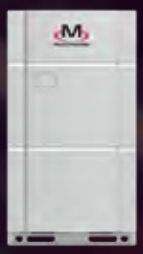
THE MW 3-PIPE SYSTEM **HEAT RECOVERY** IN INDIVIDUAL OR MODULAR USE

OUTDOOR UNITS



22.40 kW	28.00 kW	33.50 kW
8HP	**10HP**	**12HP**
M-VR-OV-224-SG	M-VR-OV-280-SG	M-VR-OV-335-SG

40.00 kW	45.00 kW	50.40 kW	56.00 kW	61.50 kW
14HP	**16HP**	**18HP**	**20HP**	**22HP**
M-VR-OV-400-SG	M-VR-OV-450-SG	M-VR-OV-500-SG	M-VR-OV-560-SG	M-VR-OV-615-SG

FLOW CONTROLLERS

Nb. of connections	Nb. of connections	Nb. of connections	Nb. of connections
1	**2**	**4**	**8**
M-VR-ME-1-NG	M-VR-ME-2-NG	M-VR-ME-4-NG	M-VR-ME-8-NG

HYDRONIC MODULE

16.00 kW
1-Phase
M-VR-HM-16-NG
30.00 kW
1-Phase
M-VR-HM-30-NG

INDOOR UNITS

Applicable indoor units for air-to-air operation on page. 93

MW 3-PIPE HEAT RECOVERY CONSISTS OF **8 INDIVIDUAL OUTDOOR UNITS**. IN COMBINATION IT REACHES A MAXIMUM OUTPUT OF **246 KW** TO WHICH UP TO **80 INDOOR UNITS** CAN BE CONNECTED

8 THREE-PHASE MODELS

The maximum power of the single outdoor unit reaches 61.5 kW (22 HP); the maximum power of the combined outdoor units reaches 246 kW (88 HP), the highest value in the industry.

The MW 3-PIPE system is able to create combinations of 4 external units, to which up to 80 internal units can be connected, thanks to the most advanced CAN+ technology.

POWER AND NUMBER OF CONNECTABLE INDOOR UNITS

Model	Min~Max power of connectable I.U.	Min~Max number of connectable I.U.	Max power of connectable hydronic modules [kW]	Max number of connectable hydronic modules
M-VR-OV-224-SG	50~135%	1~13	32	2
M-VR-OV-280-SG	50~135%	1~16	32	2
M-VR-OV-335-SG	50~135%	1~19	32	2
M-VR-OV-400-SG	50~135%	1~23	32	2
M-VR-OV-450-SG	50~135%	1~26	46	2
M-VR-OV-500-SG	50~135%	1~29	46	2
M-VR-OV-560-SG	50~135%	1~33	46	2
M-VR-OV-615-SG	50~135%	1~36	60	2

MAXIMUM COMPACTNESS FOR ALL OUTDOOR UNITS

Compactness is another important plus. There are two aesthetics proposed, with a single fan (from 22.4 to 33.5 kW) and with a double fan (from 40 to 61.5 kW).

22.40 - 28.00 - 33.50 kW

L 930 x H 1690 x D 775 (mm)

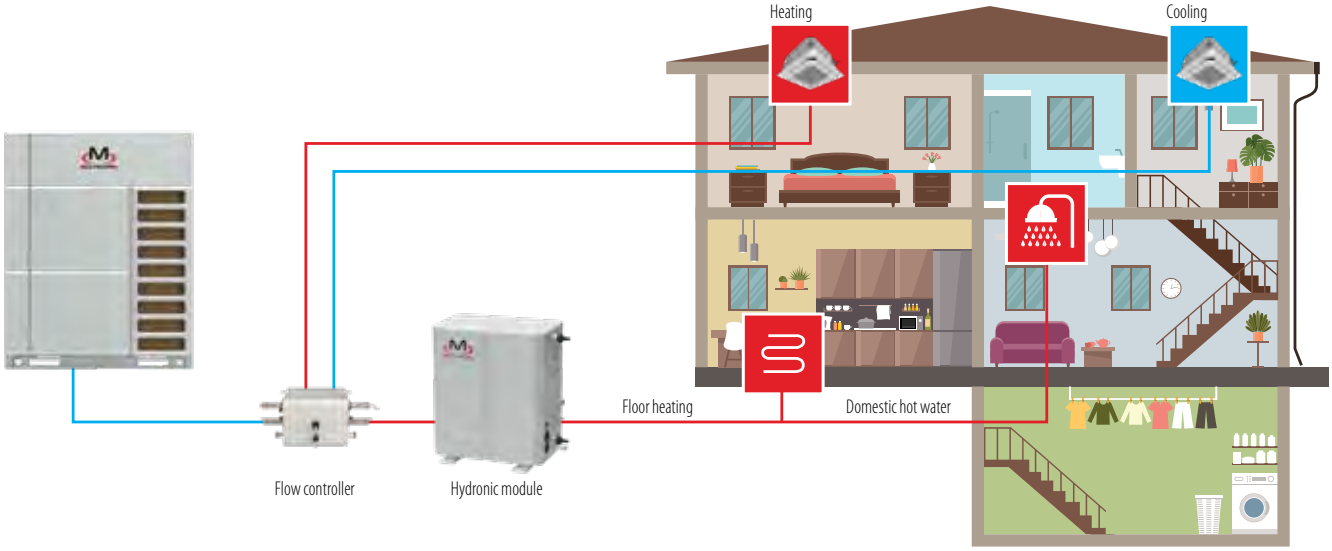
40.00 - 45.00 - 50.40 - 56.00 - 61.50 kW

L 1340 x H 1690 x D 775 (mm)

MIX OF TECHNOLOGIES TO ENSURE MAXIMUM EFFICIENCY AND ENERGY SAVINGS

The MULTIWARM 3-PIPE system with heat recovery can simultaneously meet the needs of air conditioning, heating and hot water production.

The MULTIWARM 3-PIPE range is particularly suitable for many types of applications: villas, shops, offices, shopping centres, hotels, hospitals, banks, museums, schools.



All DC Inverter Compressors

The use of All DC Inverter compressors guarantees excellent system efficiency both at full load and partial load. The high efficiency permanent magnet synchronous motor produces a better performance than the traditional DC Inverter compressor.

The system can directly absorb gas to reduce superheat loss.

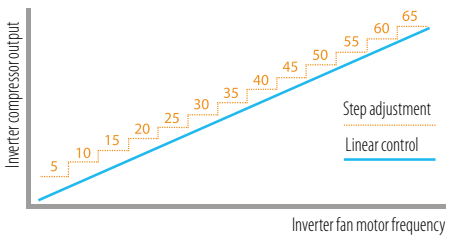
+ medium and high frequency performance, thanks to the new structure of the high pressure chamber

+ low frequency efficiency, with the new concentrated winding motor

DC Inverter Sensorless Fan Motor

Linear speed regulation ranges from 5 to 65 Hz. Compared with traditional Inverter motors, operation is more efficient.

Sensorless control technology ensures quieter operation, less vibration and smoother operation.



