

Electro Deionisation



Compact Electro Deionisation Unit *model CEDISX041*

Features

- Production of purified water, well within the limits of the latest pharmacopoeias
- Control panel including Siemens PLC S7-300 with Proface graphic display
- Calibrated conductivity / resistivity meter, temperature compensation on/off
- Very compact design
- Cabinet is mechanically polished
- Manufactured according the guidelines of the FDA/ISPE Baseline Pharmaceutical Engineering Guide for Water and Steam Systems and in accordance with the USP and EP requirements. The automation complies with GAMP4.
- Pre-validated including extensive technical documentation, certificates and validation documents.

Specific benefits

- Continuous supply of a constant high quality purified water
- Modules can be easily stacked in parallel for higher flow rates

The CEDI modules consist of many flow compartments formed by alternating cat-ion and an-ion exchange membranes. Feed water enters the module at one point and is distributed throughout the modules product and reject flow paths. Under the influence of DC voltage, ions in the resin filled product compartments are transferred to the resin filled reject compartments for disposal. As the water in the product compartments become free of ions, the DC voltage splits water into hydrogen and hydroxyl ions, which in turn regenerate the ion exchange resins.

Permeate water from the RO system is fed directly into the purifying compartments of the CEDI unit. The larger flow passes directly to the CEDI unit product inlet port and the smaller concentrate flow to the CEDI reject compartments. The water passing through the product compartments is de-ionised to Purified Water, while the water flowing into the reject compartments takes away concentrated salts and small amounts of gases formed on the electrode surfaces. The reject water exiting the CEDI unit is re-used and re treated after mixing with the RO feed water, therefore water losses from the process are minimal.

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Environmental Water Systems
Total Capability in Water Purification and Water Recovery



CEDISX041

Specifications

Type

CEDISX041

Product flow	minimum	220 l/h
	nominal	440 l/h
	maximum	660 l/h
Product conductivity	typical	0,06 – 0,5 µS/cm
Recovery		90 - 95%
Concentrate bleed	re-use	5 - 10% of feed flow rate
Pressure	normal operation	< 7 bar
Temperature	feed water	< 45 °C
Power supply input		3 x 400V / 50 Hz / kW
Removal ions		up to 99,5%
Power supply		3 x 400V / 50 Hz / kW
Dimensions	w x d x h	600 x 500 x 1.400 mm

Main components of the unit

No.	Description	Make
1	SST 304 skid or cabinet	
2	LX CEDI module(s)	Ionpure
3	Electrical control panel plus power supply	Rittal / Ionpure / Hellas
4	PLC with graphic display	Siemens S7 / Proface display
5	Conductivity instrument(s)	Endress & Hauser
6	Pressure sensors	Wika
7	Flow sensors	Bürkert
8	Sanitary stainless steel piping in product in and outlet, Ra < 0,8 micron	Dockweiler or similar
9	Sample and regulating valves	ITT or similar
10	Grounding of all water streams	

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