Fresh Water Stations for DHW
SET



fiorini

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SET
Instant DHW production units

The new SET is an instant domestic hot water production unit that uses a brazed stainless steel plate heat exchanger.

The SET comes with a control unit for DHW temperature regulation, time bands, accessory management and much more. The SET model has the same compact components and dimensions as the T-SET model but includes a greater number of options and adjustment possibilities.

Special **electronic regulation** is carried out by means of a control unit and flow meter on the secondary circuit. The graphic display on control unit allows the user to monitor operations as well as easily set the parameters of use.

For optimal ease of use, a variety of accessories is available, including the new domestic hot water **RECIRCULATION KIT**, which is to be installed inside the unit. Find out more on page 257



TESTED

SET 20, 30, 40



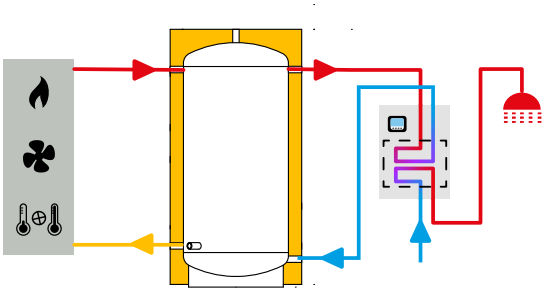
SET 80



Plus

- ✔ Compact wall module with reduced overall dimensions
- ✔ Pre-painted, aluminium cladding case
- ✔ Fitted for assembly of DHW recirculation kit
- ✔ Closed-cell, polyethylene foam insulation, which insulates the entire hydraulic system
- ✔ STAINLESS STEEL domestic hot water pipes
- ✔ Shut-off valves on each connection
- ✔ Integrated safety valve on DHW circuit
- ✔ Easy Plug and Play installation
- ✔ Simple and economical use
- ✔ Ultrasonic flowmeter (SET 80 only)

Start-up: the first start-up is recommended. See page 361



The SET is available in 4 models

				With packaging	
Model	DHW nominal flow rate	Code	Price	Dimensions cm	Weight kg
SET 20	(DHW 20 l/minute)	842030149X		63x40x21	18
SET 30	(DHW 30 l/minute)	842030150X		63x40x21	19
SET 40	(DHW 40 l/minute)	842030151X		63x40x21	20
SET 80	(DHW 80 l/minute)	842030180X		63x40x21	30

SET
Main features

Efficient electronic control of the pump speed

Option of controlling a recirculating pump for the domestic water loop, by setting the pump operating times and the temperature of the recirculation loop below which the pump is activated

Option of managing anti-legionella treatment by means of thermal shocks along the entire DHW adduction line (activation of a supplemental heat source is possible when anti-legionella treatment is active): the anti-legionella function can be activated if there is a heat source above 65°C

High-efficiency electronic pump controlled using PWM signal

Wall assembly using rawlplugs and L-hooks, supplied with the unit

Graphic display including:
- Setting the DHW usage temperature
- Setting the maximum DHW temperature. This is a safety setting that stops the unit if the temperature reaches the maximum value entered

Solar power system circulator command and control
Heat generator management (boiler, heat pump, heating elements, etc.): option of activating and deactivating a heat generator when the storage tank temperature falls below the set point
Managing cascade kits
Managing the mixing valve kit on the primary circuit
Storage tank stratification kit management



