Solar transfer stations

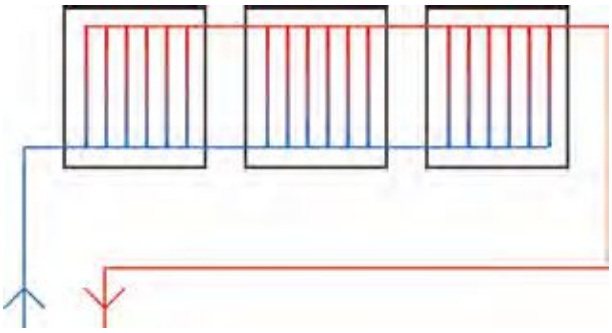
Catalogue 01/2018

Solar thermal solutions

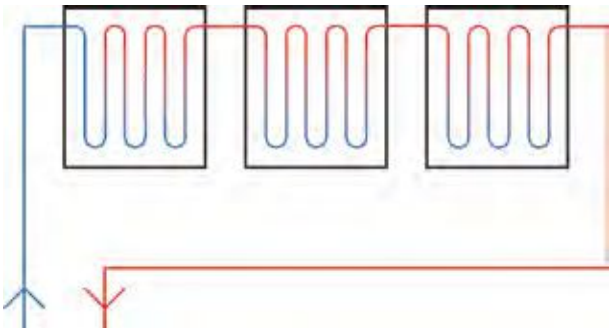
Valid for the UK

Product range Solex
Solar transfer stations

High-flow system with harp collectors



Low-flow system with meander collectors



Dimensioning of a Solex module

Different collector types with the same size of collector field need very different flow rates for an effective operation without interruption. The hydraulic connection of the collector field as well as the shape of the collector can influence the optimal flow of the solar circuit, too. Corresponding values should be agreed with the manufacturer of the collectors. They can also be found in the technical documents of the collectors.

The solar systems are roughly divided into High-Flow systems and Low-Flow systems. High-Flow systems are operated with a higher flow rate and a smaller temperature difference between collector inlet and collector outlet.
In reality, these systems have less pressure drop than Low-Flow systems. Accordingly, Low-Flow systems work with lower flow rates and a higher temperature difference.
The Solex transfer stations can be used for High-Flow solar thermal systems as well as for Low-Flow systems.

The values for the specific flow rate given below refer to the nominal flow rate. Depending on the control target and the basic conditions, the flow rate in the partial-load range is adapted by the controller and can be much smaller than the calculated nominal flow rate.

High-Flow systems have a flow rate of 25 to 40 litres per square metre of collector surface and hour or 0.42 to 0.67 litres per square metre of collector surface and minute.

Low-Flow systems have a flow rate of 10 to 20 litres per square metre of collector surface and hour or 0.17 to 0.33 litre per square metre of collector surface and minute.

The total flow rate in a solar thermal system depends on:
- System operation mode (High-Flow/Low-Flow)
- Collector surface
- Performance of the heat exchanger (secondary)

The **circulation pump dimensioning** depends on:
- Flow rate
- Pressure drop of heat exchanger, collector, piping system

For the selection table of the proper Solex, we assumed a minimum head of ~5 m wc (~50 kPa). If the real collector field (including pipes) has a higher pressure drop, a detailed dimensioning is inevitable.

Selection table solar transfer stations - Solex

Specific flow rate in l/(m² x h)	Collector surface in m²																
	15	**20**	**25**	**30**	**40**	**50**	**60**	**70**	**80**	**90/ 100**	**120**	**140/ 160**	**180/ 200**	**240**	**280**	**320**	**360/ 400**
15	Mini	Mini	Mini	Midi	Midi	Midi	Maxi	Maxi	Maxi	Maxi	Mega	Mega	Mega	2x Mega	2x Mega	2x Mega	2x Mega
20	Mini	Mini	Mini	Midi	Midi	Midi	Maxi	Maxi	Maxi	Maxi	Mega	Mega	Mega	2x Mega	2x Mega	2x Mega	2x Mega
25	Mini	Mini	Mini	Midi	Midi	Maxi	Maxi	Maxi	Maxi	Mega	Mega	Mega	2x Mega	2x Mega	2x Mega	2x Mega	***
30	Mini	Mini	Mini	Midi	Midi	Maxi	Maxi	Maxi	Mega	Mega	Mega	2x Mega	2x Mega	2x Mega	***	/	/
35	Mini	Mini	Midi	Midi	Maxi	Maxi	Maxi	Mega	Mega	Mega	2x Mega	2x Mega	2x Mega	***	/	/	/
40	Mini	Midi	Midi	Midi	Maxi	Maxi	Mega	Mega	Mega	Mega	2x Mega	2x Mega	2x Mega	***	/	/	/

*** precise dimensioning required

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Overview product range Solex
Solar transfer stations

SolexMini - for installations up to 36 m² of collector surface

SolexMini HZ/TW	Operating mode	Collector surface	Power	Temperature difference (collector inlet/ collector outlet)
	25 l/(m²xh)	36 m²	18 kW	20 K
	40 l/(m²xh)	30 m²	15 kW	12 K

Conditions: Irradiation = 800 W/m²; efficiency $\eta_{0.05}$ = 65%

See page <?>/<?> (HZ), <?>/<?> (TW).

SolexMidi - for installations up to 60 m² of collector surface

SolexMidi HZ/TW	Operating mode	Collector surface	Power	Temperature difference (collector inlet/ collector outlet)
	15 l/(m²xh)	60 m²	31 kW	33 K
	40 l/(m²xh)	30 m²	15 kW	12 K

Conditions: Irradiation = 800 W/m²; efficiency $\eta_{0.05}$ = 65%

See page <?>/<?> (HZ), <?>/<?> (TW).

SolexMaxi - for installations up to 100 m² of collector surface

SolexMaxi HZ/TW	Operating mode	Collector surface	Power	Temperature difference (collector inlet/ collector outlet)
	15 l/(m²xh)	100 m²	50 kW	33 K
	25 l/(m²xh)	80 m²	25 kW	12 K

Conditions: Irradiation = 800 W/m²; efficiency $\eta_{0.05}$ = 65%

See page <?>/<?> (HZ), <?>/<?> (TW).

SolexMega - for installations up to 200 m² of collector surface

SolexMega HZ/TW	Operating mode	Collector surface	Power	Temperature difference (collector inlet/ collector outlet)
	15 l/(m²xh)	200 m²	100 kW	33 K
	25 l/(m²xh)	160 m²	50 kW	12 K

Conditions: Irradiation = 800 W/m²; efficiency $\eta_{0.05}$ = 65%

See page <?>/<?> (HZ), <?>/<?> (TW).

SolexMega-Kaskade - for installations up to 400 m² of collector surface

SolexMega-Kaskade HZ/TW	Operating mode	Collector surface	Power	Temperature difference (collector inlet/ collector outlet)
	15 l/(m²xh)	400 m²	200 kW	33 K
	25 l/(m²xh)	320 m²	100 kW	12 K

Conditions: Irradiation = 800 W/m²; efficiency $\eta_{0.05}$ = 65%

See page <?>/<?> (HZ), <?>/<?> (TW).

SolexMini

SolexMidi / Maxi

SolexMega

Product range Solex

Advantages of the PAW solar transfer stations:

- CE conform according to DIN EN 60335
- insulation according to EnEV directive

Application range of solar transfer stations

The solar circuit in a solar thermal system must be filled with a water and propylene glycol mixture to prevent frost damage. The heating installation is normally operated with water.
To transfer the heat energy from the solar circuit to the heating circuit, a heat exchanger is used.
In small systems, a smooth pipe heat exchanger integrated in the storage tank transfers the heat energy. With larger collector fields, the heat transfer capacity of those heat exchangers is no longer sufficient. In large systems, solar transfer stations transfer the collected heat energy from the collectors to the heating water circuit.

The centre piece of those modules is a plate heat exchanger, which allows an efficient heat transfer by means of its cross-flow operating mode.

The operating conditions of the heat exchanger vary due to fluctuation in heat radiation, buffer temperatures and individual system requirements. To operate the entire system at its optimum, you have to set the flow rates at the heat exchanger, depending on the individual control target and the current conditions.

For this purpose the Solex modules use high-efficiency pumps, which offer an extremely broad adjustment range. Thus the controller efficiently adjusts the pumps to the current required flow rates. Additionally, the pumps used save more than 50% of electrical driven energy compared to conventional asynchronous pumps. Furthermore, these pumps meet the energy efficiency guidelines (EuP / ErP READY) of 2015.
The controller is delivered preset, mounted and prewired to guarantee an easy adjustment to the real system.

The use of flow rate sensors in the Solex modules allows a power adjusted control, an efficient system monitoring and an integrated heat quantity measurement.

For a safe and quick commissioning, the Solex modules are equipped with pressure relief valves, ball valves as well as with fill and drain valves.

