(PLEASE SWITCH TO THE SLIDE SHOW MODE)

Dräger X-am 5000 / X-am 5600
VIDEO BASIC TRAINING

Dräger, Lübeck 24.09.2009

CONTENT

General Information

DISCLAIMER

This visual presentation is intended to help the user understand and correctly use the Dräger X-am 5000/5600. It is not intended to be a substitute for the complete instruction manual supplied with the instrument.

IT IS THE USER'S RESPONSIBILITY TO READ AND UNDERSTAND ALL MANUALS AND INFORMATION PROVIDED WITH THE INSTRUMENTS!

Dräger X-am 5000/5600

Basic – Components on Front

XXS sensor slot

Visual alarm

Catalytic sensor (X-am 5000) / IR sensor (X-am 5600)

Horn > 90 db

Segment display

OK_{on} – Button
Switch on
Acknowledge

$+_M$ – Button
Navigation

Operation X-am 5000/5600

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SWITCHING ON

Press and hold the “OK”-key for 3 seconds

- Display counts down 3-2-1
- blinking LEDs, the acoustic alarm sounds
- and the vibrating alarm pulsates

The self-test begins automatically and shows the following:

The installed software version

- The alarm levels
- The TWA and STEL alarm settings
- The next calibration date

SWITCHING OFF

Press and hold the “+” and “OK" keys

at the same time for more than 3 sec.

The LEDs will flash and a beep will sound.

The instrument is switched off

Look at video

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Display Illumination

DISPLAY ILLUMINATION

- Press any key and the display illumination is switched on for about 30 sec.

- In an alarm situation, the display illumination is automatically switched on

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Menu Fresh Air Calibration

FRESH AIR CALIBRATION

This procedure is a fresh air calibration, which is placed in the quick menu with help of the CC-Vision Software.

- Press “+„-key three times
- The following con is shown
- Press the “OK ”-key and choose the fresh air calibration menu

Real values are shown

Press the “OK ”- key

OK appears in the display

Fresh air calibration is finished

Look at video

The fresh air calibration / zero point adjustment is not supported by the DrägerSensor Dual IR-CO2 and the DrägerSensor IR-CO2. A zero point calibration / adjustment of these sensors can be conducted using the Dräger CC-Vision PC software. To do so, a suitable zero gas that is free of carbon dioxide (e.g. N2) should be used.

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Menu Maximum Value

MENU MAXIMUM VALUE

Press and hold the "OK"-key for 3 seconds

The Maximum Value and the minimum value for the O2 sensor are show. These values have been occured since the last time the instrument was reset.

Press the "OK"- key again.

TWA and STEL values appears in the

display or press the "+„-key once

Instrument returns to measurement mode

Look at video

- The function Max Value displays the lowest oxygen reading and the highest readings for the other sensors from the time the readings were last reset.
- You can use the Max Value function in the quick menu (configurable with CC-Vision) to view and to reset the max values.

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NOTE

TWA (Time Weighted Average) is the time-weighted average gas concentration (normally over an 8 hour period) that an unprotected worker can be exposed to over an 8 hour workday and 40 hour work week without adverse effects.

The STEL (Short Term Exposure Limit) is the maximum allowed gas concentration that an unprotected worker can be exposed within a 15 minutes period.

TWA

When the TWA analysis is activated:

