VRV IV heat recovery

Best efficiency and comfort solution





VRV IV standards:

Variable refrigerant temperature

Customize your VRV for best seasonal efficiency & comfort

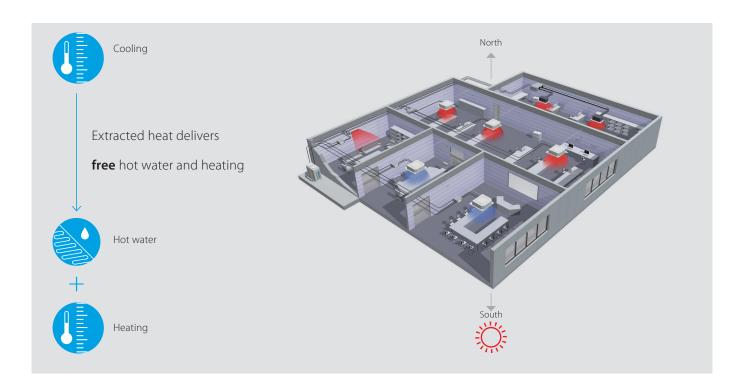
Continuous heating

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 LT hydrobox for hot water
- > Connectable to HT hydrobox for hot water
- > 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



"Free" heat and hot water production

Until now, most commercial buildings have relied on separate systems for cooling, heating, hot water and so on, which results in a lot of wasted energy.

An integrated heat recovery system reuses heat from offices, server rooms, to warm other areas or create hot water.

Improved efficiency

In heat-recovery operation the VRV IV is up to 15% more efficient compared to VRV III. In single mode operation, the seasonal efficiency of the system can be even as much as 28% higher - thanks to the variable refrigerant temperature technology - compared to a conventional VRF system.

Optimised Partition of Heat Exchanger for highest seasonal efficiency in heat recovery mode

Vertically divided heat exchanger with an optimized ratio for mix mode operation. This improves heat recovery efficiency by reducing radiation losses.

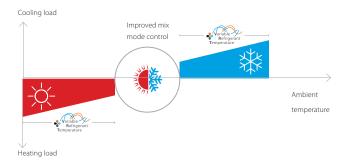
Wide heating operation range

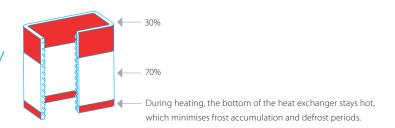
VRV IV heat recovery has a standard operation range down to -20°CWB in heating. It can also provide cooling down to -20°CDB for technical server rooms (field setting).

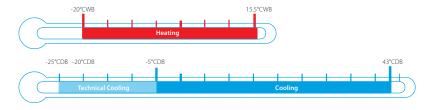
Maximum comfort

A VRV heat-recovery system allows simultaneous cooling and heating.

- > For hotel owners, this means a perfect environment for guests as they can freely choose between cooling or heating.
- > For offices, it means a perfect working indoor climate for both north and south-facing offices.







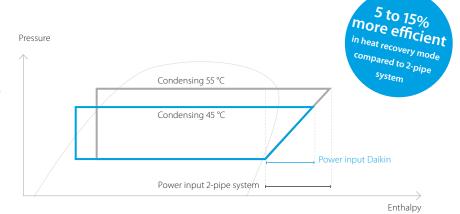
Advantages

of 3-pipe technology

More "free" heat

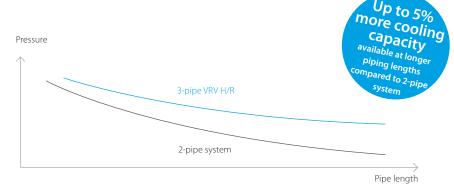
Daikin 3-pipe technology needs less energy to recover heat, meaning significantly higher efficiency during heat recovery mode. Our system can recover heat at a low condensing temperature because it has dedicated gas, liquid and discharge pipes.

In a 2-pipe system, gas and liquid travel as a mixture so the condensing temperature needs to be higher in order to separate the mixed gas and liquid refrigerant. The higher condensing temperature means more energy is used to recover heat resulting in lower efficiency.



