Reverse Osmosis Unit UO 50 RS – UO 500 RS

Stand-type unit with RO 1000 controller

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. Drinking water can also be desalinated without pre-treatment. However, in this case the recovery rate is reduced. The decisive factor is the water analysis.

Picture: UO 250 RS

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Reverse Osmosis Unit UO 50 RS – UO 500 RS

Unit design

Stainless steel base frame with plastic front panel housing the instruments and controls.

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

high pressure pump, rotary-vane type,

high performance wound module with PA/PS composite membranes in GRP pressure vessel with inliner.

Valves and instruments including feedwater sampling valve, solenoid inlet valve, feedwater pressure switch, permeate and concentrate flow meter, vibration-resistant pressure gauges for pump and concentrate pressure, stainless steel valves for adjustment of permeate and concentrate flow rate and concentrate recirculation.

Microprocessor control system as described below, connecting cable (3 meters) with 16 A - 6 h CEE three-pole plug.

Unit completely wired and pre-assembled and ready for installation. Electrical equipment in accordance with VDE 0100 part 600, VED 113 part 1.

RO 1000 microprocessor control system for fully automated monitoring and control of the system with

two line text display (16 characters per line) for visualisation of RO process and display of

operational status: permeate conductivity (temperature compensated), permeate temperature, operating hours,

Status signals: permeate reject, permeate recycling, concentrate displacement, concentrate rinse, intermittent rinse during shut-down, shut-down by external signal,

LEDs for production, fault, disinfection, reject, external stop and tank full.

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-down by external signal, 2 universal inputs.

Outputs for softener (230 V/50 Hz), 2 solenoid valves for concentrate rinse, permeate reject and -recycling, universal output, analogue output (4-20 mA) for permeate conductivity and DDC (collective malfunction signal on volt-free changeover contact).

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

Technical Data	**UO...**	**50 RS**	**100 RS**	**250 RS**	**300 RS**	**400 RS**	**500 RS**
Permeate flow rate	l/h	50	100	250	300	400	500
Min. salt rejection	%	97	97	97	97	97	97
Recovery	%	75	75	75	75	75	75
Operating pressure	bar	14	14	11	11	10	10
Membrane element/number		2540 / 1	2540 / 1	4040 / 1	4040/1	4040 / 2	4040 / 2
Voltage	V/Hz	230/50	230/50	230/50	230/50	230/50	230/50
Motor power	kW	0.3	0.55	0.55	0.55	0.55	0.55
Pre-fusing	A	16	16	16	16	16	16
Feedwater connection	DN	20	20	20	20	20	20
Permeate/concentrate connection	DN	10	10	10	10	10	10
Conductivity range	µS/cm	1 – 200	1 – 200	1 – 200	1 – 200	1 – 200	1 – 200
Min./max. feed water pressure	bar	2 / 6	2 / 6	2 / 6	2 / 6	2 / 6	2 / 6
Min./max. feed water temperature	°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	1650	1650	1650	1650	1650	1650
Width	mm	550	550	550	550	550	550
Depth	mm	690	690	690	690	690	690
Weight approx.	ca. kg	50	50	60	62	75	77
Code no.		380 211	381 071	381 081	381 410	381 091	381 430

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