

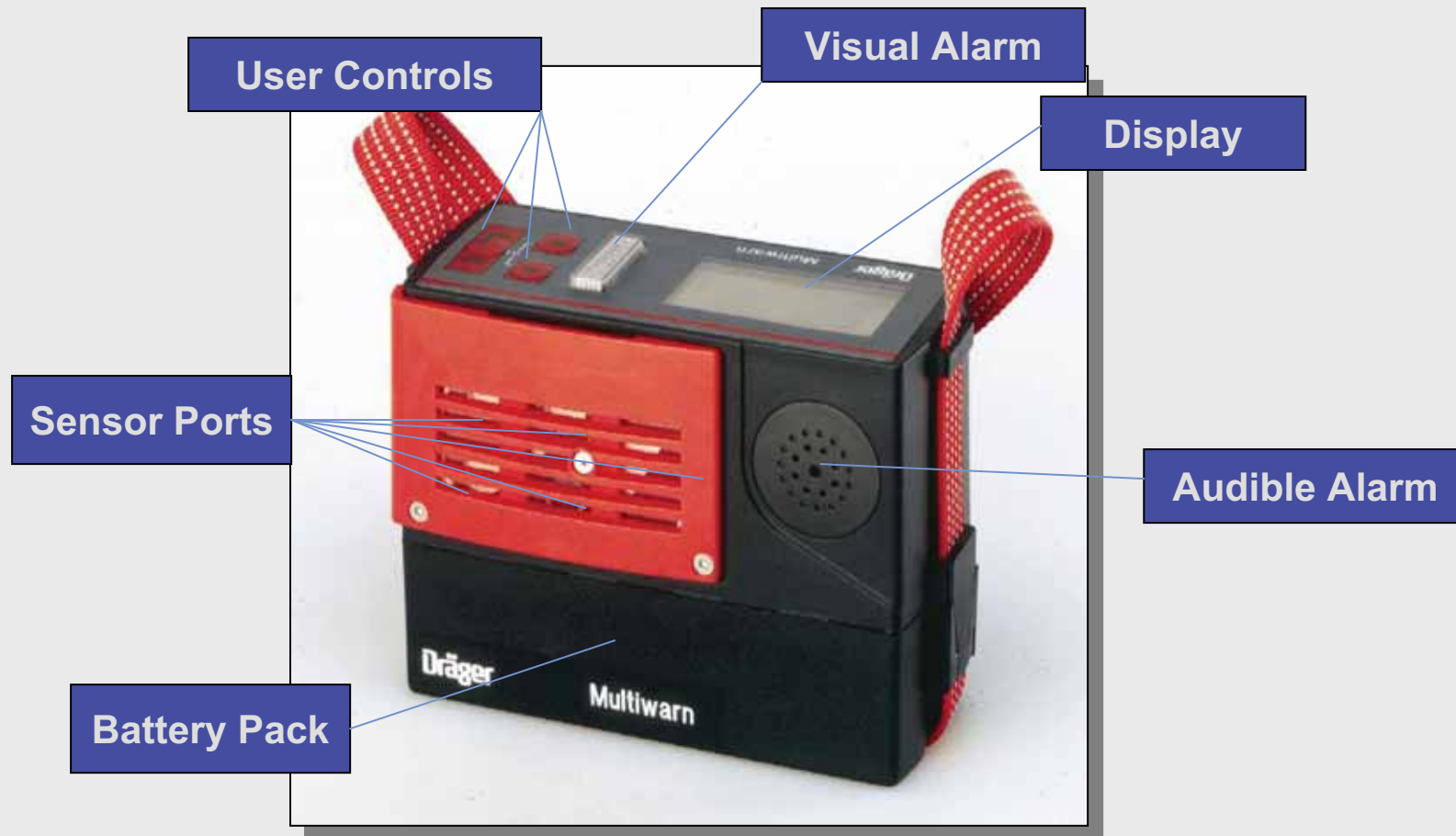
The Multiwarn II Monitor



The Ultimate in Gas Detection

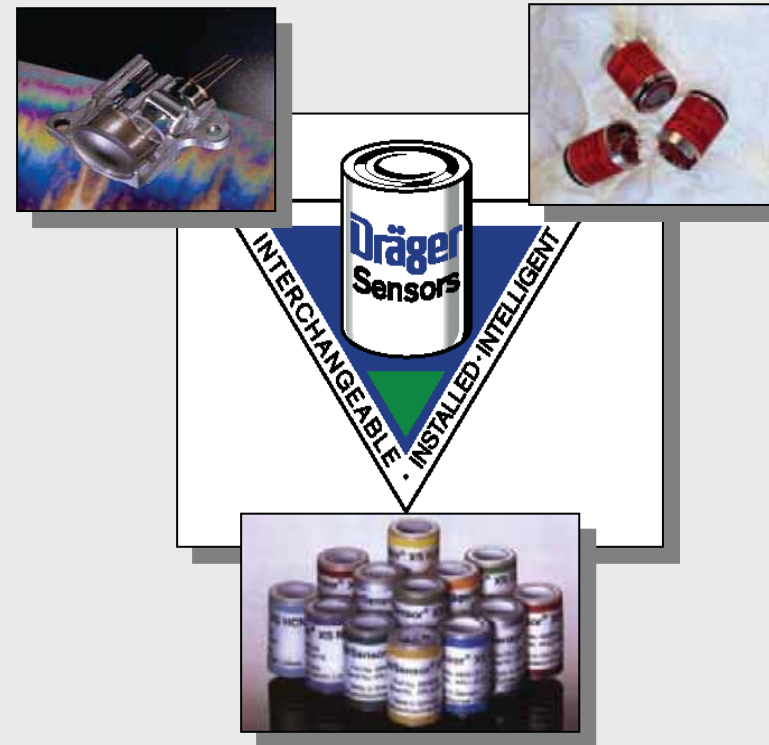


Main Components



DrägerSensors®

- Made by Dräger
- Optimized Dräger Monitor Package
- Interchangeable with other Dräger Monitors
- EC, Cat & IR Sensors
- **28 Dräger-Sensors® Available;**
Widest Selection in the Industry
- Up to 5 Sensors in the Multiwarn II Monitor



DrägerSensors®

XS Sensor Line

- 5 year Warranty for O₂, H₂S, and CO
- Extremely Low Drift
- **Reduced Calibration**
- Long Service Life
- Fast Response / Recovery
- Internal Temp. Comp.