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Function overview - Controller SC5.14
Solar transfer stations

Controller SC5.14 for solar transfer stations

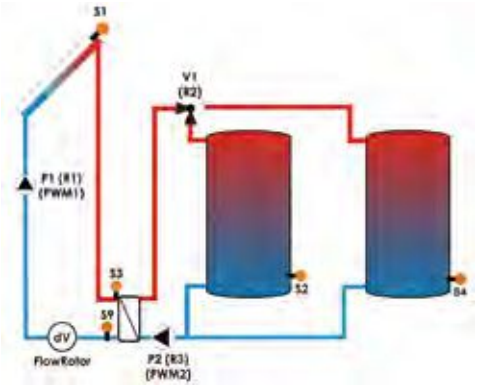
SolexMini HZ/TW	for installations up to 36 m² of collector surface
SolexMidi HZ/TW	for installations up to 60 m² of collector surface
SolexMaxi HZ/TW	for installations up to 100 m² of collector surface
SolexMega HZ/TW	for installations up to 200 m² of collector surface
SolexMega-Kaskade HZ/TW	for installations up to 400 m² of collector surface

The solar controller SC5.14 is completely mounted and preset, so that only the collector field sensor and the storage tank sensor must be installed and connected.
A text-based menu navigation in five selectable languages permits a simple controller operation.

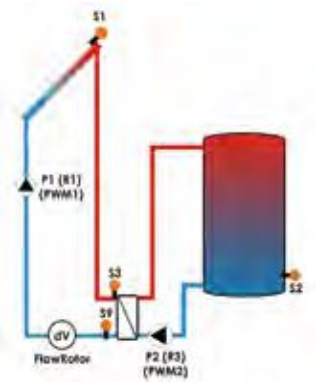
The controller comprises preset systems and can be used in solar installations with up to two domestic hot water tanks. The preset systems are optimised for PAW hydraulics.
Not only temperature measurement, but also heat quantity balancing is possible by means of the sensors.

SC5.14 - Technical data			
Display	multiline LC-text display, illuminated, with menu navigation (multilingual)	**ΔT-control**	yes
Operation	7 push buttons	**Speed control**	yes
Relay outputs	4 x semiconductor relays, 230 V 1 x potential-free relay 4 x PWM signal (0-10 V) for speed control	**Heat quantity measurement**	yes
		Tube collector function	yes
Inputs	10 x Pt1000 1 x solar radiation input CS10 1 x impulse input V40 1 x RPS / VFS 1 x FlowRotor Grundfos Direct Sensor (analogue)	**Antifreeze function**	yes
		Thermal disinfection	yes
		External heat exchanger	yes
		Return distribution	yes
Interfaces	SD card (loading/saving of configuration files, firmware updates)	**Bypass activation**	yes
Heat quantity balancing	yes	**Stratified storage tank charging**	yes
Circulation (depending on time / temperature)	yes	**Quick tank charging**	yes
Flow rate sensors	yes	**Thermostat function**	yes

Connection scheme Solex HZ



Connection scheme Solex TW



Equipment for SC5.14	Item no.	€ / piece
Temperature sensor Pt1000 - Measuring range: -50 °C ... +180 °C - Connection: 1.5 m of silicone cable - Dimensions: d = 6 mm	**Q00146**	**-**

Overview
High-efficiency pumps, solar types

Controlled solar high-efficiency pumps

Nominal diameter	Illustration	Pump type	Power		Control	Display
			Max.	solpump*		
DN 15 / DN 20		Grundfos UPM3 Solar 15-75	45 W	23 W	• PWM solar (5 V) • On/Off (230 V)	5 LEDs for operation mode and error code
		Grundfos UPM3 Solar 15-145	60 W	30 W		
		Wilo Yonos PARA ST 15/7	45 W	23 W	PWM solar (5 V)	LED display for operation and error
		Wilo Yonos PARA ST 15/13	75 W	38 W		
DN 25		Grundfos UPM3 Solar 25-75	45 W	23 W	• PWM solar (5 V) • On/Off (230 V)	5 LEDs for operation mode and error code
		Grundfos UPM3 Solar 25-145	60 W	30 W		
		Grundfos Solar PML 25-145	140 W	70 W	PWM solar (5 V)	no display, no LEDs
		Grundfos UPML 25-105	140 W	70 W	PWM solar (5 V)	no display, no LEDs
		Grundfos UPMXL GEO 25-125	180 W	90 W		
		Wilo Yonos PARA ST 25/7.5	75 W	38 W	PWM solar (5 V)	LED display for operation and error
		Wilo Stratos PARA 25/1-11 T11	140 W	70 W	PWM solar (5 V)	no display, no LEDs
DN 32		Grundfos Solar PML 32-145	140 W	70 W	PWM solar (5 V)	no display, no LEDs
		Wilo Stratos PARA 30/1-12 T2	310 W	155 W	• Solar analogue (0-10 V) • On/Off (230 V)	no display, no LEDs

***solpump = Indication of performance as per European Ecodesign Directive ErP 811/2013 and 812/2013**

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VdZ HEATINGlabel

EuP READY

ErP READY 2015 APPLIES TO EUROPEAN DIRECTIVE FOR ENERGY RELATED PRODUCTS

We are member of the platform VdZ HEIZUNGSlabel (VdZ heating label)

From the 26th of September 2015 on, according to new European guidelines, heat generators, domestic hot water tanks, water heaters and combined systems must carry an energy label. It serves to inform the consumer about the energy efficiency of the labelled products.

On the online platform VdZ HEIZUNGSlabel we provide you all the necessary data for labeling our products. www.heizungslabel.de

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PAW replacement set for solar pumps

The PAW solution for replacing solar pumps and changeover to high-efficiency technology

Since August 2015, within the scope of the European Ecodesign directives for energy related products (811/2013 and 812/2013) to increase the energy efficiency, pumps with asynchronous motors must not be operated any longer in solar thermal installations.
As already for heating technology established, solar installations must also be operated with high-efficiency pumps from now on.
Controllers of old solar installations are usually incompatible with new high-efficiency technology. High-efficiency pumps require always constant mains voltage for operation, the speed control is effected via separate/additional control signals (0-10 V or PWM signal).
Old controllers are not equipped with an appropriate control signal output.

In the case that an existing (asynchronous) pump has to be exchanged without replacing the controller, PAW offers the

PAW replacement set for solar pumps, consisting of:

- High-efficiency pump
- Pump signal converter (PSW)*
- Connection cables
- Gaskets

The following table helps you to find the suitable replacement set for the solar installation.

*The pump signal converter converts the controlled 230 V alternating voltage such as control via pulse packages, phase angle or trailing-edge phase to a PWM or 0-10 V control signal.

How to replace the pump

- Dismount the asynchronous pump and replace it with a high-efficiency pump.
- Connect the PSW to the controller (to the same relay to which the old pump was connected to).
- Connect the PSW to the pump plugs and plug the shock-proof plug into a socket.
- The PSW is correctly preset for the pump.

Thus, complex solar installations can be continuously operated with the existing controller.
Whether to replace a faulty asynchronous pump or to increase the efficiency of a installation: The PAW service team will assist you in the selection of a high-efficiency pump with appropriate characteristic curve.

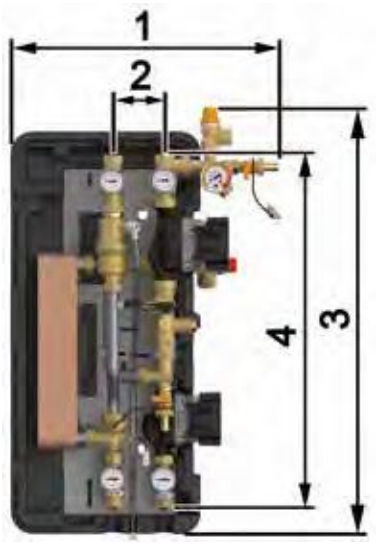
Replacement set for solar pumps in solar installations

DN 20 (¾")	DN 25 (1")	DN 32 (1¼")
Item no. **12187314** Grundfos UPM3 Solar 15-145	Item no. **12187414** Grundfos Solar PML 25-145	Item no. **12187514** Grundfos Solar PML 32-145
-	-	-
		

What is the situation with domestic hot water installations?

PAW domestic hot water modules are equipped with perfectly matched components such as heat exchanger, pumps, sensors and controllers. The pumps are usually designed as high-efficiency pumps.
To ensure the usual temperature stability after replacing a component, please contact our service team and keep the serial number of the station ready. The serial number is placed in the lower right corner of the support sheet of the station.
We will gladly submit you a specific recommendation for replacement.

SolexMini HZ (heating system) up to 36 m² of collector surface



Application range

- for charging buffer storage tanks
- with heat quantity measurement according to the BAFA promotion directive for solar thermal systems

The CE-conformity of the installation has been certified according to DIN EN 60335.

