

1 PURPOSE

Collectors are used for:

- heating domestic hot water
- supporting space heating
- heating pool water
- supporting industrial processes

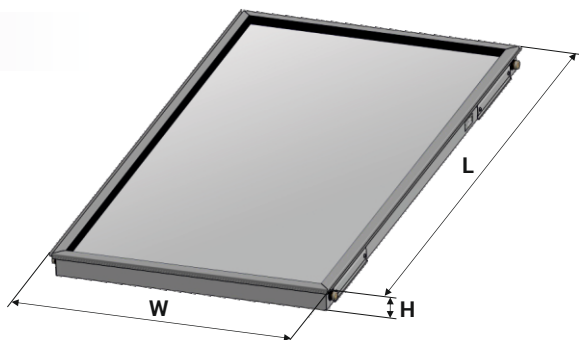


Fig.1. Explanatory drawing of the collector (dimensions)

2 TECHNICAL DATA

Collector		KS2000	KS2100	KS2200	KS2400	KS2600
Dimensions, mm: (see Fig. 1.)	L	2020	2020	2020	2020	2020
	W	1035	1037	1129	1221	1313
	H	90	90	90	90	90
Total area, m ²		2,091	2,090	2,280	2,460	2,650
Aperture area, m ²		1,827	1,82	2,01	2,19	2,36
Weight (without fluid), kg		39	35,1	37,5	40,9	43,4
Liquid capacity, l		1,1	0,85	0,92	1,00	1,09
Max. operating pressure, bar		6	10	10	10	10
Recommended flow rate per collector, l/min(minimum / nominal / maximum)		1,2 / 1,8 / 2,5			1,3 / 2,0 / 2,8	1,5 / 2,2 / 3
Pressure drop*, mbar		5	16	15	16	16,5

* Value of the pressure drop at nominal flow, rate for aqueous propylene glycol solution at concentration of 44% and temperature of 40°C.

3 TRANSPORT AND STORAGE

Collectors are transported in a lying position, the glass upwards. The maximum of 15 pieces of collectors can be stacked on a wooden pallet. Collectors without the factory packaging are stacked on the pads. Transportation of collectors in a standing position. That is, the short side horizontally, is allowed only when having the pallet full of collectors or when having solar sets factory packaged. During transport protect the collectors from moving.

Move the collectors separately by grabbing the body, either directly or by means of transport belts. Do not grab by the collectors connectors. Do not expose the stocked collectors to direct sunlight and other atmospheric factors.

4

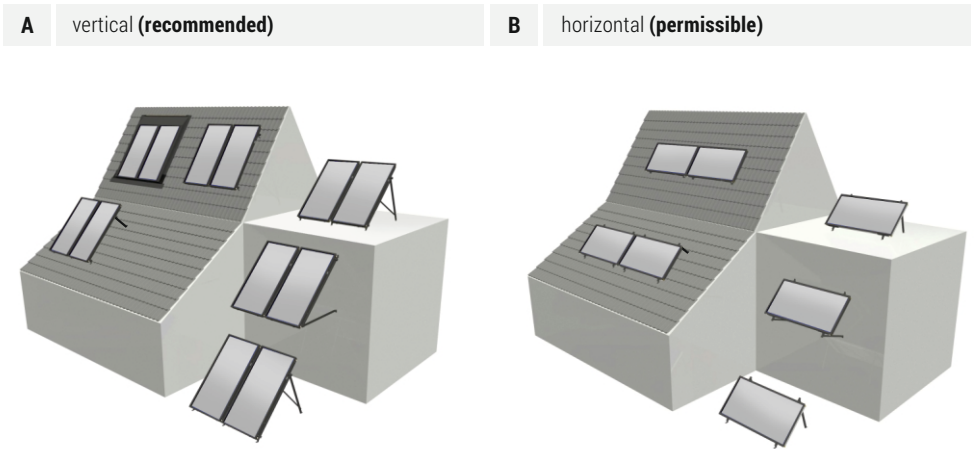
INSTALLATION

Collectors are mounted on system holders, that are available in the manufacturer’s product range. When choosing a mounting one should be guided by available installation options, recommended orientation of the collectors and the base type. Follow the recommendations that are provided with the mounting systems.

WARNING: Installation of improper holders could pose a threat to human life or health.

