HF 10

Electrochemical Gas Sensor for Hydrogen Fluoride

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3-electrode sensor for industrial safety applications

Class leading stability | Highly selective | Fast response | Very stable baseline

Performance Characteristics	
Measurement Range	0 - 10 ppm
Sensitivity (negative)	300 ± 100 nA/ppm
Response Time (T_{90})	≤ 90 s at 3 min gas exposure
Baseline (in clean air)	< ± 30 nA
Baseline (in clean air)	< ± 0.1 ppm*
Linearity	Linear
Repeatability	< 2 %

* at midpoint sensitivity

Operating Conditions	
Temperature Range	-20°C to +40°C*
Humidity Range	15% to 90% r.h. non-condensing
Pressure Range	800 – 1200 hPa
Recommended Load Resistor	100 Ohm
Bias Voltage	0 V
Recommended Orientation	sensor front pointing downwards or sidewards

* Temporary exposure up to 50°C is acceptable (a few hours per week or a few days per year). Additional bump testing is recommended in case of extended exposure which will decrease lifetime.

Lifetime	
Long Term Output Drift	< 5% per month
Expected Operating Life	> 18 months in air
Recommended Storage conditions	5 – 20°C in sealed container
Warranty	12 months from date of dispatch

Performance and lifetime data are based on conditions at 20°C, 50% r.h. and ambient pressure.

Available Formats	
Name Part Number Weight	**Drawing**
4S AN131400 ~4.6 g	
7S AN131700 ~6.9 g	
Mini AN131000 ~2.4 g	
Classic 4 pin AN131C00 ~3.1 g	
Classic 8 pin compatible AN131B00 ~3.1 g	
Smart 8p with EPROM AN131800 ~3.1 g	
Other customer specific formats upon request	

IMPORTANT NOTE:

Connection should be made via PCB sockets only. Soldering to pins will render your warranty void.

Intrinsic Safety Data / PSDS	
Maximum o/c Voltage	< 1.3 V
Maximum s/c Current	< 1.0 A
Product Safety Datasheet (PSDS)	aqueous salt electrolyte

SAFETY NOTE

This sensor is designed to be used in safety critical applications. To ensure that the sensor and/or instrument in which it is used, are operating properly, it is a requirement that the function of the device is confirmed by exposure to target gas (bump check) before each use of the sensor and/or instrument. In stationary installations this needs to be repeated regularly according to national and local regulations. Failure to carry out such tests may jeopardize the safety of people and property.

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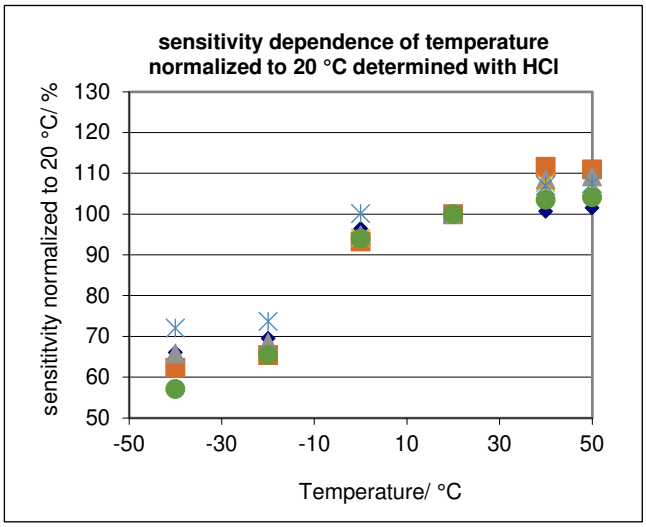
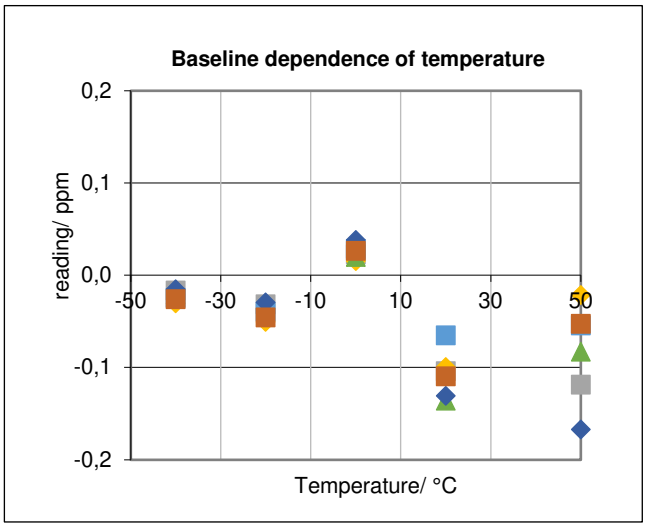
Temperature performance





Temperature Coefficients		
Temperature	Sensitivity	Zero Current
-40 °C	64.6 %	-0.02 ppm
-20 °C	68.5 %	-0.04 ppm
0 °C	95.5 %	0.03 ppm
20 °C	100.0 %	-0.10 ppm
50 °C	106.8 %	-0.08 ppm

Temperature data are taken from a typical batch.

