

RO / Cell

Reverse Osmosis
Compact Treatment Systems





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RO/Cell

RO/Cell Compact Water Treatment Systems

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 compact water treatment plants are designed to treat water 5~60 m³/day, with < 2,000 mg/L of dissolved solids (TDS) and < 10 mg/L of suspended solids (TSS), to achieve potable water quality.

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



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BRACKISH WATER		
	DESIGN VALUES	PRODUCT WATER VALUES
pH:	6,5 – 8,5	5,5 – 6,5
TDS:	< 2000 mg/l	< 500 mg/l
TSS:	< 10 mg/l	-
Tot. Hardness:	< 30 Fr	-
Design Temp.:	5 – 35 °C	
Inlet Pressure:	2 – 3 bar	
Power Supply:	220-380~450 V, 3 Phase, 50/60 Hz	
Permeate Recovery Rate:	40 – 60 %	



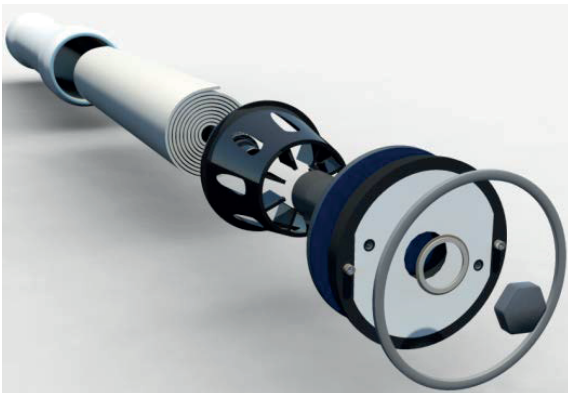


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GENERAL TECHNICAL SPECIFICATION

Skid Mounted Plant & Equipment
Feed Pump
High Pressure RO Pump
Cartridge Filter
Antiscalant Dosing System
Membrane CIP & Auto Flush System
PLC Control System with HMI
Housing and Membranes
Instrumentation





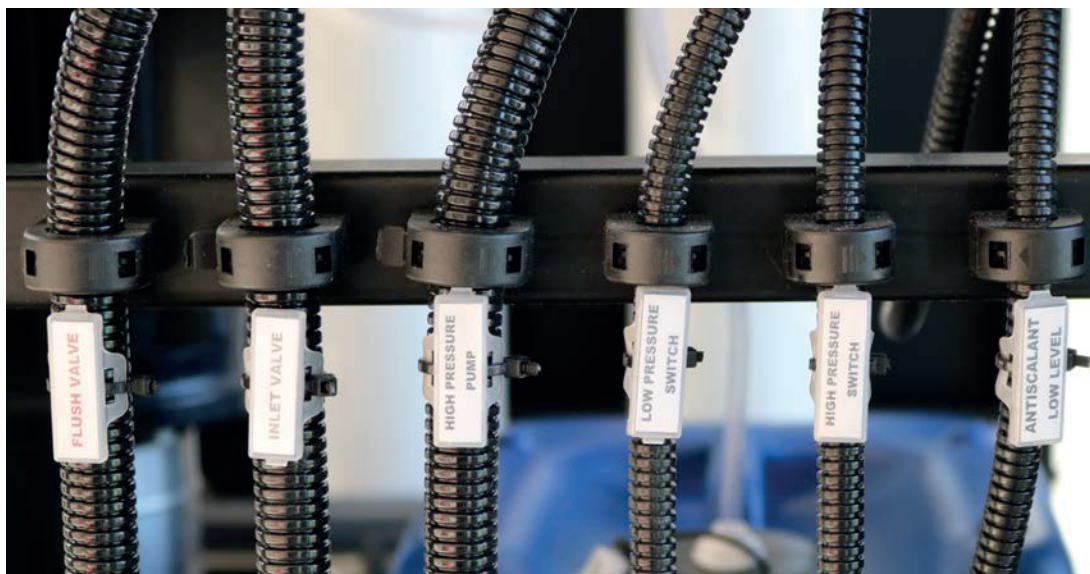
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INSTRUMENTATION PACKAGE			
	INLET LINE	PERMEATE LINE	DRAIN LINE
Pressure Gauges	✓	✓	✓
Pressure Transmitters (4-20 mA)	✓	✓	0
Flow Gauges (Rotameters)	0	✓	✓
Flow Transmitters (4-20 mA)	0	0	0
Conductivity Meter (4-20 mA)	✓	✓	0
pH Meter (4-20 mA)	✓	0	0

✓ = Standard Supply

0 = Optional Supply

- = Not Applicable





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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 analyse and control
- ✓ All instruments included





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SYSTEM	CAPACITY (m3/day)	MEMBRANE QTY.	MEMBRANE DIMENSION	SKID MATERIAL
RO / Cell - 1	5	1	4"	Epoxy Coated Carbon Steel / Stainless Steel
RO / Cell - 2	10	2		
RO / Cell - 3	15	3		
RO / Cell - 4	20	4		
RO / Cell - 5	25	5		
RO / Cell - 6	30	6		
RO / Cell - 7	40	8		
RO / Cell - 8	50	10		
RO / Cell - 9	60	12		

* RO / Cell Systems also can be designed as containerized type.



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