

# FUTURA HP

Direct metering, heating  
and hybrid domestic hot water production with heat pump

## DESCRIPTION

**FUTURA HP** is the innovative hybrid Hydraulic Interface Unit (HIU) that uses **heat pump** technology to produce domestic hot water by storage.

## OPERATION

During the **winter season**, the unit performs the **heating** function of the housing unit and the **production function of domestic hot water** by drawing thermal energy from the **central** distribution network. The energy is produced by a centralised generator and transported on the network by means of a thermo-carrier fluid. During the **summer season**, when the heating function is not required, the **production of domestic water is performed by the heat pump integrated** in the unit with a generated heat output of about 2 kW.

## BENEFITS

In this condition, **FUTURA HP** no longer needs to absorb power from the primary network, so the **centralised generator can be switched off** with resulting **environmental and economic benefits**. When compared to a traditional solution with localised production or centralised production of domestic hot water, during the summer season **FUTURA HP** exempts the centralised plant from the burden of domestic hot water production, thus **eliminating the energy losses** due to distribution. Therefore, the system **improves the distribution efficiency**, which represents one of the most critical aspects in the design/management of this type of plant. Moreover, the heat pump, while in operation, **generates fresh and dry air** that can be introduced into the room where the unit is installed or channeled and brought outside the housing unit as an **integration to the ventilation system**.

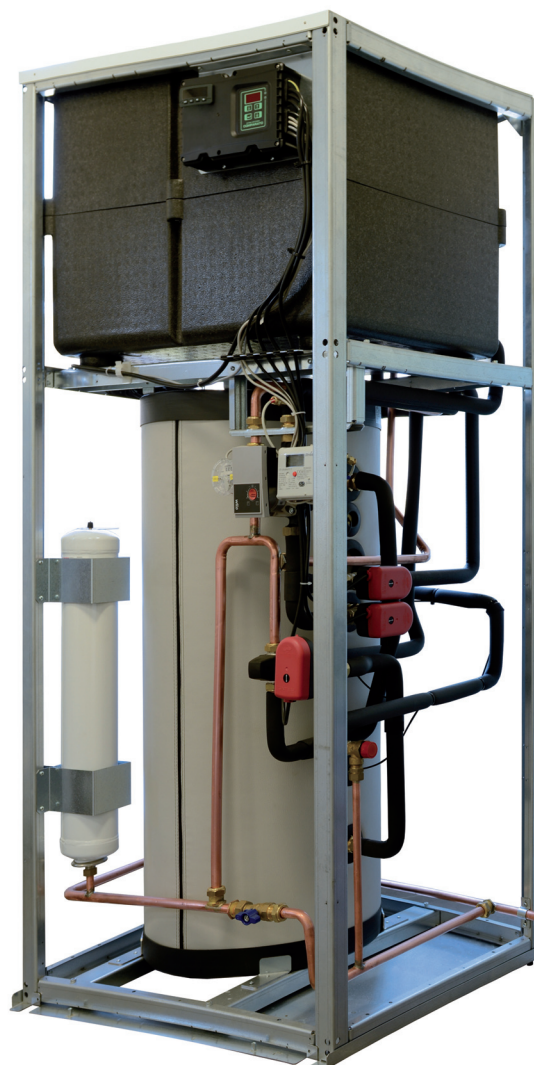
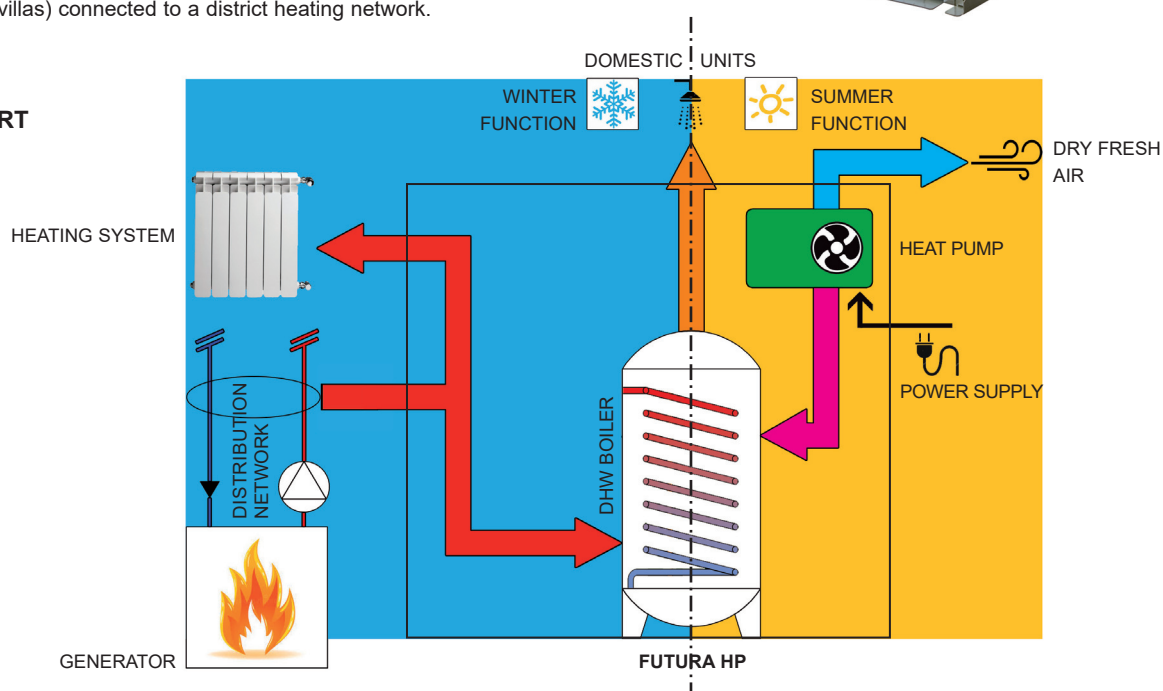
## FUNCTIONS

