

Dräger Pac Ex 2

Elegant and smart



Explosive hazards and lack or surplus of oxygen under control



Two-In-One Instrument

Pac Ex 2 measures for explosive hazards and a lack or surplus of oxygen. It can be used for personal monitoring.

Pac Ex 2 is available in two instrument versions:

- instrument for ex gas measurement,
- combination instrument for ex gas and oxygen measurement.



Pac Ex 2, Ex Version



Pac Ex 2, Ex-O₂-Version



Applications

Large range of different applications such us:

- alerting employees to a sudden emission of gas,
- certification of safe work areas,
- monitoring staff working in areas where low concentrations of gas are constantly present,
- measurement for confined space entry or in difficult-to-reach areas,
- protecting visitors on a tour of the plant,
- evaluation of dangers during emergency situations involving fire services or civil defence organisations.



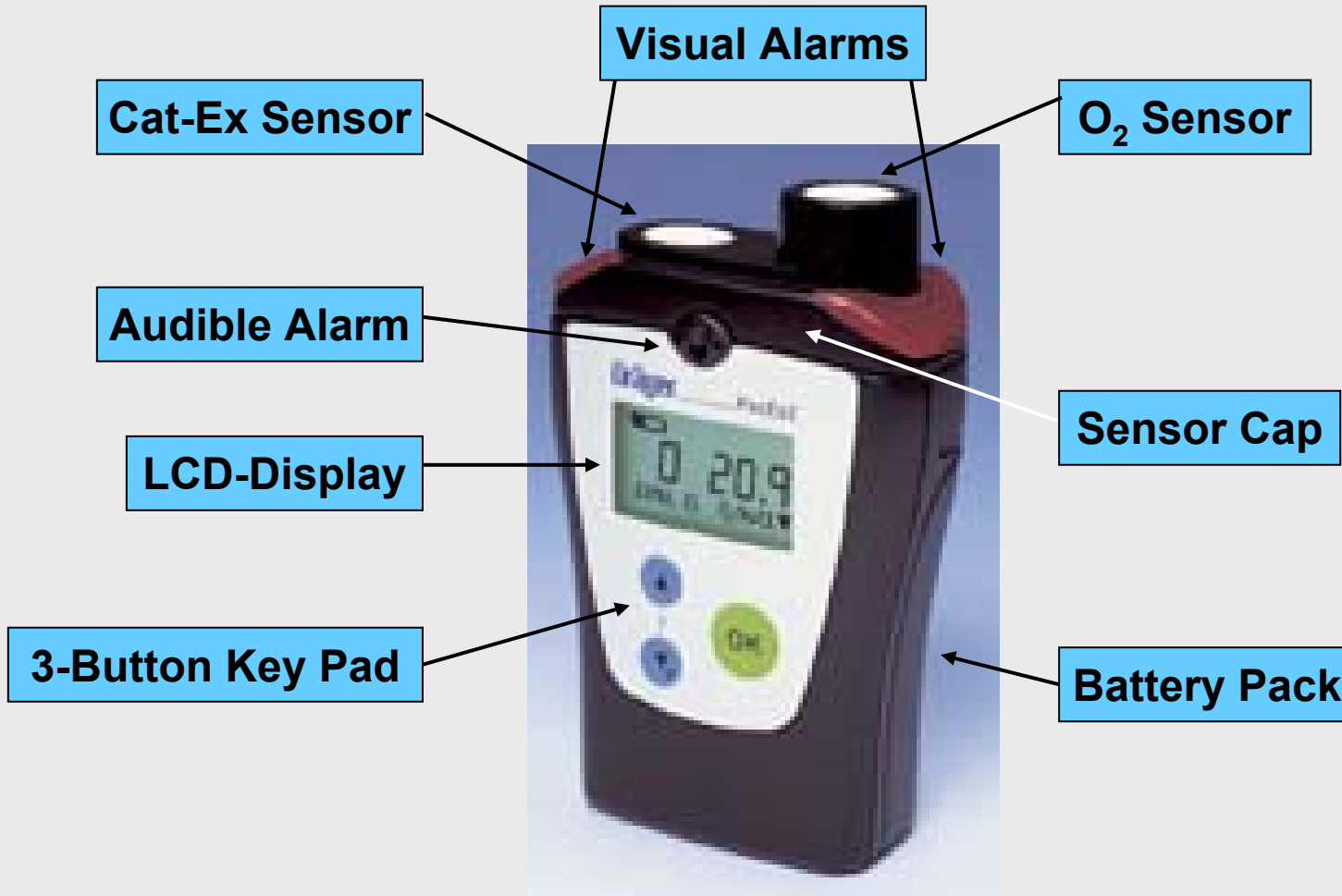
Typical Industries and Branches

The Pac Ex 2 is the ideal portable instrument for:

