



CHANGE IS IN THE AIR™

# XPOWER VARIABLE REFRIGERANT FLOW UNIT (VRF)

A whole new definition to comfort.





**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 up to 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.





## 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.

A photograph of two construction workers, a man and a woman, wearing white hard hats and high-visibility yellow safety vests over blue shirts. They are both looking upwards and to the left. The man is wearing glasses and has his right hand raised, palm facing forward. The woman is wearing safety glasses. The background is blurred, showing an industrial or construction setting.

**CREATING  
BENEFITS AROUND COMFORT**





## 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

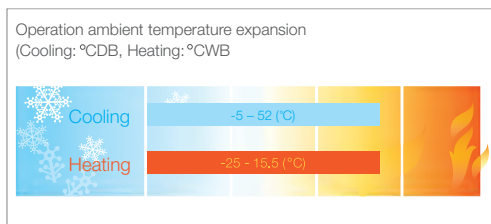
Simplified and swift commissioning.



# Key Technologies

## Innovative Compressor Technology

Xpower's infinitely 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 all inverter 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.

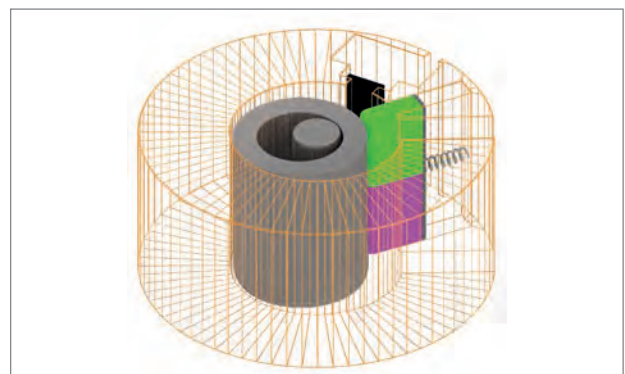
Increased operation range and a more precise control.

### Dual Vane Technology

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

New design minimises pressure losses between high and low pressure chambers increasing system efficiency, whilst further enhancing compressor reliability.

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.



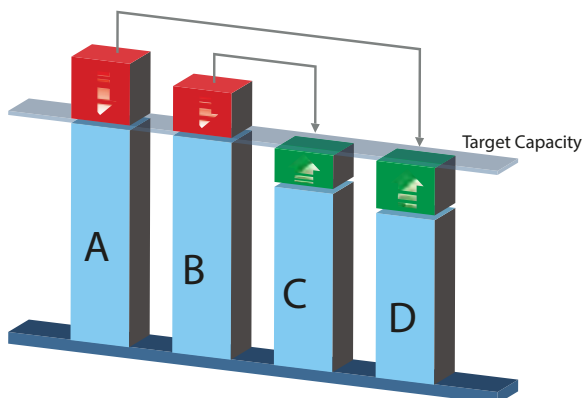
## Intelligent Flow Technology

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.

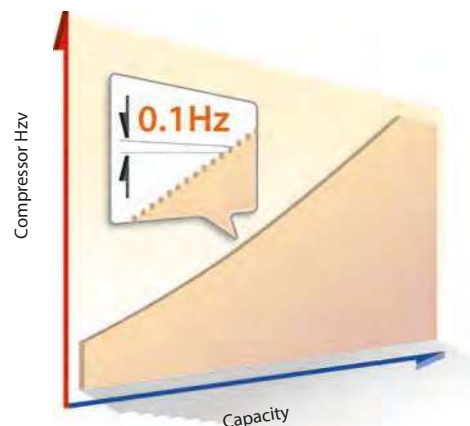


Xpower's "IFT" technology ensures that any surplus capacity can be re-distributed in order to achieve the optimum performance and efficiency throughout the entire system"

This unique technology ensures that the flow of refrigerant to the FCU's 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 Twin Rotary compressors, allows the system to respond precisely to the capacity needs of the end user, whilst minimizing energy losses.





