Carrier

XPOWER VARIABLE REFRIGERANT FLOW UNIT (VRF)

A whole new definition to comfort

XPOWER

Carrier delivers efficient, dependable performance, inside and out.

Reliability

The operating sequence of the individual compressors is rotated, balancing their operating hours and distributing load evenly. Inverters reduce the risk of compressor failure and eliminate on/off power surges.

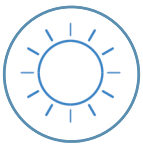
Functionality

A single VRF system can power upto 64 independent indoor units, depending on the system.This provides superior zoning because the refrigerant flow can vary from location to location, delivering only the necessary capacity to each zone.

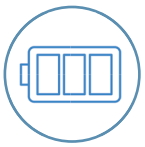
Controllability

The entire system can be run from a central location or monitored remotely – perfect for diverse applications with a range of heating and cooling needs. Timely alerts aid in maintaining the system and keeping it running at its most efficient.

Efficient cooling



Efficient heating



Energy Monitoring

Fresh Air ventilation

User-friendly Control Systems

Environmentally Friendly

Ease of Installation & Maintenance

Benefits for the user

Infinite comfort
Achieved by fully controllable room temperature, a perfect alternative to traditional heating & cooling systems.

Infinite efficiency
High levels of efficiency via optimal load adjustment.

Infinite integration
Cooling, heating, fresh air ventilation all perfectly and conveniently attuned to one another within a single system.

Infinite reliability
Hassle-free operation based on intensive testing program for all systems.

Benefits for the consultant

Absolute customisation
A wide range of indoors ensure that the customers' requirements are fully addressed.

Absolute control
Fully integrated controls network, allowing unlimited access to the system controls and its operation.

Absolute flexibility
A high degree of system flexibility, aided by a fully flexible piping specification and an extremely compact modular design.

Benefits for the installer

Simple
One supplier - one point of contact for a total solution: cooling, heating, & controls.

Versatile
Maximised installation flexibility.

Convenient
Easy access for all service and maintenance needs.

Assessable
Simplified and swift commissioning.

CREATING BENEFITS AROUND COMFORT

Key Technologies

Innovative Compressor Technology

Xpower's™ infinity variable, inverter driven control can continually adjust in real time, the operating speed of the compressors. This insures that the capacity output precisely matches that of the demand from the end user. The advantage of this control are optimized further by incorporating DC twin rotary compressors.

Increased Compressor Displacement

Increased compressor displacement extends the compressor's capacity output.

One single unit with two compressors can now achieve a capacity output of up to 20 HP.

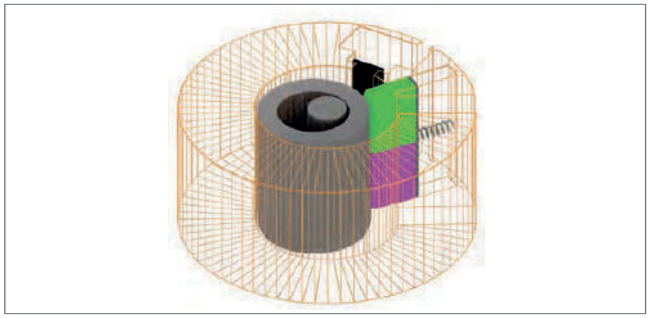
Increased operation range and a more precise control.

Dual Vane Technology

The new dual vane technology is unique to Xpower twin rotary compressors.

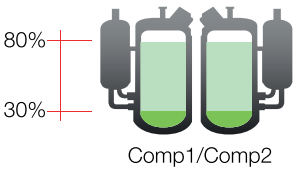
Brand new "Diamond Like Carbon Coating" ensures maximum operations without the fear of increased mechanical wear and tear.

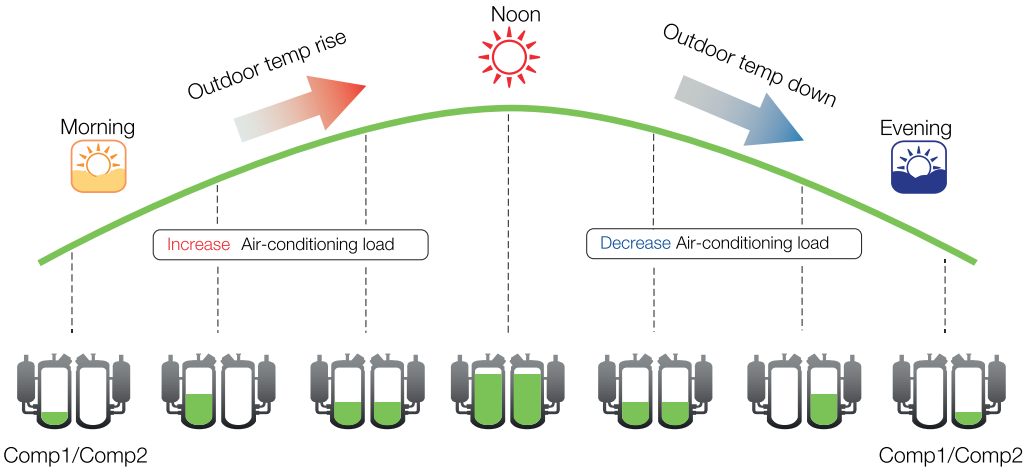
New dual vane and DLC technology ensures maximum performance and efficiency.



Relibility rotational control

The rotational control in XPower VRF is designed to improve system reliability by controlling the operation of each compressor to work equally under variable conditions.





