

# FWS

FRESH WATER MODULES

*SONNENKRAFT*

## EASY

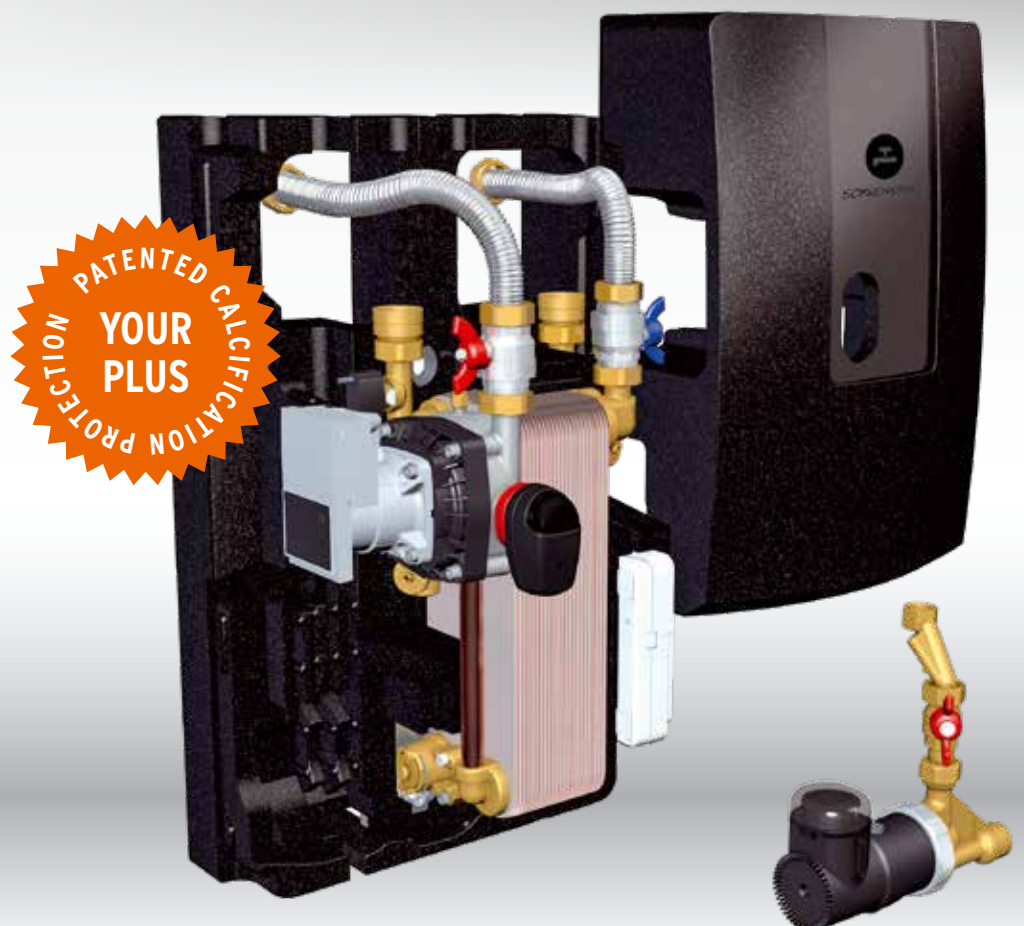
Minimal piping effort and  
easy wall and tank mounting

