



FRESH WATER MODULES

# FRESH | FRESH XL

FWS30E | FWS35 | FWSWP | FWS40HYDRO FRESH  
WALL | FRESH TOWER

### Easy installation

Minimal pipework effort and simple wall and tank installation or pre-assembled cascade tower.

### High tap capacity

High tap capacity due to the use of a large heat exchanger. Up to four fresh water modules connected in parallel (tap capacity up to 160 l/min)

### Fresh hot water free from legionella

Heats fresh, vital domestic water, and always in the required quantity.

FRESH XL: Providing a hot water supply, even during maintenance work on a module thanks to 'master/slave' control unit



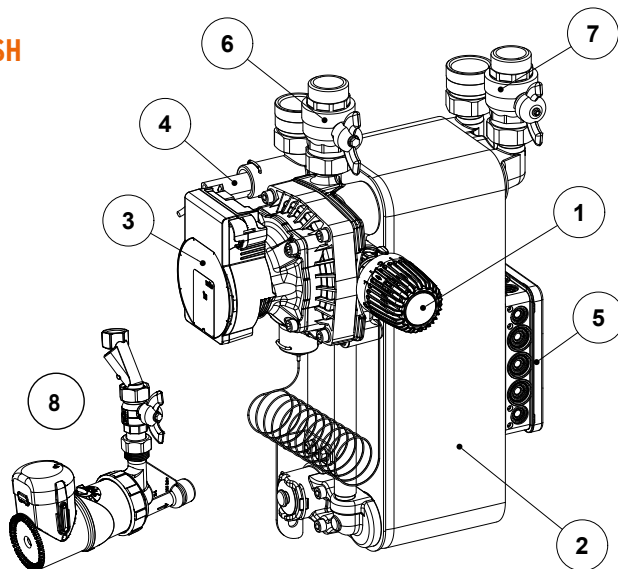
## Patented limescale protection

		<b>FWS30E</b>	<b>FWS35</b>	<b>FWSWP</b>	<b>FWS40HYDRO</b>
Installation		Wall / tank	Wall / tank	Wall / tank	Wall / tank
Control unit		thermostatic	thermostatic	thermostatic	electronic
Tap capacity	l / min	2 - 30	2 - 35	2 - 30	2 - 40
Plate heat exchanger	Plates	29	41	49	41
Dimensions (W x H x D)	mm	400 x 600 x 302	400 x 600 x 302	400 x 600 x 302	400 x 600 x 302
Cover		EPP black	EPP black	EPP black	EPP black
Weight	kg	17	18	21	

**CONNECTIONS**

Cold water (A)		G1" IG	G1" IG	G1" IG	G1" IG
Hot water (B)		G1" IG	G1" IG	G1" IG	G1" IG
Buffer advance (C)		G1" AG	G1" AG	G1" AG	G1" AG
Buffer return (D)		G1" AG	G1" AG	G1" AG	G1" AG
Circulation (E)		G1/2" IG	G1/2" IG	G1/2" IG	G1/2" IG
Flushing connection (F)		-	-	-	G3/4" AG
min. perm. operating temperature	°C	2	2	2	2
max. perm. operating temperature	°C	95	95	95	95
max. perm. operating pressure (domestic water / heating)	bar	10 / 3	10 / 3	10 / 3	10 / 3
Charging pump Para HU 25/7.0 / PWM2	V / Hz	230 / 50	230 / 50	230 / 50	230 / 50
Power consumption	W	3 - 50	3 - 50	3 - 50	3 - 50
Circulation pump Xylem E3 vario - 15/000 BRU	V / Hz	230 / 50	230 / 50	230 / 50	230 / 50
Power consumption	W	27	27	27	27