Press and hold the “OK”-key for 3 seconds

Press the “OK ”-key one time

icon appears in the display

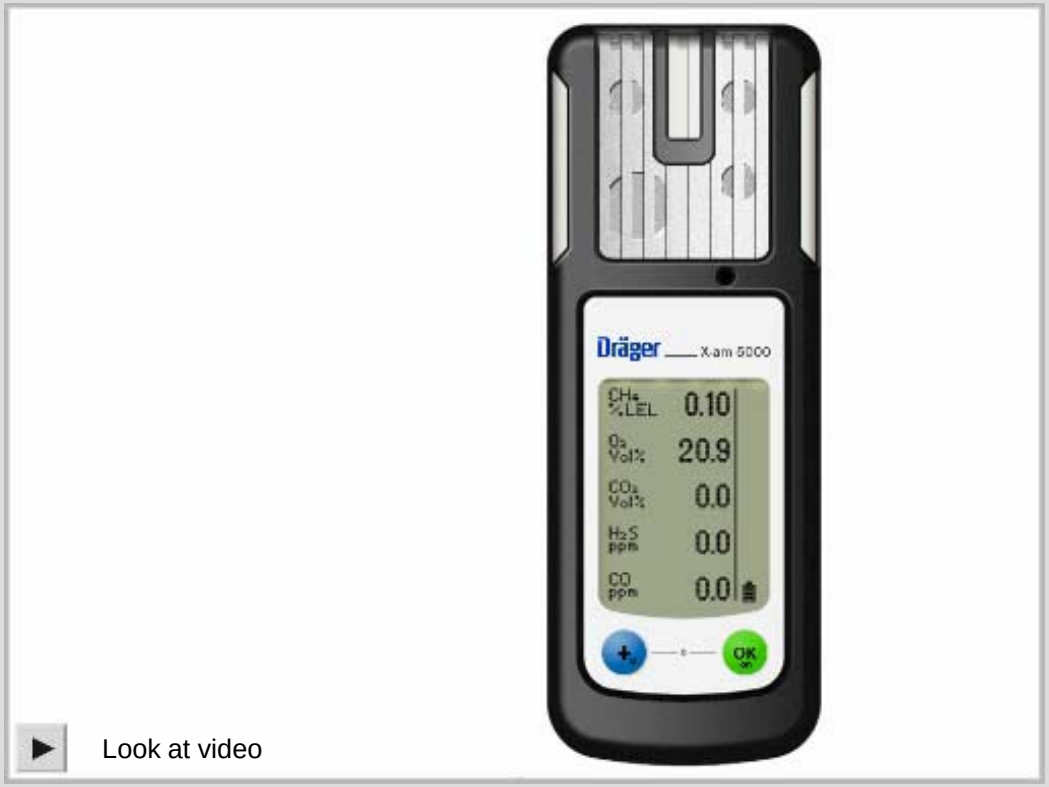
The maximum workplace concentration is shown

Press the “OK”-key again

and the STEL values are shown.

or press the “+„-key once

Instrument returns to measurement



Look at video

STEL

When STEL analysis is activated:

Press and hold the “OK”-key for 3 seconds

Press the “OK ”-key two times

icon appears in the display

The STEL values are shown

Press the “OK ”-key or the “+„-key once

Instrument returns to measurement

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A1 Gas Concentration Alarm

A1 GAS CONCENTRATION ALARM

- Alarm level can be changed with the help of the CC-Vision software
- Audible-, visual- and vibrating alarms repeat periodically
- The display character “A1” will alternate with the concentration in the display
- An A1 alarm (except O2), the audible and vibrating alarms can be acknowledged by pushing the “OK ”-key.

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A2 Gas Concentration Alarm

A2 GAS CONCENTRATION ALARM

- Alarm level can be changed with the help of the CC-Vision software
- Double audible-, visual- and vibrating alarms repeat periodically
- The display character “A2” will alternate with the concentration in the display
- The audible, visual and vibrating alarms can NOT be acknowledged (silenced) in “A2” or in an O2 “A1” alarm

Look at video

Follow the prescribed safety procedures.

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STEL Alarm

STEL ALARM

- Alarm level can be changed with the help of the CC-Vision software
- Audible-, visual- and vibrating alarms repeat periodically
- The display character “A2” will alternate with the concentration in the display
- Icon flashes
- The alarm can NOT be acknowledged

Look at video

TWA and STEL values will be cancelled when the instrument is reset. Follow the prescribed safety procedures.

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TWA Alarm

TWA ALARM

- Alarm level can be changed with the help of the CC-Vision software
- Audible-, visual- and vibrating alarms repeat periodically
- The display character “A2” will alternate with the concentration in the display
- Icon flashes
- The alarm can NOT be acknowledged

Look at video

TWA and STEL values will be cancelled when the instrument is reset. Follow the prescribed safety procedures.

