



Membrane area
20 % increased
PLC control unit
S7-1200

UF series: Ultrafiltration Systems UF 1D6 – UF 8D6

85 - 700 m³/day or 3,75 - 30 m³/h

Stand-type ultrafiltration unit for the filtration of pre-filtered or settled surface or well water

- Significant **reduction in operating costs** by use of raw water (such as surface or well water) instead of city water
- Ultrafiltrate water as **ideal raw water supply** for subsequent reverse osmosis unit
- **Fully automatic operation** with periodic backwashing of the UF membranes with ultrafiltrate
- **Best use for raw water with contamination in the range of 20 to 0.2 µm** and turbidity levels **> 1 NTU**
- No operating pump required: **use of on-site water pressure** of 2.5 bar

Complete payback of the UF system in just 0.5 to 2 years through savings on water cost

Example: UF 4D6 + disc filter DISC UF 40,
300 m³ / day, city water cost: 1 € / m³
Payback period: <1 year

Ultrafiltration Systems UF 1D6 – UF 8D6

85 - 700 m³/day or 3,75 - 30 m³/h

Stainless steel main frame, housing the instruments and controls.

Automatic raw water inlet valve. Supply pressure of 2.5 bars on site required.

High efficiency ultrafiltration membrane modules, with PES multibore fibres in vertical orientation, **separate tank and frequency-controlled centrifugal pump for automatic backwash cycles** and optional cleaning / disinfection cycles by chemicals, using CEB dosing pumps (optional; CEB = chemical enhanced backwash).

Pneumatic valves with solenoid pilot valves for fully automated filtration and backwash cycles, optional SIP/CIP cycles. An air compressor is optionally available.

Monitoring devices such as gauges for inlet and outlet pressure of the UF modules, pressure switch for compressed air supply, differential pressure switch for detection of high transmembrane pressure, sample valves for raw water/filtrate and backwash water.

Flow meters for monitoring of filtrate and backwash flow rate.

Control cabinet with lockable main switch, electrical switch gear controlling the backwash pump, control unit **PLC SIEMENS S7-1200 with 5.7"-touch screen**, indicating the operational status of filtration, backwash- and optional CEB-

cycles (e.g. in alternating top-down and bottom-up mode). Free programmable frequency and duration of backwash, CEB and disinfection sequences. Detection of low level of feed water tank and dosing tank, and motor overload.

Inputs (low voltage) for 2 level sensors and shut-down by an external signal. **Outputs** for release/interlock and DDC (collective malfunction signal) on dry contact. Ethernet communication interface.

Options and accessories:

- **DISC UF** Disk filter system for pre-treatment against rough contamination/particles
- **CEB Dosing pumps:** Enable chemically enhanced backwash

The UF system is complete and ready for installation. Electrical equipment in accordance with VDE 0100 part 600, VDE part 1.

For effective pre-treatment we recommend the use of **Disc filters, type DISC UF to protect the UF system from rough dirt particles**, as well as the use of inorganic coagulants (FeCl₃) against organic foulants (particularly with COD-values >2 mg/l) and small colloids. **Fully automatic, periodic CEB cleaning procedures are enabled using dosing pumps CEB 30/50 (optional)**. Requirements referring to the treatment of work water need to be checked on site.

Technical Data		UF 1D6	UF 2D6	UF 4D6	UF 6D6	UF 8D6
Filtrate flow rate (62.5 l/h)*	m ³ /h	3.75	7.5	15.0	22.5	30.0
Filtrate recovery	%	95				
Filtrate counter pressure*	bar	0.1 - 2.0				
Separation limit	µm	ca. 0.02				
Feed water pressure min/max	bar	2.5 - 4				
Feed water temperature	°C	5 - 35				
Turbidity	NTU	< 10				
Filtrate and Raw Water connection	DN	32	32	65	65	65
Waste-water connection	DN	50	50	80	80	80
Power requirement (during backwash only)	kW	2.3	2.3	5.5	11.5	15.0
Voltage	V/Hz	3 x 400/50				
El. protection class		IP 54				
Height	mm	2,000	2,000	2,000	2,000	2,000
Width	mm	3,000	3,000	4,000	5,000	6,000
Depth	mm	800	800	1,000	1,000	1,000
Weight	kg	220	250	1,000	1,200	1,400
Control system		SPS Siemens S7-1200 with 5.7" touch screen display				
Ambient temperature max.	°C	40				
Relative humidity max.		<95%, non condensing				
Code no.		428 044	428 054	428 064	428 074	428 084

*The capacity/ flux of filtrate depends on the quality of the raw water. The system is designed for free outlet on filtrate and wash water connection. We will gladly provide the performance data for your operating parameters.