

3 Component overview

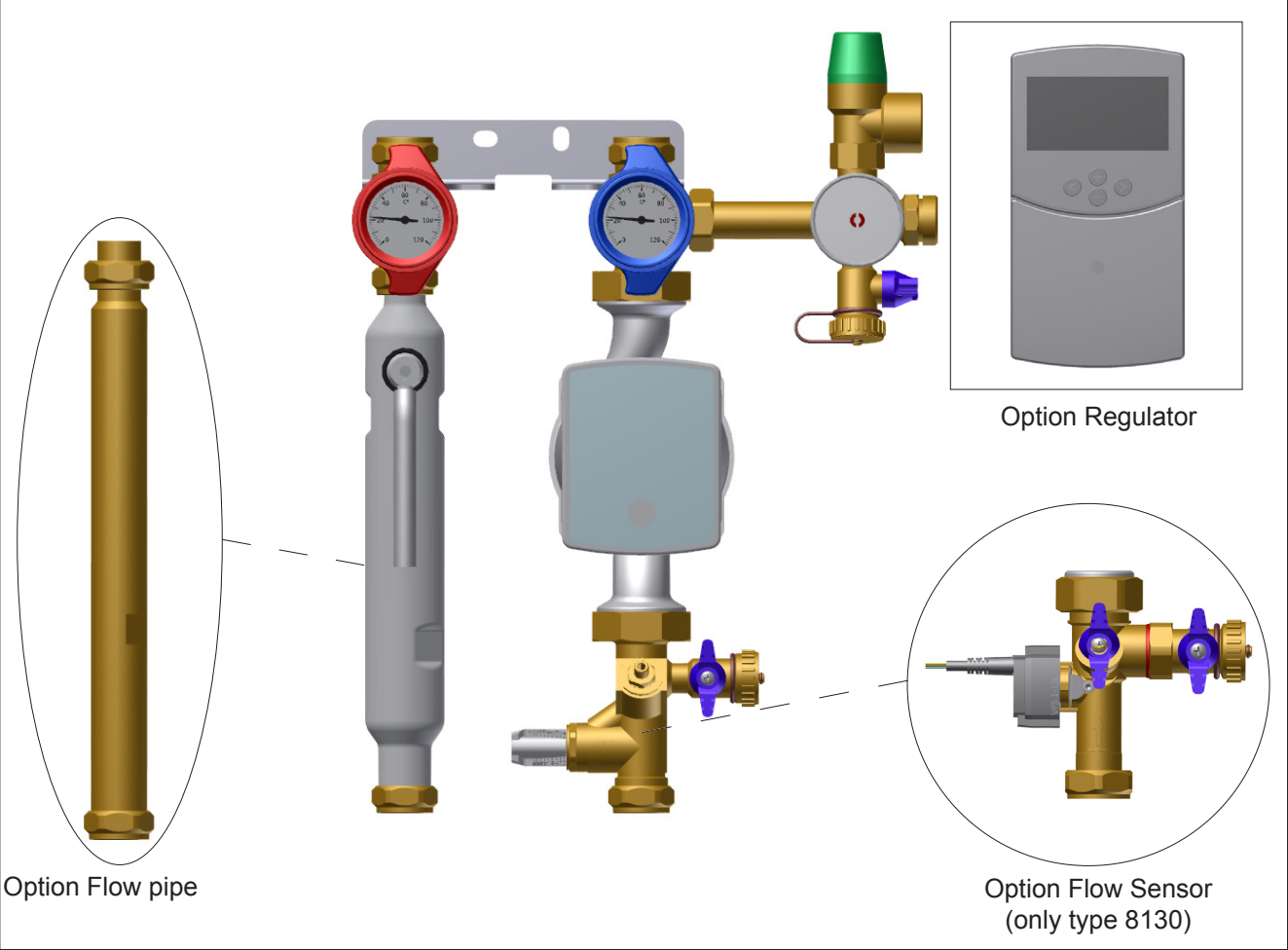


Fig. 1: Type overview 8130/8180

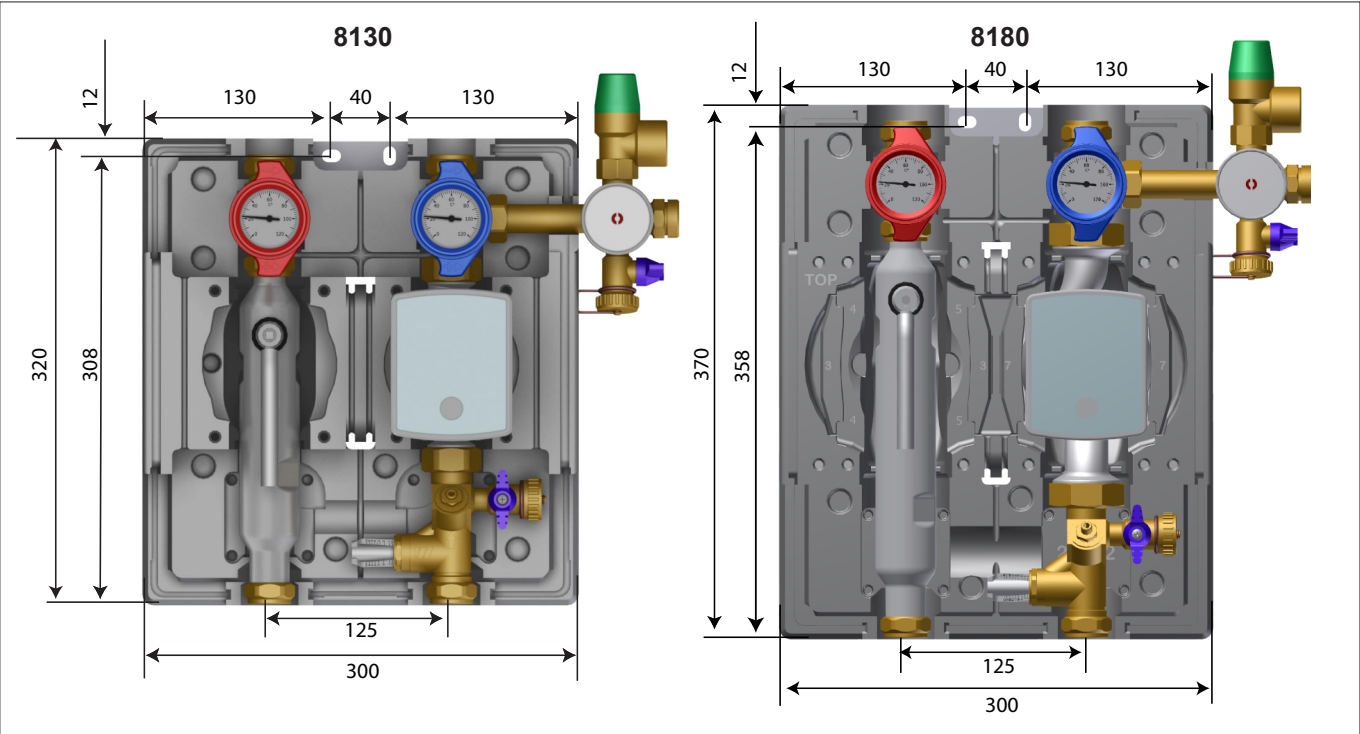


Fig. 2: Dimensions [mm]

