

Data sheet

Reverse osmosis system LW RO-D1500 PR

The reverse osmosis system is used to desalinate softened water with a salt content of up to 1,000 mg/l. It is equipped with a high-quality centrifugal pump. The RO digital microprocessor control enables fully automatic operation with logging of all relevant operating data and freely adjustable limit values. The system can be connected to the central control system via an optional Profinet interface.

Advantages

- Compact system
- Versatile RO digital control with operating data storage and numerous setting options

Applications

- Desalination of softened water
- Suitable for all commercial and industrial applications



UO-D 2000

Description

Reverse osmosis

- Stainless steel base frame with plastic front panel
- High-pressure piping made of stainless steel with orbital welds
- UO pre-filter (5 µm) with two glycerine-filled pressure gauges
- Low-maintenance valve block, hard nickel-plated
- High-pressure pump as low-noise, multi-stage centrifugal pump
- Low-pressure elements with PA/PS composite diaphragm in GRP pressure pipes

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- Control cabinet with lockable main switch and power unit for controlling the high-pressure pump
- System piped and wired, electrical design in accordance with VDE 0100 Part 600, VDE 0113 Part 1
- System tested, parameterised and preserved in our in-house test field

Fittings and instrumentation

- Inlet solenoid valve and sampling valves for feed water and permeate
- Valves for adjusting the flow rates of permeate, concentrate and concentrate recirculation
- Pressure sensors for pump inlet pressure, operating pressure and concentrate pressure
- Flow sensors for permeate, concentrate and concentrate return
- Conductivity measurement of permeate with temperature compensation
- Connection fittings for manual cleaning system and permeate check valve for each pressure pipe

Microprocessor control RO digital

- Fully automatic monitoring and control of the system
- Simple menu-guided operation of the control system with six buttons
- Four-line illuminated display and two LEDs as local indicators for operation and faults
- Languages of the plain text display: German / English / French / Spanish
- Circular storage of operating data (1,960 data records) with adjustable storage interval
- Operational safety through adjustable limit values with fault message/display
- Password-protected programming of operating parameters

Available inputs

- DIGITAL: external stop (e.g. in case of interruption of feed water supply), motor protection / hard water, 2x permeate tank level (tank min / max) and 3x universal input (configurable)
- ANALOGUE: permeate tank level (4 – 20 mA)

Available outputs

- DIGITAL: Collective fault signal, universal output (configurable)
- ANALOGUE: Permeate conductivity, measuring range 1 – 999 µS/cm (4 - 20 mA)

Optionally available

- Limitron hardness control device and HR modules for increasing the desalination rate
- Permeate recirculation PR, concentrate flushing device KSE and blending device VSE
- Profinet interface and fault, changeover and switch-on

Operating conditions

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

Free chlorine	not detectable
Iron (Fe)	< 0.2 mg/l
Manganese (Mn)	< 0.05 mg/l
Silicic acid (SiO ₂)	< 25 mg/l
Silting index (SDI)	< 3

Feed water temperature	Feed water	5 – 35 °C
pressure	Pressure fluctuation	2 – 6 bar
		± 0.5 bar

Technical data for the series

Control	RO digital
Desalination rate min.	97
Permeate yield	75–80
Permeate back pressure max.	0.3 bar
pH value during operation	6.5 – 9.5
pH value cleaning	2 – 12
Ambient temperature	5 – 40 °C

Technical data of the system

Designation	LW RO-D1500 PR
Permeate capacity	1,500 l/h
Membrane element / number	4040 / 5
Electrical connection power	2.2 kW
Voltage	3 x 400 V
Frequency	50 Hz
Backup fuse	20 A

Hydraulic connections

Inlet connection	DN 20
Permeate connection	DN 20
Concentrate connection	DN 15

Dimensions

Width	610
Depth	810 mm
Height	1,800 mm

Weights

Empty weight approx.	200 kg
Operating weight approx.	260 kg

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