

# SONNENTANK

SYSTEM STORAGE TANK

*SONNENKRAFT*

## EASY

SONNENTANK stores surplus energy as buffer tank but much more efficient.

## EFFICIENT

The most intelligent storage solution system on the market. Efficient, cost effective, sustainable.

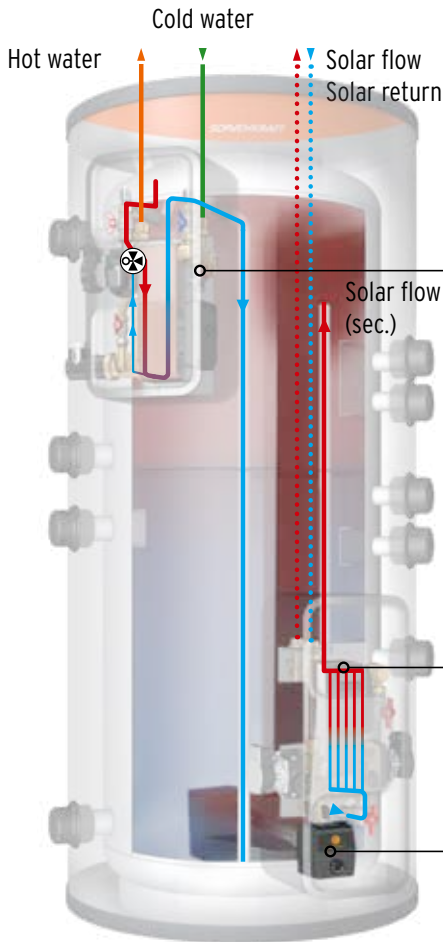
## EXTRA

Produced solar energy stored as hot water. It is sustainable and saves up to 75% of yearly energy costs.



# NEW SONNENTANK SYSTEM STORAGE TANK

Special designed internal structures in SONNENTANK enable perfect temperature stratification. SONNENBOOSTER is heating as priority the upper zone due to chimney effect. In combination with heat pump is SONNENTANK one of the most efficient storage tanks on the market. Due to perfect heat flow in heat pump or PV applications is the upper zone heating time just half so long compared to standard tank



## WATER PATENTED FRESH WATER MODULE

New FWS heat exchanger includes special separating plate which enables already chilled water to mix with hot water from the tank. This principle prevent heat exchanger to be overheated over 60°C.



## HEAT SOLAR CHARGING MODULE

Optimal heat transfer in charging station heat exchanger increases the system efficiency. Position of module enables easy mounting, presetted controller makes the first commissioning easy and fast.



## ELECTRICITY SONNENBOOSTER

Surplus solar electricity is, thanks to special solar booster, possible to store in the tank as heat. For example: Take 1000L tank in combination with heat pump. Heat pump has till 40°C good COP. So we heat the tank with heat pump up to 40°C. SONNENBOOSTER can use the surplus electricity from your solar PV plant and heats the tank up to 85°C. **This means we have stored 52kWh of electrical energy in the tank as heat**

## TECHNICAL DATA

		SONNENTANK SYSTEM STORAGE				EXTENSION TANK	
		SOTF500	SOTF800	SOTF1000	SOTF1500	SOTB800	SOTB1000
Tank capacity	l	500	800	1000	1500	800	1000
Diameter, insulated	mm	900	990	990	1200	990	990
Diameter, without insulation	mm	700	790	790	1000	790	790
Height, insulated	mm	1705	1805	2205	2130	1805	2205
Height, without insulation	mm	1627	1726	2126	2052	1726	2126
Tilted height	mm	1660	1775	2180	2150	1775	2180
Weight with insulation	kg	114	135	158	219	135	158
Perm. operating press. for heating	bar	3	3	3	3	3	3
Perm. operating press. for solar	bar	10	10	10	10	10	10
Perm. operating temp. for heating	°C	95	95	95	95	95	95
Perm. operating temp. for solar	°C	110	110	110	110	110	110
Energy efficiency class		C	C	C	C	C	C
Energy loss	kWh/24h	2,69	3,22	3,48	4,03	3,22	3,48
	W	112	134	145	168	134	145

## ELECTRICITY SONNENBOOSTER

### SYSTEM OPTIMIZER with energy manager

(to mount in switch board)

Control: 7-steps, 750 W per step

Control signal: Analog mode (0-10 V control signal) and Modbus TCP

Legionella protection management

Live visualisation in home network via PC, mobile phone or tablet

Energy manager compatible with:  
Heat pumps (SG ready)  
Solar inverters (f.e. SolarEdge, SMA, Kostal)  
E-car charging station (KEBA-Wallbox)



