

# Conductivity measuring devices



- Wide measuring range from 0,0  $\mu\text{S/cm}$  to 200,0  $\text{mS/cm}$  manually selectable or automatic range selection
- Double display for conductivity and temperature
- Display of resistance, salinity or TDS (dry residue of filtrate) (for GMH3430)
- Conform to the regulations of the drinking water ordinance (TrinkwV 2001) and DIN EN 27288
- Automatic temperature compensation, reference temp. (20°C/25°C) selectable
- Setting of different temperature coefficients (for GMH3430)
- Extremely small measuring probe (dimensions as for pH-probe)
- 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

## GMH 3410 GMH 3430



Sta. Virgilia 29 Local.1A 28033 Madrid  
Tfno.: 91 764 21 00 Fax.: 91 764 21 32  
www.guemisa.com Email.:info@guemisa.com

### Specification:

#### Measuring range:

**Conductivity:** 0,0 ... 200,0  $\mu\text{S/cm}$   
0 ... 2000  $\mu\text{S/cm}$   
0,00 ... 20,00  $\text{mS/cm}$   
0,0 ... 200,0  $\text{mS/cm}$   
*manual setting or auto range*

**Temperature** (GMH3410): 0,0 ... +85,0°C  
(GMH3430): -5,0 ... +100,0°C

**Resistance:** (GMH3430) 0,005 ... 100,0  $\text{k}\Omega$

**Salinity:** (GMH3430) 0,0 ... 70,0

**TDS:** (GMH3430) 0 ... 1999  $\text{mg/l}$

**Resolution:** 0,1  $\mu\text{S/cm}$ ; 1  $\mu\text{S/cm}$ ; 10  $\mu\text{S/cm}$  or 0,1  $\text{mS/cm}$   
0,1 °C  
0,001  $\text{k}\Omega$ ; 0,01  $\text{k}\Omega$  or 0,1  $\text{k}\Omega$   
0,1 (salinity)  
1  $\text{mg/l}$

**Accuracy:** ( $\pm 1$ digit) (at nominal temperature = 25°C)

**Conductivity:**  $\pm 0,5\%$  of m.v.  $\pm 0,3\%$  FS

**Temperature:**  $\pm 0,2\%$  of m.v.  $\pm 0,3\text{K}$

**Cell constant:** adjustable from 0.8 ... 1.2  $\text{cm}^{-1}$

**Temp. compensation:** automatic or off (GMH3430).

#### Compensation coefficient:

- nLF: non-linear function of natural water according to EN27888 (DIN38404).

- Lin: linear compensation from 0,3 ... 3,0 %/K. (GMH3430 only)

- off: no compensation. (GMH3430 only)

**Display:** 2 four digit LCDs (12.4mm and 7mm high) for conductivity (resistance, salinity, TDS) and temperature, min./ max values, hold function, etc. as well as additional functional arrows.

**Measuring cell:** two-electrode-conductivity measuring cell; temperature sensor integrated in shaft. Electrode material: graphite. The graphite electrodes are the optimum solution for sewage and can be cleaned easily.

*Four-electrode-conductivity measuring cell upon request!*

**Working temperature:** 0 to +50°C (device)  
meas. cell: 0 to +80°C (permanent) 0 to +100° C (short time)

**Relative humidity:** 0 to +95%r.h. (non-condensing)

**Storage temperature:** -20 to +70°C

**Min/Max-value memory:** max. and min. values as well as the corresponding temperature will be memorized.

**Hold function:** by pressing a button the current meas. value and the corresponding temperature will be 'frozen'.

**Pushbuttons:** 6 membrane keys for ON/OFF-switch, selection of meas. range, min- and max-value memory, hold-function, etc.

### Difference between GMH 3430 and GMH 3410:

Additional features of GMH 3430:

- Determination of resistance, salinity and TDS.
- The following temperature coefficients are freely selectable: natural waters, linear compensation or to be deactivated.
- Increased temperature measuring range

**Interface:** serial interface (3.5mm jack connector), direct connection to RS232 interface of a PC via electrically isolated interface adapter GRS3100 or GRS3105 (p.r.t. accessories).

**Power supply:** 9V-battery, type IEC 6F22 (included) as well as additional d.c. connector (internal pin  $\varnothing$  1.9mm) for external 10.5-12V direct voltage supply. (suitable power supply: GNG10/3000)

**Power-Off-function:** Device will be automatically switched off if no key is pressed/no interface communication takes place for the time of the power-off delay. The power-off delay can be set to values between 1 and 120 min.; it can be completely deactivated.

**Low battery warning:**  $\Delta$  and 'bAt'

**Power consumption:** approx. 5 mA (meas. power not incl.)

**Housing dimensions (device):** 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 for table top or suspended use.

**Electrode dim.:** approx. 120mm long,  $\varnothing$  approx. 12mm, 1m of fixed connection cable between electrode and device.