- -40 to +50 C (-40 to +120° F)
- **Smart Sensors:** Gas ID, Alarms, Measurement Data, Temp Comp, etc.
- Transportable Calibration



DrägerSensors®

Sensor Selection

- CO (2), H₂S (2), SO₂, O₂(2)
- CO₂, NO, NO₂, HCN,
- NH₃, Cl₂, F₂, Br₂,
- H₂
- PH₃ & Hydrides
- Organic Vapors
- EtO, VC, HCHO, etc.
- Mercaptans
- Amines
- **Combustible Gas**



DrägerSensors®

Cat-Ex Sensor

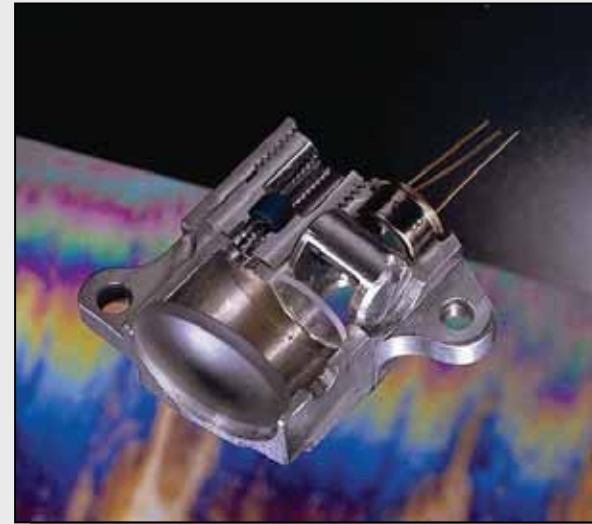
- Fast Response / Recovery
- Measuring Ranges %LEL, %Vol., & ppm
- Good Response to Heavier Hydrocarbons
- Performance Tested by; UL, CSA, & CENELEC, Department of Mineral resources (Australia)



