

# Closed Loop Desal Reverse Osmosis RO-Matrix

"Closed Loop, Open Possibilities: The Smart RO Solution"

**Efficient | Reliable | Compact**

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"CATS HAVE 9 LIVES, REVERSE OSMOSIS MEMBRANES HAVE ONE LIFE!  
The Only Way to Stop R.O. Failure is to Prevent It"

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**IONIC**  
Engineering Technology Pvt Ltd



# INTRODUCTION TO IONIC

Ionic Engineering Technologies Pvt. Ltd. is an ISO-9001/2015 certified Indian water and wastewater technology company founded in 2005 with more than 20 years of experience in the treatment and re-use of hard-to-treat waters. We design and offer equipment to operate in the most challenging conditions, offering a cost-effective and environmentally friendly solution by means of our innovative and state-of-the-art technologies. We carry out projects and solutions for Industrial and Municipal Applications, like Pharmaceuticals, Chemical, Cosmetics, FMCG, Aero Space, Automotive, Metalworking, Steel, Refinery and Petrochemical, O&G Upstream, Downstream, Food & Beverage, Pulp and Paper, Sea Water Desalination, etc. to name a few. Our value engineered “Quality by Design” systems are working in several diverse industries for many years and is helping our customers move towards “Cleaner Production”

**Motivation & Vision:** Our main goal is to create value and make a difference for our clients and partners as well as deliver tailored-made solutions to satisfy the requirements of our clients, respecting the environment. At Ionic Engineering Technologies we believe that making water and wastewater reuse an affordable and sustainable water source is essential to the future development of mankind in terms of economy, environment, and society. All our systems are designed and engineered based on sound engineering practice and offer value for money and bring “Peace of Mind” to our customers.

**Why Ionic?** Good advice is half the battle won. Ionic Engineering is a technology neutral company and focused on providing “Quality by Design” engineered systems. We have technology associates based in Europe and USA for some of the cutting-edge disruptive technologies. The first step to the perfect water treatment solution: Understanding your wastewater analysis. We design the plant based on the water analysis sent by our customer.

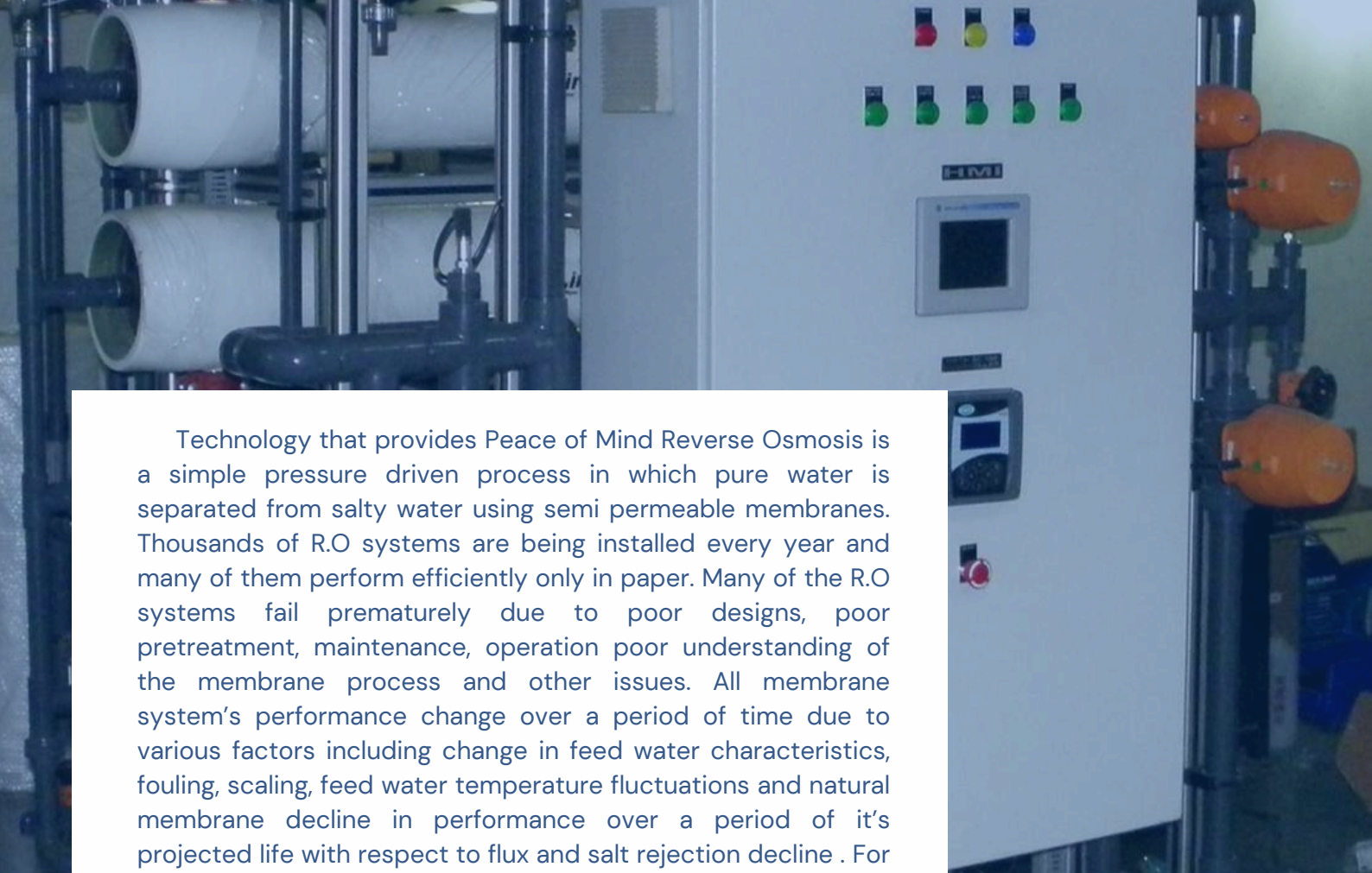
We are dedicated to using our professional expertise accumulated over many years, to providing the solution you want, when you want it. We also take great pride in ensuring that every client is satisfied with the operating efficiency of the systems we design and the overall level of service that we provide, whether during the initial contract phase or later, throughout the life of the plant.

