

SEAWATER CONTAINERIZED DESALINATION SERIES ARKQUA®

Ref: ARKQUA2000

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 ARKQUA2000

DESCRIPTION:

Single pass, single stage, 15 pressure vessels total. Each pressure vessel contains 8 membranes in series for a total of 120. System produces 2000 m3/day (499,914 GPD or 347.2 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

Features and Benefits



Fig2: ARKQUA@1200 – 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:

| | |
|----------------------------------|---|
| Power Distribution Panels | NEMA 12 |
| Control Enclosure | NEMA 12 |
| High pressure piping | Super Duplex SS |
| Low pressure piping | PVC Sch 80 |
| High Pressure Tubing | Parflex |
| 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
- 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

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 |
| ARKQUA2000 | 499914 | 2000.0 | 347.2 | 771.5 | 424.3 | 45 | 120 | 8" | 300 | 32000 | 14550 | 8" | 6" | 6" | 96 x 120 x480 | 244x305x1220 |