



COMPANY WATER TREATMENT PROFILE

2018



Alantech
INDUSTRIAL SOLUTIONS



About Us

- ✓ Over 10 Years in Operation
- ✓ Partners Across Asia, Middle East, Africa, South America
- ✓ 100+ Installations
- ✓ Approved RO Water treatment plans for industrial applicaiton
- ✓ Reverse Osmosis, Ultra Filtration system & filtration/Disinfection systems
- ✓ Lloyd's Accreditation ISO 9001, ISO 14001, OSHAS 18001
- ✓ Global Clients Across 10+ Countries
- ✓ High Quality imported components from US & Europe



What We Do

Since 2007, ALANTECH has been providing safe and reliable systems for converting brackish and sea water into pure, fresh water fit for human consumption and industrial use.

We design, manufacture, install and commission Reverse Osmosis desalination systems, Ultrafiltration systems, Nanofiltration systems that are extensively tested, reliable and user friendly even in the toughest conditions.

Our technically advanced systems are custom-engineered to suit any application, thus providing the most economical and efficient solution on the market.

We have successfully installed over 100 units in over 10 countries worldwide, with many still functioning efficiently 10 years since installation.



Business Sectors



FOOD & BEVERAGES



Advanced integrated water technology and conceptualisation of water treatment systems for Food & Beverage manufacturing and processing.

AGRICULTURE



Agriculture often faces uncertainties of changing climate and drought, Alantech is able to provide reliable water solutions to ensure consistent fresh water availability.

HOTELS, TOURISM & LEISURE



Our advanced sewage treatment delivers solutions for hotel, beach resorts, labor camps, water parks, swimming pools, water playgrounds, wellness centers, clubs and fish farming.

UTILITY WATER



We supply deployable, robust water systems for rapid installation and easy handling. The systems require less maintenance and minimum intervention and provide adequate quality for boiler feeding, process water and other equipment heating, cooling or washing requirement.

MINING



Alantech provides solutions to purify and recover water as well as meet environmental regulations through its advanced membrane application systems.

DAIRY & MEAT PRODUCTION



Alantech provide ultra pure water for dairy and meat processing applications. Our systems can meet the best water quality according to the international food processing standards.

ULTRAFILTRATION



SPARES & CONSUMABLES



DOSING SKIDS



Product Line



ETP/STP

BOOSTER SETS



RO WATER SYSTEMS

UV SYSTEMS



CONTAINERISED

SKID MOUNTED



Single Pass Horizontal Design

Compact Vertical Design

RO/EDI Vertical Design

Horizontal Design with 8" Membranes



Duplex Reverse Osmosis Skids

Fully **Stainless steel** applications



ULTRAFILTRATION MEMBRANE BASED SOLUTIONS



Integrated membrane systems with ultrafiltration (UF) are an effective solution for pretreatment of reverse osmosis desalination systems. These systems offer reliable handling of difficult to manage waters, in regions that have traditionally experienced feed water and pretreatment problems. Systems are fully automated to reduce labor costs and enhance reliability. The combination of Ultrafiltration and RO can enhance productivity while delivering consistent (product) water quality.

MBBR

WASTE WATER TREATMENT



A Moving bed biofilm Reactor (MBBR) requires less space than traditional wastewater treatment systems. The technology uses polyethylene biofilm elements operating in an aerated wastewater regime. Each individual biofilm element has a high protected surface area to support the growth of heterotrophic and autotrophic bacteria. This results in a high-rate biodegradation within the system, which also results in process reliability and ease of operation. The process is self-sustaining as the biofilm attaches to the element modulates of the incoming load fluctuation. The attached growth provides a more dense microbial population per unit volume (compared to suspended growth), resulting in compactness, lower power consumption, minimal maintenance and capacity enhancement.