Lower pressure drop means more efficiency

- Smooth refrigerant flow in 3-pipe system thanks to
 2 smaller gas pipes results in higher energy efficiency
- Disturbed refrigerant flow in large gas pipe on
 2-pipe system results in bigger pressure drop



Save on refrigerant

 Smaller diameter pipes and 3-pipe system results in up to 36% less refrigerant charge compared to 2-pipe systems, saving on refrigerant cost and reducing environmental impact

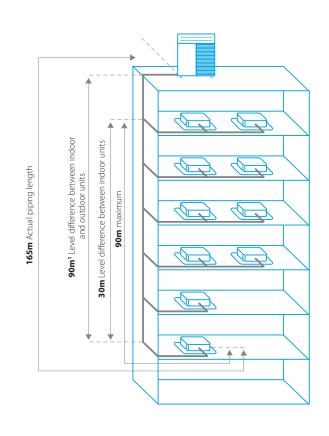
Freely combine outdoor units

Combine outdoor units flexibly to reduce your carbon footprint, optimise your system for continuous heating, and achieve the highest efficiency.

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 Outdoor unit in highest position. Consult your local sales representative for restrictions on piping lengths



Fully redesigned BS boxes

Maximum design flexibility and installation speed

- > Quickly and flexibly design your system with a unique range of single and multi BS boxes.
- > A wide variety of compact and lightweight multi BS boxes greatly reduces installation time.
- > Free combination of single and multi BS boxes

Single port

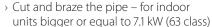
- > Unique to the market
- > Compact and light to install
- > No drain piping needed
- > Ideal for remote rooms
- > Technical cooling function
- > Connect up to 250 class unit (28 kW)
- > Allows multi-tenant applications

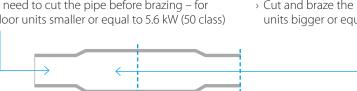
Multi port: 4 - 6 - 8 - 10 - 12 - 16

- > Up to 55% smaller and 41% lighter than previous range
- > Faster installation thanks to a reduced number of brazing points and wiring
- > All indoor units connectable to one BS box
- > Fewer inspection ports needed
- > Up to 16 kW capacity available per port
- > Connect up to 250 class unit (28kW) by combining 2 ports
- > No limit on unused ports, permitting phased installation
- > Allows multi-tenant applications

Faster installation thanks to open connection

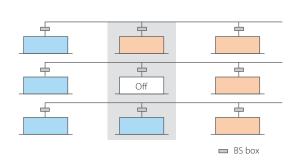
> No need to cut the pipe before brazing – for indoor units smaller or equal to 5.6 kW (50 class)





Maximum comfort at all times

With the VRV BS box, any indoor unit not being used to switch between heating and cooling maintains the constant desired temperature. This is because our heat recovery system does not need to equalise pressure over the entire system after a change-over.







VRV IV heat recovery

Best efficiency & comfort solution

- > Fully integrated solution with heat recovery for maximum efficiency with COPs of up to 8!
- > 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
- > "Free" heating and hot water production provided by transferring heat from areas requiring cooling to areas requiring heating or hot water
- > The perfect personal comfort for guests/tenants via simultaneous cooling and heating
- > Continuous heating during defrost



- > 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
- > Possibility to extend the operation range in cooling down to -20°C for technical cooling operation such as server rooms
- > Contains all standard VRV features

