

M1-Series Reverse Osmosis Systems

M1-Series Reverse Osmosis Systems are designed for overall superior performance, high recovery rates, minimal energy consumption and offer great savings with low maintenance and operation costs.

M1-Series Reverse Osmosis Systems

feature a new, innovative and expandable design which utilizes fewer fittings and connections. These systems feature only the highest quality components, including a programmable computer controller with many built-in standard features, a stainless steel booster pump for high performance and corrosion resistance, ultra low energy membranes and fiberglass membrane housings for enhanced performance and durability.



M1-12240
Reverse Osmosis System

M1-Series Reverse Osmosis Systems have been engineered for capacities ranging from 12000 – 36000 gallons per day.

Benefits

- Fully Equipped and Customizable
- Expandable and Skid Mounted
- Components Easily Accessible
- Pre-Plumbed, Wired and Assembled
- Individually Tested and Preserved
- Low Operation and Maintenance Costs
- Easy Maintenance and Servicing
- 20% Less Energy
- CE Compliant
- 1-Year Limited Warranty
- Made in the U.S.A.

Engineered Water Treatment Solutions

M1-Series Reverse Osmosis Systems

Standard Features

Models – M1-4240, M1-6240, M1-8240

- S150 Computer Controller
 - LCD Backlit Display
 - Pre-Treatment Lockout
 - Tank Level Input
 - Low Pressure Monitoring and Alarm
 - Hour Meter
 - Feed Flush

Models – M1-10240, M1-12240

- S200 Computer Controller
 - LCD Backlit Display
 - Pre-Treatment Lockout
 - Tank Level Input
 - LED Low Pressure Monitoring and Alarm
 - Hour Meter
 - Dual TDS Monitoring
 - Feed Flush
 - Digital Flow Meters x 3

- AXEON® Permeate and Concentrate Flow Meters
- AXEON® Concentrate Recycle Flow Meter
- Stainless Steel Concentrate Globe Valve
- AXEON® Pre-Filter 0-100 psi Panel Mounted Glycerin Filled Gauges
- AXEON® Pump Discharge and Concentrate 0-300 psi Panel Mounted Glycerin Filled Gauges
- AXEON® Bag Filter Housing with Stainless Steel Stand
- AXEON® 5 Micron Filter Bag



**M1-12240
Reverse Osmosis System**

- AXEON® HF5 Ultra Low Energy Membrane Elements
- AXEON® Fiberglass Membrane Housings – 450 psi
- Vertical Multi-Stage Stainless Steel Booster Pump
- Feed Solenoid Valve

- Feed Low Pressure Switch
- Clean-In-Place (CIP) Ports
- Victaulic® Style Fittings
- Permeate Sample Ports
- White Powder Coated Aluminum Frame
- Wooden Crate