**Weight:** approx. 255 g (incl. batteries and measuring cell)

**Automatic temperature compensation:** The conductivity is highly dependant on the temperature, i.e. it is only valid for one temperature. For better comparison the device offers the possibility to compensate the conductivity to a reference temperature (adjustable 20°C or 25°C).

**Temperature measurement:** The temperature of the agent can be displayed by means of the temperature probe integrated in the electrode.

**AutoRange:** Automatic selection of to the optimum meas. range for conductivity measurements. AutoRange mode can be deactivated by pressing a button.

**Salinity determination** (GMH3430 only): Salinity is understood to be the sum of concentrations of all salts dissolved in water. Reading in g/kg.

**TDS-determination (dry residue of filtrate)** (GMH3430 only): The dry residue of filtrate is understood to be the concentration of substances dissolved in a liquid. Reading in  $\text{mg/l}$ .

### Accessories:

**GKL 100** 100ml conductivity control solution (100ml bottles with 1413  $\mu\text{S/cm}$ . (pursuant to DIN EN 2788))

**miscellaneous accessories (case, power supply, etc.) suitable for all GMH3xxx devices p.r.t. p. 35 and 37**

# SENSORES DE CONDUCTIVIDAD

## Controladores Portátiles

**DPF**  
sensors

### C 565.2

Conductivity controller

- Input 2-electrodes cell  
4-electrodes preamplified cell  
electrodeless preamplified cell
- Selectable scales
- Temperature and Temperature Coefficient display
- Manual and automatic Temperature compensation



### General informations

This instrument presents all the advantages of a modern and reliable measurement of electrical conductivity in industrial plants.

In just this one instrument there are all the conductivity ranges necessary to undertake measurements in ultra-pure waters and in solutions with a very high ionic content.

It features a scale selector and there are two independent on-off regulators with the possibility of selecting the min/max function by rear switches and also the possibility to insert a delay function for each set-point.

The cell factor K may be adjusted over a wide range by means of a coarse and fine control.

It also features the automatic and manual compensation of the temperature by means of the Pt100 sensor with the display of the temperature coefficient and a digital readout of the solution's temperature. The controller provides an output of 0/20 or 4/20 mA selectable proportional to the meter reading, for driving a recorder or remote readout having a non-grounded input. A unique characteristic of this instrument is the possibility to connect the Conductivity cell for measurement in microSiemens range, the 4-electrodes cell + microtransmitter type 080310 and the electrodeless cell + microtransmitter 080315 for measurement in mSiemens range.

### Specifications

Add the following to the common Specifications shown overleaf

Input:	from conductivity cell (2 electrodes)
	from microtransmitter mod. 080310 for 4-electrodes cell
	from microtransmitter mod. 080315 for electrodeless cell
	from RTD Pt100
Scales with 2-electrodes cell installed:	0/1.999 0/19.99
	0/199.9 0/1999 microSiemens
Scales with 080310 or 080315 microtransmitter installed:	0/1.999 0/19.99 0/199.9 0/1999 milliSiemens
Temperature readout:	0/100.0 °C
Operating Frequency:	200 Hz 800 Hz 4.500 Hz selectable
Temp. compensation:	manual and automatic 0/100 °C
Temp. Coefficient:	0 to 5.5 %/°C
Temperature sensor:	RTD Pt 100
K adjustment:	0 to 2 (coarse)

### C 125.2

E. Conductivity  
Temperature meter



- High accuracy and reliability
- LCD display
- Temperature visualization
- Automatic or manual Temperature compensation
- Temperature coefficient visualization
- Corrosion resistant

This instrument is designed for field applications in waste water, swimming pools, chemical, electroplating and food industries.

By pressing any key the instrument will switch on or will extend the operation for about 5 minutes.

The Temperature compensation on the E.C. readout is automatic or manual. The operator may select the temperature coefficient for the compensation.

The zero and sensitivity adjustment allows a very accurate calibration of the meter.

The plastic case with the polycarbonate membrane provide a corrosion resistance in field applications.