FRP/STEEL VESSELS

FILTER CARTRIDGES

MEMBRANES

ACCESSORIES

Waterline Components

MEMBRANE HOUSING

CHEMICALS & RESINS

PUMPS





Pentair

FRP VESSELS

Vessels ranging from 1054 till 8079

Water Treatment Components



RO MEMBRANES

2.5" to 8" membranes and its accessories,
low energy and low fouling membranes



SS VESSELS

SS tank in 304L and 316 grades



MEMBRANE HOUSING

2.5" to 8" membranes housings
for single and multi elements



FILTER HOUSING
SS and Plastic
Filter housings
and filter cartridges



ECH



ECHS

PUMPS

Vertical / Horizontal multistage pumps,
Raw water pumps, CIP pumps

Water Treatment Components

FILTER MEDIA

Gravel, Pebbles, Sylux, Quartz sand,
Anthracite, Activated Carbon, Green sand



PRESSURE COMPONENTS

Pressure switch, Pressure gauge,
Temperature sensors, Flow Sensors,
Level sensors



Endress+Hauser



FLOW METERS

Mass & Magnetic flow meters,
Rotameters and flow indicators.





MPV

for softening and filtration,
range from 3/4" to 3" and relevant
accessories.

Water Treatment Components

WATER METERS

TDS, pH, Chlorine, ORP, Ozone and other
parameters monitoring and controlling instruments



CHEMICALS

Antiscalant, pH, boosting, RO cleaning, SMBS,
Scale inhibitors, Biocides, Flocculants, Chlorine




GE Power & Water
Water & Process Technologies



UV SYSTEMS

Single and multilamp configuration to any flow rates.



UF MEMBRANES

individual membranes and skids.



Water Treatment Components



OZONE SYSTEMS

Complete Ozone skid with generator, venturi, mixer, diffuser, analyzer



DOSING PUMPS

Different range to dosing pumps starting from 5 LPH and 4 Bar pressure

BEV Systems

Membrane Systems
for Ingredient Water
23-195⁽¹⁾ m³/ht

Features

- BEV Systems are configurable and integrate with pre-and post treatment options into a full AIS Ingredient Water System
- Two-pass and two-train designs ensure capability to meet product water requirements
- Stainless Steel construction for durability and suitability in a wet environment
- BEV Full-fit/Cage Wrap membrane elements for a more sanitary construction and permeate output
- Skid-mounted systems reduce onsite installation time and costs

Configurable Options (2)

- Stainless steel housings (2)
- VFD for high pressure pump to optimize energy usage (2)
- Concentrate recovery: Additional In/off skid membrane area to improve water yield (2)
- Bank -by- bank cleaning (2)
- Pretreatment: Carbon, Multimedia Filters
- In-line UV sterilizer
- Inlet chlorine monitor (2)
- Interbank pressure transmitters (2)
- Remote monitoring with data trending
- Stainless Steel Air Tubing (2)
- Leveling Feet (2)



Documentation Included

- Operation and maintenance manual
- Drawings: process flow, piping and instrumentation, electrical and general arrangement
- CE Declaration of Conformity

Operating Parameters

Recovery	75% to 90%
Design temp.	16 °C
Operating range	4-38 °C
Minimum inlet pressure	2 bar
Average membrane flux	27lmh

Materials of Construction

High -pressure piping	1.4404 SS, Mill Finish
Low -pressure piping	1.4404 SS, Mill Finish Frame
.....	Stainless steel
Enclosures	IP55 Stainless Steel

NSF Certified Membrane Options

BEV RO	Standard Brackish RO
BEV ULE	Ultra -low energy RO
BEV RO CA	Chlorine tolerant RO
BEV NF CA	Chlorine tolerant NF for higher recovery.

Cartridge Filtration

Housing material	1.4404 SS
Cartridge filter	1- micron nominal, ROsave *

BEV Systems

Table 1: Standard Instrumentation

Flow *	Feed and concentrate
Conductivity	Feed, permeate
pH	Feed
Pressure	Pre-Filter, Post -Filter, Primary, Final, Permeate, Concentrate, Pump discharge, Inter -bank
Pressure Switch	Permeate, concentrate
Pressure Transmitter	Primary, final

*Display of calculated permeate flow.

