Dräger

Dräger Gas Detection

Dräger: Technology for Life®

Inside front cover BLANK

Dräger Gas Detection

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Area monitoring without limits.

Dräger X-zone® 5000

D-23602-2009

Dräger X-zone® 5000
Front view

D-23594-2009

Dräger X-zone® 5000
Back view

Area monitoring without limits – the Dräger X-zone 5000. In combination with the Dräger X-am 5000 or X-am 5600, the X-zone 5000 reliably monitors for up to six hazardous gases and warns at preset levels. This easily transportable, robust and water-proof unit extends mobile gas detection technology to a unique system with many applications.

INNOVATIVE AREA MONITORING

The Dräger X-zone 5000 transforms the Dräger X-am 5000 or X-am 5600 personal gas detection instrument into an innovative area monitoring device for a wide range of applications. A patented combination for increased safety – used with personal gas air monitoring carried on the body or positioned where gas hazards are expected, the X-zone 5000 area monitor knows no limits!

CLEAR ALARM - 360°

Even from a distance, the illuminated green LED ring indicates that the air is free of toxic and combustible gases. When gas hazards are detected, the LED changes colors from green to red, providing a clear visual warning that hazardous gas is present. In addition, it emits a loud and audible evacuation alarm. With a patented 360° alarm amplifier, the acoustic warning is heard easily over a wide area, independent of wind direction. The Dräger X-zone 5000 gas entry is arranged so that gas can diffuse into the Dräger X-am 5000 or X-am 5600 from all sides.

WIRELESS FENCE LINE

Up to 25 Dräger X-zones can be automatically interconnected to form a wireless fence line. This interconnection of the monitoring devices allows for rapid securing of larger areas, e.g. leaking pipelines or industrial tanks – or the monitoring required during industrial shutdowns.

In the event of a gas alarm, the Dräger X-zone 5000 transmits alarm signals to all units that are part of the fence line which then display a daughter alarm. The original alarming unit shows a red LED along with its audible alarm, while the daughter alarm displays green/red with its illuminated LED ring. This provides fast, easy recognition of the general alarm, while identifying the unit which alarmed originally. This assures a positive alert and a clear and clean evacuation. Alternatively, the fence line can be wired.

AREA MONITORING – USING A SAMPLING PUMP

An optional integrated pump allows monitoring of remote areas by pulling a sample to the device. This provides continuous monitoring of confined spaces and locations which are difficult to access – from a distance of up to 150 ft. (45 m).

Area monitoring
Dräger X-zone 5000 complements the Dräger personal gas measuring devices X-am 5000 and X-am 5600.

Wireless fence line
Up to 25 Dräger X-zone 5000 automatically interconnect to form a wireless fence line.

TECHNICAL DATA

Dimensions (W x H x D)	16.2 x 11.4 x 11.4 inch (490 x 300 x 300 mm)	
Weight	15 lbs. (7 kg) (12 Ah battery), 22 lbs. (10 kg) (24 Ah battery)	
Approvals	ATEX	I M1 Ex ia I Ma
		II 1G Ex ia IIC T3 Ga
		II 2G Ex ia d IIC T4 Gb
	IEC	Ex ia IIC T3/T4
		Ex ia IIC T3
		Ex d ia IIC T4
		Class I, Zone 0, AEx ia IIC T3
		Class I, Zone 1, AEx d ia IIC T4

ORDER INFORMATION

Dräger X-zone® 5000 with diffusion cap	**Order No.**
Dräger X-zone 5000 – 915 MHz, 12 Ah battery	83 20 744
Dräger X-zone 5000 – 915 MHz, 24 Ah battery	83 20 745
Dräger X-zone® 5000 with integrated pump, diffusion and pump cap	
Dräger X-zone 5000 – 915 MHz, 12 Ah battery	83 20 746
Dräger X-zone 5000 – 915 MHz, 24 Ah battery	83 20 747
Accessories	
Bump Test adapter	83 20 108
Alarm damper	83 20 110
Leg extender, 1 ft. or 25 cm in height	83 20 645
Charging accessories	
Inductive charger	83 22 076
Plug-in charger	83 20 749
Pump accessories	
Float probe with 16.4 ft. or 5 m viton hose	83 18 371
Hose set (consisting of water trap, dust and water filter)	83 21 527
Viton hose, solvent-resistant	12 03 150
Tygon hose	45 94 707
Communication accessories	
Dräger CC-Vision®	64 08 515
USB DIRA with USB cable	83 17 409

The Dräger X-am 2000 represents a new generation of personal gas detectors.

DRÄGER X-AM 2000

The Dräger X-am 2000 represents a new generation of personal gas detectors which have been specially designed for personal monitoring. These gas detectors reliably measure combustible gases and vapors, as well as O_2, CO and H_2S. Their ergonomic design, mobile phone dimensions and light weight make them the perfect companion in your daily work. Reliable measurement technology, long sensor life and easy operation guarantee maximum safety at an extremely low cost of ownership.

The instrument's light weight and mobile phone size – unique in today's market – guarantees users a high level of comfort and convenience. By design, the instruments are easy to use, thanks to the practical two button control panel and easy to understand display icons.

The Dräger X-am 2000 is available in 1 to 4 gas configurations with a 1000 hour data logger. This monitor is not life limited and has user replaceable sensors, unmatched for a monitor of this type. The optional T4 NiMH battery pack will be covered by a two-year warranty.

The new bump-test station will allow for complete function tests in about 20 seconds. Automatic recognition of the monitor starts the process as soon as the monitor is placed in the cradle. The monitor can also be configured to automatically perform a complete calibration when placed in the test station. Records of the tests are stored in the instrument's data or event logger.

The Dräger E-Cal automatic test, calibration, and documentation system is also an ideal complement to the instrument, saving time and minimizing the workload.

For improved safety when facing unknown gas hazards the catalytic EX sensor, calibrated to methane, responds quickly to explosive gases. It also offers a high level of sensitivity to combustible organic vapors, thus providing dependable warnings in the event of explosive hazards.

Dräger-Sensors® stand for innovative technology at the highest level. The Dräger X-am monitors feature the latest series of powerful electrochemical Dräger-Sensors® from the miniaturize XXS generation.

The Dräger X-am 2000 monitor is tough: water and dust resistant to IP 67, the instruments remain fully functional and ready for use even after being dropped in water. The integrated rubber protection and shockproof sensors ensure additional resistance to impact and vibration. The Dräger X-am 2000 also has certified protection against electromagnetic and RFI interference.

ST-7452-2005

Dräger X-am 2000: The ideal 4-gas detector for industrial shutdowns.

TECHNICAL DATA

Gases Detected	Combustible Gases, O_2, CO and H_2S.	
Dimensions	1.85 x 5.08 x 1.22 inch (7 x 129 x 31 mm)	
Weight	7.8 oz (220 g)	
Approvals	ATEX	II 2G EEx ia d IIC T4/T3 - I M2 EEx ia d I
	UL	Cl. I Div. 1 Group A,B,C,D - Cl. II E,F,G T.-Code T4/T3
	CSA	Cl. I Div. 1 Group A,B,C,D T.-Code T4/T3
	IECEx	Ex ia d I/IIC T4/T3
	CE-mark	Electromagnetic compatibility (directive 89/336/EEC)
	MSHA	X-am 2000 permissible gas detector

ORDER INFORMATION

Dräger X-am 2000 Monitor - unlimited life with data logger - 3 Year Warranty*	
Dräger X-am 2000 EX, O_2, CO, H_2S w/ alkaline battery pack	83 18 910
Dräger X-am 2000 EX, O_2, H_2S w/ alkaline battery pack	83 18 890
Dräger X-am 2000 EX, O_2, CO w/ alkaline battery pack	83 18 880
Dräger X-am 2000, O_2, H_2S w/ alkaline battery pack	83 18 698
Dräger X-am 2000, O_2, CO w/ alkaline battery pack	83 18 697
Dräger X-am 2000, CO, H_2S w/ alkaline battery pack	83 18 696
Dräger X-am 2000 EX, CO w/ alkaline battery pack	83 18 790
Dräger X-am 2000 EX, H_2S w/ alkaline battery pack	83 18 780
Dräger X-am 2000 EX, O_2 w/ alkaline battery pack	83 18 770
Dräger X-am 2000 EX w/ alkaline battery pack	83 18 750
Dräger X-am 2000 O_2, CO, H_2S w/ alkaline battery pack	83 18 699
X-am 2000 Ex/O_2/CO/H_2S NiMH, w/ Charger Kit	45 43 095
X-am 2000 Ex/O_2/H_2S, NiMH, w/ Charger Kit	45 43 907
X-am 2000 Ex/O_2/CO NiMH, w/ Charger Kit	45 43 908
X-am 2000 Ex/CO NiMH, w/ Charger Kit	45 43 910
X-am 2000 Ex/H_2S NiMH, w/ Charger Kit	45 43 911
X-am 2000 Ex/O_2 NiMH, w/ Charger Kit	45 43 912
X-am 2000 Ex NiMH, w/ Charger Kit	45 43 913

Accessories	
NiMH battery pack T4	83 18 704
NiMH battery pack T4 with charger module and power pack	83 18 785
Alkaline battery pack T3/T4 (without alkaline batteries)	83 18 703
Alkaline battery for alkaline power supply 8318703	45 88 195

Dräger Bump Test Station for X-am 2000	83 19 131
Mixed gas cylinder, 2.5 vol.-% CH_4, 100 ppm CO; 25 ppm H_2S, 17 vol.-% O_2	45 94 655
Deluxe instrument case	45 43 755

*5 Year Warranty on EC Sensors

Dräger X-am 2000:
Robust 1- to 4-gas detector for personal monitoring.

Dräger X-am 5000

DRÄGER X-AM 5000

The smallest gas detection instrument for up to 5 gases. The Dräger X-am 5000 belongs to a new generation of gas detectors, developed especially for personal monitoring applications. This 1 to 5-gas detector reliably measures combustible gases and vapors as well as oxygen and harmful concentrations of CO, H_2S, CO_2, Cl_2, HCN, O_3, $COCl_2$, NH_3, NO_2, PH_3, SO_2, amines, odorants and organic vapors.

A variety of special calibrations for the catalytic Ex sensor allow the Dräger X-am 5000 even more sensitivity when detecting specific combustible gases and vapors. Equipped with durable DrägerSensors® XXS sensor technology, the Dräger X-am 5000 offers maximum security and extremely low operational costs. The longevity of the catalytic sensor and five year expected lifetime of the oxygen sensor are unique in the market.

Dräger X-am 5000's ergonomic mobile phone design and light weight make it comfortable for users to carry. It is water and dust-resistant according to IP 67. The integrated rubber protection and shock-proof sensors ensure additional resistance to impact and vibration. Moreover, the Dräger X-am 5000 is insensitive to electromagnetic interference. The two button control panel and easy to follow menu system allow for intuitive use. It is easy to exchange, upgrade or calibrate the sensors to other gases. The ability to customize the Dräger X-am 5000's sensors makes more applications possible, including rental equipment.

The innovative catalytic Ex sensor, with full range functionality, measures 0-100 % LEL and 0-100 Vol.- % methane concentration. The calibration concept simplifies a calibration to vapors. When set for maximum sensitivity, the detector is even more reliable to warn about unknown hazards.

TECHNICAL DATA

Dimensions (W x H x D	1.85 x 5.08 x 1.22 inch (47 x 129 x 31 mm)	
Weight	Approximately 7.8 oz. (220 g)	
Ambient conditions	Temperature	-4 to +122 °F, -20 to +50 °C,
	Pressure	700 to 1300 mbar, 20.7 to 38.4 inch Hg
	Humidity	10 to 95% RH
Alarms	Visual	180°
	Audible	Multi-tone >90 dB at 30 cm, 1 ft.
	Vibration	
Battery options	Alkaline, rechargeable NiMH cells for alkaline pack, T4 battery pack	
Operating times	> 12 hours, with pulsed mode > 40 hours	
Charging times	< 4 hours	
Data logger	Can be read out via infrared approx. 1000 hours with 5 gases and a recording interval of 1 reading per minute	
Pump operation	Maximum hose length 98 ft., 30 m.; 30 hours with 3 "AA" alkaline	
Approvals	ATEX	II 2G Ex d ia IIC T4/T3 I M2 Ex d ia II Measurement performance certificate according to: - EN 50104 (2002) + A1 (2004) O_2 - EN 45544 CO & H_2S - EN 60079-29-1:2007 Methane to Nonane - EN 50271 1:2001 Software and Documentation
	UL	Class I Div. 1 Group A, B, C, D, E, F, G T-Code T4/T3
	CSA	Class I, Div. I Group A, B, C, D, T-Code T4/T3
	IECEx	Ex d ia IIC T4/T3
	CE mark	Electromagnetic compatibility
	MED	Marine Equipment Directive 96/98/EC
	MSHA	

ORDER INFORMATION

CONTACT CUSTOMER SERVICE FOR KIT CONFIGURATIONS (1-800-858-1737)

Description	Order No.
Dräger X-am 5000, basic instrument without power supply unit, with data logger, with manufacturer's and calibration certificates. Order battery and sensors separately. Contact Dräger for additional sensors for the X-am 5000.	83 20 088
Alkaline power supply with AA batteries (2 required)	83 18 703
Rechargeable NiMH power supply unit T4	83 18 704

Additional power supply units	
Battery charging set, consisting of: NiMH power supply unit T4 with charger module and connection cable (for worldwide use) for one charger module	83 18 785
Alkaline batteries (4 pc.) for alkaline power supply	45 88 195

ST-16008-2008

Dräger X-am 5600

Innovation in the palm of your hand. Dräger X-am 5600 — Unprecedented protection from the market's smallest, infrared-capable, six-gas personal monitor.

SMALLEST DEVICE INCREASES YOUR PRODUCTIVITY BIG TIME

As the smallest device of its type in the industry it is much less obtrusive on the user allowing him to focus on the task at hand. In addition the X-am 5600 can measure up to 6 gases at one time reducing the need for additional instruments.

Size comparison of the X-am 5600 to three of its main competitors

GO EASY ON YOUR BOTTOM LINE WITH REDUCED TOTAL COST OF OWNERSHIP

Dustproof and watertight monitors are only as reliable as their sensors. That's why Dräger starts by engineering its infrared sensors to last up to eight years, keeping total cost of ownership low and instrument uptime high. In fact, Dräger's 5 year warranty on the IR sensors exceeds the industry average by 60% and there is no need to invest in new or additional equipment because the X-am 5600 works seamlessly with your existing Dräger X-am bump test stations, pumps, and calibration stations

KEEP YOUR TEAMS EVEN SAFER

The new Dräger infrared sensors can be used for the measurement of combustible hydrocarbons or CO_2. For those applications where the reliable measurement of these substances is specifically needed Dräger's dual IR CO2/EX Sensor performs at its best. The innovative 2-in-1 design provides added protection and versatility by making room for an additional sensor.

