

# OMNIA HYBRID C



## REVERSIBLE HYBRID AIR-WATER HEAT PUMPS FOR SPLIT INSTALLATION WITH INSTANTANEOUS DHW PRODUCTION

### > GENERAL CHARACTERISTICS:

- The family of **OMNIA HYBRID C hybrid heat pumps** integrates the technology of the **heat pump** and the **condensing boiler** with instantaneous dhw production in a single compact product.
- This represents the **ideal solution for replacing old existing boilers, also on high temperature system with radiators.**
- The **compact dimensions**, similar to those of a wall-hung boiler, make it easier to replace without losing significant space or requiring significant restructuring work.
- **Internal electronics**, by running the boiler or the heat pump as the climatic conditions vary, **optimise the output of the system** by always working in the **most economic consumption-related modes possible.**
- **During heat pump operation** in heating or conditioning mode, **the boiler can produce dhw at the same time** without interfering on heat pump operation, **thereby maximising the comfort of both services.**
- If the **heat pump is partially or fully blocked, the boiler can operate separately in heating and dhw production.**
- IT IS composed of an **external inverter unit** available in 3 power sizes associated with an **internal condensation unit with integrated** hydronic module for cooling circuit control.
- A highly versatile system **that can operate in particularly cold climatic conditions** (outdoor air down to -20°C).
- **The split cooling circuit avoids the risk of freezing** in particularly cold outdoor applications.
- **The user interface** is composed of a **digital remote controller** equipped with a large display and simple setting controls.
- Wall flue gas exhaust in cases pertaining to Lgs.D. 4 July 2014, No. 102.

### > CHARACTERISTICS OF EXTERNAL UNIT:

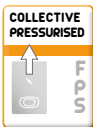
- Approved for **outdoor operation in completely exposed site.**
- **Breakaway starting current** thanks to Inverter technology.
- **Compressor with twin rotary DC INVERTER motor** on vibration damping supports and wrapped in double layer of soundproofing material to reduce vibrations and noise to a minimum.
- The compressor is also equipped with **casing oil heating element.**
- Two-flow electronic expansion vessel, cycle inversion valve.
- **Axial fans with brushless DC** motor complete with protective grids.
- **Outdoor air temperature probe already installed on the unit.**

### > CHARACTERISTICS OF INTERNAL UNIT:

- A particularly sturdy boiler, **suitable for replacements even in particularly critical and resistant systems.**
- **Combustion module with high modulation range (1:10) with high thickness stainless steel primary exchanger, with larger** passes maintaining high efficiency even on old systems with oxidation and soiling
- **M.G.R:** Methane, LPG, Propane air Ready, with a simple configuration the internal unit can run on methane, lpg and propane-air without the use of any additional conversion kits.
- **MC?: Multi Combustion Control**, combustion system with **gas-adaptive patented technology** for better adaptability of use to the varying gas network conditions (ex. pressure fluctuations or drops)
- **F.P.S:** Flue gas Protection System. The standard flue gas check valve offers easy connection to pressurised collective flue systems
- **Particularly suitable for operation in flues requiring "heavy duty" pipes** thanks to approval for operation with **flue gas exhaust with a diameter of 50mm.**
- **Can be combined with preheating systems for the domestic hot water.**
- **Place of installation:** also for outdoor use in a partially protected place that is up to -5°C, as standard

### > THE CONTROL SYSTEM

- Comprised of a wired-remote digital controller (max 50 m from the I.U).
- **Heating and cooling system:** for single-zone systems it is possible to use the control unit as a room thermostat.
- **Energy sources:** the boiler can be started in Integration or Replacement of the heat pump and also if the heat pump is not working.
- **Silenced mode:** according to a programmed schedule, this reduces the maximum frequency of the compressor and the fan speed, to reduce the generated noise and the power absorbed by the unit.
- **Eco Mode:** possibility of defining a time slot in hot mode where the heat pump runs with a sliding setpoint defined by the chosen climatic curve. There are 8 climatic curves for low temperature systems (radiant floor) and 8 climatic curves for fan coil or radiator systems).
- **Weekly programming:** this makes it possible to set a different schedule for each day of the week defining the operating mode for each time slot (COLD/HOT) and the work setpoint.



