Dräger Pac 7000

Dräger Pac instruments
Lübeck, 07/2009, Ulf Ostermann
Small and robust, ergonomic and intuitive, economic and powerful – the Dräger Pac 7000 is tailor-made for personal monitoring at the workplace. Featuring the latest sensor technology, this innovative single gas detector is equipped with a wide range of functions and is suitable for many different applications in day-to-day industrial settings.
Developed for typical industry applications especially for personal monitoring.

Ideal for:
- Shut down
- Steel industry
- Petrochemical industry
- Oil & gas industry
- Mining

- with leather case + belt
- with rotatable clip
What is what?

- Visual alarm
- LC display
- + button: Menu
- Type of gas to be measured
- 2 site gas access with changeable dust- and water filter
- Audible alarm
- Integral rubber over-mold
- OK button
- Visual alarm

What is what?
Was ist was

Serial no. & part no. label

Rotatable grip clip

Approval label

D-Ring

IR -interface

Lithium Battery compartment

Juli 2009

Ulf Ostermann
New DrägerSensor Technologie

Utilizing long-life, state-of-the-art Drager XXS Sensor technology, the innovative Dräger Pac 7000 boasts both speed and reliability in regards to the measurement results.
Dräger Pac 7000
electrochemical sensors

<table>
<thead>
<tr>
<th>Dräger XXS Sensor</th>
<th>Measurement range</th>
<th>Resolution</th>
<th>Ansprechzeit</th>
<th>Expected lifetime/month</th>
<th>Warranty</th>
<th>Part no. sensor</th>
</tr>
</thead>
<tbody>
<tr>
<td>O2 / E</td>
<td>0 - 25 Vol.-%</td>
<td>0,1 Vol.%</td>
<td>≤10 Sek (T90)</td>
<td>60</td>
<td>24/60</td>
<td>68 10 881 / 68 12 211</td>
</tr>
<tr>
<td>H2S / E</td>
<td>0 - 100 ppm</td>
<td>1 ppm</td>
<td>≤15 Sek (T90)</td>
<td>60</td>
<td>24/60</td>
<td>68 10 883 / 68 12 213</td>
</tr>
<tr>
<td>CO / E</td>
<td>0 - 2000 ppm</td>
<td>1 ppm</td>
<td>≤25 Sek (T90)</td>
<td>60</td>
<td>24/60</td>
<td>68 10 882 / 68 12 212</td>
</tr>
<tr>
<td>Cl2</td>
<td>0 - 20 ppm</td>
<td>0,05 ppm</td>
<td>≤30 Sek (T90)</td>
<td>36</td>
<td>12</td>
<td>68 10 890</td>
</tr>
<tr>
<td>CO2</td>
<td>0 - 5 Vol.-%</td>
<td>0,1 Vol.%</td>
<td>≤30 Sek (T50)</td>
<td>15</td>
<td>12</td>
<td>68 10 889</td>
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<tr>
<td>H2S LC</td>
<td>0 - 100 ppm</td>
<td>0,1 ppm</td>
<td>≤15 Sek (T90)</td>
<td>60</td>
<td>24</td>
<td>68 11 525</td>
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<tr>
<td>HCN</td>
<td>0 - 50 ppm</td>
<td>0,1 ppm</td>
<td>≤10 Sek (T90)</td>
<td>18</td>
<td>12</td>
<td>68 10 887</td>
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<tr>
<td>NH3</td>
<td>0 - 300 ppm</td>
<td>1 ppm</td>
<td>≤20 Sek (T50)</td>
<td>24</td>
<td>12</td>
<td>68 10 888</td>
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<tr>
<td>NO</td>
<td>0 - 200 ppm</td>
<td>0,1 ppm</td>
<td>≤20 Sek (T90)</td>
<td>36</td>
<td>12</td>
<td>68 11 545</td>
</tr>
<tr>
<td>NO2</td>
<td>0 - 50 ppm</td>
<td>0,1 ppm</td>
<td>≤15 Sek (T90)</td>
<td>36</td>
<td>12</td>
<td>68 10 884</td>
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<tr>
<td>OV</td>
<td>0 - 200 ppm</td>
<td>0,5 ppm</td>
<td>≤20 Sek (T50)</td>
<td>30</td>
<td>12</td>
<td>68 11 530</td>
</tr>
<tr>
<td>OV-A</td>
<td>0 - 200 ppm</td>
<td>1 ppm</td>
<td>≤40 Sek (T50)</td>
<td>30</td>
<td>12</td>
<td>68 11 535</td>
</tr>
<tr>
<td>PH3</td>
<td>0 - 20 ppm</td>
<td>0,01 ppm</td>
<td>≤10 Sek (T90)</td>
<td>36</td>
<td>12</td>
<td>68 10 886</td>
</tr>
<tr>
<td>SO2</td>
<td>0 - 100 ppm</td>
<td>0,1 ppm</td>
<td>≤15 Sek (T90)</td>
<td>36</td>
<td>12</td>
<td>68 10 885</td>
</tr>
</tbody>
</table>
Dräger Pac 7000
rugged enclosure