PERSONAL MONITORING JUST BECAME CONVENIENT

Single-handed operation feels natural with its hand-held ergonomic design. It's a cinch to operate with a simple, two-button control panel. It maintains uninterrupted accuracy when worn in a pocket with its upper and front side mounted gas inlets. With Dräger, a world leader in gas detection technology and innovation, both bump tests and equipment calibrations are simple, quick, and professionally completed in no time.

D-27784-2009

Dräger X-am® 5600
Designed for durability and reliability–and single-handed detection of up to 6 gases

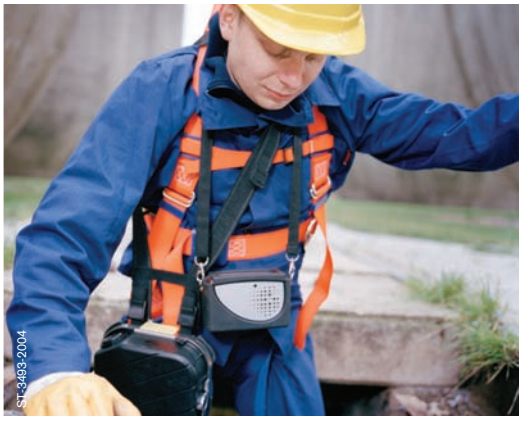
Innovation in the palm of your hand.

ORDER INFORMATION

Electrochemical Sensors	Measuring Range	Resolution	Response time (t_{90})	Order Code
DrägerSensor XXS O_2	0 – 25 Vol.-%	0.1 Vol.-%	10 sec.	68 10 881
DrägerSensor XXS CO	0 – 2,000 ppm	2 ppm	15 sec.	68 10 882
DrägerSensor XXS CO HC	0 – 10,000 ppm	5 ppm	25 sec.	68 12 010
DrägerSensor XXS CO/H_2 compensated	0 – 2,000 ppm CO	2 ppm	25 sec.	68 11 950
DrägerSensor XXS H_2S	0 – 200 ppm	1 ppm	15 sec.	68 10 883
DrägerSensor XXS H_2S LC	0 – 100 ppm	0.1 ppm	15 sec.	68 11 525
DrägerSensor XXS H_2S HC	0 – 1,000 ppm	2 ppm	15 sec.	68 12 015
DrägerSensor XXS CO/H_2S	0 – 2,000 ppm CO / 0 – 200 ppm H_2S	1 ppm H_2S / 2 ppm CO	20 sec.	68 11 410
DrägerSensor XXS NO	0 – 200 ppm	0.1 ppm	10 sec.	68 11 545
DrägerSensor XXS NO_2	0 – 50 ppm	0.1 ppm	15 sec.	68 10 884
DrägerSensor XXS SO_2	0 – 100 ppm	0.1 ppm	15 sec.	68 10 885
DraegerSensor XXS NO_2-LC	0 – 50 ppm	0.02 ppm	15 sec	68 12 600
DrägerSensor XXS PH_3	0 – 20 ppm	0.01 ppm	10 sec.	68 10 886
DrägerSensor XXS PH_3 HC	0 – 2,000 ppm	1 ppm	10 sec.	68 12 020
DrägerSensor XXS HCN	0 – 50 ppm	0.1 ppm	10 sec. (t_{50})	68 10 887
DrägerSensor XXS NH_3	0 – 300 ppm	1 ppm	20 sec. (t_{50})	68 10 888
DrägerSensor XXS CO_2	0 – 5 Vol.-%	0.1 Vol.-%	30 sec. (t_{50})	68 10 889
DrägerSensor XXS Cl_2	0 – 20 ppm	0.05 ppm	30 sec.	68 10 890
DrägerSensor XXS H_2	0 – 2,000 ppm	5 ppm	10 sec.	68 12 370
DrägerSensor XXS H_2 HC	0 – 4 Vol.-%	0.01 Vol.-%	20 sec.	68 12 025
DrägerSensor XXS OV	0 – 200 ppm	0.5 ppm	20 sec. (t_{50})	68 11 530
DrägerSensor XXS OV-A	0 – 200 ppm	1 ppm	40 sec. (t_{50})	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 $COCl_2$	0 – 10 ppm	0.01 ppm	30 sec.	68 12 005
DrägerSensor XXS O_3	0 – 10 ppm	0.01 ppm	10 sec. (t_{50})	68 11 540
DrägerSensor XXS E CO	0 – 2,000 ppm	2 ppm	15 sec.	68 12 212
DrägerSensor XXS E H_2S	0 – 200 ppm	1 ppm	15 sec.	68 12 213
DrägerSensor XXS E O_2	0 – 25 Vol.-%	0.1 Vol.-%	10 sec.	68 12 211

Communication accessories	Order code
Dräger GasVision®	83 14 034
Dräger CC-Vision®	64 08 515
USB DIRA with USB cable, communication adapter infrared to USB	83 17 409
PC communication set 1 with USB port, Dräger CC-Vision® includes registration software	83 18 761
PC communication set 2 with USB port, Dräger CC-Vision® includes registration software and barcode reader	83 18 762

Innovative Measuring
for combustible gases



Dräger X-am 3000

The Dräger X-am 3000 Monitor is a small and innovative measuring device for Combustible Gases, O_2, CO and H_2S in industrial gas detection applications. Go about your job confidently knowing that the Dräger X-am 3000 will measure and alert you to dangerous gases and vapors.

The most convenient feature of the Dräger X-am 3000 is the optional built-in remote sample pump. Everything is in one package for your confined space applications. Simply attach the pump adapter and hose and you're ready to measure gases in a confined space. Additionally, the small profile of the Dräger X-am 3000 makes it easy to take into a confined space or wear on one's body all day.

The Dräger X-am 3000 is very easy to use. The large display continuously displays the level of gas measured. The three large buttons on the front of the unit turn it ON and OFF, acknowledge alarms, and access frequently required features such as fresh-air calibration. Additional functions and features are accessed through plain text password-protected menus.

Distinctive alarms means that you will always know when a hazardous level of gas is present. The two high intensity visual red alarm lights, a loud audible alarm and a standard vibrating alarm demand attention, even in high noise areas. Different alarm cadences distinguish between pre and main alarms. The large easy-to-read display quickly indicates the gases measured, their concentrations, and other relevant data to the user. An optional internal datalogger records all of the gas measurements and events for documentation purposes.

The Dräger X-am 3000 may be small in size, but it is designed for use in the most demanding industrial environments. The rugged polymer housing is resistant to many corrosive chemicals as well as the bumps and drops that one may encounter in confined space entry or an industrial environment. All joints and openings are sealed or have gaskets to prevent the ingress of dirt or water. If required, an optional rubber boot provides additional protection to the Dräger X-am 3000.

With the convenient internal sampling pump, the Dräger X-am 3000 is very well suited for confined space entry applications such as those found in the water/waste water industry, petrochemical plants and other applications.

Dräger X-am® 3000
Designed for durability and reliability–and single-handed detection of up to 6 gases

TECHNICAL DATA

Gases Detected	Combustible Gases, O_2, CO and H_2S.
Dimension	3.5 x 5.5 x 2.1 inch (89 x 140 x 55 mm)
Weight	19.4 oz. (550 g)
Approvals	UL: Class I, Division 1, Groups A-D, T4 CSA: Class I, Division 1, Groups A-D, T4 MSHA: permissible gas detector ATEX: EEx iad IIC T4 (-25 to + 55°C)

DRÄGER X-AM 3000 ORDER INFORMATION

The following part numbers include: Instrument w/pump, noted sensors, NiMH battery, battery charger, service tool, calibration and pump adapters, 10 ft. tubing, water-stop filter, calibration gas cylinder, regulator, rubber boot, and carry case.

Dräger X-am 3000 LEL, O_2, CO, H_2S Confined Space Kit	45 43 721
Dräger X-am 3000 LEL, O_2, H_2S Confined Space Kit	45 43 720
Dräger X-am 3000 LEL, O_2, CO Confined Space Kit	45 43 719
Dräger X-am 3000 LEL, O_2 Confined Space Kit	45 43 740

The following part numbers include: Instrument, noted sensors, NiMH battery, battery charger, service tool, calibration adapter and instruction manuals. Pump units include pump adapter, 10 ft. tubing and water-stop filter.

Dräger X-am 3000 LEL, O_2, CO & H_2S with internal pump	45 43 718
Dräger X-am 3000 LEL, O_2 and H_2S with internal pump	45 43 717
Dräger X-am 3000 LEL, O_2 and CO with internal pump	45 43 716
Dräger X-am 3000 LEL, O_2 with internal pump	45 43 739

Dräger X-am 3000 LEL, O_2, CO, and H_2S	45 43 715
Dräger X-am 3000 LEL, O_2 and H_2S	45 43 714
Dräger X-am 3000 LEL, O_2 and CO	45 43 713
Dräger X-am 3000 LEL, O_2	45 43 738

Accessories	
Alkaline Battery Pack	83 17 716
Internal Datalogger	45 43 625
MSHA Approved Update	45 43 745
Protective Rubber Boot	83 17 727
Leather Carrying Case	45 43 618
Nylon Carrying Case	83 17 720

X-am 3000 is available for rental.


ST-2642-2003


ST-2660-2003


ST-2770-2003

Dräger X-am 7000: Multiple gas measurement capabilities in one compact package.

DRÄGER X-AM 7000

The Dräger X-am 7000 Monitor combines electrochemical (EC), catalytic oxidation (CAT), photo ionization (PID) and infrared (IR) sensing technology for a total of up to 5 sensors. You can choose from over 25 different electrochemical Dräger-Sensors®, 3 different catalytic sensors, a PID Sensor and 3 different IR sensors.

The Dräger X-am 7000 is the smallest gas monitor in the world that can utilize all of these technologies in one compact package. The multiple gas measurement and internal pump capabilities make this unit an ideal choice for confined space entry applications like those found in refineries, chemical plants, utility passage ways, and paper mills.

The Dräger X-am 7000 Monitor has many "strengths". The strong internal pump can draw gases from well over 150 ft. (45 m). This is useful for deep ship holds, large storage silos or reaction towers in refineries. The integrated rubber boot and strong advanced polymer enclosure of the Dräger X-am 7000 withstands the toughest industrial environments, providing good resistance against dust, RFI interference, rain, and extreme temperatures. Loud audible and bright visual alarms warn the user that hazardous levels of gas are present. The standard NiMH battery pack will last well in excess of an 8-hour shift and the optional high capacity battery will allow operation times of greater than 20 hours.

Another strength of the Dräger X-am 7000 is the optional IR Sensor. The infrared combustible gas (IR-Ex) sensor measures a wide range of hydrocarbons. However, unlike catalytic sensors, the IR sensor will measure hydrocarbons in inert backgrounds (without oxygen). The IR-Ex is very good at measuring heavier hydrocarbons (like turpentine, kerosene and jet fuels) from ppm to %LEL levels. Gases that poison catalytic sensors such as H_2S, halogenated hydrocarbons, and silicones have no effect on the IR-Ex Sensor making it ideal for industries that make or use these types of compounds. Gases like methane and propane can be measured in ppm, %LEL, and %Vol. measurement ranges (with the same instrument), which make the X-am 7000 well suited for the natural gas industry.

The IR-CO_2 sensor makes the X-am 7000 the ideal choice for breweries, carbonated beverage bottlers, and bulk gas handlers who need to measure Carbon Dioxide. The IR-CO_2 sensor detects from low ppm levels to %Vol. concentrations of CO_2.

The smart PID sensor measuring a wide range of VOC's up to 5,000 ppm, depending on the gas selected. The Dräger X-am 7000 has 20 compounds pre-programmed in its library and 3 user programmable entries available. This sensor is well suited for confined space entry, area monitoring and HazMat applications.

ST-9382-2007

TECHNICAL DATA

Smart PID Sensors	VOC's
Smart EC Sensors	O_2, H_2S, CO, CL_2, NH_3, NO_2, SO_2, HCN, CO_2, NO, H_2, H_2S-HC, CO-HC, PH_3-HC, H_2-HC, ClO_2, Organic Vapors, Hydrides, Amines, Mercaptans,
Smart IR Sensors	Combustible Gases (Ex) or Carbon Dioxide (CO_2)
Smart CAT Sensors	Standard 100 %LEL Combustible Gas or 100% Vol. CH_4
Size	5.9 x 5.5 x 2.9 inch (150 x 140 x 75 mm)
Weight	2.4 lbs. (1.09 kg) with standard battery
Approvals	UL: Class I, Division 1, Groups A-D, T4 CSA: Class I, Division 1, Groups A-D, T4 ATEX: II2G EEx ia d IIC T4 M2 ia d I

DRÄGER X-AM 7000 ORDER INFORMATION

The following Kits include the Dräger X-am 7000 Monitor with Internal Pump, integrated rubber boot, carrying strap, standard NiMH battery pack, noted sensors (with 5 year warranty), single-unit battery charger system, calibration adapter, pump adapter with water stop filter, and instruction manuals.

Dräger X-am 7000 Ex / O_2 / H_2S	45 52 198
Dräger X-am 7000 Ex / O_2 / CO / H_2S	45 52 199
Dräger X-am 7000 IR-CO_2	45 52 204
Dräger X-am 7000 IR-CO_2 / O_2	45 52 205
Dräger X-am 7000 IR-Ex / O_2	45 52 200
Dräger X-am 7000 IR-Ex / O_2 / CO / H_2S	45 52 203
Dräger X-am 7000 with datalogger, PID only	45 52 300
Dräger X-am 7000 with datalogger, PID EX	45 52 301
Dräger X-am 7000 with datalogger, PID, EX, O_2	45 52 302
Dräger X-am 7000 with datalogger, PID, EX, O_2, CO	45 52 303
Dräger X-am 7000 with datalogger, PID, EX, O_2, CO, H_2S	45 52 304

For other sensor selections, see pages 19-20.

Accessories

Leather Carrying Case	83 17 683
Nylon Transport Case	83 17 684

Dräger X-am 7000 is available for rental.

Pac 7000:
The innovative single gas instrument with reliable monitoring of ambient air.