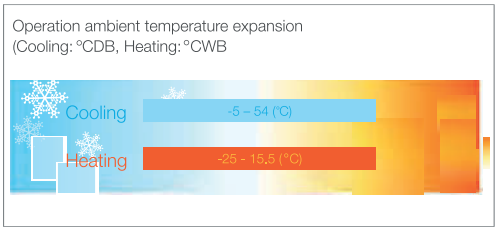
All VRF modules 8-20 HP are equipped with two twin-rotary inverter compressors

Intelligent VRF control

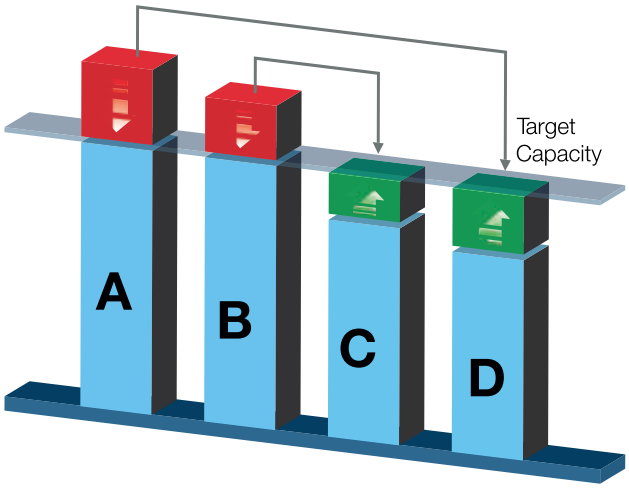
This unique control continually adjusts the operation of both indoor and outdoor units, based on the feedback from multiple sensors located throughout the system.

Refrigerating flow to each indoor unit is precisely controlled by the outdoor unit, ensuring even distribution of capacity throughout the entire system.

The evaporative and condensing temperature is continually adjusted automatically, to maintain an optimum indoor room temperature, regardless of the units load or its physical distance from the outdoor. This ensures optimum performance, whilst maximising system efficiency.



Excess capacity in units A&B can be re-distributed to units C&D, ensuring perfect operation throughout the entire system.

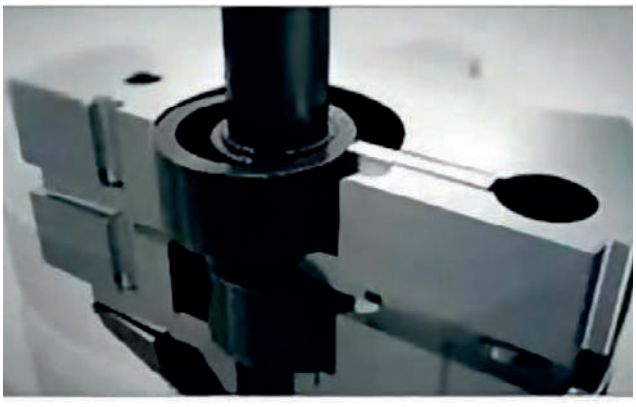


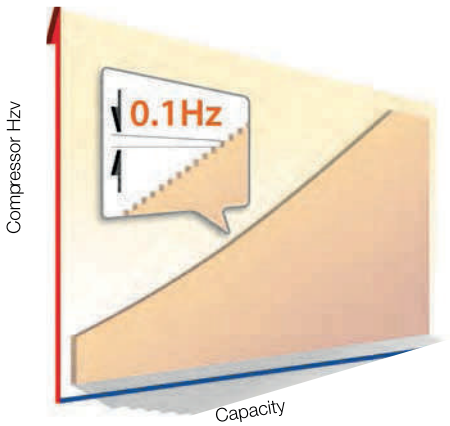
Xpower's "Intelligent VRF control" technology ensures that any surplus capacity can be re-distributed in order to achieve the optimum performance and efficiency throughout the entire system.

This unique technology ensures that the flow of refrigerant to the FCUs is precisely proportional to the demand of each individual indoor unit and where demand exceeds the output of the CDU, the refrigerant is evenly distributed throughout the indoor network, ensuring stable capacity regardless of the unit location within the building.

Infinite Variable Control

The control has the ability to adjust the compressor rotational speed in a near seamless 0.1 Hz steps. This control when matched with Xpower's newest and latest DC Twin Rotary compressors, allows the system to respond precisely to the capacity needs of the end user, whilst minimizing energy losses.





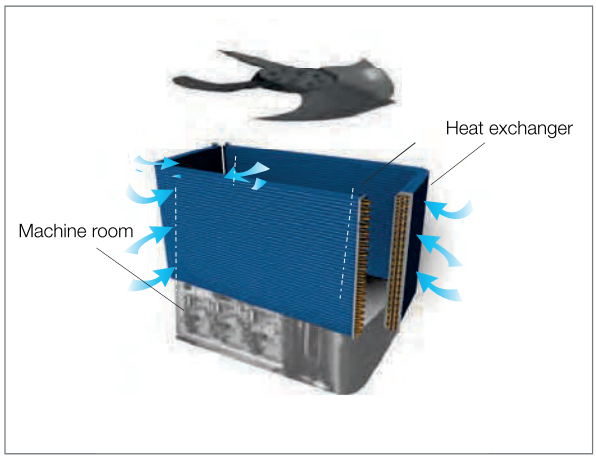
Innovation Heat Exchanger & Fan Blade Design

New 3-row heat exchanger design with reduced pipe size from 8mm to 7mm and an increase in the total number of passes, improves both system performance and efficiency.

