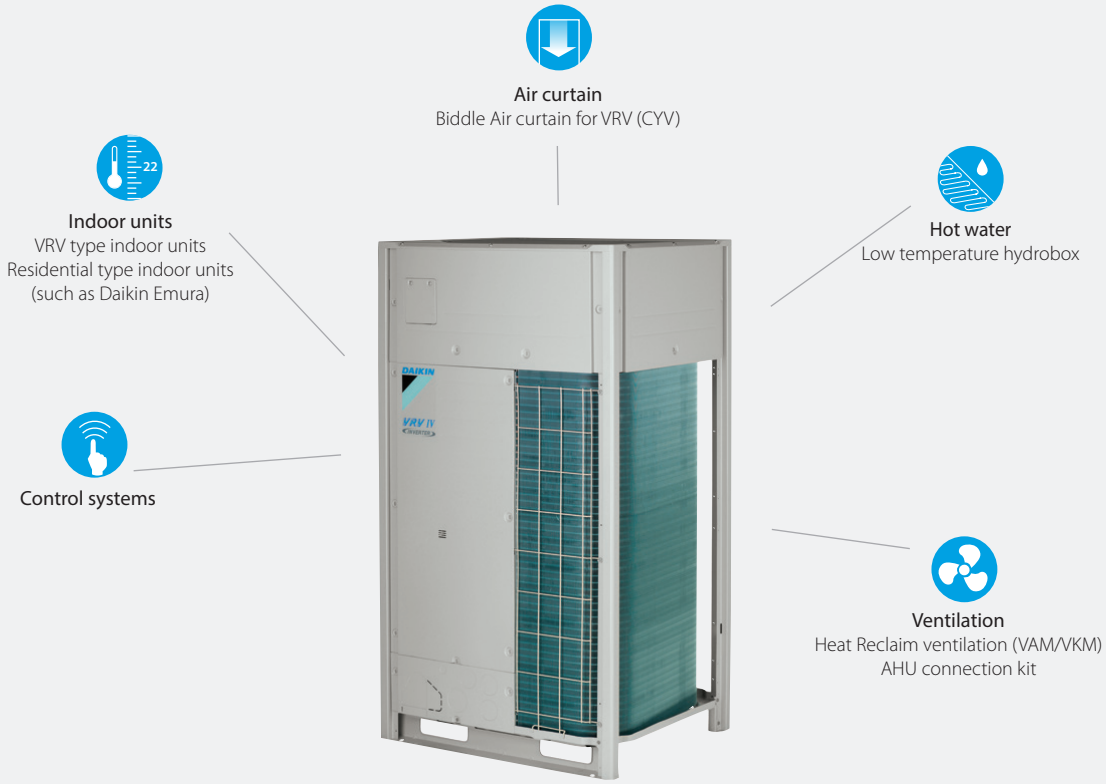
VRV IV heat pump

Daikin's optimum solution with top comfort



Variable Refrigerant Temperature

VRV IV standards:

Variable refrigerant temperature

Customize your VRV for best seasonal efficiency & comfort

Continuous heating

The new standard in heating comfort

VRV configurator

Software for simplified commissioning, configuration and customisation

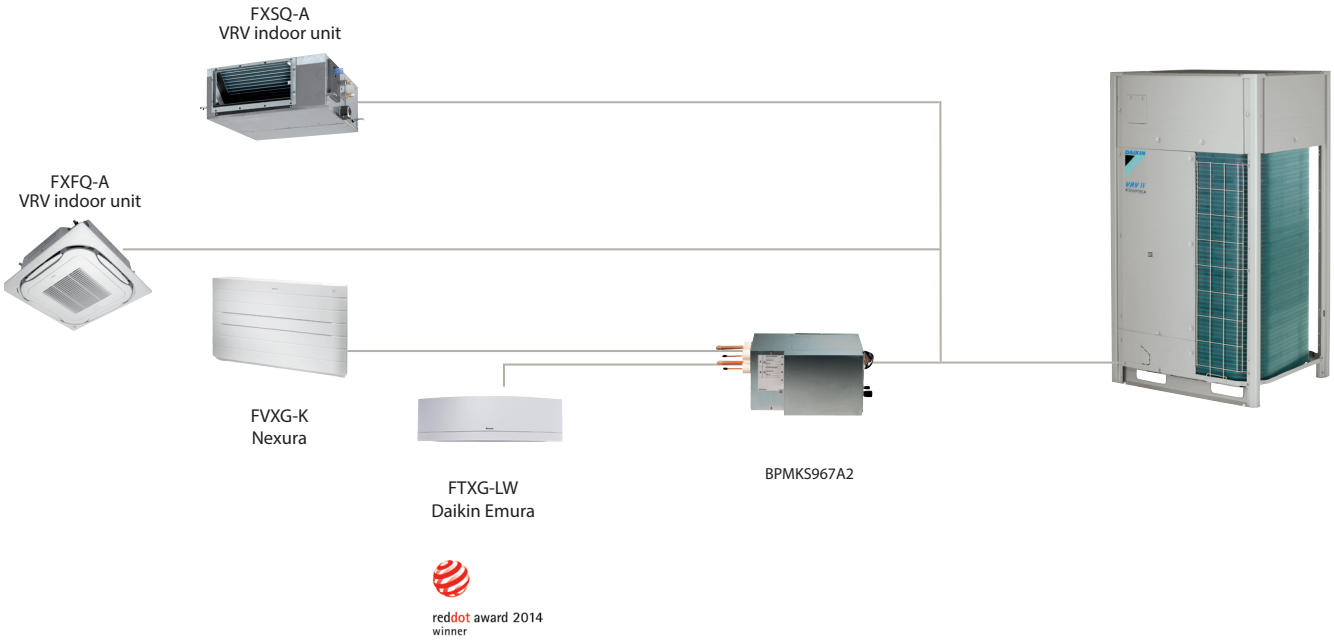
- 7 segment indicator
- Automatic refrigerant charge
- Refrigerant containment check
- Night quiet mode
- Low noise function
- Connectable to stylish indoor units
- Connectable to LT hydrobox
- Full inverter compressors
- Gas cooled PCB
- 4 side heat exchanger
- Reluctance brushless DC compressor
- Sine wave DC inverter
- DC fan motor
- E-pass heat exchanger
- I demand function
- Manual demand function

For detailed explanation of these functions refer to vrv iv technologies tab

Wide range of indoor units

Mix of RA units & VRV units

Freely combine VRV indoor units with stylish indoor units (Daikin Emura, Nexura, …)



Connectable indoor units

	15 CLASS	20 CLASS	25 CLASS	35 CLASS	42 CLASS	50 CLASS	60 CLASS	71 CLASS
Daikin Emura – Wall mounted unit		FTXG20LW FTXG20LS	FTXG25LW FTXG25LS	FTXG35LW FTXG35LS		FTXG50LW FTXG50LS		
Wall mounted unit	CTXS15K	FTXS20K	FTXS25K	FTXS35K CTXS35K	FTXS42K	FTXS50K	FTXS60G	FTXS71G
Nexura – Floor standing unit			FVXG25K	FVXG35K		FVXG50K		
Floor standing unit			FVXS25F	FVXS35F		FVXS50F		
Flexi type unit			FLXS25B	FLXS35B9		FLXS50B	FLXS60B	

BPMKS box needed to connect RA indoors to VRV IV (RYYQ-T and RXYQ-T(9))

