

Reverse Osmose

Series UO-D 7000-12000 ND - ND/FU



Reverse Osmosis Units Series UO-D 7000 – 12000 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 7000-12000 ND – ND/FU

Unit design

Stainless steel main frame. High pressure piping made of stainless steel with **orbital weldings**.

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), diaphragm valve, stainless steel valves to regulate the flow rate of permeate, concentrate and concentrate recirculation flow rate.

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. Compressed air (oilfree) 4-6 bar required.

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 pretreatment.

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 7000	UO-D 8000	UO-D 9500	UO-D 10000	UO-D 12000
Permeate flow rate	l/h	7000	8000	9500	10000	12000
Min. salt rejection	%	97	97	97	97	97
Recovery	%	75	75	75	75	75
Operating pressure	bar	13,5	13	13,5	13	12,5
Membrane element / number		8040/5	8040/6	8040/7	8040/8	8040/9
Motor power	kW	7,5	11	11	11	11
Pre-fusing	A	20	25	25	25	25
Feed water connection	DN	40	50	50	50	50
Permeate/concentrate conn.	DN	40/32	40/32	50/32	50/32	50/50
Height	mm	1900	1900	1900	1900	1900
Width	mm	3800	3800	4800	4800	3900
Depth	mm	750	800	800	800	800
Weight approx	ca. kg	600	700	800	900	900

All sizes: Conductivity range 2-200 µS/cm, Voltage 3 x 400/50 V/Hz, 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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