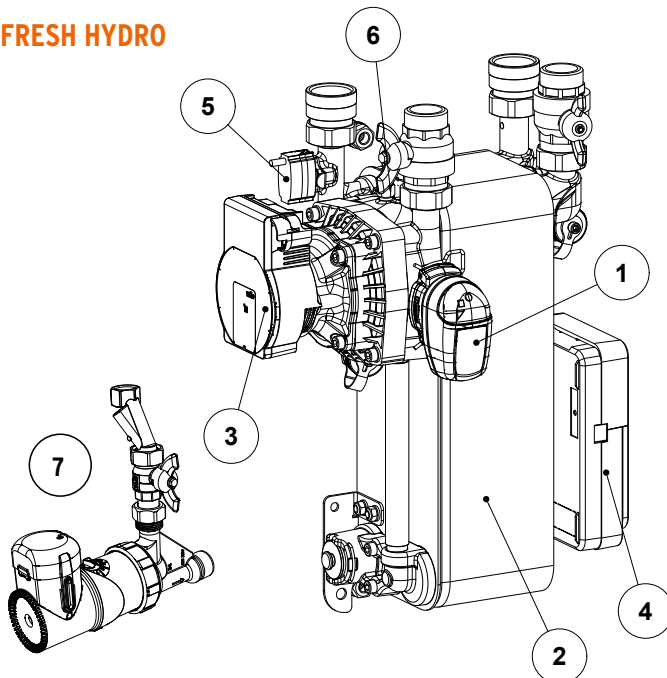
**FRESH**



**FRESH**

1	Thermostatic head
2	Plate heat exchanger
3	Para HU 25/7.0-50/PWM2-12
4	Flow switch
5	Smartbox
6	Ball valve flow
7	Ball valve return
8	3 m circulation pump, incl. circulation eccentric

**FRESH HYDRO**



**FRESH HYDRO**

1	Super flow valve
2	Plate heat exchanger
3	Para HU 25/7.0-50/PWM2-12
4	Fresh Control, incl. wiring harness
5	VFS flow sensor
6	PT-1000 probe
7	3 m circulation pump, incl. circulation eccentric

**TEMPERATURE FLUCTUATIONS**  
**EXAMPLE: THE FWS40HYDROST**

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

Target $T_{sv}$	45 °C			60 °C		
$T_{pv}$ [°C]	50	55	90	65	70	90
3 l/min	Green	Green	Light Green	Green	Green	Green
7 l/min	Green	Green	Green	Green	Green	Green
14 l/min	Green	Green	Green	Green	Green	Green

Target  $T_{sv}$  Target temperature secondary flow  
Temperature constant  
Disruptive fluctuations possible

$T_{pv}$  Primary flow temperature  
Normally no disruptive fluctuations  
Strong fluctuations

