

For Commercial Applications

Job Name _____

Contractor _____

Job Location _____

Approval _____

Engineer _____

Contractor's P.O. No. _____

Approval _____

Representative _____

Series R48

Commercial Reverse Osmosis Systems

Flow Rates: Up to 120 gpm (453 lpm)

Watts Series R48 reverse osmosis (RO) systems are commercial grade high-pressure RO units for the reduction of total dissolved solids from water. They are designed to supply reverse osmosis quality water with production rates ranging from 40 to 120 gallons per minute (151 to 453 lpm). These units are designed for floor mount installations. Reverse osmosis is a process where high-pressure feed water is fed into a semi-permeable membrane. In the membrane, pure water is allowed to pass through the membrane material and exit as purified permeate water. Dissolved mineral salts are not allowed to pass through the membrane and become a concentrated reject stream that is sent to a drain. These RO systems use high-pressure/high-rejection membranes to achieve a minimum average NaCl ionic rejection of 99 percent.

Series R48 RO systems are a time-tested line of purifiers engineered with quality and durability in mind. This series comes with a pre-selected assortment of features, including our digital controller, for monitoring and operation. Corrosion resistant fiberglass reinforced plastic (FRP) membrane housings, inlet and outlet pre-filter pressure gauges, 316 stainless steel membrane feed water piping, low-pressure switch with programmable delayed auto restart, inputs for tank level and pretreatment interlock, conductivity meter with percent ionic rejection displayed, high-conductivity alarm output, adjustable reject recycle, permeate and reject water flow meters, reject recycle flow meter, permeate water check valve, inlet diaphragm valve, membrane feed and reject water pressure gauges, programmable auto flush, and adjustable reject valve are all standard features.

These systems are designed to feed an atmospheric storage tank for collection of the reverse osmosis water. Reverse osmosis water has a wide variety of applications including municipal water treatment, steam boiler and steam sterilizer make up, laboratory use, spot free rinsing, ice and beverage water, water for cooking, food processing, metal plating and finishing, as well as water for humidification. Reverse osmosis is also the pretreatment of choice for ion exchange type deionization (DI) systems. Using RO water as make up to a DI system reduces the exhaustion rate of the DI resin by up to 95 percent saving time, money, and chemicals associated with DI resin regeneration.

▲ WARNING

Do not use with water that is microbiologically unsafe or of unknown quality without adequate disinfection before or after the system.



Series R48

Features

- Membrane Auto Flush
- Powder coated carbon steel support frame
- Corrosion resistant 300psi FRP high-pressure membrane housings
- Pressure gauges for pre-filter inlet/outlet, pump discharge, membrane feed, and reject water pressure
- Low feed water pressure safety switch
- Digital microprocessor based controller with delayed auto restart after low pressure shut down
- Permeate Water Conductivity meter with high conductivity alarm output and percent ionic rejection displayed
- Tank level and pretreatment interlock inputs
- High-pressure/high-rejection membranes with 99% minimum average salt rejection
- Permeate, reject recycle, and reject water flow meters
- Adjustable reject and reject recycle valves
- Permeate check valve
- Automatic inlet diaphragm valve

Standards

Membranes- Certified to NSF/ANSI Std. 61

Specifications

A Series R48 reverse osmosis system shall be installed to provide reverse osmosis quality water. The RO system shall be installed after a Series HC(TA) water softener so that scale forming calcium and magnesium hardness cannot scale the RO membranes. A Series AC backwashing carbon filter shall be installed on the RO feed water line to remove chlorine and prevent membrane degradation due to chlorine attack. A Series AMZ backwashing sediment filter shall also be installed on the RO feed water line to reduce the silt density index of the water to prevent particulate fouling of the RO membranes.

The RO system shall be a high-pressure/high-rejection type unit complete with 316 stainless steel pre-filter housing and high-pressure membrane feed water piping, permeate and reject water flow meters, reject recycle water flow meter, pre-filter inlet and outlet pressure gauges, pump discharge pressure gauge, membrane feed and reject water pressure gauges, FRP membrane housings, automatic inlet diaphragm valve, low feed water pressure switch, reject and recycle valves, digital controller with conductivity meter and high-conductivity alarm output, percent ionic rejection displayed, storage tank level and pretreatment interlock inputs, multistage centrifugal high-pressure pump, and all other components necessary for proper operation. The system shall be a floor mount design. The RO permeate water shall be collected in an atmospheric storage tank with the tank level controlled by an electronic level float. The RO shall be equipped with inputs for the tank level float as well as pretreatment interlock to shut the RO system down in the event the pretreatment begins a backwash cycle. Electrical requirements are 480 volt 60 hertz three phase. A local drain is required to accept drain water from the system. The feed water pressure must not fall below 20psi. The feed water temperature must not fall below 35°F or exceed 100°F (2 - 38°C).

