

PH / ORP / TEMPERATURE MEASURING DEVICES



HIGHLIGHTS:

- ORP mode allows for automatic conversion to hydrogen system electrodes
- temperature compensation
- Automatic buffer detection
- Rating function of electrode's quality
- New: analog output for all variants

ADDITIONAL FUNCTIONS GMH 3551:

**GMH 3511**

Art. no. 604953

pH-/Redox-/Temperature measuring instrument w/o accessories

GMH 3531

Art. no. 602076

pH-/Redox-/Temperature measuring instrument w/o accessories

GMH 3551

Art. no. 602817

pH-/Redox-/Temperature measuring instrument with logger w/o accessories

Specifications:**Measuring ranges****Temperature:** -5.0 ... +150.0 °C or 23.0 ... +302.0 °F**pH:** 0.00 ... 14.00 pH**Redox (ORP):** -1999 ... +2000 mV
Based on hydrogen system:
-1792 ... +2207 mV_H (DIN 38404)**rH:** 0.0 ... 70.0 rH (not GMH 3511)**Accuracy (device) ±1 digit at nominal temperature = 25 °C****Temperature:** ±0.2 °C (at range -5 ... +100 °C)**pH:** ±0.01 pH**Redox (ORP):** ±0.1 % FS (mV or mV_H)**rH:** ±0.1 rH (not GMH 3511)**Sensor connections****Temperature:** 2 x 4 mm
banana socket for Pt1000, 2-wire**pH, Redox:** BNC socket**Display:** two 4-digit LCD displays
(12.4 and 7 mm high)**Working temperature:** 0 ... +50 °C**Storage temperature:** -20 ... +70 °C**Interface:** serial interface; connectable to RS232 or USB interface of PCs via electrically isolated interface converter GRS 3100, GRS 3105 or USB 3100 N (accessories).**Power supply:** 9 V battery, additional socket for external 10.5 ... 12 V direct current power supply (adequate PSU: GNG10/3000)**Battery life:** approx. 300 h**Housing:**

Impact-resistant ABS plastic housing, membrane keyboard, transparent panel, integrated pop-up clip

Dimensions:

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

Weight:

approx. 170 g

Scope of supply:

Device, battery, calibration protocol, manual

Functions:**Automatic temperature compensation:**

In operation mode „pH“ an automatic temperature compensation (ATC) is possible in the range 0 ... 105 °C if a temperature probe is connected. Otherwise a manual input of temperature is possible.

pH calibration:

Buffer selection, temperature compensation and sensor rating according to calibration result (from 10 ... 100 %) is done automatically.

GMH 3511: 2-point calibration with Greisinger buffer capsules (GPH 4, 7, 10)**GMH 3531, GMH 3551:** Either 1-, 2- of 3- point calibration with Greisinger standard buffer, buffer according to DIN 19266 (A, C, D, F, G) or manual buffer selection.**Calibration interval (not for GMH 3511):**

The device asks for a recalibration after a selectable time period (1 ... 365 days or inactive)

GMH 3551: Calibration history additional**ORP measurement (Redox):**

There are 2 choices:

„mV“: standard ORP or mV measurement
„mV_H“: temp. compensated conversion to hydrogen system acc. to DIN 38404 part 6, table 1 based on the standard ORP electrode (e.g. GE105 with Ag/AgCl system and 3 mol KCl) used.**rH measurement (not GMH 3511):**

Calculation of the rH value by means of a ORP measurement and by manually entering the pH-value. The pH-value may also be taken from a previous pH measurement.

Analog output:0 ... 1 V, not changeable 0 ... 1 V Δ 0 ... 14 pH or -2000 ... +2000 mV, connection via 3-pole jack socket \varnothing 3.5 mm, resolution 13 bit, accuracy 0.05 % at nominal temperature**GMH 3551:** Analog output freely scalable**Data logger (GMH 3551 only):**

cyclic 10,000 data sets, manual: 1,000 data sets (with measuring point input, 40 adjustable measuring point texts or measuring point numbers)

Accessories and spare parts:**GMH 55 ES**

Art. no. 603066

pH additional set for GMH 35xx and GMH 55xx
pH-electrode GE 100 BNC, temperature probe GF 1T-T3-B-BS (Pt1000), case GKK 3500, GAK 1400**GF 1T-T3-B-BS**

Art. no. 611088

compact Pt1000 temperature probe with silicone handle, Pt1000 cl. B, with 2 banana plugs

GE 100-BNC

Art. no. 600704

pH-electrode, BNC plug

GE 117-BNC

Art. no. 600730

pH-electrode incl. Pt1000, pressure resistant

GNG 10/3000

Art. no. 600273

Plug in power supply for devices of the series GMH 3XXX

GKK 3001

Art. no. 611605

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

USB 3100 N

Art. no. 601092

Interface Converter GMH3xxx \leftrightarrow PC, USB, electrically isolated**EBS 20M**

Art. no. 601158

Measuring data acquisition software for EASYBus & GMH, see page 109

GMH3511 SETS



GMH 3511-SET

COMFORTABLE MEASUREMENT

GMH 3511-SET

Art. no. 605021

pH-/Redox-/Temperature measuring instrument
Device complete with pH electrode GE 114, GF1T-T3-B-BS,
5x GPH4, 5x GPH7, 2x GPF100

GMH 3511-G125

Art. no. 475740

pH-/Redox-/Temperature measuring instrument
Device complete with pH electrode GE 125 (PT1000)

General:

For comfortable measurement of pH value and temperature. Even easier operation with a menu reduced to 5 points in GMH 3511.

Minimum measurement effort with maintenance-free gel electrodes and automatic temperature compensation.