### Accessories and sensors

to be ordered separately

BC 921: carrying case

SZ 3252: E.C. sensor, K=1 black platinum electrodes

SP 51501 - SP 51511: suggested temperature sensors

### Specifications

Display:	LCD 3 1/2 digit
Scales:	0/199.9 µS - 1999 µS - 0/19.99 mS - -20.0/+120.0 °C
Zero:	adjustable
Sensitivity:	adjustable
Input:	from 2-electrodes cell, BNC connectors
	from Pt1000, jack connector
Power:	9 V battery
Battery life:	100 hours operation
Dimensions:	92 x 155 x 33 mm
Weight:	300 g

# pH-/redox-/temperature measuring devices



- Double display for pH or redox and temperature
- Redox mode allows for automatic conversion to a hydrogen system.
- Automatic or manual temperature compensation
- Automatic buffer detection
- Automatic detection of measuring value stability
- rH-measurements
- Min/Max value memory, Hold function
- Evaluation of probe quality
- Battery and d.c. operation
- Serial interface, device can be connected to bus system (up to 5 devices can be connected to one PC interface)
- Device can be used as thermometer, too

## GMH 3530 without accessories

pH-probe, temperature probe, redox probe, calibration access., etc. please order separately or as additional set.

## GMH 35 ES additional set

consisting of: pH-electrode GE100BNC, temperature probe GTF35 (Pt100 4-wire), case GKK3500 and GAK1400

### Specification:

#### Measuring ranges:

**Temperature:** -100,0 ... +250,0°C or -148,0 ... +482,0°F

**pH:** 0,00 ... 14,00 pH

**Redox (ORP):** -1999 ... +2000 mV. for hydrogen system (DIN38404): -1792 ... +2207 mV<sub>H</sub>

**rH:** 0,0 ... 70,0 rH

**Accuracy:** (device) (±1 digit) (at nominal temperature = 25°C)

**Temperature:** ±0,2°C (-20...+80°C), otherwise ±0.4°C

**pH:** ±0,01 pH

**Redox (ORP):** ±0,1% FS (mV or mV<sub>H</sub>)

**rH:** ±0,1rH

#### Sensor connections:

**Temperature:** 4-pin screened Mini-DIN-socket.  
for Pt100 4-wire (2-wire connection possible)

**pH, Redox:** BNC-socket

**Input resistance:** (pH, Redox) 10<sup>12</sup> Ohm

**Display:** 2 four digit LCDs (12.4mm or 7mm high) for pH, redox and temperature, min./ max values, hold function, etc. as well as additional functional arrows.

**Working temperature:** 0 to +50°C

**Relative humidity:** 0 to +95%r.h. (non-condensing)

**Storage temperature:** -20 to +70°C

**Interface:** serial interface (3.5mm jack connector), direct connection to RS232 interface of a PC via electrically isolated interface adapter GRS3100 or GRS3105 (p.r.t. accessories).

**Min/Max-value memory:** max. and min. values will be memorized.

**Hold function:** by pressing a button the current meas. value will be memorized

**Pushbuttons:** 6 membrane keys for ON/OFF-switch, selection of meas. mode, min-/max-value memory, hold-function, calibration etc.

**Power supply:** 9V-battery, type IEC 6F22 (included) as well as additional d.c. connector (internal pin Ø 1.9mm) for external 10.5-12V direct voltage supply. (suitable power supply: GNG10/3000)

**Power-Off-function:** Device will be automatically switched off if no key is pressed/no interface communication takes place for the time of the power-off delay. The power-off delay can be set to values between 1 and 120 min.; it can be completely deactivated.

**Low battery warning:**  $\Delta$  and 'bAt'

**Power consumption:** approx. 3 mA

**Housing dimensions (device):** 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 for table top or suspended use

**Weight:** approx. 155 g

**Automatic temperature compensation:** Automatic temp. comp. (ATC) if temperature probe is plugged in and operating mode is "pH". Manual temperature input if no probe connected.

**pH-calibration:** automatic buffer detection. Automatic compensation of temperature dependence of buffers.

acceptable electrode data: Asymmetry: ±55 mV

Slope: 45...62 mV/pH

Sensor evaluation depending on calibration results (10 to 100%), displayed by pressing a key.

Opt. 2- or 3-point-calibration with bend of the characteristics for GREISINGER-standard-buffer (pH4.01, pH7.00, pH10.01), buffers acc. to DIN19266 (A,C,D,F,G) or manual buffer entry

**Redox-Measurements(ORP):** you have 2 choices:

"mV" standard-redox- or mV-measurement

"mV<sub>H</sub>" Temp. compensated conversion to hydrogen system acc. to DIN38404 part 6, table 1 based on the standard redox electrode (e.g. GE105 with Ag/AgCl system and 3mol KCl) used.

**rH-measurement:** Calculation of the rH value by means of a redox measuring and by manually entering the pH-value. The pH-value can also be taken from a previous pH measurement.

**Temperature measurements:** Display of current value 12.4 mm high for thermometer mode. Min-/Max- or Hold values can be displayed in the second 7 mm high display.

