

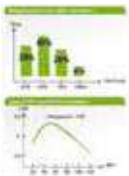
## HYDRA: INVERTER HEAT PUMP



The **HYDRA** heat pump units are particularly suitable for applications using radiant panel heating systems or low temperature applications such as suitably dimensioned fan-coil, thermal ventilation and AHUs for delivery temperatures of 50°C. All versions are fitted with **noiseless EC axial fans** and with **Twin Rotary inverter compressors** that allow complete power management of each component. In fact, the compressor, fan and circulators are continuously regulated by a programmed control unit with an internally developed control logic. It has been designed to be immediately usable and intuitive; it allows the unit to be inserted into a large number of system configurations.

HYDRA units have a vertical powder coated galvanized steel structure. They are characterised by high efficiency with integrated management of the circulator that allows high temperature hot water production with a three-way diverter valve on the boiler and with the option to use an backup electric heater, or alternatively, the integrated management of a circulator and heat exchanger dedicated to DHW production.

### Strengths:



Twin Rotary Inverter technology enables Hydra to regulate power according to actual requirements. This regulation is also used on the fan and circulators to achieve maximum efficiency.



The units can be fitted with a dedicated desuperheater. DHW is produced simultaneously with normal operation, improving the performance of the machine even when operating during the summer. The control unit controls the two circuits by controlling the thermal energy produced with the aim of always providing adequate hot water.



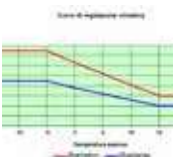
The heat exchangers are made of high quality stainless steel.



Fan and compressor regulation for special installation environments.



Internally programmed, versatile and intuitive controller

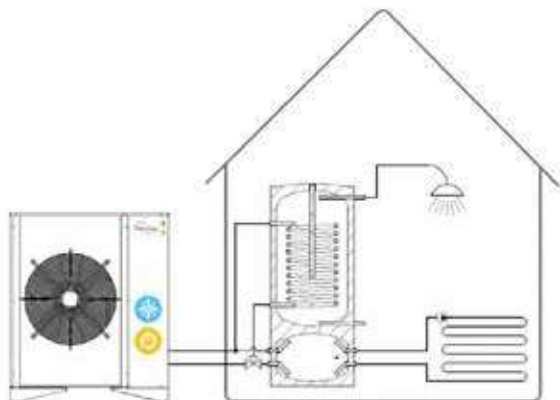


Electronic delivery temperature control via the heating or cooling curve.

