

AQUADYN® Ultrafiltration Modules

Smarter Solutions for Water Treatment



**MICRODYN
NADIR**

ADVANCED SEPARATION TECHNOLOGIES



AQUADYN®

Hollow Fiber Modules

AQUADYN® modules are encased ultrafiltration hollow fiber membrane modules which effectively reduce micro-organisms and suspended solids from water. The AQUADYN® series offers a comprehensive range of filtration modules for a wide spectrum of applications. At a choice of either modified Poly Acrylonitrile (PAN) or Poly Ethersulfone (PES) a huge selection of module sizes is available.

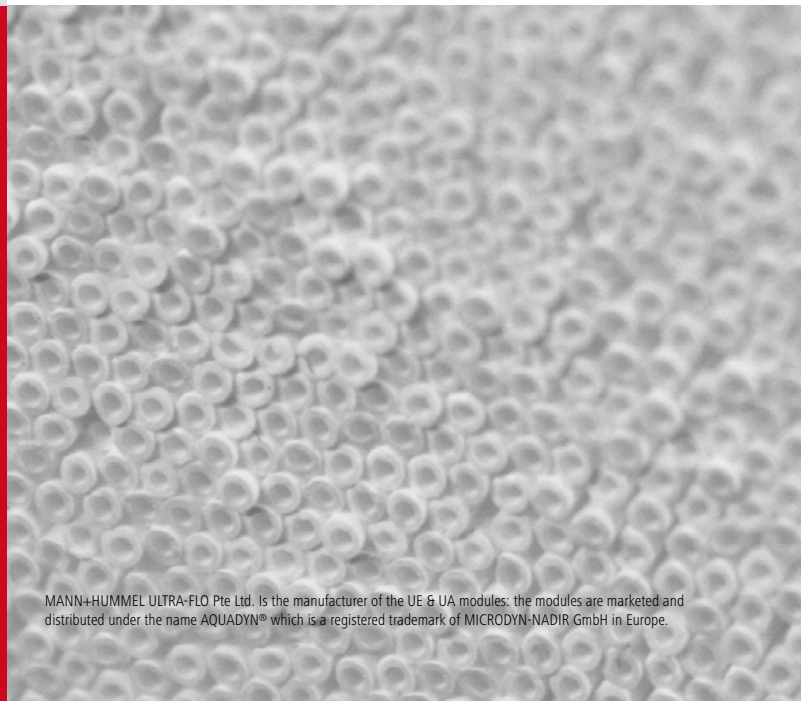
These innovative membrane modules are developed by MANN+HUMMEL with vast R&D and business experience in filtration. The modules are manufactured under strict supervision and quality checks.

Due to the optimized design efficient flow distribution, enhanced cleaning, minimal pressure drop and high packing density can be achieved. For applications requiring large capacities, extra large modules are available (10" x 60").

Moreover, the AQUADYN® UA (PAN) as well as the AQUADYN® UE (PES) materials are superior in their hydrophilic property compared to most other polymeric materials. The enhanced hydrophilic property improves the wettability and reduces operating pressure. Additionally, it makes the membrane more resistant to fouling; resulting in less cleaning cycles and reduced chemical usage.

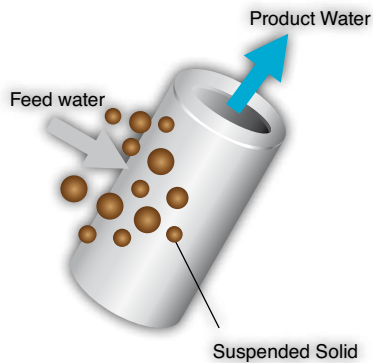
ADVANTAGES

- » hydrophilic low fouling membrane material
- » safe retention of particles and bacteria
- » high and stable permeate performance
- » flexible flushing modes
- » easy pre-treatment
- » high productivity
- » compact installation
- » high flow rates at low pressure utilization



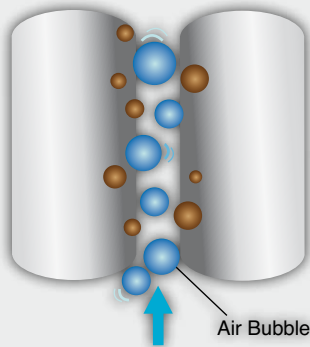
MANN+HUMMEL ULTRA-FLO Pte Ltd. is the manufacturer of the UE & UA modules; the modules are marketed and distributed under the name AQUADYN® which is a registered trademark of MICRODYN-NADIR GmbH in Europe.

Module Operating Process



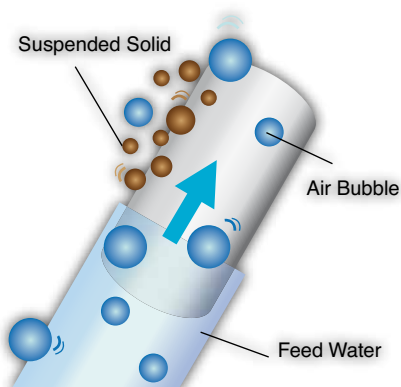
Filtration Process

Filtration process is an outside-in flow configuration where feed water is in contact with the exterior of the fibers and the filtrate (product water) is drawn from the inside of the hollow fibers (lumen). This configuration has the distinctive advantage of a larger membrane surface area which translates into higher flows.



