

SONNENKRAFT FWM15i/30i-CU/VA MODULE



EASY

Plug & Flow - every part made for easy installation.

EFFICIENT

Intelligent circulation pump, that only circulates water when needed.

EXTRA

Top quality and totally new plate heat exchanger - also for harsh water qualities.

E³



FWM15i/30i-CU/VA

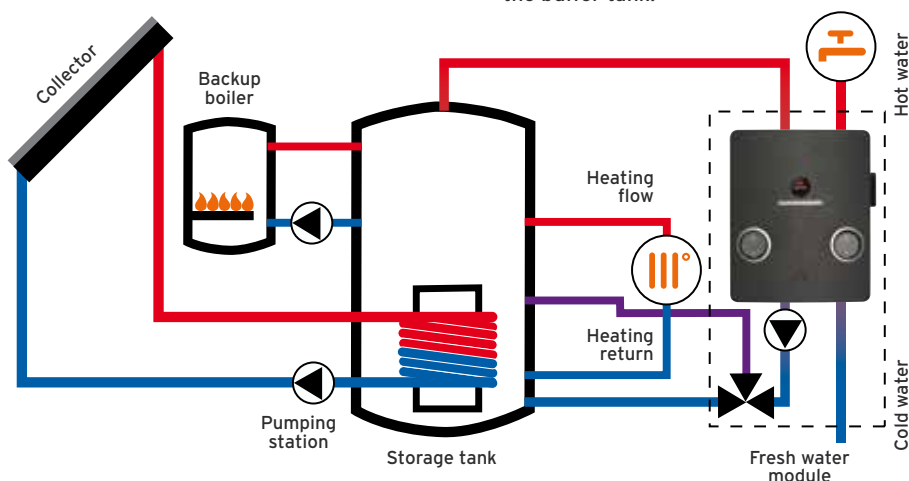
The FMWi Fresh water module prepares hygienic, fresh warm water on demand using solar thermal heat or another heat source stored as hot water in a tank. So it can be mounted plug & flow on the tanks PSR-E and PSC-E. It can be also used in combination with any former version of PSR-tank and PSC-tank by using the compatibility bracket (spare part) or it can be mounted to the wall by using the wall mounting kit (spare part).

WHAT IT DOES

The FMWi supplies - according to the continuous flow principle and with lowest standby losses - hygienic, freshly prepared warm water whenever it is needed in the exact quantity being demanded by using solar energy from the tank as efficient as possible.

HOW IT WORKS

An electronic sensor measures the flow rate and temperature in the hot fresh-water pipe. A speed-controlled high efficiency pump uses the measurements to regulate the flow of hot water from the storage tank. So a preset temperature of the tap water is assured. A diverter valve at the primary side assures a stratified return flow to the buffer tank.



FITS WITH THE FOLLOWING TANK:

PSR-E



PSC-E



YOUR BENEFITS AS AN INSTALLER



EASY

Plug & Flow – every part made for easy installation, easy to mount pipe connections for all internal piping.

EFFICIENT

Installation without use of tools, less wiring due to wireless connection, reduced mounting time.

EXTRA

Grundfos direct sensors measure without moving parts.

YOUR BENEFITS AS A CUSTOMER



EASY

Hygienic, freshly prepared warm water on demand.

EFFICIENT

Intelligent and self learning high efficiency circulation pump, that only circulates water when needed.

EXTRA

Top quality and totally new plate heat exchanger – also for harsh water qualities.

PLATE HEAT EXCHANGER ALSO FOR HARSH WATER QUALITIES

The co- and counter-current plate heat exchanger (PHE) consists of several technical improvements in order to prevent leakages, lime and corrosion.

- Shear stresses and Reynolds numbers are twice as high compared to standard PHEs
- A special construction, the CPP (corner passage pattern) prevents dead zones in the PHE
- Four reinforcement plates prevent deformation in critical areas of the PHE to avoid leakages.



SELF LEARNING, HIGH EFFICIENCY CIRCULATION PUMP

During a three-week auto-learning period, the intelligent circulation pump registers the household's hot-water consumption pattern, adjusting the required recirculation accordingly.

This results in increased comfort and less energy consumption. The intelligent circulation pump continuously monitors and learns the consumption pattern (weekday, weekend, vacation time, etc.), also during periods when other operating modes are active.



