

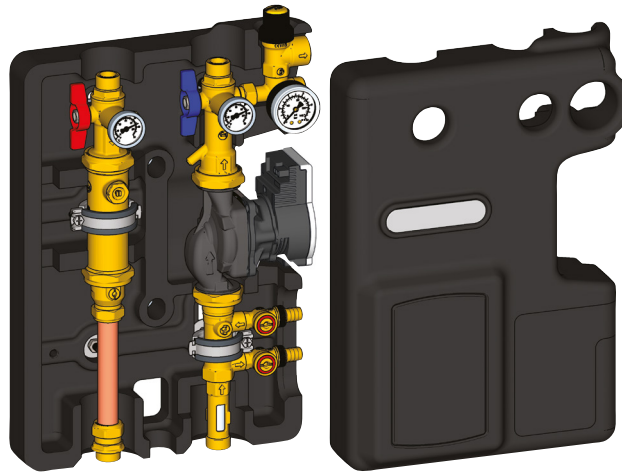
# R586S



Renewable  
Sources

## 2-way circulation unit, for solar thermal systems

Datasheet  
0237EN  12/2022



The R586S preassembled units have been designed to guarantee utmost operational reliability, dimension compactness and, last but not least, simplified installation and service of solar thermal systems. The circulation unit includes:

- ErP-complying circulator, specific for solar applications, controlling the thermo-conductor fluid flow based on the settings of the regulation unit. The ball valves installed on the bottom and top enable to maintain the system without emptying the circuit.
- Mechanical flow meter to directly calculate the thermal energy provided by the solar panels.
- Filling group including filling and drain cocks and regulation valve.
- Safety group with 6 bar calibrated safety valve, complying with the PED (2014/68/UE - Cat. IV) rule, pressure gauge and outlet for connection to expansion tank.
- Deaerator group with manual discharge valve.
- Ball valves with integrated check valve and each equipped with a thermometer to read solar circuit delivery temperatures.
- PPE insulation cover to ensure an efficient thermal insulation. It includes two removable spacers to install the regulation unit on the group side and carry out adjustment, filling and draining of the system. The cover also enables to view the thermometers mounted on the delivery and return manifolds, the pressure gauge mounted on the safety group, air circulation for cooling of the integrated circulator and, by means of a steel plate on the back, installation on boilers or walls.

To be ordered separately:

- Electronic regulation unit with Pt1000 temperature probes.

## ➤ Versions and product codes

PRODUCT CODE	CONNECTIONS
R586SY001	G 3/4"M

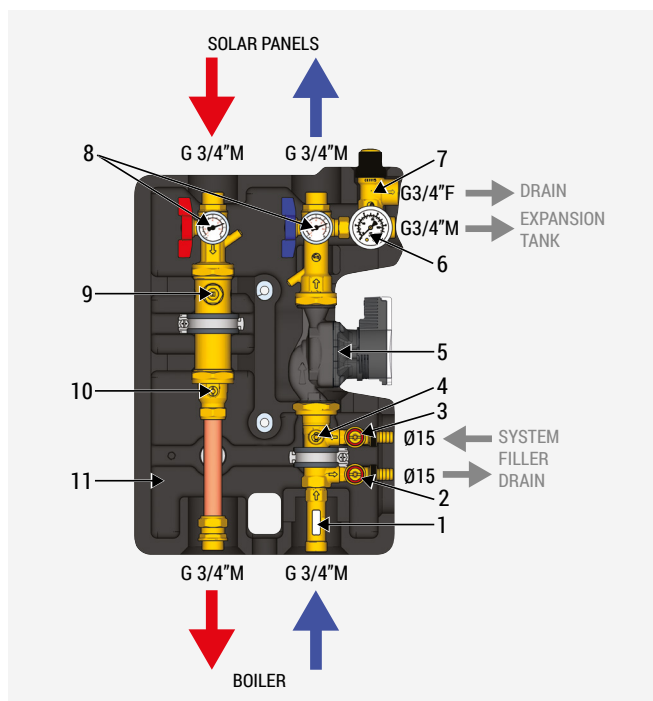
### Spare parts

- **KTDPY001:** overvoltage protection for KTD control units
- **KTDSY001:** Pt1000 temperature probe (180 °C)

