

FUTURA AC

Metering, heating and DHW
production with accumulation

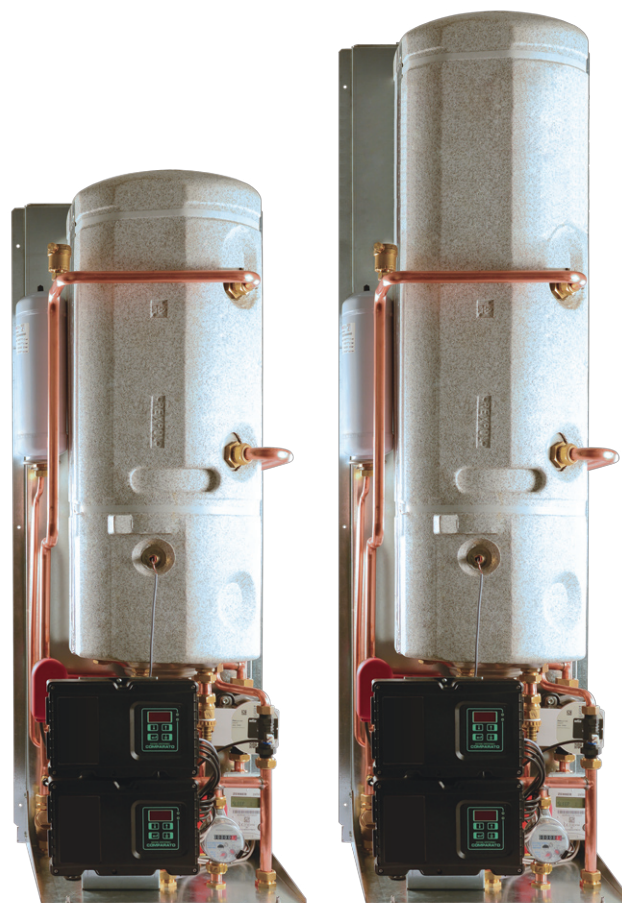
DESCRIPTION

FUTURA AC is a hydraulic interface unit for direct metering and management for central heating systems with domestic hot water production via an AISI 316L stainless steel boiler.

The planned installation is wall-mounted inside the housing unit, and the connections are arranged in line on the bottom of the module, both for the centralised system and for the housing unit.

FUTURA AC is available with a **50 litre** or **70 litre** domestic hot water boiler and can be configured for high (radiators) and low temperature (radiant panels) heating systems.

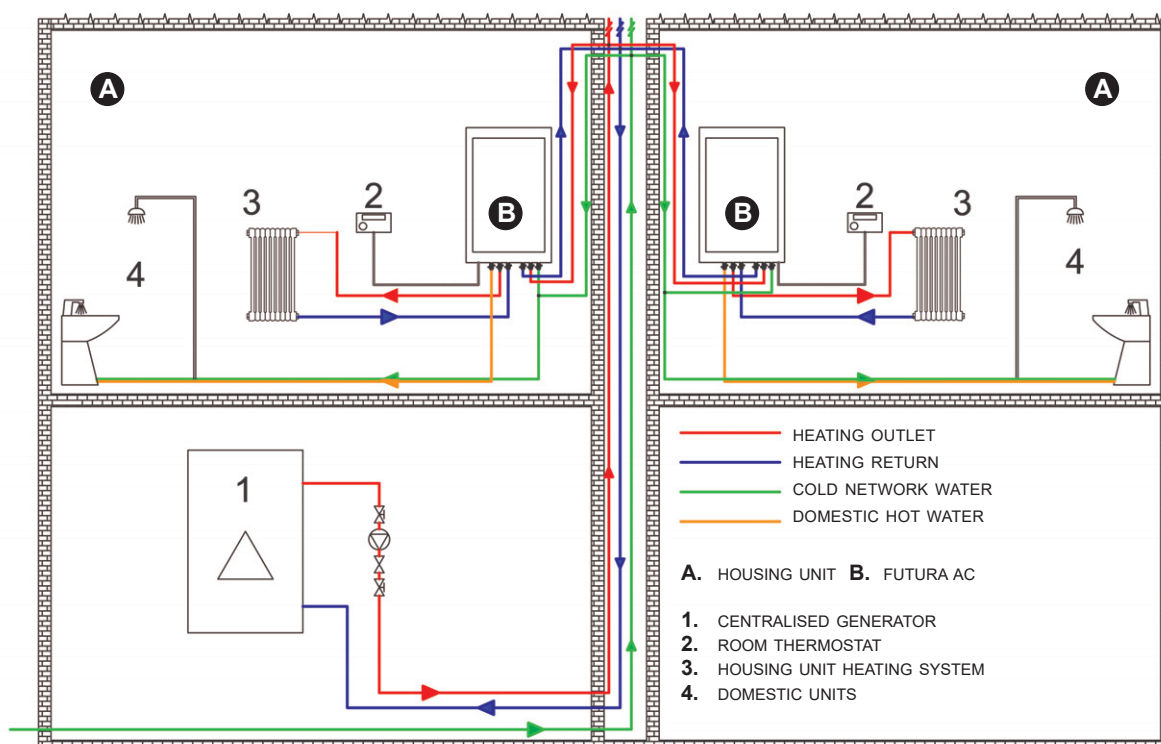
- Domestic hot water production with storage
- Independent management
- Allocation of expenses according to consumption
- Total security
- Energy saving



