

## Dräger X-am® 5000 Measuring the combination of CO and HCN

Today, smoke inhalation causes eight times as many deaths as burns<sup>1</sup> in structural fires because of toxic gases. Two of the most deadly gases are carbon monoxide (CO) and hydrogen cyanide (HCN)—known as the “toxic twins”. The Dräger X-am® 5000 multi-gas detector protects you by measuring the combined concentration of CO and HCN, plus up to three other gases.



## Benefits

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### Patented protection against the toxic twins

The toxic twins (CO + HCN) create a deadly chemical asphyxiant that may put firefighters and victims into cardiac arrest at the time of the fire and may cause cancer decades later. Because the combination of CO and HCN is exponentially more harmful than exposure to these agents individually, measuring each gas against its single alarm threshold is not ideal for overhaul operations.

The current method analyzes the alarm threshold for each gas separately—without considering the synergistic effect of the gases.

No alarm would sound unless the individual levels exceeded the standard A1 alarm levels of 2.5 parts per million (or ppm) of HCN and 35 ppm of CO—even though the combined levels were lethal.

But with the new toxic twin signal processing technology in the Dräger X-am® 5000 multi-gas detector, you're protected against the combined effect of CO and HCN.

This patented technology measures both gas values and then adds them together. An alarm is triggered by scaling the concentration of both substances.

So let's say we have 2 ppm of HCN and 25 ppm of CO. While both individual levels are under the A1 alarm levels, the combination of the two gases is high enough to trigger an alarm.

Even at 1.5 ppm HCN and 20 ppm CO, the concentrations will trigger the alarm.

The result is increased firefighter safety during overhaul.

Dräger's patented toxic twins alarm function enables the Dräger X-am 5000 to measure CO and HCN against a combined threshold, which increases firefighter safety during overhaul.

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### Ergonomic mobile phone design

The device is very lightweight and has a practical mobile phone-like design, making it comfortable to carry. For easy operation, the control panel is reduced to the essentials—with two buttons and an easy-to-follow menu.

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### Flexible sensor exchange

With the X-am 5000, it's easy to exchange, upgrade or calibrate the sensors to other gases: Simply exchange the sensor and use CC -Vision software if you need to detect another gas.

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### Poison-resistant Ex sensor

The innovative catalytic Ex sensor enables the device to provide early warning in the event of explosive gases or combustible organic vapors. The sensor is highly resistant to sensor poisons such as silicone and hydrogen sulfide.

## Benefits

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### Durable sensor technology

Highly durable XXS sensor technology offers maximum security and an extremely low cost of ownership. The sensor's typical lifetime exceeds four years, which can help reduce operational costs.

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### Robust and watertight

The X-am 5000 is water and dust resistant, with an IP67\* rating. Even after being dropped into water, the detector remains fully functional and ready for use. Integrated rubber protection and shockproof sensors provide additional resistance to impact and vibration. The device is also resistant to electromagnetic interference.

\*The device is protected against the effects of being immersed in water 15 cm to 1-m deep for 30 minutes and water will not get into it.

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### External pump for confined spaces

An optional external pump, the X-am 125 Mark II, operates with a hose up to 147 feet (45 meters) long.

The pump allows you to use the X-am 5000 for pre-entry measurements into confined spaces such as tanks or shafts. The pump starts automatically when attached to the gas detector.

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### Area monitoring

You can use the X-am 5000 in combination with the Dräger X-zone® 5500 for area monitoring. Up to 25 X-zone 5500 units can be automatically interconnected to form a wireless fence line. This allows you to monitor entire areas after overhaul for numerous toxic gases.

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### Optimum solutions for function or bump tests, calibration and documentation

The X-am 5000 offers maximum safety for every application—from a function or bump test to complete documentation. The Dräger X-dock®, an automatic test and calibration station, and the Dräger Bump Test Station are ideal device extensions that save time and reduce workload. You can select fresh air, mixed gas and single gas calibrations directly using the X-am 5000 menu.

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### A choice of power supplies

The X-am 5000 uses standard alkaline batteries or can be fitted with a T4 battery that can be charged while inside the instrument. The optional Save Energy Mode increases the operating time to more than 40 hours. This is done by selecting a measurement interval of either one second (the standard), 10 or 20 seconds for the CatEx sensor.

<sup>1</sup> National Fire Protection Association, "Fatal Effects of Fire," John R. Hall, Jr., March 2011.

