

# Precision Filtration Products

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## Pall Aria AP-Series Water Treatment Systems

Pall Aria<sup>SM</sup> AP-Series Water Treatment Systems are specifically designed to meet the drinking water treatment requirements of small communities. Aria systems use uniquely designed Pall Microza\* membrane modules in a hollow fiber configuration to remove the following contaminants from surface and ground water sources:

- Turbidity
- Bacteria
- Cysts and Oocysts
- Iron and Manganese
- Arsenic

Each 0.1µm hollow fiber module provides high active surface area (538ft<sup>2</sup> - 50m<sup>2</sup>). The hollow fiber modules in the Aria system are highly permeable resulting in high water production rates.

Pall's dedication to simplified process design and control logic has produced a family of systems that are characterized by:

- Full System NSF 61 Certification
- Long Service Life Hollow Fiber Membranes
- Operator Friendly Control Interface
- Simple Clean-In-Place Operation
- High Recovery
- Low Cost of Operation
- Easily Installed Modular Skids
- Compact System Footprint
- ISO 9000 Certified Manufacturing
- Optional Auxiliary Equipment



*View of Hollow Fiber Membrane Module Cut-away.*

## Pall Aria<sup>SM</sup> AP-Series Water Treatment Systems



*Pall Aria Water Treatment System with control panel and modules.*

## Aria AP-Series System Performance

Pall Microza membrane systems have been approved for potable water supply. The Aria hollow fiber membrane system was the first to receive a "full system" certification in accordance with ANSI / NSF 61 Specifications.

Extensive testing has been done across the USA including:

- University of New Hampshire
- Stoney Creek, VA
- Croton Reservoir, NY
- Westover, PA
- Highland Reservoir, PA
- Caney, KS
- Meeteetse Reservoir, WY
- Kernville, CA
- Oregon Parks Department
- Basalt, UT
- North Slope Borough WTP, AK
- Crested Butte, CO
- Youngs River, OR
- Hobart, NY

Site testing confirmed Pall Aria Water Treatment Systems meet or exceed EPA standards for safe drinking water, such as the requirement of the Surface Water Treatment Rule (as amended December 16, 1998).

*\* Microza is a trademark of Asahi Kasei Corporation.*

**Table 1: Pall Membrane Microbial and Particulate Removal**

Contaminants	Typical Removal*
<i>Giardia</i>	> 6 log
<i>Cryptosporidium</i>	> 6 log
MS2 coliphage or bacteriophage	0.5 - 3 log
Turbidity	< 0.1 NTU

\*Based on third party testing

**Aria AP-Series System Specifications**

**Aria AP-Series System Components**

Standard system components consist of 1 to 60 membrane modules, a feed tank, one feed pump, one reverse filtration pump, manual on/off and automatic valving, filtrate flow meter, pressure and temperature sensors, and PLC control.

**Aria AP-Series System Operation**

Maximum Inlet Pressure to Module: 45 psi (3 bar)  
 Maximum Operating Temperature: 104°F (40°C)

**Aria AP-Series System Specifications**

Module Housing: PVC, ABS or other  
 Gasket: EPDM  
 Potting Material: Silicone and Epoxy or Urethane  
 Panel: NEMA 4  
 Tanks: Polyethylene  
 Piping: Lower Manifold and Air: Stainless Steel (other piping: PVC)  
 Hollow Fiber Membrane: PVDF  
 Pumps: Horizontal Stainless Steel Centrifugal

**System Service**

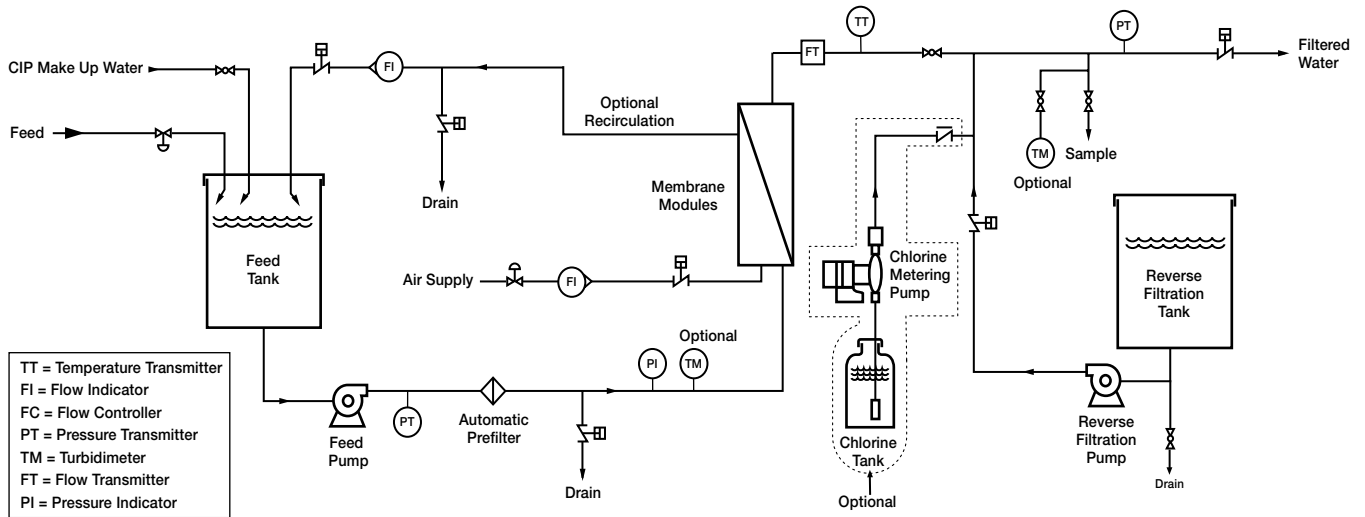
Remote monitoring of system performance available as an online service. On-site service and maintenance contract also available.

**Table 2: Standard Filtration Skid Specifications**

Model Number	Maximum Number of Modules	Maximum Flow Rate (gpm [m <sup>3</sup> /hr])	Footprint (LxWxH)(Feet) Installed
AP-1	2	3-25 [1-7]	6 x 2.8 x 9.7
AP-2	8	10-50 [2.3-12]	8 x 4.1 x 9.9
AP-3	10	25-175 [6-40]	10 x 6.9 x 10.3
AP-3x	20	25-175 [6-40]	(1) 22.9 x 5.7 x 10.8
AP-4	36	50-350 [15-80]	(1) 24 x 6.8 x 10.8
AP-6	60	200-700 [45-150]	(1) 27 x 17 x 10.8

(1) Module Rack is off the skid. Other configurations allow variation in footprint.

**Process Flow Diagram for the Pall Aria AP-Series Water Treatment System**



TT = Temperature Transmitter  
 FI = Flow Indicator  
 FC = Flow Controller  
 PT = Pressure Transmitter  
 TM = Turbidimeter  
 FT = Flow Transmitter  
 PI = Pressure Indicator