

WATERPROOF HANDHELD MEASURING DEVICE FOR MEASURING DISSOLVED OXYGEN IN WATER



HIGHLIGHTS

- Waterproof and durable (protective silicone case)
- Large double display with background lighting
- New oxygen sensor GWO 5610
- Environmental pressure compensation with integrated barometer

ADDITIONAL HIGHLIGHTS GMH 5650

- Data logger and alarm function
- Analogue output, pressure connection

ADDITIONAL FUNCTIONS GMH 5650:

**GMH 5630**

Art. no. 606880

Handheld instrument for dissolved oxygen without accessories

GMH 5650

Art. no. 606882

Handheld instrument for dissolved oxygen with data logger without accessories

Application:

Oxygen monitoring in aquaculture and aquaria. Testing of well water, sewer systems and in wastewater treatment plants, also suitable for harsh environments. Delivery can take place ready for use (filled) or dry. Electrodes delivered try are long lasting and ready for use within about 1 h after filling.

Specifications:	GMH 5630	GMH 5650
Measuring channels:	O ₂ , T, air pressure (integrated)	O ₂ , T, air pressure (integrated) / measuring depth *1)

Measuring ranges

O₂-concentration:	0.00 ... 70.00 mg/l (ppm) (Variable resolution)
O₂-saturation:	0.0 ... 600.0 % O ₂ (Variable resolution)
O₂-partial pressure:	0 ... 1200 hPa O ₂ (0.0 ... 427.5 mmHg)
Temperature:	0.0 ... 50.0 °C
Air pressure:	10 ... 1200 hPa abs 300 ... 5000 hPa abs
Measuring depth:	- 0 ... 40.0 m water column *1)

Accuracy

Oxygen:	±1.5 % of m.v. ±0.2 mg/l (0 ... 25 mg/l) or ±2.5 % of m.v. ±0.3 mg/l (25 ... 70 mg/l)
Temperature:	0.0 ... 50.0 °C
Air pressure:	10 ... 1200 hPa abs 300 ... 5000 hPa abs

Sensor: GWO 5610, active diaphragm type with platinum cathode, Ø 12 mm, standard cable length 2 m, 7 pin bayonet connection

Response time:	90 % in 10 s
Service life:	approx. 3 years, depending on usage and care

Display:	4 ½ digit, 7-segment, illuminated (white)
Working temperature:	Device: -25 ... +50 °C Sensor: 0 ... 40 °C
Sensor operating pressure:	max. 3 bar corresponds to max. 30 m water depth
Inward flow:	min. 20 cm/s
Power supply:	2 x AAA-battery, power consumption: 0.9 mA
Battery life:	approx. 1000 h (without lighting)
Protection rating:	IP65 / IP67
Housing:	Impact-resistant ABS, with stand/hanging bracket
Dimensions:	160 x 86 x 37 mm (H x W x D) including protective silicone case
Weight:	approx. 250 g, including battery and protective case
Scope of supply:	Device incl. batteries (2 x AAA), protective silicone case, calibration protocol, manual, quick guide

Additional Functions:**Salinity correction:** 0.0 ... 70.0**Pabs / height correction:** Automatic with integrated sensor**Measuring depth (GMH 5650 only):** Hydrostatic depth measurement *1)**Output / external supply:** OUT jack: 38400 baud interface, 5 V external supply**Additional with GMH 5650:** Analogue output 0 ... 1 V, adjustable**Calibration:** 1 point air, easy calibration to air at the push of a button**Additional with GMH 5650:** 1 point water, 2 point or 3 point (air and zero point and 100 % O₂)**GLP:** Calibration interval**Additional with GMH 5650:** Calibration history**Data logger (only GMH 5650):** Cyclical: 10,000, Single: 1000, single value logger with measuring point input**Alarm (only GMH 5650):** 2 alarm channels (O₂ and temperature) with separate alarm thresholds alarm notification horn / visual / interface

*1) A simple hydrostatic depth measurement can be made with special accessories. For instance, oxygen profiles in waste water can be recorded very conveniently together with the logger function.