- Production of domestic hot water with high efficiency heat pump during the summer.
- Zero temperature dispersion on the distribution network during the summer season.
- Possibility of integration with mechanical ventilation and cooling systems.

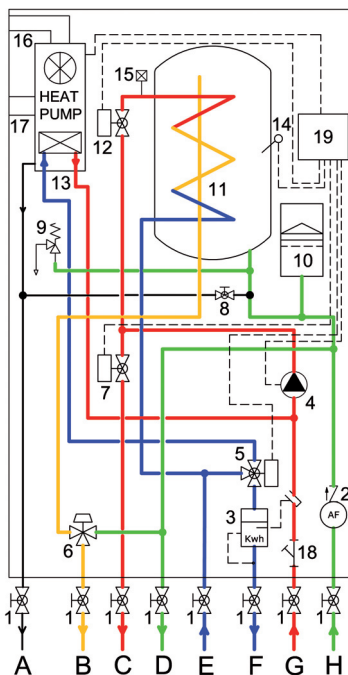
## APPLICATIONS

- New or renovated residential buildings.
- Housing units (e.g. villas) connected to a district heating network.

## FUNCTIONAL CHART



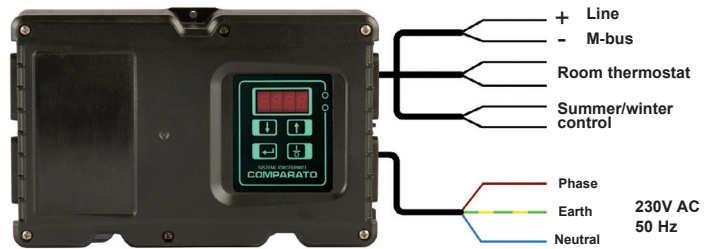
## HYDRAULIC DIAGRAM



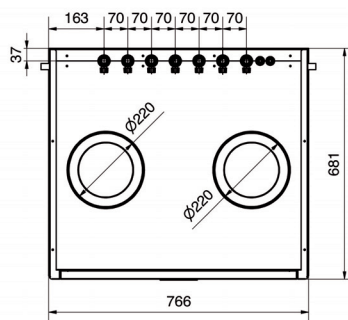
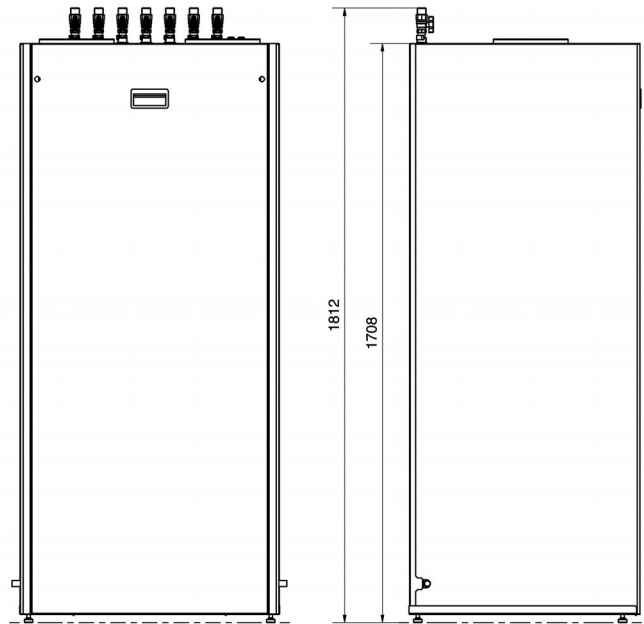
- A** : Drain  
**B** : Domestic hot water outlet  
**C** : Heating system outlet  
**D** : Domestic cold water outlet  
**E** : Heating system return  
**F** : Centralised system return  
**G** : Centralised system outlet  
**H** : Domestic cold water inlet

