

# ESRF-ESF

## In-line Gas Flow Sensors



ES Systems has developed ESRF-ESF, a MEMS gas flow sensor family, based on the hot-film anemometer principle for mass gas flow measurements.

ESRF-ESF gas flow sensors feature bidirectional gas flow sensing of up to  $\pm 500$  l/min with a total error band of 1% m.v. The streamlined symmetrical body design, manufactured from high quality polymer, presents very low pressure drop even at the maximum flow in both directions. Calibration gas is air but other non-aggressive gases are available upon request.

Operating down to 3.3V supply voltage, ESRF-ESF gas flow sensors provide calibrated and temperature compensated output on an SPI or I<sup>2</sup>C bus making them plug & play for direct interfacing to low voltage MCUs and systems. The user is provided with a multitude of options (e.g. power supply, uni/bi directionality or analog output) so that the right sensor configuration can be selected based on the specific requirements for each application.

Due to the compact design, and versatility, ESRF-ESF gas flow sensors are ideal for medical, process & pharmaceutical equipment where high accuracy and reliability are of the essence.



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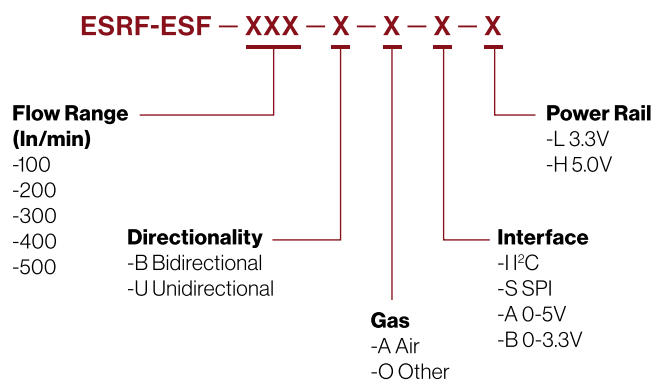
## Specifications

<b>Calibration Gas</b>	Air, other available on request
<b>Flow Range</b>	Up to ±500 l/min, Bi or Unidirectional
<b>Supply Voltage</b>	3.3 V or 5 V
<b>Output</b>	I <sup>2</sup> C, SPI, 0-5 V, 0-3.3 V
<b>Total Error</b>	1% m.v.
<b>ADC Resolution</b>	16 bit
<b>Output Update Rate</b>	1 ms
<b>Pressure Drop</b>	<7.5 mbar @ 200 l/min
<b>Operating Temperature</b>	-40 °C ... +85 °C
<b>Calibration Temperature</b>	0 °C ... +50 °C
<b>Humidity</b>	0% - 95% RH, Non-Condensing
<b>Size (W x L x H)</b>	44 x 92.8 x 35.4 mm
<b>Pneumatic Interface</b>	22 mm ISO 5356
<b>Electrical Interface</b>	2mm Locking Connector

## Evaluation Kit

The gas flow evaluation kit has been designed to provide the user with a compact solution for the evaluation of the ESRF-ESF bidirectional gas flow sensors with no need for custom software or hardware design and development. The kit has been designed to work as a plug and play device. A user-friendly software has been developed in order to log and monitor flow data of the ESRF-ESF sensors.

## Ordering Information



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