GENERAL DATA		OMNIA HY 04E 28 C		OMNIA HY 06E 28 C		OMNIA HY 08E 28 C	
ERP class in heating / Seasonal efficiency medium temperature (produced water 55°C)	(Class G - A++)	<b>A++</b>	127	<b>A++</b>	133	<b>A++</b>	126
ERP class in heating / Seasonal efficiency low temperature (produced water 35°C)	(Class G - A++)	<b>A++</b>	183	<b>A++</b>	187	<b>A++</b>	171
Electric power supply	V-ph-Hz	220-240V ~ 50 Hz					
Type of compressor	-	Twin Rotary					
No. of compressors / No. of cooling circuits	No.	1/1					
Type of exchanger system side	-	brazed stainless steel plates					
Type of exchanger source side	-	finned coil					
Type of fans	-	brushless DC					
No. of fans	No.	1					
Cooler fittings - liquid line	ø	9.52					
Cooler fittings - gas line	ø	15.88					
Internal unit expansion vessel volume	l	8					
SWL - External unit sound power level*	dB(A)	62		66		69	
SWL - Internal unit sound power level*	dB(A)			43			
External unit weight	kg	60		60		76	
Internal unit weight	kg			28			

**NOTE:** Efficiency class calculated according to European regulation 811/2013. The values refer to units without any optional features or accessories.

\* **SWL** = Sound power levels, referring to  $1 \times 10^{-12}$  W with unit operating in **A7W55** conditions

The Total sound power level in dB(A) is measured in accordance with standard ISO 9614. The Total Sound Power in dB(A) which is therefore the only binding sound data. The sound pressure levels are values calculated from the sound power level (SWL) by applying the relations of ISO-3744.

HEAT PUMP PERFORMANCE			OMNIA HY 04E 28 C		OMNIA HY 06E 28 C		OMNIA HY 08E 28 C	
<b>A7W35</b>	Heat output	W	4.10		6.10		8.00	
	Absorbed power	W	0.82		1.29		1.73	
	COP	W/W	5.00		4.73		4.62	
<b>A7W45</b>	Heat output	W	4.01		5.96		7.34	
	Absorbed power	W	1.13		1.68		2.13	
	COP	W/W	3.55		3.55		3.45	
<b>A35W18</b>	Cooling capacity	W	4.10		6.20		8.00	
	Absorbed power	W	0.84		1.43		1.93	
	EER	W/W	4.88		4.34		4.15	
<b>A35W7</b>	Cooling capacity	W	4.12		6.15		6.44	
	Absorbed power	W	1.30		2.08		2.24	
	EER	W/W	3.17		2.96		2.88	

The values refer to units without any optional features or accessories.

Data declared according to **EN 14511**:

**EER** (Energy Efficiency Ratio) = ratio of cooling capacity in relation to absorbed power

**COP** (Coefficient Of Performance) = ratio of heat output in relation to absorbed power

**A7W35** = source : air in 7°C b.s. 6°C b.u. / system : water in 30°C out 35°C

**A7W45** = source : air in 7°C b.s. 6°C b.u. / system : water in 40°C out 45°C

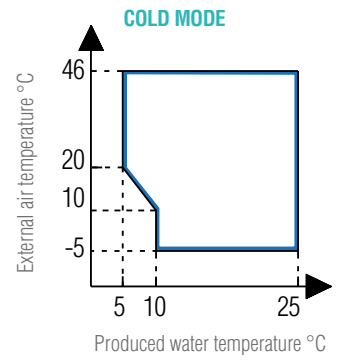
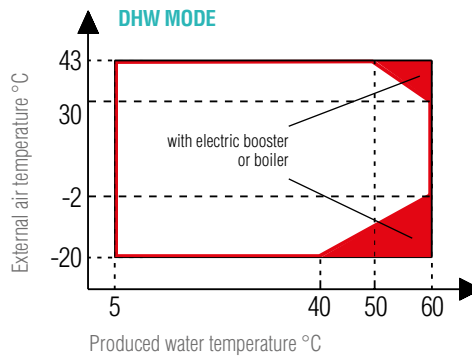
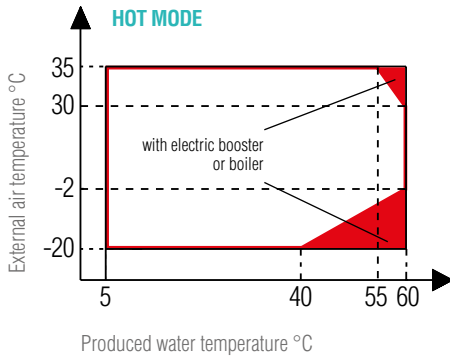
**A35W18** = source : air in 35°C b.s. / system : water in 23°C out 18°C