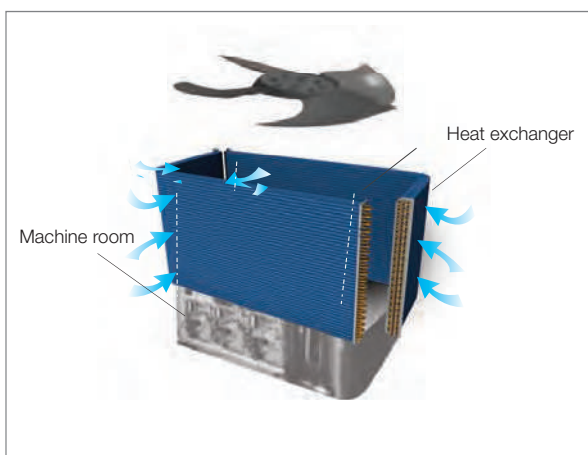
## Innovation Heat Exchanger and Fan Blade Design

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.

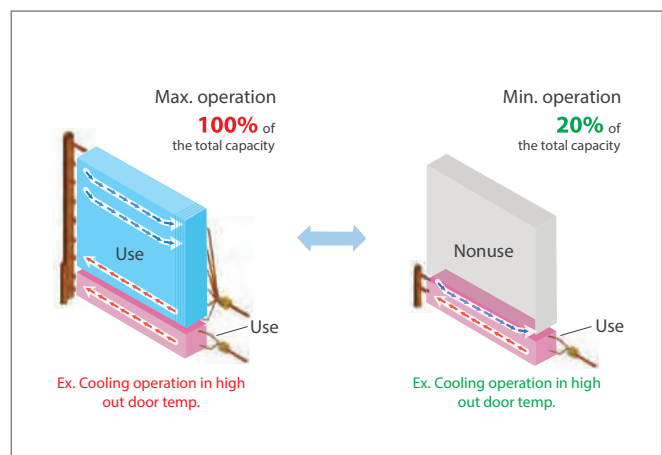
4-sided heat exchanger ensures maximum possible flow rate across the entire coil, maximizing system efficiency.

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



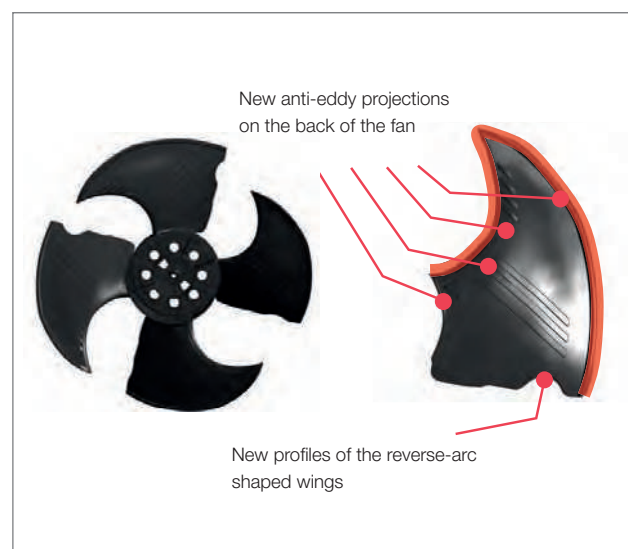
Variable heat exchanger

## 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.



Advanced blade shapes for a better air flow management



## 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.

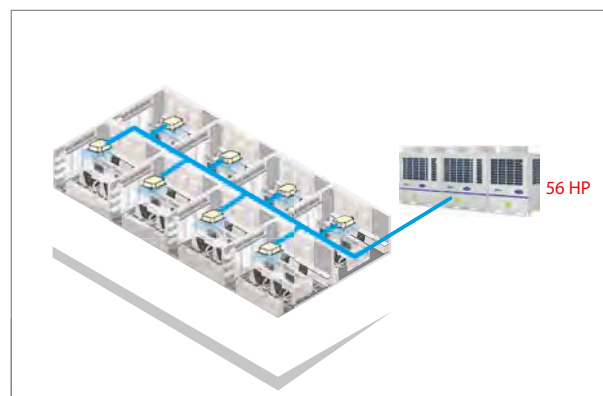
Compact design with reduced footprint.