### Accessories:

**GTF 35** temperature probe, Pt100 4-wire (p.r.t. page 87)

**GE 100 BNC** Standard-electrode, BNC-plug

**GE 109** pH electrode with integr. Pt100, without thread, BNC-plug and MiniDIN-plug (suitable for GMH3530)

**GNG 10/3000** plug-in power supply (recommend for logger application!)

**GKK 3000** case with cut-outs for GMH3xxx

**GKK 3500** large case with punched lining suitable for device and accessories

**GRS 3100** interface converter, electrically isolated

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

**EBS 9M** software for transmission, recording and archiving measuring values obtained from one GMH3xxx (p.r.t. page 37).

**miscellaneous accessories (case, mains adaptors, etc.) suitable for all GMH3xxx devices p.r.t. p. 35 - 37**

# SENSORES DE pH Y O.R.P.

Transmisores

Portátiles

**DPF**  
sensors

PH 125.2  
pH - ORP - °C  
meter



- High accuracy and reliability
- LCD display
- Temperature visualization
- Automatic or manual Temperature compensation
- Corrosion resistant

This instrument is designed for field applications in waste water, swimming pools, chemical, electroplating and food industries.

By pressing any key the instrument will switch on or will extend the operation for about 5 minutes.

The temperature compensation on the pH readout is automatic or manual. The zero and sensitivity adjustment allows a very accurate calibration of the meter.

The plastic case with the polycarbonate membrane provide a corrosion resistance in field applications.

## Accessories and sensors

to be ordered separately

BC 921: carrying case

SZ 959: buffer solutions 4/7/9 pH 50 cc.

SZ 142 - SZ 161 - SZ 1031: suggested pH electrodes

SZ 251: suggested ORP electrode

SP 51501 - SP 51511: suggested temperature sensors

## Specifications

Display: LCD 3 1/2 digit

Scales: 0/14.00 pH ±1000 mV -20.0/+120.0 °C

Zero: ± 15 %

Sensitivity: ± 20 % (pH only)

Input: from pH/ORP electrodes, BNC connectors  
from Pt1000, jack connector

Power: 9 V battery

Battery life: 100 hours operation

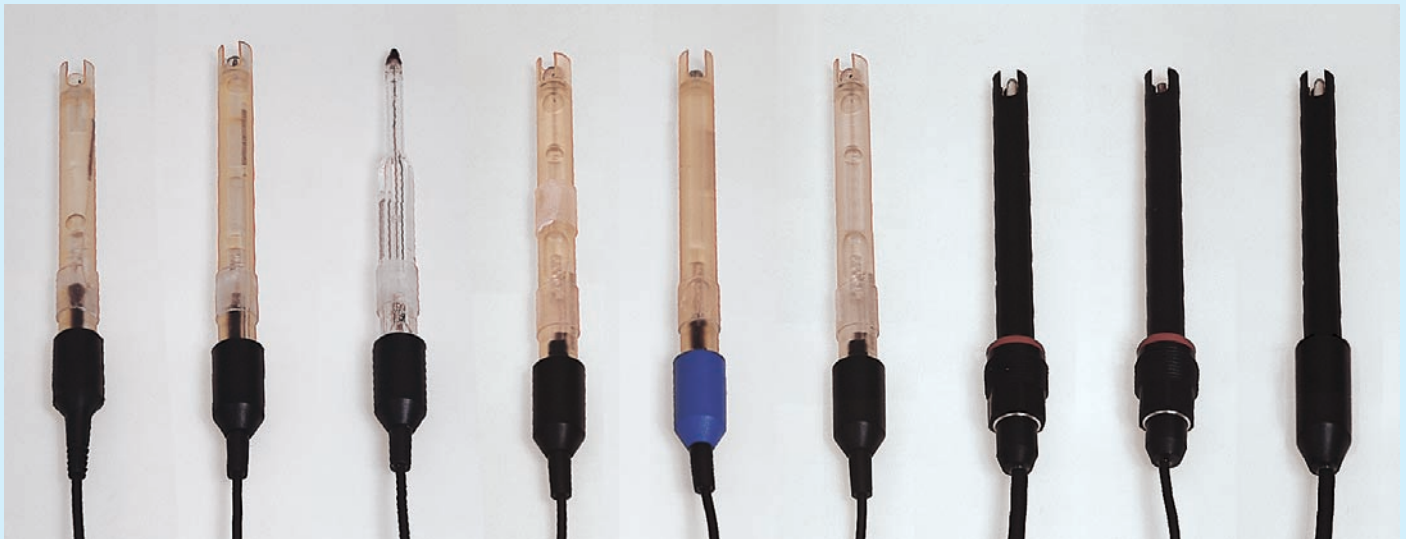
Dimensions: 92 x 155 x 33 mm

Weight: 300 g

**GUEMISA**  
**gm**

Sta. Virgilia 29 Local.1A 28033 Madrid  
Tfno.: 91 764 21 00 Fax.: 91 764 21 32  
www.guemisa.com Email.:info@guemisa.com