- **fire services,**
- **chemical industry,**
- **oil and gas industry,**
- **electrical and water utilities,**
- **disposal companies,**
- **telecommunication enterprises,**
- **mining industry,**
- **shipping industry.**



What is What



Flexible Instrument

The modular design enables high instrument flexibility:

The ex gas detection instrument can be easily upgraded to an ex gas and oxygen detection instrument. This flexibility is made possible by the plug and play function of the oxygen sensor and a simple to change sensor cap.



The Instrument

Pac Ex 2 Monitor

- **Combustible gas monitor**
- **Oxygen monitor**
- **Attention demanding audible, visual and vibrating alarms**
- **Flexible measuring Ex ranges:**
 - **0 to 100 % LEL**
 - **0 to 5 Vol.-%**
 - **0 to 100 Vol.-%**
- **Maximum protection in**
 - **a handy and pocket-sized design**
 - **a robust instrument**
- **Integrated datalogger,**
use in conjunction with Dräger software Gas Vision



The Sensors

The special robust catalytic Ex sensor

The sensor reacts to present combustible gases or vapours.

It works with the principles of heat reaction and thermal conductivity.

The Ex sensor has a high performance because:

- **it has short response time,**
- **it has a robust construction,**
- **it can be calibrated to various gases and vapours in the LEL range,**
- **it can be calibrated to methane in the % vol range,**
- **it is designed for low power operation,**
- **it has a warranty of 2 years,**
- **it has an expected sensor life longer than 2 years.**



The Sensors

Three kinds of oxygen sensors

- XS-R O₂ warranty: 5 years expected sensor life: 5 years
- XS-EC O₂ warranty: 3 years expected sensor life: > 3 years
- XS-2 O₂ warranty: 2 years expected sensor life: > 2 years

Naturally, the electrochemical Sensors have also a high performance:

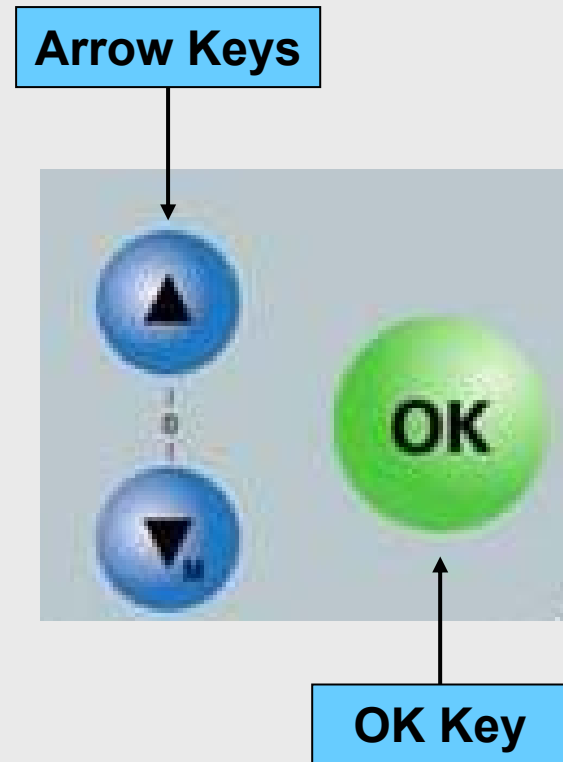
- intelligent "Smart-Technology",
- internal data memory within the sensor,
- calibrated by the manufacturer,
- high selectivity,
- short response time,
- minimal long-term drift with low follow up costs and long calibration frequencies:
 - default 12 months
 - recommended 6 months,
- known and controllable cross sensitivities.