ACTUAL SIZE SHOWN

DRÄGER PAC 7000 MONITOR

The innovative Dräger Pac® 7000 is small and robust, ergonomic and intuitive, economic and powerful – the Dräger Pac 7000 is an impressive single gas monitor equipped with a wide range of functions.

SMALL AND RUGGED

With its handy, pocket-sized design, the Dräger Pac 7000 is tailor-made for personal monitoring in daily work activities. Dräger Pac 7000 is dust proof and water resistant, meeting the requirements of IP 66/67.

A strong, tough, stainless steel crocodile clip allows the instrument to be fastened securely anywhere. The clip can be rotated to the best position for user comfort. The dual alarm LED's are positioned on opposite corners of the instrument for assured visibility. Battery and sensor replacement are easy and ensure a long instrument life.

DISPLAY

The concentration is displayed continuously in large, easy to read numbers. During an alarm, or on the push of a button, the display is backlit for better readability. Distinct icons are used to give status information and provide details on instrument functions. In addition, the peak concentration, time weighted average concentration (8-hour TWA value) and short-term exposure limit (15-minute STEL) for the measurement period are readily accessed. The Dräger Pac 7000 will show TWA, STEL and MAX values at the touch of a button and measure CO to 2000 ppm.

SENSOR TECHNOLOGY

Dräger Pac 7000 boasts the latest XXS DrägerSensor® technology, combining smaller size with high performance. Response time is very fast due to the short diffusion paths and the extremely quick electrochemical reaction times of these new sensors. The sensor is mounted in the unit so gas can enter from both the top and the front of the monitor. This positioning minimizes the possibility of the gas inlet being accidentally covered.

ALARM/WARNING FUNCTIONS

Along with the strong internal vibrating alarm, attention getting visual and audible alarms are triggered if the user adjustable alarm thresholds are exceeded. A two-tone audible alarm is used to maximize notification. The Dräger Pac 7000 features adjustable TWA and STEL alarms as well. A warning is also given near the end of the battery life or in the event of an error.

The Dräger Pac 7000 offers on-board calibration and real time datalogging. The Dräger Pac 7000 sensors has a 2-year warranty, and are expected to operate more than 3 years. The sensor is field replaceable by the user. The unit will operate 5 - 10 months 24/7 using a replaceable Lithium alkaline battery.

TECHNICAL DATA

Gases Measured	H_2S, CO, O_2 and other toxics
Dimensions	2.5 x 3.3 x 1.0 inch (64 x 84 x 25 mm)
Weight	3.8 oz. (106 g)
Approvals	UL / ULc: Class I, Division 1, Groups A-G T4 MSHA: Permissible gas detector ATEX: I/II 1/2G EEx ia I/IIC, T4

ORDER INFORMATION

Description	Measuring Range	Alarm Threshold A1	Alarm Threshold A2	Order Number
Dräger Pac 7000 CO	0 to 1999 ppm	35 ppm	50 ppm	83 18 970
Dräger Pac 7000 H_2S	0 to 100 ppm	10 ppm	15 ppm	83 18 971
Dräger Pac 7000 H_2S-LC	0 to 100 ppm	10 ppm	20 ppm	83 21 004
Dräger Pac 7000 O_2	0 to 25 Vol.-%	19.5 Vol.-%	23.5 Vol.-%	83 18 972
Dräger Pac 7000 HCN	0 to 50 ppm	2.5 ppm	4.5 ppm	83 18 973
Dräger Pac 7000 PH_3	0 to 20 ppm	0.1 ppm	0.2 ppm	83 18 974
Dräger Pac 7000 CO_2	0 to 5 Vol.-%	0.5 Vol.-%	1.0 Vol.-%	83 18 975
Dräger Pac 7000 SO_2	0 to 100 ppm	2 ppm	4 ppm	83 18 976
Dräger Pac 7000 NO_2	0 to 50 ppm	2.5 ppm	5 ppm	83 18 977
Dräger Pac 7000 Cl_2	0 to 20 ppm	0.5 ppm	1 ppm	83 18 978
Dräger Pac 7000 NH_3	0 to 300 ppm	25 ppm	50 ppm	83 18 979
Dräger Pac 7000 OV	0 to 200 ppm	5 ppm	10 ppm	83 10 006
Dräger Pac 7000 OV-A	0 to 200 ppm	5 ppm	10 ppm	83 10 007
Dräger Pac 7000 NO	0 to 200 ppm	2.5 ppm	5 ppm	83 21 263

5 YEAR WARRANTY MONITORS FOR O_2, CO, H_2S ORDER INFORMATION

Description	Measuring Range	Alarm Threshold A1	Alarm Threshold A2	Order Number
Dräger Pac 7000 5Y CO	0 to 1999 ppm	35 ppm	50 ppm	83 21 031
Dräger Pac 7000 5Y H_2S	0 to 100 ppm	10 ppm	20 ppm	83 21 032
Dräger Pac 7000 5Y O_2	0 to 25 Vol.-%	19.5 Vol.-%	23.5 Vol.-%	83 21 033

ACCESSORIES

Connecting Cradle, complete with USB cable and Dräger PacVision® software	83 18 587
Lithium battery	45 88 183
Dust and water filter (4 per pkg)	45 43 836
Leather carrying case	45 43 822
Smart Bump Test Station, (order gas cylinder 58 L separately)	83 19 559
E-Cal instrument module for connection of 4 Dräger Pac 3500, 5500 or 7000 to a Dräger E-Cal Master Station or to Module Adapter	83 18 589

Pac 3500/5000 Monitors: Accurate, quick, reliable detection.

DRÄGER PAC 3500/5500 MONITORS

Accurate and easy to use, the Dräger Pac® 3500 and the Dräger Pac® 5500 are ideal for industrial personal monitoring applications. Providing quick detection of carbon monoxide, hydrogen sulfide or oxygen, these robust single gas detectors are made specifically to fit industrial safety requirements. The small, ergonomic Dräger Pac® 3500 has a lifetime of 2 years, while the Dräger Pac® 5500 has no lifetime limitation.

SMALL AND ROBUST HOUSING

Small in size and light in weight, the Dräger Pac® 3500 and the Dräger Pac® 5500 were developed with the needs of industrial users and applications in mind. The instruments provide easy, single-handed operation, even when wearing gloves, and is designed to withstand the toughest environments. The impact-resistant rubber housing is impervious to corrosive chemicals and meets the requirements of IP 66/67 to ensure operation even when sprayed with water.

SAFETY FIRST

To ensure continuous operation even when the unit is in a shirt pocket, the instrument's sensor has been carefully positioned to allow gas intake from both the top and the front of the device.

MINIATURE SENSOR TECHNOLOGY

The latest miniature Dräger XXS sensor technology has been incorporated into both the Dräger Pac® 3500 and the Dräger Pac® 5500. Dräger XXS sensors have been specifically developed for use in personal monitoring and handheld applications. These innovative sensors, which offer a long, expected life span from 5 to 8 years, combine high performance with a fast reaction time of just ten seconds.

HIGHLY VISIBLE DISPLAY

The large display, easily seen at a glance, shows both the gas concentration and the measurement unit. Alternatively, the instrument can be configured to show only the gas detected. The concentration is displayed only when the set alarm level has been exceeded. Language-free to avoid any misunderstanding, the continuous numeric display can also be back-lit to improve readability in darker environments.

WARNINGS AND ALARMS

In addition to a vibrating alarm, these instruments emit an audible, multi-tone signal and a clear, 360° visual alarm via bright, flashing LEDs at the top and base of the instrument. The alarm threshold levels can be individually adjusted to comply with company policy or other standards using Dräger software.

EVENT LOGGER

These monitors are complete with an infrared interface and are able to store up to 60 events with dates and times. They can be easily linked to a PC via a connecting cradle. This means that significant events such as switching on or off, gas and battery alarms, error codes, configuration changes, fresh air calibrations and bump tests can be downloaded, printed and stored centrally for future reference or reporting purposes.

D-537-2009

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DRÄGER X-AM PAC® 3500/5500 MONITOR ORDER INFORMATION

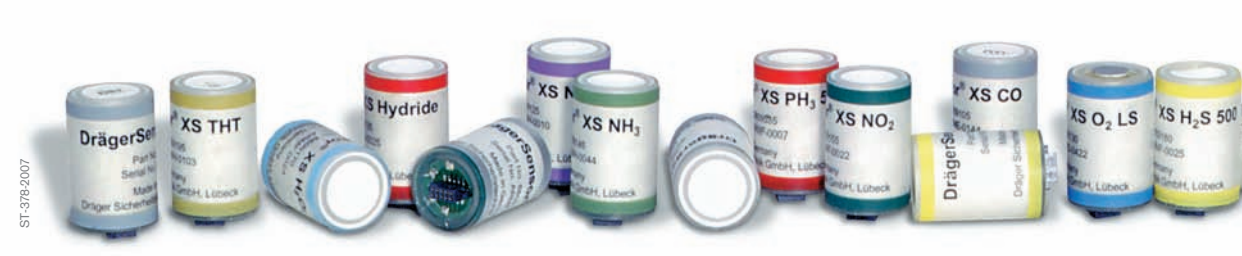
Description	Measuring Range	Default Alarm Threshold A1/A2	Resolution	Response Time	Order No.
Dräger Pac® 3500 CO	0 – 500 ppm	35/50	1 ppm	15 sec.	45 43 957
Dräger Pac® 3500 H_2S	0 – 100 ppm	10/15	0.1 ppm	15 sec.	45 43 958
Dräger Pac® 3500 H_2S w/ yellow keypad overlay	0 – 100 ppm	10/15	0.1 ppm	15 sec.	45 43 963
Dräger Pac® 3500 O_2	0 – 25 Vol.-%	19.5/23.5	0.1 Vol.-%	10 sec.	45 43 959
Dräger Pac® 3500 O_2 w/ blue keypad overlay	0 – 25 Vol.-%	19.5/23.5	0.1 Vol.-%	10 sec.	45 43 964
Dräger Pac® 5500 CO	0 – 500 ppm	35/50	1 ppm	15 sec.	45 43 960
Dräger Pac® 5500 H_2S	0 – 100 ppm	10/15	0.1 ppm	15 sec.	45 43 961
Dräger Pac® 5500 H_2S w/ yellow keypad overlay	0 – 100 ppm	10/15	0.1 ppm	15 sec.	45 43 965
Dräger Pac® 5500 O_2	0 – 25 Vol.-%	19.5/23.5	0.1 Vol.-%	10 sec.	45 43 962
Dräger Pac® 5500 O_2 w/ blue keypad overlay	0 – 25 Vol.-%	19.5/23.5	0.1 Vol.-%	10 sec.	45 43 966

Accessories	
Leather carrying case	45 43 822
High visibility yellow overlay for H_2S instruments	83 20 978
High visibility blue overlay for O_2 instruments	83 20 977

Communication Accessories	
Dräger CC-Vision®	64 08 515
Communication Module, complete with USB cable and Dräger PacVision® software	83 18 587

Calibration Accessories	
Calibration adapter	83 18 588
Dräger Pac Module for Dräger E-Cal calibration system	83 18 589
Dräger Bump Test Station for Dräger Pac® 3500/5500, (order gas cylinder separately)	83 17 410
Dräger Smart Bump Test Station for Dräger Pac® 3500/5500 (order gas cylinder separately) The station for use with Dräger Mobile Printer.	83 19 559
Printer Set for Dräger Bump Test Station Consisting of: Dräger Mobile Printer, single charger, rechargeable NiMH batteries, USB connection cable, positioning aid, Dräger CC-Vision®	83 21 010

Replacement Parts	
Lithium battery	45 88 183
Water and dust filter	45 43 836



ST-378-2007

ELECTROCHEMICAL (EC) SENSORS

The sensor is the heart of any gas detection instrument. Dräger is one of the few manufacturers of gas detection instruments who also make their own sensors and we have more experience with this technology than anyone else. Over many years, Dräger-Sensors® have proven themselves, even under the most difficult conditions. Our latest generation of sensors, the Extra Stability (XS), provide outstanding performance in a wide range of industrial applications.

DRÄGER-SENSOR® XS-R

The XS-R sensors offer the longest warranties and require the least maintenance of any sensor in the industry. The Dräger-Sensors® XS-R for CO, H_2S and O_2 are covered by an unequalled 5-Year Warranty! Yes, even our O_2 sensor which continuously detects oxygen for a period of 5 years! This is far better than what other manufacturers can offer. Calibration is only required on a yearly basis which greatly reduces down time and maintenance costs. The XS-R series offers the best cost of ownership through their unsurpassed stability and longevity.

DRÄGER-SENSOR® XS

There are 34 different XS sensors currently available that will measure over 50 different toxic gases and vapors. This is possible through our patented three-electrode sensor technology and internal filter media that maximizes response to the gas of concern while greatly reducing responses to other gases that may be present. The superior stability and accuracy of Dräger-Sensors® is especially evident on the reactive gas and exotic gas sensors where longer lives and less frequent calibration is required. The large selection of Dräger-Sensors® allows you to meet a wider range of gas detection applications with your Pac 7000, X-am 2000, X-am 5000, X-am 5500 or X-am 7000 monitors. The CO, H_2S and O_2 version of the Dräger-Sensors® XS are provided with a long 3-year warranty.

DRÄGER-SENSOR® XS-2

Our XS-2 Sensors offer the same advanced technology of the other Dräger-Sensors® in a value priced package. Available for CO, H_2S and O_2, these sensors come with a standard 2-year warranty. Even this series of Dräger-Sensors® offers superior performance and stability over other sensor brands.

