# Residual oxygen meas. device

for quick and cost-effective measurement of residual oxygen

## GMH 3691 GOG

**Application:**
Essentially there, where delicate products are conserved by low-oxygen atmospheres (protective gas), this instrument is suitable to check the residual oxygen content.

- **packaging industry**
- **food industry**

### Specification: (summary)

**Meas. range:** 0,0 ... 100,0 % $O_2$ ($O_2$-concentration)
**Accuracy:** *(whole system - during carefully calibration and measuring)*
1-point-calibration: ±0.2 %O2 ±1 digit (for concentrations < 10%)
2-point-calibration: ±0.1 %O2 ±1 digit (for concentrations < 10%)
**Oxygen probe:** Oxygen-partial pressure probe, built in external sensor housing
**Response time:** $T_{90}$ < 10 sec., depending on temperature
**Operation life:** warranty for sensor element 12 months (appropriate application and ambient pressure)
**Working pressure:** 0.5 to 2.0 bar abs.
**Over-/under-pressure:** max. 0,25 bar
**Working temperature:** 0 to 50°C (sensor), -20 to 50°C (device)
**Relative humidity:** 0 to +95%RH (non-condensing)
**Storage temperature:** -15 to 60°C (sensor), -20 to 70°C (device)
**Power supply:** 9V battery type IEC 6F22
**Dimensions case:** approx. 394 x 294 x 106 mm
**Weight:** approx. 1400g (cpl. set)

***for additional technical data refer to GMH3691 and accessory sensors p. 31***

**Scope of supply:**
Instrument GMH3691, hand pump with air tube, GOG oxygen sensor with penetration needle, case GKK3500, spare needle ø0,9mm, rubber foam sticker (40 pieces), operating manual.

### Spare elements, accessories:

**GOG-SET** Set without instrument
Scope of supply: GOG oxygen sensor with penetration needle, hand pump with air tube, case GKK3500, spare needle and 40 rubber foam sticker

**GOEL 370** spare sensor element

**GOG-N** needle, Ø 0.9 mm (5 pieces)

**GOG-A** rubber foam sticker (40 pieces)

**ST-R1** device protection bag with cut-out for probe connection

**for add. accessories p.r.t. page 42/43**

# Air oxygen measuring device


- Double display for oxygen and temperature
- Measured units: $O_2$-concentration and $O_2$-partial pressure
- Alarm detector with integrated horn
- Automatic temperature compensation
- Min./Max. value memory, Hold function
- Serial interface, device can be connected to bus system (up to 5 devices can be connected to one PC interface)
- Battery and d.c. operation
- Wide range of application
- Most simple calibration in atmospheric air

## GMH 3691 Sensor not included - please order separately!

### Specification:

**Measuring ranges:**
**Oxygen concentration:** 0,0 ... 100,0 % $O_2$ (gaseous)
**Partial oxygen pressure:** 0 ... 1100 hPa $O_2$
**Temperature:** -5,0 ... 50,0 °C
**Accuracy:** (device) (at nominal temperature = 25°C)
**Oxygen concentration:** ±0.1% ±1digit
**Partial oxygen pressure:** ±1 hPa ±1digit
**Temperature:** ±0.1°C ±1digit
**Oxygen electrode:** *for suitable sensores p.r.t. page 31*
**Sensor connection:** 6-pin screened Mini-DIN-socket.
**Display:** two 4 digit LCDs (12.4mm or 7mm high), as well as additional arrows.
**Pushbuttons:** 6 membrane keys for ON/OFF-switch, selection of meas. range, min- and max-value memory, hold-function, calibration etc.
**Working temperature:** 0 to +50°C
**Relative humidity:** 0 to +95%RH (non-condensing)
**Storage temperature:** -20 to +70°C
**Interface:** serial interface, direct connection to RS232 or USB interface of a PC via electrically isolated interface converter GRS3100 or GRS3105 resp. USB3100 (p.r.t. accessories).
**Power supply:** 9V-battery, type IEC 6F22 (included), as well as additional d.c. connector for external 10.5-12V direct voltage supply. (suitable power supply: GNG10/3000)
**Power-Off-function:** 1...120min (can also be deaktivated).
**Power consumption:** approx. 1.5 mA
**Low battery warning:** ⚠ and ' bAt '
**Dimensions:** 142 x 71 x 26 mm (H x W x D) Impact-resistant ABS plastic housing, membrane keyboard, transparent panel. Front side IP65, integrated pop-up clip.
**Weight:** approx. 160 g (cpl. with battery)

**Functions:**
**Min-/Max-value memory:** max. and min. values will be memorized.
**Hold function:** by pressing a button the current meas. value will be memorized.
**Alarm:** integrated limit detector for min. or max. alarm.
**Temperature compensation:** automatic via temperature sensor, integrated in probe housing.
**Air pressure compensation:** The $O_2$ concentration will be compensated according to the abs. atmospheric pressure set (500...2000hPa).

**Calibration:** 1-point calibration: extremely simple quick calibration in atmospheric air. (press button to compensate unit to 20.9%).
2-point calibration: first point at atmospheric air (20.9%), second point freely selectable

**Application:** Wide range of application for your home, job and hobby! For example:
**- Bio chemistry:** Oxygen monitoring in breeding chambers for cell cultures. Monitoring of fermenting process of fruits in fermentation plants etc.
**- Medicine:** Monitoring of oxygen concentration in respirators; checking of breathing, monitoring of oxygen concentration in incubators, oxygen tents etc.
**- Food technology:** Monitoring of residual oxygen in packages (e.g. coffee, tea, etc.). Monitoring of oxygen content during production processes.
**- Safety technology, safety at work:** Oxygen monitoring in mines/pits, underground parking lots, wine cellars, cooling chambers, greenhouses or stores. Oxygen monitoring or alarm in case of danger of suffocation when working in tanks, wells etc.
**- Air conditioning and ventilation technology:** Oxygen measurements, air quality monitoring, measuring of oxygen concentration in enclosed air conditioning systems, etc.
**- Sport:** Checking of oxygen content in compressed air breathing apparatuses (diving, etc.), oxygen monitoring for gliding.

***The device can only be used to check during these applications. -> no substitute for approved monitoring device!***

### Accessories:

**Suitable sensores** **p.r.t. page 31**

**GKK 3000** case (275 x 229 x 83 mm) with punched lining suitable for GMH3xxx

**GRS 3100** interface converter, electrical isolated, for RS232

**GRS 3105** interface converter with 5 connection points, electr. isolated, for the connection of 5 GMH3xxx to one PC (RS232).

**ST-R1** device protection bag with cut-out for probe connection

**for add. accessories p.r.t. pages 41 - 43**