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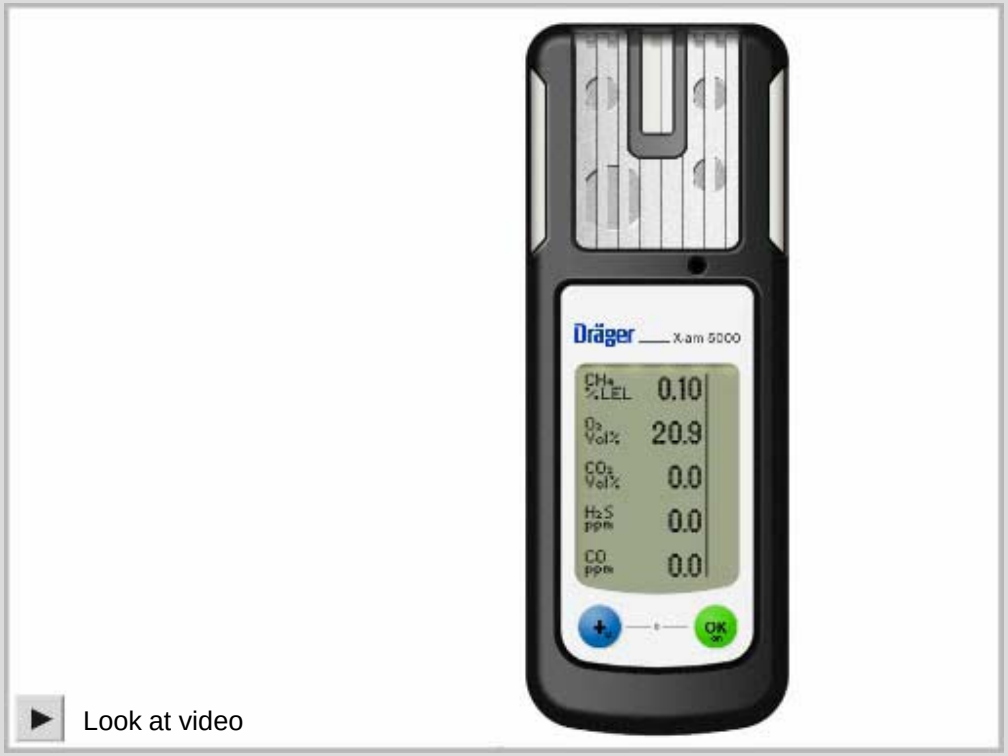
A1 Low Battery Alarm

Click the picture to watch video

A1 LOW BATTERY ALARM

- Audible-, visual- and vibrating alarms repeat periodically
- Icon flashes
- The alarm can be acknowledged with “OK”-key



This is activated when the battery has less than 10 minutes of operation – please change the batteries or charge the instrument.

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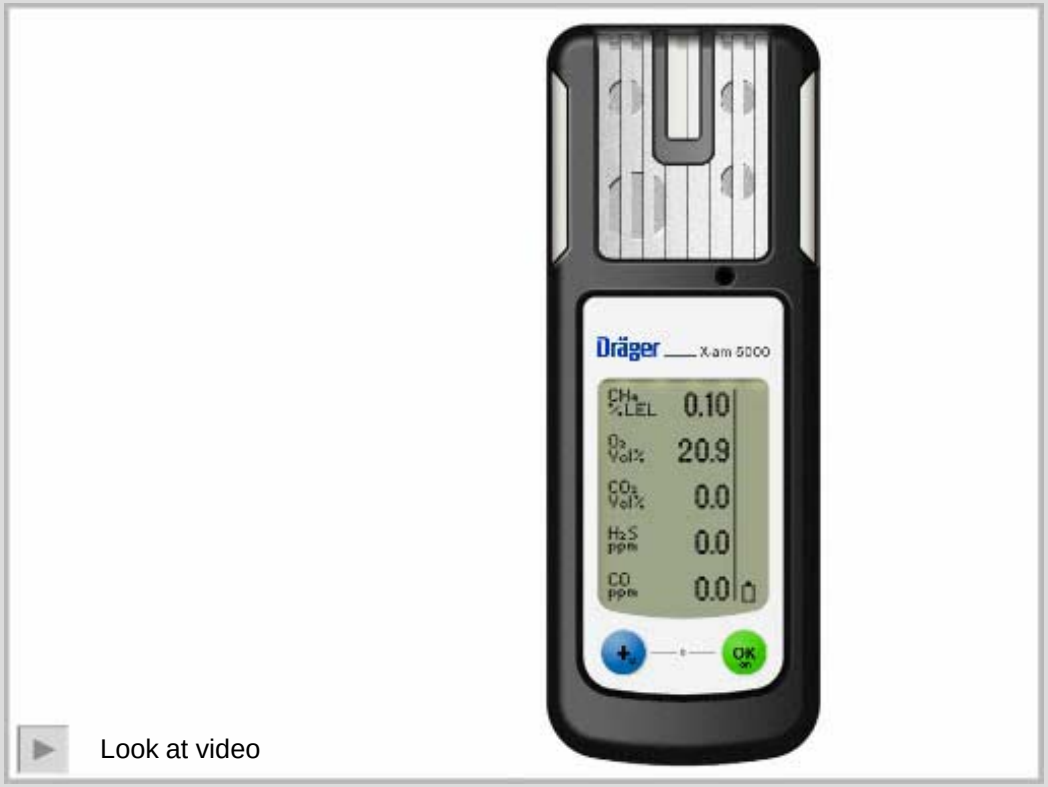
A2 Low Battery Alarm

