

PHOENIX

Certified pathogen-removal, fully automatic Direct Membrane Integrity Testing, data-logging and web-based remote access. The system's enhanced PLC controls all required peripherals, in order to filter water from any source, from waste- to well-water to Point-of-Entry treatment in buildings. The perfect standardized solution for treating surface water of surface-influenced ground-water. Seccua Phoenix also removes legionella, rust and sludge from city-water at Point-of-Entry and such reduces legionella-contamination and bio-growth within the entire building's water system.



Ultimate Removal Performance

The Nano-pores of the Seccua-Ultra filters provide removal characteristics that even exceed regulatory requirements for application of membrane filtration in drinking water treatment. The Phoenix has proven to fully remove virus, cyst and bacteria, tested against U.S. EPA and ASTM standards. It also reliably reduces turbidity to under detection levels as well as colour to up to 30% in combination with in-line coagulation.

Integrated Direct Membrane Integrity Testing

The Phoenix 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 Phoenix continuously measures the actual degree of fouling of the membrane - based on a function of flow and differential pressure. The Phoenix 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 colour-containing sources using an inline-flocculation-

process and achieve highest possible flow-rates at maximum rates of removal of colour 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 or backwash powered by an external pump, and it is even able to automatically perform chemically-enhanced Cleaning-In-Place (CIP).

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 data-logger.

Highest Filtrate output

The Phoenix 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 1,280 liters per minute (0.5 MGD) and a short-term peak flow of up to 40 liters per second (634 gpm).

Performance Data

Filtration Performance and system models

Phoenix Models						
	4 LT	4	7	10	20	40
Filter Area	60 m ²	60 m ²	120 m ²	240 m ²	360 m ²	480 m ²
	646 ft ²	646 ft ²	1,292 ft ²	2,583 ft ²	3,875 ft ²	5,167 ft ²
Peak Load	5 Ltr./s	5 Ltr./s	10 Ltr./s	20 Ltr./s	20 Ltr./s	40 Ltr./s
	300 Ltr./min	300 Ltr./min	600 Ltr./Min	1200 Ltr./Min	1200 Ltr./Min	2400 Ltr./Min
	18000 Ltr/ Hr.	18000 Ltr/Hr	36000 Ltr/Hr	72000 Ltr/Hr	72000 Ltr/Hr.	144000 Ltr/ Hr
	79 gpm	79 gpm	159 gpm	317 gpm	317 gpm	634 gpm
Continuous	160 Ltr./min	160 Ltr./min	320 Ltr./min	640 Ltr./min	960 Ltr./min	1283.33 Ltr/min
	9600 Ltr/ Hr.	9600 Ltr/ Hr	19200 Ltr/ Hr	38400 Ltr/ Hr	38400 Ltr/ Hr	77000 Ltr/ Hr
	42 gpm	42 gpm	85 gpm	169 gpm	254 gpm	339 gpm
Expand up-to	180 m ²	360 m ²				N/A
Maximum	1.937 ft ²	3.875 ft ²				
Fully Automatic	x	✓	✓	✓	✓	✓

Removal Performance

- ☞ Virus : > 5.7 log tested
- ☞ Bacteria : > 9.7 log tested
- ☞ Parasites : > 4 log tested
- ☞ Turbidity and particles : > To under detection limits

Operating conditions

- ✓ Max. operating pressure : 5 bar (72.5 psi)
- ✓ Max. operating temperature : 40 °C (104 °F)
- ✓ Min. operating temperature : 4°C (39 °F)
- ✓ Chemical tolerances : pH 1 to pH 13 (cleaning) free Chlorine
200.000 ppm*h
(@ pH>9.5) and max. 200 mg/l, Peroxide
max. 500 ppm

Filtration and Cleaning

- ✓ Filtration : Feed pump (I/O or 4-20 mA). Flocculation (feed) or
chlorine dosing (filtrate) controllable
- ✓ Cleaning : Cleaning by time-interval, time-of-day or fouling-
threshold. CIP and CEBW fully automatic.

Integrated Direct Membrane Integrity Test DIT

- ✓ Test method : Pressure hold test, meeting U.S. EPA Filtration
Guidance Manual and DVGW W 213-5 standards
- ✓ Resolution : Adjustable (approx. 0,5-3 µm) Standard settings ca.
1,6 µm
- ✓ Frequency : Triggered by filtrate-turbidity and time-of-day

Data Logging

- ✓ Logged data : Date, real-time, feed- and filtrate pressure, turbidity,
flow, tank level, alert messages, error codes as well
as the results of the direct integrity tests
- ✓ Recording interval : At each event and upon time intervals.
- ✓ Data capacity : Approx. 4 month if data is logged every 15 minutes.

Approvals and Standards

- ✓ Material and ANSI/NSF : All material in contact with water meet DVGW KTW
- ✓ Electronics spray : The system's controls and electrical wiring is made Water proof (IP 63) and can be installed in wet areas indoor.
In installation meets CE, VDE, DIN, ANSI standards.
- ✓ Production : DIN ISO 9001:2008, certified by TÜV Süd.
- ✓ Removal capabilities removal. : Tested to U.S. EPA and ASTM standards for pathogen removal.

Power Supply

- ✓ Power Supply : 230 V or 110 V, 1-phase
400 V or 200 V, 3-phase, 16 Amp per phase
- ✓ Power Consumption : Approx. 5 W during filtration

Output Interfaces

- ✓ Feed-pump : Power I/O, 1 or 3 phases and 4-20 mA (max. 200 Ω Imp.)
- ✓ Feed-dosing : Use 4-20 mA flow signal (max. 200 Ω Imp.)
- ✓ Backwash-pump : Power I/O, 1- or 3-phases
- ✓ Cleaning chemicals : Two dosing-pumps connectable, power I/O, each 1-phase.
- ✓ Flow signal : 4-20 mA (max. 200 Ω Imp.)
- ✓ Error signal : Cold contact and 12 V signal
- ✓ BUS-Interface : CAN BUS, Master & Slave

Input Interface

- ✓ Turbidity-meter : 4-20 mA
- ✓ Tank level : 4-20 mA (Filtrate- or feed)
- ✓ Error monitoring : 12 V Potential to monitor cold contact

Control Interfaces

- ✓ Mobile internet modem : Over GSM 3G through optionally available plug-in
- ✓ CAN BUS parallel (Easy unit to an existing SCADA system (Gate ways to Siemens, Allen Bradley, Mod BUS or TCP/IP are available upon request)

Water-Connections and Assembly

- ✓ Feed : 2" Victaulic compatible
- ✓ Filtrate : 2" Victaulic compatible

- ✓ Drain : 2" Victaulic compatible
- ✓ Backwash POE : 2" Victaulic compatible Not required, when installed as Filtration in building.

- ✓ Set-up supporting : 2" Victaulic compatible Up-right, standing, self-

Weights and Dimensions

Phoenix Models						
	4 LT	4	7	10	20	40
Width	113 cm	113 cm	164 cm	264 cm	390 cm	476 cm
	3.70 ft	3.70 ft	5.38 ft	8.66 ft	12.80 ft	15.62 ft
Depth			59 cm/1.94 ft			
Height			190/6.23 ft			
Weight, dry	130 kg	130 kg	210 kg	370 kg	530 kg	790 kg
	287 lbs	287 lbs	463 lbs	816 lbs	1.169 lbs	1.742 lbs