

songut®

Solar System for Hot Water and Heating

CAMOD 100/150/200/300



songut.com



Heating with solar energy

Reliable solar energy

SONGUT delivers best european manufactures solar systems.
This systems are perfect for single-family houses.

You will produce about 90% of the engery demand of your house for hotwater.

- **Free Energy**
- **Unlimited Energy**
- **Save the environmet**
- **Short pay-back time**
- **High efficiency**



The result of our development are reliable and efficient systems.

- **Plug- and play, easy to install**
- **Fast shipment**
- **Exclusive use of high quality materials**



Solar Heating + Hotwater

until max.

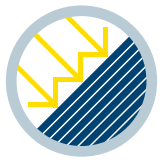
		100 m ²	150 m ²	200 m ²	300 m ²
System Tank	Litros	1000 l	1000 l	1600 l	2000 l
Solar Panels SG23V	ud.	5	6	8	10
	m ²	11	14	18	23

Components

- Solar panels
- Solar tank
- Solar pump station

- Instant hotwater station
- Expansion vessel
- Antifreeze





Solar Panel SG23V/ SG23H

	SG23V	SG23H
Collector type	Roof-mounted collector	
Gross surface area	2.25 m ²	
Absorber surface area	1.91 m ²	
Opening surface area	2.03 m ²	
H x W x D	2,108 x 1,069 x 93 mm	1,069 x 2,108 x 93 mm
Empty weight	36.3 kg	36.6 kg
Contents	1.44 l	
Absorber coating	Highly-selective	
Absorption quotient	95 %	
Emission	5 %	
Max. operating pressure	10 bar	
Type of heating medium	Propylene glycol/water mixture	
Absorber material	Aluminium 0.4 mm	
Connections	4 X 1"	
Collecting main	Cu 22 x 0.8 with screw pipe joint 1"	
Register pipe	8 mm	
Cover	3.2 mm toughened solar safety glass	
Transmission	91 %	
Glass seal	UV-resistant EPDM rubber seal	
Collector assembly	Aluminium basin 0.8 mm	
Mineral wool heat insulation	50 mm	
Leaning angle min./max.	20° / 80°	

Wind and snow tolerance 120 km/h / Tile roof: 460 kg/ Universal: 345 kg



The collectors in this series consist of a deep-drawn aluminium basin, a laser-welded aluminium full surface absorber, a 50 mm thick mineral wool plate and a piece of highly translucent, hail-proof solar glass. The collectors are available in both vertical and horizontal formats.

Absorber:

These aluminium full surface absorbers, with highly-selective coating, copper register and collecting main, are hard soldered and attached to the absorber plate using laser welding technology.

This collector has 4 connections. This makes it possible to connect any number of different combinations while reducing the need for piping to the extent permitted by the laws of hydraulics.

Mounting- Systems



Mounting at 45° angle, flexible positioning possible. Attached through the roof cladding using screws.



Universal and Tile roof 20°
Bench screw and roof rack connection.



Universal and Tile roof 0°
Mounting rails are attached through the roof cladding using screws or roof anchors.



Roofintegration

More options on request



System Tank

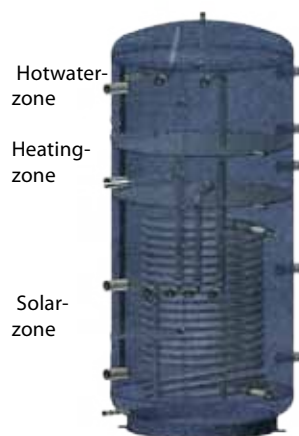
DIR800/ DIR1000

Tecnical Data

Models	800 l	1000 l
Hot water zone	215 l	280 l
Heating zone	120 l	120 l
Diameter insulated	1000 mm	
Diameter non-insulated	790 mm	
Height insulated	1825 mm	2110 mm
Height non-insulated	1755 mm	2040 mm
Tilting measure non-insulated	1788 mm	2068 mm
Weight	160 kg	180 kg
Flexible-foam insulation	100 mm	
Thermal conductivity insulation (λ)	0,041 W / (mK)	
Admissible operating pressure	3 bar	
Admissible pressure solar loop	10 bar	
Admissible operating temperature heating	95°C	
Admissible operating temperature solar loop	110°C	
Heating surface area solar heat exchange	2,5 m ²	3 m ²
Volume solar heat exchanger	16,5 l	19,8 l
Thermal sensor inner diameter	15 mm	
Sensor hot water	1350 mm	1510 mm
Sensor heating	1230 mm	1300 mm
Sensor solar	490 mm	550 mm

Function:

The DIR is an innovative solution for hot water generation and heating support. The thermal energy is distributed to radiators and floor heating systems by up to two attachable heating circuit groups. Vital and healthy water is heated up in the MAC30.



