





PH3 Gas Sensor in Miniature Housing

### **Key Features**

Highly sensitive PH3 measurements

### **Applications**

- · Discontinuous Measurement
- · Safety and Process Control
- For Portable Gas Detectors

### **Measurement**

Operation Principle	3-Electrode Electrochemical	
Nominal Range	0 - 5 ppm	
Maximum Overload	25 ppm	
Inboard Filter	-	
Output Signal	3500 ± 1000 nA/ppm	
Resolution (Electronics dependent)	< 0.02 ppm	
T90 Response Time	< 25 s	
Typical Baseline Range (pure air, 20°C)	-0.1 ppm to 0.1 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)	-	

Rev.: Sep-20 Page 1 of 5

Phone: +41 43 311 72 00 Membrapor AG
Fax: +41 43 311 72 01 Birkenweg 2
E-Mail: info@membrapor.ch
Website: www.membrapor.ch
Switzerland

#### Performance data recorded at 20 - 25 °C, 30 - 50% RH, 900 - 1100 mbar







## **Electrical**

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

### **Environmental**

Relative Humidity Range	15 % to 90 % RH non-condensing	
Temperature Range	-40 °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

Rev.: Sep-20 Page 2 of 5

Phone: +41 43 311 72 00 Membrapor AG
Fax: +41 43 311 72 01 Birkenweg 2
E-Mail: info@membrapor.ch
Website: www.membrapor.ch
Switzerland

### Performance data recorded at 20 - 25 °C, 30 - 50% RH, 900 - 1100 mbar

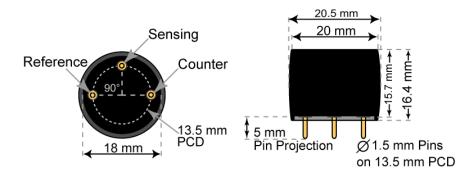






#### **Miniature-Size Outline Dimensions**

BOTTOM VIEW SIDE VIEW



± 0.10 mm

## **Mechanical**

Weight 5.5 g

Orientation Any

Housing material Polycarbonate

Rev.: Sep-20 Page 3 of 5

Phone: +41 43 311 72 00 Membrapor AG
Fax: +41 43 311 72 01 Birkenweg 2
E-Mail: info@membrapor.ch
Website: www.membrapor.ch
Switzerland

#### Performance data recorded at 20 - 25 °C, 30 - 50% RH, 900 - 1100 mbar







## **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]
AsH <sub>3</sub>	15	14
C <sub>2</sub> H <sub>4</sub>	100	< 0.5
CO	100	<1
H <sub>2</sub>	1000	< 1
H <sub>2</sub> S	20	5
HCI	20	< 1.5
Methanol (CH₃OH)	960	<1
NO	100	0
$NO_2$	5	-1.5
SiH <sub>4</sub>	10	5
SO <sub>2</sub>	5	1.2

Rev.: Sep-20 Page 4 of 5

Phone: +41 43 311 72 00 Fax: +41 43 311 72 01 E-Mail: info@membrapor.ch Website: www.membrapor.ch Membrapor AG Birkenweg 2 CH-8304 Wallisellen Switzerland

#### Performance data recorded at 20 - 25 °C, 30 - 50% RH, 900 - 1100 mbar



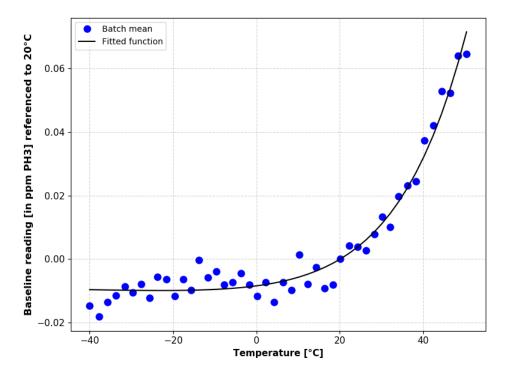




## Temperature dependence

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.

Rev.: Sep-20 Page 5 of 5

Phone: +41 43 311 72 00 Fax: +41 43 311 72 01 E-Mail: info@membrapor.ch Website: www.membrapor.ch Membrapor AG Birkenweg 2 CH-8304 Wallisellen Switzerland

#### Performance data recorded at 20 – 25 °C, 30 - 50% RH, 900 - 1100 mbar