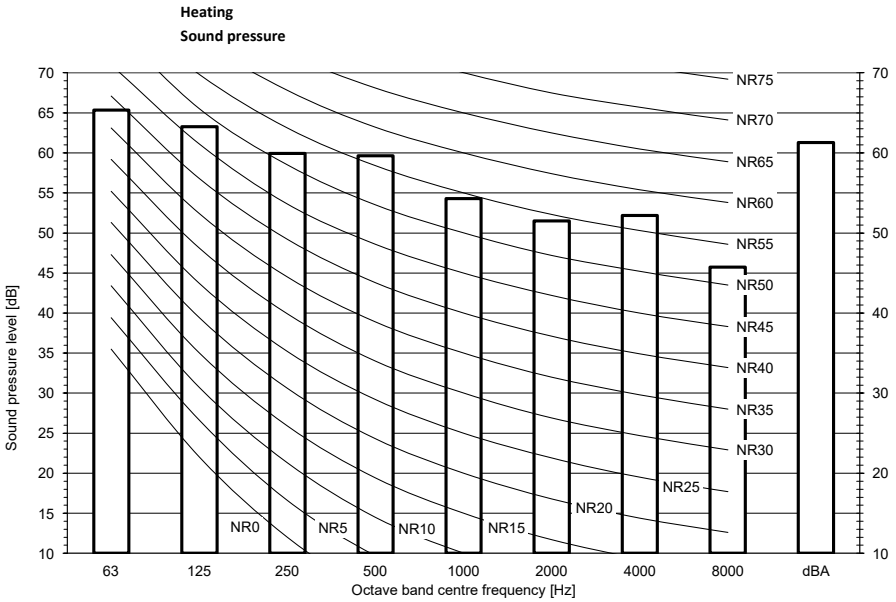


Notes
- Data is valid at free field condition.
- Data is valid at nominal operation condition.
- dBA = A-weighted sound pressure level (A scale according to IEC).
- Reference acoustic pressure 0 dB = 20 µPa

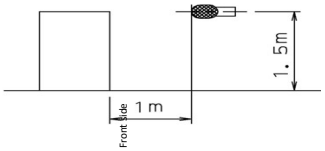


4D150006

RXYA14A



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

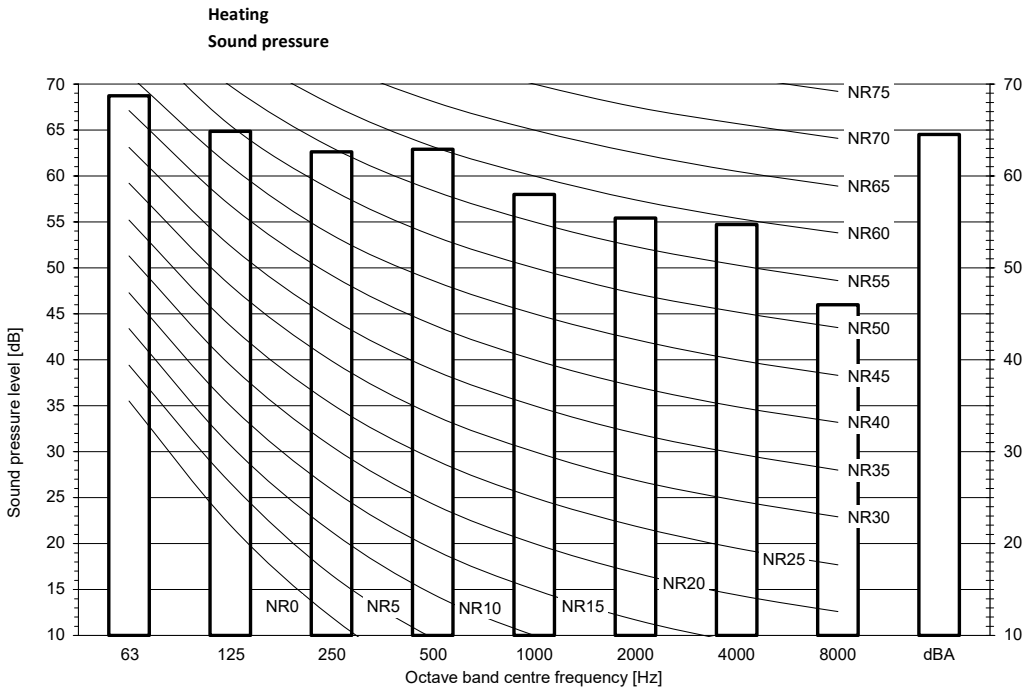


4D150007

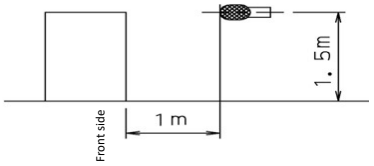
11 Sound data

11 - 4 Sound Pressure Spectrum - Heating

RXYA16A

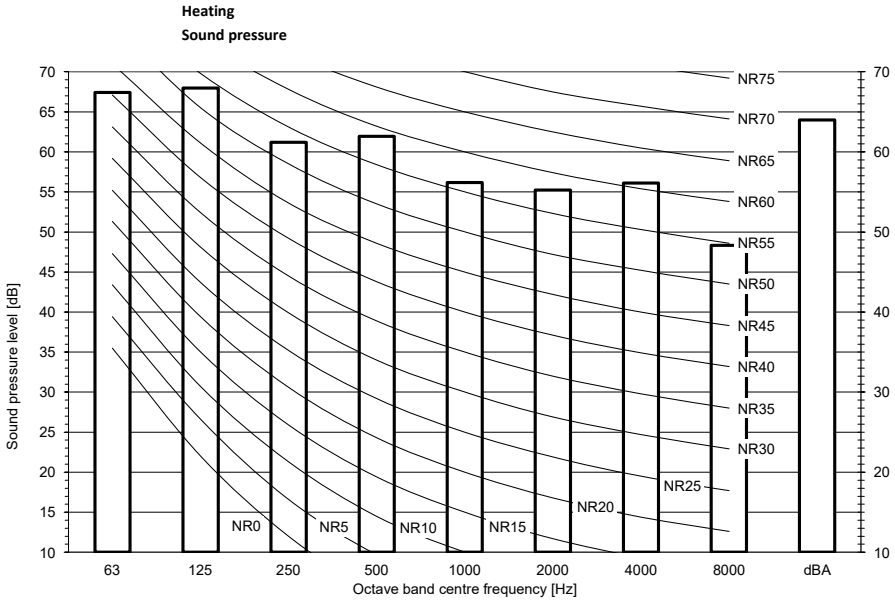


Notes
- Data is valid at free field condition.
- Data is valid at nominal operation condition.
- dBA = A-weighted sound pressure level (A scale according to IEC).
- Reference acoustic pressure 0 dB = 20 µPa

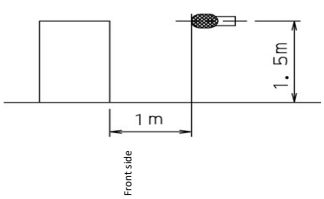


4D150008

RXYA18A



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

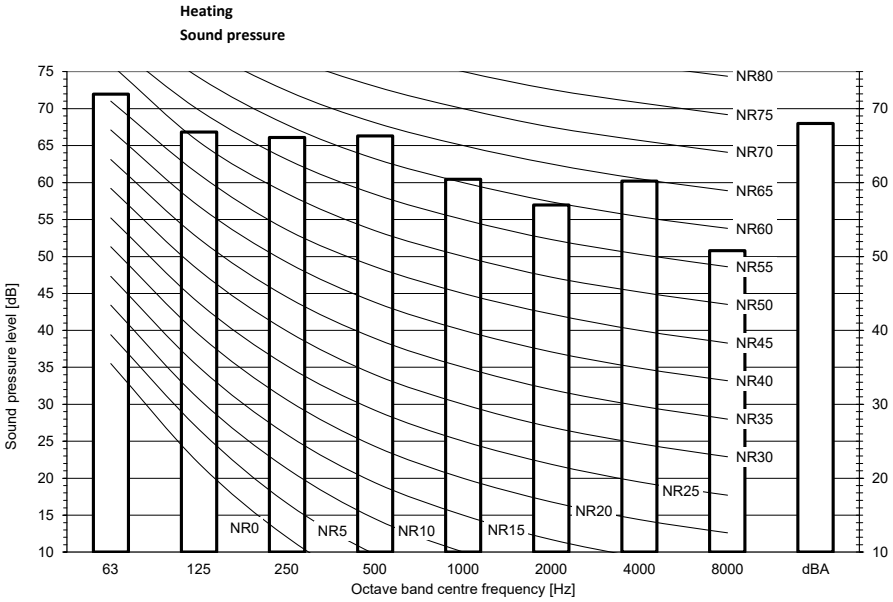


4D150009

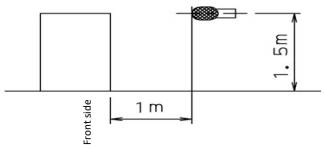
11 Sound data

11 - 4 Sound Pressure Spectrum - Heating

RXYA20A



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



4D150010

11 Sound data

11 - 5 Sound level data Quiet mode

RXYA-A
RYMA5A **VRV-5** **Heat pump**
Low noise data (level ·1-5·)