# Solar station

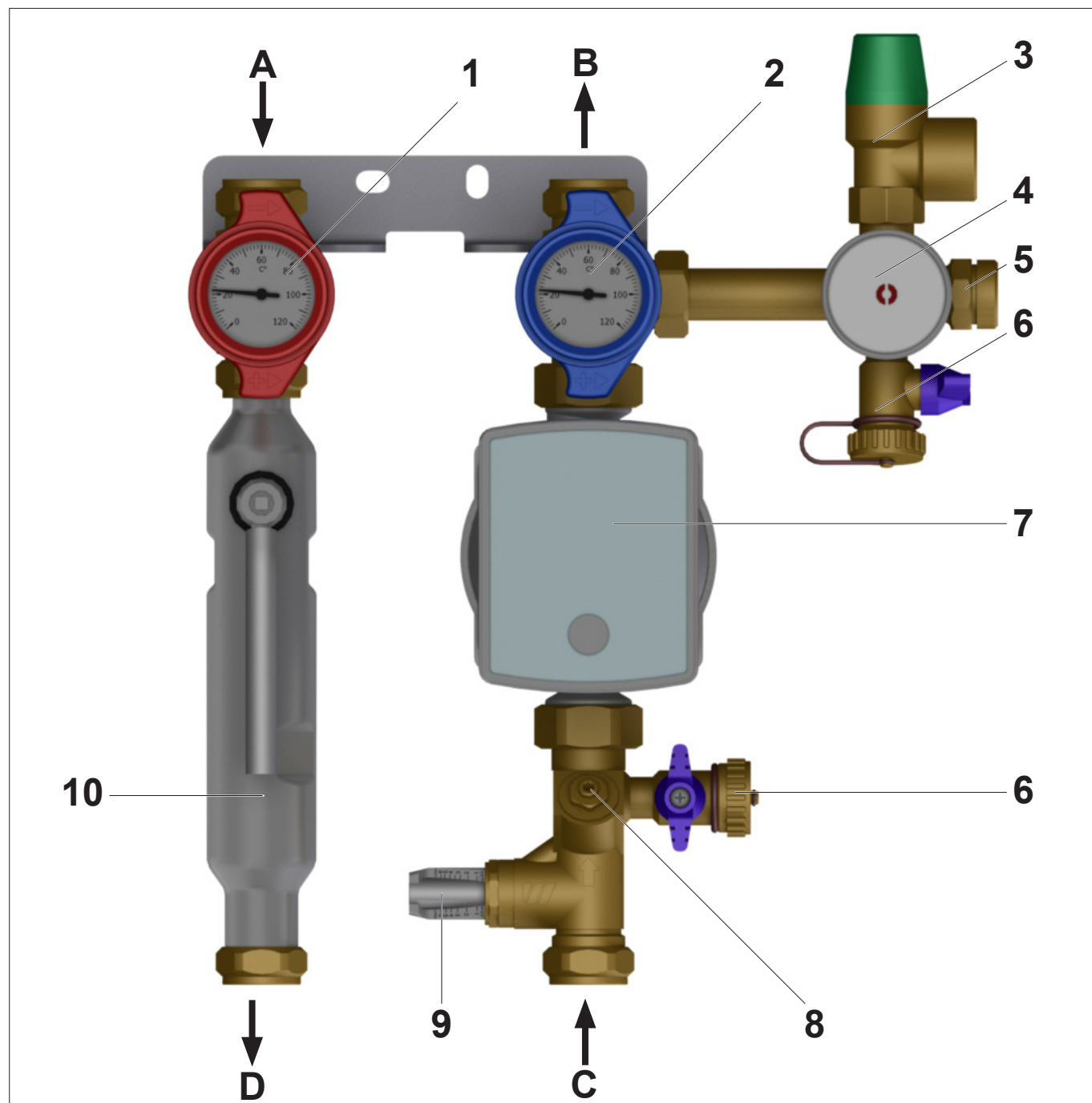


Fig. 3: Component overview (represented in type 8130 with venting pipe and WattFlow)

- |   |   |    |   |
|---|---|----|---|
| 1 | Ball valve with thermometer (supply line) | 6  | Rinsing and filling device with drain tap |
| 2 | Ball valve with thermometer (return line) | 7  | Circulation pump (solar circuit)          |
| 3 | Solar safety valve                        | 8  | WattFlow: Regulating and gate valve       |
| 4 | Gauge                                     | 9  | WattFlow: Flow indicator                  |
| 5 | Connection for expansion container        | 10 | Venting pipe (with venting valve)         |