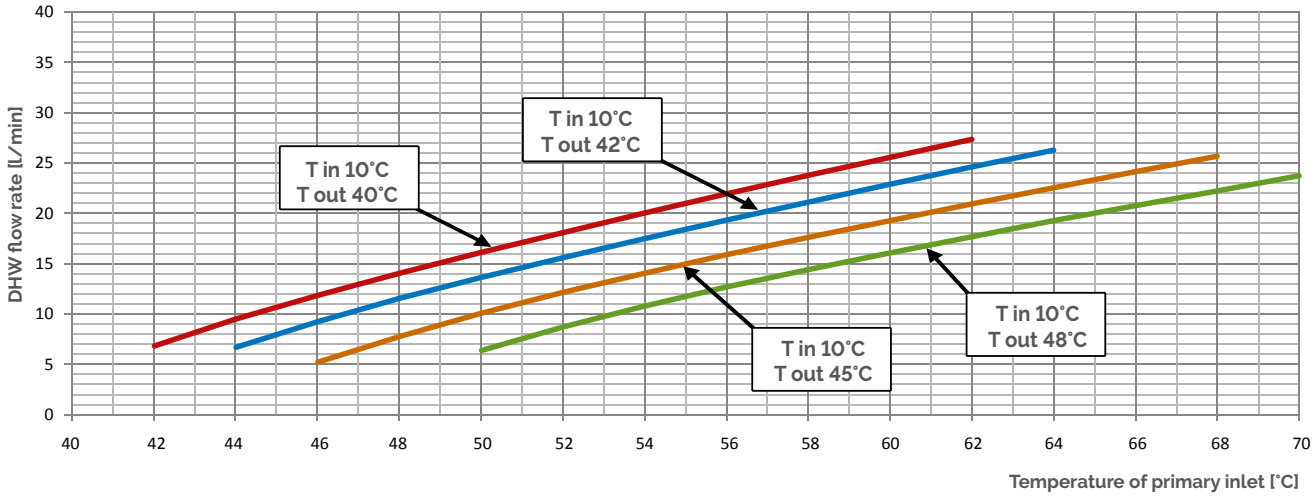
Specific features of SET 80

The new **Ultrasonic Flowmeter**, installed on the secondary circuit, is free of mechanical components vulnerable to pressure changes, ensuring greater durability and reliability of the product over time. The flowmeter has an extremely high detection sensitivity: it activates starting from 1 l/min and reaches up to 80 l/min.