Specifications:

see GHM 3511

Accessories and spare parts:**GE 114-BNC**

Art. no. 604701

pH-electrode

GE 125-BNC

Art. no. 600731

waterproof pH-electrode incl Pt1000, BNC plug

GKK 3001

Art. no. 611605

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

GMH3531 SETS



GMH 3531-SET125

FOR LABORATORY AND FIELD

GMH 3531-SET125

Art. no. 474240

pH-/Redox-/Temperature measuring instrument
Device complete GE 125, 5x GPH4, 5x GPH7, 2x GPF100,
GKK 3001

GMH 3531-SET100

Art. no. 604591

pH-/Redox-/Temperature measuring instrument
Device complete GE 100, GF1T-T3-B-BS, 5x GPH4, 5x GPH7,
2x GPF100, GKK 3001

General:

Functional scope for elevated demands in the laboratory
and field.

Minimum measurement effort with maintenance-free gel
electrodes and automatic temperature compensation.

Specifications:

see GHM 3531

Accessories and spare parts:**GE 100-BNC**

Art. no. 600704

pH-electrode, BNC plug

GE 125-BNC

Art. no. 600731

waterproof pH-electrode incl Pt1000, BNC plug

GKK 3001

Art. no. 611605

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

GMH3551 SETS



GMH 3551-SET100

WITH DATA LOGGER

GMH 3551-SET125

Art. no. 474903

pH-/Redox-/Temperature measuring instrument with
logger; Device complete GE 125, 5x GPH4, 5x GPH7, 2x
GPF100, GKK 3001

GMH 3551-SET100

Art. no. 475742

pH-/Redox-/Temperature measuring instrument with
logger; Device complete GE 100, GF1T-T3-B-BS, 5x GPH4, 5x
GPH7, 2x GPF100, GKK 3001

General:

Sets with very good equipment with integrated data logger

Specifications:

see GHM 3551

Accessories and spare parts:**GE 100-BNC**

Art. no. 600704

pH-electrode, BNC plug

GE 125-BNC

Art. no. 600731

waterproof pH-electrode incl Pt1000, BNC plug

GKK 3001

Art. no. 611605

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

WATERPROOF HANDHELD MEASURING DEVICE FOR PH / REDOX



WATER-PROOF DEVICE AND
PLUG CONNECTIONS

**GMH 5530**

Art. no. 600041

Waterproof pH-/Redox-/Temperature measuring instrument, without electrode

GMH 5550

Art. no. 600043

Waterproof pH-/Redox-/Temperature measuring instrument with logger, without electrode

Application:

- Waters measuring, fishkeeping, aquafarming
- Drinking water monitoring, process control, soil measuring
- Food production and monitoring
- Laboratory: Medicine, pharmaceuticals, chemistry
- Quality management

Specifications:**Measuring ranges**

pH:	-2.000 ... 16.000 pH (resolution selectable)
Redox / mV:	-2000.0 ... 2000.0 mV (resolution selectable) for hydrogen system DIN38404: -1792 ... +2207 mV _H)
Temperature:	-5.0 ... +150.0 °C; 23.0 ... 302.0 °F
rH:	0.0 ... 70.0 rH

Accuracy

pH:	±0.005 pH
Redox / mV:	±0.05 % FS (mV or mV _H)
Temperature:	±0.2 °C (in the range of -5.0 ... 100.0 °C)
rH:	±0.1 rH

Connections

pH, Redox:	BNC-female connector, compatible to standard BNC-plugs and waterproof BNC-plugs, additional banana-jack (4 mm) for separate reference electrode, input resistance: 10 ¹² Ohm
Temperature:	2 banana-jacks (4 mm) for temperature probes (Pt1000 or NTC 10K)
Interface / Supply:	4-pole bayonet connector for serial interface and supply (with accessory USB 5100)

Operating conditions: -25 ... +50 °C; 0 ... 95 % RH (non-condensing)

Display: two 4 ½ digit 7-segment displays (15 mm and 12 mm)

pH-Calibration

Automatically:	1-, 2- or 3- point calibration, GREISINGER standard buffer or buffer to DIN19266 (A, C, D, F, G)
Manual:	1-, 2- or 3- point calibration
Power supply:	2 x AAA-battery, power consumption: <1.0 mA
Battery life:	1000 hours

Housing: impact resistant ABS housing with pop-up clip

Protection rating: IP65 / IP67

Dimensions: 160 x 86 x 37 mm (H x W x D) incl. protection cover

Weight: 250 g incl. battery and protection cover

Scope of supply: Device, battery, calibration protocol, manual

HIGHLIGHTS:

- GLP-features (Good Laboratory Practice)
- Big dual display with background illumination
- High resolution (0.001pH / 0.1 mV)
- Incl. calibration protocol

ADDITIONAL FUNCTIONS GMH 5550:**Additional functions:**

Additional Display for pH-Electrode and Battery: Bar graph display

Background illumination: duration adjustable (off, 5 s ... 2 min)

Automatic Temperature Compensation: There is an automatic temperature compensation (ATC) in the range of 0 ... 105 °C for operation mode "pH" and if a temperature probe is connected. Without connected probe the temperature can be input manually.

pH-Calibration: 1-, 2- or 3- point calibration with characteristics bend for GREISINGER standard buffer, buffer to DIN 19266 or manual buffer input. The used buffer is detected automatically. The temperature dependency of the buffer is automatically compensated. Permissible electrodes' data: Asymmetry: ±55 mV / Slope: 45 ... 62 mV/pH
The condition of pH-Electrode is checked at each calibration.

