Data sheet as of 23/04/2024

UF
Ultrafiltration units

The ultrafiltration system is used for the treatment of pre-filtered or pre-precipitated surface or well water. The equipment with PLC Siemens S7-1200 allows a comfortable operation via touch screen and a fully automatic operation with cyclic backwash.The optionally available CEB dosing pumps also enable chemically assisted backwashing (CEB).

BENEFITS

- Considerable reduction of operating costs by using raw water (e.g. surface water or well water) instead of city water
- Fully automatic operation with cyclic backwash of the UF membranes with ultrafiltrate
- Equipped with PLC Siemens S7-1200 with comfortable operation via touch screen
- Backwash tank / cleaning tank with frequency-controlled backwash pump included

APPLICATIONS

- Advantageous for raw water of fluctuating quality (e.g. surface water)
- Use for raw water with a large proportion of particles in the range 20 to 0.2 µm and turbidity > 1 NTU
- Ultrafiltration is an ideal pre-treatment for reverse osmosis

Ultrafiltration unit UF 6D6 with backwash tank

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DESCRIPTION

Ultrafiltration

- Stainless steel main frame
- High-performance ultrafiltration modules in a vertical arrangement, equipped with PES Multibore fibers
- Separate filtrate tank and frequency-controlled pump for backwashing of the modules
- Control cabinet with lockable main switch, power unit for controlling the backwash pump
- Electrical equipment acc. to VDE 0100 part 600, VDE part 1
- Unit complete with internal piping and wiring

Fittings and instrumentation

- Automatic, adjustable inlet valve for raw water inlet
- Pneumatic fittings with pilot valves for fully automatic operation
- Pressure gauges for inlet and outlet pressure of the ultrafiltration modules
- Pressure switch for compressed air monitoring
- Pressure sensors for transmembrane pressure monitoring
- Sampling fittings for raw water/filtrate and backwash water
- Flow rate sensor for each flow of filtrate and backwash water

PLC Siemens S7-1200

- 7" Comfort Panel with graphic display and logging functions
- Adjustable timing of frequency and duration of backwashing, cleaning rinse and disinfection rinse
- Fault indicator for low water level in feed tank and dosing tank
- Fault indicator for motor overload

Inputs

- Two fixed level switches ON/OFF (demand /stop) filtration
- Switch-off by external signal
- Backwash interlock (fault feedwater pump)

Outputs

- Collective fault signal
- Collective warning signal
- Filtration and backwash signal
- Triggering of CEB
- Release of feed pump as potential-free signal
- Integrated Profinet interface for data transfer (same IP network required)
- Output of further data points can be adapted via Profinet

Optionally available

- Disc filter DISC UF for pre-treatment
- Chemically enhanced backwashing with CEB dosing pumps

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CONDITIONS OF USE

Filtrate flux depends on the quality of raw water. Raw water has to be supplied with a pressure of at least 2,5 bar. In case of insufficient inlet pressure, the raw water supply can optionally be realised with a frequency-controlled centrifugal pump. Moreover, the system is designed for free outlet on the product and wastewater side. We recommend the use of $FeCl_3$-based flocculants for pre-treatment (especially with COD values >2 mg/l) and a disc filter from the DISC-UF series to separate coarse dirt. CEB 30 or CEB 50 dosing systems (available as an option) enable a chemically enhanced backwash (CEB) to be carried out. The need to neutralize the resulting wastewater when using cleaning chemicals must be checked.

Feed water temperature	5 – 35 °C
Feed water pressure	2.5 – 4.0 bar
Turbidity	< 5 NTU
pH-value operation	6.5 – 9.5
pH-value cleaning	1 – 13

TECHNICAL DATA OF SERIES

Controller	PLC Siemens S7-1200
Filtrate recovery	95 %
Cut-off point approx.	0.02 µm
Operating pressure	1 – 5 bar
Pressure fluctuation	± 0.5 bar
Operating temperature	0 – 35 °C
Filtrate backpressure	0.1 – 2.0 bar
Operating pressure backwash approx.	2.5 bar

Product name	Filtrate flow rate m^3/h at 50-80 lmh	Hydraulic connection feed / filtrate / ww	Dimensions in mm W x D x H	Item number
UF 1D6	3.0 – 4.8	DN 32 / DN 32 / DN 50	2,200 x 1,200 x 2,050	428 044
UF 2D6	6.0 – 9.6	DN 50 / DN 50 / DN 80	2,400 x 1,200 x 2,100	428 054
UF 4D6	12.0 – 19.2	DN 65 / DN 65 / DN 100	3,200 x 1,200 x 2,150	428 064
UF 6D6	18.0 – 28.8	DN 80 / DN 80 / DN 125	3,550 x 1,250 x 2,200	428 074
UF 8D6	21.0 – 38.4	DN 100 / DN 100 / DN 150	4,200 x 1,300 x 2,250	428 084