Table 2: Major Component Manufacturers

Equipment	Manufacturer
Cartridge Filter	AIS
Membrane Element	AIS
High Pressure Pump	Grundfos* or equivalent
Cartridge filter housing	AIS or equivalent
Membrane Housing	Wave Cyber (FRP) Puro (SS) or equivalents
Flow Measurement	Endress + Hauser or equivalent
Conductivity, pH	Endress + Hauser or equivalent
HMI Components	Siemens TP-1500
PLC Components	Siemens Simatic S7
Valves	Inoxpa, or equivalents

BEV Models

MODEL	BEV 24	BEV 36 (DP)	BEV 60 (DP)	BEV 72	BEV 72X2	BEV 108
Permeate rate ⁽⁴⁾ (m ³ /h):	23-33	34-49	57-81	68-98	136-195 68-98 per tray	102-147
Permeate rate with ICR (m ³ /h):	25-36	38-54	62-91	75-109	150-219 75 per tray	112-164
Concentrate Rate (m ³ /h):	5-8	9-12	14-20	17-25	34-49 17-25 per tray	25-37
Concentrate Rate with ICR (m ³ /h):	3-5	5-7	9-11	10-13	20-25 10-13 per train	15-19
Feed Rate (m ³ /h):	28-41	43-61	71-102	85-122	170-244 85 per tray	127-183
Pumps and Motors ⁽⁴⁾						
Manufacturer:	Grundfos	Grundfos	Grundfos	Grundfos	Grundfos	Grundfos
Model:	AS22512	AS22512	AS40409	AS40409	AS40412	AS40409
Quantity:	1	1 / 2 (two-pass)	1 / 2 (two-pass)	1	2	2
Motor HP	50 HP	50 HP	75 HP	75 HP	75 HP	75 HP
Membrane Elements and Housings						
Membranes quantity:	24 (30 w ICR)	36 (42 w ICR)	60 (72 w ICR)	72 (84 w ICR)	144 (168 w ICR) (72 / 84 per train)	108 (120 w ICR)
Banking Arrangement:	3→2→1 (→1 w ICR)	3→2→1 (→1 w ICR)	5→3→2 (→2 w ICR)	6→4→2 (→2 w ICR)	6→4→2 (→2 w ICR) (per train)	9→6→3 (→2 w ICR)
2P- two-pass configuration		84 (90 w ICR) 4→2→2 (→1 w ICR) 4→2	120 (132 w ICR) 6→4→2 (→2 w ICR) 4→2→2			
Cartridge Filtration						
Cartridge Filter Quantity:	RO.Zs01 -40XK 7	RO.Zs01 -40XK 14	RO.Zs01 -40XK 21	RO.Zs01 -40XK 21	RO.Zs01 -40XK 42 (21 per train)	RO.Zs01 -40XK 28

Modular Ultrapure Water Plant

Flexible, Pre-Engineered, Proven Designs



For many years, AIS has partnered with our customers requiring ultra pure water and treatment of other difficult to treat streams and provided solutions based on the patented High Efficiency Reverser Osmosis(HERO™) process. The factor(typically an overall recovery of 90% to 98%) while producing a much higher quality effluent water when compared to traditional water treatment technologies. The HERO process can operate reliably at a flux rate of 30 GFD or more, handle higher levels of silica in the feed, reject silica and boron more efficiently, and eliminate biofouling-parameters that are difficult of achieve using a traditional RO.

Now, AIS has taken the benefits of the HERO process and added more value with our preengineered design packages. Depending on the application, one, some, or all of these design modules(See Figure 2) can be utilized to treat a variety of feed sources.