Options and Upgrades

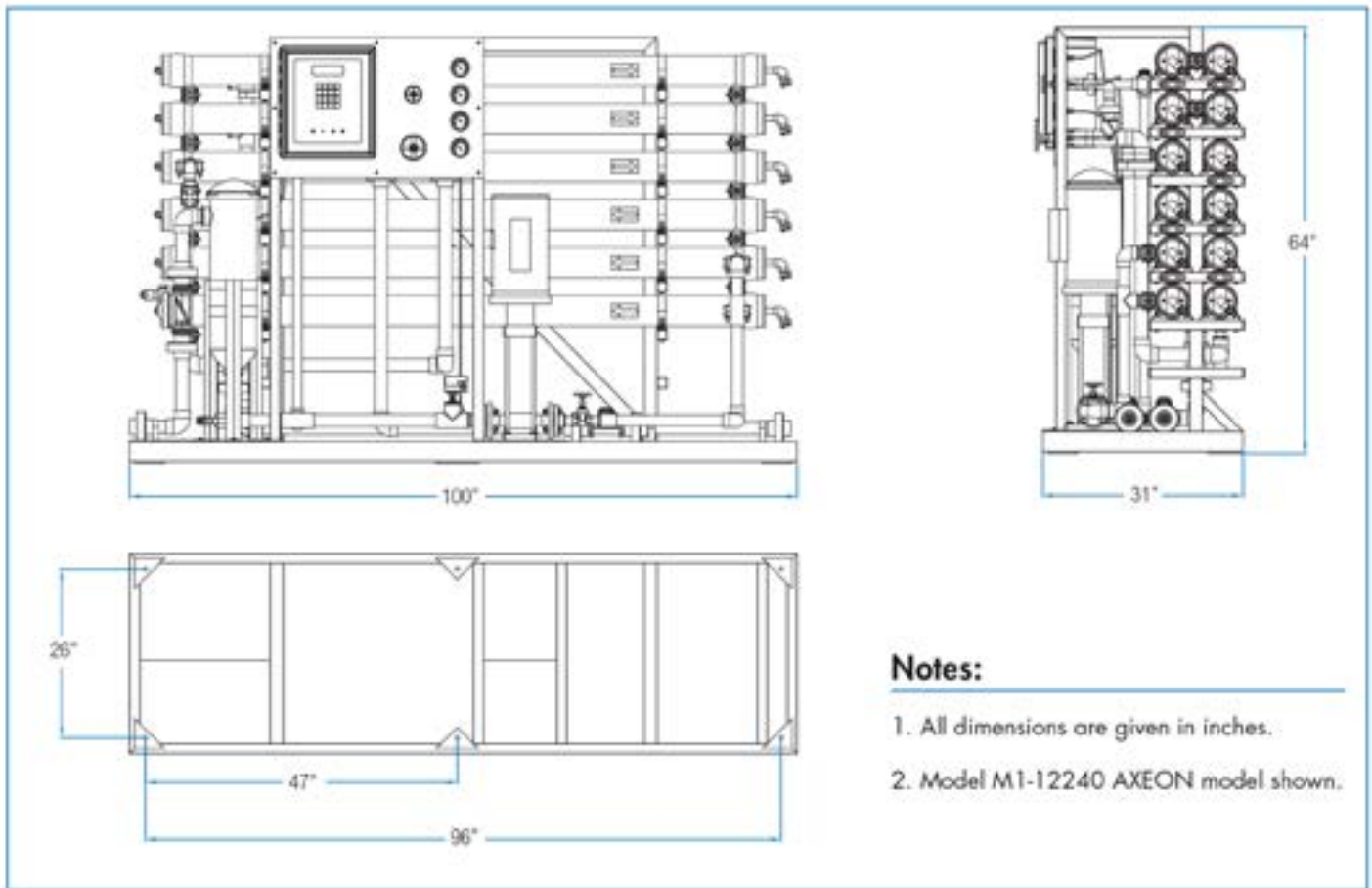
- S150 Expander Board***
- S150 Dual TDS Board***
- S200 Controller Feed TDS Sensor
- Variable Frequency Drive††
- AXEON® NF3 Nanofiltration Membrane Elements
- AXEON® NF4 Nanofiltration Membrane Elements
- Filmtec® LCLE Membrane Elements
- Filmtec® LCHR Membrane Elements
- Hanna® BL 981411 pH Meter***
- Hanna® BL 982411 ORP Meter***
- S200 pH Monitoring
- S200 ORP Monitoring
- Chemical Pump Outlet
- Blending Valve
- High Pressure Tank Switch
- Pump Pressure Relief Valve†
- Permeate Divert Valve
- Caster Wheels