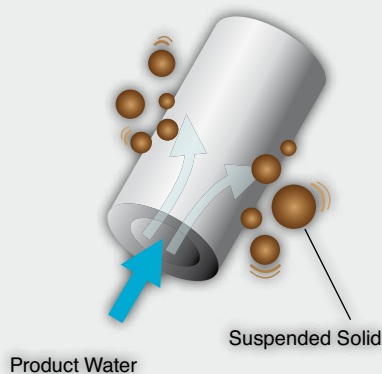
Air Scouring

During the backflush process, air is injected into the module to loosen suspended solid on the fiber surface. This enables suspended solids in the module to be flushed out effectively and prevents solid build-up.



Forward Flush

Feed water flushes the exterior surface of the fiber and dilutes the retentate. Air scouring is incorporated along with this process to ensure the suspended solids are dislodged before backflushing. This reduces the use of permeate.



Backflush

Either at pre-set intervals or when reaching a predetermined transmembrane pressure (TMP), the membrane module undergoes a backflush cleaning sequence where filtrate is used to backflush from the inside of the hollow fibers, hence dislodging the solids attached to the feed surface of the fiber.

AQUADYN® Ultrafiltration Modules

Decoding of the product code:

U	A	10	60
U	E	10	60

Type	Potting	Membrane Material	Ø Module [mm]	Length Module [mm]
UA420-BT	U-Shape	PAN	160	640
UA-640	U-Shape	PAN	168	1210
UA660	U-Shape	PAN	168	1660
UA860	U-Shape	PAN	216	1642
UA1060	U-Shape	PAN	252	1737
UE1060	U-Shape	PES	252	1737

AQUADYN® Modules

Designs and applications		
Membrane module	AQUADYN® UA	AQUADYN® UE
Membrane material	PAN	PES
MWCO (kDa)	150	150
Industrial process water	suitable	recommended
Wastewater tertiary treatment	recommended	suitable
Surface / borehole water	recommended	recommended
Pre-treatment to RO	recommended	recommended
Municipal water supply	-	recommended

Final sizing and selection has to be approved by an official MICRODYN-NADIR representative. Please contact **phone + 49 611 962 6001** or **www.microdyn-nadir.de**

i 1 m² ≙ 10.764 ft² | 1L ≙ 0.26 us-gal. | 1" ≙ 2.54 cm

Module Specifications and Operating Data AQUADYN® UA/UE Series

Parameters	UA420-BT	UA640	UA660	UA860	UA1060	UE1060 ¹⁾
Structure	Hollow Fiber	Hollow Fiber	Hollow Fiber	Hollow Fiber	Hollow Fiber	Hollow Fiber
Membrane surface (m²)	6	16	27	45	65	65
Cap, socket and housing material	PVC transparent housing	uPVC	uPVC	uPVC	uPVC	uPVC
Potting	Epoxy	Epoxy	Epoxy	Epoxy	Epoxy	Epoxy
Flow type	Out / In	Out / In	Out / In	Out / In	Out / In	Out / In
Type of filtration	Dead End	Dead End	Dead End	Dead End	Dead End	Dead End
Regeneration	-	Backflush	Backflush	Air Scouring with Backflush	Backflush optional forward flush with Air Scouring	Backflush optional forward flush with Air Scouring
Max Trans-Membrane-Pressure (bar)	1	1	1	1	1	1
pH range	2 - 10	2 - 10	2 - 10	2 - 10	2 - 10	2 - 12
Max Feed TSS (mg/l)	350	350	350	350	350	350

Note: (1) NSF Approval



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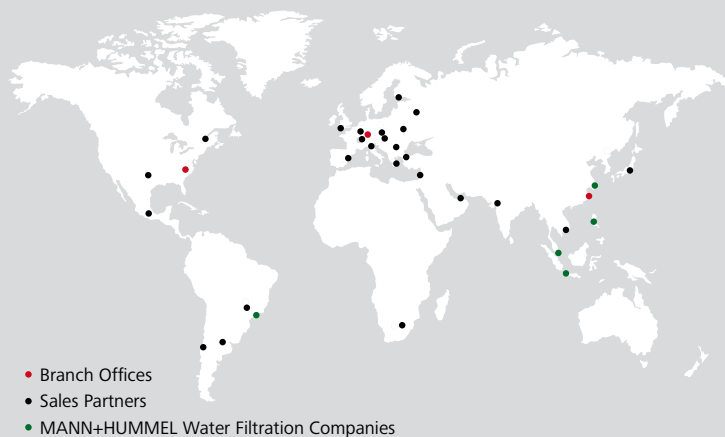
SEPARATION – OUR PASSION

For more than 45 years, MICRODYN-NADIR has developed innovative membranes and membrane modules for micro-, ultra- and nano-filtration as well as solutions to support our customers' needs in operation, performance, efficient membrane processes and regulatory compliance.

We will deliver products, information and services, which fully meet or exceed customer expectations. Our team focuses on continual improvement to achieve the highest possible level of customer satisfaction and to be recognized by our customers as the technology and quality leader.

We are not satisfied until our products have been successfully integrated into your customers' plants and processes. That is our passion.

Our quality system is designed to support these goals.



WE SUPPORT YOU – WORLDWIDE!

- » Global availability
- » Intensive technical consulting
- » Ideal choice of membranes and modules
- » Support with engineering and plant design
- » Laboratory and pilot tests
- » After Sales Service