Pre-Engineered HERO Packages

Model	Flow Rate m ³ /hr (gpm)
Mini-Mod	50 to 100 m ³ /hr (220-440 gpm)
S-Mod	100 to 150 m ³ /hr (440-661 gpm)
M-Mod	150 to 250 m ³ /hr (661-1101 gpm)
L-Mod	250 to 400 m ³ /hr (1101-1761 gpm)

Design Standards

- CSA/UL
- ASME
- ASTM
- NEMA

Design Details

Power Requirements.....	380 V, 50 Hz, 3-phase
Piping (Modules 1 &2)	304L SS
Piping (Module 3).....	304L & 316L SS
Piping (Modules 4 &5).....	PP & PVDF
Piping (Module 6).....	PVC
Max. Skid Size.....	1190L x 228W x 260H cm (469L x 90W x 102H in)

Optional Packages

- Single-Pass RO for HERO Module
- Upgrade to EDI from Primary Mixed Beds
- 460 V, 60 Hz, 3-phase power
- Operating and maintenance service contracts

UPW Design Modules

MOD-1 – Pretreatment

Unit operations selected based on feed water characteristics such as hardness and alkalinity. In general, this module can consist of blend water tank and pumps, prefiltration, heat exchanger, softener, and weak or strong acid cation columns.

MOD-2 – HERO System

Either a single-pass or a two-pass RO system operating at 90%+ overall recovery. The RO system is preceded by cartridge filtration and a degasification step. Optional CIP System for RO cleaning.

MOD-3 – Primary UPW

A storage tank with a nitrogen blanket is provided for RO permeate collection. From the storage tank, product is transferred through TOC UV units to either electrodeionization (EDI) stacks or primary mixed beds. Finally, gas-transfer membranes are used to remove CO₂ and further enhance product water quality.

MOD-6 – Rinse Reclaim / Recycle

Last rinse water from the cold and hot UPW manufacturing operations are diverted to this module for treatment and reuse. The heart of this process is a patented reverse osmosis step, with overall recovery greater than 90%.

MOD-4 – Polishing Loop / Cold UPW

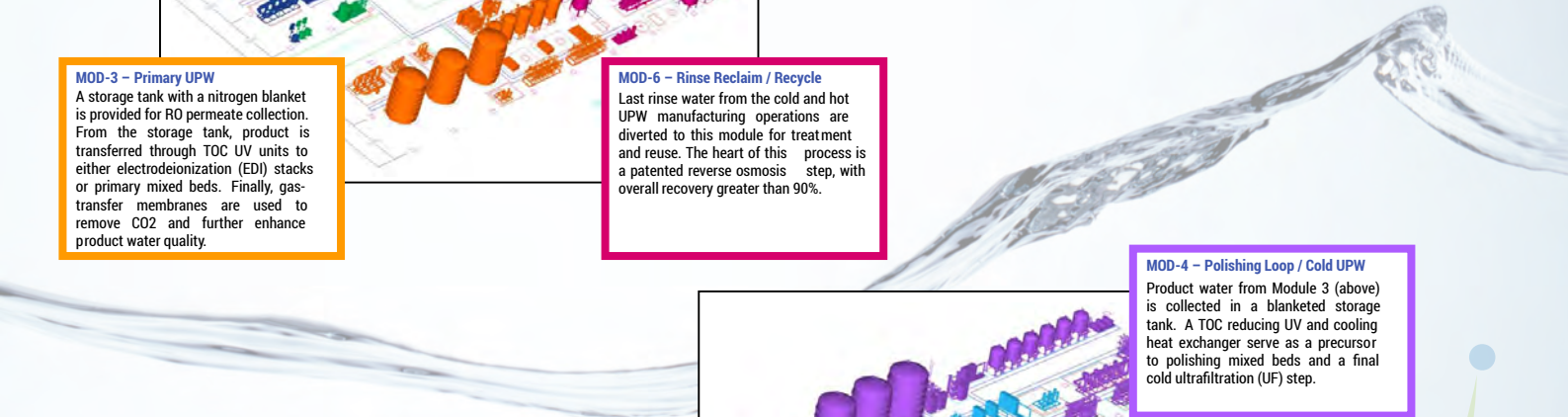
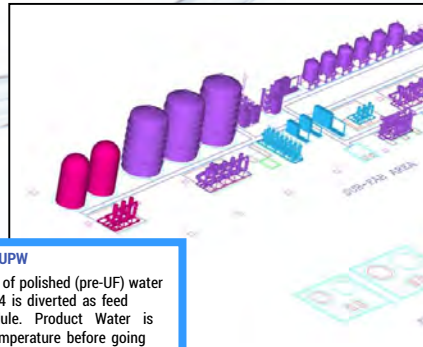
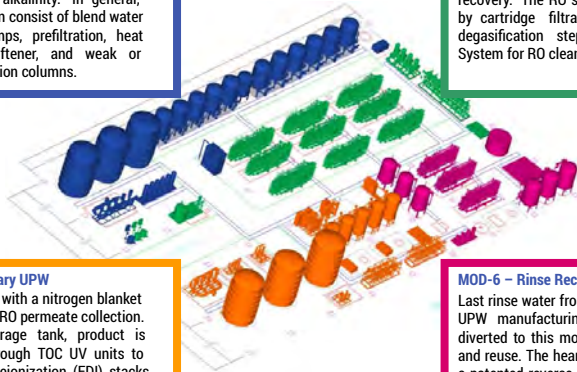
Product water from Module 3 (above) is collected in a blanketed storage tank. A TOC reducing UV and cooling heat exchanger serve as a precursor to polishing mixed beds and a final cold ultrafiltration (UF) step.

