

# SEAWATER CONTAINERIZED DESALINATION SERIES ARKQUA®

## Ref: ARKQUA1500

### GENERAL FEATURES:

The **ARKQUA® Series** of containerized water treatment systems offers a fully integrated design for **industrial, commercial, and municipal applications**. Each unit is engineered for **independent operation** and includes the necessary pretreatment to ensure reliable performance under a wide range of operating conditions.

With its **modular design**, the ARKQUA® Series allows you to expand your plant capacity in line with your specific water requirements making it a scalable and future-ready solution.

Our standard configuration features a containerized system equipped with a duplex centrifugal pump, media filtration unit, and cartridge filter system, all arranged within a space-efficient layout for easy transport and rapid installation.

### COMPONENTS:

- Container designed for oversea transportation
- Multimedia filtration system
- 5 micron FRP filter housing
- Feed Pump
- Duplex High Pressure Centrifugal RO Pump
- Energy Recovery Device Turbo Charger
- VFD for RO Pump & RO Feed Pump
- Digital flowmeters
- PLC and HMI
- Pressure transducers: High and low
- Isolation butterfly valves
- Remote control & monitoring
- Remote VPN connection
- Automatic Alarms & production reports via email
- Integral permeate flush and CIP system

### CONTROL AND POWER:

- PLC with Ethernet card and spare cards
- 10-inch HMI
- Remote start/stop & alarm capabilities
- Zero recovery flush on shutdown
- Power: 400/460V, 3 phase, 50/60Hz



Fig1: ARKQUA® model ARKQUA1500

### DESCRIPTION:

Single pass, single stage, 15 pressure vessels total. Each pressure vessel contains 6 membranes in series for a total of 90. System produces 1500 m3/day (396021 GPD or 275 gpm) of product water at 45% recovery.

### OPERATING PARAMETERS:

<b>TDS</b>	37,000-45,000 mg/l (as NaCl)
<b>SDI 15</b>	< 3.0
<b>Temperature</b>	25 to 35°C (77 to 95°F)
<b>Recovery</b>	40 to 45%
<b>Nominal Rejection</b>	>98%
<b>Incoming Power</b>	480/380Hz 60/50Hz
<b>Power Consumption</b>	10 - 14 Kwhr/KGal

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

## Features and Benefits



Fig2: ARKQUA®1000 – Pretreatment Included (similar system)

### MEMBRANE AND HOUSINGS:

- Multi Ported FRP pressure vessel design, 1000psi rated
- Spiral wound thin film composite membranes 98% nominal salt rejection.

### MATERIALS OF CONSTRUCTION:

<b>Power Distribution Panels</b>	NEMA 12
<b>Control Enclosure</b>	NEMA 12
<b>High pressure piping</b>	Super Duplex SS
<b>Low pressure piping</b>	PVC Sch 80
<b>High Pressure Tubing</b>	Parflex
<b>Low Pressure Tubing</b>	Polyethylene
<b>Pressure vessel rack</b>	Marine-anodize-Aluminum
<b>Multimedia Filters</b>	FRP
<b>PVC Sample Valves</b>	On each vessel, feed, permeate and reject

### SYSTEM SPECS:

Model-SKU	PERFORMANCE						SPECIFICATIONS									
	Output		Product	Feed	Reject	Recovery	Membranes		Pump HP	Weight		Connections Size (Inch)			System Size	
	GPD	M3/D	GPM	GPM	GPM	%	Qty	Size		lbs.	Kgs.	Feed - Inlet	Product - Permeate	Reject - Brine	Inch	cm
<b>ARKQUA1500</b>	396021	1500.0	275.0	611.1	336.1	45	90	8"	200	30000	13641	6"	4"	4"	96 x 120 x 480	244x305x1220

\*For ARKQUA1000 and larger systems, an optional pretreatment container is available, weighing approximately 28,000+ lbs.

### INSTRUMENTS:

<b>Conductivity</b>	Permeate, Final product
<b>Flow meters digital</b>	Feed and permeate
<b>Pressure switch</b>	RO Feed and Discharge pump
<b>Pressure gauges</b>	Liquid filled for high and low pressures

### ALARMS:

- Low pump suction pressure
- High pump pressure discharge
- Permeate water quality
- Low permeate flow
- High permeate flow
- Low reject flow
- Low/high voltage
- Phase protection
- Pump motor overload
- High membrane feed pressure
- Chemical tank protection level
- Flush storage tank level protection

### OPTIONALS:

- ASME Code stamped pressure vessels
- Post-treatment degasifier
- 400 V, 3 Ph, 50 Hz fuse, A/C, Lighting kit
- pH meter and H2SO4 chemical feed
- NaOCl pretreatment chemical feed
- SBS chemical feed
- Installation and commissioning
- Supervision/services are available