



CONTINUOUS ELECTRODEIONISATION

INNOVATION FOR THE PRODUCTION OF HIGH QUALITY WATER



EDI, Continuous Electrodeionisation, is the latest addition to the Culligan range. EDI produces high quality water with no

need for regenerants, such as acid and caustic, typical of demineralisation systems with ion exchange resins.

To attain the ultra-high quality standards, the EDI system uses:

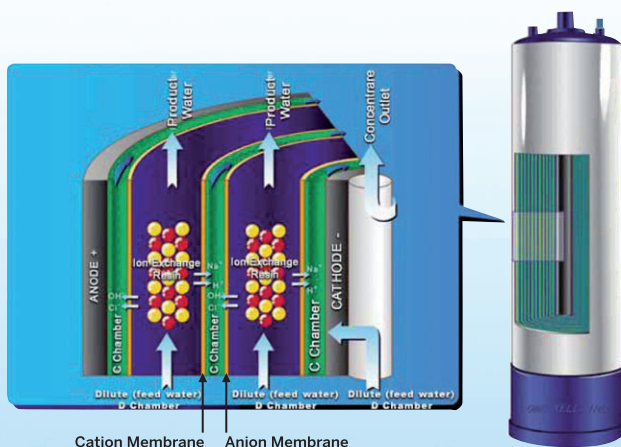
- **electricity**
- **selective membranes** (cation and anion)
- **ion exchange resins** (in minimal quantities).

Electrodeionisation has gained a decisive role in all the industrial activities where it is necessary to have high quality treated water, dictated by production requirements:

- **energy production** (feeding boilers, cogeneration)
- **microelectronics** (UPW)
- **cosmetics**
- **pharmaceuticals**
- **photovoltaic**.

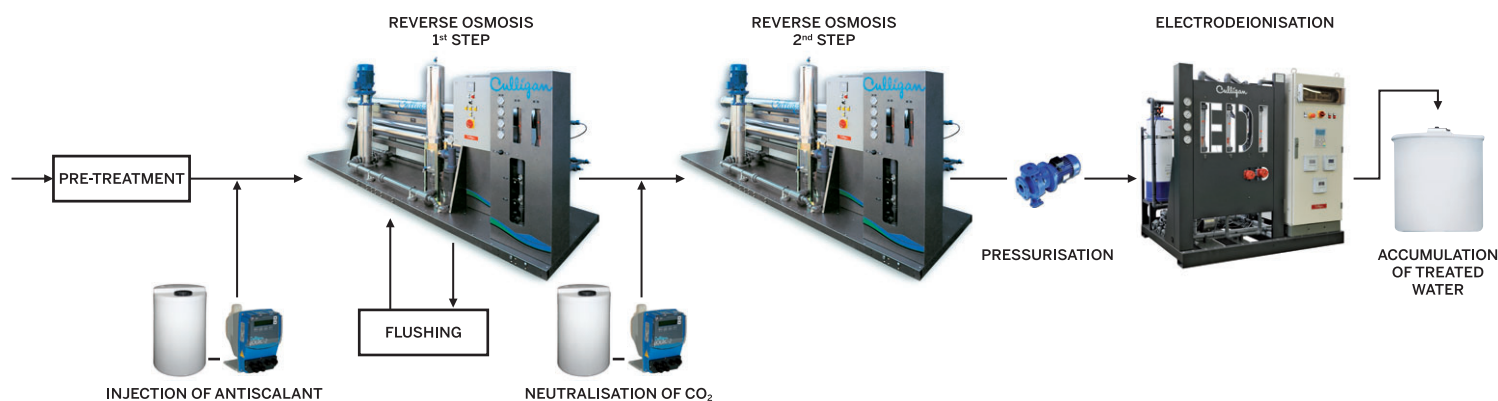


OPERATING DIAGRAM



The water to be treated enters the EDI system from the top and is distributed among all the deionisation compartments. It crosses the dilution cells downwards, where the anions and the cations are captured by the respective exchange resins. The water deionised in this way is called "product". Leaving the dilution cells the water enters the concentration cells where the ions that cannot continue toward the respective electrodes, because of the selective ion permeability of the membranes, are eliminated. This flow is called "concentrate".

