System storage tank

SONNENTANK FRESH

Highly efficient
The SONNENTANK solar tank stores surplus energy like a buffer tank, only more efficiently.

Intelligent
The most intelligent system storage tank on the market: efficient, cost-effective and sustainable.

Sustainable
Store the solar energy produced with water. This is sustainable and saves up to 75% on energy costs annually.

Ideal combination with solar power and heat pump.

SONNENKRAFT GmbH, Solarstrasse 1, 9300 St. Veit/Glan, Austria | +43 4212 45010 | office@sonnenkraft.com | sonnenkraft.com

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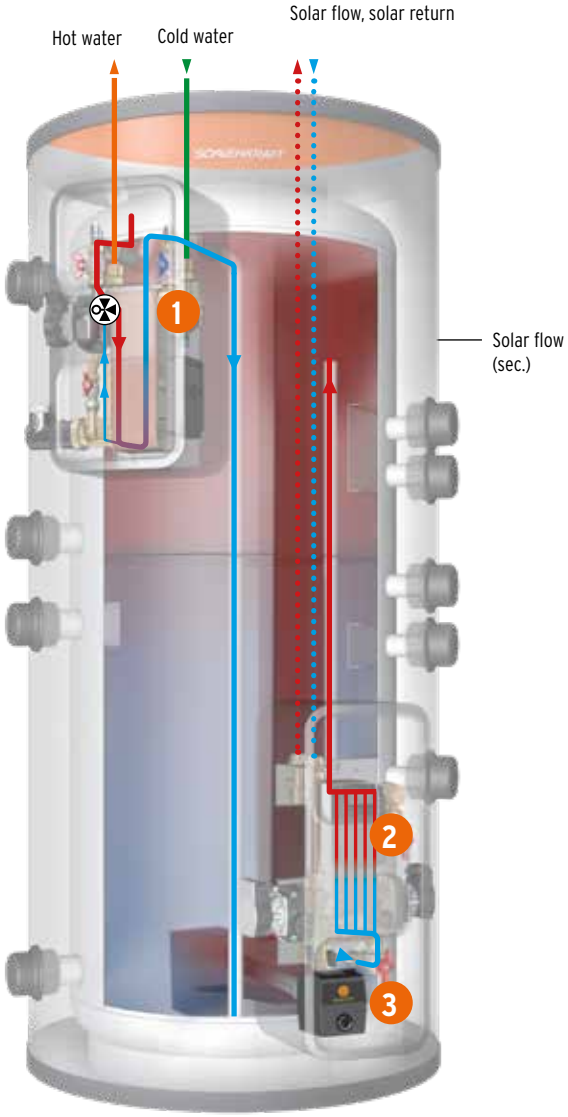
		SONNENTANK SYSTEM STORAGE TANK				ADDITIONAL STORAGE TANK	
		SOTF500	SOTF800	SOTF1000	SOTF1500	SOTB800	SOTB1000
Storage tank volumes	l	500	800	1000	1500	800	1000
Diameter, insulated	mm	900	990	990	1200	990	990
Diameter, uninsulated	mm	700	790	790	1000	790	790
Height, insulated	mm	1705	1805	2205	2130	1805	2205
Height, uninsulated	mm	1627	1726	2126	2052	1726	2126
Tilted dimension	mm	1660	1775	2180	2150	1775	2180
Weight, insulated	kg	114	135	158	219	135	158
perm. operating pressure for heating	bar	3	3	3	3	3	3
perm. operating pressure for solar	bar	10	10	10	10	10	10
perm. operating temperature for heating	°C	95	95	95	95	95	95
perm. operating pressure for solar	°C	110	110	110	110	110	110
Energy efficiency class		C	C	C	C	C	C
Loss on heating	kWh/24h	2.69	3.22	3.48	4.03	3.22	3.48
	W	112	134	145	168	134	145



1 FRESH WATER STATION

Due to the patented admixture from the middle zone of the plate heat exchanger, already cooled heating water is admixed to the buffer feed. This means that the heat exchanger inlet temperature always remains below the calcification limit of 60°C.

2 CHARGING MODULE

The optimum heat transfer at the plate heat exchanger and the speed-controlled pump maximise the solar yield. The space-saving installation on the SONNENTANK system storage tank reduces the installation time. The pre-programmed STRG Omega two-circuit controller enables easy commissioning.