**A35W7** = source : air in 35°C b.s. / system : water in 12°C out 7°C

**NOTE:** Efficiency class calculated according to European regulation **811/2013**. The values refer to units without any optional features or accessories.

THERMAL GENERATOR PERFORMANCE		OMNIA HY 04E 28 C		OMNIA HY 06E 28 C		OMNIA HY 08E 28 C	
Heating max /min heat input (Hs)	kW	27.2 / 3.2					
Heating max /min heat output (80/60°C)	kW	24 / 2.8					
Heating max /min heat output (50/30°C)	kW	26 / 3.1					
DHW max / min heat input (Hi)	kW	28.5 / 2.9					
DHW max / min heat output	kW	28.0 / 2.8					
Efficiency Pmax / Pmin (80-60°C) (Hi)	%	98.1 / 98					
Efficiency Pmax / Pmin (50-30°C) (Hi)	%	106.1 / 107.5					
Efficiency 30% (Hi)	%	109.7					
Max / min heating working pressure	bar	3 / 0.8					
DHW max / min working pressure	bar	9 / 0.3					
DHW flow rate $\Delta t$ 25°C	l/min	16.1					
DHW flow rate $\Delta t$ 30°C	l/min	13.4					
<b>CODE EU + IU</b>		<b>OXHO4GWA</b>		<b>OXHO6GWA</b>		<b>OXHO8GWA</b>	

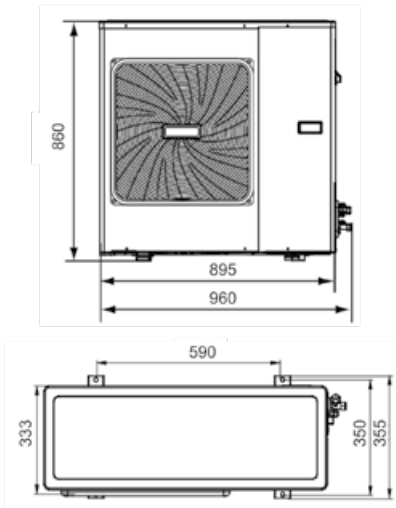
## OPERATING LIMITS



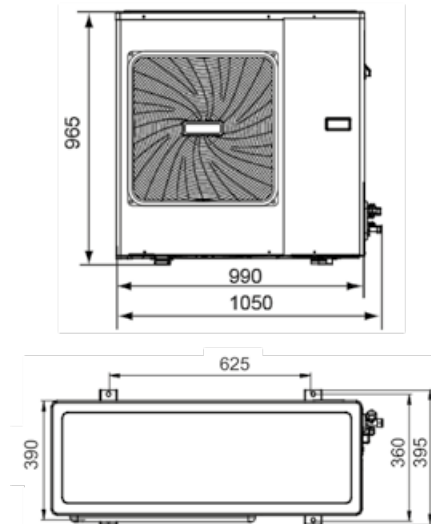
**NOTE ON DHW MODE:** Produced water temperature means the water temperature produced by the unit and not the DHW temperature available to the user which is a function of this parameter and of the surface of the coil of the DHW tank.

