FUTURA AC

Metering, heating and DHW production with accumulation

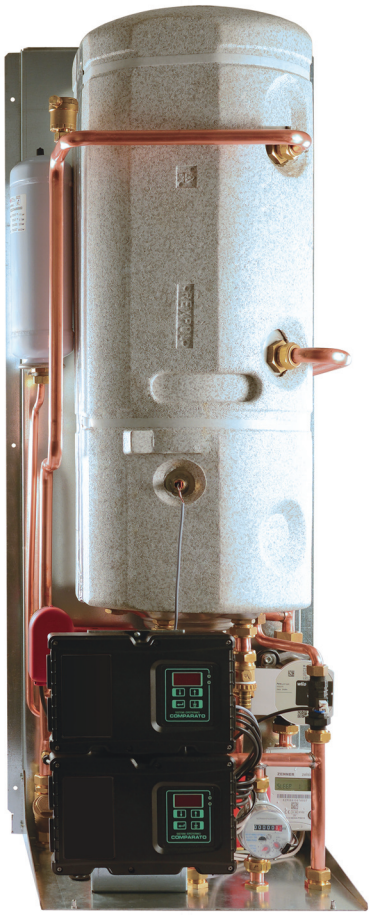
DESCRIPTION

FUTURA AC is a satellite module for direct metering and management for central heating systems with production of domestic hot water through an AISI 316L stainless steel storage tank and control of the delivery temperature.

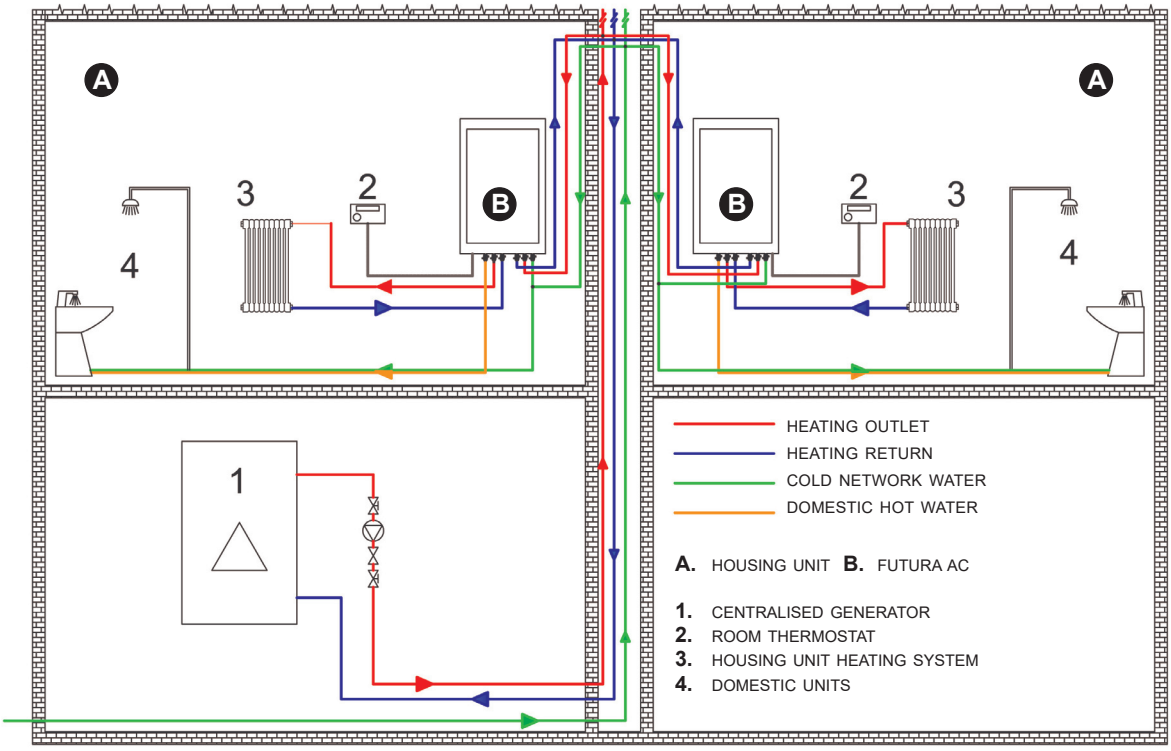
The equipment should be wall hanging, through wall fixing inside the housing unit, and the connections are arranged in line on the lower part of the HIU, both for the centralised installation and for the housing unit.