- |   |                  |   |             |
|---|------------------|---|-------------|
| A | Collector supply | C | Supply line |
| B | Collector return | D | Return line |

# Solar station

## 4.2 Assembly

### NOTE



Install the solar station in such a way that it is placed at eye level.

The solar station can also be installed to a pipe (e.g. at the storage) as an option.

- Dismantle the front encasing of the solar station.

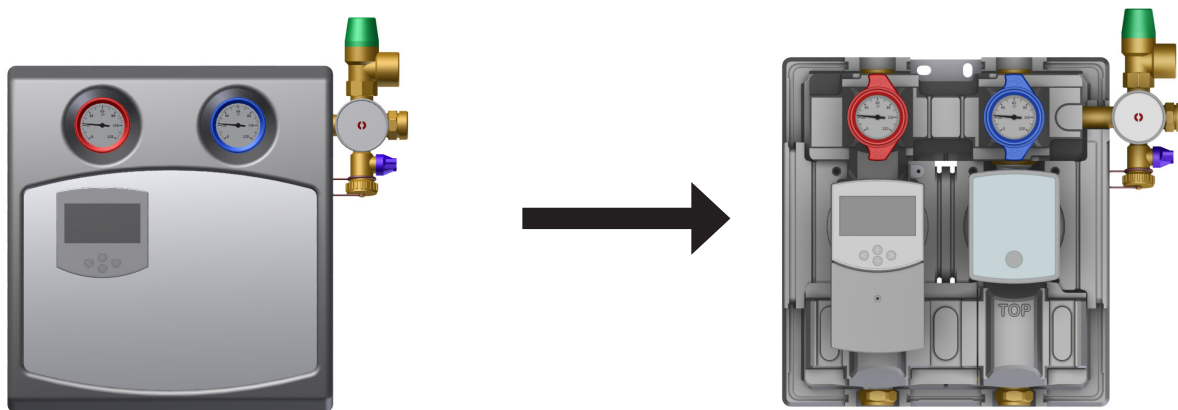


Fig. 4: Dismantle encasing (represented in type 8130 + controller)

- Mark the drilling points for installing the solar station.

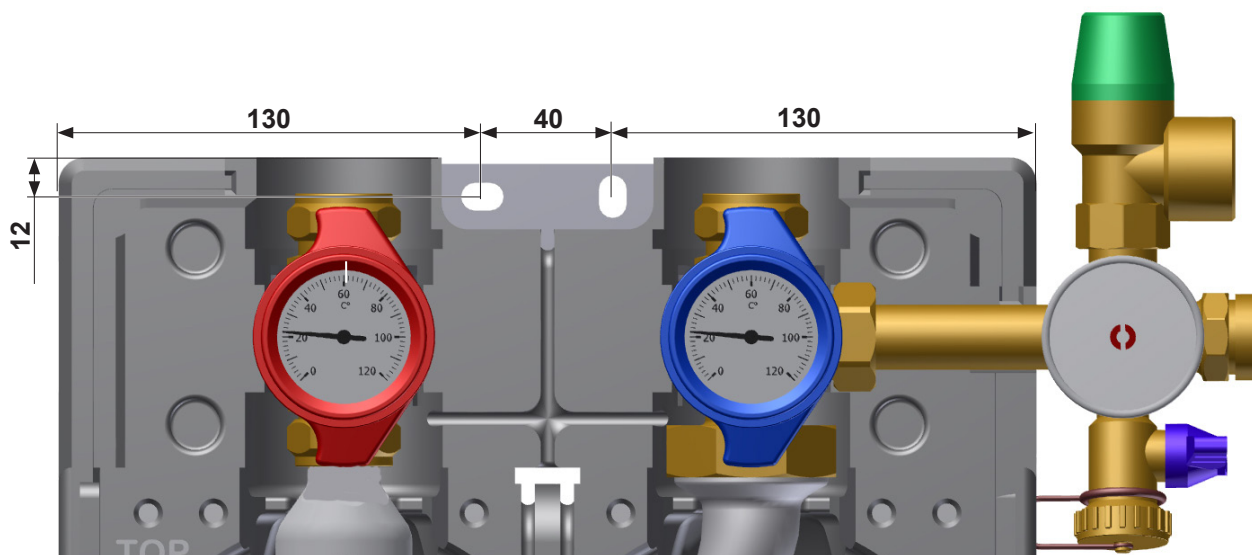


Fig. 5: Drilling dimensions [mm]