†† Standard for all 50Hz Systems

*** Only available on the following models: M1-4240, M1-6240, M1-8240

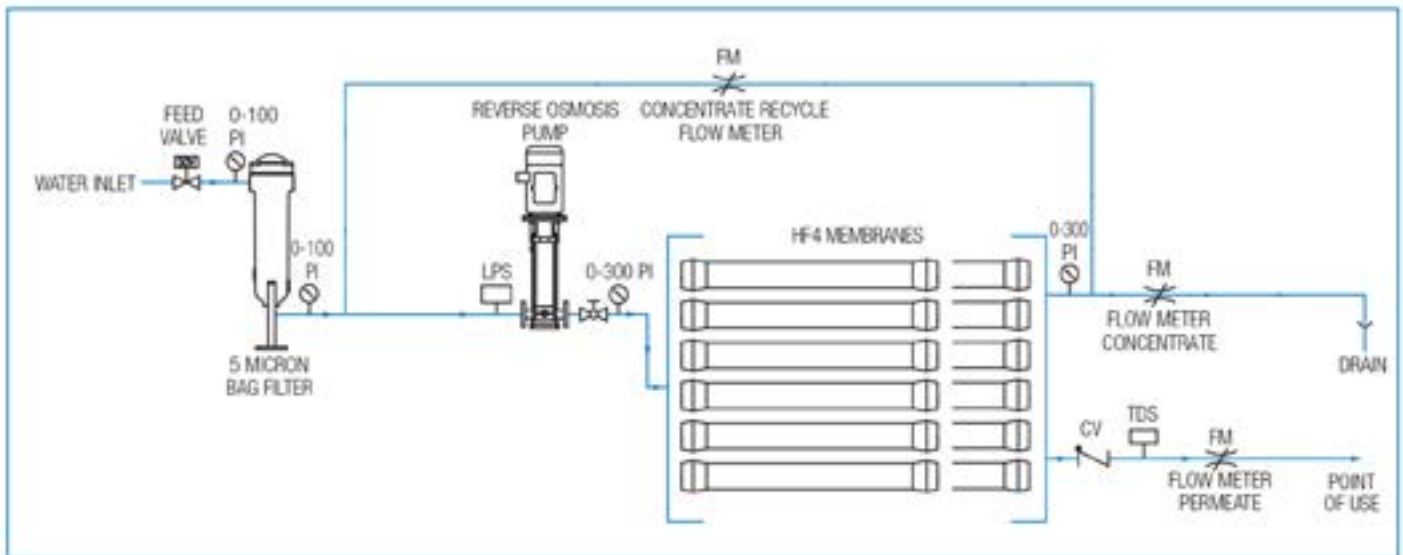
AXEON Naming Matrix

| | M1 | 12 | 2 | 40 |
|--|----|----|---|----|
| M-SERIES MODEL | | | | |
| M1 Top Water Model | | | | |
| HOUSING QUANTITY DESIGNATION | | | | |
| 4 4 Vessel | | | | |
| 6 6 Vessel | | | | |
| 8 8 Vessel | | | | |
| 10 10 Vessel | | | | |
| 12 12 Vessel | | | | |
| MEMBRANE QUANTITY PER HOUSING † | | | | |
| 2 2 Membranes | | | | |
| 4.0 INCH MEMBRANE DIAMETER | | | | |



Notes:

1. All dimensions are given in inches.
2. Model M1-12240 AXEON model shown.



Array Specifications

| Model | Vessel Array | Vessel Size | Vessel Quantity | Membrane Size | Membrane Quantity |
|----------|--------------|-------------|-----------------|---------------|-------------------|
| M1-4240 | 2:2 | 4060 | 4 | 4040 | 8 |
| M1-6240 | 2:2:2 | 4060 | 6 | 4040 | 12 |
| M1-8240 | 3:3:2 | 4060 | 8 | 4040 | 16 |
| M1-10240 | 3:3:2:2 | 4060 | 10 | 4040 | 20 |
| M1-12240 | 3:3:2:2:2 | 4060 | 12 | 4040 | 24 |