# pH-electrodes, redox electrodes and accessories



GE 014	GE 100	GE 101	GE 103	GE 105	GE 106	GE 107	GE 108	GE 109
Low cost pH-electrode	Standard pH-electrode	Injection pH-electrode	Double chamber pH-electrode	Redox-electrode	pH-electrode for VE-waters	pH-electrode with integrated Pt1000-sensor	Standard pH-electrode, pres. resistant	pH-electrode with integrated Pt100-sensor
<b>2 - 12 pH</b> <b>0 - 60 °C</b>	<b>0 - 14 pH</b> <b>0 - 80 °C</b>	<b>2 - 11 pH</b> <b>0 - 60 °C</b>	<b>0 - 14 pH</b> <b>0 - 80 °C</b>	<b>± 2000 mV</b> <b>0 - 80 °C</b>	<b>2 - 11 pH</b> <b>10 - 80 °C</b>	<b>0 - 14 pH</b> <b>0 - 80 °C</b>	<b>0 - 14 pH</b> <b>0 - 80 °C</b>	<b>0 - 14 pH</b> <b>0 - 80 °C</b>
> 200 µS/cm	> 200 µS/cm	> 200 µS/cm	> 200 µS/cm	> 25 µS/cm	> 25 µS/cm	> 200 µS/cm	> 200 µS/cm	> 200 µS/cm
not pres. resistant	not pres. resistant	not pres. resistant	not pres. resistant	not pres. resistant	not pres. resistant	pres. resistant: 6 bar	pres. resistant: 6 bar	pres. resistant: 6 bar
1m cable	1m cable	1m cable	1m cable	1m cable	1m cable	2m cable	2m cable	2m cable
3 mol/l KCL, refillable	3 mol/l KCL, refillable	3 mol/l KCL, refillable	3 mol/l KCL, 1 mol/l KNO <sub>3</sub> refillable	3 mol/l KCL, refillable	3 mol/l KCL, refillable	Gel-electrolyte, not refillable	Gel-electrolyte, not refillable	Gel-electrolyte, not refillable
without thread	without thread	without thread	without thread	without thread	without thread	thread PG13.5	thread PG13.5	without thread
cinch plug	cinch plug	cinch plug	cinch plug	cinch plug	cinch plug	DIN/banana plug	cinch plug	BNC/MiniDIN plug
*	*	*	*	*	*	**	*	***
environmental analysis, swimming pool, aquarium, water treatment etc.	environmental analysis, swimming pool, aquarium, water treatment etc.	foods, suspensions, ground survey, etc.	photochemistry etc.	aquarium, ground survey, chemical analysis, sewage etc.	low-ionic media, VE-water, discus-fishes etc.	environmental analysis, swimming pool, aquarium, water treatment etc.	environmental analysis, swimming pool, aquarium, water treatment etc.	environmental analysis, swimming pool, aquarium, water treatment etc.

\* suitable for GPRT 1400AN, GPH 014, GPHU 014 MP

\*\* suitable for GPHU 014 MP/DIN

\*\* suitable for GMH3530

## types with BNC plug

(suitable for GMH3530, GPHU014MP/BNC or 3rd-party-devices)

GE 014 BNC	GE 100 BNC	GE 101 BNC	GE 103 BNC	GE 105 BNC	GE 106 BNC		GE 108 BNC	
------------	------------	------------	------------	------------	------------	--	------------	--

Cable extension for pH-electrode

**GWA1Z** thread adapter PG13.5 to G1", plastics

**PG 13.5** external thread, plug on thread adapter, for any electrode

**Special design types** (electrodes with thread, outer length, special applications etc.)

**upon request**

## Accessories, etc.:

**VD120** injection aid for injection electrode GE101

**GAD 1 CINCH** Adapter for the plug-in of electrodes with Cinch-plugs to devices with BNC-sockets.

**GAD 1 BNC** Adapter for the plug-in of electrodes with BNC-plugs to devices with Cinch-sockets.

**KCL 3 M** 3 mol KCl-electrolyte for refilling and storage (fill into protective cap) of electrodes with 3 mol KCl electrolyte, injection bottle, 100 ml

**KNO3 1M** 1 mol KNO<sub>3</sub>-elektrolyte - 100ml-injection bottle, eg for GE103

**GRL 100** Pepsin-cleaning agent, 100ml

**GRP 100** Redox testing solution (220mV at 25°C), 100ml

**GPF 100** Plastic bottle with wide neck, 100ml

**GAK 1400** Working and calibration set cons. of 5 buffer caps. each ( GPH4,0, GPH7,0 und GPH10,0), 3 x GPF100, 1 x 3 mol KCl-electrolyte KCL3M and 1 x Pepsin-cleaning agent GRL100.

