

Solar station FlowCon D2F

USE in closed loop design only. The circulation unit is used on the primary circuit of solar heating systems to control the temperature in the hot water storage. Module with two return lines, suitable for two solar panel fields. The pumps inside the unit are activated by the signal from the differential temperature regulator. In addition, this unit contains the functional and safety devices for optimum circuit control.

Your advantages:

All medium-bearing parts are made of brass

All connections ¾" female

With pre-assembled steel wall bracket.

Full port ball valve in return pipe

Check valve inside the supply and return ball valve, manual opener, 3 x 200 mm WC each, special design for solar systems, avoid any gravity circulation. The check valves are integrated into the ball valves so that each line has a total pressure drop of 400 mm WC.

Ball valves are key-actuated
 easy handling, no danger of burnings

Function-optimized design insulation made of durable elastic EPP; **100% insulation of the fittings** – excellent pump ventilation and cooling

Application

In a system with 2 independantly working solar panel fields, the pumps are connected in order to switch between the collector fields. This assembly allows a parallel operation of both collector fields.

Solar safety assembly

pressure relief valve 6 bar / 87 psi, high-temperature pressure gauge 0-6 bar / 0-90 psi with shut off valve, drain valve for flushing and filling, flat sealing connection for expansion tank

Full metal solar thermometer, 0-160 °C / 32-320 °F dual scale

can be pulled off, with immersion sleeve integrated in the ball valve

Fully assembled with flat sealing union connections

With solar circulation pump by Wilo

pre-assembled, without wire

Pump can be completely isolated, no draining necessary during servicing

2 flowmeters

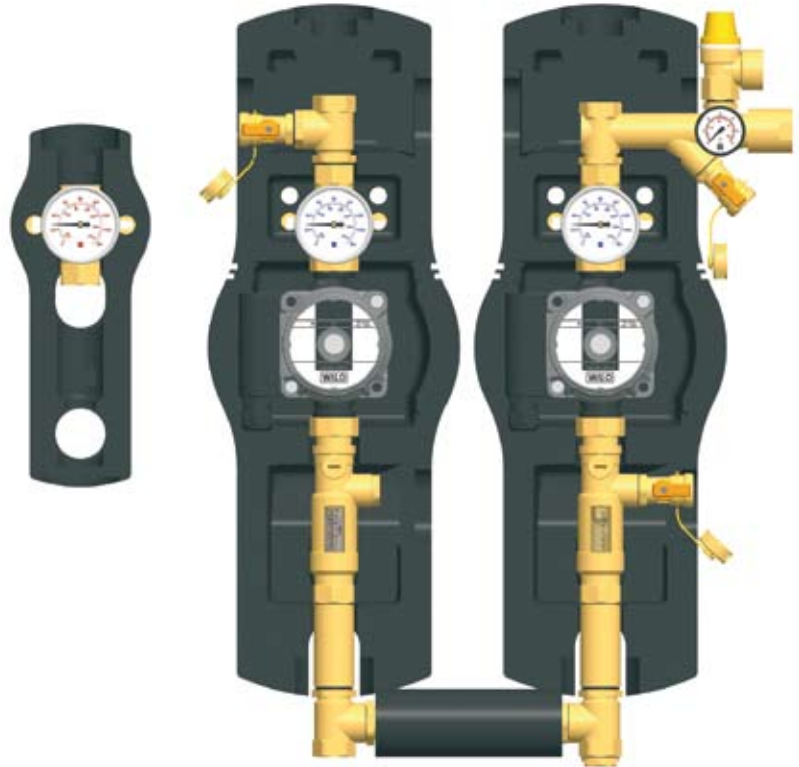
Flow quantity measuring devices with adjustable flow quantity gauge and function control device, installed in the (cold) return - up to 130 °C / 266 °F heat resistant measurement range: 1 – 13 l/min.

Flushing and filling unit integrated

three drain valves, two flushing valves, for each collector field, located above the pump, a drain valve inside the flowmeter permit filling and flushing the system.