Redox-Measurement (ORP): 2 choices:

- „mV“ Standard-Redox-, ORP or mV- measurement
- „mV_H“ Conversion to hydrogen systems according to DIN38404 part 6

rH-Measurement: The rH-value is calculated from a measured Redox-value and a manually input pH-value.

Calibration interval:

The device asks for a recalibration after a selectable time period (1 ... 365 days or inactive)

Calibration memory (GMH 5550 only):

last 16 calibrations

Analog output (GMH 5550 only):

0 ... 1 V, freely adjustable, connection with 4-pole bayonet connector, resolution 13 bit, accuracy 0.05 % at nominal temperature

data logger (GMH 5550 only):

with measuring point input, adjustable cycle time: 1 s ... 1 h
recording time: 416 days at interval 1 h,
data logger: cyclic: 10000 data sets, manual: 1000 data sets

Accessories and spare parts:**EBS 20M**

Art. no. 601158

Measuring data acquisition software for EASYBus & GMH, p.r.t. page 109

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

Electrically isolated interface converter with supply of device via USB

GNG 5 / 5000

Art. no. 602287

Plug in power supply for devices of the series GMH 5XXX (p.r.t. page 115)

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

PH MEASUREMENT SET

**GMH 5530-SET**

Art. no. 611614

Waterproof pH-/Redox-/Temperature measuring instrument
Device, GE125-L02, PHL 4, PHL 7, PHL 10, KCL3M, GRL100, GKK 2019

GMH 5550-SET

Art. no. 611254

waterproof pH-/Redox-/Temperature measuring instrument with logger:
Device, GE125-L02, PHL 4, PHL 7, PHL 10, KCL3M, GRL100, Software, USB 5100, GKK 2019

GMH 5530-G125

Art. no. 475746

Waterproof pH-/Redox-/Temperature measuring instrument,
Device complete with pH electrode GE 125 (PT1000)

GMH 5550-G125

Art. no. 475747

waterproof pH-/Redox-/Temperature measuring instrument with logger,
Device complete with pH electrode GE 125 (PT1000)

General:

With our ready-to-use pH measurement set, you have everything you need for your work in a practical case and with the set price, you save 23 % in comparison with the prices for the individual components

Application:

No matter which sector you work in, our comprehensive SET-GMH 5550 never lets you down and stows away in the tidy practical case

Specifications:**Measuring ranges**

pH:	-2.000 ... 16.000 pH (resolution selectable)
Redox / mV:	-2000.0 ... 2000.0 mV (resolution selectable) for hydrogen system DIN38404: -1792 ... +2207 mV _H)
Temperature:	-5.0 ... +150.0 °C; 23.0 ... 302.0 °F
rH:	0.0 ... 70.0 rH
Dimensions:	450 x 360 x 140 mm (case)
Weight:	approx. 5700 g
Scope of supply:	Device with silicone protective sleeve, pH electrode, 3 x buffer solution, KCL electrolyte, pepsin cleaning solution, case, battery, calibration protocol, manual SET-GMH 5550 only: Software, interface converter

Accessories and spare parts:**GMH 5550**

Art. no. 600043

waterproof pH-/Redox-/Temperature measuring instrument with logger, without electrode (p.r.t. page 61)

GSOFT 3050

Art. no. 601336

Windows-software for handheld instruments with logger (p.r.t. page 110)

USB 5100

Art. no. 601095

galvanically isolated interface converter with device power supply via USB

GKK 2019

Art. no. 611147

Device case 2 layers, for 1x GMH 5000 and 3 ready to use buffer solutions (450 x 360 x 140 mm)

PH / REDOX ACCESSORIES

Supplementary set
GMH 55 ES

**Accessories and spare parts:****GMH 55 ES**

Art. no. 603066

pH additional set for GMH 35xx and GMH 55xx
including pH-electrode (GE 100 BNC), temperature probe (GF 1T-T3-B-B5), case (GKK 3500), working and calibration set (GAK 1400)

GE 125-BNC

Art. no. 600731

waterproof pH-electrode with integrated Pt1000 temperature sensor
incl. waterproof BNC-plug and two banana plugs (p.r.t. page 65)

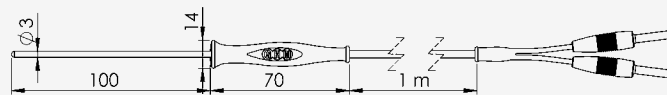
**GF 1T-T3-B-B5**

Art. no. 611088

compact Pt1000 temperature probe with silicone handle

-70 ... +250 °C, Pt1000 cl. B

immersion probe Ø 3 mm made of V4A tube, black silicone handle up to +250 °C, 1 m, silicone cable up to +230 °C permanently / +250 °C for 2 h, 2 x Ø 4 mm banana plug
Response time T₉₀: water 0.4 m/s < 2 s, air 2 m/s approx. 40 s

**GE 100-BNC**

Art. no. 600704

pH-electrode (p.r.t. page 65)

**GR 105-BNC**

Art. no. 607798

ORP / redox electrode (p.r.t. page 66)

**PHL 4**

Art. no. 601369

pH buffer solution, ready to use (pH 4.01 / 25 °C), 250 ml

PHL 7

Art. no. 601371

pH buffer solution, ready to use (pH 7.00 / 25 °C), 250 ml

PHL 10

Art. no. 601373

pH buffer solution, ready to use (pH 10.01 / 25 °C), 250 ml

KCL 3 M

Art. no. 602477

3 mol KCL electrolyte for refill or storage (filled in the protective cap) of electrodes with 3 mol KCL electrolyte. 100 ml plastic vial.