	Capacity ratio
LN1	90%
LN2	75%
LN3	60%
LN4	45%
LN5	30%

5HP/ 8HP	Cooling		Heating	
	Sound power [dBA]	Sound pressure [dBA]	Sound power [dBA]	Sound pressure [dBA]
LN1	75	53	76	55
LN2	72	50	73	52
LN3	69	47	70	49
LN4	66	44	67	46
LN5	63	41	64	43

10HP	Cooling		Heating	
	Sound power [dBA]	Sound pressure [dBA]	Sound power [dBA]	Sound pressure [dBA]
LN1	76	55	78	56
LN2	73	52	75	53
LN3	70	49	72	50
LN4	67	46	69	47
LN5	64	43	66	44

12HP	Cooling		Heating	
	Sound power [dBA]	Sound pressure [dBA]	Sound power [dBA]	Sound pressure [dBA]
LN1	79	58	80	58
LN2	76	55	77	55
LN3	73	52	74	52
LN4	70	49	71	49
LN5	67	46	68	46

14HP	Cooling		Heating	
	Sound power [dBA]	Sound pressure [dBA]	Sound power [dBA]	Sound pressure [dBA]
LN1	76	54	81	58
LN2	73	51	78	55
LN3	70	48	75	52
LN4	67	45	72	49
LN5	64	42	69	46

16HP	Cooling		Heating	
	Sound power [dBA]	Sound pressure [dBA]	Sound power [dBA]	Sound pressure [dBA]
LN1	81	58	84	62
LN2	78	55	82	59
LN3	75	52	80	56
LN4	72	49	77	53
LN5	69	46	74	50

4D150022

11 Sound data

11 - 5 Sound level data Quiet mode

RXYA-A
RYMA5A

18HP	Cooling		Heating	
	Sound power [dBA]	Sound pressure [dBA]	Sound power [dBA]	Sound pressure [dBA]
LN1	81	60	83	61
LN2	78	57	81	58
LN3	76	54	78	55
LN4	74	51	75	52
LN5	71	48	72	49

20HP	Cooling		Heating	
	Sound power [dBA]	Sound pressure [dBA]	Sound power [dBA]	Sound pressure [dBA]
LN1	85	64	87	65
LN2	82	61	84	62
LN3	80	58	81	59
LN4	77	55	79	56
LN5	74	52	77	53

LN1: Low noise level ·1·
LN2: Low noise level ·2·
LN3: Low noise level ·3·
LN4: Low noise level ·4·
LN5: Low noise level ·5·

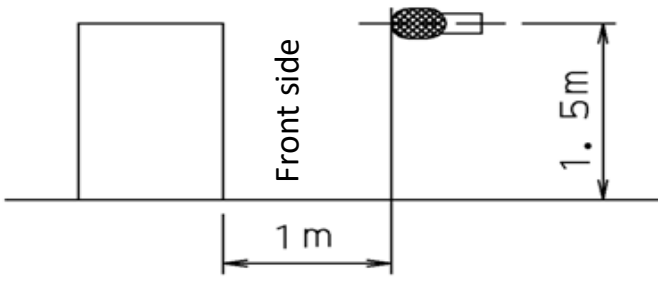
Notes

Sound power

dBA = A-weighted sound power level (A scale according to IEC).
Reference acoustic intensity 0dB = ·10^ -12 W·
Measured according to ISO 3744

sound pressure

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



4D150022

11 Sound data

11 - 6 Sound power level at high ESP

RXYA-A
RYMA5A

VRV-5 **Heat pump**
High ESP

	Cooling	Heating
	Sound power [dBA]	**Sound power [dBA]**
5HP	81	84
8HP	81	84
10HP	81	84
12HP	81	84
14HP	83	85
16HP	87	89
18HP	87	89
20HP	88	90

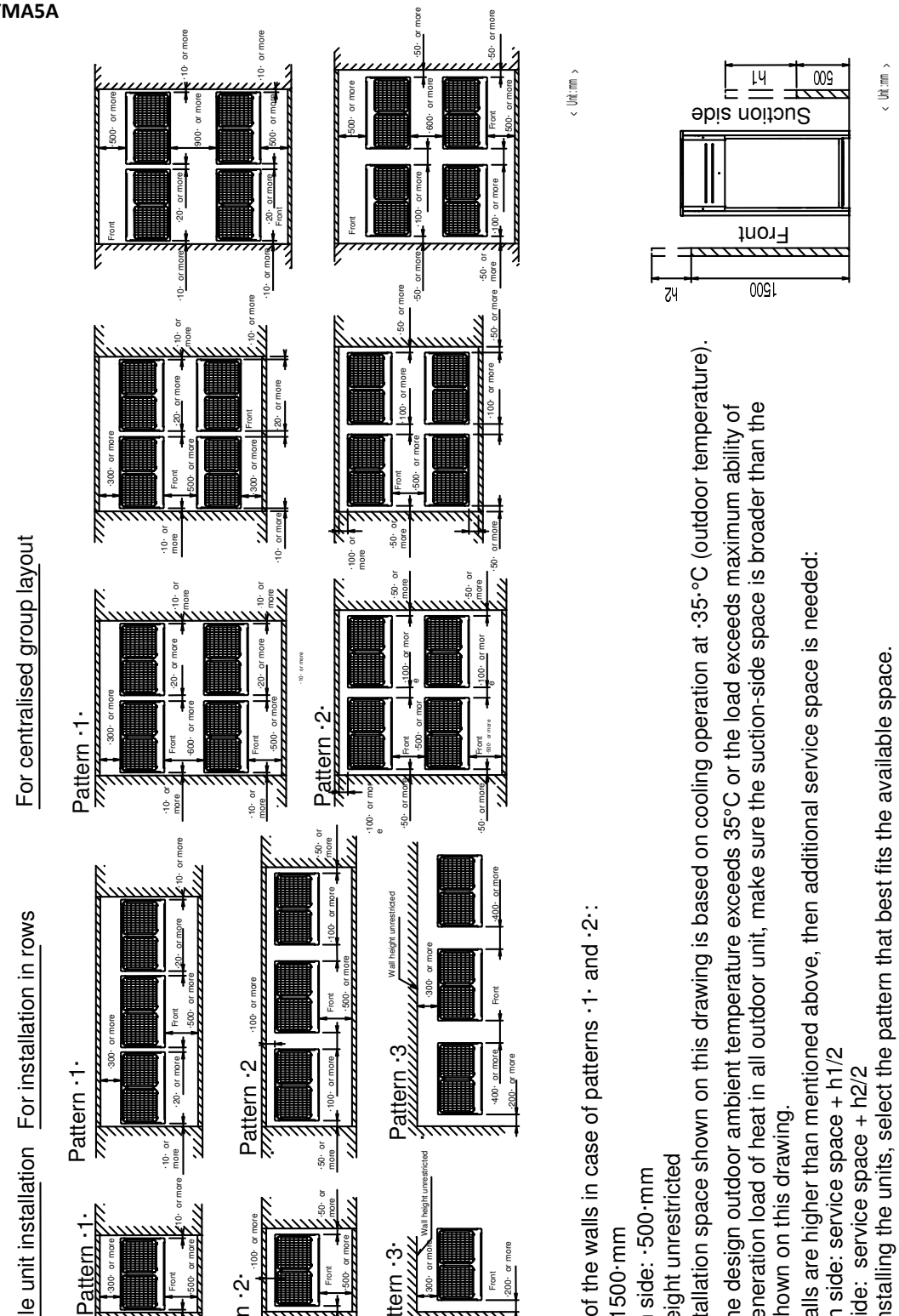
Sound power is measured on a freestanding unit.
Actual sound is depending on the installation of the duct.