The unit components enable:

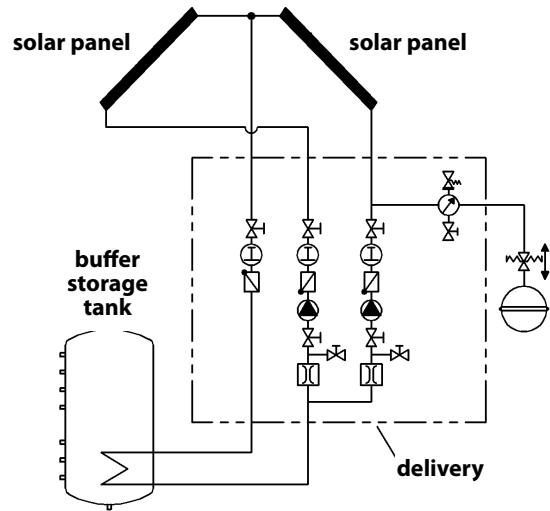
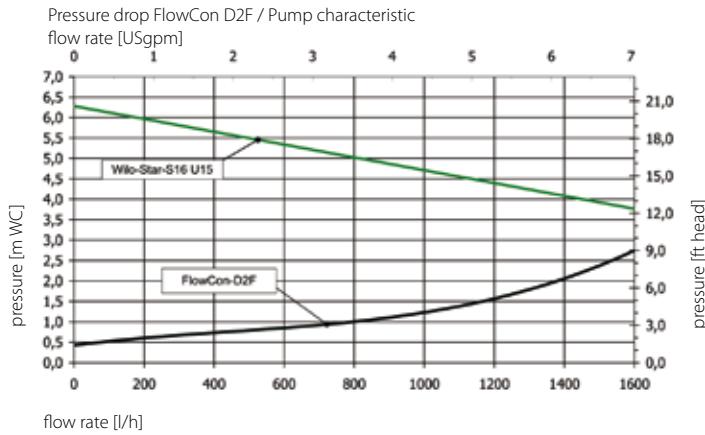
- Medium circulation with specific pump
- Safety against pressure increase
- Accurate flow rate control
- Filling / draining the circuit
- Measuring the supply and return line temperature
- Separating the air contained in the circuit
- Shutting off the circuits and no return
- Thermal insulation



TECHNICAL DATA FlowCon D2F

Dimension	DN 20 - ¾"	
Material	fittings	brass
	gaskets	Klingersil / EPDM
	insulation	EPP
	check valves	brass
Techn. data	max. pressure	10 bar / 145 psi
	max. temperature	130 °C / 266 °F, temp. 160 °C / 320 °F
Equipment	check valves	2 x 200 mm WC = 400 mm WC per line
	flowmeter range	type D2F 1 - 13 l/min
	pressure relief valve	6 bar / 87 psi, for thermal solar systems
	pressure gauge	0 - 6 bar / 0-90 psi, resistant to high temperatures
	thermometer	0-160 °C / 32-320 °F, full metal
Dimensions	connections	¾" female
	pipe-center distance	125 mm / 4 29/32"
	width of insulation	550 mm / 21 21/32"
	height of insulation	590 mm / 22 1/16"




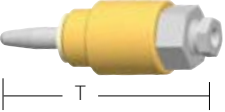

Solar station FlowCon D2F



hydraulic diagram of a FlowCon D2F solar station






Illustration	Options	Pumps	Item #
	FlowCon D2F metric 2 roof-system, 2 flowmeters 1 - 13 l/min	2 x Wilo Star S 16 U-15 - 130	608175 NA 01
	FlowCon D2F imperial 2 roof-system, 2 flowmeters 0.5 - 3.5 USgpm	2 x Wilo Star S 16 U-15 - 130	608175 US01
Illustration	Accessories		Item #
	Connecting set 3/4" for expansion tank Stainless steel corrugated hose 3/4" female - female x 2", wall bracket with fastening material, solar tank connecting coupling 3/4", with BSP coupling		437 509
	As before, but tank connecting coupling with integrated cap valve 3/4"		437 510
	Stainless steel corrugated hose 3/4" female - female x 2", wall bracket with fastening material, solar tank connecting coupling 3/4", with NPT coupling		437 509NA
	Compression-ring couplings for copper pipe For the connection of 3/4" solar stations – DN 20, self-sealing with o-ring, additionally with support sleeve, also appropriate for soft copper pipes! Applicable until 150 °C / 302 °F!		
	3/4" male x 1/2" copper pipe		561 212
	3/4" male x 3/4" copper pipe		561 222
	Soldering inserts 3/4" male for copper pipe		
	3/4" to ø x 1/2" copper pipe		206 212
	3/4" to ø x 3/4" copper pipe		206 234
	Adaptor nipple		
	3/4" male x outlet 3/4" NPT male - flat sealing		548 310 NA