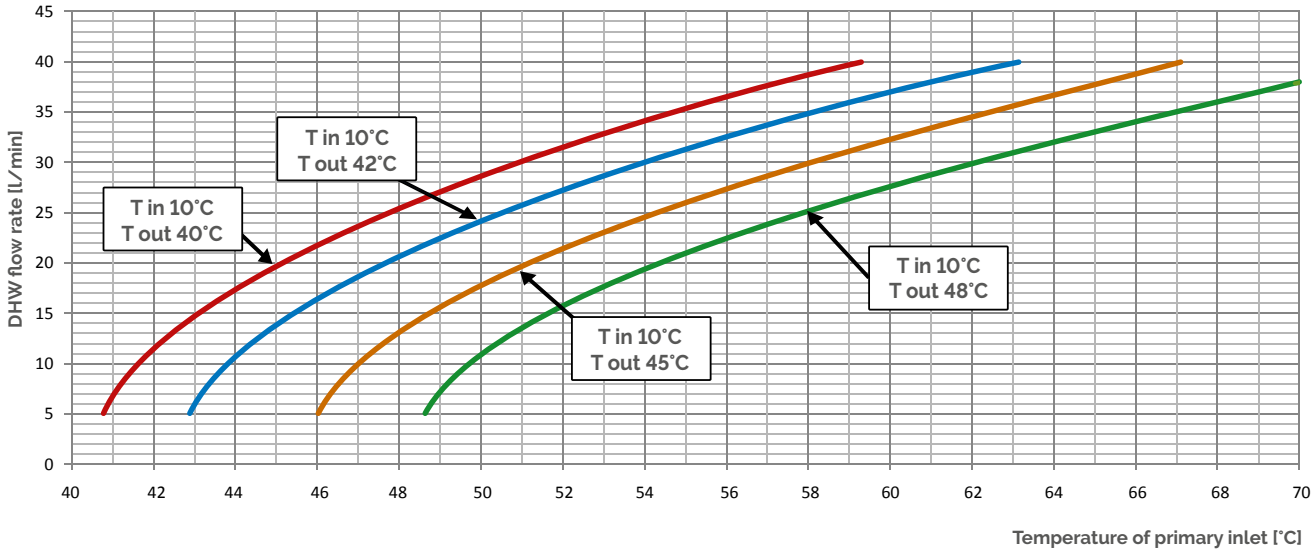


SET
Thermal performance

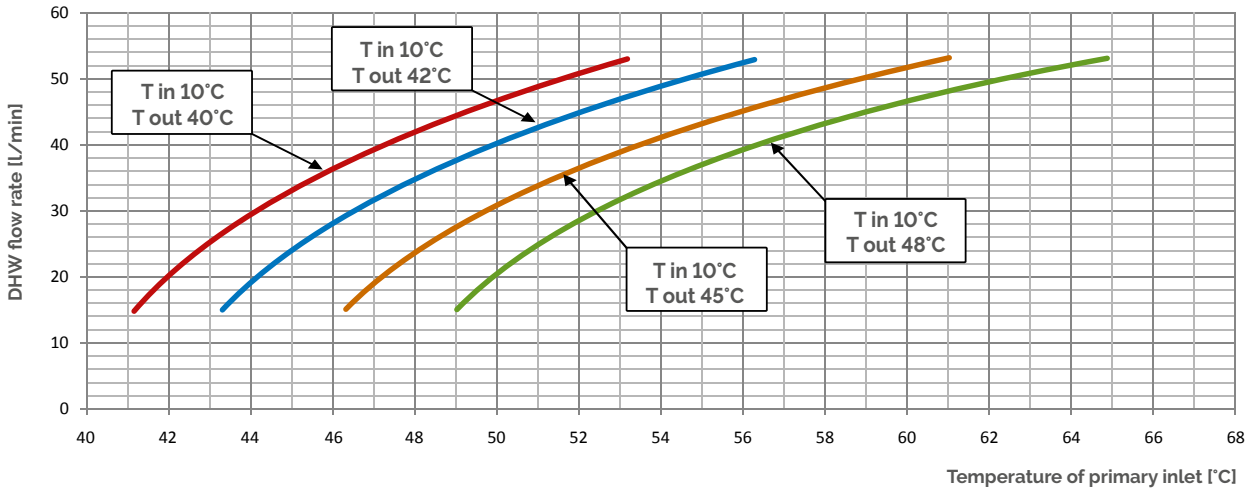
Thermal performance SET 20



Thermal performance SET 30

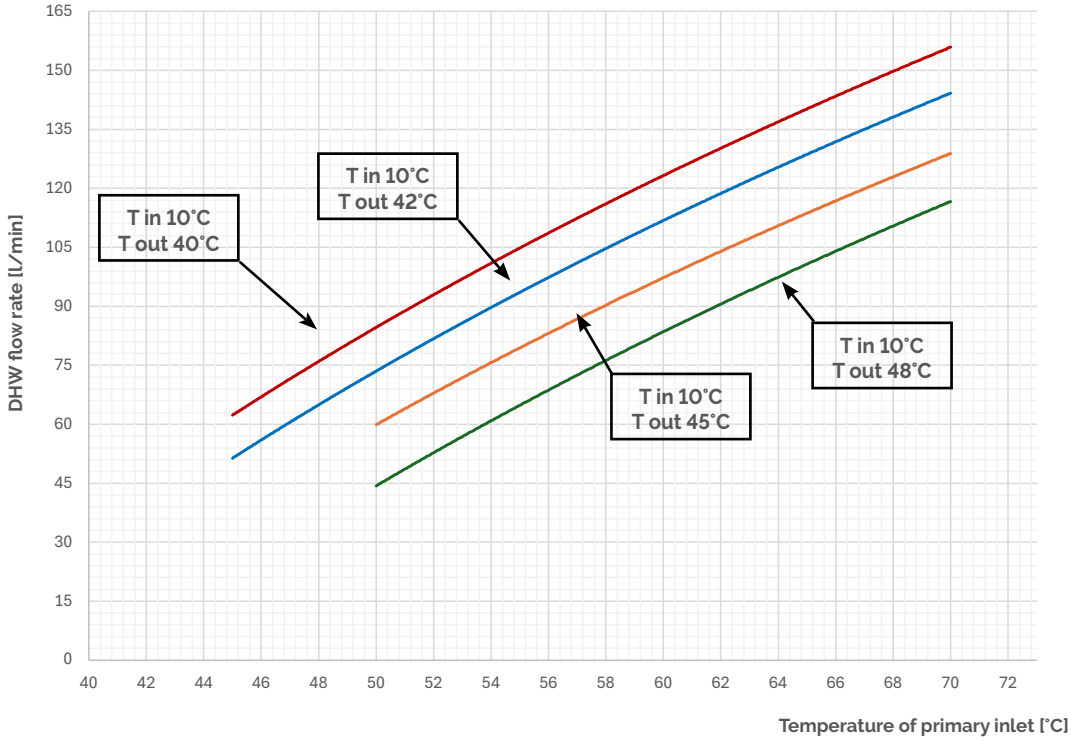


Thermal performance SET 40

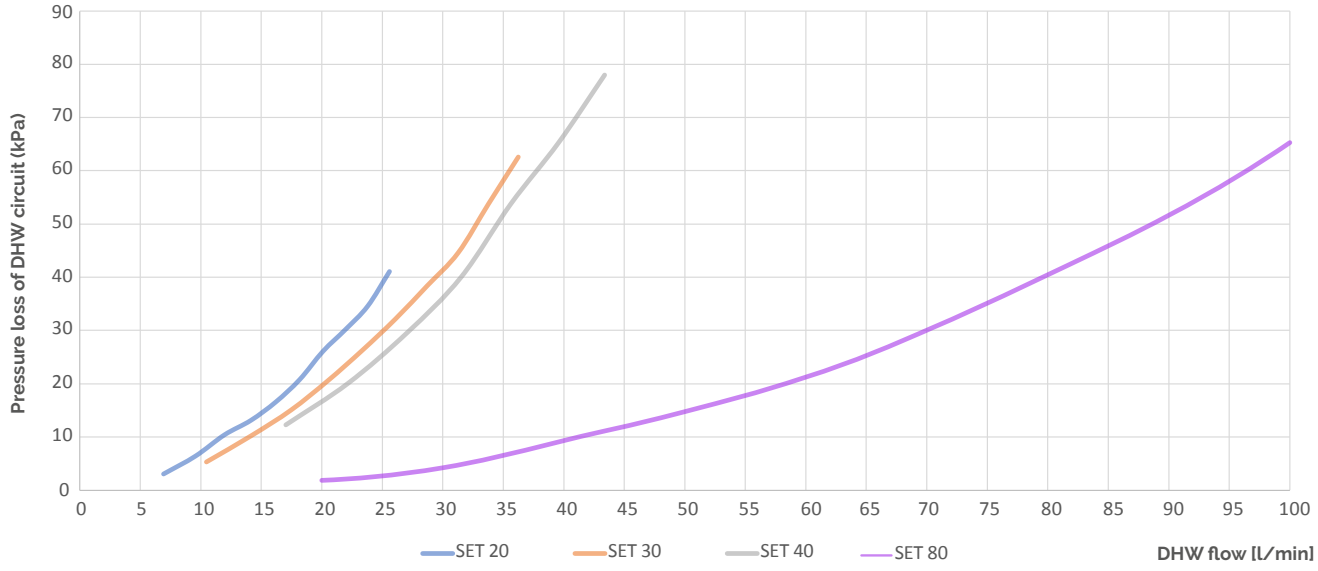


SET
Thermal performance

Thermal performance SET 80

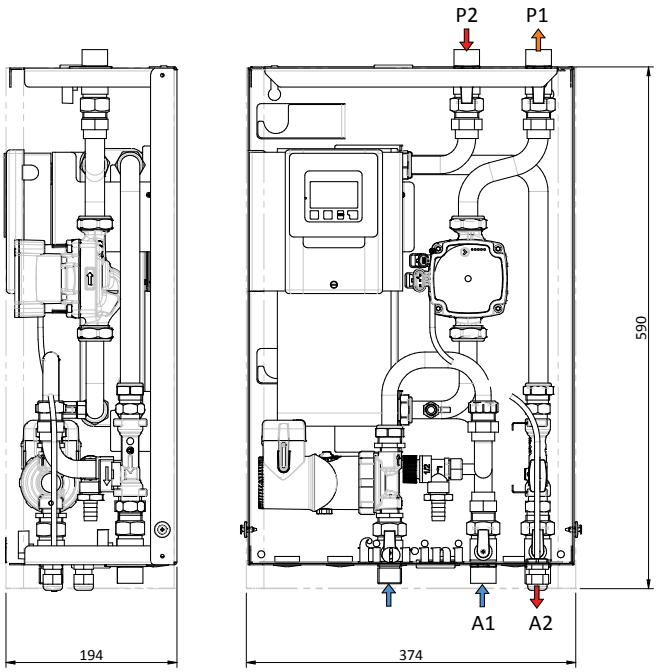


SET
Hydraulic performance



SET
Dimensions

SET 20, 30, 40



SET 80

Key

A1	DHW inlet
A2	DHW outlet
P1	To energy source
P2	From energy source

The domestic recirculating pump shown in the drawing is optional

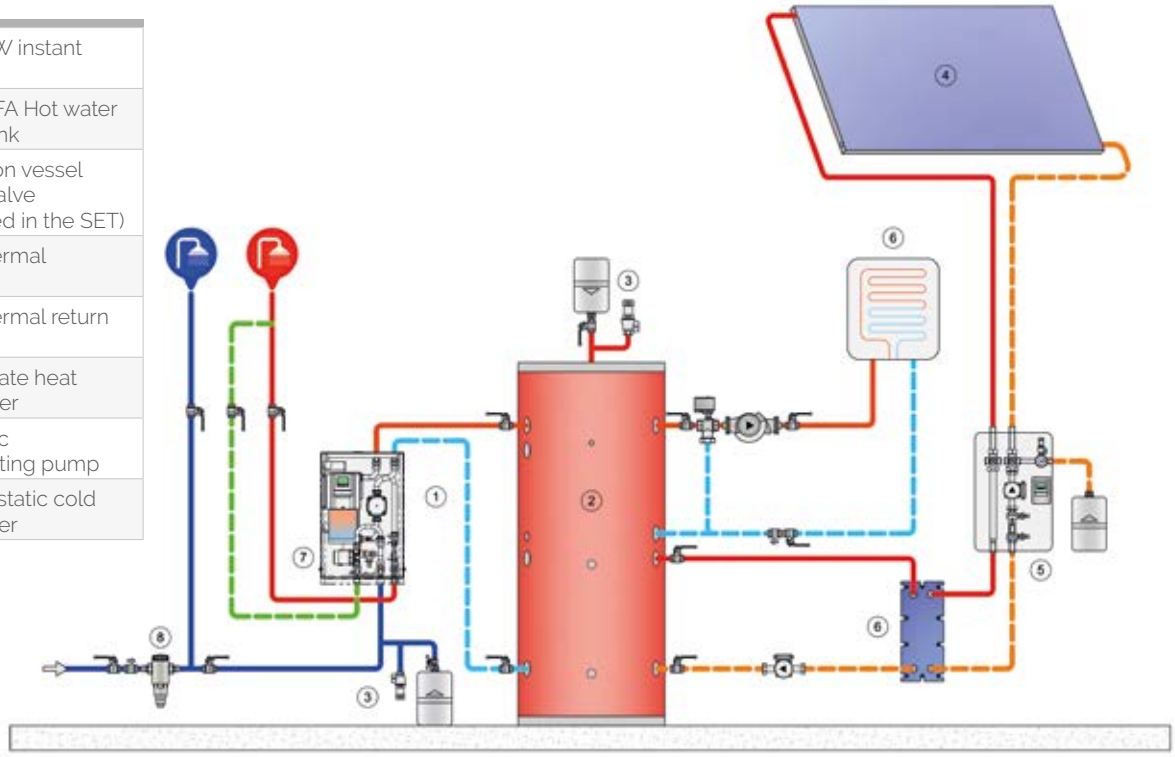
Technical Data Table

		SET 20	SET 30	SET 40	SET 80
Power supply	V/Ph/Hz	230/1/50			
Primary pump power min/max	W	10-75			3-180
Primary pump consumption min/max	A	0,03-0,66			0,04-1,42
Maximum system recirculating pump power managed by the control unit	W	460			
Primary flow rate	l/h	1500	1600	2500	5400
Primary circuit residual head	m.c.a.	5	4	3	4
Weight without packaging/with packaging	kg	17/18	18/19	19/20	27/28
Primary circuit volume	l	0,6	0,8	1,2	2,8
Domestic circuit volume	l	0,7	0,9	1,4	2,9
Maximum operating pressure primary circuit	bar	6			10
Maximum operating pressure domestic circuit	bar	10			10