Range of application

- up to 36 m² of collector surface

For information on design data and the solpump indication of performance, see page 213/216.

Operating data

Max. pressure	primary: 6 bars secondary: 3 bars
Max. operating temperature	primary: 120 °C secondary: 95 °C
Operating mode 1	25 l/(m²xh)
Operating mode 2	40 l/(m²xh)

Technical data

Equipment

Check valves	prim.: 2 x 200 mm wc sec.: 1 x 200 mm wc
Heat exchanger	24 plates, type IC8T
Controller	SC5.14
Sensors	2 x Pt1000 (mounted), 3 x Pt1000 (enclosed)
FlowRotor (primary)	0.5-15 l/min
Flowmeter (secondary)	0.5-15 l/min
Pressure gauge	0-6 bars, temperature-resistant
Pressure relief valve	primary: 6 bars secondary: 3 bars

Dimensions

Nominal diameter	DN 15 (½")
Connections	prim.: ¾" internal thread sec.: ¾" internal thread
(1) Width	427 mm
(2) Centre distance	82 mm
(3) Height	680 mm
(4) Installation length	562 mm
Depth	249 mm

Materials

Valves and fittings	Brass
Gaskets	Klingersil / EPDM
Insulation	EPP
Check valves	Brass
Heat exchanger	Solder: 99.99 % copper Plates + connecting pieces: 1.4401 (AISI 316)

SolexMini HZ - DN 15 (½")

	Item no.	€ / piece
prim.: Grundfos UPM3 Solar 15-145, sec.: Grundfos UPM3 Solar 15-75	**6091420**	**-**

Accessories

	Item no.	€ / piece
2-way zone valve - DN 20 (¾")	**563532**	**-**

for connecting and disconnecting single storage tanks,
DN 20, ¾" internal thread, setting time for 90°: 30 sec.

	Item no.	€ / piece
3-way zone valve - DN 20 (¾")	**563533**	**-**

for switching between single storage tanks,
DN 20, ¾" internal thread, setting time for 90°: 18 sec., Kvs value = 7

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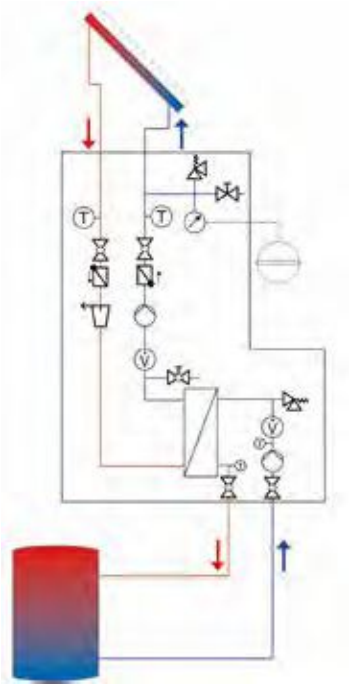
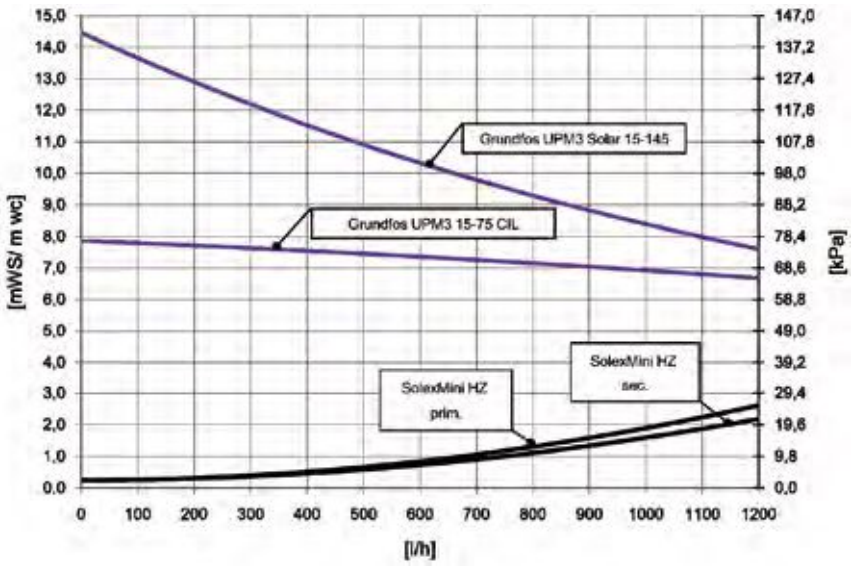
SolexMini HZ
Mounting example, hydraulic scheme, differential pressure diagram

SolexMini HZ with diaphragm expansion tank (item no. 43750925)

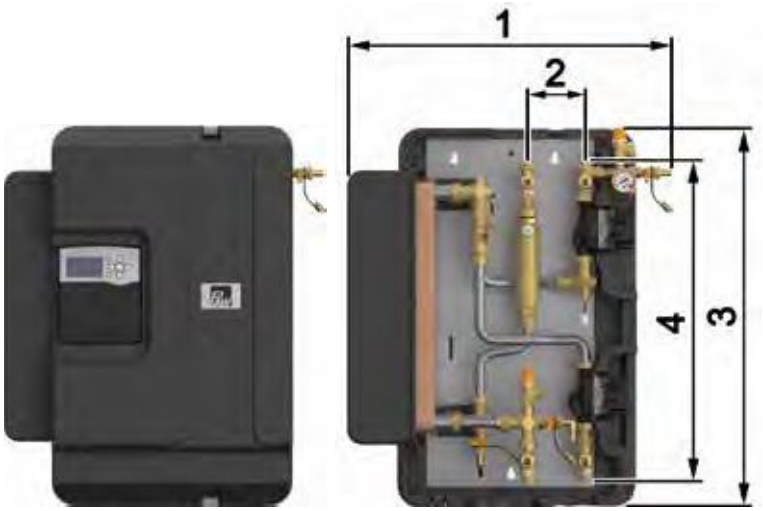


Hydraulic scheme

Differential pressure diagram



SolexMidi HZ (heating system) up to 60 m² of collector surface



Application range

- for charging of buffer storage tanks
- with heat quantity measurement according to the BAFA promotion directive for solar thermal systems

The CE-conformity of the installation has been certified according to DIN EN 60335.

Range of application

- up to 60 m² of collector surface

For information on design data and the solpump indication of performance, see page 213/216.

Operating data

Max. pressure	primary: 6 bars secondary: 6 bars
Max. operating temperature	primary: 120 °C secondary: 95 °C
Operating mode 1	15 l/(m²xh)
Operating mode 2	40 l/(m²xh)

Technical data

Equipment

Check valves	prim.: 2 x 200 mm wc sec.: 2 x 200 mm wc
Heat exchanger	30 plates, type IC25
Controller	SC5.14
Sensors	2 x Pt1000 (integrated), 3 x Pt1000 (enclosed)
FlowRotor (primary)	2-50 l/min
Flowmeter (secondary)	3-22 l/min
Pressure gauge	0-6 bars, temperature-resistant
Pressure relief valve	primary: 6 bars secondary: 6 bars

Dimensions

Nominal diameter	DN 20 (¾")
Connections	prim.: ¾" internal thread sec.: ¾" internal thread
(1) Width	674 mm
(2) Centre distance	120 mm
(3) Height	795 mm
(4) Installation length	670 mm
Depth	298 mm

Materials

Valves and fittings	Brass
Gaskets	Klingersil / EPDM
Insulation	EPP
Check valves	Brass
Heat exchanger	Solder: 99.99 % copper Plates + connecting pieces: 1.4401 (AISI 316)

SolexMidi HZ - DN 20 (¾")	Item no.	€ / piece

prim.: Grundfos UPM3 Solar 15-145, sec.: Grundfos UPM3 Solar 15-75	6095430	-

Accessories

2-way zone valve - DN 20 (¾")	563532	-

for connecting and disconnecting single storage tanks,
DN 20, ¾" internal thread, setting time for 90°: 30 sec.