M1-Series Reverse Osmosis Systems

Specifications

| Models | M1-4240 | M1-6240 | M1-8240 | M1-10240 | M1-12240 |
|---|---|---|---|---|---|
| Design | | | | | |
| Configuration | Single Pass | Single Pass | Single Pass | Single Pass | Single Pass |
| Feed Water Source*** | TDS<2,000 ppm | TDS<2,000 ppm | TDS<2,000 ppm | TDS<2,000 ppm | TDS<2,000 ppm |
| Standard Recovery Rate | 50-75% | 50-75% | 50-75% | 50-75% | 60-75% |
| Rejection and Flow Rates | | | | | |
| Nominal Salt Rejection % | 99 | 99 | 99 | 99 | 99 |
| Permeate Flow* gpm (lpm) | 9.3 (31.6) | 12.5 (47.3) | 16.7 (63.1) | 20.8 (78.9) | 25.0 (94.6) |
| Minimum Feed Flow gpm (lpm) | 14.3 (54.3) | 18.5 (70.00) | 22.7 (85.8) | 26.8 (101.6) | 31.0 (117.4) |
| Maximum Feed Flow gpm (lpm) | 28 (106) | 28 (106) | 42 (159) | 42 (159) | 42 (159) |
| Minimum Concentrate Flow gpm (lpm) with Recycle Based on 75% Recovery | 6.00 (22.70) | 6.00 (22.70) | 6.00 (22.70) | 6.95 (26.31) | 8.33 (31.53) |
| Connections | | | | | |
| Feed inch | 1.5" FNPT | 1.5" FNPT | 1.5" FNPT | 1.5" FNPT | 1.5" FNPT |
| Permeate inch | 1" FNPT | 1" FNPT | 1" FNPT | 1.5" FNPT | 1.5" FNPT |
| Concentrate inch | 1" FNPT | 1" FNPT | 1" FNPT | 1.5" FNPT | 1.5" FNPT |
| CIP inch | 1" FNPT | 1" FNPT | 1" FNPT | 1" FNPT | 1" FNPT |
| Membranes | | | | | |
| Membrane(s) Per Vessel | 2 | 2 | 2 | 2 | 2 |
| Membrane Quantity | 8 | 12 | 16 | 20 | 24 |
| Membrane Size | 4040 | 4040 | 4040 | 4040 | 4040 |
| Vessels | | | | | |
| Vessel Array | 2:2 | 2:2:2 | 3:3:2 | 3:3:2:2 | 3:3:2:2:2 |
| Vessel Quantity | 4 | 6 | 8 | 10 | 12 |
| Pumps | | | | | |
| Pump Type | Multi-Stage | Multi-Stage | Multi-Stage | Multi-Stage | Multi-Stage |
| Motor HP | 3 | 5 | 5 | 7.5 | 7.5 |
| RPM @ 60 Hz | 3450 | 3450 | 3450 | 3450 | 3450 |
| RPM @ 50 Hz | VFD at 60Hz | VFD at 60Hz | VFD at 60Hz | VFD at 60Hz | VFD at 60Hz |
| Electrical | | | | | |
| Standard Voltage | 220V, 60Hz, 3Ph, 9A | 220V, 60Hz, 3Ph, 9A | 220V, 60Hz, 3Ph, 13.6A | 220V, 60Hz, 3Ph, 19.2A | 220V, 60Hz, 3Ph, 19.2A |
| Voltage Options | 220V, 50Hz, 3Ph, 10.6A 460V, 60Hz, 3Ph, 5A | 220V, 50Hz, 3Ph, 10.6A 460V, 60Hz, 3Ph, 5A | 220V, 50Hz, 3Ph, 16.1A 460V, 60Hz, 3Ph, 7A | 220V, 50Hz, 3Ph, 22.9A 460V, 60Hz, 3Ph, 9.7A | 220V, 50Hz, 3Ph, 22.9A 460V, 60Hz, 3Ph, 9.7A |
| Systems Dimensions ** | | | | | |
| L x W x H inch (cm) | 31 x 100 x 64 (78 x 254 x 162) | 31 x 100 x 64 (78 x 254 x 162) | 31 x 100 x 64 (78 x 254 x 162) | 31 x 100 x 64 (78 x 254 x 162) | 31 x 100 x 64 (78 x 254 x 162) |
| Weight lb. (kg) | 1060 (481) | 1150 (520) | 1260 (572) | 1350 (612) | 1450 (658) |

* Product flow and recovery rates are based on equipment test parameters.

** Does not include operating space requirements.

*** Treatment ability of the RO system is dependent on feed water quality. Performance projections must be run for each installation.

Operating Limits

| | | | |
|--------------------------------------|------------|-------------------------------|-------|
| Maximum Feed Temperature °F (°C) | 85 (29) | Maximum Free Chlorine ppm | 0 |
| Minimum Feed Temperature °F (°C) | 40 (4.4) | Maximum TDS ppm | 2,000 |
| Maximum Ambient Temperature °F (°C) | 120 (48.9) | Maximum Hardness gpg | 0 |
| Minimum Ambient Temperature °F (°C) | 40 (4.4) | Maximum pH (Continuous) | 11 |
| Maximum Feed Pressure psi (bar) | 85 (5.9) | Minimum pH (Continuous) | 5 |
| Minimum Feed Pressure psi (bar) | 45 (3.1) | Maximum pH (Cleaning 30 Min.) | 12 |
| Maximum Operating Pressure psi (bar) | 200 (13.8) | Minimum pH (Cleaning 30 Min.) | 2 |
| Maximum SDI Rating SDI | <3 | Maximum Turbidity NTU | 1 |

Test Parameters: 550 TDS Filtered (5 Micron), De-Chlorinated, Municipal Feed Water, 65 psi (4.5 bar) Feed Pressure, 100 psi (6.89 bar) Operating Pressure, 77 Degrees F (25 Degrees C), Recovery as stated, 7.0 pH. Data taken after 60 minutes of operation.

Low temperatures and high feed water TDS levels will significantly affect the system's production capabilities. Computer projections should be run for individual applications which do not meet or exceed minimum and maximum operating limits.

Scale prevention measures must be taken to prolong membrane life.