VRV IV

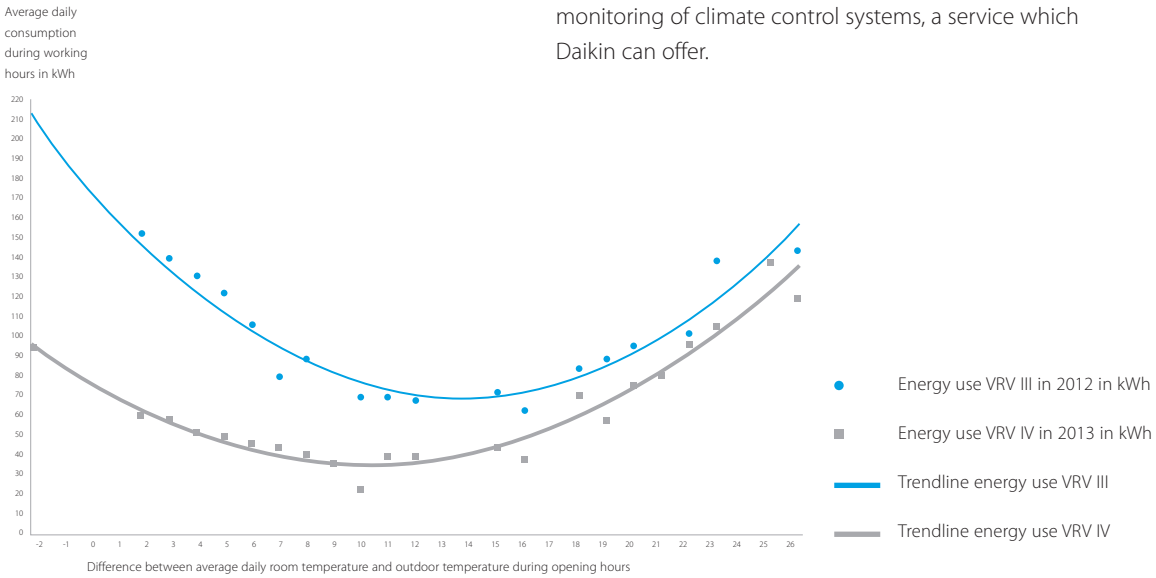
proven in practice: 40% more efficient

A field trial at a German fashion chain store demonstrated how the innovative features of VRV IV have improved energy efficiency dramatically over previous models.

Results: up to 60% less energy consumed

The results of the trial showed that the new VRV IV system consumed much less energy, particularly when cooling, compared with the VRV III system – in some cases up to 60% less. When heating, savings were an average of 20%.

The Unterhaching trial demonstrates how VRV IV heat pump technology uses a renewable energy source – air - to provide a complete and environmentally sustainable solution for heating, cooling, and ventilation in commercial environments. The trial also shows that businesses can only identify and control energy wastage through careful and intelligent monitoring of climate control systems, a service which Daikin can offer.



	VRV III 20HP (2 modules)	VRV IV 18HP (1 module)
Period	March 2012 - February 2013	March 2013 - February 2014
Avg (kWh/Month)	2.797	1.502
Total (KWh)	33.562	18.023
Total (€)	6.041	3.244
Yearly (operation cost/m² (€/m²)	9,9	5,3
	46% savings = € 2.797	

Measured data

Fashion store Unterhaching (Germany)

› Floor space: 607m²
› Energy cost: 0,18 €/kWh
› System taken into account for consumption:
- VRV IV heat pump with continuous heating
- Round flow cassettes (without auto cleaning panel)
- VAM for ventilation (2x VAM2000)
- Biddle Air curtain.

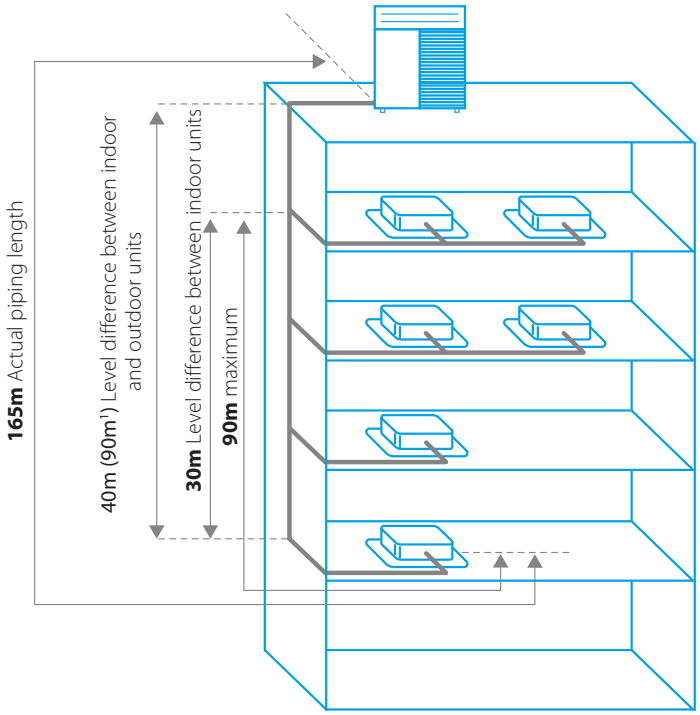
Free combination of outdoor units

Freely combine outdoor units to optimise for small footprint, continuous heating, highest efficiency or any other combination

Flexible piping design

Total piping length	1000m
Longest length actual (Equivalent)	165m (190m)
Longest length after first branch	90m[1]
Level difference between indoor and outdoor units	90m[1]
Level difference between indoor units	30m