FUTURA AC is able to use the pre-heated sanitary water coming from a centralised solar heating system, supplying only the necessary amount of energy to keep the storage at the desired temperature.

- **Domestic hot water production**
- **Management independence**
- **Costs breakdown according to real consumptions**
- **Total security**
- **Energy saving**



EXAMPLE OF USE



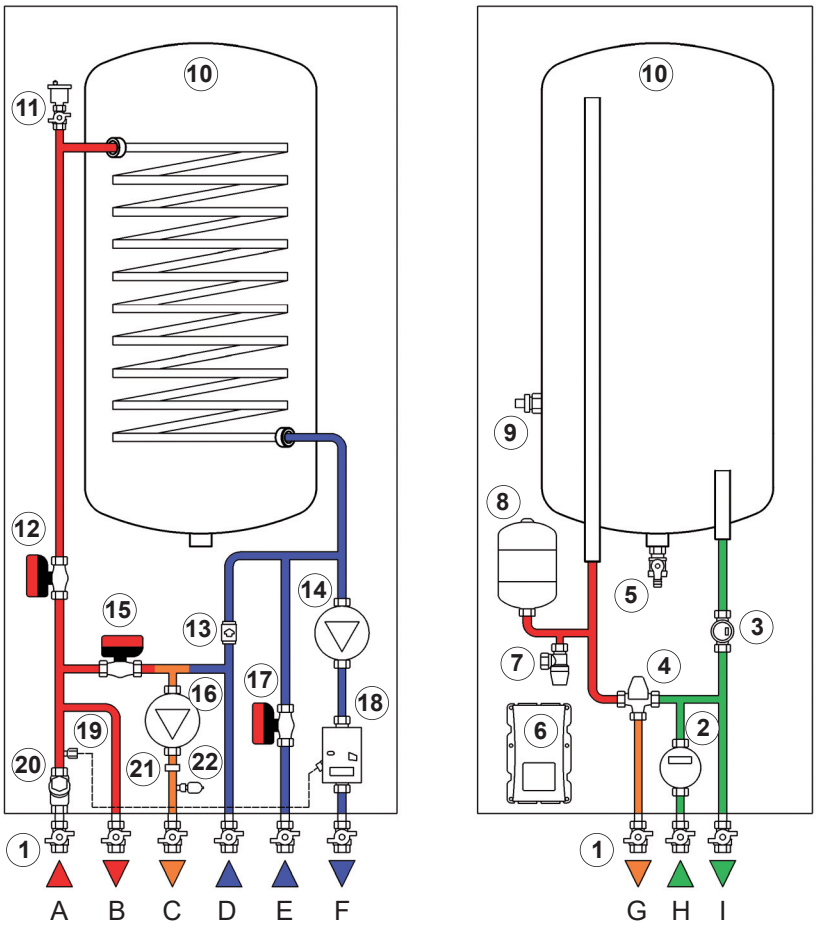
COMPONENTS AND FLOWS

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 : AISI 316L stainless steel storage tank, 45 litres
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)

FULL OPTIONAL version



* 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.

FUTURA AC

FUNCTION

HEATING FUNCTION:

Thanks to the **FUTURA AC** HIU, the fluid flowing to the heating system can be intercepted by means of a 2-way ON/OFF **SINTESI** motorised valve controlled by a room thermostat (not included). The circulation of the fluid within the housing unit can be assisted by an electronic circulation pump. You can also adjust the heating temperature to a fixed or variable point, when combined with an external probe.

DOMESTIC HOT WATER PRODUCTION:

The accumulation exchanger allows a high production of domestic hot water using a reduced amount of power of the centralised generator: thanks to the use of **FUTURA AC** unit, even in housing units that require high quantities of domestic hot water, the designer can keep the instantaneous power of the centralised generator low by exploiting the thermal flywheel supplied by the accumulation.

