

UO-D 120 - 500

Reverse osmosis units

The reverse osmosis unit with designer cover is used for the desalination of softened water with a salinity of up to 1,000 mg/l. It is equipped with a compact rotary vane pump. The RO digital microprocessor controller enables fully automatic operation with logging of all relevant operating data and freely adjustable limit values. The unit can be connected to the central control system via an optional Profinet interface.

BENEFITS

- Available from stock
- Beautifully designed cover
- Versatile RO digital controller with logging of operation data and many parametrisation options

APPLICATIONS

- Desalination of softened water
- Suitable for all commercial and industrial applications
- Ideal for medical practices or other public locations with visitors



UO-D 120 with cover

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DESCRIPTION

Reverse osmosis

- Compact unit with plastic designer cover
- Base frame made of powder-coated sheet steel
- Pre-filter RO (5 µm) with two glycerine-filled manometers
- High-pressure pump as a rotary vane pump
- Low pressure element(s) with PA/PS composite membrane in stainless steel pressure vessel(s)
- Connection cable (3 m) with 16 A - 6 h CEE plug, 3-pin
- Unit incl. piping and wiring, electrical construction acc. to VDE 0100 Part 600, VDE 0113 Part 1
- Unit tested, parameterised and conserved in own test field

Fittings and instrumentation

- Inlet solenoid valve and sampling valves for feed water and permeate
- Valves for adjusting the flow rates of permeate and concentrate
- Pressure sensors for pump inlet pressure and operating pressure
- Flow sensors for permeate and concentrate
- Conductivity measurement of permeate with temperature compensation
- Connection fittings for a manual cleaning system

RO digital microprocessor controller

- Fully automatic monitoring and control of the unit
- Easy menu-guided operation of the controller with six buttons
- Four-line illuminated display and two LEDs as local signals for operation and fault
- Languages of the plain text display: German / English / French / Spanish
- Circular storage of operation data (1,960 data sets) with adjustable storage interval
- Operational reliability through adjustable limit values with fault message and display
- Password-protected programming of operating parameters

Available inputs

- DIGITAL: external stop (e.g. in case of interrupted feed water supply), motor protection / hard water, 2x level permeate tank (tank min / max) and 3x universal input (configurable)
- ANALOGUE: Level permeate tank (4 - 20 mA)

Available outputs

- DIGITAL: collective fault signal, universal output (configurable)
- ANALOGUE: conductivity permeate, measuring range 1 - 999 µS/cm (4 - 20 mA)

Optionally available

- Hardness control unit limitron to protect the membranes from hard water
- HR modules for increasing salt rejection rate from 97 % to > 98.5 % (slightly lower permeate capacity)
- Permeate recirculation PR and blending device VSE
- Profinet interface and back-up / alternating / parallel RO operation

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CONDITIONS OF USE

The unit may only be used for the desalination of softened feed water of drinking water quality or appropriately pre-treated well or surface water. The unit is designed for a salinity (TDS) of 1,000 mg/l and a temperature of 15 °C. Under these conditions, the projected permeate output is achieved even after three years of operation. The permeate yield depends on the raw water quality and the pre-treatment. The following parameters must be maintained in the feed water:

Free chlorine	not detectable
Iron (Fe)	< 0.2 mg/l
Manganese (Mn)	< 0.05 mg/l
Silica (SiO ₂)	< 25 mg/l
Silt density index (SDI)	< 3
Feed water temperature	5 – 35 °C
Feed water pressure	3 – 6 bar
Pressure fluctuation	± 0.5 bar

TECHNICAL DATA OF SERIES

Controller	RO digital
Desalination rate min.	97 %
Permeate recovery	75 – 80 %
Permeate back pressure max.	0.3 bar
pH value operation	6.5 – 9.5
pH value cleaning	2 – 12
Ambient temperature	5 – 40 °C

Product name	Mains connection	Hydraulic connection	Dimensions in mm	Item number
Permeate l/h	kW / V / Hz	feed/permeate/conc.	W x D x H	
UO-D 120	0.55 / 230 / 50	DN 20 / DN 10 / DN 10	460 x 400 x 1,260	387 141
UO-D 300	0.55 / 230 / 50	DN 20 / DN 10 / DN 10	460 x 400 x 1,260	387 142
UO-D 500	0.55 / 230 / 50	DN 20 / DN 10 / DN 10	460 x 400 x 1,260	387 143