

Vantage™ M84 Reverse Osmosis Units: The Clear Advantage in Membrane Systems

Vantage™ M84 units are packaged, single-pass, 8-inch reverse osmosis units designed for a variety of industrial applications requiring high quality equipment with a fast delivery and competitive price. These pre-engineered, pre-assembled and factory tested units minimize installation and start-up time. With simple utility connections and easy to set up controls, the unit is ready for quick on-line service.

The Vantage™ M84 unit comes in four models: the Economy (E), the Plus (P), the Deluxe (D), and the Selects (S)

- Economy (M84E) – Controlled by Microprocessor
- Plus (M84P) – Controlled by Siemens PLC and user friendly touch screen Human Machine Interface (HMI)
- Deluxe (M84D) – M84P controls plus Variable Frequency Drive (VFD) for flow control and Clean In Place (CIP) function, and pH/ORP monitoring
- Select (M84S) – A stainless steel “Deluxe” package including stainless steel frame, piping and control panel

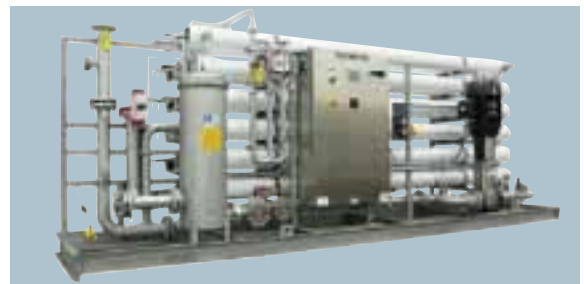
The Deluxe unit features an “On-Board” integrated cleaning system (CIP) initiated through the HMI. The CIP system includes plumbing to the on-skid RO cartridge filter housing and VFD controlled pump along with the factory supplied valves, hoses, and a polyethylene CIP tank (off-skid).

Vantage™ M84 Unit Benefits

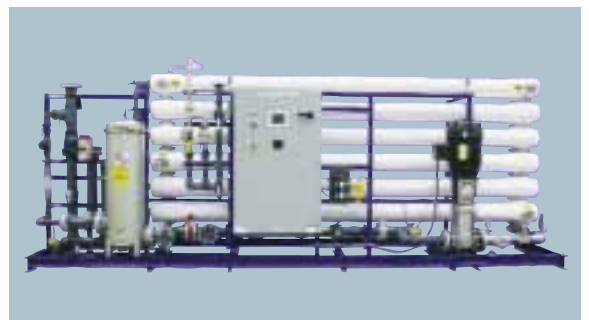
- Compact footprint saves valuable floor space
- Quick equipment delivery keeps project moving fast
- Clean in place connections maximize system serviceability
- Comprehensive factory testing performed at our ISO9001 certified facility
- FilmTec’s iLEC® interlocking endcaps, an innovative element coupling technology that significantly enhances the performance of RO systems

Standard M84 Unit Features

- Choice of brackish water or low energy TFC membranes (400 ft²) to ensure optimum water quality
- High pressure 316 stainless steel vertical multistage feed pump
- ASME Code FRP, RO pressure vessels with ASME pressure relief protection
- PVC low pressure feed, product and reject piping (316L SS for Select package), 316L SS high pressure piping (all packages)
- Urethane coated carbon steel frame (304 Stainless steel for Select) rated for Seismic Zone 4 anchorage
- Dry contacts are provided for chemical feed, pretreatment equipment, storage tank levels, and pressure switches
- All alarm and shut down conditions are indicated on the control interface