3 SONNENBOOSTER

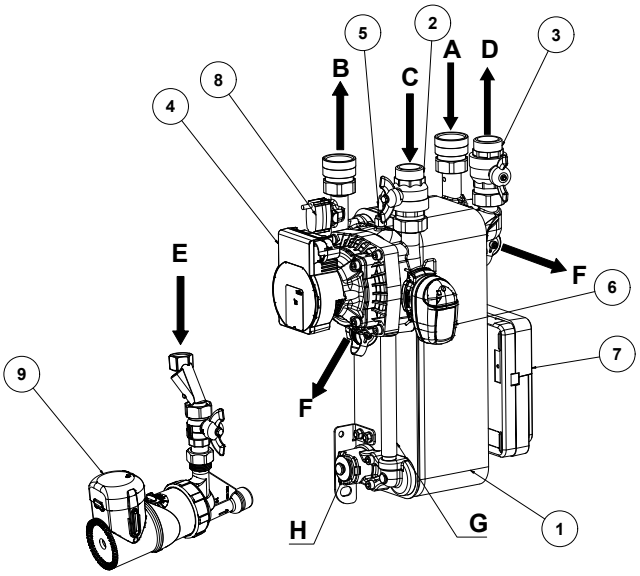
Your solar power surplus is stored with the SONNENBOOSTER sun booster in the SONNENTANK system storage tank. Example of maximum solar power storage: You have a 1000 L SONNENTANK with a fresh water station that you heat up to 40 °C with your heat pump with a good COP. With the SONNENBOOSTER, you can load this up to 85 °C.

This means: 1000 L x 45 °C temperature difference to max. 85 °C x 1.16 / 1000 = 52 kWh. You can therefore store up to 52 kWh of solar power.

SONNENTANK Fresh system storage tank

FWS40 fresh water station

1		HYDROST	HYDROSTIN
Dimensions (W x H x D)	mm	340 x 560 x 270	340 x 560 x 270
Cover		EPP black	EPP black
Weight	kg	20	20
Control		electronic	electronic
max. perm. operating pressure (domestic water / heating)	bar	10 / 3	10 / 3
Installation		Storage tank	Storage tank
Tap capacity	l / min	2 - 40	2 - 40
Plate heat exchanger	Plates	41 (copper, soldered)	41 (stainless steel, soldered)
perm. operating temperature (min./max.)	°C	2 / 95	2 / 95
Charging pump Para HU 25/7.0 / PWM2	V / Hz	230 / 50	230 / 50
Power consumption	W	3 - 50	3 - 50
Circulation pump Xylem E3 vario - 15/000 BRU	V / Hz	230 / 50	230 / 50
Power consumption	W	27	27



COMPONENTS

1 Plate heat exchanger WT11-41 VLD
2 Ball valve flow 1" red
3 Ball valve return 1" blue
4 Para HU 25/7.0 / PWM2
5 PT1000 temperature sensor
6 Super flow valve
7 FRESH Control
8 Grundfos Direct Sensors™ flow sensor
9 Circulation unit (optional)

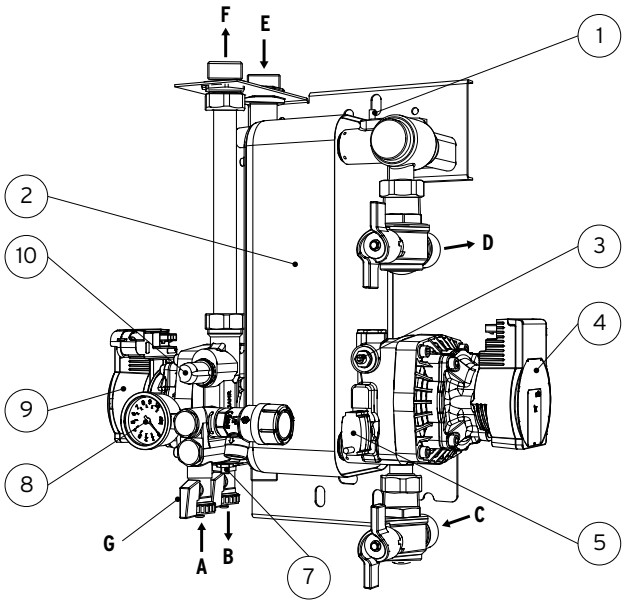
CONNECTIONS

A Cold water - G1" IG
B Hot water - G1" IG
C Storage system tank flow - G1" AG
D Storage system tank return - G1" AG
E Circulation - G1/2" IG
F Flushing connection - 3/4" AG
G By-pass pipe for mixing from the middle zone
H Push-in connection for circulation unit