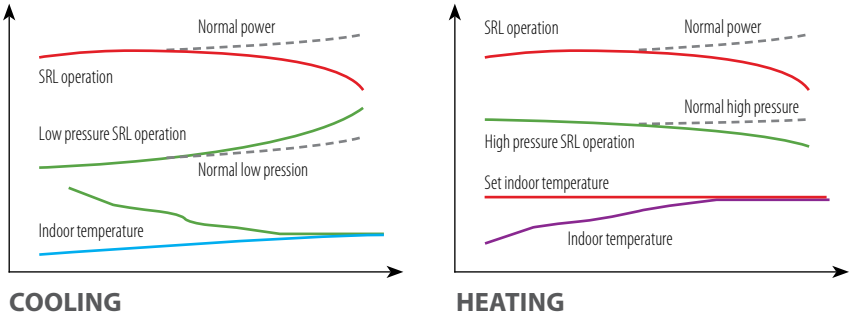
Enhanced Vapour Injection "EVI" technology

This special technology applied to the compressor uses part of the refrigerant to maximize performance while improving energy efficiency.

Automatic load control

The unit intelligently detects and controls system parameters, adapting them to actual cooling/ heating needs.

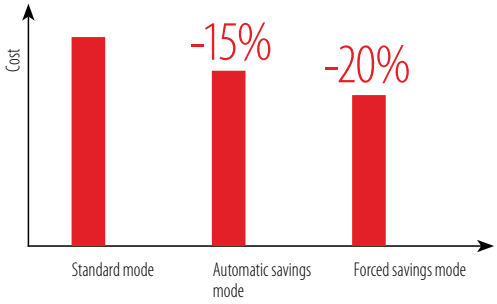
Automatically adjusts the refrigerant heat exchange temperature according to the increase or decrease in ambient temperature.



Control technology with energy savings of up to 20%

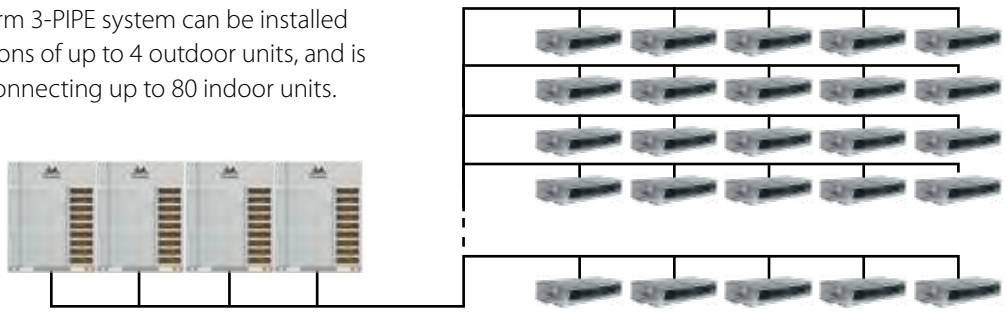
The MW 3-PIPE system has two energy saving modes:

- **Automatic energy saving**: automatically adjusts the parameters according to the working status, thus reducing the cost of electricity. It can save up to 15% energy.
- **Forced energy saving**: forcedly limits the output power. Depending on the power consumption and user needs, a capacity ratio of 90% or 80% can be selected.



Up to 80 connectable indoor units

The Multiwarm 3-PIPE system can be installed in combinations of up to 4 outdoor units, and is capable of connecting up to 80 indoor units.

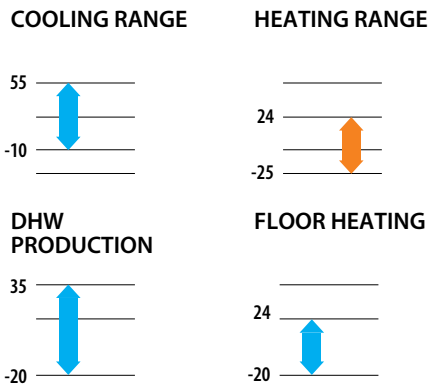


SILENT COMFORT THAT LASTS OVER TIME

Wide operating range, from -25°C to 55°C, fast start-up times, rapid defrosting without performance drops. Reduced noise for maximum comfort in all environments.

Wide range of operation and operating conditions

Operation is possible for voltages from 380 to 415V, at 50Hz.



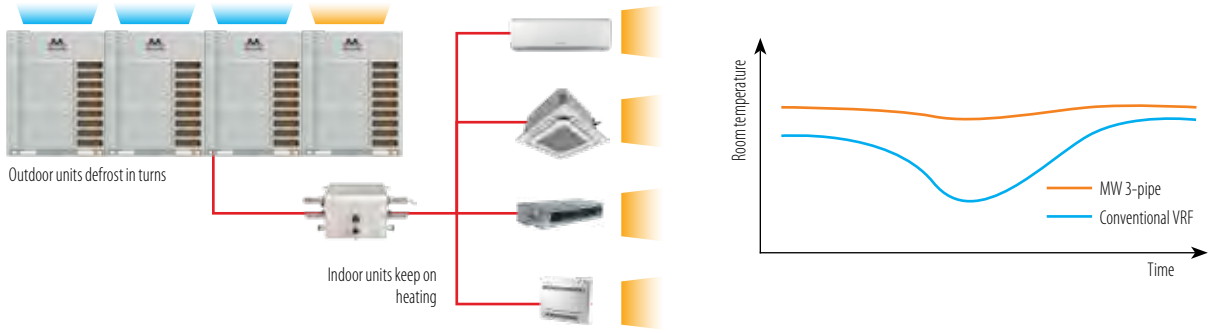
up to **55°C** in cooling

down to **-25°C** in heating

down to **-20°C** in DHW production and floor heating

Heat storage defrosting technology (optional module)

The heat storage module is optional and offers the advantage of an innovative and intelligent defrosting mode, allowing you to accelerate heat transfer, defrost quickly and maintain constant comfort.



Reduction of pre-heating time

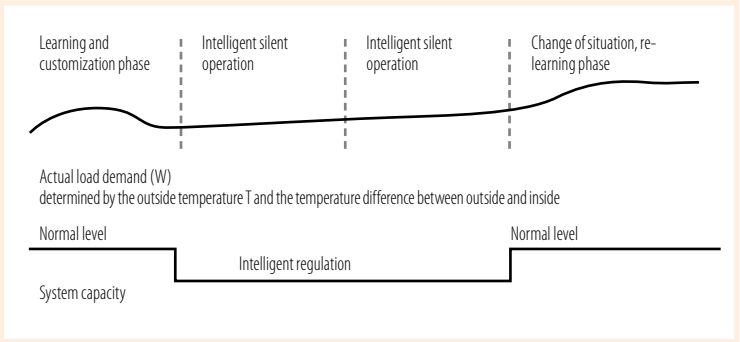
The motor's electric winding and the heating belt are activated simultaneously, heating the oil and ensuring rapid and complete evaporation of the coolant.
This allows the pre-heating time to be reduced by 75%, from 8 to 2 hours.

Intelligent defrosting and auto-adaptive control

It occurs with variable cycles and capacities based on the system temperature, pressure and speed of the workload. The MW 3-PIPE system can automatically change the compressor capacity during defrosting by evaluating the parameters in real time, so as to obtain stable or fast defrosting.

Outdoor unit silent mode and sound level control

The system can learn, define and remember user habits. It can automatically determine the system capacity in the next 24 hours to achieve automatic silent operation.