A2 LOW BATTERY ALARM

- Audible-, visual- and vibrating alarms repeating periodically
- Icon flashes
- The instrument will automatically shut down in about 10 seconds
- Instrument switches off
- The alarm can NOT be acknowledged



Look at video

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Error Alarm

ERROR ALARM

- Audible-, visual- and vibrating alarms repeat periodically
- The icon appears in the display
- These alarms may be silenced with the "OK" - key, but the gas display will still indicate a fault

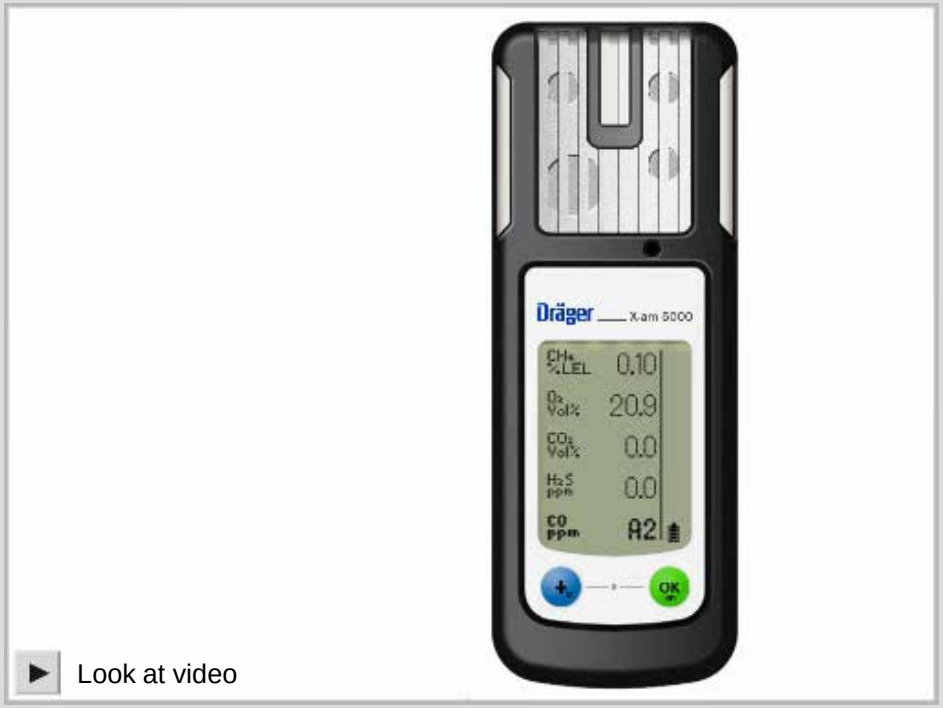
Look at video

An error is an indication that something needs to be looked at in the instrument immediately. The instrument should be removed from service and the error corrected before further use

Over Range

OVER RANGE

- Audible-, visual- and vibrating alarms repeat periodically
- ⌐⌐ and A1 appear alternately
- The alarm can NOT be acknowledged



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If the measuring range is exceeded, the following display is shown instead of measured value display. Follow the prescribed safety procedures.