- Drill the holes corresponding to the screw and anchor size.
- Place the anchor.
- Insert the pump assembly.
- Screw the screws into the anchor.
- Install the safety valve at the outlet of the return line (Pos. A) of the solar station.

## WARNING



**Scalding hazard caused by escaping heat transfer medium at the safety valve!**

Severe scalding possible.

- Install a temperature-resistant outlet pipe.
- Install a collection container.

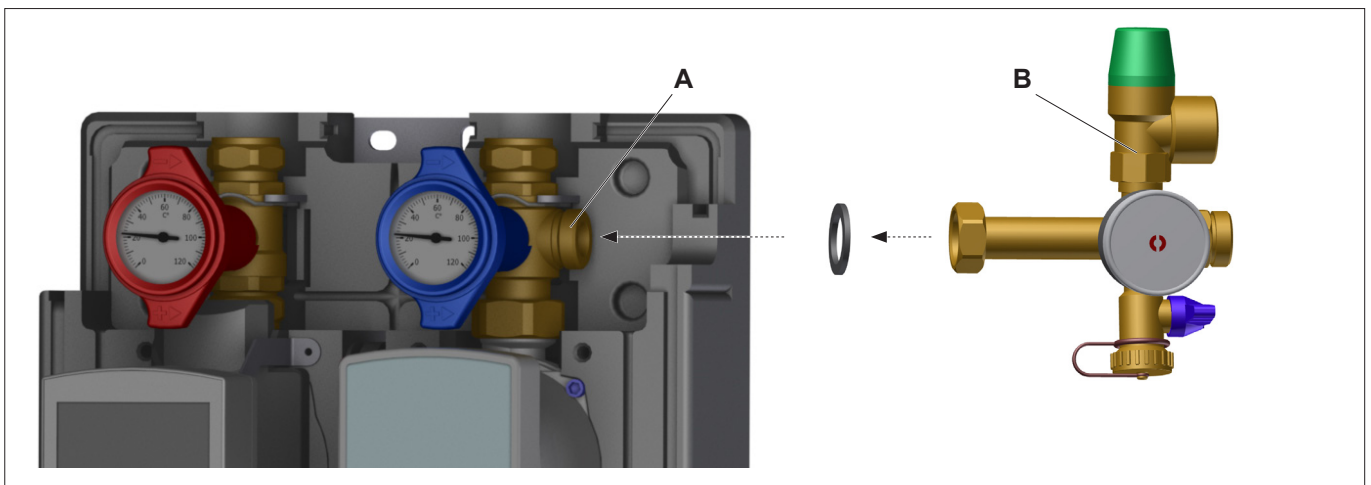


Fig. 6: Install safety valve

- Connect the supply and return line of the solar circuit (Pos. A+B, see Fig. 3 on page 8) and of the storage circuit (Pos. C+D, see Fig. 3 on page 8).
- Check all the screw connections for firm seating.

# Solar station

## 4.3 Initial operation

### Fill and rinse the solar station

#### CAUTION



##### Material damages through frost or steam formation!

Formation of frozen water or steam, if the solar station is rinsed and filled in direct sunlight or freezing temperatures.

- Rinse and fill the solar station only if no direct sunlight or frost is expected.

#### NOTE



Use suitable filling and rinsing pumps for rinsing and filling the solar station. Ensure that there is sufficient heat transfer medium in the filling and rinsing pump for filling and rinsing. Follow the instructions for filling the solar station.

- Stop the power supply of the solar station and secure it against being switched on again.

#### HAZARD



##### Electrical Energy!

Mortal danger through electrical shock.

- Do not touch the live cables or components with moist hands.
- Follow the accident prevention regulations when dealing with electrical current.
- Stop the power supply of the solar station before undertaking any maintenance, cleaning and repair works and secure it against being switched on again.

- Dismantle the front encasing of the pump assembly (see Fig. 4 on page 10).
- Connect the filling hose (pressure hose) of the external rinsing and filling pump to the intake (Pos. D) of the safety valve and the rinsing hose to the return pipe (Pos. F).