3-Button Key Pad

Functional and easy to use operation

- Pac Ex 2 is operated by a 3-button key pad
- Switch On / Enter Key “OK”
- Up Arrow Key “▲”
- Down Arrow Key “▼”
- Acknowledge Alarm / Enter Key “OK”
- Switch On Menu / Enter Down Arrow Key
- Switch Off Menu / Enter Briefly Up and Down Arrow Key
- Switch Off / Enter Up and Down Arrow Key (about 5 seconds)

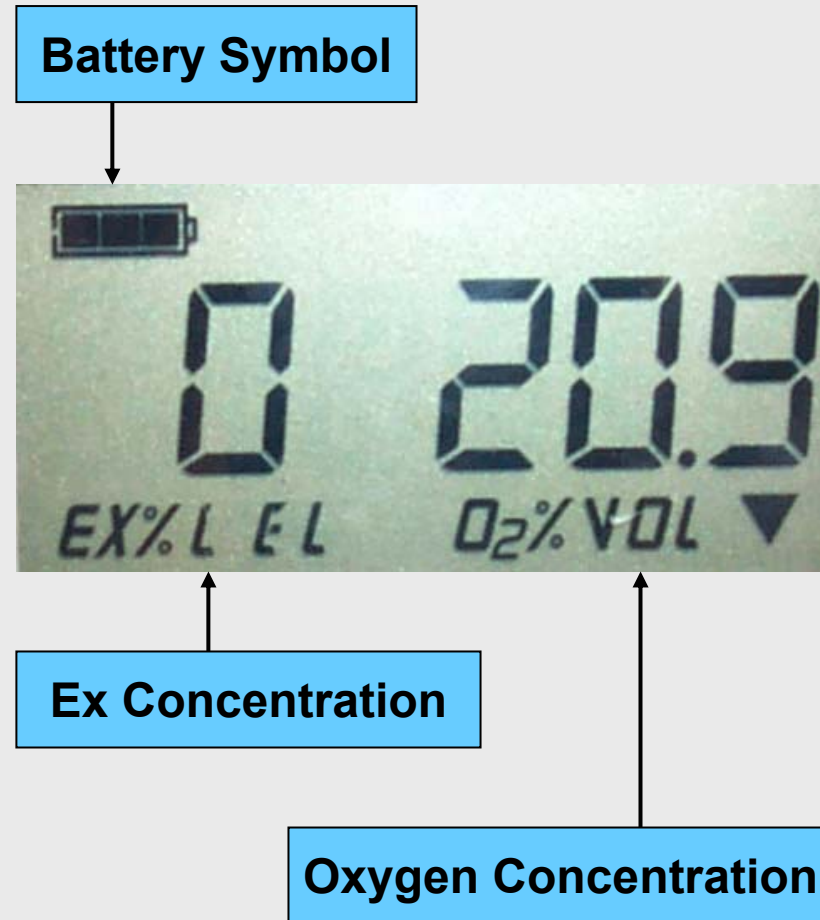


Display Interface

Monitoring of Ex and oxygen in one display

- continuously
- simultaneously
- independently

- Large characters
- Gas concentration
- Measuring units
- Alarm indication
- Battery capacity
- Backlight when in alarm or enter key "OK"