50-litre version

70-litre version

EXAMPLE OF USE



COMPONENTS AND FLOWS

- A** : Outlet from centralised system
- B** : Outlet to the heating system
- C** : Outlet to LT heating (optional)
- D** : Return from LT heating (optional)
- E** : Heating return
- F** : Return to centralised system
- G** : Domestic hot water outlet
- H** : Domestic cold water inlet
- I** : Domestic cold water outlet

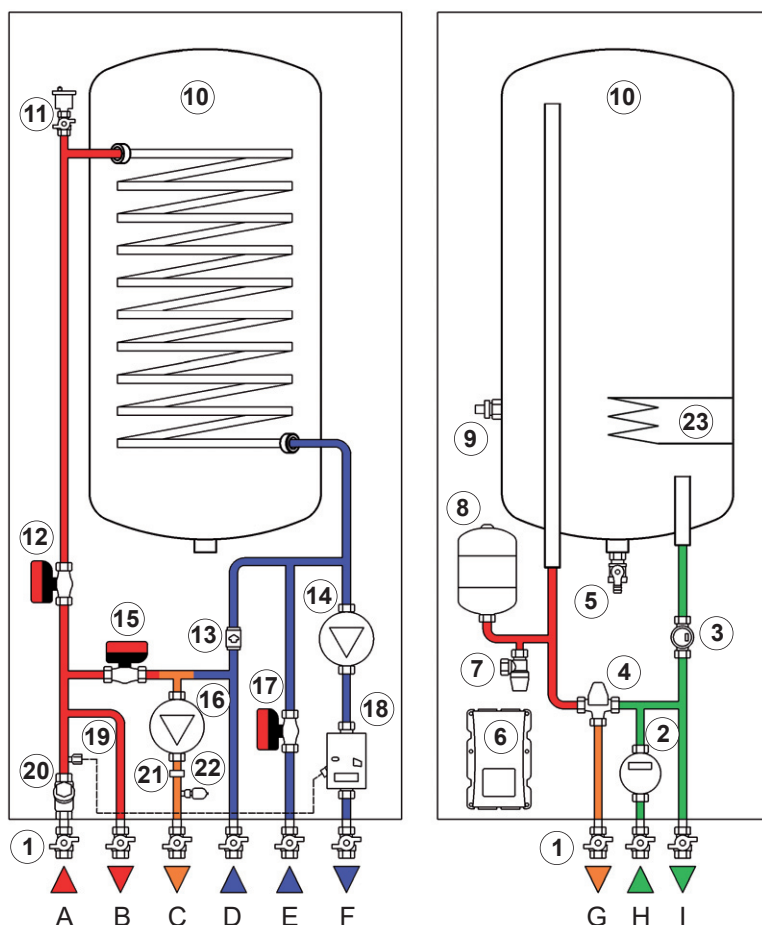
All hydraulic connections are G3/4" M according to ISO 228/1 standard

- 1** : Manual interception valves (accessory)
- 2** : Domestic cold water volumetric flow meter for M-bus reading *
- 3** : Domestic priority flow switch
- 4** : Thermostatic mixer
- 5** : Manual drain valve
- 6** : Control panel with management microprocessor board
- 7** : 7-bar safety valve
- 8** : Expansion vessel in AISI 304 stainless steel
- 9** : Stainless steel immersion temperature probe
- 10** : Stainless steel hot water boiler
- 11** : Automatic air vent valve
- 12** : 2-way ON/OFF **SINTESI** motorised valve on the domestic line
- 13** : Non-return valve **
- 14** : System circulation pump
- 15** : 2-way modulating **SINTESI** motorised valve on low-temperature heating line
- 16** : Pump for low temperature
- 17** : 2-way ON/OFF **SINTESI** motorised valve on the heating line
- 18** : Energy meter (accessory)
- 19** : Probe thermowell for energy meter
- 20** : Y-strainer
- 21** : Temperature probe for low temperature
- 22** : Safety thermostat for low-temperature (optional)
- 23** : Electric heater 1500W (accessory)

* The module is supplied with plastic stub pieces that temporarily replace the energy meter and domestic water meters to allow the system to flow before components are installed.

