# HYDROLUTION PRO, THE SYSTEM TO HEATING AND COOLING

R32

GWP 675

50 KW

e-3D

NEW COMPRESSOR E-3D SCROLL

# HYDROLUTION PRO HEATING AND COOLING AT MAXIMUM PERFORMANCE

HYDROLUTION PRO is a latest-generation monoblock heat pump, designed for industrial applications.

It is equipped with an advanced compressor and ecological R32 refrigerant, its exceptional performance stands out, significantly reducing the environmental impact compared to traditional systems.

With 5 different versions, it is able to adapt to any type of system, ensuring efficiency and versatility. Its very low R32 charge makes it an ecological and sustainable choice.

## HIGH EFFICIENCY

- Class A+++ in heating with flow water temperature at 35°C.

## ENVIRONMENTALLY RESPONSIBLE

- Ecological, as it guarantees low environmental impact and silent operation.

## TOP EFFICIENCY

- SCOP 4.59 in heating.
- The compressor is designed to be efficient up to -20° C, it is suitable for the coldest climates, in cooling the efficient operation of the machine is guaranteed up to 43°C.

## ADVANTAGES

- Suitable for underfloor heating, fan coil and radiator systems.
- Modular solution up to 1000 kW.
- Long-term reliability.
- When using Hot Water or Q-ton for ACS, possibility of eliminating methane altogether.
- Low management costs.

A+++

With delivery temperature at 35°C

R32

For all power sizes

-20°C

Heating operation up to -20° C

43°C

Delivery water at 4° C up to 43° C external

4,59

SCOP heating



MITSUBISHI HEAVY INDUSTRIES

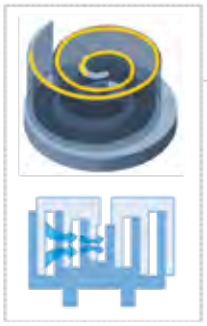
# HYDROLUTION PRO

## New e-3D Scroll compressor

New technology uses EC fan for maximum efficiency and energy saving.

- World-unique compression process design.
- Improved energy efficiency with exceptional low-speed performance.
- Significant increase in compressor efficiency.

NORMAL SCROLL

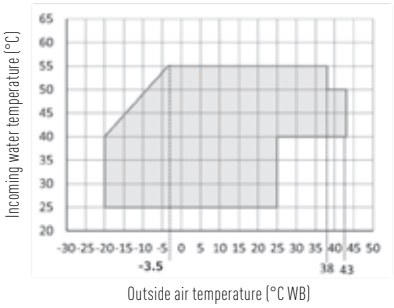


NEW E-3D SCROLL FOR MSV2

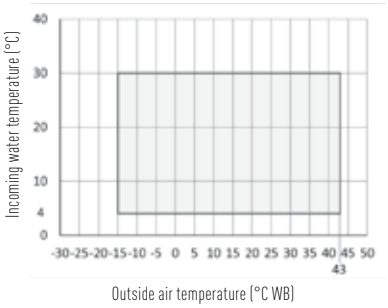
## Wide range of applications

Cooling operation with incoming air at 43° C.

HEATING




COOLING





## REMOTE CONTROL RC-MCU-E

- A wired controller can be connected to up to 20 MCUS, which, with the same operating mode, will work with the same parameters.
- Control of mixed Heating/Cooling operation when there are multiple MCUS connected to the same system.
- It is possible to set a yearly schedule consisting of up to six different patterns.
- It is possible to display capacity and COP.
- Store the cooling/heating temperature settings separately.
- Display and reset the Error log.


## ADVANCED CONTROL MCU-C-E

- Allows control of up to 20 units.
- Optimally controls the number of machines to be used based on the load.
- Management of the bypass valve.
- Allows control of a secondary circulation pump.
- Optimization of compressor hours, the operating priority falls on the machine with the least active working hours. Maximization of the useful life of the components.