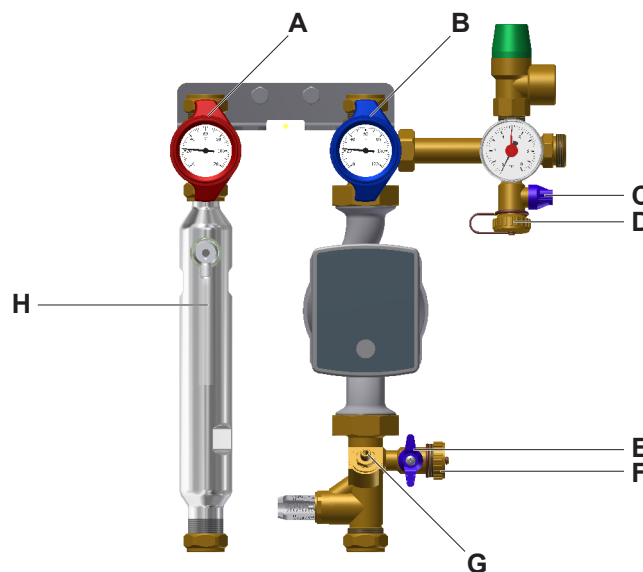


Fig. 7: Filling and rinsing connection

- Open the ball valve (Pos. C, see Fig. 7 on page 12) at the supply line.

- Open the supply line ball valve (multifunction armature, Pos. A, see Fig. 7 on page 12) by rotating the thermometer handle (see “ thermometer handle settings” on page 6).
- Close the return line ball valve (multifunction armature, Pos. B, see Fig. 7 on page 12) by rotating the thermometer handle (see “ thermometer handle settings” on page 14).

## NOTE



The multifunction armature of the supply and return line (multifunction armature, Pos. B, see Fig. 7 on page 12) can be opened at 45° (emptying position, see Fig. 7 on page 12) if required.

- Open the regulating and gate valve (Pos. G, see Fig. 7 on page 12).
  - Fill the solar station with the help of rinsing and filling pump and then rinse the solar circuit sufficiently to flush the air out of the solar circuit.
  - Open the return line ball valve (multifunction armature, Pos. B, see Fig. 7 on page 12) during the rinsing and filling process 2-3 times to vent the circulation pump.
- ⚠ *If the rinsing and filling pump is suitable for pressurisation, the corresponding system pressure can be created.*
- Close the filling and emptying valve (Pos. E, see Fig. 7 on page 12).
  - Close the filling and emptying valve (Pos. C, see Fig. 7 on page 12)
  - Switch off the rinsing and filling pump.
  - Open the return line ball valve (multifunction armature, Pos. B, see Fig. 7 on page 12) by rotating the thermometer handle (see „thermometer handle settings” on page 14).

## WARNING



### High temperatures!

High temperature may arise in the collectors even if there is little sunlight.

- Vent the solar station only with covered collectors.
- Follow the instructions of the collector manufacturer.

- Remove the filling hose (pressure hose) of the external rinsing and filling pump from the supply line (Pos. C, see Fig. 7 on page 4) and the rinsing hose from the return line (Pos. F, see Fig. 7 on page 4) of the safety valve and screw the caps to the connections.
- Check the Fig. 7 on page 12 for tightness.
- Open the supply and return line ball valves (multifunction armatures, Pos. A+B, see Fig. 7 on page 12) completely.

# Solar station



Fig. 8: Thermometer handle settings

- A Operational setting: check valve operational; ball valve open
- B Empty: check valve open; ball valve ½ open (only in the supply run)
- C Service setting: ball valve closed

## Connect the power supply

- Close the power supply of the solar station.

### NOTE



The electrical installation of the solar station may be done only by trained technicians.  
The connection diagram is included in the controller documentation.

⇒ The solar station switches on automatically after connecting the power supply.

- Program the controller if required according to the respective controller manual.

