



## MAGIS VICTRIX

Condensing wall-hung  
combi boiler  
for hybrid systems





# MAGIS VICTRIX

Condensing wall-hung combi boiler with standard electronics for coupling with AUDAX heat pumps

MAGIS VICTRIX offers an excellent performance as a condensing wall-hung combi boiler but also as the **heart of a hybrid system for heating and cooling** with 6, 8, 10 kW single-phase heat pumps and for producing domestic hot water with solar thermal system. The hydraulic manifold and standard electronic control system are designed for easy coupling with sources of renewable energy.

This makes MAGIS VICTRIX in line with the latest European regulations on the reduction of energy consumption and the **ideal solution for the installation** of integrated heating, cooling and domestic hot water systems **in new homes**. When coupled with heat pumps, MAGIS VICTRIX can also use the electrical energy produced by the photovoltaic system, besides reducing power consumption by the AUDAX heat pumps and pollutant emissions.



## HIGH TECHNOLOGY AND SUPPORT FOR PROFESSIONAL

To provide professionals with all the information they need and help them get the most out of the new MAGIS VICTRIX solutions, Immergas offers the assistance of a team of experts to supply technical and regulatory advice for the study and installation of hydraulic and electrical systems.

The advice is complete and covers every aspect from quotation to system design, from installation to regular maintenance over subsequent years.



## IMPORTANT EUROPEAN REGULATIONS FOR ALL APPLICATIONS

Reducing use of fossil energy and increasing the use of renewable sources are two priorities of the European Community. The **RES (Renewable Energy Sources) directive** on the **promotion of the use of energy from renewable sources** requires all European states to adapt their regulations in order to achieve these objectives.

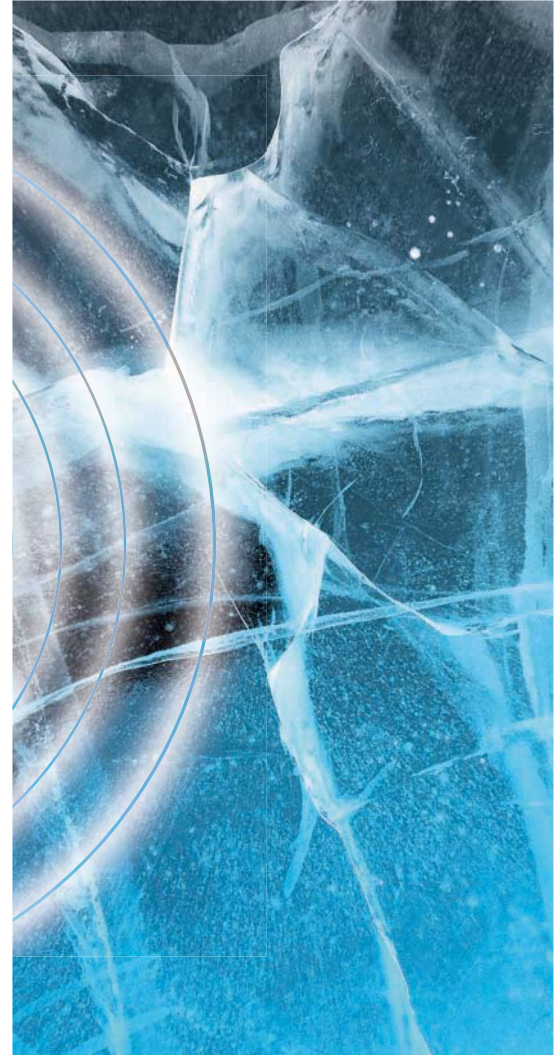
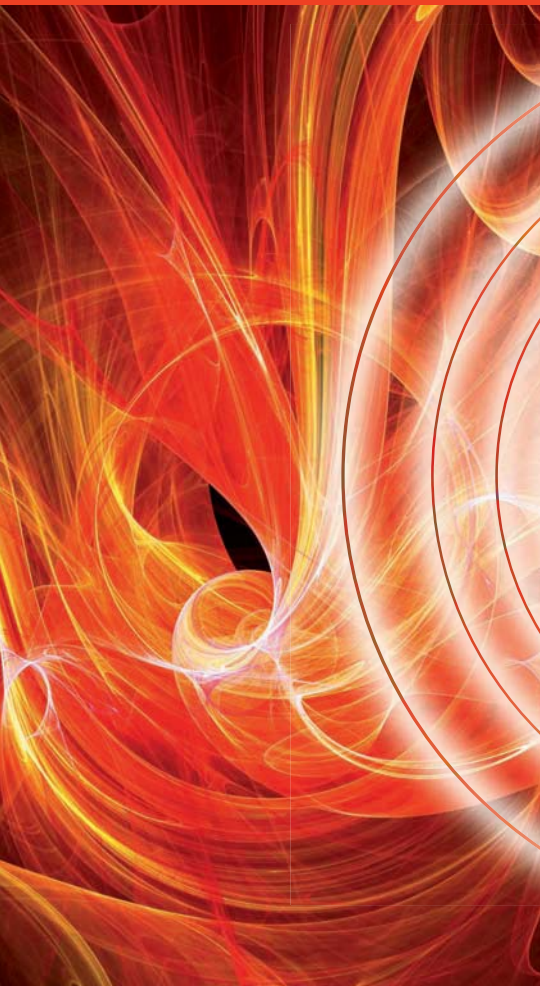
## THE TECHNOLOGICAL APPROACH OF IMMERGAS

