

# DrägerSensor® XXS PH<sub>3</sub>

Order no. 68 10 886

Used in	Plug & Play	Replaceable	Guaranty	Expected sensor life	Selective filter
Dräger Pac 8000 <sup>1)</sup>	no	yes	1 year	> 3 years	no
Dräger X-am 5000	no	yes	1 year	> 3 years	no
Dräger X-am 5600	no	yes	1 year	> 3 years	no
Dräger X-am 8000	no	yes	1 year	> 3 years	no

<sup>1)</sup> Selection of measuring gas in Pac 7000/8000 not possible, only phosphine

## MARKET SEGMENTS

Inorganic chemicals, fumigation, clearance measurements.

## TECHNICAL SPECIFICATIONS

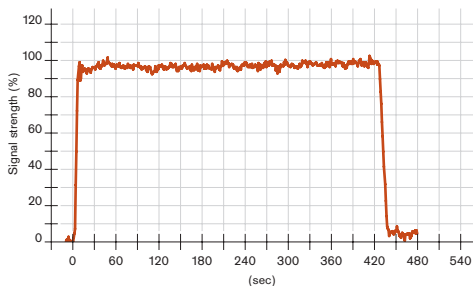
<b>Detection limit:</b>	0.02 ppm
<b>Resolution:</b>	0.01 ppm
<b>Measurement range/ relative Sensitivity</b>	0 to 20 ppm PH <sub>3</sub> (phosphine) 1.00
	0 to 20 ppm AsH <sub>3</sub> (arsine) 1.00
	0 to 20 ppm B <sub>2</sub> H <sub>6</sub> (diborane) 0.25
	0 bis 20 ppm GeH <sub>4</sub> (Germanium hydride) 0.40
	0 to 20 ppm SiH <sub>4</sub> (silane) 0.50
	0 to 20 ppm H <sub>2</sub> Se (selenium hydrogen)* 0.50
<b>Response time:</b>	≤ 10 seconds (t <sub>90</sub> )
<b>Precision</b>	
Sensitivity:	≤ ± 2% of measured value
<b>Long-term drift, at 20°C (68°F)</b>	
Zero point:	≤ ± 0.05 ppm/year
Sensitivity:	≤ ± 2% of measured value/month
<b>Warm-up time:</b>	≤ 15 minutes
<b>Ambient conditions</b>	
Temperature:	PH <sub>3</sub> , AsH <sub>3</sub> , SiH <sub>4</sub> : (-20 to 50)°C (-4 to 122)°F B <sub>2</sub> H <sub>6</sub> : (0 to 50)°C (32 to 122)°F GeH <sub>4</sub> : (15 - 35)°C (59 - 95)°F
Humidity:	(10 to 90)% RH
Pressure:	(700 to 1,300) hPa
<b>Influence of temperature</b>	
Zero point:	≤ ± 0.02 ppm
Sensitivity:	≤ ± 5% of measured value
<b>Influence of humidity</b>	
Zero point:	No effect
Sensitivity:	≤ ± 0.05% of measured value/% RH
<b>Test gas:</b>	approx. 0.5 to 18 ppm PH <sub>3</sub>

\* With limited temperature range: 0 to 40°C dry test gas

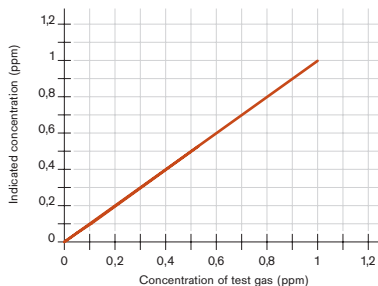
## SPECIAL CHARACTERISTICS

This sensor's advantages include an extreme fast response time of less than 10 seconds for 90% of the measured signal, and its excellent linearity. It is suitable for monitoring concentrations of common hydrides such as phosphine, arsine, diborane, and silane in the ambient air.

Sensor reaction to PH<sub>3</sub> at 20 °C/68 °F  
Flow = 0.5 l/min, with 0,1 ppm PH<sub>3</sub>



Linearity of PH<sub>3</sub> sensor  
calibrated with 1 ppm PH<sub>3</sub>



The values shown in the following table are standard and apply to new sensors. The values may fluctuate by  $\pm 30\%$ . The sensor may also be sensitive to additional gases (for more information, please contact Dräger). Gas mixtures may be displayed as the sum of all components. Gases with a negative cross sensitivity may displace an existing concentration of PH<sub>3</sub>. To be sure, please check if gas mixtures are present.

## RELEVANT CROSS-SENSITIVITIES

Gas/vapor	Chem. symbol	Concentration	Display in ppm PH <sub>3</sub>
Acetylene	C <sub>2</sub> H <sub>2</sub>	100 ppm	No effect
Ammonia	NH <sub>3</sub>	50 ppm	No effect
Carbon dioxide	CO <sub>2</sub>	10 Vol.-%	No effect
Carbon monoxide	CO	200 ppm	No effect
Chlorine	Cl <sub>2</sub>	10 ppm	≤ 2 (-)
Ethanol	C <sub>2</sub> H <sub>5</sub> OH	250 ppm	No effect
Hydrogen	H <sub>2</sub>	1,000 ppm	≤ 0.3
Hydrogen chloride	HCl	20 ppm	≤ 1
Hydrogen cyanide	HCN	60 ppm	≤ 5
Hydrogen sulfide	H <sub>2</sub> S	20 ppm	≤ 20
Isobutylene	(CH <sub>3</sub> ) <sub>2</sub> CCH <sub>2</sub>	100 ppm	No effect
Methane	CH <sub>4</sub>	0.9 Vol.-%	No effect
Nitrogen dioxide	NO <sub>2</sub>	20 ppm	≤ 5 (-)
Nitrogen monoxide	NO	20 ppm	No effect
Ozone	O <sub>3</sub>	0.5 ppm	No effect
Sulfur dioxide	SO <sub>2</sub>	10 ppm	≤ 1

(-) Indicates negative deviation