
GE556Y401 - GE556Y402

Description

The user satellites GE556Y401 and GE556Y402 allows the metering of heat energy consumption for heating and the production of SHW (Sanitary Hot Water) in modern autonomous systems with centralised heat production (e.g. district heating). The management of the satellite parameters is completely electronic. The various parameters can be set via remote control which also performs the function of programmable chronothermostat. The satellites allows significant energy savings, minimizing the flow demand from the primary side and reducing the return temperature.

Versions and product codes

Product code	Type	Heating side power	SHW heat exchanger rated power	Template with valves
GE556Y401	Heating and SHW production	26 kW	58 kW	GE551Y074
GE556Y402	Heating and SHW production	26 kW	67 kW	GE551Y074

Completion codes

The following components can be installed on each satellite:

- Heat energy meter of the GE552 series.
- Sanitary hot water meter, GE552-2 series.
- Template with 6 shut-off valves and 3/4" connections: code GE551Y074


Note.

Use energy meters approved in accordance with the standardized "flow disturbance elements" and provided for by the EN 1434 for null rectilinear section upstream and downstream of the meter, such as the GE552Y122.

Main features

- Electronic thermoregulation with SET POINT, to manage the SHW temperature and heating temperature.
- Remote control with chronothermostat function to manage the parameter, with display.
- External temperature sensor for climatic compensation.
- Heat exchanger for instantaneous SHW production.
- Flow control switch for priority SHW production.
- Motorized three-way priority valve on the delivery of the primary side.
- Motorized two-way modulating valve on the return of the primary side.
- Manual air vent filter and valve on the primary side.
- Safety pressure switch for low pressure on the primary side.
- Electrical and thermal safety valve on the heating side.
- Connections 3/4".

- Self-modulating circulator 15/6, centre distance 130 mm, complying with ErP directive (2009/125/CE).
- Heat exchanger and fully insulated piping.
- WRAS-certified components for the sanitary circuit.
- Spacers for inserting the meters.
- Painted sheet metal cabinet (RAL9010), with key locking.

Technical data

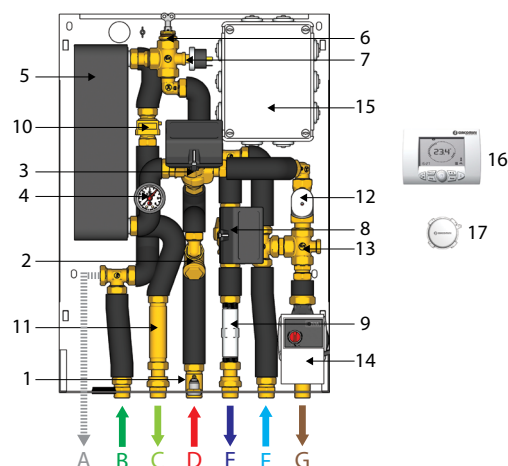
- Max. working temperature: 90 °C
- Primary circuit max. working pressure: 10 bar
- Secondary SHW circuit max. working pressure: 10 bar


Warning.

Maximum operating differential pressure for the primary side = 4 bar (priority valve)

- Temperature range of the secondary heating circuit:
low temperature 25÷45 °C
high temperature 25÷85 °C
- Temperature range of the secondary SHW circuit:
30÷60 °C (SET POINT 50 °C)
- Nominal flow rate on primary circuit: 1070 l/h @ 75 °C for 58 kW
1150 l/h @ 75 °C for 67 kW

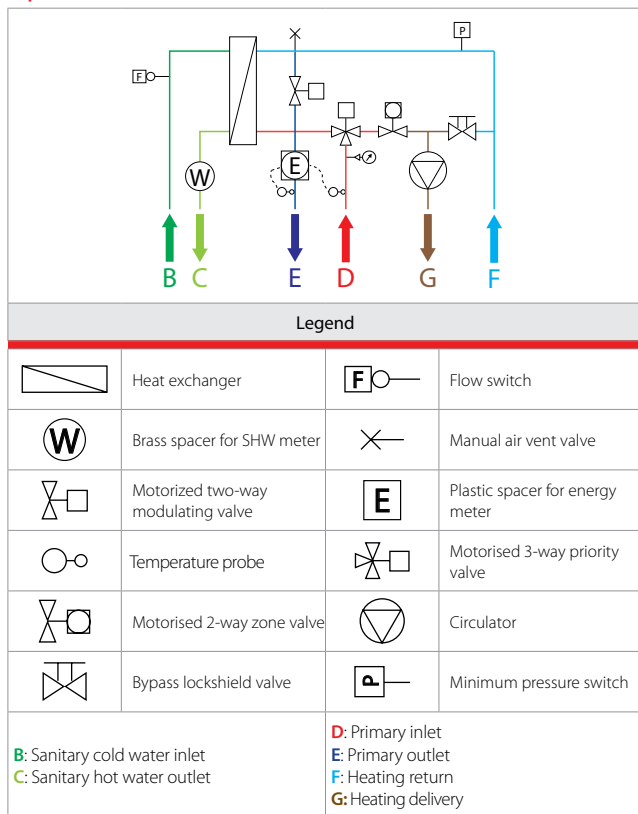
Components


Legend

1	Housing for energy meter temperature probe	PRIMARY
2	Filter	
3	Motorized three-way priority valve for SHW	
4	Manometer	
5	Heat exchanger for the sanitary hot water function	
6	Manual air vent valve	
7	Minimum pressure switch	
8	Motorized two-way modulating valve	
9	Plastic spacer for heat energy meter	
10	Flow switch	SHW PRODUCTION
11	Brass spacer for SHW meter	
12	Motorised 2-way zone valve for heating and electric safety	HEATING
13	Bypass lockshield valve	
14	Circulator	
15	Cabinet with electronic regulation unit	CHECKS
16	Remote control / chronothermostat with display	
17	External temperature probe	
<div>A: Sanitary cold water outlet (optional) B: Sanitary cold water inlet C: Sanitary hot water outlet</div> <div>D: Primary inlet E: Primary outlet F: Heating return G: Heating delivery</div>		