### SYSTEM OPTIMISATION with OHMPILOT

Stepless control, 0 to 9 kW

Frequency 50 Hz

Max. input current ( $I_{ac,max}$ ) 16 A / 3 x 16 A

Input voltage 230 V / 3 x 230 V

AC output current ( $I_{ac,nom}$ ) 1) 13 A / 3 x 13 A

Output voltage 230 V / 3 x 230 V

Necessary in combination with Fronius Datamanager 2.0 (at other brand inverter must be added) and Fronius smart meter



### SONNENBOOSTER SOB0052 with 5,2 kW

Functions: Legionella protection  
Heat pump switch-on as emergency operation  
Manual operation ((automatic switch-off after 24 hours)

Heating element: corrosion protection insulation, plug & flow principle, simple cable connector, connection plug included

Flat area power: 7 W/cm<sup>2</sup> (less calcification)

Sensor: 4 x PT1000 (Modbus TCP)

Connection: 6/4" male

### SONNENBOOSTER SOB0075 with 7,5 kW

Functions: Stepless control with Ohmpilot

Heating element: corrosion protection insulation, plug & flow principle, simple cable connection, cable connection plug included

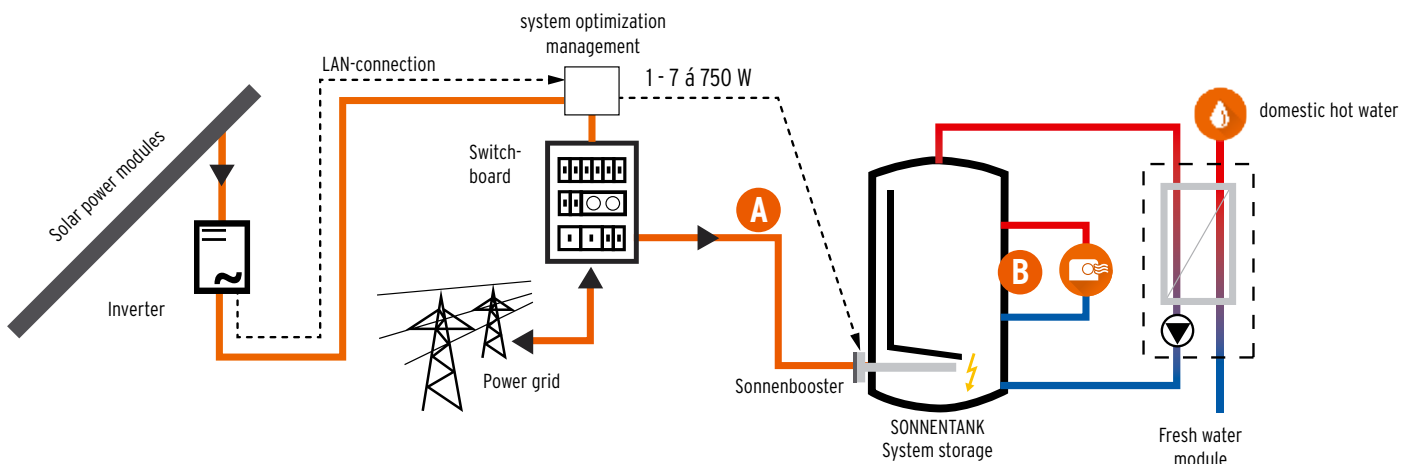
Flat area power: 7 W/cm<sup>2</sup> (less calcification)

Connection: Norm-flank 6/4" male

- Z1 - Network connection:  
Power supply of heating elements & internal circuit board
- Z2 - Sensors & analog input:  
Connection external sensor and 0-10V analog signal
- Z3 - Communication & relays signal:  
Communication connection via RS485 interface
- Z4 - RJ45 Connection socket:  
possible Network connection via LAN connector.



### SONNENBOOSTER FUNCTION DIAGRAM



**A** At surplus solar electrical energy switches the system optimizer in 7 steps the solar booster. By this application is electrical energy stored as heat energy. Each step enlarge the power by 750W

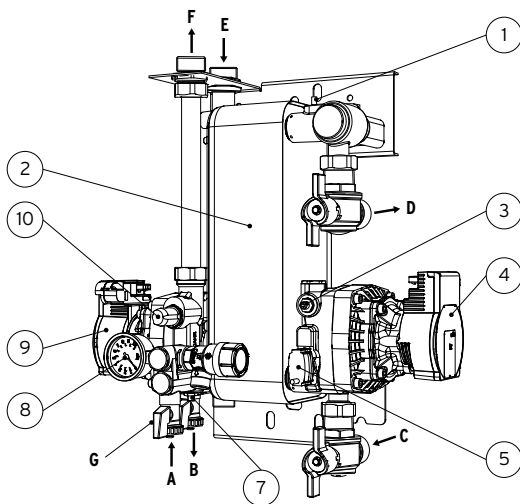
**B** By solar booster is domestic hot water in summer time properly heated. It prolong the life expectancy of heatpump by reducing the switch on/switch off sequences of compressor.

