mza planning
planning permission without the headaches

14 Devonshire Mews, Chiswick, London W4 2HA
Tel: 020 8995 7848 Fax: 020 8711 5732 office@mzaplanning.com www.mzaplanning.com

TOWN AND COUNTRY PLANNING ACT 1990
(AS AMENDED)

PLANNING STATEMENT

Relocation of x2 Air Conditioning units

15 King Edward Road Ruislip HA4 7AE

On behalf of Sandeep Mohal

CONTENTS

Appendices

1 SITE AND SURROUNDINGS

1.1 The property is located in a predominately residential area, north east of Ruislip tube station.

1.2 The property is a new-build, two storey detached dwelling.

1.3 The building is not listed, nor location within a conservation area.

2 RELEVANT PLANNING HISTORY

2.1 Planning application (ref: 43419/APP/2014/3879) erection of two-detached houses with dormer, integral garage, new crosser and associated external works (involving demolition of the existing house) at 15 King Edward Road.

2.2 The applicant was served a warning letter threatening formal enforcement notice on 29th July 2019 (ref: ENF/524/19) following the installation of two external heat pump/ac units and installation of three non-glazed windows.

2.3 Planning application (ref: 43419/APP/2019/3075) Installation of 2 air conditioning units' replacement of 3 x windows (Retrospective). Refused, on the 7th October 2019.

2.4 Appeal (ref: APP/R5510/D/20/3247002) Air conditioning units x2 and replacement of window (retrospective) Dismissed on the 27th May 2020.

3 PROPOSED DEVELOPMENT

3.1 Relocation of x2 Airconditioning units

4 PLANNING POLICY

4.1 MHCLG's National Planning Policy Framework (2019)

4.2 MHCLG's National Planning Practice Guidance (Online)

4.3 GLA The London Plan (2016)

4.4 Hillingdon Local Plan Part 1: Strategic Policies (2012)

4.5 Hillingdon Local Plan Part 2: Strategic Policies (2020)

4.6 Hillingdon Design and Accessibility Statement (HDAS) Supplementary

5 MATERIAL CONSIDERATIONS

Preliminary Matters

5.1 The proposed development seeks to relocate two air-conditioning units to the rear of the property from the East elevation of the property.

5.2 The previous planning application (ref:43419/APP/2019/3075) and appeal (ref: APP/R5510/D/20/3247002) were refused due to the harm of the units on conservation area. Please see below the reason for refusal taken from the decision notice (ref: APP/R5510/D/20/3247002):

"There are some more modern dwellings to the side and rear of the appeal site. However, this part of the RVCA is characterized and derives its significance from the large well-preserved dwellings in traditional brick, render and tiled roofs reflating early 20th Century garden suburb design principles. Although located on a smaller plot, the composition of the appeal site dwelling, results in it appearing in keeping with the historic dwellings in the street scene.

By virtue of their size, protrusion appearance, and the approximately 2.5m high mounting, the air conditioning units are notably visible from the highway. Their detachment from the side wall on protruding metal wall mountings and industrial appearance, results in them appearing significantly at odds with and harmful to the character and appearance of the host dwelling and the RVCA."

For the full decision notice and delegated report, please refer to appendix 1 of this report.

5.3 As the reason for refusal only pertains to the impact of the development on character and appearance, applicant is prepared to move the air-

conditioning units to the rear of the property so as to not be visible within the public realm and thus preserve the character and appearance of the conservation area. The delegated report (ref: APP/R5510/D/20/3247002) states the following in relation to amenity of the proposed plants:

"Based upon the evidence before me and the background noise levels at my visit, noise from the units would not be likely to be discernible on King Edwards Road."

5.4 Therefore, the remainder of this document will put forward a case for the relocation of the air-conditioning unit to the rear and how the proposal will have negligible harm on the character and appearance of the area.

Character and Appearance

5.5 The London Plan (2016) policy 7.4 states development should have regard to the form, function, and structure of an area, place or street and the scale, mass and orientation of surrounding buildings.

5.6 Furthermore, the NPPF attaches great importance to the creation of high-quality buildings and places which is fundamental to planning.

5.7 The London Plan (2016) policy 7.6 states architecture should make a positive contribution to a coherent public realm, streetscape and wider cityscape.

5.8 Policy BE1 of the Hillingdon Local Plan Part 1: Strategic Policies (2012) states development must achieve a high quality of design in all new buildings, alterations, extensions and the public realm which enhances the local distinctiveness of the area and a sense of place.

5.9 Moreover, Policy BE1 of the Hillingdon Local Plan Part 1: Strategic Policies (2012) additionally states developments must be designed to be appropriate to the identity and context of Hillingdon's buildings, townscapes, landscapes and views, and make a positive contribution to the local area in terms of layout, form, scale and materials.

5.10 Policy

5.11 The air conditioning units are of a modest size measuring 823mm in height, 940mm in width and 485mm in depth. As a result, these units will appear subservient to the host dwelling and not detract from the overall look of the dwelling. Character and appearance will therefore be maintained.

5.12 The movement of the air conditioning units from the eastern elevation to the rear will preserve the visual amenity of the conservation area as the development would no longer be visible from the highway.

5.13 Moreover, the proposed units are viewed as an appropriate addition to the application property which will not be prominent or obtrusive due to their small size and narrow width.

5.14 The air conditioning units are also of similar colour to the wall rendering, this allows the units to blend with the building and not appear bold and incongruous.

5.15 The small units will also appear subservient in comparison to the host dwelling, allowing the character and appearance of the house to be maintained.

5.16 The proposed development is therefore a small addition to the dwelling which will not create an overbearing impact. The relocation of the units, therefore, maintain the character and appearance of the area in accordance with The London Plan, policies 7.4 and 7.6, the Hillingdon Unitary Development Plan, policy BE13 and the Hillingdon Local Plan, policy BE1.

6 CONCLUSION

6.1 The development seeks to relocate two air conditioning units to the rear of the property, so as to be concealed from the public realm and preserve the character and appearance of the streetscape and the wider RVCA.

6.2 The air conditioning units are of an appropriate scale and will be hidden from the public realm to maintain character and appearance, and the air conditioning units will cause no unacceptable levels of noise as demonstrated by its technical data, and thus retain neighbouring amenity. As a result, the scheme complies with The London Plan, policies 7.4 and 7.6, the Hillingdon Unitary Development Plan, policy BE13 and the Hillingdon Local Plan, policy BE1.

6.3 The LPA is respectively asked to grant planning permission.

Appendix 1

Documents for the appeal (ref: APP/R5510/D/20/3247002) Air-conditiong units x2 and replacement of window (part retrospective).

The Planning Inspectorate

Appeal Decision

Site visit made on 27 May 2020

by D. Szymanski, BSc (Hons) MA, MRTPI

an Inspector appointed by the Secretary of State

Decision date: 4th June 2020

Appeal Ref: APP/R5510/D/20/3247002
15 King Edwards Road, London, HA4 7AE

- The appeal is made under section 78 of the Town and Country Planning Act 1990 against a refusal to grant planning permission.
- The appeal is made by Mr Mohal against the decision of the Council of the London Borough of Hillingdon.
- The application Ref: 43419/APP/2019/3075 dated 12 September 2019, was refused by notice dated 2 December 2019.
- The development proposed is described as retention of air conditioning units x2 and x3 windows. (Retrospective).

Decision

1. The appeal is dismissed.

Procedural Matters

2. The site address in the original planning application form is listed as King Edward Road. However, from my visit and the decision notice, it was clear it is on King Edwards Road. I have used this address in the banner heading above.

3. The evidence explains the development occurred prior to the submission of the application. At my site visit the development appeared substantially completed. Therefore, I am considering this appeal as a retrospective proposal.

4. The London Borough of Hillingdon Local Plan Part 2 - Development Management Policies (the Part 2 Local Plan) was adopted by the Council on 16 January 2020. It replaces the 2012 saved Unitary Development Plan polices and now forms part of the statutory development plan. As a result of the adoption of the Part 2 Local Plan, the Council has withdrawn the Residential Extensions Supplementary Planning Document. Consequently, I have had regard to the newly adopted policies in my decision and the parties have been provided with an opportunity to comment.

Main Issues

5. The main issues are the effect of the development upon:

   - the character and appearance of the host dwelling and the Ruislip Village Conservation Area, and,

   - the living conditions of the occupiers of No. 13 King Edwards Road, with particular reference to privacy and overlooking.