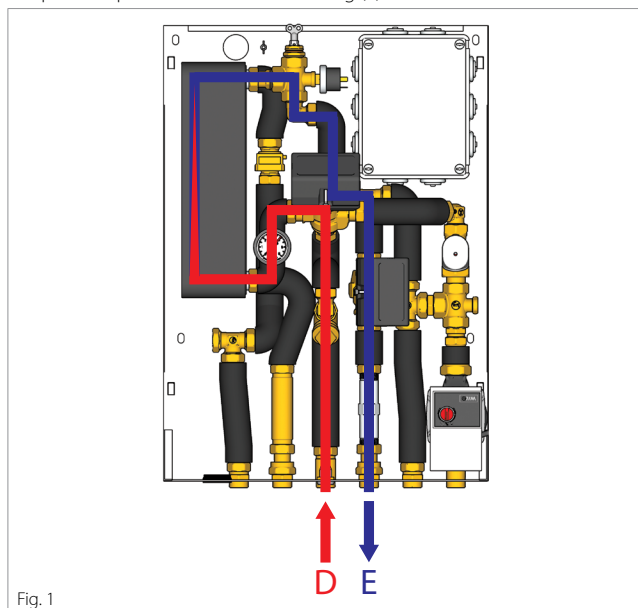
Operation



Primary

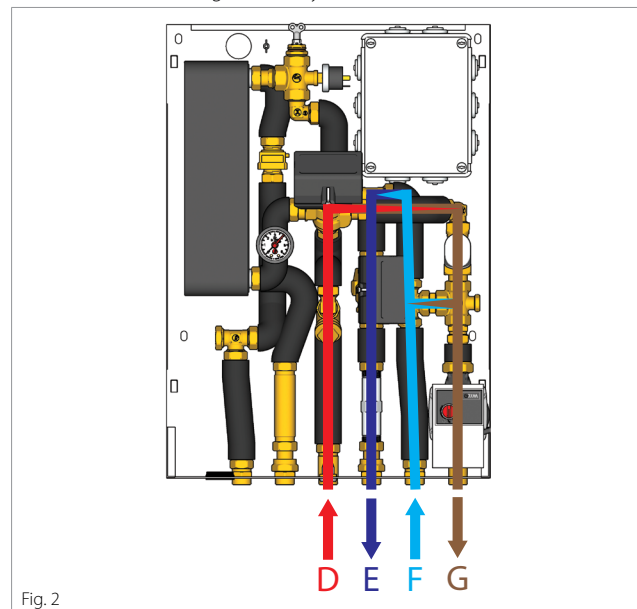
Inlet (D) and return (E). The primary circuit is composed of a Y-filter, a motorized three-way priority valve, a manual air vent valve, a heat exchanger, a manometer, a minimum pressure switch and a motorized two-way modulating valve.

Energy Saving function: the two-way modulating valve controlled by the electronic management of the satellite, restricts the flow demand from the primary to the minimum necessary to obtain the pre-set SET POINT temperature. The priority valve diverts the flow in the heat exchanger (if there is a request of SHW: SHW flow switch enabled) or in the heating system. The heat energy meter can be installed in place of the plastic spacer, fitting its temperature probe in the relative housing (1).



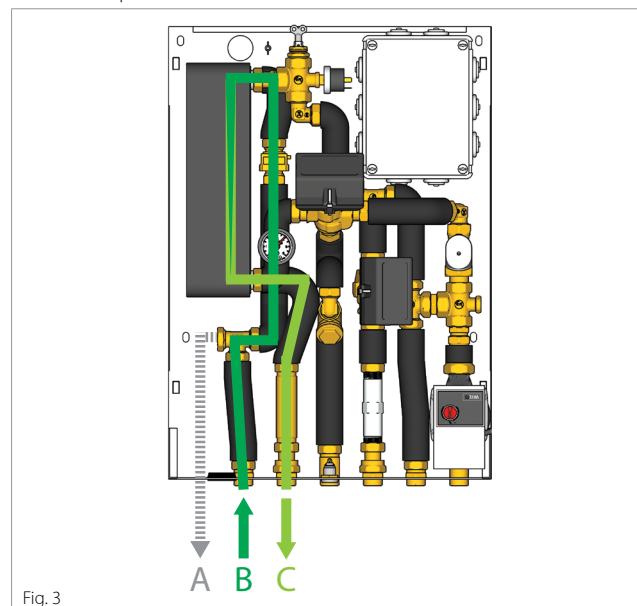
Heating

Delivery (G) and return (F). The heating circuit is composed of a motorized two-way zone valve with thermal safety function (the valve stops the flow in the system in the event the delivery temperature exceeds 5° C, the temperature set on the remote control - SET POINT), an adjustable bypass lockshield valve and a high-efficiency circulator (ErP 2009/125/EC).