Primary circuit connections	inches	UNI ISO 228/1 – G 3/4			UNI ISO 228/1 – G 1
Secondary circuit connections	inches	UNI ISO 228/1 – G 3/4			UNI ISO 228/1 – G 1
Maximum operating temperature	°C	95			
Electrical protection rating		IP40			
Length of the power supply cable	m	1,5			
Min DHW ignition flow	l/min	2			2
Max DHW flow	l/min	25	35	45	80
Dimensions (HxLxW)	mm	590X374X194			

SET
Installation diagram
in combination with hot water buffer tank

Key

1	SET DHW instant heater
2	Fiorini PFA Hot water buffer tank
3	Expansion vessel (safety valve integrated in the SET)
4	Solar thermal systems
5	Solar thermal return unit
6	Fiorini plate heat exchanger
7	Domestic recirculating pump
8	Bacteriostatic cold water filter



Standard supply

The SET instant water heater is shipped in a cardboard box and includes:

- ✔ Complete instant water heater with power cord
- ✔ Template for easy layout of holes on the wall to secure the instant DHW heater
- ✔ Rawlplugs and L-hooks to mount the instant DHW heater to the wall
- ✔ Use and maintenance manual

SET
Accessories on request

A number of accessory kits are available to be combined exclusively with the SET heater to improve efficiency, optimise consumption and enhance ease of use for the end user:

1. SET connection kit in cascade
2. SET recirculation kit
3. Mixing valve kit on primary circuit
4. Stratification buffer tank kit (with external deviation valve)
5. External relay

N.B.: The SET electronic control unit manages up to 3 digital outputs, so it is necessary to check how many outputs are engaged by each chosen accessory according to their requirements. The new SET model may be integrated with the external relay accessory to add a digital output to the control unit.

The following pages outline detailed specifications for each accessory: codes and prices can be found on page 259

SET connection kit in cascade

The SET connection Kit in cascade (not usable on T-SET units), is the ideal solution for all applications where the demand for domestic hot water is highly variable. It is possible to connect up to a maximum of 8 instant DHW heaters, guaranteeing a production of DHW from a minimum of 2 l/min up to 360 l/min*. The electronic control units installed on each instant DHW heater communicate with one another via CanBus. The electronics can, thus, decide how many and which DHW heaters must start working depending on the conditions of use.

Advantages and benefits:

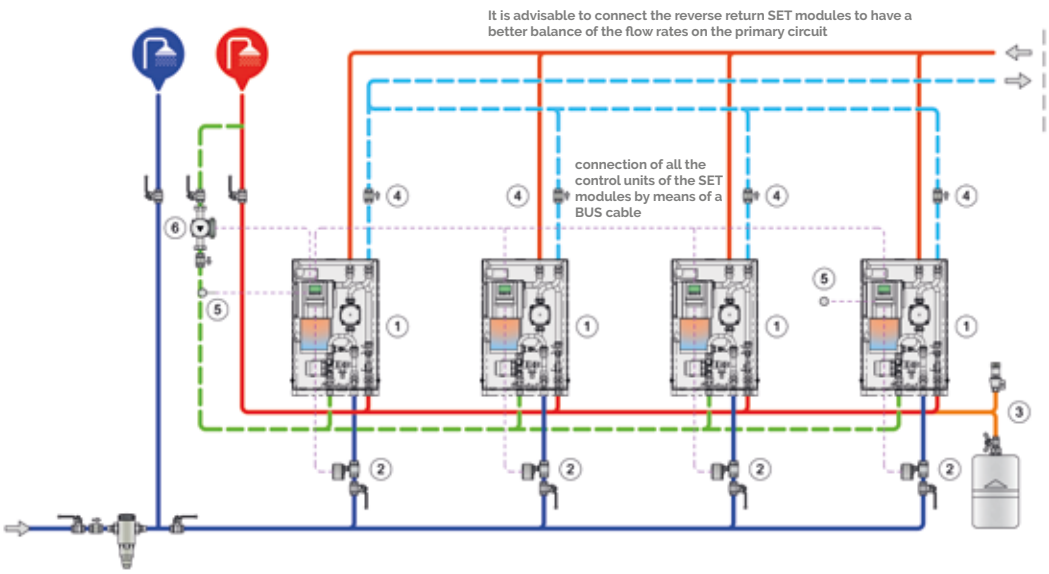
- ✔ Wide DHW production range: from 2 to 360 l/min
- ✔ Maximum reliability. Thanks to the self-diagnosis performed by the control unit, if a DHW heater malfunctions, it is automatically switched off and another one is started. Continuity in the production of DHW is thus guaranteed
- ✔ Even more precise temperature adjustment. Adjustment means that the correct number of instant DHW heaters are started based on the flow rate and DHW temperature requested. Each DHW heater, therefore, only operates in close-to-nominal conditions, improving efficiency and adjustment accuracy.
- ✔ The system designed with DHW heaters in cascade can be expanded by adding other units later on.
- ✔ Possibility of performing scheduled maintenance on DHW heaters without halting the supply of DHW.
- ✔ Each DHW heater works for the same number of hours, guaranteeing maximum system durability.

Kit supplied.

Install one kit for every instant DHW heater. The kit is supplied separately, unassembled and includes:
- ✔ 1 x motorized zone valve with fast 230 V motor
- ✔ 1 x fittings for coupling
- ✔ 1 x CanBus cable and 2 x CanBus line terminal resistors
- ✔ Instructions

*The flow rate of DHW that can be delivered by a cascade system is equal to the sum of the flow rates that can be delivered by each
single active heater included in the Thermal performance section.

Installation diagram



Key

1	DHW production unit SET
2	2-way valve for waterfall kit
3	Expansion tank
4	Non-return valve
5	Temperature probe
6	DHW circulation pump

MULTIGATEWAY -Remote management for SET fresh water stations

The Multigateway is a device with a touchscreen display for remote management of devices that communicate with the CAN protocol. Once the Multigateway is installed, it is possible to manage the system directly via the App or with the integration of a BMS (Building Management System) that communicates using the Modbus protocol. In the case of a SET cascade, it is sufficient to use 1 Multigateway.

Operating conditions

- ✔ Protection class: IP 20
- ✔ Temperatures: 0°C - 50°C
- ✔ CAN cable length < 3 m, or you need to use shielded cable

Main features

- ✔ Data Logger
- ✔ Fieldbus CAN
- ✔ Modbus RTU RS 485
- ✔ WiFi module
- ✔ Display touchscreen
- ✔ 12/24 V Power supply
- ✔ Android & iOS app
- ✔ Dimensions: 75 x 95 x 19 mm
- ✔ ABS body and glass front

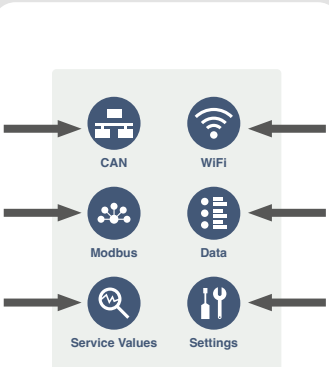


Main menu

CAN
Add devices to the network

Modbus
Protocol specific settings

Service values
System messages and data



WiFi
WiFi settings

Data
Data storage settings

Settings
Device parameters such as language, brightness, etc.