Outdoor system				REYQ	8T	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) / 33.5 (4)	40.0 (3) / 40.00 (4)	45.0 (3) / 45.00 (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	5.31 (1) / 4.56 (2)	7.15 (1) / 6.19 (2)	9.23 (1) / 8.31 (2)	10.7 (1) / 9.61 (2)	12.8 (1) / 11.9 (2)	15.2	18.6		
	Heating	Nom.		kW	4.75 (3) / 4.47 (4)	6.29 (3) / 5.47 (4)	8.05 (3) / 6.83 (4)	9.60 (3) / 9.37 (4)	11.2 (3) / 9.88 (4)	12.3 (3)	14.9 (3)		
		Max.		kW	5.51 (3)	7.38 (3)	9.43 (3)	11.3 (3)	12.9 (3)	14.3	17.5		
EER				kW	4.22 (1) / 4.92 (2)	3.92 (1) / 4.52 (2)	3.63 (1) / 4.03 (2)	3.74 (1) / 4.16 (2)	3.52 (1) / 3.79 (2)	3.32	3.01		
ESEER - Automatic					7.41	7.37	6.84	7.05	6.63	6.26	5.68		
ESEER - Standard					6.25	5.78	5.36	5.45	5.14	4.84	4.39		
COP at nominal capa	city			kW	4.72 (3) / 5.01 (4)	4.45 (3) / 5.12 (4)	4.16 (3) / 4.90 (4)	4.17 (3) / 4.27 (4)	4.02 (3) / 4.56 (4)	4.10 (3)	3.76 (3)		
COP at maximum cap	acity			kW	4.54 (3)	4.27 (3)	3.9	8 (3)	3.88 (3)	3.95	3.60		
Maximum number of	connectable indoor	r units						64 (5)					
Indoor index	Min.				100	125	150	175	200	225	250		
connection	Nom.				200	250	300	350	400	450	500		
	Max.				260	325	390	455	520	585	650		
Dimensions	Unit	HeightxWi	dthxDepth	mm		1,685x930x765			1,685x1,240x765				
Weight	Unit			kg	210	2	18	304	305	37			
Fan	Air flow rate	Cooling	Nom.	m³/min	162	175	185	223	260	251	261		
Sound power level	Cooling	Nom.		dBA	78	79	8	31	8	6	88		
Sound pressure level	Cooling	Nom.		dBA	5	8	6	51	64	65	66		
Operation range	Cooling	Min.~Max.		°CDB	-5.0~43.0								
	Heating	Min.~Max.		°CWB	-20~15.5 (6)								
Refrigerant	Туре					R-410A							
	Charge			kg	9.7	9.8	9.9		11	.8			
				TCO₂eq	20.2	20.5	20.7		24	ł.6			
	GWP	GWP						2,087.5					
Piping connections	Liquid	OD		mm	9.	52		12.7		15	5.9		
	Gas	OD		mm	19.1	22.2			28.6				
	Discharge gas	OD		mm	15.9	19	9.1		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 an	nps (MFA)		Α	20	2	25	32	4	0 50			

Outdoor system			REYQ	10T	13T	16T	18T	20T	22T	24T	26T	28T	30T	32T	
System	Outdoor unit module 1			REM	REMQ5T		REYQ8T REYQ10T		REYQ8T REYQ12T			REYQ16T			
	Outdoor unit mod	dule 2		REMQ5T	REY	Q8T	REYQ10T	REY	Q12T	REYQ16T	REYQ14T	REYQ16T	REYQ18T	REYQ16T	
Capacity range			HP	10	13	16	18	20	22	24	26	28	30	32	
Cooling capacity	Nom.		kW	28.0	36.4	44.8	50.4	55.9	61.5	67.4	73.5	78.5	83.9	90.0	
Heating capacity	Nom.		kW	28.0	36.4	44.8	50.4	55.9	61.5	67.4	73.5	78.5	83.9	90.0	
	Max.		kW	32.0	41.0	50.0	56.5	62.5	69.0	75.0	82.5	87.5	94.0	100.0	
Power input - 50Hz	Cooling	Nom.	kW	6.34	8.48	10.62	12.46	14.54	16.38	18.11	19.93	22.03	24.43	25.6	
	Heating	Nom.	kW	5.42	7.46	9.50	11.04	12.80	14.34	15.95	17.65	19.25	20.35	22.4	
		Max.	kW	6.50	8.76	11.02	12.89	14.94	16.81	18.41	20.73	22.33	23.73	25.8	
EER			kW	4.42	4.29	4.22	4.04	3.84	3.75	3.72	3.69	3.56	3.43	3.52	
ESEER - Automatic				7.77	7.54	7.41	7.38	7.06	7.07	6.87	6.95	6.72	6.48	6.63	
ESEER - Standard				6.55	6.36	6.25	5.98	5.68	5.54	5.46	5.41	5.23	5.03	5.14	
COP at nominal capa	city		kW	5.17	4.88	4.72	4.57	4.37	4.29	4.23	4.16	4.08	4.12	4.02	
COP at maximum cap	oacity		kW	4.92	4.68	4.54	4.38	4.18	4.10	4.07	3.98	3.92	3.96	3.88	
Maximum number o	f connectable indoo	r units		64 (5)											
Indoor index	Min.			125	162.5	200	225	250	275	300	325	350	375	400	
connection	Nom.			250	325.0	400	450	500	550	600	650	700	750	800	
	Max.			325	422.5	520	585	650	715	780	845	910	975	1,040	
Piping connections	Liquid	OD	mm	9.52	12	2.7		15	5.9			19	9.1		
	Gas	OD	mm	22.2			28.6					34.9			
	Discharge gas	OD	mm	1:	9.1	2	2.2				28.6				
	Total piping length	System	Actual m		500				1,000						
Current - 50Hz	Maximum fuse an	nps (MFA)	A		40 50 63							80			
Continuous heating				V											
* Check engineering data for	or restrictions														