Reasons

Character and appearance

6. The appeal site is one of two detached dwellings approved under permission Ref: 43419/APP/2014/3879. The construction appeared substantially complete. They appear carefully designed, with features including brick quoins, large chimney stacks, dormer windows and multiple hipped and gable roof forms.

7. The appeal site and surroundings are within the Ruislip Village Conservation Area (RVCA). Within the RVCA there is a statutory duty under section 72 of the Planning (Listed Buildings and Conservation Areas) Act 1990 to pay special attention to the desirability of preserving or enhancing its character or appearance. Paragraph 193 of the National Planning Policy Framework (2019) (the Framework) requires when considering the impact upon the significance of a heritage asset great weight should be given to the asset's conservation. Where a proposal would lead to less than substantial harm, the harm should be weighed against the public benefits of the proposal (paragraph 196).

8. There are some more modern dwellings to the side and rear of the appeal site. However, this part of the RVCA is characterised and derives its significance from the large well preserved dwellings in traditional brick, render and tiled roofs reflecting early 20th century garden suburb design principles. Although located on a smaller plot, the composition of the appeal site dwelling, results in it appearing in keeping with the historic dwellings in the street scene.

9. By virtue of their size, protrusion, appearance, and the approximately 2.5m high mounting, the air conditioning units are notably visible from the highway. Their detachment from the side wall on protruding metal wall mountings and industrial appearance, results in them appearing significantly at odds with and harmful to the character and appearance of the host dwelling and the RVCA. The Council's first reason for refusal makes reference to only the air conditioning units and not the opening windows. Given their location and size, I do not find the windows would be harmful to the character and appearance of the RVCA. Notwithstanding this the development as a whole would neither preserve or enhance, and it would be harmful to the character and appearance of the RVCA. This harm amounts to less than substantial harm.

10. The neighbouring dwelling to the west also has some units, although I am not aware of their status. Those units also appear incongruous, although appear to protrude less and appear more enclosed by an adjacent building. Such units were not prominently visible elsewhere in the street scene, and do not form an overriding characteristic of this part of the RVCA. Therefore, their presence does not justify allowing this appeal.

11. Based upon the evidence before me and the background noise levels at my visit, noise from the units would not be likely to be discernible on King Edwards Road. Furthermore, the noise levels could be controlled by the planning condition suggested by the Council. Specifically, in regard of noise, the development would appear to preserve the character of the RVCA. However, this would not mitigate or override the other harm I have found above.

12. The units would moderate temperature internally within the dwelling. However, there is no evidence before me that suggests this is essential for

future occupiers to reside at the property. There is also no evidence that other solutions have been investigated and discounted. Based on the evidence before me, these and any other benefits, would not outweigh the harm to the RVCA, which attracts great weight.

13. For the reasons set out above the development is harmful to and does not preserve or enhance the character and appearance of the host dwelling and the RVCA. Therefore, it conflicts with Policy BE1 of the Hillingdon Local Plan: Part 1 Strategic Policies (November 2012) (the Part 1 Local Plan) and DHMB11 of the Part 2 Local Plan. These policies expect development to be designed to the highest standards and incorporate good design. There is also conflict with Policy DMHB4 of the Part 2 Local Plan which requires development conserves and enhances the character, appearance and significance of a heritage asset. As the public benefits do not outweigh the harm to the RVCA, the development would also be contrary to paragraph 196 of the Framework.

14. Although the appellant has referred to the development being compliant with Policies 7.4 and 7.6 of the London Plan (2016), I have not been provided with these policies. However, based upon the wording suggested, for the reasons set out above, the development would also conflict with these policies.

Living conditions

15. There is a requirement in condition 9 of permission Ref 43419/APP/2014/3879 for windows facing No. 13 to be obscured glass and non-opening below 1.8m in height from internal floor level. The Council's report advises the ground floor windows are not harmful to the living conditions of the occupiers of No. 13, and I see no reason to disagree. At the visit, the first floor side window appeared fully obscure glazed, but openable with side hinges.

16. When open, whilst the views are limited, it allows future occupiers some close proximity views into the private side return and the near side of the rear garden of No. 13. These views are to some of the outside areas closest to the dwelling, which would generally be expected to have a greater level of protection from overlooking than other parts of the garden/amenity areas. Conventional rear facing windows generally protect these areas to a greater degree, as the area of the rear garden and return closest to the dwelling, is often protected from close proximity views by the narrowness of the angle.

17. For the reasons set out above, the development would result in harm to the living conditions of the occupiers of No. 13 King Edwards Road with regard to loss of privacy and overlooking. Therefore, the development conflicts with Policy DMHB11 of the Part 2 Local Plan. This expects development to protect the amenity of neighbouring residential properties.

Conclusion

18. The proposed development would be contrary to the development plan and the National Planning Policy Framework and there are no other considerations, including the policies of the Framework, which outweigh this finding. Accordingly, for the reasons given, the appeal should not succeed.

Dan Szymanski, INSPECTOR

Appendix 2

Air conditioning technical data

(RXYSCQ-TV1)

DAIKIN

Air Conditioning

Technical Data

VRV IV S-series compact heat pump

EEDEN16-200_2

RXYSCQ-TV1

TABLE OF CONTENTS

RXYSCQ-TV1

1 Features

The most compact VRV

- Compact & lightweight single fan design makes the unit almost unnoticeable
- Covers all thermal needs of a building via a single point of contact: accurate temperature control, ventilation, air handling units and Biddle air cutains
- Wide range of indoor units: either connect VRV or stylish indoor units such as Daikin Emura, Nexura ...
- Incorporates VRV IV standards & technologies: Variable Refrigerant Temperature and full inverter compressors
- Customize your VRV for best seasonal efficiency & comfort with the weather dependant Variable Refrigerant Temperature function. Increased seasonal efficiency with up to 28%. No more cold draft by supply of high outblow temperatures
- VRV configurator software for the fastest and most accurate commissioning, configuration and customisation
- Outdoor unit display for quick on-site settings and easy read out of errors together with the indication of service parameters for checking basic functions.
- 3 steps in night quiet mode: step 1: 47dBA, step 2: 44 dBA, step 3: 41 dBA
- Simplified installation & guaranteed optimal efficiency with automatic charging & testing
- Easy compliance with F-gas regulation thanks to automated refrigerant containment check
- Possibility to limit peak power consumption between 30 and 80%, for example during periods with high power demand
- Connectable to all VRV control systems
- Keep your system in top condition via our i-Net service: 24/7 monitoring for maximum efficiency, extended lifetime, immediate service support thanks to failure prediction and a clear understanding of operability and usage

Inverter

2 Specifications

2-1 Technical Specifications					RXYSCQ4TV1	RXYSCQ5TV1
Capacity range				HP	4	5
Cooling capacity	Nom.			kW	12.1 (1)	14.0 (1)
Heating capacity	Nom.			kW	12.1 (2)	14.0 (2)
	Max.			kW	14.2 (2)	16.0 (2)
Power input - 50Hz	Cooling	Nom.		kW	3.43 (1)	4.26 (1)
	Heating	Nom.		kW	3.18 (2)	3.91 (2)
		Max.		kW	4.14 (2)	5.00 (2)
Capacity control	Method				Inverter controlled	
Maximum number of connectable indoor units					64 (3)	
Indoor index connection	Min.				50	62.5
	Nom.				-	
	Max.				130	162.5
Dimensions	Unit	Height		mm	823	
		Width		mm	940	
		Depth		mm	460	
	Packed unit	Height		mm	995	
		Width		mm	1,030	
		Depth		mm	580	
Weight	Unit			kg	94	
	Packed unit			kg	106	
Packing	Material				Carton	
	Weight			kg	3.8	
Packing 2	Material				Wood	
	Weight			kg	5.8	
Packing 3	Material				Plastic	
	Weight			kg	1.1	
Casing	Colour				Daikin White	
	Material				Painted galvanized steel plate	
Heat exchanger	Type				Cross fin coil	
	Fin	Treatment			Anti-corrosion treatment	
Compressor	Quantity				1	
	Type				Hermetically sealed swing compressor	
	Crankcase heater			W	33	
	Model				Inverter	
Fan	Quantity				1	
	Air flow rate	Cooling	Nom.	m^3/min	91	
	External static pressure	Max.		Pa	-	
	Discharge direction				Horizontal	
	Type				Propeller fan	
Fan motor	Quantity				1	
	Model				Brushless DC motor	
	Output			W	200	
Sound power level	Cooling	Nom.		dBA	68 (4)	69 (4)
Sound pressure level	Cooling	Nom.		dBA	51 (5)	52 (5)
Operation range	Cooling	Min.~Max.		°CDB	-5~46	
	Heating	Min.~Max.		°CWB	-20~15.5	
Refrigerant	Type				R-410A	
	Charge			kg	3.7	
				TCO_2eq	7.7	
	GWP				2,087.5	
Refrigerant oil	Type				Synthetic (ether) oil FVC50K	
	Charged volume			l	1.4	