DrägerSensors®

Infrared (IR) Sensors

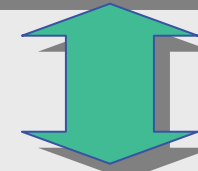
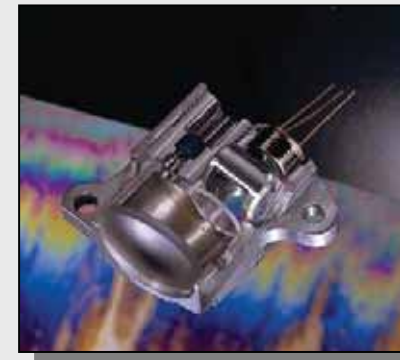
- Extremely Fast Response / Recovery
- Measuring; % LEL, % Vol., & ppm
- IR Advantages
- Available for Ex or CO₂
- Can be coupled with a Cat-Ex
- Qualified for more than just Methane
- Does not require a Pump for operation



DrägerSensors®

IR-Ex versus Cat-Ex

- Infrared operates in environments with Low or No Oxygen concentrations
- Infrared is Completely Immune to Poisoning and Inhibiting Compounds that effect Cat-Ex
- Measures % LEL, ppm, and % Vol. Concentrations of various gases
- Different responses to different compounds vs. catalytic sensor (specific)



DrägerSensors®

IR Ex and Cat Ex Quick Change

- Quickly done with the “Function Key”
- Switch Between Measuring Ranges %LEL, %Vol., & ppm
- Switch Between Calibration References CH₄, C₃H₈, C₅H₁₀, etc.
- Select between 1-3 (IR) and 1-5 (Cat Ex) different, independent configurations

Configuration
1 % LEL CH ₄
2 % Vol CH ₄
3 ppm CH ₄
4 % LEL C ₉ H ₂₀
5 % LEL H ₂



Internal Pump

- Remote Sample and Pre-entry Tests
- Sample Draw Length;
up to 45m/140ft
- Can also operate in Diffusion mode



Display Interface

- Large Characters
- Gas Concentration
- Measuring Units
- Gas Measured
- Alarm Indication
- Information Icons
- Auto-Backlight when in Alarm or Button Press
- Plain Language Higher Function Commands



Globally Speaking, Languages

- English
- German
- Spanish
- Dutch
- French
- Italian
- Swedish
- Norwegian
- Danish
- Finnish
- Czech

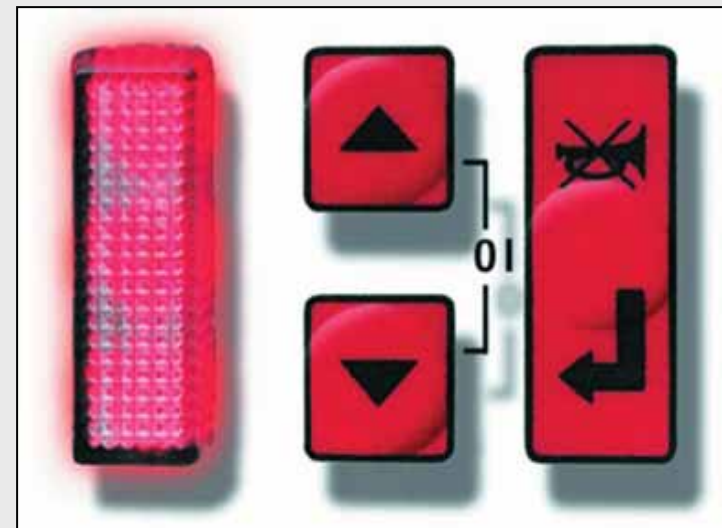


- Hungarian
- Polish
- Russian
- Turkish
- Slovak
- Romanian
- Croatian
- Hebrew
- Japanese
- Malaysian