The SONGUT fresh water system tank is a comprehensive heating system solution which is hydraulic and electric ready-for-connection. A heating source independent layered buffer tank, patented hygienic hot water generation and integrated high- and low-temperature heating circuit groups all combined in one aligned system.

Advantages:

Required space:

- optimized use of space and pleasing design

Hygiene:

- continuous-flow heating of water prevents the formation of legionella

Comfort:

- quick and easy installation and starting up.
- no piping necessary for hot water storage
- the patented temperature control guarantees constant hot water temperatures and prevents furring

Technology:

- high quality and long lifespan
- integrated bare-tube heat exchanger with high transmission capacity
- optimized layering due to partition plates and inflow slow-downs.
- plug-in heating circuit groups MOC
- automated system deaeration
- optimized insulation, including flexible foam rings for unused pipe connections

Optimally combinable with various heating systems:

- solar thermal
- heat pumps
- wood burners
- pellet burners
- gas burners
- oil burners



Instant Hotwater Station MAC30



The combination of the SONGUT fresh water system tank DIR and the SONGUT fresh water module MAC30 guarantees constant fresh and vital hot water. A patented temperature control manages this without any latency and thermal fluctuation in every required amount.

Advantages:

Required space:

- smallest possible block construction
- no internal piping
- minimal external piping – MAC30 directly attached to the DIR tank

Hygiene:

- heats up fresh, healthy and vital fresh water in required amount
- continuous-flow heating with patented temperature control prevents the formation of legionella

Comfort:

- plug-in idelivery
- easy installation on DIR tank
- maintenance-free
- constant hot water temperatures
- self-deaeration
- no wear parts
- possibility of wall mounting
- impressive and clean design with covered pipe connections

Technology:

- MAC30 for 1-3 families
- heat insulated model
- separable flat sealing system connections
- push-in circulation unit connection
- high output due to the use of large heat exchangers

Dimensions	
Width	400 mm
Height	820 mm
Depth	290 mm
Insulation	EPP
Weight	20 kg
Connections	
Fresh water (A)	G1 IT
Hot water (B)	G1 IT
From system tank (C)	G1 ET
To system tank (D)	G1 ET
Circulation (E)	G½ IT
Output	30 l/min
Min. operating temperature	2°C
Max. operating temperature	95°C
Max. operating pressure	
Fresh water	10 bar
Heating	3 bar
Charge Pump	230 V / 50 Hz
Rpm	2200 U/min
Power input	95 W
Nominal current	0,4 A
Circulation pump	230 V / 50 Hz
Power input	25 W
Nominal current	0,1 A

- fast reaction time without over- and undershooting
- no water and energy losses because no temperature relief valve on hot water side needed
- no drain is needed, reduced installation costs
- hot water temperature pre-adjustment and fixation in the simplest possible way
- prevention of thermal furring

Function:

The MAC30 follows the continuous-flow heating principle and guarantees fresh hot water combined with very low standby losses. The charge pump conveys the heating circuit water through the two-pass heat exchanger. To reach the set hot water temperature, the patented temperature control unit adjusts the temperature of the heating circuit water at the inflow of the heat exchanger. Before flowing into the heat exchanger, the temperature of the heating circuit water is lowered under the furring level.



Solar Pumpstation ESTSOL

Function:

The Solarstation ESTSOL connects up to 25 m² solar collectors to the DIR or hot water tank DACS. The integrated dual-circuit controller works with three Pt1000 sensors, which control the collector and tank temperatures, and regulates the charge pump.