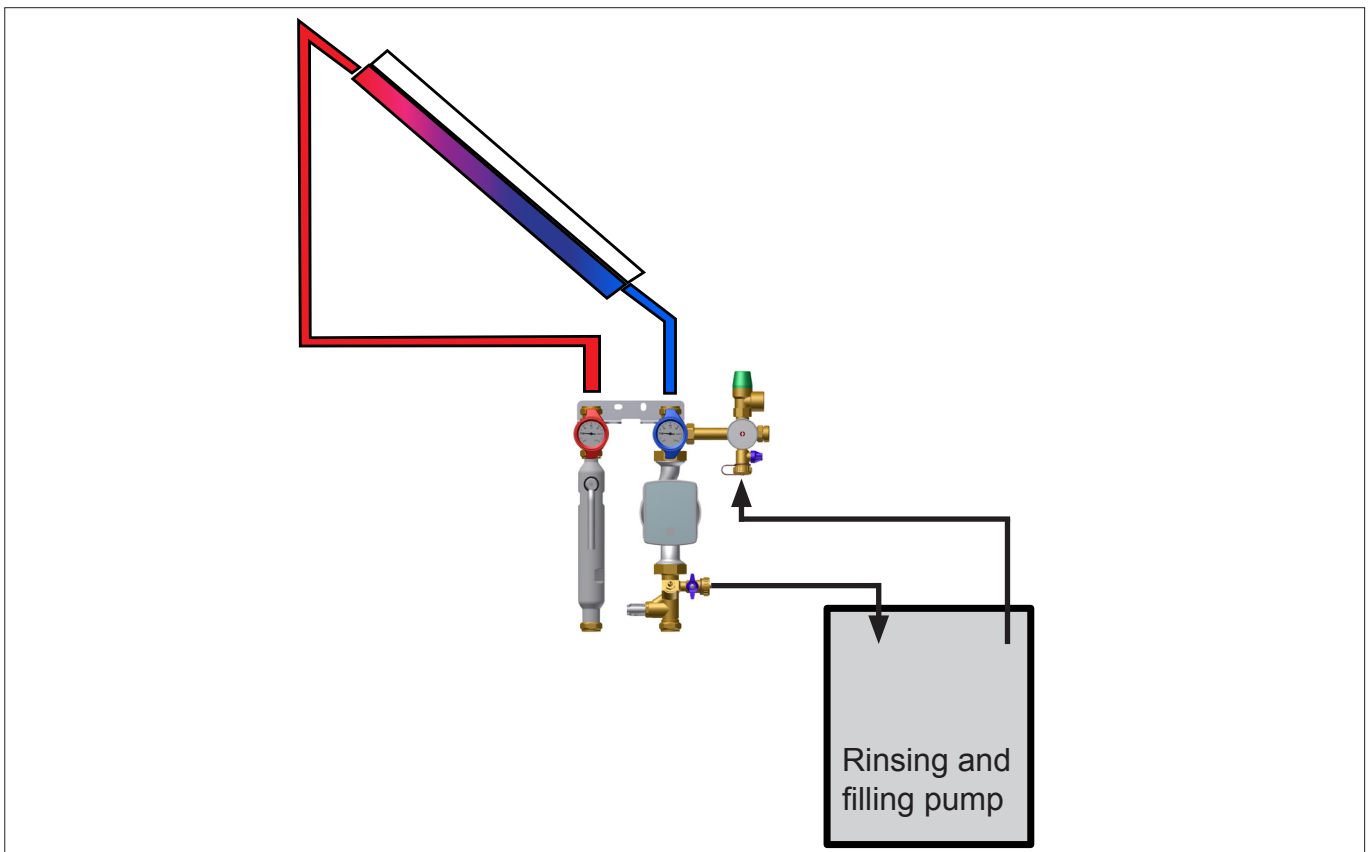





Fig. 9: Rinsing and filling diagram

## 5 Maintenance

### 5.1 Safety

HAZARD	
	<p><b>Electric Energy!</b></p> <p>Mortal danger through electric shock.</p> <ul style="list-style-type: none"> <li>➤ Do not touch the live cables or components with moist hands.</li> <li>➤ Follow the accident prevention regulations when dealing with electric current.</li> <li>➤ Stop the power supply of the solar station before undertaking any maintenance, cleaning and repair works and secure it against being switched on again.</li> </ul>

WARNING	
	<p><b>Hot water/heat transfer medium!</b></p> <p>Severe burns possible.</p> <ul style="list-style-type: none"> <li>➤ Let the solar station cool down before undertaking any maintenance, cleaning and repair works.</li> <li>➤ Do not touch the hot water when emptying the solar station.</li> </ul>

WARNING	
	<p><b>Hot surfaces!</b></p> <p>Severe burns possible.</p> <ul style="list-style-type: none"> <li>➤ Let the solar station cool down before undertaking any maintenance, cleaning and repair works.</li> <li>➤ Do not touch the pipes and components when doing maintenance, cleaning and repairs works.</li> <li>➤ Wear heat-resistant safety gloves when you need to work with hot components.</li> </ul>

### 5.2 Recommended maintenance intervals

Job	Interval
Check gate and ball valves for smooth movement	Annual
Watch out for any noise development in the pump	Annual
Check the solar station for leakages (visual inspection)	Annual
Check the solar safety valve	Annual
Check the WattFlow for proper operation	Annual



# Solar station

## 5.3 Maintenance works

### 5.3.1 Dismantle the circulation pump solar circuit

- Stop the power supply of the solar station and secure it against being switched on again.

#### HAZARD



##### Electric Energy!

Mortal danger through electric shock.

- Do not touch the live cables or components with moist hands.
- Follow the accident prevention regulations when dealing with electric current.
- Stop the power supply of the solar station before undertaking any maintenance, cleaning and repair works and secure it against being switched on again.

- Dismantle the front encasing of the solar station (see Fig. 4 on page 10).
- Close the ball valves (multifunction armature, Pos. A) by rotating the thermometer handle (see “thermometer handle setting” on page 14).
- One after another dismantle the lower insulation (Pos. B), the thermometer handles supply and return line (Pos. A) as well as the upper insulation (Pos. C).

