

# INSTRUCTION MANUAL



## Portable Oxygen Detector DEGA PBO-EL II



**ISO 9001:2008**  
Quality Management Systems  
Système de Qualité  
www.sgs.com

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DEGA CZ s.r.o. reserves the right to alter the specifications of the hardware and software described in this manual at any time and without prior notice.

DEGA CZ s.r.o. bears no liability for any damage resulting from the use of this device!

### ▼ FOR YOUR PROTECTION



#### **In the event of an equipment failure immediately disconnect the item from the power supply (i.e. remove the battery)**

If you notice any unusual odour or smoke emanating from the product, remove the battery and allow the product checked at an authorised service centre or by the manufacturer.



#### **Do not use the device near flammable gases or in areas where there is the potential presence of such gases**

Do not use electronic equipment in the presence of a flammable gas; this could cause a fire or an explosion. The product is not designed for use in industrial or commercial spaces nor in „Ex“ hazardous areas. For applications of this nature, we recommend the use of DEGA M-Sx-yl II or P-Sx Multi II



#### **Do not disassemble the product and ensure against its contact with water**

Contact with internal components of the product may cause an electric shock. In the case of any failure refer the servicing of the product exclusively to a certified service centre. Contact with water can create a short circuit in the product and consequent damage to property or personal injury.

## ▼ TECHNICAL DATA AND INFORMATION

<b>Supply voltage:</b>	3 x AA batteries (1,5 V) preferably alkaline
<b>Battery life:</b>	about 100 hours with the backlight switched off
<b>Type of sensor:</b>	electrochemical

**Expected operational life of the sensor in a clean environment:**

2 years (after that it is possible to replace the sensor)

**Operating temperature range:**

max +10°C to +40°C

**Relative humidity of the ambient air:**

0 to 90%

**The range of measurable values:** 0-25%

**Resolution:** 0,1%

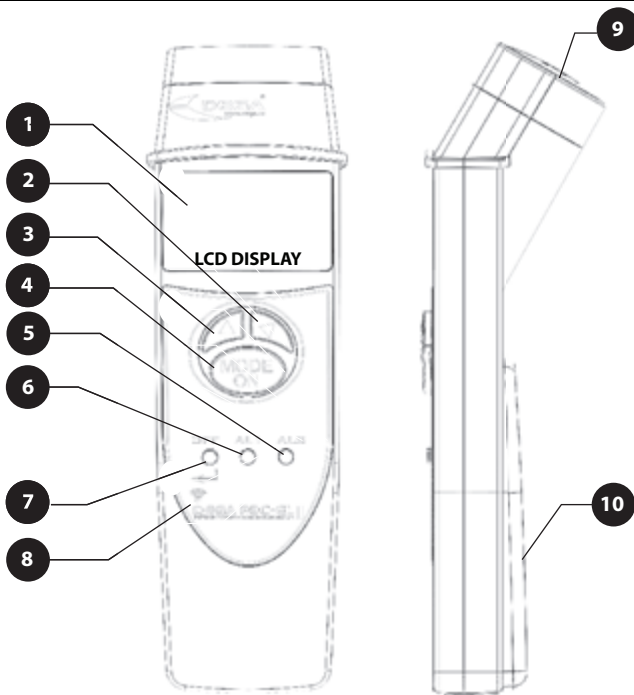
**Measurement error:** ± 0,5%

**Type of signalling:** Acoustooptical

**Dimensions:** 172 x 51 x 26mm

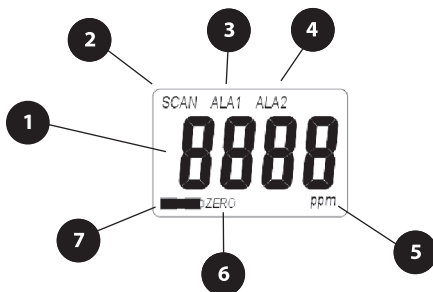
## ▼ DESCRIPTION OF THE PRODUCT

- 1 - Display
- 2 - Button for adjustment of the value
- 3 - Button for moving the cursor
- 4 - Holding the „MODE ON“ button for 2 seconds switches on the device.
- 5 - Level 2 alarm (red LED)
- 6 - Level 1 alarm (yellow LED)
- 7 - Holding the „MODE OFF“ button for 2 seconds switches off the device.
- 8 - Piezo-buzzer
- 9 - Sensor
- 10 - Cover of the battery compartment



### LCD DISPLAY

- 1 - The numerical value of the gas concentration
- 2 - The measurement mode
- 3 - Signal level 1
- 4 - Signal level 2
- 5 - Units
- 6 - Zero point calibration
- 7 - Battery charge status



## ▼ DIRECTIONS FOR USE

### CONNECTING THE BATTERY

Pull on the back cover to remove it and insert 3 x 1.5 V AAA alkaline batteries. Pay attention that their polarity is correct.

### SWITCHING THE DEVICE ON AND OFF

With charged batteries switch the device on by pressing and holding the „MODE ON“ button for 2 seconds. After it is switched on the device it will be in the measurement mode and the display will show „SCAN“. Switch the device off by pressing and holding the „MODE OFF“ button for 2 seconds.

### TURNING THE DISPLAY BACKLIGHT ON AND OFF

In the measurement mode (the display will show „SCAN“) press the „MODE OFF“ button and the backlight will turn on or off.

### SETTING THE DETECTION LIMIT (THE VALUES OF THE DETECTION LEVELS)



The default setting for alarm limit at signal level 1 is 19.5 % vol.; for signal level 2 18 % vol.

**Note:** In case of the requirement for setting different limits contact your dealer or authorised service centre, or the manufacturer to set these other limits (calibration of the device will be carried out at the same time).