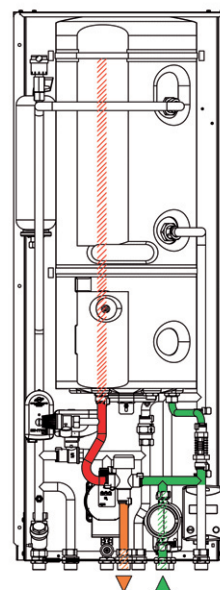
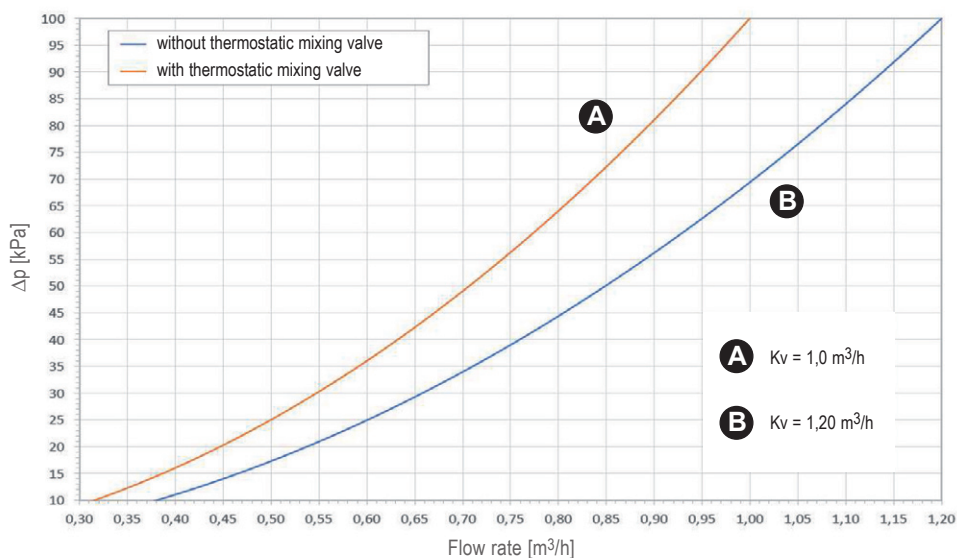
** Components supplied with the "Low Temperature" option.

FULL OPTIONAL version

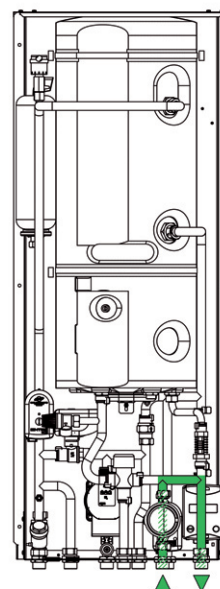
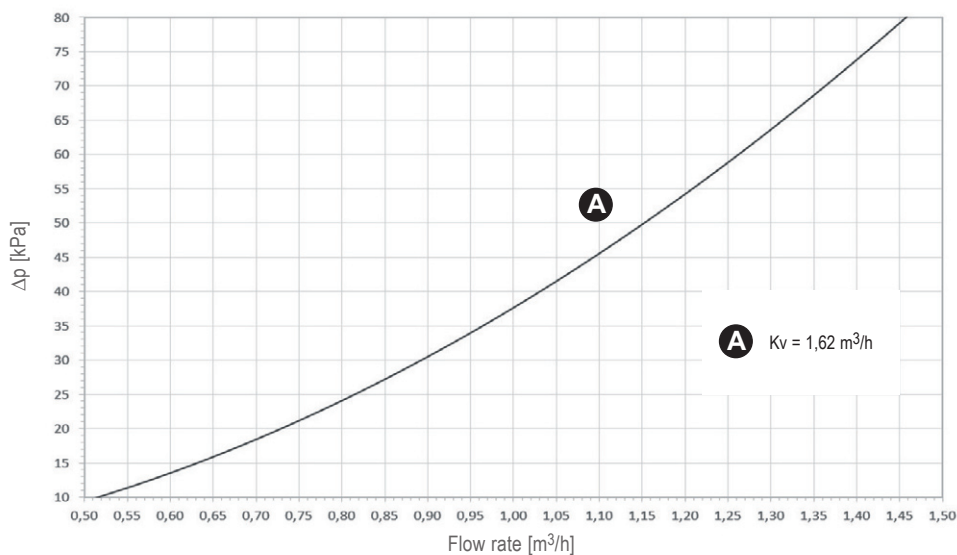


