

Hydrolution PRO

AIR-SOURCE INVERTER HEAT PUMPS



ABOUT 60%
REDUCTION¹
IN GLOBAL
WARMING
POTENTIAL

43%²
REDUCTION IN
REFRIGERANT
CHARGE
AMOUNT

COMPACT & TOP-LEVEL ENERGY

Introducing the Hydrolution PRO - Mitsubishi Heavy Industries' (MHI) Air-source Inverter Heat Pump, featuring an advanced "e-3D scroll" compressor and eco-friendly R32 refrigerant with impressively low Global Warming Potential (GWP).

This innovative system signifies a remarkable advancement in heating and cooling technology, emphasizing enhanced efficiency and environmental sustainability. Its exceptional performance stands out, significantly reducing environmental impact compared to traditional refrigerants.

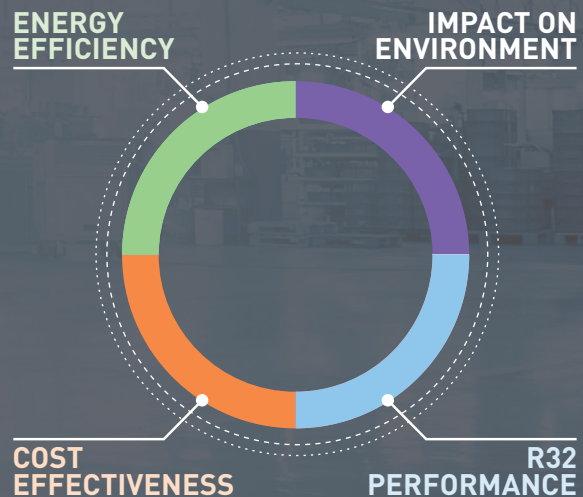
WHY R32?

Efficient Comfort: Air-Source Heat Pumps featuring the 'e-3D scroll' compressor and eco-friendly R32 refrigerant.

Mitsubishi Heavy Industries has engineered the innovative Hydrolution PRO heat pump, precisely designed with an exceptional focus on quality and intricate details. Versatile in its capabilities, the Hydrolution PRO caters to a diverse range of applications, covering residential comfort to industrial or IT cooling requirements. The Hydrolution PRO heat pump distinguishes itself by being the most compact while delivering top-tier energy efficiency within its category. Its exceptional performance ensures superior functionality across various applications, maintaining an unparalleled level of compactness.

BENEFITS OF R32

1. Low Global Warming potential and Superior Energy Efficiency
2. Zero Ozone Depletion
3. Easy to recycle
4. Single component, easy to handle refrigerant
5. Already used in the air conditioning systems and heat pumps worldwide





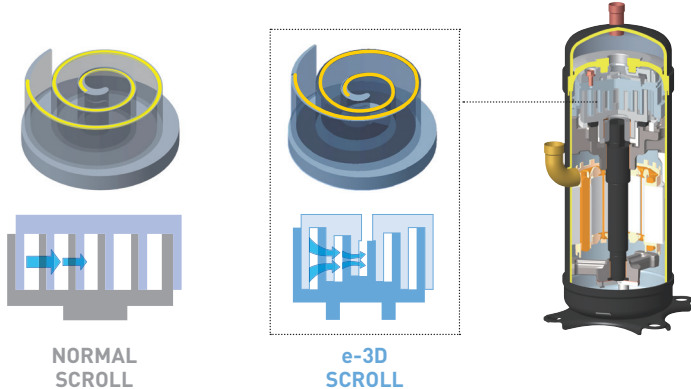
50kW
4.59
SCOP³

50kW
3.47
COP⁴

HIGH EFFICIENCY

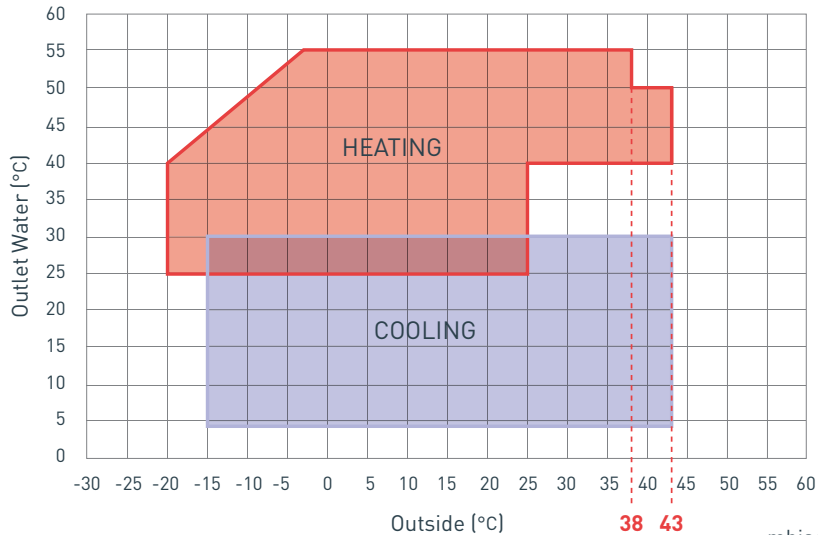
New technology “e-3D scroll” compressor and EC fan for highest efficiency and energy savings.