3-way zone valve - DN 20 (¾")	563533	-

for switching between single storage tanks,
DN 20, ¾" internal thread, setting time for 90°: 18 sec., Kvs value = 7

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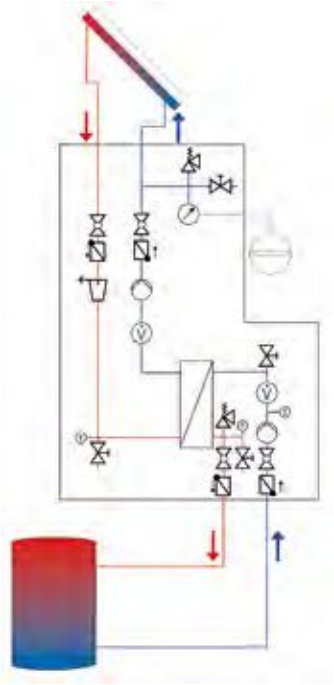
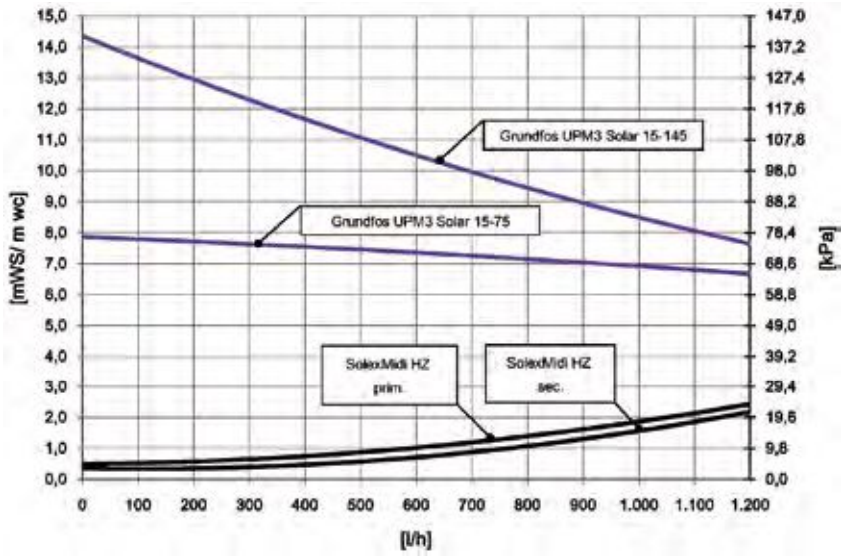
SolexMidi HZ
Mounting example, hydraulic scheme, differential pressure diagram

SolexMidi HZ with diaphragm expansion tank (item no. 43750925)

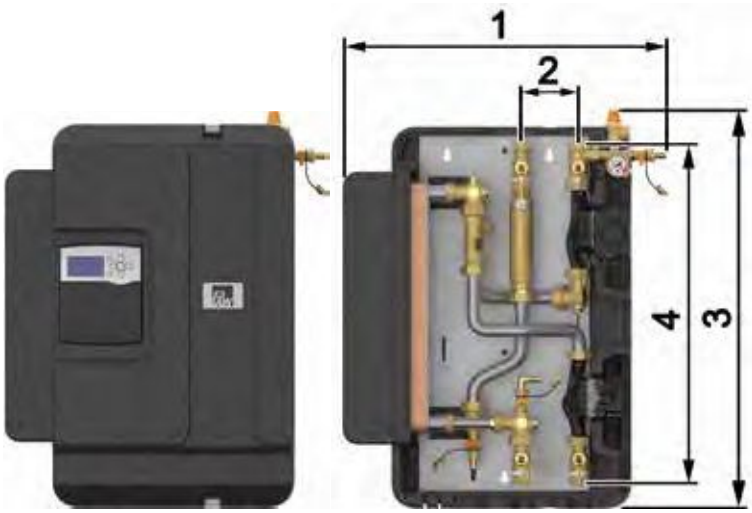


Hydraulic scheme

Differential pressure diagram



SolexMaxi HZ (heating system) up to 100 m² of collector surface



Application range

- for charging buffer storage tanks
- with heat quantity measurement according to the BAFA promotion directive for solar thermal systems

The CE-conformity of the installation has been certified according to DIN EN 60335.

Range of application

- up to 100 m² of collector surface

For information on design data and the solpump indication of performance, see page 213/216.

Operating data

Max. pressure	primary: 6 bars secondary: 6 bars
Max. operating temperature	primary: 120 °C secondary: 95 °C
Operating mode 1	15 l/(m²xh)
Operating mode 2	25 l/(m²xh)

Technical data

Equipment

Check valves	prim.: 2 x 200 mm wc sec.: 1 x 200 mm wc
Heat exchanger	60 plates, type IC25
Controller	SC5.14
Sensors	2 x Pt1000 (integrated), 3 x Pt1000 (enclosed)
FlowRotor (primary)	2-50 l/min
Flow meter (secondary)	5-40 l/min
Pressure gauge	0-6 bars, temperature-resistant
Pressure relief valve	primary: 6 bars secondary: 6 bars

Dimensions

Nominal diameter	DN 25 (1")
Connections	prim.: 1" internal thread sec.: 1" internal thread
(1) Width	674 mm
(2) Centre distance	120 mm
(3) Height	828 mm
(4) Installation length	709 mm
Depth	298 mm

Materials

Valves and fittings	Brass
Gaskets	Klingersil / EPDM
Insulation	EPP
Check valves	Brass
Heat exchanger	Solder: 99.99 % copper Plates + connecting pieces: 1.4401 (AISI 316)

SolexMaxi HZ - DN 25 (1")	Item no.	€ / piece

prim.: Grundfos Solar PML 25-145, sec.: Grundfos UPM3 Solar 25-75	6096460	-

Accessories

2-way zone valve - DN 25 (1")	563542	-

for connecting and disconnecting single storage tanks,
DN 25, 1" internal thread, setting time for 90°: 30 sec.

3-way zone valve - DN 25 (1")	563543	-

for switching between single storage tanks,
DN 25, 1" internal thread, setting time for 90°: 18 sec., Kvs value = 11

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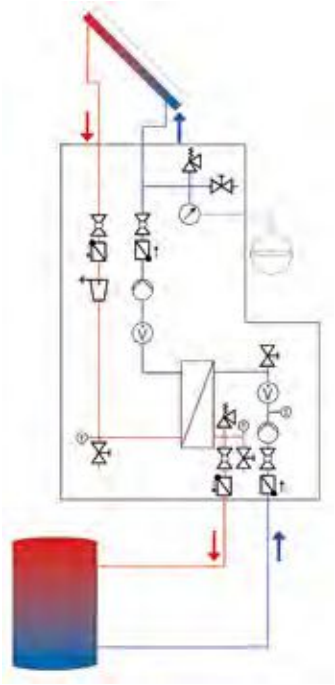
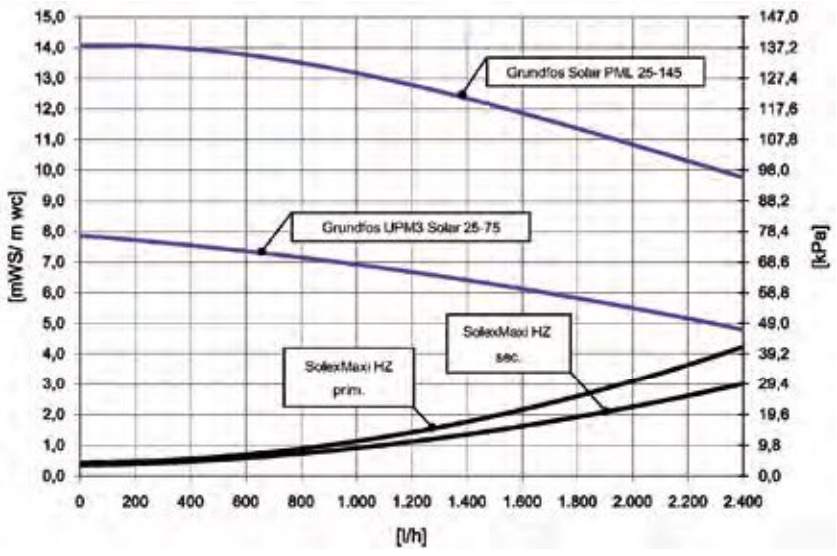
SolexMaxi HZ
Mounting example, hydraulic scheme, differential pressure diagram

SolexMaxi HZ with diaphragm expansion tank (item no. 43750925)

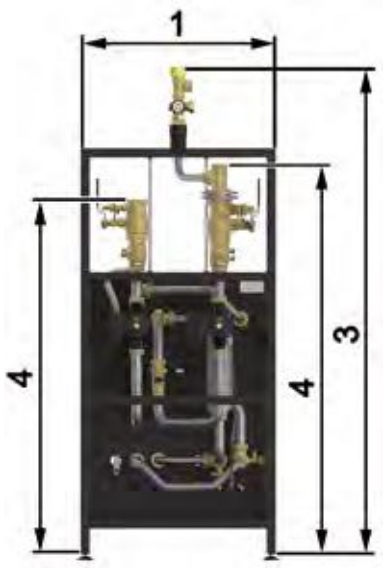


Hydraulic scheme

Differential pressure diagram



SolexMega HZ (heating system) up to 200 m² of collector surface



Application range

- for charging buffer storage tanks
- with heat quantity measurement according to the BAFA promotion directive for solar thermal systems

The CE-conformity of the installation has been certified according to DIN EN 60335.

Range of application

- up to 200 m² of collector surface

For information on design data and the solpump indication of performance, see page 213/216.

