

PH ELECTRODES



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



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.



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.

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 ¹⁾	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 ¹⁾²⁾
(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:

GPH 4,0 / 5 Art. no. 602614

pH buffer capsules (5 pieces), pH 4.0

GPH 4,0 / 10 Art. no. 602615

pH buffer capsules (10 pieces), pH 4.0

GPH 7,0 / 5 Art. no. 602616

pH buffer capsules (5 pieces), pH 7.0

GPH 7,0 / 10 Art. no. 602617

pH buffer capsules (10 pieces), pH 7.0

GPH 10,0 / 5 Art. no. 602618

pH buffer capsules (5 pieces), pH 10.0

GPH 10,0 / 10 Art. no. 602619

pH buffer capsules (10 pieces), pH 10.0

GPH 12,0 / 5 Art. no. 602620

pH buffer capsules (5 pieces), pH 12.0

GPH 12,0 / 10 Art. no. 602621

pH buffer capsules (10 pieces), pH 12.0

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

PHL 4 Art. no. 601369

pH buffer solution, ready to use (pH 4.01 / 25 °C), 250 ml

PHL 7 Art. no. 601371

pH buffer solution, ready to use (pH 7.00 / 25 °C), 250 ml

PHL 10 Art. no. 601373

pH buffer solution, ready to use (pH 10.01 / 25 °C), 250 ml

PHL 4-1000 Art. no. 415029

pH buffer solution, ready to use, (pH 4.01 / 25 °C), 1000 ml

PHL 7-1000 Art. no. 415030

pH buffer solution, ready to use, (pH 7.00 / 25 °C), 1000 ml

PHL 10-1000 Art. no. 415031

pH buffer solution, ready to use, (pH 10.01 / 25 °C), 1000 ml

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