Technical Data

Model	ESTSOL	ESTSOLFV
Dimensions		
Width	330 mm	
Height	570 mm	
Depth	230 mm	
Insulation	EPP	
Weight	7 kg	6 kg
Controller	SONGUT REG2C Dual-circuit controller with 3 x Pt1000- sensors	No controller necessary
Connections		
Collector	Rp ³ / ₄ IT	G1 ET
Tank	Rp ³ / ₄ IT	G1 ET
Expansion vessel	G ³ / ₄ IT (swivel nut)	G ³ / ₄ ET
Medium	water with max. 50 % propylene-glycol	
Nominal width	DN 15	
Operating temperature flow	140°C	160°C
Operating temperature return	120°C	95°C
Operating pressure	max. 6 bar	max. 8 bar
Charge pump	230 V / 50 Hz	8 – 24 V (DC)
Power input	min. 34 W (level 1)	16 W
	max. 82 W (level 3)	

Advantages:

Required space:

- compact construction
- minimal external piping – directly attached to tank

Comfort:

- plug-in delivery
- easy installation on fwss tank
- maintenance free
- no wear parts
- twice the safety due to two gravitational brakes
- wall fastening feasible
- impressive and clean design with hidden piping

Technology:

- for up to 25 m² solar collectors
- thermally insulated model
- multi-functional ball valves with integrated gravitational brakes
- flow rate adjustable from 1 to 10 l/min
- flow and return temperature indicator
- manometer (range 10 bar)
- solar safety valve (reaction pressure 6 bar)
- flow indicator with rinse and stop function
- kfe-valve for easy filling, rinsing and draining

Specific advantages ESTSOL:

- dual-circuit solar controller with system status display
- air-jet with manual deaeration-nipple

Specific advantages ESTSOLFV:

- self-sustaining operating is possible
- no solar-controller necessary
- high-efficient DC pump

Opcion: Module for heating MOCBAJ/ MOCALT/ MOCB/A

Technical Data

Dimensions	
Width	400 mm
Height	570 mm
Depth	230 mm
Insulation	EPP
Weight	6 kg (1 unit)
Operating pressure	max. 3 bar
Medium	Heating water
Heating water temperature	max. 115 °C
Nominal width	DN 20
Heat output v _{max} 1m/s	Kvs 4,0
Δt = 10 K	9 kW
Δt = 20 K	16 kW
Sealing	flat-sealing swivel-nut G1
Connections	
Tank-sided	G1 ET flat-sealing
Heating-sided	Rp ³ / ₄ IT

MOCBAJ:

For low-temperature heating-circuits (Floorheating, etc.).

MOCALT:

For high-temperature heating-circuits (Radiators, etc.).

MOCB/A:

For heating-circuits with high-temperature and low-temperature circuits.

Function:

The MOC is used to connect high- and/or low-temperature heating circuits to the DIR system tank. It boosts on adjustable constant return flow admixing and is suitable for loading pumps with frontal connections. An EPP insulation and optimized buffer connections are responsible for minimal heat losses.



The SOJNGUT-Heating Circuit Unit can be directly attached on to the fresh water system tank DIR. Like the other SONGUT components, it features the same impressive and clean design and fits perfectly onto the FWSS tank in combination with the MAC30 module. The MOC takes the hot water required for the heating circuits from the heating zone of the DIR tank and the return is layered back into the according zone of the tank.

Advantages:

Required space:

- smallest possible block construction
- no internal piping
- minimal external piping, MOC directly attached to the DIR tank

Comfort:

- plug-in delivery
- easy installation on DIR tank
- wall fastening feasible
- maintenance without draining of tank and heating
- impressive and clean design with hidden piping
- ball valves with flow and return scales

Technology:

- big capacity coverage due to mixing unit with high
Kvs-value =4,0 - 9 kW at Δt 10 K
- 16 kW at Δt 20 K
- adjustable constant return flow admixing
- integrated gravitational brake to avoid unintended circulation
- integrated sensor socket
- heat insulated design
- universally fits various heating controls

Recommended: Special solar tubes TUSO

This special tubes will garantize the perfect funcion of your system. Perfect aislation, no extra pieces, protected for outdoor use.

The pipes are delivered aislated and protected against sun, rain, birds, etc.
There is no necesity for welding or any extra parts.
Install a solar systems gets easy for anyone without welding and saving more than half of time.





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