



Virex Pro

The new Virex® Pro.

Meet the toughest regulatory standards with Seccua's leading-edge Ultrafiltration: Certified pathogen-removal, integrated membrane testing, data-logging and web-based remote access.

Plus full control over all required peripherals to filter water from any source, from waste- to well-water.

Now with 60% higher performance.



Ultimate Removal Performance

The nano-pores of the Seccua-Ultrafilters provide removal characteristics, that meet and exceed regulatory requirements for application of membrane filtration in drinking water treatment. The Virex Pro has proven to fully remove virus, cyst and bacteria, tested against US EPA Standards. It also reliably reduces turbidity to under a level that downstream second barrier devices, like UV-systems, can function at efficiently.

Integrated Membrane Testing

The Virex Pro has a fully automated, integrated, state-of-the-art membrane integrity test. It detects membrane damages smaller than the size of pathogens. Together with its ability to monitor the signal of a turbidity meter in the filtrate line of the system (not included), it performs a continuous, indirect integrity test, triggering the integrated, direct membrane-test.

Treats difficult water

As the only one of its kind, the Virex Pro continuously measures the actual degree of fouling of the membrane - based on a function of flow and differential pressure. The Virex Pro automatically reacts to varying feed water conditions and adjusts the frequency of its cleaning cycles accordingly. In addition to a feed-pump it also controls dosing equipment in the feed to be able to treat high-color-containing sources using an inline-flocculation-process and achieve highest possible flowrates at maximum rates of removal of color and dissolved organics.

Cleaning-In-Place capability

Once the system detects a need for cleaning, it can apply different combinations of cleaning techniques, including pre- and post-flushing, internal backwash or backwash powered by an external pump, and it is even able to automatically perform chemically-enhanced Cleaning-In-Place (CIP): Thereby the Virex Pro co-ordinates a cleaning process including two different chemicals in sequence to allow e.g. high- followed by low-pH cleaning steps to get the system back to start-up conditions.

Remote monitoring- and alert-system

As soon as the system detects an operating-error, including a failed membrane-integrity test, but also other differentiated messages, e.g. unsuccessful cleaning sequences, occurred water hammer, empty cleaning chemicals and other, it can send out an SMS message to up to ten cell-phones or report to an existing remote monitoring system. Once the unit is hooked up to an existing cellular network through its internal high-speed-modem (optional), latest web-based, remote-control solutions allow the user to access the unit over the internet, change operating parameters and read operating history from the datalogger.

Highest Filtrate output

The Virex Pro now offers higher filtrate output than ever: due to optimized filter-module construction and more membrane area, depending on the water quality, the system achieves a continuous output of up to 32 l/min (4.1 gpm) and a short-term peak flow of up to 1.3 l/s (20 gpm).

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Performance Data

Membrane surface area	16 m ² (172 ft ²)
Filtration Performance ¹	
Peak load, short term	up to 1.3 l/s (20.6 gpm)
Continuous load	up to 1,600 l/h (10,000 gpd)
Removal performance	
Virus (MS2 Phage) ²	full removal (>4.7 log tested)
Bacteria (B. Subtilis, E-Coli) ²	full removal (>4.9 log tested)
Parasites (Crypto) ²	full removal (>4.7 log tested)
Water consumption during flushing	typically less than 2%

¹ Filtration performance depends on water quality and temperature. Please design carefully before designing a Virex Pro system and consult with Seccua Authorized System Partners for advise if required.

² Virus and Bacteria removal of the Ultrafiltration membrane was measured by US EPA against EPA Standards for Ultrafiltration systems used on surface water filtration on a new membrane.

Operating Conditions

Max. operating pressure	5 bar (75 psi)
Max. operating temperature	40 °C (104 °F), 80 °C (176 °F) optional

Operating Modes

Filtration	Feed pressurized by gravity or pump (I/O or 4-20 mA), feed flocculation can be controlled
Cleaning method	Flushing and backwashing by interval-, time of day- or fouling. Automatic chemically enhanced cleaning possible
Maximum Δp inlet to filtrate	3.0 bar (45 psi)

Integrated Integrity Testing

Test method	Pressure Hold Test, Patent pending US 12/293,071 PCT/EP 2007/052477
Resolution	Adjustable (approx 0,5 - 3 μm) Standard settings: 1,6 μm
Frequency	Triggered by turbidity threshold ³ or daily

³ Triggering by filtrate turbidity available starting May 2010, also to installed units as a free software upgrade (requires external turbidity-meter, not supplied).

