

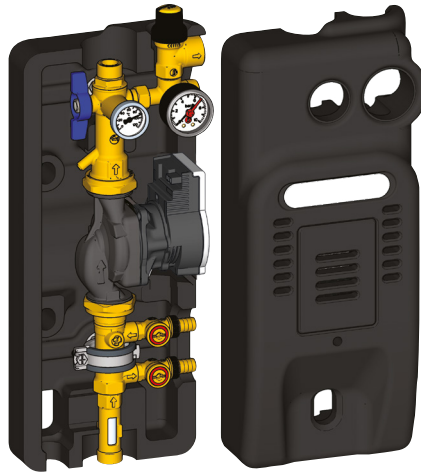
R586S-0



Renewable
Sources

Single way circulation unit for solar thermal systems

Datasheet
0243EN  12/2022



The R586S-0 preassembled single way circulation 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 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.
- Ball valve with integrated check valve, 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
R586SY002	G 3/4"M

Spare parts

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

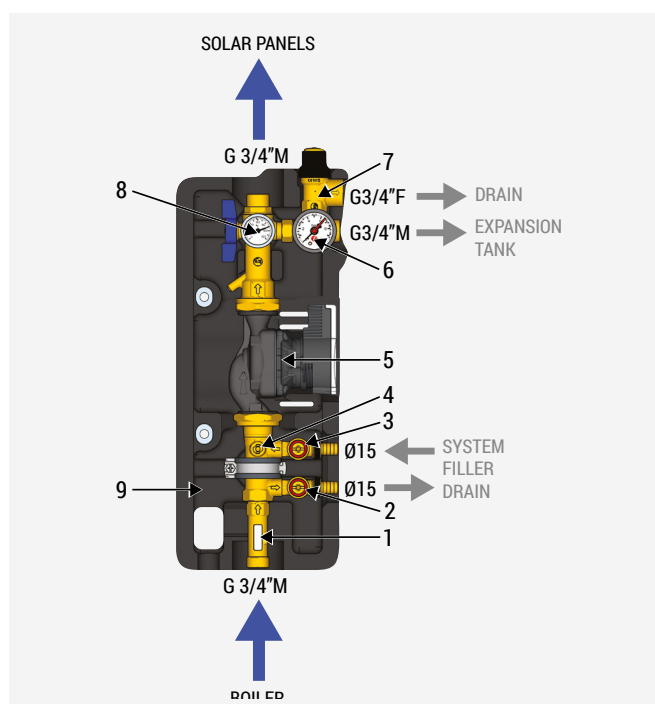
Optionals

- **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

➤ 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
- Boiler circuit connections: G 3/4"M
- 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/m³, 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: 6 kg