The system shall produce reverse osmosis quality water with 99 percent minimum average ionic rejection of total dissolved solids when operated within the manufacturer's operational specifications.

Feed Water Guidelines

pH	6 to 9
Hardness (maximum)	Less than 1 grain per gallon as CaCO ₃ (Softened) or anti scale chemical injection if not softened (contact your Watts representative)
Feed Water Pressure (minimum)	20 psi
Temperature	35 - 100°F (2 - 38°C)
Free Chlorine (maximum)	None Allowed
Iron (maximum)	Less than .1mg/L
Oil and H ₂ S	None Allowed
Turbidity	Less than 1.0 NTU
Silt Density Index	Less than 5.0 SDI

NOTICE

For all other guideline information please contact your Watts representative.

Published maximum production rates are based on a feed water of 77°F, SDI of less than 3, 2000 ppm TDS, and pH 7 with a feed pressure of 225 psi. Individual membrane productivity may vary (± 15%). May be operated on other feed waters with reduced capacity.

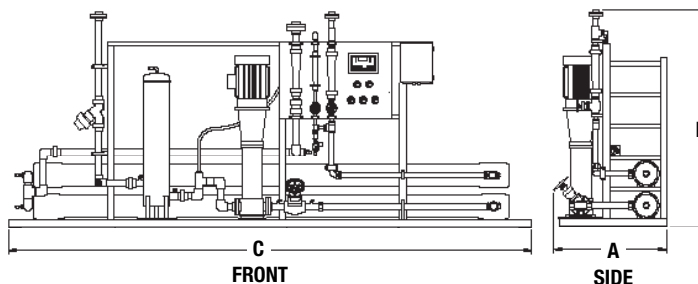
Percent rejection is based on membrane manufacturer's specifications; overall system percent rejection may be less.

NOTICE

The information contained herein is not intended to replace the full product installation and safety information available or the experience of a trained product installer. You are required to thoroughly read all installation instructions and product safety information before beginning the installation of this product.



Dimensions - Weights



MODEL NO.	DIMENSIONS						WEIGHTS	
	A		B		C		lbs	kgs
	in.	mm	in.	mm	in.	mm		
R48-08-3131100	43	1092	80	2032	196	4978	2500	1136
R48-12-3131100	43	1092	80	2032	196	4978	2800	1273
R48-16-3131100	43	1092	80	2032	196	4978	3200	1455
R48-20-3131100	43	1092	80	2032	196	4978	3500	1591
R48-24-3231100	43	1092	80	2032	196	4978	3800	1727

Performance

Maximum Productivity (gallons per minute)	40	60	80	100	120
Quality (typical membrane percent rejection)	99%				
Recovery (adjustable)	65% - 75%				
Membrane Size	8" x 40"				
Membrane Array (four elements per vessel)	1:1	2:1	2:2	3:2	3:2:1
Prefilter (system ships with five micron cartridges)	7 round x 40"				
Feed Water Connection	2" Flange	2.5" Flange	3" Flange		
Product Water Connection	2" Flange		2.5" Flange		
Reject Water Connection	1.5" Flange				
Feed Water Required (GPM at 65% recovery)	62	93	123	154	185
Minimum Feed Water Pressure	20 PSIG				
Drain Required (maximum)	62	93	123	154	185
460 VAC, 3-phase, 60Hz (other voltages available)	25 amps	30 amps	35 amps	40 amps	
Motor Horse Power (TEFC Motor)	15	20	25	30	
Dimensions W x D x H (approximate)	196" x 43" x 80"				
Shipping Weight (estimated pounds)	2500	2800	3200	3500	3800

Ordering Information

Model No.	Description
R48-08-3131100	40 GPM Reverse Osmosis System with Micro Processor Controller and Auto Flush
R48-12-3131100	60 GPM Reverse Osmosis System with Micro Processor Controller and Auto Flush
R48-16-3131100	80 GPM Reverse Osmosis System with Micro Processor Controller and Auto Flush
R48-20-3131100	100 GPM Reverse Osmosis System with Micro Processor Controller and Auto Flush
R48-24-3231100	120 GPM Reverse Osmosis System with Micro Processor Controller and Auto Flush

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