MOD-5 – Hot UPW

A side stream of polished (pre-UF) water from Module 4 is diverted as feed to this module. Product Water is brought to temperature before going through a hot UF step. The UF permeate then goes to the plant for consumption

MOD-7 – Support Equipment

Miscellaneous system support operations include necessary regeneration storage tanks and transfer pumps.



PRO MINI Series

Reverse Osmosis Machines from 8 to 112 m³/h



Features

- Configurable skid mounted RO system for industrial brackish water demineralization
- Control Cabinet with Siemens S7- 1200 PLC and TP 277 touchscreen
- Ethernet Communication
- Motor starter mounted and wired
- 4-20 mA Instruments displayed locally on instruments and/or on touchscreen
- 100% permeate flush on shut down using CIP tank
- High pressure pump & cartridge filter housings mounted on skid

Instrumentation

Flow Meters transmitters Permeate, Concentrate
 Conductivity transmitters Feed, Permeate Temperature transmitter, Permeate Pressure transmitters after HP Pump throttling valve Prior to concentrate valve pH/ORP control system (optional Feed Pressure indicator/Switches :
 Pre & Post Cartridge Filter HP Pump discharge,
 Post HP Pump throttling valve, Pre/post concentrate Orifice, permeate line, Inter-stage

Configurations

- Controls configuration:
 - PLC and HMI
 - I/O box
- Membrane Options:
 - Low Energy Elements
 - Standard brackish water elements
 - High rejection Elements
- Banking configuration:
 - 2-Banks (high rejection design)
 - 3 banks (high recovery design)
- High pressure pump motor control options:
 - Motor Starter
 - Variable Frequency Drive
 - Optional pH/ORP meter (feed)

PRO MINI Accessories

- PRO Multi-Media filters
- PRO Activated Carbon and Softeners
- PRO Clean- in-Place units
- PRO Chemical Feed Systems
- Transfer Pumps and Storage Tanks

Operating Parameters

Design Recovery ¹	70%- 85%
Design Temperature	15°C
Operating Temperature Range	5-30 °C
Nominal rejection	97-99%
System Inlet Pressure	2-4 bar
¹ Recovery Rate can vary +/- 5%	