GMH 5630-L02

Art. no. 607470

Handheld instrument for dissolved oxygen including sensor GWO 5610, 2 m cable

GMH 5650-L02

Art. no. 607474

Handheld instrument for dissolved oxygen with data logger including sensor GWO 5610, 2 m cable

Varianten:**GMH 5630-L04**

Art. no. 606881

Handheld instrument for dissolved oxygen with sensor with 4 m cable length

GMH 5630-L10

Art. no. 607471

Handheld instrument for dissolved oxygen with sensor with 10 m cable length

GMH 5630-L30

Art. no. 607472

Handheld instrument for dissolved oxygen with sensor with 30 m cable length

GMH 5650-L04

Art. no. 606883

Handheld instrument for dissolved oxygen with data logger with sensor with 4 m cable length

GMH 5650-L10

Art. no. 607478

Handheld instrument for dissolved oxygen with data logger with sensor with 10 m cable length

GMH 5650-L30

Art. no. 607479

Handheld instrument for dissolved oxygen with data logger with sensor with 30 m cable length

Accessories and spare parts:**GKK 5001**

Art. no. 611606

with cut-outs for 1 device of the GMH 5xxx-/7500 series and accessories for water analysis (395 x 295 x 106 mm), p.r.t page 112

DISSOLVED OXYGEN SENSOR



HIGHLIGHTS:

- Significantly lower inward flow required than with the predecessor model
- Dry storage possible for long-term storage needs
- Compact 12 mm diameter retained!

GWO 5610-L02

Art. no. 607386

replacement sensor for dissolved oxygen, GMH 56 & GMH 75, Sensor with 2 m cable

General:

Standard, for laboratory use, electrode is delivered filled, dry delivery available on request

Accessories and spare parts:

GWO 5610-L04

Art. no. 607764

replacement sensor for dissolved oxygen, GMH 56 & GMH 75 with 4 m cable (field use)

GWO 5610-L10

Art. no. 607765

replacement sensor for dissolved oxygen, GMH 56 & GMH 75 with 10 m cable (field use)

GWO 5610-L30

Art. no. 607766

replacement sensor for dissolved oxygen, GMH 56 & GMH 75 with 30 m cable (field use)

GSKA 3600

Art. no. 601414

Protection hat for depth measuring for sensors Ø 12 mm, PVC

GSKA 3610

Art. no. 607267

Protection hat for depth measuring for sensors Ø 12 mm, red brass



GWOK 02

Art. no. 608012

Spare membrane head for GWO 5610

GAS 5610

Art. no. 608032

Working set, includes 3 GWOK 5610, 1 KOH100, 1 Pipette

KOH 100

Art. no. 603356

spare electrolyte KOH 100 ml

GCAL 3610

Art. no. 611371

Calibration vessel for dissolved oxygen sensors with Ø 12 mm



GKK 5001

Art. no. 611606

with cut-outs for 1 device of the GMH 5xxx-/7500 series and accessories for water analysis (395 x 295 x 106 mm), p.r.t page 112

MEASUREMENT SET FOR DISSOLVED OXYGEN



GMH 5630-SET

Art. no. 611613

Measurement set

Device, GWO5610-L02, GWOK 02, KOH 100, GSKA 3610, GKK 5001

GMH 5650-SET

Art. no. 611255

Measurement set

Device, GWO5610-L02, GWOK 02, KOH 100, GSKA 3610, Software, USB 5100, GKK 5001

General:

With our ready-to-use measurement set for dissolved oxygen, you have everything you need for your work in a practical case and with the set price, you save 13 % in comparison with the prices for the individual components

Application:

No matter which sector you work in, our comprehensive set never lets you down and stows away in the tidy practical case

Specifications:

Measuring channels: O₂, T, air pressure (integrated) / measuring depth

Measuring range:

O₂-concentration: 0.00 ... 70.00 mg/l (ppm) (Variable resolution)

O₂-saturation: 0.0 ... 600.0 % O₂ (Variable resolution)

O₂-partial pressure: 0 ... 1200 hPa O₂ (0.0 ... 427.5 mmHg)

Temperature: 0.0 ... 50.0 °C

Air pressure: 300 ... 5000 hPa abs

Measuring depth: 0 ... 40.0 m water column

Dimensions: 450 x 360 x 123 mm (case)

Weight: approx. 1900 g

Scope of supply: Device incl. protective silicone case, sensor, protective cap, 2 pipettes, spare membrane cap, spare electrolyte, case, battery, calibration protocol, manuals
SET-GMH 5650 only: Software, interface converter

Accessories and spare parts:

