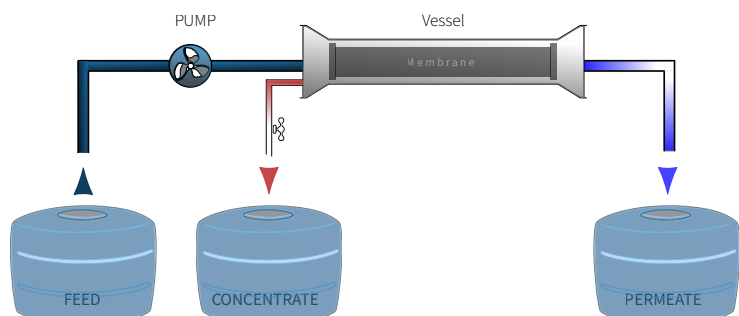


REVERSE OSMOSIS RO S

Reverse osmosis on membrane

It is a membrane process, which allows almost all of the substances present in it to be removed from the water.

The water in the feed is pressurized by a pump which exerts a pressure higher than the osmotic one, obtaining two flows: the permeate, poor in salts and the concentrate with a high salt concentration, due to the accumulation of all the salts which do not have crossed the membrane.



REVERSE OSMOSIS RO S 3 UBE

Reverse osmosis RO S

The RO S series machines are designed, sized and built with strict quality control procedures and with particular attention to limiting energy and water consumption. The reverse osmosis units of the RO S family are suitable for small uses in community, industrial, agricultural, technological fields and wherever water with low salinity is desired; they can be used in the standard version up to pressures of 13 bar (at 15 °C) using different types of membranes.

The RO S machines have an exclusive design, are compact, robust and functional and, thanks to their dimensions and specially designed structure, they can be installed both on the base and on the wall. Their operation is managed with PLC logic and "flushing" is provided at the end of the work cycle, at a programmable intermediate time and every 24 hours of inactivity in order to avoid premature deterioration of the membranes. Flow rate: from 2000 to approximately 8000 litres/day (in standard versions).

Standard equipment

- Load-bearing structure entirely made of AISI 304 stainless steel;
- Piping and low pressure line fittings in PVC-U PN16;
- Piping and high pressure line fittings in special plastic material 13 bar at 15° C;
- Calibratable safety pressure switches for pressure: minimum and maximum;
- 24V solenoid valves for power supply and flushing;
- AISI 316 pressurization, remineralization, recirculation valves (if provided);
- 2" ½ membranes;
- Vessels in VTR;
- Hydraulic control panel equipped with 2 stainless steel glycerin bath pressure gauges for displaying: pressures IN raw water and IN membranes;
- Direct reading flow meters: permeate, concentrate, recirculation (if provided);
- AISI 316 vane pressurization pump with 1360 rpm motor (4 poles);
- PP 20" 5 micron safety filter;
- Management panel that allows you to control the high pressure pump and the two shut-off solenoid valves feed water and flushing, manage and program the normal measuring and signaling instruments installed on the system, with high flexibility of working methods, manage and program the automatic washing system.

It also has the following characteristics: compliant with the requirements of the CE safety regulations, built with a microprocessor, 2 x 16 digit liquid crystal display, power supply voltage 230VAC 50-60 Hz, available in an ABS box with IP65 protection class (codes DG101 and DG103) or for RACK mounting on a panel (codes DG101R and DG103R), possibility of connecting inlet water conductivity meter from 00.0 to 9.99 $\mu\text{S}/\text{cm}$ and outlet water conductivity meter from 00.0 to 999 $\mu\text{S}/\text{cm}$.

Optional

- Dosing pumps for anti-scaling and biostabilising;
- Alarm transmission system via GSM;
- Digital permeate conductivity meter;
- Remineralisation on board the machine;
- Vessels in AISI 304 or 316 steel;
- CIP washing group.



Water saving



Energy Saving



Certified materials



Controlled construction process



Tested operativity



REVERSE OSMOSIS RO S 2 UBE

Legenda

RO	• →	Reverse Osmosis
S	• →	Serie
4	• →	Number of membranes
UBE	• →	Type of membrane

Membranes

Type	Saline rejection	Energy saving	Resistance to fouling
Low Energy BE	Good	Optimal	Ordinary
Ultra Low Energy UBE	Good	Excellent	Ordinary
Low pressure Low fouling BP-BS	Optimal	Good	Optimal
Ultra low energy Low fouling UBE-BS	Good	Excellent	Optimal

Standard technical and hydraulic details

Model	Permeate l/h	Recirculation l/h	Concentrate l/h	Recovery %	Vessel n	Operating pressure bar	Power supply
RO S 1 UBE	100	350	120	45	1	10,5	0,55 kW - 230V
RO S 2 UBE	180	300	100	65	2	11,0	0,55 kW - 230V
RO S 3 UBE	260	180	140	65	3	10,5	0,75 kW - 230V
RO S 4 UBE	330	250	140	70	4	11,0	0,75 kW - 230V

FURTHER SIZINGS ARE AVAILABLE UPON REQUEST

Values referring to the treatment of water with characteristics as per the "Raw water reference parameters" table with variations of $\pm 20\%$

Geometry

(A) Length cm	(B) Depth cm	(C) Height cm
103	45	131

With possible variations of $\pm 20\%$

Raw water reference parameters

Parameter	Limit
TDS (Total Suspended Solids)	<2000 ppm
SDI (Sit Densisy Index)	<3
pH	7,0 - 7,5
Turbidity	0,2 NTU
Temperature of feed	20 °C
Pressure of feed	2,5 - 5,0 bar
Iron without anti-precipitant	<0,01 ppm
Chlorine, Hydrogen sulphate, Manganese	Assente
Hardness without antiscalant	<5 °f
Microbiological pollution	Assente

Pressure of feed: +2,5 - +5,0 bar
 Temperature of feed: +14 - +25°C
 Environmental temperature: +2 - +40°C



Electrical cabinet



230V instrument power input
Alarm output with voltage-free contacts
Max. level probe input
Maximum pressure switch input
Pump thermal input
Dosing pump alarm input
Osmosis output conductivity probe
Min. level probe input
Minimum pressure switch input
Osmosis input conductivity probe

Piping in PVC-U



The permeate, concentrate and food lines are made of PVC-U, useful taps for sampling and checks are also provided.

Pressure switches



The programmable pressure switches allow you to operate safely, preserving the pump and diaphragms. They communicate with the electrical panel and allow the machine to be stopped if necessary.

Pressurization pump



The vane pressurization pumps are built in AISI 316 and equipped with a 1360 rpm motor. They are sized in such a way as to guarantee suitable pressurization of the water in the feed, tending towards energy savings.

Automatic valve



The motorized valves, thanks to the commands received from the electrical panel, allow the opening and closing of the lines automatically and precisely.

Membranes



The semi-permeable spiral membranes must be appropriately chosen based on the characteristics of the feed water and the characteristics of the water you want to obtain.