DRÄGER-SENSOR® XXS FEATURES

- The longest warranties offered by any manufacturer
- Fast and accurate response to changing gas concentrations
- Extra stability sensors that drift less and require less frequent calibration
- Superior operating temperature range (-40 to +105 °F / -40 to +40 °C) and stability due to an internal thermal compensating device
- A wide operating pressure range (20.7 to 38.4 in Hg /700 to 1300 mbar) due to a unique mechanical design of the sensor
- The ability to withstand and recover from high concentration exposures
- Calibration intervals of 6-12 months
- Dräger-Sensor® XXS combines “New Sensor Technology” from the Dräger Pac 7000 with “Dräger Sensor Technology” from the Dräger X-am 5000

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Dräger-Sensor® XXS

ST-557-2007

Dräger-Sensor® XS-R

ST-5-0003

Dräger-Sensor® XS-2

DRÄGER XS TOXIC GAS AND VAPOR SENSOR SELECTION

Gas	Sensor (XXS)	Sensor (XS)	Range	Resolution	Part No. (XXS)	Part No. (XS)
1-Chloro-2,3-epoxypropane	OV(XXS)	-	0-100 ppm	0.5 ppm	86 11 530	-
Acetaldehyde	OV(XS)	-	0-200 ppm	0.5 ppm	68 09 115	-
Acrylonitrile	OV-A(XXS)	OV-A(XS)	0-100 ppm	0.5 ppm	68 11 535	68 09 522
Ammonia	NH_3 (XXS)	NH_3 (XS)	0-300 ppm	1 ppm	68 10 888	68 09 145
Arsine	PH_3 (XXS)	Hydride (XS)	0-20 ppm	0.01 ppm	68 10 886	68 09 135
Bromine	Cl_2 (XXS)	Cl_2 (XS)	0-20 ppm	0.05 ppm	68 10 890	68 09 168
Butadiene	OV (XXS)	OV(XS)	0-100 ppm	0.05 ppm	68 11 530	68 09 115
Butyl Mercaptan	Odorant (XXS)	Odorant (XS)	0-40 ppm	0.5 ppm	68 12 535	68 09 200
Carbon Dioxide	CO_2 (XXS)	CO_2 (XS)	0-5 %Vol.	0.1 %Vol.	68 10 889	68 09 175
Carbon Monoxide (2 Year Warranty)	CO (XXS)	CO (XS-2)	0-2000 ppm	2/1 ppm	68 10 882	68 10 365
Carbon Monoxide (3 Year Warranty)	-	CO (XS)	0-2000 ppm	1 ppm	-	68 09 105
Carbon Monoxide (5 Year Warranty)	CO E (XXS)	CO (XS-R)	0-2000 ppm	1 ppm	68 12 212	68 10 258
Carbon Monoxide (High Concentration)	CO-HC (XXS)	-	0-10,000 ppm	5 ppm	68 12 010	68 09 120
Chlorine	Cl_2 (XXS)	Cl_2 (XS)	0-20 ppm	0.05 ppm	68 10 890	68 09 165
Chlorine Dioxide	Cl_2 (XXS)	ClO_2 (XS)	0-20 ppm	0.05/0.01 ppm	68 10 890	68 11 360
Diborane	PH_3 (XXS)	Hydride (XS)	0-20/0-1 ppm	0.01 ppm	68 10 886	68 09 135
Diethylamine	Amine (XXS)	Amine (XS)	0-100 ppm	1 ppm	68 12 545	68 09 545
Diethyl Ether	OV-A(XXS)	OV (XS)	0-200 ppm	0.5 ppm	68 11 353	68 09 522
Dimethylamine	Amine (XXS)	Amine (XS)	0-100 ppm	1 ppm	68 12 545	68 09 545
Dimethyl Sulfide	Odorant (XXS)	Odorant (XS)	0-100 ppm	0.5 ppm	68 12 535	68 09 200
Dimethyl Disulfide	Odorant (XXS)	Odorant (XS)	0-40 ppm	0.5 ppm	68 12 535	68 09 200
Ethanol	OV-A (XXS)	OV(XS)	0-300 ppm	0.5 ppm	68 11 535	68 09 115
Ethine	OV-A (XXS)	-	0-100 ppm	0.5 ppm	68 11 530	-
Ethyl Mercaptan	Odorant (XXS)	Odorant (XS)	0-40 ppm	0.5 ppm	68 12 535	68 09 200
Ethylene	OV (XXS)	OV (XS)	0-100 ppm	0.5 ppm	68 11 530	68 09 115
Ethylene Oxide	OV (XXS)	OV (XS)	0-200 ppm	0.5 ppm	68 11 530	69 09 115
Formaldehyde	OV (XXS)	OV (XS)	0-100 ppm	0.5 ppm	68 11 530	70 09 115
Fluorine	Cl_2 (XXS)	Cl_2 (XS)	0-20 ppm	0.05 ppm	68 10 890	68 09 165
Germane	-	Hydride (XS)	0-20 ppm	0.01 ppm	-	68 09135
Hydrazine (Pac III only)	-	Hydrazine (XS)	0-3 ppm	0.01 ppm	-	68 09 190
Hydrazine "D" (Pac III only)	-	N_2H_4D (XS)	0-3 ppm	0.01 ppm	-	68 10 295
Hydrogen	H_2 (XXS)	H_2 (XS)	0-2,000 ppm	5 ppm	68 12 370	68 09 185
Hydrogen (High Concentration)	H_2-HC (XXS)	H_2-HC (XS)	0-4 %Vol.	0.1 %Vol.	68 12 025	68 11 365
Hydrogen Chloride (Pac III only)	-	HF/HCl (XS)	0-30 ppm	0.1 ppm	-	68 09 140
Hydrogen Cyanide	HCN (XXS)	HCN (XS)	0-50 ppm	0.1 ppm	68 10 887	68 09 150
Hydrogen Fluoride (Pac III only)	-	HF/HCl (XS)	0-30 ppm	0.1 ppm	-	68 09 140
Hydrogen Peroxide (Pac III only)	-	H_2O_2 (XS)	0-20 ppm	0.1 ppm	-	68 09 170
Hydrogen Selenide	-	Hydride (XS)	0-1 ppm	0.01 ppm	-	68 09 135
Hydrogen Sulfide (2 Year Warranty)	H_2S (XXS)	H_2S (XS-2)	0-200/100 ppm	1 ppm	68 10 883	68 10 370
Hydrogen Sulfide (3 Year Warranty)	-	H_2S (XS)	0-100 ppm	1 ppm	-	68 09 110
Hydrogen Sulfide (5 Year Warranty)	H_2S E (XXS)	H_2S (XS-R)	0-100 ppm	2 ppm	68 12 213	68 10 260
Hydrogen Sulfide (High Concentrations)	H_2S -HC (XXS)	H_2S -HC (XS)	0-1,000 ppm	2 ppm/1 ppm	68 12 015	68 09 180
Hydrogen Sulfide (Sensitivity Revised)	H_2S -LC (XXS)	H_2S -SR (XS-2)	0-100	0.1 ppm	68 11 525	68 10 575
Isobutane	OV-A (XXS)	-	0-300 ppm	1 ppm	68 11 535	-
Iso-Propyl Alcohol	OV (XXS)	OV (XS)	0-300 ppm	0.5 ppm	68 12 530	68 09 115
Methanol	OV (XXS)	OV (XS)	0-200/100 ppm	0.5 ppm	68 11 530	69 09 115
Methylamine	Amine (XXS)	Amine (XS)	0-100 ppm	1 ppm	68 12 545	68 09 545
Methyl Mercaptan	Odorant (XXS)	Odorant (XS)	0-40 ppm	0.5 ppm	68 12 535	68 09 200
Nitric Oxide	NO (XXS)	NO (XS)	0-200 ppm	0.1/0.5 ppm	68 11 545	68 09 125
Nitrogen Dioxide	NO_2 (XXS)	NO_2 (XS)	0-50 ppm	0.1 ppm	68 10 884	68 09 155
Oxygen 100% Vol.	-	O_2-100% (XS)	0-100 %Vol	0.5 %Vol.	-	68 09 550
Oxygen (2 Year Warranty)	O_2 (XXS)	O_2 (XS-2)	0-25 %Vol	0.1 %Vol.	69 10 881	68 10 375
Oxygen (3 Year Warranty)	-	O_2 (XS)	0-25 %Vol	0.1 %Vol.	-	68 09 130
Oxygen (5 Year Warranty)	O_2 E (XXS)	O_2 (XS-R)	0-25 %Vol	0.1 %Vol.	68 12 211	68 10 262
Ozone	O_3 (XXS);	-	0-10 ppm	0.01 ppm	68 11 540	-
Phosgene	$COCl_2$ (XXS)	$COCl_2$ (XS)	0-10 ppm	0.01 ppm	68 12 005	68 08 582
Phosphine	PH_3 (XXS)	Hydride (XS)	0-20 ppm	0.01 ppm	68 10 886	69 09 135
Phosphine (High Concentration)	PH_3HC (XXS)	PH_3HC (XS)	0-2,000/1,000	1 ppm	68 12 020	68 09 535
Propylene	OV (XXS)	OV (XS)	0-100 ppm	1 ppm	68 11 530	68 09 115
Propylene Oxide	OV (XXS)	OV (XS)	0-200 ppm	0.5 ppm	68 11 530	69 09 115
Silane	PH_3 (XXS)	Hydride (XS)	0-50 ppm	0.01 ppm	68 10 886	68 09 135
Styrene	OV-A (XXS)	OV-A(XS)	0-100 ppm	0.5 ppm	68 11 535	68 08 522
Sulfur Dioxide	SO_2 (XXS)	SO_2 (XS)	0-100 ppm	0.1/0.5 ppm	68 10 885	68 09 160
Tetrahydrofuran	OV (XXS)	-	0-200 ppm	0.5 ppm	68 11 530	-
Tetrahydrothiophene	Odorant (XXS)	Odorant (XS)	0-40 ppm	0.5 ppm	68 12 535	68 09 200
Triethylamine	Amine (XXS)	Amine (XS)	0-100 ppm	1 ppm	68 12 545	68 09 545
Vinyl Acetate	OV-A (XXS)	OV (XS)	0-100 ppm	0.5 ppm	68 11 535	68 09 115
Vinyl Chloride	OV (XXS)	OV (XS)	0-100 ppm	0.5 ppm	68 11 530	68 09 115

Easy Calibration
while saving time and money.

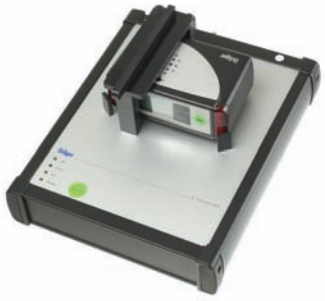
DRÄGER E-CAL SYSTEMS

The Dräger E-Cal system makes calibrating your Dräger gas detection instruments easy while saving time and money. The Dräger E-Cal system automatically calibrates up to 10 gas monitors and documents the entire process making it ideal for ISO-9001 compliance.

The Dräger E-Cal Station also bump tests, downloads stored information, charges the instrument, and changes instrument configurations with the included CC-Vision® software. This computer control ensures that the calibration is done properly every time according to Dräger's exacting specifications. The Dräger E-Cal system supports different calibration gases, even mixed gases and many non-standard gases. You can start with as little as a single drop-in instrument module and expand as your needs grow. Instrument modules can work alone as remote bump test or calibration modules using the adapter. The Dräger E-Cal system makes use of "parallel" processing to simultaneously process instruments yielding significant savings in gas, time, and money.

THE DRÄGER E-CAL SYSTEM FEATURES

- Simultaneous automatic calibration of up to 10 instruments at once saving time and money.
- Automatic bump testing, calibration, documentation, datalogging, and charging at each station.
- CC-Vision® Software provides state-of-the-art asset management and complete ISO-9001 compliance for your instrument program.
- The Dräger E-Cal System is closed and self-purging allowing operation without an expensive fume-hood. With optional purge module you can exhaust gas more than 75 feet away.
- Modules can function independently with or without a PC as "bump" stations or as mixed gas autocal stations for smaller users.
- Compatible with Dräger instruments.



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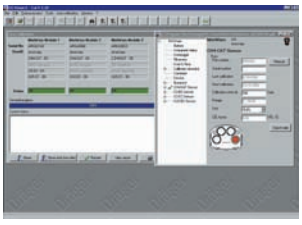

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TECHNICAL DATA

Dimensions	
Master Station (l x w x h)	12.3 x 12.1 x 2.5 in (295 x 290 x 60 mm)
Dräger Pac X000 Module (l x w x h)	12.3 x 10.0 x 2.5 in (295 x 240 x 60 mm)
Dräger X-am 1/2/5000 Module (l x w x h)	12.3 x 5.6 x 2.5 in (295 x 135 x 60 mm)
Dräger X-am 3000 Module (l x w x h)	12.3 x 10.0 x 2.5 in (295 x 240 x 60 mm)
Dräger X-am 7000 Module (l x w x h)	12.3 x 10.0 x 2.5 in (295 x 240 x 60 mm)

Computer Requirements	
Computer System	IBM Compatible PC
Operating System	Windows XP, Windows 7
Connections	1 available USB port with appropriate adapters, or combination

DRÄGER E-CAL SYSTEMS ORDER INFORMATION

Master Station 2 USB (with inputs for 2 gas bottles)	83 19 452
Master Station 12 USB (with inputs for up to 12 gas bottles)	83 19 412
Master Station 6 USB (with inputs for up to 6 gas bottles)	83 194 56
Module Adapter USB (for single instrument module)	83 19 409
Dräger Pac X000 Module	83 18 589
Dräger X-am 1/2/5000 E-Cal Module	83 18 754
Dräger X-am 3000 E-Cal Module	83 17 719
Dräger X-am 7000 E-Cal Module	83 17 705

Dräger's Full Range of Calibration Gases

All gas detection sensors require periodic calibration or bump testing. Dräger offers a full range of calibration gas mixtures in various concentrations and related supplies.

TOXIC GASES

The following gases are most commonly requested and recommended calibration gases for TWA measurements. Other gases and concentrations are available, contact Dräger for the full selection of calibration gases.