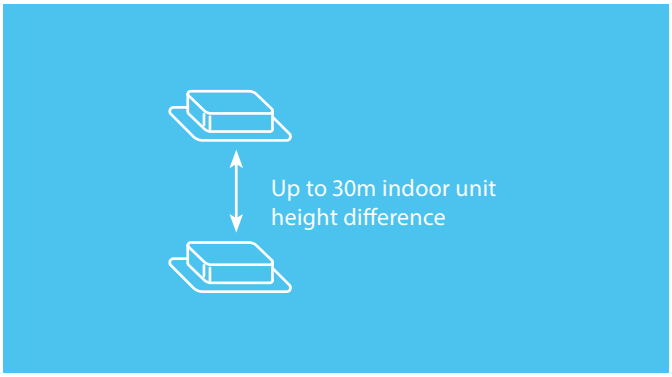
1 Contact your local dealer for more information and restrictions
2 in case outdoor unit is located below indoor units



VRV IV heat pump

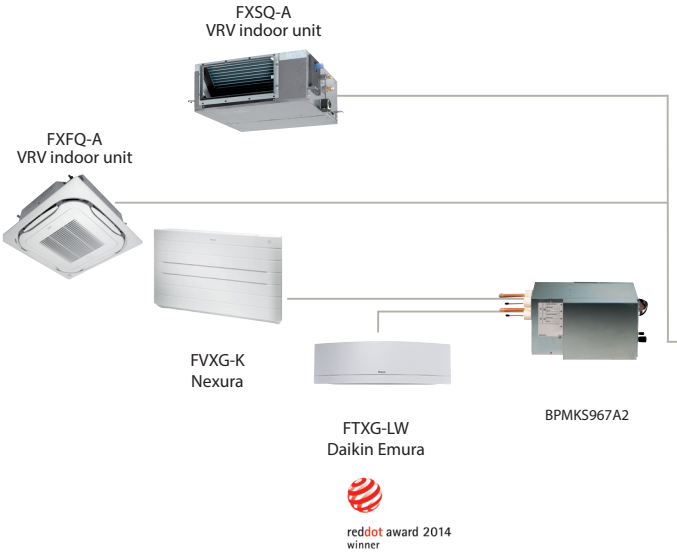
Daikin's optimum solution with top comfort

- Covers all thermal needs of a building via a single point of contact: accurate temperature control, ventilation, hot water, air handling units and Biddle air curtains
- Wide range of indoor units: possibility to combine VRV with stylish indoor units (Daikin Emura, Nexura, ...)
- Incorporates VRV IV standards & technologies: Variable Refrigerant Temperature, continuous heating, VRV configurator, 7 segment display and full inverter compressors, 4-side heat exchanger, refrigerant cooled PCB, new DC fan motor
- Free combination of outdoor units to meet installation space or efficiency requirements
- Available as heating only by irreversible field setting
- Contains all standard VRV features