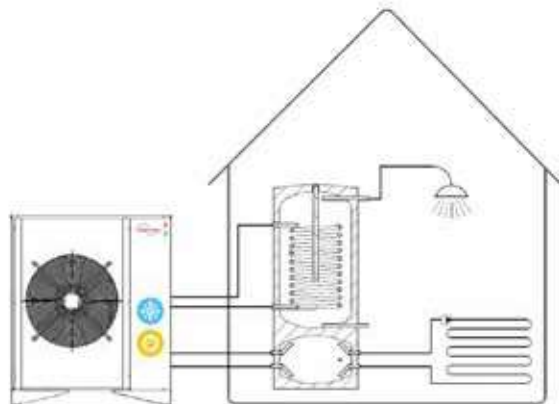
|                       | HYDRA 6 kW   | HYDRA 9 kW   | HYDRA 12 kW  | HYDRA 14 kW   |
|-----------------------|--|--|--|---|
| Operating conditions  | Input / Output / COP (%)   | Input / Output / COP (%)   | Input / Output / COP (%)   | Input / Output / COP (%)  |
| A-8 / W35             | 0.5 / 1.4 / 2.7 (33%)<br>1.0 / 2.8 / 2.8 (66%)<br>1.5 / 4.1 / 2.7 (100%) | 1.0 / 2.7 / 2.7 (33%)<br>2.0 / 5.6 / 2.8 (66%)<br>3.0 / 8.1 / 2.7 (100%)   | 1.2 / 3.4 / 2.8 (33%)<br>2.4 / 7.0 / 2.9 (66%)<br>3.2 / 9.0 / 2.8 (100%)   | 2.1 / 6.1 / 2.9 (33%)<br>3.1 / 9.3 / 3.0 (66%)<br>4.7 / 13.6 / 2.9 (100%)   |
| A-5 / W35             | 0.5 / 1.5 / 3.0 (33%)<br>1.0 / 3.1 / 3.1 (66%)<br>1.5 / 4.5 / 3.0 (100%) | 1.0 / 3.0 / 3.0 (33%)<br>2.0 / 6.2 / 3.1 (66%)<br>3.0 / 9.0 / 3.0 (100%)   | 1.2 / 3.7 / 3.1 (33%)<br>2.4 / 7.7 / 3.2 (66%)<br>3.2 / 9.9 / 3.1 (100%)   | 2.1 / 6.7 / 3.2 (33%)<br>3.1 / 10.2 / 3.3 (66%)<br>4.7 / 15.0 / 3.2 (100%)  |
| A2 / W35              | 0.5 / 1.8 / 3.6 (33%)<br>1.0 / 3.7 / 3.7 (66%)<br>1.5 / 5.4 / 3.6 (100%) | 1.0 / 3.6 / 3.6 (33%)<br>2.0 / 7.4 / 3.7 (66%)<br>3.0 / 10.8 / 3.6 (100%)  | 1.2 / 4.4 / 3.7 (33%)<br>2.4 / 9.1 / 3.8 (66%)<br>3.2 / 11.8 / 3.7 (100%)  | 2.1 / 8.0 / 3.8 (33%)<br>3.1 / 12.1 / 3.9 (66%)<br>4.7 / 17.9 / 3.8 (100%)  |
| A7 / W35              | 0.5 / 2.1 / 4.1 (33%)<br>1.0 / 4.2 / 4.2 (66%)<br>1.5 / 6.2 / 4.1 (100%) | 1.0 / 4.1 / 4.1 (33%)<br>2.0 / 8.4 / 4.2 (66%)<br>3.0 / 12.3 / 4.1 (100%)  | 1.2 / 5.0 / 4.2 (33%)<br>2.4 / 10.3 / 4.3 (66%)<br>3.2 / 13.4 / 4.2 (100%) | 2.1 / 9.0 / 4.3 (33%)<br>3.1 / 13.6 / 4.4 (66%)<br>4.7 / 20.2 / 4.3 (100%)  |
| A12 / W35             | 0.5 / 2.4 / 4.7 (33%)<br>1.0 / 4.8 / 4.8 (66%)<br>1.5 / 7.1 / 4.7 (100%) | 1.0 / 5.1 / 5.1 (33%)<br>2.0 / 10.4 / 5.2 (66%)<br>3.0 / 15.3 / 5.1 (100%) | 1.2 / 6.2 / 5.2 (33%)<br>2.4 / 12.7 / 5.3 (66%)<br>3.2 / 16.6 / 5.2 (100%) | 2.1 / 10.9 / 5.2 (33%)<br>3.1 / 16.4 / 5.3 (66%)<br>4.7 / 24.4 / 5.2 (100%) |
| A-5 / W50             | 0.7 / 1.1 / 1.5 (33%)<br>1.3 / 2.4 / 1.6 (66%)<br>2.0 / 3.0 / 1.5 (100%) | 1.1 / 1.8 / 1.6 (33%)<br>2.4 / 4.1 / 1.7 (66%)<br>3.7 / 6.0 / 1.6 (100%)   | 1.4 / 2.2 / 1.6 (33%)<br>2.9 / 4.9 / 1.7 (66%)<br>4.1 / 6.6 / 1.6 (100%)   | 2.4 / 4.1 / 1.7 (33%)<br>3.6 / 6.5 / 1.8 (66%)<br>5.5 / 9.4 / 1.7 (100%)    |
| A2 / W50              | 0.7 / 1.5 / 2.1 (33%)<br>1.3 / 2.9 / 2.2 (66%)<br>2.0 / 4.2 / 2.1 (100%) | 1.2 / 2.5 / 2.1 (33%)<br>2.5 / 5.5 / 2.2 (66%)<br>3.8 / 8.0 / 2.1 (100%)   | 1.5 / 3.3 / 2.2 (33%)<br>3.0 / 6.9 / 2.3 (66%)<br>4.2 / 9.2 / 2.2 (100%)   | 2.5 / 5.8 / 2.3 (33%)<br>3.7 / 8.9 / 2.4 (66%)<br>5.6 / 12.9 / 2.3 (100%)   |
| A7 / W50              | 0.8 / 2.1 / 2.6 (33%)<br>1.4 / 3.8 / 2.7 (66%)<br>2.1 / 5.5 / 2.6 (100%) | 1.3 / 3.4 / 2.6 (33%)<br>2.6 / 7.0 / 2.7 (66%)<br>3.9 / 10.1 / 2.6 (100%)  | 1.6 / 4.3 / 2.7 (33%)<br>3.2 / 9.0 / 2.8 (66%)<br>4.3 / 11.6 / 2.7 (100%)  | 2.6 / 7.3 / 2.8 (33%)<br>3.9 / 11.3 / 2.9 (66%)<br>5.8 / 16.2 / 2.8 (100%)  |
| A12 / W50             | 0.9 / 2.9 / 3.2 (33%)<br>1.5 / 4.6 / 3.3 (66%)<br>2.3 / 7.4 / 3.2 (100%) | 1.4 / 5.0 / 3.6 (33%)<br>2.7 / 10.0 / 3.7 (66%)<br>4.1 / 14.8 / 3.6 (100%) | 1.7 / 6.3 / 3.7 (33%)<br>3.4 / 13.0 / 3.8 (66%)<br>4.5 / 16.7 / 3.7 (100%) | 2.8 / 10.9 / 3.9 (33%)<br>4.1 / 16.4 / 4.0 (66%)<br>6.0 / 23.4 / 3.9 (100%) |
| A35 / W12 (EER)       | 1.2 / 4.6 / 3.8 (66%)<br>2.0 / 6.9 / 3.5 (100%)                          | 2.0 / 8.0 / 4.0 (66%)<br>2.8 / 10.9 / 3.9 (100%)                           | 2.5 / 10.5 / 4.2 (66%)<br>3.6 / 14.8 / 4.1 (100%)                          | 3.6 / 14.8 / 4.1 (66%)<br>6.0 / 22.2 / 3.7 (100%)                           |
| Supply                | 230/50/1+N   | 230/50/1+N   | 230/50/1+N   | 400/50/3+N  |
| operating limits      | 15 rps - 120 rps   |  | 15 rps - 100 rps   |   |
| Refrigerant           | R410a  |  |  |   |
| Sound power           | 55 dB (A)  | 58 dB (A)  | 60 dB (A)  | 62 dB (A)   |
| Sound pressure at 1 m | 47 dB (A)  | 50 dB (A)  | 52 dB (A)  | 54 dB (A)   |