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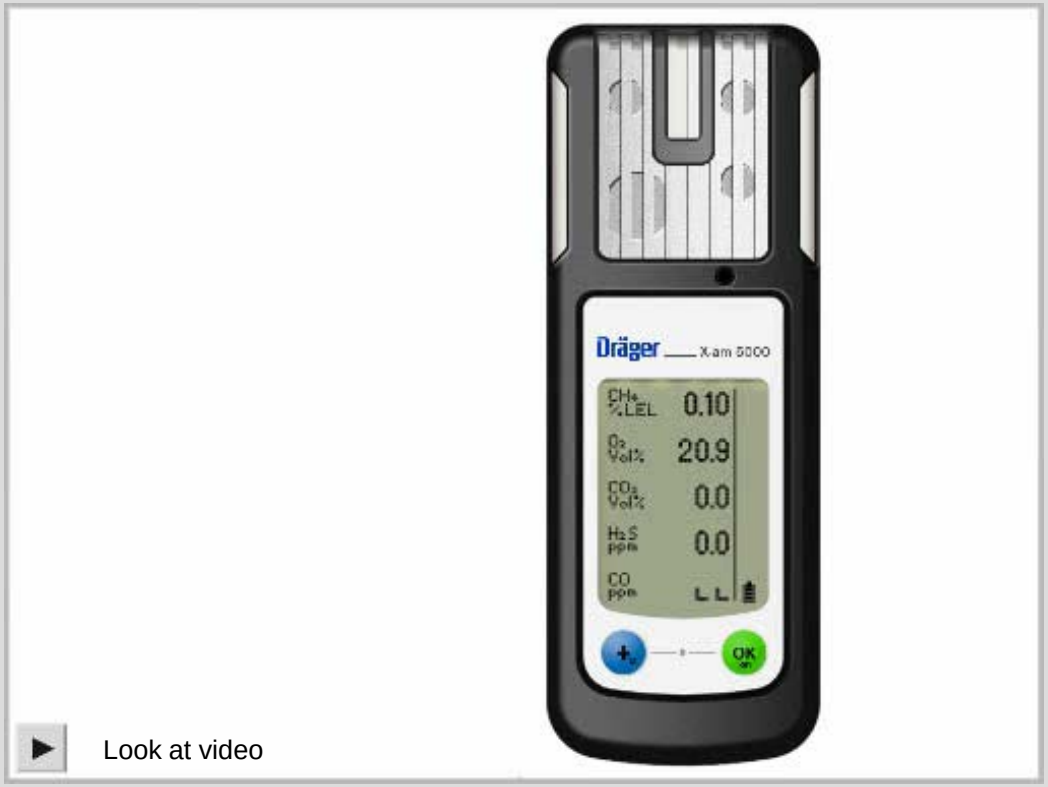
Under Range

UNDER RANGE

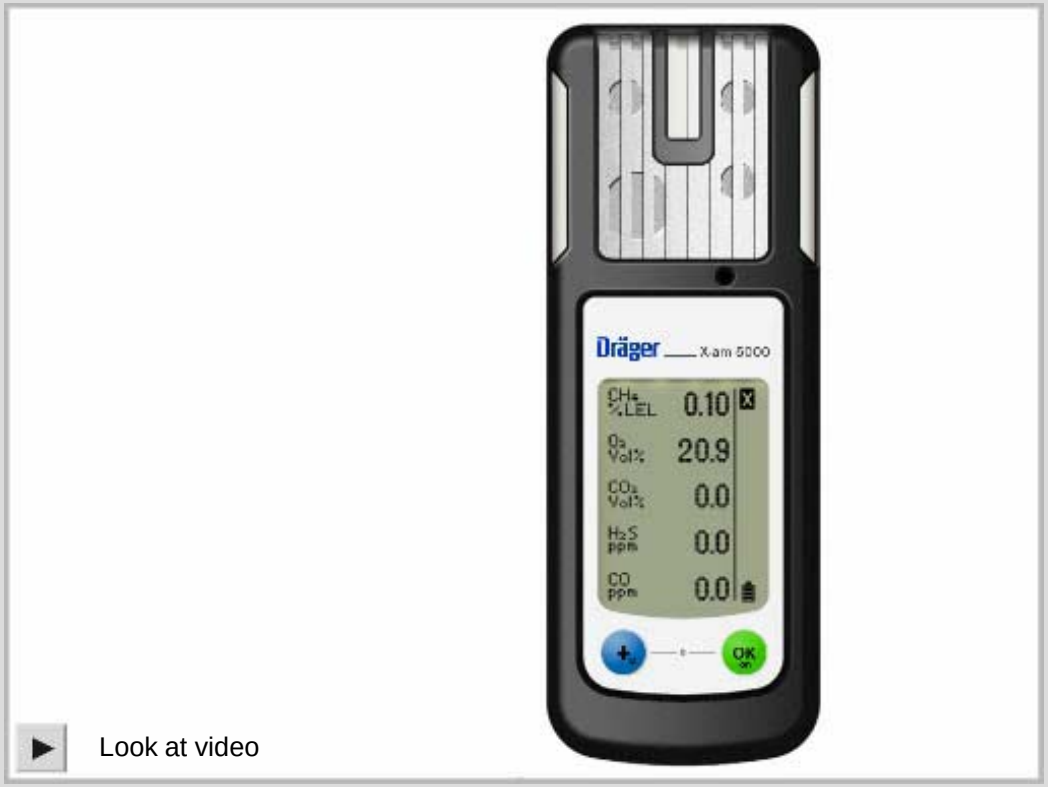
- Audible-, visual- and vibrating alarms repeat periodically
- LL is shown
- The alarm can NOT be acknowledged