### ALARM ACTIVATION

The alarm will sound when the value measured exceeds the preset alarm limit. When the alarm limits of level 1 are exceeded the acoustic alarm will switch on (at signal level 1) and the yellow indicator will start flashing. When the alarm limits of level 2 are exceeded the acoustic alarm will switch on (at signal level 2) and the red light will start flashing.

## ▼ CAUTION

1. This detector is a sensitive measuring instrument. Avoid damaging it and keep it away from water and hot objects (with a temperature of above 60°C).
2. In the event of long periods of measurement turn off the backlight; thereby you will reduce the energy consumption of the appliance and prolong its battery life.
3. If the display is showing the  symbol the battery is fully charged. During gradual discharging the dark coloured boxes on the display decrease. The  symbol indicates that the battery status of your device is too low for it to function normally. In this case the battery should be replaced as soon as possible. Turn off the unit and then remove the old batteries and insert new ones.
4. If no button has been pressed while the detector has been in the setting mode for 10 minutes it turns off automatically.
5. The activation of the acoustic alarm indicates that the concentration of carbon monoxide has exceeded the alarm limit. Take all requisite steps to protect lives and property.
6. If the unit is not going to be in use for an extended period, turn it off and remove its batteries (to avoid the leakage of electrolyte and damage to the detector). Removing the battery from the device while it is switched on leads to the loss of the limit setting for signal levels 1 and 2. When you switch the device on again the default values for the alarm limits will be re-established. In order to retain the settings for the user's alarm limit values, the device must be properly switched off prior to removing the batteries.
7. A large difference between the concentration of oxygen measured in the fresh air and value of 21% points to the necessity for recalibration.

## ▼ BASIC INFORMATION ON OXYGEN

Concentration	Explanation / effects
21 %	Normal concentration of oxygen in the air
18 %	The minimum concentration of oxygen consistent with standards for the protection of occupational health and safety
14 % - 18 %	Rapid and deeper breathing, reduced control over the movement of limbs
10 % - 14 %	Possibility of experiencing fatigue and the loss of attention
6 % - 10 %	Possibility of experiencing dizziness, nausea; loss of consciousness or coma
Less than 6%	Possible respiratory arrest, even death

## ▼ TESTING THE DETECTOR

1. For testing purposes, use only the calibration gases. Never test the detector using cigarette smoke.
2. If the detector shows a different value of concentration than that of the calibration compound, re-calibrate the detector.

**CAUTION:** IF THE ALARM SOUNDS AND YOU ARE NOT PERFORMING THE TEST THIS REPRESENTS A REAL ALARM!! THIS ALARM REQUIRES YOUR IMMEDIATE ATTENTION AND ACTION.

Compounds that may affect or damage the sensor and cause erroneous measurements include: methane, propane, isobutane, isopropanol, ethyl acetate, alcohols, lacquers, paints, thinners, solvents, glues, hair spray, aftershave, perfume, and certain cleaning materials. Avoid the contact of the detector with any of these substances.

## ▼ MAINTENANCE

In the case of serious contamination disconnect the detector from the battery and clean the surface of the detector with a damp cloth. **To maintain the proper functioning of the detector it is also necessary to calibrate the instrument: to carry out calibration at least once a year** (i.e. setting the detection limits, checking the responsiveness of the sensor, checking the functionality of the detector). The exact time interval depends on the purity of the environment, the level of accuracy required and the occurrence of selective gases in the environment.

**Note:** In the event of frequent use we recommend carrying out calibration at least once every six months.

Calibrate the device at an authorised service centre holding a valid certificate from the manufacturer or at the manufacturer's premises!

## ▼ GENERAL WARRANTY TERMS AND CONDITIONS

**When following the instructions for installation, operation and maintenance, the manufacturer guarantee 24 months from the date of receipt for the product.** Should the product purchased be put into operation by an entity other than the seller, the warranty period commences from the date that the product is put into operation, provided that the buyer ordered its commissioning within three weeks of its receipt. The customer expressly acknowledges that during the warranty period that extends beyond the length of the warranty period that is specified in the Commercial Code (the statutory warranty) s/he can neither require replacement of the product nor may s/he withdraw from the contract.

1. Claims concerning the product (for a warranty repair only complete devices are accepted) may be filed during the warranty period only with the seller from which it was purchased; subsequently the seller is required to forward the product to an authorised service centre or to the manufacturer.
2. **This warranty is not applicable to:**
  - damage caused by fire, water, static electricity, power surges in the electric supply or in the public network, accident, improper use of the product, wear and tear
  - contamination of the product and its subsequent cleaning,
  - damage caused by **improper installation, any adjustment, modification** or improper manner of use inconsistent with the instruction manual, the technical standards or the applicable safety regulations in the Czech Republic,
  - damage to the product during transportation caused by improper handling or handling of the product in a manner contrary to the advice provided in the instruction manual,
  - Detector (calibration) settings
  - DEGA products that have **been used in association with other than original DEGA products**, including consumables and accessories,
  - bearing additional parts or consumables (e.g. a foil label, seal, etc.), that are detrimental to normal wear and tear during operation, together with wear and tear of the product and its parts caused by their normal use.
5. Claims regarding a product defect that can be dealt with reasonably quickly and without additional consequences will be resolved by remedying the defect (repair) or by replacement of the product part, because in such a case it is a contradiction of the standard norms that the entire product shall be replaced (§ 616, paragraph 4 of the Commercial Code).
6. The buyer who exercises the right of warranty repair is not entitled to the return of the parts that have been replaced.
8. For the complete version of the general business conditions and of the claims procedure go to [www.dega.cz](http://www.dega.cz)

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