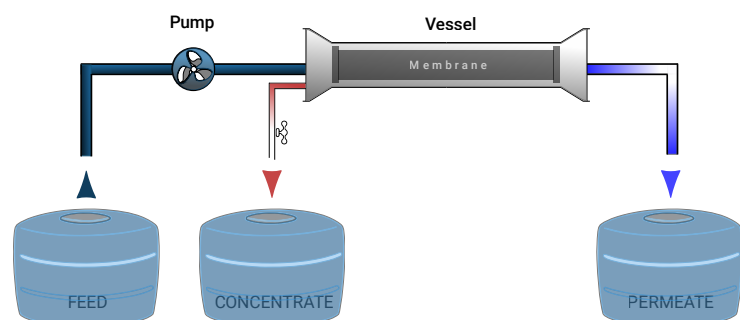


# REVERSE OSMOSIS RO TEC

## 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 TEC

The machines of the RO TEC series 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 TEC family are suitable for continuous operation and professional uses in the community, industrial, agricultural and technological fields; they can be used in the standard version up to pressures of 13 bar (at 15 °C) using different types of membranes.

The RO TECs are characterized by high ergonomics and easy maintenance accessibility with the peculiarity of having an excellent quality-price ratio.



## REVERSE OSMOSIS RO TEC 4

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 8000 to approximately 46000 litres/day (in standard versions).

## Standard Equipment

- Load-bearing structure entirely made of AISI 304 tubular Tig-welded stainless steel;
- Piping and low pressure line fittings in PVC-U PN16;
- Calibratable safety pressure switches for pressure: minimum, maximum and maximum pump;
- 24V solenoid valves for power supply and flushing;
- AISI 316 pressurization, remineralization, recirculation valves (if provided);
- 4" membranes;
- Vessels in VTR;
- Hydraulic control panel equipped with 4 stainless steel glycerin bath pressure gauges for displaying:
  - IN filtration, OUT filtration, IN membranes, OUT membranes;
- Direct reading flow meters: permeate, concentrate, recirculation (if provided);
- AISI 316L stainless steel vertical multistage pump;
- BIG 20" safety filter;
- Digital permeate conductivity meter with set point alarm and 4 - 20 mA output;
- Management and control framework consisting of:
  - resin container, main switch with door lock device;
  - transformer complete with protections for powering auxiliary circuits; phase control relay;
  - PLC with 7" color operator panel on the front of the panel with display of operating states, working hours and remote alarms for low/high pressure/thermal block/high conductivity/low level of dispenser 1 and 2 (with relative audible alarm), thermal , 230 V ON-OFF auxiliary power supplies in the terminal block with work cycle start and provision for tank level regulator;
  - motor protection switches;
  - relay for auxiliary management;
  - buzzer on the front of the panel for acoustic alarm signalling;
  - cumulative alarm in the terminal block for remote transmission.

## Optional

- Dosing pumps for antiscalant and biostabiliser
- Alarm transmission system via GSM
- Double set-point digital conductivity meter
- 4" and 8" vessels in AISI 304 or 316 steel
- 8" membranes
- Impresa Digitale Kit 4.0



Water saving



Energy saving



Certified materials



Controlled construction process



Tested operativity



## REVERSE OSMOSIS RO TEC 2

## Legenda

<b>RO</b>	→	Reverse Osmosis
<b>TEC</b>	→	Series
<b>6</b>	→	Number of membranes
<b>UBE</b>	→	Type of membrane

## Membranes

Type	Saline rejection	Energy saving	Resistance to fouling
Low Energy <b>BE</b>	Good	Optimal	Ordinary
Ultra-Low Energy <b>UBE</b>	Good	Excellent	Ordinaria
Low pressure Low fouling <b>BP-BS</b>	Optimal	Good	Optimal
Ultra-low energy Low fouling <b>UBE-BS</b>	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 TEC 2 UBE	500	0	1170	30	1	9,5	1,1 kW - 400V
RO TEC 4 UBE	900	0	900	50	2	9,5	1,1 kW - 400V
RO TEC 6 UBE	1400	400	930	60	3	10,5	1,5 kW - 400V
RO TEC 8 UBE	1700	400	800	68	4	10,3	2,2 kW - 400V
RO TEC 10 UBE	2500	400	1070	70	5	11,2	3,0 kW - 400V
RO TEC 12 UBE	3000	800	1000	75	6	11,7	4,0 kW - 400V