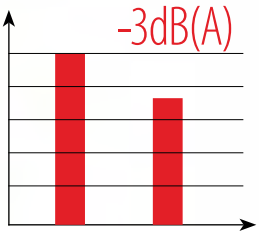


Optimized fan housing design

The fan housing structure reduces vibrations during operation. This allows a reduction in noise level of up to 3 dB(A).

3D aerodynamic axial fan

Its special inverted S-shape, while ensuring a significant increase in air flow, has the advantage of containing noise emissions.



Sound absorption and insulation

The use of high-quality sound-absorbing materials ensures optimum insulation of the compressor and other components. The use of sound-absorbing cotton + insulation box allows the unit's noise level to be controlled.

Sound-absorbing cotton

Insulation box

Intelligent control of the refrigeration circuit

The system intelligently judges whether the refrigerant circulation amount is sufficient based on the system parameters (pressure, temperature, speed, etc.).
The refrigerant transfer is performed automatically.

EXCELLENT PERFORMANCE

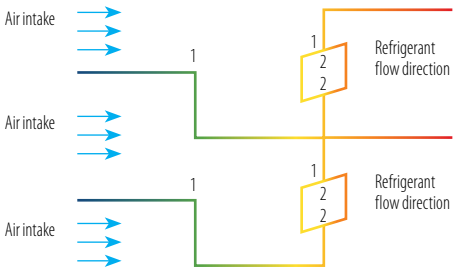
The new generation intelligent management control system and healthy fresh air solution ensure excellent energy saving, comfort and reliability.

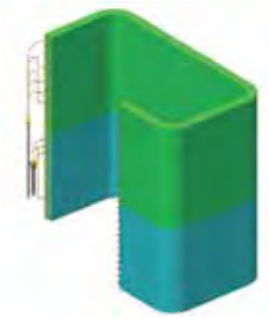
Highly efficient heat exchanger

The heat exchanger has a design such that the battery has been divided into two distinct areas (upper and lower) to improve the flow of the refrigerant: the flow scheme adopted (1-2-2-1), compared to the traditional one, guarantees a better heat exchange.

Its characteristics:

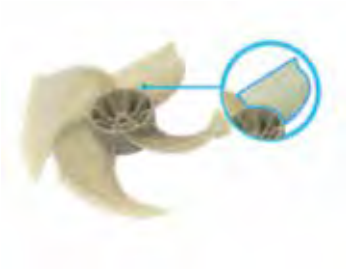
- corrugated heat exchange fins with reduced pitch;
- reduced fin section, increased corrosion resistance;
- wavy hydrophilic design, easier defrosting.





Wide airflow

The inverted S-shaped fan blade design allows for a larger action area and consequently a greater volume of air treated at the same rpm.



HPAC function - intelligent switching control

The MW 3-PIPE system adopts a brand new modular control method that ensures not only the operating life of the entire unit, but also the overall operating energy efficiency through intelligent switching, modulated according to the load demands of the indoor unit.

VRF traditional system

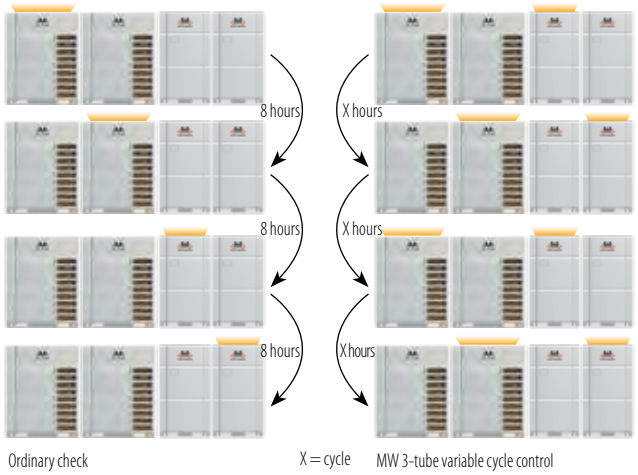
MW 3-pipe

RELIABILITY OVER TIME AND EASY MAINTENANCE

Heat exchanger with Golden Fin treatment against corrosion. Protects against atmospheric phenomena and the effects of aggressive environments.

Alternating control of variable cycle modules

The HPAC function, with intelligent switching between outdoor units according to a variable control cycle based on the load demands of the indoor unit, helps to increase the reliability of the system over time.

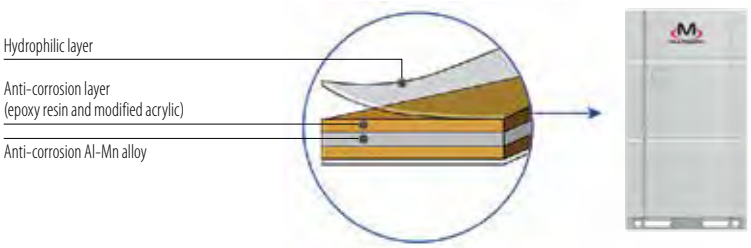


Compressor rotation control

The overall life of the modular units is considered in the system control.
When there is more than one compressor, the internal compressors will operate in turn to balance the life of each compressor.

Golden Fin Anti-Corrosion Protection

The main material of the Golden Fin is a rust-proof aluminum-manganese (Al-Mn) alloy, coated with the Golden Protection Layer (anti-corrosion layer composed of epoxy resin and modified acrylic, without silicone) whose anti-corrosion performance in the salt spray test is 200-300% higher than that of normal Blue Fins.



FLEXIBILITY AND SIMPLICITY OF INSTALLATION

The maximum overall pipe length available on the market, equal to 1,000 m, allows installation in a wide range of buildings, with maximum flexibility.

High split length

Maximum effective length of a single pipe = 200 m

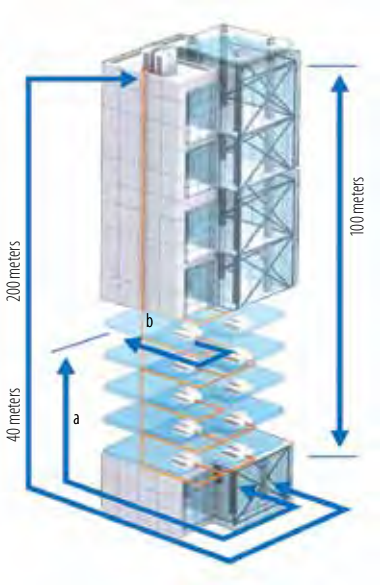
Maximum equivalent length of a single pipe = 240 m

Maximum length of pipes = 1000 m

Maximum length after first branch = 120 m

Maximum height difference of indoor and outdoor units = 110 m

Maximum height difference between indoor units = 30 m



Smart Start

QUICK INSTALLATION

- Automatic address assignment to indoor units, no DIP switch required for start-up.
- Five-sided outlet pipe connection method: maximum installation versatility.
- No external oil balance tube thanks to advanced oil balance control.
- Highly versatile design.

EFFICIENT MULTIPLE STARTS

Quick start with just one button.

Clear interface, detailed data and professional analysis.

Multifunctional debugger, quick connection, no special PC needed, automatic data storage, no external memory.
Debugging without installation wired control.

Air ducting - maximum versatility

The design of the outdoor unit fan allows for a very high static pressure of the outdoor unit, with a range from 0 to 110 Pa. This makes the installation of the machine more versatile and suitable for different types of environments, especially in cases where it is necessary to position the outdoor units inside the rooms.