Hybrid systems are an effective solution because they meet the needs of new systems whilst improving the energy performance of buildings. Each component in a hybrid system plays a fundamental role:

- **MAGIS VICTRIX.** The boiler guarantees the right comfort especially in harsh winter conditions and guarantees the production of domestic hot water in continuous service; the hydraulic and electronic systems inside the unit are designed to control heating, cooling and domestic hot water.
- **AUDAX.** It enables substantial savings during the winter season when the external temperature is not too low and supports the cooling system during the summer season (see page 12).
- **THERMAL SOLAR SYSTEM.** It integrates the energy requirement for the production of domestic hot water, particularly during the summer; ideal with MAGIS VICTRIX is the use of UB Inox Solar 200-2 coupled with solar collectors (see page 16).
- **PHOTOVOLTAIC SOLAR SYSTEM.** It substantially reduces power consumption in homes, in particular in connection with the power requirements of the heat pump. In some countries it can also be an excellent form of investment.







### **EASY CONNECTION**

MAGIS VICTRIX integrates an insulated hydraulic manifold which contains the connections from the boiler and the AUDAX heat pump. This layout reduces significantly the impact of connections on the system. No refrigeration connections are required.

### **LOW POWER CONSUMPTION CIRCULATORS**

The hydraulic unit consists of two low-power consumption circulators: a modulating one installed before the manifold and another one, suitable for both heating and cooling, installed after the manifold to feed the heating system.

### **HIGH HYDRAULIC PERFORMANCE**

The high flow rate available to the system makes MAGIS VICTRIX interesting also for replacement a boiler in old heating system, because it guarantees excellent hydraulic performances (with no further external pump and manifold).



### INDOOR/OUTDOOR INSTALLATION

MAGIS VICTRIX is also certified for outdoor installations in a partially sheltered place (for example under a balcony): a very important feature in small apartments where the space available for technical installations is minimal. The boiler can be protected using a specific optional kit for temperatures up to  $-15^{\circ}\text{C}$ .