**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  $\pm 20\%$

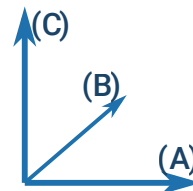
## Geometry

Vessel model	(A) Length cm	(B) Depth cm	(C) Height cm
2/4 elements 6/8 elements	110	75	270
Vessels 1 item on request			
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	Absent
Hardness without antiscalant	<5 °f
Microbiological pollution	Absent

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



## Water Panel



It allows, thanks to the four pressure gauges, the display of pressures:

- IN filtration
- OUT filtration
- IN membranes
- OUT membranes

in order to monitor the status of the safety filter and membranes.

## 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 vertical multilayer pumps, in AISI 304 or AISI 316, are reliable, silent and easy to maintain.

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.

## Membrane



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.

## Kit Impresa Digitale 4.0

The kit makes multiple and advanced additional technological functions available to control and monitor the treatment process and to display the following values on the HMI panel, and therefore on connected remote devices such as PCs or Smartphones (Android/iOS):

a) Instantaneous and total hydraulic flow rates:

- Incoming raw water
- Product permeate
- Concentrate discarded

b) Instantaneous pressures and history:

- IN and OUT Filtration and relative Delta P
- IN and OUT membranes and relative Delta P

It is composed of 4-20 mA pressure transducers in AISI 316, turbine flow meters with current output and the relevant software.

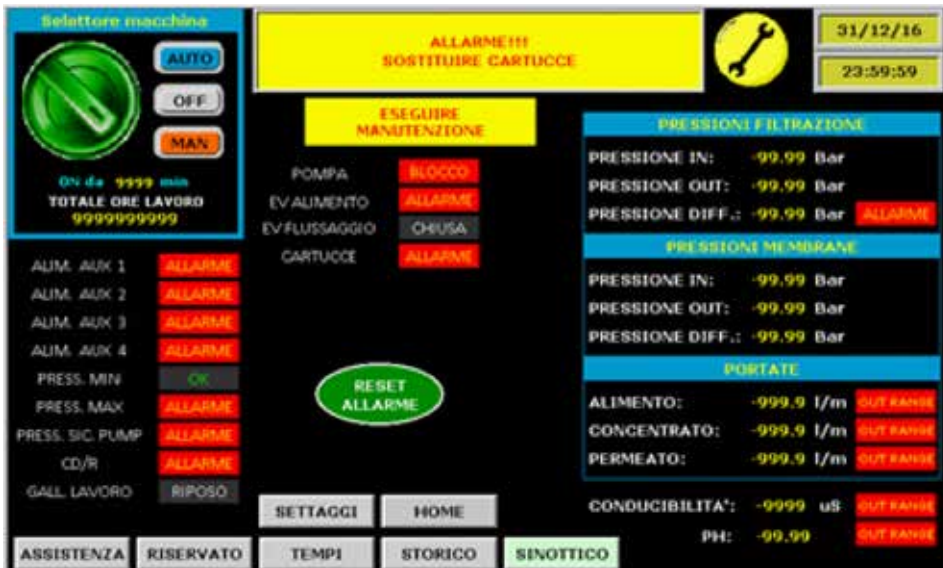
The adoption of the "IMPRESA 4.0" digital KIT allows the possibility of accessing significant tax advantages.



ROTOR FLOW SENSOR



PRESSURE TRANSDUCER



ROTOR FLOW SENSOR WITH BRACKET SOCKET

### PARAMETERS OF KIT IMPRESA DIGITALE 4.0



BATTERY OF PRESSURE TRANSDUCERS

### SETTINGS OF KIT IMPRESA DIGITALE 4.0