Capacity up to 20HP can be covered with a single module, reducing pipe work and overall installation time.

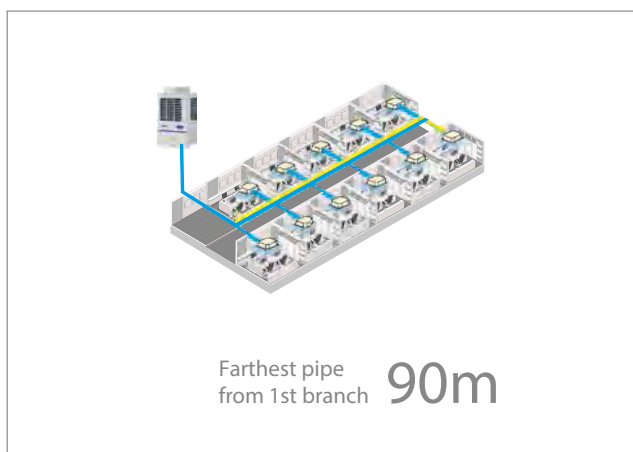
Expanding the maximum combination to 56 HP in one system, with up to 64 connectable indoor units.

Maximum piping length of 1,000 m, farthest equivalent length 235 m.

Maximum vertical distance between indoor units, which reaches up to 40 meters.



