

# PRO E-Cell\* Series

## Integrated RO/EDI Machines 50 to 200 gpm 60 Hz



### Features

- RO and EDI mounted on common skid
- PRO E-Cell\* 50 and 100 are 2 pass RO designs
- PRO E-Cell 150 and 200 are 1 pass RO designs
- RO Pump VFD(s) and EDI DC Drive mounted on skid
- RO permeate flush sequence on shutdown and divert to drain on startup
- Allen Bradley control system with Compact Logix PLC and PanelView Plus 1000 interface
- UL/cUL Electrical Panel

### Instrumentation

Flow Meters.....RO Permeate, RO Concentrate  
EDI Product, EDI Concentrate, EDI Electrode  
Pressure Gauge..... Pre & Post Cartridge Filter  
Primary, Final, Interstage, RO Permeate,  
RO Concentrate, RO Pump Discharge,  
Pressure Switch.....RO Feed, RO Permeate  
RO Concentrate  
Pressure Transmitter..... RO Primary, RO Final  
RO Permeate, EDI Product, EDI Concentrate,  
EDI Electrode, EDI Dilute Feed  
pH Meter..... RO Feed pass 1  
(also pass 2 for 50-100 model)  
ORP (Optional)..... RO Feed pass1

### Accessories

- PRO Multi-Media filters
- PRO Activated Carbon and Softeners
- PRO Clean-in-Place units
- PRO Chemical Feed Systems
- Transfer Pumps and Storage Tanks

### Operating Parameters

Design Recovery RO1 ..... 75% Pass 1; 85% Pass 2  
Design Recovery EDI ..... 90-95%  
Design Temperature ..... 60°F (16°C)  
Operating Temperature Range ..... 40-85°F (5-29°C)  
System Inlet Pressure ..... 30-60 PSI (2-4 Bar)  
<sup>1</sup>Recovery Rate can vary +/- 5%

### Materials of Construction

High-pressure piping ..... 316 Stainless Steel, Sch. 10  
Low-pressure RO & EDI piping ..... PVC, Sch. 80  
Frame ..... Epoxy-coated carbon steel  
Enclosure ..... Nema 4 carbon steel  
Clamps/fittings ..... Zinc-plated

### Membrane Elements and Housings

Model (50-100) GE ..... AK-400  
Model (150-200) ..... GE PRO-RO-400-HR-WT  
Average membrane flux (50-100)..... 12 GFD pass 1  
21 GFD pass 2  
Average membrane flux (150-200)..... 14 GFD  
Membrane rejection..... 99.0 to 99.5%  
Housing material ..... Fiberglass  
Housing Pressure Rating ..... 450 psi



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## EDI Stacks

Model ..... GE E-Cell MK-3  
 Stack product flow rate, nom..... 16.7 gpm (3.8 m<sup>3</sup>/hr)  
 Performance..... 16 MOhm-cm  
 Silica Removal..... <10 ppb

## Cartridge Filtration

Housing model..... GE HX-0740-80-V316  
 Housing material ..... 316 Stainless Steel  
 Cartridge filter ..... 1-μ nom, ROSave.Zs\*,  
 RO.Zs01-40XK