|                             |                   | HYDRA 6 kW                         | HYDRA 9 kW                         | HYDRA 12 kW                        | HYDRA 14 kW                        |
|-----------------------------|-------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|
| Supply                      | V/Hz/Ph           | 230/50/1+N                         | 230/50/1+N                         | 230/50/1+N                         | 400/50/3+N                         |
| Compressor type             |                   | ROTARY BLDC                        | ROTARY BLDC                        | ROTARY BLDC                        | ROTARY BLDC                        |
| Number of compressors       | No.               | 1                                  | 1                                  | 1                                  | 1                                  |
| Power modulation            | %                 | 20 to 100                          | 20 to 100                          | 20 to 100                          | 20 to 100                          |
| Refrigerating circuits      | No.               | 1                                  | 1                                  | 1                                  | 1                                  |
| Coolant load (R410a)        | Kg                | 1.8                                | 3.0                                | 4.2                                | 5.2                                |
| Freon-Water exchanger type  |                   | Braze welded plate                 | Braze welded plate                 | Braze welded plate                 | Braze welded plate                 |
| Freon-Air exchanger type    |                   | Finned coil hydrophilic copper/Alu | Finned coil hydrophilic copper/Alu | Finned coil hydrophilic copper/Alu | Finned coil hydrophilic copper/Alu |
| Number of exchangers        | No.               | 1                                  | 1                                  | 1                                  | 1                                  |
| Water flow rate (system)    | l/hr              | 1200                               | 1650                               | 2200                               | 2500                               |
| Max. temperature (system)   | °C                | 53                                 | 53                                 | 53                                 | 53                                 |
| Water connections (system)  |                   | 1 1/4" F                           | 1 1/4" F                           | 1 1/4" F                           | 1 1/4" F                           |
| Maximum pressure water-side | kPa               | 550                                | 550                                | 550                                | 550                                |
| Storage capacity (system)   | Litres            | -                                  | -                                  | -                                  | -                                  |
| System expansion vessel     | Litres            | -                                  | -                                  | -                                  | -                                  |
| Fan type                    |                   | Axial                              | Axial                              | Axial                              | Axial                              |
| Air flow rate               | m <sup>3</sup> /h | 0-3400                             | 0-4000                             | 0-5000                             | 0-5800                             |
| Input power                 | W                 | 0-135                              | 0-160                              | 0-200                              | 0-230                              |

