

# 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
- ⇒ Minimize filter maintenance
- ⇒ Filter pore sizes from  $1\mu\text{m}$  to  $200\mu\text{m}$  available

### 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 filter characteristics must be assured.

LFE's USR-F sample filter system helps meet these requirements using a cross-flow filter element. The filter element is irradiated at adjustable, regular intervals 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. The particles loosened from the filter element are carried away by the main sample stream. The filtered sample can be taken continuously from the cleaned filter element.

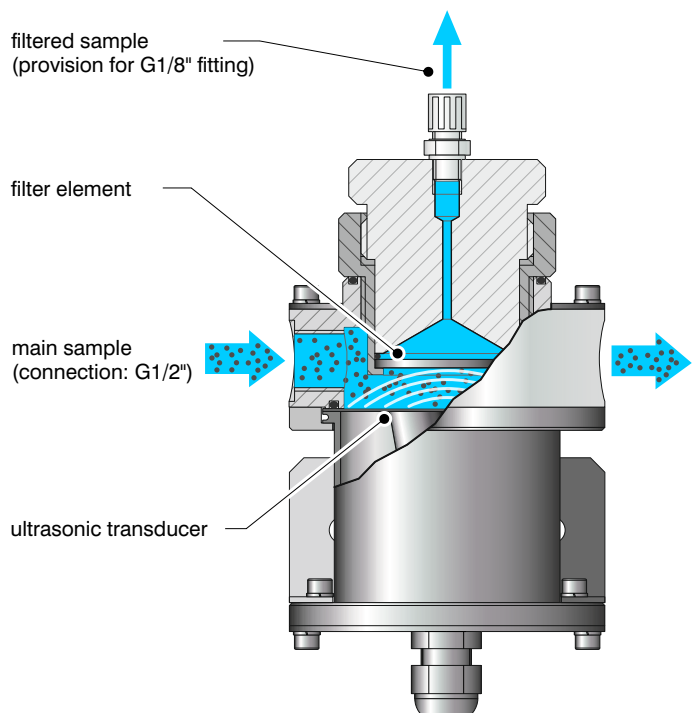
### Features

- ⇒ cross-flow filter element
- ⇒ ultrasound irradiation of filter element timer-controlled or remote via digital inputs
- ⇒ various filter elements available with pore sizes ranging e.g. from  $1\mu\text{m}$  to  $200\mu\text{m}$ ; materials e.g. 1.4401 stainless steel or PA (Polyamide)
- ⇒ constant filtering characteristics
- ⇒ highly corrosion resistant filter unit constructed of PVDF with ultrasound transducer made of Hastelloy®
- ⇒ high reliability and low-maintenance