HYDRAULIC FEATURES

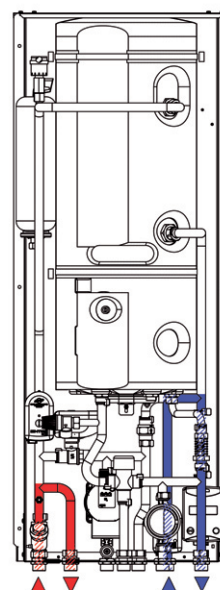
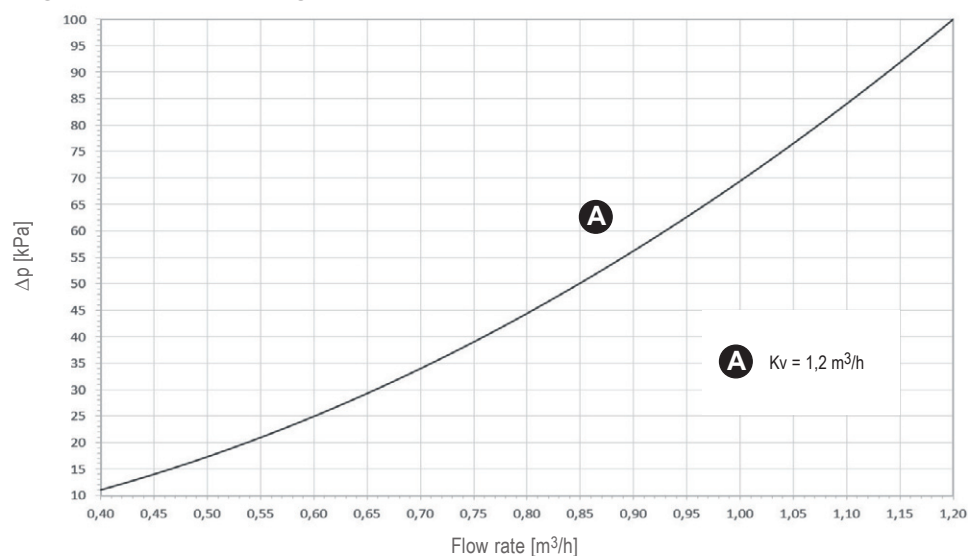
DHW line • head loss *