### CAR REMOTE CONTROL AS STANDARD

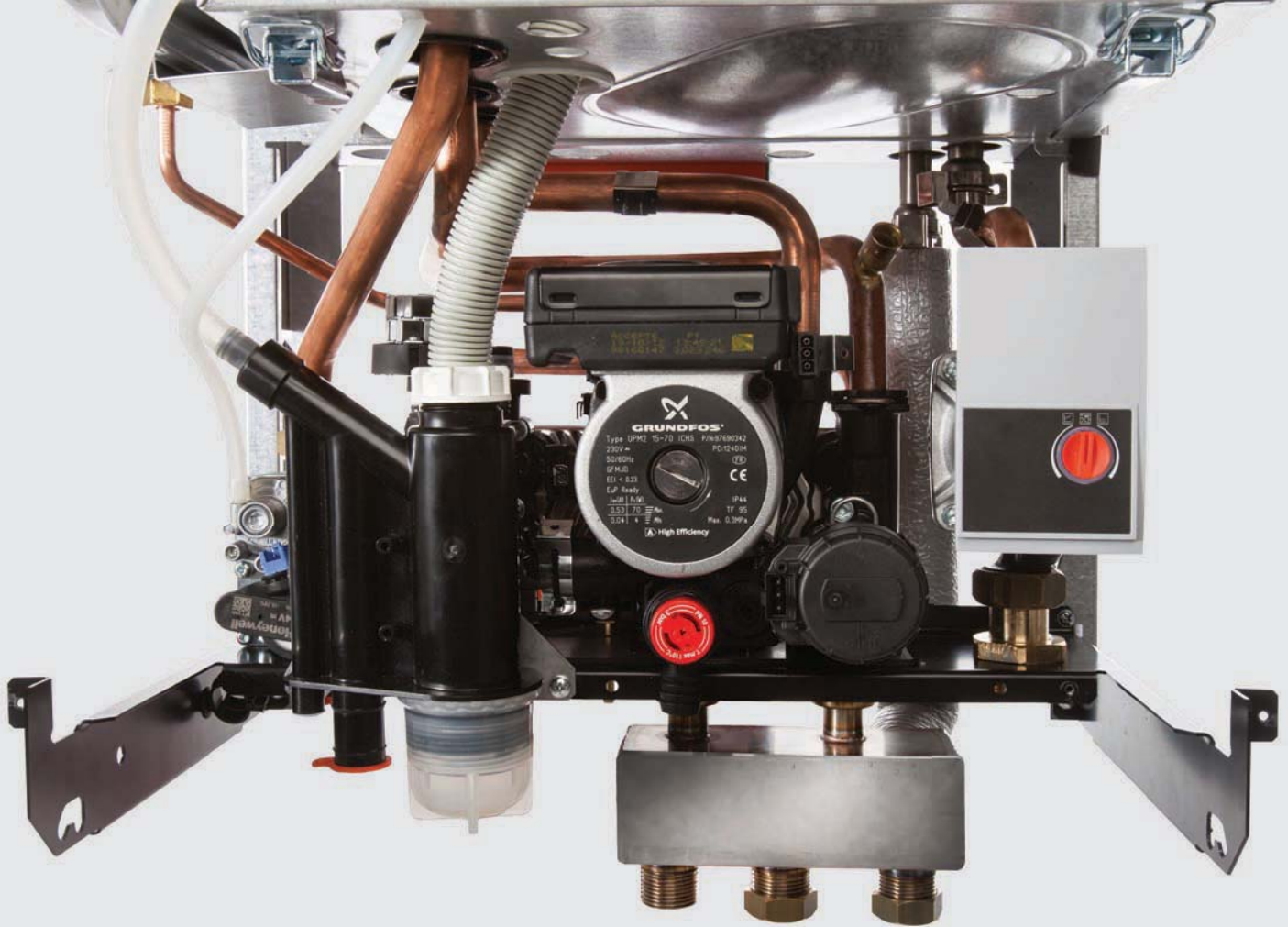
The CAR<sup>V2</sup> enables system control both in the winter and summer mode and remotely control the MAGIS VICTRIX, facilitating its use when the unit is installed outdoors or in areas that are not frequently accessed (attic, laundry room, etc.).

### INTELLIGENT ELECTRONICS

The external sensor (also part of the standard supply) manages the priority between the boiler and the heat pump depending on outdoor temperature.

The PCB stores the system operation values in order to set the output of the generators based on the user's habits.





### HYDRAULIC DISTRIBUTION MANIFOLD

Integrated in the boiler, it is insulated in order to work also with refrigerated water. It allows the connection of the primary circuit of the boiler, the hydronic circuit of the heat pump and the system connections.

### LOW-POWER CONSUMPTION PUMPS

- The system pump is a high-head type and low consumption, suitable for operation with refrigerated water.
- The boiler pump is low consumption and modulating type; there is no boiler by-pass as the pump is directly connected to the distribution manifold.