4D149959

12 Installation

12 - 1 Installation Method

RXYA-A
RYMA5A



Notes

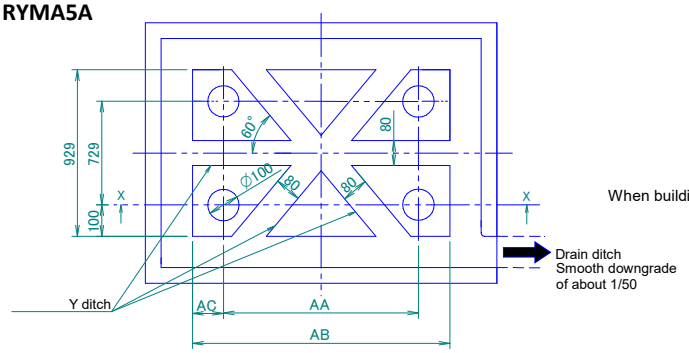
1. Height of the walls in case of patterns ·1· and ·2·:
   Front: ·1500·mm
   Suction side: ·500·mm
   Side: height unrestricted
   The installation space shown on this drawing is based on cooling operation at ·35·°C (outdoor temperature).
   When the design outdoor ambient temperature exceeds 35°C or the load exceeds maximum ability of much generation load of heat in all outdoor unit, make sure the suction-side space is broader than the space shown on this drawing.
2. If the walls are higher than mentioned above, then additional service space is needed:
   - suction side: service space + h1/2
   - front side: service space + h2/2
3. When installing the units, select the pattern that best fits the available space.
   Always keep in mind to leave sufficient space for a person to pass between unit and wall and for the air to circulate freely.
   Provide sufficient space at the front to connect refrigerant piping (comfortably).
4. If more units are to be installed than are catered for in the above patterns, your layout should take into account of the possibilit y of short circuits.

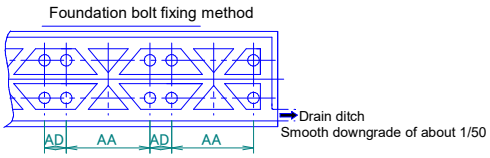
3D118467A

12 Installation

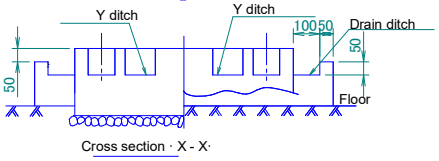
12 - 2 Fixation and Foundation of Units

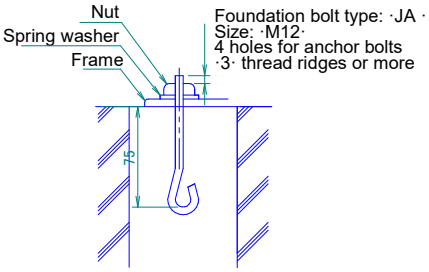
RXYA-A
RYMA5A





When building a foundation on the ground ⇔ When building a foundation on a concrete floor





For multi-unit installation

Model	AA	AB	AC	AD
RYYQ8-12U RYMQ8-12U RXYQ8-12U RXYQQ8-12U REMQ5T/REYQ8-12U RXYTQ8U REMA5A/REYA8-12A RYMA5A/RXYA8-12A	766	992	113	185
RYYQ14-20U RYMQ14-20U RXYQ14-20U RXYQQ14-20U REYQ14-20U RXYTQ10-16U REYA14-20A RXYA14-20A	1076	1076		

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.

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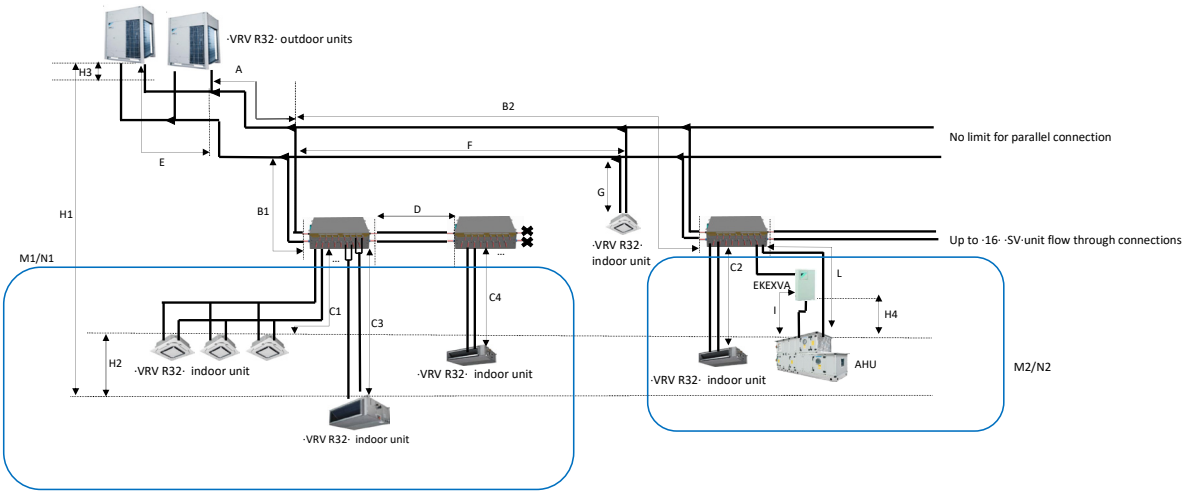
12 Installation

12 - 3 Refrigerant Pipe Selection

RXYA-A
RYMA5A



4D149886

RXYA-A
RYMA5A

VRV5
Heat pump
Piping restrictions

	Total				Allowed capacity	
	Capacity	Maximum indoor unit quantity (*1)	Maximum total downstream capacity — flow through connection ·SV· unit [M1]; [M2]	Maximum downstream number of ports – flow through connection ·SV· unit [N1]; [N2]	·VRV DX· indoor unit	Air handling unit (AHU)
·VRV R32 DX· indoor unit	50 ~ 130%	64	650	16	50 ~ 130%	-
AHU only (Pair (·EKEXVA+EKEACBVE·)) (*5)	65/75 ~ 110% (*3)(*4)	64 (*2)(*6)	550	16	-	65/75 ~ 110% (*3)(*4)
AHU only (Multi (·EKEXVA+EKEACBVE·)) (*5)	65/75 ~ 110% (*3)(*4)	64 (*2)(*6)	550	16	-	65/75 ~ 110% (*3)(*4)
·VRV R32 DX· indoor unit + ·AHU mix(EKEXVA+EKEACBVE)·	50 ~ 110% (*3)	64 (*2)	550	16	50 ~ 110%	0 ~ 60% (*3)

Notes

1. Excluding ·SV· units and including ·EKEXVA· kits.
2. For connection with ·AHU·
   ·EKEXVA· kits are also considered indoor units.
3. Restrictions regarding the air handling unit capacity
4. ·75%~110%·: default situation
   ·65%~75%·: Allowed if stricter AHU volume limitations are valid.
   Refer to the databook of ·EKEACBVE· for details.
5. Pair AHU = system with 1 air handling unit connected to one outdoor unit system
   Multi AHU = system with multiple air handling units connected to one outdoor unit system
   Mixed AHU = mix of AHU units and ·VRV DX· indoor units connected to one outdoor system
6. Number of AHUs that can be connected in case of pair or multi layout depends on the control types:
   ·X·-control is possible (up to ·3· [·(EKEXV+EKEQFA*)· or ·(EKEXVA+EKEACBVE)· boxes] can be connected to one outdoor unit (system)).
   ·Y·-control is possible (up to ·3· [·(EKEXV+EKEQFA*)· or ·(EKEXVA+EKEACBVE)· boxes] can be connected to one outdoor unit (system)).
   ·W·-control is possible (up to ·3· [·(EKEXV+EKEQFA*)· or ·(EKEXVA+EKEACBVE)· boxes] can be connected to one outdoor unit (system)).
   ·Z,Z'·-control is possible (the allowed number of [·EKEXVA + EKEACBVE · boxes] is determined by the connection ratio and the capacity of the outdoor unit.
   ·Z·-control is possible (the allowed number of [·EKEXV + EKEQMA* · boxes] is determined by the connection ratio and the capacity of the outdoor unit.

Amount of units connectable to a ·SV· unit

	SV1A	SV4A	SV6A	SV8A	Multi ·SV· per branch	Multi ·SV· when 2 branches are combined
·VRV R32 DX· indoor unit	Maximum ·5· units Maximum ·250· class	Maximum ·20· units Maximum ·400· class	Maximum ·30· units Maximum ·600· class	Maximum ·40· units Maximum ·650· class	Maximum ·5· units Maximum ·140· class	Maximum ·5· units Maximum ·250· class

Notes

7. Excluding ·SV1A· units
   In case the indoor unit capacity class exceeds ·140·, two branch ports need to be combined. Refer to the installation manual for more details.