Outdoor unit				RYYQ/RXYQ	8T/8T9	10T	12T	14T	16T	18T	20T
Capacity range				HP	8	10	12	14	16	18	20
Cooling capacity	Nom.			kW	22.4 (1) / 22.4 (2)	28.0 (1) / 28.0 (2)	33.5 (1) / 33.5 (2)	40.0 (1) / 40.0 (2)	45.0 (1) / 45.0 (2)	50.4 (1)	56.0 (1)
Heating capacity	Nom.			kW	22.4 (3) / 22.40 (4)	28.0 (3) / 28.00 (4)	33.5 (3) / 33.50 (4)	40.0 (3) / 40.0 (4)	45.0 (3) / 45.0 (4)	50.4 (3)	56.0 (3)
	Max.			kW	25.0 (3)	31.5 (3)	37.5 (3)	45.0 (3)	50.0 (3)	56.5 (3)	63.0 (3)
Power input - 50Hz	Cooling	Nom.		kW	5.21 (1) / 4.47 (2)	7.29 (1) / 6.32 (2)	8.98 (1) / 8.09 (2)	11.0 (1) / 9.88 (2)	13.0 (1) / 12.10 (2)	15.0 (1)	18.5 (1)
	Heating	Nom.		kW	4.75 (3) / 4.47 (4)	6.29 (3) / 5.47 (4)	7.77 (3) / 6.59 (4)	9.52 (3) / 9.30 (4)	11.1 (3) / 9.8 (4)	12.6 (3)	14.5 (3)
		Max.		kW	5.51 (3)	7.38 (3)	9.10 (3)	11.2 (3)	12.8 (3)	14.6 (3)	17.0 (3)
EER				kW	4.30 (1) / 5.01 (2)	3.84 (1) / 4.43 (2)	3.73 (1) / 4.14 (2)	3.64 (1) / 4.05 (2)	3.46 (1) / 3.73 (2)	3.36 (1)	3.03 (1)
ESEER - Automatic					7.53	7.20	6.96	6.83	6.50	6.38	5.67
ESEER - Standard					6.37	5.67	5.50	5.31	5.05	4.97	4.42
COP at nominal capacity				kW	4.72 (3) / 5.01 (4)	4.45 (3) / 5.12 (4)	4.31 (3) / 5.08 (4)	4.20 (3) / 4.30 (4)	4.05 (3) / 4.59 (4)	4.00	3.86
COP at maximum capacity				kW	4.54 (3)	4.27 (3)	4.12 (3)	4.02 (3)	3.91 (3)	3.87	3.71
Maximum number of connectable indoor units					64 (5)						
Indoor index connection	Min.				100	125	150	175	200	225	250
	Nom.				200	250	300	350	400	450	500
	Max.				260	325	390	455	520	585	650
Dimensions	Unit	HeightxWidthxDepth		mm	1,685x930x765			1,685x1,240x765			
Weight	Unit	RYYQ/RXYQ		kg	243/187	252/194		356/305		391/314	
Fan	Air flow rate	Cooling	Nom.	m^3/min	162	175	185	223	260	251	261
Sound power level	Cooling	Nom.		dBA	78	79	81		86		88
Sound pressure level	Cooling	Nom.		dBA	58		61		64	65	66
Operation range	Cooling	Min.~Max.		°CDB	-5~43						
	Heating	Min.~Max.		°CWB	-20~15.5						
Refrigerant	Type				R-410A						
	Charge			kg	5.9	6	6.3	10.3	10.4	11.7	11.8
				TCO_2eq	12.3	12.5	13.2	21.5	21.7	24.4	24.6
	GWP				2,087.5						
Piping connections	Liquid	OD		mm	9.52		12.7			15.9	
	Gas	OD		mm	19.1	22.2	28.6				
	Total piping length	System	Actual	m	1,000						
Power supply	Phase/Frequency/Voltage			Hz/V	3N~/50/380-415						
Current - 50Hz	Maximum fuse amps (MFA)			A	20	25	32		40		50

Outdoor system				RYYQ/RXYQ	22T	24T/24T9	26T	28T	30T	32T	34T	36T	38T/38T9	40T
System	Outdoor unit module 1				10T	8T		12T			16T		8T	10T
	Outdoor unit module 2				12T	16T	14T	16T	18T	16T	18T	20T	10T	12T
	Outdoor unit module 3				-								20T	18T
Capacity range				HP	22	24	26	28	30	32	34	36	38	40
Cooling capacity	Nom.			kW	61.5	67.4	73.5	78.5	83.9	90.0	95.4	101.0	106.3	111.9
Heating capacity	Nom.			kW	61.5	67.4	73.5	78.5	83.9	90.0	95.4	101.0	106.3	111.9
	Max.			kW	69.0	75.0	82.5	87.5	94.0	100.0	106.5	113.0	119.0	125.5
Power input - 50Hz	Cooling	Nom.		kW	16.27	18.2	20.0	22.0	24.0	26.0	28.0	31.5	29.2	31.3
	Heating	Nom.		kW	14.06	15.85	17.29	18.87	20.4	22.2	23.7	25.6	25.1	26.7
		Max.		kW	16.48	18.31	20.30	21.90	23.7	25.6	27.4	29.8	29.2	31.1
EER				kW	3.77	3.70	3.68	3.57	3.5	3.46	3.4	3.21	3.6	
ESEER - Automatic					7.07	6.81	6.89	6.69	6.60	6.50	6.44	6.02	6.36	6.74
ESEER - Standard					5.58	5.42	5.39	5.23	5.17	5.05	5.01	4.68	5.03	5.29
COP at nominal capacity				kW	4.37	4.25		4.16	4.1	4.05	4.0	3.95	4.2	
COP at maximum capacity				kW	4.19	4.10	4.06	4.00		3.91	3.9	3.79	4.1	4.0
Maximum number of connectable indoor units					64									
Indoor index connection	Min.				275	300	325	350	375	400	425	450	475	500
	Nom.				550	600	650	700	750	800	850	900	950	1,000
	Max.				715	780	845	910	975	1,040	1,105	1,170	1,235	1,300
Piping connections	Liquid	OD		mm	15.9		19.1							
	Gas	OD		mm	28.6	34.9						41.3		
	Total piping length	System	Actual	m	1,000									
Current - 50Hz	Maximum fuse amps (MFA)			A	63				80				100	