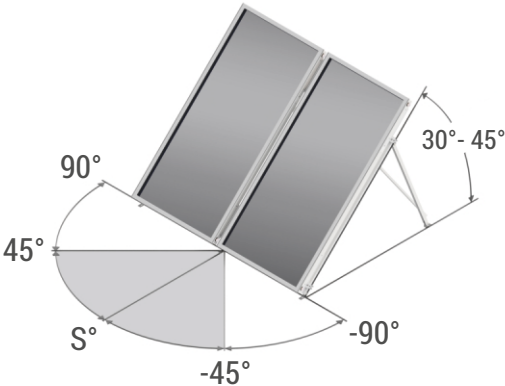
4.1.

Installation options



4.2.

Recommended collectors orientation

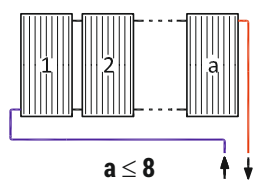


WARNING:

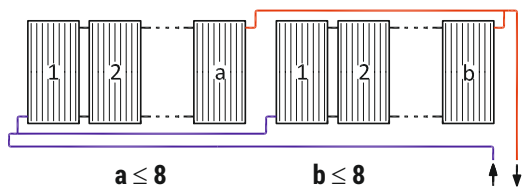
In special cases it is allowed: to incline collectors from 5° to 90° with respect to horizontal plane, and the deviation from the south from -90° to 90°. Deviation of the collectors from the recommended angles, shown on the left diagram, results in a decrease of energy efficiency of the installation.

4.3. Collectors connections

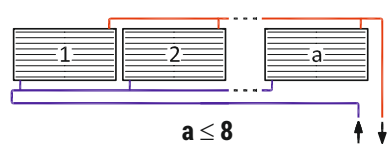
A



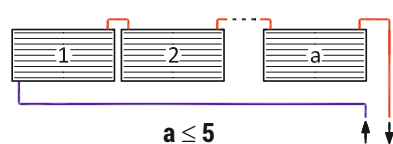
B



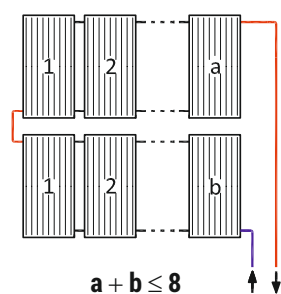
C



D



E



Collectors should be connected into batteries using the original connection sets available in the manufacturer's offer.

The collectors batteries should be connected to installation either through elastic tubes or rigid pipes in case of the latter adequate compensation should be used. In solar circuits one should use pipes of the following materials: copper, stainless steel, carbon steel.

Use appropriate insulation.

WARNING: Do not use pipes completely or even partially made of plastic.

WARNING:

Connection **B** - if $a \neq b$, use flow control with the batteries.

Connection **D** disables complete emptying of the collector from the heat transfer fluid.

4.4. Diameter of the pipes

Collectors type	Recommended number of collectors for a given pipe diameter, pcs.		
	DN15	DN20	DN25
KS2000/KS2100/KS2200	1 – 4	5 – 8	9 – 12
KS2400	1 – 3	4 – 7	8 – 10
KS2600	1 – 3	4 – 6	7 – 9

WARNING: When choosing diameter for a greater number of collectors, please consult it with the manufacturer.

4.5. Working fluid

Fill the solar collectors installation with working fluid of proper physico-chemical properties. Recommended are the fluids on the basis of propylene glycol namely: TERMSOL EKO, CORACON SOL 5F.

4.6. Lightning protection

Connecting the collectors to lightning protection should be done according to the current regulation.

5 PRECAUTIONARY MEASURES

During installation, maintenance and operation, one must follow these rules:

- Follow general safety regulations.
- All operations on the roof can be done only by a trained person, who has a permit to work at height and is equipped with appropriate protective equipment.
- Ensure the safety of the zone around the roof's work site.
- Do not expose the collectors to direct sunlight when unfilled with heat transfer fluid. If necessary cover collectors with opaque material.
- Nuts of the collector's connections are to be tightened until a **slight resistance is felt** (max. 5 Nm (3,7 lb·ft)). Overtightening the connection may result in a permanent damage of the collector.
- Installation should not be filled only in case of direct sunlight or when the collector is not covered.
- While filling the installation take all precautions recommended by the working fluid manufacturer. When filling and servicing the installation, pay attention to possible high temperature of the working fluid. **Risk of burns!**
- During installation or an accident, the elements of the collector and the piping system may be hot. **Risk of burns!**