

ESRF-ESF

In-line Gas Flow Sensors



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

ESRF-ESF is one of the few gas flow sensors featuring bidirectional gas flow sensing of up to ± 300 l/min with a total error band of $< \pm 1.25\%$ RD. ESRF-ESF gas flow sensors provide calibrated and temperature compensated output on an SPI, I²C bus or analog output making them plug & play for direct interfacing to low voltage MCUs and systems. The user is provided with a multitude of interface and output options 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.

Calibration gas is air but other non-aggressive gases are available upon request.



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Specifications

Calibration Gas	Air, other available on request
Flow Range	Up to ±300 l/min, Bi or Unidirectional
Supply Voltage	5 V
Output	I ² C, SPI, 0.5 - 4.5V
Total Error	±1.25 % RD
Effective Resolution	12 bit
Output Update Rate	1.6 ms
Response Time	35 ms
Operating Temperature	-20 °C... +85 °C
Calibration Temperature	0 °C... +50 °C
Humidity	0 % - 95 % RH, Non-Condensing
Size (W x L x H)	44 x 92,8 x 35,4 mm
Pneumatic Interface	22 mm ISO 5356
Electrical Interface	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

ESRF-ESF – NNNNN – NN – NN – NN – N

Flow Range	FS (l/min)	Directionality	Gas	Output Type	Temperature Sensor
-010NL	10	-01 Unidirectional	-01 Air	-01 I ² C	-Y Yes
-015NL	15	-02 Bidirectional	-02 Other	-02 SPI	-N No
-020NL	20			-03 0.5-4.5V	
-050NL	50				
-100NL	100				
-200NL	200				
-300NL	300				



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