CaCl

Art. no. 603254

Electrolyte for soil-pH measuring, 1000 ml

GRL 100

Art. no. 601422

HCL/Pepsin cleaning solution, 100 ml

GRP 100

Art. no. 601424

Redox test solution 220 mV, 100 ml

GAK 1400

Art. no. 603523

pH Working and calibration set

Scope of supply:

5 buffer capsules each GPH 4.0, GPH 7.0 and GPH 10.0, 3 x 100 ml-plastic bottle GPF 100, 1 x 3 mol KCL-electrolyte KCL3M and 1 x Pepsin-cleaning agent GRL 100. GAK 1400 is required if no buffer solutions are existing



PRECISE PH MEASURING DEVICE



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
- BNC connection for alternating electrodes



Connection G 1500

G 1500

Art. no. 609850

Waterproof pH-meter incl. pH electrode GE 114 WD

G 1500-SET

Art.-Nr: 474035

Waterproof pH-meter

Device complete with pH electrode GE 114 WD, GAK 1400 and suitcase GKK 1001

General:

The primary focus in the development of the new G 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 compact pH-meter is an alternative to pH sticks and elaborate middle-class devices.

Application:

Aquariums and aquaculture, plant cultivation and agriculture, laboratories, quality assurance, service, foods, etc.

Specifications:

Measuring range:	0.00 ... 14.00 pH
Resolution:	0.01 pH
Accuracy (device):	±0.02 pH ±1 digit (at nominal temperature 25 °C)
Display:	3-line unit, with background light, protected by an unbreakable pane, overhead display at the push of a button
Sensors / measuring inputs:	pH electrode connectable via BNC, Standard GE 114 WD Temperature compensation which can be set on the device Electrode range of application: 0 ... 60 °C
Working temperature:	Display unit -20 ... +50 °C
Power supply:	2 x AA battery, approx. 3000 h operating time
Housing:	Break-proof ABS housing
Dimensions:	108 x 54 x 28 mm (H x W x D) without sensor connection
Weight:	approx. 130 g (without electrode)
Scope of supply:	Device, electrode, calibration log, 2 x battery, manual G 1500-SET only: GAK 1400, case GKK 1001

Accessories and spare parts:

G 1500-GL

Art. no. 609851

Device without electrode

GE 114-BNC-WD

Art. no. 610460

pH-electrode with waterproof BNC-connector, IP 67

GE 114-BNC

Art. no. 604701

pH-electrode

GE 100-BNC

Art. no. 600704

pH-electrode

for additional electrodes, see the next page

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)

GKK 1100

Art. no. 601060

Case with punched lining for universal application (340 x 275 x 83 mm), suitable to accommodate accessories

GKK 1001

Art. no. 611604

Case G1000 series water analysis universal 395 x 295 x 106 mm (W x H x D)

PHL 4

Art. no. 601369

pH buffer solution, ready to use (pH 4.01 / 25 °C), 250 ml

PHL 7

Art. no. 601371

pH buffer solution, ready to use (pH 7.00 / 25 °C), 250 ml

PHL 10

Art. no. 601373

pH buffer solution, ready to use (pH 10.01 / 25 °C), 250 ml

GAK 1400

Art. no. 603523

pH Working and calibration set:

Scope of supply:

5 buffer capsules each
GPH 4.0, GPH 7.0 and
GPH 10.0, 3 x 100 ml-
plastic bottle GPF 100,
1 x 3 mol KCL-electrolyte
KCL3M and 1 x Pepsin-
cleaning agent GRL 100.
GAK 1400 is required if
no buffer solutions are existing

ST-G1000

Art. no. 611373

Protection bag, leather

GB AA

Art.-Nr: 610049

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



PRECISE PH MEASURING DEVICE



ROBUST UND PREISWERT



GE 114-WD

GE 125

HIGHLIGHTS:

- Modern and functional housing
- 3-line display / overhead display at the push of a button
- Backlighting
- Waterproof (IP65 / IP67)
- Durable, long battery life
- BNC connection for alternating electrodes
- with Redox (ORP) and temperature measurement
- Alarm function



Connection G 1501

G 1501

Art-Nr: 611725

Waterproof pH/ORP-meter with Pt1000 input and alarm with pH electrode GE 114-WD

G 1501-G125

Art-Nr: 414689

Waterproof pH/ORP-meter with Pt1000 input and alarm, Device complete with pH electrode GE 125 (PT1000)

General:

The primary focus in the development of the new GMH 1000 series was place 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 compact pH-meter is an alternative to pH sticks and elaborate middle-class devices.

The G 1501 also enables Redox (ORP) measurement (with temperature-compensated conversion of the Ag/AGCl reference system to a hydrogen system in accordance with DIN 38404 part 6, table 1) and automatic temperature compensation with connected Pt 1000 temperature sensor for pH and mV_H measurements. An optical and visual alarm signal (min/max) is also included.

Application:

Aquariums and aquaculture, plant cultivation and agriculture, laboratories, quality assurance, service, foods, etc.