3-Button Interface

- **ON**, Large Button
- **OFF**, two Small Buttons
- Acknowledge Alarm, **Press Large Button**
- Higher Functions, **Press and Hold Large Button** for 3 seconds
- All Maintenance and Configuration Menus are Password Protected

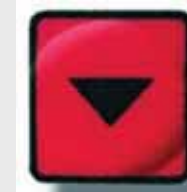


Custom Software Access

- Maintenance (password)
- Configuration (password)
- Fresh-Air Calibration
- Battery Level
- Change Ex (F)
- Peak Holding (F)
- Silent Alarm (F)
- **All functions selected or password protected**
- Session / Location ID
- Personal / Monitor ID
- TWA Value
- STEL Value
- Max Value
- Min Value
- Clear Exposures



Function Hot Key



Silent Alarm Mode

- Bell “🔔” with “S”

Peak Hold Mode

- Up & Down (↑↓) Arrows

Quick Channel Change

- CA with arrow over top

Alarm Interface

- Loud Audible Alarm; >85 dBA @ 1ft. / 30 cm
- Area Alarm
- Bright Visual Alarm;
- 3 High-Intensity LED's
- Visible from 180°



Alarm Interface

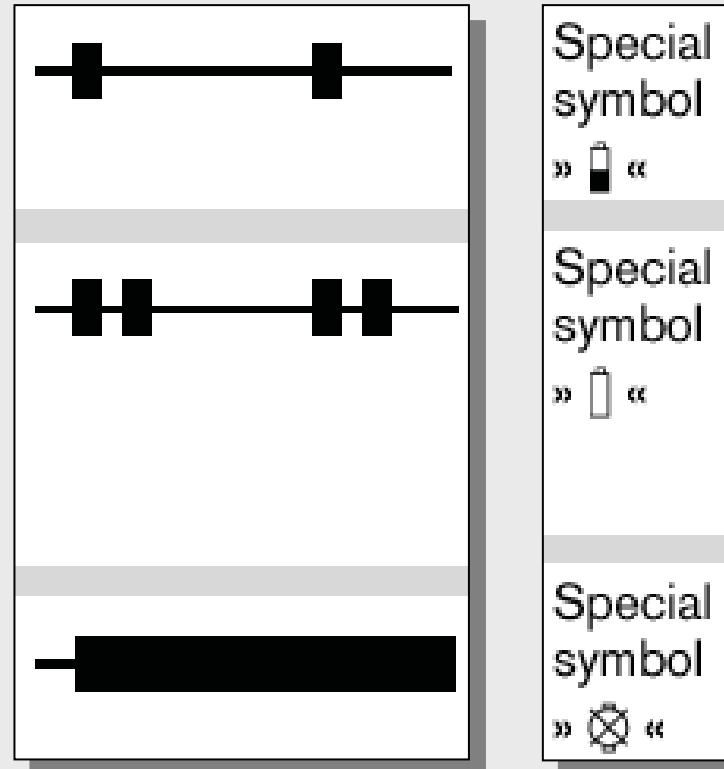
Unique Alarm Cadence

- A1; Single Repeat, Light & Horn
- A2; Double Repeat, Light & Horn
- F; Steady, Light & Horn

