Settler with Blow-Back Filter – avoid interference in your analysis

Sampling Conditioning Systems (SCS) from Metrohm Process Analytics

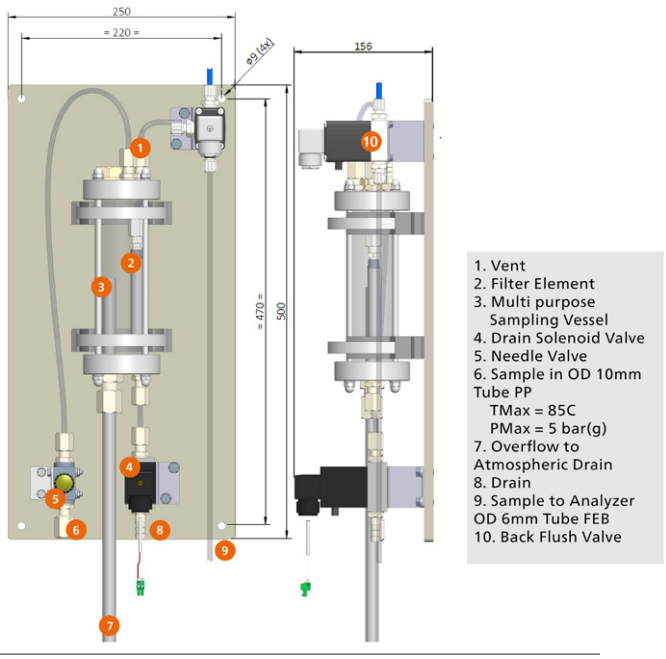
HIGHLIGHTS

- **Increased analyzer uptime** due to problem free sampling
- **Fast and easy filter self-cleaning** with the use of water or air prior to every analysis
- **SCS fully controlled** by your Metrohm Process Analyzer
- **Easy upkeep** due to simple design with few moving parts
- **Auto vessel cleaning** by means of a back-flush valve to rinse settled solids to drain
- **Multiple materials** of construction options to adapt to the nature of the sample

Metrohm
Process Analytics

Push your analytical analysis with optimal sampling systems

This sample conditioning system is designed for the combined settling and filtration of particulate material from the incoming sample stream prior to entering a process analyzer. Without the removal of the sample solids and particles, the analyzer would be prone to failure and not able to obtain a representative sample to measure. The particulate material would potentially cause blockage in the pipeline during sample transport, but more critically, clog analyzer sample valves/pumps and even interfere with the analysis measurement itself.



Settler and Blow-black filter front and side view.

OPERATION PRINCIPLE

With a simple design, heavy solids first settle to the bottom of a Multi-Purpose Sampling Vessel (Step 1) before being filtered at time of analysis (Step 2). Incoming sample flow up to 5 bar (g) max is fined tuned to a workable flow rate using a needle valve and continuously flows through an overflow pipe to atmospheric drain and returns back to the process.

Just prior to sample transfer to the analyzer, a 3-way back-flush valve connected to either high pressure instrument air or water mechanically flushes back through the filter element dislodging any solids adhering to the filter mesh and out to drain. Following step with the drain valve now closed, fresh sample enters the Multi-Purpose Vessel and allows to «settle» for a duration depending on the amount and type of solids present. Next, the 3-way valve is triggered to allow the sample to be drawn through the filter element from the clean layer into the analyzer using an installed sample pump/valve. The duration of sample flow is programmed until a representative sample is captured in the internal sampler in the analyzer.

The integrated Metrohm Process Analytics analyzer has the programming flexibility to adjust the sequence and timing of the back-flush step either prior to sample transfer to the analyzer or after sample transfer depending on which back-flush medium is used. When using instrument air, it is important to avoid turbulence between the clean layer and the layer containing solids so the back-flush step should come after sample is drawn into the analyzer for efficient operation.

SPECIFICATIONS

Instrument	
Dimensions	250 x 500 x 156 mm (W x H x D)
Sample contacting materials	Polypropylene, Polymethylmethacrylaat (PMMA), SS316, Viton®, FEP, and PVDF
Volume vessel	300 ml
Allowable sample temperature*	85 °C
Max. Allowable sample pressure*	500 kPag (5 barg)
Available filter elements	0.5, 1 , 5, 10, 20, 40, 75, 100, 200 micron

* The total system design must be considered when applying the maximum allowable pressure and temperature ratings.

Subject to change without prior notice
Layout by Andrea Ferreira, Metrohm Applikon B.V.
8.000.5373EN – 2021-08