TECHNICAL SPECIFICATIONS

TECHNICAL DATA	FWM15i-CU	FWM15i-VA	FWM30i-CU	FWM30i-VA
Art. no.	131 120	131 119	131 118	131 117
Dimensions (H x W x D)	465 x 568 x 312 mm			
Copper brazed plate heat exchanger	✓	-	✓	-
VA brazed plate heat exchanger	-	✓	-	✓
Delivery rate	1-15 l/min		2-30 l/min	
Weight without insulation	11,9 kg		15,7 kg	
Temperature range	30 - 65 °C (80 °C) ²⁾			
Maximum allowable temperature in tank	90 °C			
Maximum allowable pressure in tank	3 bar			
Maximum allowable temperature of fresh warm water (°C)	65 °C (80 °C) ²⁾			
Minimum pressure in fresh cold water supply line	2 bar ¹⁾			
Maximum allowable pressure in fresh cold water supply line	10 bar			
Installation options	on tank PSC-E or on tank PSR-E on wall			
Accessories	FWM15i-CFK/FWM30i-CFK, 130456 Recirculation pump unit for FWM15i/30i-CU/VA FWMi-WMS, 130 501 Wall mounting set for FWM15i/30i			

1) The minimum pressure of 2 bar is required to achieve the specified delivery rate
2) in case of desinfection

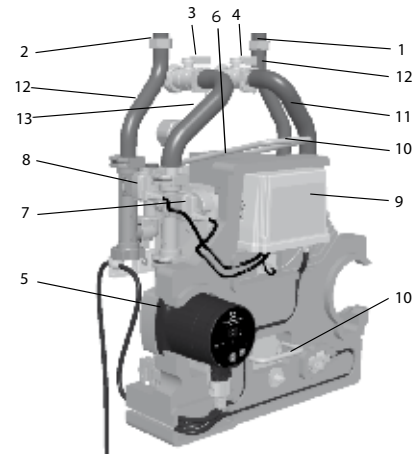
Recommendation for the choice between copper brazed and stainless steel brazed plate heat exchangers

- + Good resistance under normal conditions
- 0 Corrosion problems may occur especially when more factors are valued 0
- Use is not permitted

	Concentration (mg/l or ppm)	Plate	Brazing	
		AISI 316	Cu	VA
Alkalinity HCO ₃	<70	+	0	+
	70-300	+	+	+
	>300	+	0/+	+
Sulphate ^[1] SO ₄ ²⁻	<70	+	+	+
	70-300	+	0/-	+
	>300	+	-	+
HCO ₃ /SO ₄ ²⁻	>1.0	+	+	+
	<1.0	+	0/-	+
	<10 µS/cm	+	0	+
Electrical conductivity	10-500 µS/cm	+	+	+
	>500 µS/cm	+	0	+
	pH ^[2]	<6.0	0	0
6.0-7.5		+	0	+
7.5-9.0		+	+	+
>9.0		+	0	+
Ammonium NH ₄	<2	+	+	+
	2-20	+	0	+
	>20	+	-	+
Chlorides Cl ⁻	<100	+	+	+
	100-200	+	+	+
	200-300	+	+	+
	>300	-	0/+	+
Free Chlorine Cl ₂	<1	+	+	+
	1-5	-	0	+
	>5	-	0/-	+
Hydrogen sulfide H ₂ S	<0.05	+	+	+
	>0.05	+	0/-	+
Free (aggressive) carbon oxide CO ₂	<5	+	+	+
	5-20	+	0	+
	>20	+	-	+
Total hardness °dH	<4	+	-	+
	4,0-20	+	+	+
	20-30	+	0	+
	>30	+	-	+
Nitrate ^[1] NO ₃	<100	+	+	+
	>100	+	0	+
Iron ^[3] Fe	<0.2	+	+	+
	>0.2	+	0	+
Aluminium Al	<0.2	+	+	+
	>0.2	+	0	+
Manganese ^[3] Mn	<0.1	+	+	+
	>0.1	+	0	+

[1] Sulfates and nitrates work as inhibitors for pitting corrosion caused by chlorides in pH neutral environments.
[2] In general low pH (below 6) increases corrosion risk and high pH (above 7.5) decreases the corrosion risk.
[3] Fe³⁺ and Mn²⁺ are strong oxidants and may increase the risk for localised corrosion on stainless steels SiO₂ above 150 ppm increase the risk of scaling.

COMPONENTS



CONNECTIONS

1. Cold fresh water in
2. Hot fresh water out
3. Hot storage tank water in
4. Storage tank water out

MAIN COMPONENTS

- 5 ALPHA FWM pump
- 6 Plate heat exchanger, PHE (not visible)
- 7 Temperature sensor
- 8 Flow and temperature sensor
- 9 Sensor box
- 10 Handle bars
- 11 Flexible hoses - storage tank
- 12 Flexible hoses - fresh water

Contact your SONNENKRAFT sales representative today.
The sun will rise again tomorrow.

PRESSURE LOSS

