

UO 120 - 500 C

Reverse osmosis units with simplex softener

The ready-to-connect combi unit includes a pre-filter, a backflow preventer, a simplex water softener, a limitron hardness control device and a reverse osmosis unit. It is used for the desalination of water with a salinity of up to 1,000 mg/l and is equipped with a compact rotary vane pump. The RO 524 controller allows fully automatic operation without logging of operation data and with fixed, factory-set limit values.

BENEFITS

- Complete pre-treatment integrated, can be connected directly to the drinking water network
- Simple installation on site with only four connection points (drinking water, permeate, waste water, socket)
- Cost-effective, factory-preset RO 524 controller

APPLICATIONS

- Discontinuous water softening and desalination
- Suitable for commercial and industrial applications that do not require operation data logging and parametrisation



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DESCRIPTION

Reverse osmosis with pre-treatment as combi unit

- Stainless steel base frame, RO part on powder-coated steel panel
- Pre-filter (100 µm) with two manometers, backflow preventer
- Volume-controlled simplex softener ECOTROL-E with limitron hardness control device
- Pre-filter RO (5 µm) with two glycerine-filled pressure gauges
- High-pressure pump as a rotary vane pump
- Low pressure element(s) with PA/PS composite membrane in stainless steel pressure vessel(s)
- Connection cable (3 m) with 16 A - 6 h CEE plug, 3-pin
- Unit incl. piping and wiring, electrical construction acc. to VDE 0100 Part 600, VDE 0113 Part 1
- Unit tested, parameterised and conserved in own test field

Fittings and instrumentation

- Inlet solenoid valve and sampling valves for feed water, soft water and permeate
- Valves for adjusting the flow rates of permeate and concentrate
- Pressure switch for monitoring the feed water pressure and manometer for operating pressure
- Flow meters (rotameters) for permeate and concentrate
- Permeate conductivity measurement without temperature compensation
- Connection fittings for a manual cleaning system

RO 524 microprocessor controller

- Fully automatic monitoring and control of the unit, operation of the controller with switch
- Two-digit, alphanumeric display and two LEDs as local indication for operation and disinfection
- Integrated functions: external stop, tank full, error message due to lack of pressure and hard water, automatic restart with progressive restart times
- Automatic concentrate displacement after each operating phase, forced displacement after 24 h standstill

Available inputs (low voltage)

- Level permeate tank (1 or 2 float switches), hard water, external stop (e.g. if feed water supply interrupted)

Available outputs

- Connection softening unit (230 V/50 Hz), collective fault signal (floating changeover contact)

Programming options (only factory-preset by manufacturer)

- Conductivity limit value 50 µS/cm (range 1 -99 µS/cm)
- Conductivity advance warning 40 µS/cm (range 1 - 99 µS/cm)
- Others: conductivity limit value delay, flushing interval / time when tank is full, concentrate displacement time

Optionally available

- HR modules, PR permeate recirculation and VSE blending device

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CONDITIONS OF USE

The unit may only be used for the desalination of feed water with drinking water quality or appropriately pre-treated well or surface water. The unit is designed for a salinity (TDS) of 1,000 mg/l and a temperature of 15 °C. Under these conditions, the projected permeate output is achieved even after three years of operation. The permeate yield depends on the raw water quality and the pre-treatment. The following parameters must be maintained in the feed water:

Free chlorine	not detectable
Iron (Fe)	< 0.2 mg/l
Manganese (Mn)	< 0.05 mg/l
Silica (SiO ₂)	< 25 mg/l
Silt density index (SDI)	< 3
Feed water temperature	5 – 35 °C
Feed water pressure	3 – 6 bar
Pressure fluctuation	± 0.5 bar

TECHNICAL DATA OF SERIES

Controller	RO 524
Desalination rate min.	97 %
Permeate recovery	75 – 80 %
Permeate back pressure max.	0.3 bar
pH value operation	3.6 – 9.5
pH value cleaning	2 – 12
Ambient temperature	5 – 40 °C

Product name	Mains connection	Hydraulic connection	Dimensions in mm	Item number
Permeate l/h	kW / V / Hz	feed/permeate/conc.	W x D x H	
UO 120 C	0.55 / 230 / 50	DN 20 / DN 10 / HT 50	1,130 x 750 x 1,520	420 191
UO 300 C	0.55 / 230 / 50	DN 20 / DN 10 / HT 50	1,130 x 750 x 1,520	420 192
UO 500 C	0.55 / 230 / 50	DN 20 / DN 10 / HT 50	1,130 x 750 x 1,520	420 193