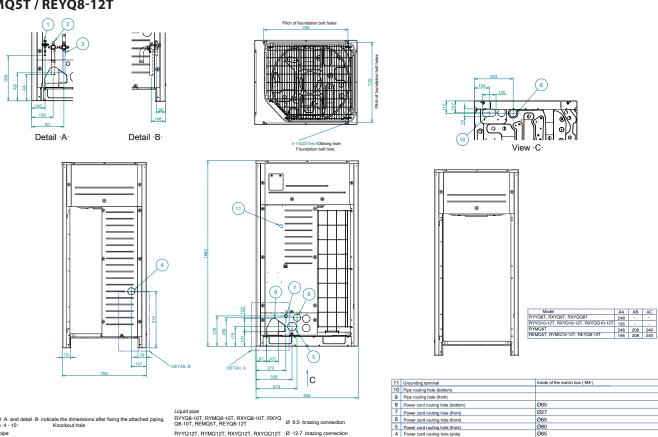


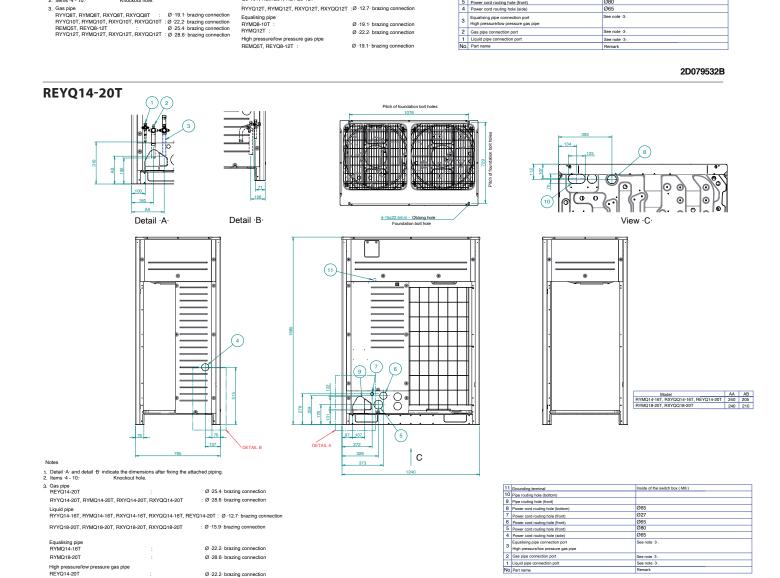


Outdoor system				REYQ	34T	36T	38T	40T	42T	44T	46T	48T	50T	52T	54T	
System	Outdoor unit mo	dule 1			REY	'Q16T	REYQ8T	REY	Q10T	REYQ12T	REYQ14T		REYQ16T		REYQ18T	
	Outdoor unit mo	REYQ18T	REYQ20T	REY	REYQ12T			REYQ16T			REY	Q18T				
	Outdoor unit mo	dule 3			- REYQ18T				REY	Q16T		REYQ18T				
Capacity range				HP	34	36	38	40	42	44	46	48	50	52	54	
Cooling capacity	Nom.			kW	95.4	101.0	106.3	111.9	118.0	123.5	130.0	135.0	140.4	145.8	151.2	
Heating capacity	Nom.			kW	95.4	101.0	106.3	111.9	118.0	123.5	130.0	135.0	140.4	145.8	151.2	
	Max.			kW	106.5	113.0	119.0	125.5	131.5	137.5	145.0	150.0	156.5	163.0	169.5	
Power input - 50Hz	Cooling	Nom.		kW	28.0	31.4	29.74	31.58	32.75	34.83	36.3	38.4	40.8	43.2	45.6	
	Heating	Nom.		kW	23.5	26.1	25.10	26.64	28.69	30.45	32.00	33.6	34.7	35.8	36.9	
		Max.		kW	27.2	30.4	29.24	31.11	33.18	35.23	37.1	38.7	40.1	41.5	42.9	
EER				kW	3.41	3.22	3.57	3.54	3.60	3.55	3.58	3.52	3.44	3.38	3.32	
ESEER - Automatic					6.43	6.06	6.66	6.68	6.79	6.68	6.75	6.63	6.49	6.37	6.26	
ESEER - Standard					4.97	4.70	5.25	5.20	5.28	5.20	5.23	5.14	5.03	4.93	4.84	
COP at nominal capa	icity			kW	4.06	3.87	4.24	4.20	4.11	4.	06	4.02	4.05	4.07	4.10	
COP at maximum ca	pacity			kW	3.92	3.72	4.07	4.03	3.96	3.90	3.91	3.88	3.90	3.93	3.95	
Maximum number o	f connectable indoo	or units								64 (5)						
Indoor index	Min.				425	450	475	500	525	550	575	600	625	650	675	
connection	Nom.				850	900	950	1,000	1,050	1,100	1,150	1,200	1,250	1,300	1,350	
	Max.				1,105	1,170	1,235	1,300	1,365	1,430	1,495	1,560	1,625	1,690	1,755	
Piping connections	Liquid	OD		mm						19.1						
	Gas	OD		mm	34.9 41.3											
	Discharge gas	OD		mm	2	28.6 34.9										
	Total piping length	System	Actual	m						1,000						
Current - 50Hz	Maximum fuse ar	mps (MFA)		Α	80 100 125											
Continuous heating										V						
Outdoor unit modu	le			REMQ	5T											
Dimensions	Unit	Height/Wio	lth/Depth	mm					1	,685/930/7	65					
Weight	Unit			kg						210						
Fan	Air flow rate	Cooling	Nom.	m³/min						162						
