

## Calibration procedure for LAMBDA OXYMETER (O<sub>2</sub>-Meter)

The O<sub>2</sub> concentration can be calibrated on the LAMBDA OXYMETER (O<sub>2</sub>-Meter). The calibration is a two-point calibration consisting of zero-setting and sensitivity setting:

### Zero setting

Connect a source of nitrogen (N<sub>2</sub>) gas to the OXYMETER input barb. The gas flow rate should be around 200 ml/min. Unplug the power supply and continuously press the **Λ** **button located below the lowest order digit** of the display and reconnect the power supply. The display shows “**NUL**” and a value, which is gradually stabilizing and approaching zero. When the reading is stable, press button **P [mbar]**. The value of the display is saved, the display shows “**0.00**” and the OXYMETER is switched to operation mode. The saved value is subtracted from the value measured by the sensor, thus correcting the zero setting. This correction applies to both parameters, the concentration O<sub>2</sub> [%] and the partial pressure O<sub>2</sub> [mbar].

If you do not want to save this new zero setting, disconnect the power supply and reconnect it again (without pressing any button). The zero value is now corrected by the setting that was previously stored in the memory.

If you want to disable the zero setting, unplug the power supply and continuously press the **Λ** button located below the lowest order digit of the display and reconnect the power supply. End the calibration mode by pressing simultaneously the buttons **T [°C]** and **O<sub>2</sub> [mbar]**. By doing this the value zero is saved in the memory and the actual sensor value is displayed in operation mode.

### Sensitivity setting

Connect a source of air to the OXYMETER input barb. The gas flow rate should be around 200 ml/min. Press the **O<sub>2</sub> [%]** button. The display will stabilize with the actual value of oxygen concentration. After the actual value of oxygen concentration has stabilized the correction factor can be calculated as the ratio between the real oxygen concentration (e.g. 21.0 %) and the actual measured oxygen concentration.

Unplug the power supply and continuously press the **Λ** **button located below the highest order digit** of the display and reconnect the power supply. The display shows “**SLP**” and then the value of the correction factor. Use the **Λ** buttons under the display to set the desired value of the correction factor and press button **P [mbar]**. The correction factor is saved, the display shows the actual O<sub>2</sub> concentration and the OXYMETER is switched to operation mode.

## Calibration procedure for LAMBDA CARBOMETER (CO<sub>2</sub>-Meter)

The CO<sub>2</sub> concentration can be calibrated on the LAMBDA CARBOMETER (CO<sub>2</sub>-Meter). The calibration is a two-point calibration consisting of zero-setting and sensitivity setting:

### Zero setting

On the back side of the LAMBDA CARBOMETER (CO<sub>2</sub>-Meter) there are two buttons labeled **N<sub>2</sub>** and **Air**. These buttons are used for the zero setting of the instrument.

Connect a source of nitrogen (N<sub>2</sub>) gas to the CARBOMETER input barb. The gas flow rate should be around 200 ml/min. The display shows a value, which is gradually stabilizing and approaching zero. After the value on the display stabilizes, press the button in the hole on the rear side labeled **N<sub>2</sub>**. The display shows **"0.00"**.

A simpler but less accurate way is to use an air flow for the zero setting (air flow rate should be around 200 ml/min). In this case, after the value on the display stabilizes, press the button in the hole on the rear side labeled **Air**. The display shows **"0.04"**, which corresponds to the expected concentration of CO<sub>2</sub> in air (400 ppm).

### Sensitivity setting

Connect a source of known concentration of CO<sub>2</sub> to the CARBOMETER input barb. The gas flow rate should be around 200 ml/min. The display will stabilize with the actual value of CO<sub>2</sub> concentration. After the actual value of CO<sub>2</sub> concentration has stabilized the correction factor can be calculated as the ratio between the real CO<sub>2</sub> concentration and the actual measured CO<sub>2</sub> concentration.

Unplug the power supply and continuously press the **^ button located below the highest order digit** of the display and reconnect the power supply. The display shows **"SLP"** and then the value of the correction factor. Use the **^** buttons under the display to set the desired value of the correction factor and press button **↵**. The correction factor is saved, the display shows the actual CO<sub>2</sub> concentration and the CARBOMETER is switched to operation mode.