## ➤ Technical data

- Fluids: water or glycol-based solutions (max. 50 % of glycol)
- Max. working temperature: 110 °C at  $T_{room} \leq 55$  °C
- Nominal pressure: PN10
- Safety valve calibration pressure: 6 bar
- Circulator: Wilo Para ST25/6, center distance 130 mm, ErP 2009/125/CE
- Circulator power: 230 Vac, 50 Hz (molex connector included)
- Mechanical flow meter: 2±12 L/min
- Pressure gauge scale: 0+10 bar
- Thermometer scale: 0+120 °C
- Solar circuit connections: G 3/4"M (center distance: 125 mm)
- Boiler circuit connections: G 3/4"M (center distance: 125 mm)
- Safety valve discharge: G 3/4"F
- Expansion tank connections: G 3/4"M
- Filling/drain cocks with hose connection: Ø15 mm
- Ball valve with integrated check valve
- Insulation cover: PPE, density 70 kg/m<sup>3</sup>, with seat arranged for insertion of the KTD control unit
- Back steel plate for fixing on the prearranged boiler or on the wall
- Empty weight: 8 kg

## ➤ Components



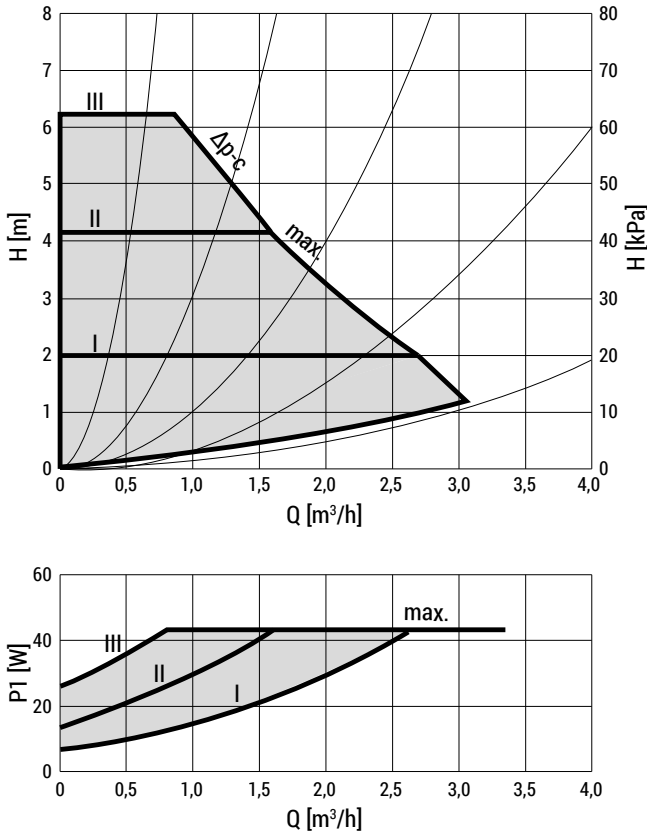
### Optionals

- **KTD3Y003:** differential control unit for programming and controlling the operation of solar thermal systems. Equipped with nr. 3 Pt1000 temperature probes
- **KTD5Y006:** differential control unit for programming and controlling the operation of solar thermal systems. Equipped with nr. 6 Pt1000 temperature probes

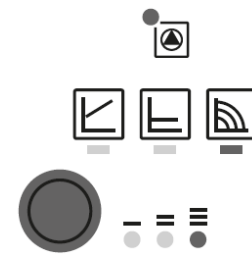
1	Mechanical flow meter
2	Drain cock
3	Filling cock
4	Ball valve
5	Circulator
6	Pressure gauge
7	Safety valve, 6 bar
8	Ball valve with integrated thermometer and check valve
9	Manual air vent valve
10	Ball valve
11	Insulation cover

## ➤ Circulator features

### Constant differential pressure $\Delta p-c$ (I, II, III) [RECOMMENDED]



### Setting the control mode



The LED selection of control modes and corresponding pump curves takes place in clockwise succession.

