picture: UO-D 2500 ND/RM

Reverse Osmosis Units Series UO-D 4300 – 6000 ND/RM

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

Combining established **variable area flowmeters and RO digital control.** With the "Analog signals for rotameter RM" option, all operating status can be displayed via the controller.

Reverse Osmosis Units with controller RO digital
Series UO-D 4300 – 6000 ND/RM

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 low noise, multi-stage centrifugal type,

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

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.

Variable-area flow meters 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 unit is 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 Reverse Osmosis Unit.

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, 1,960 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: RO-unit start, RO-unit stop, hard water / motor protection, external stop, 3 universal inputs (free configurable).

Analogue outputs: 2 universal outputs 4-20 mA, 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 4300 ND/RM	UO-D 5400 ND/RM	UO-D 6000 ND/RM
Permeate flow rate	l/h	4,300	5,400	6,000
Min. salt rejection	%	97		
Recovery	%	75		
Design pressure	bar	13.5	13	12
Membrane element / number		8040/3	8040/4	8040/5
Voltage	V/Hz	3 x 400/50		
Motor power	kW	5,5		
Feed water connection	DN	32	40	40
Permeate / concentrate connection	DN	32/32	32/32	40/32
Height	mm	1,790		1,830
Width	mm	2,900	2,910	3,870
Depth	mm	790		
Weight approx.	kg	450	500	600
Item no. Series ND/RM		**387 178**	**387 179**	**387 180**

Pre-fusing 20 A, conductivity range 1-999 µS/cm, feed water temperature min./max. 5/35 °C, ambient temperature max. 40 °C, pH-value 3-11