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Chemical	Concentration	Cylinder	Part No.
Ammonia (NH_3)	50 ppm in N_2	58L/500 psi	45 94 957
Carbon Dioxide (CO_2)	2.5 %Vol. in Air	103L/1000 psi	45 95 193
Carbon Monoxide (CO)	50 ppm in N_2	103L/1000 psi	45 02 153
Chlorine (CL_2)	5 ppm in N_2	58L/500 psi	45 94 964
Ethylene (for OV Sensor)	100 ppm in Air	103L/1000 psi	45 94 645
Hydrogen Chloride (HCL)	10 ppm in N_2	58L/500 psi	45 94 658
Hydrogen Cyanide (HCN)	10 ppm in N_2	58L/500 psi	45 94 962
Hydrogen Sulfide (H_2S)	25 ppm in N_2	58L/500 psi	45 02 155
Nitric Oxide (NO)	25 ppm in N_2	58L/500 psi	45 52 020
Nitrogen Dioxide (NO_2)	10 ppm in N_2	58L/500 psi	45 94 977
Phosphine (PH_3)	0.5 ppm in N_2	58L/500 psi	45 97 057
Sulfur Dioxide (SO_2)	10 ppm in N_2	58L/500 psi	45 97 050
$CH_4/CO/SO_2/CO_2/O_2$	50% LEL / 100 ppm / 10 ppm / 2.5% / 17.0%	116L/1000 psi	45 97 160
$CH_4/CO/H_2S/O_2$	50% LEL / 100 ppm / 25 ppm / 17.0%	116L/1000 psi	45 97 161
$CH_4/CO/H_2S_2/O_2$	50% LEL / 100 ppm / 25 ppm / 17.0%	116L/1000 psi	45 97 162
H_2S	25 ppm	116L/1000 psi	45 97 163

COMBUSTIBLE GASES

Chemical	Concentration	Cylinder	Part No.
Hydrogen	50% LEL (2.0 %Vol.) in Air	103L/1000 psi	45 94 627
Methane (CH_4)	50% LEL (2.5 %Vol.) in N_2	103L/1000 psi	45 57 019
Methane (CH_4)	40 %Vol. in N_2	34L/500 psi	45 94 625
Pentane	50% LEL (0.75 %Vol.) in N_2	80L/750 psi	45 10 057
Propane	35% LEL (0.75 %Vol.) in Air	103L/1000 psi	45 94 624

MULTI-COMPONENT CALIBRATION GASES

Chemical/Concentration	Cylinder	Part No.
Methane 50% LEL / CO, 100 ppm / H_2S 25 ppm / O_2, 17% / bal N_2	58L/500 psi	45 94 655
Methane 50% LEL / CO, 100 ppm / H_2S 25 ppm / in N_2	58L/500 psi	45 94 943
Methane 5 % LEL / CO, 100 ppm / in N_2	103L/1000 psi	45 94 945
Pentane 30% LEL / CO, 100 ppm / H_2S 25 ppm / N_2	58L/500 psi	45 94 944
Pentane 30% LEL / CO, 100 ppm / O_2, 17% / bal N_2	103L/1000 psi	45 94 947

CYLINDER REGULATORS

Chemical/Concentration	Max. Pressure	Part No.
Standard Regulator, suitable for most calibration gases	1000 psi	45 57 020
Trigger Control Regulator, allows both calibration and bump testing	1000 psi	45 94 640
Demand Valve Regulator, for use with sampling pumps	1000 psi	45 95 641
Reactive Gas Regulator, for use with NH_3 Gas	500 psi	45 94 952

BUMP TEST GASES (CYLINDER REGULATOR NOT REQUIRED)

Chemical/Concentration	Cylinder	Part No.
Hydrogen Sulfide (H_2S)/ 25 ppm in N_2	11L/155 psi	45 94 634
Carbon Monoxide (CO)/ 100 ppm in Air	11L/155 psi	45 94 682
Methane (CH_4)/ 50 %LEL in Air	11L/155 psi	45 94 633
Methane, 50% LEL / CO, 100 ppm / 17% O_2 / bal N_2	11L/155 psi	45 94 635
Methane, 50% LEL / CO, 100 ppm / H_2S, 25 ppm / 17% O_2 / bal N_2	11L/155 psi	45 94 636

Calibrate, configure and document

DRÄGER SOFTWARE

GAS-VISION®

Document gas and vapor exposures measured with Dräger instruments equipped with internal data loggers. Quickly and easily determine TWA and STEL exposures. Create graphs and spreadsheets from this data for documentation and reporting purposes with included graphical and tabular report generators. Dräger Gas-Vision® is also a complete management tool that will manage the stored exposure data for you. Search previous reports by date, gas measured, or person monitored and get only the information you need including serial numbers and sensor calibration dates for the monitors used.

CC-VISION®

Calibrate, configure, and document all maintenance of your Dräger instruments with Dräger CC-Vision® Software. A complete maintenance record can be automatically created and stored when calibrating your Dräger monitor with CC-Vision®.

CC-Vision® speeds up your maintenance while drastically reducing the amount of paperwork. This tool is ideal for ISO 9001 or similar quality documentation. All serial numbers, installed sensors, and configurations are automatically stored with CC-Vision's® on-board report generation and management system. CC-Vision® also allows the point-and-click setup of your instruments via a "Browser"–type interface, including alarm levels, menus, and sensor status. Training technicians and users is made much easier and requires less use of complicated written manuals. Save certain configurations to a disk and later download them to your instrument for rapid configuration. CC-Vision® also makes possible the new tamper-proof "end-user" no features mode for more reliable field operations.

ST-9371-2007

ST-9234-2007

DRÄGER SOFTWARE ORDER INFORMATION

Gas-Vision® (exposure documentation)	83 14 034
CC-Vision® (calibrate and configure, single unit version)	64 08 515

Dräger Support Materials

GAS DETECTION SELECTION GUIDE

This booklet lists the most common industrial chemicals and whether there is a Dräger-Tube®, Dräger CMS-Chip, and/or Dräger-Sensor® available for detecting this substance. The Selection Guide also includes a list of the Dräger Detection products available with measuring ranges and order information. Contact our Customer Service Department for a free copy of this valuable field guide for health and safety professionals.

DRÄGER-TUBE®/DRÄGER CMS HANDBOOK

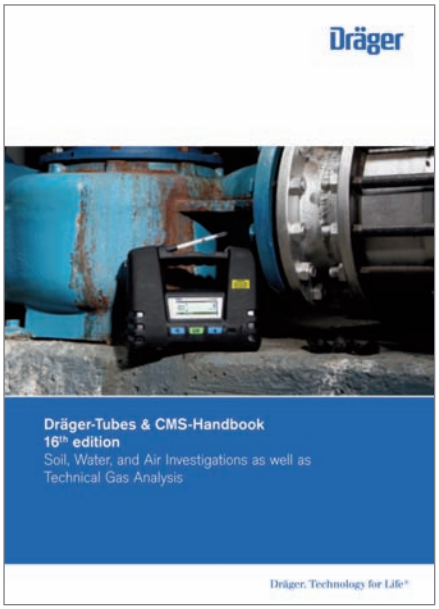
Everything you wanted to know about Dräger-Tubes® and Dräger-CMS Chips in one book. Measurement Data, Operating Conditions, Reaction Principles, Cross Sensitivity, Range Extension information, and full color graphics of the tubes are is given in one handy to use format. The new 15th edition Tube Handbook also contains general detector tube and chemical information and is a good reference source for any health and safety professional.

VOICE® ON DRÄGER.COM

Determine the best Dräger detection tool for your application with VOICE® software. Search from over 1600 different substances by chemical name, chemical formulas, trade names, CAS Numbers, UN/DOT Numbers, and other synonyms. Once the chemical is located, VOICE will tell you what Dräger devices are available for measurement. Electronic Instruction Sheets for all Dräger-Tubes® are included.

DRÄGER SOFTWARE ORDER INFORMATION

Dräger-Tube®/CMS Handbook (16th edition)	90 92 086
Dräger-Sensor® Handbook (1st edition)	90 46 571
Dräger-Sensor® Handbook CD (1st edition)	45 95 444



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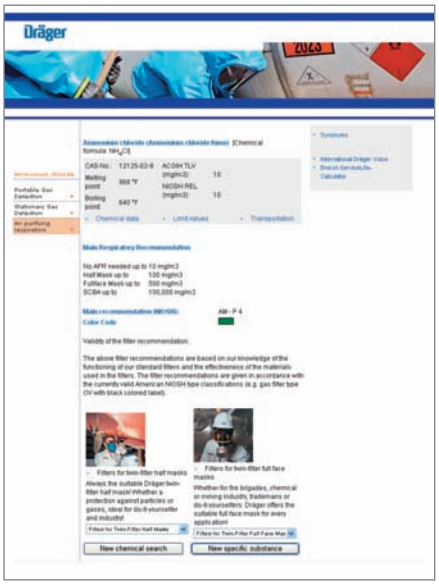


ST-9234-2007

Dräger-Training and Training Software

Even though Dräger equipment is simple to operate, the new equipment must be understood by all who use them. To make your job easier, Dräger Safety has created training tools in MS Power Point to aid in the implementation of your new equipment. These programs contain operating training modules, a competency test, helpful maintenance tips, and a guide to accessories and options.

COMPUTER BASED TRAINING (CBT) PROGRAMS

Computer Based Training programs identify the monitor components, alarm signals and display icons. When it comes to operating the monitor, the CBT contains a "virtual instrument" that mimics the exact operation of the gas detector. This is supplemented with video clips that will guide you through performing all of the operator functions of the monitor. At the end of the training course there is a competency test. If a satisfactory grade is not achieved, the program will take the user back through the CBT course. When a passing grade is achieved, a certificate is printed. Training records can be reviewed and are able to be exported to a database for documentation of the training.

DRÄGER-TRAINING

Let our experienced and knowledgeable trainers teach your staff. We provide basic operation training, service and maintenance levels for your technicians and application safety courses like confined space entry or emergency response.

Call Dräger-Service for more information.

DRÄGER TRAINING SOFTWARE ORDER INFORMATION

Dräger-Tube®/accuro® Pump Training CD	40 56 835
Dräger CMS Operator Training CD	40 56 637
Dräger Haz-Mat Simultest Operator Training CD	40 56 561
Dräger X-am 3000 Operator Training CD	45 43 701
Dräger X-am 7000 Operator Training CD	45 52 286
Drager X-act 5000 Video Tutorial	45 23 620
Drager Civil Defense Simultest Operator Training CD	40 56 666

Accurate gas measurements made easier.

DRÄGER CMS ANALYZER

Accurate gas measurements are made easier with the Dräger-CMS®. This spot-check detection device is literally as easy as 1-2-3 to operate. Simply insert one of the over 50 chemical specific CMS Chips and follow the instructions on the display as to when to move the slide switch. TWA levels are typically analyzed in 1-2 minutes. Upon completion of this process, the concentration is indicated on the LCD display. Every Chip uses the exact same procedure so training is minimal.

The system is based on Dräger's 70+ years of dry chemical reaction technology used in Dräger-Tubes®, however, the Dräger CMS includes a mass flow controller to take a precise air sample and the color change is measured with a photo-optical system eliminating any human subjectivity. Accuracies of +/- 4 to 10% of measured values are achieved for most gases and vapors.

Dräger CMS does not require gas calibration. All measurement and calibration information is stored on a bar code on the CMS Chip. An electronic leak check is performed before each measurement so you are assured of accurate indications every time. Operating on 4 "AA" cells, the Dräger CMS will deliver about 100 measurements per battery change.

An optional remote sampling system makes the Dräger CMS an ideal choice for confined space entry applications.

The on-board data-recorder stores up to 50 measurements with the gas/concentration and date/time. The recorder can be set up to record manually or automatically, and previous measurements can be called up on demand.

The Dräger CMS is currently used extensively in the petrochemical, transportation, and utilities industries as well as the fire service and government regulatory agencies. Popular applications include TWA screening, confined space entry and emergency response.

ST-14162-2008

ST-1347-2004

Dräger CMS Chip
Miniaturized Dräger-Tubes

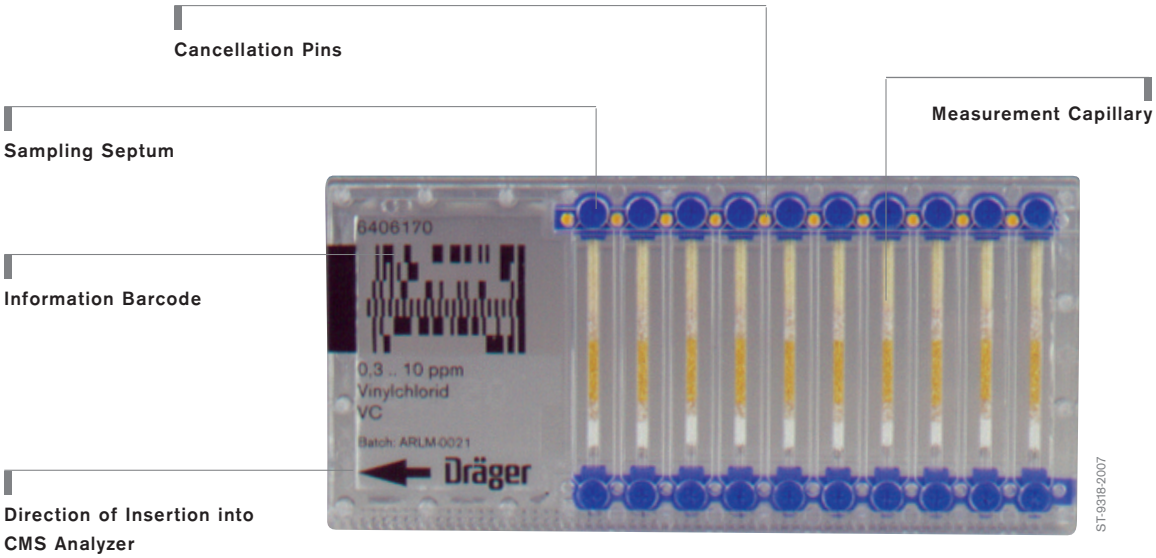
SPECIFICATIONS

Dimensions	4.1 x 8.5 x 2.5 inch (105 x 215 x 65 mm)
Weight	25.6 oz. (730 g)
Operational Temperature	32 - 104 °F (0 - 40 °C)
Ingress Protection	IP-54, protected against dust and water
Data Capacity	Stores up to 50 measurements
Power Supply	4 x 1.5 Volt (AA) alkaline batteries
Battery Duration	450 minutes of analysis time (typically greater than 100 measurements)
Approvals	UL: Class I, Division 1, Groups A-D, T4 CSA: Class I, Division 1, Groups A-D, T4 MSHA: Permissible Gas Detector ATEX: EEx ib IIC T4

Dräger CMS Analyzer

ORDER INFORMATION

Description	Order No.
CMS Analyzer with Data Recorder	64 05 300
Remote System	64 05 060
CMS Analyzer with Remote System	83 17 700
Telescopic Probe (requires remote system)	33 16 530
10 meter Sampling Hose (use with 8317700)	83 17 613
Nylon Transport Case	45 94 631
Molded Plastic Transport Case	40 56 442
Leather Carrying Case with Shoulder Strap for Analyzer	64 05 080
Leather Carrying Case for Chips	64 05 090



Shown Actual Size

Dräger CMS - accurate, versatile, easy to use for chemical specific measurements.

DRÄGER CMS® CHIP

The Dräger CMS Chip consists of 10 measurement capillaries filled with substance-specific reagent systems. The gas type, part number and batch number are printed on the chip. A printed barcode on the chip, read by the analyzer optics, contains information about gas type, measuring range and measuring time required for completing the measurement. Each chip is calibrated during manufacturing and is valid for two years.