- Providing expert advice, tailored to meet your requirements.
- Supplying high quality, good value-for-money systems, and equipment.
- Supporting all our clients for the lifetime of their water & wastewater treatment systems.
- Developing and deploying the best, most economic solutions for your needs
- Listen to our customers as well as our suppliers on products and technologies feedback and updates.
- Continuous improvement in all that we do!

Find the best solution for your processes: Let our competent team from the application technology team advise you now! We look forward to hearing from you.

**Customers:** We have many reputed Multinational companies such as Unilever, Coca-Cola, L'Oréal, John Deere, Tata Hitachi, Bajaj, Tata Motors, Century rayon, GACL to name a few as our customers






Technology that provides Peace of Mind Reverse Osmosis is a simple pressure driven process in which pure water is separated from salty water using semi permeable membranes. Thousands of R.O systems are being installed every year and many of them perform efficiently only in paper. Many of the R.O systems fail prematurely due to poor designs, poor pretreatment, maintenance, operation poor understanding of the membrane process and other issues. All membrane system's performance change over a period of time due to various factors including change in feed water characteristics, fouling, scaling, feed water temperature fluctuations and natural membrane decline in performance over a period of it's projected life with respect to flux and salt rejection decline . For example any change in temperature of feed water will have impact on membrane water permeability and salt passage.

As long as the membrane surface is clean from inside it will give the required flow and quality. However in practice fouling does take place and is difficult to find out as it is hidden and inaccessible. All we can conclude when the R.O productivity or quality declines is that the system is not working at optimum desired efficiency. By the time the decline in performance is noticed the damage caused may be considerable and in many cases expensive membrane replacement will be the only option available.

Why your R.O need Our **"Matrix"** advanced Real time Remote monitoring and control systems?

- Indicates Decline in performance and efficiency level.
  - Reduces unscheduled downtime.
  - Meets water quality specifications.
  - Avoids premature membrane failure.
  - Extends potential membrane life.
  - Allows cleaning on need vs. cleaning on schedule.
  - Reduces water consumption.
  - Reduces pretreatment cost.
  - Reduces power consumption.
  - Reduces waste water for disposal.
  - Minimises risk of scaling and fouling on membrane.
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### Our Unique Digital Technology at Work for You

#### CONNECTING YOUR BUSINESS TO THE TECHNOLOGY RESOURCES YOU NEED

Monitoring the performance of an RO unit can be complicated and time-consuming due to the large number of parameters that must be measured and calculated. And of course, data logging and data normalization often are difficult when manpower is in short supply or available man power is unskilled.

Since many RO problems are the result of insufficient monitoring and record keeping, Ionic developed the "MATRIX" real time monitoring system with " Easy Control" RO Performance Monitor to automatically calculate the critical normalized values like NPF, NDP, NSR%, NSP%, Recovery%, SP% etc.

The more advanced versions can log and analyses RO data remotely. This is a cost effective control system even suitable for small sized plants which monitors, analyses and displays all RO operating parameters including the normalized values. The MATRIX system also calculates additional parameters that are critical to R.O performance in addition to regular raw data like pressure, flow, conductivity etc.





IONIC offers its unique skid mounted compact, pre-engineered "Matrix" series Fully automatic PLC controlled Advanced Reverse Osmosis systems with "Easy Control" and "Real Time Monitoring" & "Remote Monitoring" technology for producing purified water required in process, boiler feed, drinking etc. All components are carefully selected to give long term reliable performance. Advanced safety features have been incorporated for reliable operation 24 hrs. and 365 days a year.

The unique "Real Time" monitoring system developed by us for the first time in India is capable of providing normalized values for flow, salt rejection, salt passage, pressure drop continuously and has a very unique "PDP Indicator" (Permissible Decline in Performance) to tell the customer in plain English text what is the condition of the membranes since start up. Reference values are stored internally and automatically compared with the present normalized values to provide the customer on the spot decision making inputs for safe and long term reliable operation of the system. In a way, this system protects the membranes from irreparable damage due to excessive fouling which if not detected at the right time may lead to costly downtime and membrane replacement.

Our R.O plants are easier to configure and use than your cell phones. You have the option of having our Remote Monitoring system to monitor the system performance from anywhere in the world!

Decision making at your finger tip Artificial Intelligence! We have put our brain inside! Years of experience has taught us how to make life easier for you. No more guess work while troubleshooting your R.O system.

The unique PDP indicator supports membrane cleaning decision making too.

When to clean the membranes? Or Whether membrane cleaning is successful, partially successful or failure can be easily determined even by a layman.

All the above comes with affordable cost of ownership to our customers and backed by quality after sales service.



# GET IN TOUCH

WITH  
**IONIC ENGINEERING TECHNOLOGY PVT. LTD.**

We're here to help you with all your water and wastewater treatment needs. Whether you're looking for customized solutions, technical support, or just want to explore how our services can benefit your business, feel free to reach out to us.

Our team of experts is ready to provide personalized assistance and ensure that you get the most effective and innovative solutions tailored to your requirements. You can contact us via phone, email, or through our website. We value every opportunity to collaborate and are committed to delivering excellence in every interaction.

## CONTACT US :



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