

# EDI (ELECTRODEIONIZATION) SYSTEMS



## COMMON SPECIFICATIONS

### DESIGN PARAMETERS

SYSTEM RECOVERY (typical)**	90% - 95%
INLET PRESSURE	45 psig (3.1 bar)
INLET TEMPERATURE	60 °F (15.56 °C)
PRODUCT PRESSURE	20 psig (1.37 bar)

### GENERAL SPECIFICATIONS

FRAME MATERIALS	Structural carbon steel or stainless steel
PLUMBING, VALVES AND INSTRUMENTATION	Market specific

### OPERATING LIMITS

MAXIMUM FEED TEMPERATURE	113 °F (45 °C)
MINIMUM FEED TEMPERATURE	40 °F (4.4 °C)
MAXIMUM FEED PRESSURE	100 psig (6.9 bar)
MINIMUM FEED PRESSURE	45 psig (3.1 bar)
PRESSURE DROP AT MINIMUM FLOW RATE	10 - 15 psig (0.69 - 1.03 bar)
PRESSURE DROP AT NOMINAL FLOW RATE	25 - 35 psig (1.72 - 2.41 bar)
PRESSURE DROP AT MAXIMUM FLOW RATE	40 - 50 psig (2.76 - 3.45 bar)

## FEED WATER REQUIREMENTS

FEED WATER SOURCE	RO PERMEATE
FEED WATER CONDUCTIVITY EQUIVALENT INCLUDING CO <sub>2</sub> AND SILICA	<40 µS/cm
SILICA (SiO <sub>2</sub> )*	<1 ppm
IRON, Mn, H <sub>2</sub> S, S	< 0.01 ppm
TOTAL CHLORINE (as Cl <sub>2</sub> )	< 0.02 ppm
HARDNESS (as CaCO <sub>3</sub> )	< 1.0 ppm
DISSOLVED ORGANICS (TOC as C)	< 0.5 ppm
OPERATING pH RANGE	4 - 11

## AQUALINE CDI - LOW AND CDI-HIGH ELECTRODEIONIZATION SYSTEMS

Aqualine CDI - Low and High systems are pre-engineered and specifically designed to meet the demands of the pharmaceutical, power, microelectronics, and general industry customer. The standard CDI-Low systems come in flow rates from 1.7 to 180 gpm (0.39 to 40.88 m<sup>3</sup>/hr), combining single or multiple (up to 8) IONPURE® CDI-LX modules on a frame with power supplies, controllers, piping, sample valves, cleaning connections, and flow and quality monitoring instrumentation. Select CDI-LX systems can be hot water sanitizable at up to 185°F (85° C).

Standard CDI - High systems come in flow rates ranging from 100 gpm to 600 gpm nominal (22.7 to 136.3 m<sup>3</sup>/hr), combining multiple Ionpure® VNX modules on a frame with power supplies, controllers, piping, sample valves, cleaning connections, and pressure, flow and quality monitoring instrumentation.

Continuous electrodeionization is a safe, chemical free way to take RO (reverse osmosis) water to a higher level of purity. CDI Low and High systems use our proven, proprietary process to continuously produce an uninterrupted supply of high purity water, up to 18 megohm-cm, without the need for regeneration chemicals or deionization (DI) tanks.



### FEATURES AND BENEFITS

- Reliable, compact design
- Quick installation
- Low maintenance
- Easy validation
- Hot water sanitizable (HWS) units available up to 185 °F (85 °C)
- High operating temperature (up to 100 psig feed)
- Completely leak-free operation
- Ideal for loop applications
- Low power consumption
- Individual power supplies and controls

### SPECIFICATIONS

- A complete, power supply assembly (NEMA 12 or optional NEMA 4 and 4X)
- Controllers
- Piping
- Sample valves
- Cleaning connections

Flow and quality monitoring instrumentation and remote I/O is available as an option.