Materials of Construction

High-pressure piping	316 Stainless Steel PN 25
Low-pressure piping	PVC PN 10/16
Frame	Painted blue carbon steel
Enclosure	IP 55
Clamps/fittings	Zinc-plated

Membrane Elements and Housings

Membrane Model	AK8040F-400, AG8040F-400 AK-400 or AG-400
Style	Spiral-wound elements
Manufacturer	GE/Hydranautics
Membrane type	TFC (Polyamide)
Average membrane flux	18- 28 l/mh
Membrane rejection	99.0-99.5 %
Manufacturer	GE/Codeline
Housing material	FRP
Housing Pressure Rating	20 or 30 Bar

Cartridge Filtration

Housing model	HX- 0740 - 80 -V316
Housing material	316 Stainless Steel
Cartridge filt	1-micron nominal, ROsave.Z ³ s

PRO MINI Models

MODEL	PRO-1 1-MINI	PRO-2 3-MINI	PRO-3 4-MINI	PRO-4 5-MINI	PRO-6 8-MINI	PRO-1 02-MINI
Permeate Rate ¹ :	8-12 m ³ /hr	17-25 m ³ /hr	25-37 m ³ /hr	34-49 m ³ /hr	51-75 m ³ /hr	76-112 m ³ /hr
Concentrate Rate:	1-5 m ³ /hr	3-11 m ³ /hr	4-15 m ³ /hr	6-21 m ³ /hr	9-32 m ³ /hr	7-48 m ³ /hr
Concentrate Recycle:	3 m ³ /hr	3 m ³ /hr	NA	4-6 m ³ /hr	NA	NA
Feed Rate:	9-17 m ³ /hr	20-36 m ³ /hr	29-52 m ³ /hr	40-70 m ³ /hr	60-107 m ³ /hr	89-160 m ³ /hr
Pumps and Motors						
Manufacturer:	Grundfos	Grundfos	Grundfos	Grundfos	Grundfos	Grundfos
Quantity:	1	1	1	1	2	2
Motor Power and type:	11 kW -15KW ; IP55	15KW -22 kW; IP55	22KW -30KW ; IP55	30KW -45 kW; IP55	22KW -30 kW; IP55	30KW -45 kW; IP55
Design boost pre ssure:	10-16 bar	10-16 bar	10-16 bar	10-16 bar	10-16 bar	10-16 bar
Membrane Elements and Housings						
Membranes Qua ntity:	12	24	36	48	72	108
Memb. Hou sing Style :	4 element long, 4 port	4 element long, 4 port	6 element long, 4 port	4 element long, 4 port	6 element long, 4 port	6 element long, 4 port
Banking Arrang ement:	2 1 or 1 1 1	4 2 or 3 2 1	4 2 or 3 2 1	8 4 or 6 4 2	8 4 or 6 4 2	12 6 or 9 6 3
Cartridge Filtration						
Housing Model:	HX-0740-80-V-316	HX-0740-80-V-316	HX-0740-80-V-316	HX-0740-80-V-316	HX-0740-80-V-316	HX-0740-3.0-V-316
Housing Quantity:	1	1	2	2	3	4
Cartridge Fi lter Model:	RO2s01-400K	RO2s01-400K	RO2s01-400K	RO2s01-400K	RO2s01-400K	RO2s01-400K
Cartridge Filter Length:	102 cm (40")	102 cm (40")	102 cm (40")	102 cm (40")	102 cm (40")	102 cm (40")
Cartridge Filter Qt ity:	7 per housing, 7/change out	7 per housing, 7/change out	7 per housing, 14/change out	7 per housing, 14/change out	7 per housing, 21/change out	7 per housing, 28/change out
Installation and Utility Requirements						
Inlet:	DN 50 flange	DN 80 flange	DN 80 flange	DN 100 flange	DN 150 flange	DIN 150 flange
Permeate:	DN 40 flange	DN 80 flange	DN 80 flange	DN 80 flange	DN 100 flange	DIN 150 flange
Concentrate:	DN 25 flange	DN 40 flange	DN 40 flange e	DN 50 flange	DN 65 flange	DIN 80 flange
Inlet Water Pre ssure:	2 bar, min.	2 bar, min.	2 bar, min.	2 bar, min.	2 bar , min.	2 bar, min.
Air Pressure:	6 bar, oil -free	6 bar, oil -free	6 bar, oil -free	6 bar, oil -free	6 bar, oil -free	6 bar, oil -free
Drain to be Sized for:	18 m ³ /hr	31 m ³ /hr	31 m ³ /hr	60 m ³ /hr	91 m ³ /hr	136 m ³ /hr
Power:	400 VAC, 3-phase, 50Hz	400 VAC, 3-phase, 50Hz	400 VAC, 3-phase, 50Hz	400 VAC, 3-phase, 50Hz	400 VAC, 3-phase, 50Hz	400 VAC, 3-phase, 50Hz
Control Ci rcuit	230 VAC, 1-phase, 50Hz	230 VAC, 1-phase, 50Hz	230 VAC, 1-phase, 50Hz	230 VAC, 1-phase, 50Hz	230 VAC, 1-phase, 50Hz	230 VAC, 1-phase, 50Hz
Skid						
Height:	201 cm	240 cm	242 cm	245 cm	247 cm	247 cm
Width:	500 cm	500 cm	700 cm	500 cm	710 cm	710 cm
Depth:	95 cm	95 cm	95 cm	140 cm	140 cm	170 cm
Weight estimates:						
Operatin g:	1870 kg	3355 kg	4420 kg	5255 kg	8110kg	11430 kg
Shipping:	1550 kg	2350 Kg	3005 Kg	3405 Kg	4960 Kg	6740 Kg

