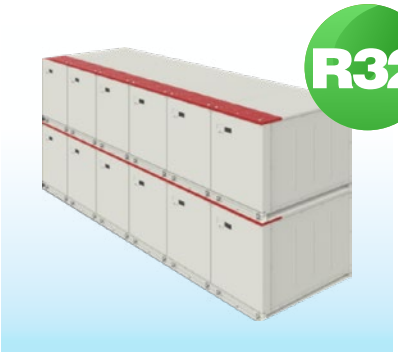
ERCV-M900YA

WATER SOURCED MODULAR HEAT PUMP CHILLER



Cooling Capacity: 90-1080kW
Heating Capacity: 90-1080kW

Indoor water-sourced modular unit with variable speed scroll compressors optimised for R32, brazed plate heat exchanger and electronic expansion valve as standard.

Flexible and reliable, the ERCV adapts to different thermal load conditions using precise temperature control together with inverter technology. High performance levels at both full and partial loads are achieved thanks to the unit's detailed design as well as the use of two variable speed (inverter) compressors per module.

Low Noise Operation

72dBA*1 (SWL)

Narrow Footprint

Only 780mm wide each module

High Efficiency Performance

5.05 EER*2

7.66 SEER*2

4.61 COP*2

7.10 SCOP*3

*1 ERCV-M900YA Sound Power Level ISO 9614.
*2 ERCV-M900YA EN14511 Regulation (EU) N.14511.
*3 ERCV-M900YA Regulation (EU) N.14511 low temperature application.

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WATER SOURCED HEAT PUMP CHILLER

Key Features

High Efficiency Inverter Compressors

The ERCV utilises Mitsubishi Electric Inverter Scroll Compressors to deliver high part load efficiency and low compressor turn-down. Each unit uses a two inverter compressor arrangement to achieve higher efficiency.

R32 Refrigerant

Low global warming potential (GWP) R32 refrigerant is zero ozone depleting and has a GWP 66% less than R410A – all while offering benefits of higher efficiency and a reduced refrigerant charge.

Water Heat Exchanger

The brazed plate heat exchanger is insulated in a closed cell neoprene insulation. The water circuits are arranged in series which increases efficiency of heat exchange, and when configured in the double stacked arrangement, contributes to higher system efficiency.

Electronic Expansion Valve Supplied as Standard

The use of the electronic expansion valve generates considerable benefits, especially in cases of variable demand and at different working conditions. It guarantees energy savings due to efficiency optimisation, which translates to a reduction in operating consumption, a faster start-up of the unit and a wider extension of the operating limits.

Wide Operating Range

Capable of delivering hot water up to 60°C the ERCV range is suitable for most heating applications as well as domestic hot water production. In Chiller Mode the ERCV can produce chilled water as low as 4°C and up to 30°C.

Low Noise Operation

Operating from just 72dBA (SWL), the ERCV range comes standard with an acoustic enclosure to deliver low noise performance.

Multi Modular Controls

Easily control the water temperature in each module by connecting to either the local remote controller PAR-W31MAA or the centralised controller, to best suit customer preference. There is capability to control a maximum of 6 double-stack units (12 units) in a single group, and can handle up to 4 groups (4,320 kW).

Compact, Modular and Easy to Install

Thanks to the compact design, easily transport units to plant rooms via elevators. Furthermore, with the top-bottom unit joining kit, it is possible to stack two units vertically to achieve 180 kW or connect up to 6 double-stack units (12 units) in one group, for a maximum of 1,080 kW. This modular approach reduces the space needed and makes lifting and installation more straightforward.

Easy Maintenance

Thanks to its openable and retractable internal structure, the ERCV offers convenient access to each component. When only access to the control box is needed, there is no need to pull out components as it can be opened from the front.
With the modular chiller system, if one unit is undergoing maintenance, other units can remain operating.