Redundant LCD

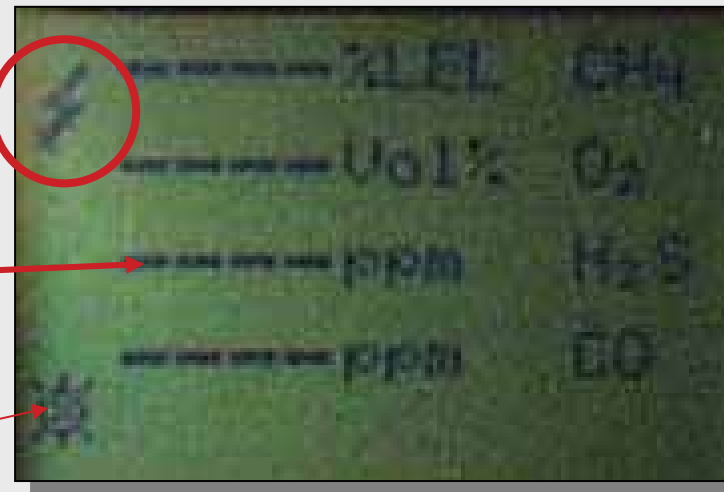
Characters

- A1, A2 and Special Icons



Pump Blockage Alarm

- Steady Light and Horn
- **Lightening Bolt** = Fault; Proper Detection is not possible
- - - - - Notes which sensor(s) are affected
- **Pump with X** indicates this is a pump blockage



Power Supplies

NiCd Batteries (4 Sensors)

- > 8 h w/ Pump
- >12 h Diffusion
- Single & Multi-Chargers
- Chargeable in an Ex-atmosphere

Alkaline Batteries

- Emergency Back-Up
- Changeable in an Ex-atmosphere



Rugged Enclosure

- Withstands the expected uses and abuses of an industrial application
- Light-Weight, easy to carry on one's body
- IP-54 Rating
- RFI Shielding per IEC Specification



Intrinsic Safety

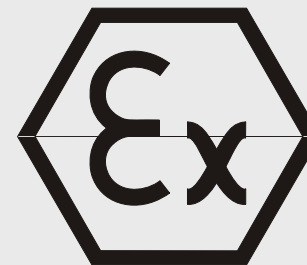
UL: Class I, Division 1,
Groups A-D, T4



CSA: Class I, Division 1,
Groups A-D, T4

MSHA Pending

CENELEC: EEx ib s IIC T4
(w/o IR-Sensor)



