

PH ELECTRODES



NEW!

STERILIZABLE

	GE 100	GE 101	GE 104	GE 108	GE 114	GE 117	GE 120	GE 125	GE 126	GE 151	GE 171	GE 173
<b>Measuring range</b>	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
<b>Conductivity</b>	>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
<b>Temperature measuring</b>	no	no	no	no	no	integr. Pt1000 4 mm banana	no	integr. Pt1000 4 mm banana	no	no	no	no
<b>Water-proof</b>	no	no	no	no	optional	no	no	ja	no	no	no	no
<b>Pressure resistant</b>	no	no	no	6 bar	no	6 bar	no	1 bar	5.5 bar	no	10 bar	6 bar
<b>Cable</b>	1 m <sup>1)</sup>	1 m <sup>1)</sup>	1 m <sup>1)</sup>	2 m <sup>1)</sup>	1 m	2 m <sup>2)</sup>	1 m	2 m	5 m	1 m <sup>1)</sup>	ohne	1 m <sup>1)</sup>
<b>Electrolyte</b>	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
<b>Diaphragm</b>	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
<b>Thread</b>	without	without	without	PG 13.5	without	PG 13.5	without	without	1/2" NPT	without	PG 13.5	PG 13.5
<b>Electrode shaft</b>	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
<b>Features</b>	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, alkal-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-2S7-BNC or GEAK-5S7-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 <sup>1)2)</sup>**  
(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.



ceramic rod



glass sleeve



Pellon strap

**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.

HANDHELD INSTRUMENTS

SOFTWARE

ACCESSORIES

ALARM / PROTECTION / LEVEL

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 <sup>1)</sup>	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 <sup>1)2)</sup>  
(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:

<b>GPH 4,0 / 5</b> pH buffer capsules (5 pieces), pH 4.0	Art. no. 602614
<b>GPH 4,0 / 10</b> pH buffer capsules (10 pieces), pH 4.0	Art. no. 602615
<b>GPH 7,0 / 5</b> pH buffer capsules (5 pieces), pH 7.0	Art. no. 602616
<b>GPH 7,0 / 10</b> pH buffer capsules (10 pieces), pH 7.0	Art. no. 602617
<b>GPH 10,0 / 5</b> pH buffer capsules (5 pieces), pH 10.0	Art. no. 602618
<b>GPH 10,0 / 10</b> pH buffer capsules (10 pieces), pH 10.0	Art. no. 602619
<b>GPH 12,0 / 5</b> pH buffer capsules (5 pieces), pH 12.0	Art. no. 602620
<b>GPH 12,0 / 10</b> pH buffer capsules (10 pieces), pH 12.0	Art. no. 602621

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

<b>PHL 4</b> pH buffer solution, ready to use (pH 4.01 / 25 °C), 250 ml	Art. no. 601369
<b>PHL 7</b> pH buffer solution, ready to use (pH 7.00 / 25 °C), 250 ml	Art. no. 601371
<b>PHL 10</b> pH buffer solution, ready to use (pH 10.01 / 25 °C), 250 ml	Art. no. 601373
<b>PHL 4-1000</b> pH buffer solution, ready to use, (pH 4.01 / 25 °C), 1000 ml	Art. no. 415029
<b>PHL 7-1000</b> pH buffer solution, ready to use, (pH 7.00 / 25 °C), 1000 ml	Art. no. 415030
<b>PHL 10-1000</b> pH buffer solution, ready to use, (pH 10.01 / 25 °C), 1000 ml	Art. no. 415031

**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