SONNENTANK Fresh system storage tank

BL25ST charging station

2		BL25ST
Dimensions (W x H x D)	mm	330 x 730 x 290
Cover		EPP black
Weight	kg	19
Solar control unit		STRGO
Maximum operating pressure for collector circuit / buffer circuit	bar	6 / 3
Solar pump	Type	Para HU 25/7.0 / PWM2
Nominal voltage	VAC/Hz	230/50
Nominal power	W	3-45
max. delivery height	m	max. 7
Buffer charge pump		Para HU 25/7.0 / PWM2
Nominal voltage	V/Hz	230/50
Nominal power	W	3-45
max. delivery height	m	max. 7
Plate heat exchanger		Glycol/water
Power	kW	15
Input temperature	°C	60 °C (glycol) / 29 °C (water)
Output temperature	°C	35 °C (glycol) / 54 °C (water)
Flow rate	kg/h	500



COMPONENTS

1 Buffer flow temperature sensor
2 Heat exchanger
3 Buffer circuit control valve
4 Buffer charge pump
5 Buffer circuit flow meter
6 Overpressure valve 6 bar
7 Solar circuit return control valve
8 Pressure gauge
9 Solar pump
10 Solar circuit flow meter

CONNECTIONS

A Solar filling nozzle - G3/4" AG
B Solar discharge nozzles - G3/4" AG
C Storage system tank return - G1" AG
D Storage system tank flow - G1" AG
E Solar flow - G1" AG
F Solar return - G1" AG
G Expansion tank connection

3 SONNENTANK Fresh system storage tank

SONNENBOOSTER energy manager

SYSTEM OPTIMISER with energy manager

(to be installed in the control cabinet)

Control	7-stage, 750 W per stage
Control signal	Analogue mode (0-10 V control signal) and Modbus TCP
	Integrated legionella protection management
	Real-time visualisation in the home network via PC, tablet and mobile phone
Energy manager compatible with	Heat pumps (SG-ready) Inverters (e.g. SolarEdge, SMA, Kostal) Car charging stations (KEBA wall box)

SUN BOOSTER SOB0052 with 5.2 kW

Operating modes	Legionella protection Heat pump request as emergency operation Manual operation (automatic switch-off after 24h)
Heating element	Insulated design against corrosion, wired ready to plug in, easy cable connection to supplied connector plugs
Surface load	7 W/cm² (for slight calcification)
Sensor	4 x PT1000 (Modbus TCP)
Connection	6/4" AG

Z1 - Power supply:
Energy supply for heating elements and internal circuit boards

Z2 - Sensors & analogue input:
Connection of external sensors and 0-10V analogue signal

Z3 - Communication & relay signal:
Communication connection via RS485 interface

Z4 - RJ45 connection socket:
poss. mains connection via LAN connection

3 SONNENTANK Fresh system storage tank

SONNENBOOSTER Ohmpilot

SYSTEM OPTIMISER with Ohmpilot

Control	continuous, 0 to 9 kW
Frequency	50 Hz
Max. input current	16 A / 3 x 16 A
Input voltage	230 V / 3 x 230 V
AC output current	13 A / 3 x 13 A ($I_{ac\ max}$)
Output voltage	230 V / 3 x 230 V
	Prerequisite for use is a Fronius Datamanager 2.0 (to be retrofitted for non-Fronius inverters) and Fronius Smart Meter

SONNENBOOSTER SOB0075 with 7.5 kW

Operating modes	continuous control via Ohmpilot
Heating element	Insulated design against corrosion, wired ready to plug in, easy cable connection to supplied connector plugs
Surface load	7 W/cm² (for slight calcification)
Connection	Standard flange 6/4" AG

Functional diagram POWER2HEAT Combination with SONNENTANK & Ohmpilot