- Introducing a world-first compression process design
- Enhancing energy efficiency with outstanding low-speed performance
- Significantly boosting compressor efficiency



Applicable to a wide range of applications or cooling & heating operation

- Standard for annual cooling and heating
- Cooling operation under 43°C air inlet

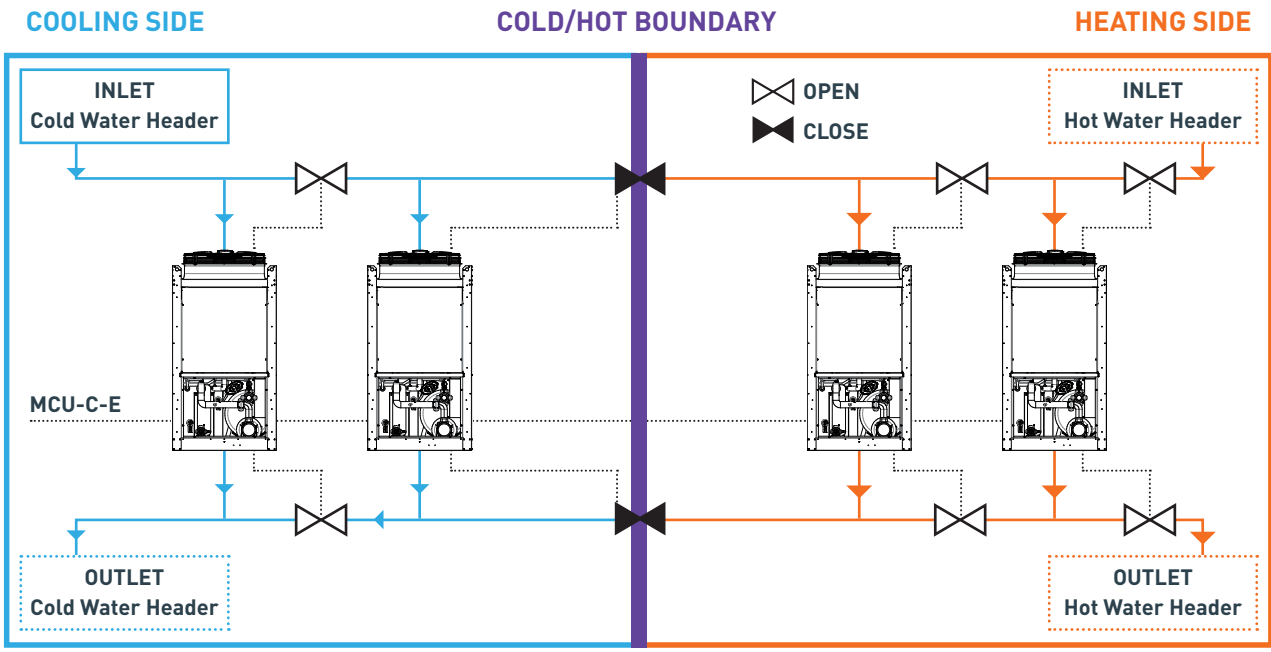


(1) Comparison of GWP between R32 and R410A refrigerants.
 (2) Comparison with MSV which adopts R410A refrigerant manufactured by MHI Thermal Systems.
 (3) SCOP: Seasonal Space Heating Class Average Climate General Water Outlet 35 °C
 (4) Due to planned figures, figures are subject to change.

EASY OPERATION

With the user-friendly remote control (RC-MCU-E), setting adjustments become effortless. The group management controller (MCU-C-E) takes charge of optimizing the operation of units in line with equipment load, and it even enables a cooling/heating mix mode for precise control.

To match the varying seasonal demand for cold and hot water, the system allows for adjustments in the number of cooling and heating units based on the operating season and load. Furthermore, a mixed operation setting for both cooling and heating can be effortlessly configured using the calendar function on the remote control. This feature empowers users to create optimized facility management plans.



Cooling/Heating mix mode can be set according to the season. 6 different patterns for a year can be set by scheduling of the remote control (RC-MCU-E).



Group management controller

Adding a controller allows control of the number of units for both cold and warm.

