

Reverse Osmosis Units



UO 4300 ND – UO 12000 ND

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Stand-type unit for desalination of softened drinking water according to German drinking water regulations (free chlorine not detectable), operating on the principle of reverse osmosis.

Unit design

Stainless steel main frame.

Special inlet filter with 5 µm-filter cartridge, **high pressure pump** 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 (for each pressure vessel), inlet solenoid valve/inlet diaphragm valve, valves made of stainless steel to regulate the flow rate of permeate, concentrate and concentrate recirculation.

Pressure gauges for inlet and outlet pressure pre-filter, pump pressure, operating pressure and concentrate pressure, pressure switch for monitoring the feed water pressure.

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

Permeate **conductivity measurement**, temperature compensated, measuring range 2-200 µS/cm.

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

RO 1000 microprocessor control system for fully automated monitoring and control of the reverse osmosis unit with **two-line LCD** (16 characters per line) of

Operating data: permeate conductivity (temperature-corrected), permeate temperature, operating hours,

Malfunction signals: low pressure, hard water, motor overload, high conductivity prealarm, high conductivity fault, **status signals:** permeate discard, permeate recycling, concentrate displacement, concentrate rinse, intermittent rinse during shut-down, shut-down by external signal (forced stop, regeneration),

LEDs for operation, malfunction, regeneration, discard, disinfection and full tank.

Inputs (low voltage) for level control with 1 or 2 float switches, hardness monitoring unit (the RO 1000 control system includes control functions for the limitron hardness monitoring unit), shut-downs by external signal (forced stop, regeneration),

Outputs for softening unit (230V/50Hz), 2 solenoid valves for concentrate rinse, permeate discard and recycling and DDC (collective malfunction signal on floating changeover contact).

Technical Data		UO4300ND	UO5400ND	UO7000ND	UO8000ND	UO9500ND	UO12000ND
Permeate flow rate	l/h	4,300	5,400	7,000	8,000	9,500	12,000
Min. salt rejection	%	97	97	97	97	97	97
Recovery	%	75	75	75	75	75	75
Operating pressure	bar	13.5	13.0	13.5	13.0	13.5	12.5
Membrane element / number		8040/3	8040/4	8040/5	8040/6	8040/7	8040/9
Voltage	V/Hz	3 x 400/50	3x400/50	3x400/50	3x400/50	3x400/50	3x400/50
Motor power	kW	5,5	5,5	7,5	11	11	11
Pre-fusing	A	16	16	20	25	25	25
Feedwater connection	DN	32	40	40	50	50	50
Permeate/concentrate conn.	DN	32/32	32/32	40/32	40/32	50/32	50/50
Conductivity range	µS/cm	2-20 0	2-200	2-200	2-200	2-200	2-200
Min./max. feedwater pressure	bar	2/6	2/6	2/6	2/6	2/6	2/6
Min./max. feedwater temp.	°C	5/35	5/35	5/35	5/35	5/35	5/35
Max. ambient temperature	°C	40	40	40	40	40	40
pH		3-11	3-11	3-11	3-11	3-11	3-11
Height	mm	1,900	1,900	1,900	1,900	1,900	1,900
Width	mm	2,800	2,800	3,800	3,800	4,800	3,900
Depth	mm	750	750	750	800	800	800
Weight approx.	kg	450	500	600	700	800	900
Code no.		381440	381450	381460	381470	381480	381490

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 units still reach design permeate flow after three years of operation. The permeate recovery depends on the raw water quality and the type of pre-treatment.

Subject to modification. 08-06