Specifications:

Measuring range:	0.00 ... 14.00 pH
Resolution:	0.01 pH
Accuracy (device):	±0.02 pH ±1 digit (at nominal temperature 25 °C)
Temperature:	
Measuring input:	2 x 4 mm banana for Pt 1000, 2-wire
Measuring range:	-5.0 ... +105.0 °C or 23.0 ... 221.0 °F
Accuracy:	±0.2 °C ±1 digit (at nominal temperature 25 °C)

Redox (OPR)

Measuring input:	BNC socket (Redox or pH measurement adjustable via menu)
Measuring range:	-1500 ... 1500 mV or -1293 ... 1707 mV _H
Accuracy:	±0.1 % FS ±1 digit (at nominal temperature 25 °C)
Display:	3-line unit, with background light, protected by an unbreakable pane, overhead display at the push of a button
Sensors / measuring inputs:	pH electrode connectable via BNC, Standard GE 114 WD Temperature compensation which can be set on the device Electrode range of application: 0 ... 60 °C
Working temperature:	Display unit -20 ... +50 °C
Power supply:	2 x AA battery, approx. 3000 h operating time
Housing:	Break-proof ABS housing
Dimensions:	108 x 54 x 28 mm (H x W x D) without sensor connection
Weight:	approx. 130 g (without electrode)
Scope of supply:	Device, electrode, calibration log, 2 x battery, manual

Accessories for G 1501:

G 1501-GL

Art. no. 611483

Device without electrode

GF 1T-T3-B-BS

Art. no. 611088

compact Pt1000 temperature probe with silicone handle

GR 105-BNC

Art. no. 607798

ORP / redox electrode with BNC connection

GRP 100

Art. no. 601424

Redox test solution 220 mV, 100 ml

General accessories see page 66



G 1501-SET

Art-Nr: 611385

Waterproof pH/ORP-meter with Pt1000 input and alarm, Complete set for pH/temperature measurement Device compl. with pH electrode GE 114-WD + GF1T 3mm + GPH4.0/5 + GPH7.0/5 + 2x GPF100

G 1501-SET 114

Art-Nr: 474037

Waterproof pH/ORP-meter with Pt1000 input and alarm, Device complete with pH electrode GE 114 WD, T-probe GF1T-T3-B-B, GAK 1400 and suitcase GKK 1001

G 1501-SET 125

Art-Nr: 474038

Waterproof pH/ORP-meter with Pt1000 input and alarm, Device complete with pH electrode GE 125, GAK 1400 and suitcase GKK 1001

General:

Affordable set for temperature-compensated pH measurement

Application:

The measuring devices can be used in aquarium, water and surface water monitoring, plant husbandry, agricultural, laboratory, quality assurance, service and food applications.

Accessories and spare parts:

see page 66

GF 1T-T3-B-BS

Art. no. 611088

compact Pt1000 temperature probe with silicone handle, Pt1000 class B, with 2 banana plugs

GAK 1400

Art. no. 603523

pH Working and calibration set:

consisting of:

5 of each of GPH 4.0, GPH 7.0 and GPH 10.0 buffer capsules, 3 x 100 ml plastic bottle GPF 100, 1 x 3 mol KCL electrolyte KCL3M and 1 x pepsin cleaning solution GRL 100.



GKK 1001

Art. no. 611604

Case G1000 series water analysis universal 395 x 295 x 106 mm (W x H x D)

PH ELECTRODES



	GE 100	GE 101	GE 104	GE 108	GE 114	GE 117	GE 120	GE 125	GE 126	GE 151	GE 171	GE 173
Measuring range	0 ... 14 pH 0 ... 80 °C	2 ... 11 pH 0 ... 60 °C	0 ... 14 pH 0 ... 80 °C	0 ... 14 pH 0 ... 80 °C	0 ... 14 pH 0 ... 60 °C	0 ... 14 pH 0 ... 80 °C	0 ... 14 pH 0 ... 60 °C	0 ... 14 pH 0 ... 70 °C	0 ... 14 pH -5 ... +80 °C	0 ... 14 pH 0 ... 80 °C	0 ... 14 pH 0 ... 140 °C	0 ... 14 pH 0 ... 80 °C
Conductivity	>100 µS/cm	>100 µS/cm	>20 µS/cm	>100 µS/cm	>200 µS/cm	>100 µS/cm	>200 µS/cm	>200 µS/cm	>100 µS/cm	>100 µS/cm	>100 µS/cm	>50 µS/cm
Temperature measuring	no	no	no	no	no	integr. Pt1000 4 mm banana	no	integr. Pt1000 4 mm banana	no	no	no	no
Water-proof	no	no	no	no	optional	no	no	ja	no	no	no	no
Pressure resistant	no	no	no	6 bar	no	6 bar	no	1 bar	5.5 bar	no	10 bar	6 bar
Cable	1 m ¹⁾	1 m ¹⁾	1 m ¹⁾	2 m ¹⁾	1 m	2 m ²⁾	1 m	2 m	5 m	1 m ¹⁾	ohne	1 m ¹⁾
Electrolyte	3 mol/l KCl	3 mol/l KCl	3 mol/l KCl	gel electrolyte	gel electrolyte	gel electrolyte	gel electrolyte	gel electrolyte	gel electrolyte	3 mol/l KCl	gel electrolyte	gel electrolyte
Diaphragm	2 x ceramic	2 x ceramic	moving joint	2 x ceramic	1 x Pellon	2 x ceramic	2 x ceramic	1 x ceramic	2 x ceramic	1 x ceramic	2 x ceramic	joint
Thread	without	without	without	PG 13.5	without	PG 13.5	without	without	1/2" NPT	without	PG 13.5	PG 13.5
Electrode shaft	tyril, Ø 12 mm x 120 mm	glass, Ø 12 or 6 mm x 120 mm	glass, Ø 12 mm x 120 mm	PSU, Ø 12 mm x 120 mm	epoxide, Ø 12 mm x 120 mm	PSU, Ø 12 mm x 120 mm	PVC, Ø 22 mm x 110 mm	epoxide, Ø 12 mm x 120 mm	ABS Ø 26.4 mm x 147 mm	glass, Ø 12 mm x 120 mm	glass, Ø 12 mm x 120 mm	glass, Ø 12 mm x 120 mm
Features	universal electrode	tip Ø 6 mm, small sample volume	for low-ion media	low-maintenance	Low-cost low-maintenance	temperature compensated	insertion electrode, blade Ø 13 mm x 60 mm	submersible, water-proof IP67 (also BNC-plug)	extremely low-maintenance	chemicals-resistant glass shaft	for extreme conditions, sterilizable, autoclavable	for process chemistry, bio-chemistry, alkali-resistant
Connection:												
BNC												
Art. no.	600704	600693	602063	600713	604701	600730	600698	600731	610987	600727	-	600735
S7*)												
Art. no.	-	-	-	606089	-	-	-	-	-	-	606375	606572

