



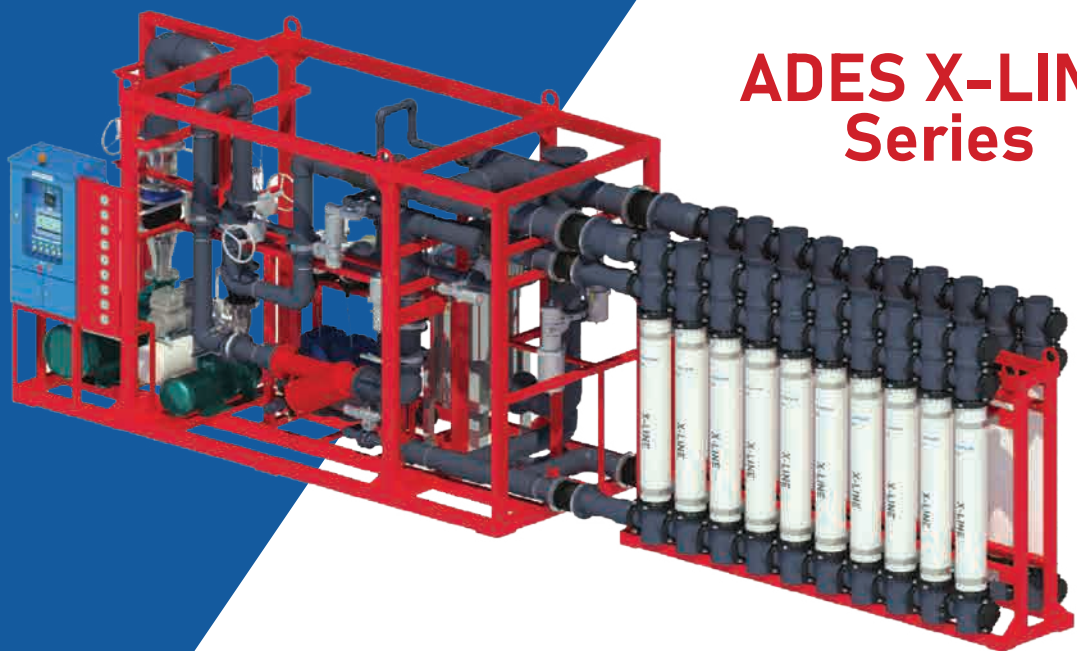
**ATS WATER
TECHNOLOGY**



X-LINE

**Ultrafiltration
System**

Inside/Out (I/O) Filtration Technology



**ADES X-LINE
Series**



COMMERCIAL ULTRAFILTRATION SYSTEM CAPACITY: 05 - 110 M³/H

Descriptions

Using state of art technology and decades of expertise and experience, ATS has built a robust and reliable Pressurized Ultrafiltration (UF) system for the challenging markets. In this system, ATS uses the established UF modules from Pentair X-Flow.

UF systems can be an excellent alternative replacement for clarifier and multimedia filter. Standard design is based on X-line configuration which allows for compact footprint, low fouling, higher filtration capacity and easy cleaning.

ADES X-Line Series is constructed according to Pentair X-Flow's specifications and standards.

Standard Features

- » Feed & Backwash pump: IE3, IP55 motor
- » UF modules (Inside out PES/PVP): PVC housing
- » Amiad Manual Strainer: 200 micron for Feed and Backwash line
- » Control panel: PLC & 9" HMI
- » Electrical enclosure: SS400 powder coated IP54
- » Automatic control with pneumatic butterfly valves
- » Air compressor for valve control
- » Frame: SS400 with 3 layers epoxy coated steel
- » Piping: PVC SCH80 with NSF / ANSI certificate
- » Connection: JIS-10K Flange
- » Power supply: 380-415V/3Ph/50Hz

Instrumentation Accesories

- » Pressure Transducers
- » Liquid filled pressure gauges (Panel mount)
- » Flow indicators: Feed & Backwash
- » Manual valves & accessories
- » Chemical enhanced backwash (CEB) dosing system (excludes CEB tanks): NaOH, NaOCl & HCl dosing pumps & chemical tanks