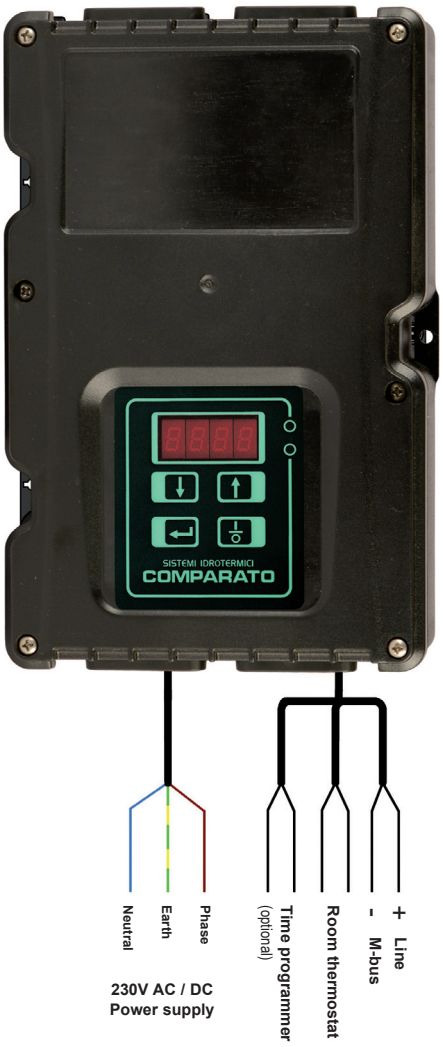
Moreover, thanks to the particularly long coil, the module allows an instantaneous production of domestic hot water adequate for a single user when the accumulation is exhausted. See table “Instantaneous production of domestic hot water”.

MAIN CHARACTERISTICS:

- Priority to the domestic water production (*)
- Programmable electronic thermostat for the control of the domestic water temperature inside the accumulation with NTC immersion temperature probe (stainless steel)
- Thermostatic mixer with anti-scald function, adjustable from 35°C to 55°C (optional)

(*) During the drawing of hot domestic water, the primary circuit of the accumulation exchanger is supplied by the heat transfer fluid coming from the central plant, while the supply to the heating system of the housing unit is interrupted

ELECTRICAL CONNECTIONS



M-bus line

- 2 x 1,5 mm² twisted unshielded cable (connecting the shunt nodes to the individual HIUs).
- 2 x 2,5 mm² twisted unshielded cable for the back line sections coming out of the concentrator nodes towards the data acquisition unit.

Room thermostat (TA) and Low temperature Thermostat (TB)

- Clean contact, i.e. voltage free contact.
- 2 x 0,75 mm² cable (cable length not exceeding 30 m).

Dedicated centralised power supply

Cable 3 x 1,5 mm²

- phase;
- neutral (blue);
- ground (yellow/green).

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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 litres
Corrosion protection	magnesium anode
Expansion tank	2 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

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

PUMPS	
Type	electronic ERP
Features	see graphs

PHYSICAL CHARACTERISTICS	
Empty weight	40 Kg (6)
Operating weight	90 Kg (6)

1 Ultrasonic upon request.
2 Impulsivo / wireless M-Bus a richiesta.
3 Su linea riscaldamento bassa temperatura (opzionale).
4 Per soluzioni glicolate contattare l'Ufficio Tecnico.
5 Per acqua con durezza superiore ai 15°f è consigliato l'utilizzo di addolcitori.
6 Versione full optional.

