

# Waterproof handheld measuring device for pH / Redox

## Features

- Waterproof (device and plug connections)
- Serial Interface and analog output
- Data logger- and alarm function
- GLP-features (Good Laboratory Practice)
- Robust silicone protection cover
- Big dual display
- Background lightning
- High resolution (0.001pH / 0.1 mV)
- Incl. calibration protocol

## Field of application

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



**GMH 5530** without electrode

**GMH 5550** with analog output and data logger, without electrode

## Technical data

### Measuring ranges:

pH:	-2.000 ... 16.000 pH
Redox / mV:	-2000.0 ... 2000.0 mV (for hydrogen system DIN38404: -1792 ... +2207 mV <sub>H</sub> )
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 <sub>H</sub> )
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 <sup>12</sup> 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)
Display:	two 4½ - digit seven-segment display (15 mm and 12 mm)
pH-Calibration	
Automatically:	1-, 2- or 3- point calibration, GREISINGER-Standard-Buffer or Puffer to DIN19266 (A,C,D,F,G)
Manually:	1-, 2- or 3- point calibration
Protection class:	IP67 (Housing and connections)
Dimensions / Weight:	160 x 86 x 37 mm (H x W x D) incl. protection cover / 250 g incl. battery and protection cover
Housing:	impact resistant ABS housing with pop-up clip
Power supply:	2 x AAA-battery (incl. in scope of supply) power consumption: <1.0 mA
Battery life time:	1000 hours



# Handheld measuring device for pH / Redox

**GMH 5530** without electrode

**GMH 5550** with analog output and data logger, without electrode

Functions	GMH 5530	GMH 5550
Min / max value memory	x	x
Hold / auto-hold	x	x
Auto power off	x	x
Low battery display "BAT"	x	x
Display of condition of pH-electrode	x	x
Background lightning	x	x
Period selectable (on/off or 5 s ... 2 min)		
Automatic temperature compensation	x	x
Adjustable calibration intervals (GLP)	x	x
Calibration memory (GLP)	-	x
Analog output	-	0 - 1 V, freely adjustable, connection with 4-pole bayonet connector, Resolution 13 bit, accuracy 0.05% at nominal temp.
Data logger	-	With measuring point input Recording interval: 1 s ... 1 h Recording period: 416 days at interval 1 h Value memory: cyclic: 10000 data sets; singular: 1000 data sets
Real-time clock	-	x
Min-/max-alarm	-	Permanent monitoring of alarm boundaries 3 alarm conditions - off: Alarm function inactive - on: Alarm report via display, integrated buzzer and interface - no Sound: Alarm report only via display and interface



## General function description

**Min / Max Value Memory:** highest and lowest measured value is saved

**Auto-Hold:** automatic freezing of a constant measuring value

**Auto Power Off:** device is automatically switched off after a selected period if unused (0 to 120 min, or deactivated)

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

**Low Battery Display "BAT"**

**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:**

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.

1-, 2- or 3- point calibration with characteristics bend for GREISINGER-Standard-Buffer, buffer to DIN 19266 or manual buffer input

**Redox-Measurement (ORP):**

2 choices:

"mV" Standard-redox- or mV- measurement

"mVH" Conversion to hydrogen systems according to DIN38404 Teil 6

**rH-Measurement**

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

## Accessories

**GE 125** waterproof pH-electrode with integrated Pt1000 temperature sensor incl. waterproof BNC-plug (p.r.t. page 37)

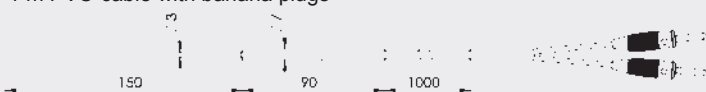
**GE 117** (p.r.t. page 37)

pH-electrode with integrated Pt1000 temperature sensor

**GTF 55 B**

Pt1000 temperature immersion sensor for liquids

1 m PVC-cable with banana plugs



**GE 100 BNC** pH-electrode (p.r.t. page 37)

**GE 105 BNC** Redox-electrode (p.r.t. page 37)

**GAK 1400** Working and calibration set (p.r.t. page 37)

**PHL 4** pH buffer (pH 4,01 / 25 °C) 250 ml

**PHL 7** pH buffer (pH 7,00 / 25 °C) 250 ml

**PHL 10** pH buffer (pH 10,01 / 25 °C) 250 ml



**GMH 55 ES**

Supplementary set, including pH-electrode (GE 100 BNC), temperature probe (GTF 55 B), case (GKK 3500), working and calibration set (GAK 1400)

**EBS 20M** Software for long-term monitoring (p.r.t. page 62)

**GSOFT 3050** (p.r.t. page 62)

Software for operation of logger devices

**USB 5100**

Electrically isolated interface converter with supply of device via USB