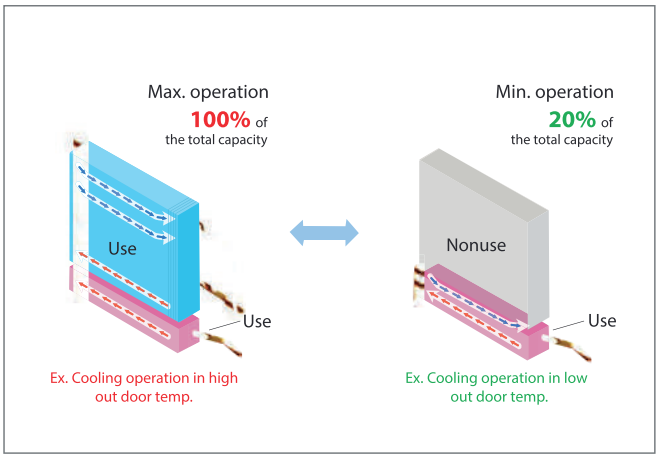
4-sided heat exchanger ensures maximum possible flow rate across the entire coil, maximizing system efficiency.

3-way variable heat exchanger design, allows the CDU to select the most efficient heat exchanger size, which precisely matches the indoor capacity load.

New Sub cooling heat exchanger increase system operating performance and allows the total piping length to reach a total of 1,000 m.



4-way heat exchanger realizing balanced airflow



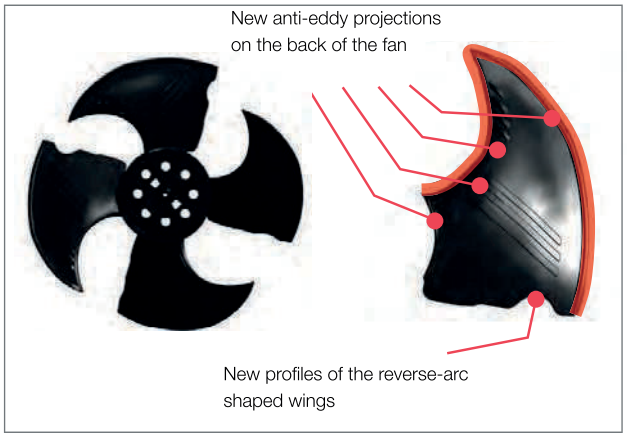
Variable heat exchanger

Outdoor Fan

New outdoor fan blade includes a unique profile, ensuring smoother uninterrupted air flow.

New propeller design reduces sound pressure level whilst maximizing the air flow volume.

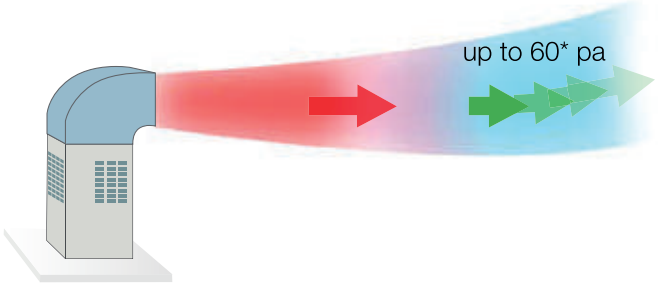
Outdoor fan motor now incorporates a 3-phase motor to maximise performance and efficiency, whilst reducing the minimum circuit amps value of the outdoor unit. Based on requirement, Outdoor unit can automatically regulate fan speed (up to 64 steps).



Advanced blade shapes for a better air flow management

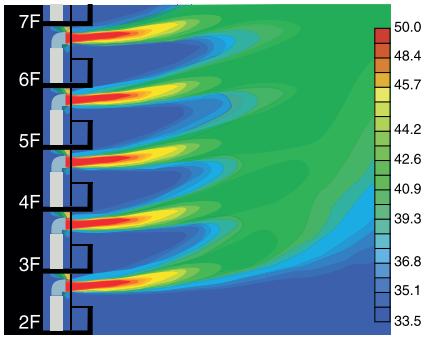
The external static pressure

The XPower VRF is suitable for challenging installations where high external static pressure performance



Note: For ESP consult to local sales person.

Air flow simulation diagram

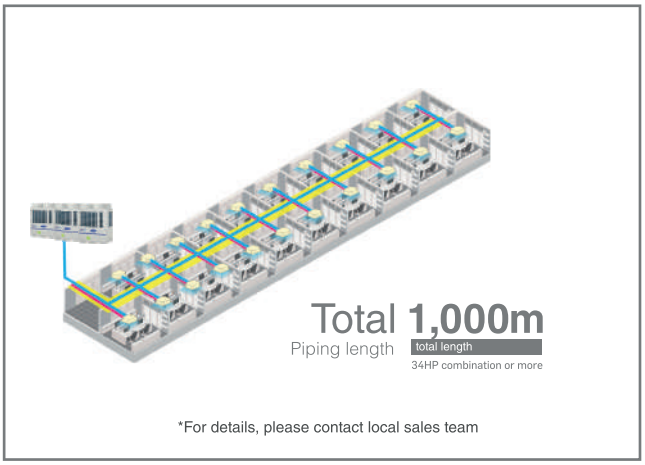


Note : This result is analytical simulation, that does not guarantee actual temperatures.

Expanded Installation Flexibility

The new compact design of the Outdoor units gives increased performance that defies their compact module size. This delivers greater freedom in layout design and minimizes weight-related restrictions and allows for quicker installation.

- Compact design with reduced footprint.
- Capacity up to 20HP can be covered with a single module, reducing pipe work and overall installation time.
- Expanding the maximum combination to 56 HP in one system, with up to 64 connectable indoor units.
- Maximum total piping length of 1,000 m, farthest equivalent length 235 m.
- Maximum vertical distance between indoor units can be up to 40m.