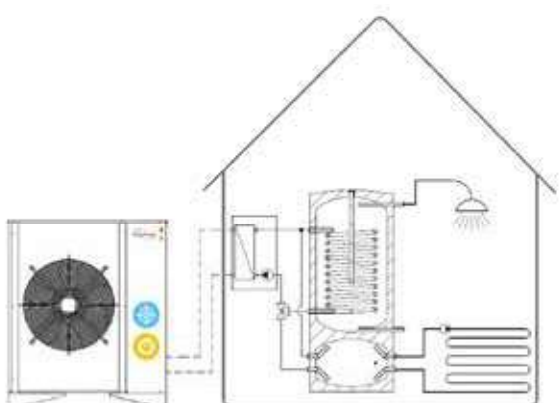
HYDRA - 2 TUBE VERSION



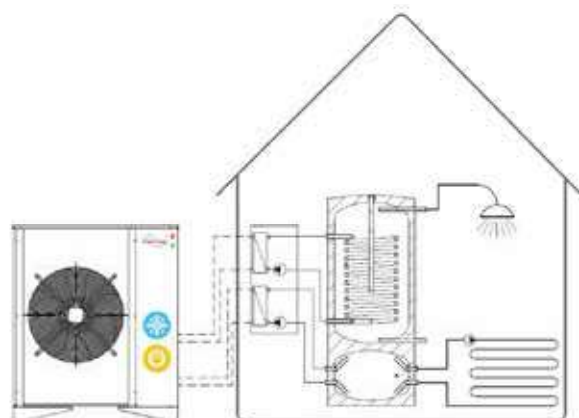
HYDRA - 4 TUBE VERSION



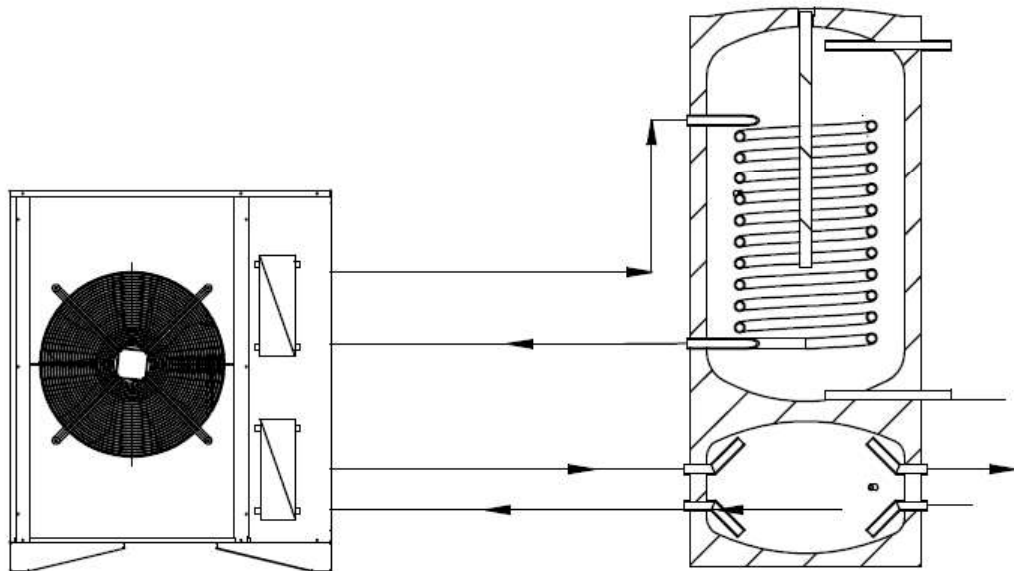
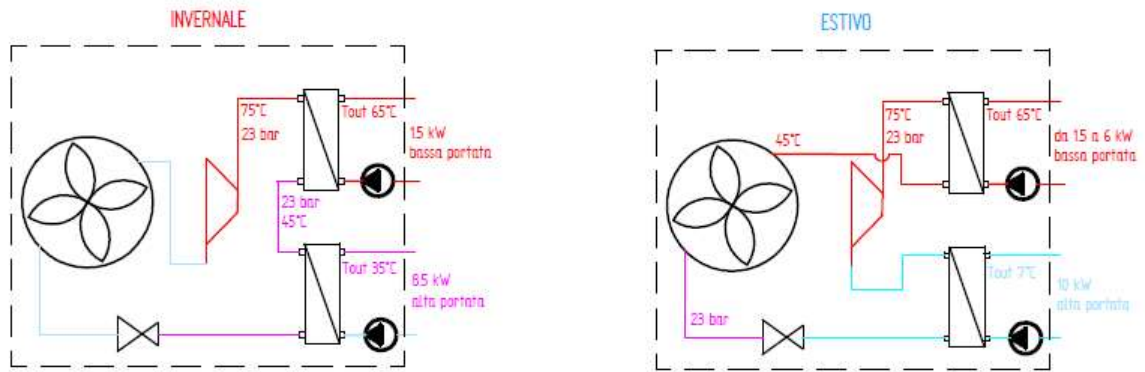
HYDRA - 2 TUBE SPLIT VERSION

