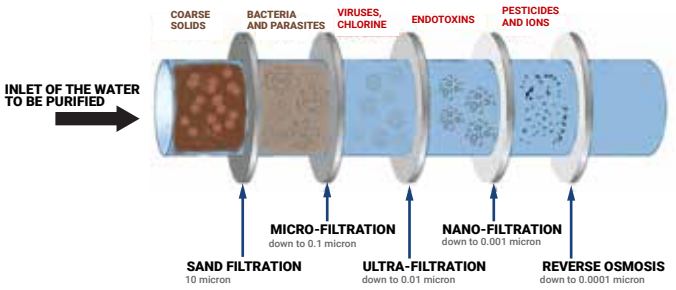
Ecosistemi
THE BEST WATER

REVERSE OSMOSIS
ULTRA RO ECO

Ultrafiltration membrane

Even if apparently clear, the water could contain microscopic corpuscles and pathogenic organisms such as viruses, some types of endotoxins and other types of organic macromolecules. To eliminate these particles, it must pass through an ultrafiltration system that block,s particles larger than 0.01 micron



Reverse Osmosis ULTRA RO ECO

The reverse osmosis machines of the ULTRA RO ECO series have the Ultrafiltration system installed on the machine in line with the RO membranes.

The installed Ultrafiltration section guarantees SDI < 3, turbidity < 0.2 NTU and an impassable barrier for any type of microbiological element, thus safeguarding the duration and efficiency of the reverse osmosis membranes.

The ULTRA RO ECO machines produce considerable quantities of purified water with continuous operation in heavy professional uses in the community, industrial, agricultural and technological fields; they can be used in the standard version up to pressures of 30 bar using different types of membranes.

The ULTRA RO ECO are robust, compact and simple to install, operate and easily accessible for maintenance. Their operation is entirely managed by a PLC with a 10" HMI TOUCH panel that can be viewed on smartphones and remote PCs, allowing for easy remote control.
Our (proprietary) management software allows infinite ordinary and extraordinary process management activities and is continuously implementable.

REVERSE OSMOSIS ULTRA RO ECO 9 + OPTIONALS (washing kit, demi column)

Standard Equipment

- Supporting structure entirely made of AISI 304 tubular Tig welded stainless steel;
- Safety filter in highly chemically resistant plastic material and cartridges;
- Piping and fittings for low and high pressure lines in PVC-U PN16;
- Electromechanical safety pressure switches: minimum, maximum and maximum pump;
- Modulating 24V motorized valves, with position display, for power supply, flushing and UF exchange phases;
- AISI 316 pressurization, remineralization, recirculation valves (if provided);
- 8" Ultrafiltration membranes;
- Osmosis Membranes 8040;
- Vessels in 8” 300 PSI fiberglass;
- Hydraulic control panel complete with 5 glycerine bath stainless steel pressure gauges for displaying:
  IN filtration, OUT filtration, IN membranes, OUT membranes, MAX pump;
- Direct reading flow meters: permeate, concentrate, recirculation (if provided);
- AISI 316L stainless steel vertical multistage pump;
- Digital food and permeate conductivity meter with set point alarm and 4 - 20 mA output;
- PLC management and control panel features:
  - 10” HMI panel with intuitive P&ID of the treatment process
  - Operating states of equipment, levels and conductivity
  - Instantaneous and historical influent and effluent hydraulic flow rate in digital format (Kit 4.0 optional)
  - Process and equipment operation history with graphs and diagrams
  - Email alerts of thermal blocks, anomalous hydraulic levels of water and chemical reagents, network failure
  - Integrated VPN industrial router for data traffic and remote assistance

Optional

- Kit Impresa Digitale 4.0
- AISI multi-cartridge filter
- Dosing pumps for product dosing
- Pressurization pump inverter
- Double pump on board the machine
- Fiberglass grating
- High pressure piping in AISI 304 EU, AISI 316 SS, etc.
- 4” and 8” vessels in AISI 304 or 316 steel
- CIP washing group

Water saving

Energy saving

Certified materials

Controlled construction process

Tested operativity

REVERSE OSMOSIS ULTRA RO ECO 12 UBE

Legenda

ULTRA	Ultra-filtration
RO	Reverse Osmosis
ECO	Serie
8	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
High rejection Low energy	AR-BE	Excellent	Optimal	Ordinary
Low pressure Low fouling	BP-BS	Optimal	Good	Optimal
Ultra-low energy Low fouling	UBE-BS	Good	Excellent	Optimal
Sea Water	AM	Excellent	Good	Ordinary
Sea Water Low energy	AM-BE	Excellent	Optimal	Ordinary