The measured concentration has drifted into the negative range. This can e.g. happen, when the fresh air calibration was done in an area where a concentration of gas was present. Please fresh air calibrate the instrument in a clean environmental.

ERROR DISPLAY

- Press the “OK ”-key to acknowledge
- Press the “OK ”-key again
  An Error code is shown
  (Use the instructions to determine what the error code means.)
- Press the “OK ”-key again.
  More error code could be shown.
- Or press “+M”-key to return to measurement



Look at video

NOTICE

NOTICE

- Press the “OK ”-key
- A Notice Code is shown

  (Use the instructions to determine what the notice code means.)

- Press the “OK ”-key again.

  More notice codes could be shown

- Or press “+M”-key to return to measurement

Look at video

Operation Pump for X-am 1/2/5000

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STARTING THE PUMP FOR DRÄGER X-AM 1/2/5000

- Switch on the gas measuring device and insert it into the pump. It clicks into place.
- LEDs will light shortly green / red, a tone will sound
- The pump is automatically switched on and triggers the Flow-Test

- Flow LED flashes yellow, tone sounds
- Block the intake port for 2 seconds (by bending the hose)
- Flow LED flashes red, continuous tone will Sound
- Unblock the intake port
- Flow LED lights green
- The instrument is operational

the flow LED flashes red, accompanied by a continuous tone.

OPERATION OF THE PUMP FOR DRÄGER X-AM 1/2/5000

- Performing the measurement:
  - Connect the Dräger sampling hoses or the Dräger probes to the hose connection of the pump
  - Perform the measurement
- Ending operation:
  - Press the release key
  - LEDs flash shortly green / red, short signal tone
  - The pump is switched off automatically

Attention!

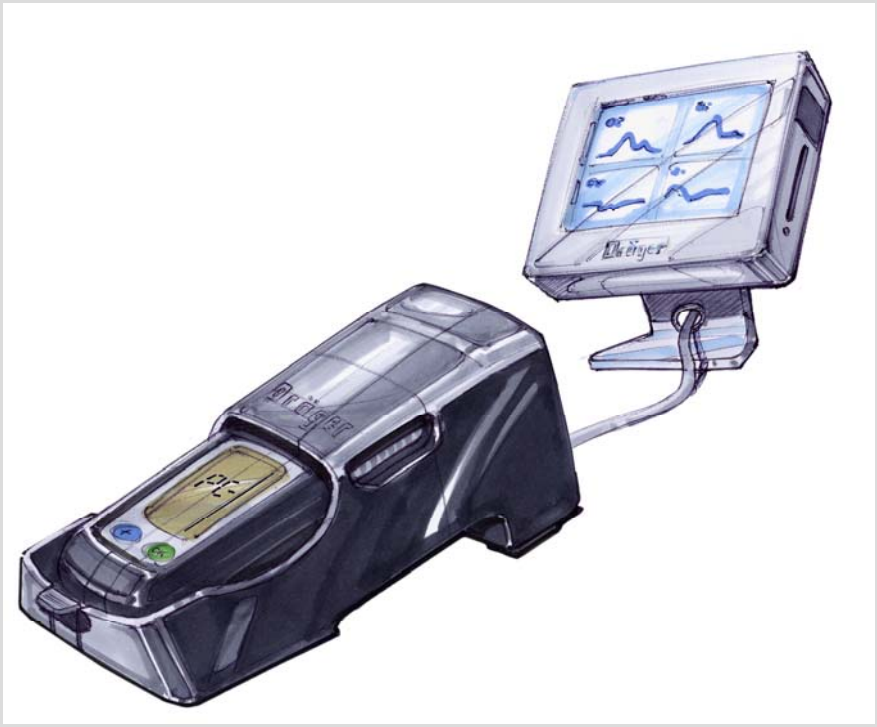
Before every measurement, flush the Dräger sampling hose or the probes with the air sample to be measured.