¹ At design temperature

SKYLINE

Seawater Solutions

Products and processes to desalinate seawater

Your source for water in abundance

Water today is more precious than ever. Whatever your need, wherever you are, Water & Process Technologies can deliver a reliable, safe supply of fresh water from virtually any water source including seawater or brackish water.

Our SKYLINE desalination solutions are based on the latest technologies. As experts in seawater echnologies, we offer solutions that encompass:

- Water reuse and conservation throughout your operations
- Optimization of existing water production
- Design and construction of new, energy efficient and environmentally friendly desalination processes

Complete solutions from a single source

supplies SKYLINE desalination solutions designed specifically for your application. To help plan your system, we analyze your water requirement, test your source water, evaluate your potential for reuse and conservation, and perform a treatment cost-benefit analysis. Your fully integrated desalination process can include:

- Depth Filters
- UF Pre-treatment
- Reverse Osmosis Elements
- Pre-engineered Systems
- Chemicals
- Lifecycle Services
- InSight*
- Build, Own & Operate (BOO)

Pre-treatment products:

SKYLINE depth filters offer superior SDI reduction, lower pressure drop with greater dirt holding capacity and up to twice the life of conventional depth filters. ZeeWeed* Ultrafiltration (UF) pre-treatment offers benefits for your SWRO including: lower membrane fouling, reduced cleaning costs, increased flux, increased membrane life and longer membrane warranty.

Depth Filters



ZeeWeed UF Seawater

Membranes



Packaged Plants

Custom Systems



SKYLINE RO Membranes:

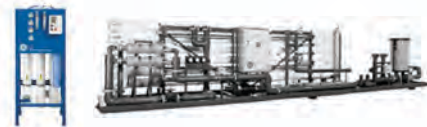
offers a broad portfolio of high rejection seawater and brackish water membranes manufactured at the Membrane Center of Excellence. Several low energy and low fouling membranes are available to reduce overall desalination plant costs.



SKYLINE Pre-engineered Systems

SKYLINE pre-engineered systems are built in factories and factory tested for fast commissioning.

