

E-Series L

Large Reverse Osmosis Machines, 3 to 23 m³/hr



Figure 1: E4H-CE, 3 to 7 cubic meters per hour



Figure 2: E8-CE, 9 to 23 cubic meters per hour

GE Water & Process Technologies has more than 30 years experience in designing and building high quality reverse osmosis systems. Our E-series RO machines (Figures 1 and 2) are designed for durable operation, high quality product water production, easy installation and straightforward control.

General Properties

Typical Applications

- Boiler feed water
- Ion exchange pre-treatment
- Process ingredient water
- Safe drinking water

Features

- Compact design
- Energy saving Desal membrane elements
- Micron rated pre-filter
- Automatic inlet shut-off valve
- Permeate purge on shut down (option to disable)
- Emergency stop and motor thermal protection

Instrumentation and Controls

- PLC based control system
- Single-source power connection and disconnect
- Universal transformer capable of accepting different voltages
- Permeate and concentrate flow meters
- Digital permeate conductivity meter
- Digital pH meter
- ALARMS: Low inlet pressure, motor starter overload, high temperature (38°C), high permeate conductivity, High permeate pressure, high pH
- Remote machine on/off capability
- Pre-filter, post-filter, pump discharge, primary, and final pressure gauges
- Clean frame design discourages dust or water accumulation

Table 1: Operating Parameters

| | |
|------------------------|-------------|
| Operating Pressure | 6.9-15 bars |
| Maximum Recovery | 75% |
| Nominal Rejection | 95-98% |
| Operating Temperature | 1-40 °C |
| Minimum Inlet Pressure | 2 bars |
| Design Temperature* | 25 °C |

* Varying the operating temperature will affect machine productivity



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Table 2: Materials of Construction

| | |
|--------------------|---------------------------------|
| Frame | Painted Carbon Steel |
| Membrane Elements | Desal AK8040F Desal AK4040FM |
| Membrane Housing | Stainless Steel |
| Low Pressure Pipe | Schedule 80 PVC |
| High Pressure Pipe | Stainless Steel |
| Control Enclosure | IEC 66 |
| Motor Starters | IEC 66 |

Table 3: Pump and Motor

| | |
|-------------------|------------------------------------|
| Pump Manufacturer | Tonkaflo |
| Pump Type | Multi-stage, centrifugal |
| Materials | SS shell/housing, Noryl* internals |
| Castings | SS inlet/discharge |
| Motor | 3-phase, TEFC, 400 VAC, 50 Hz |

Table 4: E-Series CE Specifications 50 Hz

| Model | E4H-CE-3 | E4H-CE-5 | E4H-CE-7 | E8-CE-9 | E8-CE-14 | E8-CE-23 |
|--------------------------------------|------------|------------|------------|----------------|----------------|----------------|
| Part Number | 1232267 | 1232268 | 1232269 | 1232259 | 1232260 | 1232261 |
| Flow Specifications | | | | | | |
| Recovery Range: | 50-75% | 50-75% | 50-75% | 66-75% | 66-75% | 66-75% |
| Permeate Rate: m ³ /h | 3 | 5 | 7 | 9 | 14 | 23 |
| Concentrate Rate: m ³ /h | 3-1 | 5-2 | 7-3 | 5-3 | 7-5 | 12-8 |
| Pump and Motor | | | | | | |
| RO Pump Model | SS2823G | SS5512D | SS8512D | SS8512D | SS12509KC | SS24006KC |
| RO Motor: KW (HP) | 3.7 (5) | 7.4 (10) | 11.2 (15) | 11.2 (15) | 15 (20) | 18.6 (25) |
| Membrane Elements and Filters | | | | | | |
| Membrane Quantity | 9 | 15 | 24 | 8 | 12 | 20 |
| Membrane Type | AK4040FM | AK4040FM | AK4040FM | AK8040F | AK8040F | AK8040F |
| Array | 2-1 | 3-2 | 5-3 | 1-1-1 | 2-1-1 | 3-2 |
| Pre-Filter Quantity | 2 | 2 | 2 | 7 | 7 | 7 |
| Pre-Filter Model | LD05-20 | LD05-20 | LD05-20 | RO.Zs 01-20-XK | RO.Zs 01-30-XK | RO.Zs 01-40-XK |
| Connections | | | | | | |
| Inlet: mm | DN 40 | DN 40 | DN 40 | DN 50 | DN 50 | DN 80 |
| Permeate: mm | DN 25 | DN 25 | DN 25 | DN 50 | DN 50 | DN 50 |
| Concentrate: mm | DN 25 | DN 25 | DN 25 | DN 40 | DN 40 | DN 40 |
| Dimensions & Weights | | | | | | |
| Height: mm (inch) | 1702 (67) | 1702 (67) | 1702 (67) | 1981 (78) | 1981 (78) | 1981 (78) |
| Width: mm (inch) | 3327 (131) | 3327 (131) | 3327 (131) | 4064 (160) | 4064 (160) | 4064 (160) |
| Depth: mm (inch) | 914 (36) | 914 (36) | 914 (36) | 1168 (46) | 1168 (46) | 1168 (46) |
| Shipping Weight Estimate: kg (lb) | 500 (1100) | 700 (1500) | 900 (2000) | 1200 (2600) | 1400 (3100) | 1600 (3500) |

Optional Features (Consult price list for more information)

- Cold Water (CW) configuration
- High Rejection (HR) Membranes
- Fiberglass Reinforced Plastic (FRP) membrane element housings
- Clean In Place (CIP) System