Options Available

- » Membrane cleaning (CIP) system
- » pH adjustment
- » Online turbidity monitor
- » Permeate (Backwash) tank (PE, SUS304, FRP)
- » Marterials for sea water filtration
- » Connection: DIN/ANSI flange

Operating conditions

- » Operating pressure: 0.2-2bar
- » Max. operating pressure: 3bar
- » Control: automatic Hydraulic Clean (HC) and Chemical Enhanced Backwash (CEB)

ATS supplies a full line of standard customizable UF systems, that includes X-line, Aquaflex configuration with circulation flow, air flushing or coagulant/chemical dosing for different application & types of water.

UF Membrane Characteristics

- » Model: XF75 - Pentair
- » Membrane surface area: 75m²
- » Module dimensions (DxL): 8.7" x 1537.5 mm
- » Housing material: PVC
- » Membrane material: PES/PVP
- » A nominal pore size of 20nm
- » Structure asymmetric/microporous
- » High performance with an excellent anti-fouling behavior
- » Typical permeate quality: SDI<3, turbidity<0,1 NTU
- » Membrane filtration provides 99.9999% (LOG6) reduction of bacteria (*Pseudomonas diminuta*) and 99.99% (LOG 4) reduction of virus (*MS2 colifages*) by mechanical means. EPA Est. No. 090374-NLD-001

Feed Water Quality

- | | |
|---|--|
| » Turbidity: < 5NTU | » pH: 6-9 (2-12 for cleaning) |
| » TSS: < 10mg/L | » Temperature: 25°C (max. 40°C) |
| » TOC: < 2mg/L | » Oil & grease: < 0.1ppm |
| » COD: < 1mg/L | » Cl ₂ : 200-500 ppm for cleaning |
| » Hardness: <150mg/L as CaCO ₃ | |
| » Alkalinity: <300mg/L as CaCO ₃ | |

The system is designed for city water applications or similar. Contact us for other water quality

ADES X-LINE Series
Capacity: 05 - 15 m³/h

Model	ADES-UFX 05-01-M	ADES-UFX 10-02-M	ADES-UFX 15-03-M
Net permeate flow Flux: 80l/m ² /h	05 m ³ /h	10 m ³ /h	15 m ³ /h
No. of elements	1	2	3
Total membrane area	75 m ²	150 m ²	225 m ²
UF permeate tank volume	≥ 6 m ³	≥ 12 m ³	≥ 18 m ³
FEED PUMPS			
Motor	2.2 kW	3.0 kW	4.0 kW
Design flowrate	7 m ³ /h	13 m ³ /h	20 m ³ /h
Design pressure	2.5 bar	2.5 bar	2.5 bar
Manufacturer	PENTAIR		
BACKWASH PUMPS			
Motor	3 kW	5.5 kW	7.5 kW
Design flowrate	18 m ³ /h	36 m ³ /h	54 m ³ /h
Design pressure	3.0 bar	3.0 bar	3.0 bar
Manufacturer	PENTAIR		
MANUAL STRAINER			
Filtration degree	200 µm	200 µm	200 µm
Feed line	3" Leader Filter	3" Leader Filter	3" Leader Filter
Backwash line	3" Leader Filter	3" Leader Filter	3" Leader Filter
Manufacturer	AMIAD		
MECHANICAL CONNECTION (FLANGE)			
Feed port	DN65 (2.5")	DN65 (2.5")	DN80 (3")
Backwash port	DN65 (2.5")	DN100 (4")	DN125 (5")
Permeate port	DN32 (1.25")	DN50 (2")	DN50 (2")
Concentrate port	DN50 (2")	DN80 (3")	DN100 (4")
Membrane connection	X-Line	X-Line	X-Line
DIMMENSIONS			
Approx. Length	3400 mm	3600 mm	3800 mm
Approx. Width	1300 mm	1300 mm	1500 mm
Approx. Height	2500 mm	2500 mm	2500 mm
Approx. Weight	1830 kg	1950 kg	2100 kg

