Water Technologies & Solutions
fact sheet

SUEZ 2020 EDR systems

electrodialysis reversal technology

The SUEZ 2020 Electrodialysis Reversal (EDR) product is a proven and reliable desalination technology that has been in service in a variety of industrial and public infrastructure applications.

EDR features

- Use of Carbon Electrodes results in no gas produced and no separate electrode stream required.
- High Water Recovery, up to 94%
- Salt Removal of 50 to 95%
- Polarity Reversal self-cleaning with electricity
- Free chlorine tolerance
- Tolerance to moderate suspended solids
- Adjustable product water performance without blending
- Ability to disassemble stacks for inspection
- Silica tolerance

EDR benefits

- Efficient use of scarce water resources
- Low pretreatment requirements and costs
- Low chemical consumption costs
- Long membrane life, typically 10+ years
- Strong ability to recover from less than ideal feed water quality

standard design and scope of supply

- MK-IV-2 EDR stacks with SUEZ Carbon Electrodes
- Cartridge filter
- Concentrate Recirculation pump with VFD
- GE Fanuc[1] Micro PLC & 12" (30 cm) color Quick Panel HMI
- Full Owners Operation & Maintenance Manual, Factory Acceptance Test results and Stack Performance Test results

instrumentation - transmitters

Flow	Product Outlet, Concentrate Outlet
Pressure	Cartridge Filter Inlet & Outlet Concentrate, Recirculation Pump Outlet, Product Outlet
Conductivity	Inlet & Product Outlet

operating parameters

Water Recovery	Up to 94%
Salt Removal	50% to 95%
Silica Removal	none
Temperature	40 to 100°F (4 To 38°C)
Maximum Feed Pressure	50 psi
Input Voltage	480VAC/3/60Hz

feed water requirements

Typical Feed TDS	100 to 3,000 ppm (mg/l)
Maximum Feed TDS	12,000 ppm (mg/l)
Silica (Reactive)	unlimited
pH	2 to 10

Find a contact near you by visiting www.suezwatertechnologies.com and clicking on "Contact Us."

*Trademark of SUEZ; may be registered in one or more countries.

[1]GE Fanuc is a trademark of General Electric Company

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SDI (5 min. test) 10
Turbidity ..... < 0.5 NTU
Free Chlorine (continuous) ..... 0.5 ppm (mg/l)
TOC ..... < 15 ppm (mg/l)
COD ..... < 50 ppm (mg/l) as O_2
Iron ..... < 0.3 ppm (mg/l)
Manganese, Aluminum ..... < 0.1 ppm (mg/l)
H2S ..... < 0.1 ppm (mg/l)

allowable intermittent levels:
SDI (5 min. test) 15
Turbidity ..... 2.0 NTU
Free Chlorine ..... 30 mg/l

material of construction

Welded Frame ..... Painted Carbon Steel
Dilute and Concentrate Piping ..... Sch. 80 PVC
Flanges ..... ANSI
Concentrate Pump ..... Single-stage Centrifugal
Rectifier ..... NEMA 3R
Control Panel ..... NEMA 4