- IP 65 protection class
- Pressure resistant sensor for 700 up to 1300 mbar
- -30°C to 55°C
- Rubber overmold chassis
Alarms

Integrated vibrating alarm

Loud audible alarm
>90 dB (A) at a distance of 30 cm

Bright visual alarm with 2 high intensity LED´s visible 180°

Alarms pointed towards user eyes and ears
Dräger Pac 7000
Battery

- Exchangeable lithium battery
- Sensors kept warm during standby
  - Turn on=> ready to use

Battery life time:

<table>
<thead>
<tr>
<th>PAC 7000</th>
<th>PAC 7000 O2</th>
</tr>
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<tbody>
<tr>
<td>8 month</td>
<td>4 month</td>
</tr>
</tbody>
</table>
Dräger Pac 7000
Software Menu

Dräger Pac 7000 Menu
indicate:
- TWA (time weighted average)
- STEL (short time exposure limit)
- Peak concentration

Menu:
- Bump test
password protected:
- Fresh air calibration (option: password free)
- span cal calibration
Dräger Pac 7000
configurable options

For calibration and individual configuration the instrument will be connected to a PC with installed CC Vision software.

- Measuring units (Vol.%, ppm, mg/m³)
- Alarm levels: “A1 & A2”
- TWA and STEL values
- Data logger interval
- Life signal
- Adjust Operating timer
- Adjust calibration – and bump test interval
- Option: instrument error after expired or ignored bump test or calibration interval
- Manual or automatic bump test
- Adjust Switch off not allowed
The Dräger Bump Test Station works independently, without any external power supply, ideal for use in the field.

Insert the Dräger Pac 7000 in the Bump Test Station. The instrument identifies the Dräger Bump Test Station and starts the automatic bump test without pressing any buttons.

=> Option: automatic recalibration, if bump test failed (e.g. A1 not achived).
The units meet the intrinsic safety requirements for use in hazardous areas for ATEX, UL, CSA and GOST.

- UL Class I, II Div I, Group A, B, C, D, E, F, G, Temp Code T4
  \(-30°C \leq T_a \leq +55°C (-22°F \leq T_a \leq +131°F)\)
- cUL Class I, II Div I, Group A, B, C, D, E, F, G, Temp Code T4
  \(-30°C \leq T_a \leq +55°C (-22°F \leq T_a \leq +131°F)\)
- CE0158 (89/336/EEC, 94/9/EC)
- DEMKO 04 ATEX
  I/II M 1/1 G Ex ia I/IIC T4,
  \(-30°C \leq T_a \leq +55°C (-22°F \leq T_a \leq +131°F)\)
- IEC Ex
- MTC (ATEX) EN 50104 (O2), EN 45544 1+2 (CO+H2S), EN50271 (Software+System)
- MED approval ‘Marine Equipment Directive’ 96/98/EC
- ГОСТ Р 51330.0-99 (МЭК 60079-0-98)
  ГОСТ Р 51330.1-99 (МЭК 60079-1-98)
  ГОСТ Р 51330.10-99 (МЭК 60079-11-99)
Dräger Pac 7000

in case of...

... is the dust- and water filter, the battery, the clip and the sensor is easy exchangeable by the user.
Communication cradle complete with USB cable and Pac Vision software.

Lithium Battery

Dust- and water filter

Leather carrying case

Bump Test Station

E-Cal Module for Pac instruments

CC/Pac Vision

Gas Vision
Dräger Pac 7000
At a glance

- High performance Dräger XXS Sensors
- Optional 5-year guaranty for hydrogen sulfide, oxygen and carbon monoxide monitors
- Automatic function test with Dräger Bump Test Station
- Optional recalibration after a failed bump test
- Adjustable bump test interval
- Unlimited lifetime with simple battery, sensor and filter replacement
- Integrated data logger
- Gas access from top and front
- Adjustable TWA and STEL alarms
- Peak value
Thank you for your attention!