## HEAT SOLAR CHARGING MODULE

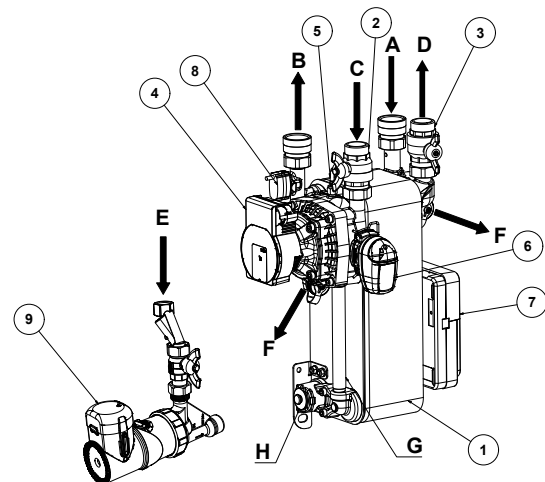
		BL25ST
Dimensions (W x H x D)	mm	330 x 730 x 290
Cover		EPP black
Weight	kg	19
Solar controller		STRG0
max. perm. operating pressure (solar circuit / buffer circuit)	bar	6 / 3
solar pump	Type	Para HU 25/7.0 / PWM2
Nominal voltage	VAC/Hz	230/50
Nominal output	W	3-45
Max. delivery height	m	max. 7
Buffer charging pump		Para HU 25/7.0 / PWM2
Nominal voltage	V/Hz	230/50
Nominal output	W	3-45
Max. delivery height	m	max. 7
Plate heat exchanger		Glycol/water
Power	kW	15
Inlet temperature	°C	60°C (glycol) / 29 °C (water)
Outlet temperature	°C	35°C (glycol) / 54 °C (water)
Flow	kg/h	500

## WATER PATENTED FRESH WATER STATION

		FWS40	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			digital	digital
Max. perm. operating pressure (hot water / heating)	bar		10 / 3	10 / 3
Mounting			Tank	Tank
Tap capacity	l / min		2 - 40	2 - 40
Plate heat exchanger	plates		41 (copper welded)	41 (steel welded)
Perm. operating temperature (max./min.)	°C		2 / 95	2 / 95
Pump Para HU 25/7.0 / PWM2	V / Hz		230 / 50	230 / 50
Pump power	W		3 - 50	3 - 50
Circ. pump Xylem E3 vario - 15/000 BRU	V / Hz		230 / 50	230 / 50
Pump power	W		27	27



COMPONENTS	CONNECTIONS
1 Temp. sensor - buffer inflow line	<b>A</b> KFE-valve filling nozzle - G3/4" male
2 Heat exchanger	<b>B</b> KFE-valve discharge nozzle - G3/4" male
3 Buffer circuit adjustment valve	<b>C</b> Buffer return line - G1" male
4 Buffer charging pump	<b>D</b> buffer inflow line - G1" male
5 Buffer circuit flow meter	<b>E</b> Solar flow - G1" male
6 safety valve 6 bar	<b>F</b> Solar back flow - G1" male
7 Solar circuit adjustment valve	<b>G</b> Expansion tank connection
8 Manometer	
9 Solar pump	
10 Solar circuit flow meter	



COMPONENTS	CONNECTIONS
1 Plate heat exchanger WT11-41 VLD	<b>A</b> Cold water - G1" fem.
2 Ball valve flow 1" red	<b>B</b> Hot water - G1" fem.
3 Ball valve return 1" blue	<b>C</b> Buffer flow - G1" male
4 Para HU 25/7.0 / PWM2	<b>D</b> Buffer return - G1" male
5 Temperature sensor PT1000	<b>E</b> Circulation - G1/2" fem.
6 Super Flow valve	<b>F</b> Drain connection - 3/4" male
7 FRESH Control	<b>G</b> „Bypass“ pipe
8 Flow sensor Grundfos Direct Sensor™	<b>H</b> Push-In-connection for circulation unit
9 Circulation unit (optional)	