

## pH / ORP / temperature measuring device



NEW

- ORP mode allows for automatic conversion to hydrogen system electrodes
- Automatic or manual temperature compensation
- Automatic buffer detection
- Rating function of electrode's quality

NOW WITH PT1000 PROBE  
 GHM 3551 WITH DATA LOGGER  
 AND ANALOG OUTPUT

**GMH 3531**

pH / ORP / temperature measuring device w/o accessories

**GMH 3551**

pH / ORP / temperature measuring device with data logger w/o accessories

**GMH 55 ES**

Additional set:

pH-electrode GE100BNC, temperature probe GTF 55 B (Pt1000), case GKK3500, GAK1400

**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 (DIN 38404): -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 (at range -5 ... 100 °C)
pH:	±0.01 pH
Redox (ORP):	±0.1% FS (mV or mV <sub>H</sub> )
rH:	±0.1 rH

**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).

Current consumption: &lt; 1 mA

Dimensions (device): 142 x 71 x 26 mm (L x W x D). Impact-resistant ABS housing, membrane keyboard, transparent panel. Front side IP65, integrated pop-up clip for table top or suspended use.

Weight: approx. 165 g

**Functions:**

Min / max value memory

Hold function

Automatic off function

Battery warning

**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:**

The buffer type is automatically detected. The temperature dependency of the buffer is automatically compensated.

permitted electrode data: asymmetry: ±55 mV  
slope: 45 ... 62 mV/pH

Sensor evaluation depending on calibration results (10 to 100 %). Opt. 2- or 3-point-calibration with bend of the characteristics for GREISINGER-standard-buffer, buffers acc. to DIN19266 (A,C,D,F,G) or manual buffer entry

**ORP measurement (Redox):**

There are 2 choices:

„mV“: standard ORP or mV measurement

„mV<sub>H</sub>“: temp. compensated conversion to hydrogen system acc. to DIN38404 part 6, table 1 based on the standard ORP electrode (e.g. GE105 with Ag/AgCl system and 3 mol KCl) used.**rH measurement:**

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.

**additional functions of GMH 3551:****Real-time clock****Analog output:** 0 - 1 V, freely scalable, connection via 3-pole jack socket Ø 3.5 mm, resolution 13 bit, accuracy 0.05 % at nominal temperature**Data logger:** cyclic 10,000 data sets, manual: 1,000 data sets (with measuring point input, 40 adjustable measuring point texts or measuring point numbers)**Min- / max- alarm:**continuous checking of alarm boundaries for pH (or mV, mV<sub>H</sub>, ORP)

3 alarm settings:

- off: alarm inactive
- on: alarm via display, internal buzzer and interface
- no Sound: alarm only via display and interface

**Accessories and spare parts:****GTF 55 B**

Temperature probe, Pt1000 (see p. 39)

**GE 100-BNC**

Standard electrode, BNC plug

**GE 117-BNC**

pH electrode with integrated Pt1000 sensor (see p. 40)

**GNG 10/3000**

Plug-in power supply

**GKK 3000**

Case with cut-outs for GMH 3xxx

**USB 3100 N**

Interface converter to USB, electrically isolated

**EBS 20M**

Software for read-out, recording and archiving of measuring data (see p. 66)