SET recirculation kit

The SET can be integrated into an internal or external recirculation system: the internal recirculation kit (1) is equipped with probe and circulator, while the external recirculation kit (2) consists of a probe that controls an external circulator. The two KITs are individually selectable but NOT combinable.
The recirculation kits make it possible to exploit the many options provided by the electronic control unit to control the pump of the domestic recirculation circuit.
The possible settings of the electronic control unit include, among others:

- Time band recirculation programming: the recirculating pump is activated only during the enabled times and when the recirculation temperature is below the set temperature.
- Recirculation pump always on

(1) Internal SET recirculation kit

The recirculation kit can be integrated internal to the SET body using the supplied hydraulic fittings. In case of installation of SET in cascade, the internal recirculation kit cannot be used, but the external kit must be used. In any case, it must be checked that the performance of the recirculation pump is sufficient to deliver a flow rate that is adequately higher than the minimum flow rate of the flowmeter.
The kit is supplied separately, unassembled and includes:

✔ Circulator
✔ Temperature probe to place on the recirculation loop
✔ Recirculation connection pipe
✔ Shut-off valve
✔ Instructions



(2) External SET recirculation kit

The kit is supplied separately, unassembled and includes:

✔ PT1000 temperature probe to be positioned on the recirculation loop
✔ Instructions

A recirculating pump is not supplied with the external kit. A single-phase pump with a maximum power of 460W must be used
N.B.: In the case of several SETS connected in cascade, a common recirculation pump can be installed, managed by the control unit of any of the groups.

Mixing valve kit on primary circuit

The mixing kit allows you to regulate the inlet temperature to the DHW heater. The adjustment precision of the DHW heater is consequently improved, thus ensuring greater comfort, especially in systems that can reach high temperatures in the primary circuit.

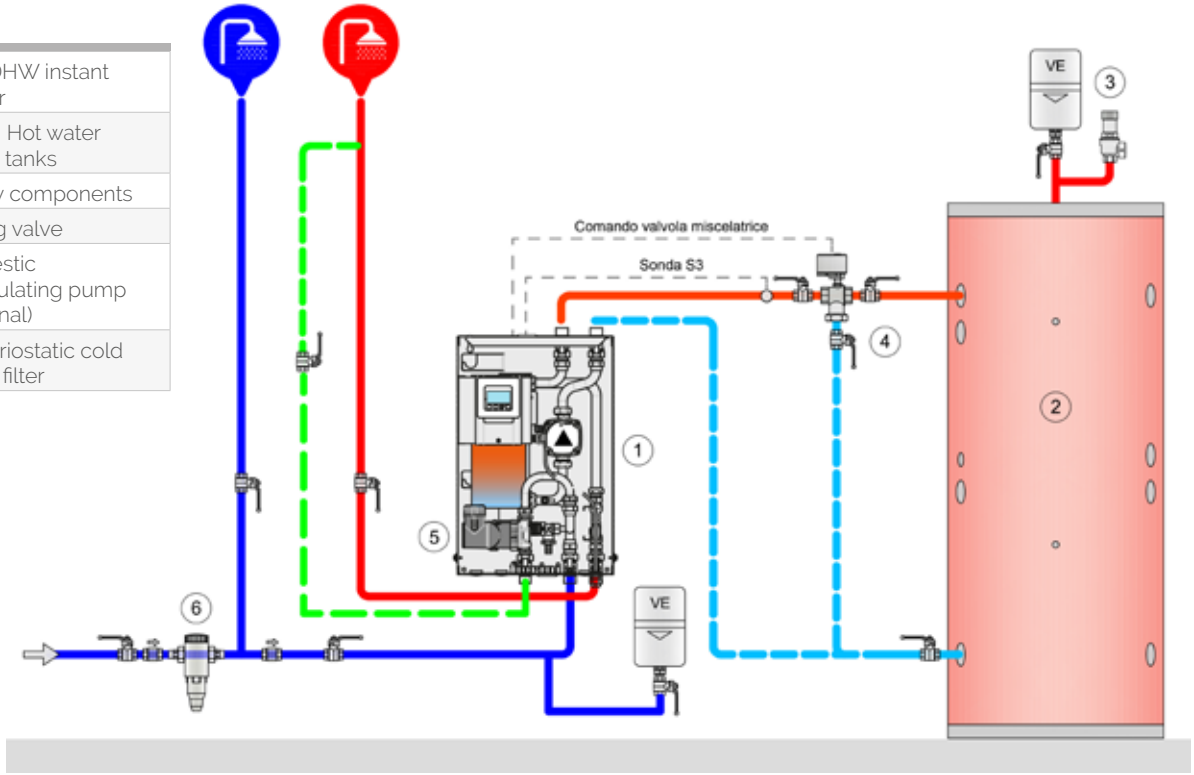
N.B.: If several SETs are installed in cascade to manage the inlet temperature of the primary, a mixing kit must be provided for each SET installed.

Kit supplied

The kit is supplied separately, unassembled and includes:
- ✔ S3 temperature probe to be placed at the exchanger inlet on the primary circuit
- ✔ Instructions
- ✔ Motorised mixing valve

Key

1	SET DHW instant heater
2	Fiorini Hot water buffer tanks
3	Safety components
4	Mixing valve
5	Domestic recirculating pump (optional)
6	Bacteriostatic cold water filter



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Stratification buffer tank kit (with external deviation valve)

The stratification kit on the primary circuit (storage tank) directs the return from the instant heaters to 2 points at different heights of the storage tank, thus favouring the phenomenon of stratification inside the hot water buffer tank and optimising the efficiency of the entire heating system.