Rule of thumb: When using a new sampling hose, a typical flushing time of approx. 3 seconds is required for each meter. The sensor response time should be added.

Function test and Maintenance

DATA READ OUT

- In the display, “PC” appears when the instrument is connected via IR interface to a personal computer



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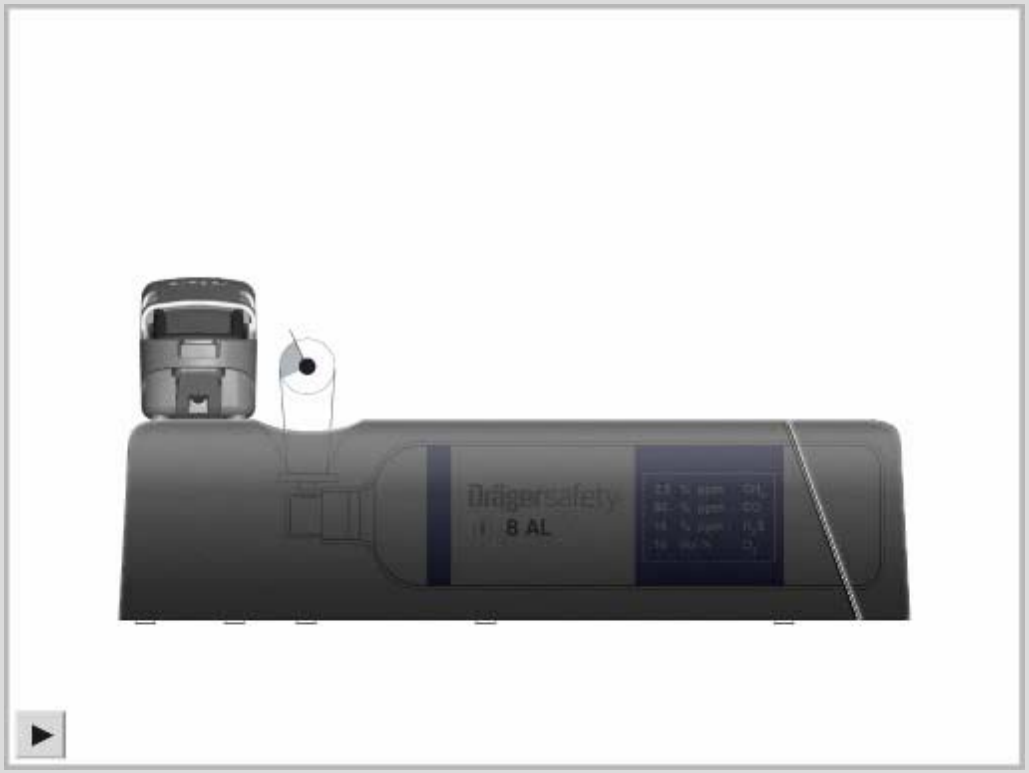
Function Test

- **A „Bump Test“ is a function test. Before using the instrument, it is important to check following:**
- Gas channels are not blocked (e.g. with dirty membranes)
- The sensors are calibrated correctly
- The correct alarms are shown
- The alarm levels have been adjusted correctly

AUTOMATIC BUMP TEST

- Slide the instrument into the bump test cradle
- The Bump Test Station automatically recognizes the instrument
- Gas is supplied to the sensors
- The values increase
- Audible and visible A1/A2 alarms are shown
- Is the Bump test is correct, “ appears in the display
- The bump test is completed
- If the bump test is not correct,
- A channel error is shown for the specific sensor
- The instrument should be calibrated or contact your local service.



MANUAL BUMP TEST

- Slide the instrument into the calibration cradle
- Press “+M”-key three times
- Manually supply the gas
- The values increase
- Audible and visual A1/A2 alarm are shown
- Press the “OK ”-key
- The bump test is completed
- Or a channel error is shown for the specific sensor
- The instrument needs to be calibrated or contact your local service

CHARGING THE BATTERY PACK

- Slide the instrument into the charging module
- Connect the charging module with a single- or multi-charger
- The instrument is charging
- Red LED blinks -> instrument is charging
- Red LED lights stay on -> instrument is fully charged
- 4 hours are needed for a complete charge

Do not charge underground or in areas, where explosions can occur! There is a danger of explosion! The chargers are not designed in accordance with the regulations for fire and explosion protection..