The chemical specific Chip and the advanced electronics of the Analyzer make the Dräger CMS one of the most accurate gas and vapor measurement tools available. The pre-calibrated Chip means no gas calibration type maintenance is required. The Analyzer eliminates all interpretation or usage errors that may be associated with other methods. The mass flow pump system ensures that the exact amount of sample is taken and the opto-electronics make precise measurements of the chemical reaction.

CHEMICAL SPECIFIC MEASUREMENTS

When you need to know exactly what is there, Dräger CMS is the tool to provide those answers. The chemistry is chosen to provide the best results possible. The capillaries of several chips have multiple layers (yes, even in something that small!) to help reduce cross sensitivity to derive a specific measurement of the targeted chemical.

DRÄGER CMS CHIPS[1)]

Description	Measurement range	Order no.
Acetic Acid	2.0-50.0 ppm	64 06 330
Acetone	40.0-600 ppm	64 06 470
Ammonia	0.20 -5.0 ppm	64 06 550
Ammonia	2.0-50.0 ppm	64 06 130
Ammonia	10.0-150 ppm	64 06 020
Ammonia	100-2000 ppm	64 06 570
Benzene	50-2500 ppb	64 06 600
Benzene	0.20-10.0 ppm	64 06 030
Benzene	0.50-10.0 ppm	64 06 160
Benzene	10.0-250 ppm	64 06 280
Butadiene	1.0-25.0 ppm	64 06 460
Carbon Dioxide	200-3000 ppm	64 06 190
Carbon Dioxide	1000-25000 ppm	64 06 070
Carbon Dioxide	1.0-20.0 Vol.-%	64 06 210
Carbon Monoxide	5.0-150 ppm	64 06 080
Chlorine	0.20-10 ppm	64 06 010
Ethanol	100-2500 ppm	64 06 370
Ethylene Oxide	0.40-5.0 ppm	64 06 580
Formaldehyde	0.20-5.0 ppm	64 06 540
Hydrochloric Acid	1.0-25.0 ppm	64 06 090
Hydrochloric Acid	20.0-500 ppm	64 06 140
Hydrocyanic Acid	2.0-50.0 ppm	64 06 100
Hydrogen Peroxide	0.20-2.0 ppm	64 06 440
Hydrogen Sulphide	0.20-5.0 ppm	64 06 520
Hydrogen Sulphide	2.0-50.0 ppm	64 06 050
Hydrogen Sulphide	20.0-500 ppm	64 06 150
Hydrogen Sulphide	100 -2500 ppm	64 06 220
Iso-Propanol	40.0- 1000 ppm	64 06 390
Mercaptan	0.25-6.0 ppm	64 06 360
Methanol	20.0-500 ppm	64 06 380
Methylene Chloride	20.0-200 ppm	64 06 510
MTBE	10.0-200 ppm	64 06 530
Nitrogen Dioxide	0.50-25.0 ppm	64 06 120
Nitrous Gases	0.50-15.0 ppm	64 06 060
Nitrous Gases	10.0-200 ppm	64 06 240
Oxygen	1.0-30.0 Vol.-%	64 06 490
Ozone	25.0-1000 ppb	64 06 430
Perchloroethylene	5.0-150 ppm	64 06 040
Petroleum Hydrocarbons	20.0-500 ppm	64 06 200
Petroleum Hydrocarbons	100-3000 ppm	64 06 270
Phosgene	0.05-2.0 ppm	64 06 340
Phosphine	0.10-2.50 ppm	64 06 400
Phosphine	1.0-25.0 ppm	64 06 410
Phosphine	20.0-500 ppm	64 06 420
Phosphine	200-5000 ppm	64 06 500
Propane	100-2000 ppm	64 06 310
Styrene	2.0-40.0 ppm	64 06 560
Sulphur Dioxide	0.40-10.0 ppm	64 06 110
Sulphur Dioxide	5.0-150 ppm	64 06 180
Toluene	10.0-300 ppm	64 06 250
Training Chip	Simulation	64 06 290
Trichlorethylene	5.0-100 ppm	64 06 320
Vinyl Chloride	0.30-10.0 ppm	64 06 170
Vinyl Chloride	10.0- 250 ppm	64 06 230
Water Vapor	0.4.0-10.0 mg/L	64 06 450
Xylene	10.0 - 300 ppm	64 06 260

D-10395-2009


D-8775-2009


D-235443-2010

Dräger's leading edge technology puts us on the forefront of colorimetric detector tubes.

DRÄGER ACCURO® PUMP AND DRÄGER X-ACT® 5000

The world has relied on Dräger-Tubes® more than any other gas and vapor measurement device to tell them when the air is safe to breathe, to identify an unknown hazard, or to check on process gases. For more than 70 years, Dräger has been the leader in detector tube technology with more accurate measurements, a wider range of gases and vapors measured, more designs of tubes and more accessories to meet specific gas and vapor measurement applications.

Though many Dräger-Tubes® require more than one pump stroke, the sampling time is usually faster than competitive one-stroke tubes. Not only do you get the benefit of quicker analysis, the larger sample volume provides statistically better accuracy. Once the sample is taken, the larger diameter Dräger-Tubes® and well-spaced graduation marks enable distinct and decisive measurement readings.

Reagents used in the Dräger-Tubes® are chosen to provide not only the most accurate, but also the most specific results. The use of chemical pre-layers on many tubes (like benzene) removes potentially interfering gases (e.g. aromatic hydrocarbons) so you only measure the targeted chemical, getting only the results you want.

The cornerstone of the Dräger-Tube® system is the accuro® Pump. It draws a calibrated 100 ml sample of air through the Dräger-Tube® with each stroke. The one-handed operation is simple and allows you to reach places that a piston pump cannot go. A built-in stroke counter tells you exactly how many strokes have been taken. The visual end-of-stroke indicator signifies the completion of each pump stroke.

DRÄGER-X-ACT® 5000 AUTOMATIC TUBE PUMP

The handling of gases, vapors, and aerosols has never been easier. The automatic tube pump, Dräger X-act 5000, directs the air to be measured through the appropriate Dräger-Tube effortlessly. It is conveniently carried with one hand or using the shoulder strap and is easily operated wearing heavy work gloves. A simple and intuitive menu structure provides the user efficient operation with just a few button presses.

SWIPING BARCODE LOADS MEASUREMENT DATA

Accuracy and reliability of measurement results is critical. A bar code printed on the back label of a box of Dräger short-term tubes contains all relevant measurement parameters. Simply sliding the bar code over the bar code reader of the pump automatically transfers the name of the substance to be measured, the number of strokes, and the measuring range to the display.

REDUCED MEASUREMENT TIME

Less time spent measuring means reduced cost for your operations. The X-act 5000 presents a new concept that reduces the average measurement time for certain Dräger-Tubes by 15 - 20%. The key principle is the ability to provide the required flow characteristics of the Dräger short-term tubes on the spot – no manual calibration is necessary.

DRÄGER ACCURO® PUMP ORDER INFORMATION

Dräger accuro® Pump	64 00 000
Soft-Sided accuro® Pump Kit	40 53 473
Hard-Sided accuro® Pump Kit	40 56 443
Extension Hose, 3 meter	64 00 077
Extension Hose, 10 meter	64 00 078
Extension Hose, 15 meter	64 00 079
Hot Air Probe	CH 00 213
Tube Opener 7000	64 01 200

accuro® Pump and X-act® 5000 Pump are available for rental.

DRÄGER X-ACT® 5000 ORDER INFORMATION

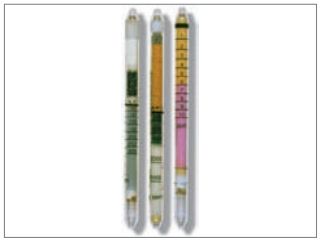
Dräger X-act 5000, consists of Dräger X-act 5000, shoulder strap without power supply	45 23 500
Dräger X-act 5000 Kit, consists of Dräger X-act 5000, shoulder strap, NiMH battery and power supply	45 23 617

Power Packs	
Rechargeable Battery NiMH, T4	45 23 520
Alkaline Battery Pack, T4 w/o batteries (6 batteries required)	45 23 525
Alkaline Battery, AA pack of 4	45 88 195

Charging accessories	
Wall-Wart Charger 100 – 240 VAC (worldwide)	45 23 545
Car Charger 12 / 24 V	45 23 511

Accessories	
Extension Hose, 3 meter	64 00 077
Extension Hose, 10 meter	64 00 078
Extension Hose, 15 meter	64 00 079
Extension Hose, 30 meter	64 01 175

ST-9375-2007



Dräger-Tubes®

ST-9374-2007

accuro® Pump

ST-9376-2007

Soft & Hard Sided accuro® Pump Kits

D-12095-2010

X-act 5000

D-12060-2010

X-act 5000
With connected extension hose

D-12090-2010

Dräger-Tube® Boxes
Barcode printed on the label

WHAT IS THE DRÄGER-TUBE® SYSTEM?

Dräger-Tubes® are glass vials filled with a chemical reagent that reacts to a specific chemical or family of chemicals. With each stoke a calibrated 100 ml sample of air is drawn through the tube with the Dräger accuro® bellows pump. If the targeted chemical(s) is present the reagent in the tube changes color and the length of the color change typically indicates the measured concentration. The Dräger-Tubes® System is the world's most popular form of gas detection.

DRÄGER SHORT-TERM DETECTION TUBES

Dräger-Tube®	Measuring Range	Part No.
Acetaldehyde 100/a	100-1,000 ppm	67 26 665
Acetic Acid 5/a	5-80 ppm	67 22 101
Acetone 40/a	40-800 ppm	81 03 381
Acetone 100/b	100-12,000 ppm	CH 22 901
Acid Test	Qualitative	81 01 121
Acrylonitrile 0.5/a (5)	0.5-20 ppm	67 28 591
Air Current Tube Kit		40 54 388
Air Current Tubes		CH 25 301
Alcohol 25/a	50-4,000 ppm Isopropanol 25-5,000 ppm Methanol	81 01 631
Alcohol 100/a	100-3,000 ppm	CH 29 701
Amine Test	Qualitative	81 01 061
Ammonia 0.25/a	0.25-3 ppm	81 01 711
Ammonia 2/a	2-30 ppm	67 33 231
Ammonia 5/b	2.5-100 ppm	81 01 941
Ammonia 5/a	5-600 ppm	CH 20 501
Ammonia 0.5%/a	0.05-10 Vol.%	CH 31 901
Aniline 0.5/a	0.5-10 ppm	67 33 171
Aniline 5/a	1-20 ppm	CH 20 401
Arsine 0.05/a	0.05-60 ppm	CH 25 001
Benzene 0.5/a	0.5-10 ppm	67 28 561
Benzene 0.5/c (5) specific	0.5-10 ppm	81 01 841
Benzene 2/a (5)	2-60 ppm	81 01 231
Benzene 5/b	5-50 ppm	67 28 071
Benzene 15/a	15-420 ppm	81 01 741
Carbon Dioxide 100/a	100-3,000 ppm	81 01 811
Carbon Dioxide 0.1%/a	0.1-6 Vol.%	CH 23 501
Carbon Dioxide 0.5%/a	0.5-10 Vol.%	CH 31 401
Carbon Dioxide 1%/a	1-20 Vol.%	CH 25 101
Carbon Dioxide 5%/A	5-60 Vol.%	CH 20 301
Carbon Disulfide 3/a	3-95 ppm	81 01 891
Carbon Disulfide 30/a	32-3,200 ppm	CH 23 201
Carbon Monoxide 2/a	2-300 ppm	67 33 051
Carbon Monoxide 5/c	5-700 ppm	CH 25 601
Carbon Monoxide 8/a (only for CO in H_2)	8-150 ppm	CH 19 701
Carbon Monoxide 10/b	10-3,000 ppm	CH 20 601
Carbon Monoxide 10/d	10-3,000 ppm	81 03 321
Carbon Monoxide 0.3%/b	0.3-7 Vol.%	CH 29 901
Carbon Pretubes		CH 24 101
Carbon Tetrachloride 0.1/a	0.1-5 ppm	81 03 501
Carbon Tetrachloride 1/a (5)	1-15 ppm	81 01 021
Carbon Tetrachloride 5/c	5-50 ppm	CH 27 401
Chlorine 0.2/a	0.2-30 ppm	CH 24 301
Chlorine 0.3/b	0.3-10 ppm	67 28 411
Chlorine 50/a	50-500 ppm	CH 20 701
Chlorine Dioxide 0.025/a	0.025-3 ppm	81 03 491

Dräger-Tube®	Measuring Range	Part No.
Chlorobenzene 5/a (5)	5-200 ppm	67 28 761
Chloroform 2/a (5)	2-10 ppm	67 28 861
Chloroformates 0.2/b	0.2-10 ppm	67 18 601
Chloropicrin 0.1/a	0.1-2 ppm	81 03 421
Chloroprene 5/a	5-60 ppm	67 18 901
Chromic Acid 0.1/a (9)	0.1-0.5 mg/m³	67 28 681
Cyanide 2/a	2-15 mg/m³	67 28 791
Cyanogen Chloride 0.25/a	0.25-5 ppm	CH 19 801
Cyclohexane 100/a	100-1,500 ppm	67 25 201
Cyclohexylamine 2/a	2-30 ppm	67 28 931
Dichloropropene 0.1/a	0.1-10 ppm	81 03 551
Diesel Fuel	25-200 mg/m³	81 03 475
Diethyl Ether 100/a	100-4,000 ppm	67 30 501
Dimethyl Formamide 10/b	10-40 ppm	67 18 501
Dimethyl Sulfate 0.005/c (9)	0.005-0.05 ppm	67 18 701
Dimethyl Sulfide 1/a (5)	1-15 ppm	67 28 451
Epichlorohydrin 5/c	5-80 ppm	67 28 111
Ethyl Acetate 200/a	200-3,000 ppm	CH 20 201
Ethyl Benzene 30/a	30-600 ppm	67 28 381
Ethylene 0.1/a (5)	0.2-5 ppm	81 01 331
Ethylene 50/a	50-2,500 ppm	67 28 051
Ethylene Glycol 10 (5)	10-180 mg/m³	81 01 351
Ethylene Oxide 1/a (5)	1-15 ppm	67 28 961
Ethylene Oxide 25/a	25-500 ppm	67 28 241
Ethyl Formate 20/a	20-500 ppm	81 03 541
Ethyl Glycol Acetate 50/a	50-700 ppm	67 26 801
Fluorine 0.1/a	0.1-2 ppm	81 01 491
Formaldehyde 0.2/a	0.2-5 ppm	67 33 081
Formaldehyde Activation tube (for use only in conjunction with 0.2/a tube)	extend to 0.04 ppm	81 01 141
Formaldehyde 2/a	2-40 ppm	81 01 751
Formic Acid 1/a	1-15 ppm	67 22 701
Halogenated Hydrocarbons 100/a	100-2,800 ppm	81 01 601
Hexane 100/a	50-3,000 ppm	67 28 391
Hydrazine 0.01/a	0.01-6 ppm	81 03 351
Hydrazine 0.25/a	0.1-10 ppm	CH 31 801
Hydrocarbons 0.1%/c	0.1-1.3 Vol. %	81 03 571
Hydrocarbons 2/a	2-24 mg/l	81 03 581
Hydrochloric Acid 0.2/a	0.2-20 ppm	81 03 481
Hydrochloric Acid 1/a	1-10 ppm	CH 29 501
Hydrochloric Acid 50/a	50-5,000 ppm	67 28 181
Hydrochloric Acid/Nitric Acid 1/a 1-15 ppm (HNO_3)	1-10 ppm (HCL)	81 01 681
Hydrocyanic Acid 0.5/a	0.5-50 ppm	81 03 601
Hydrogen 0.2%/a	0.2-2 Vol. %	81 01 511

