



# Q-SEP<sup>®</sup>

## Q-CONNECT<sup>™</sup> 10012 ULTRAFILTRATION MODULE

Q-SEP<sup>®</sup> outside-in hollow fiber ultrafiltration modules contain PVDF membranes manufactured with QUA's innovative modified thermally-induced phase separation (TIPS) method. The membrane has high mechanical strength, high chemical and chlorine tolerance, and the ability to handle high feed turbidity for a wide range of applications. Q-SEP<sup>®</sup> outside-in UF membranes are made of modified hydrophilic polyvinylidene fluoride (PVDF) material that offers high fiber strength and chemical resistance, resulting in higher membrane productivity.

These hollow fiber membranes operate under a low transmembrane pressure in an outside-in flow configuration for superior performance. Applications of Q-SEP<sup>®</sup> UF include pretreatment to RO systems (brackish and seawater applications), purification of surface and well water for potable applications, filtration of industrial water, and wastewater recycle and reuse.

Q-SEP<sup>®</sup> modules deliver superior performance characteristics and product water quality that surpass the quality from conventional UF modules. This Q-SEP module provides a key advantage – the ability to operate with a one-pump system with no separate backwash pump or tank needed. This allows for lower equipment costs, lower risk of fiber leakage, and easier operation than other UF systems.

Q-SEP<sup>®</sup> modules deliver superior performance characteristics and product water quality that surpass the quality from conventional UF modules.



## Q-SEP<sup>®</sup> 10012 MEMBRANE SPECIFICATIONS

Operational Instructions	
Filtrate Flux Range	40 to 120 Lm <sup>2</sup> h (24 to 71 gfd)
Feed Pressure (Max.)	4.8 bar (70 psi)
Operating Feed Pressure	3.0 bar (43 psi)
Transmembrane Pressure	0.3 to 2.0 bar (5 to 30 psi)
Operating pH Range	5 – 9
Operating Temperature (Max.)	5 - 45° C (41 - 113° F)
Feed Turbidity	Up to 100 NTU*
Expected Product Turbidity	< 0.1 NTU
Filtration Cycle Duration	20 – 60 minutes
Operating Air Scour flow	12 -14 Nm <sup>3</sup> /hr (7.5 – 8.7 scfm)
Maximum Air Flow	16 Nm <sup>3</sup> /hr (10 scfm)
Air Inlet Pressure (Max.)	2 bar (30 psi)
Chemically Enhanced Backwash (CEB)	
Estimated Frequency	Once every 1-2 days, depending on feed water specs & TMP rise
Duration	20 to 30 minutes
Cleaning Chemicals	NaOCl (200 ppm as Cl <sub>2</sub> ) with 9.0 – 9.5 pH HCl / H <sub>2</sub> SO <sub>4</sub> (0.2% solution) with pH = 2 Citric acid (2% solution) with pH = 2
Cleaning pH Range	2 – 10
Cleaning Flow Range	30 to 40 L/m <sup>2</sup> h (18 to 24 gfd)
Air Scouring Flow	4 - 6 Nm <sup>3</sup> /hr (2.5 – 3.7 scfm)
Chemical Solution Feed Port	Product
Module Characteristics	
Membrane Material	Hydrophilic PVDF
Membrane Pore Size	0.04 μ
Operating Configuration	Self-encapsulated hollow fiber ultrafiltration membrane module (outside-in)
Operating Mode	Dead-end or Cross flow
Module Mounting	Vertical
Housing Material	UPVC
End Cap Material	GRP
Clamp Material	GRP

Parameters	Description / Information
Configuration	Self-encapsulated hollow fiber ultrafiltration membrane module (outside-in)
Operating Mode	Dead-end or Cross flow
Module Mounting	Vertical

\*Can handle up to 300 NTU on an intermittent basis



# Q-SEP<sup>®</sup>

## Q-CONNECT<sup>™</sup> 10012 ULTRAFILTRATION MODULE

QUA<sup>®</sup> Q-Connect<sup>™</sup> series is pre-engineered Q-SEP<sup>®</sup> Ultrafiltration rack solution which provides reduced foot print, high flow rates and ease of installation. Q-Connect<sup>™</sup> can be used for any industrial or municipal water and waste water treatment application requiring Ultrafiltration membranes.

Q-SEP 10012 Q-Connect<sup>™</sup> Series consists of outside-in Ultrafiltration membranes. This is available in two configurations, Q-Connect<sup>™</sup> 6.0 with 6 Q-SEP<sup>®</sup> 10012 modules and Q-Connect<sup>™</sup> 4.0 with 4 Q-SEP<sup>®</sup> 10012 modules.. Each ultrafiltration module has a membrane area of 100 m<sup>2</sup>.

Within the Q-Connect<sup>™</sup> rack, the feed and product end caps of adjacent modules are joined to form the respective feed and the product headers, thus additional headers are not required. The reject header is installed above the module using structural support.

The information provided in this data sheet are the general characteristics of a Q-SEP<sup>®</sup> module. QUA believes that this information is updated and accurate, however, the content of this datasheet might be subject to changes with further developments of the product line. Make sure that the Q-SEP<sup>®</sup> modules are operated according to the latest version of the QUA Operation and Maintenance/Technical Manual guidelines.