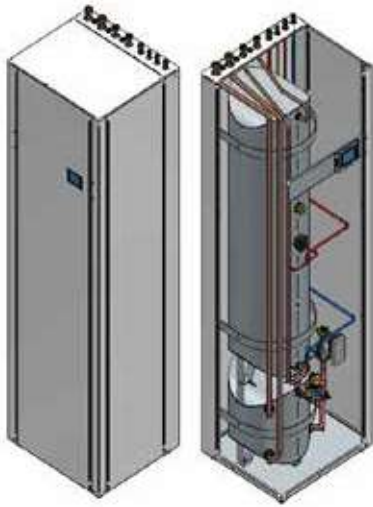


HYDRA - 4 TUBE SPLIT VERSION



## FUNCTIONAL DIAGRAM





### HYDRA SPLIT 4T - 150 DHW

Domestic hot water first of all!

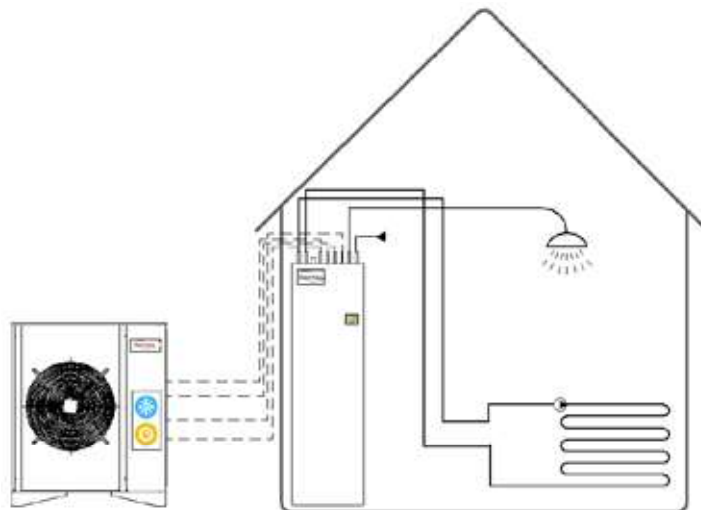
The Hydra split4T heat pump is the only one of its kind. Thermics's objective is to always ensure maximum DHW comfort at the lowest possible cost.

Hot exhaust gas from the compressor is always used to produce heat recovery DHW, both in winter and summer.