GMH 5630

Art. no. 606880

Handheld instrument for dissolved oxygen without accessories

GMH 5650

Art. no. 606882

Handheld instrument for dissolved oxygen with data logger without accessories

GWO 5610-L02

Art. no. 607386

replacement sensor for dissolved oxygen, GMH 56 & GMH 75 with 2 m cable

GSKA 3610

Art. no. 607267

Protection hat for depth measuring for sensors Ø 12 mm, red brass

GSOFT 3050

Art. no. 601336

Windows software for GMH 3000 and GMH 5000 with logger, p.r.t. page 110

USB 5100

Art. no. 601095

Interface converter GMH 5xxx <=>PC, Galvanic isolation

GWOK 02

Art. no. 608012

Spare membrane head for GWO 5610

KOH 100

Art. no. 603356

spare electrolyte KOH 100 ml

GKK 5001

Art. no. 611606

with cut-outs for 1 device of the GMH 5xxx-/7500 series and accessories for water analysis (395 x 295 x 106 mm), p.r.t page 112

PRECISE DISSOLVED OXYGEN MEASURING DEVICES (DO)



DURABLE AND AFFORDABLE



HIGHLIGHTS:

- Modern and functional housing
- 3-line display / overhead display at the push of a button
- Backlighting
- Waterproof (IP65 / IP67)
- Durable, long battery life
- Including galvanic oxygen sensor
- Easy calibration to air at the push of a button

SUCCESSOR TO THE GOX 20

IT IS STILL AVAILABLE ON REQUEST - CONTACT US IMMEDIATELY!



GSKA 3600 mounted on the sensor

G 1610

Art. no. 610003

Waterproof handheld for dissolved oxygen incl. sensor, 2 m cable

G 1610-4

Art. no. 408380

Waterproof handheld for dissolved oxygen incl. sensor, 4 m cable

General:

The primary focus in the development of the new GMH 1000 series was placed on the essential functions of the measurement technology. Pure measurement with a focus on precision, speed and reliability packaged in a compact housing distinguish an impressive price/performance ratio, Made in Germany.

The new handheld measuring devices also impress with their ergonomic design, dust and water-protected design in accordance with IP 65/67 and the illuminated display. The Oxymeter with maintenance-friendly galvanised sensor is an entry-level device suitable for everyday use. Concentrations in mg/l(ppm) and saturation in percentage can be read directly without using tables.

Calibration with environmental air takes place at the push of a button. Use of a GSKA protective cap is recommended for field use in bodies of water in order to protect the membrane.

Application:

Freshwater and salt water aquariums, aquaculture / fish breeding, monitoring of wells and bodies of water

Specifications:

Measuring range / Resolution: 0.0 ... 20.0 mg/l (or ppm) O₂ concentration
0 ... 200 % O₂ saturation

Accuracy

Oxygen: ±1,5 % of m.v. ±0.2 mg/l or ±1,5 % of m.v. ±2 % O₂ saturation

Temperature: ±0.3 °C

Sensors / measuring inputs: Galvanic sensor (active membrane type), KOH electrolyte 2 m or 4 m cable, permanently connected to the device, with integrated temperature sensor

Response time T₉₅: 10 s at nominal temperature

Operating pressure: max. 3 bar (~30 m water depth)

Sensor range of application: 0 ... 40 °C

Compensation

Temperature: automatic with integrated temperature measurement

Air pressure: Compensation possible with manual input (normally not necessary)

Salinity: with manual entry

Display: 3-line unit with battery status indicator, background light, protected by an unbreakable pane, overhead display at the push of a button

Operation: 4 long-lasting, easy-to-operate buttons

Additional functions: stability recognition, automatic adjustment to environmental air

Display unit environment: -20 ... +50 °C, 0 ... 95 % RH

Power supply: 2 x AA battery, battery life >3000 h

Protection rating: IP65 / IP67

Housing: Break-proof ABS housing

Dimensions: 108 x 54 x 28 mm (H x W x D) without sensor

Weight: approx. 240 g (device incl. sensor)

Scope of supply: Device, sensor, GWOK 02 spare membrane cap and KOH 100 spare electrolyte, 2 x battery, manual