# ULTRA-PURE WATER UNITS / ELECTRO-DEIONISATION UNITS EDI – UP AND EP SERIES

## Characteristics of the UP 150 – 20000 series

- Electro-deionisation with upstream RO unit
- Product water (diluate) with a typical conductivity of < 0.2 µS/cm
- Unit ready for connection
- No regeneration chemicals needed
- Continuous operation
- Permeate recirculation PR included
- Wide range of options, such as membrane degasification, available to improve the product water conductivity

## Characteristics of the EP 150 – 2200 series

- Demineralisation of RO permeate by electro-deionisation
- Product water (diluate) with a typical conductivity of < 0.2 µS/cm
- Direct connection to a RO unit possible
- Can be converted for indirect supply with permeate (as an option)



<b>UP SERIES: REVERSE OSMOSIS UNITS WITH ELECTRO-DEIONISATION, DILUATE CAPACITY 150 – 3,000 l/h</b>				
Demineralisation of softened drinking water with a salinity of up to 1,000 mg/l				
Product name Permeate capacity l/h	Mains connection kW / V / Hz	Hydraulic connection Feed w./diluate/conc.	Dimensions in mm W x D x H	Item number
<b>UP 150</b>	1.3/230/50	DN 20 / DN 10 / DN 50	1,150 x 690 x 1,610	425 082
<b>UP 250</b>	1.3/230/50	DN 20 / DN 10 / DN 50	1,150 x 690 x 1,610	425 092

<b>UP 550</b>	4.1/3x400/50	DN 25 / DN 20 / DN 50	1,340 x 890 x 2,000	425 002
<b>UP 800</b>	4.1/3x400/50	DN 25 / DN 20 / DN 50	1,340 x 890 x 2,000	425 012
<b>UP 1100</b>	4.1/3x400/50	DN 25 / DN 20 / DN 50	1,340 x 890 x 2,000	425 022
<b>UP 1500</b>	4.1/3x400/50	DN 32 / DN 25 / DN 50	2,460 x 890 x 2,025	425 042
<b>UP 2200</b>	6.1/3x400/50	DN 32 / DN 25 / DN 50	2,460 x 890 x 2,025	425 052
<b>UP 3000</b>	11.5/3x400/50	DN 32 / DN 25 / DN 25+15	3,500 x 820 x 1,900	425 075

<b>UP SERIES: REVERSE OSMOSIS UNITS WITH ELECTRO-DEIONISATION, DILUATE CAPACITY 4,100 – 20,000 l/h</b>				
Demineralisation of softened drinking water with a salinity of up to 1,000 mg/l				
Product name Permeate capacity l/h	Mains connection kW / V / Hz	Hydraulic connection Feed w./diluate/conc.	Dimensions in mm W x D x H	Item number
<b>UP 4100</b>	13.5/3x400/50	DN 40 / DN 32 / DN 32+20	2,750 x 850 x 2,210	425 076
<b>UP 6000</b>	18.5/3x400/50	DN 50 / DN 40 / DN 32+20	3,865 x 850 x 2,210	425 077
<b>UP 8200</b>	20.0/3x400/50	DN 50 / DN 40 / DN 32+20	4,750 x 850 x 2,210	425 078
<b>UP 11000</b>	26.0/3x400/50	DN 50 / DN 50 / DN 50+20	3,865 x 1,000 x 2,200	425 079
<b>UP 20000</b>	45.0/3x400/50	DN 80 / DN 65 / DN 50+20	4,750 x 1,500 x 2,200	425 080

<b>EP SERIES: ELECTRO-DEIONISATION UNITS, DILUATE CAPACITY 150 – 2,200 l/h</b>				
RO permeate demineralisation				
Product name Permeate capacity l/h	Mains connection kW / V / Hz	Hydraulic connection Feed w./diluate/conc.	Dimensions in mm W x D x H	Item number
<b>EP 150</b>	0.8/230/50	DN 15 / DN 15 / DN 50	1,050 x 700 x 1,600	425 161
<b>EP 300</b>	2.1/3x400/50	DN 20 / DN 20 / DN 50	1,050 x 700 x 1,600	425 101
<b>EP 900</b>	2.1/3x400/50	DN 20 / DN 20 / DN 50	1,050 x 700 x 1,600	425 121
<b>EP 1500</b>	2.1/3x400/50	DN 20 / DN 20 / DN 50	1,050 x 700 x 1,600	425 141
<b>EP 2200</b>	3.1/3x400/50	DN 20 / DN 20 / DN 50	1,050 x 700 x 1,600	425 151