Produzione istantanea ACS con salto termico ACS 10°C / 45°C

TEMPERATURA PRIMARIO	PORTATA PRIMARIO	PORTATA ACS	POTENZA
°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

TEMPERATURA INGRESSO PRIMARIO	TEMPO DI RISCALDAMENTO *
°C	s
60	520
65	390
70	330
75	310

* tempo necessario a scaldare l'acqua da 10°C a 50°C

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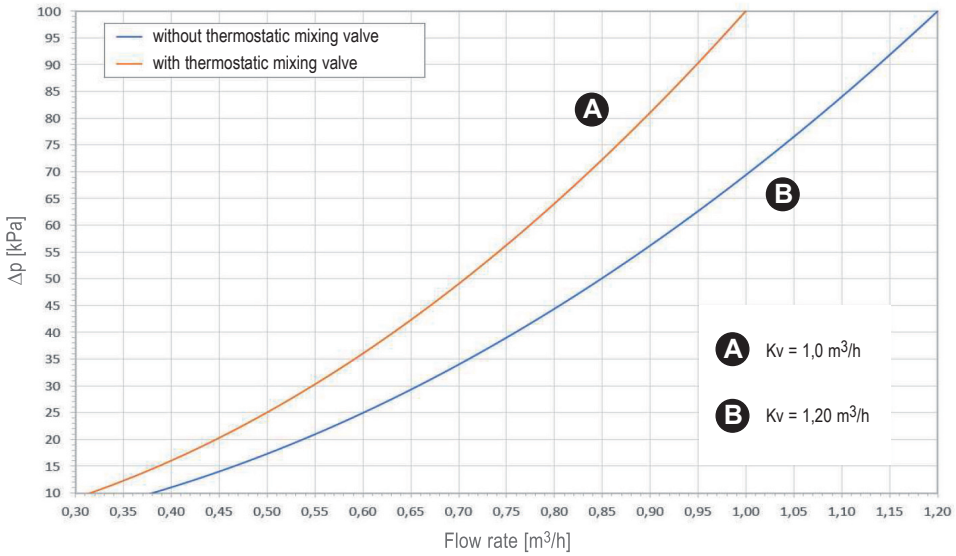
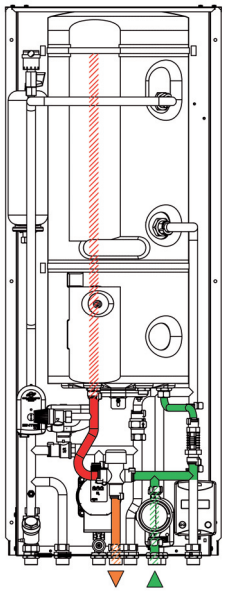
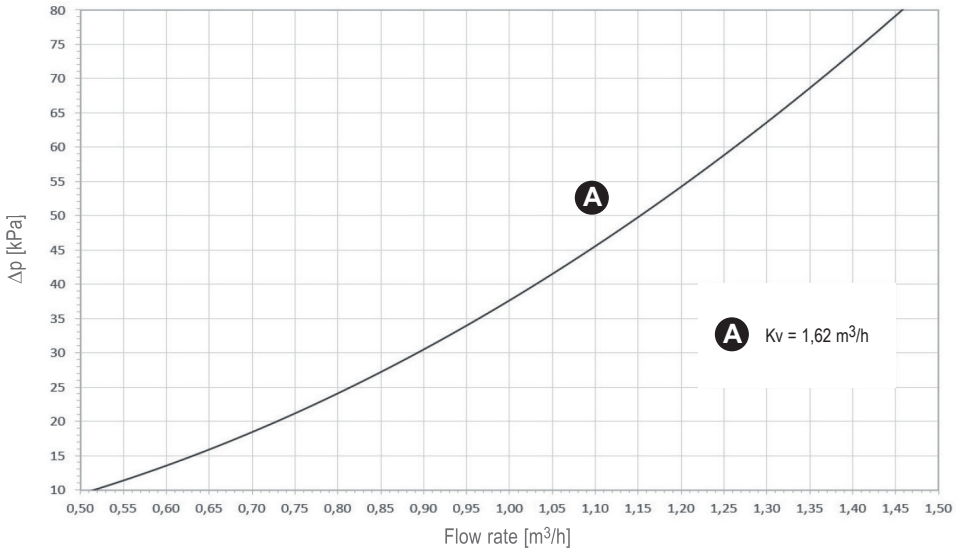
HYDRAULIC FEATURES