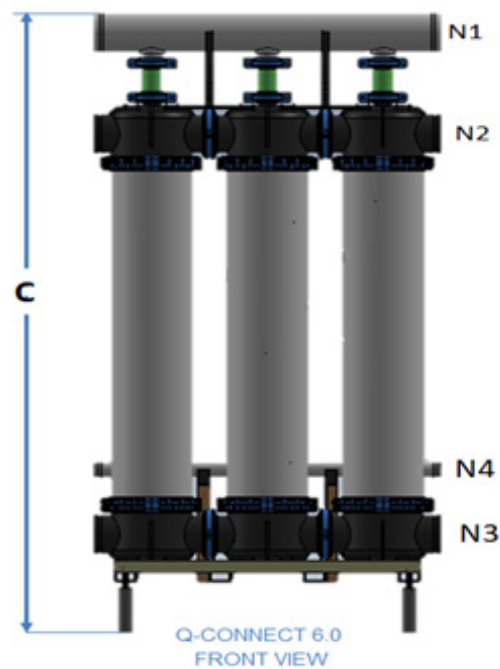
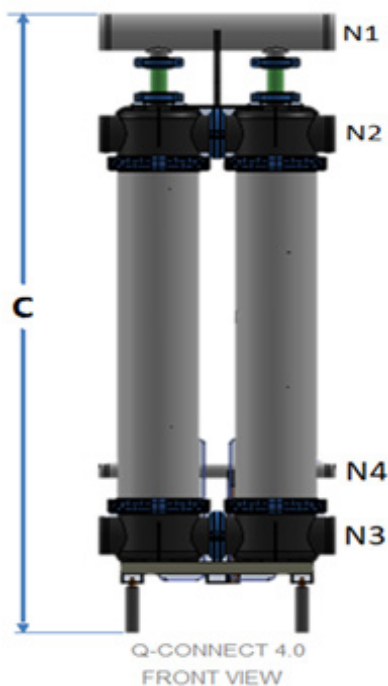


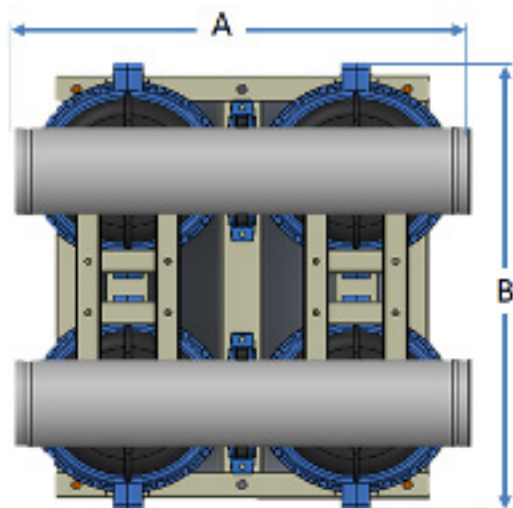
## Q-CONNECT™ - 10012 RACK SPECIFICATIONS

Product Data	UOM	Q-Connect™ 4.0	Q-Connect™ 6.0
Q-SEP® 10012 Modules	Nos.	4	6
Total Membrane Area	m <sup>2</sup> / ft <sup>2</sup>	400 / 4306	600 / 6458
Filtrate Flow Rate Minimum	m <sup>3</sup> /hr / gpm	16 / 70.5	24 / 105.6
Filtrate Flow Rate Maximum	m <sup>3</sup> /hr / gpm	48/ 211.3	72 / 316.8
Air Scouring – Air Assisted Cleaning	Nm <sup>3</sup> /hr / scfm	48 – 56 / 30 – 35	72 – 84 / 45 – 52
Air Scouring – Chemical Cleaning	Nm <sup>3</sup> /hr / scfm	16 – 24 / 10 - 15	24 – 36 / 15 – 22
Rack Length (A)	mm / inch	801 / 31.5	1214.4 / 47.8
Rack Width (B)	mm / inch	867.4 / 34.1	867.4 / 34.1
Rack Height - With Product Header (C)	mm / inch	2703.1 / 106.4	2703.1 / 106.4

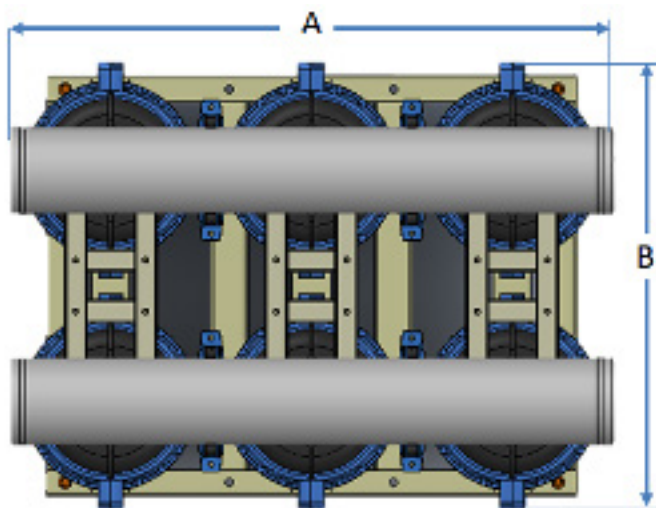
## Q-CONNECT™ - 10012 MODULE PORTS DESCRIPTION

Ports Tag No	Ports Description	Size & Type
N1	Reject	6" Victaulic
N2	Product	6" Victaulic
N3	Feed	6" Victaulic
N4	Air	2" Victaulic





Q-CONNECT 4.0  
TOP VIEW



Q-CONNECT 6.0  
TOP VIEW



Q-CONNECT 4.0 / 6.0  
SIDE VIEW