Accessories and spare parts:**GWOK 02**

Art. no. 608012

Spare membrane head for GWO 5610

KOH 100

Art. no. 603356

spare electrolyte KOH 100 ml

GSKA 3600

Art. no. 601414

Protection hat for depth measuring for sensors Ø 12 mm, PVC

GSKA 3610

Art. no. 607267

Protection hat for depth measuring for sensors Ø 12 mm, red brass

GCAL 3610

Art. no. 611371

Calibration vessel for dissolved oxygen sensors with Ø 12 mm

ST-G1000

Art. no. 611373

Device protection bag with 1 round cut-out

GB AA

Art.-Nr: 610049

Spare battery Mignon (AA) 1,5 V (2 batteries required)

GKK 1002

Art. no. 411907

Case G1000 series water analysis small

GKK 1003

Art. no. 411917

Case for 2x G1000 series water analysis and 2x PHLx 450 x 360 x 106 mm (W x H x D)

**G 1610-1002**

Art. no. 474287

Waterproof handheld for dissolved oxygen incl. sensor

Device with fix mounted sensor 4 m: GWO5610-L02 and case GKK 1002

OXYGEN MEASURING DEVICES FOR DISSOLVED OXYGEN IN LIQUIDS



HIGHLIGHTS:

- Automatic air pressure compensation
- Salinity correction
- Simple calibration in atmospheric air

MEAS. UNITS: O₂-CONCENTRATION O₂-SATURATION
AND O₂-PARTIAL PRESSURE (GMH3651 ONLY)

ADDITIONAL FUNCTIONS GMH 3651:



GMH 3611

Art. no. 605922

Handheld instrument for dissolved oxygen incl. sensor, sensor with 4 m cable

GMH 3651

Art. no. 605924

Handheld instrument for dissolved oxygen with data logger incl. sensor, sensor with 4 m cable

Specifications:

Measuring range: (device)

O₂-concentration: 0.00 ... 70.00 mg/l (ppm)
(resolution selectable)

O₂-saturation: 0.0 ... 600.0 % O₂
(resolution selectable)

O₂-partial pressure: 3651: 0 ... 1200 hPa O₂
(0.0 ... 427.5 mmHg)

Temperature: 0.0 ... 50.0 °C

Pressure: 3611: 10 ... 1200 hPa abs.
3651: 300 ... 5000 hPa abs. or
0 ... 100.0 m water column*
(with pressure port)

Accuracy: (at nominal temperature = 25 °C)

Oxygen: ±1.5 % of m.v. ±0.2 mg/l
(0 ... 25 mg/l) or
±2.5 % of m.v. ±0.3 mg/l
(25 ... 70 mg/l)

Temperature: ±0.1 °C ±1 digit

Pressure: ±0.5 % FS ±1 digit
±3 hPa or 0.1 % of m.v.
±2 hPa (750 ... 1100 hPa)

Sensor connection: 6-pin screened Mini-DIN-socket

Sensor: Active membrane type.
Electrode-Ø front: approx. 12 mm,
overall length: approx. 220 mm,
anti buckling glanding, neck collar:
Ø approx. 20 mm, 4 m connection
cable with Mini-DIN-plug

Response time: 95 % in 10 s,
depends on temperature

Operation life: approx. 3 years, depends on
maintenance

Working temperature: 0 ... +40 °C

Working pressure: max. 3 bar
Operating pressure sensor GWO
3600 max. 3000 hPa rel. or 4000
hPa pay attention to abs.!

Flow rate: min. 30 cm/s

Display: 2 x 4 digit LCDs (12.4 / 7 mm high)

Interface: serial interface, direct connection
to RS232 or USB interface of a PC
via electrically isolated interface
converter.

Power supply: 9 V-battery as well as additional d.c.
connector for external 10.5 ... 12 V
direct voltage supply. (suitable
power pack: GNG10/3000)

Battery life: approx. 500 h

Housing: impact-resistant ABS, membrane
keyboard, transparent panel, inte-
grated pop-up clip for table top or
suspended use.

Dimensions: 142 x 71 x 26 mm (H x W x D)

Weight: approx. 300 g (incl. battery and
probe)

Scope of supply: Device incl. electrode, GWOK01
and KOH electrolyte, battery,
calibration protocol, manual

Additional functions:

Temperature compensation:
automatic via temperature sensor integrated in electrode.

Air pressure compensation:
automatic via integrated pressure sensor. Display of current
air pressure.