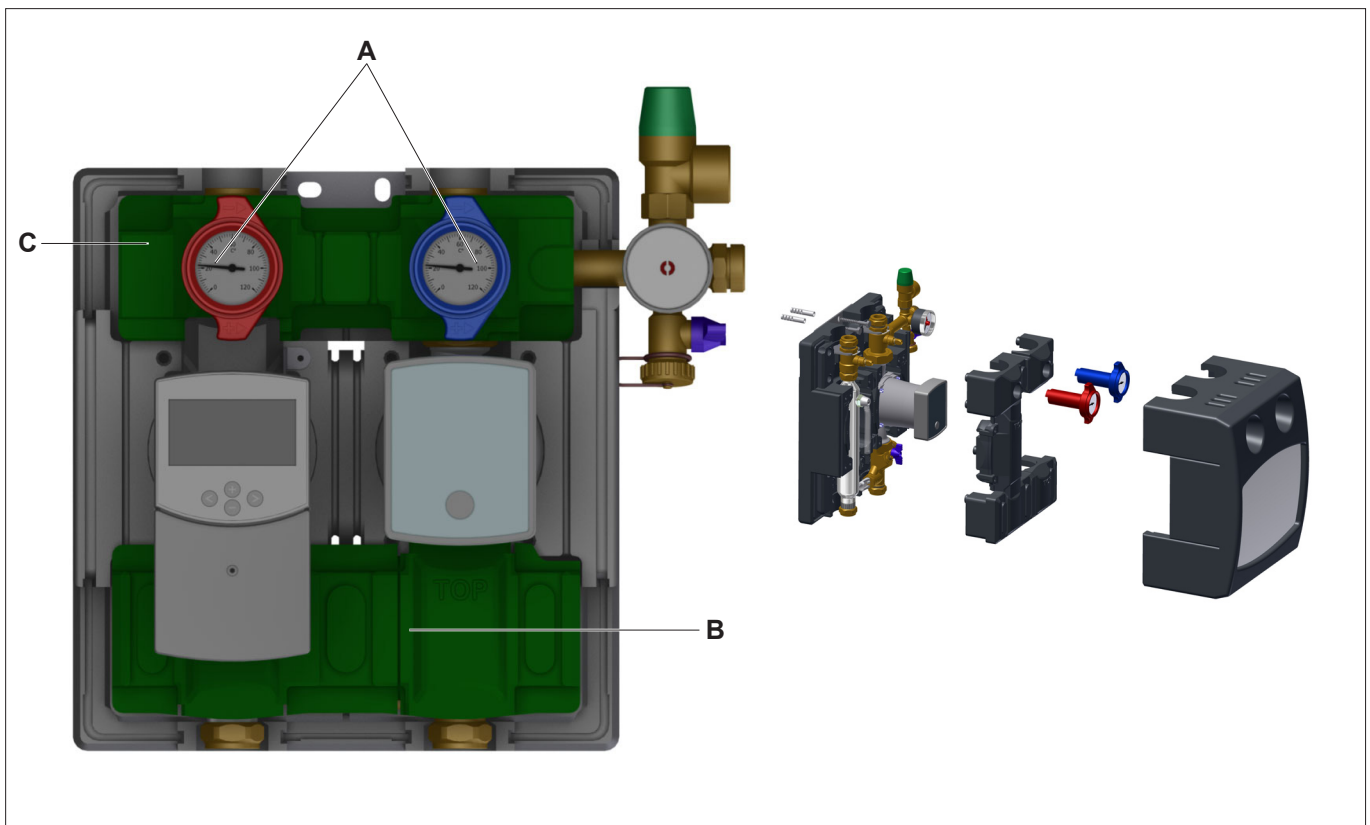


Fig. 10: Dismantle insulations (represented in type 8130 with venting pipe and regulator)

- Close the regulator/gate valve (Pos. C, see Fig. 11 on page 17).
- Loosen the wiring of the solar pump (Pos. D, see Fig. 11 on page 17).

- Loosen the nuts (Pos. B) and dismantle the circulation pump (Pos. D).

## WARNING



### Hot water/heat transfer medium!

Severe burns possible through fluids escaping under pressure.

- Let the solar station cool down before undertaking any maintenance, cleaning and repair works.
- Open the nuts (Pos. B) of the circulation pump (Pos. D) slowly and in a controlled manner.

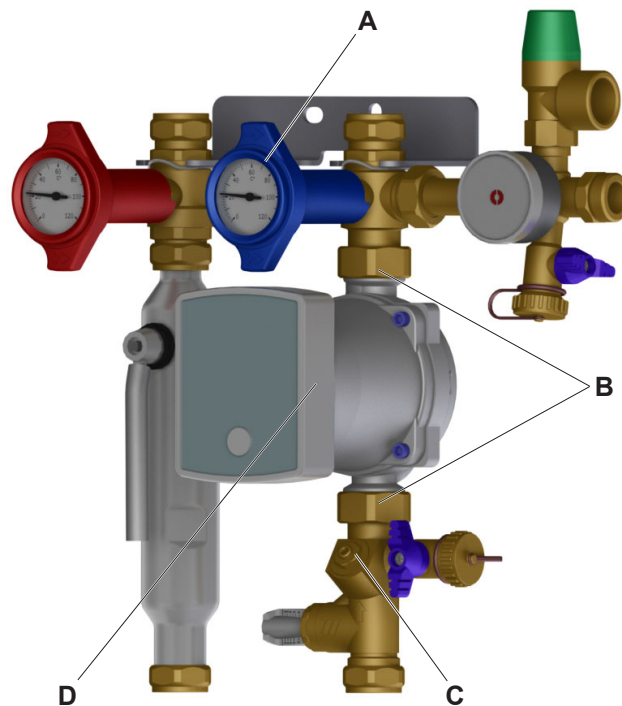


Fig. 11: Dismantle circulation pump solar circuit (represented type 8130 with venting pipe and regulator)

### 5.3.2 Assemble the circulation pump solar circuit

- Replace the damaged or defective sealings.
- Insert the circulation pump and tighten the nuts (tightening torques see „6 Technical data“ on page 19).
- Connect the wiring of the circulation pump.
- **Slowly** open the return ball valve (multifunction armature, Pos. A, see Fig. 11 on page 17) by rotating the thermometer handle 90 degree in the clockwise direction till the stop (see „Thermometer handle settings“ on page 14).
- **Slowly** open the regulator/gate valve (Pos. C, see Fig. 11 on page 17).
- **Gently** pressurise the solar station and vent it if required.
- Reconnect the power supply of the solar station.