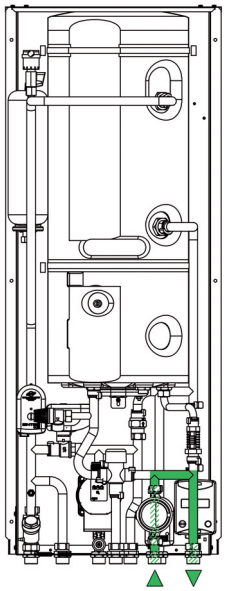
DHW line • head loss *



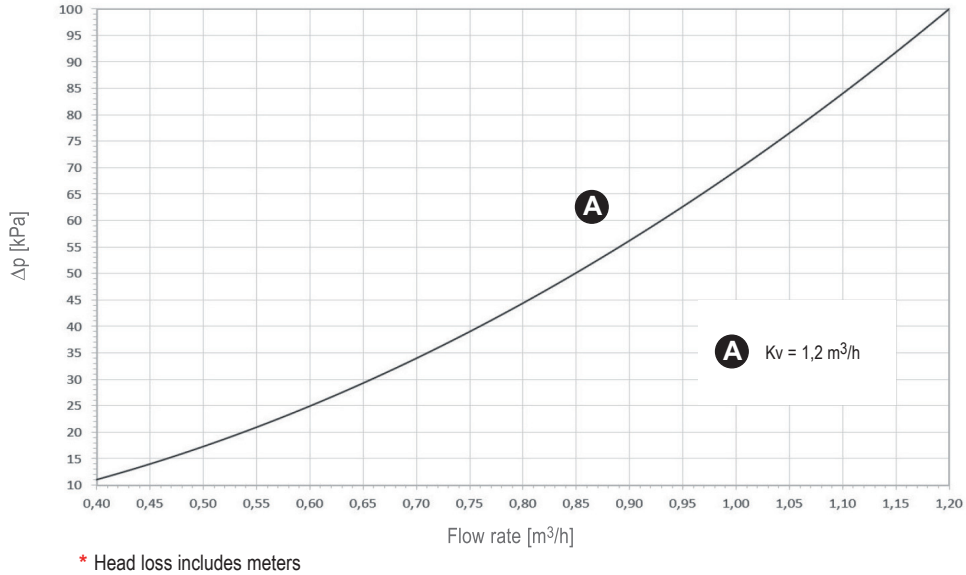


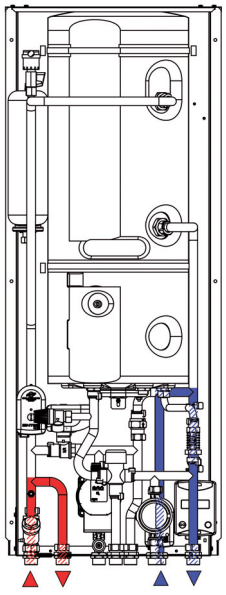
DCW line • head loss *





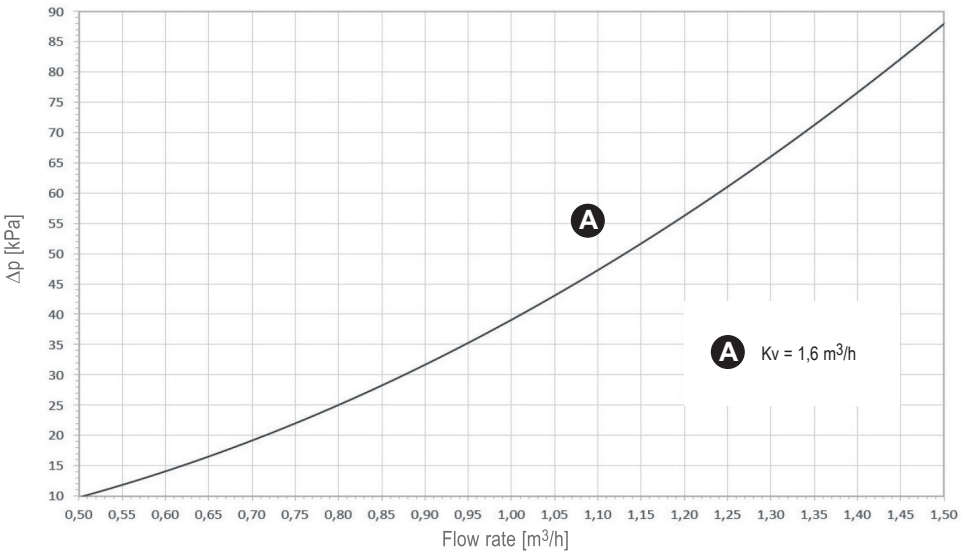
High temperature heating DHW line • head loss *

