LFE USR-Series

Ultrasonic cleaning systems

USR-F | Sample Filter with Ultrasonic Cleaning for on-line Water Analysis

Key Features

- ⇨ Automatic ultrasonic cleaning of filter element
- ⇨ Filter element in cross-flow configuration with pore sizes from 1 μm to 200 μm available
- ⇨ High reliability of the analyzer system
- ⇨ Minimized filter maintenance

Typical Applications

- ⇨ Long-term stable sample filtration for use with process water analyzers
- ⇨ Sampling for analyzers such as TOC, conductivity, pH, dissolved O_2, turbidity, etc.
- ⇨ Process water with high corrosion potential and degree of contamination
- ⇨ Defined and constant filtering

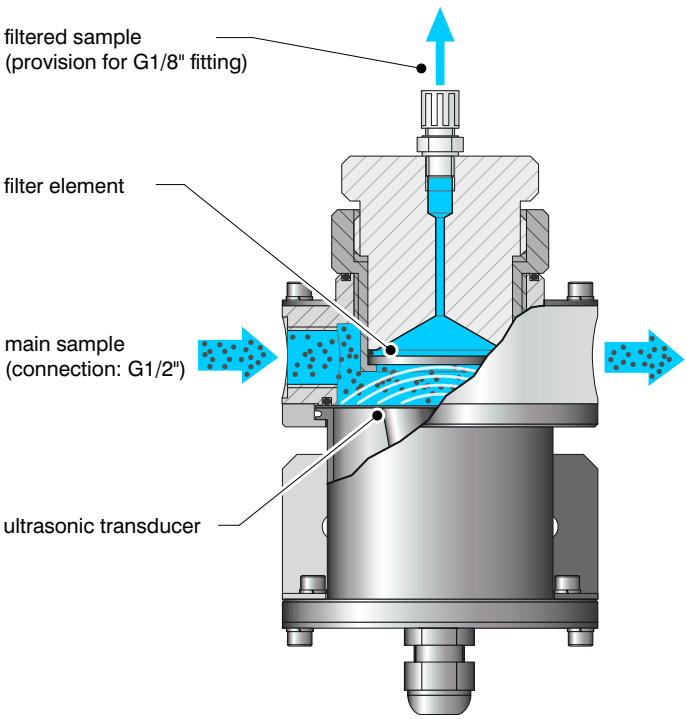
Description

On-line water analysis often places heavy demands on sample filtration. Aside from the expected high availability of the analysis system in conjunction with low maintenance requirements, defined constant filter characteristics must be assured.

LFE's USR-F sample filter system helps to meet these requirements using a filter element in cross-flow configuration. The filter element is irradiated at adjustable, regular intervals and defined duration by ultrasonic energy. The ultrasound generator creates cavitation in the water sample which serves as the coupling medium.

The implosions of a tremendous number of micro cavitation bubbles results in the familiar excellent cleaning effect of this method. The particles loosened from the filter element are carried away by the main sample stream. The connected analyzer system can take the sample continuously from the cleaned filter element achieving considerably lower maintenance and longer service life.

LFE's sample filter consists of the corrosion resistant filter unit containing the ultrasonic transducer and a control unit with the time or remote controlled ultrasound generator. The control unit is housed in a water-protected (IP65) wall-mounted housing.