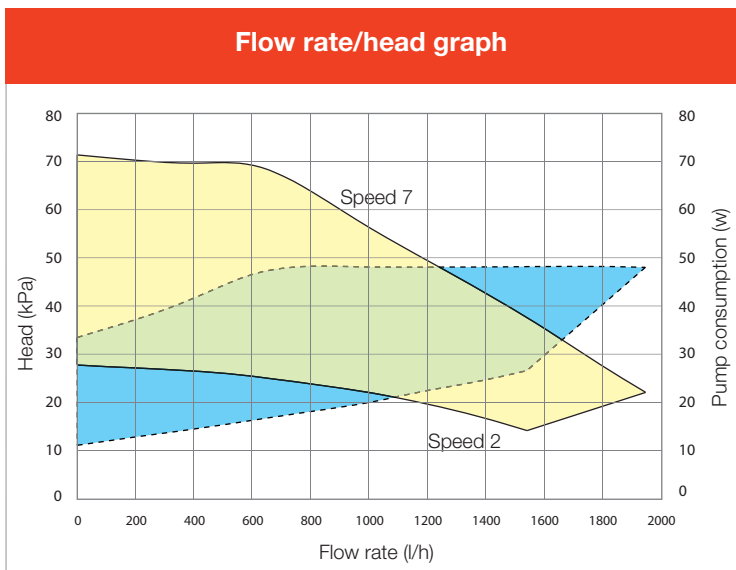
### DOMESTIC HOT WATER PRODUCTION

To improve performance, the boiler is equipped with an electronic flow rate regulator which is able to increase the rate based on the real temperature difference (cold/hot water), therefore it is ideal in situations where MAGIS VICTRIX is coupled to a solar heating systems using UB Inox Solar 200-2 (see page 16).

## HYDRAULIC PERFORMANCE

The special hydraulic configuration of this boiler gives to the system designer the opportunity to work with system with high flow rate and head both in the heating and cooling phase. The system pump can be set to variable or constant head, based on system design needs.

