

# Manual for GE105

## Specification:

<b>Reference System:</b>	Ag/AgCl
<b>Metal-electrode:</b>	Platinum round end, Ø 6 mm
<b>Probe stem:</b>	Plastics, Ø12 x 120 mm
<b>Diaphragma:</b>	Ceramics
<b>Electrolyte:</b>	KCl, 3 mol/l
<b>Temperature Range:</b>	0 ... 80 °C

## General maintenance and measuring instructions

- Each electrode has been checked and is delivered ready for use.
- With appropriate use, the warranty will be 6 months.
- The electrodes should be stored in dry rooms at temperatures between 10°C and 30°C. Freezing of the electrolyte may destroy the electrode, below temperatures of -5°C.
- The electrode is covered with a protective cap and must not be stored dry. The protective cap is filled with a 3mol/l KCl-electrolyte, which must be refilled, when needed. A longer storage in distilled water cause a depletion of KCl of the glass electrode single-rod measuring cell or reference cell.
- Air bubbles in the membrane round end can be eliminated with slide moves (clinical thermometer).
- The level of the reference-electrodes has to be checked regularly and, when needed, missing electrolyte has to be refilled with 3 mol/l KCl-dilution via injection or pipette through the refill port (covered with a silicone ring). Refill only with 3 mol/l KCl-dilution.
- Before measuring carefully wash up the electrodes with distilled water.
- During measuring the electrodes have to be washed up well. After using it, the electrode has to be cleaned. For cleaning albuminous soilings pepsin-hydrochloric acid is recommended (GRL 100).
- The platinum round end (shining silvery) can be cleaned via commercial shyer powder (therefore place some shyer powder onto a rag and shortly turn over the platinum round end with the finger - wash up well afterwards.)
- When the measuring function of the electrode is affected or the display reaction is very slow, the following methods are recommended:
  - check reference electrode for air bubbles in it.
  - check reference electrode with the help of a second reference electrode.
  - treating of the sensible glass diaphragma with regenerative dilution (approx. 1 to 2 minutes at ambient temperature)
  - replace of the electrode

All dilutions for calibrating, refilling, cleaning and activating can be ordered directly from us.

## Measuring hints:

The electrode is working after the "silver / silver-chloride" frame of reference. When comparing the measuring values with a standard hydrogen-electrode, the deviation – coming from the changed frame of reference - has to be considered! For getting the hydrogen-electrode reference value you have to use the correction value from the following DIN-table (according to the actual medium temperature) and add this value to the measuring value of the GE105.

Example: Measuring value = 220mV, Medium temperature 25°C  
 DIN-correction value (for medium temperature = 25°C) = 207mV  
 => redox value according to the hydrogen-electrode = 427mV

<u>Medium temperature</u>	<u>Correction value</u>
5°C	221mV
10°C	217mV
15°C	214mV
20°C	211mV
25°C	207mV
30°C	203mV
35°C	200mV
40°C	196mV
45°C	192mV
50°C	188mV

## Disposal instructions

Exhausted pH-electrodes must be disposed via special refuse. When delivering exhausted electrodes from our product range, free for us (sufficient post paid), we will dispose them for free.