*) Note: cable GEAK-257-BNC or GEAK-557-BNC is needed for connection S7, for devices with cinch connection adapter GAD 1 BNC is necessary. Electrodes are consumption objects. Lifetime under careful treatment: >2 years; warranty: 12 months

Options:

Longer cable for ¹⁾²⁾
(available cable lengths: up to 5 m)

Special designs
(electrodes with thread, other lengths, special applications etc.)

Accessories and spare parts:**Kabel-BNCM/BNCF**

Art. no. 606158

Extension cables for electrodes with BNC connector, Cable length: 3 m



BNC connection



S7 connection at shaft

Diaphragm:

The diaphragm makes the electric connection between reference system and sample. Additionally it should prevent the spoiling of the reference electrolyte by the measured medium.

Ceramic diaphragm

Porous ceramic rods ensure low leak rates.

Application:

General applications in clean till lightly soiled media.

Joint / movable joint

The roughened surface between the cut glass of the electrode and a cut glass sleeve permits a electrolyte flow of several ml/h.

Application:

low-ion or heavily soiled samples

Pellon diaphragm

A permeable diaphragm made of Pellon texture is used for fast response times and stable measuring values

Application:

Clean till lightly soiled media.

**Reference electrolyte:**

The reference electrolyte offers a constant voltage of the reference system and makes the electrical connection between sample and reference electrode.

Liquid electrolyte

Mainly 3 mol/l KCl is used. Liquid electrolytes offer fast response times in general and can be replaced if contaminated.

Gel electrolyte

The electrolyte is solidified for low-maintenance electrodes able to measure irrespective to its position. Under normal measurement conditions no noticeable electrolyte leakage is observable.

Electrodes with S7 connection:

The electrodes are offered with an S7 industrial screw plug fitted, also known as industrial-S8 Plug head. In contrast to S7 lab plug head this one is for direct installation in fittings with PG 13.5 suitable thread.

APPLICATION AREAS: ELECTRODES

APPLICATION	GE 100	GE 101	GE 104	GE 108	GE 114	GE 117	GE 120	GE 125	GE 151	GE 171	GE 173	GE 126	GR 105	GR 175
Sewage											•	•		
Aquarium water	•		•	•	•	•			•			•	•	•
Soil testing		•												
Emulsions		•	•											
On-site measurements				•	•	•		•					•	
Fish farming	•		•	•	•	•		•	•			•	•	•
Galvanic baths											•			•
Beverages								•	•		•		•	•
Low-ion media			•								•			
Cosmetics			•											
Food sample		•					•							
Sea water	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Online measuring										•	•			•
Process chemistry									•	•	•			•
Swimming pool water	•			•	•	•		•			•	•	•	•
Suspensions		•	•											•
Drinking water	•		•	•	•	•		•			•	•	•	•
Water-based lacquers			•								•			

Note: The set information are to provide general recommendations. It needs to be checked, which electrodes for each area of application are suitable.

ORP ELECTRODES



GR 105-BNC

Art. no. 607798

ORP / redox electrode with BNC connection



GR 175-BNC

Art. no. 607801

ORP electrode with BNC connection

GR 175-S7

Art. no. 607802

ORP electrode incl. S7 connector - without connecting cable *)

Specifications:	GR 105	GR 175
Measuring unit:	ORP	
Measuring range:	±2000 mV, 0 ... 80 °C	
Conductivity:	>100 µS / cm	
Temperature measurement:	no	
Water-proof:	no	
Pressure resistant:	no	6 bar
Cable:	1 m ¹⁾	without / 1 m
Electrolyte:	3 mol/l KCL	gel electrolyte
Diaphragm:	2 x ceramic	1 x ceramic
Metal electrode:	Platin dome Ø 5 mm	
Thread:	without	PG 13.5
Electrode shaft:	tyril, Ø 12 mm x 120 mm	glass, Ø 12 mm x 120 mm
Minimal depth of immersion:	15 mm	
Scope of supply:	ORP electrode, manual	

Options:

Longer cable for ¹⁾²⁾
(available cable lengths: up to 5 m)

Accessories:

GRP 100

Art. no. 601424

Redox test solution 220 mV, 100 ml



ELECTRODES - ACCESSORIES

Buffer capsules and buffer solutions:

GPH 4,0 / 5 Art. no. 602614

pH buffer capsules (5 pieces), pH 4.0

GPH 4,0 / 10 Art. no. 602615

pH buffer capsules (10 pieces), pH 4.0

GPH 7,0 / 5 Art. no. 602616

pH buffer capsules (5 pieces), pH 7.0

GPH 7,0 / 10 Art. no. 602617

pH buffer capsules (10 pieces), pH 7.0

GPH 10,0 / 5 Art. no. 602618

pH buffer capsules (5 pieces), pH 10.0

GPH 10,0 / 10 Art. no. 602619

pH buffer capsules (10 pieces), pH 10.0

GPH 12,0 / 5 Art. no. 602620

pH buffer capsules (5 pieces), pH 12.0

GPH 12,0 / 10 Art. no. 602621

pH buffer capsules (10 pieces), pH 12.0

All buffer capsules are traceable to NIST standards and have ±0.02 pH at 25 °C.