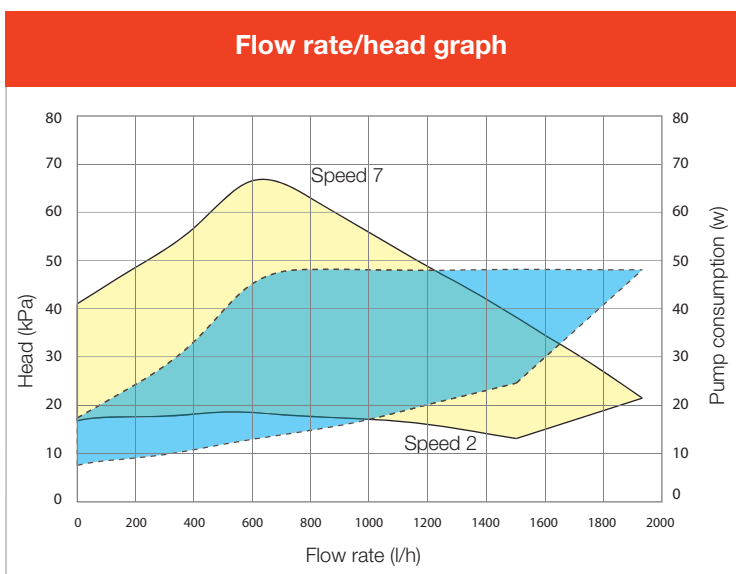
### CONSTANT HEAD



**Key:**

- Head available with speed 2 - 7
- System pump consumption

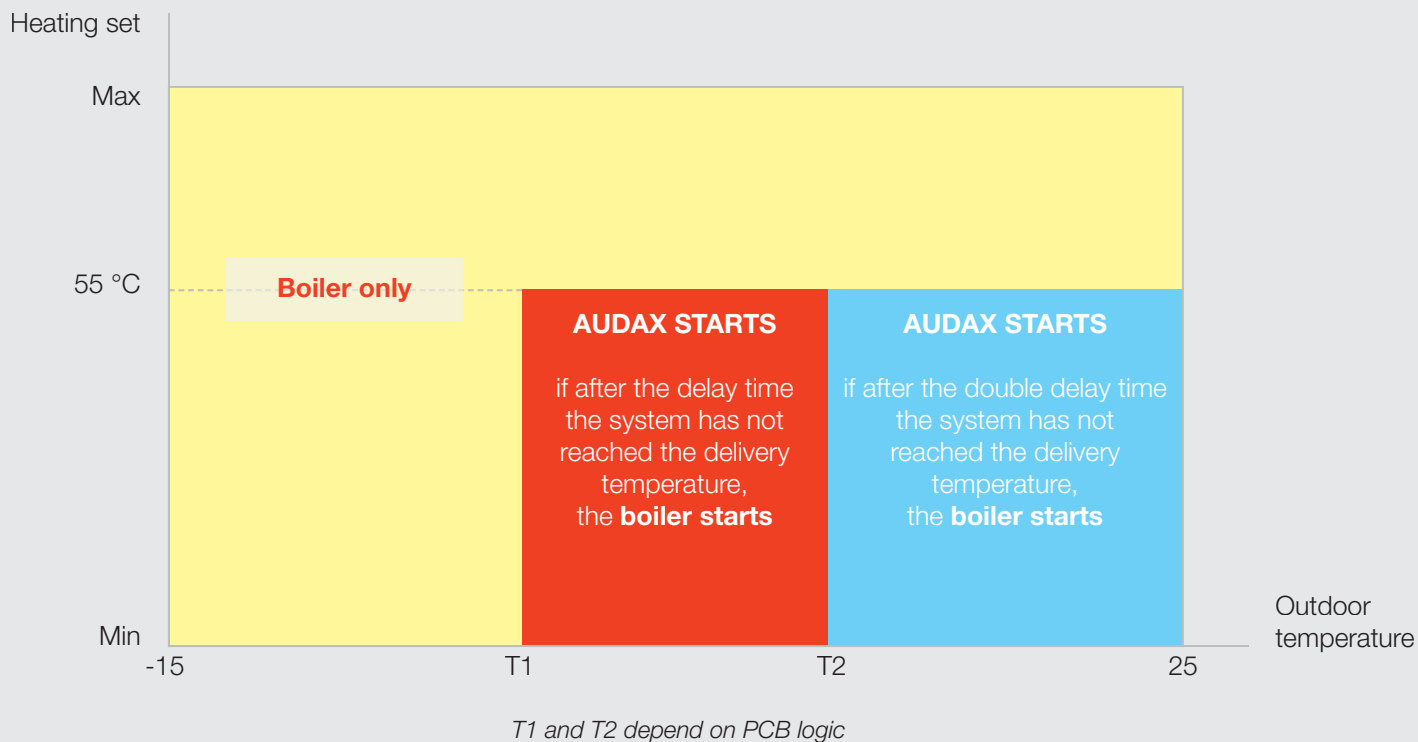
### VARIABLE HEAD



**Key:**

- Head available with speed 2 - 7
- System pump consumption





The solution MAGIS VICTRIX + AUDAX are ideal in low temperature systems, fitted with underfloor heating or fan coils. The system operation can be divided into 3 main phases:

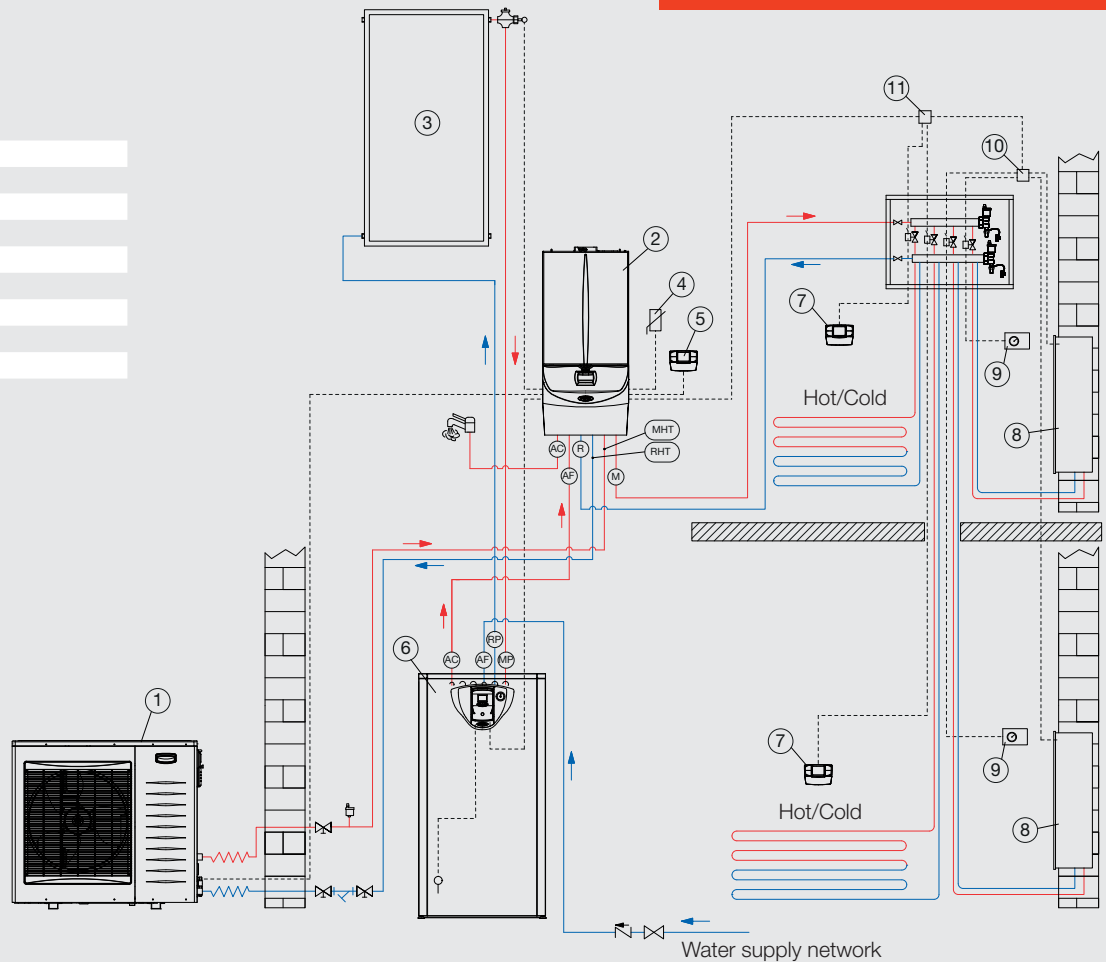
- **Heating**, the two generators operate alternatively or in parallel (simultaneously), as shown in the above graph. Depending on the outdoor temperature, the PBC decides **whether to start the heat pump, or** (with very cold temperatures) **the boiler. The simultaneous functioning is activated when AUDAX** cannot reach the set temperature within a given time (T1 or T2 depending on the case). For this purpose, a system delivery sensor is installed after the hydraulic manifold.
- **Cooling**, only AUDAX works.
- **Domestic Hot Water**, only MAGIS VICTRIX works regardless of outdoor temperature, with the possibility to have pre-heated hot water from the solar system (see page 16).

