

RO / CELL

**Reverse Osmosis
Containerized Treatment Systems**



RO/Cell

RO/Cell Containerized Water Treatment System

Reverse osmosis is a process used to filter fresh water out of brackish water sources such as well water, streams or sea water. Main principle of reverse osmosis is inversion of the naturally occurring osmosis process. Pressure is employed in order to achieve the reverse osmosis; while the water is passing through membrane, ions in the water are filtered 97-99%.



Miranda's RO / Cell containerized water treatment plants are designed to treat water 40 - 240 m³/day of either brackish, contaminated or seawater with an output of potable water.

The standard treatment process involves pre filtration (auto backwashing multimedia filters and cartridge filters), anti-scalant dosing to prevent membrane scaling, RO desalination, auto flushing and CIP systems for membrane cleaning and mineralization using Dolomite.



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SPECIFICATIONS		
	Brackish / Ground	SeaWater
pH:	6.5 – 8.5	6.5 – 8.5
TDS:	< 2000 mg/l	< 40,000 mg/l
TSS:	< 10 mg/l	< 10 mg/l
Tot. Hardness:	< 18 ppm	< 18 ppm
Design Temp.:	10 – 35 °C	
Inlet Pressure:	2 – 3 bar (30 – 45 psi)	
Power Supply:	220-380~450 V, 3 Phase, 50/60 Hz	
Permeate Recovery	40 – 70 %	





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GENERAL COMPONENTS

Feed Pump

Pre- Filtration

High Pressure RO Pump

Cartridge Filter

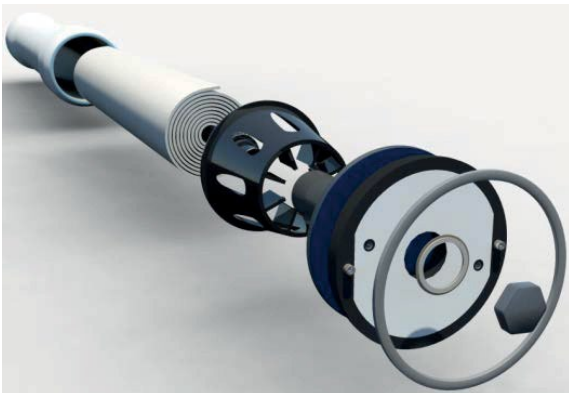
Antiscalant Dosing System

Membrane CIP & Auto Flush System

PLC Control System with HMI

Housing and Membranes

Remineralization via Dolomite





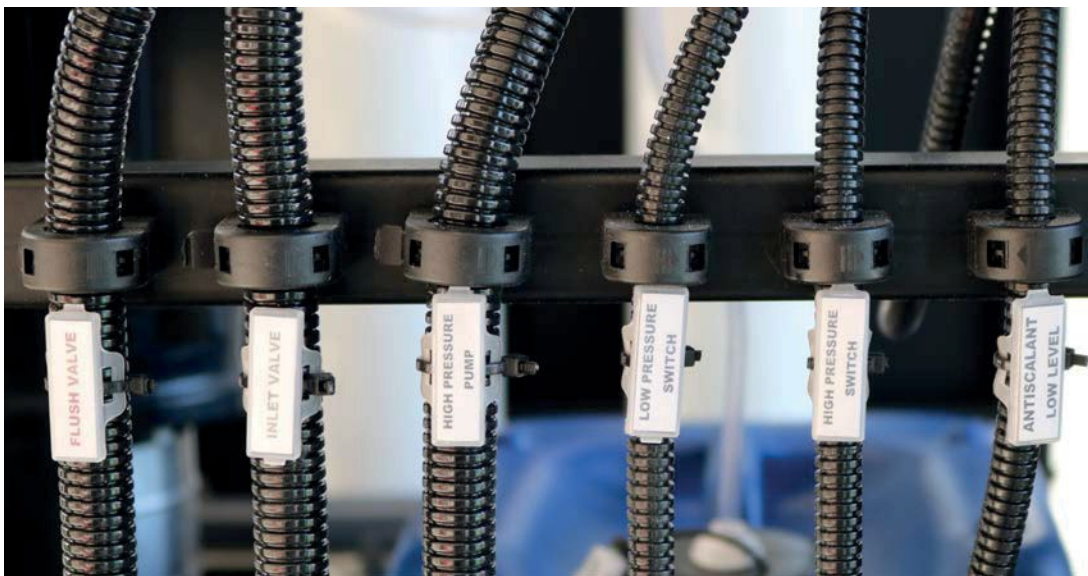
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	INLET LINE	PERMEATE LINE	DRAIN LINE
Pressure Gauges	✓	✓	✓
Pressure Transmitters (4-20 mA)	✓	✓	○
Flow Gauges (Rotameters)	○	✓	✓
Flow Transmitters (4-20 mA)	○	○	○
Conductivity Meter (4-20 mA)	✓	✓	○
pH Meter (4-20 mA)	✓	○	○

✓ = Standard Supply

○ = Optional Supply





miranda

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- ✓ Automatic warning system against pressure difference of membranes
- ✓ Early reporting system of filter changing time
- ✓ Automatic warning and shut down when antiscalant is over
- ✓ Remote access on mobile phone
- ✓ Automatic flush line
- ✓ Electric actuated valves
- ✓ Inlet & outlet pH analyses and control
- ✓ All instruments included





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NAME	PRODUCT CAPACITY (M3 /DAY)	MEMBRANE QTY	RECOVERY	POWER (KW)
BRACKISH / CONTAMINATED				
R/O CELL SMARTWATER 80B	80	4	60% - 70%	12
R/O CELL SMARTWATER 100B	100	5	60% - 70%	15
R/O CELL SMARTWATER 120B	120	5	60% - 70%	18
R/O CELL SMARTWATER 150B	150	6	60% - 70%	20
R/O CELL SMARTWATER 240B	240	106	60% - 70%	23
SEAWATER				
R/O CELL SMARTWATER 40SW	40	5	40 – 45%	25
R/O CELL SMARTWATER 40SW	50	8	40 – 45%	30
R/O CELL SMARTWATER 40SW	80	8	40 – 45%	35
R/O CELL SMARTWATER 40SW	100	10	40 – 45%	40
R/O CELL SMARTWATER 40SW	120	10	40 – 45%	50
R/O CELL SMARTWATER 40SW	150	12	40 – 45%	60
R/O CELL SMARTWATER 40SW	240	18	40 – 45%	85

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