Source: Institute for Solar Technology SPF, Rapperswil, Switzerland



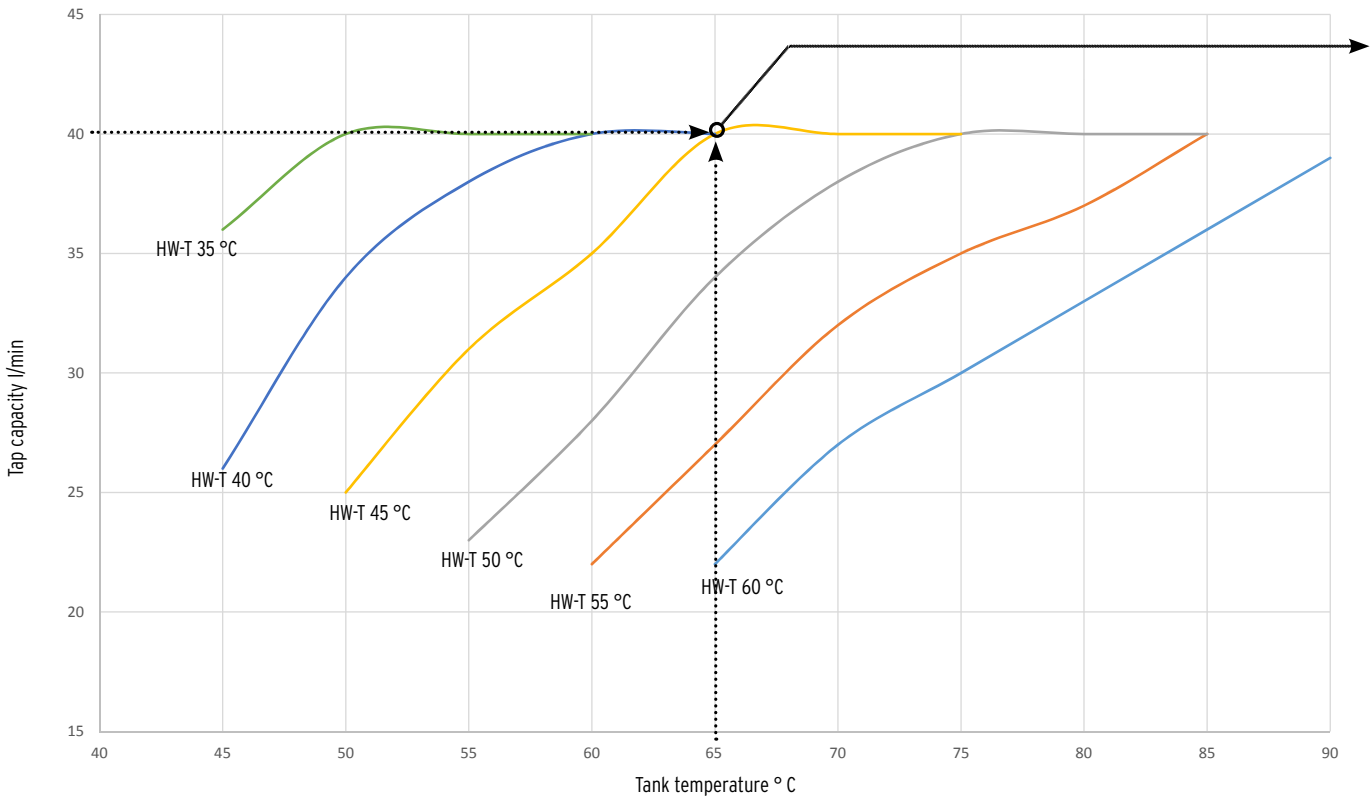
WATER CONSTITUENTS (limit values)	CU-WT	INOX
pH value (under consideration of SI Index)	7-9	6-10
Saturation index SI ( $\Delta$ pH value)	-0.2 < 0 < +0.2	No specification
Total hardness	°dH 6-15	6-15
Conductivity	$\mu$ S/cm 10..500	No specification
Filterable substances	mg/l < 30	< 30
Free chlorine	mg/l < 0.5	< 0.5
Hydrogen sulphide (H2S)	mg/l < 0.05	No specification
Ammonia (NH3/NH4+)	mg/l < 2	No specification
Sulphate	mg/l < 100	< 300
Hydrocarbonate	mg/l < 300	No specification
Hydrocarbonate/sulphate	mg/l > 1.0	No specification
Sulphide	mg/l < 1	< 5
Nitrate	mg/l < 100	No specification
Nitri	mg/l < 0.1	No specification
Iron, dissolved	mg/l < 0.2	No specification
Manganese	mg/l < 0.1	No specification
Free aggressive carbonic acid	mg/l < 20	No specification

For areas with deviating water limit values, use the fresh water module **FWS40HYDROINOX** with stainless steel soldered heat exchanger

**FWS40HYDROST DESIGN DIAGRAM**

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

Reading example:  
Tank temperature: 65 °C  
Tap capacity: 40 l/min  
Hot water temperature: 45 °C