*For details, please contact local sales team

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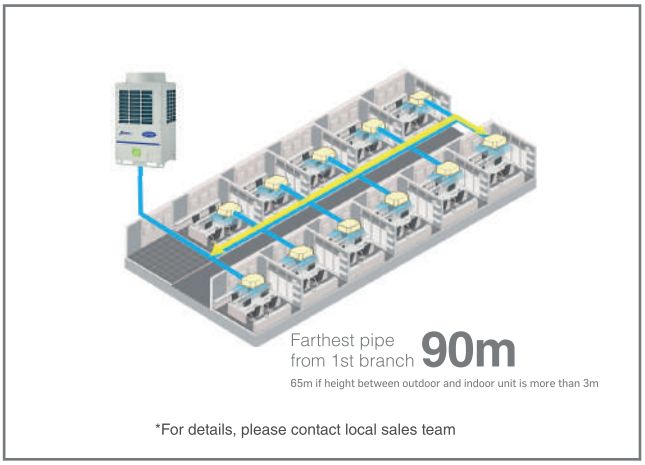

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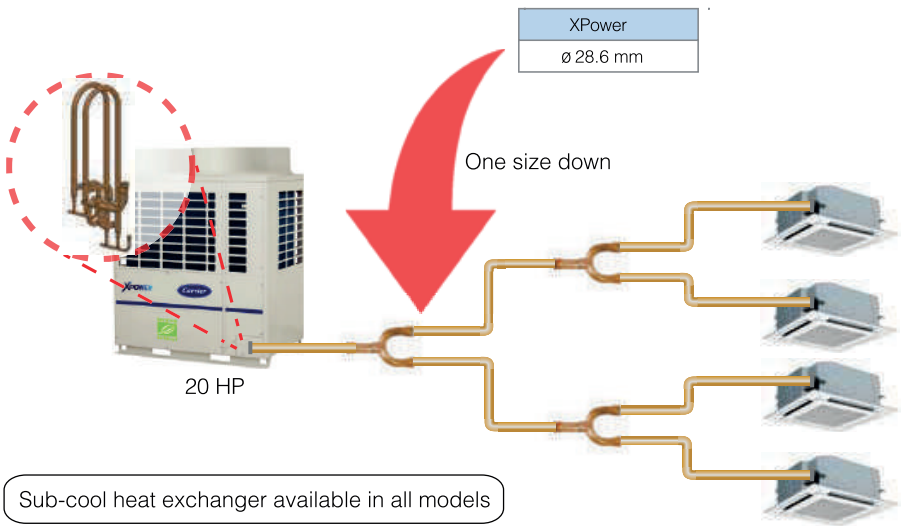
Piping saving costs

With the sub-cool heat exchanger less refrigerant is needed therefore now it is possible to use smaller pipes and save in installation costs



Sub-cool heat exchanger available in all models

Outdoor Lineup



Model (50Hz)		38VT008168HTMM (Z)1	38VT010168HTMM (Z)1	38VT012168HTMM (Z)1	38VT014168HTMM (Z)1	38VT016168HTMM (Z)1	38VT018168HTMM (Z)1	38VT020168HTMM (Z)1
Capacity	HP	8	10	12	14	16	18	20
Cooling Capacity (35C)	kW	22.4	28.0	33.5	40.0	45.0	50.4	56.0
Cooling Capacity (46C)	kW	20.3	25.2	26.8	32.5	36.0	42.8	44.8
Heating Capacity (35C)	kW	25.0	31.5	37.5	45.0	50.0	56.0	63.0
Max. number of connected indoor units	Qty	13	16	20	23	27	30	33



Model (50Hz)		38VT022S68HTMM (Z)1	38VT024S68HTMM (Z)1	38VT026S68HTMM (Z)1	38VT028S68HTMM (Z)1	38VT030S68HTMM (Z)1	38VT032S68HTMM (Z)1	38VT034S68HTMM (Z)1
Combination Models		38VT012168HTMM (Z)1	38VT012168HTMM (Z)1	38VT014168HTMM (Z)1	38VT014168HTMM (Z)1	38VT016168HTMM (Z)1	38VT016168HTMM (Z)1	38VT018168HTMM (Z)1
		38VT010168HTMM (Z)1	38VT012168HTMM (Z)1	38VT012168HTMM (Z)1	38VT014168HTMM (Z)1	38VT014168HTMM (Z)1	38VT016168HTMM (Z)1	38VT016168HTMM (Z)1
Capacity	HP	22	24	26	28	30	32	34
Cooling Capacity (35C)	kW	61.5	67.0	73.5	80.0	85.0	90.0	95.4
Cooling Capacity (46C)	kW	52.0	53.6	59.3	65.0	65.0	72.0	78.8
Heating Capacity (35C)	kW	69.0	75.0	82.5	90.0	95.0	100.0	106.0
Max. number of connected indoor units	Qty	37	40	43	47	50	54	57


Model (50Hz)		38VT036S68HTMM (Z)1	38VT038S68HTMM (Z)1	38VT040S68HTMM (Z)1	38VT042S68HTMM (Z)1	38VT044S68HTMM (Z)1	38VT046S68HTMM (Z)1	38VT048S68HTMM (Z)1
Combination Models		38VT018168HTMM (Z)1	38VT020168HTMM (Z)1	38VT020168HTMM (Z)1	38VT014168HTMM (Z)1	38VT016168HTMM (Z)1	38VT016168HTMM (Z)1	38VT016168HTMM (Z)1
		38VT018168HTMM (Z)1	38VT018168HTMM (Z)1	38VT020168HTMM (Z)1	38VT014168HTMM (Z)1	38VT014168HTMM (Z)1	38VT016168HTMM (Z)1	38VT016168HTMM (Z)1
		-	-	-	38VT014168HTMM (Z)1	38VT014168HTMM (Z)1	38VT014168HTMM (Z)1	38VT016168HTMM (Z)1
Capacity	HP	36	38	40	42	44	46	48
Cooling Capacity (35C)	kW	100.8	106.4	112.0	120.0	125.0	130.0	135.0
Cooling Capacity (46C)	kW	85.7	87.6	89.6	97.5	101.0	104.5	108.0
Heating Capacity (35C)	kW	112.0	119.0	126.0	135.0	140.0	145.0	150.0
Max. number of connected indoor units	Qty	60	64	64	64	64	64	64