Sanitary hot water


Cold water inlet (B), hot water outlet (C) and cold water outlet (A - optional). The SHW circuit is comprised of a flow switch and a brass spacer for the introduction of the water meter. A hot water meter can be installed instead of the brass spacer.








Settings of the remote control/chronothermostat


Operation in mode: OFF, SUMMER, WINTER, HEATING ONLY

The selection of the operating mode is done by repeatedly pressing the button .


Off: "OFF" and the current time are shown on the display. Only the antifreeze function (if set) is enabled in this mode. Any request for the SHW or heating mode operation is ignored.



Summer: the measured room temperature, the current time and the icon are displayed . The SHW, if set, and the antifreeze function are enabled in this mode. Any request for the heating mode operation is ignored.









Winter: the display shows the measured room temperature, the time and the current day, the icons   and the program set for the current day. All SHW, heating and, if set, antifreeze functions are enabled in this mode.




Heating only: the display shows the measured room temperature, the time and the current day, the icon  and the program set for the current day. All heating and, if set, antifreeze functions are enabled in this mode. Any request for the SHW mode operation is ignored.




Clock and temperature setting




Depending on the operating mode selected (OFF / SUMMER / WINTER / HEATING ONLY) by pressing the button , the clock and the temperature of the boiler can be set.




The value is displayed for a time equal to the display settings time delay and is identified by its flashing icon. Press key  to pass to the next value and turn the knob  to modify the value.




Clock: press key  until the icon  and the time value start to flash. Turn the knob  to select the desired time. Press the knob  to pass to the minutes. The minutes start flashing: turn the knob  to select the desired minutes. Press the knob  to pass to the day of the week. The days of the week start flashing: turn the knob  to select the desired day. Press the knob  to confirm the value entered.

Day Set point: press key  until the icon  and the day set point value start to flash. Turn the knob  to select the desired value.

Night Set point: press key  until the icon  and the night set point value start to flash. Turn the knob  to select the desired value.

Heating Set point: press key  until the icon  and the heating set point value start to flash. Turn the knob  to select the desired value.

SHW Set point: press key  until the icon  and the SHW set point value start to flash. Turn the knob  to select the desired value.

Kd: this setting is only available if the remote control is configured as the modulator with the use of the external probe (P04 = 2 or 3). press key  until the icon  and the relative value start to flash. Turn the knob  to select the desired value.



NB:
For the other operating modes of the remote control, refer to the corresponding instruction sheet.

Electric connections

An electrical cabinet IP55 containing the electronic control board is located at the top right of the satellite.

- The satellite is powered electrically by connecting the 230 V mains supply to the three-pin terminal board M1 of the electronic board.
- The remote control/chronothermostat (K480Y002) is connected to terminals 23-24 of the electronic board.
- The external temperature probe (K365PY002) is connected to terminals 27-28 of the electronic board.
- The optional safety thermostat (K373/K373I), is connected to terminals 39-40 of the electronic board.

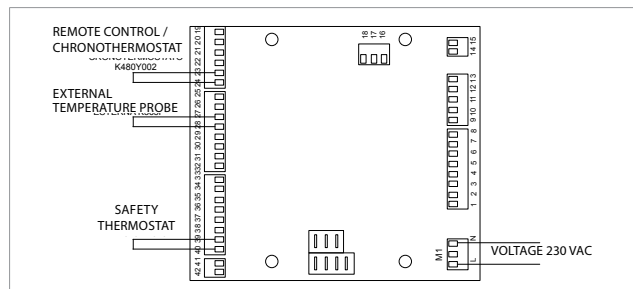


Diagram of the electronic board

Technical data

- Electronic board power supply of the satellite: 230 V
- Supply voltage frequency: 50÷60 Hz
- Ambient operating temperature: -20÷60 °C
- Ambient storage temperature: -20÷80 °C
- Humidity: max 90 % @ 40° C non-condensing
- Maximum absorption: 7 VA
- Maximum length of external probe cable: 30 m
- Maximum length of remote control cable: 30 m

M-Bus

To connect the M-Bus data transfer cable to the concentrator, refer to the data sheet of the heat energy meter used.

Protection and safety systems



Warning.
Risk of burns and electric shock. The satellite must only be accessed by skilled personnel, authorised by the building administrator.

It is important that the satellites are accessed only by skilled personnel authorised by the building administrator: the box is locked. As optional is possible to install a K373/K373I safety thermostat to prevent the high temperature on the heating side.

Checks and Maintenance

Heating circuit pressure

Regularly check the pressure in the heating circuit by means of the manometer: the pressure value must be kept above 1 bar (values lower than this may cause cavitation, damaging the circulator). There is a pressure switch with a 0,8 bar setting to protect the circulator.



Warning.
The satellite will turn off and the display on the remote control signals an error E71 if the pressure is less than 0,8 bar. Fill the system again to restart the satellite.

You must set up a filling system for heating - i.e. a connection from the sanitary circuit to the heating circuit, with a suitable backflow preventer. Attention: risk of burns. Use the manual air vent to remove the air in the circuit.