DCW line • head loss *

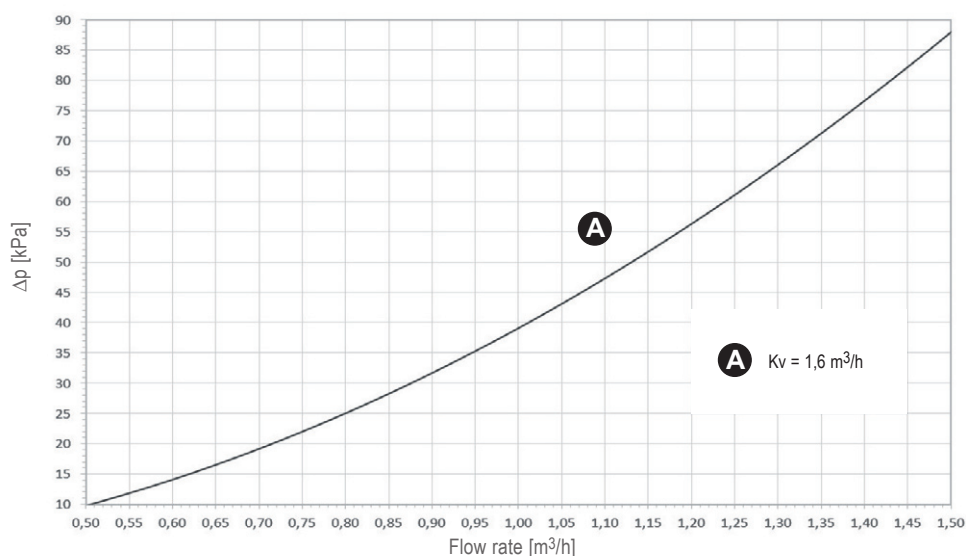


High temperature heating DHW line • head loss *

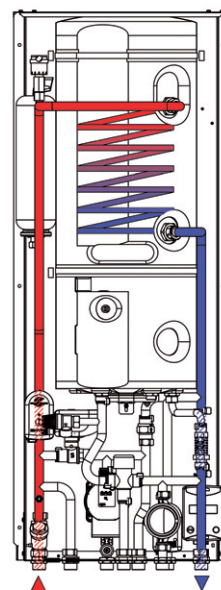


* Head loss includes meters

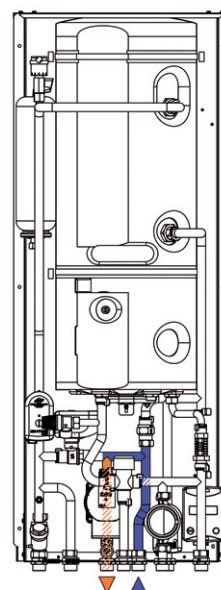
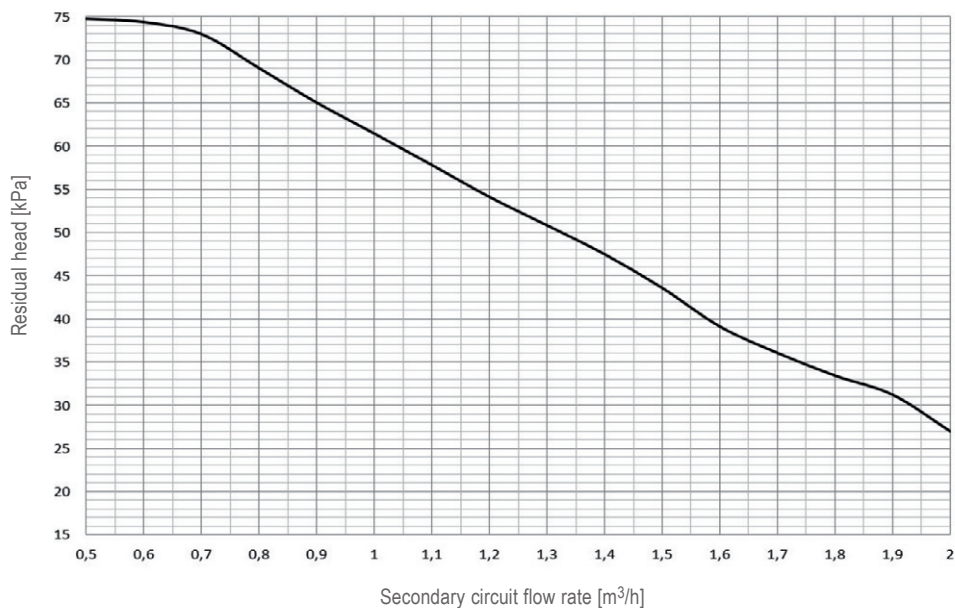
Primary DHW cylinder • head loss *



* Head loss includes meters



Low temperature heating residual head • optional



FUNCTION

HIGH TEMPERATURE HEATING

FUTURA AC hydraulic interface unit allows you to intercept the fluid to the unit's heating system via a **SINTESI** motorised zone valve controlled by a room thermostat (not included). The fluid circulation within the housing unit can be assisted by a booster pump (optional).

LOW TEMPERATURE HEATING (optional)

This option allows the flow temperature to **the radiant system** to be regulated by means of modulating motorised **SINTESI** valve, electronic pump, flow temperature sensor, safety thermostat and non-return valve. The electronic control unit allows **fixed point control** or **weather compensation function** if the (accessory) outside temperature probe is connected. Low-temperature heating control is done by means of a room thermostat (not included).

DOMESTIC HOT WATER

The 50 / 70 litre domestic hot water boiler equipped with a **high-heat coil** allows high production of domestic hot water with a reduced power consumption of the centralised generator: thanks to **FUTURA AC** unit, even in dwellings requiring high quantities of domestic hot water, the designer can keep the **instantaneous power of the centralised generator low**. DHW production is activated by opening the **SINTESI** motorised valve that controls the flow to the coil. This occurs when the temperature of the storage tank falls below the set-point or when the flow switch detects a domestic hot water withdrawal from a user: in this way the system **immediately restores** the temperature in the boiler minimising recharge times.

FUTURA AC operates according to the **domestic water priority** logic: this means that if during operation in heating mode domestic hot water production is required, this request has priority over the heating function: the motorised valves that control the high and low temperature heating are forced to closing, thus ensuring maximum flow on the boiler coil. The temperature in the boiler is regulated by a programmable **electronic thermostat** with immersion temperature probe.

The **thermostatic mixer** (optional) ensures stable DHW supply temperatures at all times and allows you to keep the boiler temperature higher, thereby increasing the **usable capacity**. The (accessory) **electrical resistance in the boiler**, in addition to serving as a **backup** for DHW production in the event of problems on the centralised system, allows the latter to be switched off completely during the months in which the heating function is not required: domestic hot water is produced electrically, thus **eliminating any thermal dispersion on the distribution network**.

ACCESSORIES

ENERGY METER



code CFCENM348 (hot / cold)

DOMESTIC COLD WATER METER



code CFCAFSI15 (cold)

EXTERNAL TEMPERATURE PROBE



code RFSONDAE

TECHNICAL FEATURES

ENERGY METER

Type	meccanico (1)
Flow rate Qp	1,5 m³/h
Minimum flow	0,015 m³/h
Maximum flow	3,0 m³/h
DN	15
PN	16
Power supply	lithium battery
Protection	IP54
Interface	M-bus (2)
Certification	MID



code CFCENM34B
(hot / cold)