56 HP in one system, up to 64 connectable indoor units





# Technical Specifications






Model name			38VT			008167HTMM	010167HTMM	012167HTMM	014167HTMM	016167HTMM	018167HTMM	020167HTMM
Unit Size				HP		8	10	12	14	16	18	20
Cooling capacity (*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 (*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 (*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
Power supply (V/PH/Hz)						380/3/60	380/3/60	380/3/60	380/3/60	380/3/60	380/3/60	380/3/60
Voltage range (*3)			Minimum	V		342	342	342	342	342	342	342
			Maximum	V		418	418	418	418	418	418	418
Electrical characteristic	Cooling (*1)	Running current	A		8.5	11.2	14.0	17.1	21.0	21.1	26.3	
		Power input	kW		5.09	6.60	8.66	10.4	12.7	12.9	16.3	
		EER	kW/kW		4.38	4.26	3.85	3.84	3.50	3.91	3.41	
			Btu/Wh		14.95	14.55	13.15	13.10	11.95	13.35	11.65	
	Cooling (*2)	Power input	kW		6.90	9.20	9.44	12.2	13.1	15.0	15.7	
		EER	kW/kW		2.93	2.74	2.83	2.64	2.73	2.86	2.84	
			Btu/Wh		10.00	9.35	9.65	9.00	9.30	9.75	9.70	
		Heating (*1)	Running current	A		9.4	12.3	15.8	18.6	21.7	23.6	28.0
	Power input		kW		5.66	7.45	9.72	11.1	13.2	14.3	17.4	
	COP		kW/kW		4.42	4.23	3.86	4.05	3.79	3.92	3.62	
			Btu/Wh		15.00	14.35	13.05	13.70	12.90	13.30	12.30	
	Starting current			A		Soft Start	Soft Start	Soft Start	Soft Start	Soft Start	Soft Start	Soft Start
	Dimension			Height	mm		1800	1800	1800	1800	1800	1800
Width				mm		990	990	990	1210	1210	1600	1600
Depth				mm		780	780	780	780	780	780	780
Weight	Heat pump	kg		242	242	242	299	299	370	370		
Colour						Silky shade (Munsell 1Y8.5/0.5)	Silky shade (Munsell 1Y8.5/0.5)	Silky shade (Munsell 1Y8.5/0.5)	Silky shade (Munsell 1Y8.5/0.5)	Silky shade (Munsell 1Y8.5/0.5)	Silky shade (Munsell 1Y8.5/0.5)	Silky shade (Munsell 1Y8.5/0.5)
Compressor			Type			Hermetic Twin Rotary	Hermetic Twin Rotary	Hermetic Twin Rotary	Hermetic Twin Rotary	Hermetic Twin Rotary	Hermetic Twin Rotary	Hermetic Twin Rotary
			Motor output	kW		2.1 x 2	3.1 x 2	3.9 x 2	4.8 x 2	5.8 x 2	6.5 x 2	7.6 x 2
Fan unit			Type			Propeller fan	Propeller fan	Propeller fan	Propeller fan	Propeller fan	Propeller fan	Propeller fan
			Motor output	kW		1.0	1.0	1.0	1.0	1.0	1.0x2	1.0x2
			Air volume	m3/h		9700	9700	12200	12200	12600	17300	17900
Max. external static pressure				Pa		60	60	50	50	40	50	40
Heat exchanger						Finned tube	Finned tube	Finned tube	Finned tube	Finned tube	Finned tube	Finned tube
Refrigerant	Name					R410A	R410A	R410A	R410A	R410A	R410A	R410A
	Charge	Heat pump		kg		11.5	11.5	11.5	11.5	11.5	11.5	11.5
High-pressure switch				Pa		OFF:3.2 ON:4.15	OFF:3.2 ON:4.15	OFF:3.2 ON:4.15	OFF:3.2 ON:4.15	OFF:3.2 ON:4.15	OFF:3.2 ON:4.15	OFF:3.2 ON:4.15
Protective devices						(*4)	(*4)	(*4)	(*4)	(*4)	(*4)	(*4)
Power supply wiring			MCA (*5)		A	20.5	21.5	26.1	31.0	35.8	40.6	44.9
			MOCP (*6)		A	25.0	25.0	32.0	40.0	40.0	50.0	63.0
Piping connections	Gas	Type			Brazing	Brazing	Brazing	Brazing	Brazing	Brazing	Brazing	Brazing
		Diameter	mm		19.1	22.2	28.6	28.6	28.6	28.6	28.6	28.6
	Liquid	Type			Flare	Flare	Flare	Flare	Flare	Flare	Flare	Flare
		Diameter	mm		12.7	12.7	12.7	15.9	15.9	15.9	15.9	15.9
	Balance	Type			Flare	Flare	Flare	Flare	Flare	Flare	Flare	Flare
		Diameter	mm		9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5
Max. number of connected indoor units						13	16	20	23	27	30	33
Sound pressure level			Cooling	dB(A)		55	57	59	60	62	60	61
			Heating	dB(A)		56	58	61	62	64	61	62
Sound power level			Cooling	dB(A)		74	74	80	80	81	81	82
			Heating	dB(A)		74	74	82	82	83	83	84
Operation temperature range			Cooling	CDB		-5 to 52	-5 to 52	-5 to 52	-5 to 52	-5 to 52	-5 to 52	-5 to 52
			Heating(*7)	CWB		-25 to 15.5	-25 to 15.5	-25 to 15.5	-25 to 15.5	-25 to 15.5	-25 to 15.5	-25 to 15.5

## 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 27 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) Voltage range : Units are suitable for use on electrical systems where voltage supplied to unit terminal is not below or above listed range limits.
- (\*4) Discharge temp. sensor / Suction temp. sensor / High-pressure sensor / Low-pressure sensor / Compressor case thermostat / PC board fuse
- (\*5) Select wire size base on the larger value of MCA.  
MCA : Minimum Circuit Amps
- (\*6) MOCP : Maximum Overcurrent Protection(Amps)
- (\*7) Low ambient heating (-20degC or less) for extended periods of time is not allowed