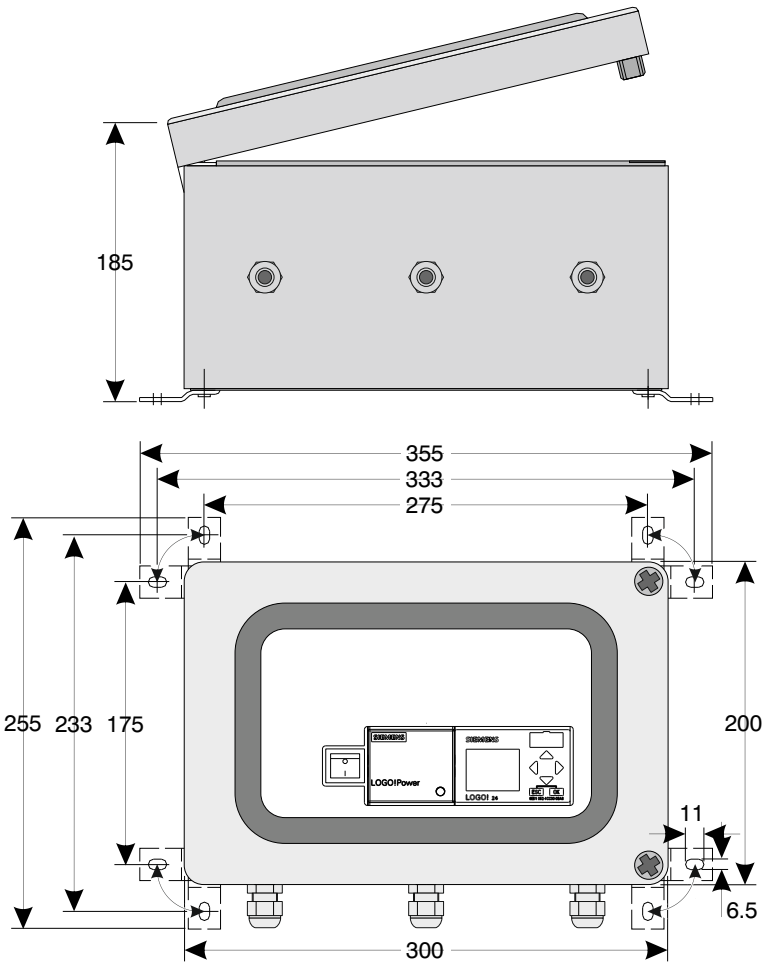


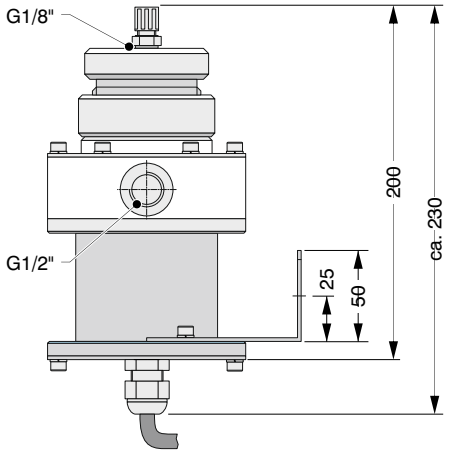
Features

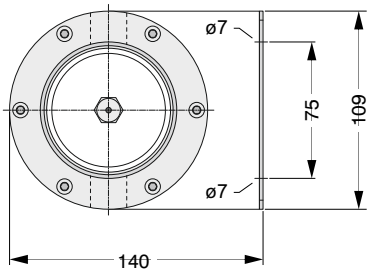
- ⇨ cross-flow filter element
- ⇨ Filter element arranged in cross-flow configuration
- ⇨ Ultrasonic cleaning of filter element – time controlled via timer or remote controlled via digital inputs
- ⇨ Diverse filter elements with pore sizes from 1 μm to 200 μm available
- ⇨ Constant filter characteristics
- ⇨ High corrosion resistance of filter unit made of PVDF and ultrasound transducer made of Hastelloy®
- ⇨ High reliability and low maintenance

Technical Data

Ultrasound module - Sample filter	
Housing	Ultrasound module / Filter head assembly: Wall-mounted, stainless steel housing with Hastelloy® transducer diaphragm Filter head assembly: PVDF; exchangeable filter material (various materials and pore sizes (1 - 200 µm) available)
Dimensions	see dimensional diagram below
Weight	1.5 kg
Protection class	IP65
Connecting cable	btwn. control unit and ultrasound module assembly: approx. 3 m
Sample flow	Unfiltered water sample stream: approx. 50 - 500 l/h Filtered sample: approx. 100 - 4000 ml/h
Effective filter surface area	approx. 12 cm²
max. Pressure	1 barg
Ambient temperature	+10°C - +35°C
Ultrasound generator - Control unit	
Housing	Synthetic housing with viewing pane; wall-mounted
Dimensions	see dimensional diagram below
Weight	6 kg
Protection class	IP65
Power supply	Model variations • 95 -120 VAC / 50-60 Hz / 80 VA max. • 190-240 VAC / 50-60 Hz / 80 VA max.
Ultrasound frequency	approx. 35 kHz
Ultrasound irradiation duration	internal timer: irradiation and pause duration adjustable remote control: via digital inputs
Ambient temperature	+10°C - +35°C







all dimensions in millimeters

Note:

We reserve the right to make technical changes or modify the contents of this document without prior notice. With regard to purchase orders, the agreed particulars shall prevail.

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