Operating data

Max. pressure	primary: 6 bars secondary: 6 bars
Max. operating temperature	primary: 120 °C secondary: 95 °C
Operating mode 1	15 l/(m²xh)
Operating mode 2	25 l/(m²xh)

Technical data

Equipment

Check valves	prim.: 2 x 200 mm wc sec.: 2 x 200 mm wc
Heat exchanger	2 x 50 plates, type XB37M
Controller	SC5.14
Sensors	2 x Pt1000 (mounted)
FlowRotor (primary)	2-130 l/min
Pressure gauge	0-6 bars, temperature-resistant, analogue output 0.5 - 3 V
Pressure relief valve	primary: 6 bars secondary: 6 bars

Dimensions

Nominal diameter	DN 32 (1¼")
Connections	prim.: 1½" internal thread sec.: 1½" internal thread
(1) Width	710 mm
Centre distance	158 mm
(3) Height	1654 mm
(4) Installation length	1205 mm / 1324 mm
Depth	920 mm

Materials

Valves and fittings	Brass
Gaskets	EPDM or AFM 34, asbestos-free
Insulation	EPP
Check valves	Brass
Heat exchanger	Solder: 99.99 % copper Plates + connecting pieces: 1.4400

SolexMega HZ - DN 32 (1¼")	Item no.	€ / piece

prim.: Grundfos UPM XL 25-125, sec.: Grundfos UPML 25-105	6097460	-

Accessories

Return distribution set 1½" internal thread	6404242	-

3-way valve with actuator, setting time for 90°: 35 sec., Kvs value = 25
for SolexMega HZ

3-way zone valve - DN 32 (1¼")	563553	-

for switching between single storage tanks
DN 32, 1¼" internal thread, setting time for 90°: 18 sec., Kvs value = 15

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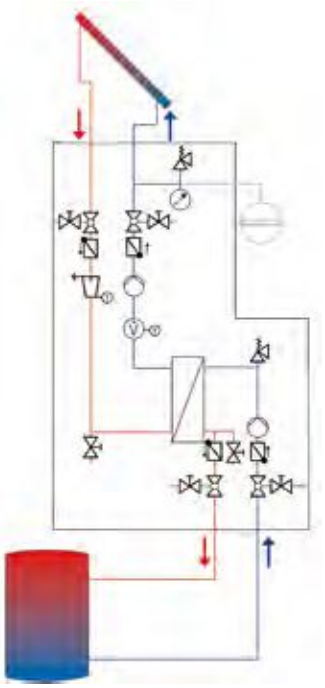
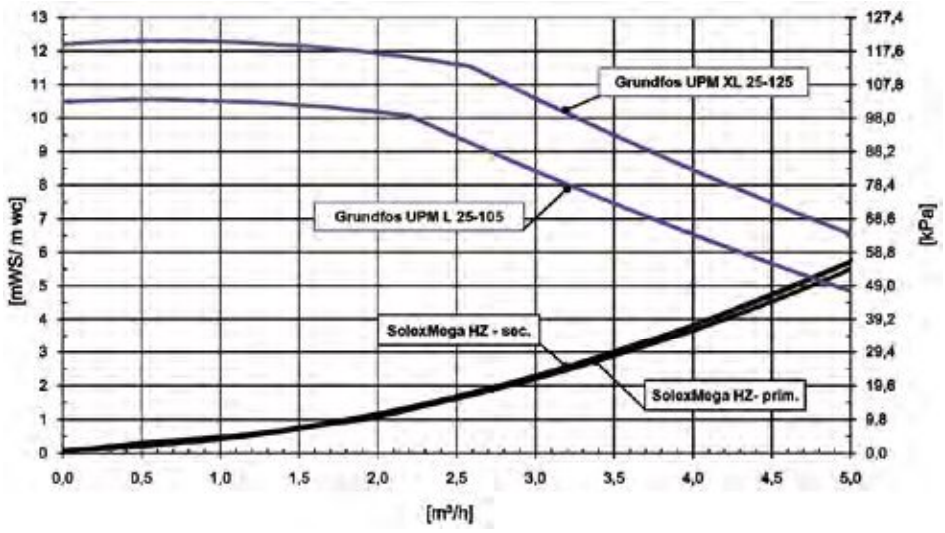
SolexMega HZ
Mounting example, hydraulic scheme, differential pressure diagram

SolexMega HZ with diaphragm expansion tank (item no. 43750925)

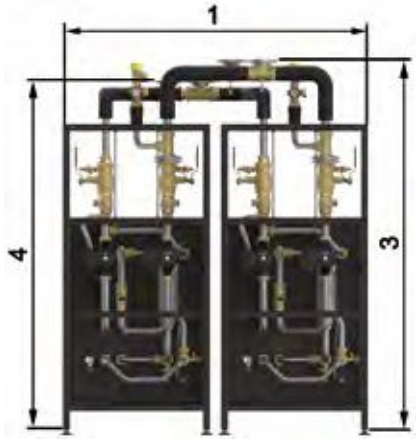


Hydraulic scheme

Differential pressure diagram



SolexMega-Kaskade HZ (heating system) up to 400 m² of collector surface



Application range

- for charging buffer storage tanks
- with heat quantity measurement according to the BAFA promotion directive for solar thermal systems

The CE-conformity of the installation has been certified according to DIN EN 60335.

Range of application

- up to 400 m² of collector surface

For information on design data and the solpump indication of performance, see page 213/216.

Operating data

Max. pressure	primary: 6 bars secondary: 6 bars
Max. operating temperature	primary: 120 °C secondary: 95 °C
Operating mode 1	15 l/(m²xh)
Operating mode 2	25 l/(m²xh)

Technical data

Equipment

Check valves	prim.: 4 x 200 mm wc sec.: 4 x 200 mm wc
Heat exchanger	4 x 50 plates, type XB37M
Controller	SC5.14
Sensors	4 x Pt1000 (integrated)
FlowRotor (primary)	2 x 2-130 l/min
Pressure gauge	0-6 bars, temperature-resistant
Pressure relief valve	primary: 6 bars secondary: 6 bars

Dimensions

Nominal diameter	DN 50 (2")
Connections	prim.: 2" ext. thread / flange DN 50 sec.: 2" ext. thread / flange DN 50
(1) Width	1420 mm
Centre distance	158 mm
(3) Height	1672 mm
(4) Installation length	1577 mm / 1672 mm
Depth	920 mm

Materials

Valves and fittings	Brass
Gaskets	EPDM or AFM 34, asbestos-free
Insulation	EPP
Check valves	Brass
Heat exchanger	Solder: 99.99 % copper Plates + connecting pieces: 1.4400

SolexMega-Kaskade HZ - DN 50 (2")	Item no.	€ / piece

prim.: Grundfos UPM XL 25-125, sec.: Grundfos UPML 25-105	6098460	-

Accessories

Return distribution set 2" internal thread	6404244	-

3-way valve with actuator, setting time for 90°: 35 sec., Kvs value = 40
for SolexMega-Kaskade HZ

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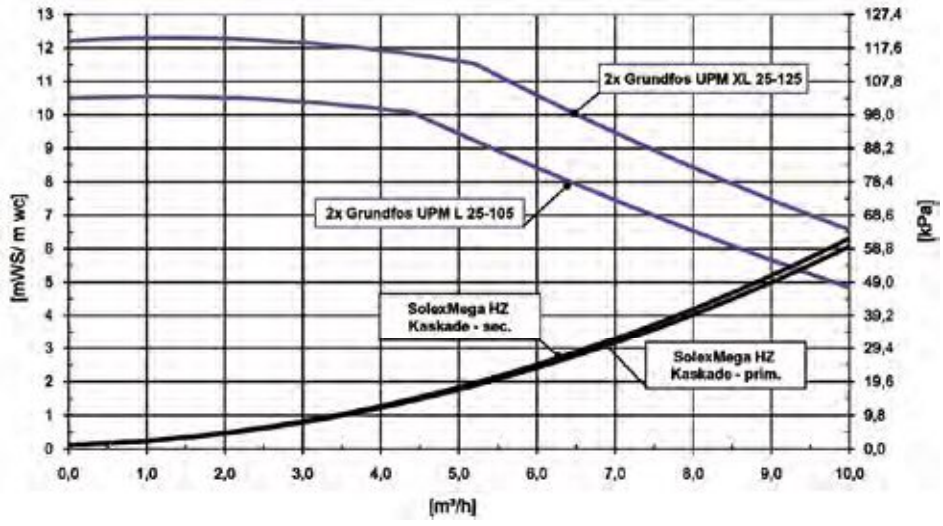
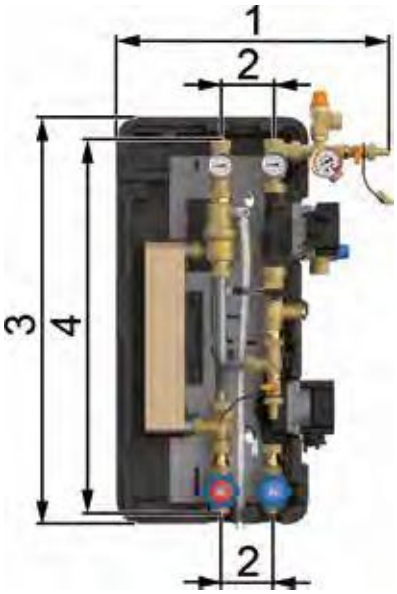
SolexMega-Kaskade HZ
Mounting example, differential pressure diagram

SolexMega-Kaskade HZ with diaphragm expansion tank (item no. 43750925)

Differential pressure diagram



SolexMini TW (domestic hot water system) up to 36 m² of collector surface



Application range

- for charging domestic hot water tanks
- with heat quantity measurement according to the BAFA promotion directive for solar thermal systems

The CE-conformity of the installation has been certified according to DIN EN 60335.

