AQUAPUMP HYBRID is a packaged unit for outdoor installation, designed for hot or cold water production from renewable energy sources, for the application of industrial and commercial buildings.

The research that led to the development of AquaPump Hybrid project was aimed towards the study of an integrated regulation which ensure the contribution of renewable energy as long as the working conditions are conducive to energy saving and cost-effectiveness, ensuring the intake of hot water in continuous, even at very low outside temperatures, through the last generation high performance boiler.

The adjustment flexibility of the system allows the use of this technology for both high or medium/low temperature systems.

In the case of high temperature equipment, it is designed an aerotherm to combine with the Hybrid system characterized by high exchange surfaces with high-performance batteries, double fan with automatic speed control, brushless DC motor and condensation tray for use in cooling.

The development of an outdoor monobloc product, plug and play with integrated regulation ensures convenience and ease of installation by the installer with a substantial saving in terms of costs for the end user and also in terms of time for the installer himself.

High Energy Efficiency.

Energy class A++, in compliance with UE ECOLABEL 811/2013 rules, results from adding efficiencies of condensation boiler of the latest generation, of heat pump with inverter, and of Smart Easy or Smart Web remote controls. Global efficiency of the system is shown on final label.
Hybrid Integrated System

This system integrates the high efficiency of condensing technology (from 34 kW boiler with premix burner modulating class NOx emission n. 6 stars compliant with EN 15502-1 regulations) with the performance of a heat pump air-water generation with latest inverter technology from 14 Heating kW and 12 kW in cooling.

Domains of Application

AquaPump Hybrid includes several features that make it perfectly and efficiently be used in multiple domains, assuring top temperature comfort both in winter and in summer when installed with traditional or last generation terminals.

Small Size, High Capacity

The integrated compact unit (boiler + heat pump) is the same size as a heat pump. The inverter technology and a new generation of compressors and fans, stemming from most recent research work by leading manufacturers, assure unprecedented levels of silent operation.
AQUAPUMP HYBRID: One Package

This packaged system, formed by a condensation boiler and an hydronic heat pump with inverter (pre-assembled with a sealed and tested R410A cooling circuit) is managed through a Smart Easy or Smart Web Control. These controls prioritize air-water heat pump operation. Condensation boiler automatically triggers on only when temperature conditions around the system do not allow optimum exploitation of renewable energy sources or when the output required from the system is higher than the output efficiency of the heat pump.

Modulation of operation capacity of both systems is adjusted so that priority is always given to the heat pump. Each system has its own adjustment curve and different set points for delivery, according to the working mode you have chosen.

In order to maximize heat pump performance, you can choose to enable maximum energy savings, setting an outdoor temperature limit (+3°C, for instance) below which heat pump is turned off.

In systems where electric power comes from renewable sources (photovoltaic), the heat pump can work at lower outdoor temperatures (even below 0°C) provided and anti-freeze kit is installed.
AQUAPUMP HYBRID is plug and play: it includes self-regulating features that make it simple and easy to install.

Installer’s work is eased since the unit is preassembled, pre-adjusted, and values are already set.

You only need to have water intake and delivery connected to hydraulic system, as well as gas and power supplies enabled. Then, just plug it in!

**Advanced Control with Touch Screen SMART System**

Smart Easy (standard) or Smart Web (upon request) remote controls with touch screen work as stand-alone chronothermostats (when a thermoventilation unit is installed).

They include a control for hot domestic water if a tank is installed.

Connection is simple and requires two polarized cables. The remote control can be recessed into the wall or hanged on it. You can install up to three remote sensors in addition to the one in the remote control.

Use is easy, with a 4.3” color display and an intuitive administration menu.

User program is available in 9 languages.

Ease of installation, clear and intuitive administration menu, four temperature value readings in the controlled area make these chronothermostats versatile and suitable to different installation types and needs.
Technical features

Condensing Boiler:
- Premix burner with low NOx emissions, class 6, complaint with EN15502-1 norm;
- Heat Exchanger in Low-Carbon Stainless Steel;
- Seal Combustion Chamber
- Forced discharge.
- Integrated condensate drain;
- Control and safety equipment.
- Electronic ignition;
- Electronic device and Self-testing Microprocessor controlling all commands and burner test

Heating Pump and Inverter:
- Fan’s motor DC inverter;
- Twin Rotary compressor DC inverter with permanent magnets;
- Cooling gas R410A;
- Source exchanger with coil made with copper tubes and aluminium hydrophilic-treated flaps.