Large spaces for easy maintenance

The MW 3-PIPE system is designed with integrated electric control and reserved maintenance space, to facilitate after-sales service.

Excellent emergency operation

EMERGENCY FUNCTION

The system can realize a combination of 4 modules with outdoor units. When an error occurs in one of the modules, the other modules take over the emergency operation to continue the service.

EMERGENCY OPERATION OF THE FAN

Thanks to the dual fan design, one of the two fans can continue to operate if the other one fails.

COMPRESSOR EMERGENCY OPERATION

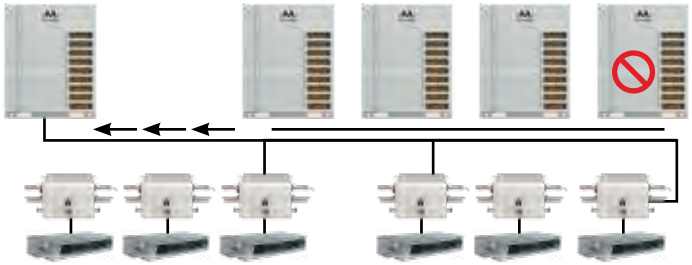
All compressors in each module are DC Inverter and when one compressor fails, the others take over the emergency operation.

EMERGENCY OPERATION OF THE SENSOR

If there is a sensor problem on one indoor unit, it can be turned off while the other units continue to operate. A maximum of 3 indoor units can be turned off at the same time.

Automatic refrigerant recovery

The advanced automatic refrigerant recovery function from the indoor and outdoor units allows the refrigerant to be effectively recovered from the units in the event of a malfunction, avoiding gas dispersion and reducing intervention times.



Emergency function of the indoor unit

When an indoor unit needs to be turned off for maintenance, the other indoor units connected to the same system remain in operation.

Auto-positioning function of indoor units

If multiple indoor units are installed in large spaces such as exhibition halls, conference rooms and offices, the auto-positioning function enables the indoor unit buzzers to sound so you can quickly locate them.

OUTDOOR UNITS

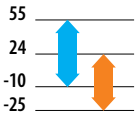
3 REFRIGERANT CAPACITIES
22.40 - 28.00 - 33.50 kW

R410A
Refrigerant gas

DC Inverter compressors guarantee total reliability thanks to high energy efficiency and silence. In addition, they allow a reduction in vibrations and accurate control of the operating frequency.

M-VR-OV-224-SG
M-VR-OV-280-SG
M-VR-OV-335-SG

OPERATION RANGE



Very wide operating limits: winter operation up to -25° C of external air and summer operation up to +55° C.

Model			M-VR-OV-224-SG	M-VR-OV-280-SG	M-VR-OV-335-SG
Power		**HP**	**8**	**10**	**12**
Nominal Data					
Rated capacity	Cooling	kW	22.40	28.00	33.50
Nominal absorbed power		kW	4.98	6.48	8.19
Energy efficiency coefficient (nominal)		EER[1]	4.50	4.32	4.09
Rated capacity	Heating	kW	25.00	31.50	37.50
Nominal absorbed power		kW	5.10	7.24	8.91
Energy performance coefficient (nominal)		COP[1]	4.90	4.35	4.21
Seasonal Data					
Seasonal energy efficiency index	Cooling	SEER[2]	7.00	6.70	6.55
Seasonal performance coefficient	Heating	SCOP[2]	4.32	4.58	4.74
Seasonal energy efficiency (ns)		%	169.80	180.20	186.60
Electrical Data					
Power supply		Ph-V-Hz	3-380~415V-50Hz		
Maximum current		A	23.00	23.50	24.10
Refrigerant Circuit Data					
Refrigerant[3]		type (GWP)	R410A (2088)		
Q.ty of refrigerant pre-charge [4] (tons of CO2 equivalent)		Kg	8.2 (17.12)	8.5 (17.75)	9.6 (20.04)
Compressor		nb. / type	1 / Scroll DC Inverter		
Piping diameter	Liquid	mm (inch)	9.52 (3/8")	9.52 (3/8")	12.7 (1/2")
	Gas HP	mm (inch)	15.9 (5/8")	19.05 (3/4")	19.05 (3/4")
	Gas LP	mm (inch)	19.05 (3/4")	22.2 (7/8")	25.4 (1")
Product Specifications					
Dimensions	WxHxD	mm	930x1690x775	930x1690x775	930x1690x775
Net weight		Kg	243	243	256
Sound power level	max	dB(A)	80	82	84
Sound pressure level at 1 m	max	dB(A)	60	61	63
Volume of air treated	max	m^3/h	9750	10500	11100
Available static pressure	std/max	Pa	0/110	0/110	0/110
Operating range (outdoor temperature)	Cooling	°C	-10~55	-10~55	-10~55
	Heating	°C	-25~24	-25~24	-25~24
	Hydronic heating	°C	-20~24	-20~24	-20~24
	Domestic hot water (DHW)	°C	-20~35	-20~35	-20~35
Connectable air-to-air indoor units (max)		**nb.**	**13**	**16**	**19**
Connectable air-to-water hydronic modules (max)[5]		**nb.**	**2**	**2**	**2**
Capacity of connectable air-to-air indoor units		%	50 ~ 135		

1. Value measured according to the harmonized standard EN14511.
2. EU Regulation No. 206/2012 - - Value measured according to the harmonized standard EN14825.
3. Refrigerant leakage contributes to climate change. If released into the atmosphere, refrigerants with a lower global warming potential (GWP) contribute less to global warming than those with a higher GWP. This appliance contains a refrigerant with a GWP of 2088. If 1 kg of this refrigerant were released into the atmosphere, therefore, the impact on global warming would be 2088 times higher than 1 kg of CO2, over a period of 100 years. Under no circumstances should the user attempt to intervene on the refrigerant circuit or disassemble the product. If necessary, always contact qualified personnel.
4. To calculate the additional refrigerant charge, refer to the labels located inside and outside the unit.
5. To determine the power of the connectable hydronic modules, consult the installation manual.

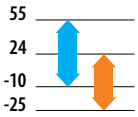
OUTDOOR UNITS

5 REFRIGERANT CAPACITIES
40.00 - 45.00 - 50.40 - 56.00 - 61.50 kW

R410A
Refrigerant gas

DC Inverter compressors guarantee total reliability thanks to high energy efficiency and silence. In addition, they allow a reduction in vibrations and accurate control of the operating frequency.

OPERATION RANGE



Very wide operating limits: winter operation up to -25° C of external air and summer operation up to +55° C.