- Press the operating button briefly (approx. 1 second).

- ➔ LEDs display the set control mode and pump curve.

### Air venting



- Fill and vent the system correctly.

If the pump does not vent automatically:

- Activate the pump venting function via the operating button: press and hold for 3 seconds, then release.

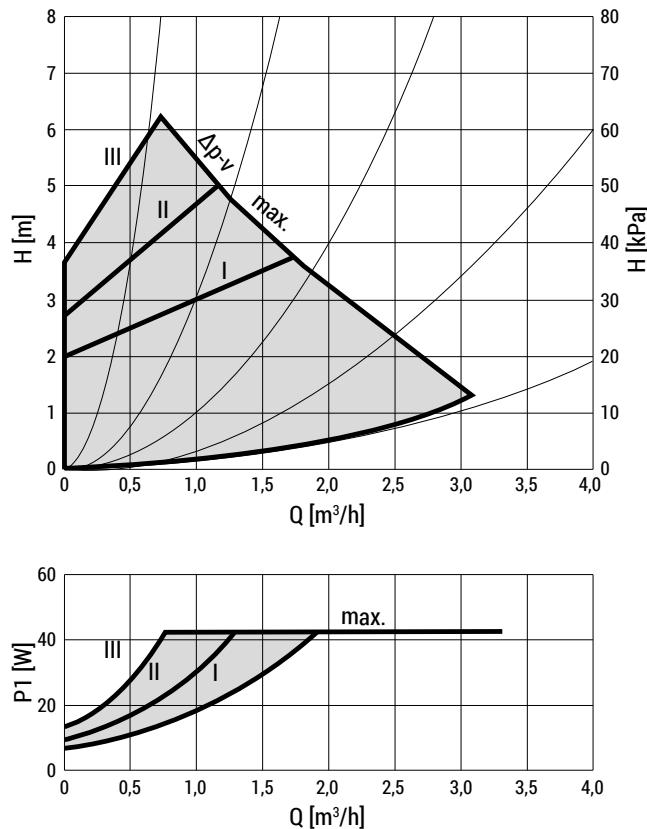
- ➔ The pump venting function is initiated and lasts 10 minutes.

- ➔ The top and bottom LED rows flash in turn at 1 second intervals.

- To cancel, press and hold the operating button for 3 seconds.

After venting, the LED display shows the previously set values of the pump.

### Variable differential pressure $\Delta p-v$ (I, II, III)

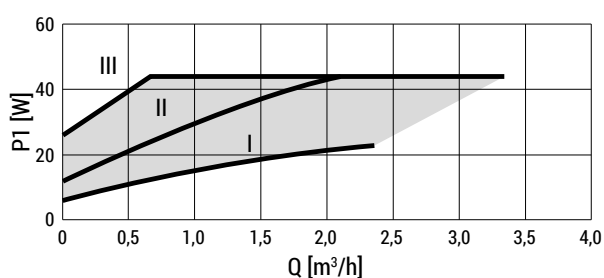
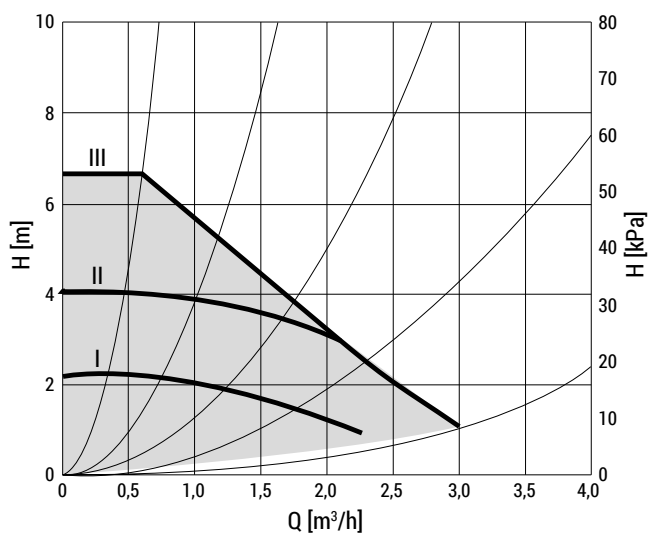


Recommended for two-pipe heating systems with radiators to reduce the flow noise at thermostatic valves. The pump reduces the delivery head to half in the case of decreasing volume flow in the pipe network.