Hydraulic System:
- Manometer for equipment pressure control
- NTC sensors for water temperature regulation;
- Thermometer for hydraulic circuit temperature control.
- Flow meter to measure water flow rate in the system;
- Brushless circulator with variable-displacement CC motor and built-in automatic air separator;
- Safety thermostat (90°C)
- System safety valve (3 bar).
- IPX5D protection degree.
- Expansion tank (8 l).
System Layouts
## Technical Data

### Heat Pump

<table>
<thead>
<tr>
<th></th>
<th>Heating</th>
<th>Conditioning</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Output power</strong></td>
<td>kW</td>
<td>kW</td>
</tr>
<tr>
<td>(MIN-MAX)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>COP</td>
<td>W/W</td>
<td></td>
</tr>
<tr>
<td>COP$_1$</td>
<td>4,3</td>
<td></td>
</tr>
<tr>
<td>COP$_2$</td>
<td>3,35</td>
<td></td>
</tr>
<tr>
<td><strong>Output power</strong></td>
<td>kW</td>
<td>kW</td>
</tr>
<tr>
<td>$_1$</td>
<td>14,90</td>
<td>15,20</td>
</tr>
<tr>
<td>COP$_1$</td>
<td>W/W</td>
<td></td>
</tr>
<tr>
<td>COP$_2$</td>
<td>4,70</td>
<td></td>
</tr>
<tr>
<td><strong>Output power</strong></td>
<td>kW</td>
<td>kW</td>
</tr>
<tr>
<td>$_2$</td>
<td>3,15</td>
<td>3,35</td>
</tr>
<tr>
<td><strong>COP</strong></td>
<td>W/W</td>
<td></td>
</tr>
</tbody>
</table>

### Boiler

<table>
<thead>
<tr>
<th></th>
<th>Furnace output power [MIN-MAX] kW</th>
<th>Output power$_3$ [min-max] kW</th>
<th>Efficiency$_5$ %</th>
<th>Output power$_4$ [min-max] kW</th>
<th>Efficiency$_6$ %</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>8,0 - 34,8</td>
<td>8,6 - 36,8</td>
<td>106,9 - 105,9</td>
<td>8,5 - 36,2</td>
<td>106,3 - 103,9</td>
</tr>
</tbody>
</table>

### General Data

<table>
<thead>
<tr>
<th></th>
<th>Power supply V/Hz/F</th>
<th>Power input $^7$ kW</th>
<th>Absorbed max current $^8$ A</th>
<th>Gas supply fitting $^9$ Ø 3/4” M</th>
<th>Hydraulics system fitting $^9$ Ø 1” M</th>
<th>Sound pressure$^a$ dbA</th>
<th>Weight $^a$ kg</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>230/50/1F</td>
<td>7,7</td>
<td>32,8</td>
<td>10,9</td>
<td>3/4” M</td>
<td>57,5</td>
<td>165</td>
</tr>
</tbody>
</table>

5. Calculated on LHV with water at 50/30°C;
6. Calculated on LHV with water at 60/35°C;
7. Outdoor air temp. 7°C D.B.T./6°C W.B.T.; water temp. heat pump in/out 30/35°C;
8. Average sound pressure level in free field at 1 m from appliance according to ISO 3744.

### Dimensions

<table>
<thead>
<tr>
<th>Model</th>
<th>Width $^b$ mm</th>
<th>Height $^b$ mm</th>
<th>Depth $^b$ mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>AB018IT-00H0</td>
<td>765</td>
<td>730</td>
<td>595</td>
</tr>
<tr>
<td>AB034IT-00H0</td>
<td>1,390</td>
<td>730</td>
<td>595</td>
</tr>
</tbody>
</table>

1. Outdoor air temp. 7°C D.B.T./6°C W.B.T.; water temp. in/out 30/35°C;
2. Outdoor air temp. 7°C D.B.T./6°C W.B.T.; water temp. in/out 40/45°C;
3. Outdoor air temp. 35°C temp. water in/out 23/18°C;
4. Outdoor air temp. 35°C temp. water in/out 12/7°C;