**While AUDAX is working in heating or cooling mode, the boiler can be switched on for domestic hot water (while the heat pump is on).**



## Key

- 1 Heat pump
- 2 MAGIS VICTRIX
- 3 Solar collector
- 4 External sensor
- 5 CAR<sup>v2</sup>
- 6 UB Inox Solar 200-2
- 7 CRONO 7
- 8 Flush-mounted dehumidifier
- 9 Humidistat
- 10 Relay box (not supplied)
- 11 Junction box (not supplied)



With MAGIS VICTRIX you can realize many system solutions; the Immergas pre-sales team is available to advise professionals on the ideal solution for every installation requirement.

The hydraulic diagram shown above can be considered one of the most appropriate solutions for a typical system in a new home of approximately 70-80 m<sup>2</sup>.

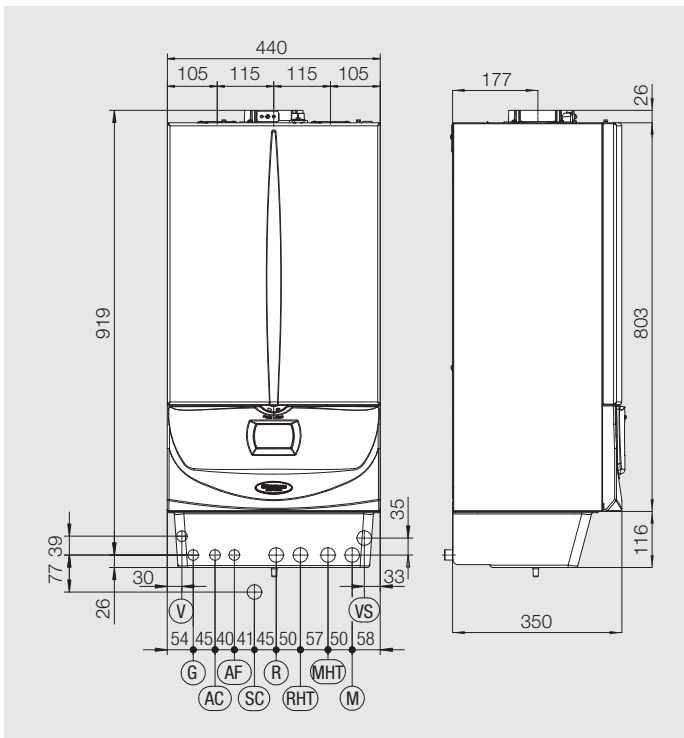
The CAR<sup>v2</sup> will be set to summer/winter operation mode.

