

# MEMBRAPOR SPECIFICATION SHEET

## PH3/C-5

Phosphine Gas Sensor in Compact Housing



### MEASUREMENT

Operation Principle	3-Electrode Electrochemical
Nominal Range	0 – 5 ppm
Maximum Overload	25 ppm
Inboard Filter	none
Output Signal	4000 ± 1200 nA/ppm
Resolution (Electronics dependent)	< 0.3 ppm
T90 Response Time	< 25 sec
Typical Baseline Range (pure air, 20°C)	< 0.03 ppm
Maximum Zero Shift (+20°C to +40°C)	N.D.
Repeatability	< 2 % of signal
Output Linearity	Linear
Gain	–

### ELECTRICAL

Rec. Load Resistor	10 Ohm
Bias Voltage	not recommended
Conformity to RoHS directive	RoHS Compliance

### ENVIRONMENTAL

Relative Humidity Range	15 % to 90 % R.H. non-condensing
Temperature Range	-20 °C to 50 °C
Pressure Range	Atmospheric ± 10%
Pressure Coefficient	N.D.
Humidity Effect	none

### LIFETIME

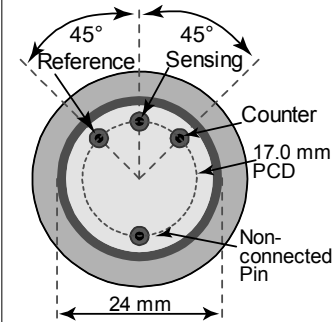
Expected Operation Life	2 years in air
Expected Long Term Output Drift in air	N.D.
Filter Life	–
Storage Life	6 months in container
Rec. Storage Temperature	5 °C – 20 °C
Warranty Period	12 months from date of dispatch

### IMPORTANT NOTE

Performance data conditions: 20 °C, 50% RH, 1013 mbar

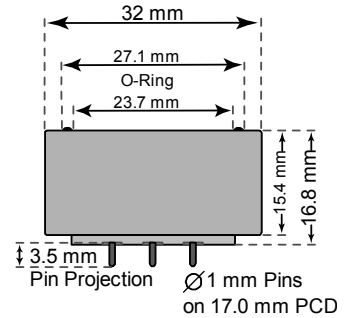
### Compact-Size Outline Dimensions

BOTTOM VIEW



± 0.10 mm

SIDE VIEW



### MECHANICAL

Weight	13 g
Position Sensitivity	None

### APPLICATIONS

Discontinuous Measurement  
Safety and Environmental Control

### CROSS-SENSITIVITY DATA

The table below does not claim to be complete.

Interfering Gas	Conc. ppm	Reading ppm
CO	100	0
H <sub>2</sub> S	34	8
NO	100	0
NO <sub>2</sub>	100	-30
H <sub>2</sub>	100	0
C <sub>2</sub> H <sub>4</sub>	100	2
SO <sub>2</sub>	100	25
SiH <sub>4</sub>	10	5

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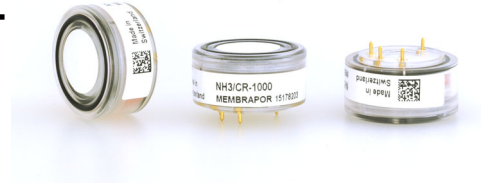
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### TEMPERATURE DEPENDENCE

The output of an electrochemical sensor varies with temperature. The graphs below show the variation in output with temperature for this type of sensor. The results are shown in the graphs as a mean for a batch of sensors. The sensitivity dependence is expressed as a percentage of the signal at 20 °C. The shift in baseline is shown in ppm referenced to 20 °C and a relative humidity of 50%.

Please note:

It is highly recommended to acquire the temperature dependence curves with the whole instrument. The sampling system, the humidity, the electronics, the interaction between the electronics and the sensor, all have a significant impact on the temperature dependence of the final measurement reading.