## System Components



D-47907-2012

### Dräger X-dock® 5300/6300/6600

Automatic bump tests, calibration, reduced test gas consumption, short testing times, and comprehensive documentation come standard in this new device from Dräger, the experts in gas detection.



D-12191-2010

### DrägerSensor® XXS

Dräger has developed miniature electrochemical sensors specially for the Dräger Pac® and X-am® 1/2/5 generation gas detectors. The sensors detect many different gases and vapors. They are also very reliable and stable over the long-term, thereby reducing your operating costs.



ST-1535-2007

### Dräger Catalytic Ex-Sensors

The Dräger Sensor Catalytic Ex-Sensors measure multiple gases at the same time—combustible gases and vapors in the air.



ST-740-2006

### Dräger Bump Test Station

The Bump Test Station is easy to use, stand-alone and flexible. In this regard, function tests of gas detection and warning devices can be carried out easily and independently of the location.

## Accessories

D-11857-2016



### Dräger X-am® 125 external pump

External pump for hose length of up to 45 meters (147 feet). Makes it possible to use the detector for pre-entry measurements into confined spaces such as tanks, shafts, etc. The pump starts automatically when the detector is attached. The change between diffusion and pump operation is quick and easy without any need for additional tools or steps.

D-12284-2009



### Power pack & charging set

Consisting of: NiMH power supply, charging module, single charger

ST-15011-2008



### Leather carrying case

ST-14360-2008



### Calibration cradle

## Accessories



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### Calibration gases

Single gases and gas mixtures of reliable, constant quality

## Services



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### Dräger Service

With Dräger's service solutions, you get complete peace of mind and budget security knowing that your safety equipment is supported by the same team of experts that engineered it and is backed by over 125 years of experience. You can rely on Dräger to keep the devices you depend on operating at peak performance and to always put the safety of your team first. That's the Dräger Service Advantage.

## Related Products

D-43530-2015



### Dräger X-am® 2500 Personal Monitor

Dräger's X-am® 2500 accurately detects O<sub>2</sub>, CO, NO<sub>2</sub>, SO<sub>2</sub> and H<sub>2</sub>S and is the only 1-4 gas monitor you need in industrial and refinery applications. The X-am® 2500 combines reliable sensor technology with long battery life and intuitive operation in an instrument that defines safety.

ST-67-2006



### Dräger X-am® 7000

Dräger X-am® 7000 is the innovative solution for the simultaneous and continuous measurement of up to five gases. A combination of more than 25 sensors allows flexible solutions to individual monitoring tasks. It is the ideal companion in a variety of applications where the reliable detection of oxygen, toxic and combustible gases and vapors is necessary.

D-27784-2009



### Dräger X-am® 5600 Personal Monitor

Featuring an ergonomic design and innovative infrared sensor technology, the Dräger X-am® 5600 is the smallest gas detection instrument for the measurement of up to 6 gases. Ideal for personal monitoring applications, this robust and water-tight detector provides accurate, reliable measurements of explosive, combustible and toxic gases and vapors as well as oxygen.

D-30746-2015



### Dräger Configuration and Evaluation Software

Tailor-made Dräger software makes saving measurement results, professionally configuring gas detection instruments, and viewing performance data possible.

## Technical Data

Dimensions (W x H x D)	48 x 130 x 44 mm; 1.89 x 5.12 x 1.73 in.	
Weight	220 – 250 g; 7.8 – 8.8 oz.	
Ambient conditions	Temperature	-20 – +50 °C; -4 – 122 °F
	Pressure	700 – 1,300 hPa
	Humidity	10 – 95% r.h.
Alarms	Visual	360°
	Audible	Multi-tone > 90 dB at 30 cm
	Vibrating	
Ingress Protection	IP67	
Operating time	> 12 hours with Alkaline and NiMH; > 13 hours with NiMH HC; without Ex Sensor typ. > 250 hours with Alkaline Battery; when using the Save Energy Mode > 40 hours	
Charging time	< 4 hours	
Data logger	Can be read out via Infrared > 1,000 hours with 5 gases and a recording interval of 1 value per minute	
Pump operation	Maximum hose length 45 m; 147 ft.	
Approvals	ATEX	I M1 Ex ia I Ma, II 1G Ex ia IIC T3 Ga, I M2 Ex d ia I Mb, II 2G Ex d ia IIC T4 / T3 Gb
		Performance approval to:
		EN 50104 (2002) + A1 (2004) O <sub>2</sub>
		EN 45544 CO & H <sub>2</sub> S
		EN 60079-29-1:2007 Methane to nonane
		EN 50271:2010 Software and documentation
	CSA	Class I, Div. 1 Group A, B, C, D T.-Code T4 / T3
	IECEX	Ex ia I
		Ex ia IIC T3
		Ex d ia I Ex d ia IIC T4/T3
CE-mark	Electromagnetic compatibility Directive 2004 / 108 / EG; EN 50270:2006	
EAC	PO Ex ia I X 0 Ex ia IIC T4 / T3 X	
MED	Marine Equipment Directive 96 / 98 / EC	
MSHA		

## Ordering Information

### Dräger X-am® 5000 <sup>2)</sup>

Consisting of: basic instrument with an integrated data logger and manufacturer's and calibration certificates.