2 Specifications

2-1 Technical Specifications					RXYSCQ4TV1	RXYSCQ5TV1
Piping connections	Liquid	Type			Flare connection	
		OD		mm	9.52	
	Gas	Type			Flare connection	
		OD		mm	15.9	
	Heat insulation				Both liquid and gas pipes	
	Piping length	OU - IU	Max.	m	300	
	Total piping length	System	Actual	m	-	
	Level difference	OU - IU	Outdoor unit in highest position	m	-	
			Indoor unit in highest position	m	-	
Defrost method					Reversed cycle	
Safety devices	Item	01			High pressure switch	
		02			Fan driver overload protector	
		03			Inverter overload protector	
		04			PC board fuse	
		05			Fusible plugs	
PED	Category				Category I	
	Most critical part	Name			Compressor	
		Ps*V		Bar*l	167	

Standard Accessories : Installation manual;

Standard Accessories : Operation manual;

Standard Accessories : Connection pipes;

2-2 Electrical Specifications				RXYSCQ4TV1	RXYSCQ5TV1
Power supply	Name			V1	
	Phase			1~	
	Frequency		Hz	50	
	Voltage		V	220-240	
Voltage range	Min.		%	-10	
	Max.		%	10	
Current	Nominal running current (RLA) - 50Hz	Cooling	A	19.0 (6)	
Current - 50Hz	Minimum circuit amps (MCA)		A	29.1	
	Maximum fuse amps (MFA)		A	32	
	Total overcurrent amps (TOCA)		A	29.1 (7)	
	Full load amps (FLA)	Total	A	0.6	
Wiring connections - 50Hz	For power supply	Quantity		3G	
	For connection with indoor	Quantity		2	
		Remark		F1,F2	
Power supply intake				Both indoor and outdoor unit	

2 Specifications

Notes

(1) Nominal cooling capacities are based on: indoor temperature: 27°CDB, 19°CWB, outdoor temperature: 35°CDB, equivalent refrigerant piping: 5m, level difference: 0m. Data for standard efficiency series. Eurovent 2015 tolerances are used.

(2) Nominal heating capacities are based on: indoor temperature: 20°CDB, outdoor temperature: 7°CDB, 6°CWB, equivalent refrigerant piping: 5m, level difference: 0m. Data for standard efficiency series. Eurovent 2015 tolerances are used.

(3) Actual number of units depends on the indoor unit type (VRV DX indoor, RA DX indoor, etc.) and the connection ratio restriction for the system (being; 50% ≤ CR ≤130%).

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

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

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

(7) TOCA means the total value of each OC set.

Sound values are measured in a semi-anechoic room.

For detailed contents of standard accessories, see installation/operation manual

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

MCA must be used to select the correct field wiring size. The MCA can be regarded as the maximum running current.

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

FLA means the nominal running current of the fan

Voltage range: units are suitable for use on electrical systems where voltage supplied to unit terminal is not below or above listed range limits.

Maximum allowable voltage range variation between phases is 2%.

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

EN/IEC 61000-3-11: European/international technical standard setting the limits for voltage changes, voltage fluctuations and flicker in public low-voltage supply systems for equipment with rated ≤ 75A

EN/IEC 61000-3-12: European/international technical standard setting the limits for harmonic currents produced by equipment connected to public low-voltage system with input current \> 16A and ≤ 75A per phase

Ssc: Short-circuit power

Zsys: system impedance

3 Options

3 - 1 Options

RXYSCQ-TV1
RXYSQ-TV1
RXYSQ-TY1

Nr.	Item	RXYSCQ4~5TMV1B	RXYSQ4~6T7V1B	RXYSQ4~6T7Y1B	RXYSQ8~12TMY1B	RXYSQ6T7Y1B9
I.	Refnet header	KHRQ22M29H				
		-	-	-	KHRQ22M64H	-
II.	Refnet joint	KHRQ22M20T				
		-	-	-	KHRQ22M29T9	-
		-	-	-	KHRQ22M64T	-
1a.	Cool/heat selector (switch)	-	KRC19-26		-	KRC19-26
1b.	Cool/heat selector (fixing box)	-	KJB111A		-	KJB111A
1c.	Cool/heat selector (PCB)	-	EBRP2B	-	-	-
1d.	Cool/heat selector (cable)	-	-	EKCHSC	-	EKCHSC
2.	Drain plug kit	-	EKDK04		-	EKDK04
3.	VRV configurator	EKPCCAB*				
4.	Demand PCB	DTA104A61/62*				
5.	Branch provider - 2 rooms	BPMKS967A2				-
6.	Branch provider - 3 rooms	BPMKS967A3				-

Notes
1. All options are kits
2. To mount option 1a, option 1b is required.
3. For RXYSQ4~6T7V1B
   To operate the cool/heat selector function, options 1a and 1c are both required.
4. For RXYSQ4~6T7Y1B
   To operate the cool/heat selector function, options 1a and 1d are both required.

3D097778A

4 Combination table

4 - 1 Combination Table

RXYSCQ-TV1
RXYSQ-TV1
RXYSQ-TY1

Configuration			Indoor unit type
RA box + indoor unit	Wall-mounted	*Emura*	FTXG20L (W/S)
			FTXG25L (W/S)
			FTXG35L (W/S)
			FTXG50L (W/S)
		FTXS	FTXS20K
			FTXS25K
			FTXS35K
			FTXS42K
			FTXS50K
			FTXS60G
			FTXS71G
		CTXS	CTXS15K
			CTXS35K
	Floor-standing Ceiling-mounted	*Flex*	FLXS25B
			FLXS35B
			FLXS50B
			FLXS60B
	Floor-standing	*FVXS*	FVXS25F
			FVXS35F
			FVXS50F
		Nexura	FVXG25K
			FVXG35K
			FVXG50K
	Duct	*FDXS*	FDXS25F
			FDXS30F
			FDXS50F9
			FDXS60F

Configuration			Indoor unit type
SA box + indoor unit	Cassette	*Fully Flat 2x2*	FFQ25C
			FFQ35C
			FFQ50C
			FFQ60C
		Roundflow 3x3	FCQG35F
			FCQG50F
			FCQG60F
			FCQG71F
	Ceiling-suspended		FHQ35C
			FHQ50C
			FHQ60C
			FHQ71C
	Duct		FBQ35D
			FBQ50D
			FBQ60D
			FBQ71D

Remark
1. The limitations on the use of RA/SA indoor units with the VRV4-S Heat Pump are subject to the rules set out in drawings 3D097983 and 3D097984.

3D097777

4 Combination table

4 - 1 Combination Table

RXYSCQ-TV1
RXYSQ-TV1
RXYSQ-TY1

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

O: Allowed
X: Not allowed

Notes
1. O_1
   - *Combination of AHU only + control box EKEQFA (not combined with VRV DX indoor units)*
     → X-control is possible (up to 3x [EKEXV+EKEQFA* boxes] can be connected to one outdoor unit (system)). No Variable Refrigerant Temperature control possible.
     → Y-control is possible (up to 3x [EKEXV+EKEQFA* boxes] can be connected to one outdoor unit (system)). No Variable Refrigerant Temperature control possible.
     → W-control is possible (up to 3x [EKEXV+EKEQFA* boxes] can be connected to one outdoor unit (system)). No Variable Refrigerant Temperature control possible.