VOLUMETRIC METER FOR DOMESTIC WATER

Type	mechanical
Permanent flow rate Q	2,5 m³/h
Minimum flow	0,03 m³/h
Maximum flow	3,0 m³/h
DN	15
PN	16
Interface	pulse output
Certification	MID
Maximum temperature DHW	30°C • for DCW 90°C • for DHW



code CFCACSI15
(hot)



code CFCAFSI15
(cold)

SINTESI MOTORISED VALVES

ON/OFF type (90°)	45 sec
Modulating type (90°)	35 sec (3)

HEATING – PRIMARY CIRCUIT OF THE EXCHANGER

Fluid type	water VDI 2035 (4)
Maximum temperature	90 °C
Maximum pressure	6 bar
Maximum flow	1,5 m³/h

DOMESTIC HOT WATER

Fluid type	water (5)
Maximum temperature	80°C
Maximum pressure	7 bar
Boiler and coil material	AISI 316 L Stainless Steel
Accumulation capacity	50 / 70 litres
Corrosion protection	magnesium anode
Expansion tank	3 / 4 litres

PIPING

Material	copper
Size	Ø 18mm

HYDRAULIC CONNECTIONS

Material	brass
Size	G3/4" M ISO 228/1

HYDRAULIC SUPPORT

Material	galvanised sheet 10/10
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SHELL

Material	black sheet 10/10
Colour	RAL9010
Paint	epoxy powders

POWER SUPPLY

Voltage	230V ± 10%
Frequency	50 Hz
Maximum input power	
• without pumps	20W
• with primary circulator or low temperature	70W
• with primary circulator and low temperature	120W
Protection	IP40

USAGE

Installation	indoor environments
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PUMPS

Type	electronic ERP
Features	see graphs

PHYSICAL CHARACTERISTICS

Empty weight	40 / 50 Kg (6)
Operating weight	90 / 120 Kg (6)

1 Ultrasonic upon request.

2 Pulse / wireless M-Bus upon request.

3 On low temperature heating line (optional).

4 For glycol solutions contact the Technical Office.

5 For water with hardness greater than 15°f, the use of softeners is recommended.

6 Full optional version.

Instantaneous DHW production with DHW temperature difference 10°C / 45°C

PRIMARY TEMPERATURE	PRIMARY FLOW	DHW FLOW RATE	POWER
°C	m³/h	l/min	kW
60	1,5	6	14,5
65	1,5	8	19,5
70	1,5	9	22
75	1,5	10	24,5

DOMESTIC HOT WATER production features

50 LITRE VERSION

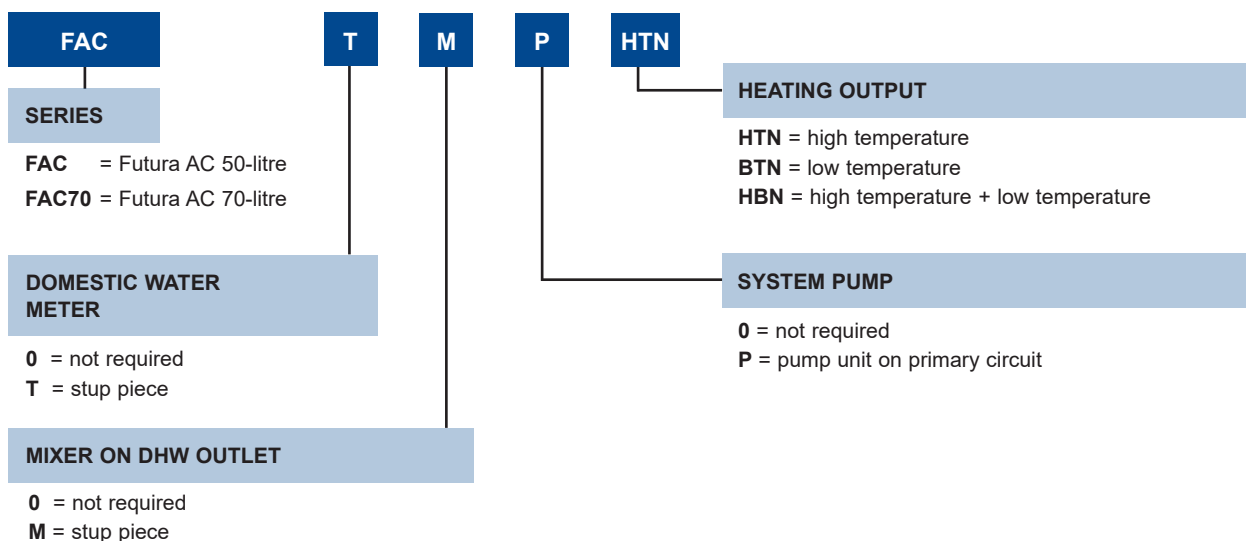
PRIMARY INLET TEMPERATURE	HEATING TIME *
°C	s
60	520
65	390
70	330
75	310

70 LITRE VERSION

PRIMARY INLET TEMPERATURE	HEATING TIME *
°C	s
60	735
65	550
70	460
75	435

* time needed to heat water from 10°C to 50°C

VERSIONS AND CODE BUILDER E.g.: FUTURA AC with thermostatic mixing valve and pump on primary circuit



INSTALLATION

The **FUTURA AC** HIU is designed for the indoor installation in frost-protected rooms. The unit has a RAL 9010 painted shell. The equipment must be installed vertically. The hydraulic connections are all lower. The unit is supplied with plastic stub pieces that temporarily replace the energy meter and domestic water meters to allow the system "flushing" before the components are installed.