Sound power level	Cooling	Nom.		dBA						77						
Sound pressure level	Cooling	Nom.		dBA						56						
Operation range	Cooling	Min.~Max.		°CDB						-5.0~43.0						
	Heating	Min.~Max.		°CWB						-20~15.5						
Refrigerant	Туре									R-410A						
	Charge	Charge kg				9.7										
				TCO₂eq	20.2											
	GWP				2,087.5											
Power supply	Phase/Frequency	/Voltage		Hz/V					31	N~/50/380-	415					
Current - 50Hz	Maximum fuse ar			Α						20						
(1) Nominal cooling capaci	ties are based on indoor	temperature: 27°C	DR 19°CWR outo	nor temperat	ure: 35°CDB 6	equivalent refri	gerant nining	5m level diff	erence: 0m D	ata for standar	d efficiency se	ries (2) Nomi	inal cooling can	acities are ha	sed on: indoo	

(1) Nominal cooling capacities are based on: indoor temperature: 27°CDB, 19°CWB, outdoor temperature: 25°CDB, equivalent refrigerant piping: 5m, level difference: 0m. Data for standard efficiency series (2) Nominal cooling capacities are based on: indoor temperature: 25°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: 2

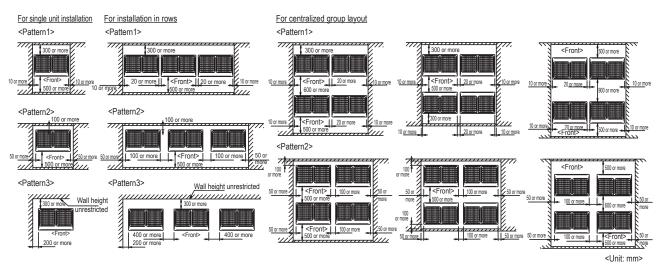
REMQ5T / REYQ8-12T

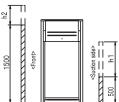




Ø -22.2- brazing connection

REYQ-T





NOTES

- Heights of walls in case of Patterns 1 and 2: Front: 1500mm Suction side: 500mm

 - Side: Height unrestricted
- Side: Tregit unrestruction 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 because of much generation load of heat in all outdoor units, take the suction side space
- when the design outcoor an emperature exceeds so degrees of the load exceeds maximum animy because of much generation load of read in an outcoor mins, take the socious side space more broadly than the space as shown in this drawing.

 If the above wall heights are exceeded then h2/2 and h1/2 should be added to the front and suction side service space respectively as shown in the figure on the right.

 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 bearing in mind the need to leave enough space for a person to pass between units and wall and 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.)