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

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

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

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

3D097983

Page 1

RXYSCQ-TV1
RXYSQ-TV1
RXYSQ-TY1

Combination table	RXYSCQ4~5TMV1B	RXYSQ4~6T7V1B	RXYSQ4~6T7Y1B	RXYSQ8~12TMY1B
VRV* DX box + indoor unit	O	O	O	O
RA DX box + indoor unit	O	O	O	O
Hydrobox unit	X	X	X	X
Air handling unit (AHU) (2)	O	O	O	O

O: Allowed
X: Not allowed

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

3D097983

Page 1

5 Capacity tables

5 - 1 Capacity Table Legend

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

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

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

5 Capacity tables

5 - 2 Integrated Heating Capacity Correction Factor

RXYSCQ-TV1
RXYSQ-TV1
RXYSQ-TY1

Integrated heating capacity coefficient

The heating capacity tables do not take into account the capacity reduction in case of frost accumulation or defrost operation.
The capacity values that take these factors into account, or in other words, the integrated heating capacity values, can be calculated as follows:

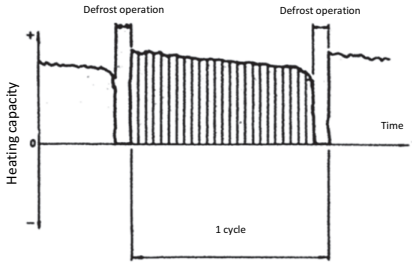
Formula

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

A = B * C

Inlet air temperature of heat exchanger

[°CDB/°CWB]	-7/-7.6	-5/-5.6	-3/-3.7	0/-0.7	3/2.2	5/4.1	7/6
RXYSCQ4TMV1B RXYSCQ5TMV1B RXYSQ4T7V1B RXYSQ5T7V1B RXYSQ6T7V1B RXYSQ4T7Y1B RXYSQ5T7Y1B RXYSQ6T7Y1B RXYSQ6T7Y1B9	0,88	0,86	0,80	0,75	0,76	0,82	1,00
RXYSQ8TMY1B	0,95	0,93	0,88	0,84	0,85	0,90	1,00
RXYSQ10TMY1B	0,95	0,93	0,87	0,79	0,80	0,88	1,00
RXYSQ12TMY1B	0,95	0,92	0,87	0,75	0,76	0,85	1,00



Notes

(1) The figure shows the integrated heating capacity for a single cycle (from one defrost operation to the next).
(2) When there is an accumulation of snow against the outdoor unit heat exchanger, there will always be a temporary reduction in capacity depending on the outdoor temperature (°C DB), relative humidity (RH) and the amount of frosting which occurs.

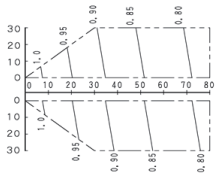
3D094659

5 Capacity tables

5 - 3 Capacity Correction Factor

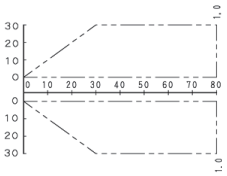
RXYSCQ-TV1

Correction ratio for cooling capacity



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

Correction ratio for heating capacity



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

Notes

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

2. With this outdoor unit, the following control is used:
   - in case of cooling: constant evaporating pressure control
   - in case of heating: constant condensing pressure control

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

   Indoor connection ratio ≤ 100%.

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

   Indoor connection ratio > 100%.

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

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

Model	Standard liquid side Ø	Increased liquid side Ø	Standard gas side Ø	Increased gas side Ø
RXYSCQ4TMV1B	9,5	Not increased	15,9	19,1
RXYSCQ5TMV1B				

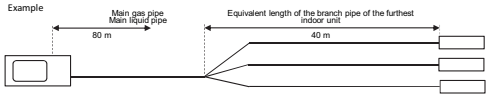
5. Overall equivalent length

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

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

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

Example



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

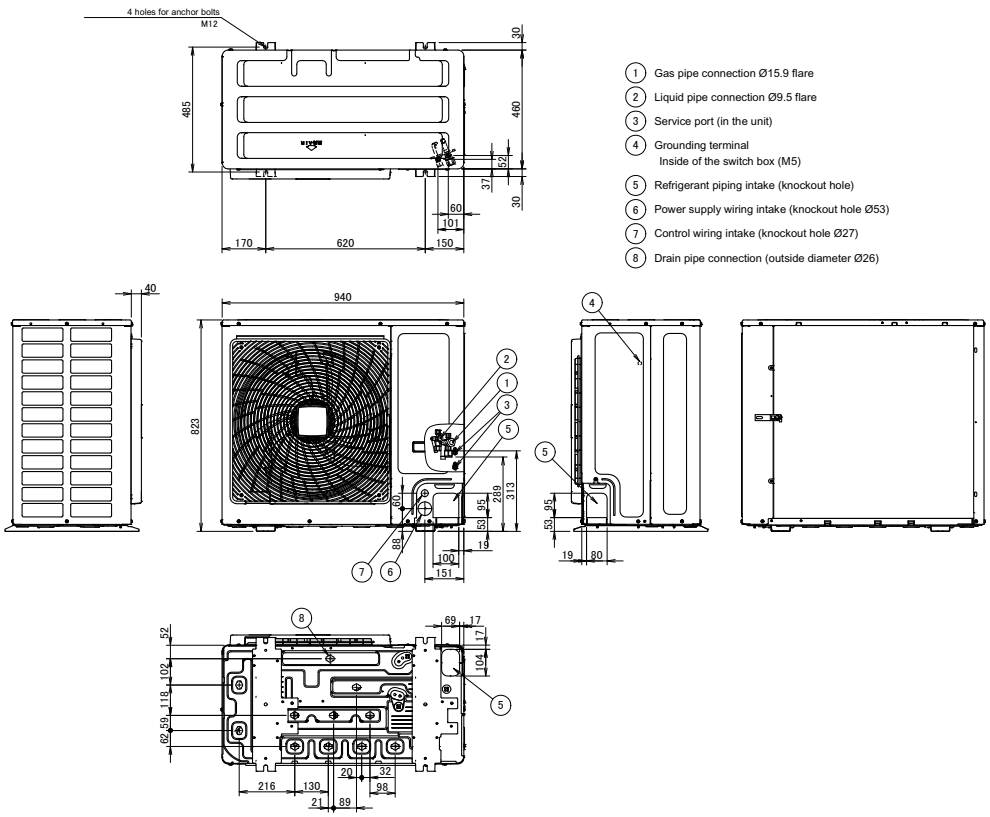
Capacity correction ratio (height difference = 0)
- Cooling mode = 0,78
- Heating mode = 1,0

