Technical
Information
TI 032C/07/en

Electrodes for pH/Redox measurement

CPS 64/65

pH/Redox single electrodes for all areas of application. Used in conjunction with the corresponding reference electrodes to form a complete measuring chain.

Areas of application
A complete measuring chain comprises a pH or Redox measuring electrode and the corresponding reference electrode. Reference electrodes can be selected from the following electrode families: Orbisint, Orbitex, Ceratex or Ceraliquid. Depending on the pH glass membrane and reference electrode type, these pH/Redox measuring chains can be installed in a wide range of applications.

The single electrode is employed
- in process technology with a reference electrode CPS 13 of the Orbisint family,
- in waste water applications with a reference electrode CPS 23 of the Orbitex family,
- in swimming pools when used with a reference electrode CPS 33 of the Ceratex family, and,
- in food industry with a Ceraliquid reference electrode CPS 43.

Benefits at a glance
Can be used in conjunction with all available reference electrodes (Orbisint CPS 13, Orbitex CPS 23, Ceratex CPS 33, Ceraliquid CPS 43) and other standard reference electrodes.
- For pH ranges from 0 to 14 and temperature ranges from -15 to 130 °C, depending on the choice of membrane glass.
- 6 different membrane glasses:
  - Process standard glass for standard process applications
  - Process high acid glass for use in hot, acid solutions
  - Process high alcaline glass for use in hot, alcaline solutions
  - Sterilizable glass
  - Special glass for applications of high alkalescence
  - Special glass for waste water applications
- Can be installed in standard assemblies via Pg 13.5 threaded plug-in head.
- ZSA electrode plug-in head available for use in Zone 0 hazardous areas
- In standard length 120 mm

Quality made by
Endress+Hauser

ISO 9001

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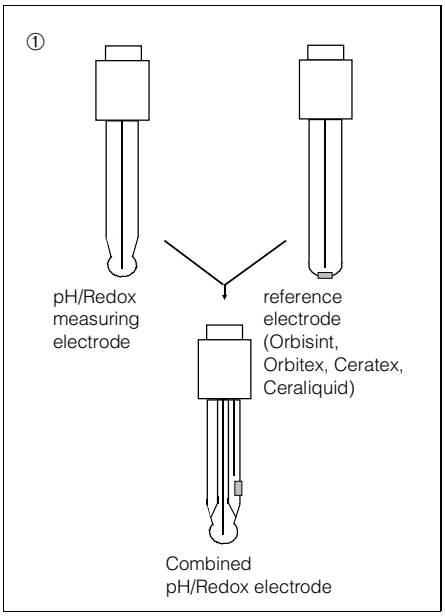
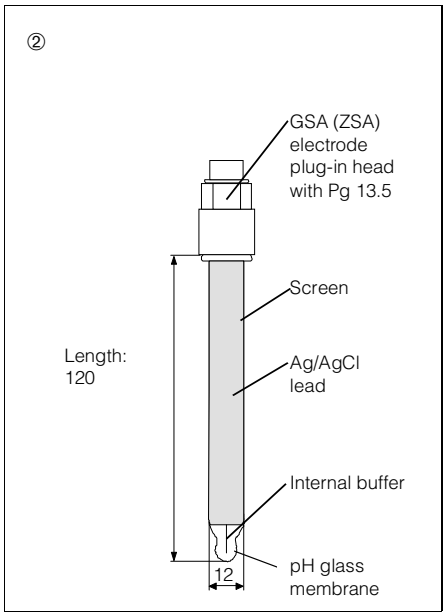
Electrode construction and dimensions

① pH/Redox measurement
- with pH/Redox measuring electrode and reference electrode
- with combined electrode