M-VR-OV-400-SG
M-VR-OV-450-SG
M-VR-OV-500-SG
M-VR-OV-560-SG
M-VR-OV-615-SG

Model			M-VR-OV-400-SG	M-VR-OV-450-SG	M-VR-OV-500-SG	M-VR-OV-560-SG	M-VR-OV-615-SG
Power		HP	14	16	18	20	22
Nominal Data							
Rated capacity	Cooling	kW	40.00	45.00	50.40	56.00	61.50
Nominal absorbed power	Cooling	kW	9.76	11.45	12.99	15.82	18.52
Energy efficiency coefficient (nominal)	Cooling	EER[1]	4.10	3.93	3.88	3.54	3.32
Rated capacity	Heating	kW	45.00	50.00	56.50	63.00	69.00
Nominal absorbed power	Heating	kW	10.84	12.47	14.49	16.71	18.40
Energy performance coefficient (nominal)	Heating	COP[1]	4.15	4.01	3.90	3.77	3.75
Seasonal Data							
Seasonal energy efficiency index	Cooling	SEER[2]	6.91	6.46	6.48	6.32	6.32
Seasonal performance coefficient	Heating	SCOP[2]	4.44	4.42	4.25	4.15	4.15
Seasonal energy efficiency (ηs)	Heating	%	174.60	173.80	167.00	163.00	163.00
Electrical Data							
Power supply		Ph-V-Hz	3-380~415V-50Hz				
Maximum current		A	37.50	39.30	47.00	48.00	49.00
Refrigerant Circuit Data							
Refrigerant[3]		type (GWP)	R410A (2088)				
Q.ty of refrigerant pre-charge [4] (tons of CO2 equivalent)		Kg	11.1 (23.18)	11.6 (24.22)	12.8 (26.73)	12.8 (26.73)	13.3 (27.77)
Compressor		nb. / type	1 / Scroll DC Inverter		2 / Scroll DC Inverter		
Piping diameter	Liquid	mm (inch)	12.7 (1/2")	12.7 (1/2")	15.9 (5/8")	15.9 (5/8")	15.9 (5/8")
Piping diameter	Gas HP	mm (inch)	22.2 (7/8")	22.2 (7/8")	25.4 (1")	25.4 (1")	25.4 (1")
Piping diameter	Gas LP	mm (inch)	25.4 (1")	28.6 (1-1/8")	28.6 (1-1/8")	28.6 (1-1/8")	28.6 (1-1/8")
Product Specifications							
Dimensions	WxHxD	mm	1340x1690x775	1340x1690x775	1340x1690x775	1340x1690x775	1340x1690x775
Net weight		Kg	325	325	385	385	385
Sound power level	max	dB(A)	91	91	88	88	88
Sound pressure level at 1 m	max	dB(A)	63	63	63	63	64
Volume of air treated	max	m3/h	13500	15400	16500	16500	16500
Available static pressure	std/max	Pa	0/110	0/110	0/110	0/110	0/110
Operating range (outdoor temperature)	Cooling	°C	-10~55	-10~55	-10~55	-10~55	-10~55
Operating range (outdoor temperature)	Heating	°C	-25~24	-25~24	-25~24	-25~24	-25~24
Operating range (outdoor temperature)	Hydronic heating	°C	-20~24	-20~24	-20~24	-20~24	-20~24
Operating range (outdoor temperature)	Domestic hot water (DHW)	°C	-20~35	-20~35	-20~35	-20~35	-20~35
Connectable air-to-air indoor units (max)		nb.	23	26	29	33	36
Connectable air-to-water hydronic modules (max)[5]		nb.	2	2	2	2	2
Capacity of connectable air-to-air indoor units		%	50 ~ 135				

1. Value measured according to the harmonized standard EN14511.
2. EU Regulation No. 206/2012 - - Value measured according to the harmonized standard EN14825.
3. Refrigerant leakage contributes to climate change. If released into the atmosphere, refrigerants with a lower global warming potential (GWP) contribute less to global warming than those with a higher GWP. This appliance contains a refrigerant with a GWP of 2088. If 1 kg of this refrigerant were released into the atmosphere, therefore, the impact on global warming would be 2088 times higher than 1 kg of CO2, over a period of 100 years. Under no circumstances should the user attempt to intervene on the refrigerant circuit or disassemble the product. If necessary, always contact qualified personnel.
4. To calculate the additional refrigerant charge, refer to the labels located inside and outside the unit.
5. To determine the power of the connectable hydronic modules, consult the installation manual.

COMBINATIONS

Model			M-VR-OV-680-SG	M-VR-OV-730-SG	M-VR-OV-785-SG	M-VR-OV-850-SG
Power		**HP**	**24**	**26**	**28**	**30**
Combination			**280+400**	**280+450**	**280+500**	**280+560**
Rated capacity	Cooling	kW	68.00	73.00	78.40	84.00
Nominal absorbed power		kW	16.24	17.93	19.47	22.30
Energy efficiency coefficient (nominal)		EER[1]	4.19	4.07	4.03	3.77
Rated capacity	Heating	kW	76.50	81.50	88.00	94.50
Nominal absorbed power		kW	18.08	19.71	21.73	23.95
Energy performance coefficient (nominal)		COP[1]	4.23	4.13	4.05	3.95
Electrical Data						
Power supply		Ph-V-Hz	3-380~415V-50Hz			
Maximum current		A	61.00	62.80	70.50	71.50
Refrigerant Circuit Data						
Refrigerant[2]		type (GWP)	R410A (2088)			
Q.ty of refrigerant pre-charge [3] (tons of CO2 equivalent)		Kg	19.6 (40.93)	20.1 (41.97)	21.3 (44.48)	21.3 (44.48)
Compressor		nb. / type	2 / Scroll DC Inverter		3 / Scroll DC Inverter	
Piping diameter[4]	Liquid	mm (inch)	15.9 (5/8")	19.05 (3/4")	19.05 (3/4")	19.05 (3/4")
	Gas HP	mm (inch)	25.4 (1")	28.6 (1-1/8")	28.6 (1-1/8")	28.6 (1-1/8")
	Gas LP	mm (inch)	28.6 (1-1/8")	31.8 (1-1/4")	31.8 (1-1/4")	31.8 (1-1/4")
Product Specifications						
Dimensions[5]	WxHxD	mm	2370x1690x775	2370x1690x775	2370x1690x775	2370x1690x775
Net weight		Kg	568	568	628	628
Volume of air treated	max	m3/h	24000	25900	27000	27000
Available static pressure	std/max	Pa	0/110	0/110	0/110	0/110
Operating range (outdoor temperature)	Cooling	°C	-10~55	-10~55	-10~55	-10~55
	Heating	°C	-25~24	-25~24	-25~24	-25~24
	Hydronic heating	°C	-20~24	-20~24	-20~24	-20~24
	Domestic hot water (DHW)	°C	-20~35	-20~35	-20~35	-20~35
Connectable air-to-air indoor units (max)		**nb.**	**39**	**43**	**46**	**50**
Connectable air-to-water hydronic modules (max)[6]		**nb.**	**4**	**4**	**4**	**4**
Capacity of connectable air-to-air indoor units		**%**	**50 ~ 135**			
Accessories						
Branch pipe kit for O.U. pairing		nb. / type	1 / DOS-68-MW-VR			

