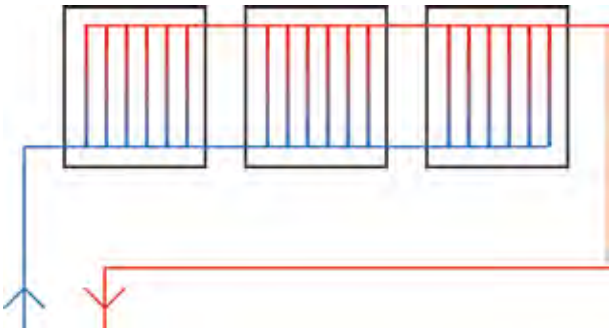
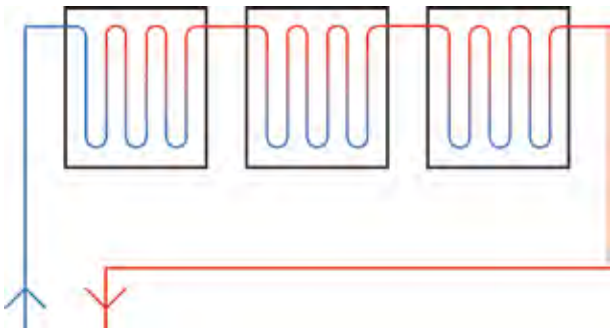
Product range Solex
Solar transfer stations

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 litres 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 to36 m² collector surface area				
SolexMini HZ/TW	**Operating mode**	**Collector surface area**	**output**	**Temperature difference** (collector inlet/collector outlet)
	25 l/(m²xh)	36 m²	18 kW	20 K
	40 l/(m²xh)	30 m²	15 kW	12 K

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

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SolexMidi - for installations up to 60 m² collector surface area				
SolexMidi HZ/TW	**Operating mode**	**Collector surface area**	**output**	**Temperature difference** (collector inlet/collector outlet)
	15 l/(m²xh)	60 m²	31 kW	33 K
	40 l/(m²xh)	30 m²	15 kW	12 K

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

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SolexMaxi - for installations up to 100 m² collector surface area				
SolexMaxi HZ/TW	**Operating mode**	**Collector surface area**	**output**	**Temperature difference** (collector inlet/collector outlet)
	15 l/(m²xh)	100 m²	50 kW	33 K
	25 l/(m²xh)	80 m²	25 kW	12 K

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

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SolexMega - for installations up to 200 m² collector surface area				
SolexMega HZ/TW	**Operating mode**	**Collector surface area**	**output**	**Temperature difference** (collector inlet/collector outlet)
	15 l/(m²xh)	200 m²	100 kW	33 K
	25 l/(m²xh)	160 m²	50 kW	12 K

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

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SolexMega-Kaskade - for installations up to 400 m² collector surface area				
SolexMega-Kaskade HZ/TW	**Operating mode**	**Collector surface area**	**output**	**Temperature difference** (collector inlet/collector outlet)
	15 l/(m²xh)	400 m²	200 kW	33 K
	25 l/(m²xh)	320 m²	100 kW	12 K

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

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