Number in parenthesis indicates tests per box.
Bold font indicates SEI Certification

Dräger-Tube®	Measuring Range	Part No.
Hydrogen Fluoride 0.5/a	0.5-90 ppm	81 03 251
Hydrogen Peroxide 0.1/a	0.1-3 ppm	81 01 041
Hydrogen Sulfide 0.2/a	0.2-5 ppm	81 01 461
Hydrogen Sulfide 0.2/b	0.2-6 ppm	81 01 991
Hydrogen Sulfide 0.5/a	0.5-15 ppm	67 28 041
Hydrogen Sulfide 1/d	1-200 ppm	81 01 831
Hydrogen Sulfide 2/a	2-200 ppm	67 28 821
Hydrogen Sulfide 2/b	1-60 ppm	81 01 961
Hydrogen Sulfide 5/b	5-600 ppm	CH 29 801
Hydrogen Sulfide 100/a	100-2,000 ppm	CH 29 101
Hydrogen Sulfide 0.2%/A	0.2-7 Vol. %	CH 28 101
Hydrogen Sulfide 2%/a	2-40 Vol. %	81 01 211
Hydrogen Sulfide + Sulfur Dioxide 0.2%/A	0.02-7 Vol. %	CH 28 201
Iodine 0.1/a	0.1-6 ppm	81 03 521
Mercaptan 0.1/a	0.1-2.5 ppm	81 03 281
Mercaptan 0.5/a	0.5-5 ppm	67 28 981
Mercaptan 20/a	20-100 ppm	81 01 871
Mercury Vapor 0.1/b	0.05-2 mg/m³	CH 23 101
Methyl Acrylate 5/a	5-200 ppm	67 28 161
Methyl Bromide 0.2/a	0.2-8 ppm	81 03 391
Methyl Bromide 0.5/a	0.5-30 ppm	81 01 671
Methyl Bromide 5/b	5-50 ppm	CH 27 301
Methylisothiocyanate 0.1/a	0.1-6 ppm	81 03 485
Methylene Chloride 20/a	20-200 ppm	81 03 591
Natural Gas Test (Methane)(5)	Qualitative	CH 20 001
Nickel Tetracarbonyl 0.1/a (9)	0.1-1 ppm	CH 19 501
Nitric Acid 1/a	1-50 ppm	67 28 311
Nitrogen Dioxide 0.5/c	0.5-25 ppm	CH 30 001
Nitrogen Dioxide 2/c	2-100 ppm	67 19 101
Nitrous Fumes 0.5/a	0.5-10 ppm	CH 29 401
Nitrous Fumes 2/a	2-100 ppm	CH 31 001
Nitrous Fumes 20/a	20-500 ppm	67 24 001
Nitrous Fumes 50/a	50-2,000 ppm	81 01 921
Nitrous Fumes 100/c	100-5,000 ppm	CH 27 701
Oil Mist 1/a	1-10 mg/m³	67 33 031
Olefins 0.05%/a	0.06-3.2 Vol.% Propylene 0.04-2.4 Vol.% Butylene	CH 31 201
Organic Arsenic Compounds and Arsine	3 mg org. arsenic/m³	CH 26 303
Organic Basic Nitrogen Compounds	1 mg/m³	CH 25 903
Oxygen 5%/C	5-23 Vol. %	81 03 261
Ozone 0.05/b	0.05-1.4 ppm	67 33 181
Ozone 10/a	10-300 ppm	CH 21 001
Pentane 100/a	100-1,500 ppm	67 24 701
Perchloroethylene 0.1/a	0.1-4 ppm	81 01 551
Perchloroethylene 2/a	2-300 ppm	81 01 501
Perchloroethylene 10/b	10-500 ppm	CH 30 701
Petroleum Hydrocarbons 10/a	10-300 ppm (n-Octane)	81 01 691
Petroleum Hydrocarbons 100/a	100-2,500 ppm (n-Octane)	67 30 201
Phenol 1/b	1-20 ppm	81 01 641
Phosgene 0.02/a	0.02-1 ppm	81 01 521
Phosgene 0.25/c	0.25-15 ppm	CH 28 301
Phosphine 0.01/a	0.01-1 ppm	81 01 611
Phosphine 0.1/a	0.1-4 ppm	CH 31 101
Phosphine 0.1/b in acetylene	0.1-15 ppm	81 03 341
Phosphine 1/a	1-100 ppm	81 01 801
Phosphine 25/a	25-10,000 ppm	81 01 621
Phosphine 50/a	15-1,000 ppm	CH 21 201
Phosphoric Acid Esters 0.05/a Dimethyldichlorovinylphosphate)	0.05 ppm	67 28 461
Polytest	Qualitative	CH 28 401
Pyridine 5/A	5 ppm	67 28 651
Styrene 10/a	10-200 ppm	67 23 301
Styrene 10/b	10-250 ppm	67 33 141
Styrene 50/a	50-400 ppm	CH 27 601
Sulfur Dioxide 0.1/a	0.1-3 ppm	67 27 101
Sulfur Dioxide 0.5/a	0.5-25 ppm	67 28 491
Sulfur Dioxide 1/a	1-25 ppm	CH 31 701
Sulfur Dioxide 20/a	20-2,000 ppm	CH 24 201
Sulfur Dioxide 50/b	50-8,000 ppm	81 01 531
Sulfuric Acid 1/a (9)	1-5 mg/m³	67 28 781
Sulfuryl Fluoride 1/a (5)	1-5 ppm	81 03 471
Tetrahydrothiophene 1/b (5)	1-10 ppm	81 01 341
Thioether	1 mg/m³	CH 25 803
Toluene 5/b	5-300 ppm	81 01 661
Toluene 50a	50-400 ppm	81 01 701
Toluene 100/a	100-1,800 ppm	81 01 731
Toluene Diisocyanate 0.02/A (9)	0.02-0.2 ppm	67 24 501
Trichloroethane 50/d (5)	50-600 ppm	CH 21 101
Trichloroethylene 2/a	2-250 ppm	67 28 541
Trichloroethylene 50/a	50-2,000 ppm	81 01 701
Triethylamine 5/a	5-60 ppm	67 18 401
Vinyl Chloride 0.5/b	0.5-30 ppm	81 01 721
Vinyl Chloride 100/a	100-3,000 ppm	CH 19 601
Water Vapor 0.1/a	0.05-1 mg/L	81 01 321
Water Vapor 1/b	1-40 mg/L	81 01 781
Water Vapor 3/a	3-60 lbs/mcf	81 03 031
Xylene 10/a	10-400 ppm	67 33 161

Consult the VOICE® Hazardous Substances Database for detection options on over 1700 chemicals. Access VOICE® at www.dräger.com

Dräger Emergency Response Kits

DRÄGER CMS EMERGENCY RESPONSE KIT

Put the simplicity of the Dräger CMS to work for you in your emergency response procedures. The Dräger CMS Emergency Response Kit contains the Dräger CMS Analyzer, the appropriate accessories, and a selection of 10 different Chips for response to HazMat or other situations.

Put the capability of several gas detection monitors in your hands without all of the worries. The Dräger CMS is as easy to use as 1-2-3, all Dräger Chips use the exact same procedure. The Chips never need calibration, and the Analyzer does not require battery charging. All of the needed accessories are placed in one rugged carrying case, ready to go at a moments notice.

Use our standard selection of Chips, or create your own Emergency Response Kit selecting from the over 50 CMS Chips currently available.

GASES MEASURED

Ammonia, Carbon Dioxide, Carbon Monoxide, Chlorine, Hydrochloric Acid, Hydrogen Sulfide, Nitrous Gases, Perchloroethylene, Petroleum Hydrocarbons, and Toluene.

DRÄGER CMS EMERGENCY RESPONSE KIT ORDER INFORMATION

Dräger CMS Emergency Response Kit	40 55 711
Dräger CMS Emergency Response Kit (without Chips)	40 55 976

CMS Emergency Response Kit

DRÄGER HAZMAT SIMULTEST KIT

Designed primarily for the municipal fire service and other emergency responders, this kit quickly identifies and quantifies a wide range of chemical substances in less than 5 minutes using the Dräger Simultest Sets. The Dräger HazMat Simultest Kit includes three Simultest Sets for measuring 15 different Organic and Inorganic chemicals and/or chemical families. Broad scale measurement and identification is as easy as using Set I, II and III.

The Dräger HazMat Simultest Kit comes complete with a Dräger accuro® Pump, 10 Simultest Sets, Test Set Adapter and Tube Openers, full color laminated instruction sheets, and an Air Current Kit together in a rugged Pelican® case.

GASES MEASURED

Acid Gases, Basic Gases, Carbon Monoxide, Hydrocyanic Acid, Nitrous Gases, Phosphine, Chlorine, Hydrogen Sulfide, Phosgene, Sulfur Dioxide, Aliphatics, Aromatics, Alcohols, Ketones and Chlorinated Hydrocarbons

DRÄGER SIMULTEST KIT ORDER INFORMATION

Dräger HazMat Simultest Kit	40 56 098
Dräger HazMat Simultest Kit (without Dräger accuro® Pump)	40 56 447
Dräger Simultaneous Test Set I (Inorganic Gases)	81 01 735
Dräger Simultaneous Test Set II (Inorganic Gases)	81 01 736
Dräger Simultaneous Test Set III (Organic Vapors)	81 01 770

HazMat Simultest Kit

DRÄGER CLAN LAB SIMULTEST KIT

The illegal manufacture of methamphetamine is a serious problem in North America. Dräger has developed a Simultest Set with detector tubes that quickly confirm the presence of chemicals commonly associated with three principal methods of methamphetamine production. This allows law enforcement and first responder personnel to make fast decisions on the need for respiratory protection.

The Dräger Clan Lab Simultest Kit includes the accuro® Pump, Test Set Adapter and Opener, quick reference laminated instruction sheet and 5 Clan Lab Simultest Sets in a Pelican Case.

GASES MEASURED

Ammonia, Hydrochloric Acid, Iodine, Phosgene and Phosphine

DRÄGER CLAN LAB SIMULTEST KIT ORDER INFORMATION

Dräger Clan Lab Simultest Kit	40 56 562
Dräger Clan Lab Simultaneous Test Set	81 03 310

ST-9378-2007

Clan Lab Simultest Kit

DRÄGER CIVIL DEFENSE SIMULTEST (CDS) KIT

Are you prepared to respond to a terrorist attack involving the use of chemical weapons? In today's world, immediate and accurate detection of toxic chemicals is crucial. The Dräger CDS Kit uses specially developed Dräger-Tubes® (the same tubes used by NATO forces) in a quick and easy to use kit. Two Civil Defense Simultest Sets measure a wide range of chemical substances including nerve, blood, lung, and blister agents.

Dräger-Tubes® have been proven by Aberdeen Proving Grounds to be more accurate, more specific and more reliable than PID and FID devices in detecting chemical warfare agents. The CDS Kit requires no calibration, no battery charges or changes, and is extremely simple to use.

GASES MEASURED

Chlorine, Hydrocyanic Acid, Phosgene, Cyanogen Chloride, Organic Arsenic Compounds and Arsine (e.g. Lewisite), Nerve Agents (G agents and VX) and Blister Agents (Mustard and other Organic Basic Nitrogen Compounds).

DRÄGER CIVIL DEFENSE SIMULTEST KIT ORDER INFORMATION

Dräger Civil Defense Simultest Kit (w/ accuro® Pump)	6400 565S
Dräger Civil Defense Simultest Kit (w/ X-act® 5000)	40 56 570
Dräger Civil Defense/HazMat Simultest Kit (w/ accuro® Pump)	40 56 665
Dräger Civil Defense/HazMat Simultest Kit (w/ X-act® 5000)	40 56 528
Dräger Civil Defense Simultest, Set I	81 03 140
Dräger Civil Defense Simultest, Set V	81 03 200
Training Set for Civil Defense Simultest Set I	81 03 230
Training Set for Civil Defense Simultest Set V	81 03 240

D-57054-2012

Civil Defense Simultest (CDS) Kit with Quantimeter

DRÄGER AEROTEST KITS

Dräger-Tubes® are widely used to measure the quality of compressed breathing air, the purity of medical gases, contaminants in process gases, and impurities in technical gases. The Aerotest Kits facilitate these types of measurements by conditioning the pressurized sample to a level at which the Dräger-Tubes® can accurately operate.

The Dräger Aerotest Kits are designed to measure the quality of breathing air. The kits come complete with Dräger-Tubes® for measuring CO, CO_2, oil and water vapor. The low-pressure (Alpha) version may be plugged directly into compressed airlines, while the high-pressure (HP) version can be connected directly to SCBA cylinders or compressors.

The Dräger Multi-Test is designed for medical gases and can measure up to seven different substances simultaneously; CO, CO_2, H_2O, Oil, SO_2, H_2S, and NOx.