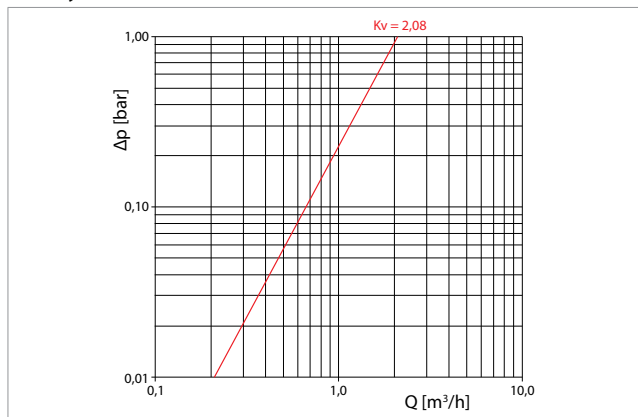


Warning.
Installation must be carried out by skilled personnel, authorised by the building administrator. Respect the regulations regarding the use (installation, fixing, etc.), operation, recalibration and replacement of the meters. Refer also to the assembly instructions provided with the meter.

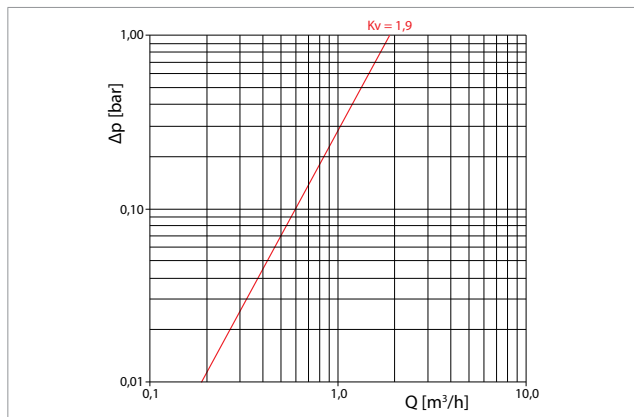


Operating data for GE556Y401

Primary circuit



Primary circuit for SHW production, modulating valve all open (see fig.1)



Primary circuit for heating, lockshield valve and modulating valve all open (see fig.2)

Heating

Heating			Flow rate [l/h] Primary outlet temperature (35-30 °C)			
Circulator speed	Flow rate [l/h]	Power [kW]	75 °C	70 °C	65 °C	60 °C
Max.	1500	8,8	170 l/h (30 °C)	190 l/h (30 °C)	215 l/h (30 °C)	250 l/h (30 °C)

Primary circuit data for delivery temperature 35-30 °C

Heating			Flow rate [l/h] Primary outlet temperature (45-40 °C)			
Circulator speed	Flow rate [l/h]	Power [kW]	75 °C	70 °C	65 °C	60 °C
Max.	1500	8,8	215 l/h (40 °C)	250 l/h (40 °C)	300 l/h (40 °C)	375 l/h (40 °C)

Primary circuit data for delivery temperature 45-40 °C

Heating			Flow rate [l/h] Primary outlet temperature (60-45 °C)			
Circulator speed	Flow rate [l/h]	Power [kW]	75 °C	70 °C	65 °C	60 °C
Max.	1500	26,3	750 l/h (45 °C)	900 l/h (45 °C)	1130 l/h (45 °C)	-
Max.	1200	21	-	-	-	1200 l/h (45 °C)

Primary circuit data for delivery temperature 60-45 °C

Heating			Flow rate [l/h] Primary outlet temperature (70-55 °C)			
Circulator speed	Flow rate [l/h]	Power [kW]	75 °C	70 °C	65 °C	60 °C
Max.	1200	21	900 l/h (55 °C)	1200 l/h (55 °C)	-	-

Primary circuit data for delivery temperature 70-55 °C

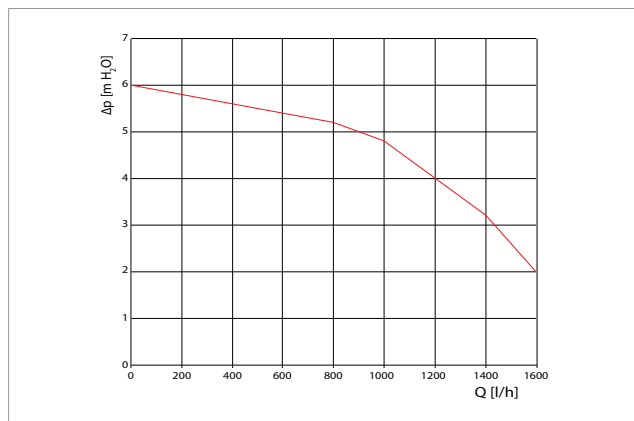
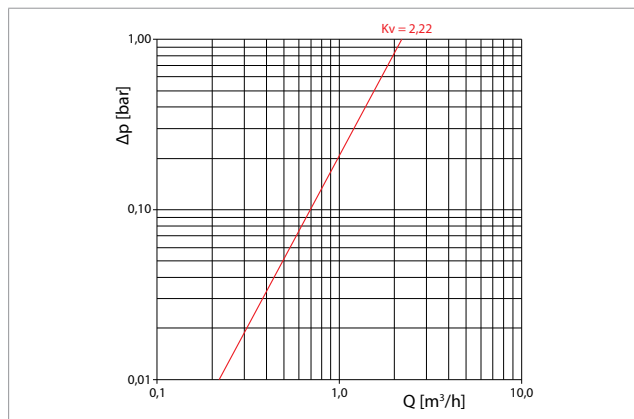


Diagram of the heating circulator - Circulator at Δp constant (see fig.2)