ADES X-LINE Series
Capacity: 20 - 40 m³/h

Model	ADES-UFX 20-04-M	ADES-UFX 30-06-M	ADES-UFX 40-07-M
Net permeate flow Flux: 80l/m ² /h	20 m ³ /h	30 m ³ /h	40 m ³ /h
No. of elements	4	6	7
Total membrane area	300 m ²	450 m ²	525 m ²
UF permeate tank volume	≥ 24 m ³	≥ 36 m ³	≥ 42 m ³
FEED PUMPS			
Motor	4.0 kW	5.5 kW	7.5 kW
Design flowrate	26 m ³ /h	39 m ³ /h	52 m ³ /h
Design pressure	2.5 bar	2.5 bar	2.5 bar
Manufacturer	PENTAIR		
BACKWASH PUMPS			
Motor HP	11 kW	15.0 kW	18.5 kW
Design flowrate	72 m ³ /h	108 m ³ /h	144 m ³ /h
Design pressure	3.0 bar	3.0 bar	3.0 bar
Manufacturer	PENTAIR		
MANUAL STRAINER			
Rating	200 μm	200 μm	200 μm
Feed line	3" Leader Filter	3" Leader Filter	3" Leader Filter
Backwash line	3" Leader Filter	6" Super Leader Filter	6" Super Leader Filter
Manufacturer	AMIAD		
MECHANICAL CONNECTION (FLANGE)			
Feed port	DN80 (3")	DN100 (2.5")	DN125 (5")
Backwash port	DN150 (6")	DN200 (8")	DN200 (8")
Permeate port	DN65 (2.5")	DN80 (3")	DN100 (4")
Concentrate port	DN100 (4")	DN80 (5")	DN150 (6")
Membrane connection	X-Line	X-Line	X-Line
DIMMENSIONS			
Approx. Length	3600 mm	4200 mm	4800 mm
Approx. Width	1500 mm	1500 mm	1600 mm
Approx. Height	2500 mm	2600 mm	2800 mm
Approx. Weight	2310 kg	2530 kg	2770 kg

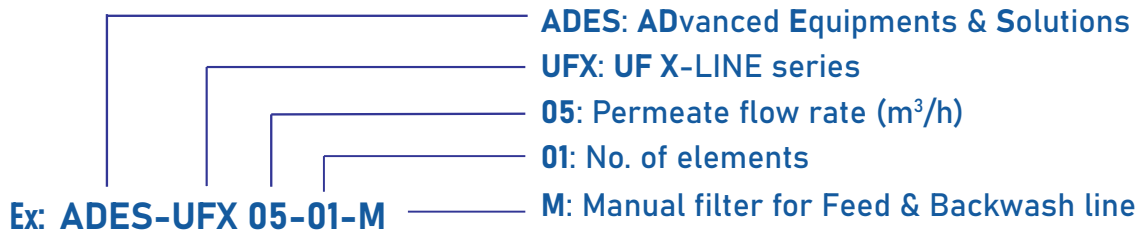
**ADES X-LINE Series
Capacity: 50 - 80 m³/h**