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12 Installation

12 - 3 Refrigerant Pipe Selection

RXYA-A

RYMA5A **VRV5**

Heat pump
Piping restrictions

		Maximum piping length			Maximum height difference			Total piping length
		Longest pipe from the outdoor unit or the last multi-outdoor piping branch Actual / Equivalent Maximum · (A+B1+C1, A+B2+C2, A+B1+C3, A+B1+D+C4,A+F+G,A+B2+L)·	Longest pipe after first branch or multi ·SV· unit Actual Maximum ·(B1+C1, B2+C2, B1+C3, B1+D+C4,F+G,B2+L)·	Longest pipe from the outdoor unit to the last multi-outdoor piping branch Actual / Equivalent Maximum ·(E)·	Indoor-to-outdoor Outdoor unit higher than indoor unit / Indoor unit higher than outdoor unit Maximum ·(H1)·	Indoor-to-indoor Maximum ·(H2)·	Outdoor-to-outdoor Maximum ·(H3)·	Piping length Maximum
·VRV R32 DX· indoor units only		165/190 m (*3)	40 m (*1) (*4)	-	50/40 m (*2)	30 m	-	1000 m
Multi-outdoor unit combinations		135/160 m (*3)	40 m (*1) (*4)	10/13 m	50/40 m (*2)	30m	5 m	500 m
·AHU· connection	Pair (*5)	50/55 m (*7)	40 m	10/13 m	40/40 m	-	5 m	150m (*9)
	Multi (*6)	165/190 m (*3)	40 m	10/13 m	40/40 m	15 m	5 m	1000 m
	Mix (*8)	165/190 m (*3)	40 m	10/13 m	40/40 m	15 m	5 m	1000 m

Maximum piping length		Maximum height difference
·AHU· connection	·EKEXVA· to ·AHU· (l)	·EKEXVA· to ·AHU· (H4)
Pair (*5)	5 m	5 m
Multi (*6)	5 m	5 m
Mix (*8)	5 m	5 m

Notes

1. If all conditions below are met, the limitation can be extended up to 90 m
   a. The piping length between all indoor units and the nearest branch kit or ·SV· unit is ≤·40· m
   b. It is required to size up gas and liquid piping between the first branch kit or ·SV· unit and the last branch kit or last ·SV· unit.
      i. If the increased pipe size is larger than the pipe size of the main pipe, also increase the size of the main pipe.
   c. When the piping size is increased, the piping length has to be counted as double.
      i. The total piping length has to be within limitations.
   d. The piping length difference between the nearest indoor unit to the outdoor unit and the farthest indoor unit to the outdoor unit is ≤ ·40·m.
2. If all conditions below are met, the limitation can be extended up to 90 m
   a. Indoor units are ·VRV R32 DX· only.
   b. If the outdoor units are positioned higher than the indoor units:
      i. Size up the liquid piping
      ii. A dedicated setting on the outdoor unit is required.
      For more information, refer to the service manual.
   c. If the outdoor units are positioned lower than the indoor units:
      i. Size up the liquid piping
      ii. A dedicated setting on the outdoor unit is required.
      For more information, refer to the service manual.
3. If the equivalent piping length is >·90· m, size up the main liquid and gas piping.
4. Limit of ·40· m between ·SV· unit and indoor unit is depending on room size (cfr. Safety system).
5. Pair AHU = system with 1 air handling unit connected to one outdoor unit system
6. Multiple air handling units (·AHU·)(·EKEXVA· + ·EKEACBVE· kits).
7. The allowable minimum length is ·5· m.
8. Mix of air handling units (·EKEXVA+EKEACBVE·) and ·VRV R32 DX· indoor units.
9. Up to ·3· piping branches are possible in case of an AHU with an interlaced heat exchanger.

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12 Installation

12 - 4 Refrigerant Charge Information

RXYA-A
RYMA5A

Requirements for R32 units

To comply with the requirements of enhanced tightness refrigerating systems of the IEC ·60335-2-40:2022·, this system is equipped with an alarm in the remote controller and shut-off valves in the ·SV· unit.

These safety measures are installation specific and can be determined using the requirements mentioned in the outdoor unit manual.

The ·SV· unit is prearranged for a ventilated enclosure as countermeasure.

Outdoor unit installation

The outdoor unit has to be installed outside. For indoor installation of the outdoor unit, additional measures can be necessary to comply with the applicable legislation.

Indoor unit installation

The total amount of refrigerant in the system shall be less than or equal to the maximum allowed total refrigerant amount.

The maximum allowed total refrigerant amount depends on the area of the rooms being served by the system and the rooms in the lowest underground floor.

Note: The total refrigerant charge amount in the system MUST always be lower than ·79.8· [kg].

Depending on the smallest room size in which the indoor unit is installed/conditioning and the total amount of refrigerant in the system, different safety measures can be applied.

Follow the flowchart. Details are described in the manual of the outdoor unit.

Use the graph or table ·1· to determine the required safety measures for the indoor unit.

Note: If the installation height is more than ·2.2· m, different boundaries for the applicable safety measures can apply.

To know which safety measure is required in case the installation height is more than ·2.2· m, refer to VRV Xpress (https://vrvxpress.daikin.eu/).

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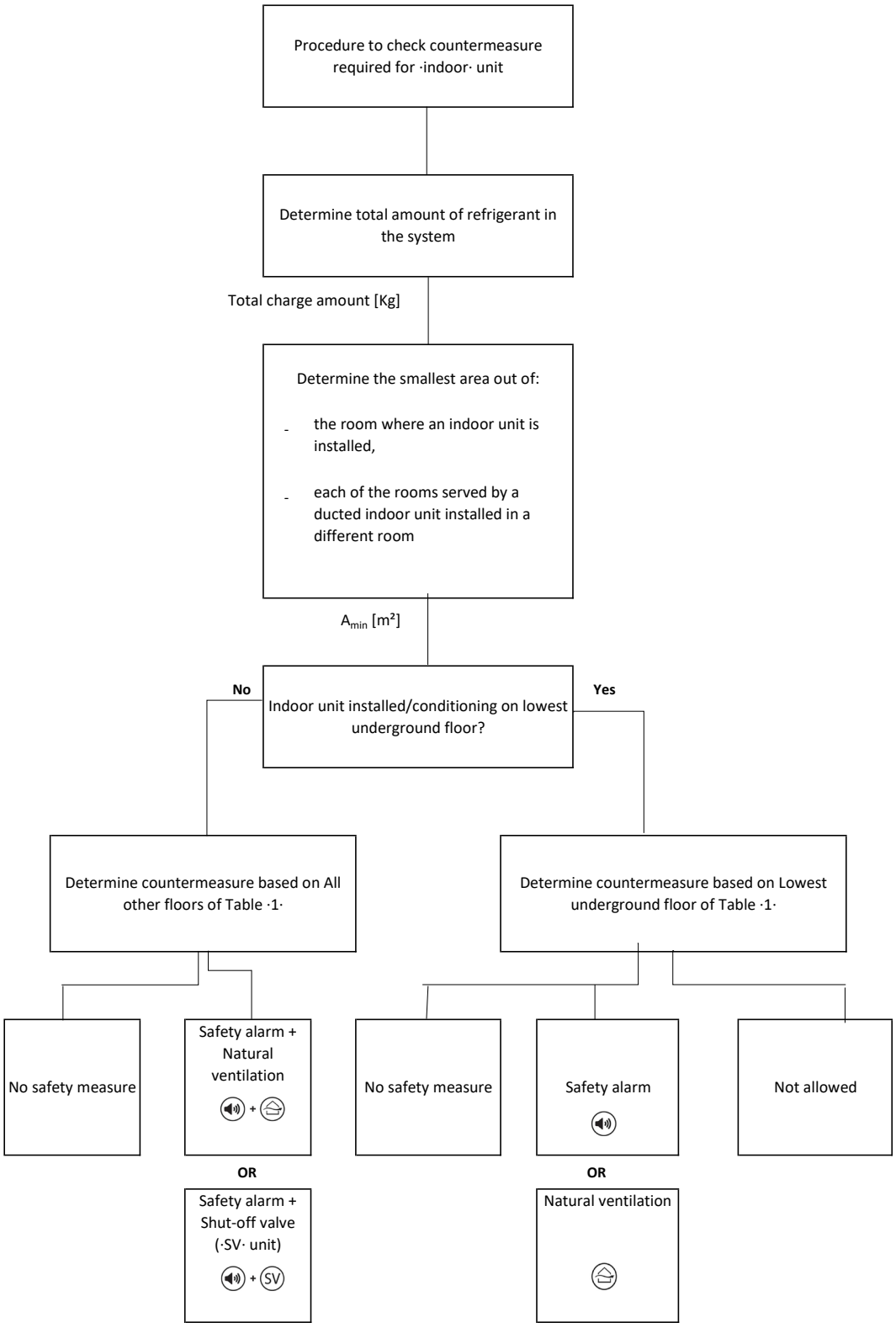
12 Installation

