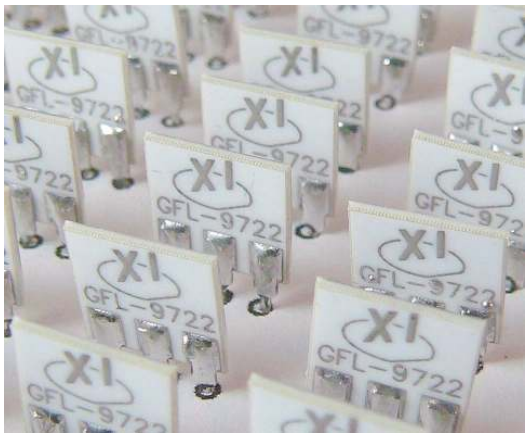
Gas flow sensor GFL-9722

Features

- Solid State reliability
- Low cost, small size
- Long-term stability (parts of a percent)
- Interchangeability (0.5%)
- Protective polymer coating
- Custom designs on request



Gas flow sensor

Applications

- Flow detection
- Gas-flow measurements
- Flow control
- Absolute temperature measurement
- Fluid detection

Description

The Gas Flow Sensor GFL-9722 is a ceramic based thermal sensor. It consists of two thick-film heating resistors and a thick-film temperature sensor. Both temperature sensor and heating resistors are laser trimmed which provides a true sensor-to-sensor interchangeability. The sensitive parts of the sensor are coated with a black polymer, which protects them from harsh environments like aggressive solvents, corrosive gasses and aggressive vapors.
When the GFL-9722 is heated by the heating resistors, a gas flow passing the sensor will cool it. Because of this the output resistance will change. External temperature effects can be compensated using a second, not-heated, sensor connected in a Wheatstone bridge configuration.

Specifications (in air, ambient temperature 20 °C, 1 Atm.)

Parameter	*typ*	*units*	*notes*
Dimensions	7.5 x 7.5	mm	
Operating temperature	-40 to + 70	°C	
Storage temperature	-50 to + 170	°C	
Heating resistor	50 ± 1	Ω	
Typical heating voltage	7	V	
Max. heating voltage	9	V	
Temperature sensor	2000 ± 10	Ω	
Stability	< 0.5	%	
Sensitivity	5.5 ± 0.5	Ω/ °C	
TCR	2750	ppm/ °C	
Time constant	3	sec.	depending on flow and mounting

Xensor Integration bv Smart Sensor Devices
Distributieweg 28
2645 EJ Delfgauw
The Netherlands
Phone +31 (0)15-2578040
Fax +31 (0)15-2578050
Email info@xensor.nl
Founded 18 May 1988
Trade reg. 27227437
Site www.xensor.nl
ABN-AMRO 60 50 40 311
IBAN NL42ABNA0605040311
VAT NL 009122746 B01

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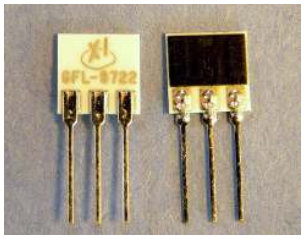
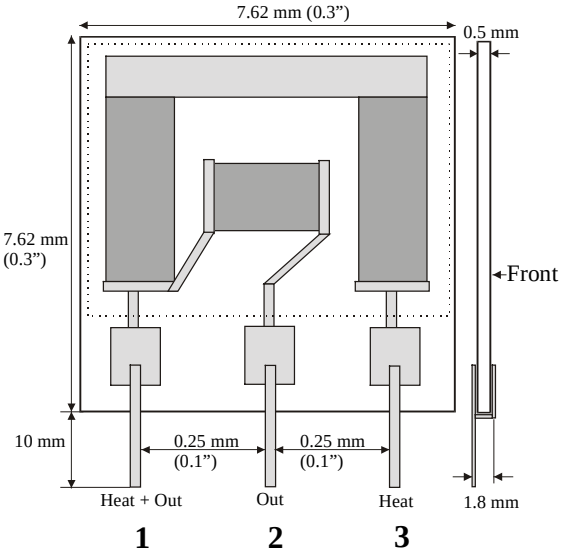
Dimensions



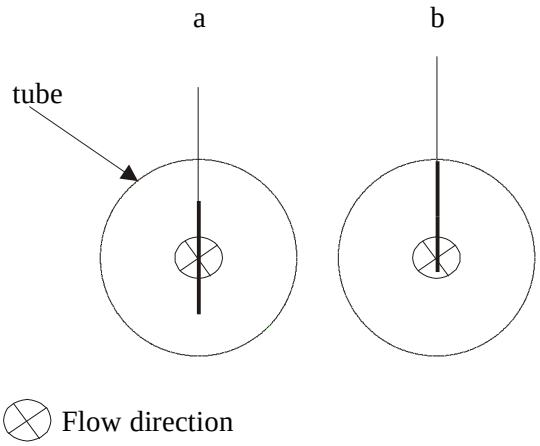
Front



Positioning the sensor

The sensor is usually positioned parallel with the gas stream:

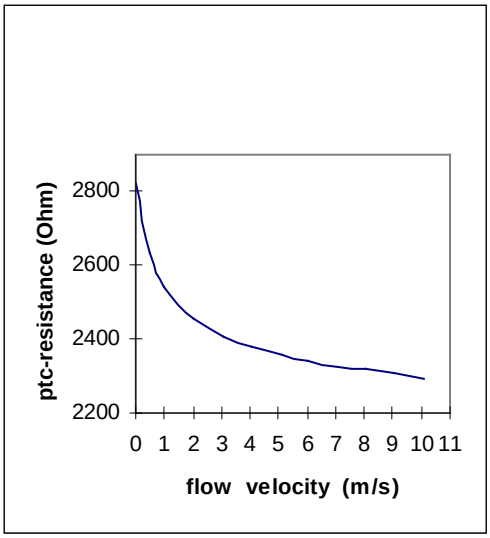
- in the heart of the stream (a).
- protuding from the wall of the tube (b).



Example of resistence response vs flow

Measurement in windtunnel by Mierij Meteo bv in de Bilt. GFL-9722 Sensor vertical parallel to flow, connections down. Pressure: 1024 mBar, temperature: 300 K, heating voltage: 7.00 V.

Flow velocity (m/s)	*Temp sensor (Ω)*
0	2819
0.542	2625
1.051	2534
2.049	2455
3.099	2409
4.086	2379
5.010	2361
5.997	2343
7.089	2327
8.065	2317
9.052	2307
10.076	2292



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