ADES-UFX 50-09-M	ADES-UFX 60-10-M	ADES-UFX 70-12-M	ADES-UFX 80-14-M
50 m ³ /h	60 m ³ /h	70 m ³ /h	80 m ³ /h
9	10	12	14
675 m ²	750 m ²	900 m ²	1050 m ²
≥ 54 m ³	≥ 60 m ³	≥ 72 m ³	≥ 84 m ³
FEED PUMPS			
7.5 kW	7.5 kW	11.0 kW	11.0 kW
57 m ³ /h	65 m ³ /h	78 m ³ /h	91 m ³ /h
2.5 bar	2.5 bar	2.5 bar	2.5 bar
PENTAIR			
BACKWASH PUMPS			
22 kW	22.0 kW	30.0 kW	30.0 kW
180 m ³ /h	180 m ³ /h	216 m ³ /h	252 m ³ /h
3.0 bar	3.0 bar	3.0 bar	3.0 bar
PENTAIR			
MANUAL STRAINER			
200	200 μm	200 μm	200 μm
4" Super Leader Filter	4" Super Leader Filter	4" Super Leader Filter	6" Super Leader Filter
4" Super Leader Filter	4" Super Leader Filter	6" Super Leader Filter	6" Super Leader Filter
AMIAD			
MECHANICAL CONNECTION (FLANGE)			
D125 (5")	D125 (5")	DN150 (6")	DN150 (6")
DN250 (10")	DN250 (10")	DN250 (10")	DN250 (10")
DN100 (4")	DN100 (4")	DN125 (5")	DN125 (5")
DN150 (6")	DN150 (6")	DN200 (8")	DN200 (8")
X-Line	X-Line	X-Line	X-Line
DIMMENSIONS			
5600 mm	5600 mm	7800 mm	8300 mm
1600 mm	1600 mm	2000 mm	2000 mm
2800 mm	2800 mm	3000 mm	3000 mm
2910	3060 kg	3430 kg	3600 kg

ADES X-LINE Series
Capacity: 90 - 110 m³/h

Model	ADES-UFX 90-16-M	ADES-UFX 100-18-M	ADES-UFX 110-20-M
Net permeate flow Flux: 80l/m ² /h	90 m ³ /h	100 m ³ /h	110 m ³ /h
No. of elements	16	18	20
Total membrane area	1200 m ²	1350 m ²	1500 m ²
UF permeate tank volume	≥ 96 m ³	≥ 108 m ³	≥ 120 m ³
FEED PUMPS			
Motor	11.0 kW	11.0 kW	15.0 kW
Design flowrate	104 m ³ /h	117 m ³ /h	130 m ³ /h
Design pressure	2.5 bar	2.5 bar	2.5 bar
Manufacturer	PENTAIR		
BACKWASH PUMPS			
Motor HP	37.0 kW	45.0 kW	55.0 kW
Design flowrate	288 m ³ /h	324 m ³ /h	360 m ³ /h
Design pressure	3 bar	3.0 bar	3.0 bar
Manufacturer	PENTAIR		
MANUAL STRAINER			
Rating	200 μm	200 μm	200 μm
Feed line	6" Super Leader Filter	6" Super Leader Filter	6" Super Leader Filter
Backwash line	6" Super Leader Filter	6" Super Leader Filter	6" Super Leader Filter
Manufacturer	AMIAD		
MECHANICAL CONNECTION (FLANGE)			
Feed port	D150 (6")	DN200 (8")	DN200 (8")
Backwash port	DN250 (10")	DN300 (12")	DN300 (12")
Permeate port	DN125 (5")	DN125 (5")	DN150 (6")
Concentrate port	DN200 (8")	DN250 (10")	DN250 (10")
Membrane connection	X-Line	X-Line	X-Line
DIMMENSIONS			
Approx. Length	8600 mm	9500 mm	9800 mm
Approx. Width	2000 mm	2300 mm	2300 mm
Approx. Height	3000 mm	3300 mm	3300 mm
Approx. Weight	3950 kg	4440 kg	4590 kg

Product numbering guide



Confirmation letter



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5-Jan-2024

Subject: ADES X-LINE SERIES (UF SYSTEM)

To Whoever Is Concerned,

ATS WATER
TECHNOLOGY

This letter is to confirm that the ADES X-Line Series (UF system), built and supplied by ATS WATER TECHNOLOGY, Vietnam, has been audited by Pentair and is constructed according to Pentair X-Flow's specifications and standards.

