TUA Engineering

TPRO - COMMERCIAL REVERSE OSMOSIS SYSTEMS

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DATA SHEET - TPRO Reverse Osmosis Models EKO 100/150/200/250



System Capacities

The system capacities indicated below are based on feed water with a total dissolved solid (TDS) content of <1500mg/l and a recovery of 60 to 70%.

Model	Nominal Capacity cu-m/day	Membranes 8" x 40
EK100	100	4
EK150	150	6
EK200	200	8
EK250	250	10

Capacity will vary according to the feed water TDS and temperature and pump-operating pressure will vary according to the feed water quality. Typically pump pressure will be in the range of 12 to 17 Bar. Please request a projection and design for your particular water.

Operating conditions

Feed Pressure: 1.5 to 4 Bar
Power: 400VAC 50Hz 3 phase
Temperature range: 5 to 35 ^{o}C
Feed pH: 4 to 8

Equipment

The RO unit will be pre-assembled on a structural light green Stainless steel/GRP Frame and will include the following main components:

- 5 micron sediment filters including first set of filters
- Lowara vertical SV series 316 SSTL pump with 400VAC motor, 3 phase, 2900RPM
- 8”x 40” Toray or GE OSMONICS TFC low pressure membranes.
- Wave cyber or Protec GRP Vessel(s) for membranes.
- Product flow indicator
- Reject flow indicator
- Product quality indicator – TDS indicator
- Pump inlet pressure gauges
- Membrane inlet pressure gauge
- Membrane inter-stage pressure
- Reject pressure gauge
- SSTL reject control valve
- Low pressure piping in PVC
- High pressure piping in 316L SSTL tubing Duplex victaulic style flexible couplings
- Electrical Control panel incorporating Horner PLC and HMI interface.
- Elevated flush tank including low level switch
- GRP and/or Stainless steel frame to house all the above equipment

Approximate dimension

- Approximate dimensions 6m wide x 1.6m deep x 1.6m high

Pre-treatment

The membranes used in most reverse osmosis systems including our TPRO - EKO range, are spiral wound and made of a polyamide material. This material is not compatible with oxidizing agents such as chlorine normally found in tap water. The passages within a membrane are fairly small and un-dissolved materials can become lodged inside the membrane blocking it and reducing its capacity. Our systems come with an in-built safety carbon block filter but pre-treatment in the form of further carbon filtration and un-dissolved solid removal is normally required.
The reject from a reverse osmosis system has an increased concentration of salts and particularly hardness salts. Care must be administered to make sure that these salts do not precipitate in the membrane as this can lead to irreversible damage. Depending on the feed water as well as the system recovery, a water softener or anti-scalant chemical injection may be required before the system as part of the pre-treatment.
Contact your water treatment specialist for assistance on your pre-treatment requirement.