BioSampler

Automated Sampling for Bioprocesses

Unique sterile sampling and filtration technology

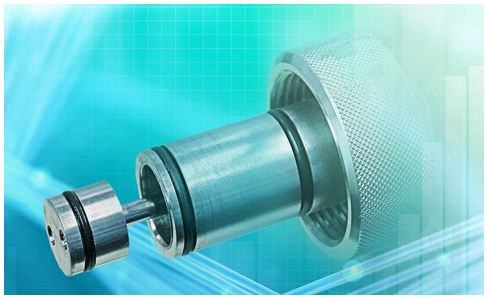
- Reliable, robust and versatile automated sampling solution with low maintenance
- Especially suitable for high cell density, high viscosity and variable sample matrices
- Easy standard 25 mm connection to the bioreactor
- In-situ filtration with back-flush washing
- Clean-in-place and sterilize-in-place
- Open to process only during sample withdrawal
- Fixed-volume sampling without dead-volume
- Particle-free samples for chemical analysis
- Patent granted (US), pending (EPO)

Applications

- Applicable from development to production scale bioreactors
- Connectible to most on-line measuring instruments (HPLC, MS, FTIR, etc)
- Demonstrated successfully in challenging bioprocesses such as
  - Yeast, bacterial and filamentous fungus cultivations with cell density over 60 g/L cell dry weight (OD >200)
  - Media for filamentous fungus cultivations for protein production containing 60 g/L distiller's spent grain
  - Media for bioethanol production containing starch slurry

BioSampler

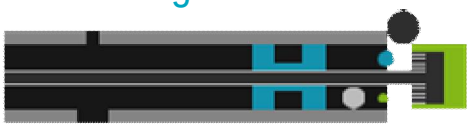
Technology description



Biosampler's core technology is in unique design of filtering pistons and HW/SW to allow reliable repeatable operational sampling cycle and confidence for sterilization. Versatility is due to possibilities to customize filter for special and challenging processes and to provide samples for various analysis needs – whether need is just to collect samples for laboratory analysis or use sophisticated on-line analyses such as HPLC.

Piston positions in sampling and filtering

1. RESTING
Totally closed when not sampling



2. SAMPLING
Adjustable port opening eliminates large particles (>500 µm)

3. FILTRATION STAGE 2a

4. FILTRATION STAGE 2b
>200 µm particles eliminated

5. EMPTYING
Samples sent to 3rd stage filtration, analysis, collector

6. STERILIZATION
Back-flush with steam and air

Piston 1 (filter)

Piston 2

> 500 µm
> 200 µm
> 0.2 µm
< 0.2 µm

Contacts

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