E-Series Ultra



SeaPRO

SeaPRO -E

SeaTECH



SeaPAK

SeaSMART



SKYLINE MemChem

SKYLINE MemChem combines complete chemical pretreatment, engineering tools, laboratory capabilities and human expertise to improve membrane separation processes to achieve:

- Longer membrane life
- Superior permeate quality
- Minimum operational cost
- Environmental compliance
- Reduced cleaning frequency
- Lower men power to run the system
- Improved control and monitoring

SKYLINE Lifecycle Services

A complete line of products and services to support your desalination plant – helping you stay current, connected, in production and on budget including:

- Remote monitoring and diagnostics
- Off-site technical support
- On-site technical support
- Parts & Consumables
- Conversions, modifications and upgrades
- Contract services

SKYLINE InSight

Seawater and related process applications generate vast amounts of operating data. InSight, easy-to-use, cloud-based Remote Monitoring & Diagnostics platform, captures and transforms your plant data into meaningful and actionable information, ultimately providing the knowledge you need to maximize performance, avoid operational interruptions, optimize your processes, and reduce the total cost of operation.

SKYLINE Build, Own & Operate

outsourced water projects provide customers with little or no capital expenditure, reduced operating costs and improved technical performance

SeaTECH* Series

SeaTECH-84: 1000m³/day (200gpm) SWRO Container

This specification defines the integrated design requirements for the SeaTECH line of containerized systems for the Industrial, Power and Municipal markets. All necessary equipment required for independent operation is provided given the necessary pretreatment precautions are taken. Design basis includes containerized system with centrifugal feed pump as well as a containerized media filter and cartridge filter system (SeaTECH-MMF-84x3V). Optional configurations available based on market needs.

Functional Description

Single pass, single stage, twelve pressure vessels total. Each pressure vessel contains 7 thin-film composite elements in series for a total of 84. System produces 1,000 m³/day (45 m³/hr, 200 gpm) of product water at 40% recovery.

Operating Parameters

- TDS 37,000-45,000 mg/l (as NaCl)
- SDI₁₅ < 3.0
- Temperature 25 to 35°C (77 to 95°F)
- Recovery 40 to 36%
- Nominal Rejection >98%

Note: Required 3bar (45psi) minimum customer supplied pressure to high pressure RO Feed Pump. Temperatures and high salinities will reduce system productivity.

Standard Components

- Container designed for oversea transportation
- High Pressure Centrifugal RO Feed Pump w/ 400/460V 3 phase 50/60 Hz TEFC motor



- Energy Recovery Device and Booster Pump
- VFD for Booster Pump & RO Feed Pump
- Valves: Permeate diversion valves, diaphragm valve for ERI reject out, isolation butterfly valves

Control Features & Power Requirements

- Fanuc Versamax Micro PLC with 6-inch Quickpanel HMI
- Remote start/stop & alarm capabilities
- Zero recovery flush on shutdown
- Power: 400/460V, 3 phase, 50/60 Hz, UL listed components with CE marking

Instrumentation

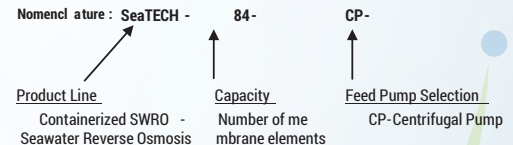
- Conductivity Permeate, Final product
- Flow meters Energy recovery feed, Permeate, Booster pump discharge
- Pressure switch RO Feed pump
- Pressure gauges liquid filled for high and low pressures
- Gauge Panel four low and three high pressure readings available via 5 way valves for pressure monitoring

Membranes & Housings

- Multi Ported FRP pressure vessel design, 1200psi rated
- Spiral wound thin film composite membranes

Materials of Construction

- Power Distribution Panels NEMA 12
- Control Enclosure NEMA 4X
- High pressure piping Zeron 100
- Low pressure piping PVC Schedule 80
- Low Pressure Tubing Polyethylene
- High Pressure Tubing Parflex
- PVC Sample Valves on each vessel, feed, permeate and reject





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