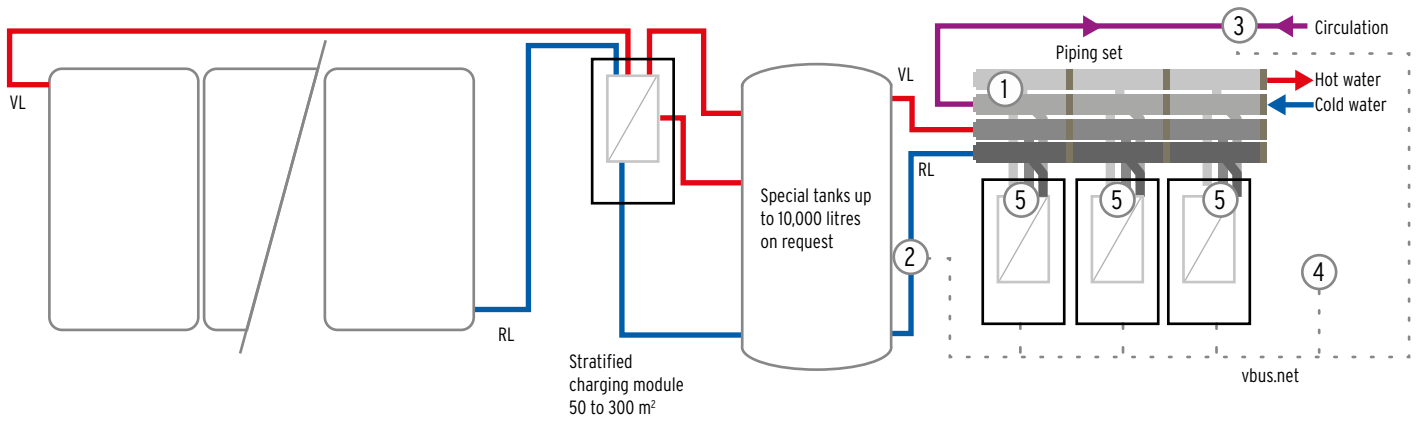
# FRESH WALL | FRESH TOWER | FRESH XL

## Advantages

- Four-drawer cascade up to 160 l/min
- Life cycle accounting
- Thermal disinfection
- Cascade valves
- Heat metering
- High system stability
- HE circulation pump
- Circulation control
- Return switchover
- Easy to maintain
- Master / slave control unit
- Visualisation via internet
- Notification by email in the event of a fault

## Hydraulic diagram

Combination of solar tank system with stratified charging module and fresh water cascade 25 m<sup>2</sup> to 300 m<sup>2</sup> collector area



- 1 Hygiene set (1 pc. per cascade)
- 2 Return switching valve
- 3 Circulation pump

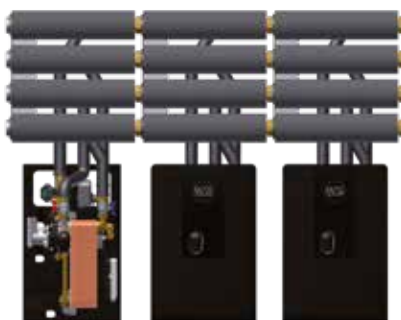
- 4 Controller and communication module
- 5 Cascade valve

## APPLICATIONS FOR CASCADES



	Apartment building [flats]	Hotel [beds]	Sports facilities [showers]
Cascade of 2	80 l / 20	20	6
Cascade of 3	120 l / 25 to 40	30 to 50	10 to 15
Cascade of 4	160 l / 50 to 70	60 to 120	20
Tap points:	1 x shower, 1 x washbasin, 1 x kitchen	1 x shower, 1 x washbasin	Showers 100% simultaneity
rec. gross collector area	1.5 to 2 m <sup>2</sup> / person	1 to 2 m <sup>2</sup> / bed	from 15 m <sup>2</sup>
rec. tank size	50 - 100 l / m <sup>2</sup> collector area	50 - 75 l / m <sup>2</sup> collector area	from 1,000 l

## INSTALLATION TYPES



**FRESH WALL**

for wall mounting, incl. valves, controller, communication module, piping set optional - up to four fresh water modules.



**FRESH TOWER**

up to four fresh water modules, pre-assembled and ready to plug in on substructure, incl. piping, hygiene set, electrical wiring, valves, controller, communication module



**FRESH XL**

for space-saving installation of up to two fresh water modules on the SONNENTANK system storage tank