EEx ib d IIB+ H2 T4 (w IR
Sensor

NSW Mining Approval
Testsafe Australia



Dräger Software

Interface to computer

Gas-Vision

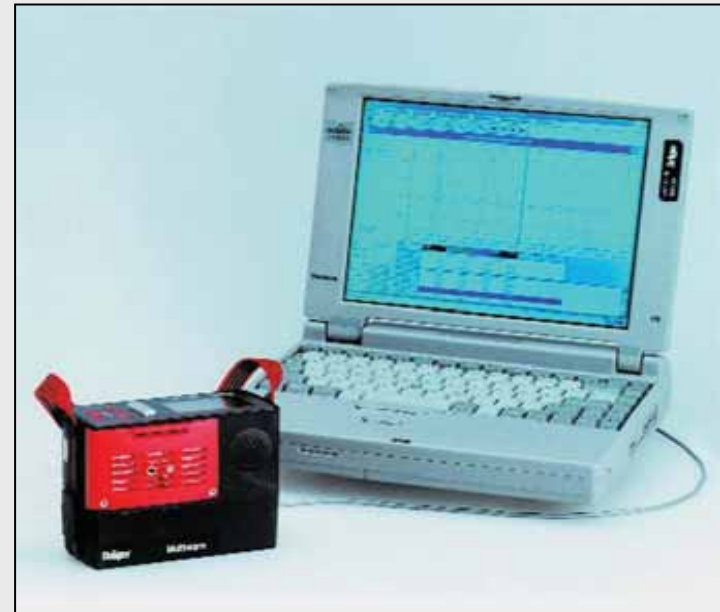
Display and Document
Gas Exposures

CC-Vision

Configure, Calibrate, and
Document Monitor

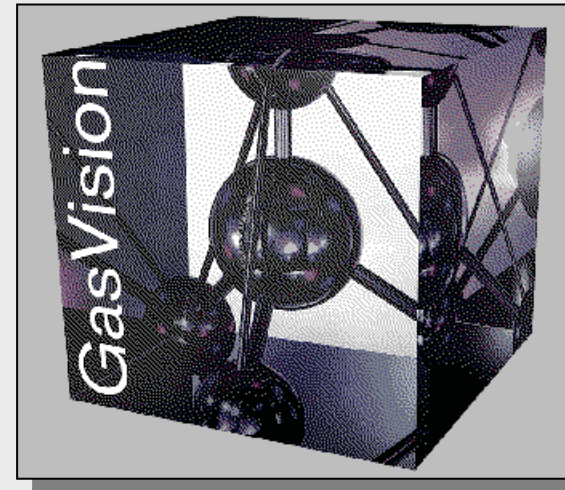
VOICE

Selecting proper Gas
Detection and Protection
Technology



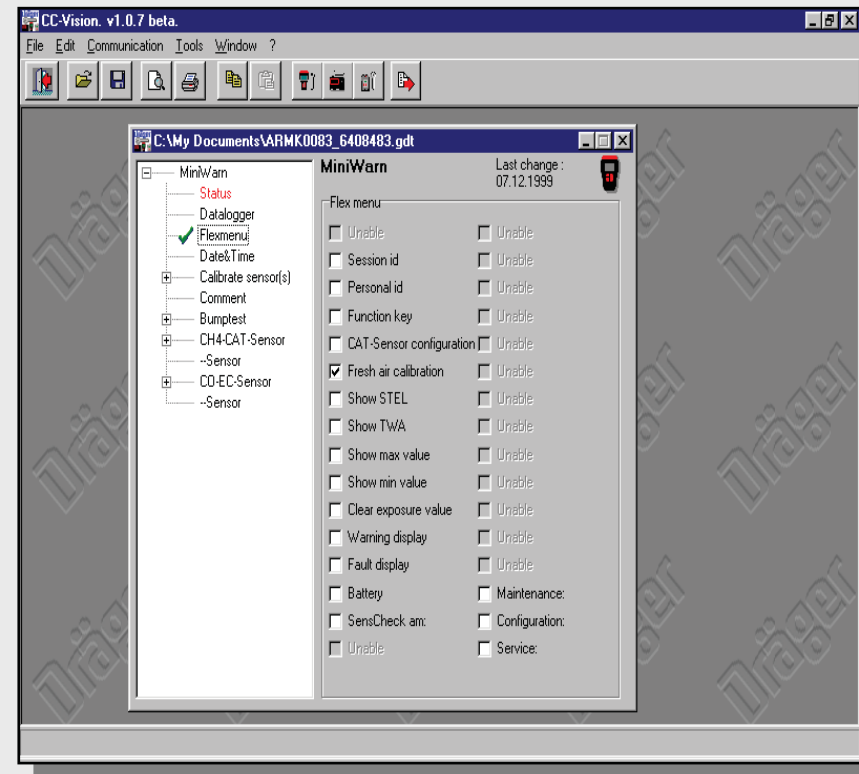
Gas-Vision

- Download Stored Values
- Graphic Presentation
- Spreadsheet Analysis
- Calculate TWA & STEL
- Document with workers name, location, etc.



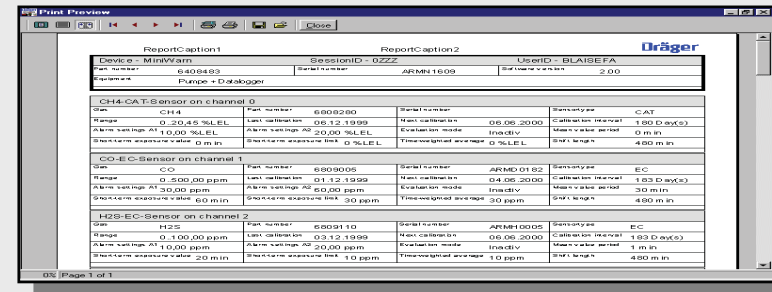
CC-Vision

- **Customize** User Menu
- Secure Access to Calibration & Alarm
- Change Alarm Values
- Set-Up Datalogging Parameters
- Store Configurations and download to other MW II's



CC-Vision

- Calibrate Monitor
- Document Calibration
- Change Calibration Intervals
- Track Sensor Changes
- Diagnose Warnings and Faults