**GPH 4,0 / 5** Buffer capsule (5 pcs.), pH4.0

**GPH 4,0 / 10** Buffer capsule (10 pcs.), pH4.0

**GPH 7,0 / 5** Buffer capsule (5 pcs.), pH7.0

**GPH 7,0 / 10** Buffer capsule (10 pcs.), pH7.0

**GPH 10,0 / 5** Buffer capsule (5 pcs.), pH10.0

**GPH 10,0 / 10** Buffer capsule (10 pcs.), pH10.0

**GPH 12,0 / 5** Buffer capsule (5 pcs.), pH12.0

**GPH 12,0 / 10** Buffer capsule (10 pcs.), pH12.0



## DIGITAL-pH-METER

### GPH 014

Device ready for use incl. pH-electrode type GE 014 and battery. (no buffer solutions)

#### Specification:

**Measuring range (device):** 0.00 up to 14.00 pH  
**Resolution:** 0.01 pH  
**Accuracy (device)** at nominal temperature = 25°C: +/-0.02 pH +/- 1 digit

**Input resistance:** 10<sup>12</sup> Ohm

**pH-electrode:** combined measuring and reference electrode type GE 014 with refillable 3 mol-KCl electrolyte, 2-12 pH, 0 to 60°C

**Calibration:** 3 turning knobs for:

- temperature compensation 0 to 90°C
- pH7 value
- pH x-value (eg 4.0/10.0/12.0)

**Working temperature:** 0 to 45°C

**Display:** 3½-digit LCD display, 13mm high

**Power supply:** 9V battery type JEC 6F22 (incl.)

**Low battery warning:** automatic; "BAT" displayed in case of low voltage

**Battery service life:** approx. 200 operating h

**Dimensions:** approx. 106 x 67 x 30 mm (H x W x D). Impact resistant ABS housing.

**Weight:** approx. 200 g (incl. battery and electrode)

### GAK 1400

#### Working and calibration set:

Working and calibration set consisting of 5 buffer capsules each GPH4.0, GPH7.0 and GPH10.0, 3 x 100ml-plastic bottle GPF100, 1 x 3 mol KCl-electrolyte KCL3M and 1 x Pepsin-cleaning agent GRL100.

GAK1400 is required if no buffer solutions are existing at your works.

#### Accessories:

**GE 014** Spare electrode

**GPH 014 GL** Loose device (without accessories)

**GE 100** Better electrode 0-14pH, 0-80°C

**GE 101** Injection electrode 2-11pH, 0-60°C

**GE 106** pH-electrode for low-ion water (as of 100 µS/cm)

**GKK 252** Case (235 x 185 x 48 mm) with foam lining

**GKK 1100** Case (340 x 275 x 83 mm) with foam lining

**GB 9 V** Spare battery

for additional accessories p.r.t. p. 29, 35

## automatic temperature compensation



## DIGITAL-pH-/mV-/Thermometer

### GPRT 1400 AN

Device ready for use incl. pH-electrode GE100, buffer capsules pH4 and pH7, two 100ml-plastic bottles as well as temperature probe GTF1400AN. Battery/mains operation, analog output: 1mV/digit, ATC = Automatic Temperature-Compensation.

#### Specification:

**Measuring range:**

Position 1 (pH): 0,00 ... 14,00 pH  
 Position 2 (°C): -20,0 ... +110,0 °C  
 Position 3 (mV): -1999 ... +1999 mV

**Resolution:** 0,01pH, 0,1°C or 1mV

**Accuracy (device):** (at nominal temperature = 25°C)

(pH): ± 0,02 pH ± 1 digit  
 (°C): ± 0,5 °C ± 1 digit (range: -10 to 110°C)  
 (mV): ± 0,2 % of m.v. ± 1 digit

**Input resistance:** 10<sup>12</sup> Ohm

**pH-electrode:** combined measuring and reference electrode type GE 014 with refillable 3 mol-KCl electrolyte 0-14pH, 0-80°C

**Attention!** The pH-electrode does not allow for redox-measurements! - Please order redox electrode GE105 separately, if required (p.r.t. p. 29)

**Temperature probe (type: GTF1400AN):** silicon temperature probe (KTY 11-6), electr. insulated in V4A-pipe, 5mm Ø, approx. 100mm length, approx. 1m silicone cable with 3.5mm Ø jack connector for connection to front-side socket.

