Industrial pH electrodes
Serie 9300

- **For pH meter with analog input : Measurement in millivolts (mV)**
- **Combined electrodes (measurement + reference)**
- **PG13.5 thread + coaxial connector**
- **Gel electrolyte**

APPLICATIONS

pH monitoring and control in various industrial sectors:
- pH neutralization
- Wastewater discharge monitoring
- Cooling circuit (Ammonia detection NH_3)
- Electroplating / Galvanoplasty
- Decyanization / Cleansing

DESCRIPTION

The accuracy of pH measurement depends on several factors: the pH meter, the electrode, the connecting cable and the buffer solutions used for calibration. Among these elements, the electrode remains the most crucial.

The glass pH electrodes presented here are combination electrodes, designed to ensure accurate measurement by incorporating a stable reference. They are compatible with all types of pH meters, making them easy to use in a wide range of measurement environments.

Reference system:
All electrodes use an Ag/AgCl system with a ceramic or PTFE diaphragm.

- Theoretical gain : The electrode produces approximately 58 mV per pH unit at a temperature of 20 °C.

pH combined electrodes:
Combination electrodes combine a measurement electrode and a reference electrode in a single unit. The measuring electrode is fully protected by the surrounding low-resistivity electrolyte of the reference electrode. The measuring part corresponds to the special pH glass bulb at the tip.

Installation:
To protect glass electrodes, they must be installed on suitable supports. The Pg 13.5 threaded connection provides a solid, watertight hold. Several mounting options are available:
- Immersion mounting: for measurements in basins or tanks (doc 130-01, 135-01, 145-01).
- In-line installation: for measurements on piping (doc 140-01, 140-02, 141-01, 142-01).

Electrical connection :
To connect a pH electrode via a coaxial connector, a coaxial cable is required. These cables ensure low-loss signal transmission and protection against electromagnetic interference, essential for accurate pH measurements. We recommend 9060 or 9061 cables and 9054 connectors (see datasheet 160-01).

Maintenance and care :
The pH electrode requires regular maintenance.
Calibration is crucial for reliable and accurate measurements.
For continuous measurements, the electrode must remain immersed. If not in use, proper storage is necessary to extend its lifespan.

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pH

150-01 /1

CODE NUMBERS AND REFERENCES

Code	150 112	150 113	150 125	150 210	150 342	150 370
Reference	9308 RP	9308 RP2	9326F	9321	9387	2001
Range	0...14 pH	0...14 pH	1...11 pH	0...12 pH	0...14 pH	See doc. 150-03
Max. pressure at 20 °C	6 bar	10 bar	1 bar	6 bar	10 bar	
Temperature	-5...+80 °C	-5...+70 °C	0...+60 °C	-30...+30 °C	-5...+140 °C	
Conductivity	> 100 µS/cm	> 150 µS/cm	> 150 µS/cm	> 5 µS/cm	> 100 µS/cm	
Diaphragm(s)	Ceramic x1	Ring PTFE	Ring PTFE	Ceramic x3	Ceramic x3	
Length and diameter	120 mm					
Fitting	Type S8 (PG13.5 thread + coaxial connector)					
Connection system	Fixed	Rotating	Fixed	Fixed	Fixed	Fixed
Recommended applications						
Drinking water	●	●				
Swimming pool water	●	●				
Lightly contaminated environments	●	●				
Dechromatization, decyanidation	●	●				
Heavy and clogging media		●				
Highly alkaline media		●				
Fluoride (max. 500 mg/l at pH1)			●			
Low temperature (e.g. NH3 detection)				●		
High temperature (e.g. NH3 detection)					●	
Dirty and contaminated media					●	●
Sulfide, protein					●	●
Ultra-pure water (demineralized)						●
Suspensions and emulsions						●

150 112	**150 113**	**150 125**	**150 210**	**150 342**	**150 370**
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Lifespan
Over time, electrodes wear out and need to be replaced.

This results in an increase in response time, a reduction in slope and/or a shift in the zero point.
The service life of an electrode cannot be predicted, as it depends on the specific operating conditions of the process in which it is used. Under standard conditions, lifetime is estimated at 1 year, with a maximum of 3 years for measurements in optimal conditions, and a few months for continuous measurements in more aggressive or extreme environments.

The design of the 2001 electrode, without a porous ceramic junction, offers a longer service life than conventional electrodes (see doc 150-03).

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pH

17-01-2025 D-150.01-EN-AD

150-01 /2