ReportCaption1		ReportCaption2		Dräger	
Device - MINIVAM	SessionID - 0222	UserID - BLAISEFA			
Part number	6409402	Part name	APM11600	Serial number	200
Location	Pumpe + Databogger				
CH4-CAT-Sensor on channel 0					
Gas	CH4	Part number	6009200	Serial number	500000
Range	0...20,45 %LEL	Lot number	05.12.1999	Max. calibration	05.06.2000
Alarm setting At	10,00 %LEL	Alarm setting At	20,00 %LEL	Expiration mode	Inaktiv
Start date expiration	0 m. n.	Start date expiration	0 %LEL	Threshold average	0 %LEL
				Start length	480 m. n.
CO-EC-Sensor on channel 1					
Gas	CO	Part number	6009005	Serial number	ANM0102
Range	0...500,00 ppm	Lot number	01.12.1999	Max. calibration	04.06.2000
Alarm setting At	30,00 ppm	Alarm setting At	60,00 ppm	Expiration mode	Inaktiv
Start date expiration	60 m. n.	Start date expiration	30 ppm	Threshold average	30 ppm
				Start length	480 m. n.
H2S-EC-Sensor on channel 2					
Gas	H2S	Part number	6009110	Serial number	ANM10005
Range	0...100,00 ppm	Lot number	03.12.1999	Max. calibration	05.06.2000
Alarm setting At	10,00 ppm	Alarm setting At	20,00 ppm	Expiration mode	Inaktiv
Start date expiration	30 m. n.	Start date expiration	10 ppm	Threshold average	10 ppm
				Start length	480 m. n.



Standard Accessories

- Carrying Cases
- Transport Cases
- Telescopic Probes
- Sample Hoses
- Calibration Gases
- Single, Multiple, and Automotive Chargers



Meeting World-Wide Requirements

- Solvent Calibration Chamber
- Calibrate to vapors not available in compressed gas cylinders



Long-Term low Cost of Ownership

Dräger-Sensors XS-R O₂, H₂S, CO

- 5-year Warranty
- Non-Consumption Sensors

- Annual Calibration

Dräger-Sensor Cat Ex

- 19 months Warranty



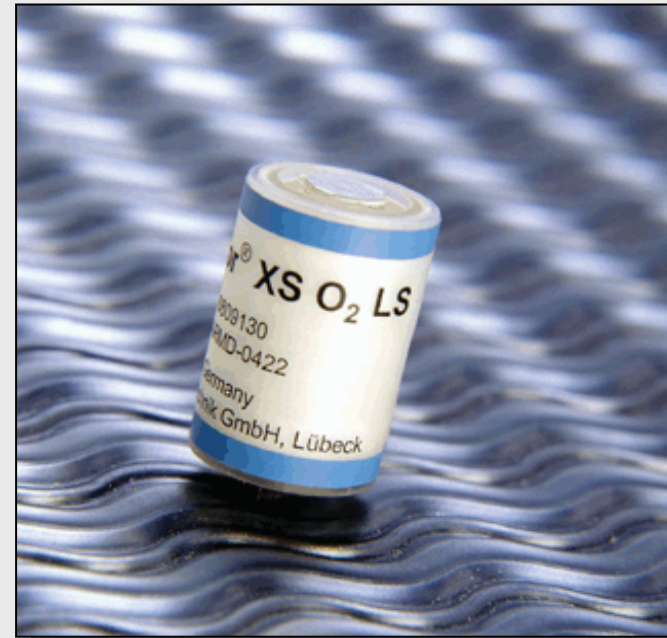
Dräger IR-Sensors für CO₂ und EX



Long-Term low Cost of Ownership

**For O₂, CO & H₂S XS-R
Standard 5-year
Warranty**

- Fully covered by a factory warranty for a 5 year period



Long-Term low Cost of Ownership



- On-Board Diagnostics
- Watchdog Circuitry continuously monitors all internal functions of the instrument
- Fault and Warning Icons in the Display
- Plain language diagnostics in the menu