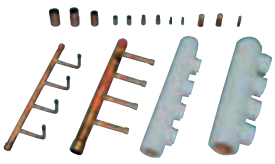
Outdoor Lineup

Model (50Hz)		38VT050S68HTMM(Z)1	38VT052S68HTMM(Z)1	38VT054S68HTMM(Z)1	38VT056S68HTMM(Z)1
Combination Models		38VT018168HTMM(Z)1	38VT018168HTMM(Z)1	38VT020168HTMM(Z)1	38VT020168HTMM(Z)1
		38VT016168HTMM(Z)1	38VT018168HTMM(Z)1	38VT020168HTMM(Z)1	38VT020168HTMM(Z)1
		38VT016168HTMM(Z)1	38VT016168HTMM(Z)1	38VT014168HTMM(Z)1	38VT016168HTMM(Z)1
Capacity	HP	50	52	54	56
Cooling Capacity (35C)	kW	140.4	145.8	152.0	157.0
Cooling Capacity (46C)	kW	114.8	121.7	122.1	125.6
Heating Capacity (35C)	kW	156.0	162.0	171.0	176.0
Max. number of connected indoor units	Qty	64	64	64	64

Outdoor Lineup - Side discharge VRF

Corresponding HP		4HP	5HP	6HP
Model name	3phase 4wires 380 -415V (50Hz)/380V (60Hz)	38VS004168HCMM	38VS005168HCMM	38VS006168HCMM
Cooling capacity (kW)*1	T1(35C)	12.6	14.0	15.5
	T3(46C)	11.4	12.6	14.0
Heating capacity (kW)*1		14.2	16.0	18.0
No. of connectable indoor units		6	8	9

Branching joints

	Y-shape branching joint	Branch headers	Outdoor unit connection piping kit
Appearance			

Technical Specifications

Heat Pump inverter

Model name				38VT008168HTMM1	38VT010168HTMM1	38VT012168HTMM1	38VT014168HTMM1	38VT016168HTMM1	38VT018168HTMM1	38VT020168HTMM1
Power supply				3N~50Hz 400V(380~415V)						
Cooling capacity T1 (*1)			(kW)	22.4	28.0	33.5	40.0	45.0	50.4	56.0
			Btu/h	76,000	96,000	114,000	136,000	152,000	172,000	190,000
Cooling capacity T3 (*2)			(kW)	20.3	25.2	26.8	32.5	36.0	42.8	44.8
			Btu/h	69,000	86,000	91,000	110,000	122,000	146,000	152,000
Heating capacity T1 (*1)			(kW)	25.0	31.5	37.5	45.0	50.0	56.0	63.0
			Btu/h	85,000	107,000	127,000	152,000	170,000	190,000	214,000
Electrical Characteristics	Cooling T1(*1)	Power input	kW	4.84	6.28	8.24	9.86	12.10	12.30	15.50
		EER	W/W	4.63	4.46	4.07	4.05	3.72	4.10	3.61
			(Btu/h)/W	15.70	15.30	13.85	13.80	12.55	14.00	12.25
	Cooling T3 (*2)	Power input	kW	6.54	8.75	8.98	11.60	12.50	14.20	14.90
		EER	W/W	3.10	2.88	2.98	2.80	2.88	3.01	3.01
			(Btu/h)/W	10.55	9.83	10.13	9.48	9.76	10.28	10.20
	Heating (*1)	Power input	kW	5.38	7.08	9.24	10.60	12.50	13.60	16.50
		COP	W/W	4.65	4.45	4.06	4.25	4.00	4.12	3.82
			(Btu/h)/W	15.85	15.15	13.85	14.45	13.65	14.05	13.00
	Starting current		A	Soft Start						
Dimension		Height	mm	1800						
		Width	mm	990			1210		1600	
		Depth	mm	780						
Total weight			kg	242			299		370	
Compressor	Type			Hermetic Twin Rotary Compressor						
	Motor output		kW	2.1x2	3.1x2	3.9x2	4.8x2	5.8x2	6.5x2	7.6x2
Fan unit	Type			Propeller fan (Q'ty 1)					Propeller fan (Q'ty 2)	
	Motor output		kW	1.0					2.0	
Refrigerant	Name			R410A						
Protective devices				(*3)						
Piping connections	Gas	Type		Brazing						
		Diameter	mm	19.1	22.2	28.6				
	Liquid	Type		Flare						
		Diameter	mm	12.7			15.9			
	Balance	Type		Flare						
		Diameter	mm	9.5						
Total Piping Length			m							
Max. number of connected indoor units				13	16	20	23	27	30	33
Sound pressure level		Cooling	dB(A)	55.0	57.0	59.0	60.0	62.0	60.0	61.0
		Heating	dB(A)	56.0	58.0	61.0	62.0	64.0	61.0	62.0
Operation temperature range		Cooling	CDB	-5.0 to 54.0						
		Heating	CWB	-25.0 to 15.5						

Standard VRF unit are tested as per ASTM B117 for 1500hrs salt spray test

Note:

*(*1) Rated conditions:* *Cooling : Indoor 27 degC Dry Bulb /19 degC Wet Bulb , Outdoor 35 degC Dry Bulb.*

Heating : Indoor 20 degC Dry Bulb, Outdoor 7 degC Dry Bulb / 6 degC WetBulb.