Cross Sensitivity & Filter	
Gas concentration	Reading after 5 min
Acetic Acid 10 ppm	~10 ppm (tbc)
Ammonia 100 ppm	0
Carbon Monoxide 100 ppm	0
Chlorine 5 ppm	~3 ppm (tbc)
Hydrogen 1000 ppm	0 (tbc)
Hydrogen Bromide 10 ppm	9 ppm
Hydrogen Chloride 10 ppm	9 ppm
Hydrogen Sulfide 10 ppm	0 (tbc)
Nitrogen Dioxide 10 ppm	~6 ppm (tbc)
Sulfur Dioxide 10 ppm	~3 ppm (tbc)
Chemical Filter	None

Signals below baseline are stated as 0

tbc = to be confirmed

Whilst Sensorix cells are designed to be highly specific to the gas they are intended to measure, they will still respond to some degree to various other gases. The table above is not exclusive and other gases not included in the table may still cause a sensor to react. The cross-sensitivity values quoted are based on tests conducted on a small number of sensors. They are intended to indicate sensor response to gases other than the target gas. Sensors may behave differently with changes in ambient conditions and any batch may show significant variation from the values quoted. Therefore, interfering gases should not be used for calibration.

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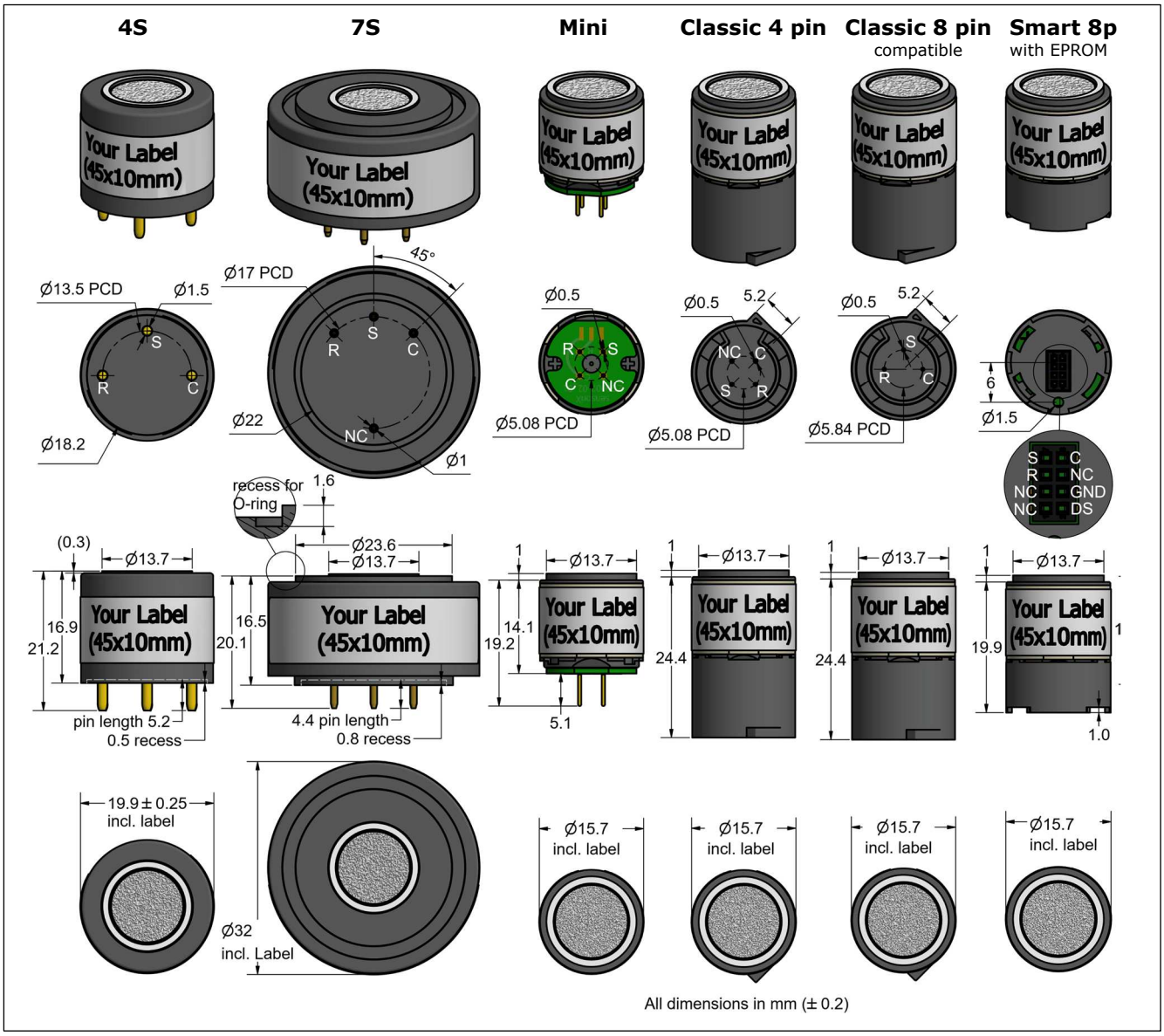
Product dimensions



Poisoning

Sensorix cells are designed for operation in a wide range of environments and harsh conditions. However, it is important that exposure to high concentrations of solvent vapors is avoided, both during storage, fitting into instruments, and operation. When using sensors with printed circuit boards (PCBs), degreasing agents should be used before the sensor is fitted.

Recycling

At the end of the product's life, do not dispose of any electronic sensor, component, or instrument in the domestic waste, but contact the instrument manufacturer or Sensorix for disposal instructions. Sensorix will take back sensors for professional recycling.