

Reverse Osmosis Units

UO 1650 AS – UO 3100 AS



Herco
Präzision in Reinwasser-Technik

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Stand-type unit for desalination of hardness stabilized drinking water according to German drinking water regulations (free chlorine not detectable), operating on the principle of reverse osmosis.

Unit design

Stainless steel main frame with plastic front panel housing the instruments and controls.

Special inlet filter with 5 μm -filter cartridge, **high pressure pump** 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 (for each pressure vessel), inlet solenoid valve, valves made of stainless steel to regulate the flow rate of permeate, concentrate and concentrate recirculation.

Pressure gauges for inlet and outlet pressure pre-filter, pump pressure, operating pressure and concentrate pressure, pressure switch for monitoring the feed water pressure.

Flow meters for permeate, concentrate and concentrate recirculation flow rate.

Permeate **conductivity measurement**, temperature compensated, measuring range 2-200 $\mu\text{S}/\text{cm}$.

Connection set for cleaning device, T-piece for injection point, concentrate flushing device.

Control cabinet with lockable main switch, electrical switch-gear for control of the high-pressure pump and antiscalant dosing unit.

RO 1000 microprocessor control system for fully automated monitoring and control of the reverse osmosis unit **with two-line LCD** (16 characters per line) of

Operating data: permeate conductivity (temperature-corrected), permeate temperature, operating hours,

Malfunction signals: low pressure, hard water, motor overload, high conductivity prealarm, high conductivity fault, **status signals:** permeate discard, permeate recycling, concentrate displacement, concentrate rinse, intermittent rinse during shut-down, shut-down by external signal (forced stop, regeneration),

LEDs for operation, malfunction, regeneration, discard, disinfection and full tank.

Inputs (low voltage) for level control with 1 or 2 float switches, hardness monitoring unit (the RO 1000 control system includes control functions for the limitron hardness monitoring unit), shut-downs by external signal (forced stop, regeneration),

Outputs for softening unit (230V/50Hz), 2 solenoid valves for concentrate rinse, permeate discard and recycling and DDC (collective malfunction signal on floating changeover contact).

Technical Data		UO 1650 AS	UO 2200 AS	UO 2500 AS	UO 3100 AS
Permeate flow rate	l/h	1,650	2,200	2,500	3,100
Min. salt rejection	%	97	97	97	97
Recovery	%	75	75	75	75
Operating pressure	bar	12.0	12.0	12.0	11.5
Membrane element / number		4040 / 6	4040 / 8	4040 / 9	4040 / 12
Voltage	V/Hz	3 x 400 / 50	3 x 400 / 50	3 x 400 / 50	3 x 400 / 50
Motor power	kW	2.2	2.2	3.0	3.0
Pre-fusing	A	16	16	16	16
Feedwater connection	DN	32	32	32	32
Permeate/concentrate connections	DN	25 / 25	25 / 25	25 / 25	25 / 25
Connection dosing point	R	1/2"	1/2"	1/2"	1/2"
Conductivity range	$\mu\text{S}/\text{cm}$	2 - 200	2 - 200	2 - 200	2 - 200
Min./max. feedwater pressure	bar	2 / 6	2 / 6	2 / 6	2 / 6
Min./max. feedwater temperature	°C	5 / 35	5 / 35	5 / 35	5 / 35
Max. ambient temperature	°C	40	40	40	40
pH		3 - 11	3 - 11	3 - 11	3 - 11
Height	mm	1,650	1,650	1,650	1,650
Width	mm	2,550	2,550	3,550	3,550
Depth	mm	700	700	700	700
Weight approx	kg	240	320	340	380
Code no.		381500	381510	381520	381530

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 units still reach design permeate flow after three years of operation. The permeate recovery depends on the raw water quality and the type of pre-treatment.

Subject to modification. 08-06