

WATEX WRO400 PLUS

reverse osmosis system with clean-water reservoir

SKU WRO400PLUS · Watex Estonia OÜ

How reverse osmosis works

Reverse osmosis (RO) uses pressure to drive water through a semi-permeable membrane. Water molecules pass to the permeate side, while dissolved salts, heavy metals, organic compounds and microorganisms are retained and discharged in the concentrate stream. Depending on feed-water quality, temperature, pressure, membrane selection and system configuration, salt removal is typically 80–99.7%.

Advantages

- RO production combined with a clean-water reservoir and supply system
- Supports project-defined chemical and microbiological water quality when correctly designed and operated
- Compact plug-and-play design
- Stable performance

Applications

- Pre-treatment for high-purity water systems
- Boiler feed and cooling-tower make-up water
- Food and beverage process water
- Steam generation and humidification
- Laboratory and pharmaceutical water preparation
- Agriculture, irrigation and other industrial processes

System design

- AISI 304 stainless-steel frame
- 5 µm polypropylene cartridge pre-filter
- MANITRONICA controller
- Acrylic permeate and concentrate flow meters
- Four glycerine-filled pressure gauges
- MWG high-pressure pump and Grundfos booster pump
- Food-grade polyethylene clean-water reservoir
- PVC-U PN16 and John Guest pipework
- Two CSM RE4021-BLN membranes
- Anti-vibration mounts

Quality and performance control

- Online permeate conductivity meter, 0–499 µS/cm
- Low feed-water pressure switch
- Permeate high-pressure switch
- Pressure monitoring after pre-filter, after pump and in concentrate line
- Permeate, concentrate and recirculation flow control
- Pump-pressure regulation
- Adjustable high-conductivity alarm
- Automatic/manual flushing
- Reservoir-full float switch

Technical parameters

Parameter	Unit	WRO400 PLUS
Permeate flow	l/h	400–500
Permeate per day	l/day	9,600–12,000
Clean-water supply		3,000 l/h at 3.5 bar
Maximum RO operating pressure	bar	15
Recovery	%	65–75
Dimensions (L × W × H)	cm	139 × 65 × 200
Power consumption	kW	1.55 (0.75 + 0.80)
Feed/permeate connection	in	male ¾"
Concentrate connection	in	male ½"
Clean-water reservoir	l	1,000
Reservoir overflow	mm	32
Empty weight	kg	150
Membrane configuration		CSM RE4021-BLN × 2
Pump configuration		MWG + Grundfos SBA3-35A

Performance basis: 1,500 mg/l NaCl solution at 10 bar and 10 °C; salt rejection 99.2%; SDI < 3.
 Actual output depends on feed-water conditions.

Installation requirements

- Pre-treatment as required: sediment and iron removal, softening or antiscalant dosing, and activated carbon when free chlorine is present
- Required feed-water flow: up to 1,000 l/h
- Concentrate drain connection
- 1 × 230 V / 50 Hz / L / N / PE socket with 16 A protection
- Water temperature 0–40 °C
- Ambient temperature 0–50 °C

Optional features

- Feed-water pre-treatment
- Pre-treatment interlocks
- Clean-water reservoir and booster pump (standard WRO only)
- Remineralisation and pH adjustment
- Antiscalant dosing



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