DRÄGER AEROTEST KITS ORDER INFORMATION

Aerotest Simultan Alpha (< 175 psi)	40 56 747
Aerotest Simultan HP (< 4500 psi)	40 55 986
Aerotest Multi-Test (< 75 psi)	40 56 181
Aerotest Level A (≤ 150 psi)	40 54 001
Aerotest Simultan HP + P Navy (≤ 4500 psi)	65 25 960
Aerotest Simultan Test CO_2	40 56 849

DRÄGER BIO-CHECK F BADGES

The Bio-Check F detects formaldehyde in the range of 0.02 to 0.7 ppm without mechanical or electronic devices. An enzyme reaction changes the color of the indication layer and is evaluated by a color comparison chart that is included with the badge. The determination of indoor air exposure levels can be accomplished in only two hours. The Bio-Check is small enough to be worn on a person's lapel, or set in a room of concern for measurement of formaldehyde at these very low levels.

ORDER INFORMATION

Bio-Check F Badge	64 00 235

Bio-Check F Badges

DRAGER BIO-CHECK ALLERGEN CONTROL

The house dust mite is the most common cause of allergies. The Dräger-Bio-Check Allergen Control rapid-test allows the user to conduct an on-site analysis of house dust mite allergens. The table supplied with Dräger-Bio-Check Allergen Control groups the exposure levels into categories based on the scientific limit values for house dust allergens.

ORDER INFORMATION

Drager Bio-Check Allergen Control (package of 5)	64 00 945

Bio-Check Allergen Control

Dräger TWA Measurements

DRÄGER DIFFUSION (PASSIVE SAMPLING) TUBES

Get on-site measurements of 8-hour exposures with the Dräger Diffusion Tubes. This gas and vapor measurement technique provides a quick, simple, and on-site means to determine employee exposures.

Unlike Short-Term detector tubes that require a pump for operation, Dräger Diffusion Tubes rely on natural movement of the gases and vapors to enter the tube and cause a color change. Simply read the indication on the graduated scale (ppm x hours) and divide by the amount of hours the Dräger Diffusion Tube has been in use for a TWA measurement. No waiting, no analysis fees, no laboratory services, no turn-around time; just on the spot measurement. The Dräger-Tube Holder allows you to place the Dräger Diffusion Tube in the breathing zone of the people being monitored or in the suspected areas.

ORDER INFORMATION

Dräger-Tube®	Range in Absolute Units	Part No.
Acetic Acid 10/a-D	10 - 200 ppm x h	81 01 071
Ammonia 20/a-D	20 - 1,500 ppm x h	81 01 301
Butadiene 10/a-D	10 - 300 ppm x h	81 01 161
Carbon Dioxide 500/a-D	500 - 20,000 ppm x h	81 01 381
Carbon Dioxide 1%/a-D	1 - 30 Vol.% x h	81 01 051
Carbon Monoxide 50/a-D	50 - 600 ppm x h	67 33 191
Ethanol 1000/a-D	1,000 - 25,000 ppm x h	81 01 151
Hydrochloric Acid 10/a-D	10 - 200 ppm x h	67 33 111
Hydrocyanic Acid 20/a-D	20 - 200 ppm x h	67 33 221
Hydrogen Sulfide 10/a-D	10 - 300 ppm x h	67 33 091
Nitrogen Dioxide 10/a-D	10 - 200 ppm x h	81 01 111
Perchloroethylene 200/a-D	200 - 1,500 ppm x h	81 01 401
Sulfur Dioxide 5/a-D	5 - 150 ppm x h	81 01 091
Toluene 100/a-D	100 - 3,000 ppm x h	81 01 421
Trichloroethylene 200/a-D	200 - 1,000 ppm x h	81 01 441
Diffusion Tube Holder (pkg 3)		67 33 014

Diffusion (Passive Sampling) Tubes

Air Current Measurement

DRÄGER FLOW CHECK

Air current directions and flow rates are very important to gas detection. The visible plume of non-toxic, non-reactive smoke generated by the Dräger Flow-Check allows you to actually see the direction, dispersion, and relative speed of the air currents in an area. Knowing how the air is moving, you are better prepared to accurately measure gases. This smoke can also be used to detect air leaks around doorways or other fixtures.

Dräger Flow-Check is also popular for checking the effectiveness of ventilation ducts, pressurized rooms, fume hoods, vapor extractors and other air movement equipment. These functions assist those in the HVAC, hospital laboratory, and manufacturing industry sectors.

TECHNICAL DATA

Dimensions	Approx 11.8 x 7.9 x 2.8 in., (300 x 200 x 70 mm)
Weight	17.6 oz. (500 g)

DRÄGER FLOW-CHECK ORDER INFORMATION

Dräger Flow Check Device	64 00 761
Battery Charger, 110 VAC, Required for operation	83 16 993
Replacement Smoke Ampoules (3/pkg)	64 00 812

DRÄGER SMOKE TUBES SAMPLE KIT

Dräger Smoke Tubes have been very popular in the HVAC and mining industries for many years. The reagent inside the smoke tube produces a visible aerosol plume when in contact with atmospheric humidity. A simple squeeze bulb pushes air through the tube to propel the smoke into the ambient air. Even the most gentle air currents are made visible.

ORDER INFORMATION

Air Current Tube Kit	40 54 388
Smoke Tubes	CH 25 301

Training and Support
for your Dräger protection and detection equipment.


ST-40-2007


ST-13881-2010


D-31376-2011

DrägerService

Let DrägerService provide expert care for your respiratory protection equipment. Dräger has strategically located Service Centers across North America in Pittsburgh PA, Carson CA, Pasadena TX, Richmond BC, Dartmouth NS, Mississauga ON, Sudbury ON, Montreal PQ, Edmonton AB, and Queretaro, Mexico. Services are available at these locations or on-site.

DrägerService supports with a full range of technical services including gas calibration, maintenance, upgrades and repairs. Services can be arranged on an as needed basis, or through maintenance agreements and service contracts. Dräger's all-encompassing Total Care Packages provide all services, including loaner units when needed.

DRÄGER TRAINING

The best safety equipment is only as good as the knowledge of those who use it. Let Dräger train your staff on the proper use and maintenance of all of our products. We offer both operator and technician level courses at our service facilities or at your site. Students are provided with the appropriate training materials such as posters, videos, CDs, books and/or schematics depending on the training given. All courses are available with certification.

DRÄGER RENTAL

For many applications and situations, purchasing gas detection or respiratory protection equipment may not be the most efficient or cost-effective solution. The complete range of Dräger products are available for rental. We offer competitive pricing; convenient daily, weekly or monthly terms; expertly maintained equipment; and Rent-to-Own options.

DRÄGER SUPPORT

Our worldwide experience obtained from many different industries, applications, and environmental conditions are available to all Dräger customers. The Technical Services staff in Pittsburgh can assist you through the challenges and questions you may encounter in your application and recommend the proper equipment for the job at hand.

Dräger Swede Survival

LIVE FIRE TRAINING IN WOOD-FUELED CLASS "A" CONTAINER SYSTEMS

Dräger Swede Survival training systems offer firefighters the opportunity to observe fire behavior and the signs that lead to phenomena like a flashover. The training is being conducted according to proven procedures in order to create a safe and controlled training setting. Repetition of the training increases and stabilizes the firefighter's knowledge and skills to recognize and handle the specific fire scenarios.

The Swede Survival portfolio consists of 5 product categories, which represent a progression or different phases of training. Phase I is essentially a laboratory, where fire behavior and the flashover phenomenon can be safely observed three feet below the fire. The Phase II system is ideal for teaching fire attack scenarios by placing the trainees on the same level as the fire. The Phase III further adds to fire fighter's knowledge by demonstrating the conditions and warning signs of a backdraft. In Phase IV, Phase IV replicates a garage fire scenario and Phase V is a Multi-story system with multiple burn chambers. Each one of these live fire training systems provide a cost effective way to build the confidence and knowledge of fire fighters. When all of these phases are combined, it creates a flexible and comprehensive fire training program for novice and veteran fire fighters alike.

Realistic reliable and safe.

Dräger Fire Training Systems

LIVE FIRE TRAINING IN PROPANE FUELED CLASS 'B' SYSTEMS

Dräger's training systems provide ideal conditions for breathing apparatus users to experience physical and mental stress common to emergency situations in a controlled environment. Dräger Safety Systems is taking firefighting to a whole new level with the acquisition of Fire Training Systems (FTS). Dräger Safety Systems provides the fire service with one source for an entire range of training systems and equipment emphasizing on:

- Confidence in their skills and equipment under stressful situations
- Teamwork built with practice and repetition of skills and tactics
- Knowledge gained through experience with fire behavior
- Dräger improves the training experience for all fire fighters

SYSTEMS INCLUDE:

TUTOR
- Mobile solution for basic fire extinguisher training

System 64
- Creates flexible exterior fire scenarios with a mobile 6' x 4' fire platform

QUAD
- Perform advanced exterior fire attack with sophisticated burn props

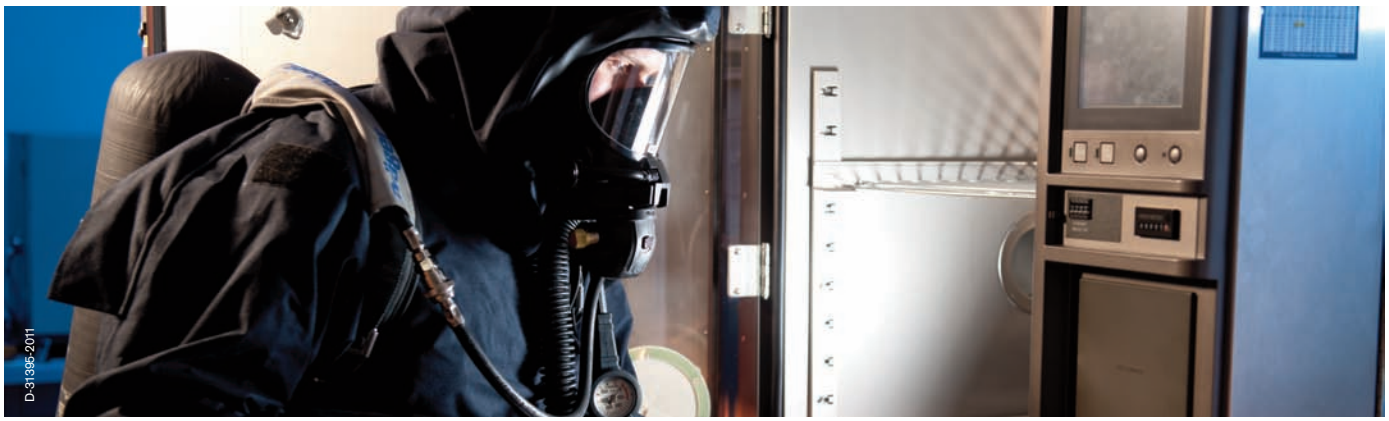
Car
- Maintain control of car fire training scenarios with wireless controls

Container
- Create interior fire scenarios with cost effective container configurations

Interior
- Add realistic burn props to new or existing training buildings

SCBA Confidence Maze
- Teach fire fighters to maneuver through confined areas with an SCBA

MLFTU: Mobile Live Fire Training Unit
- Simplify training logistics with a mobile containerized system



Respiratory Protection

DRÄGER X-PLORE® 1300

The Dräger X-plore® Series of filtering facepiece respirators sets the standard for comfort and adjustability. The unique tension adjuster allows a wearer to fine-tune the non-irritating fabric head strap to a proper fit. In addition, the strap provides a drop-down feature to comfortably hang around the neck when not needed. The Dräger X-plore® facepiece respirator is available in two sizes, with a strong plastic-coated nose clip and internal ribbing to prevent collapsing, making them the most ergonomically designed filtering facepiece respirators on the market.

DRÄGER X-PLORE® MASKS AND FILTERS

The new Dräger X-plore® Series masks set a new benchmark in fit and comfort in respiratory protection. The innovative X-guided strap system secures the mask evenly over the face providing an excellent fit while remaining very comfortable. Three sizes (S, M, L) of masks and a flexible nose seal ensure a proper fit for every type of face. The Dräger X-plore® comes in economical use (3300) and premium (3500) half-mask styles. The full face (5500) mask provides a higher level protection when needed. To meet a wide range of industrial applications, Dräger offers a full line of NIOSH approved cartridges and filters with their exclusive two-point bayonet connector.

DRÄGER PARAT C

The Dräger Parat C fire/smoke escape hood offers a minimum of 15 minutes of protection against potential hazards found in fires, such a carbon monoxide, toxic gases and smoke particulates. The flame retardant hood is an easy to see orange color that has been flame flash tested at 1200 °F. It can be worn by people with facial hair, glasses, long hair, and has even been tested on children. The Parat C has a shelf life of 12 years, providing that the filter is replaced after 6 years. In addition, the Parat C offers documented protection against H_2S. This hood is approved to the European Standard EN403:2004.

DRÄGER INDUSTRIAL SUPPLIED AIR RESPIRATORS

Hard work in an industrial environment requires rugged and reliable equipment. The Dräger line of supplied air respirators confidently meets this challenge. Our modular airline respirator systems are based on the Dräger Panorama Nova mask that provides superior fit and comfort. The Type C Dräger SAR and constant flow Dräger PentAir® respirators are for working extended periods in non-IDLH environments. The PAS Colt, Supplied Airline Respirator (Combination Pressure Demand, Type "C") with a 5 or 10-minute self-contained air cylinder for emergency use, is NIOSH approved for entry and escape, and may be used in the supplied air mode up to 300 feet or 12 hose length sections from the air source, whichever is greater.

DRÄGER FIRE FIGHTING BREATHING APPARATUS

As the world's largest SCBA manufacturer, we design SCBAs to withstand the most demand-ing circumstances while delivering the most safety and comfort. Ergonomic back plates and fully adjustable harness system, allow the Dräger PSS 3000 and Dräger PSS 5000 to provide exceptional safety, maneuverability, and comfort for fire fighters. The Dräger PSS SCBA Series has been approved to the most challenging standards in the world, NFPA 1981-2007 edition. Available in both one piece, Evolution backplate as well as the PSS 7000 multi-position backplate, the series utilizes the advanced PSS pneumatic system and Sentinel 7000 gauge and PASS device.

DRÄGER BG-4 CLOSED CIRCUIT BREATHING APPARATUS (CCBA)

The Dräger BG-4 is a NIOSH & MSHA Approved Closed Circuit Breathing Apparatus provides superior respiratory protection in IDLH environments for up to 4 hours! Conventional SCBA's are limited to just one hour or less and do not provide the extended time that is required in critical operations like: search and rescue, hazardous materials clean-up, domestic preparedness, or mine and tunnel rescue. The low profile of the Dräger BG-4 makes it easy to use under protective clothing. Every Dräger BG-4 is equipped with the Dräger Sentinel, which is an electronic alarm; test and pressure display module that provides continuous information to the user.

NOTES

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