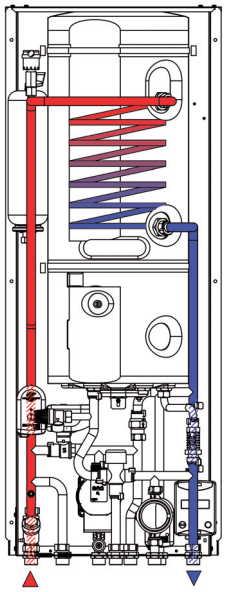




* Head loss includes meters

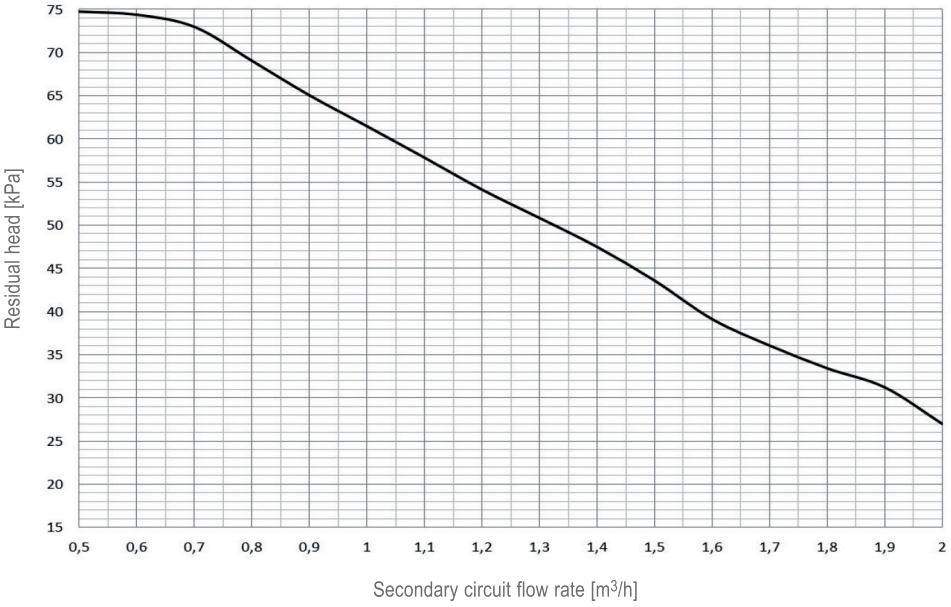
Primary DHW cylinder • head loss *

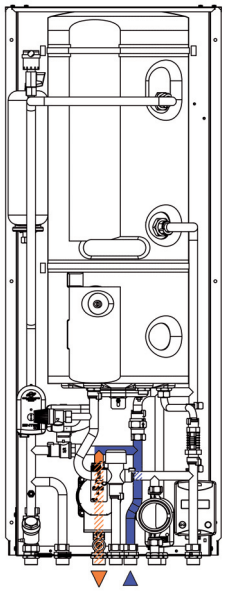




* Head loss includes meters

Low temperature heating residual head • optional





FUTURA AC

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

FAC | **T** | **M** | **P** | **HT**

SERIES

FAC = Futura AC

DOMESTIC WATER METER

0 = not required
T = stup piece

MISCELATORE SU USCITA ACS

0 = not required
M = stup piece

MIXER ON DHW OUTLET

HTN = high temperature
BTN = low temperature
HBN = high temperature + low temperature

SYSTEM PUMP

0 = not required
P = pump unit 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.