Based on equivalent piping length of 7.5m and piping height difference of 0m.

*(*2) Rated conditions:* *Cooling : Indoor 29 degC Dry Bulb /19 degC Wet Bulb , Outdoor 46 degC Dry Bulb.*

Based on equivalent piping length of 7.5m and piping height difference of 0m.

*(*3)* *Discharge temp. Sensor/ Suction temp. sensor/ High-pressure sensor/ Low-pressure sensor/ PCboard fuse*

Technical Specifications

Heat Pump inverter - Side Discharge

Model Name			38VS004168HCMM	38VS005168HCMM	38VS006168HCMM
Cooling capacity (*1)		kW	12.6	14.0	15.5
		Btu/h	43,000	48,000	53,000
Cooling capacity (*2)		kW	11.4	12.6	14.0
		Btu/h	39,000	43,000	48,000
Heating capacity (*1)		kW	14.2	16.0	18.0
		Btu/h	48,450	54,590	61,410
Capacity range		HP	4	5	6
Power supply		(*3)	3N~ 50Hz 400V(380-415V 3phase 60Hz 380V	3N~ 50Hz 400V(380-415V) 3phase 60Hz 380V	3N~ 50Hz 400V(380-415V) 3phase 60Hz 380V
Electrical Characteristics Cooling (*1)	Power input	kW	3.11	3.49	4.26
	EER	W/W	4.06	4.01	3.64
		(Btu/h)/W	13.85	13.75	12.45
Electrical Characteristics Cooling (*2)	Power input	kW	3.75	4.15	4.64
	EER	W/W	3.04	3.03	3.02
		(Btu/h)/W	10.40	10.35	10.35
Electrical Characteristics Heating (*1)	Power input	kW	3.12	3.72	4.27
	COP	W/W	4.55	4.30	4.22
		(Btu/h)/W	15.53	14.67	14.38
Dimension	Height	mm	1235	1235	1235
	Width	mm	990	990	990
	Depth	mm	390	390	390
Weight		kg	124	124	124
Compressor	Type		Hermetic twin rotary	Hermetic twin rotary	Hermetic twin rotary
	Motor output	kW	3.75	3.75	3.75
Fan unit	Type		Propeller fan (Q'ty 2)	Propeller fan (Q'ty 2)	Propeller fan (Q'ty 2)
	Motor output	W	100+100	100+100	100+100
Refrigerant			R410A	R410A	R410A
Piping connection	Gas	Type	Flare	Flare	Flare
		mm	15.9	15.9	19.1
	Liquid	Type	Flare	Flare	Flare
		mm	9.5	9.5	9.5
Max. number of connected indoor units			6	8	9
Sound pressure level	Cooling	dB(A)	49	50	51
	Heating	dB(A)	52	53	54

Standard VRF unit are tested as per ASTM B117 for 1500hrs salt spray test

Note:

*(*1) Rated conditions* — *Cooling : Indoor 27 degC Dry Bulb / 19 degC Wet Bulb, Outdoor 35 degC Dry Bulb.*
Heating : Indoor 20 degC Dry Bulb, Outdoor 7 degC Dry Bulb / 6 degC Wet Bulb.
The standard pipe means that equivalent piping length of 7.5 m and standard 0m piping height difference.

*(*2) Rated conditions* — *Cooling : Indoor 29 degC Dry Bulb / 19 degC Wet Bulb, Outdoor 46 degC Dry Bulb.*
The standard pipe means that equivalent piping length of 7.5 m and standard 0 m piping height difference.

*(*3) Voltage range* — *Units are suitable for use on electrical systems where voltage supplied to unit terminal is not below or above listed range limits.*

Indoor Lineup

Type	kW / HP	Cooling Capacity											
		2.2 / 0.8	2.8 / 1.0	3.6 / 1.25	4.5 / 1.7	5.6 / 2.0	7.1 / 2.5	8.0 / 3.0	9.0 / 3.2	11.2 / 4.0	14.0 / 5.0	16.0 / 6.0	22.4 / 8.0	28.0 / 10.0
4-way air discharge cassette type			■	■	■	■	■	■	■	■	■	■	■	
Compact 4-way cassette type (620 x 620)		■	■	■	■	■								
2-way air discharge cassette type			■	■	■	■	■	■	■	■	■	■	■	
1-way air discharge cassette type		■	■	■	■	■	■	■						
Slim duct type		■	■	■	■	■	■	■						
Concealed duct high static pressure type						■	■			■	■	■	■	■
Concealed duct type			■	■	■	■	■	■	■	■	■	■	■	
Ceiling type					■	■	■	■		■	■	■	■	
Floor standing type					■	■	■	■		■	■	■	■	
High wall type		■	■	■	■	■	■	■	■	■	■			
Floor standing concealed & cabinet type		■	■	■	■	■	■							
Fresh air intake unit											■		■	■
Console type		■	■	■	■	■								

VRF DX kit for AHU/FAHU	kW	22.4	28	45	50.4	56
	HP	8	10	16	18	20

Type	m³/h Air Volume	150	250	350	500	650	800	1000	1500	2000
Air to Air HEX		●	●	●	●	●	●	●	●	●
Air to Air HEX (with coil)					●		●	●		

● - *Coming soon*
* - *Indoor equipped with Inverter DC Fan Motor*
** - *Indoor equipped with Inverter AC Fan Motor*

Controls

Comfort, economic efficiency and safety can be further maximised with modern control mechanisms. Whether wired or remotely controlled units, Web-based control devices or elegant touch screen systems, the important thing is to achieve the right temperature at the right time and at the right place! It's about balance - and we've got it just right.