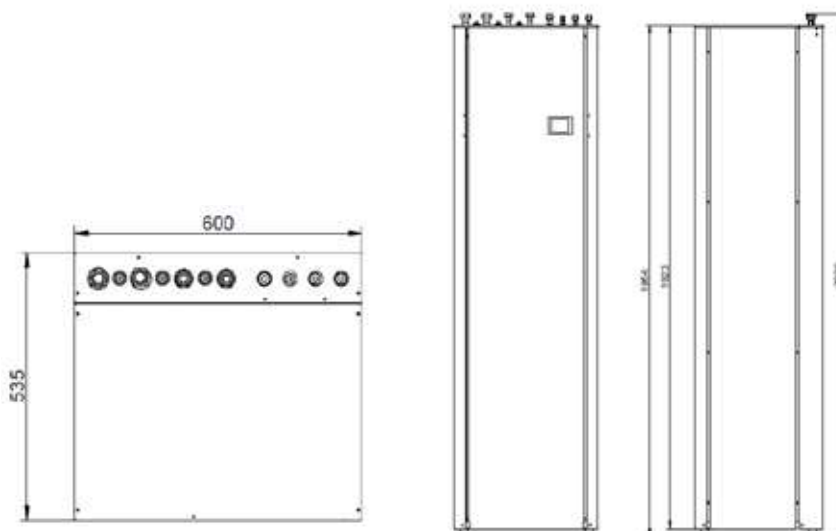
The indoor unit is composed of:

- 150 litre DHW stainless-steel storage tank with stainless-steel condenser / desuperheater
- 40 litre stainless-steel buffer tank for heating system
- Filling circulator for 40 litre storage tank
- Safety unit
- Plate type gas-water condenser
- Evco Vcolor touch-screen control unit