 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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Individual branch selector for VRV IV heat recovery

- > Unique range of single and multi BS boxes for flexible and fast design
- > Compact & light to install
- > Ideal for remote rooms as no drain piping is needed
- > Allows integration of server rooms into the heat recovery solution thanks to technical cooling function
- > Connect up to 250 class unit (28kW)
- > Faster installation thanks to open connection
- > Allows multi tenant applications
- > Connectable to REYQ-T, RQCEQ-P3 and RWEYQ-T8 VRV IV heat recovery units



Indoor unit				BS	1Q10A	1016A	1Q25A					
Power input	Cooling	Nom.		kW		0.005	1,2211					
	Heating	•										
Maximum number o	f connectable indo	or units			6	6 8						
Maximum capacity in	ndex of connectable	e indoor units			15 < x ≤ 100	100 <x≤160< td=""><td>160<x≤250< td=""></x≤250<></td></x≤160<>	160 <x≤250< td=""></x≤250<>					
Dimensions	Unit	HeightxWic	lthxDepth	mm	207x388x326							
Weight	Unit			kg	12 15							
Casing	Material				Galvanised steel plate							
Piping connections	Outdoor unit	Liquid	OD	mm	9.5							
. iping connections		Gas	OD	mm	15	5.9	22.2					
		Discharge gas	OD	mm	12	2.7	19.1					
	Indoor unit	Liquid	OD	mm	9.5							
		Gas	OD	mm	15	5.9	22.2					
Sound absorbing the	ermal insulation				Foamed polyurethane Flame-resistant needle felt							
Power supply	Phase					1~						
	Frequency			Hz	50							
	Voltage			V	220-240							
Total circuit	Maximum fuse a	mps (MFA)		Α	15							

Multi branch selector for VRV IV heat recovery

- > Unique range of single and multi BS boxes for flexible and fast design
- Major reduction in installation time thanks to wide range, compact size and light weight multi BS boxes
- > Up to 70% smaller and 66% lighter than previous series
- > Faster installation thanks to a reduced number of brazing points and wiring
- > All indoor units connectable to one BS box
- > Less inspection ports needed compared to installing single BS boxes
- > Up to 16kW capacity available per port
- > Connect up to 250 class unit (28kW) by combining 2 ports
- > No limit on unused ports allowing phased installation
- > Faster installation thanks to open port connection
- > Allows multi-tenant applications
- > Connectable to REYQ-T, RQCEQ-P3 and RWEYQ-T8 VRV IV heat recovery units



Indoor unit				BS	4Q14AV1	6Q14AV1	8Q14AV1	10Q14AV1	12Q14AV1	16Q14AV1			
Power input	Cooling	Nom.		kW	0.043	0.064	0.086	0.107	0.129	0.172			
	Heating	Nom.		kW	0.043	0.064	0.086	0.107	0.129	0.172			
Maximum number of	f connectable indo	or units			20	30	40	50	60	64			
Maximum number of	f connectable indo	or units per bra	nch			5							
Number of branches					4	6	8	10	12	16			
Maximum capacity index of connectable indoor units					400	600		7.	50				
Maximum capacity in	ndex of connectable	e indoor units p	er branch			140							
Dimensions	Unit	HeightxWio	lthxDepth	mm	298x370x430	298x5	80x430	298x8	298x820x430				
Weight	Unit			kg	17	24	26	35	38	50			
Casing	Material						Galvanised	steel plate					
Piping connections	Outdoor unit	Liquid	OD	mm	9.5	12.7	12.7 / 15.9	15.9	15.9 / 19.1	19.1			
		Gas	OD	mm	22.2 / 19.1	28.6 / 22.2	28.6	28.6	/ 34.9	34.9			
		Discharge gas	OD	mm	19.1 / 15.9	19.1 / 22.2	19.1 / 22.2 / 28.6		28.6				
	Indoor unit	Liquid	OD	mm		9.5 / 6.4							
		Gas	OD	mm	15.9 / 12.7								
	Drain				VP20 (I.D. 20/O.D. 26)								
Sound absorbing the	ermal insulation				Urethane foam, polyethylene foam								
Power supply	Phase				1~								
	Frequency			Hz	50								
	Voltage			٧	220-440								
Total circuit	Maximum fuse a	mps (MFA)		Α	15								