

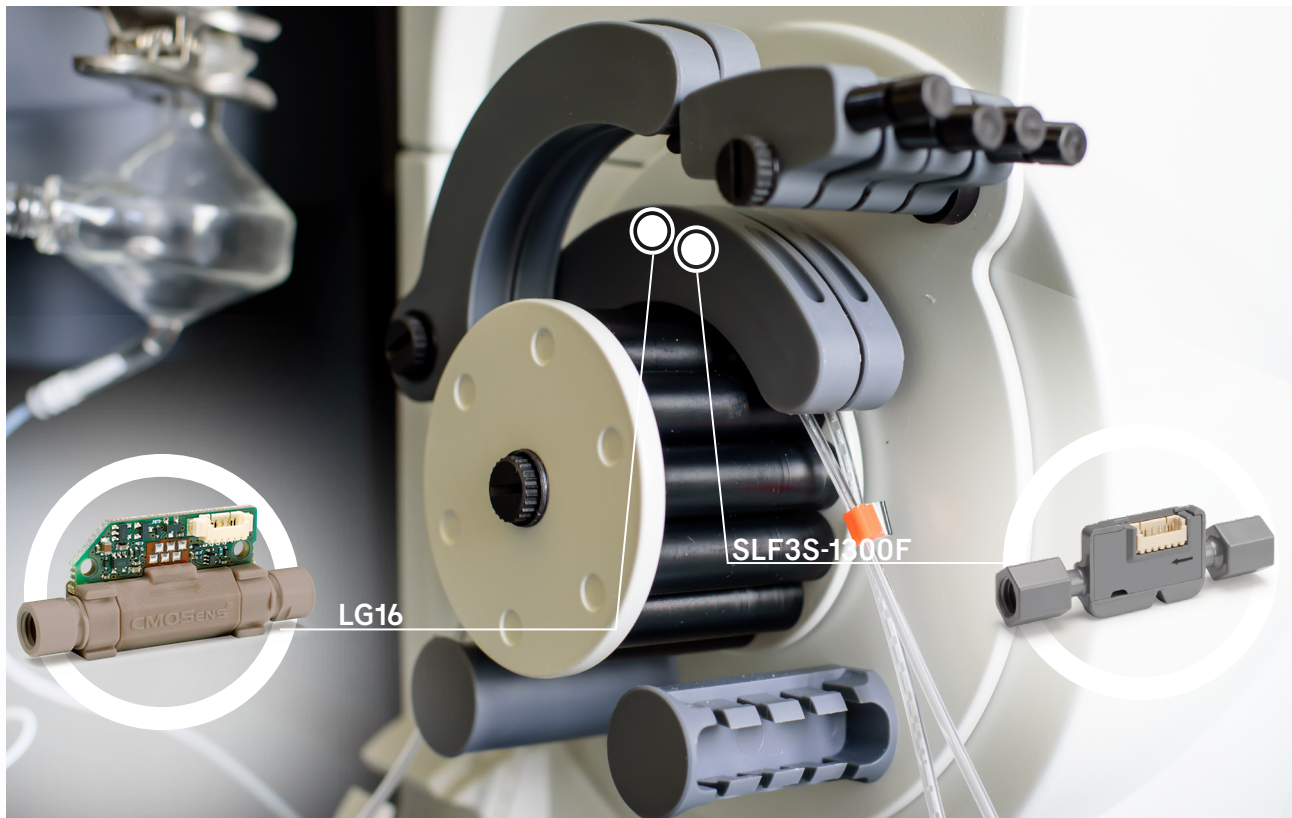
Pump control liquid flow

Improving instrument robustness and avoiding unexpected downtime

Pumps play a crucial role in a myriad of analytical and laboratory instruments, allowing dispensing, injection, and fluid handling. Vital to the machine's functioning, any degradation caused by wear, seal fritting, clogging, or other malfunctions can result in critical issues, jeopardizing the reliability and robustness of the processes underway.

Target customers:

- Pump and analytical lab instrument manufacturers



Application challenges

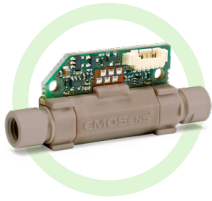
- 1 Pump wear over time and valve ringing leading to imprecisions
- 2 Backflows reducing pumping efficiency
- 3 Clogging inducing higher pressure and potentially bursts



Sensirion's solutions

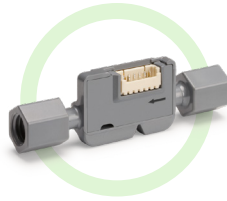
- 1 High sensitivity detects noise and oscillations in the signal to alert the user
- 2 Negative flow readouts showing a flow in the inverse direction
- 3 Clogging detection through lower flow readout by the sensor

Sensirion sensor solution:



LG16: Compact liquid flow sensor for OEM applications

Size (LxWxH): 53 x 22 x 9 mm³



SLF3S-1300F: Next generation in liquid flow

Size (LxWxH): 48 x 15.5 x 8.9 mm³

Additional sensor features

- Bubble detection
- High repeatability (0.5%)
- Fast reaction time (in milliseconds)
- Temperature monitoring

Other applications

- Flow cytometry
- DNA sequencing
- Microfluidics
- Battery manufacturing

FAQs

• What is the sensor calibrated with?

The sensor is calibrated with water and IPA. Using it with other media will not affect the repeatability but will lead to an inaccurate reading which requires recalibration.

• Can I calibrate the sensor with my media?

Yes. You will need to create a look up table for different flow ranges. It has to be saved on the microcontroller of the customer – it is not possible to save directly to the sensor.

• What is the reason of an increasing measurement deviation?

Most common reason is biofilm growth. Prevent it by introducing a washing step.

• Can the sensor be cleaned?

Yes. Refer to a dedicated application note.

• Is the sensor available with a higher flow range?

LG16 is used up to 5 ml/min. For higher flows check out the SLF series.

Getting started



LG16 connectivity kit



EK-SLF3S-1300F

Useful documents



Datasheets, application notes, handling instructions, sample codes, step files, certificates

Related sensors

➤ LG16-2000D; LG16-1000D; LG16-0431D; LG16-0430D; LG16-0150D; LG16-0025D

➤ SLF3S-4000B; SLF3S-0600F; SLF3C-1300F

➤ SLI-2000; SLI-1000; SLI-0430

➤ LS32-1500