Room temperature control (both in winter and summer) will require 1 chrono-thermostat (for example CRONO 7) in each system area where the required temperature must be set.

For humidity control you can install a single dehumidifier (up to maximum of 70-80 m<sup>2</sup>) or more according to the layout of the house; in order to control humidity it is necessary to equip each installed dehumidifier with a humidistat which will simultaneously start the AUDAX unit by means of special relays.

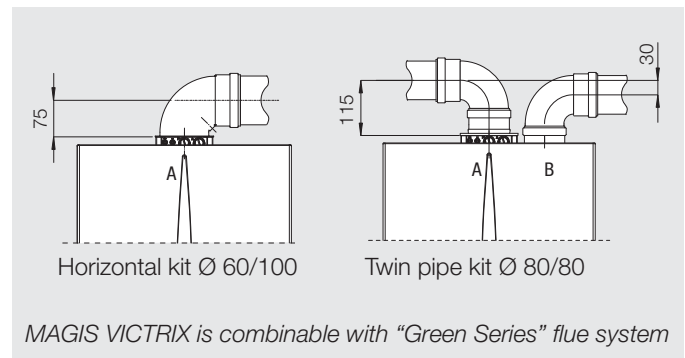


Sizes and connections



Key

- G** Gas supply (threaded)
- SC** Condensate drain
- AC** Domestic hot water outlet
- AF** Domestic cold water inlet
- R** CH return
- M** CH flow
- V** Electrical connection
- RHT** Heat pump return
- MHT** Heat pump delivery
- A** Outlet/inlet
- B** Inlet



Hydraulic connections

Gas	Condensate Drain	D.H.W.		System		Heating Pump	
mm/inch	mm	inch		mm/inch		inch	
G	S	AC	AF	R	M	RHT	MHT
3/4"	40	1/2"	1/2"	3/4"	3/4"	3/4"	3/4"



Technical data	Unit of measurement	MAGIS VICTRIX
<b>Code</b>	<b>N.G. L.P.G.</b>	<b>3.023757 3.023757GPL</b>
<b>CE certificate</b>		<b>0051CM4141</b>
<b>Code template</b>		<b>2.015066</b>
Domestic hot water nominal heat input	kW	26,7
Central heating nominal heat input	kW	24,1
Minimum nominal heat input	kW	3,3
Domestic hot water nominal heat output (useful)	kW	26,0
Central heating nominal heat output (useful)	kW	23,6
Minimum heat output (useful)	kW	3,0
Efficiency at nominal heat output (80/60 °C)	%	97,9
Efficiency at 30% of load (80/60 °C)	%	99,1
Efficiency at nominal heat output (40/30 °C)	%	107,0
Efficiency at 30% of load (40/30 °C)	%	107,0
Weighted CO with natural gas	mg/kWh	15
Weighted NO <sub>x</sub> with natural gas	mg/kWh	26
D.H.W. flow rate for continuous service (ΔT=30 °C)	l/min	13,3
D.H.W. circuit max pressure	bar	10
Marketing sanitary comfort (EN 13203-1)		***
Set heating temperature	°C	20-85
Central heating circuit max pressure	bar	3
Expansion vessel size	litres	8
Fan available head (max/min)	Pa	125/50
Electric protection index	IP	X5D
Full appliance weight	kg	49,0







### **MAGIS VICTRIX AND PHOTOVOLTAIC SYSTEM: THE IDEAL COUPLE**

Immergas promotes photovoltaic systems because in addition to providing energy with high environmental sustainability, it is a sort of investment opportunity with high yield and low risk. MAGIS VICTRIX can use the electrical energy obtained from the photovoltaic system, reducing consumption of power by the AUDAX unit and related CO<sub>2</sub> emissions.

### **SOLAR PACKAGES OR CUSTOMIZED SOLUTIONS. CHOOSE YOUR PHOTOVOLTAIC SYSTEM.**

5 packages are designed mostly for residential applications in single-phase version (up to a maximum of 5.52 kWp):

- PHV Poli pack 1,38 kWp
- PHV Poli pack 2,07 kWp
- PHV Poli pack 2,76 kWp
- PHV Poli pack 4,60 kWp
- PHV Poli pack 5,52 kWp

All of the packages are composed by polycrystalline silicon modules and contain all the components that technicians need to install the photovoltaic system. The components can also be bought individually to create and install customized systems.





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Design, manufacture and post-sale assistance of gas boilers, gas water heaters and related accessories	