12 - 4 Refrigerant Charge Information

RXYA-A
RTMA5A

Indoor unit installation



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12 Installation

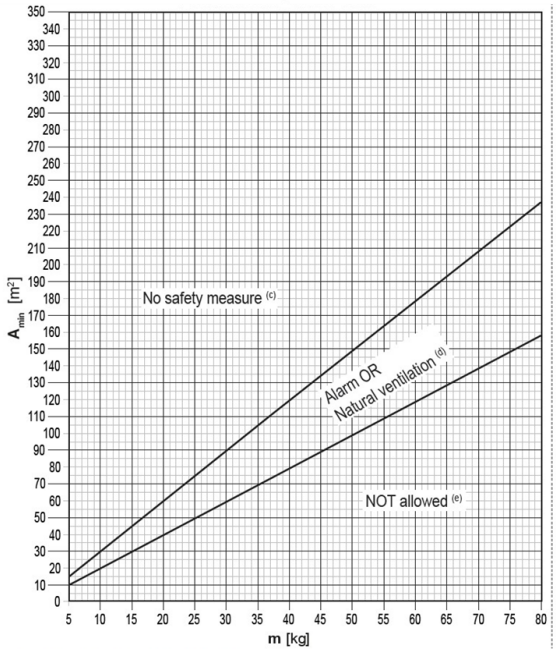
12 - 4 Refrigerant Charge Information

RXYA-A
RYMA5A

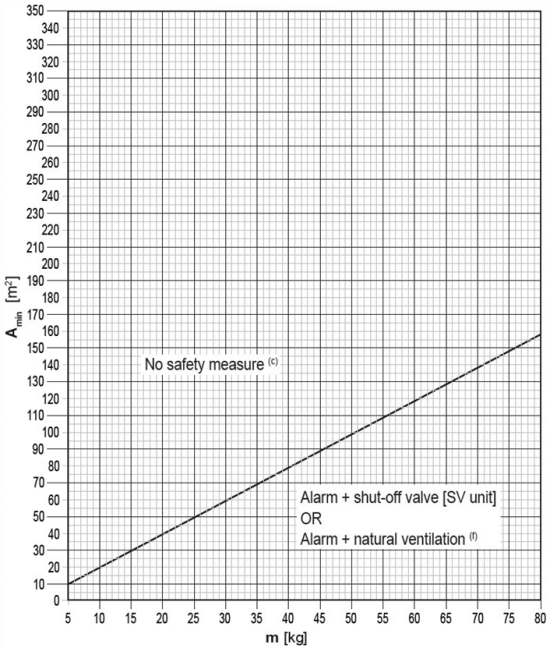
Indoor unit installation

Table ·1·

Lowest underground floor (·a·)



All other floors (·b·)



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RXYA-A
RYMA5A

Indoor unit installation

m [kg]	A_{min} [m²]			m [kg]	A_{min} [m²]		
	Lowest underground floor (·a·)		All other floors (·b·)		Lowest underground floor (·a·)		All other floors (·b·)
	No safety measure (·c·)	Safety alarm OR Natural ventilation (·d·)	No safety measure (·c·)		No safety measure (·c·)	Safety alarm OR Natural ventilation (·d·)	No safety measure (·c·)
5	15	10	10	43	128	85	85
6	18	12	12	44	131	87	87
7	21	14	14	45	134	89	89
8	24	16	16	46	137	91	91
9	27	18	18	47	140	93	93
10	30	20	20	48	143	95	95
11	33	22	22	49	146	97	97
12	36	24	24	50	149	99	99
13	39	26	26	51	152	101	101
14	42	28	28	52	154	103	103
15	45	30	30	53	157	105	105
16	48	32	32	54	160	107	107
17	51	34	34	55	163	109	109
18	54	36	36	56	166	111	111
19	57	38	38	57	169	113	113
20	60	40	40	58	172	115	115
21	63	42	42	59	175	117	117
22	66	44	44	60	178	119	119
23	69	46	46	61	181	121	121
24	72	48	48	62	184	123	123
25	75	50	50	63	187	125	125
26	77	52	52	64	190	127	127
27	80	54	54	65	193	129	129
28	83	56	56	66	196	131	131
29	86	58	58	67	199	133	133
30	89	60	60	68	202	135	135
31	92	62	62	69	205	137	137
32	95	64	64	70	208	139	139
33	98	66	66	71	211	141	141
34	101	68	68	72	214	143	143
35	104	70	70	73	217	145	145
36	107	72	72	74	220	147	147
37	110	74	74	75	223	149	149
38	113	76	76	76	226	151	151
39	116	77	77	77	229	153	153
40	119	79	79	78	231	154	154
41	122	81	81	79	234	156	156
42	125	83	83	80	237	158	158

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12 Installation

12 - 4 Refrigerant Charge Information

RXYA-A

RYMA5A

Indoor unit installation

Safety measures include:

No safety measure

When the room area is sufficiently large, no safety measures are required.

Safety alarm

When the R32 sensor in the indoor unit detects a refrigerant leak, it will activate the alarm that will warn the user visually and audibly.

Each indoor unit must be connected with an R32 safety system compatible remote controller (e.g. ·BRC1H52/82*· or later type).

Each indoor unit must be connected to a separate remote controller. In case indoor units are operating under group control, it is possible to only use one remote controller per room.

In case the indoor unit is serving a different room than where it is installed, a remote controller is required in both the installed and the served room.

For buildings where sleeping facilities are offered (e.g. hotel), where persons are restricted in their movements (e.g. hospital), where an uncontrolled number of persons is present or buildings where people are not aware of the safety precautions:

It is mandatory to install one of the following devices at a location with 24-hour monitoring.

- a supervisor remote controller
- or a centralised controller, e.g. iTM with external alarm via WAGO module,
- iTM with built-in alarm, ...

The alarm should always be ·15· dB louder than the background noise of the room.
For details, see the manual of the ·outdoor· unit.

Natural ventilation

Natural ventilation is a safety measure where ventilation is made to a place where sufficient air is available to dilute the leaked refrigerant such as a large space.

Step ·1·
Determine total room area, which is the total area of the space that has natural ventilation and the space in which the indoor unit is installed.

Step ·2·
Use the graph or table to determine the total refrigerant charge limit in the system.

See table ·2·.
If the installation height is more than ·2.2· m, a higher total refrigerant charge limit of the system can apply.

To know the total refrigerant charge limit of the system in case the installation height is more than ·2.2· m, refer to the online tool (VRV Xpress).

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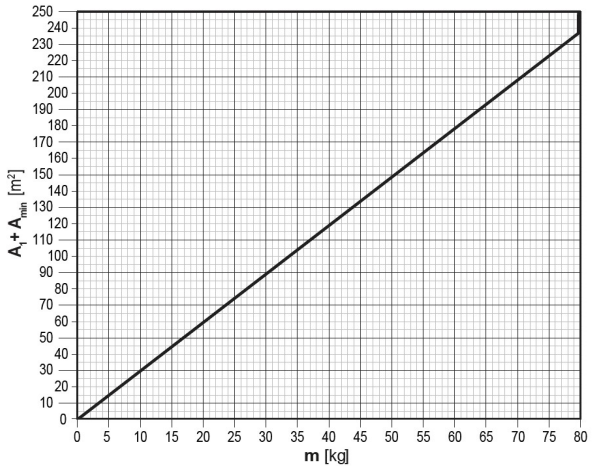
RXYA-A

RYMA5A

Indoor unit installation

Table ·2·



A_1+A_{min} [m²]	m [kg]
0	0
10	3.3
20	6.7
30	10.1
40	13.5
50	16.8
60	20.2
70	23.6
80	27.0
90	30.3
100	33.7
110	37.1
120	40.5
130	43.9
140	47.2
150	50.6
160	54.0
170	57.4
180	60.7
190	64.1
200	67.5
210	70.9
220	74.2
230	77.6
236	79.6
237	79.8
240	79.8
250	79.8

Step ·3·
The total amount of refrigerant in the system shall be less than or equal to the maximum allowed total refrigerant amount.

If NOT, natural ventilation safety measure is not allowed.
Step ·4·
The partition between two rooms on the same floor MUST meet one of the two requirements for natural ventilation.

For details, see the manual of the ·outdoor· unit.

Shut-off valves

·SV· unit which has shut-off valves needs to be installed to reduce the amount of refrigerant leakage in to the room where the indoor unit is installed.

When the R32 sensor in the indoor unit detects a refrigerant leak, the corresponding shut-off valves in the ·SV· unit close.
Follow the flowchart. Details are described in the manual of the outdoor unit.

