Aquasource* XS-1500 Ultrafiltration Membrane System

FACT SHEET

WATER TECHNOLOGIES



Pressurized ultrafiltration system for 5-25 m³/h featuring ZeeWeed* 1500 membranes

Description and Use

Reliable, the Aquasource XS-1500 pressurized ultrafiltration system, featuring the ZeeWeed 1500 module, is ideally suited for challenging water filtration and as reverse osmosis (RO) pre-treatment. The Aquasource systems are proven to consistently outperform conventional filtration technology while meeting or exceeding effluent requirements.

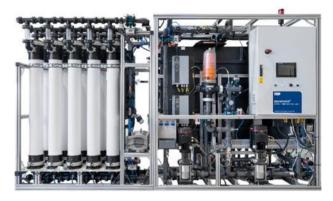
Versatile, the Aquasource XS-1500 system comes with robust ultrafiltration modules and tailor-made options to meet a wide range of customers' applications allowing management of variable feed water quality typically observed in river and tertiary applications.

Simple and Compact, the Aquasource XS-1500 system has all the essential equipment of a fully functional ultrafiltration membrane water treatment system on one compact skid.

Benefits

- Leverage decades of ultrafiltration membrane system design experience.
- Modular mechanical and automation philosophy provides flexibility in design and integration.
- A compact profile which can fit in tight spaces and containers.
- Operates automatically including pre-filtration, backwashing, integrity testing, clean-in-place (CIP).
- One-skid design philosophy that minimizes ancillary loose-shipped equipment for significantly less interconnecting and installation work onsite.

The ZeeWeed 1500 hollow-fiber membrane has a 0.02 μm nominal pore diameter for optimal removal of particulates, bacteria, viruses, low turbidity and low silt density index (SDI) permeate.



Typical Applications

The Aquasource XS-1500 system is suited for use in numerous municipal and industrial applications including:

- Pretreatment for RO for wastewater reuse
- Pretreatment for RO for process water production
- Wastewater Reuse applications
- Polishing filtration
- Industrial (brine) effluent filtration

Base System

- Feed/CIP Pump on Variable Frequency Drive (VFD)
- Disc Filter, 100 microns
- Ultrafiltration modules

- Backwash Pump on VFD
- Backwash tank
- CIP tank
- Air scouring compressor
- Siemens programmable logic controller (PLC), 10" human-machine interface (HMI)

Available Options

- Flow Control Valve for pressurized feed
- Remote I/O or Junction Box panel design
- Chemical dosing stations for cleaning (Chlorine, caustic soda, citric acid, mineral acid)
- Chemical dosing station for improved performances (coagulant)
- Turbidity meter
- Compressor for pneumatic valves & Membrane integrity test (MIT)

Instrumentation

Flow	Feed, CIP
Pressure	Feed, Permeate, MIT
Level	CIP & Backwash Tanks
Temperature	Feed
pH	Permeate
Turbidity	Feed - Optional

Typical Permeate Quality

Bacteria, Giardia, Cryptosporidium ≥ 4-log removal Total Suspended Solids (TSS)≤ 0.1 mg/L Total Organic Carbon (TOC) 50-90% removal^{1,2}

UF Membrane Modules

Membrane	ZeeWeed 1500, Outside-In Filtration
Membrane Area	a56m² / 600ft²
Pore Size	Ultrafiltration, 0.02-micron nominal
Chemistry	PVDF

Materials of Construction

Water Piping	PVC, PP
Water Sampling Hose	PE
Compressed Air Piping	PU, Aluminum
Skid Frames	Aluminum Alloy
Tanks	HDPE

Operating Conditions

Parameters	Values	
Typical Flux ³	20-100 LMH	
Production Cycle Duration	15-45 mins	
Typical Production Recoveries	90-97%	
Typical TMP	<1.5 bar	
Max, allowable TMP	ole TMP 2.7 bar	
Operating pH	5.0 - 10.0	
Cleaning pH	2.0 - 12.0	
Max. Operating Temperature	40° C	
Filtration Mode	Dead-end	
UF Permeate Pressure	< 1 bar	
Number of trains (or skid)	(or skid) 1 to 3	

³ Based on influent water quality and water temperature

Lifecycle Services with Lifetime Support

- Most extensive service capabilities in the industry
- InSight* Asset Performance Management remote monitoring available
- Upgrades to help you advance with Veolia's technology.

¹ Pretreatment required

² Dependent on water quality

General System Specifications

Model	XS-15-4	XS-15-6	XS-15-8	XS-15-10		
	Model specifications					
Hydraulic Capacity			25 m³/h			
Modules Quantity	4	6	8	10		
Modules Type	ZW1500 VIC - 56 m ²					
PLC/HMI	Siemens					
Communication Protocol	Profinet					
Power	400VAC, 3P, 50Hz, 12kW					
Feed / CIP pump power	4 kW					
Feed / CIP pump material	SS 316L					
BW pump power	3 kW					
BW pump material	SS 316L					
Length (+/- 10 mm)	3670 mm		4220 mm			
Width (+/- 10 mm)	1100 mm					
Height (+/- 10 mm)	2544 mm					
Shipping Weight	1500 kg					
Operating Weight	2375 kg	2465 kg	2560 kg	2650 kg		
	Model Tie-Points					
Feed	DN50 PN10 Flange					
Service water (optional upon application)	DN50 PN10 Flange					
Production	DN50 PN10 Flange					
Waste w/ chemicals	DN50 PN10 Flange					
Waste w/o chemicals	DN50 PN10 Flange					
Chemical injection	DN20 PN16 Threaded					
Compressed Air Pneumatic Circuit	Rilsan flexible hose 8/10 mm					

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