Specifications

ERCV-M900YA/M900YA x 2

			ERCV-M900YA		ERCV-M900YA X 2 (Double Stack)	
	Capacity mode		Capacity priority	Efficiency priority	Capacity priority	Efficiency priority
	Power supply		3-phase 4-wire 380-400-415V 50/60Hz			
COOLING CAPACITY *1	Capacity	kW	90.00	45.00	180.00	90.00
	Power input	kW	17.47	8.22	33.07	15.24
	EER		5.15	5.47	5.44	5.91
	IPLV *5		8.18	–	8.61	–
	Evaporator side water flow rate	L/s	4.31	2.13	8.61	4.31
	Condenser side water flow rate	L/s	4.97	2.47	9.97	4.86
COOLING CAPACITY (EN14511) *2	Capacity	kW	89.83	44.95	178.71	89.66
	Power input	kW	17.80	8.31	35.54	15.87
	EER		5.05	5.41	5.03	5.65
	SEER		7.66	–	–	–
	Evaporator side water flow rate	L/s	4.31	2.13	8.61	4.31
	Condenser side water flow rate	L/s	4.97	2.47	9.97	4.86
HEATING CAPACITY *3	Capacity	kW	90	45	180	90
	Power input	kW	19.07	9.4	37.22	18.39
	COP		4.72	4.79	4.84	4.89
	Condenser side water flow rate	L/s	4.31	2.13	8.61	4.31
	Evaporator side water flow rate	L/s	5.97	2.97	11.86	6.02
HEATING CAPACITY (EN14511) *4	Capacity	kW	90.12	45.03	180.87	90.23
	Power input	kW	19.53	9.52	40.9	19.26
	COP		4.61	4.73	4.42	4.68
	SCOP Low / Medium		7.10 / 4.86	–	–	–
	Condenser side water flow rate	L/s	4.31	2.13	8.61	4.31
	Evaporator side water flow rate	L/s	5.97	2.97	11.86	6.02
WATER PRESSURE DROP *1	Evaporator side	kPa	10	3	85	25
	Condenser side	kPa	7	2	66	18
TEMPERARURE RANGE (COOLING) *7	Evaporator side water outlet	°C	4~30			
	Condenser side water inlet	°C	9~50			
TEMPERARURE RANGE (HEATING) *7	Condenser side water outlet	°C	20~60 *6	20~55	20~55	
	Evaporator side water inlet	°C	9~35			
CIRCULATING WATER FLOW RANGE	Evaporator side range	L/s	2.13~7.16		4.27~13.88	
	Condenser side range *8	L/s	1.25~8.33		2.5~13.88	
SOUND PRESSURE LEVEL (MEASURED IN ANECHOIC ROOM) AT 1M *1			53	48	56	51
SOUND POWER LEVEL (MEASURED IN ANECHOIC ROOM) *1			72	66	75	69
PIPE CONNECTION SIZE	Condenser and Evaporator	mm (in)	65A (2 1/2B) grooved type			
EXTERNAL FINISH			Polyester powder coating steel plate			
EXTERNAL DIMENSION H x W x D		mm	918 X 780 X 1350		1836 X 780 X 1350	
NET WEIGHT / OPERATING WEIGHT		kg	430 / 473		863 / 962	
DESIGN PRESSURE	R32	MPa	4.15			
	Water	MPa	1.0			
HEAT EXCHANGER	Evaporator / Condenser side		Stainless steel plate and copper brazing			
COMPRESSOR	Type		Inverter scroll hermetic compressor			
	Quantity		2		4	
	Motor output	kW	8.3 x 2		8.3 x 4	
REFRIGERANT	Type x charge		R32 x 5.2 (kg) x 2		R32 x 5.2 (kg) x 4	

(1) Under normal cooling conditions at evaporation side water inlet temp 12°C outlet temp 7°C codensation side water inlet temp 30°C outlet temp 35°C. Pump input is not included in cooling capacity and power input.

(2) Under normal cooling conditions at evaporation side water inlet temp 12°C outlet temp 7°C condensation side water inlet temp 30°C outlet temp 35°C. Pump input is included in cooling capacity and power input based on EN14511.

(3) Under normal heating conditions at condensation side water inlet temp 40°C outlet temp 45°C evaporation side water inlet temp 10°C outlet temp 7°C. Pump input is not included in cooling capacity and power input.

(4) Under normal heating conditions at condensation side water inlet temp 40°C outlet temp 45°C evaporation side water inlet temp 10°C outlet temp 7°C. Pump input is included in cooling capacity and power input based on EN14511.

(5) IPLV is calculated in accordance with AHRI 551-591.

(6) When using in condensation side water outlet is more than 55°C, please adjust the condensation inlet water temperature to 50°C or less.

(7) Please refer to operation temperature range from Databook.

(8) Set the minimum waterflow rate on the condensation side to 2.22L/s when the evaporation side water inlet temperature during operation is 15°C(or) higher.

Options

- Compact Controller PAR-W31MAA
- Piping Kit ER-01RK (for connecting Double Stacked Modules

For more information please visit our website or call our Applied Products Sales Team.
www.mitsubishi-electric.co.nz | 0800 784 382

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