

Reverse Osmose

Series UO-D 2000-3500 ND – ND/FU



Reverse Osmosis Units Series UO-D 2000 – 3500 ND

For desalination of softened drinking water according to German drinking water regulations.
With controller RO digital.

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Up to 30% energy savings due to high pressure pump with frequency converter (FU) with control of permeate flow rate at constant value (PKR).



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Series UO-D 2000-3500 ND – ND/FU

Unit design

Stainless steel main frame with plastic front panel.

Special inlet filter with 5 µm-filter cartridge and 2 pressure gauges,

high pressure pump with frequency converter (only Series ND/FU) low noise, multi-stage centrifugal type,

low energy spirally wound modules with energy-efficient PA/PS composite membranes in GRP vessels with inliner.

Valves such as sampling valves for feed water and permeate (each vessel and total), inlet solenoid valve, stainless steel valves to regulate the flow rate of permeate, concentrate and concentrate recirculation flow rate, permeate check valve for each pressure vessel.

Pressure sensors for pump feed pressure, operating pressure and concentrate pressure.

Flow sensors for permeate, concentrate and concentrate recirculation flow rate.

Conductivity measurement permeate with temperature compensation.

Control cabinet with lockable main switch, electrical switchgear for control of the high-pressure pump.

Unit is completely wired, pre-assembled and ready for installation. Electrical equipment in accordance with VDE 0100 part 600, VDE 0113 part 1.

The units are designed for a maximum TDS of 1,000 mg/l, a water temperature of 15°C, a maximum colloidal index of 3 and free permeate outlet. Under these conditions, the unit still reaches design permeate flow after three years of operation. The permeate recovery depends on the raw water quality and the type of pre-treatment.



Microprocessor control RO digital for fully automatic monitoring and control of RO system. **Process visualization with central display of operational status and data (analogue and digital values)** and hours of operation on 4-line, backlit LCD text display. Simple menu-driven operation of the controller with 6 buttons.

Automatic logging of relevant operating data (analogue and digital data, 1960 data sets), storage interval programmable.

Highest operational safety due to adjustable alarms and limits of the operating parameters with selectable system response.

Operating conditions: permeate production, permeate rejection / recirculation, concentrate displacement / flushing, intermittent flushing when system is idle, shutdown by an external signal.

Analogue inputs: permeate conductivity (temperature compensated) permeate temperature, feed water, operating and concentrate pressure, flow rates of permeate and concentrate, calculated feed water flow, 2 additional programmable analogue inputs (e.g. for pressure, flow, level measurement).

Digital Inputs: (low voltage) for level control of permeate tank with 1 or 2 switches, hardness control unit; shutdown by an external signal, 3 universal inputs.

Analogue outputs: 2 universal outputs 4-20mA, e.g. for DDC.

Digital outputs: high-pressure pump, valve outputs 3x (24 VDC) for example for feed water, concentrate flushing, permeate rejection or recirculation, collective fault indication as a floating changeover contact, universal output.

LED indicators for power and fault, fault alarms as plain text in the display.

Technical Data		UO-D 2000	UO-D 2500	UO-D 3000	UO-D 3500
Permeate flow rate	l/h	2000	2500	3000	3500
Min. salt rejection	%	97	97	97	97
Recovery	%	75	75	75	75
Operating pressure	bar	14	14	14	14
Membrane element / number		4040/6	4040/8	4040/9	4040/11
Voltage	V/Hz	3 x 400/50	3 x 400/50	3 x 400/50	3 x 400/50
Motor power	kW	3	3	4	4
Height	mm	1650	1650	1650	1650
Width	mm	2450	2450	3450	3450
Depth	mm	700	700	700	700
Weight approx	ca. kg	240	320	340	380

Pre-fusing 16 A, Feed water connection DN 20, Permeate / concentrate connection DN 20, Conductivity range 2-200 µS/cm, Feed water pressure min./max. 2/6 bar, Feed water temperature min./max. 5 / 35 °C, Ambient temperature max. 40°C, pH-value 3 – 11

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