*Instrument is calibrated to included GTF1400AN. If probe is replaced a new calibration is necessary.*

**Calibration:** 3 turning knobs for  
 - temperature compensation 0-90°C (automatically when probe is plugged in)  
 - pH7-value  
 - pHX-value (eg. 4.0, 10.0, 12.0)

**Working temperature:** 0 to 45°C

**Display:** 3½-digit LCD display, 13mm high

**Analog output:** 1mV / digit, connection via 3.5 mm Ø jack connector. (suitable jack connector included)

**Power supply:** 9V-battery type IEC 6F22 (incl.). Additional power supply connector socket 2,5mm Ø.

**Low battery warning:** automatic; "BAT" displayed in case of low voltage.

**Battery service life:** approx. 100 operating h

**Dimensions:** approx. 150 x 86 x 30 mm (H x W x D). Impact resistant ABS housing with integrated pop-up clip for table top or suspended use, electrode clipped on at the side

**Weight:** approx. 330 g (ready for use)

#### Accessories:

**GPRT 1400 AN GL** loose device

**GTF 1400 AN** spare temperature probe

for additional accessories p.r.t. p. 29, 35



## Digital-Oxygen Meter

### GOX 20

Device ready for use incl. oxygen probe and battery.

#### Specification:

**Measuring range:**

Temperature: 0.0 ... 40.0 °C  
 Oxygen: 0.0 ... 20.0 mg/l O<sub>2</sub>

**Resolution:**

Temperature: 0.1 °C  
 Oxygen: 0.1 mg/l O<sub>2</sub>

**Accuracy:** (at nominal temperature = 25°C) ±1digit

Temperature: ±0.3°C (range 0-30°C)  
 Oxygen: ±2% of m.v. ±0.2 mg/l

**Electrode:** active diaphragm type.

Electrode-Ø front: approx. 12mm, length: approx. 170mm, connecting cable approx. 2m permanently connected to device.

**Response time:** 95% in 10sec., depending on temperature.

**Operation life:** 3 years or more dependant on maintenance

**Operation pressure:** max. 3 bar

**Temperature compensation:** automatically via temperature sensor integrated in electrode

**Calibration:** simple quick-calibration in atmospheric air

**Display:** 3½-digit LCD display, 13mm high

**Working temperature:** 0 to 50 °C

**Relative humidity:** 0 to 95% r.F. (non condensing)

**Storage temperature:** -5 to 70 °C

**Power supply:** 9V-battery type IEC 6F22 (included).

**Power consumption:** max. 1 mA

**Low battery warning:** automatic; "BAT" displayed in case of low voltage

**Dimensions:** 106 x 67 x 30 mm, impact resistant ABS plastic housing

**Weight:** approx. 250 g (ready for use)

#### Accessories:

**GAS 3600** Working set (consisting of 3 spare diaphragm heads and 100ml KOH-electrolyte)

**GWOK 01** Spare diaphragm head

**KOH 100** 100 ml-bottle Spare electrolyte KOH

**GKK 252** case (235 x 185 x 48 mm) with foam lining

**GKK 1100** case (340 x 275 x 83 mm) with foam lining

**GB 9 V** Spare battery

for additional accessories p.r.t. p. 35

# oxygen measuring devices for dissolved oxygen in liquids



- Double display for oxygen and temperature
- Meas. units: O<sub>2</sub>-concentration, O<sub>2</sub>-saturation and O<sub>2</sub>-partial pressure (GMH3630 only)
- Automatic air pressure compensation by means of integrated pressure sensor
- Salinity correction
- Extremely small measuring probe (dimensions as for pH-probe)
- 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
- Simple calibration in atmospheric air

**GMH 3610**



Sta. Virgilia 29 Local.1A 28033 Madrid  
Tfno.: 91 764 21 00 Fax.: 91 764 21 32  
www.guemisa.com Email: info@guemisa.com

**GMH 3630**

## Specification :

### Measuring ranges:

**O<sub>2</sub>-concentration:** GMH3610: 0,0 ... 25,0 mg/l

GMH3630: 0,0 ... 70,0 mg/l or  
0,00 ... 25,00 mg/l

**O<sub>2</sub>-saturation:** GMH3610: 0 ... 300 %

GMH3630: 0 ... 600 % or 0,0 ... 250,0 %

**O<sub>2</sub>-partial press.:** GMH3630: 0,0 ... 570,0 hPa or 0 ... 1200 hPa

(0,0 ... 427,5 mmHg or 0 ... 900 mmHg)

**Temperature:** 0,0 ... 50,0 °C

**Pressure:** GMH3630 500 ... 1100 hPa abs.

**Accuracy:** (at nominal temperature = 25°C)

**Oxygen:** GMH3610: ±1,5% of m.v. ±0.2 mg/l

GMH3630: ±1,5% of m.v. ±0.2 mg/l (0...25mg/l) or  
±2,5% of m.v. ±0.3 mg/l (25...70mg/l)

**Temperature:** ±0,1°C ±1digit

**Pressure:** ±0,5% FS ±1digit

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

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

**Response time:** 95% in 10sec., depending on temperature.

**Operation life:** 3 years or more, depending on maintenance

**Working temperature:** 0 to +40°C

**Working pressure:** max. 3 bar

**Display:** 2 four digit LCDs (12.4mm and/or 7mm high) for oxygen, temperature and pressure and for min./max values, hold function, etc. as well as additional functional arrows.