# HYDROLUTION PRO

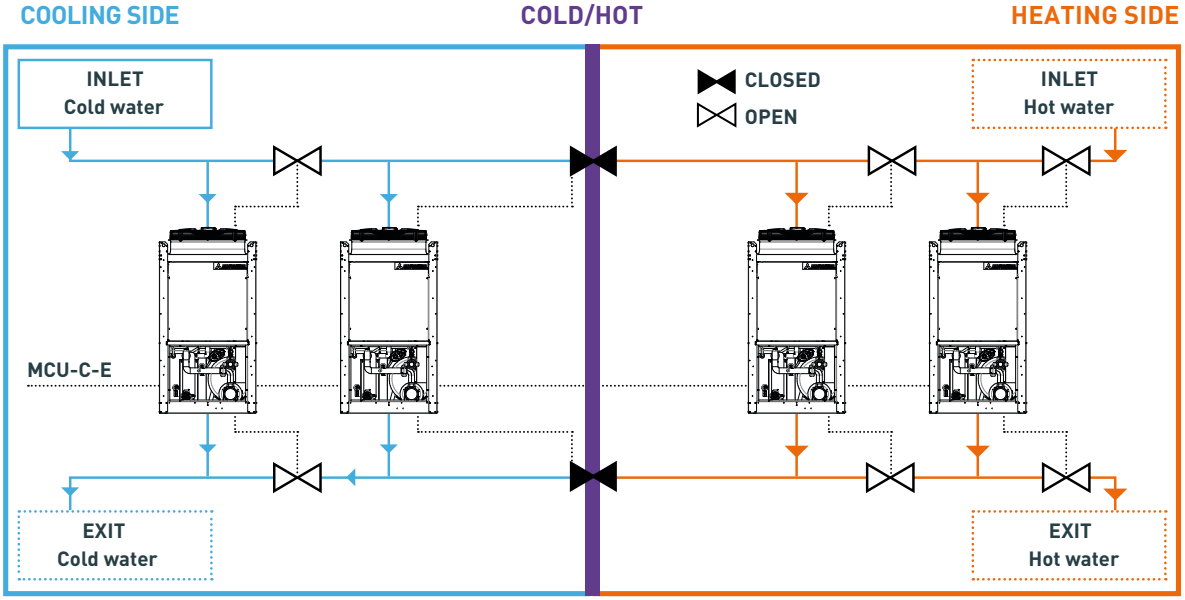
## Easy operation

With the easy-to-use RC-MCU-E wired controller, adjusting settings becomes a breeze. The advanced MCU-C-E control takes care of optimizing unit operation based on load.

To meet the varying seasonal demand for hot and cold water, the system allows the number of cooling and heating units to be adjusted based on the operating season and load. In addition, a mixed operation setting for cooling and heating can be configured effortlessly using the calendar function on the wired controller. This feature allows users to create optimized management plans for facilities.

## Simultaneous heating and cooling

The system allows simultaneous heating and cooling with two-pipe terminals, thanks to advanced programming via the control panel. This allows you to configure and adjust, based on specific needs, the units in hot and/or cold mode within the same system.



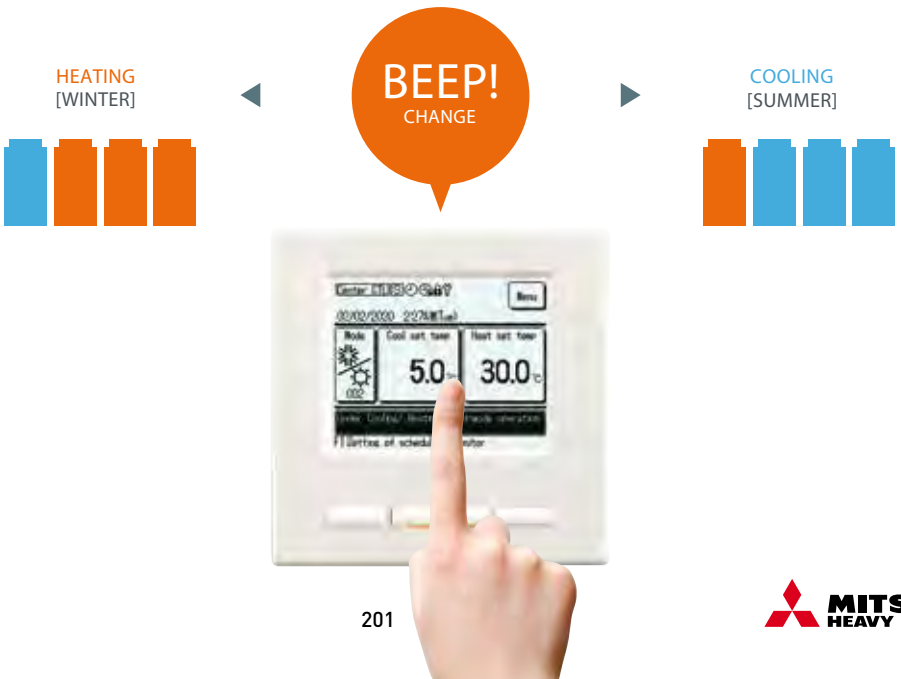

Controller unit (MCU-C-E) manages the units in cooling.