SHW production

Sanitary hot water			Flow rate [l/h] Primary outlet temperature (SHW 15-50 °C)			
l/min	l/h	kW	75 °C	70 °C	65 °C	60 °C
12	720	29	495 l/h (24 °C)	550 l/h (24 °C)	665 l/h (27 °C)	850 l/h (30 °C)
15	900	37	630 l/h (25 °C)	720 l/h (26 °C)	850 l/h (28 °C)	1050 l/h (30 °C)
17	1020	41,7	730 l/h (26 °C)	830 l/h (27 °C)	1000 l/h (29 °C)	1200 l/h (30 °C)
20	1200	49	875 l/h (27 °C)	1000 l/h (28 °C)	1200 l/h (30 °C)	1450 l/h (31 °C)
22	1320	54	980 l/h (28 °C)	1100 l/h (28 °C)	-	-
24	1440	58,8	1070 l/h (28 °C)	1200 l/h (28 °C)	-	-

Data of the primary circuit for SHW production 15-50 °C

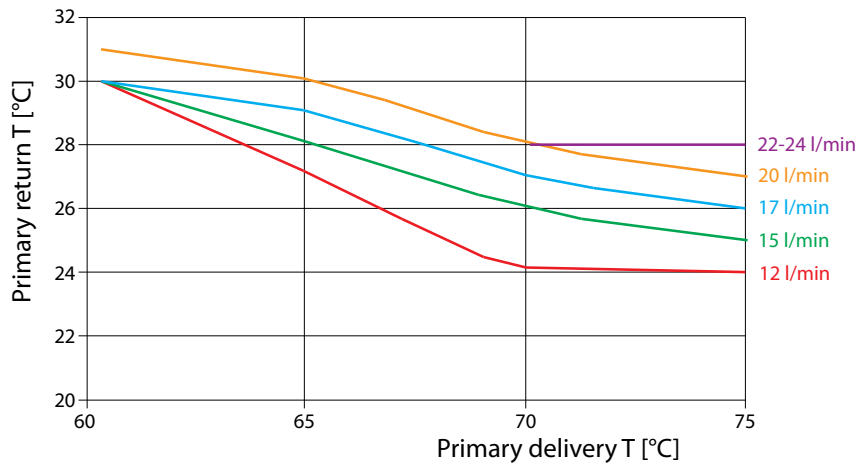


Hydraulic data for hot and cold sanitary water circuits (see fig.3)



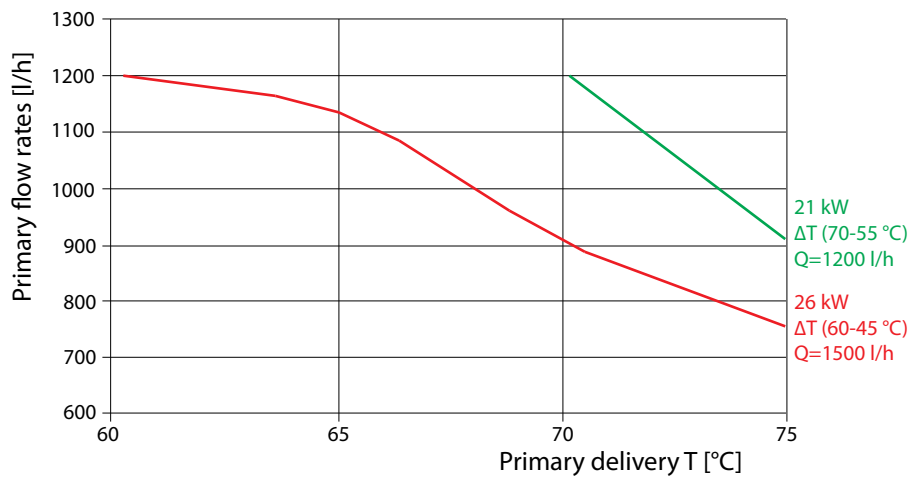
Energy saving features for GE556Y401

Low return temperatures of the primary in SHW operation

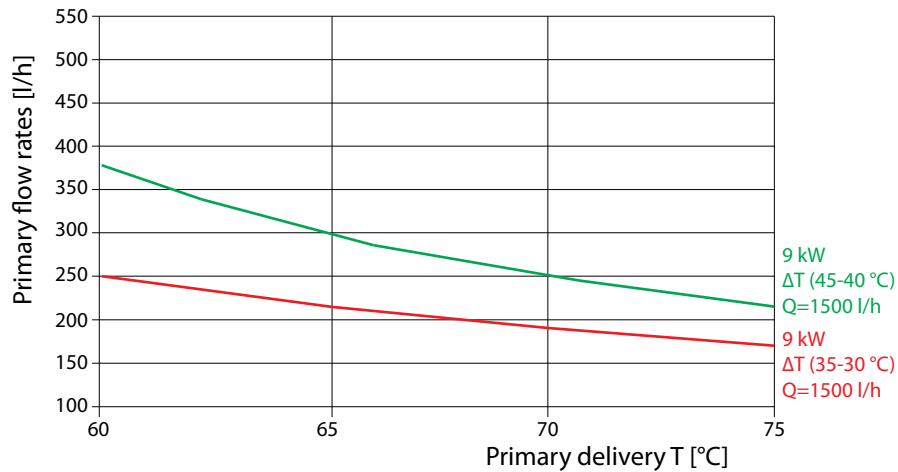


Reduced flow rates requests to the primary, in heating operation

High temperature:



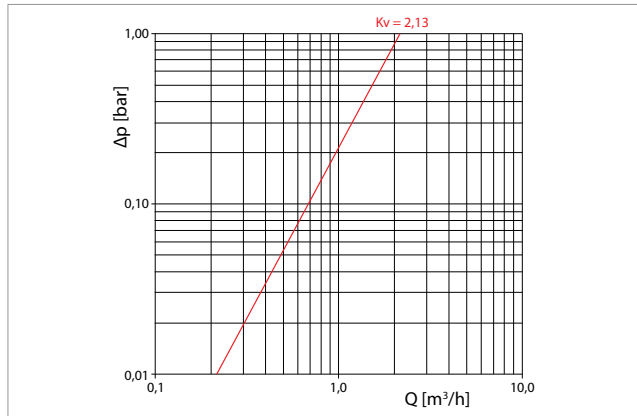
Low temperature:



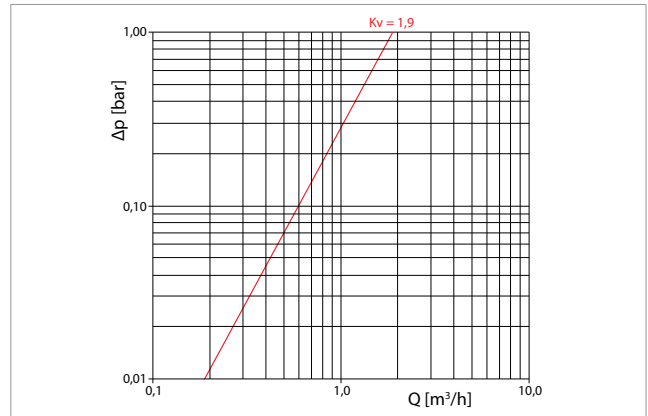


Operating data for GE556Y402

Primary circuit



Primary circuit for SHW production, modulating valve all open (see fig.1)



Primary circuit for heating, lockshield valve and modulating valve all open (see fig.2)

Heating

Heating			Flow rate [l/h] Primary outlet temperature (35-30 °C)			
Circulator speed	Flow rate [l/h]	Power [kW]	75 °C	70 °C	65 °C	60 °C
Max.	1500	8,8	170 l/h (30 °C)	190 l/h (30 °C)	215 l/h (30 °C)	250 l/h (30 °C)

Primary circuit data for delivery temperature 35-30 °C

Heating			Flow rate [l/h] Primary outlet temperature (45-40 °C)			
Circulator speed	Flow rate [l/h]	Power [kW]	75 °C	70 °C	65 °C	60 °C
Max.	1500	8,8	215 l/h (40 °C)	250 l/h (40 °C)	300 l/h (40 °C)	375 l/h (40 °C)

Primary circuit data for delivery temperature 45-40 °C

Heating			Flow rate [l/h] Primary outlet temperature (60-45 °C)			
Circulator speed	Flow rate [l/h]	Power [kW]	75 °C	70 °C	65 °C	60 °C
Max.	1500	26,3	750 l/h (45 °C)	900 l/h (45 °C)	1130 l/h (45 °C)	-
Max.	1200	21	-	-	-	1200 l/h (45 °C)

Primary circuit data for delivery temperature 60-45 °C

Heating			Flow rate [l/h] Primary outlet temperature (70-55 °C)			
Circulator speed	Flow rate [l/h]	Power [kW]	75 °C	70 °C	65 °C	60 °C
Max.	1200	21	900 l/h (55 °C)	1200 l/h (55 °C)	-	-

Primary circuit data for delivery temperature 70-55 °C

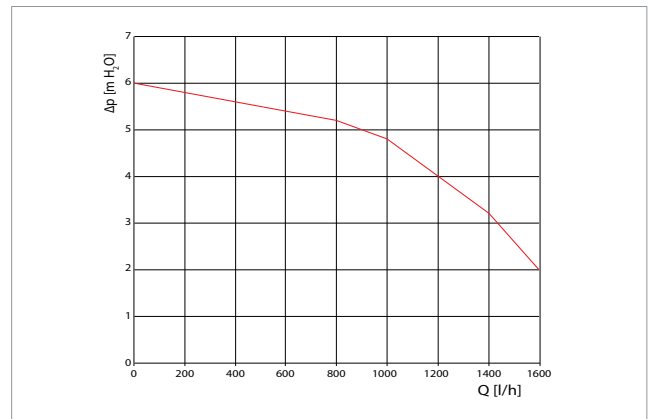
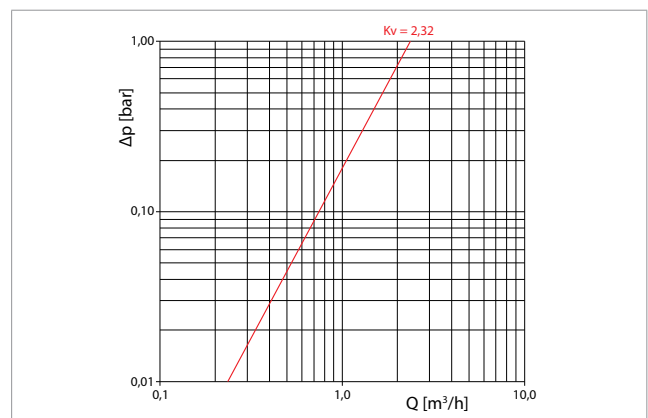


Diagram of the heating circulator - Circulator at Δp constant (see fig.2)