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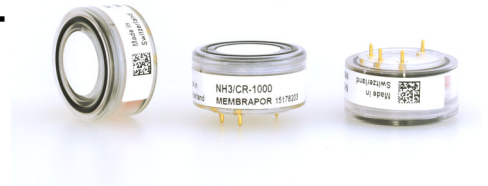
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### TEMPERATURE DEPENDENCE

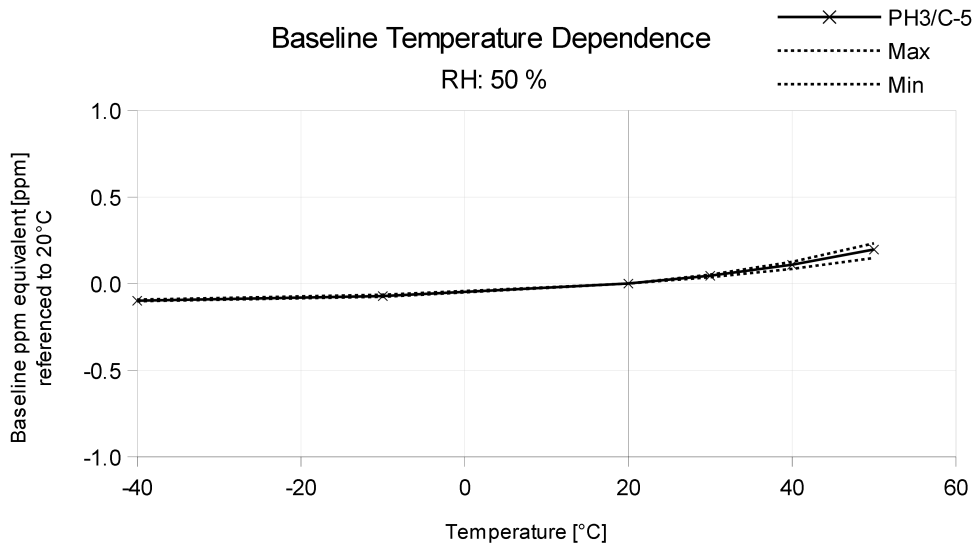


Figure 1: The shift in baseline shown in ppm referenced to 20 °C and a relative humidity of 50%.

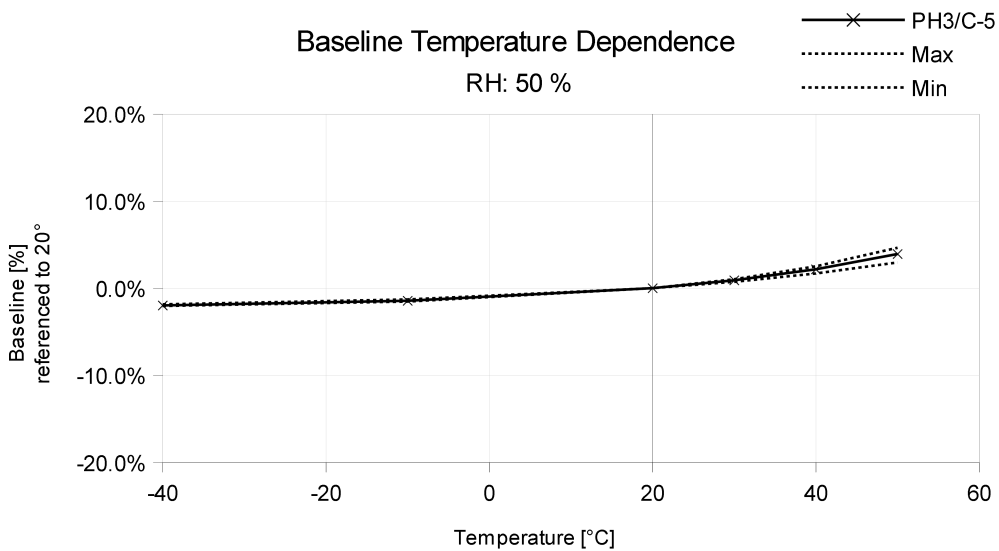


Figure 2: The shift in baseline expressed as percentage of the measurement range referenced to 20 °C and a R.H. of 50%.