## Outdoor Lineup

								
Model (60Hz)		38VT008167HTMM	38VT010167HTMM	38VT012167HTMM	38VT014167HTMM	38VT016167HTMM	38VT018167HTMM	38VT020167HTMM
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 (60Hz)		38VT022S67HTMM	38VT024S67HTMM	38VT026S67HTMM	38VT028S67HTMM	38VT030S67HTMM	38VT032S67HTMM	38VT034S67HTMM
Combination Models		38VT012167HTMM	38VT012167HTMM	38VT014167HTMM	38VT014167HTMM	38VT016167HTMM	38VT016167HTMM	38VT018167HTMM
		38VT010167HTMM	38VT012167HTMM	38VT012167HTMM	38VT014167HTMM	38VT014167HTMM	38VT016167HTMM	38VT016167HTMM
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	53.0	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 (60Hz)		38VT036S67HTMM	38VT038S67HTMM	38VT040S67HTMM	38VT042S67HTMM	38VT044S67HTMM	38VT046S67HTMM	38VT048S67HTMM
Combination Models		38VT018167HTMM	38VT020167HTMM	38VT020167HTMM	38VT014167HTMM	38VT016167HTMM	38VT016167HTMM	38VT016167HTMM
		38VT018167HTMM	38VT018167HTMM	38VT020167HTMM	38VT014167HTMM	38VT014167HTMM	38VT016167HTMM	38VT016167HTMM
		-	-	-	38VT014167HTMM	38VT014167HTMM	38VT014167HTMM	38VT016167HTMM
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	85.6	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

					
<b>Model (60Hz)</b>		<b>38VT050S67HTMM</b>	<b>38VT052S67HTMM</b>	<b>38VT054S67HTMM</b>	<b>38VT056S67HTMM</b>
Combination Models		38VT018167HTMM	38VT018167HTMM	38VT020167HTMM	38VT020167HTMM
		38VT016167HTMM	38VT018167HTMM	38VT020167HTMM	38VT020167HTMM
		38VT016167HTMM	38VT016167HTMM	38VT014167HTMM	38VT016167HTMM
Capacity	HP	50	52	54	56
Cooling Capacity (35C)	kW	140.4	145.8	152.0	157.0
Cooling Capacity (46C)	kW	114.8	121.6	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





## 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															
High wall type Series 3															
High wall type Series 4															
Floor standing concealed type															
Floor standing cabinet type															
Console type															
Floor standing type															

## 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

Lite-Vision Plus



Remote Controller with weekly timer



Simple wired remote controller



### Central Controllers

Central remote controller



Schedule Timer



### BMS Controllers

Touch Screen controller



Smart BMS Manager



### Wireless Remote Controls

Infrared Remote Control



Receiver kit for the installation on the wall or ceiling.



Receiver kit to be installed directly in the frame of the indoor unit.



Receiver kit to be installed directly in the frame of the indoor unit.



Receiver kit to be installed directly in the frame of the indoor unit.

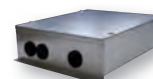


### Connectable Open Network

BACnet®



LonWORKS®



Modbus®



## Notes







Certificate Number: 190220027101  
**ISO9001**  
QUALITY MANAGEMENT SYSTEM

Certificate Number: 19011001704  
**ISO14001**  
ENVIRONMENTAL MANAGEMENT SYSTEM

Certificate Number: 19011001705  
**TIS18001**  
THERMAL INSULATION QUALITY MANAGEMENT SYSTEM

Certificate Number: 190220027101  
**OHSAS**  
OCCUPATIONAL HEALTH AND SAFETY MANAGEMENT SYSTEM

## الشركة العربية لتكييف الهواء المحدودة Arabian Air-Conditioning Company Ltd.

Riyadh الرياض	Jeddah جدة	Makkah مكة	Madinah المدينة	Dammam الدمام	Al Hofuf الهفوف
هاتف: ٠١١ ٢١٨٠٠٢٢	هاتف: ٠١٢ ٢٣٧٥٠٠٠	هاتف: ٠١٢ ٥٤٨٢٢٣٠	هاتف: ٠١٤ ٨٤٦٤١٦٣	هاتف: ٠١٣ ٨٥٧٧٧١٠	هاتف: ٠١٣ ٥٨٢٨٥٩٥
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