Electrical energy saving by adjusting the delivery head to the volume flow requirement and lower flow rates.

There are three pre-defined pump curves (I, II, III) to choose from.

## Constant speed (I, II, III) [FACTORY SETTING]



Recommended for systems with fixed system resistance requiring a constant volume flow.

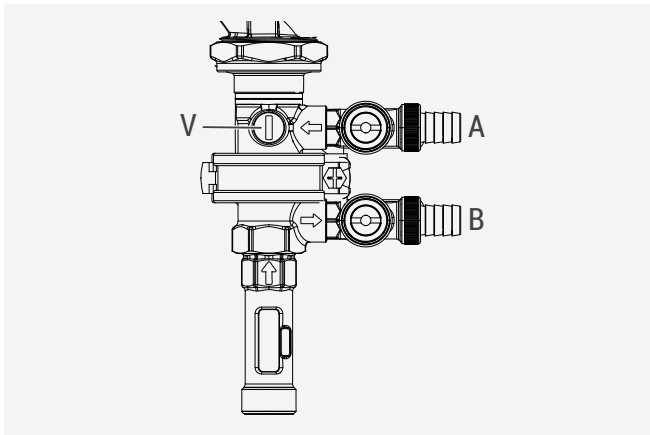
The pump runs in three prescribed fixed speed stages (I, II, III).

## Fault signals

- The fault signal LED indicates a fault.
- The pump switches off (depending on the fault) and attempts a cyclical restart.

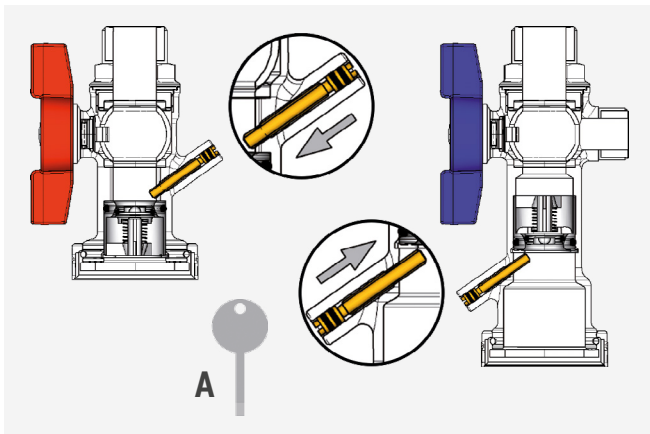
LED	FAULTS	CAUSES	REMEDY
 Lights up red 	Blocking	Rotor blocked	Activate manual restart or acontact customer service
	Contacting/winding	Winding defective	
Flashing red 	Under/overvoltage	Power supply too low/high on mains side	Check mains voltage and operating conditions, and request customer service
	Excessive module temperature	Module interior too warm	
	Short-circuit	Motor current too high	
Flashes red/ green 	Generator operation	Water is flowing through the pump hydraulics, but there is no mains voltage at the pump	Check the mains voltage, water quantity/pressure and the ambient conditions
	Dry run	Air in the pump	
	Overload	Sluggish motor, pump is operated outside of its specifications (e.g. high module temperature). The speed is lower than during normal operation	

## Construction features



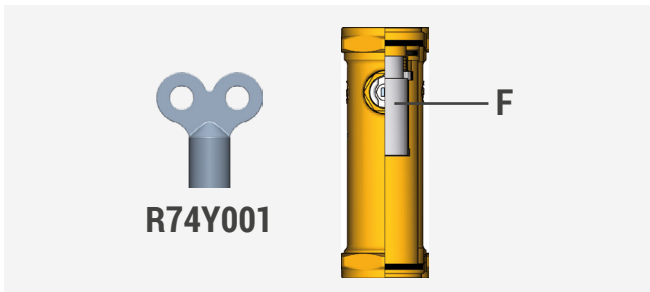
A mechanical flow meter connected to the KTD regulation unit reads the flow. The **V** valve adjusts the flow starting from the "completely open" position (screwdriver tip in vertical position) and turning clockwise.