HEATING
[WINTER]



BEEP!
CHANGE IN

COOLING
[SUMMER]



SPECIFICATION

		Model	50kW MCUS5001VHE-W
Compressor (inverter scroll)			50kW x 1
Cooling Capacity		kW	44.0
Heating Capacity		kW	50.0
Power Input	Cooling	kW	15.1
	Heating	kW	13.5
EER		-	2.91
COP		-	4.07
SEER		-	4.48
Seasonal Space Heating Class	ns	%	180
Average Climate General Water Outlet 35°C	SCOP	-	4.59
	Class	-	A+++
Dimensions	Height	mm	2,186
	Width	mm	1,135
	Length	mm	2,209
Rated Operation	Cooling	°C	12/7
	Heating	°C	40/45
Water Flow Minimum - Maximum		m ³ /h	3.0-13.8
		L/min	50-230
Minimum System Water Volume		L	1276 ⁽¹⁾ /319 ⁽²⁾
Leaving Water Temperature Range	Cooling	°C	4-30
	Heating	°C	25-55
Outdoor Air Temperature Range	Cooling	°C	-15-43
	Heating	°C	-20-43
Refrigerant	Type	-	R32
Acoustic Data	Sound Power	dB(A)	82.5
	Sound Pressure	dB(A)	65.0*

(1) Minimum allowable temperature difference 0.5 deg. (inlet water temp. and set point) for unit to start running.

(2) Minimum allowable temperature difference 2.0 deg. (inlet water temp. and set point) for unit to start running.

SCOP: Seasonal Space Heating Class Average Climate General Water Outlet 35°C

COP Conditions: Cond.40/45°C,air7(6)°C-NET values[EN14511-EN14825]




Values are subject to change

*not certified by Eurovent

Optional accessories

Water pump	Rated output of the motor	kW	LP:0.9/HP:1.8
	Rated operating current	A	LP:1.2/HP:2.2
	Rated unit outside head (at 5°C Difference)	m	LP:17/HP:27
Grill Guards	Upper		GG-T-MCUS
	Lower		GG-B-MCUS

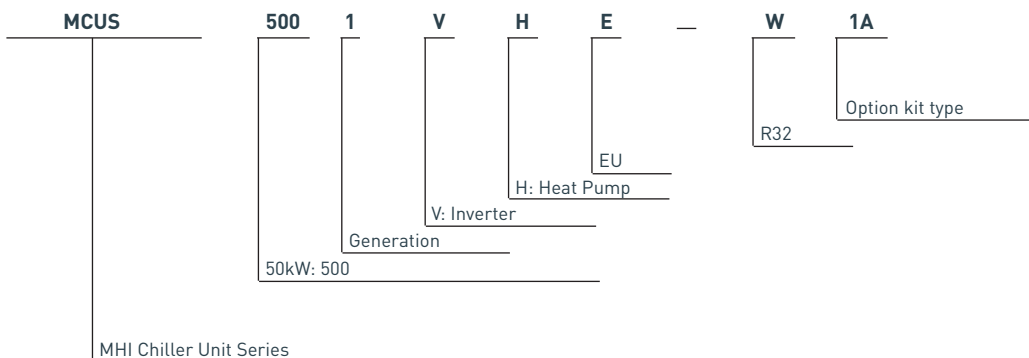
List of models

Heat pump	Standard	50kW		
			Pumpless	MCUS5001VHE-W 
			Built-in LP pump	MCUS5001VHE-W1 
			Built-in LP pump + Expansion Tank	MCUS5001VHE-W1A [†]
			Built-in HP pump	MCUS5001VHE-W2 
			Built-in HP pump + Expansion Tank	MCUS5001VHE-W2A [†]



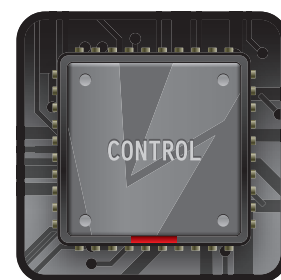
[†]Models not certified by Eurovent

Unit configuration






UNIT & CONTROLLERS



Unit MCUS5001VHE-W

- Achieving the highest levels of efficiency and energy savings.
- "e-3D scroll" compressor significantly improves energy-saving performance at low speed operation.
- Standard for annual cooling and heating.
- Cooling operation under 43°C air inlet.
- Using low GWP refrigerant - R32.
- Cooling/Heating mix mode control possible.
- Operation with glycol available.
- Connectability to  M-ACCESS.
- Availability of our selection software.