The cooling/heating mixing mode can be set according to the season. 6 different annual patterns can be set by programming the wired controller (RC-MCU-E).

Controller unit (MCU-C-E) manages the units in heating.


### MCU Controller

**By adding an MCU controller, intelligent management of operating hours is possible, so that they balance out across all units in the group.**



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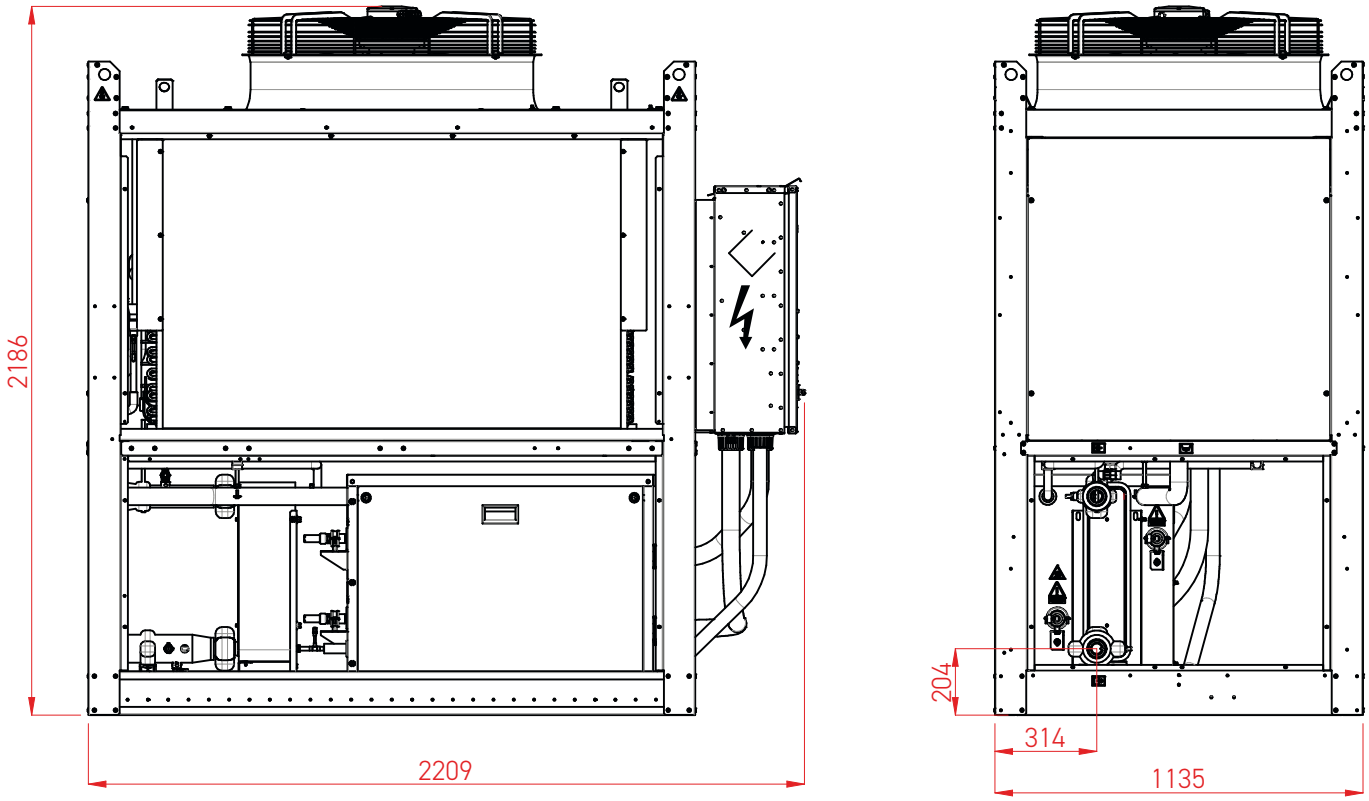
# HYDROLUTION PRO

## MCUS 5001 VHE-W




All measurements are expressed in mm.
The indicated dimensions are valid for all models.