Standard technical and hydraulic details

Model	Permeate l/h	Recirculation l/h	Concentrate l/h	Recovery %	Vessel n	Operating pressure bar	Power supply
ULTRA RO ECO 2 UBE	2400	1500	2900	45	1	10,5	4,0 kW - 400V
ULTRA RO ECO 3 UBE	3400	1000	2800	55	1	10,5	4,0 kW - 400V
ULTRA RO ECO 4 UBE	4300	1000	2500	65	2	10,5	4,0 kW - 400V
ULTRA RO ECO 6 UBE	6100	0	3600	65	2	10,0	5,5 kW - 400V
ULTRA RO ECO 8 UBE	7300	0	3100	70	2	10,0	5,5 kW - 400V
ULTRA RO ECO 9 UBE	9000	1000	3900	70	3	10,5	7,5 kW - 400V
ULTRA RO ECO 12 UBE	12000	0	5100	75	3	10,5	11 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 ± 20%

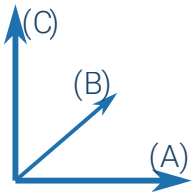
Raw water reference parameters

Parameter	Limit
TDS (Total Suspended Solids)	<2000 ppm
SDI (Sit Density Index)	<6
pH	7,0 - 7,5
Turbidity	<300 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	Assent
Hardness without antiscalant	<5 °f

Geometry

Vessel model	(A) Length cm	(B) Depth cm		(C) Height cm
		1 bar	2 bars	
2 elements	340	130	168	204
3 elements	415	130	168	204
4 elements	520	130	168	204
5 elements	625	150	168	204
6 elements	725	150	168	204

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



REVERSE OSMOSIS RO ECO 24

Water Panel

It allows the display of the permeate concentrate flow rates, the recirculation (if foreseen) of the filtration and osmotization pressures. It includes pressurization and recirculation needle valves in AISI 316.

Piping in AISI304 e PVC

The permeate line is made of PVC-U and is equipped with taps useful for sampling and controls.

The concentrate line is built in AISI 304 EU, TIG welded.

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 multistage pumps, made of AISI 316 stainless steel, are reliable and silent.

They are sized in such a way as to guarantee suitable pressurization of the water, taking into account energy savings.

Automatic Valve

The motorized valves, thanks to the commands received from the electrical panel, allow the soft opening and closing of the hydraulic lines.
They are also equipped with microswitches to control correct opening and closing.

Membranes

Semipermeable spiral membranes must be appropriately chosen based on the characteristics of the feed water and the characteristics of the water used wants to get.

Kit impresa digitale 4.0

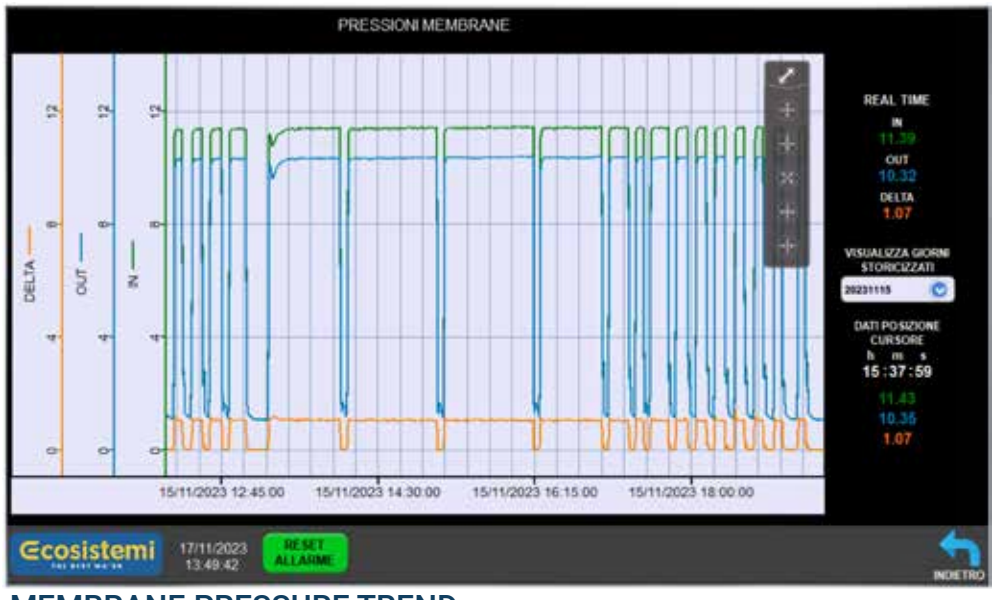
The kit makes multiple and advanced additional technological functions available to control and monitor the treatment process and to display the following values on the HMI panel, and therefore on connected remote devices such as PCs or Smartphones (Android/iOS):
a) Instantaneous and total hydraulic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

INTUITIVE P&ID ON 10" PANEL

ROTOR FLOW SENSOR WITH BRACKET SOCKET



MEMBRANE PRESSURE TREND

BATTERY OF PRESSURE TRANSDUCERS