

RO digital
Controller



picture: UO-D 1200 ND

Reverse Osmosis Units Series UO-D 600 – 1500 ND

For desalination of softened drinking water according to German drinking water regulations (free chlorine not detectable).

With controller RO digital.

Reverse Osmosis Units Series UO-D 600 – 1500 ND/FU

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

Reverse Osmosis Units with controller RO digital

Series UO-D 600 – 1500 ND and Series UO-D 600 – 1500 ND/FU

Unit design

Stainless steel main frame with plastic front panel.

Special inlet filter with 5 µm-filter cartridge,

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, inlet solenoid valve, valves to regulate the flow rate of permeate and concentrate, permeate check valve for each pressure vessel.

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

Flow sensors for permeate and concentrate.

Conductivity measurement permeate with temperature compensation.

Screw connection for manual cleaning unit.

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.



Microprocessor control RO

digital for fully automatic monitoring and control of RO system. **Process visualization with central display of operational status and data (analogue und 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.

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.

Technical Data		UO-D 600	UO-D 900	UO-D 1200	UO-D 1500
Permeate flow rate	l/h	600	900	1200	1500
Min. salt rejection	%	97	97	97	97
Recovery	%	75	75	75	75
Operating pressure	bar	14	12	11	10
Membrane element/number		4040/2	4040/3	4040/4	4040/5
Voltage	V/Hz	3 x 400/50	3 x 400/50	3 x 400/50	3 x 400/50
Motor power	kW	1.5	1.5	2.2	2.2
Height	mm	1650	1650	1650	1650
Width	mm	660	660	660	660
Depth	mm	690	690	690	690
Weight approx.	ca. kg	135	150	180	195
Item no. Series ND		387 001	387 004	387 007	387 010
Item no. Series ND/FU		387 002	387 005	387 008	387 011

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