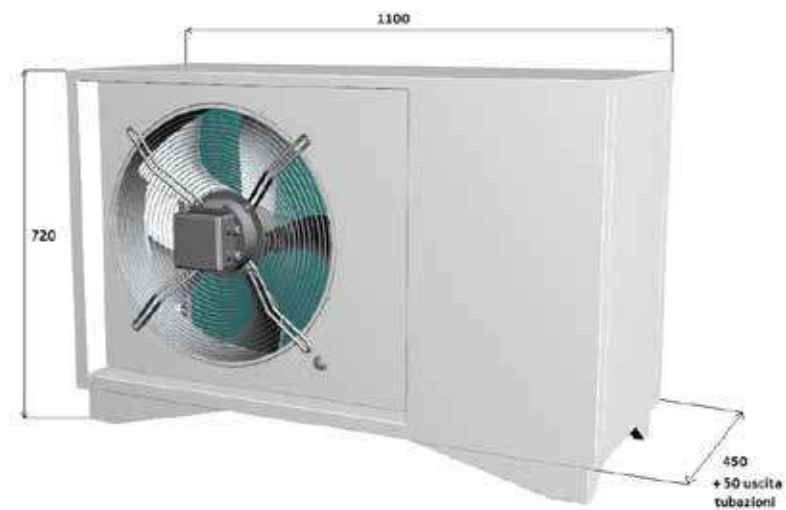
### HYDRA SPLIT 4T - 150 DHW



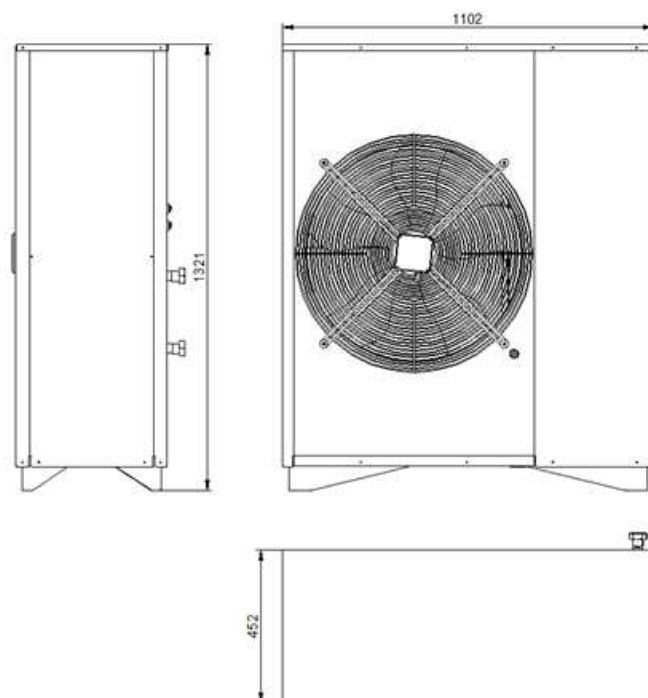
### DIMENSIONS HYDRA 4T-SPLIT - 150DHW



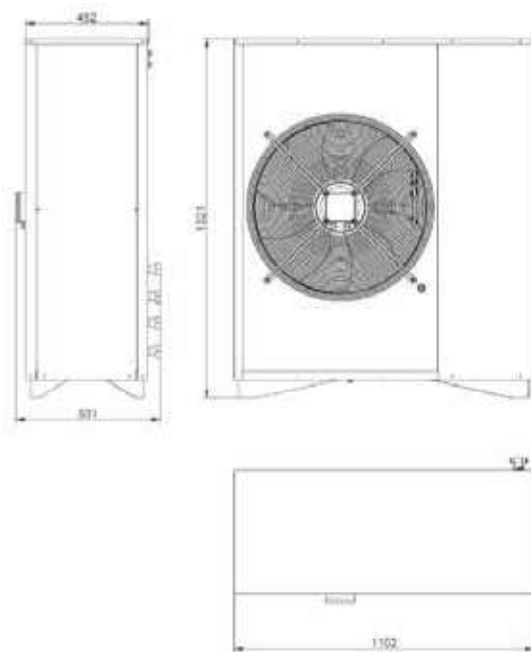
## DIMENSIONS HYDRA 6



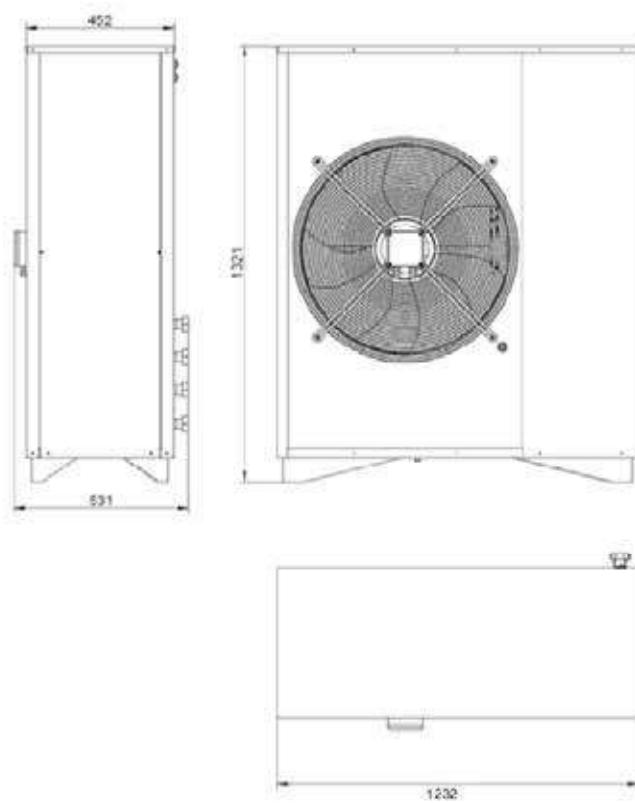
## DIMENSIONS HYDRA 9 - 2T



### DIMENSIONS HYDRA 9 - 4T



### DIMENSIONS HYDRA 12/14 - 4T





## SPECIFICATION

### Technical specifications

Compact air-water heat pump for outdoor installation with EC axial fan and Twin Rotary Inverter compressor, with a cutting-edge design and high COP.

The heat source is the outside air down to a minimum of -10°C. Low noise is guaranteed by an intelligent control system that regulates the speed of the compressor and fan according to actual requirements. In addition, the use of anti-vibration mountings for the compressor and multi-layer noise insulation on the cover mean that high levels of noise reduction are obtained.

### Controller

The control unit consists of an Evco unit and can be combined with a highly intuitive touch-screen controller with which all the operating parameters, set points and usage settings can be controlled. The controller allows direct connection to the heating system with or without a storage tank, or more commonly, by connecting the latter to the heating system at two or four points. The storage tank charge can be at a set point for DHW and with a heating or cooling curve as regards heating / cooling. Other possible auxiliary controls:

- Auxiliary electric heaters in the circuit or storage tank.
- Auxiliary external sources (existing gas, electric and other boilers)
- Input for activating a second set point if low-cost energy is available (e.g. from photovoltaic inverters)
- Option of controlling a 3-way valve, recirculation pump or transfer pump.

