

SEAWATER CONTAINERIZED DESALINATION SERIES ARKQUA®



Fig1: ARKQUA® model ARKQUA150 (similar system)

DESCRIPTION:

Single pass, single stage, two pressure vessels total. Each pressure vessel contains 3 membranes in series for a total of 6. System produces 100 m3/day (26500 GPD or 18.4 gpm) of product water at 45% recovery.

OPERATING PARAMETERS:

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

Ref: ARKQUA100

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
- High Pressure Centrifugal RO Feed Pump w/ 400/460V 3 phase 50/60 Hz TEFC motor
- Energy Recovery Device Turbo Charger
- VFD for RO Pump & RO Feed Pump
- Digital flowmeters
- PLC
- Pressure switches: High and low
- Isolation butterfly valves
- Integral permeate flush and CIP system

CONTROL AND POWER:

- PLC with Ethernet card and spare cards
- 6-inch HMI
- Remote start/stop & alarm capabilities
- Zero recovery flush on shutdown
- Power: 380/460V, 3 phase, 50/60Hz

Features and Benefits



Fig2: ARKQUA® model ARKQUA500 rendering (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:

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

INSTRUMENTS:

Conductivity	Permeate, Final product
Flow meters digital	Feed and permeate
Pressure switch	RO Feed and Discharge pump
Pressure gauges	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
- 220 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

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
ARKQUA100	26500	100.0	18.4	40.9	22.5	45	6	8"	30	8000	3638	2"	1-1/2"	1-1/2"	170 x 38 x 67	431x97x170