**Working temperature:** 0 to +50°C

**Relative humidity:** 0 to +95%r.h. (non-condensing)

**Storage temperature:** -20 to +70°C (Electrode: 0 to 60°C)

**Interface:** serial interface (3.5mm jack connector), direct connection to RS232 interface of a PC via electrically isolated interface adapter GRS3100 or GRS3105 (p.r.t. accessories).

**Min-/Max-value memory:** max. and min.values will be memorized.

**Hold function:** by pressing a button the current meas. value will be memorized.

**Pushbuttons:** 6 membrane keys for ON/OFF-switch, selection of meas. mode, min- and max-value memory, hold-function, calibration etc.

**Power supply:** 9V-battery, type IEC 6F22 (included) as well as additional d.c. connector (internal pin Ø 1.9mm) for external 10.5-12V direct voltage supply. (suitable power pack: GNG10/3000)

**Power consumption:** approx. 3 mA

## Difference between GMH3630 and GMH3610:

Additional features of GMH3630:

- Measuring of air pressure by means of integrated pressure sensor
- Ext. meas. range for O<sub>2</sub> and temperature
- O<sub>2</sub>-partial pressure measurement
- Correction of salinity

**Low battery warning:**  $\Delta$  and 'bAt'

**Power-Off-function:** Device will be automatically switched off if no key is pressed/no interface communication takes place for the time of the power-off delay. The power-off delay can be set to values between 1 and 120 min. or deactivated.

**Housing 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 for table top or suspended use.

**Weight:** approx. 300 g (complete with battery and probe)

**Temperature compensation:** automatic via temperature sensor integrated in electrode.

**Air pressure compensation:**

GMH3610: enter current air pressure by means of keys

GMH3630: automatic via integrated pressure sensor. Display of current air pressure.

**Correction of salinity (GMH3630):** automatic Salinity value can be set via keyboard from 0,0 ... 70,0

**Calibration:** 1-point calibration: extremely simple quick calibration in atmospheric air.

2-point calibration (GMH3630 only): first point at atmospheric air, second point at upper measuring range (with calibration set GKS3600).

**Scope of supply:** device incl. electrode, GWOK01 and KOH100

## Upcharges, accessories:

**GWO 3600 Spare electrode** with 4 m cable

**Upcharge for electrode with 10 m cable**

**Upcharge for electrode with 30 m cable**

**GSKA 3600** protection cap for depth measuring

**GKS 3600** calibration set

(consisting of calibration device, 100 ml calibration solution, 10 ml catalytic solution, measuring pipette and measuring bottle)

**GKN 3600** calibration refill set

(consisting of 100ml calibration solution, 10ml catalytic solution, meas. pipette)

**GAS 3600** working set

(consisting of 3 spare diaphragm heads and 100ml KOH-electrolyte)

**GWOK 01** spare diaphragm head per piece

**KOH 100** spare electrolyte KOH 100 ml-bottle

for add. spare parts and accessories p.r.t. pages 35, 37





### CL 125.2

Free Chlorine - Dissolved Ozone meter



This instrument is designed for a reliable Free Chlorine and D. Ozone measuring in swimming pools, drinking water and in field applications.

The PPM measuring is displayed by means of a potentiostatic sensor directly immersed into the water.

The measuring method requires a constant pH value and a stirring of the sensor into the water in order to replace the consumed Chlorine/Ozone by the sensor.

The calibration is performed by a comparison with an external meter (example a photometer).

By pressing any key the instrument will switch on or will extend the operation for about 5 minutes.

The temperature compensation on the readout is automatic or manual.

The zero and sensitivity adjustment allows a very accurate calibration of the meter.

The plastic case with the polycarbonate membrane provides a corrosion resistance in field applications.

### Accessories and sensors

to be ordered separately

BC 921: carrying case

SP 651: potentiostatic sensor with built-in Pt1000

### Specifications

Display: LCD 3 1/2 digit

Input: from potentiostatic sensor, BNC connectors  
from Pt1000, jack connector

Scales: 0/1.999 PPM - 0/19.99 PPM - -20.0/120.0 °C

Power: 9 Vdc battery

Battery life: 100 hours operation

Dimensions: 92 x 155 x 33 mm

Weight: 300 g