B-SMART® Containerized Pilot Unit
System Information

We at Berghof Membranes don't just sell membranes. We utilize our 40+ years of experience in over 1,500 reference installations to develop robust and energy-efficient tubular membrane solutions to effectively treat even the most challenging industrial wastewater and process streams. Our B-SMART® containerized pilot units are yet another easy way we help your company select the right solution for your application.

During the pilot phase, pre-designed system parameters are validated to ensure that they will meet the required permeate quality, energy consumption, chemical resistance and plant capacity. Then we'll use this data and work with you to design a full-scale system for your application. Our engineers will support you every step of the way with:

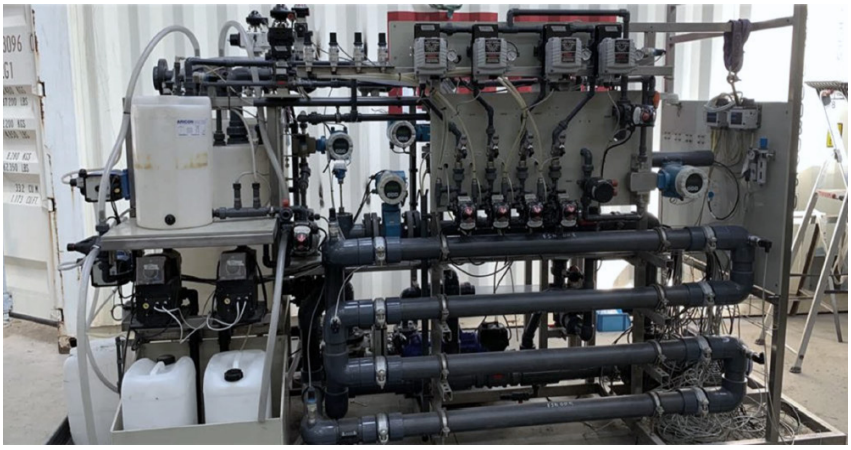
- on-site pilot commissioning support & training
- continuing remote technical support
- responsive system trouble-shooting

See for yourself how our external tubular membrane technology delivers clear advantages for direct filtration, MBR, AnMBR, and RO brine applications.

B-SMART® containerized pilot unit

Features:

- B-SMART intelligent software with proprietary anti-fouling and anti-plugging algorithms
- B-SMART Eco mode for reduced energy
- B-SMART Performance mode for maximized permeate production
- Advanced permeate control mode of operation
- Advanced TMP control mode of operation
- B-CONNECT™ for local and secure cloud data storage capabilities to enable remote monitoring and control
- Automated backwash
- Feed-and-bleed configuration
- Filtration in series with 4 modules
- Pre-treatment with automatic self-cleaning strainer
- Automatic permeate flow control system per loop and per module via self-tuning valves
- Integrated CIP and backwash tanks



B-SMART® Intelligent Software

These pilot units come equipped with either the **B-SMART *Eco*** or ***Performance*** software to demonstrate potential energy savings, and innovative anti-fouling and anti-plugging mechanisms.

B-SMART *Performance* ensures that the system will deliver higher flux rates at the lowest possible crossflow velocity.

B-SMART *Eco* allows for total or individual module backwash and the ability to operate in extra low enegy mode, and can result in a significant reduction in overall chemical usage for cleaning.

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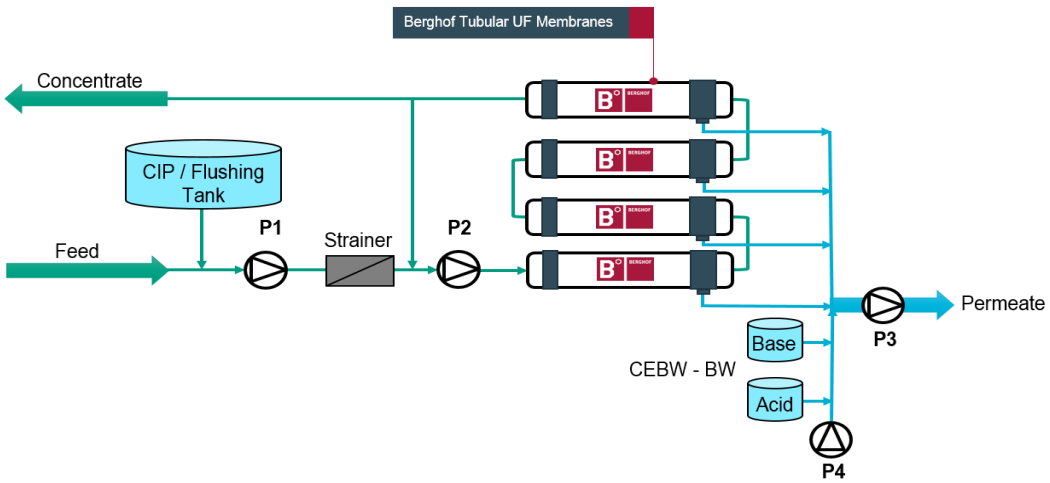
System specifications	
Feature	**Specification**
Capacity - permeate flow	4.0 – 36.0 m^3/d*
Total membrane area	8.4 m^2 (8 mm membranes) or 9.6 m^2 (5 mm membranes)
Crossflow velocity (CFV)	1.0 – 4.0 m/s
Circulation flow	10 – 40 m^3/h
Max. temperature	40 °C
Max. operating pressure	8.0 bar
Permeate pressure	-0.8…+10.0 bar
Transmembrane pressure	-0.6…+6.0 bar
Pressure drop over the length of module - for water at 25°C	3.0 · $CFV^{1.75}$ kPa
pH range of application	2 – 12
Container-dimensions - L x W x H	6.10 x 2.45 x 2.6 m
Container weight	2000 kg

*Dependent on type of application (MBR, AnMBR, or direct filtration) and membranes used

Connections and Power Supply	
Feature	**Specification**
Feed connection	Flange DN65 / 2.5 inch, EN1092 / ISO7005
Concentrate connection	Flange DN65 / 2.5 inch, EN1092 / ISO7005
Permeate connection	Hose nozzle 25mm / 1 inch If permeate piping leads to a destination on a level lower than the connection on the unit, it may be necessary to aerate the piping in order to avoid suction.
Tap water connection	Hose nozzle 25 mm / 1 inch
Drainage CIP connection	Hose nozzle 25 mm / 1 inch
Drainage strainer connection	Hose nozzle 25 mm / 1 inch
Electrical power supply	3+N+T / 400V / 50-60 Hz Supply cable 5 x 16 mm^2 , Power socket 63A
Total power consumption	Pmax.=25 kW

Process flow diagram



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