RO250A
Reverse Osmosis System

Model No. RO250A
Part No. 7120-0500-252

Features & Benefits

- Provides standardized water quality for laboratory animals that is less dependent on a facility's location or water source.
- Prevents the introduction of water-related variables into lab animal studies.
- Helps prevent disease in laboratory animals by limiting biofilm development.
- Automatic operation minimizes labor.
- Compact size allows for easy fit in a water treatment area.
- Water production capacity up to 500 gallons/day [1893 liters/day]

Overview

The RO250A Reverse Osmosis Water Purification System is designed specifically for animal drinking water applications to reduce contaminants in the water supply. Reverse Osmosis is a purification process in which water is forced by pressure through a semipermeable membrane from a more concentrated solution to a less concentrated solution. In the system, the product water (permeate) is retained in a storage tank, while the waste water (concentrate) is sent to a drain.

The Reverse Osmosis (RO) system is custom designed and built to meet specific requirements including production capacity, storage tank capacity, distribution pump output, and posttreatment options. A microprocessor-based controller controls and monitors the system operation.

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Our Quality Management System is Certified to ISO 9001

RO250A Reverse Osmosis System

Specifications

Flow rate at pressure: 4 gpm [15 lpm] @ 45 psi
Inlet Pressure: 45 psi minimum to 85 psi
Temperature: 77°F [25°C] ideal, 40°F [4°C] min. to 85°F [30°C] max
pH: 5.8 to 11
Total Dissolved Solids: 2000 ppm maximum
Chlorine Concentration Tolerance: <0.1 ppm max
Turbidity: < 1 NTU
Iron: < 2 ppm
Silica: < 1 ppm
Manganese: < 0.05 ppm
Organics: < 1 ppm
Hardness: < 6 grains per gallon
Aluminum: < 0.05 ppm
Silt Density Index: < 5 sdi
*Local water conditions may dictate additional pretreatment to achieve specified performance.

REVERSE OSMOSIS UNIT
Epoxy powder coated frame with stainless steel (ss) floor mounted stand.
Membrane Prefilters:
5-micron filter and carbon filter: 10 in [254 mm]

Reverse Osmosis Pump:
Type: Rotary vane pump
Pump Material: Brass
Ports: 3/8 in
Built-in adjustable pressure bypass
Motor: Open drip-proof / 120 VAC, 50/60 Hz, 1 phase, 1/3 HP
*Transformer may be required for all other VAC operation.

Membrane and Housing:
Membrane: 2.5 in [64 mm] D x 21 in [533 mm] L
Polyamide Thin Film Composite (PA)
Housing: PVC with glass filled polyester end couplings

Solenoid Valve and Switches:
Solenoid Valve: Inlet, 120 VAC with manual override
Switch: Low inlet pressure
Switch: Manual on/off

Glycerin Filled Pressure Gauges:
Prefilter gauge: 0 to 160 psi [0 to 1103 kPa, 0 to 11.03 bar]
Post filter gauge: 0 to 160 psi [0 to 1103 kPa, 0 to 11.03 bar]
RO pump pressure gauge: 0 to 300 psi [0 to 2068 kPa, 0 to 20.68 bar]

Flow Meters:
Permeate: 0.2 to 2 gpm [0.76 to 7.6 lpm]
Concentrate: 0.2 to 5 gpm [0.76 to 18.9 lpm]

Piping, Tubing, Fittings, Connections:
Wetted materials (feed water): PVC piping
Wetted materials (RO water): Nylon tubing, 316 ss, PVC, polyethylene
Inlet: 3/4 in. NPT, female
Permeate outlet: 1/2 in. ss tubing
Drain: 1/2 in. ss tubing

OPERATING PARAMETERS
Product (Permeate) Output:
Two Membranes – 500 gal/day @ 77°F [1893 L/day @ 25°C], 150 psi @ 60 Hz
400 gal/day @ 77°F [1514 L/day @ 25°C], 150 psi @ 50 Hz.
Membrane Performance:
Nominal salt rejection: 98.5%; Recovery rate: 26%

RO SYSTEM COMPONENTS:
Control Panel
Enclosure: NEMA 12, 304 ss
Electrical: 120 VAC, 50/60 Hz, single phase, 1 Amp with GFI circuit required
Microprocessor-based controller

Storage and Repressurization Equipment
Storage Tank capacity: Sized to application (90 to 500 gal) [341 to 1893 L]
Purified Water Distribution Pump Skid:
Type: Centrifugal
Wetted material: 316 Passivated Stainless Steel
Motor: 208 to 240/460 VAC, 50/60 Hz, 3 phase 1.5 HP
415/460 VAC, 50/60 Hz, 3 phase 2 HP
*Transformer may be required for all other VAC operation.
Pressure Tank capacity: 34 gal max [129 L].

OPTIONAL EQUIPMENT:
Post Chlorination Treatment
Chlorine Injector Station:
Panel size: Approx. 35 in. W x 23.5 in. H [889 mm W x 597 mm H]
Panel material: 300 series 18 gauge, stainless steel
Solution tank: 35 gal [132 L], polyethylene
Flow rate: Max capacity 26 mL/min
Electrical: 120 VAC, 50/60 Hz

pH Monitor:
pH Analyzer:
Display: Digital on front of self-contained enclosure
Mounting: Wall mounted with bracket
Alarm set point for high and low pH
Range: 0 to 14 pH
Accuracy: ±0.1% of upper range limit
Electrical: 120 VAC, 50/60 Hz
pH Probe: Flat-glass electrode with double junction, gel filled reference electrode
Wetted Materials: PVDF

Conductivity Analyzer
Display: Digital on front of self contained enclosure
Mounting: Wall mounted with bracket
Range: 0 µS/cm to 100 µS/cm
Accuracy: ±0.5% of upper range limit
Alarm set point for high conductivity
Conductivity probe:
Cell factor: 0.1 cm-1
Wetted materials: Titanium and Ryton
Electrical: 120 VAC, 50/60 Hz

All specifications are subject to change without notice.

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