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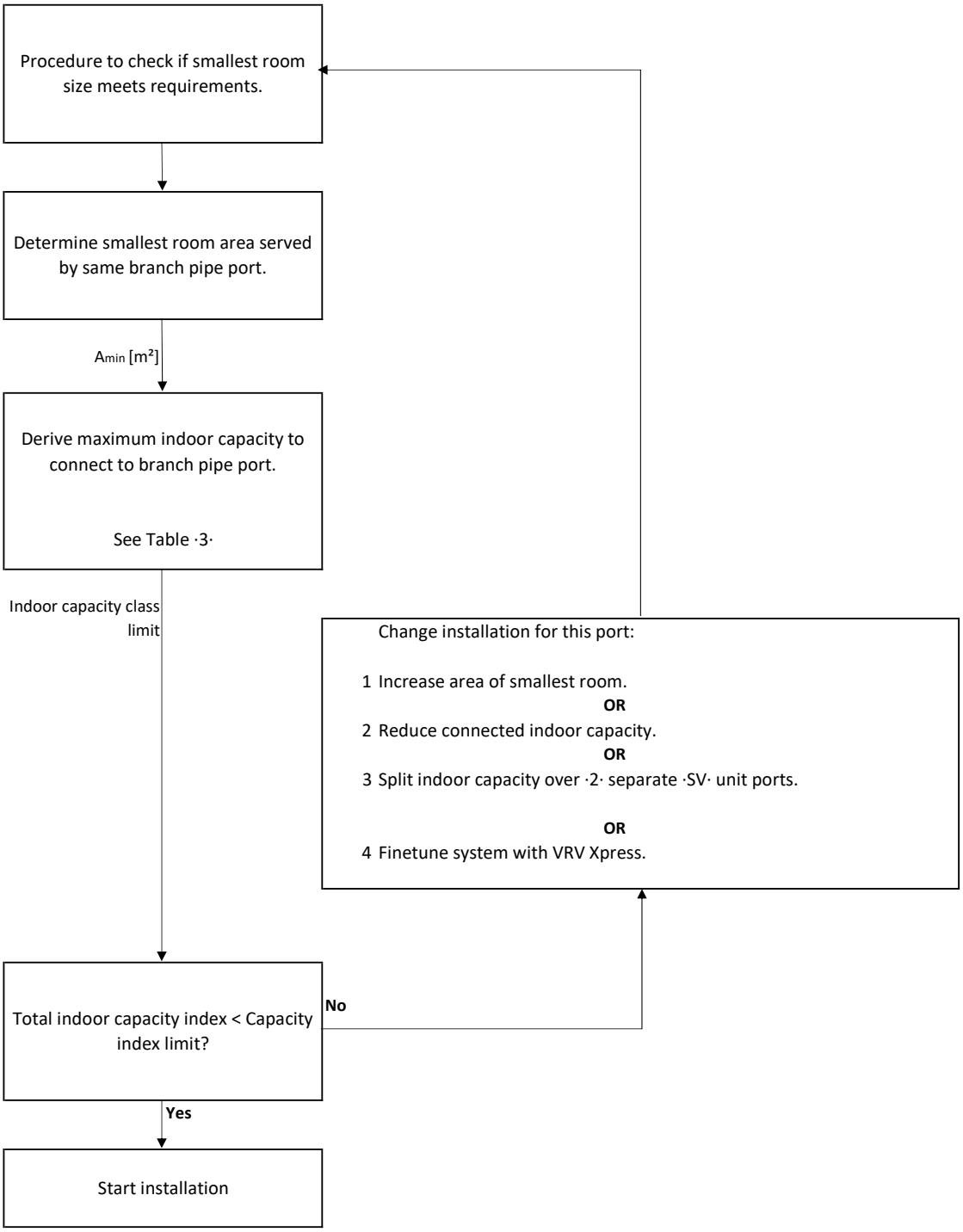
12 Installation

12 - 4 Refrigerant Charge Information

RXYA-A
RYMA5A

Indoor unit installation

Flowchart (for EACH ·SV· unit branch pipe port)



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12 Installation

12 - 4 Refrigerant Charge Information

RXYA-A

RYMA5A

Indoor unit installation

Table ·3·

Area of installed/conditioned room [m²]	Maximum total indoor unit capacity class		
	1 indoor unit per branch pipe port (·a·)	·2-5· units per branch pipe port	
		·40· m after first branch (·b·)	·90· m after first branch (·c·)
< 5	-	-	-
5	10	-	-
6	25	-	-
7	32	-	-
8	40	-	-
9	71	-	-
10	80	-	-
11	80	20	-
12	80	25	-
13	80	32	-
14	80	32	-
15	125	40	-
20	140	50	40
25	250	71	71
30	250	125	125
35	250	200	200
40	250	200	200
≥ 45	250	250	250

(a) 1 indoor unit connected to a single branch pipe port.

(b) ·2· to ·5· indoor units connected to a single branch pipe port, ·40· m after first refrigerant branch.

(c) ·2· to ·5· indoor units connected to a single branch pipe port, ·90· m after first refrigerant branch.

Note: In case the indoor unit capacity class allowed per branch pipe port exceeds ·140·, use ·SV1A· unit or combine two ports while using ·SV4~8A unit·.

Note: The values in Table ·3· are under the assumption of worst case indoor unit volume and ·40· m piping between indoor and ·SV· unit.

In VRV Xpress (https://vrvxpress.daikin.eu/) it is possible to add custom piping lengths and indoor units, which can lead to lower minimum room area requirements.

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12 Installation

12 - 4 Refrigerant Charge Information

RXYA-A
RYMA5A

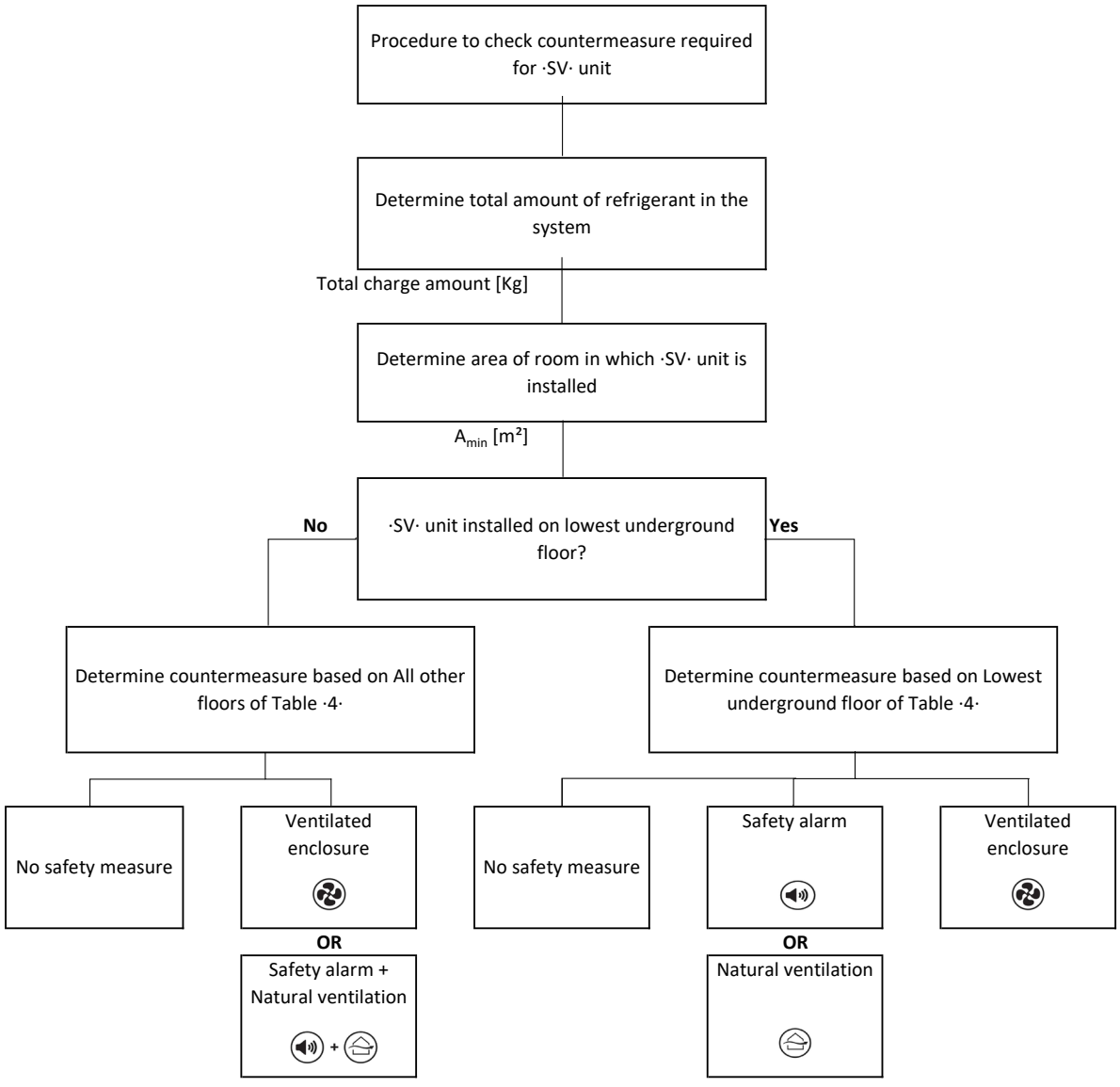
·SV· unit installation

Depending on the room size in which the ·SV· unit is installed and the total amount of refrigerant in the system, different safety measures can be applied.