PHL 4 Art. no. 601369

pH buffer solution, ready to use (pH 4.01 / 25 °C), 250 ml

PHL 7 Art. no. 601371

pH buffer solution, ready to use (pH 7.00 / 25 °C), 250 ml

PHL 10 Art. no. 601373

pH buffer solution, ready to use (pH 10.01 / 25 °C), 250 ml

PHL 4-1000 Art. no. 415029

pH buffer solution, ready to use, (pH 4.01 / 25 °C), 1000 ml

PHL 7-1000 Art. no. 415030

pH buffer solution, ready to use, (pH 7.00 / 25 °C), 1000 ml

PHL 10-1000 Art. no. 415031

pH buffer solution, ready to use, (pH 10.01 / 25 °C), 1000 ml

KCL 3 M Art. no. 602477 3 mol KCL electrolyte for refilling and storage (fill into protective cap) of electrodes with 3 mol KCl electrolyte, injection bottle, 100 ml

CaCl Art. no. 603254

1000 ml, solution for measuring the pH value of soil

GRL 100 Art. no. 601422

HCL/Pepsin cleaning solution, 100 ml

Accessories and spare parts:

GEAK-2S7-BNC

Art. no. 601996

Adapter cable pH S7-BNC, 2 m

GEAK-5S7-BNC

Art. no. 601998

Adapter cable pH S7-BNC, 5 m

VD120

Art. no. 601380

injection aid for injection electrode GE101

GAD 1 BNC

Art. no. 601382

Adapter for the plug-in of electrodes with Cinch plug to devices with BNC socket.

GPF 100

Art. no. 601417

Plastic bottle with wide neck, 100 ml

GAK 1400

Art. no. 603523

pH Working and calibration set: GPH 4,0, GPH 7,0, GPH 10,0 (5 capsules of each type); 3 x GPF 100; 1 x KCL 3M; 1 x GRL 100

GWA1Z

Art. no. 602914

pressure accessories, plastic adapters PG13.5 to G1"

PG 13.5

Art. no. 603205

Thread Adapter, pluggable, Pg 13,5 for sensors with shaft Ø 12 mm

GWA 11 PG

Art. no. 605379

pressure accessories, plastic adapters from PG11 external thread to PG 13.5 internal thread incl. sealing and PG11 counter nut, material: polyamide, fiber glass reinforced, O-ring: NBR, temperature range: -10 ... +100 °C

HD-22-3

Art. no. 700040

freely positionable laboratory sensor holding arm for sensors Ø12mm

SDW 500

Art. no. 606171

Deionized water in refillable 500 ml bottle

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

O ₂ -concentration:	0.00 ... 70.00 mg/l (ppm) (Variable resolution)	
O ₂ -saturation:	0.0 ... 600.0 % O ₂ (Variable resolution)	
O ₂ -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!



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. 61414

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

GAL 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

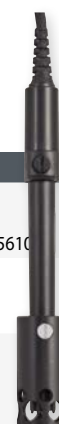
Art. no. 411907

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)



GSKA 3600 mounted on the sensor



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

ADDITIONAL FUNCTIONS GMH 3651:



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

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 % O ₂ (resolution selectable)
O₂-partial pressure:	3651: 0 ... 1200 hPa O ₂ (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

MULTISENSOR WATER ANALYSIS HANDHELD MEASURING DEVICE



ISO

AUTOHOLD

AUTOOFF

HOLD

MIN MAX



NEW!

HIGHLIGHTS:

- simultaneous measurement of pH/oxygen or pH/conductivity and the corresponding temperatures
- integrated galvanic isolation enables simultaneous measurement with affordable standards sensors
- the display enables convenient reading of several values simultaneously and the measurement curve in diagram form
- the data logger can be read directly via USB – with standard smartphone cable or software
- simple and convenient battery charging via USB connection

**G 7500**

Art. no. 414318

MultiSensor water analysis handheld instrument

G 7500-PH/O2

Art. no. 414787

MultiSensor water analysis handheld instrument

Device, GE125-L02+accessories, GWO 5610-L02+accessories, GKK 2021

G 7500-PH/CON

Art. no. 414788

MultiSensor water analysis handheld instrument

Device, GE125-L02+accessories, LF425-L02+accessories, GKK 2021

G 7500-PH/CON/O2

Art. no. 414789

MultiSensor water analysis handheld instrument

Device, GE125-L02+accessories, LF425-L02+accessories, GWO5610-L02+accessories, GKK 2021

General:

The G 7500 is a comfortable multi-channel water analysis device for simultaneous measurement of two measurement variables and the corresponding temperature. All significant electrochemical measurements can be combined:

- pH/ Redox + conductivity/salinity
- pH/ Redox + dissolved oxygen

The backlit graphic display shows all parameters in plain text in German or English; other languages can be integrated (additional charges indicated on request). Large display or measurement diagram can also be represented. Use of our proven standard plug connectors guarantees that you can use our standard sensors – without additional costs due to complicated technology in the sensors. The device is distinguished by its impressive performance and the affordable system price (refer also to our sets). The state-of-the-art device platform uses the standard USB cable to charge the internal batteries (interchangeable) and read the data logger without the need for additional software or adapters. The logger is read conveniently like a USB 2.0 memory stick.

Application:

Therefore, you have applications such as surface water monitoring, neutralisation processes or agricultural measurements ready to hand in a compact format.

