MEMBRAPOR

Specification Sheet

Hydrogen Fluoride Gas Sensor HF/C-10

HF Gas Sensor in Compact Housing

Key Features

• Long life HF sensor

Applications

• Safety and Process Control
• Continuous Air Quality Monitoring

Measurement

Operation Principle	3-Electrode Electrochemical
Nominal Range	0 - 10 ppm
Maximum Overload	20 ppm
Inboard Filter	-
Output Signal	- 110 ± 40 nA/ppm
Resolution (Electronics dependent)	< 0.5 ppm
T90 Response Time	< 60 s
Typical Baseline Range (pure air, 20°C)	-1 ppm to 1 ppm
Maximum Zero Shift (+20°C to +40°C)	see Graph
Repeatability	< 2 % of signal
Output Linearity	Linear
Gain (Only applies to 4-Electrode sensors)	-

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Electrical

Rec. Load Resistor	10 - 33 Ω
Bias (V_Sens-V_Ref)	not allowed
Conformity to RoHS directive	RoHS Compliance

Environmental

Relative Humidity Range	15 % to 90 % RH non-condensing
Temperature Range	-10 °C to 50 °C
Pressure Range	Atmospheric ± 10%
Pressure Coefficient	N.D.
Humidity Effect	None

Lifetime

Expected Operation Life	2 years in air
Expected Long Term Output Drift in air	< 2 % signal loss per month
Filter Life	
Storage Life	6 months in container
Rec. Storage Temperature	5°C - 20°C
Warranty Period	12 months from date of dispatch

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Compact-Size Outline Dimensions

BOTTOM VIEW   SIDE VIEW

45° Reference   45° Sensing

Counter

17.0 mm PCD

Non-connected Pin

24 mm

± 0.10 mm

32 mm

27.1 mm
O-Ring
23.7 mm

15.4 mm

16.8 mm

3.5 mm Pin Projection

∅ 1 mm Pins on 17.0 mm PCD
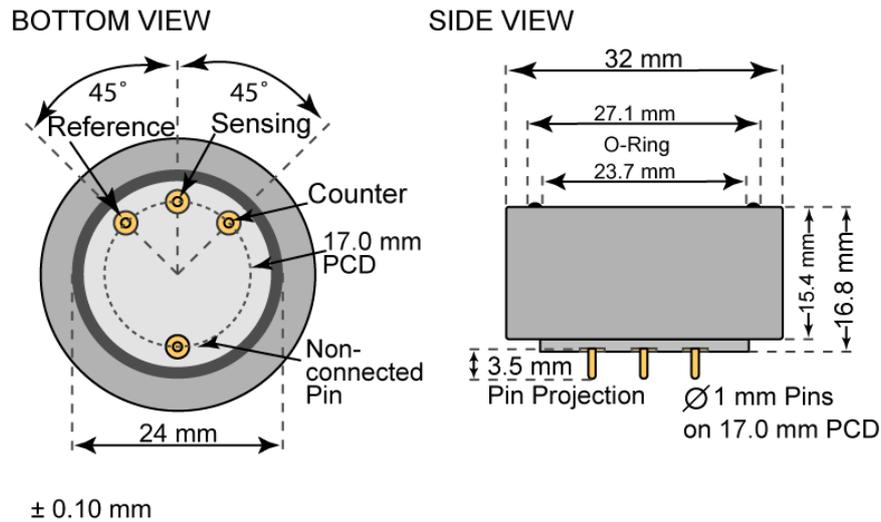
Mechanical

Weight	13 g
Orientation	Any
Housing material	Polycarbonate

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Cross Sensitivity Data

The table below does not claim to be complete. Interfering gases should not be used for calibration. Please contact Membrapor AG for further support regarding cross sensitivities.

Interfering Gas	Concentration [ppm]	Reading [ppm]
Cl_2	1	7.5
CO	250	0
Ethanol (C_2H_5OH)	60	< 5
H_2	1000	0
H_2S	20	-57
HCl	21	4
NH_3	80	-11
NO_2	5	12
O_3	1	5
PH_3	5	0.3
SiH_4	20	0
SO_2	10	> -50

Important Application Notes

• Exposure to SO2 results in a transient signal in opposite direction (like CO). Exposure should be avoided.

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Temperature dependence

The output of an electrochemical sensor varies with temperature. The graphs below show the temperature-dependent variation of baseline and sensitivity, respectively. The results shown here are raw data (batch average) without any post-processing steps. The sensitivity and baseline are referenced to the signal at 20°C (reference point).

Please note: It is highly recommended to acquire the temperature dependence curves with the whole instrument. The sampling system, the humidity, the electronics and the interaction between the electronics and the sensor have a significant impact on the temperature dependence of the final measurement reading.
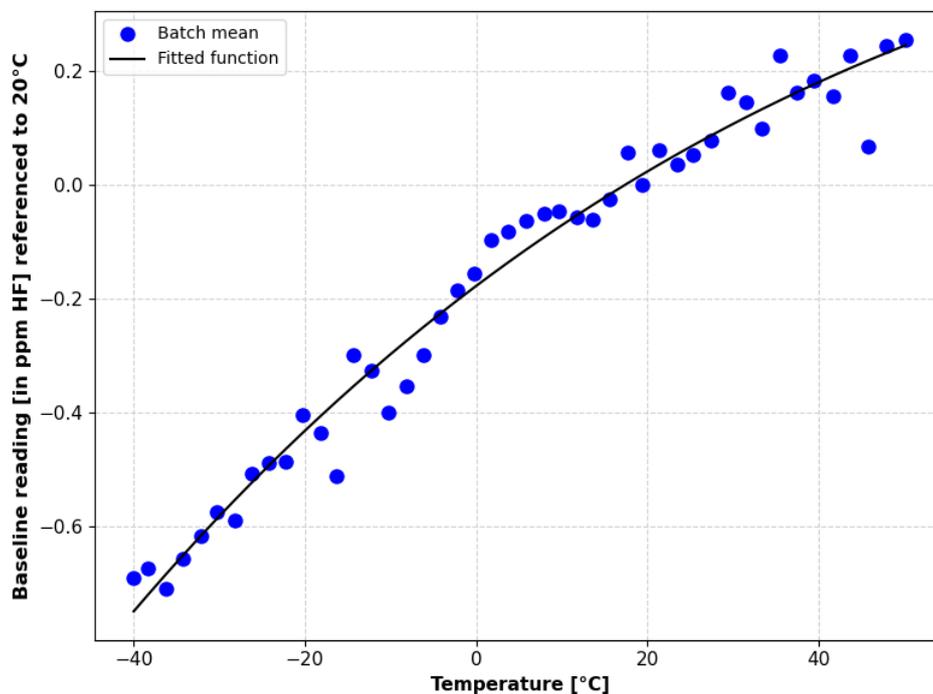
Baseline shifted with respect to reference point at 20°C.

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