SHW production

Sanitary hot water			Flow rate [l/h] Primary outlet temperature (SHW 10-50 °C)		
l/min	l/h	kW	75 °C	70 °C	65 °C
12	720	33,5	510 l/h (18,5 °C)	580 l/h (20 °C)	670 l/h (22 °C)
15	900	42	660 l/h (20,5 °C)	750 l/h (22 °C)	880 l/h (24 °C)
17	1020	47,5	770 l/h (22 °C)	880 l/h (23,5 °C)	1020 l/h (25 °C)
20	1200	56	940 l/h (23,5 °C)	1050 l/h (24,2 °C)	-
22	1320	61,5	1040 l/h (24 °C)	1160 l/h (24,6 °C)	-
24	1440	67	1150 l/h (25 °C)	1280 l/h (25 °C)	-

Data of the primary circuit for SHW production 10-50 °C

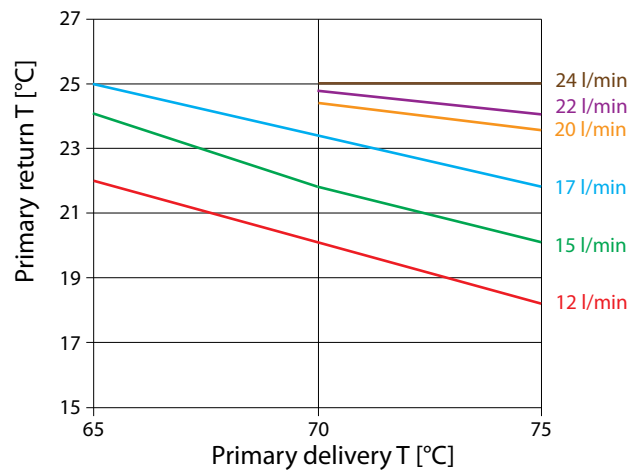


Hydraulic data for hot and cold sanitary water circuits (see fig.3)



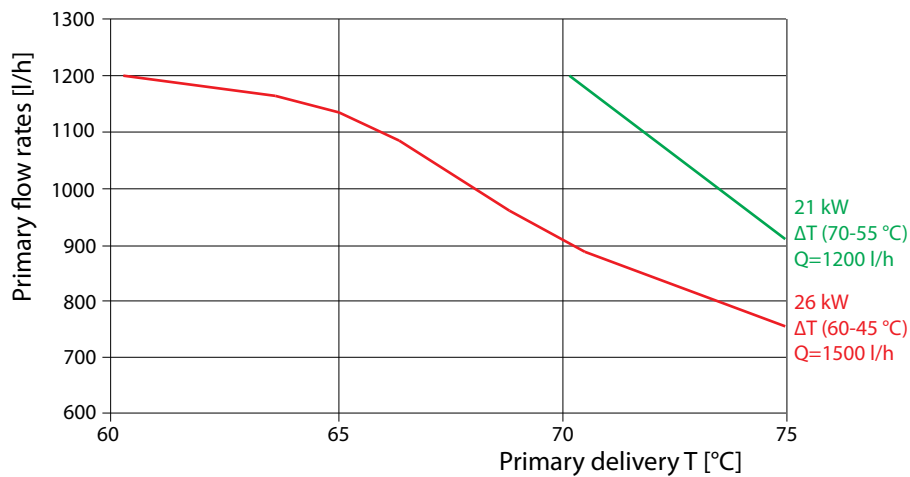
Energy saving features for GE556Y402

Low return temperatures of the primary in SHW operation

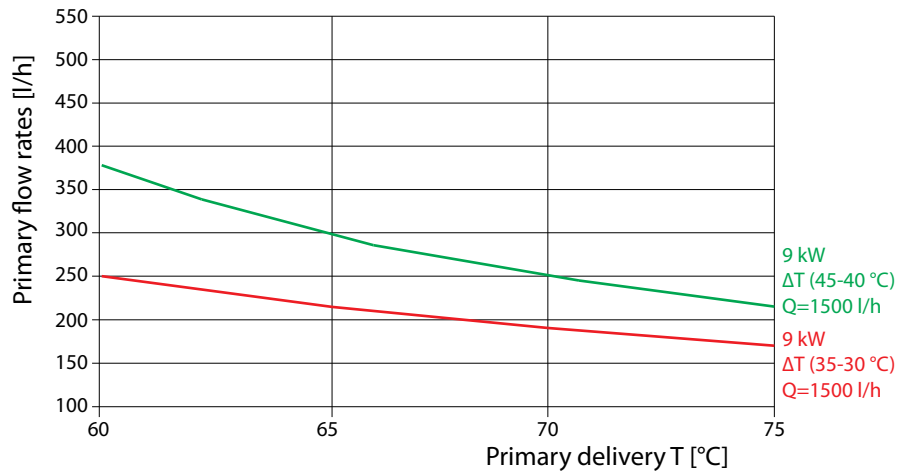


Reduced flow rates requests to the primary, in heating operation

High temperature:

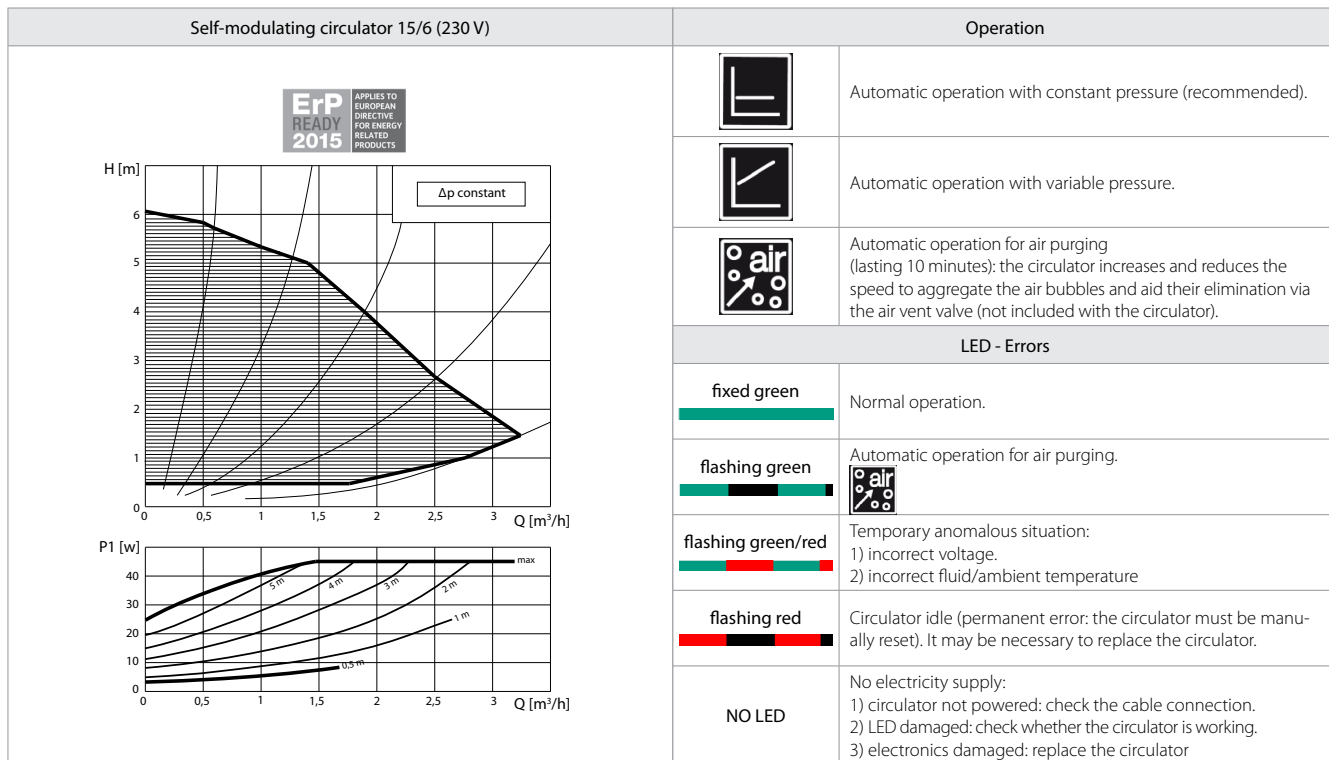


Low temperature:



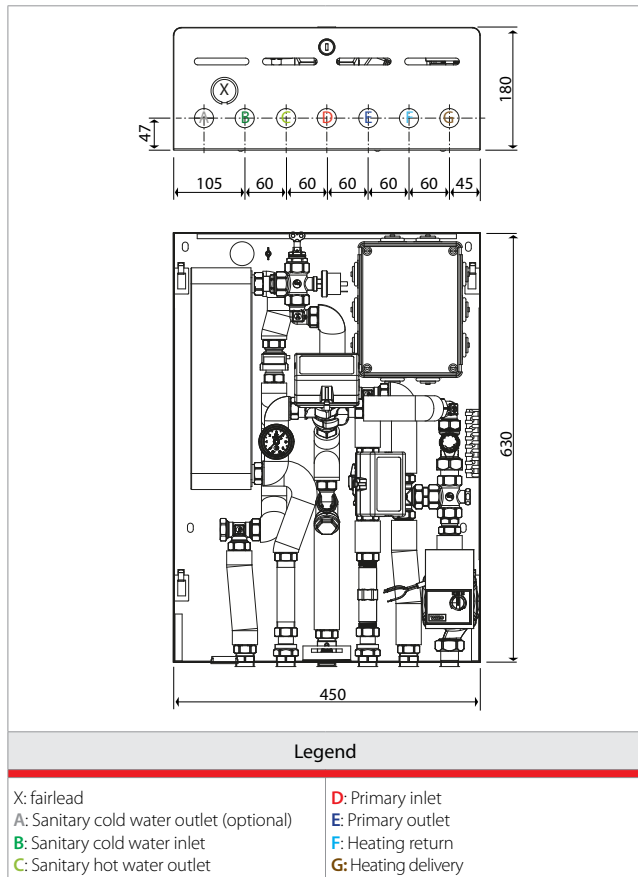


Circulator characteristics



Circulator characteristics

Dimensions



Dimensions in mm

Reference Standards

- UNI EN 1434
- EN 60751
- EN 61107
- Measuring Instruments Directive 2004/22/EC (MID)
- ErP Directive 2009/22/EC

WRAS certifications

Components	Certificate number
Gaskets	1004515
Heat exchanger	1403059



Warning.

The satellite can be used in closed boiler rooms for operation with non-aggressive fluids (water, glycol-based water in compliance with VDI 2035/ÖNORM 5195).



To download the satellite
 "User and maintenance Manual" scan this code

Additional information

For additional information please check the website www.giacomini.com or contact the technical service: ☎ +39 0322 923372 📠 +39 0322 923255 ✉ consulenza.prodotti@giacomini.com
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