## OVERALL DIMENSIONS OF EXTERNAL UNIT

mod. 4 - 6

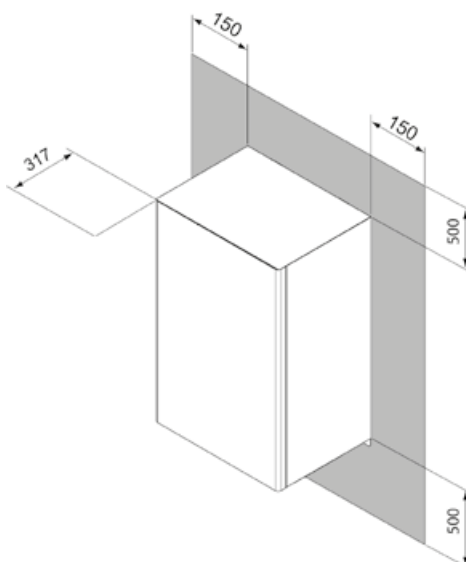


mod. 8

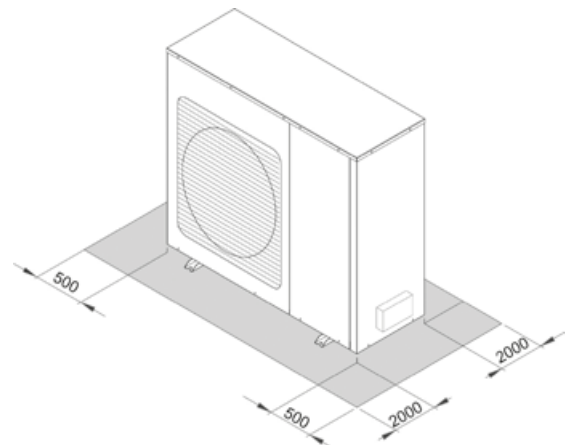


## MINIMUM OPERATING SPACES

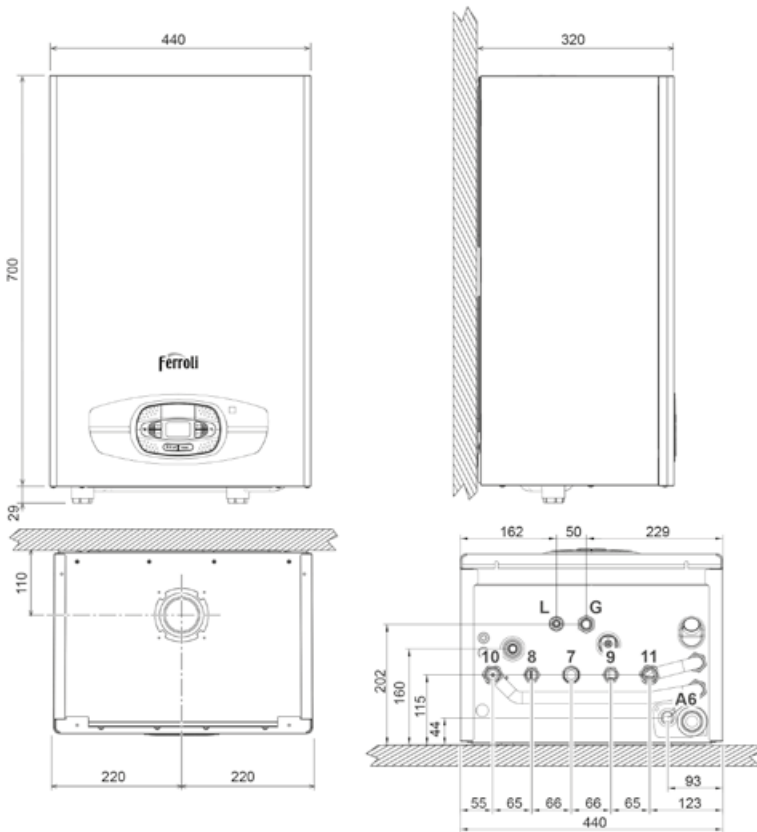
### INTERNAL UNIT



### EXTERNAL UNIT



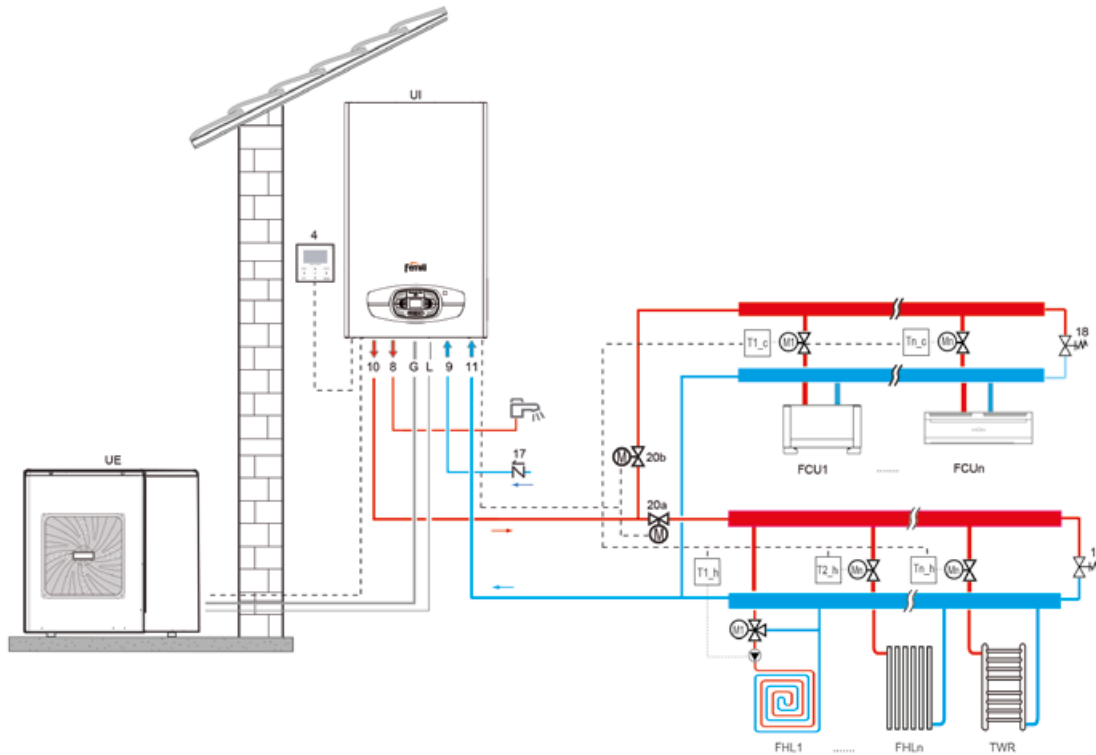
## OVERALL DIMENSIONS OF INTERNAL UNIT



### > KEY

- 7 Gas inlet - Ø 3/4"
- 8 DHW water outlet - Ø 1/2"
- 9 DHW inlet - Ø 1/2"
- 10 System delivery - Ø 3/4"
- 11 System return - Ø 3/4"
- A6 Condensate discharge connection
- L Liquid line
- G Gas line

## EXAMPLE OF SYSTEM DIAGRAM



### > KEY

**IU** Internal unit **EU** External unit **4** Wired remote control (provided per standard with the heat pump) **8** DHW outlet - Ø 1/2" **9** DHW inlet - Ø 1/2" **10** System delivery - Ø 3/4" **11** System return - Ø 3/4" **17** Check valve (not supplied) **18** Bypass valve (not supplied) **20a** Two-way valve (not supplied), controlled by SV2 **20b** Two-way valve (not supplied), controlled by SV2 in denied logic **G** Gas Line **L** Liquid Line **T1\_c - Tn\_c** Cold request room thermostat (not supplied) **T1\_h - Tn\_h** Hot request room thermostat (not supplied) **FCU 1...n** Air terminal: it can only be used for cooling with radiant floor heating or for cooling and heating without radiant floor **FHL 1...n** Radiant floor / radiator only heating in zones **TWR** Integration of towel warmer in bathroom: if connected to the heating system it must be integrated with an electrical resistor (R) actuated by the control (C) which closes the valve at the same time (M); if not connected to the system, heating is provided by the resistor only (R) actuated by the control (C) - - - - Electrical connections