Wired Remote Controls

Compact Remote Controller

Remote sensor

Central Controller

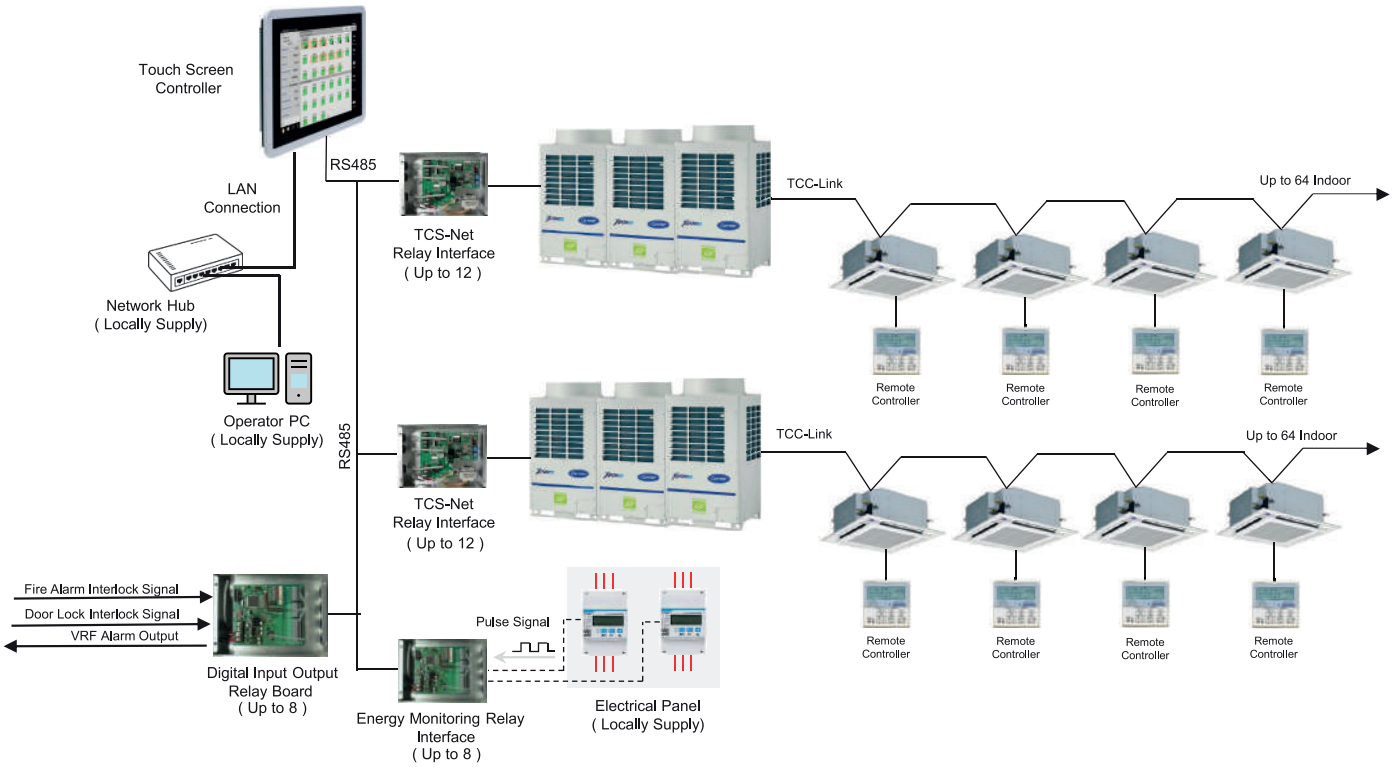
Central Controller
(Up to 64 Indoor Unit)

Touch Screen - Central Controller
(Up to 128 Indoor Unit)

Central Controller - Touch Screen

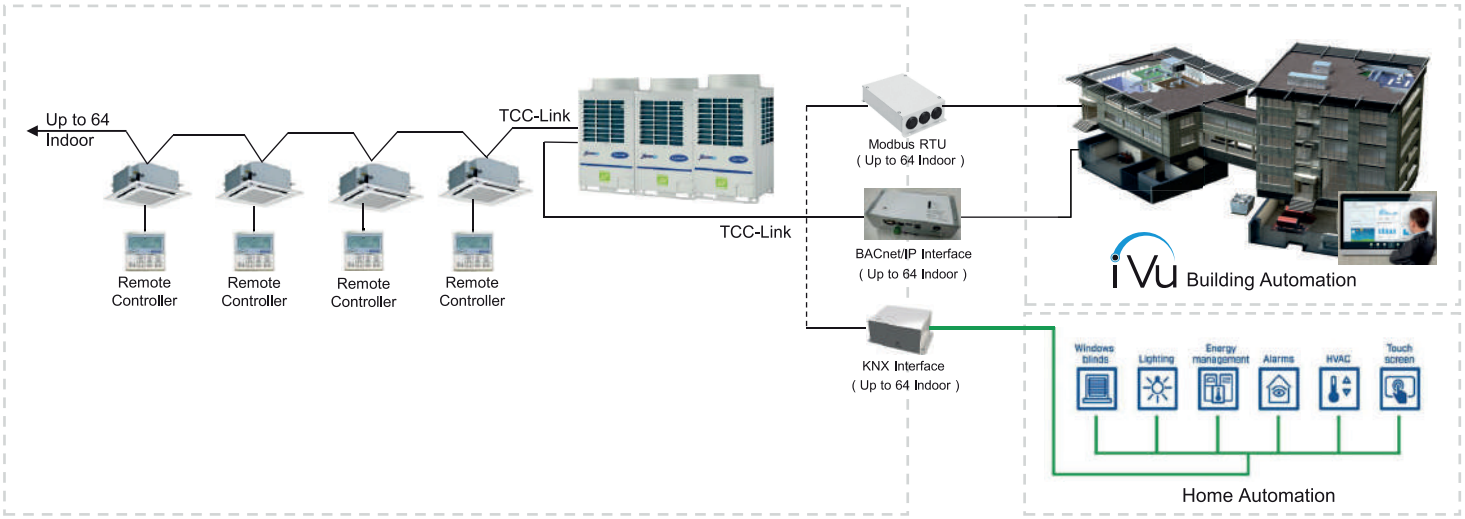
The Touch Screen Controller is ideally suited to any small or large installation where a professional and highly presentable finish or where Energy monitoring functions are required is required.