# Solar station

## 5.3.3 Adjust the flow rate

### NOTE



For adjusting the flow rate the solar station must be completely cooled off (temperature range 30-40°C).

In case of variants with Flow Sensor the flow rate is automatically controlled. An adjustment is not required.

- Set the ball valves (Pos. A; see Fig. 10 on page 16) to position B.



Fig. 12: Thermometer settings

- A Operational setting: check valve operational; ball valve open
  - B Empty: check valve open; ball valve ½ open
  - C service setting: ball valve closed
- Adjust the flow rate with Allen wrench SW 4 (Pos. C, see Fig. 11 on page 17).
  - Select operating mode “manual mode” at the controller.
  - Check the adjusted flow rate in the inspection window of the WattFlow (Pos. A).

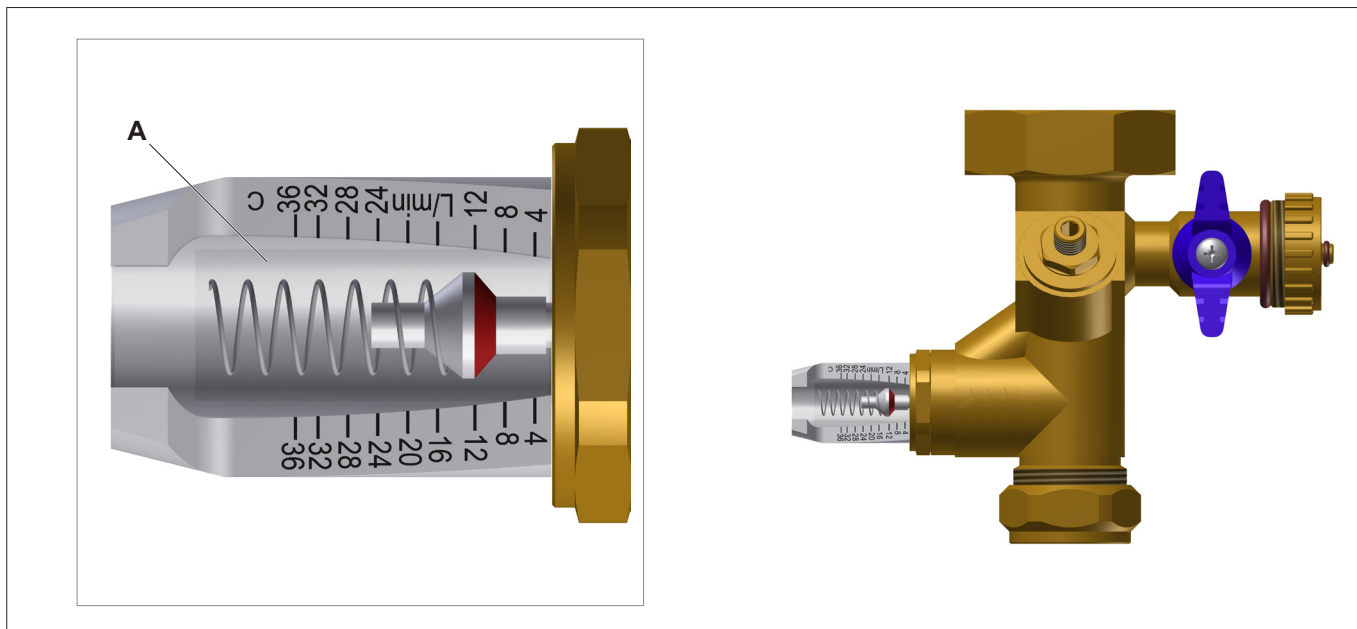


Fig. 13: Regulator valve WattFlow (Example: flow rate 12L/min)

- Vent the solar station if required.

## 6 Technical data

General	
Dimensions (W x H x D)	
Type 8130	300 x 320 x 235 mm
Type 8180	300 x 370 x 240 mm
Weight	
Type 8130	6.5 - 8.5 kg (type dependent)
Type 8180	7.5 - 10 kg (type dependent)
Power supply	See pump/regulator manual
Maximum operating pressure	10 bar
Maximum permissible operating temperature	120 °C (check pump specification)

Circulation pumps
Technical data of the circulation pumps should be taken from the respective pump documentation.

Materials	
Armatures	Pressed brass Ms58 (CW614N)
Tube	Precision steel pipe with surface treatment
Springs	Stainless steel
O-Ring	EPDM-Elastomere (Solar-suitable)
Flat gaskets	AFM34
Ball seatings	PTFE (Solar-suitable)
Check valves VL + RL	Metal

Tightening torques for screws with Reinz AFM 34 + Klingerit gaskets	
$\frac{3}{4}$ "	35 Nm
1 "	55 Nm
$1 \frac{1}{4}$ "	90 Nm
$1 \frac{1}{2}$ "	130 Nm
2 "	190 Nm

Characteristic curves