Follow the flowchart. Details are described in the manual of ·SV· unit.

Note: If the installation height is more than ·2.2· m, different boundaries for the applicable safety measures can apply.

To know which safety measure is required in case the installation height is more than ·2.2· m, refer to VRV Xpress (https://vrvxpress.daikin.eu/).



* Do NOT use the external safety alarm if the ·SV· unit is installed in an occupied space where people are restricted in their movement.

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12 Installation

12 - 4 Refrigerant Charge Information

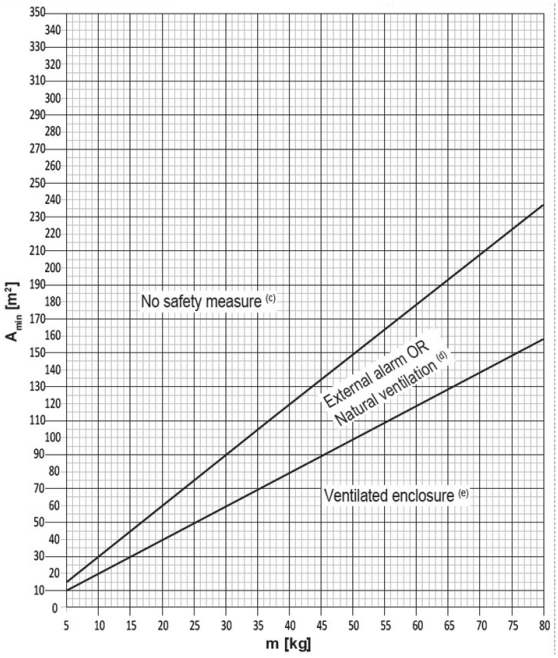
RXYA-A
RYMA5A

12

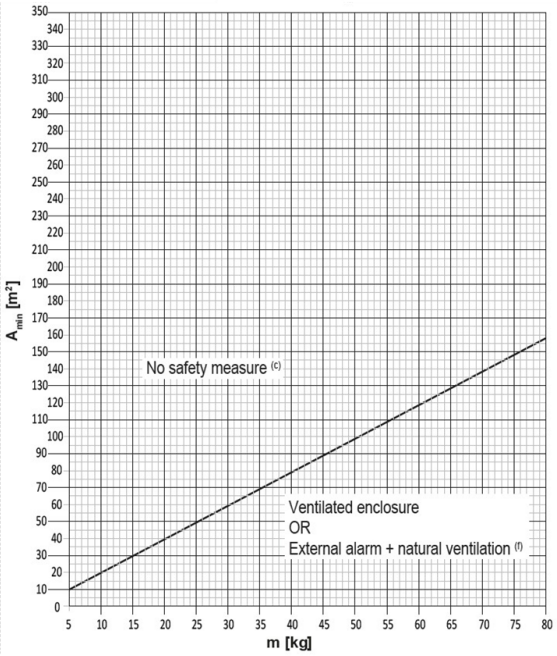
·SV· unit installation

Table ·4·

Lowest underground floor (·a·)



All other floors (·b·)



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RXYA-A
RYMA5A

·SV· unit installation

m [kg]	Amin [m²]			m [kg]	Amin [m²]		
	Lowest underground floor (·a·)		All other floors (·b·)		Lowest underground floor (·a·)		All other floors (·b·)
	No safety measure (·c·)	Safety alarm OR Natural ventilation (·d·)	No safety measure (·c·)		No safety measure (·c·)	Safety alarm OR Natural ventilation (·d·)	No safety measure (·c·)
5	15	10	10	43	128	85	85
6	18	12	12	44	131	87	87
7	21	14	14	45	134	89	89
8	24	16	16	46	137	91	91
9	27	18	18	47	140	93	93
10	30	20	20	48	143	95	95
11	33	22	22	49	146	97	97
12	36	24	24	50	149	99	99
13	39	26	26	51	152	101	101
14	42	28	28	52	154	103	103
15	45	30	30	53	157	105	105
16	48	32	32	54	160	107	107
17	51	34	34	55	163	109	109
18	54	36	36	56	166	111	111
19	57	38	38	57	169	113	113
20	60	40	40	58	172	115	115
21	63	42	42	59	175	117	117
22	66	44	44	60	178	119	119
23	69	46	46	61	181	121	121
24	72	48	48	62	184	123	123
25	75	50	50	63	187	125	125
26	77	52	52	64	190	127	127
27	80	54	54	65	193	129	129
28	83	56	56	66	196	131	131
29	86	58	58	67	199	133	133
30	89	60	60	68	202	135	135
31	92	62	62	69	205	137	137
32	95	64	64	70	208	139	139
33	98	66	66	71	211	141	141
34	101	68	68	72	214	143	143
35	104	70	70	73	217	145	145
36	107	72	72	74	220	147	147
37	110	74	74	75	223	149	149
38	113	76	76	76	226	151	151
39	116	77	77	77	229	153	153
40	119	79	79	78	231	154	154
41	122	81	81	79	234	156	156
42	125	83	83	80	237	158	158

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12 Installation

12 - 4 Refrigerant Charge Information

RXYA-A
RYMA5A

·SV· unit installation

Safety measures include:

No safety measure

When the room area is sufficiently large, no safety measures are required.

Safety alarm

An external alarm circuit (field supply) must be connected to the SVS output of the ·SV· unit.

When the R32 sensor in the ·SV· unit detects a refrigerant leak, the SVS output closes and activates the alarm. An error message is displayed on the remote controllers of the connected indoor units.

- This alarm system must warn audibly AND visibly (e.g. a loud buzzer AND a flashing light). The audible alarm must be ·15· dBA above the background sound level at all times.
- At least one alarm must be installed in the occupied space in which the ·SV· unit is installed.
- For the occupancy listed below, the alarm system must additionally warn at a supervised location with 24-hour monitoring. To warn at a supervised location, connect a supervisor remote controller (e.g. ·BRC1H52*·) to the system
  - with sleeping facilities.
  - where an uncontrolled number of people are present.
  - accessible for persons not familiar with the necessary safety precautions.
- Do NOT use the external safety alarm if the ·SV· unit is installed in an occupied space where people are restricted in their movement.

For details, see the manual of the ·SV· unit.

Natural ventilation

Natural ventilation is a safety measure where ventilation is made to a place where sufficient air is available to dilute the leaked refrigerant such as a large space.

Step ·1·

Determine total room area, which is the total area of the space that has natural ventilation and the space in which the indoor unit is installed.

Step ·2·

Use the graph or table to determine the total refrigerant charge limit in the system.

See table ·5·.

Note: If the installation height is more than ·2.2· m, different boundaries for the applicable safety measures can apply.

To know the total refrigerant charge limit of the system in case the installation height is more than ·2.2· m, refer to the online tool (VRV Xpress).

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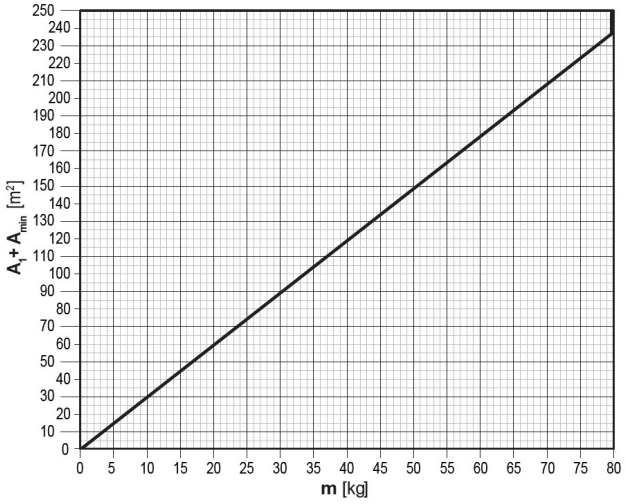
RXYA-A
RYMA5A

·SV· unit installation

Table ·5·



A_1+A_{min} [m²]	m [kg]
0	0
10	3.3
20	6.7
30	10.1
40	13.5
50	16.8
60	20.2
70	23.6
80	27.0
90	30.3
100	33.7
110	37.1
120	40.5
130	43.9
140	47.2
150	50.6
160	54.0
170	57.4
180	60.7
190	64.1
200	67.5
210	70.9
220	74.2
230	77.6
236	79.6
237	79.8
240	79.8
250	79.8

Step ·3·

The total amount of refrigerant in the system shall be less than or equal to the maximum allowed total refrigerant amount.