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Battery Case

POWER SUPPLY

- Loosen the screw with the help of a Allen key
- Remove the battery case
- Insert the 2 alkaline- or NiMh batteries
- Pay attention to the polarity of the batteries
- Install the battery case and tighten the screw

Do not charge the battery in explosion hazard areas. Alkaline-Batteries are part of the Ex-approval. Only the following types should be used:
Energizer No. E91
Energizer No. EN91 (Industrial)
Varta Type 4106 (power one)
GP 180AAHC (rechargeable NiMH batteries)
The use of alkaline batteries other than those described above invalidates the intrinsic safety approval for the instrument and could result in unsafe operation.

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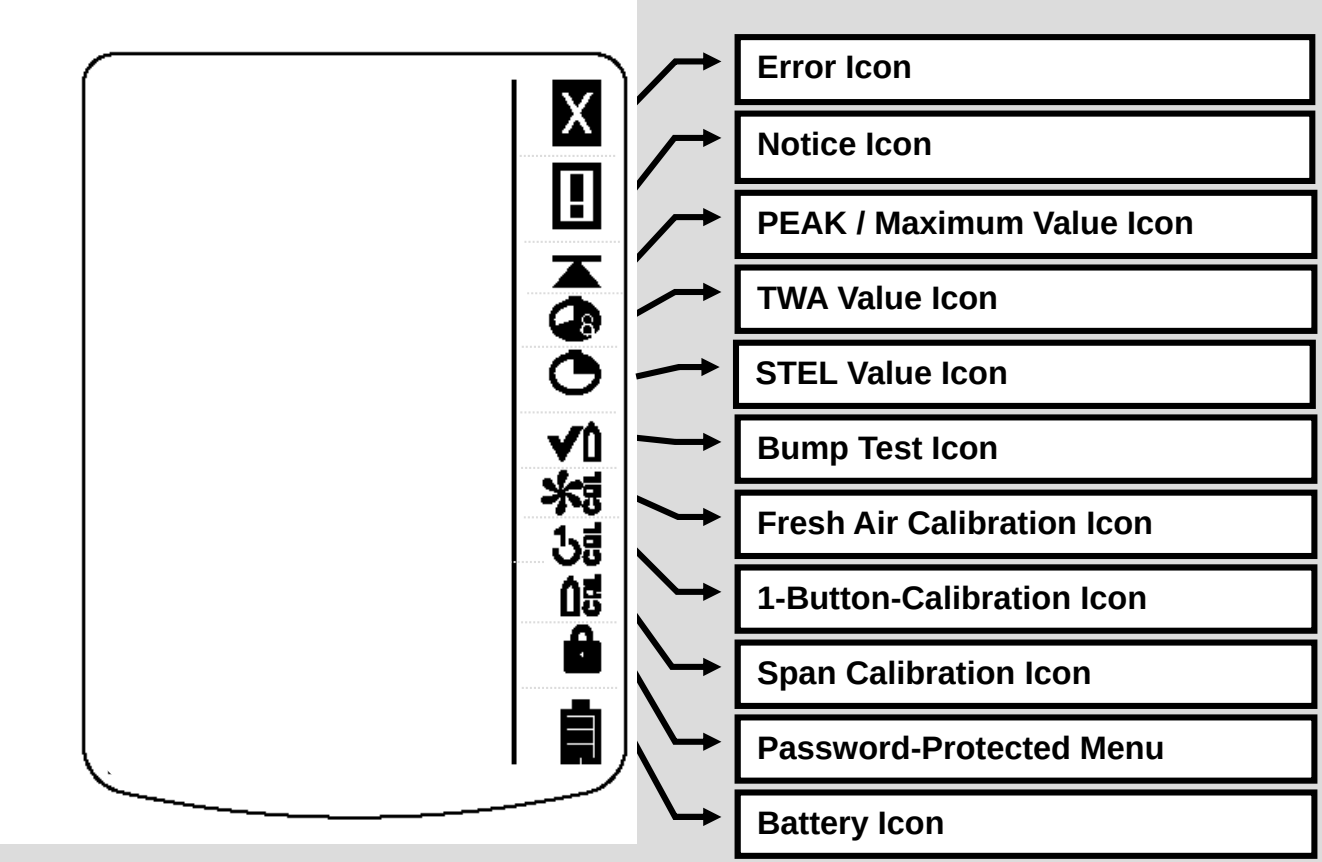
Overview of the icons

- **Special symbols provide a quick message about the instrument status**



THANK YOU FOR YOUR ATTENTION!