Range of application

- up to 36 m² of collector surface

For information on design data and the solpump indication of performance, see page 213/216.

Operating data

Max. pressure	primary: 6 bars secondary: 10 bars
Max. operating temperature	primary: 120 °C secondary: 95 °C
Operating mode 1	25 l/(m²xh)
Operating mode 2	40 l/(m²xh)

Technical data

Equipment

Check valves	prim.: 2 x 200 mm wc
Heat exchanger	24 plates, type ICT8
Controller	SC5.14
Sensors	2 x Pt1000 (integrated), 2 x Pt1000 (enclosed)
FlowRotor (primary)	0.5-15 l/min
Pressure gauge	0-6 bars, temperature-resistant
Pressure relief valve	primary: 6 bars secondary: 10 bars

Dimensions

Nominal diameter	DN 15 (½")
Connections	prim.: ¾" internal thread sec.: ¾" internal thread
(1) Width	426 mm
(2) Centre distance	82 mm
(3) Height	679 mm
(4) Installation length	589 mm
Depth	263 mm

Materials

Valves and fittings	Brass
Gaskets	Klingersil / EPDM
Insulation	EPP
Check valves	Brass
Heat exchanger	Solder: 99.99 % copper Plates + connecting pieces: 1.4401 (AISI 316)

SolexMini TW - DN 15 (½")	Item no.	€ / piece

prim.: Grundfos UPM3 Solar 15-145, sec.: Grundfos UPM3 15-70 CIL3	6091426	-

Accessories

2-way zone valve - DN 20 (¾"), suitable for DHW	563541	-

suitable for DHW, for connecting or disconnecting single storage tanks or flow paths, DN 20, ¾" internal thread, setting time for 90°: 12 sec., Kvs value = 45. Certified by DVGW, ACS and WRAS.

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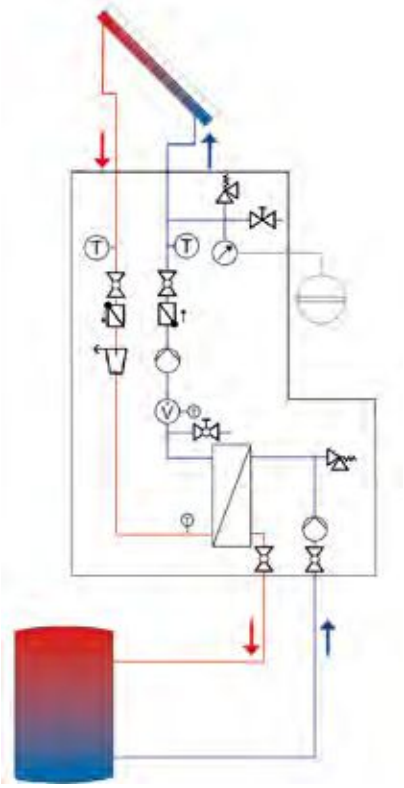
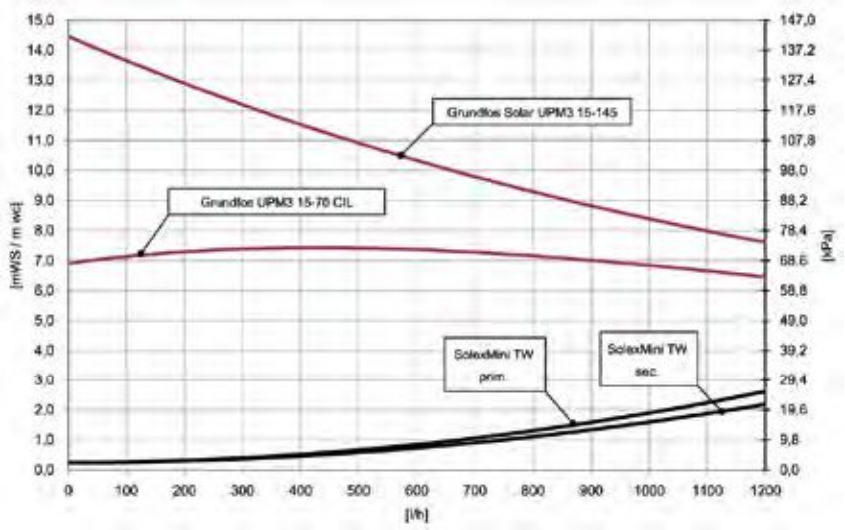
SolexMini TW
Mounting example, hydraulic scheme, differential pressure diagram

SolexMini TW with diaphragm expansion tank (item no. 43750925)

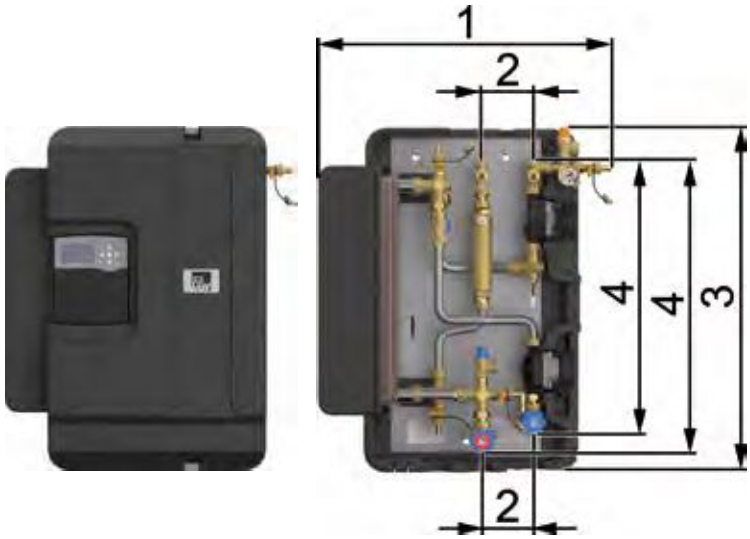


Hydraulic scheme

Differential pressure diagram



SolexMidi TW (domestic hot water system) up to 60 m² of collector surface



Application range

- for charging domestic hot water tanks
- with heat quantity measurement according to the BAFA promotion directive for solar thermal systems

The CE-conformity of the installation has been certified according to DIN EN 60335.

Range of application

- up to 60 m² of collector surface

For information on design data and the solpump indication of performance, see page 213/216.

Operating data

Max. pressure	primary: 6 bars secondary: 10 bars
Max. operating temperature	primary: 120 °C secondary: 95 °C
Operating mode 1	15 l/(m²xh)
Operating mode 2	40 l/(m²xh)

Technical data

Equipment

Check valves	prim.: 2 x 200 mm wc sec.: 1 x 150 mm wc
Heat exchanger	30 plates, type IC25
Controller	SC5.14
Sensors	2 x Pt1000 (mounted) 2 x Pt1000 (enclosed)
FlowRotor (primary)	2-50 l/min
Pressure gauge	0-6 bars, temperature-resistant
Pressure relief valve	primary: 6 bars secondary: 10 bars

Dimensions

Nominal diameter	DN 20 (¾")
Connections	prim.: ¾" internal thread sec.: 1" external thread
(1) Width	674 mm
(2) Centre distance	120 mm
(3) Height	795 mm
(4) Installation length	640 mm / 678 mm
Depth	298 mm

Materials

Valves and fittings	Brass
Gaskets	Klingersil / EPDM
Insulation	EPP
Check valves	Brass
Heat exchanger	Solder: 99.99 % copper Plates + connecting pieces: 1.4400

SolexMidi TW - DN 20 (¾")	Item no.	€ / piece

prim.: Grundfos UPM3 Solar 15-145, sec.: Grundfos UPM3 15-70 CIL3	6095436	-

Accessories

2-way zone valve - DN 20 (¾"), suitable for DHW	563541	-

suitable for DHW, for connecting or disconnecting single storage tanks or flow paths, DN 20, ¾" internal thread, setting time for 90°: 12 sec., Kvs value = 45.
Certified by DVGW, ACS and WRAS.