Programming and remote access

The unit is programmed comfortably through a Windows (XP/7) software and can be accessed locally through CAN-Bus or USB connection or remotely over the internet (GSM Modem optional).

Data Logging

Data Logging	Event-driven or by time-interval
Logged Data-Sets	Date, Time, feed- filtrate- pressure, turbidity, flow, Tank- buffer-level, alerts and failures
Data Memory	1024 data-sets (standard), upgradable to 40,000 data-sets

Power supply

Voltage ⁴	12 V DC, 110 V AC, 230 V AC
Power consumption during filtration	approx. 5 W
Power consumption during cleaning	max. 35 W (typically ⁵ hourly for 20 s.)

⁴ Units are shipped with US and German power-cables. Other country-specific equipment and an adaptor to connect to 12 VDC is upon request.

⁵ The cleaning frequency depends on the contamination of the raw water and may vary. The power requirement of the pumps is not included in the consumption data.

Control system interfaces

Output interfaces⁶

Feed-Pump	Power On/Off or 4-20 mA
Feed-Dosing-Pump	Power On/Off or 4-20 mA (flow)
Backwash Pumps	Power On/Off
Alert Monitoring	Cold Contact, CAN Bus or SMS (modem optional)
Flow measured by Virex Pro	4-20 mA
Operating mode status	CAN Bus

Input interfaces⁶

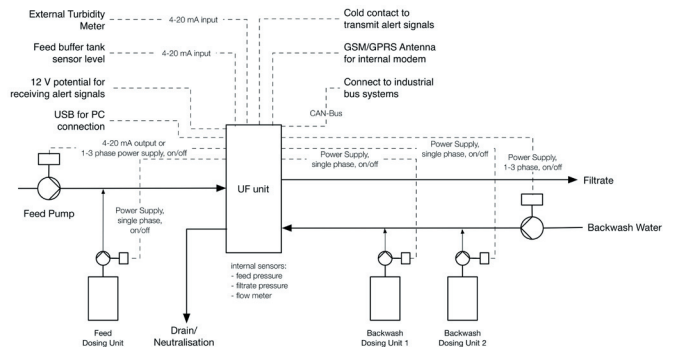
Turbidity meter	4-20 mA
Alert monitoring peripherals	12 V Potential
Feed-/Storage tank signal	4-20 mA

⁶ Some of the listed functions require the optional Virex Pro Connectivity Kit.

Control interfaces⁶

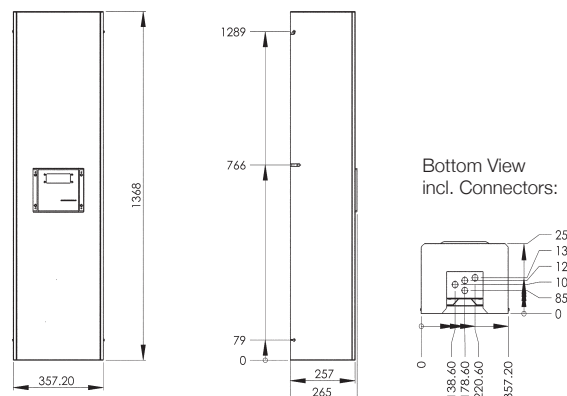
Integrated CAN-BUS signal can be translated to Ethernet-IP Bus (e.g. Allen Bradley PLC), Serial- or Profi-BUS (e.g. Siemens S7 PLC) through an available Gateway-Module.

Controllable functions Allow Cleaning or Integrity Testing
Monitored Functions Flow, Operating Mode, Pumps' & Peripherals' Modes, Alarms



Weights and Dimensions

Width	358 mm (14 in.)
Depth	265 mm (10.5 in.)
Height	1,368 mm (54 in.)
Weight (dry)	50 kg (110 lb)



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The picture on the front page shows a Virex Pro 1000 with a stainless steel cover, which is available as an option. By standard, the units are equipped with a powder coated, white steel cover.

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