3D094660

6 Dimensional drawings

6 - 1 Dimensional Drawings

RXYCSQ-TV1

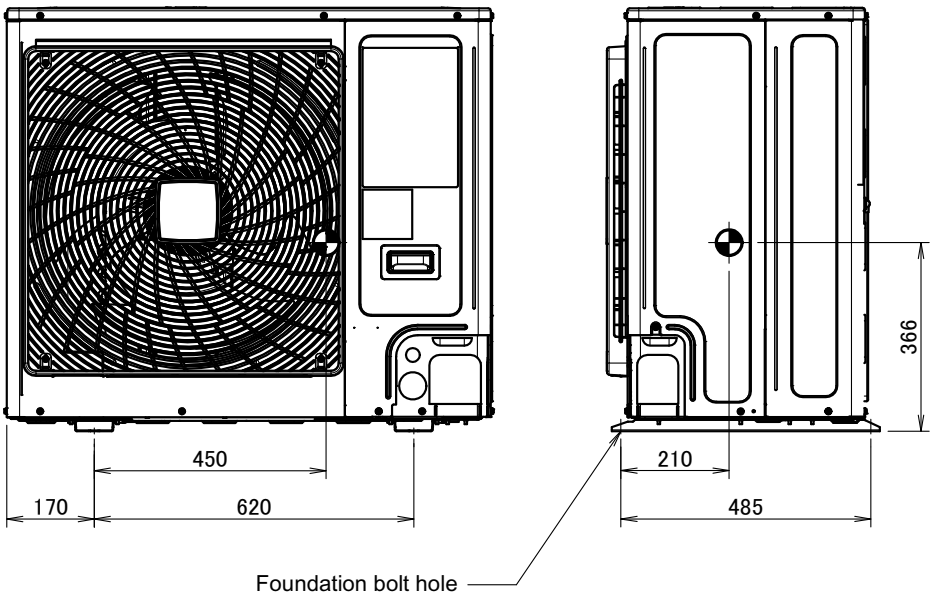


3D098107

7 Centre of gravity

7 - 1 Centre of Gravity

RXYSCQ-TV1

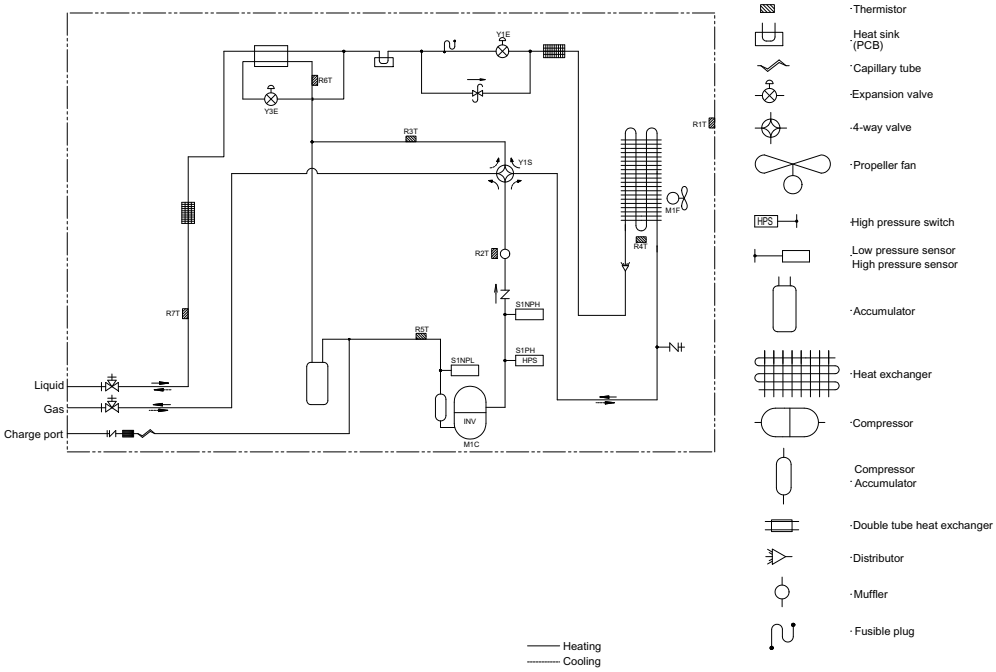


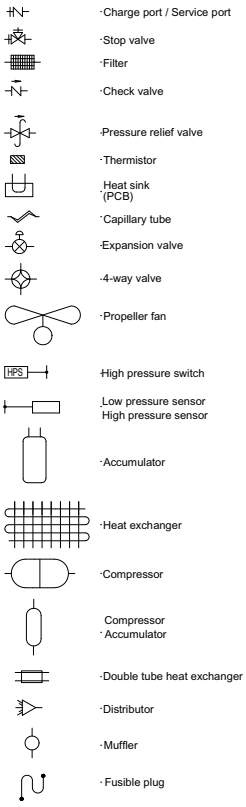
4D098083

8 Piping diagrams

8 - 1 Piping Diagrams

RXYSCQ-TV1





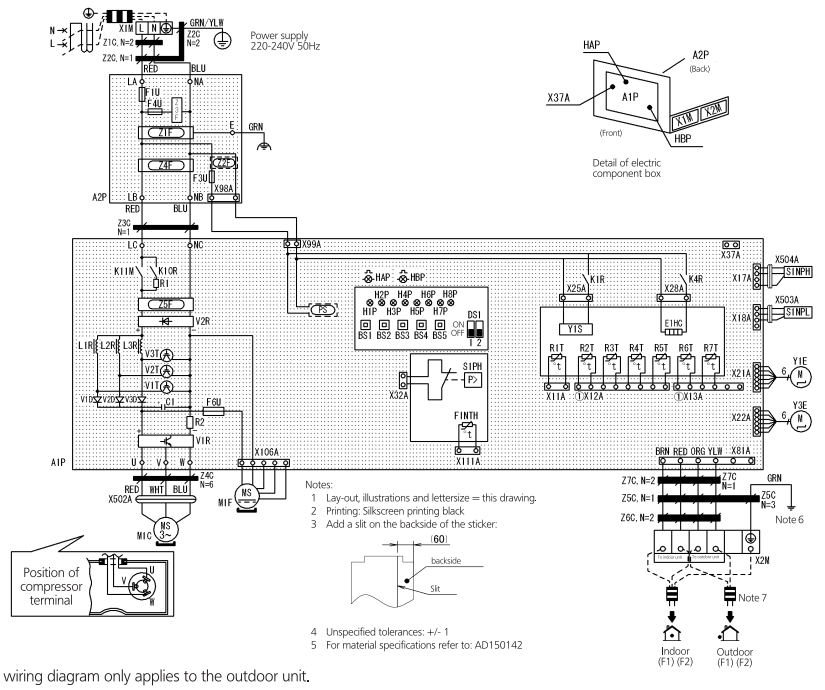
3D097886

9 Wiring diagrams

9 - 1 Wiring Diagrams - Single Phase

RXYSCQ-TV1

E1HC	: Crankcase heater
A1P	: Printed circuit board (Main)
A2P	: Printed circuit board
BS1~BS5	: Push button switch
C1	: Capacitor
DS1	: Dip switch
F1U	: Fuse
F3U	: Fuse (T 6.3A / 250V)
F4U	: Fuse (T 6.3A / 250V)
F6U	: Fuse (T 5A / 250V)
H1P~H8P	: Pilot lamp (service monitor-orange) [H2P] Prepare, Test --------- Flickering Malfunction Detection -- Light up
HAP	: Pilotlamp (service monitor - green)
HBP	: Pilotlamp (service monitor - green)
K11M	: Magnetic contactor
K1R	: Magnetic relay (Y1S)
K4R	: Magnetic relay (E1HC)
K10R	: Magnetic relay
M1C	: Motor (compressor)
M1F	: Motor (fan)
PS	: Switching power supply
R1	: Resistor
R2	: Resistor
R1T	: Thermistor (Air)
R2T	: Thermistor (Discharge)
R3T	: Thermistor (Suction 1)
R4T	: Thermistor (Heat exchanger)
R5T	: Thermistor (Suction 2)
R6T	: Thermistor (Subcooling H.Ex)
R7T	: Thermistor (Liquid pipe)
FINTH	: Thermistor (Fin)
S1NPH	: Pressure sensor (High)
S1NPL	: Pressure sensor (low)
S1PH	: High pressure switch
V1R	: IGBT power module
V2R	: Diode module
V1T~V3T	: IGBT
V1D~V3D	: Diode
L1R~L3R	: Reactor
X1M	: Terminal strip
X2M	: Terminal strip
Y1E	: Electronic expansion valve
Y3E	: Electronic expansion valve
Y1S	: Solenoid valve (4 way valve)
Z1C~Z7C	: Noise filter (ferrite core)
Z1F~Z5F	: Noise filter
X37A	: Connector



Notes:
1. This wiring diagram only applies to the outdoor unit.
2. :Field wiring :Terminal block, : Connector, : Movable connector, : Fixed connector, : Terminal, :Protective earth (screw), Noiseless earth
3. Refer to the installation manual on how to use BS1 - BS5 and DS1, DS2 switch.
4. When operating, do not short circuit for protection device. (S1PH)
5. Colours: BLK: Black, RED: Red, BLU: Blue, WHT: White, GRN: Green, BRN: Brown, YLW: Yellow
6. Refer to the installation manual for connection wiring to indoor-outdoor transmission F1 - F2.
7. When using the central control system, connect outdoor-outdoor transmission F1-F2.

2D0943433D

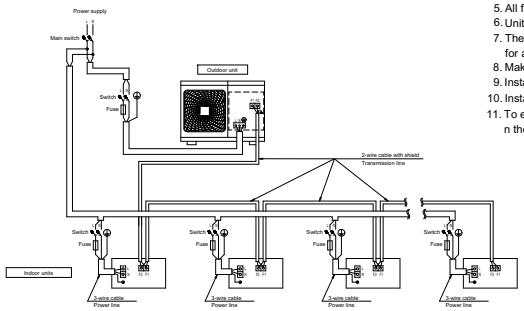
10 External connection diagrams

10 - 1 External Connection Diagrams

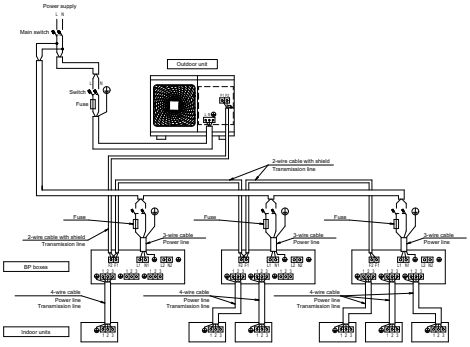
RXYSCQ-TV1

External connection diagram

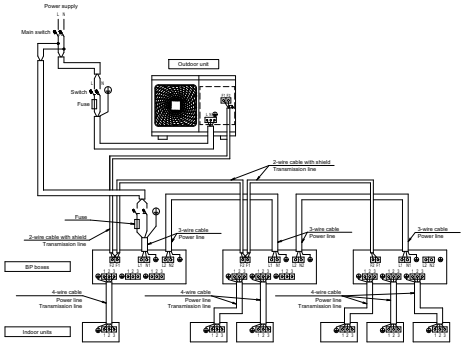
VRV indoor unit



BP box + RA/SA indoor unit



Power source is supplied to each BP box individually.