quality assurance

Certification ..... UL
Facility ..... ISO 9001:2000

EDR 2020 2 & 4 line standard systems

MODEL	2020-2L-2S	2020-2L-3S	2020-4L-2S	2020-4L-3S
Flow Rates				
Product Flow Nominal	280 gpm 63.6 m^3/h	260 gpm 59.1 m^3/h	560 gpm 127.2 m^3/h	520 gpm 118.2 m^3/h
Product Flow Range	165 to 325 gpm 37.5 to 73.8 m^3/h	165 to 270 gpm 37.5 to 61.3 m^3/h	325 to 655 gpm 73.8 to 148.8 m^3/h	325 to 545 gpm 73.8 to 123.8 m^3/h
Concentrate Outlet Flow	Depends on recovery and product			
Electrode Outlet Flow	2.2 gpm 8.3 lpm	2.5 gpm 9.5 lpm	4.3 gpm 16.3 lpm	5.0 gpm 19 lpm
General Information				
Number of Stacks	4	6	8	12
Number of Lines	2	2	4	4
Number of Stages	2	3	2	3
Type of Stack	MK-IV-2	MK-IV-2	MK-IV-2	MK-IV-2
Dimensions				
System Dimensions Width x Length	90" x 309" (2.3 x 7.9 m)	90" x 375" (2.3 x 9.5 m)	169" x 493" (4.3 x 12.5 m)	169" x 625" (4.3 x 15.9 m)
Inlet Piping	4" (10 cm)	4" (10 cm)	6" (15 cm)	6" (15 cm)
Product Outlet Piping	4" (10 cm)	4" (10 cm)	6" (15 cm)	6" (15 cm)
Off-Spec Outlet Piping	4" (10 cm)	4" (10 cm)	6" (15 cm)	6" (15 cm)
Electrode Outlet Piping	3" (8 cm)	3" (8 cm)	3" (8 cm)	3" (8 cm)
Concentrate Outlet Piping	1.5" (4 cm)	1.5" (4 cm)	2" (5 cm)	2" (5 CM)
Note: all piping sizes are provided for nominal flow rates at 85% recovery.				
Electrical				
Maximum Rectifier Output (Per Stack Basis)				
Stage 1	590VDC, 46A	590VDC, 26A	590VDC, 46A	590VDC, 26A
Stage 2	518VDC, 18A	518VDC, 14A	518VDC 18A	518VDC, 14A
Stage 3		420VDC, 7.5A		420VDC, 7.5A
Connection Requirement (Includes Feed pump, which may be supplied by others)	140 KVA	107 KVA	276 KVA	209 KVA
Typical Power consumption	2 – 4 kWh/1,000 gallons of product water			
Performance, number of stages and cell pairs, recovery and power consumption are dependent on inlet feed water quality and temperature. A Watsys projection must be completed by an authorized SUEZ Water Technologies & Solutions design representative for proper system design & for any performance guarantee to be provided.				

EDR 2020 6 & 8 line standard systems

MODEL	2020-6L-2S	2020-6L-3S	2020-8L-2S	2020-8L-3S
Flow Rates				
Product Flow Nominal	840 gpm 190.8 m^3/h	780 gpm 177.2 m^3/h	1120 gpm 254.4 m^3/h	1040 gpm 236.2 m^3/h
Product Flow Range	485 to 985 gpm 110.2 to 223.7 m^3/h	485 to 820 gpm 110.2 to 186.2 m^3/h	645 to 1315 gpm 146.5 to 298.7 m^3/h	645 to 1090 gpm 146.5 to 247.6 m^3/h
Concentrate Outlet Flow	Depends on recovery and product flow rate			
Electrode Outlet Flow	6.5 gpm 25 lpm	7.5 gpm 28 lpm	8.7 gpm 33 lpm	10 gpm 38 lpm
General Information				
Number of Stacks	12	18	16	24
Number of Lines	6	6	8	8
Number of Stages	2	3	2	3
Type of Stack	MK-IV-2	MK-IV-2	MK-IV-2	MK-IV-2
Dimensions				
System Dimensions Width x Length	270" x 493" (6.0 x 12.5 m)	270" x 625" (6.0 x 15.9 m)	270" x 493" (6.0 x 12.5 m)	270" x 625" (6.0 x 15.9 m)
Inlet Piping1	8" (20 cm)	8" (20 cm)	8" (20 cm)	8" (20 cm)
Product Outlet Piping	8" (20 cm)	8" (20 cm)	8" (20 cm)	8" (20 cm)
Off-Spec Outlet Piping	8" (20 cm)	8" (20 cm)	8" (20 cm)	8" (20 cm)
Electrode Outlet Piping	3" (8 cm)	3" (8 cm)	3" (8 cm)	3" (8 cm)
Concentrate Outlet Piping	3" (8 cm)	3" (8 cm)	3" (8 cm)	3" (8 cm)
Note: all piping sizes are provided for nominal flow rates at 85% recovery.				
Electrical				
Maximum Rectifier Output (Per Stack Basis)				
Stage 1	590VDC, 46A	590VDC, 26A	590VDC, 46A	590VDC, 26A
Stage 2	518VDC, 18A	518VDC, 14A	518VDC 18A	518VDC, 14A
Stage 3		420VDC, 7.5A		420VDC, 7.5A
Connection Requirement (Includes Feed pump, which may be supplied by others)	380 KVA	285 KVA	542 KVA	397 KVA
Typical Power consumption	2 – 4 kWh/1,000 gallons of product water			
Performance, number of stages and cell pairs, recovery and power consumption are dependent on inlet feed water quality and temperature. A Watsys projection must be completed by an authorized SUEZ Water Technologies & Solutions design representative for proper system design & for any performance guarantee to be provided.				