N.B.: If several SETs are installed in cascade, it is possible to install a single stratification kit managed by the control unit of any SET.

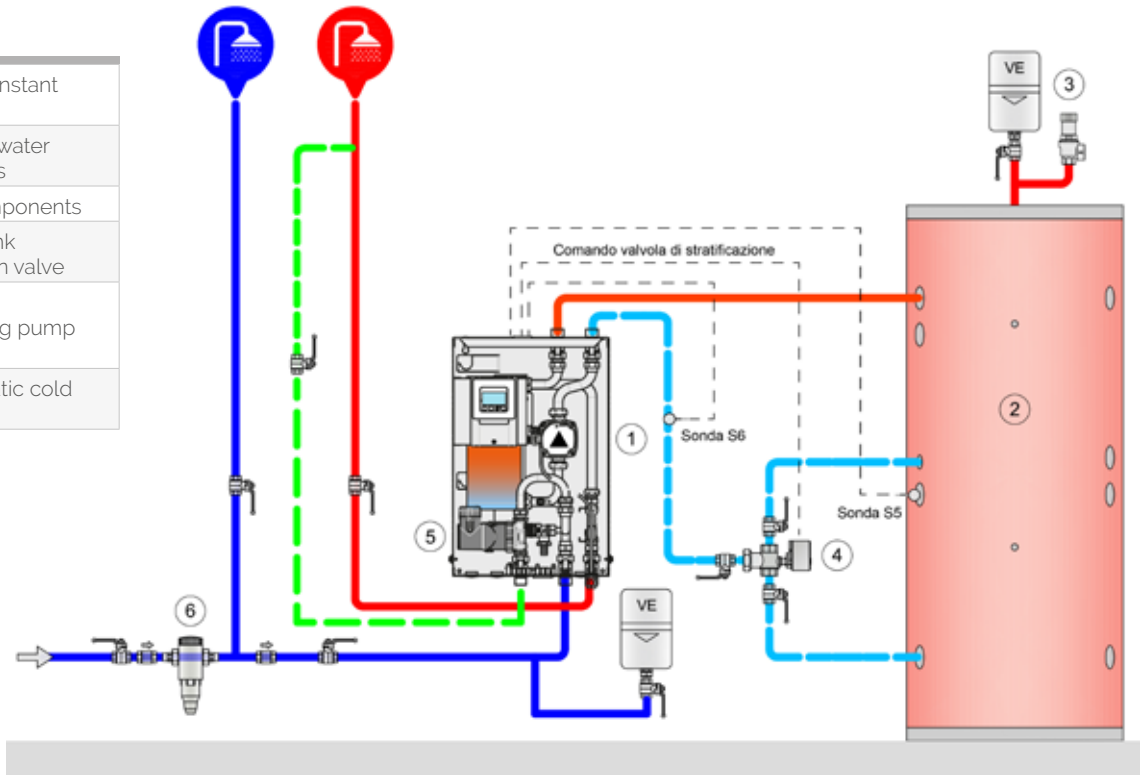
Kit supplied

The kit is supplied separately, unassembled and includes:

- ✔ S5 probe temperature to be placed in the middle of the buffer tank
- ✔ S6 probe temperature on the return of the primary circuit
- ✔ Instructions
- ✔ Motorised stratification valve

Key

1	SET DHW instant heater
2	Fiorini Hot water buffer tanks
3	Safety components
4	Storage tank stratification valve
5	Domestic recirculating pump (optional)
6	Bacteriostatic cold water filter



SET - Accessory codes and prices

Description	Digital ports	Code	Price
SET 20,30,40 EXTERNAL CASCADE KIT	-1	842040006X	
SET 80 EXTERNAL CASCADE KIT	-1	842030092X	
SET INTERNAL RECIRCULATION KIT	-1	842040004X	
T-SET/SET EXTERNAL RECIRCULATION KIT	-1	842040009X	
SET EXTERNAL MIXING VALVE KIT	-2	842040007X	
SET EXTERNAL STORAGE TANK STRATIFICATION KIT	-1	842040008X	
MULTIGATEWAY	0	C22120078	
EXTERNAL RELAY 1W 6A OUTPUT 0-10V IP55	+1	C24090225	

N.B.: The control unit manages up to 3 digital outputs: check the availability of the free outputs and the requirements of the various accessories. The following accessory is available: **External relay** 1W 6A OUTPUT 0-10V IP55, which converts one of the unused analogue outputs (V2) from 0-10V / PWM into an exchange contact (allows the increase of the digital outputs of the control unit by 1 unit)



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