

## 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
- rH-measurements
- Evaluation of probe quality
- Battery and d.c. operation
- Serial interface
- Device can be used as thermometer, too

### GMH 3530 without accessories

### GMH 35 ES additional set

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> (at 25°C)

**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 possible)

**pH, Redox:** BNC-socket

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

**Display:** 2 four digit LCDs  
(12.4 mm or 7 mm high)

**Working temperature:** 0 to +50°C

**Storage temperature:** -20 to +70°C

**Interface:** serial interface, direct connection to RS232  
or USB interface of a PC via electrically isolated interface  
converter GRS 3100 or GRS 3105 resp. USB 3100 N  
(p.r.t. accessories).

**Power supply:** 9V-battery, type IEC 6F22 (in-  
cluded) 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 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. Front side IP65, in-  
tegrated pop-up clip for table top or suspended use.

**Weight:** approx. 165 g

##### Functions:

**Min/Max-value memory, Hold function, Auto-  
Off-Function, Low battery warning**

**Automatic temperature compensation:** Auto-  
matic temp. comp. (ATC) if temperature probe is  
plugged in and operating mode is "pH".  
Temperatur compensation ragen: 0 - 105°C.  
Manual temperature input if no probe connected.

**pH-calibration:** automatic buffer detection. Auto-  
matic compensation of temperature dependance  
of buffers.

acceptable electrode data:

Asymmetry: ±55 mV

Slope: 45...62 mV/pH

Sensor evaluation depending on calibration re-  
sults (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 manu-  
ally 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 123)

##### 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

##### USB 3100 N

interface converter to USB, electrically isolated



##### EBS 20M

software for transmission, recording and archiving meas-  
uring values obtained from 1 GMH3xxx (p.r.t. p. 62)

**miscellaneous accessories (case, mains  
adaptors, etc.) p.r.t. p. 60 - 62**

## pH-electrodes for goods and food, etc.



	GE 101	GE 120
Measurand	pH	pH
Measuring range	2 - 11 pH 0 - 60 °C	0 - 14 pH 0 - 80 °C
Conductivity	> 200 µS	> 200 µS
Temperature meas.	no	no
Water proof	no	no
Pressure resistant	no	no
Cable	1 m	1 m
Electrolyte	3 mol/l KCL	3 mol/l KCL
Thread	without	without
Application	foods, suspensions, ground survey, etc.	frozen food, meat, cheese, etc.
Temperature connection	-	-
<b>Connection:</b>		
<b>Cinch</b> 		
<b>BNC</b> 		

#### Options, upcharges:

##### - Cable extension

(available cable length: 1, 2, 5 und 10 m)

##### - Special disign types upon request

(electrodes with thread, other length, special applications etc.)

#### Accessories:

##### 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.

##### GPF 100

Plastic bottle with wide neck, 100ml

**miscellaneous accessories  
p.r.t. p. 37**