83 20 000

A functional instrument must include up to 4 sensors and a power supply unit.

Description	Measuring range	Resolution	Response time (t <sub>90</sub> )	Order code
CatEx 125 PR <sup>2)</sup>	0 – 100 % LEL	1 % LEL	10 sec.	68 12 950
	0 – 100 Vol.-% CH <sub>4</sub>	1 Vol.-%	45 sec.	
CatEx 125 PR Mining	0 – 100 % LEL	1 % LEL	10 sec.	68 13 080
	0 – 100 Vol.-% CH <sub>4</sub>	1 Vol.-%	45 sec.	
DrägerSensor XXS O <sub>2</sub> <sup>2)</sup>	0 – 25 Vol.-%	0.1 Vol.-%	10 sec.	68 10 881



## Ordering Information

DrägerSensor XXS CO <sup>2)</sup>	0 – 2,000 ppm	2 ppm	25 sec.	68 10 882
DrägerSensor XXS CO LC	0 – 2,000 ppm	1 ppm	15 sec.	68 13 210
DrägerSensor XXS CO HC	0 – 10,000 ppm	5 ppm	25 sec.	68 12 010
DrägerSensor XXS CO / H <sub>2</sub> compensated	0 – 2,000 ppm CO	2 ppm	25 sec.	68 11 950
DrägerSensor XXS H <sub>2</sub> S	0 – 200 ppm	1 ppm	15 sec.	68 10 883
DrägerSensor XXS H <sub>2</sub> S LC <sup>2)</sup>	0 – 100 ppm	0.1 ppm	15 sec.	68 11 525
DrägerSensor XXS H <sub>2</sub> S HC	0 – 1,000 ppm	2 ppm	15 sec.	68 12 015
DrägerSensor XXS CO / H <sub>2</sub> S	0 – 2,000 ppm CO / 0 – 200 ppm H <sub>2</sub> S	1 ppm H <sub>2</sub> S / 2 ppm CO	20 sec.	68 11 410
DrägerSensor XXS NO	0 – 200 ppm	0.5 ppm	10 sec.	68 11 545
DrägerSensor XXS NO <sub>2</sub>	0 – 50 ppm	0.1 ppm	15 sec.	68 10 884
DrägerSensor XXS NO <sub>2</sub> LC	0 – 50 ppm	0.02 ppm	15 sec.	68 12 600
DrägerSensor XXS SO <sub>2</sub>	0 – 100 ppm	0.1 ppm	15 sec.	68 10 885
DrägerSensor XXS PH <sub>3</sub>	0 – 20 ppm	0.01 ppm	10 sec.	68 10 886
DrägerSensor XXS PH <sub>3</sub> HC	0 – 2,000 ppm	1 ppm	10 sec.	68 12 020
DrägerSensor XXS HCN	0 – 50 ppm	0.1 ppm	10 sec.*	68 10 887
DrägerSensor XXS HCN PC	0 – 50 ppm	0.5 ppm	10 sec.*	68 13 165
DrägerSensor XXS NH <sub>3</sub>	0 – 300 ppm	1 ppm	10 sec.*	68 10 888
DrägerSensor XXS CO <sub>2</sub>	0 – 5 Vol.-%	0.1 Vol.-%	30 sec.*	68 10 889
DrägerSensor XXS Cl <sub>2</sub>	0 – 20 ppm	0.05 ppm	30 sec.	68 10 890
DrägerSensor XXS H <sub>2</sub>	0 – 2,000 ppm	5 ppm	10 sec.	68 12 370
DrägerSensor XXS H <sub>2</sub> HC	0 – 4 Vol.-%	0.01 Vol.-%	20 sec.	68 12 025
DrägerSensor XXS OV	0 – 200 ppm	0.5 ppm	20 sec.*	68 11 530
DrägerSensor XXS OV-A	0 – 200 ppm	1 ppm	40 sec.*	68 11 535
DrägerSensor XXS Amine	0 – 100 ppm	1 ppm	30 sec.	68 12 545
DrägerSensor XXS Odorant	0 – 40 ppm	0.5 ppm	90 sec.	68 12 535
DrägerSensor XXS COCl <sub>2</sub>	0 – 10 ppm	0.01 ppm	20 sec.*	68 12 005
DrägerSensor XXS Ozone	0 – 10 ppm	0.01 ppm	10 sec.*	68 11 540