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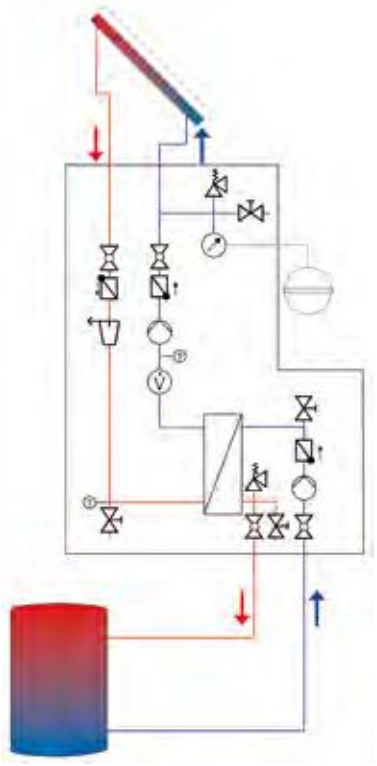
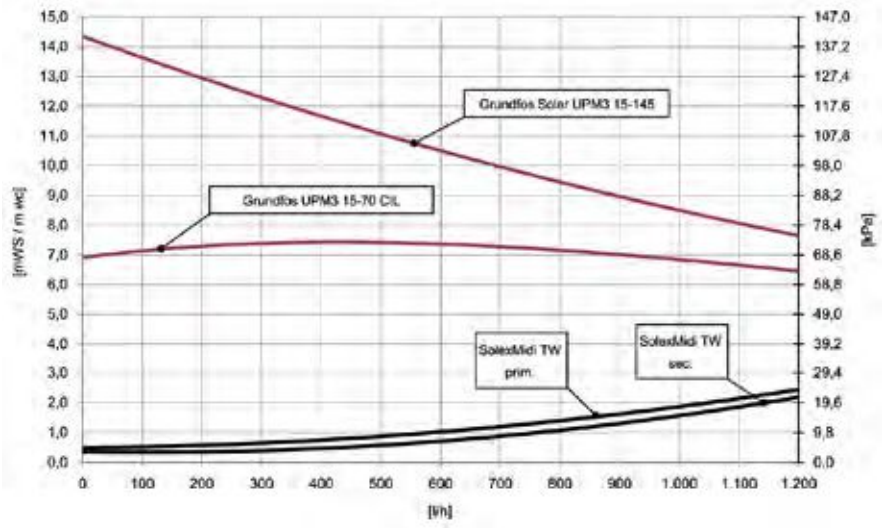
SolexMidi TW
Mounting example, hydraulic scheme, differential pressure diagram

SolexMidi TW with diaphragm expansion tank (item no. 43750925)

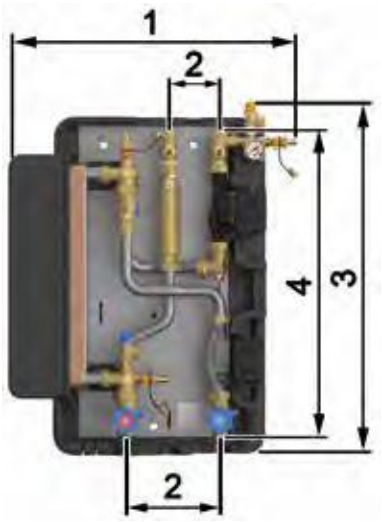


Hydraulic scheme

Differential pressure diagram



SolexMaxi TW (domestic hot water system) up to 100 m² of collector surface



Application range

- for charging domestic hot water tanks
- with heat quantity measurement according to the BAFA promotion directive for solar thermal systems

The CE-conformity of the installation has been certified according to DIN EN 60335.

Range of application

- up to 100 m² of collector surface

For information on design data and the solpump indication of performance, see page 213/216.

Operating data

Max. pressure	primary: 6 bars secondary: 10 bars
Max. operating temperature	primary: 120 °C secondary: 95 °C
Operating mode 1	15 l/(m²xh)
Operating mode 2	25 l/(m²xh)

Technical data

Equipment

Check valves	prim.: 2 x 200 mm wc sec.: 1 x 150 mm wc
Heat exchanger	60 plates, type IC25
Controller	SC5.14
Sensors	2 x Pt1000 (mounted) 2 x Pt1000 (enclosed)
FlowRotor (primary)	2-50 l/min
Pressure gauge	0-6 bars, temperature-resistant
Pressure relief valve	primary: 6 bars secondary: 10 bars

Dimensions

Nominal diameter	DN 25 (1")
Connections	prim.: 1" internal thread sec.: 1½" external thread
(1) Width	674 mm
(2) Centre distance	120 mm / 220 mm
(3) Height	829 mm
(4) Installation length	716 mm
Depth	298 mm

Materials

Valves and fittings	Brass
Gaskets	Klingersil / EPDM
Insulation	EPP
Check valves	Brass
Heat exchanger	Solder: 99.99 % copper Plates + connecting pieces: 1.4400

SolexMaxi TW - DN 25 (1")	Item no.	€ / piece

prim.: Grundfos Solar PML 25-145, sec.: Grundfos UPML 25-105 N	6096465	-

Accessories

2-way zone valve - DN 25 (1"), suitable for DHW	563551	-

suitable for DHW, for connecting or disconnecting single storage tanks or flow paths, DN 25, 1" internal thread, setting time for 90°: 12 sec., Kvs value = 60.
Certified by DVGW, ACS and WRAS.

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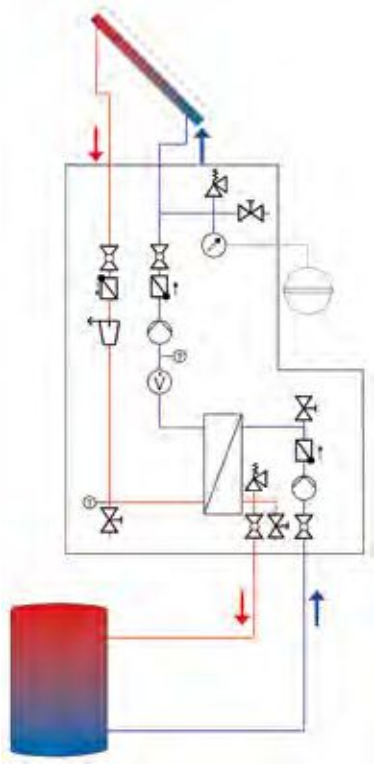
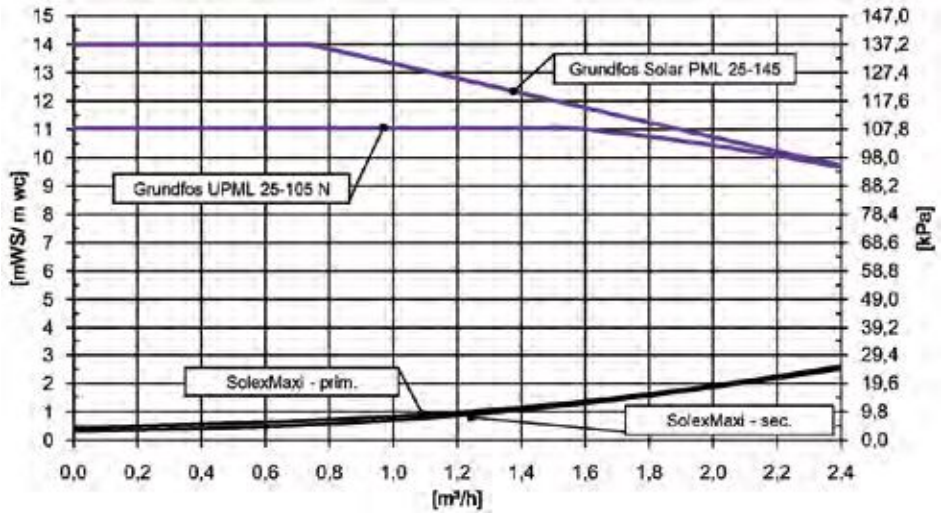
SolexMaxi TW
Mounting example, hydraulic scheme, differential pressure diagram

SolexMaxi TW with diaphragm expansion tank (item no. 43750925)

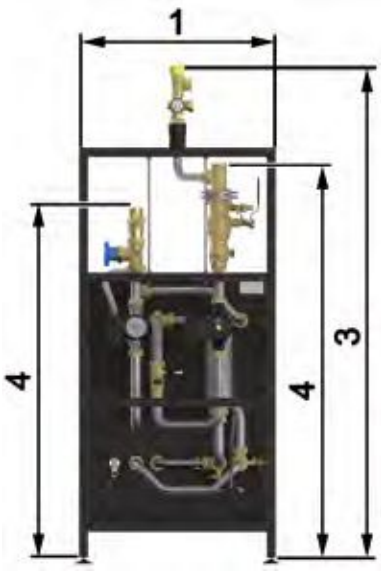


Hydraulic scheme

Differential pressure diagram



SolexMega TW (domestic hot water system) up to 200 m² of collector surface



Application range

- for charging domestic hot water tanks
- with heat quantity measurement according to the BAFA promotion directive for solar thermal systems

The CE-conformity of the installation has been certified according to DIN EN 60335.

