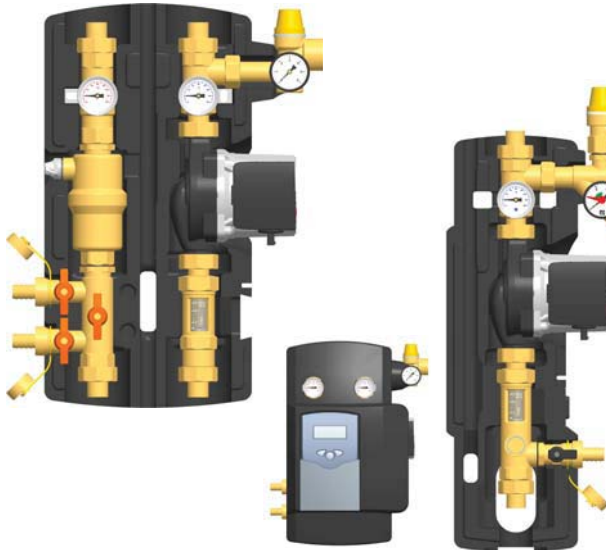


Solar pump stations for solar heating systems

255 - 256 series

**CALEFFI
SOLAR**



(Dual station with cover and controller)

General

The solar pump station is a pre-installed and leak-tested unit with fittings for transferring heat from the collector to the storage tank. It contains important fittings and safety devices for the operation of the solar thermal system:

- Ball valves in flow and return in combination with check valves to prevent gravity and thermo circulation.
- Unit for flushing, filling and emptying the system.
- Air vent for manual bleeding of the solar thermal system.
- Flow meter for displaying and setting the flow rate.
- Thermometer in flow and return for displaying both temperatures.
- Pressure gauge for displaying the system pressure.
- Safety relief valve to prevent overpressure.
- Three-speed solar pump for wide range of flow rates.

Function

Solar pump stations are used on the primary circuit of solar heating systems to control the temperature of the hot water storage. The pump inside the units is activated by the signal from the differential temperature controller. The units contain the functional and safety devices for an optimal circuit control, and are available with flow and return connection and with return connection only.

Product range

Code 255056A	Dual pump station, flow and return connection, flow meter scale: 1/2–5 gpm	size 3/4" MNPT unions
Code 255059A	Dual pump station, flow and return connection, flow meter scale: 1/2–5 gpm	size 3/4" sweat unions
Code 255060A	Dual pump station, flow and return connection, flow meter scale: 1/2–5 gpm	size 1" male half unions
Code 256059A	Single pump station, return connection, flow meter scale: 1/2–5 gpm	size 3/4" sweat unions

Technical specifications

Body:	brass
Temperature gauge:	steel / aluminium
Seals:	PTFE / EPDM
O-Rings:	EPDM / Viton
Union gaskets:	AFM 34, asbestos free
Insulating shell:	EPP, thermal conductivity value = R4

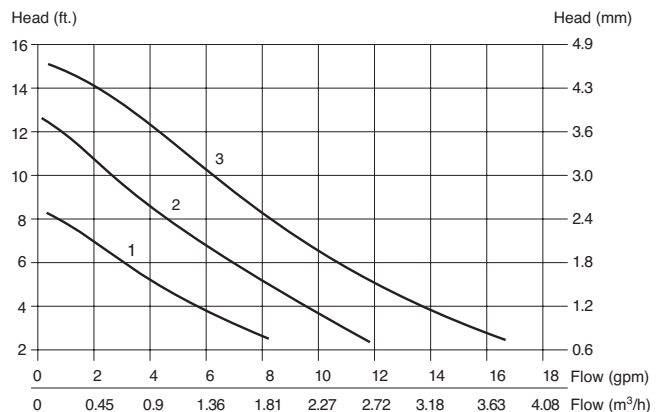
Performance

Medium:	water, glycol solutions
Max. percentage of glycol:	50%
Max. working temperature:	360°F (180°C)
Max. working pressure:	150 psi (10 bar)
Safety relief valve temperature range:	-20 to 360°F (-30 to 180°C)
Safety relief valve factory setting:	90 psi (6 bar)
Min. opening pressure for check valve:	Δp : 1/4 psi (2 kPa)
Adjustment range of flow meter:	1/4 to 5 gpm (1 to 20 l/min)
Max return flow meter temperature:	265°F (130°C)
Pressure gauge scale:	0–90 psi (0–6 bar)
Temperature gauge scale:	32–320°F (0–160°C)
Connections:	1" male half union
Filling/drain hose connections:	3/4"