### Typical Applications

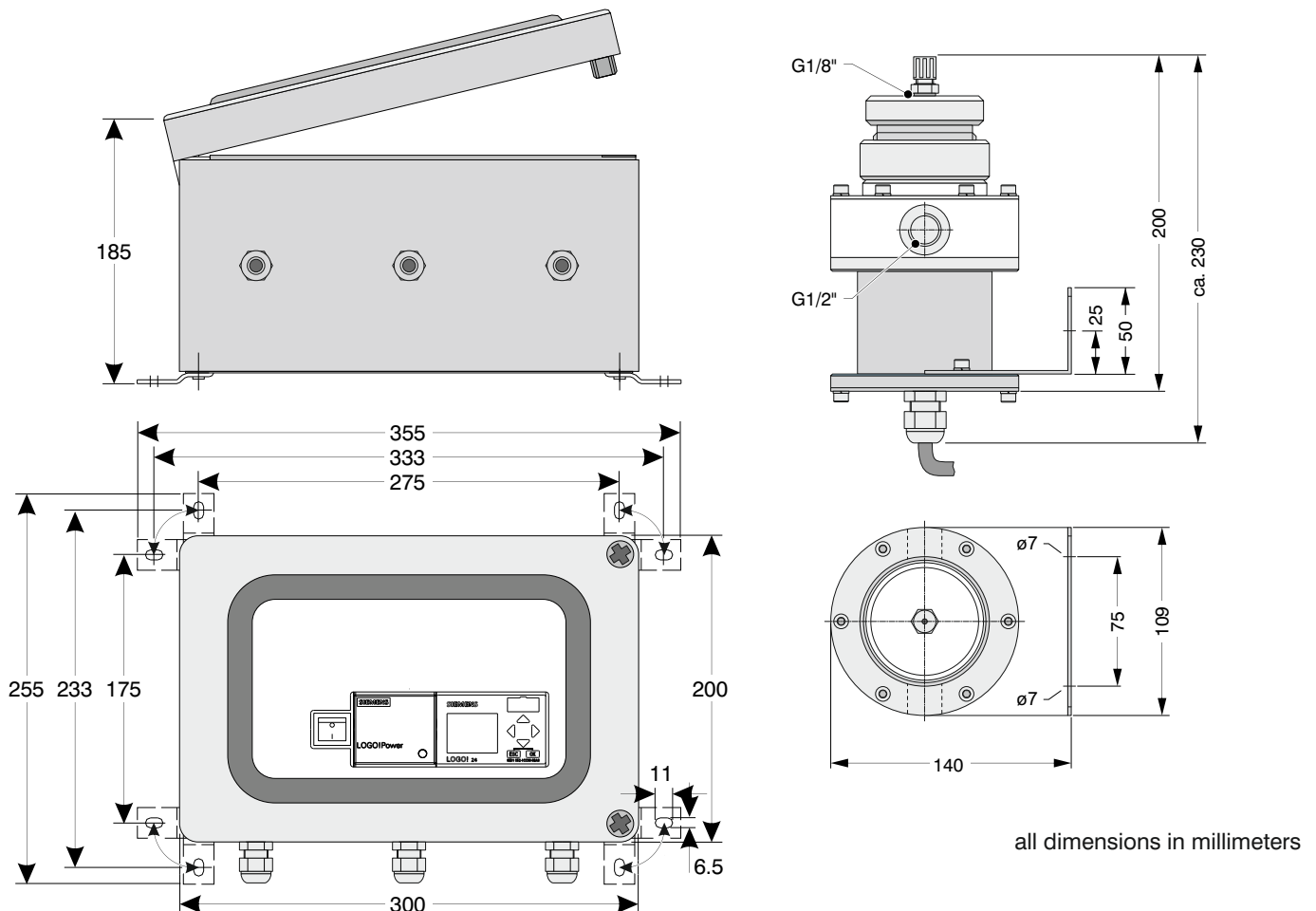
- ⇒ For use with process water analyzers e.g. TOC analyzers

LFE's sample filter consists of the corrosion resistant filter unit containing the ultrasonic transducer and a control unit with the timer-controlled ultrasound generator. The control unit is housed in a water-protected (IP66) wall-mount housing.



## Technical Data

Ultrasound Module / Filter Head Assembly	
Housing	Wall mounted, stainless steel housing with Hastelloy® transducer diaphragm Filter head assembly: PVDF; removable filter material (various materials and pore sizes available)
Dimensions	see dimensional diagram below
Weight	1.5 kg
Protection Class	min. IP65
Connecting cable	btwn. control unit and ultrasound module assembly: approx. 3 meters
effective filter surface area	approx. 12 cm <sup>2</sup>
Sample flow	Unfiltered water sample stream: approx. 50 - 500 l/h Filtered sample: approx. 100 - 3000 ml/h
max. Pressure	1 barg
Ultrasound Generator / Control Unit	
Housing	Synthetic housing with viewing pane; wall mounted
Dimensions	see dimensional diagram
Weight	6 kg
Protection Class	min. IP65
Power Supply	190-240 VAC / 50-60Hz / 80 VA max.
Ultrasound Frequency	approx. 35kHz
Ultrasound irradiation duration	internal timer : irradiation- and pause durations adjustable remote control : via digital inputs



all dimensions in millimeters

**Note:**

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