Alarm Interface

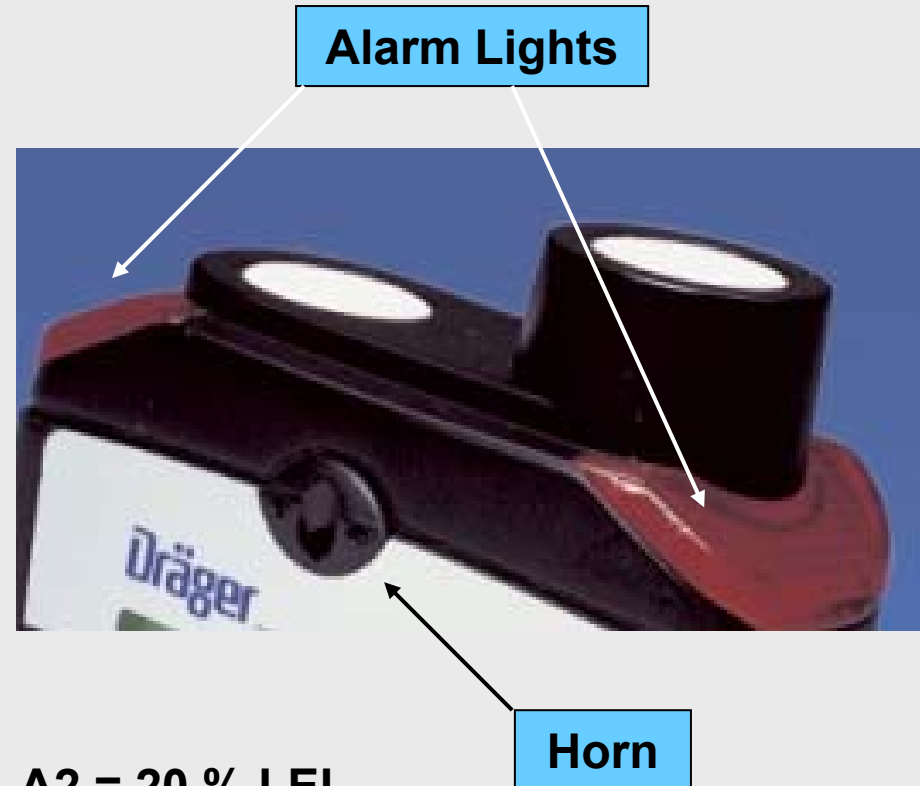
Unique Alarm Cadence

- Loud audible alarm:
> 90 dBA @ 30 cm / 1 ft
- Bright visual alarm:
2 high-intensity LED's
visible in from 180 °
- Alarms pointed towards
user eyes and ears
- vibrating alarm

Default thresholds:

- Ex (CH₄): A 1 = 10 % LEL A2 = 20 % LEL
- O₂: A 1 = 19 Vol.-% A2 = 23 Vol.-%

Thresholds adjustable to user requirements



Alarm Frequency



Single beep, single flash of concentration or battery symbol every second:

- Pre-alarm A 1 for Ex hazards
- Battery pre-alarm



Double beep, double flash of concentration or battery symbol every second:

- Main-alarm A 2 for Ex hazards
- Main-alarm A 2 for low oxygen alarm (deficiency)
- Main-alarm A 2 for high oxygen alarm (enrichment)
- Battery main-alarm



Triple beep, triple flash every second:

- Fault alarm during operation



Instrument Menus

Easy to use menus

The Pac Ex 2 offers two menus:

- a quick menu for
 - fresh air calibration
 - the oxygen sensor can be span calibrated
 - the Ex sensor can be zero calibrated
 - a read out of the four-hour-Ex-average concentration
- a password protected menu for
 - calibration of the instrument
 - configuration of the instrument
 - Pac Ex 2 can be adjusted to either the LEL range or the % vol range
 - both alarm thresholds can be set
 - the password can be adjusted, it consists of a four-digit, self-defined number code



Power Supply

Extra long operation time

- **Rechargeable NiMHy Battery**
 - > 12 hours operation time
 - < 4 hours charging time
 - simple to change
- **Charging equipment**
 - Charging module 1, 110 - 240 VAC for charging of 1 instrument
 - Charging module 2, 110 - 240 VAC for charging of 1 instrument, additional separate battery charging and connecting to CC / Gas Vision
 - Car charging adapter, 12 / 24 V
- **Alkaline Batteries**
 - 4 AAA cells
 - > 12 hours operation time



Intrinsic Safety

Main Ex approvals

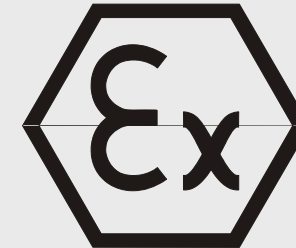
Europe

CE - mark

I M 2/II 2 G

EEx ia d I / IIC T4 Ta $\leq 55^{\circ}$ C

Demko 02 ATEX 0213653X Ta
(-25° C to $+55^{\circ}$ C)



USA

UL Class I, Div. 1, Groups A, B, C, D,
Temp Code T4



Canada ¹⁾

CSA Class I Groups A, B, C, D
Div. 1 Temp Code T4



Shipping ¹⁾ Steering Wheel Certification

¹⁾ pending



Available Accessories

Extensive range of accessories

- Carrying case
- Rubber boot
- Adaptable automatic Pump
- Extension hoses and probes
- Calibration adapter
- Calibration gases
- NiMHy battery pack
- Alkaline battery pack
- Charging modules
- Car charging adapter
- E - Cal module
- Gas Vision
- CC Vision