The units can have either 2 or 4 tubes, the latter can control a high and low temperature circuit simultaneously. In summer mode, the high temperature heat exchanger will operate as a desuperheater, improving the overall performance and producing hot water by recovering energy that would otherwise not be utilised. The speed of the compressor, fan and circulators is continuously regulated by the control unit.

### Construction details

The units are made of powder coated hot-dip galvanized sheet metal and have a high resistance to weathering, the structure is self-supporting with removable panels to make inspection and maintenance easier.

### Cooling circuit

The refrigerant gas used is R410A. The unit is fitted with inspection ports to enable technicians to check that the cooling circuit is operating correctly.

### Heat exchangers

The source side heat exchangers are made of copper tubes and aluminium fins painted with hydrophilic paint that encourages water run-off. The user side braze-welded plate exchanger allows the amount of refrigerant gas to be reduced to the minimum, maximizing efficiency through the large heat exchange surface.

### Fan

The EC brushless axial fan has been designed to minimize noise. The rotation speed is continuously regulated by the control unit.

### Control and protection

The unit is provided with a series of alarms to protect it from possible faults. These are managed entirely by the control unit that makes them available and accessible. It is also possible to access the controller via the control unit if you need to make any adjustments.

### Testing

All units are fully assembled and wired at the factory, they undergo a leak test, vacuum cycle, and are filled with an eco-friendly refrigerant. They undergo a complete functional test before being shipped. All units comply with European Directives and have a CE marking and relative certificate of conformity.

| CODE       | PRODUCT   | PRICE (€) |
|------------|---|-----------|
| 8TAC00520  | HYDRA heat pump - 6 kW - inverter - 230 - H/C                   | 5,012.00  |
| 8TAC00522  | HYDRA heat pump - 6 kW 4T - inverter - 230 - H/C                | 6,510.00  |
| 8TAC00524  | HYDRA heat pump - 6 kW SPLIT - inverter - 230 - H/C             | 6,150.00  |
| 8TAC00526  | HYDRA heat pump - 6 kW 4T SPLIT - inverter - 230 - H/C          | 7,350.00  |
| 8TAC00530  | HYDRA heat pump - 9 kW - inverter - 230 - H/C                   | 6,496.00  |
| 8TAC00532  | HYDRA heat pump - 9 kW 4T - inverter - 230 - H/C                | 7,975.00  |
| 8TAC00534  | HYDRA heat pump - 9 kW SPLIT - inverter - 230 - H/C             | 7,482.00  |
| 8TAC00536  | HYDRA heat pump - 9 kW 4T SPLIT - inverter - 230 - H/C          | 8,758.00  |
| 8TAC00537  | HYDRA heat pump - 9 kW 4T SPLIT-DHW150 - inverter - 230 - H/C   | 9,686.00  |
| 8TAC00557  | HYDRA heat pump - 12 kW 4T SPLIT -DHW150 - inverter - 230 - H/C | 11,643.81 |
| 8TAC00539  | HYDRA heat pump - 12 kW 4T - inverter - 230 - H/C               | 8,265.00  |
| 8TAC00540  | HYDRA heat pump - 14 kW - inverter - 400 - H/C                  | 8,642.00  |
| 8TAC00542  | HYDRA heat pump - 14 kW 4T - inverter - 400 - H/C               | 10,063.00 |
| 8TAC00544  | HYDRA heat pump - 14 kW SPLIT - inverter - 400 - H/C            | 9,425.00  |
| 8TAC00546  | HYDRA heat pump - 14 kW 4T SPLIT - inverter - 400 - H/C         | 10,817.00 |
| 8TAC00547  | HYDRA heat pump - 14 kW 4T SPLIT -DHW150 - inverter - 400 - H/C | 12,006.42 |
| 8TAC00560  | HYDRA heat pump - 22 kW 2T - inverter - 400 - H/C               | POA       |
| 8TAC00650  | HYDRA heat pump - 30 kW 4T - inverter - 400V - H/C              | POA       |
| 8TAC00675  | HYDRA heat pump - 55 kW 2T - inverter - 400 - H/C               | POA       |
| 6TAC00036* | Heat pump commissioning and testing - HYDRA / INTEGRA           | 115.00    |

\* The prices shown are net and exclusive of VAT.

System commissioning and start-up will be carried out by Thermics Energie authorised technical support centres.