## PRO E-Cell Models

MODEL	PRO E-Cell 50DP	PRO E-Cell 100DP	PRO E-Cell 150	PRO E-Cell 200
RO Permeate Rate <sup>2</sup> :	52.5 gpm (11.9 m <sup>3</sup> /hr)	105 gpm (23.9 m <sup>3</sup> /hr)	158 gpm (36 m <sup>3</sup> /hr)	210 gpm (48 m <sup>3</sup> /hr)
RO Concentrate Rate:	21 gpm (4.8 m <sup>3</sup> /hr)	42 gpm (9.5 m <sup>3</sup> /hr)	52.7 gpm (12 m <sup>3</sup> /hr)	70 gpm (16 m <sup>3</sup> /hr)
Concentrate Recycle:	10 gpm (2.3 m <sup>3</sup> /hr)	10 gpm (2.3 m <sup>3</sup> /hr)	NA	NA
RO Feed Rate:	74 gpm (16.8 m <sup>3</sup> /hr)	147 gpm (33.4 m <sup>3</sup> /hr)	211 gpm (48 m <sup>3</sup> /hr)	280 gpm (63.6 m <sup>3</sup> /hr)
EDI Product Rate:	50 gpm (11.4 m <sup>3</sup> /hr)	100 gpm (22.7 m <sup>3</sup> /hr)	150 gpm (34 m <sup>3</sup> /hr)	200 gpm (45 m <sup>3</sup> /hr)
EDI Concentrate Rate (max):	1.6 gpm (0.36 m <sup>3</sup> /hr)	3.2 gpm (0.73 m <sup>3</sup> /hr)	4.7 gpm (1.1 m <sup>3</sup> /hr)	6.3 gpm (1.4 m <sup>3</sup> /hr)
EDI Electrode Rate:	1 gpm (0.23 m <sup>3</sup> /hr)	2.1 gpm (0.48 m <sup>3</sup> /hr)	3.2 gpm (0.73 m <sup>3</sup> /hr)	4.2 gpm (0.95 m <sup>3</sup> /hr)
Pumps and Motors				
Model:	SS8512 Pass 1 SS8512 Pass 2	SS24007 Pass 1 SS12509 Pass 2	SS24009	AS40409
Manufacturer:	GE/Tonkaflo*	GE/Tonkaflo	GE/Tonkaflo	GE/Tonkaflo
Quantity:	2	2	1	1
Motor Power and type:	20HP (15 KW) TEFC Pass 1	50 Hp (37 KW) TEFC Pass 1 30 Hp (22.5 KW) TEFC Pass 2	60 Hp (45 KW) TEFC	75 Hp (56.3 KW) TEFC
Installed Power:	20HP (15 KW) TEFC Pass 2 30 KW	60 KW	45 KW	56.3 KW
Membrane Elements and Housings				
Membrane Quantity:	20 Pass 1 ; 12 Pass 2	36 Pass 1 ; 18 Pass 2	42	54
Memb. Housing Style:	4 element long, 4 port	6 element long, 4 port	6 element long, 4 port	6 element long, 4 port
Banking Arrangement:	3→2 Pass 1 ; 2→1 Pass 2	4→2 Pass 1 ; 2→1 Pass 2	5→2	6→3
EDI Stacks				
Stack Model :	GE E-Cell MK-3	GE E-Cell MK-3	GE E-Cell MK-3	GE E-Cell MK-3
Stack Quantity:	3	6	9	12
Power (DC drive, 300 VDC):	16 A max	31.2 A max	46.8 A max	62.4 A max
Cartridge Filtration				
Housing Model:	HX-0740-30-V-316	HX-0740-30-V-316	HX-0740-30-V-316	HX-0740-30-V-316
Housing Quantity:	1	2	2	2
Cartridge Filter Model:	ROSave.Zs, RO.Zs01-40XK	ROSave.Zs, RO.Zs01-40XK	ROSave.Zs, RO.Zs01-40XK	ROSave.Zs, RO.Zs01-40XK
Cartridge Filter Length:	40-inch (120 cm)	40-inch (102 cm)	40-inch (102 cm)	40-inch (102 cm)
Cartridge Filter Qty:	7	14	14	14
Installation and Utility Requirements				
RO Inlet:	3" ANSI flange	3" ANSI flange	4" ANSI flange	4" ANSI flange
RO Reject to Drain:	1.5" ANSI flange	2" ANSI flange	1.5" ANSI flange	2" ANSI flange
RO Product Dump:	1.5" ANSI flange	3" ANSI flange	3" ANSI flange	4" ANSI flange
EDI Product Outlet:	1.5" ANSI flange	3" ANSI flange	3" ANSI flange	4" ANSI flange
EDI Product Dump:	1.5" ANSI flange	3" ANSI flange	3" ANSI flange	4" ANSI flange
EDI Concentrate Outlet:	0.5" ANSI flange	0.5" ANSI flange	0.5" ANSI flange	0.5" ANSI flange
EDI Electrode Outlet:	0.5" ANSI flange	0.5" ANSI flange	0.5" ANSI flange	0.5" ANSI flange
Inlet Water Pressure:	30-60 psig	30-60 psig	30-60 psig	30-60 psig
Air Pressure:	80 psi, oil-free	80 psi, oil-free	80 psi, oil-free	80 psi, oil-free
Drain to be Sized for:	95 gpm (22 m <sup>3</sup> /hr)	150 gpm (35 m <sup>3</sup> /hr)	220 gpm (50 m <sup>3</sup> /hr)	280 gpm (64 m <sup>3</sup> /hr)
Power:	460 VAC, 3-phase, 60Hz	460 VAC, 3-phase, 60Hz	460 VAC, 3-phase, 60Hz	460 VAC, 3-phase, 60Hz
Control Circuit	120 VAC, 1-phase, 60Hz	120 VAC, 1-phase, 60Hz	120 VAC, 1-phase, 60Hz	120 VAC, 1-phase, 60Hz
Skid Dimensions and Weights				
Height:	96" (244 cm)	96" (244 cm)	90" (229 cm)	90" (229 cm)
Width:	72" (183 cm)	58" (147 cm)	80" (203 cm)	80" (203 cm)
Length:	197" (500 cm)	277" (704 cm)	282" (716 cm)	282" (716 cm)
Shipping Weight :	9050 lb. (4150 kg)	13650 lb. (6250 kg)	12350 lb. (5650 kg)	14600 lb. (6650 kg)
Operating Weight:	11150 lb. (5100 kg)	17050 lb. (7750 kg)	15200 lb. (6950 kg)	18250 lb. (8300 kg)

<sup>2</sup> Maximum permeate rate listed at design temperature. Permeate rate can be reduced by up to 15%.