Power source is connected in series between the units.

Notes

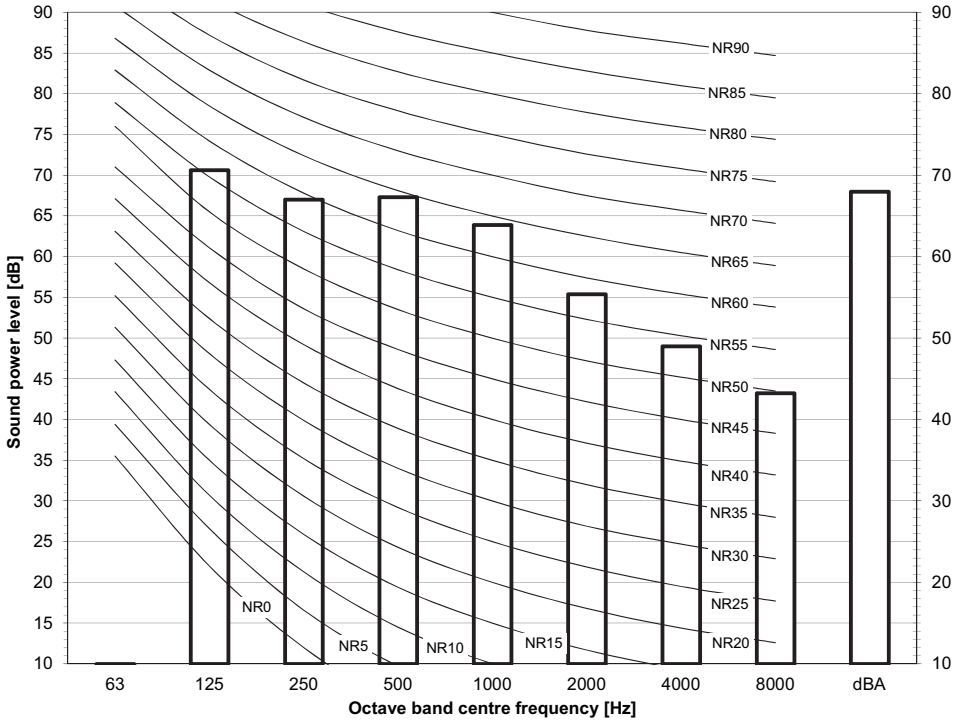
1. All wiring, components and materials to be procured on-site must comply with the applicable legislation.
2. Use copper conductors only
3. For more details, refer to the wiring diagram of the unit.
4. Install a circuit breaker for safety.
5. All field wiring and components must be provided by an authorised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

1D094668

11 Sound data

11 - 1 Sound Power Spectrum

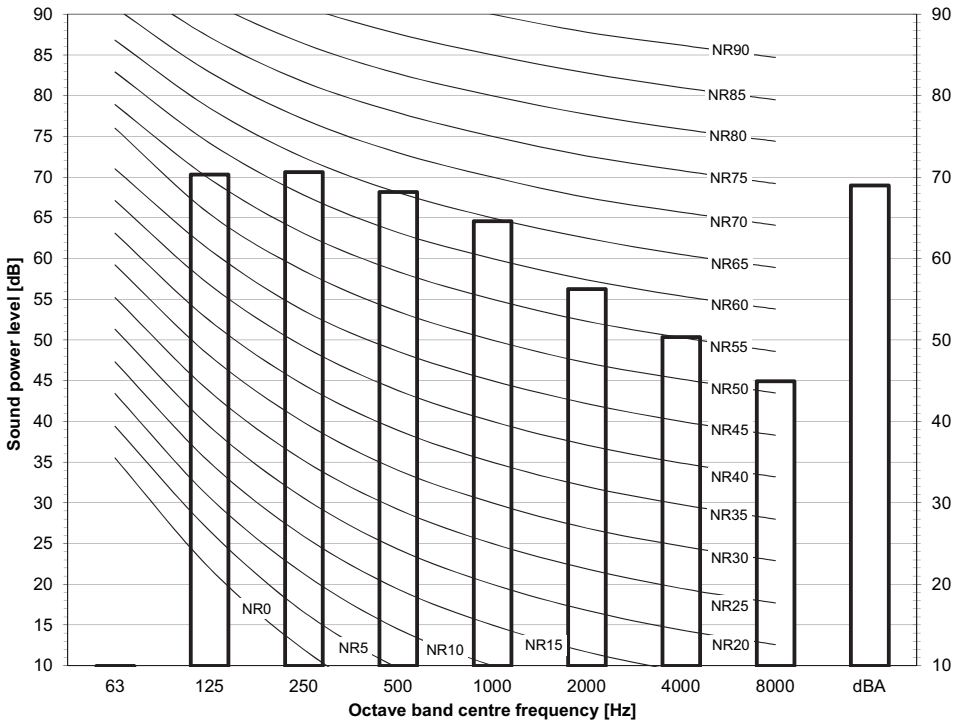
RXYSCQ4TV1



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

3D098238

RXYSCQ5TV1



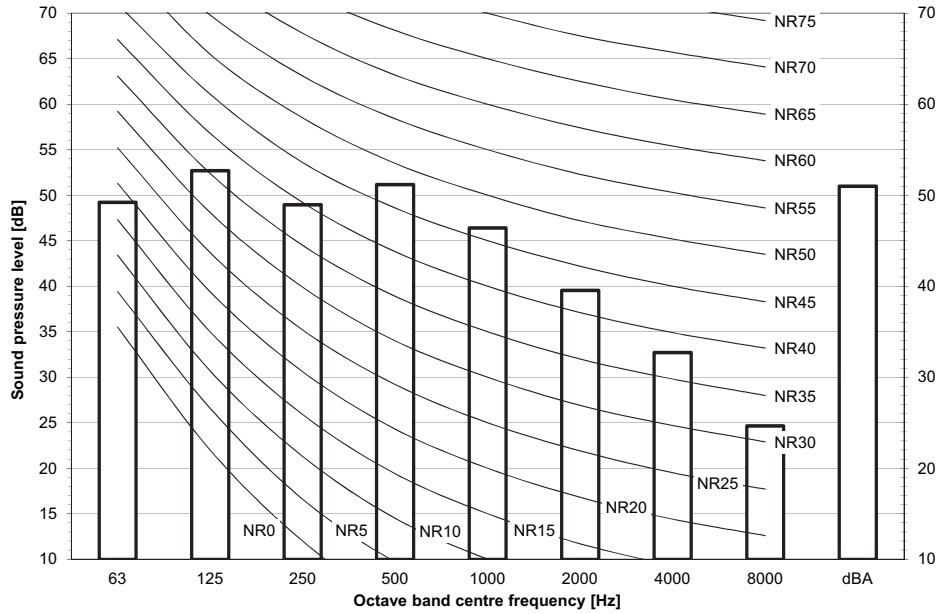
Notes
- dBA = A-weighted sound power level (A scale according to IEC).
- Reference acoustic intensity 0dB = 10E-6µW/m²
- Measured according to ISO 3744