Solar station FlowCon - assembly accessories

Illustration	Description	Item #
	<p>Connecting set ¾" for expansion tank On the solar station system "FlowCon" to connect the safety set ¾"; for max. tank diameter of 440 mm.</p>	
	<p>Stainless steel corrugated hose ¾" female - female x 2", wall bracket with fastening material, solar tank connecting coupling ¾", with BSP coupling</p>	<p>437 509</p>
	<p>As before, but tank connecting coupling with integrated cap valve ¾"</p>	<p>437 510</p>
	<p>Stainless steel corrugated hose ¾" female - female x 2", wall bracket with fastening material, solar tank connecting coupling ¾", with NPT coupling</p>	<p>437 509NA</p>
	<p>Service unit for solar systems With solar fluid fine filter (250 µ) As protection of the pump, the flow check valve(s) and the flow meter against dirt particles (e. g. solder residues and scales particles). For assembly inside the solar supply line, above the ball valve. Completely closable for servicing so that only a small amount of solar fluid has to be refilled. Connection to the solar station with self sealing screw connection ¾", outlet ¾" female.</p>	
<p>Maintenance unit for solar systems</p>	<p>56701</p>	
	<p>Connecting piece for sensor well For thermowell with ½" male, up to 60 mm length 1" union nut with gasket, ¾" female, bushing ½"</p>	
<p>Connecting piece for sensor well</p>	<p>5660</p>	
	<p>Thermowells For the assembly of the temperature sensors inside the storage, collector etc.</p>	
<p>self-sealing with o-ring, brass blank, for sensor Ø 5.5 mm, depth = 30 mm</p>	<p>566 001</p>	
<p>standard, chromed brass, for sensor Ø 6 mm, depth = 60 mm</p>	<p>566 002</p>	
<p>standard, chromed brass, for sensor Ø 6 mm, depth = 100 mm</p>	<p>566 003</p>	
<p>standard, chromed brass, for sensor Ø 6 mm, depth = 150 mm</p>	<p>566 004</p>	
	<p>Flush and drain kit t-piece with counter nut, self-sealing with drain valve, for expanding the solar system with a flush and drain connection, assembly at the lowest point (drain unit).</p>	
<p>1 piece DN 20 - ¾"</p>	<p>31611NA</p>	



Solar station FlowCon - assembly accessories

Illustration	Description	Item #
	<p>Manually operated filling and injection pump Male = 1/2", 15 mm hose connection Attainable pressure until approx. 4 bar, length: 175 mm</p>	
	Manually operated filling and injection pump	7061
	<p>Manually operated filling and injection pump Male = 1/2", 15 mm hose connection Additional drain valve Attainable pressure until approx. 4 bar, length: 225 mm</p>	
	Manually operated filling and injection pump	7062
	<p>Flush and fill kit DN 20 Consisting of: Brass ball valve 3/4" female, with red wing handle, with 2 drain valves with hose clip 15 mm</p> <p>Additionally with: 2 compression fittings with support sleeves, preassembled</p>	
	DN 15 for 1/2" mm copper pipe	565 151 NA
	DN 22 for 3/4" mm copper pipe	565 221 NA
	<p>Compression adaptors for copper pipe For the connection of 3/4" solar stations – DN 20, self-sealing with o-ring, additionally with support sleeve, also appropriate for soft copper pipes! Applicable until 150 °C / 302 °F!</p>	
	3/4" male x 15 mm	561 215
	3/4" male x 22 mm	561 222
	<p>Soldering inserts 3/4" male for copper pipe For the connection of solar stations 3/4" – DN 20</p>	
	3/4" to 15 mm: soldering inserts 3/4" x 1/2"	206 212
	3/4" to 22 mm: soldering inserts 3/4" x 3/4"	206 234



Features of PAW solar pump modules

PAW solar pump modules and heat transfer systems are designed for use in closed loop solar thermal systems working with glycol.

- Integrated in the pump module are a lot of functions which make the installation easier, prevent installation mistakes and improve the performance of your solar thermal plant.

Features of every unit are

- all water-carrying parts are made of brass
- all sealing components are high temperature resistant up to 266 °F / 130 °C (320 °F / 160 °C - short term)
- Flowmeters are adjustable to set the correct flow rate. High quality bora silicate glass.
- Check valves are integrated in every line in the solar loop. They are made of brass for high pressure and temperature resistance.
- Air scoops in the supply line help to deaerate your system easily
- All pumps used in PAW solar pump modules are UL-certified and equipped with 3-speed motors.

Range of application of the solar stations:

Solar thermal systems are divided into "High-Flow" and "Low-Flow" systems depending on their operational mode. "High-Flow" systems are characterized by a flow rate of 25 - 40 l/m² solar panel surface and hour which corresponds to 0.42 - 0.67 l/(m² x min). "Low-Flow" systems are operated with 10 - 20 l/m² solar panel surface and hour which corresponds to 0.17 - 0.33 l/(m² x min).

The flow rate being circulated in the system depends on the operational mode, the solar panel surface as well as on the performance of the heat exchanger (secondary). The dimensioning of the circulation pump depends on the flow rate and the pressure losses which occur in the heat exchanger, the solar panels and inside the fittings of the system.

