

BMF +FLUX SMART BEER MEMBRANE FILTER

The brewer of today has many challenges. Beer quality must be outstanding, all resources needs to be maximally utilized and the output of beer must be as high as possible. Besides, the consumer is requesting to have an extended choice of beers, produced in an environmental and safe way.

For over decades Pentair is market technology leader in Beer Membrane Filtration and many breweries all over the globe implemented the BMF systems in their operation to have the perfect beer against the lowest possible cost level.

Now we've gone one step further and developed our newest Beer Membrane Filter, the BMF +Flux Smart.

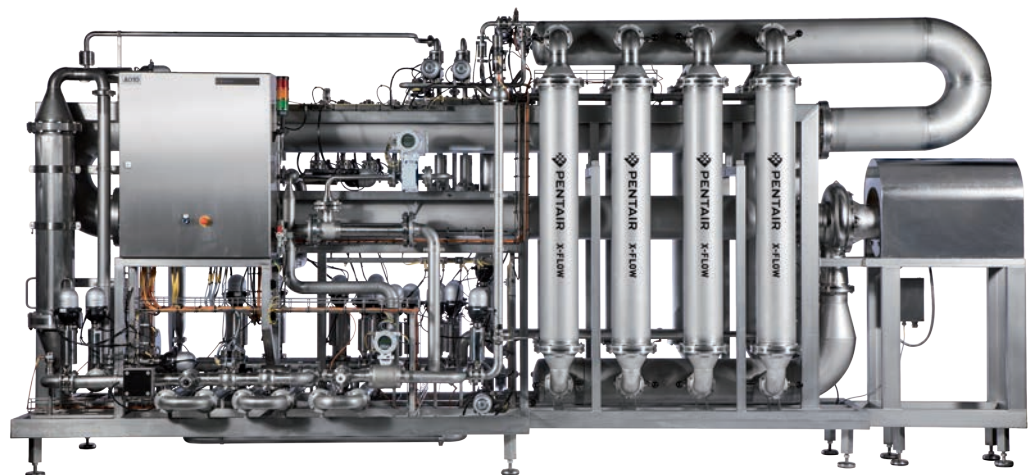
PREDICTABLE OUTPUT

The BMF +Flux Smart consists out of a master controller and multiple membrane units. The core of the design is that the membrane units are able to filter and clean independently of each other, making it a self-foreseeing membrane unit. Even when the quality of resources has fluctuations, the smart steering controller makes sure the system runs as efficient as possible. Furthermore the smart steering controller decides which unit has to run, at which flow, and which unit can do a cleaning. This results in a non-stop beer flow and reduction of down time to zero!

IN-HOUSE MEMBRANE TECHNOLOGY

A BMF makes use of proprietary membrane technology owned by Pentair. A membrane is a thin polymer layer with pores working as a sieve in the shape of a fiber. Turbidities like yeast and proteins are retained, and beer flows through the pores. The membrane is used for many filter run-cycles, which is possible because of an optimized cleaning protocol. The membrane is made from poly ethersulphon which is known for its great compatibility for food & beverages and can withstand cleaning agents and high temperatures. Thousands of membrane fibers form a so called module, and 4-18 modules are packed in a membrane unit.

Pentair's membrane fiber technology has several advantages compared to the use of diatomaceous earth filters: beer ageing is strongly reduced and beer quality is consistent. Besides the use of membranes is sustainable and environmental friendly.



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BENEFITS

- ◆ **Sustainability**
 - Low energy consumption because of no centrifuge
 - Solid waste stream is reduced by up to 50 percent
 - Safe and hygienic work environment
- ◆ **Beer Quality**
 - Consistent beer quality
 - Better taste stability due to no iron pick-up
 - Permanent barrier to beer spoiling bacteria
- ◆ **Operation**
 - Predictable output
 - Non-stop beer flow
 - Simple process provides easy operation
 - Easy to fully automate
 - Less labor—No DE-handling
- ◆ **Cost Level**
 - Beer loss down to 0.1 percent, with no pre- and after run tank
 - Fixed cost for membranes per hectoliter—predictable and simple
 - Low OPEX through maximized run volume
 - No downtime

SCOPE OF SUPPLY

Capacity

3,000 hl, up to 14,000 hl per day.

Automation

Fully automated system on a turnkey basis.
Available in several PLC and software platforms.

Construction

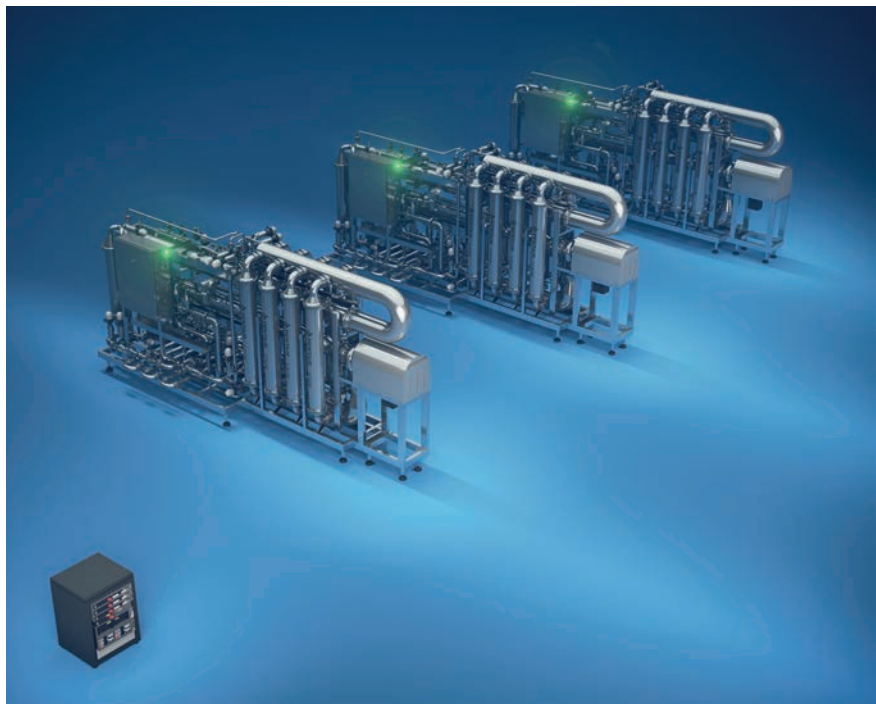
Skid mounted units.

Integration

Periphery of an existing DE filter line can be reused easily.

Service

Various packages are available up to 24-7 hour support.



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