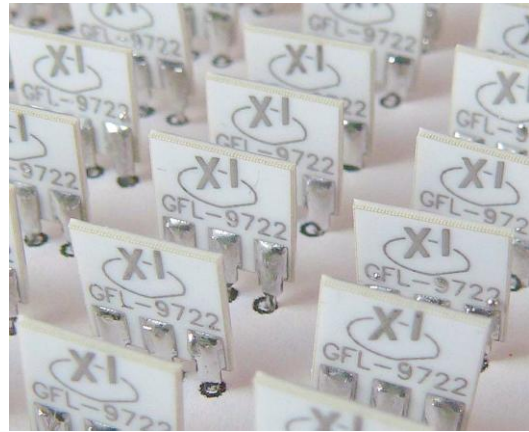


Features

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

Applications

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



Gas flow sensor

Description

The Gas Flow Sensor XEN-GFL9722 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 XEN-GFL9722 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

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2645 EJ Delfgauw
The Netherlands

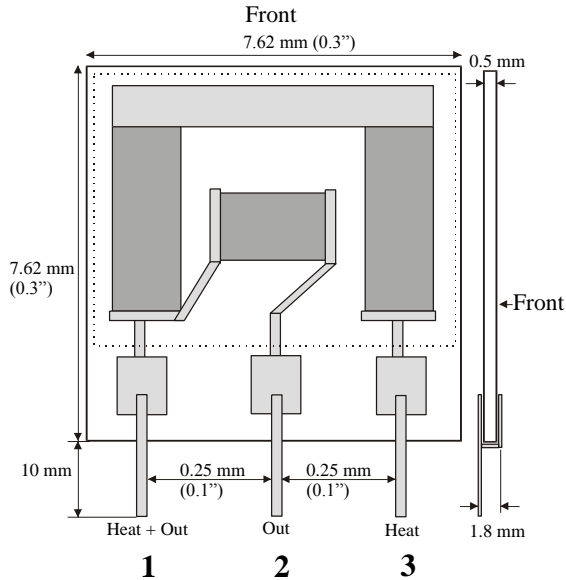
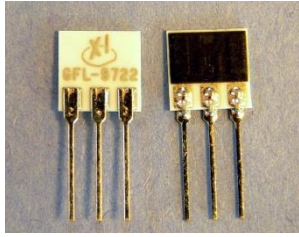
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Founded 18 May 1988
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Smart Sensor Devices

ABN-AMRO 60 50 40 311
IBAN NL42ABNA0605040311
VAT NL 009122746 B01

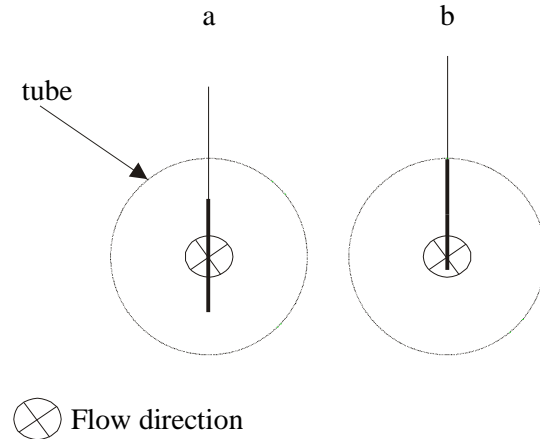
Dimensions



Positioning the sensor

The sensor is usually positioned parallel with the gas stream:

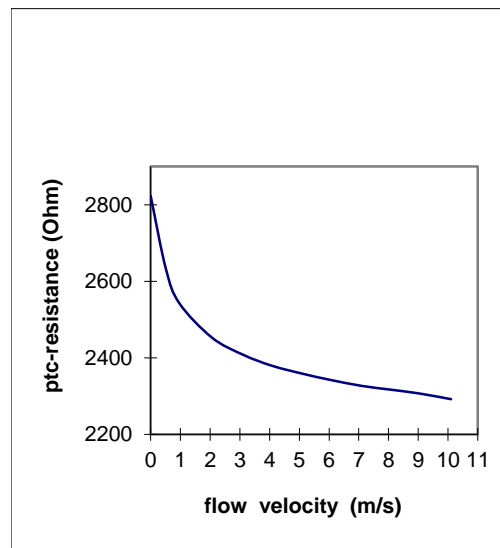
- in the heart of the stream (a).
- protruding from the wall of the tube (b).



Example of resistance response vs flow

Measurement in windtunnel by Mierij Meteo bv in de Bilt. XEN-GFL9722 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 |



Conditions: Use of sensors for industrial applications is subjected to patent rights. Xensor Integration assumes no liability arising from violation of these rights

Warranty: Xensor Integration warrants its products against defects in materials and workmanship for 12 months from date of shipment. Products not subject to misuse will be replaced or repaired. The foregoing is in lieu of all other expressed or implied warranties. Xensor Integration reserves the right to make changes to any product herein and assumes no liability arising out of the application or use of any product or circuit described or referenced herein.

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