RYYQ-T/RXYQ-T(9)

Connectable indoor units

	15 CLASS	20 CLASS	25 CLASS	35 CLASS	42 CLASS	50 CLASS	60 CLASS	71 CLASS
Daikin Emura – Wall mounted unit		FTXG20LW FTXG20LS	FTXG25LW FTXG25LS	FTXG35LW FTXG35LS		FTXG50LW FTXG50LS		
Wall mounted unit	CTXS15K	FTXS20K	FTXS25K	FTXS35K CTXS35K	FTXS42K	FTXS50K	FTXS60G	FTXS71G
Nexura – Floor standing unit			FVXG25K	FVXG35K		FVXG50K		
Floor standing unit			FVXS25F	FVXS35F		FVXS50F		
Flexi type unit			FLXS25B	FLXS35B9		FLXS50B	FLXS60B	

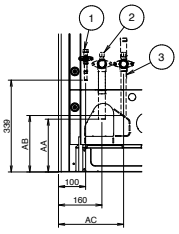
BPMKS box needed to connect RA indoors to VRV IV (RYYQ-T and RXYQ-T(9))

Outdoor system				**RYYQ/RXYQ**	**42T**	**44T**	**46T**	**48T**	**50T**	**52T**	**54T**
System	Outdoor unit module 1				10T	12T	14T		16T		18T
	Outdoor unit module 2				16T					18T	
	Outdoor unit module 3				16T				18T		
Capacity range				HP	42	44	46	48	50	52	54
Cooling capacity	Nom.			kW	118.0	123.5	130.0	135.0	140.0	145.8	151.2
Heating capacity	Nom.			kW	118.0	123.5	130.0	135.0	140.0	145.8	151.2
	Max.			kW	131.5	137.5	145.0	150.0	156.0	163.0	169.5
Power input - 50Hz	Cooling	Nom.		kW	33.3	35.0	37.0	39.0	40.7	43.0	45.0
	Heating	Nom.		kW	28.49	29.97	31.72	33.3	34.6	36.3	37.8
		Max.		kW	32.98	34.70	36.8	38.4	40.0	42.0	43.8
EER				kW	3.54		3.51	3.46	3.44	3.4	3.40
ESEER - Automatic					6.65	6.62	6.60	6.50	6.46	6.42	6.38
ESEER - Standard					5.19	5.17	5.13	5.05	5.02	4.99	4.97
COP at nominal capacity				kW	4.14	4.12	4.10	4.05		4.0	
COP at maximum capacity				kW	3.99	3.96	3.94	3.91	3.90		
Maximum number of connectable indoor units					64						
Indoor index connection	Min.				525	550	575	600	625	650	675
	Nom.				1,050	1,100	1,150	1,200	1,250	1,300	1,350
	Max.				1,365	1,430	1,495	1,560	1,625	1,690	1,755
Piping connections	Liquid	OD		mm	19.1						
	Gas	OD		mm	41.3						
	Total piping length	System	Actual	m	1,000						
Current - 50Hz	Maximum fuse amps (MFA)			A	100			125			

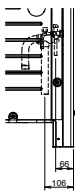
Outdoor unit module for RYYQ combinations				**RYMQ**	**8T**	**10T**	**12T**	**14T**	**16T**	**18T**	**20T**
Dimensions	Unit	Height/Width/Depth		mm	1,685/930/765			1,685/1,240/765			
Weight	Unit			kg	188	195		309		319	
Fan	Air flow rate	Cooling	Nom.	m^3/min	162	175	185	223	260	251	261
Sound power level	Cooling	Nom.		dBA	78	79	81		86		88
Sound pressure level	Cooling	Nom.		dBA	58		61		64	65	66
Operation range	Cooling	Min.~Max.		°CDB	-5~43						
	Heating	Min.~Max.		°CWB	-20~15.5						
Refrigerant	Type				R-410A						
	Charge			kg	5.9	6	6.3	10.3	10.4	11.7	11.8
				TCO_2eq	12.3	12.5	13.2	21.5	21.7	24.4	24.6
	GWP				2,087.5						
Power supply	Phase/Frequency/Voltage			Hz/V	3N~/50/380-415						
Current - 50Hz	Maximum fuse amps (MFA)			A	20	25	32		40		50