Range of application

- up to 200 m² of collector surface

For information on design data and the solpump indication of performance, see page 213/216.

Operating data

Max. pressure	primary: 6 bars secondary: 10 bars
Max. operating temperature	primary: 120 °C secondary: 95 °C
Operating mode 1	15 l/(m²xh)
Operating mode 2	25 l/(m²xh)

Technical data

Equipment

Check valves	prim.: 2 x 200 mm wc sec.: 1 x 150 mm wc
Heat exchanger	2 x 50 plates, type XB37M
Controller	SC5.14
Sensors	2 x Pt1000 (mounted), 2 x Pt1000 (enclosed)
FlowRotor (primary)	2-130 l/min
Pressure gauge	0-6 bars, temperature-resistant
Pressure relief valve	primary: 6 bars secondary: 10 bars

Dimensions

Nominal diameter	DN 32 (1¼")
Connections	prim.: 1½" internal thread sec.: 1½" external thread
(1) Width	710 mm
Centre distance	158 mm
(3) Height	1654 mm
(4) Installation length	1175 mm / 1324 mm
Depth	920 mm

Materials

Valves and fittings	Brass / Bronze
Gaskets	EPDM or AFM 34, asbestos-free
Insulation	EPP
Check valves	Brass
Heat exchanger	Solder: 99.99 % copper Plates + connecting pieces: 1.4401 (AISI 316)

SolexMega TW - DN 32 (1¼")	Item no.	€ / piece

prim.: Grundfos UPM XL 25-125, sec.: Grundfos UPML 25-105 N	6097465	-

Accessories

2-way zone valve - DN 25 (1"), suitable for DHW	563551	-

suitable for DHW, for connecting or disconnecting single storage tanks or flow paths, DN 25, 1" internal thread, setting time for 90°: 12 sec., Kvs value = 60.
Certified by DVGW, ACS and WRAS.

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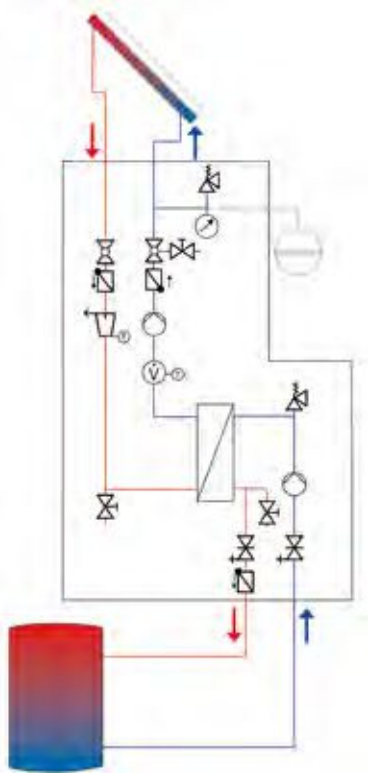
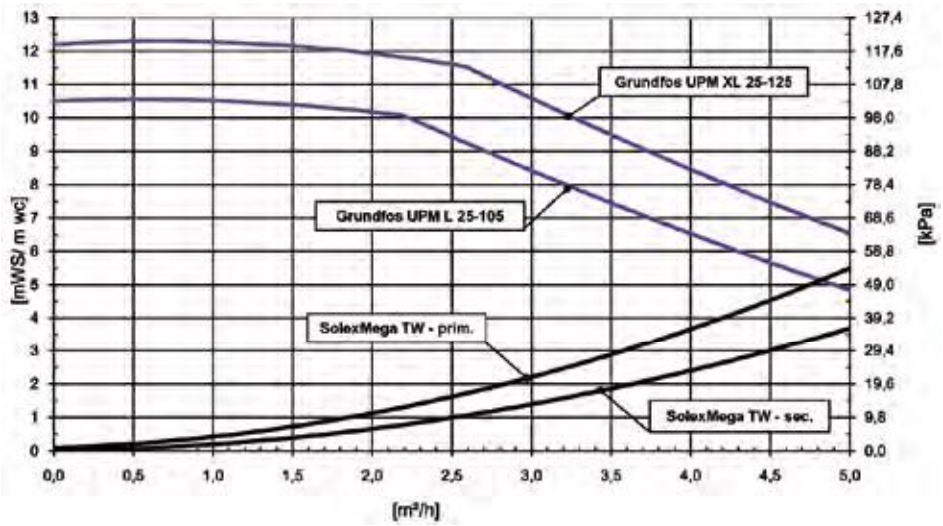
SolexMega TW
Mounting example, hydraulic scheme, differential pressure diagram

SolexMega TW with diaphragm expansion tank (item no. 43750925)

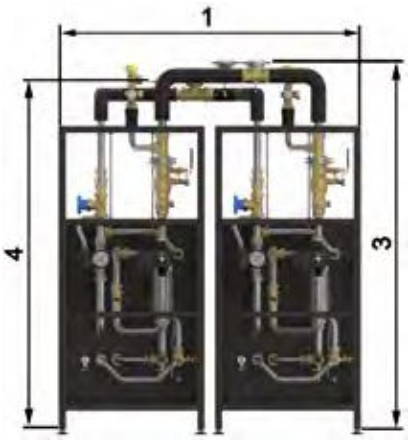


Hydraulic scheme

Differential pressure diagram



SolexMega-Kaskade TW (DHW system) up to 400 m² of collector surface



Application range

- for charging domestic hot water tanks
- with heat quantity measurement according to the BAFA promotion directive for solar thermal systems

The CE-conformity of the installation has been certified according to DIN EN 60335.

Range of application

- up to 400 m² of collector surface

For information on design data and the solpump indication of performance, see page 213/216.

Operating data

Max. pressure	primary: 6 bars secondary: 10 bars
Max. operating temperature	primary: 120 °C secondary: 95 °C
Operating mode 1	15 l/(m²xh)
Operating mode 2	25 l/(m²xh)

Technical data

Equipment

Check valves	prim.: 4 x 200 mm wc sec.: 2 x 150 mm wc
Heat exchanger	4 x 50 plates, type XB37M
Controller	SC5.14
Sensors	2 x Pt1000 (mounted), 4 x Pt1000 (enclosed)
FlowRotor (primary)	2 x 2-130 l/min
Pressure gauge	0-6 bars, temperature-resistant
Pressure relief valve	primary: 6 bars secondary: 10 bars

Dimensions

Nominal diameter	DN 50 (2")
Connections	prim.: 2" ext. thread / flange DN 50 sec.: 2" ext. thread / flange DN 50
(1) Width	1420 mm
Centre distance	158 mm
(3) Height	1672 mm
(4) Installation length	1586 mm / 1672 mm
Depth	870 mm

Materials

Valves and fittings	Brass / Bronze
Gaskets	EPDM or AFM 34, asbestos-free
Insulation	EPP
Check valves	Brass
Heat exchanger	Solder: 99.99 % copper Plates + connecting pieces: 1.4401 (AISI 316)

SolexMega-Kaskade TW - DN 50 (2")

	Item no.	€ / piece
prim.: Grundfos UPM XL 25-125, sec.: Grundfos UPML 25-105 N	**6098465**	**-**

Accessories

	Item no.	€ / piece
2-way zone valve - DN 25 (1"), suitable for DHW	**563551**	**-**

suitable for DHW, for connecting or disconnecting single storage tanks or flow paths, DN 25, 1" internal thread, setting time for 90°: 12 sec., Kvs value = 60. Certified by DVGW, ACS and WRAS.

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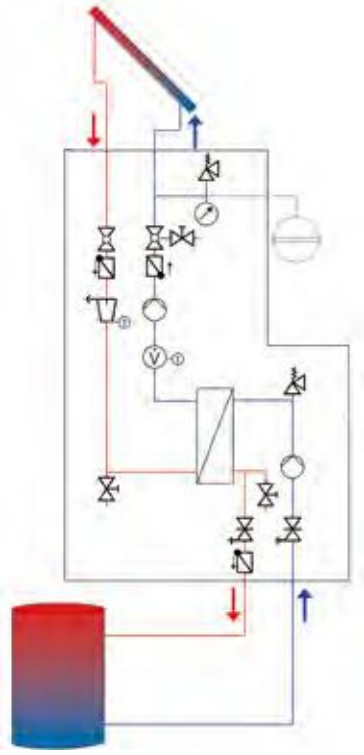
SolexMega-Kaskade TW
Mounting example, hydraulic scheme, differential pressure diagram

SolexMega-Kaskade TW with diaphragm expansion tank (item no. 43750925)



Hydraulic scheme

Differential pressure diagram