

Reverse Osmose EDI

Series UP 1500 – UP 3000



UP 1500 – UP 3000

Systems for ultra-pure water electro-deionization EDI

Vertical frame system for desalination of softened drinking water operating on the principle of reverse osmosis(RO) in conjunction with the electro-deionization method (EDI).



Geonwater BV Centaurusweg 148-02 TILBURG
T. +31 (0)13 533 44 69 E. geon@geonwater.nl

www.geonwater.nl

UP 1500 – UP 3000

Systems for ultra-pure water electro-deionization

Unit design Stainless steel main frame with plastic front panel housing the instruments and controls,

Pressure reducing valve to limit the input pressure, 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, permeate recirculation subject to conductivity.

Electro-deionization module for continuous desalination of the RO permeate, consisting of a carefully designed robust housing containing a series of special ion selective membranes which create alternating concentrate and desalination chambers filled with mixed-bed ion exchanges resins. Two special electrodes are used to create an DC electric field across the chambers.

Valves such as sampling valves for feed water, RO permeate and EDI product, inlet solenoid valve, control valves made of stainless steel to regulate the flow rate of permeate, RO concentrate, RO concentrate recirculation and EDI concentrate.

Pressure monitoring vibration-resistant pressure gauges for inlet and outlet pressure, pre-filter, pump pressure, operating pressure, RO concentrate pressure, pressure EDI feed water, inlet pressure EDI concentrate, product output pressure, pressure switch for monitoring the feed water pressure,

Flow meters for permeate, RO concentrate, RO concentrate recirculation, EDI feed water, EDI concentrate, electrolyte, control of minimal EDI concentrate flow rate,

Permeate conductivity measurement, temperature compensated, measuring range 0 – 200 µS/cm,

Product water resistivity measurement, constant on-line with temperature compensation as defined by ASTM D 1125-95, measuring range 0 – 20 MΩ x cm.

Control cabinet with lockable main switch, **electrical switchgear** for control of the high-pressure pump, **integral power supply** for supply of voltage to the EDI module

RO 1000 microprocessor control system for fully automated monitoring and control of the system with two line text display (16 characters per line) for display of

operational status: permeate conductivity, temperature, operating hours, password-protected programming of the operating sequences.

Malfunction displays for low pressure feed motor overload, high conductivity.

Additional connections: Inputs (low voltage) for level control with 1 or 2 float switches, shut-down by external signal (forced stop, regeneration),

Outputs for Pretreatment (230 V/50 Hz), solenoid valves for permeate discard and -recycling, and DDC (collective malfunction signal on voltfree changeover contact).

Unit is completely wired, pre-assembled and ready for installation. Electrical equipment in accordance with VDE 0100 part 600, VDE part 1.

Options: Membrane degassing, dosing stations, concentrate flushing unit KSE, pipeworks in PP on request

The units are designed for softened feed water (< 0.1 °GH) with a maximum TDS of 1,000 mg/l, a water temperature of 15 °C, a maximum colloidal index of 3, a CO2 content of 10 mg/l and a SiO2 content of 20 mg/l. Under these conditions, the units still reach design product flow after three years of operation. The EDI product recovery depends on the raw water quality and the type of pre-treatment.

Technical Data		UP 1500	UP 1700	UP 2200	UP 3000
Permeate flow rate	l/h	1500	1700	2200	3000
Resistivity EDI product (with free CO ₂)	MΩ x cm	5	5	5	5
Resistivity EDI product (without free CO ₂)	MΩ x cm	> 10	> 10	> 10	> 10
Recovery	%	70	70	70	70
Operating pressure	bar	15	16	16	16
Membrane element / number		4040/6	4040/6	4040/8	4040/11
Voltage	V/Hz	3 x 400/50	3 x 400/50	3 x 400/50	3 x 400/50
Power consumption	kW	4,1	7,1	7,1	7,8
Max. pre-fusing	A	16	16	16	16
Feed water connection	DN	32	32	32	32
Waste water connection	HT	50	50	50	50
Product water connection	DN	25	25	25	25
Min./max. feed water pressure	bar	2 / 6	2 / 6	2 / 6	2 / 6
Min./max. feed water temperature	°C	5 / 35	5 / 35	5 / 35	5 / 35
Min./max pH value feed water		5,0 / 9,5	5,0 / 9,5	5,0 / 9,5	5,0 / 9,5
Max. ambient temperature	°C	40	40	40	40
Height	mm	1950	1950	1950	1950
Width	mm	2450	2450	2450	3000
Depth	mm	850	850	850	1000
Weight approx	kg	320	330	400	600

Geonwater BV Centaurusweg 148-02 TILBURG
T. +31 (0)13 533 44 69 E.geon@geonwater.nl

www.geonwater.nl