If NOT, natural ventilation safety measure is not allowed.

Step ·4·

The partition between two rooms on the same floor MUST meet one of the two requirements for natural ventilation.

For details, see the manual of the ·SV· unit.

Ventilated enclosure

For the ventilated enclosure safety measure, ductwork and an extraction fan are installed.

When the R32 sensor in the ·SV· unit detects a refrigerant leak, it will activate the safety measures.

This includes:

- opening the damper of the unit to allow air to enter and evacuate the refrigerant leak.
- activating the fan output signal to trigger an extraction fan to operate.
- displaying an error message on the remote controllers of the connected indoor units.

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12 Installation

12 - 4 Refrigerant Charge Information

RXYA-A
RYMA5A

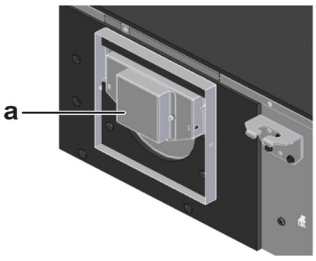
·SV· unit installation

The information in the table below must be taken into account in case a ventilated enclosure is used as a safety measure.

Ductwork	The evacuation ductwork MUST vent outside the building. Avoid that dirt and small animals can enter the ductwork and lead to an obstruction. Example: install a non-return valve, grille, filter or other component in the evacuation duct.
Extraction fan	The extraction fan must have a CE marking and cannot act as an ignition source during normal operation. This requirement is met if the fan motor has an IP4X rating or better.
Replacement air	Make sure that sufficient air is available for the extraction of a refrigerant leak. The extraction airflow rate must be maintained for at least ·8· hours. This is achieved by providing a sufficiently large air volume around the ·SV· unit, or by providing sufficient replacement air around the ·SV· unit (e.g. natural openings or a dedicated opening in the false ceiling).
Maintenance	Maintain the evacuation channel to avoid dust and dirt from building up and obstructing the flow path.

A damper at the air inlet of the ·SV· unit enables a choice between 3 types of configurations (see below).

The damper opens when a refrigerant leak has been detected in the ·SV· unit. This creates an airflow path from the leaking ·SV· unit to the extraction fan.



a Damper

When a ventilated enclosure is required, the following requirements apply.

- Pressure inside the ·SV· unit has to be more than ·20· Pa below the ambient pressure.
- Minimum airflow rate

Model	Minimum airflow rate [m³/h]
SV1A	82
SV4A	82
SV6-8A	84

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12 Installation

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RXYA-A
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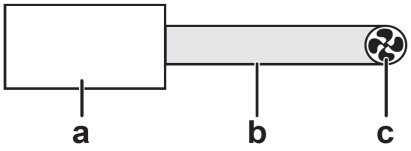
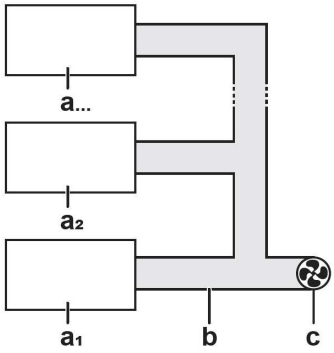
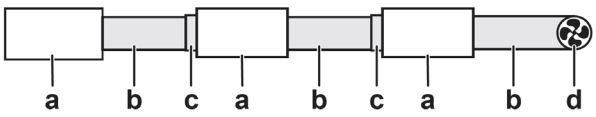
·SV· unit installation

External fan needs to be selected in order to meet these requirements. The available calculation method depends on the configuration.

Possible configurations	Calculation method for selection of external fan
One ·SV· unit – one extraction fan	
	- Manual calculation: see ·SV· unit manual for details - VRV Xpress: see https://vrvxpress.daikin.eu/
a SV unit **b** Ductwork **c** Extraction fan	
Multiple ·SV· units in parallel – one extraction fan	- VRV Xpress: see https://vrvxpress.daikin.eu/
	
a# SV unit # **b** Ductwork **c** Extraction fan	
Multiple ·SV· units in series – one extraction fan	- VRV Xpress: see https://vrvxpress.daikin.eu/
	
a SV unit **b** Ductwork **c** EKBSDCK **d** Extraction fan	

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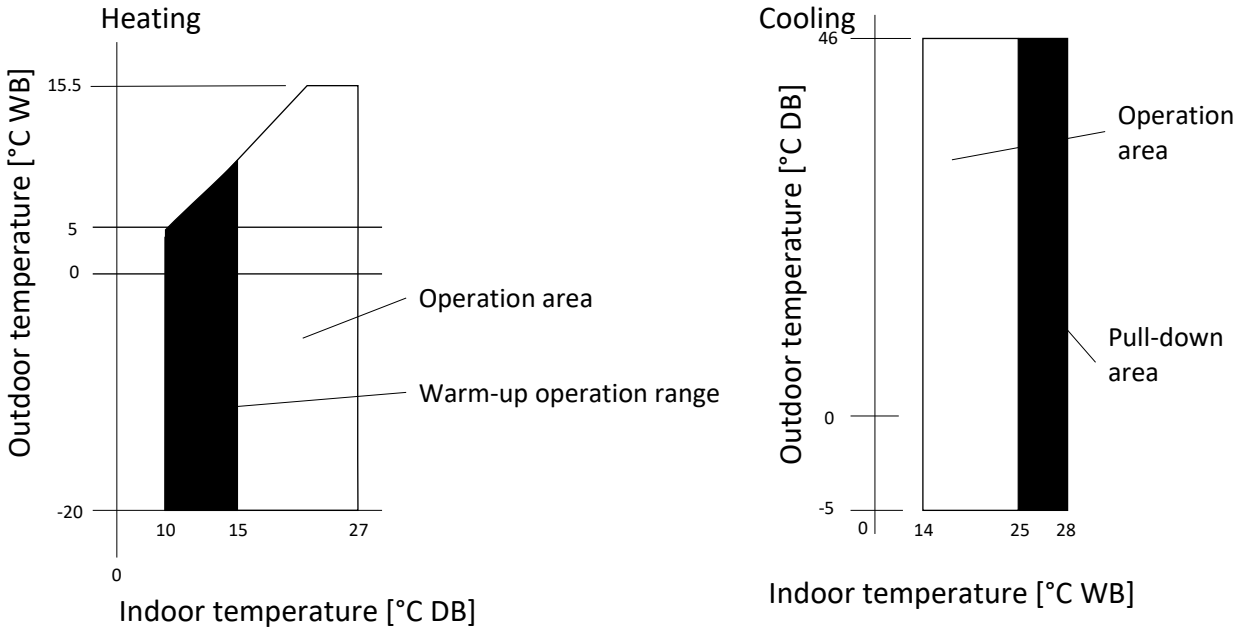
13 Operation range

13 - 1 Operation Range

RXYA-A
RYMA5A



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14 Appropriate Indoors

14 - 1 Appropriate Indoors

RXYA-A
RYMA5A

Recommended indoor units for ·RXYA*A* + RYMA*A*· outdoor units

·· HP	8	10	12	13	14	16	18	20
	4xFXSA50	4xFXSA63	6xFXSA50	3xFXSA50 3XFXSA63	1xFXSA50 5XFXSA63	4XFXSA63 2xFXSA80	3xFXSA50 5XFXSA63	8xFXSA63

For multi outdoor units ·>16HP·, the recommended amount of indoor units is the sum of the indoor units defined for a single outdoor unit.
For details about the allowed combinations, see the engineering databook.

Appropriate indoor units for ·RXYA*A* + RYMA*A*· outdoor units

Covered by ·ENER LOT21·

FXFA20-25-32-40-50-63-80-100-125
FXZA15-20-25-32-40-50
FXSA15-20-25-32-40-50-63-80-100-125-140
FXDA10-15-20-25-32-40-50-63
FXAA15-20-25-32-40-50-63
FXMA50-63-80-100-125-200-250
FXHA32-50-63-100
FXUA50-71-100

Outside the scope of ·ENER LOT21·

EKVDX32-50-80-100
EKEXVA50-63-80-100-125-140-200-250-300-350-400-450-500 + EKEACBVE
CYAS100*80, CYAS150*80, CYAS200*100, CYAS250*140
CYAM100*80, CYAM150*80, CYAM200*100, CYAM250*140
CYAL100*125, CYAL150*200, CYAL200*250, CYAL250*250

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Daikin Europe N.V. Naamloze Vennootschap · Zandvoordestraat 300 · 8400 Oostende · Belgium · www.daikin.eu · BE 0412 120 336 · RPR Oostende (Responsible Editor)

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