- 1** : Interception valve  
**2** : Domestic water meter  
**3** : Energy meter  
**4** : Pump  
**5** : 3-way diverting **SINTESI** motorised valve  
**6** : Thermostatic mixer  
**7** : 2-way ON/OFF **SINTESI** motorised valve, heating  
**8** : Drain valve  
**9** : Safety valve  
**10** : Domestic expansion vessel  
**11** : Domestic boiler  
**12** : 2-way ON/OFF **SINTESI** motorised valve, heating  
**13** : Heat pump  
**14** : Temperature probe for domestic water  
**15** : Automatic air vent valve  
**16** : Ventilation air outlet  
**17** : Ventilation air inlet  
**18** : Y-strainer  
**19** : Control panel

## ELECTRICAL CONNECTIONS



## OVERALL SIZE



## DHW PRODUCTION FEATURES WITH HEAT PUMP

### NOMINAL DATA

COP	W/W	2,9
Rated thermal power	kW	1,82 *

### TECHNICAL DATA

Power supply	V	230
Frequency	Hz	50
Maximum consumption	kW	0,53
Average absorption	kW	0,43
Electrical resistance power (optional)	kW	1,5

### OPERATING CONDITIONS

Min /max inlet air temp.	°C	-7 ÷ 38
Min /max installation room temp.	°C	5 ÷ 38
Max DHW temp. production	°C	56

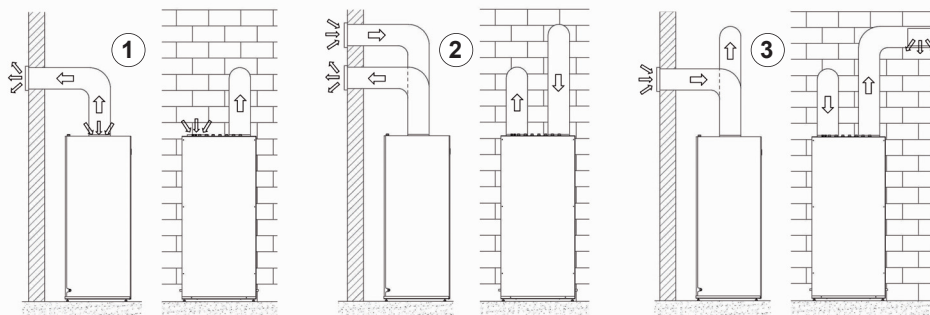
\* 2,9 kW version available

### BOILER VOLUME

		80 l	160 l	200 l	260 l
Heating time with heat pump 10°C - 55°C	min	95	188	238	306

## INSTALLATION

**FUTURA HP** is a base-installed unit. The hydraulic connections are all located at the top. The integrated heat pump can exchange with the environment. Alternatively, air flows can be channeled as shown below:



- INTERNAL INTAKE AND EXTERNAL EXHAUST**  
FACILITATES THE REPLACEMENT OF INTERNAL AIR IN THE HOUSING UNIT
- EXTERNAL INTAKE AND EXTERNAL EXHAUST**  
THE OPERATION OF THE HEAT PUMP DOES NOT INTERFERE WITH THE INTERNAL ENVIRONMENT
- EXTERNAL INTAKE AND INTERNAL PIPING**  
TO TAKE ADVANTAGE OF THE DRY AND FRESH AIR FOR CONDITIONING OTHER PREMISES OR INTEGRATE WITH THE VENTILATION SYSTEM



**HYDROTHERMAL SYSTEMS  
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