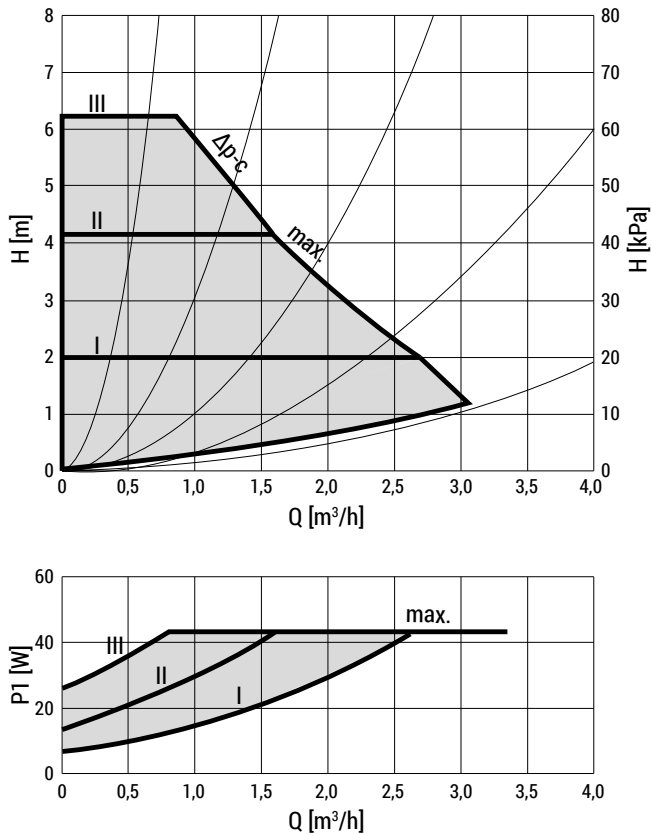
➤ Components



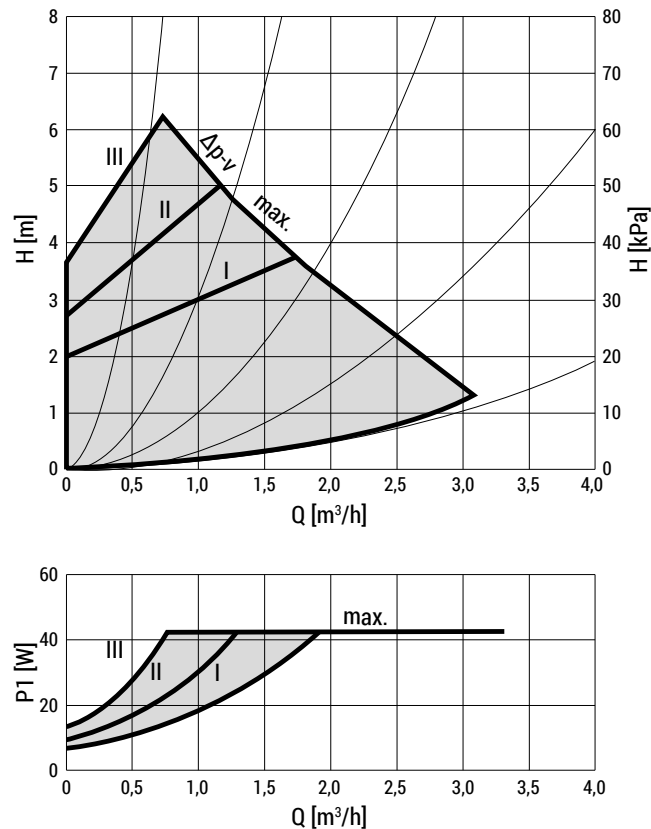
- | | |
|---|--|
| 1 | Mechanical flow meter |
| 2 | Drain cock |
| 3 | Filling cock |
| 4 | Ball valve |
| 5 | Circulator |
| 6 | Pressure gauge |
| 7 | Safety valve, 6 bar |
| 8 | Ball valve with integrated thermometer and check valve |
| 9 | Insulation cover |

Circulator features

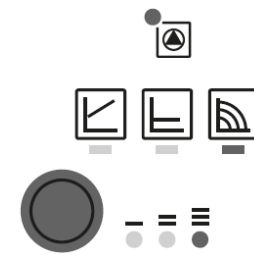
Constant differential pressure Δp -c (I, II, III) [RECOMMENDED]



Variable differential pressure Δp -v (I, II, III)



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.

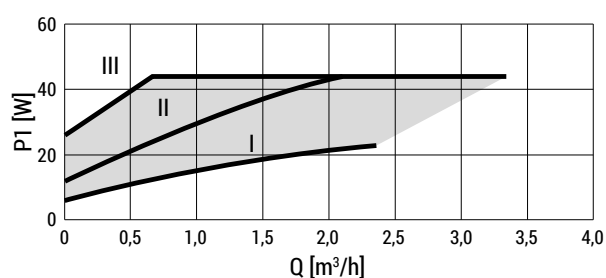
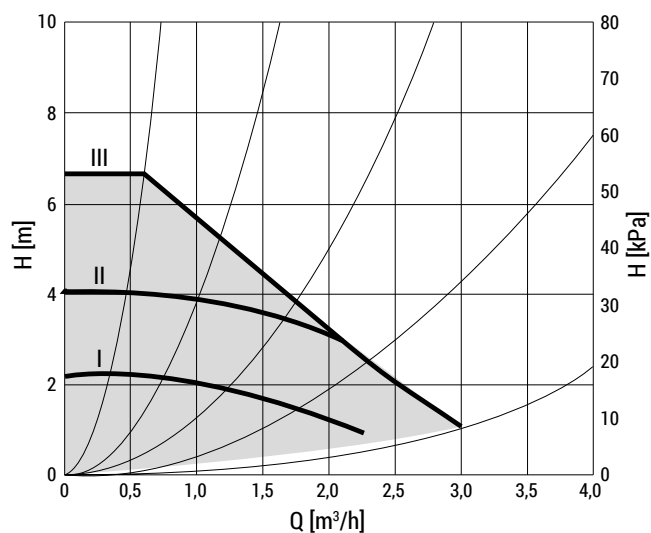
After venting, the LED display shows the previously set values of the pump.

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.