Model			M-VR-OV-1300-SG	M-VR-OV-1350-SG	M-VR-OV-1410-SG	M-VR-OV-1460-SG
Power		**HP**	**46**	**48**	**50**	**52**
Combination			**280+450+560**	**280+450+615**	**335+450+615**	**280+560+615**
Rated capacity	Cooling	kW	129.00	134.50	140.00	145.50
Nominal absorbed power		kW	33.75	36.46	38.17	40.82
Energy efficiency coefficient (nominal)		EER[1]	3.82	3.69	3.67	3.56
Rated capacity	Heating	kW	144.50	150.50	156.50	163.50
Nominal absorbed power		kW	36.42	38.11	39.78	42.35
Energy performance coefficient (nominal)		COP[1]	3.97	3.95	3.93	3.86
Electrical Data						
Power supply		Ph-V-Hz	3-380~415-50			
Maximum current		A	110.80	111.80	112.40	120.50
Refrigerant Circuit Data						
Refrigerant[2]		type (GWP)	R410A (2088)			
Q.ty of refrigerant pre-charge [3] (tons of CO2 equivalent)		Kg	32.9 (68.70)	33.4 (69.74)	34.5 (72.03)	34.6 (72.25)
Compressor		nb. / type	4 / Scroll DC Inverter			5 / Scroll DC Inverter
Piping diameter[4]	Liquid	mm (inch)	19.05 (3/4")	19.05 (3/4")	19.05 (3/4")	19.05 (3/4")
	Gas HP	mm (inch)	31.8 (1-1/4")	31.8 (1-1/4")	38.1 (1-1/2")	38.1 (1-1/2")
	Gas LP	mm (inch)	38.1 (1-1/2")	38.1 (1-1/2")	41.3 (1-5/8")	41.3 (1-5/8")
Product Specifications						
Dimensions[5]	WxHxD	mm	3810x1690x775	3810x1690x775	3810x1690x775	3810x1690x775
Net weight		Kg	953	953	966	1013
Volume of air treated	max	m3/h	42400	42400	43000	43500
Available static pressure	std/max	Pa	0/110	0/110	0/110	0/110
Operating range (outdoor temperature)	Cooling	°C	-10~55	-10~55	-10~55	-10~55
	Heating	°C	-25~24	-25~24	-25~24	-25~24
	Hydronic heating	°C	-20~24	-20~24	-20~24	-20~24
	Domestic hot water (DHW)	°C	-20~35	-20~35	-20~35	-20~35
Connectable air-to-air indoor units (max)		**nb.**	**64**	**64**	**66**	**69**
Connectable air-to-water hydronic modules (max)[6]		**nb.**	**6**	**6**	**6**	**6**
Capacity of connectable air-to-air indoor units		**%**	**50 ~ 135**			
Accessories						
Branch pipe kit for O.U. pairing		nb. / type	1 / DOS-68-MW-VR + 1 / DOS-246-MW-VR			

1. Value measured according to harmonized standard EN14511.
2. Refrigerant leakage contributes to climate change. Refrigerants with a lower global warming potential (GWP) contribute less to global warming when released into the atmosphere than those with a higher GWP. This appliance contains a refrigerant with a GWP of 2088. Therefore, if 1 kg of this refrigerant were released into the atmosphere, the impact on global warming would be 2088 times greater than 1 kg of CO2, over a period of 100 years. Under no circumstances should the user attempt to intervene on the refrigerant circuit or disassemble the product. If necessary, always contact qualified personnel.
3. To calculate the additional refrigerant charge, refer to the labels located inside and outside the unit.
4. In combinations of multiple outdoor units, the diameters indicated refer to the section up to the first branch, with an equivalent length of less than 90 m.
5. Space between the combined units = 100 mm.
6. To determine the power of the connectable hydronic modules, consult the installation manual.

COMBINATIONS

M-VR-OV-900-SG	M-VR-OV-960-SG	M-VR-OV-1010-SG	M-VR-OV-1065-SG	M-VR-OV-1130-SG	M-VR-OV-1180-SG	M-VR-OV-1235-SG
32	**34**	**36**	**38**	**40**	**42**	**44**
280+615	**335+615**	**400+615**	**450+615**	**500+615**	**560+615**	**615+615**
89.50	95.00	101.50	106.50	111.90	117.50	123.00
25.01	26.71	28.28	29.97	31.51	34.34	37.05
3.58	3.56	3.59	3.55	3.55	3.42	3.32
100.50	106.50	114.00	119.00	125.50	132.00	138.00
25.64	27.31	29.24	30.87	32.89	35.11	36.80
3.92	3.90	3.90	3.86	3.82	3.76	3.75
3-380~415V-50Hz						
72.50	73.10	86.50	88.30	96.00	97.00	98.00
R410A (2088)						
21.8 (45.52)	22.9 (47.81)	24.4 (50.95)	24.9 (51.99)	26.1 (54.50)	26.1 (54.50)	26.6 (55.54)
3 / Scroll DC Inverter				4 / Scroll DC Inverter		
19.05 (3/4")	19.05 (3/4")	19.05 (3/4")	19.05 (3/4")	19.05 (3/4")	19.05 (3/4")	19.05 (3/4")
28.6 (1-1/8")	28.6 (1-1/8")	28.6 (1-1/8")	31.8 (1-1/4")	31.8 (1-1/4")	31.8 (1-1/4")	31.8 (1-1/4")
31.8 (1-1/4")	31.8 (1-1/4")	31.8 (1-1/4")	38.1 (1-1/2")	38.1 (1-1/2")	38.1 (1-1/2")	38.1 (1-1/2")
2370x1690x775	2370x1690x775	2780x1690x775	2780x1690x775	2780x1690x775	2780x1690x775	2780x1690x775
628	641	710	710	770	770	770
27000	27600	30000	31900	33000	33000	33000
0/110	0/110	0/110	0/110	0/110	0/110	0/110
-10~55	-10~55	-10~55	-10~55	-10~55	-10~55	-10~55
-25~24	-25~24	-25~24	-25~24	-25~24	-25~24	-25~24
-20~24	-20~24	-20~24	-20~24	-20~24	-20~24	-20~24
-20~35	-20~35	-20~35	-20~35	-20~35	-20~35	-20~35
53	**56**	**59**	**63**	**64**	**64**	**64**
4	**4**	**4**	**4**	**4**	**4**	**4**
50 ~ 135						
1 / DOS-68-MW-VR	1 / DOS-246-MW-VR					

M-VR-OV-1515-SG	M-VR-OV-1580-SG	M-VR-OV-1630-SG	M-VR-OV-1685-SG	M-VR-OV-1750-SG	M-VR-OV-1800-SG	M-VR-OV-1845-SG
54	**56**	**58**	**60**	**62**	**64**	**66**
280+615+615	**335+615+615**	**400+615+615**	**450+615+615**	**500+615+615**	**560+615+615**	**615+615+615**
151.00	156.50	163.00	168.00	173.40	179.00	184.50
43.53	45.24	46.80	48.50	50.04	52.87	55.57
3.47	3.46	3.48	3.46	3.47	3.39	3.32
169.50	175.50	183.00	188.00	194.50	201.00	207.00
44.04	45.71	47.64	49.27	51.29	53.51	55.20
3.85	3.84	3.84	3.82	3.79	3.76	3.75
3-380~415-50						
121.50	122.10	135.50	137.30	145.00	146.00	147.00
R410A (2088)						
35.1 (73.29)	36.2 (75.58)	37.7 (78.72)	38.2 (79.76)	39.4 (82.27)	39.4 (82.27)	39.9 (83.31)
5 / Scroll DC Inverter				6 / Scroll DC Inverter		
19.05 (3/4")	19.05 (3/4")	19.05 (3/4")	19.05 (3/4")	19.05 (3/4")	19.05 (3/4")	19.05 (3/4")
38.1 (1-1/2")	38.1 (1-1/2")	38.1 (1-1/2")	38.1 (1-1/2")	38.1 (1-1/2")	38.1 (1-1/2")	38.1 (1-1/2")
41.3 (1-5/8")	41.3 (1-5/8")	41.3 (1-5/8")	41.3 (1-5/8")	41.3 (1-5/8")	41.3 (1-5/8")	41.3 (1-5/8")
3810x1690x775	3810x1690x775	4220x1690x775	4220x1690x775	4220x1690x775	4220x1690x775	4220x1690x775
1013	1026	1095	1095	1155	1155	1155
43500	44100	46500	48400	49500	49500	49500
0/110	0/110	0/110	0/110	0/110	0/110	0/110
-10~55	-10~55	-10~55	-10~55	-10~55	-10~55	-10~55
-25~24	-25~24	-25~24	-25~24	-25~24	-25~24	-25~24
-20~24	-20~24	-20~24	-20~24	-20~24	-20~24	-20~24
-20~35	-20~35	-20~35	-20~35	-20~35	-20~35	-20~35
71	**74**	**77**	**80**	**80**	**80**	**80**
6	**6**	**6**	**6**	**6**	**6**	**6**
50 ~ 135						
1 / DOS-68-MW-VR + 1 / DOS-246-MW-VR	2 / DOS-246-MW-VR					