## EFFICIENT

High tap capacity thanks to large dimensioned  
plate heat exchangers

## EXTRA

Heats up fresh, vital hot water in the required quantity



## TECHNICAL DATA

		FWS20E	FWS30E	FWSWP	FWS40HYDRO
Mounting		Wall / Tank			Wall / Tank
Controller		thermostatic			electronic
Tap capacity	l / min	2 - 20	2 - 30	2 - 30	2 - 40
Plate heat exchanger	plates	21	29	49	41
Dimensions (W x H x D)	mm	400 x 600 x 302			400 x 600 x 302
Cover		EPP schwarz			EPP schwarz
Weight	kg	15	17	21	20
<b>CONNECTIONS</b>					
Cold water (A)		G1" IG			G1" IG
Hot water (B)		G1" IG			G1" IG
Buffer flow (C)		G1" AG			G1" AG
Buffer return (D)		G1" AG			G1" AG
Circulation (E)		G1/2" IG			G1/2" IG
Flushing connection (F)		-			G3/4" AG
min. perm. operating temperature	°C	2			2
max. perm. operating temperature	°C	95			95
max. perm. operating pressure (hot water / heating)	bar	10 / 3			
Pump		Yonos Para HU 25/7.0-PWM2-MC-12			
Pump	V / Hz	230 / 50			
Leistungsaufnahme	W	3 - 45			
Zirkulationspumpe		Xylem E3 vario - 15/000 BRU			
Zirkulationspumpe	V / Hz	230 / 50			
Leistungsaufnahme	W	27			

### WATER INGREDIENTS (LIMITS)

		CU-WT
pH value (considering SI Index)		7-9
Saturation index SI (Delta pH value)		-0,2 < 0 < +0,2
Total hardness	°dH	6-15
Conductivity	µS/cm	10...500
Filterable substances	mg/l	< 30
Free Chlorine	mg/l	< 0,5
Hydrogen sulfide (H2S)	mg/l	< 0,05
Ammoniac (NH3/NH4+)	mg/l	< 2
Sulfate	mg/l	< 100
Hydrocarbonate	mg/l	< 300
Hydrocarbonate/Sulfate	mg/l	> 1,0
Sulfide	mg/l	< 1
Nitrate	mg/l	< 100
Nitrite	mg/l	< 0,1
Iron, solved	mg/l	< 0,2
Manganese	mg/l	< 0,1
Free aggressive carbonation	mg/l	< 20

For areas with different water limits, please use the new fresh water module FWS40HYDROIN

### TEMPERATURE FLUCTUATIONS ON THE EXAMPLE FWS40HYDRO

Volume flow at the tap at 42 °C assuming an admixture of cold water at 10 °C

T <sub>SVsoll</sub>	45 °C			60 °C		
T <sub>pV</sub> [°C]	50	55	90	65	70	90
3 l/min	■	■	■	■	■	■
7 l/min	■	■	■	■	■	■
14 l/min	■	■	■	■	■	■

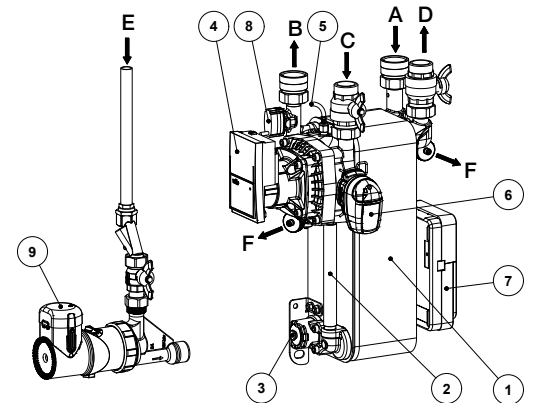
  

T <sub>SVsoll</sub>	Target temperature secondary flow	T <sub>pV</sub>	Primary flow temperature
■	Temperature constant	■	Normally no disturbing fluctuations
■	Disturbing fluctuations possible	■	Strong fluctuations

Source: Institut für Solartechnik SPF, Rapperswil, Schweiz



### COMPONENTS FWS40HYDRO



- 1 Plate heat exchanger
- 2 Pipe „bypass“
- 3 Push-In-connection for circulation unit
- 4 Primary pump
- 5 Temperature sensor PT1000
- 6 Super flow valve
- 7 FRESH Control
- 8 Flow sensor
- 9 Circulation unit with pump and electronic return thermostat (for pulse or time operation)

### CONNECTIONS

- A Fresh water
- B Hot water
- C Buffer feed
- D Buffer return
- E Circulation

### DIMENSIONS TABLE FWS40HYDRO

Cold water temperature = 10 °C  
Hot water temperature = HW-T

Example:  
Storage tank temperature: 65 °C  
Tap capacity: 40 l/min  
Hot water temperature: 45 °C

