

Reverse Osmosis Units



UO 50 RSE – UO 500 RSE

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

Unit design

Stainless steel base frame with plastic front panel to house 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(s)** with PA/PS composite membranes in GRP pressure vessel(s) 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.

Microprocessor control system, as described below, connecting cable (3 m) 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, VDE 113 part 1.

RO 500 microprocessor control system for fully automated monitoring and control of the reverse osmosis unit with **two-digit alphanumeric display** of permeate conductivity, forced stop and full tank, **malfunction signals**: low pressure, hard water and high conductivity, **LEDs** for operation and disinfection,

inputs (low voltage) for level control with 1 or 2 float switches, hardness monitoring unit (the RO 500 controller includes control functions for the limitron hardness monitoring unit), shut-down by external signal (forced stop, regeneration),

outputs for softening unit (230 V/50 Hz) and DDC (collective malfunction signal on floating changeover contact).

| Technical Data | | UO 50 RSE | UO 100 RSE | UO 250 RSE | UO 300 RSE | UO 400 RSE | UO 500 RSE |
|----------------------------|--------|-----------|------------|------------|------------|------------|------------|
| 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 | 14.0 | 12.0 | 11.0 | 11.0 | 10.0 | 10.0 |
| 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/conc. connection | DN | 10 | 10 | 10 | 10 | 10 | 10 |
| Conductivity range | µS/cm | 1–99 | 1–99 | 1–99 | 1–99 | 1-99 | 1-99 |
| Min./max. feedwater press. | 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 | 1,650 | 1,650 | 1,650 | 1,650 | 1,650 | 1,650 |
| 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. | | 380 217 | 381 041 | 381 051 | 381 400 | 381 061 | 381 420 |

The units are designed for a maximum TDS of 1,000 mg/l, a water temperature of 15°C and a maximum fouling index of 3. Under these conditions, the units still reach design permeate flow after 3 years of operation. The permeate recovery depends on the raw water quality and the type of pretreatment.

Subject to modification. 08-06