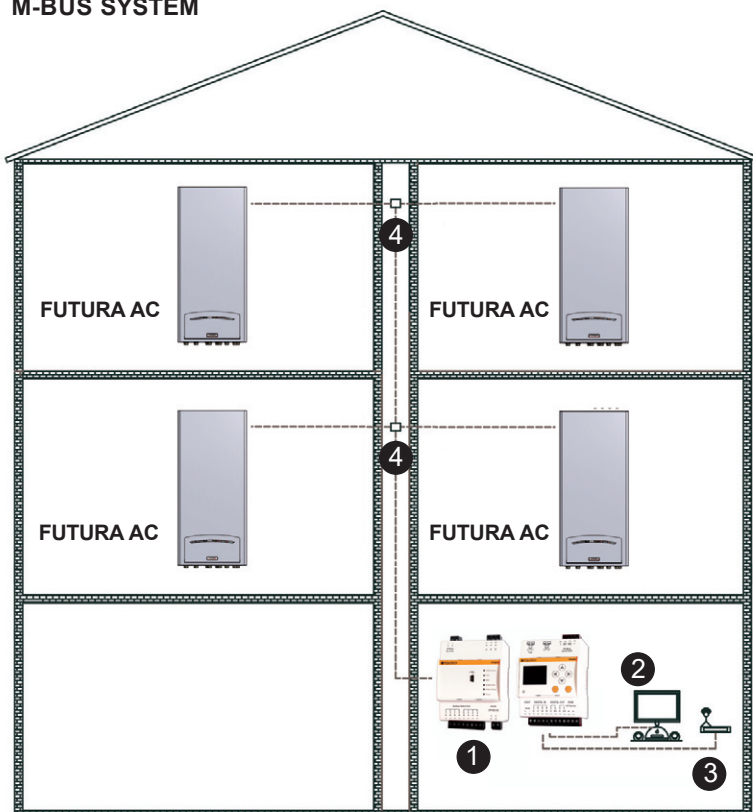
INSTALLATION WARNING

It is advisable to use flexible hydraulic connection in order to compensate for any thermal expansion and possible misalignment between the system connections.

WARRANTY AND FIRST START-UP

The warranty becomes effective on the date of testing, if required, and shall last for 24 months. If testing is not required, the warranty will become effective on the date of purchase.

M-BUS SYSTEM



- 1** : M-BUS data acquisition control unit
- 2** : Control unit-PC connection
- 3** : Control unit-modem connection
- 4** : Concentrator nodes

The **M-bus** system represents a cabled means of communication among the peripheral metering units and a remote control unit which collects the consumption data registered by each peripheral unit.

The consumption data can be read directly on the control unit display or by means of a PC connected to the control unit; moreover, it is possible to interface the control unit with a modem in order to be able to query the control unit from a remote position.

For further information please contact our Technical Office.

CERTIFICATIONS

CE Machinery Directive

2006/42/CE.