- monitoring of bodies of water
- drinking water preparation
- sewage treatment plants
- fish husbandry and aquaculture
- vertical/ urban farming
- conventional agriculture

Specifications:**Input no.1 pH/ Redox****Connection:** BNC waterproof**Measuring range:** -2.00 ... +16.00 pH (± 0.25 % FS @ 25 °C)
or -1500 ... +1500 mV Redox voltage (± 0.25 % FS @ 25 °C)**Temperature:** -10.0 ... +150.0 °C (Pt1000)
 ± 0.25 % FS connection via 4 mm banana or O₂/LF sensor**Temperature compensation:** Manual, automatic**Input no. 2****Connection:** 7-pole bayonet jack**Temperature:** -10.0 ... +110.0 °C (NTC or Pt1000) measuring range (Pt 1000)
-10.0 ... +110.0 °C measuring range (NTC 10k)
-10.0 ... +110.0 °C (integrated in O₂/LF sensor)**Conductivity****Measuring range:** 0 µS/cm ... 500 mS/cm (± 0.5 % FS @ 25 °C)
Salinity/PSU: 0.0 ... 70.0 g/kg
Cell constant 0.3 ... 1.6000 1/cm**Temperature compensation** Off, linear (0.300 ... 3.000 %/K), NLF (according to DIN EN 27888), Reference temperature: 20 °C or 25 °C (adjustable)**Dissolved oxygen****Measuring range:** Oxygen saturation: 0.0 ... 500.0 % sat
Oxygen concentration: 0.0 ... 50.0 mg/l
Oxygen partial pressure: 0 ... 1013 mbar O₂
(accuracy depending on sensor and calibration with flow >20 cm/s, add. ± 1.5 % FS @ 25 °C, 100 % sat, O₂)

MULTISENSOR WATER ANALYSIS HANDHELD MEASURING DEVICE



A multi-channel measuring device was developed based on our proven G 1000/ GMH 3000/ GMH 5000 individual-parameter devices. This combines multi-channel measurement with the proven housing of the GMH 5000 series.

Numerous applications demand simultaneous measurement of multiple measured variables. For example, simultaneous measurement of pH and oxygen is desired when monitoring bodies of water – the G 7500 determines both measurements in one device. A very interesting application area for the combination of pH and conductivity is the current trend market of vertical farming/ urban farming.

A daylight-compatible backlit graphic display is used for optimal visualization. At the same time, simple measurement and easy calibration are guaranteed with the plain text display with various language settings. There are no longer any limitations on the measurement recording, because the buffer size of the data logger is very large. Our proven sensor connections are installed in the devices. As a result, system costs are kept in check and the flexibility of the free sensor selection adapted to your emphases is guaranteed.

Temperature compensation:	Automatically via connected sensor
Pressure compensation	Manual, automatic via int. sensor: 500 ... 1100 hPa ± 4 hPa
Salinity compensation:	Manual PSU 0 ... 70 g/kg
Additional functions:	Text-base user guidance (DE/EN), Charging via USB jack (3 x AAA batteries integrated, interchangeable)
Display:	LCD (180 x 128 pixel), monochromatic, adjustable backlighting
Interface:	USB 2.0, Micro USB jack
Calibration:	pH 1...5 point calibration (PHL buffer, DIN buffer) LF cell constant O ₂ : Water-saturated air
Data logger:	Yes (8 GB with FAT file system)
Alarm:	Yes, acoustic alerting (horn) Visual (red LCD background)
Power supply:	3 x NiMH AAA (max. 750 mAh)
Current requirement:	On: approx. 75 mA in operation; Off: approx. <0.1 mA
Housing:	Impact-resistant ABS, with stand/hanging bracket
Protection rating:	IP67
Dimensions:	160 x 86 x 37 mm (H x W x D) incl. protection cover
Weight:	300 g incl. battery and protection cover
Scope of supply:	Device with 3 AAA batteries, quick reference guide, operating manual and test report as pdf on mass storage device

Accessories and spare parts:**GW05610-L04**

Art. no. 607764

replacement sensor for dissolved oxygen, GMH 56 & GMH 75, Sensor with 4 m cable

GWOK 02

Art. no. 608012

Spare membrane head for GWO 5610

KOH 100

Art. no. 603356

spare electrolyte KOH, 100 ml

GCAL 3610

Art. no. 611371

Calibration vessel for dissolved oxygen sensors with \varnothing 12 mm

LF452-L02

Art. no. 608773

Conductivity cell for GMH 5400 / G 7500-Series, 4-pole graphite measuring cell, \varnothing 16 mm

LF400-L02

Art. no. 602968

Conductivity cell for GMH 5400 / G 7500-Series, 4-pole graphite measuring cell

GKL 100

Art. no. 601396

Conductivity control solution, Control solution 1413 μ S/cm, 100 ml bottle

GKL 102

Art. no. 601400

Conductivity control solution, Control solution 50 mS/cm, 100 ml bottle

GE117-BNC-L02

Art. no. 600729

pH-electrode incl. Pt1000, pressure resistant, BNC plug

GE125-BNC-L02

Art. no. 600731

Waterproof pH electrode with Pt1000 to 4 mm banana

PHL 4

Art. no. 601369

pH buffer solution, ready to use, Buffer solution pH 4 in 250 ml dosing bottle

PHL 7

Art. no. 601371

pH buffer solution, ready to use, Buffer solution pH 7 in 250 ml dosing bottle

PHL 10

Art. no. 601373

pH buffer solution, ready to use, Buffer solution pH10 in 250 ml dosing bottle

GRL100

Art. no. 601422

HCL/Pepsin cleaning solution, 100 ml

GKK 5001

Art. no. 611606

kompakter Koffer für Feldeinsatz 395 x 295 x 106 mm (W x H x D)