1. Value measured according to harmonized standard EN14511.
2. Refrigerant leakage contributes to climate change. Refrigerants with a lower global warming potential (GWP) contribute less to global warming when released into the atmosphere than those with a higher GWP. This appliance contains a refrigerant with a GWP of 2088. Therefore, if 1 kg of this refrigerant were released into the atmosphere, the impact on global warming would be 2088 times greater than 1 kg of CO2, over a period of 100 years. Under no circumstances should the user attempt to intervene on the refrigerant circuit or disassemble the product. If necessary, always contact qualified personnel.
3. To calculate the additional refrigerant charge, refer to the labels located inside and outside the unit.
4. In combinations of multiple outdoor units, the diameters indicated refer to the section up to the first branch, with an equivalent length of less than 90 m.
5. Space between the combined units = 100 mm.
6. To determine the power of the connectable hydronic modules, consult the installation manual.

COMBINATIONS

Model			M-VR-OV-1908-SG	M-VR-OV-1962-SG	M-VR-OV-2016-SG	M-VR-OV-2072-SG
Power		**HP**	**68**	**70**	**72**	**74**
Combination			**280+450+560+615**	**280+500+560+615**	**280+560+560+615**	**280+560+615+615**
Rated capacity	Cooling	kW	190.50	195.90	201.50	2070
Nominal absorbed power		kW	52.28	53.81	56.64	59.35
Energy efficiency coefficient (nominal)		EER[1]	3.64	3.64	3.56	3.49
Rated capacity	Heating	kW	213.50	220.00	226.50	232.50
Nominal absorbed power		kW	54.82	56.84	59.06	60.75
Energy performance coefficient (nominal)		COP[1]	3.89	3.87	3.83	3.83
Electrical Data						
Power supply		Ph-V-Hz	3-380~415-50			
Maximum current		A	159.80	167.50	168.50	169.50
Refrigerant Circuit Data						
Refrigerant[2]		type (GWP)	R410A (2088)			
Q.ty of refrigerant pre-charge [3] (tons of CO2 equivalent)		Kg	46.2 (96.47)	47.4 (98.98)	47.4 (98.98)	47.9 (100.02)
Compressor		nb. / type	6 / Scroll DC Inverter		7 / Scroll DC Inverter	
Piping diameter[4]	Liquid	mm (inch)	22.2 (7/8")	22.2 (7/8")	22.2 (7/8")	22.2 (7/8")
	Gas HP	mm (inch)	41.3 (1-5/8")	41.3 (1-5/8")	41.3 (1-5/8")	41.3 (1-5/8")
	Gas LP	mm (inch)	44.5 (1-3/4")	44.5 (1-3/4")	44.5 (1-3/4")	44.5 (1-3/4")
Product Specifications						
Dimensions[5]	WxHxD	mm	5250x1690x775	5250x1690x775	5250x1690x775	5250x1690x775
Net weight		Kg	1338	1398	1398	1398
Volume of air treated	max	m3/h	58900	60000	60000	60000
Available static pressure	std/max	Pa	0/110	0/110	0/110	0/110
Operating range (outdoor temperature)	Cooling	°C	-10~55	-10~55	-10~55	-10~55
	Heating	°C	-25~24	-25~24	-25~24	-25~24
	Hydronic heating	°C	-20~24	-20~24	-20~24	-20~24
	Domestic hot water (DHW)	°C	-20~35	-20~35	-20~35	-20~35
Connectable air-to-air indoor units (max)		**nb.**	**80**	**80**	**80**	**80**
Connectable air-to-water hydronic modules (max)[6]		**nb.**	**6**	**6**	**6**	**6**
Capacity of connectable air-to-air indoor units		**%**	**50 ~ 135**			
Accessories						
Branch pipe kit for O.U. pairing		nb. / type	1 / DOS-68-MW-VR + 2 / DOS-246-MW-VR			

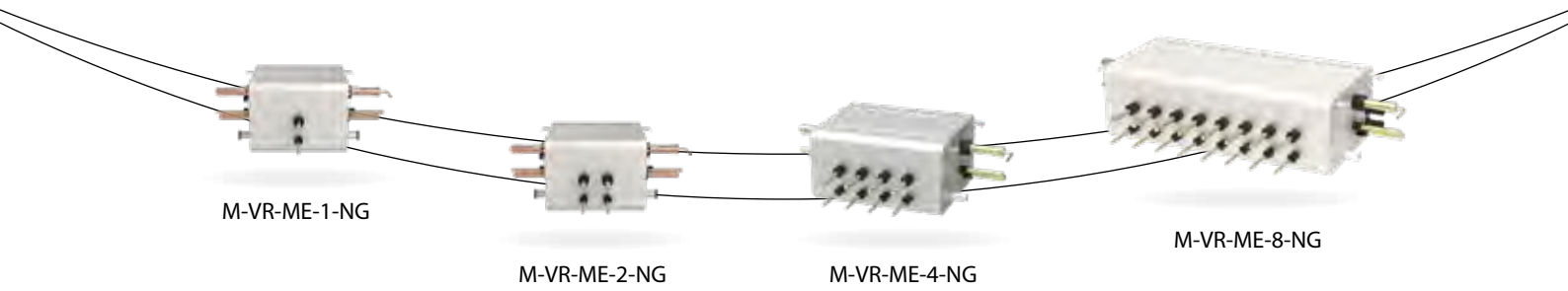
1. Value measured according to harmonized standard EN14511.
2. Refrigerant leakage contributes to climate change. Refrigerants with a lower global warming potential (GWP) contribute less to global warming when released into the atmosphere than those with a higher GWP. This appliance contains a refrigerant with a GWP of 2088. Therefore, if 1 kg of this refrigerant were released into the atmosphere, the impact on global warming would be 2088 times greater than 1 kg of CO2, over a period of 100 years. Under no circumstances should the user attempt to intervene on the refrigerant circuit or disassemble the product. If necessary, always contact qualified personnel.
3. To calculate the additional refrigerant charge, refer to the labels located inside and outside the unit.
4. In combinations of multiple outdoor units, the diameters indicated refer to the section up to the first branch, with an equivalent length of less than 90 m.
5. Space between the combined units = 100 mm.
6. To determine the power of the connectable hydronic modules, consult the installation manual.