When the **V** valve is completely closed (screwdriver tip in horizontal position), the **A** and **B** cocks can be used to fill and drain the system.



The ball valves integrated in the circulation unit for sectioning of the solar panels are both equipped with a check valve to prevent undesired circulations.

Should specific operational conditions (e.g. when filling the system) require circulation of a thermo-convecter fluid also in the opposite direction, the check valves can be opened using the **A** wrench to move the rods.

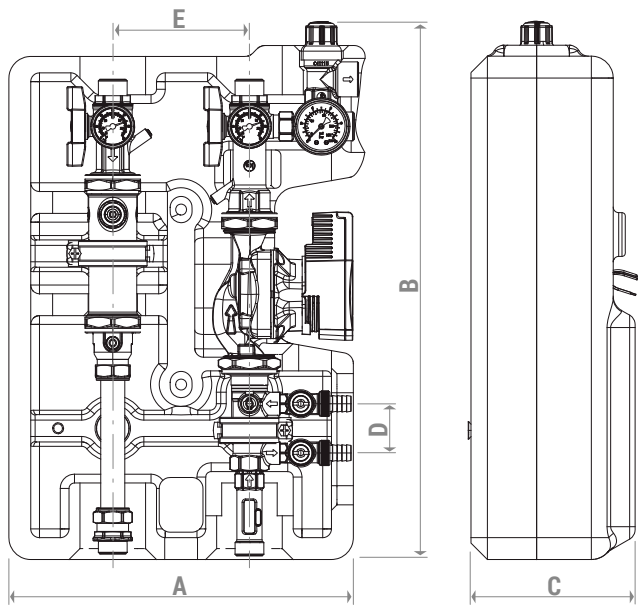


Manual air vent valve mounted on delivery manifold.

It must be moved using the special R74Y001 wrench.

For proper operation, a dearetor filter **F** has also been installed inside the support insert and can be easily removed for replacement or ordinary maintenance operations.

## ➤ Dimensions



PRODUCT CODE	CONNECTIONS	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]
R586SY001	G 3/4" M	315	495	150	45	125

## ➤ Product specifications

### R586S

Preassembled 2-way circulation unit for solar thermal systems. Fluids of use: water, glycol-based solutions (max. 50 %). The unit includes: ErP-complying circulator with 2 operational options: 3 speeds or variable lift; safety valve calibrated at 6 bar, complying with PED 2014/68/UE - cat. IV; filling/drain cocks; 0÷10 bar pressure gauge; G 3/4" M outlet for connection to expansion tank; deaerator group with manual discharge valve; insulation cover; delivery and return thermometers with 0÷120 °C scale; ball valves with integrated check valve; mechanical flow meter (2÷12 l/min measuring range) to directly calculate the thermal energy provided by the manifolds. Power 230 Vac; 50 Hz. G 3/4" M solar circuit connections (center distance 125 mm). G 3/4" M boiler circuit connections (center distance 125 mm). Dimensions 315x495x150 mm (LxHxP). Max. working temperature 120 °C. Nominal pressure PN10.

**⚠ Safety Warning.** Installation, commissioning and periodical maintenance of the product must be carried out by qualified operators in compliance with national regulations and/or local standards. A qualified installer must take all required measures, including use of Individual Protection Devices, for his and others' safety. An improper installation may damage people, animals or objects towards which Giacomini S.p.A. may not be held liable.

**♻ Package Disposal.** Carton boxes: paper recycling. Plastic bags and bubble wrap: plastic recycling.

**ℹ Additional information.** For more information, go to [giacomini.com](http://giacomini.com) or contact our technical assistance service. This document provides only general indications. Giacomini S.p.A. may change at any time, without notice and for technical or commercial reasons, the items included herewith. The information included in this technical sheet do not exempt the user from strictly complying with the rules and good practice standards in force.

**♻ Product Disposal.** Do not dispose of product as municipal waste at the end of its life cycle. Dispose of product at a special recycling platform managed by local authorities or at retailers providing this type of service.