Standard application of Electrodeionisation



DOUBLE STEP REVERSE OSMOSIS + NEUTRALISATION OF CO₂ + ELECTRODEIONISATION
End quality 10-18 MOhm·cm

Characteristics and advantages

THIS TREATMENT ELIMINATES THE MAIN PROBLEMS THAT PLAGUE THE ALTERNATIVE TECHNOLOGY, THAT IS DEMINERALISATION WITH ION EXCHANGE, SPECIFICALLY:

No use of chemical regenerants

- no health hazard
- no corrosion or pollution
- no contamination
- no harmful waste to be treated and disposed of
- no particular need for ventilation.

No downtime for regeneration

- constant quality
- better resistivity

- very low risk of resin pulverisation
- smaller changes in TOC
- continual delivery.

Modular construction

- reduced initial investment
- possibility of expanding the system.

Compact design

- saving space
- easy positioning.

TECHNICAL SPECIFICATIONS

Model	Modules no.	Flow rate m ³ /h	Power kW	Supply "	Hydraulic connections			Dimensions length x width x height mm
					Product "	Electrolyte mm	Concentrate "	
EDI 10	1	2,2	2	1,5	1	Ø 6	1	1700x1200 x1500
EDI 20	2	4,5	3,5	2	1	Ø 6	1	1700x1200 x1500
EDI 30	3	6,5	5	2	1	Ø 6	1	1700x1200 x1500
EDI 40	4	9	7	2	1½	Ø 6	1	1700x1550 x1500
EDI 60	6	13	10	2	1½	Ø 6	1	1700x1550 x1500

- Power supply: 230V~ 50Hz, three-phase + earth

FEED WATER (MAX LIMITS)

Element	Unit of measurement	Supply EDI
TEA – Total Exchange Anions	ppm (mg/l) as CaCO ₃	≤ 25
pH		7 - 9
Hardness	ppm (mg/l) as CaCO ₃	≤ 0,5
CO ₂	ppm (mg/l)	≤ 3
SiO ₂	ppm (mg/l)	≤ 0,2
TOC	ppm (mg/l)	≤ 0,3
Cl ₂	ppm (mg/l)	≤ 0,05
Fe, Mn, H ₂ S	ppm (mg/l)	≤ 0,01
SDI (15 minutes)		≤ 1
Oils and greases		None
Cloudiness	NTU	≤ 1
Oxidants	ppm (mg/l)	None

MAIN REFERENCES IN ITALY

- FAMAR: Milano - 3 m³/h
 MERCK SHARP & DOHME: Pavia - 2 x 3 m³/h
 Merial: Padova - 1 m³/h
 CERAMICHE RAGNO: Fiorano (RE) - 1,5 m³/h
 CERAMICHE RAGNO: Scandiano (RE) - 1,5 m³/h
 X-CELL: Padova - 2 x 10 m³/h
 Società ICT: Lodi - 2 m³/h
 CABOT: Ravenna - 11 m³/h
 HERA: Coriano (RN) - 2 x 2,5 m³/h
 ACEGAS: Trieste - 2 x 6 m³/h

QUALITY SYSTEM CERTIFIED ACCORDING TO UNI EN ISO 9001 NORM

Culligan reserves the right to change any technical or design specifications for the models shown in this brochure.

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With three manufacturing plants and more than a hundred dealers, agents and representatives all over Europe, Culligan is next door wherever you are. Each and every user enjoys outstanding after-sales service. Culligan is present in every area thanks to its engineers and technicians who are ready to act for you quickly and efficiently. The Culligan organisation is represented worldwide in more than 90 countries. The logistic support it provides enables each licensee and dealer to guarantee exceptional services during and after the warranty period (one year, covering manufacturing faults and corrosion).