| | | |
|---|---|---|
| **Modelli 50 kW** | MCUS 5001 VHE-W | Without pump |
| | MCUS 5001 VHE-W1 | Integrated LP pump |
| | MCUS 5001 VHE-W1A | Integrated LP pump + buffer tank |
| | MCUS 5001 VHE-W2 | Integrated HP pump |
| | MCUS 5001 VHE-W2A | Integrated HP pump + buffer tank |

| FUNCTIONALITY | APPLICATIONS | ADVANTAGES FOR PROFESSIONALS | ADVANTAGES FOR CUSTOMERS |
|---|---|---|---|
| • underfloor heating<br>• fan coil heating<br>• high efficiency radiator<br>• heating<br>• cooling | • condominium<br>• office building<br>• shopping center | • installation flexibility<br>• low environmental impact<br>• modular solution up to 1000 kW | • very high performance<br>• long-term reliability<br>• when using Hot Water or Q-ton for ACS, possibility of eliminating methane altogether<br>• low management costs |

# HYDROLUTION PRO - DATI TECNICI

## HYDROLUTION PRO

| Outdoor unit model | | | | MCUS 5001 VHE-W |
|---|---|---|---|---|
| Heating | Rated power | A7//W35 | kW | 50.00 |
| | Power input | | | 12.30 |
| | Performance coefficient | | COP | 4.07 |
| | Rated power | A7/W45 | kW | 47.00 |
| | Power input | | | 13.50 |
| | Performance coefficient | | COP | 3.48 |
| Cooling | Rated power | A35//W18 | kW | 50.00 |
| | Power input | | | 12.90 |
| | Energy efficiency | | EER | 3.87 |
| | Rated power | A35//W7 | kW | 44.00 |
| | Power input | | | 15.10 |
| | Energy efficiency | | EER | 2.91 |
| Seasonal data (Heating) | Design load (Pdesignh) @ -10°C | 35/55 | kW | 32.10 |
| | Seasonal energy efficiency (ηs) | | % | 180 |
| | Energy efficiency class | | - | A+++ |
| | Annual energy consumption | | kWh/y | 14439 |
| Operating range | Outdoor air temperature | Heating & DHW | °C | -20~43 |
| | | Cooling | | -15~43 |
| | Delivery water temperature | Heating & DHW | °C | 25~55 |
| | | Cooling | | 4~30 |
| Refrigerant circuit data | Refrigerant type (GWP) | | | R32 (675) |
| | Q.ty of precharge (tons CO2) | | kg (t) | 6.7 (4.523) |
| | Refrigerant control system | | | Electronic expansion valve |
| | Compressore | | type | Scroll / Motore DC |
| Hydraulic data | Water/freon heat exchanger | | type | Braze-welded plates |
| | Water flow rate | Min~Max | m³/h | 3~13.8 |
| | Pressure drops | Cooling | kPa | 37.6 |
| | | Heating | | 44.5 |
| | Water connections | | type | Victaulic |
| | Pipe diameter | In/Out | inch | 2" (DN50) |
| | System water volume | Min | L | 1276 |
| | Operating pressure (system) | Max | bar | 4 |
| Electrical data | Power supply | | V/Ph/Hz | 400/3Ph+N/50 |
| | Maximum current | | A | 33 |
| | Power cable (recommended) | | type | 5x10 mm² |
| Product specifications | Fan | Type | q.ty | Axial / EC Motor |
| | | Air flow | m³/h | 15600 |
| | Sound power level | | dB(A) | 88 |
| | Sound pressure level (a 1 m) | | dB(A) | 68.5 |
| | Dimensions | LxDxH | mm | 2209x1135x2186 |
| | Weight | Net | kg | 531 |
| | Control (included) | | | RC-MCU-E |
| Models with optional parts | With circulation pump | Low prevalence (LP) | | MCUS 5001 VHE-W1 |
| | | High prevalence (HP) | | MCUS 5001 VHE-W2 |
| | With inertial tank1 + pump | Low prevalence (LP) | | MCUS 5001 VHE-W1A |
| | | High prevalence (HP) | | MCUS 5001 VHE-W2A |
| Specifications optional parts | LP pump head | | m | 17 |
| | HP pump head | | m | 27 |
| | Inertial tank volume | | L | 180 |
| | Expansion vessel volume | | L | 8 |

1. Includes expansion vessel.

The data reported above refers to the following standards: EN 14511:2018; EN 14825:2019; EN50564:2011; EN12102-1:2018; EN12102-2:2019; (EU)No:811:2013; (EU)No:813:2013; OJ 2014/C 207/02:2014.