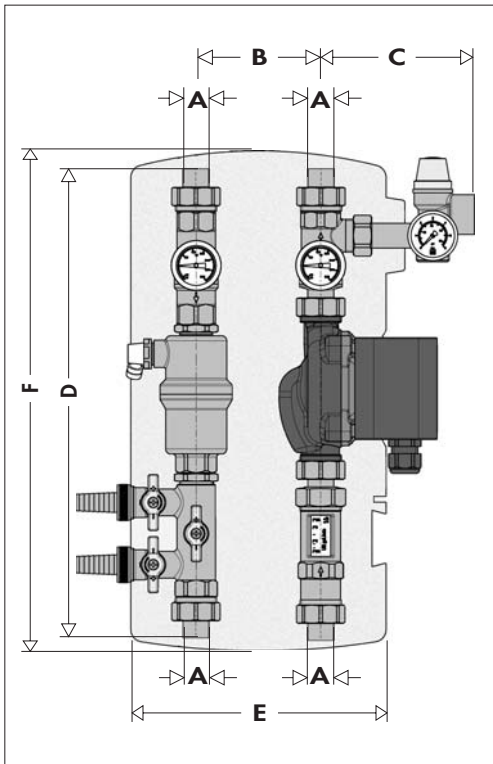
Wilo pump

Wilo solar model:	Star S-16 U15
Body:	cast iron
Power supply:	115 V - 60 Hz
Max. pressure:	150 psi (10 bar)
Max. temperature:	230°F (110°C)
Agency approval:	cULus

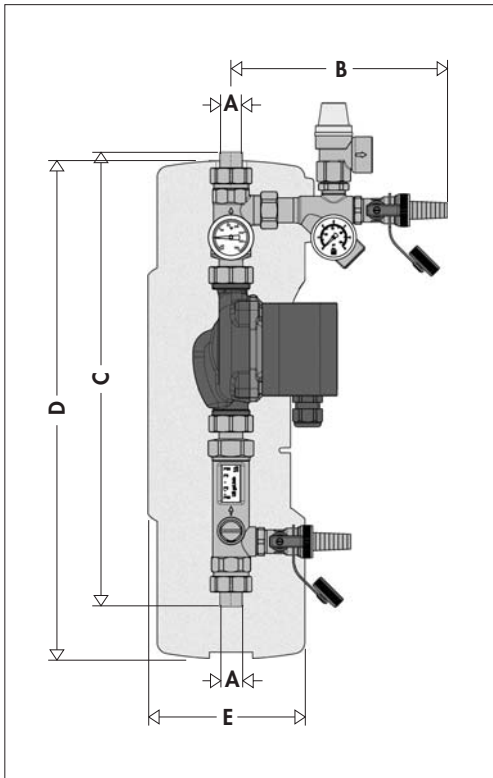
Wilo Star S-16 U15 hydraulic characteristics



Dimensions

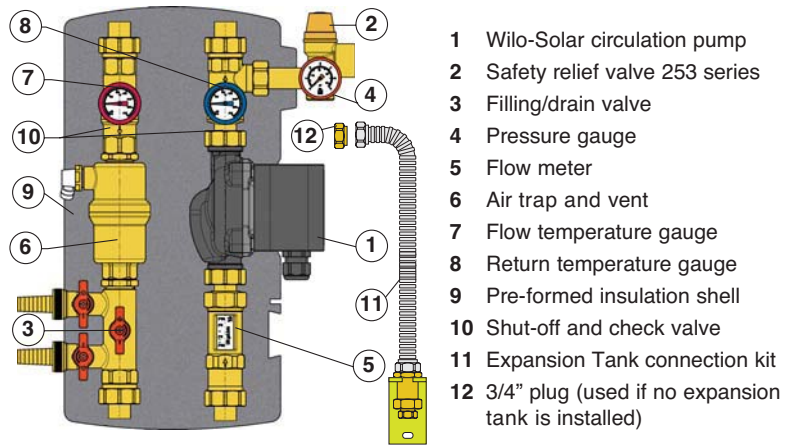


Code	A	B	C	D	E	F	Weight (lb)
255056A	3/4"	4"	4 7/8"	15"	8"	16"	15
255059A	3/4"	4"	4 7/8"	15"	8"	16"	15
255060A	1"	4"	4 7/8"	13"	8"	16"	15



Code	A	B	C	D	E	Weight (lb)
256059A	3/4"	7"	16 1/4"	17"	5"	10

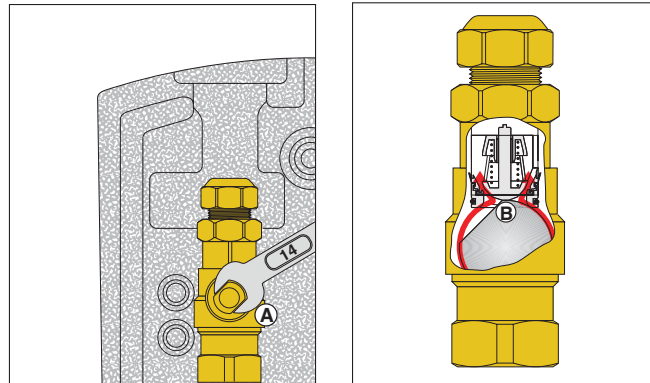
Characteristic components



Construction details

The shut-off and check valves are built into the ball valves of the temperature gauge connectors.

To allow the fluid to flow in both directions, it is necessary to open the respective ball valve (A) to 45° with a 14mm wrench. The check valve is opened by the ball (B). In normal system operation, the ball valves must be fully open.



Air trap

The solar pump unit version with flow and return connection is equipped with an air trap on the flow line. The gases, separated from the fluid, are collected at the top of the trap.

The collected gases must be released from time to time - every day after the initial installation; however, it can eventually be done weekly or monthly, depending on the quantity of the air. The collected gases are released using the manual air vent with a screwdriver. To maintain optimal efficiency of the solar heating system, it is necessary to vent the system every six months by using the manual air vent.