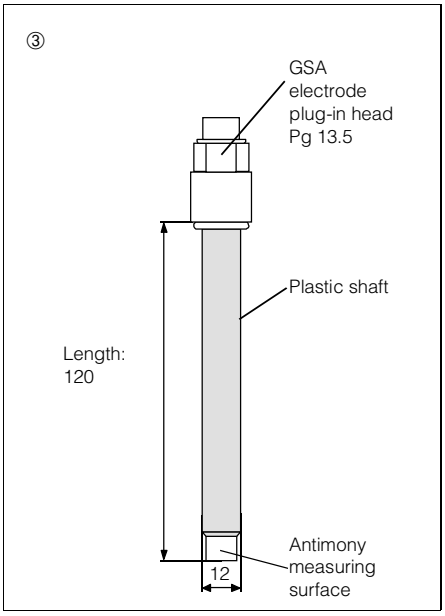
② pH measuring electrode

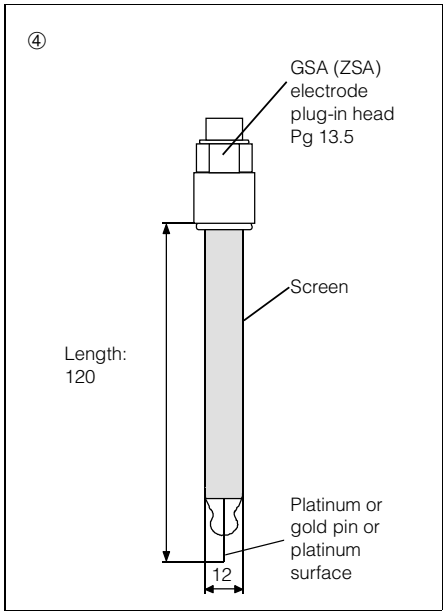




③ Antimony pH measuring electrode

④ Redox measuring electrode





Technical data

Electrical connection

Plug-in head	GSA head with Pg 13.5 for industrial applications
	ZSA head with Pg 13.5 for application in type 0 hazardous areas
Shaft length	120 mm
Shaft material	process glass, non-leaded
Reference system	Ag/AgCl
Chain zero point	E_0 = 7.0 or E_0 = 4.62
Temperature range	-15 ... 130 °C
Pressure range	≤ 15 bar
Membrane glasses	type A, B, C, D, F, H (antimony)
pH range	0 ... 14
Metal	platinum surface, platinum pin, gold pin

Additional data for antimony pH measuring electrode

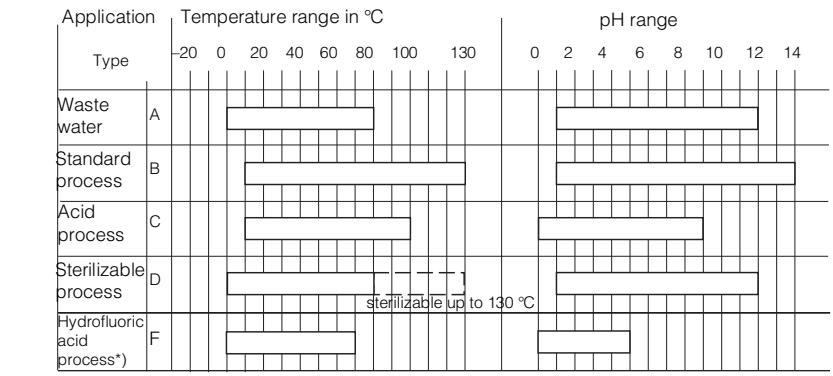
Shaft material	plastic
Chain zero point	E_0 = 2 ... 3
Temperature range	0 ... 50 °C
Pressure	1.5 bar
pH range	0 ... 10

pH electrode selection

When selecting pH electrodes, not only the pH value has to considered, but also temperature, pressure and the conductivity of the medium to be measured.

The temperature/pH range table is a guide for selecting a suitable pH membrane glass.
Finally select the correct electrode length and electrode connection head.

Temperature and ph ranges



Permitted medium pressure ≤ 15 bar =Application range

*) max. 1 g/l

How to order

pH single electrodes CPS 64

Type
0 pH single electrode (only type HK, antimony electrode)
1 pH single electrode / Eo=7.0

Membrane
AA 1-12 pH; 0-80 °C
BA 1-14 pH; 10-130 °C
CA 0-9 pH; 10-100 °C (only GSA connection head)
DA 1-12 pH; 0-80 °C (only GSA connection head)
FA 0-5 pH; 0-70 °C (HF max. 1g/l)
GA 0-12 pH; 0-80 °C (toughened glass, only GSA connection head)
HK 0-10 pH; 0-60 °C (only GSA connection head)

Shaft length
2 Shaft length: 120 mm

Connection head
GSA Threaded plug-in head Pg 13.5
ZSA Threaded plug-in head Pg 13.5; 1.4401 Ex Zone 0

CPS 64- ☐☐☐☐ ⇐ **Complete order code**

Redox electrode selection

When selecting Redox electrodes, the most important factor to consider is the medium being measured. Use the following general guidelines:

Gold electrodes
for oxidizing media, e.g. cyanide oxidation, nitrite oxidation, ozone measurement, hydrogen peroxide measurement.

Platinum electrodes
for reducing media, e.g. chromate reduction, chlorine dosing in swimming pools.

Finally select the correct electrode length and electrode connection head.

How to order

Redox single electrodes CPS 65

Type
0 Redox single electrode

Membrane
PA Platinum surface
MA Platinum pin (only GSA connection head)
NA Gold pin

Shaft length
2 Shaft length: 120 mm

Connection head
GSA Threaded plug-in head Pg 13.5

CPS 65- [ ][ ][ ][ ] ⇐ **Complete order code**

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TI 032C/07/en/05.97
Printed Germany / DT (50054653)