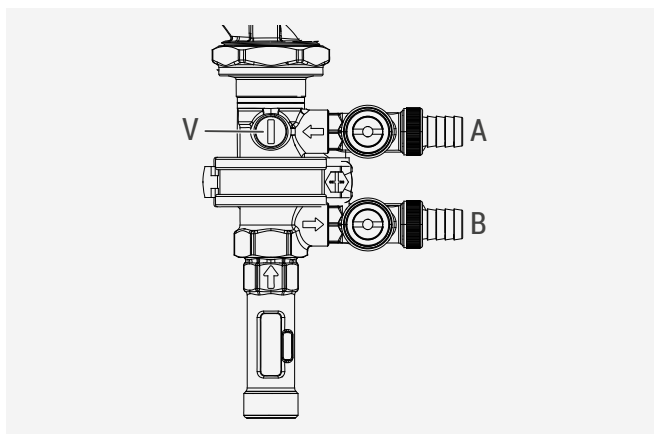
The pump runs in three prescribed fixed speed stages (I, II, III).

Fault signals

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

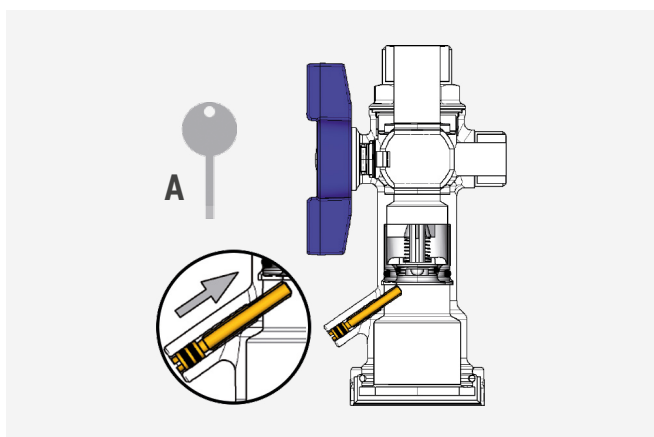
LED	FAULTS	CAUSES	REMEDY
 Lights up red	Blocking	Rotor blocked	Activate manual restart or acontact customer service
	Contacting/winding	Winding defective	
 Flashing red	Under/overvoltage	Power supply too low/high on mains side	Check mains voltage and operating conditions, and request customer service
	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.

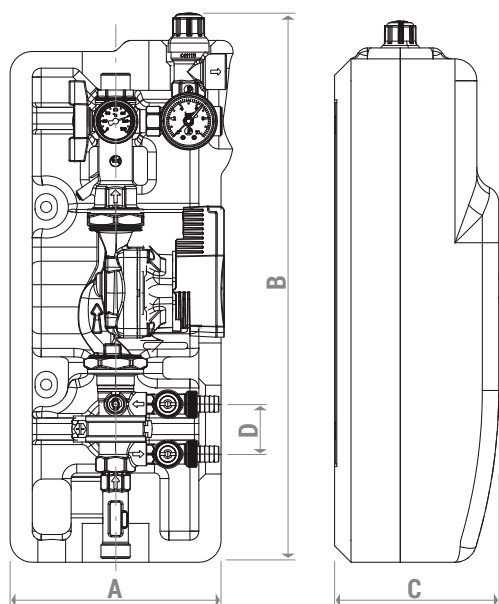
When the **V** valve is completely closed (screwdriver tip in horizontal position), the **A** and **B** cocks can be used to fill and drain the system.



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

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

➤ Dimensions



PRODUCT CODE	CONNECTIONS	A [mm]	B [mm]	C [mm]	D [mm]
R586SY002	G 3/4" M	195	495	150	45

➤ Product specifications

R586S-o

Gruppo di circolazione preassemblato a monovia, per impianti solari termici. Fluidi di impiego: acqua, soluzioni glicolate (massimo 50 %). Gruppo composto da: circolatore ErP con doppia possibilità di funzionamento: 3 velocità o prevalenza variabile; valvola di sicurezza tarata a 6 bar, conforme alla normativa PED 2014/68/UE - cat. IV; rubinetti di carico/scarico; manometro con scala 0÷10 bar; attacco G 3/4" M per collegamento vaso di espansione; guscio di coibentazione; termometro di mandata con scala 0÷120 °C; valvole a sfera con ritegno integrato; misuratore di portata meccanico (campo di misurazione 2÷12 L/min) per il calcolo diretto dell'energia termica fornita dai collettori solari. Alimentazione 230 Vac; 50 Hz. Attacchi circuito solare: G 3/4" M. Attacchi circuito bollitore: G 3/4" M. Dimensioni 195x495x150 mm (LxHxP). Temperatura massima di esercizio 120 °C. Pressione nominale 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.

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