

Continuous Electro Deionization Unit: Model EDIpure

Technology

The continuous electro deionization unit (CEDI) is designed to further purify reverse osmosis product water to ultra pure or high purity water (0,055 – 0,5 $\mu\text{S}/\text{cm}$).

The CEDI technology is a continuous process using ion exchange membranes, ion exchange resin and electricity. DC electric current is the driving force to remove ions from the feed stream while continuously regenerating the resin pack.

Construction of CEDI-module

CEDI-modules consist of two different functional type of compartments within a single stack.

The product compartments as well as the reject compartments are filled with ion exchange resin and are located side by side, with cation and anion selective membranes in between.

Feed water entering the CEDI stack flows parallel to the membrane surface and resin capture dissolved ions.

Electric current drives captured cations through cation membranes and captured anions through anion membranes. The cation-permeable membranes prevent anions from leaving concentrating compartments and anion-permeable membranes prevent cations from leaving the concentrating compartments.



Compact Electro Deionization Unit: Model EDIpure

Specific features

NO chemicals needed for regeneration

Unlike traditional DI systems, CEDI unit does NOT need acid or caustic chemicals for regeneration. This results in safe operation and no need for hazardous waste or neutralization equipment.

Consistent ultra pure water

Due to the continuous electrical regeneration the resin never gets exhausted. Because of this phenomena the product quality is consistent, week after week, month after month, without the necessity of taking the system out of operation.

Low operational costs

The CEDI unit can operate in continuous mode with low energy consumption and does not need any preventive maintenance.

Typical markets for EDIpure

- Industrial demineralized water
- High pressure boiler feed water
- Pure water injection in gas turbine
- Semi-conductor Industry
- Hospitals
- Universities
- Laboratory, central DI-water utility

EDIpure

Up to 7.600 l/h

Typical Conductivity < 0,1 µS/cm

PERFORMANCE				
Reference Number	Capacity l/h Nom. -max.	Recovery %	Pressure Bar	P KW
CEDIPZ(P)041	440 - 660	90 - 95	2 - 7	0,15
CEDIPZ(P)101	1.100 - 1.650	90 - 95	2 - 7	0,35
CEDIPZ(P)181	2.000 - 3.000	90 - 95	2 - 7	0,6
CEDIPZ(P)241	2.800 - 4.200	90 - 95	2 - 7	0,9
CEDIPZ(P)301	3.300 - 5.000	90 - 95	2 - 7	1,0
CEDIPZ(P)451	5.100 - 7.600	90 - 95	2 - 7	1,5

DIMENSION AND WEIGHT				
Reference Number	Operation Weight kg	Width mm	Depth mm	Height mm
CEDIPZ(P)041	100	750	1.000	1.600
CEDIPZ(P)101	115	750	1.000	1.600
CEDIPZ(P)181	130	750	1.000	1.600
CEDIPZ(P)241	140	750	1.000	1.600
CEDIPZ(P)301	150	750	1.000	1.600
CEDIPZ(P)451	200	600	1.100	1.700

ELECTRICAL CONNECTIONS	
Fixed connection	3 x 400V / 50 Hz / 2 - 14 kW

FEED WATER SPECIFICATIONS (RO PRODUCT WATER)						
Temperature	pH	Conductivity equivalent	Total hardness	Free chlorine CL2	TOC	Silica SiO2
5 - 45 °C	4 - 11	< 40 µS/cm	< 1 mg/l CaCO3	< 0,02 mg/l	< 0,5 mg/l	< 1,0 mg/l

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