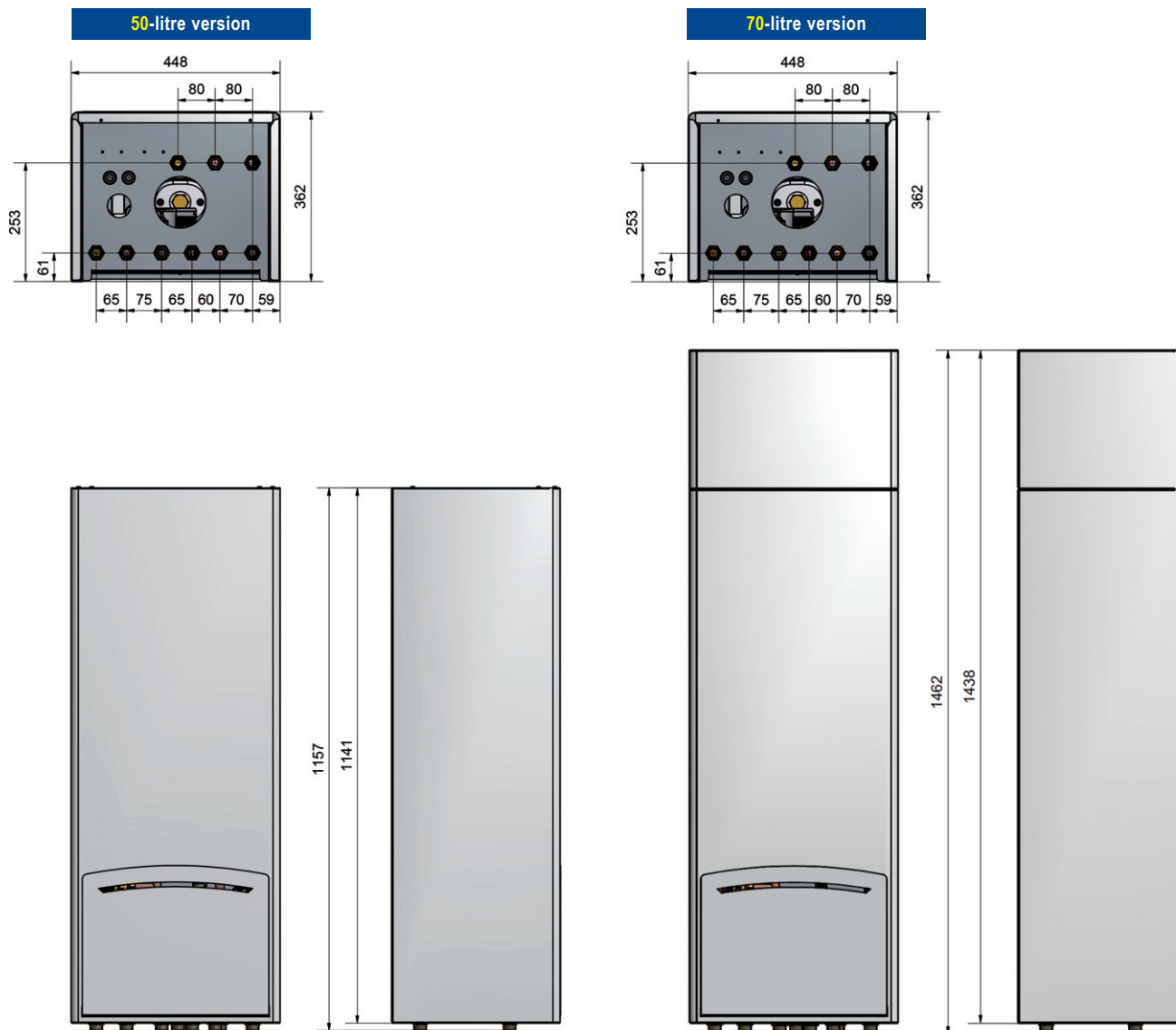
CE Low Voltage Directive

2014/35/ue: 26/04/2014

CE Electromagnetic Compatibility Directive

2014/30/UE

OVERALL SIZE



EXAMPLE OF SPECIFICATIONS

FUTURA AC HYDRAULIC INTERFACE UNIT for direct metering and management of central heating systems with instantaneous production of domestic hot water through a 45 litre AISI 316L stainless steel storage tank and control of the delivery temperature. Main components: • Replacement stub piece for domestic water meter • Replacement stub piece for energy meter • 45 litre storage tank • Flow switch for domestic priority • Y-strainer • Thermostatic DHW mixer • 2-way ON/OFF **SINTESI** motorised valve on boiler supply line • 2-way ON/OFF **SINTESI** motorised valve on heating line • Stainless steel immersion temperature probe • 7-bar safety valve • Manual drain valve • Stainless steel domestic expansion vessel • Control panel with electronic management board and digital display. Ø18 mm copper pipe-lines, G3/4"M in-line connections placed on the lower side of the unit, as per ISO 228/1 standard. Maximum pressure 6 bar, maximum temperature 90°C. Nominal power 30 kW, nominal flow rate of primary circuit 1,1 m³/h and secondary circuit 0,64 m³/h, delivery temperature on secondary circuit adjustable from 35°C to 50°C. Electrical connections: electrical power supply, room thermostat and M-bus line. Power supply: 230V - 50Hz, maximum power consumption 20 W. Wall-mounted installation with shell. Size: (LxHxD) 448 x 1027 x 357mm.

Brand: **COMPARATO** • Code: **FACTM0HTN**

M-BUS HEATING ENERGY METER, DN15, nominal capacity Qp 1,5 m³/h, MID-approved. Size: 3/4"x110mm.

Brand: **COMPARATO** • Code: **CFCENM34B**

VOLUMETRIC METER AFS impulsive (10 litres/pulse), DN15, permanent flow rate Q 2,5 m³/h, MID-approved. Size: 3/4"x110mm.

Brand: **COMPARATO** • Code: **CFCAFS115**.

UPDATED DATA SHEETS AVAILABLE AT www.comparato.com

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HYDROTHERMAL SYSTEMS

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