With kind regards,

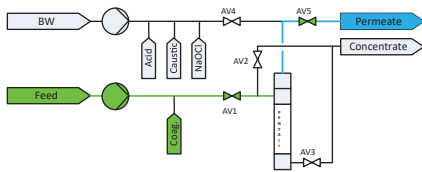


Pentair Water Asia Pacific Pte Ltd
Aik Leng Lim
Technical manager – Southeast Asia

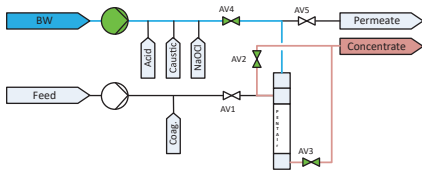
OPERATION PROCESS

The system uses two main pumps. The feed pump provides the membranes with feed water during Filtration and the backwash pump is used for cleaning the membranes during Hydraulic Clean (HC) and Chemically Enhanced Backwash (CEB) programs. UF permeate is used for these cleaning operations. The system is also equipped with dosing pumps for cleaning chemicals and coagulant. In the following sections, the operations of the UF system are described. Coagulant dosing is used for specific applications only.

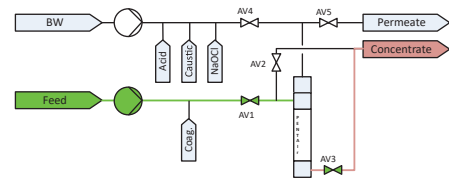
FILTRATION 20-120mins



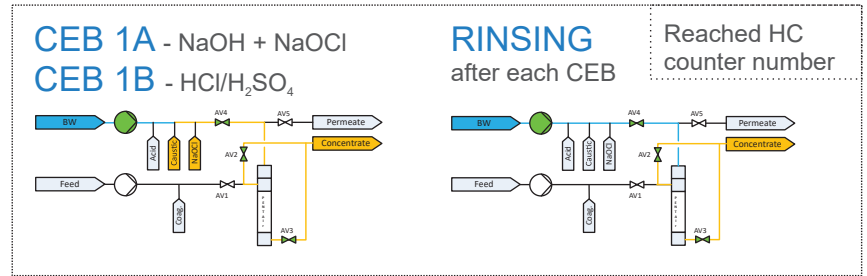
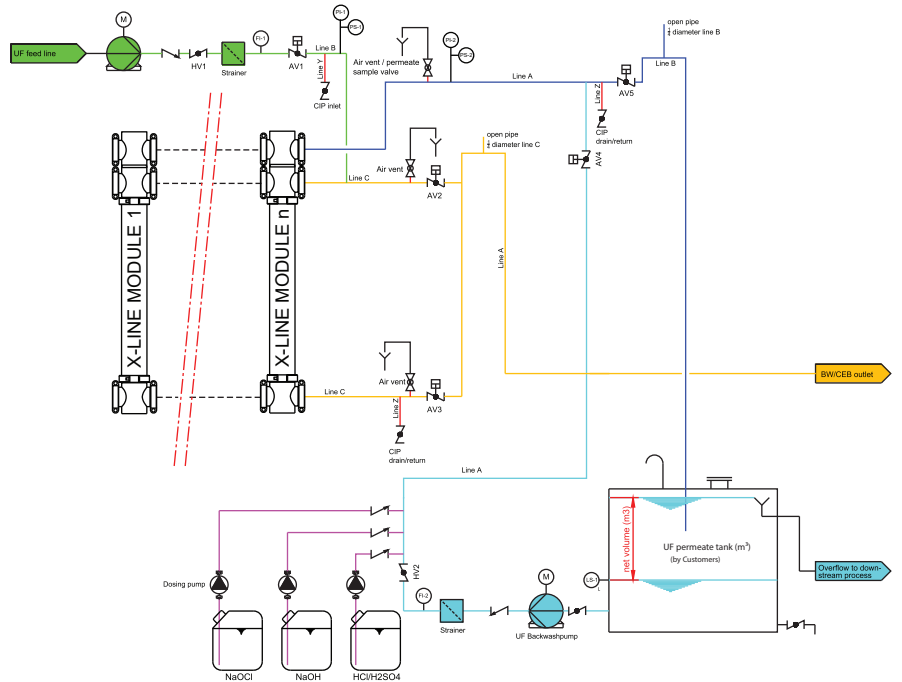
BACKWASH after each filtration cycle



HYDRAULIC CLEAN (HC) Forward flush top-bottom



X-line System P&ID



Design Approved by
Aik Leng Lim
Technical Manager

PENTAIR
X-FLOW

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