Stainless Steel Select package



Specifications

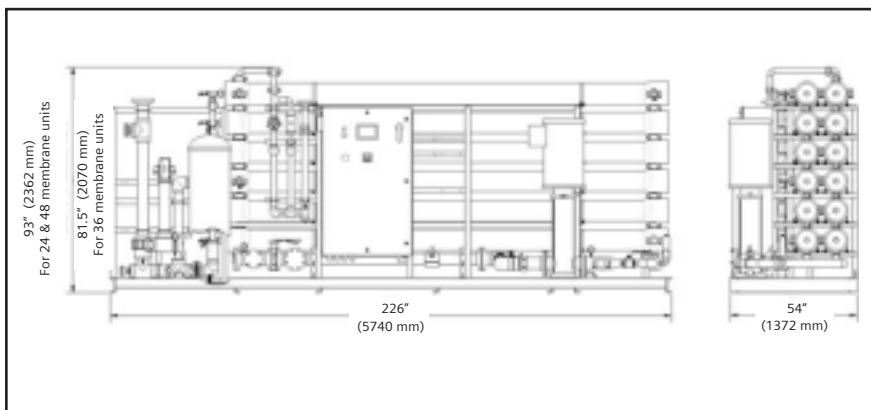
Model No**	Flow Rate Specifications GPM Nominal (m ³ /hr)			Vessel Staging	Membrane/Vessel	Membrane Quantity	Customer Connection Specifications			Utility Requirements***			Approx. Shipping Weight lb (kg)
	Product*	Feed	Reject				Feed	Product	Reject	High Voltage Service	High Voltage FLA	Pump HP	
M84R024	107(24.3)	143(32.5)	36(8.7)	3:2:1	4	24	3"	3"	2"	480 VAC 3 ph	36	25	5400 (2449)
M84R036	160(36.3)	215(48.8)	53(12.0)	4:3:2	4	36	4"	4"	2"	480 VAC 3 ph	67	50	5750 (2608)
M84R048	214(48.6)	285(64.7)	71(16.1)	6:4:2	4	48	4"	4"	2"	480 VAC 3 ph	67	50	6100 (2767)

*Product flow rates are based on a flux rate of 16 GFD and equipment design parameters listed below. Product flow rates may not be appropriate for other feed waters.

**The 8 designates 8" housing, the 4 designates 4 elements in length, and the -NXXX designates the number or membranes.

***Additional voltage options are available. Refer to equipment specifications.

Dimensions



Design Parameters:

Feed Water Source	Well or Softened
Maximum Turbidity	1 NTU
Maximum Free Chlorine and/or chloramine	<0.1 PPM
Feed Water Fouling Index	Silt Density Index (SDI) <3
Design Feed Water Temperature	65°F (18.3°C)
Inlet Pressure Requirements	30-60 PSIG
Product Pressure Available	10 PSIG
System Recovery (Nominal)	75%
Performance Basis	A specific computer projection must be run for each individual application.

*Lower temperature may require larger booster pump or use of low energy membranes.

If any of the feed water parameters are not within the limits given, contact Siemens Water Technologies Technical Support.

Model Features

Description	M84E (Economy)	M84P (Plus)	M84D (Deluxe/Select)
Controls	Microprocessor	Siemens PLC	Siemens PLC
HMI	No	6" Color Touch Screen	6" Color Touch Screen
Inputs/Outputs	Discrete 14 point (8 input/ 6 output)	Discrete 24 point (14 input/ 10 output)	Discrete 24 point (14 input/ 10 output)
I/O Expansion Capability	No	Yes	Yes
Communications	RS232/ Optional Modem	PLC-RS485 and Ethernet HMI-Ethernet	PLC-RS485 and Ethernet HMI-Ethernet
Flow Monitoring	Paddlewheel to Signet flow monitor (feed/reject)	Paddlewheel to PLC (feed/reject)	Paddlewheel to PLC (feed/reject)
Conductivity	Integral to Controller	Signet Multiparameter	Signet Multiparameter
Auto-Flush (Standby)	Yes	Yes	Yes
Visual/Audible Alarm	Yes	Yes	Yes
Single Power Drop (460/575 VAC)	Yes	Yes	Yes
304LSS Pre-Filter Housing	Yes	Yes	Yes
Product Divert Kit	Yes	Yes	Yes
Variable Frequency Drive (VFD) Pump	No	No	Yes
On-Board CIP (Tank off-skid)	No	No	Yes
ORP/pH with alarms	Optional	Optional	Yes
Low Energy Membranes (Cold Water)	Optional	Optional	Optional
Product Blend Kit	Optional	Optional	Optional

*Additional communication modules and remote monitoring capabilities available upon request.

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