- 12.1 Inch Smart Touch Screen Display.
- Big size and fine Clear Display
- Control and Monitoring up to 512 Indoor Units .
- Scheduling function.
- Setting temperature range restriction.
- Return back function
- Return back function
- Save & demand control for outdoor unit
- Electricity Proportional Distribution of the Indoor Units
- Digital I/O and Energy Monitoring available with additional relay interface devices.
- Remote access using web browser.



BMS interface option

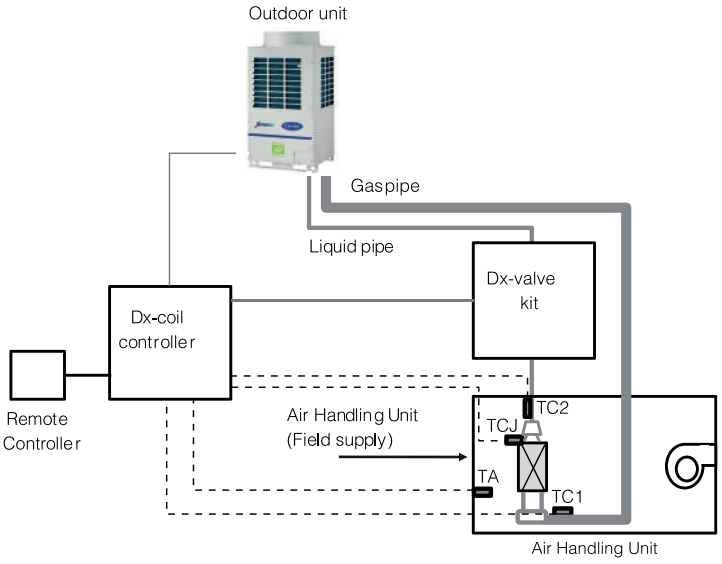
Comprehensive BMS interface solutions provide easy installation and integration with leading building management systems & Home Automation.



VRF AHU - DX Kit

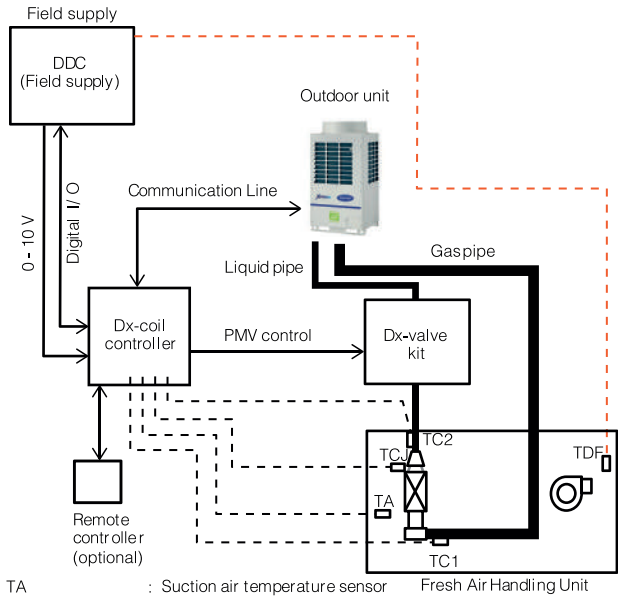
VRF DX coil interface - AHU application

VRF DX-coil interface is suitable for AHU with the DX Coil combined with XPower VRF outdoor unit . VRF Outdoor's capacity control using DX kit PCB based on the return air temperature sensor.



VRF DX coil interface - FAHU application

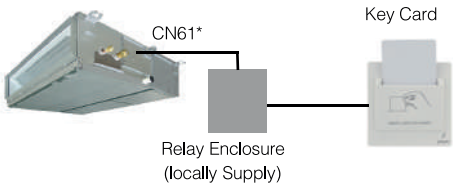
VRF DX-coil interface (DDC type) is suitable for FAHU with the DX Coil combined with XPower VRF outdoor unit. VRF Outdoors's control using DDC (Field Supply) using 0~10V signal based on the supply air temperature sensor (Field Supply) .



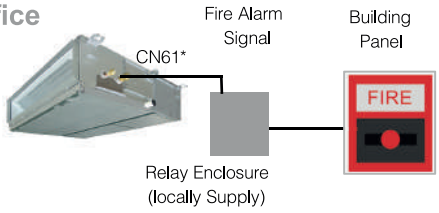
TA : Suction air temperature sensor
TCJ, TC1, TC2 : Evaporator temperature sensor
TDF : AHU discharge air temperature sensor

Accesories for Application Controls

Hotel Room



Office



*Optional Accesories

Notes:

CONTACT US:

UAE:

Call: 800 CARRIER (2277437)

Website: www.carrieruae.com

Our units are tested at:

Award

Carrier is committed to continuously improving its products to ensure the highest quality and reliability standards, as well as to meet local regulations for marketing the XPower brochure

REV-08-2023-AE