In the description of the products the ranges of application/solar panel surfaces are mentioned.

For low-flow systems a specific flow rate of 0.2 l/(m² x min) was assumed; for high-flow systems we calculated with 0.5 l/(m² x min).

These values can only serve as a first help for the dimensioning. It is always essential to carry out a complete dimensioning of the system!

PAW air scoop



PAW flowmeter



PAW high temperature check valve



PAW handle with integrated temperature gauge



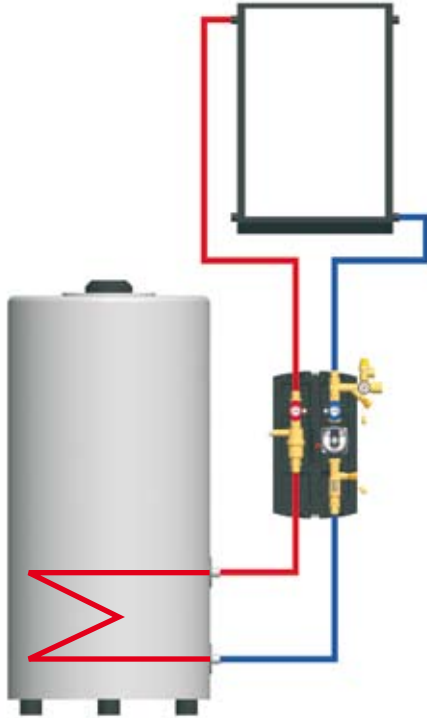
PAW isolation valve



Solar systems with PAW pump modules

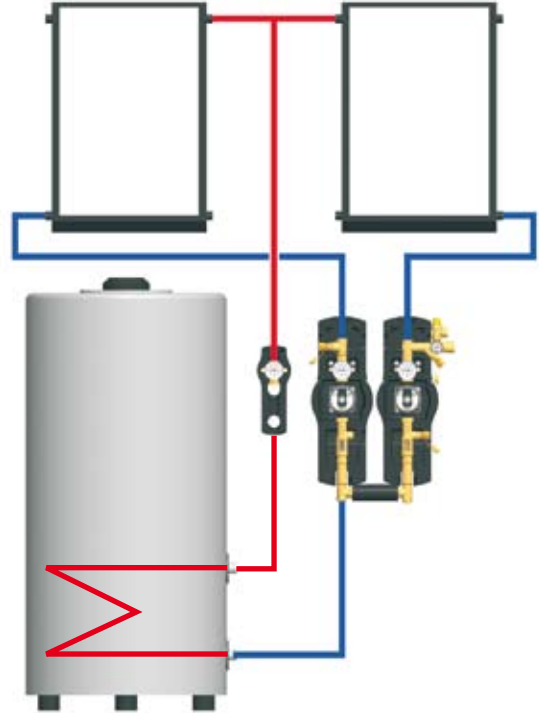
FlowCon , FlowCon C , FlowCon MAX

One solar panel field, single storage tank with integrated heat exchanger



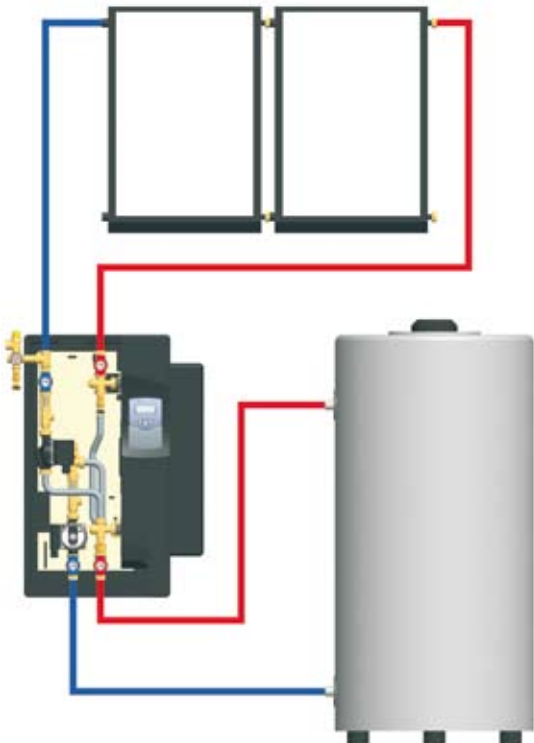
FlowCon D2F

Two independantly operated solar panel fields, one storage tank with integrated heat exchanger



Solex

One solar panel field, one buffer storage tank without heat exchanger



FlowCon S2F

One solar panel field, two independantly or parallely operated storage tanks with integrated heat exchanger