Remote control (RC-MCU-E)

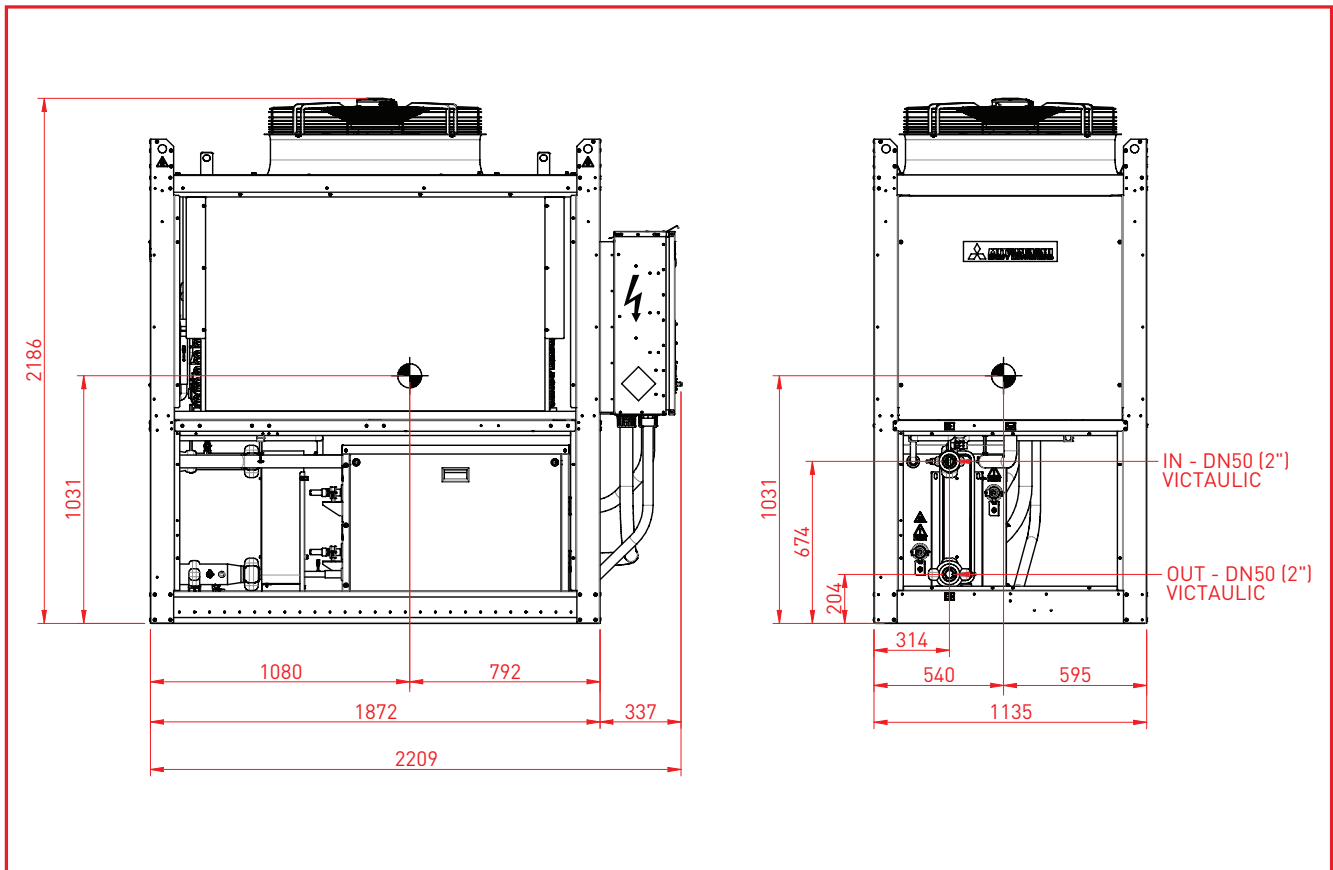
- One remote control (RC-MCU) can be connected to up to 20 units.
- Cooling/Heating mixed mode can be set by a remote control.
- An annual schedule can be set in six different patterns.
- Capacity and COP can be displayed.
- Memorise settings of cooling/heating temperature separately.
- Enable to check the group management controllers Error as well as Error reset.

Group management controller (MCU-C-E)

- The group management controller enables control and leveling operation of 20 units.
- Annual schedule also available via remote control connection.
- Optimally controls the number of units to be operated according to the equipment load.
- Supply pressure is automatically controlled by bypass valve control.
- Cold and hot water pump control to optimize flow rate not only of the primary pump side, but up to the secondary pump side.
- The priority is assigned to the unit, which has less operation time, ensuring the equalization of driving time.

DIMENSIONS

Model MCUS5001VHE-W





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Certified ISO 9001



Mitsubishi Heavy Industries – Mahajak Air Conditioners Co., Ltd. has been certified of Quality Management System in accordance with ISO 9001 by TUV NORD (Thailand) Ltd.

Certified ISO 14001



Mitsubishi Heavy Industries – Mahajak Air Conditioners Co., Ltd. has been certified of Environmental Management System in accordance with ISO 14001 by TUV NORD (Thailand) Ltd



Mitsubishi Heavy Industries Thermal Systems, Ltd. Participate in the Eurovent certification program for Liquid Chilling Packages and Hydronic Heat Pumps (LCP-HP). Check ongoing validity of the certificate: www.eurovent-certification.com

*Models non-certified by Eurovent