(1) Nominal cooling capacities are based on: indoor temperature: 27°CDB, 19°CWB, outdoor temperature: 35°CDB, equivalent refrigerant piping: 5m, level difference: 0m. Data for standard efficiency series (2) Nominal cooling capacities are based on: indoor temperature: 27°CDB, 19°CWB, outdoor temperature: 35°CDB, equivalent refrigerant piping: 5m, level difference: 0m. Data for high efficiency series, Eurovent certified (3) 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 (4) Nominal heating capacities are based on: indoor temperature: 20°CDB, outdoor temperature: 7°CDB, 6°CWB, equivalent refrigerant piping: 5m, level difference: 0m. Data for high efficiency series, Eurovent certified (5) Actual number of connectable indoor units depends on the indoor unit type (VRV indoor, Hydrobox, RA indoor, etc.) and the connection ratio restriction for the system (50% <= CR <= 130%) | The STANDARD ESEER value corresponds with normal VRV4 Heat Pump operation, not taking into account advanced energy saving operation functionality | The AUTOMATIC ESEER value corresponds with normal VRV4 Heat Pump operation, taking into account advanced energy saving operation functionality (variable refrigerant temperature control operation) | Contains fluorinated greenhouse gases

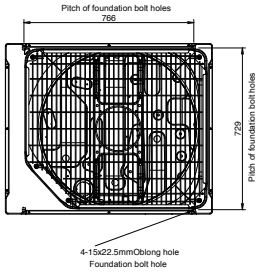
RYYQ8-12T / RYMQ8-12T / RXYQ8-12T(9)

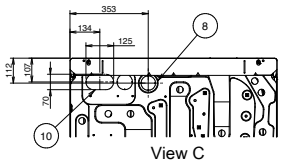


Detail A

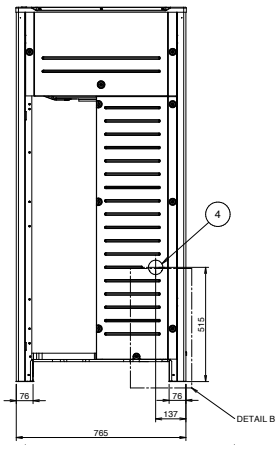


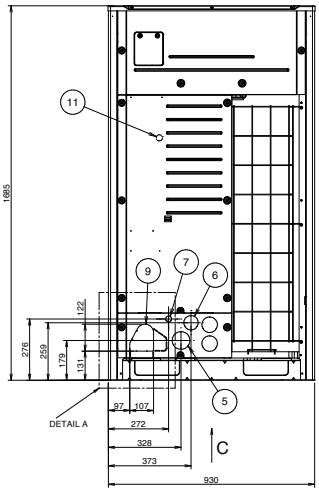
Detail B

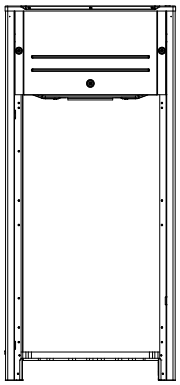




View C







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

Notes

1. Detail A and detail B indicate the dimensions after fixing the attached piping.
2. Items 4 - 10: Knockout hole.
3. Gas pipe
   - RYYQ8T, RYMQ8T, RXYQ8T, RXYQQ8T : Ø 19.1 brazing connection
   - RYYQ10T, RYMQ10T, RXYQ10T, RXYQQ10T : Ø 22.2 brazing connection
   - REMQ5T, REYQ8-12T : Ø 25.4 brazing connection
   - RYYQ12T, RYMQ12T, RXYQ12T, RXYQQ12T : Ø 28.6 brazing connection

   Liquid pipe
   - RYYQ8-10T, RYMQ8-10T, RXYQ8-10T, RXYQ Q8-10T, REMQ5T, REYQ8-12T : Ø 9.5 brazing connection
   - RYYQ12T, RYMQ12T, RXYQ12T, RXYQQ12T : Ø 12.7 brazing connection