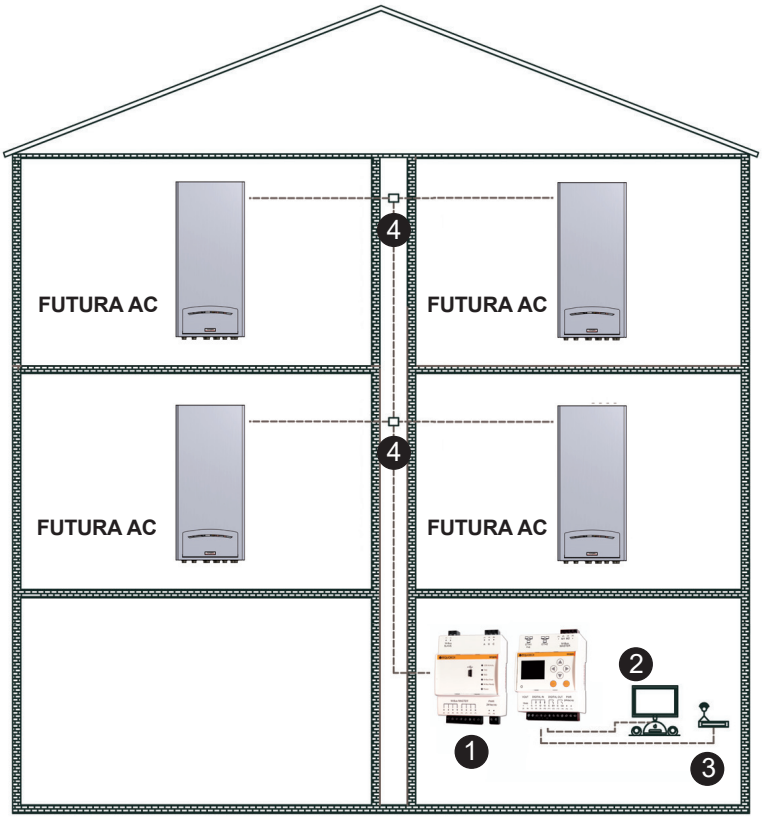
INSTALLATION WARNING

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.

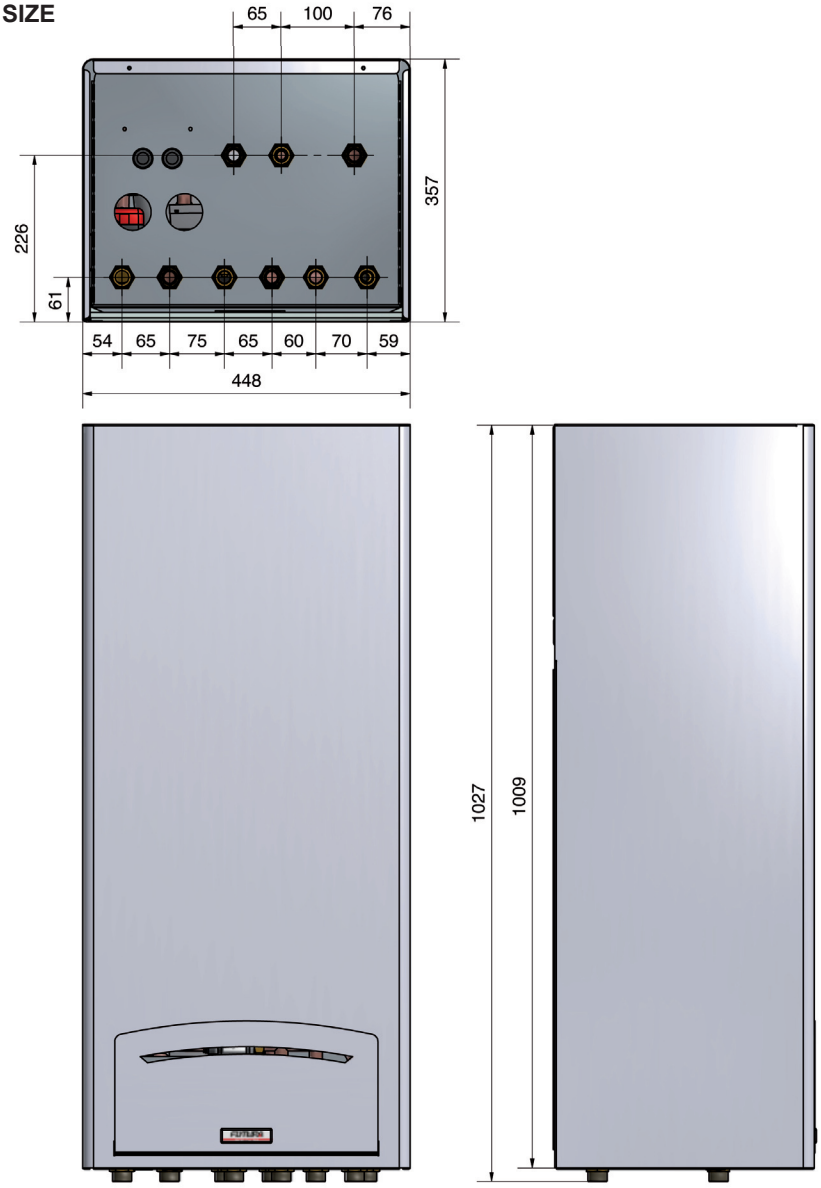
The consumption data can be read directly on the control unit display or by means of a PC connected to the control unit; moreover, it is possible to interface the control unit with a modem in order to be able to query the control unit from a remote position.

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: **CFCAFSI15**.

UPDATED DATA SHEETS AVAILABLE AT www.comparato.com