COMBINATIONS

M-VR-OV-2128-SG	M-VR-OV-2184-SG	M-VR-OV-2240-SG	M-VR-OV-2295-SG	M-VR-OV-2350-SG	M-VR-OV-2405-SG	M-VR-OV-2460-SG
76	**78**	**80**	**82**	**84**	**86**	**88**
280+615+615+615	**335+615+615+615**	**400+615+615+615**	**450+615+615+615**	**500+615+615+615**	**560+615+615+615**	**615+615+615+615**
212.50	218.00	224.50	229.50	234.90	240.50	246.00
62.05	63.76	65.33	67.02	68.56	71.39	74.10
3.42	3.42	3.44	3.42	3.43	3.37	3.32
238.50	244.50	252.00	257.00	263.50	270.00	276.00
62.44	64.11	66.04	67.67	69.69	71.91	73.60
3.82	3.81	3.82	3.80	3.78	3.75	3.75
3-380~415-50						
170.50	171.10	184.50	186.30	194.00	195.00	196.00
R410A (2088)						
48.4 (101.06)	49.5 (103.35)	51 (106.49)	51.5 (107.53)	52.7 (110.04)	52.7 (110.04)	53.2 (111.08)
7 / Scroll DC Inverter				8 / Scroll DC Inverter		
22.2 (7/8")	22.2 (7/8")	22.2 (7/8")	22.2 (7/8")	22.2 (7/8")	22.2 (7/8")	22.2 (7/8")
41.3 (1-5/8")	41.3 (1-5/8")	41.3 (1-5/8")	41.3 (1-5/8")	41.3 (1-5/8")	41.3 (1-5/8")	41.3 (1-5/8")
44.5 (1-3/4")	44.5 (1-3/4")	44.5 (1-3/4")	44.5 (1-3/4")	44.5 (1-3/4")	44.5 (1-3/4")	44.5 (1-3/4")
5250x1690x775	5250x1690x775	5660x1690x775	5660x1690x775	5660x1690x775	5660x1690x775	5660x1690x775
1398	1411	1480	1480	1540	1540	1540
60000	60600	63000	64900	66000	66000	66000
0/110	0/110	0/110	0/110	0/110	0/110	0/110
-10~55	-10~55	-10~55	-10~55	-10~55	-10~55	-10~55
-25~24	-25~24	-25~24	-25~24	-25~24	-25~24	-25~24
-20~24	-20~24	-20~24	-20~24	-20~24	-20~24	-20~24
-20~35	-20~35	-20~35	-20~35	-20~35	-20~35	-20~35
80	**80**	**80**	**80**	**80**	**80**	**80**
6	**6**	**6**	**6**	**6**	**6**	**6**
50 ~ 135						
1 / DOS-68-MW-VR + 2 / DOS-246-MW-VR		3 / DOS-246-MW-VR				

1. Value measured according to harmonized standard EN14511.
2. Refrigerant leakage contributes to climate change. Refrigerants with a lower global warming potential (GWP) contribute less to global warming when released into the atmosphere than those with a higher GWP. This appliance contains a refrigerant with a GWP of 2088. Therefore, if 1 kg of this refrigerant were released into the atmosphere, the impact on global warming would be 2088 times greater than 1 kg of CO2, over a period of 100 years. Under no circumstances should the user attempt to intervene on the refrigerant circuit or disassemble the product. If necessary, always contact qualified personnel.
3. To calculate the additional refrigerant charge, refer to the labels located inside and outside the unit.
4. In combinations of multiple outdoor units, the diameters indicated refer to the section up to the first branch, with an equivalent length of less than 90 m.
5. Space between the combined units = 100 mm.
6. To determine the power of the connectable hydronic modules, consult the installation manual.

FLOW CONTROLLERS



Model				M-VR-ME-1-NG	M-VR-ME-2-NG	M-VR-ME-4-NG	M-VR-ME-8-NG
Pairs of connections for indoor units			**q.ty**	**1**	**2**	**4**	**8**
Max. number of connectable indoor units	for each pair of connections[1]			8	8	8	8
	for each flow controller			8	16	32	64
Max. capacity of connectable indoor units	for each pair of connections[2]		kW	16.00	16.00	16.00	16.00
	for each flow controller[3]		kW	16.00	28.00	45.00	85.00
Electrical Data							
Power supply			Ph-V-Hz	1-220~240V-50Hz			
Refrigerant Circuit Data							
Piping diameter (a saldare)	Outdoor unit side	Liquid	mm (inch)	9.52 (3/8")	9.52 (3/8")	12.7 (1/2")	12.7 (1/2")
		Gas HP	mm (inch)	19.05 (3/4")	19.05 (3/4")	22.2 (7/8")	22.2 (7/8")
		Gas LP	mm (inch)	22.2 (7/8")	22.2 (7/8")	28.6 (1-1/8")	28.6 (1-1/8")
	Indoor uni side	Liquid	mm	6.35 / 9.52	6.35 / 9.52	6.35 / 9.52	6.35 / 9.52
		Gas	mm	12.7 / 15.9	12.7 / 15.9	12.7 / 15.9	12.7 / 15.9
Product Specifications							
Dimensions		WxHxD	mm	340x250x388	340x250x388	460x250x388	784x250x388
Net weight			Kg	12	14.5	20.6	33
Condensate drain				Necessary	Necessary	Necessary	Necessary

1. Any indoor units connected to the same pair of connections must operate in the same operating mode.
2. I.U.s with capacities from 16 to 30 kW can be connected to the heat cost allocators with 2 to 8 connections, using the DIS-180-1 branch kit which occupies 2 pairs of connections.
3. In case of connection of hydronic modules, the maximum capacity increases to 32 kW (2 connections), 64 kW (4 connections) and 96 kW (8 connections).

HYDRONIC MODULE

M-VR-HM-16-NG
M-VR-HM-30-NG

Model			M-VR-HM-16-NG	M-VR-HM-30-NG
Rated capacity	Domestic hot water	kW	4.50 (3.60~16.00)	4.50 (3.60~30.00)
	Hydronic heating	kW	16.00	30.00
Maximum delivery water temperature		℃	55	55
Electrical Data				
Power supply		Ph-V-Hz	1-220~240-50Hz	
Hydraulic Dats				
Water/freon heat exchanger	Brand	type	Braze-welded plates	Braze-welded plates
	Water flow	m^3/h	2.76	5.16
	Pressure drop	kPa	27.5	38.5
Circulation pump			Not included	
Water connections	Diameter	mm	25	25
	Thread	Inch	G1	G1
Operating pressure Min/Max	Max	bar	3	3
Expansion vessel			Not included	
Refrigerant Circuit Data				
Piping diameter	Liquid	mm (inch)	9.52 (3/8″)	9.52 (3/8″)
	Gas		15.9 (5/8″)	22.2 (7/8″)
Product Specifications				
Dimensions	WxHxD	mm	515x606x330	515x606x330
Net weight		kg	36	40
Condensate drain			Necessary	
Controls	Wired control		Included	
	Climate curve		Available	
Accessories				
Branch pipe kit for connection to flow divider			-	DIS-180-1