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

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

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

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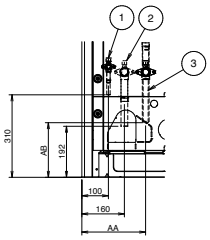
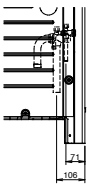
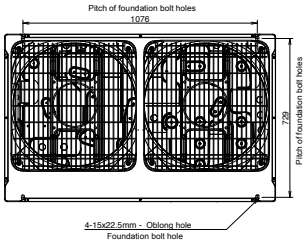
RYYQ14-20T / RYMQ14-20T / RXYQ14-20T

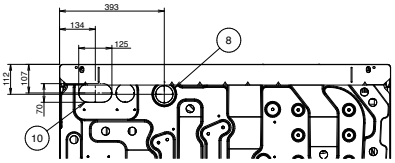


Detail A

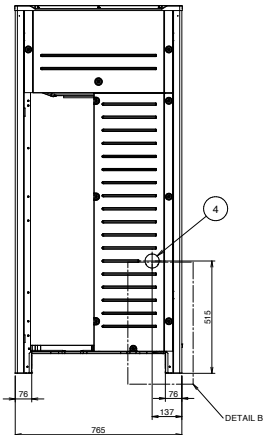


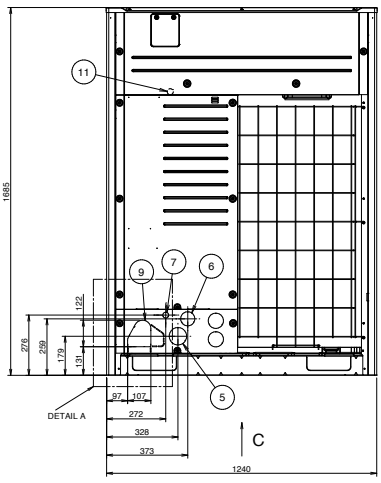
Detail B

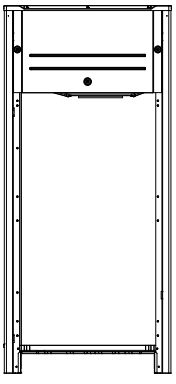




View C







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

Notes

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

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

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

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

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

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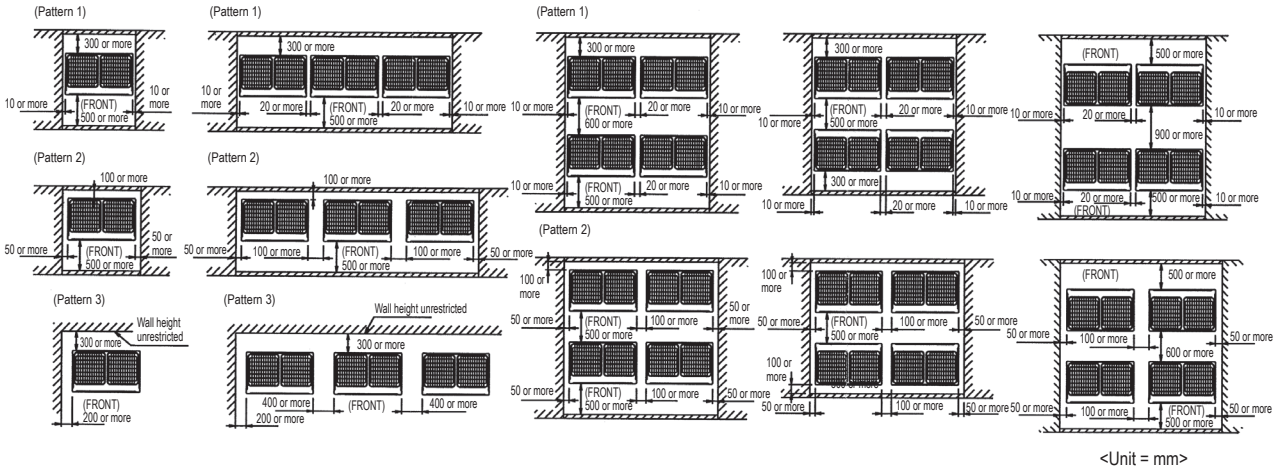
RYYQ-T / RXYQ-T(9)

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



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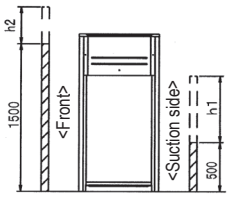

NOTES

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

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