<sup>1)</sup>Special calibration for Ex sensors are available (standard setting: Methane)

<sup>2)</sup> Dräger provides a 3 year warranty on the Dräger X-am® 5000 and these sensors.

\* Response time (t<sub>50</sub>)

## Ordering Information

### Sensors with a 5 year warranty

DrägerSensor XXS E CO	0 – 2,000 ppm	2 ppm	15 sec.	68 12 212
DrägerSensor XXS E H <sub>2</sub> S	0 – 200 ppm	1 ppm	15 sec.	68 12 213
DrägerSensor XXS E O <sub>2</sub>	0 – 25 Vol.-%	0.1 Vol.-%	10 sec.	68 12 211

### Power supply units

NiMH power pack T4	83 18 704
Power pack & charging set Consisting of: rechargeable NiMH power supply T4, charging module and a single charger (for worldwide use)	83 18 785
NiMH power supply T4 high capacity	83 22 244
Alkaline power pack T3 / T4 (without alkaline batteries)	83 22 237
Alkaline batteries T4 (2 pc.) for alkaline power supply 83 22 237	83 22 240
Alkaline batteries T3 (2 pc.) for alkaline power supply 83 22 237	83 22 239

### Charging accessories

Charging module	83 18 639
Charging set basic consisting of one charging module and a single power supply (worldwide use)	83 20 333
Power supply with connection cable (worldwide use) for max. 20 charging modules	83 15 805
Single charger (worldwide use) for max. 5 charging modules	83 16 994
Single charger (worldwide use) for max. 2 charging modules	83 15 635
Car charging connection cable 12 / 24 V for a charging module	45 30 057
Vehicle charger mounting kit for a X-am® 1/2/5x00 car charging module	83 18 779

### Pump accessories

Dräger Mark II X-am® Pump incl. USB charger with wall plug and shoulder strap	83 27 115
CSE Set for Dräger X-am® Mark II Pump	83 27 117
Customizable Expanded Dräger X-am® 5000/5600 CSE Kit with Mark II Pump	83 27 106
USB 2.0 Cable	83 27 108
USB power supply	83 27 102
Shoulder strap	83 19 386
Case for Dräger X-am® Mark II Pump	83 27 104
Filter with hose connector (3 mm / 0.12 in and 5 mm / 0.20 in)	83 19 364
Clamp	56 00 956
Telescopic Probe ES150, 1.5 m / 4.9 ft	83 16 533
Telescopic Probe, 1.4 m / 4.5 ft	45 10 546
Telescopic Probe, 2 m / 6.5 ft	45 10 545
Float probe	83 27 654
5 m / 16.4 ft FKM hose (diameter 3 mm / 0.12 in)	83 25 705
Dust/Water Stop Filter for 1/2/5 Pump	45 43 759
Kit, pump inlet w/nut, X-am® 1/2/5 Spare	45 94 854
Kit, MSHA PX2 Pump with adapter for X-am 1/2/5	45 43 982
Hand Pump Kit with 10 ft (3 m) Tygon Tubing	45 94 585
Water Trap, Dust/Mist Filter for Hand Pump Kit	45 23 078

## Ordering Information

### Calibration accessories

Calibration cradle for X-am® 1/2/5x00	83 18 752
Dräger X-dock® for Dräger X-am® 1/2/5x00, not including gas cylinder	83 21 880
Dräger Bump Test Station for Dräger X-am® 5000, not including gas cylinder	83 19 131

### Communication accessories

Dräger GasVision	83 14 034
Dräger CC-Vision	Freeware
USB DIRA with USB cable, communication adapter infrared to USB	83 17 409

### Cases

Leather carrying case	83 18 755
Carrying case for charging accessories, probes, external pump, hose and gas cylinder (without content)	83 20 467

### Area Monitoring

Dräger X-zone® 5500, 915 MHz, 24 Ah	83 24 823
Dräger X-zone® 5500, 915 MHz, 24 Ah, with Pump	83 24 825

## Notes

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