Correction of salinity:
autom. salinity value can be set via keyboard from
0.0 ... 70.0

Calibration:
1-point calibration: extremely simple quick calibration in
atmospheric air.
additional at GMH 3651: 2- and 3-point-calibration

Calibration interval:
The device asks for a recalibration after a selectable time
period (1 - 365 days or inactive).
GMH 3651: additional calibration history

Analog output (GMH 3651 only):
0 ... 1 V, freely adjustable

Alarm (GMH 3651 only):
2 Alarm (O₂ and temperature) with separate alarm limits,
Alarm horn / visual / interface

Data logger (GMH 3651 only):
cyclic: 10.000 data sets, manual: 1.000 data sets
(with measuring point input, 40 adjustable measuring
point texts or measuring point numbers)

Variants:

GMH 3611-L10

Art. no. 606233

Handheld instrument for dissolved oxygen with sensor
with 10 m cable length

GMH 3611-L30

Art. no. 415157

Handheld instrument for dissolved oxygen with sensor
with 30 m cable length

GMH 3651-L10

Art. no. 606105

Handheld instrument for dissolved oxygen with data
logger with sensor with 10 m cable length

GMH 3651-L30

Art. no. 606106

Handheld instrument for dissolved oxygen with data
logger with sensor with 30 m cable length

Accessories and spare parts:

see next page

* There is the possibility for hydrostatic depth measurements
with special accessories (upon request / pressure connection).
This allows in combination with the logger function e.g. com-
fortable recordings of oxygen profiles in waters.

ACCESSORIES

Accessories and spare parts:

GMH 3611-GL

Art. no. 606310

Handheld instrument for dissolved oxygen without accessories

GMH 3651-GL

Art. no. 606312

Handheld instrument for dissolved oxygen with data logger without accessories

GWO 3600-L04

Art. no. 603895

replacement sensor for dissolved oxygen, GMH 36 / OXY 36 with 4 m cable

GWO 3600-L10

Art. no. 603258

replacement sensor for dissolved oxygen, GMH 36 / OXY 36 with 10 m cable

GWO 3600-L30

Art. no. 603259

replacement sensor for dissolved oxygen, GMH 36 / OXY 36 with 30 m cable

GWOK 01

Art. no. 601411

Spare membrane head for GWO 3600

GAS 3600

Art. no. 603497

Working set(3 spare Membrane heads and 100 ml of KOH electrolytes)

GSKA 3600

Art. no. 601414

Protection hat for depth measuring for sensors Ø 12 mm, PVC

GSKA 3610

Art. no. 607267

Protection hat for depth measuring for sensors Ø 12 mm, red brass

KOH 100

Art. no. 603356

spare electrolyte KOH 100 ml

GCAL 3610

Art. no. 611371

Calibration vessel for dissolved oxygen sensors with Ø 12 mm

GKK 3001

Art. no. 611605

Case for GMH 3000 series water analysis / universal with cut-outs for 1 device of the GMH 3xxx series and accessories for water analysis (395 x 295 x 106 mm)

GCAL 3610 on the sensor

OXYGEN MEASURING DEVICE SETS

NEW!

**GMH 3611-SET04**

Art. no. 474202

Handheld instrument for dissolved oxygen
Device, sensor 4 m: GWO 3600-L04, spare GWOK 01, KOH 100, protection GSKA3610, case GKK3001**GMH 3651-SET04**

Art. no. 474203

Handheld instrument for dissolved oxygen with data logger
Device, sensor 4 m: GWO 3600-L04, spare GWOK 01, KOH 100, protection GSKA3610, case GKK3001

Specifications:

Measuring range: (device)

O₂-concentration: 0.00 ... 70.00 mg/l (ppm)
(resolution selectable)**O₂-saturation:** 0.0 ... 600.0 % O₂
(resolution selectable)**O₂-partial pressure:** 3651: 0 ... 1200 hPa O₂
(0.0 ... 427.5 mmHg)**Temperature:** 0.0 ... 50.0 °C**Pressure:** 3611: 10 ... 1200 hPa abs.
3651: 300 ... 5000 hPa abs. or
0 ... 100.0 m water column*
(with pressure port)

Accuracy: (at nominal temperature = 25 °C)

Oxygen: ±1.5 % of m.v. ±0.2 mg/l
(0 ... 25 mg/l) or
±2.5 % of m.v. ±0.3 mg/l
(25 ... 70 mg/l)**Temperature:** ±0.1 °C ±1 digit**Pressure:** ±0.5 % FS ±1 digit
±3 hPa or 0.1 % of m.v.
±2 hPa (750 ... 1100 hPa)

further specifications p.r.t. GMH 3611 and GMH 3651