3D098239

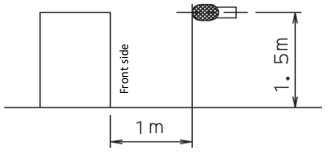
11 Sound data

11 - 2 Sound Pressure Spectrum

RXYSCQ4TV1

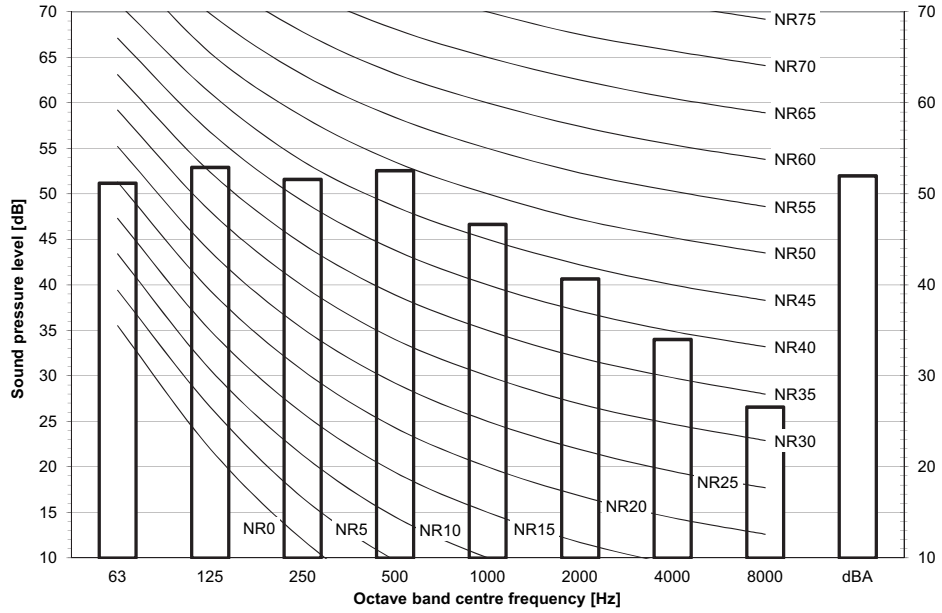


Notes
- Data is valid at free field condition.
- Data is valid at nominal operation condition.
- dBA = A-weighted sound pressure level (A scale according to IEC).
- Reference acoustic pressure 0 dB = 20 µPa

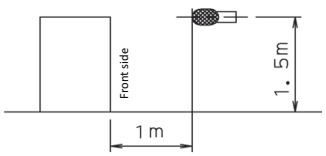


3D098243

RXYSCQ5TV1



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



3D098244

12 Installation

12 - 1 Installation Method

RXYSCQ-TV1

Required installation space

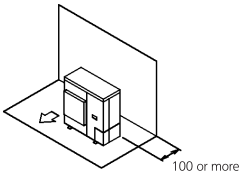
The unit of the values is mm.

(A) When there are obstacles on suction sides.

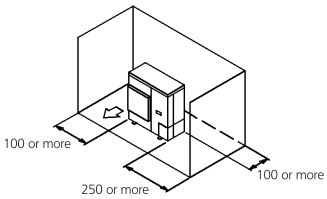
● No obstacle above

① Stand-alone installation

● Obstacle on the suction side only

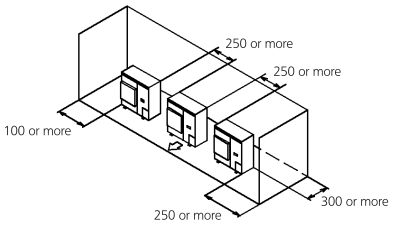


● Obstacle on both sides



②Series installation (2 or more)

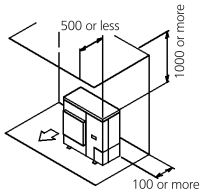
● Obstacle on both sides



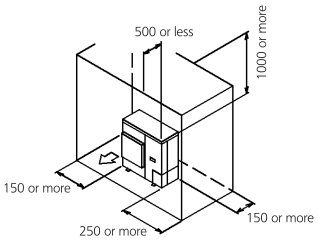
● Obstacle above, too.

① Stand-alone installation

● Obstacle on the suction side, too

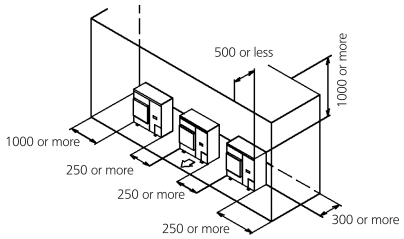


● Obstacle on the suction side and both sides



② Series installation (2 or more)

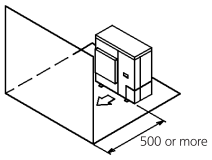
● Obstacle on the suction side and both sides



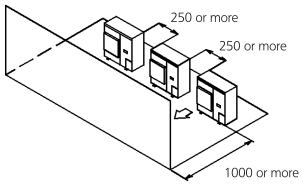
(B) When there are obstacles on discharge sides.

● No obstacle above

① Stand-alone installation

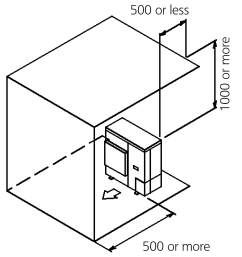


② Series installation (2 or more)

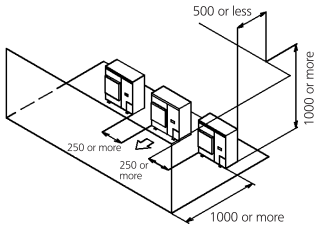


● Obstacle above, too

① Stand-alone installation



② Series installation (2 or more)



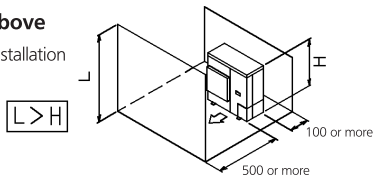
(C) When there are obstacles on both suction and discharge sides.:

Pattern 1

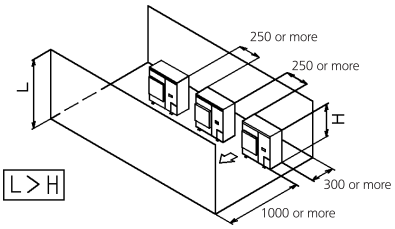
When the obstacles on the discharge side is higher than the unit.
(There is no height limit for obstructions on the intake side.)

● No obstacle above

① Stand-alone installation



② Series installation (2 or more)



3D089310A

12 Installation

12 - 1 Installation Method

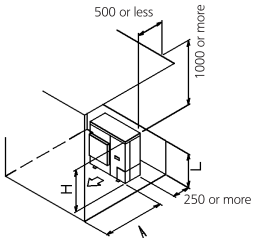
RXYSCQ-TV1

● Obstacle above, too

① Stand-alone installation

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

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

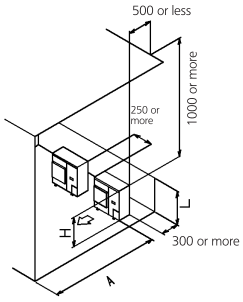


Close the bottom of the installation frame to prevent the discharged air from being bypassed.

② Series installation (2 or more)

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

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

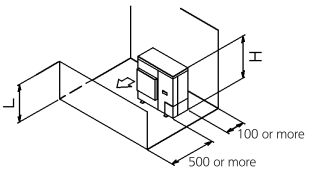


Close the bottom of the installation frame to prevent the discharged air from being bypassed.
Only two units can be installed for this series.

Pattern 2

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

● No obstacle above

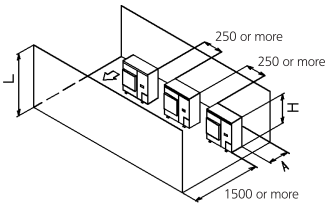


① Stand-alone installation
L > H

② Series installation (2 or more)

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

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

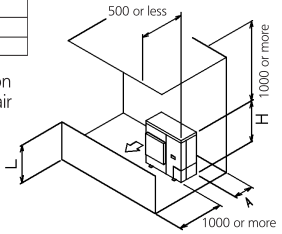


● Obstacle above, too

① Stand-alone installation

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

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

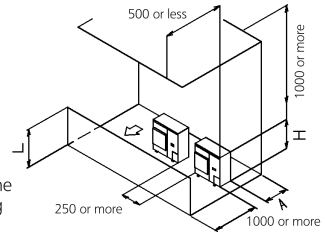


Close the bottom of the installation frame to prevent the discharged air from being bypassed.

② Series installation

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

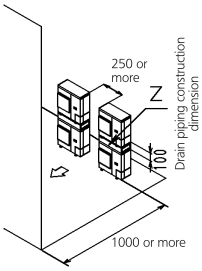
	L	A
L ≦ H	0 < L ≦ 1/2 H	250
	1/2 H < L ≦ H	300
H < L	Set the stand as : L ≦ H	



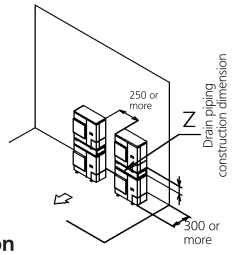
Close the bottom of the installation frame to prevent the discharged air from being bypassed.
Only two units can be installed for this series.

(D) Double-decker installation

① Obstacle on the discharge side.
Close the gap Z (the gap between the upper and lower outdoor units) to prevent the discharged air from being bypassed.
Do not stack more than two unit.

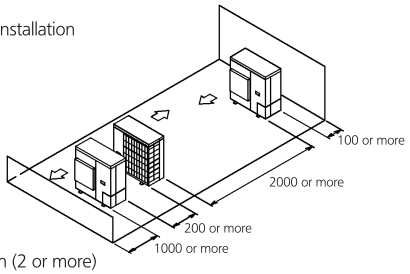


② Obstacle on the suction side.
Close the gap Z (the gap between the upper and lower outdoor units) to prevent the discharged air from being bypassed.
Do not stack more than two unit.



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

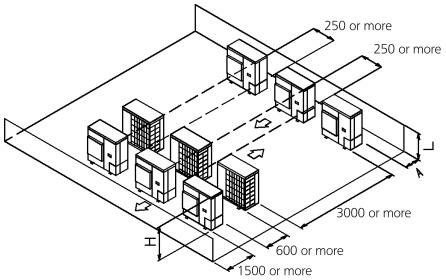
① One row of stand-alone installation



② Rows of series installation (2 or more)

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

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



3D089310A

12 Installation

12 - 2 Refrigerant Pipe Selection

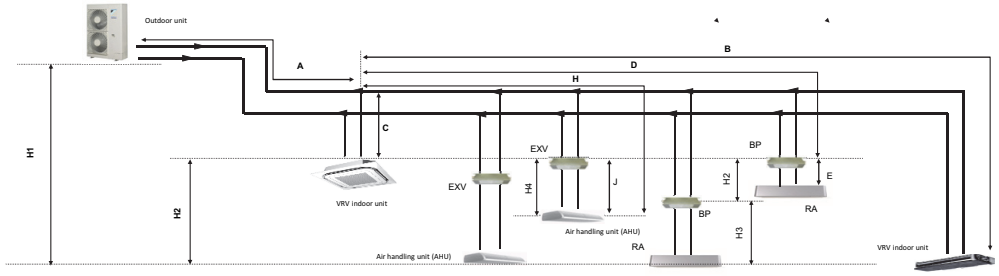
RXYSCQ-TV1
RXYSQ-TV1
RXYSQ-TY1

For the reference drawing, see page ·2/3·.		Maximum piping length: Longest pipe (A+[B,D+E,H]) Actual / (Equivalent)	Maximum piping length: After first branch (B,D+E,H) Actual	Maximum height difference: Indoor-to-outdoor (H1) Outdoor above indoor / (indoor above outdoor)	Maximum height difference: Indoor-to-indoor (H2)	Total piping length
Standard ·VRV DX· indoor units only	RXYSCQ4~5TMV1B	70/(90)m	40m	30/(30)m	15m	300m
	RXYSQ4~6T7(V/Y)1B	120/(150)m	40m	50/(40)m	15m	300m
	RXYSQ8TMY1B	100/(130)m	40m	50/(40)m	15m	300m
	RXYSQ10~12TMY1B	120/(150)m	40m	50/(40)m	15m	300m
·RA· connection	RXYSCQ4~5TMV1B	35/(45)m	40m	30/(30)m	15m	140m
	RXYSQ4~6T7(V/Y)1B	65/(85)m	40m	30/(30)m	15m	140m
	RXYSQ8TMY1B	80/(100)m	40m	30/(30)m	15m	140m
	RXYSQ10~12TMY1B	80/(100)m	40m	30/(30)m	15m	140m
Air handling unit (·AHU·) connection	Pair	50/(55)m (1)	-	40/(40)m	-	-
	Multi (2)	50/(55)m (1)	40m	40/(40)m	15m	300m
	Mix (3)	50/(55)m (1)	40m	40/(40)m	15m	300m

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

3D097984

RXYSCQ-TV1
RXYSQ-TV1
RXYSQ-TY1



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

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

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

3D097984

12 Installation

12 - 2 Refrigerant Pipe Selection

RXYSCQ-TV1

RXYSQ-TV1

RXYSQ-TY1

System pattern Allowed connection ratio (CR) Other combinations are not allowed.	Total		Allowed capacity		
	Capacity	Maximum allowed amount of connectable indoor units (·VRV, RA, AHU·) Excluding ·BP· units and including ·EXV· kits.	VRV DX indoor unit	·RA DX· indoor unit	Air handling unit (AHU)
·VRV DX· indoor units only	50~130%	Maximum ·64·	50~130%	-	-
·RA DX· indoor units only	80~130%	Maximum ·32· (1)	-	80~130%	-
·VRV DX· indoor unit + ·AHU· Mix	50~110% (3)	Maximum ·64· (2)	50~110%	-	0~110%
·AHU· only Pair + multi (4)	90~110% (3)	Maximum ·64· (2)	-	-	90~110%

Notes

1. There is no restriction on the number of connectable ·BP· boxes.
2. ·EKEXV· kits are also considered indoor units.
3. Restrictions regarding the air handling unit capacity
4. Pair AHU = system with 1 air handling unit connected to one outdoor unit
   Multi AHU = system with multiple air handling units connected to one outdoor unit

About ventilation applications

I. ·FXMQ_MF· units are considered air handling units, following air handling unit limitations.
   - Maximum connection ratio when combined with ·VRV DX· indoor units: ·CR ≤ 30·%.
   - Maximum connection ratio when only air handling units are connected: ·CR ≤ 100·%.
   - Minimum connection ratio when only ·FXMQ_MF· units are connected: ·CR ≥ 50·%

   For information on the operation range, refer to the documentation of the ·FXMQ_MF· unit.

II. ·Biddle· air curtains are considered air handling units, following air handling unit limitations:
   For information on the operation range, refer to the documentation of the ·Biddle· unit.

III. ·EKEXV + EKEQ· units combined with an air handling unit are considered air handling units, following air handling unit limitations.
   For information on the operation range, refer to the documentation of the ·EKEXV-EKEQ· unit.

IV. ·VKM· units are considered to be regular ·VRV DX· indoor units.
   For information on the operation range, refer to the documentation of the ·VKM· unit.

V. Because there is no refrigerant connection with the outdoor unit (only communication F1/F2), ·VAM· units do not have connection limitations.
   However, since there is communication via F1/F2, count them as regular indoor unit when calculating the maximum allowed number of connectable indoor units.

3D097984

13 Operation range

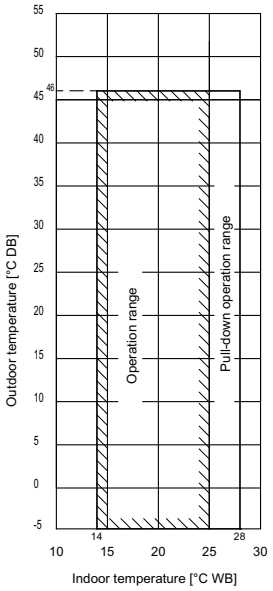
13 - 1 Operation Range

RXYSCQ-TV1
RXYSQ-TV1
RXYSQ4-6TY1

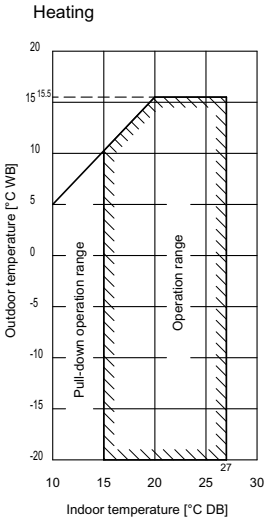
Notes

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

Cooling



Heating



3D094664

Daikin Europe N.V. participates in the Eurovent Certification programme for Liquid Chilling Packages (LCP), Air handling units (AHU), Fan coil units (FCU) and variable refrigerant flow systems (VRF) Check ongoing validity of certificate online: www.eurovent-certification.com or using: www.certiflash.com

BARCODE

Daikin products are distributed by:

DAIKIN EUROPE N.V. Naamloze Vennootschap - Zandvoordestraat 300, B-8400 Oostende - Belgium - www.daikin.eu - BE 0412 120 336 - RPR Oostende

EEDEN16-200_2 08/15 Copyright Daikin
The present publication supersedes EEDEN15-200_2