Datasheet (preliminary)
## SMD foil pH electrode pH01

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The SMD foil pH electrode is designed for electrochemical, potentiometric determination of pH in liquid or moist samples **when combined with a second, reference electrode**.
The readings are taken by measuring the open circuit potential/voltage between both electrodes via high resistivity voltage measurement electronics (see example circuit below). Potential (E) and pH have a linear relationship in the operating range of pH 5 to pH 9. The pH value of an unknown analyte solution can be calculated using the pre-determined slope and an offset E_0 value, which could be determined by measuring the potential in a calibration buffer of known pH value. Once used, the sensor must be kept hydrated for further application and not allowed to dry out.

Technical Data	
Dimensions	L x W in mm
Whole sensor foil	7.6 x 5.6
Connection pad	1.5 x 1.61
Potential response (at 20ºC)	39.3 ± 4.0 mV / pH
Set-up time (time till stable output)	< 1 min
Response time (t_{90})	< 30 sec
Lifetime (in use)	~ 3 days
Measuring environment	
Operating pH range	4 – 8 pH
Samples	Diverse*

must be sufficient moisture for contact to be maintained between both electrodes


Front   *Back*
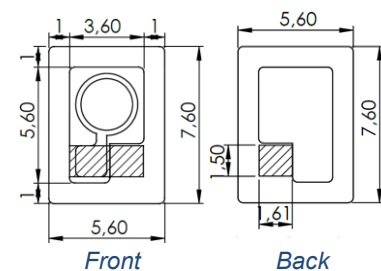
All mechanical dimensions are valid at 25 °C ambient temperature, if not differently indicated. All data except the mechanical dimensions only have information purposes and are not to be understood as assured characteristics. Technical changes without previous announcement as well as mistakes reserved. Load with extreme values during a longer period can affect the reliability. Typing errors and mistakes reserved. Product specifications are subject to change without notice.
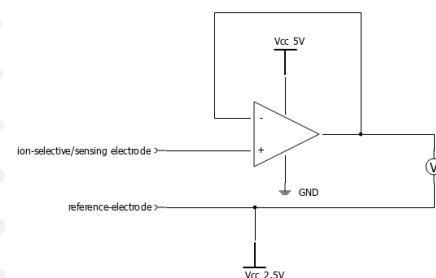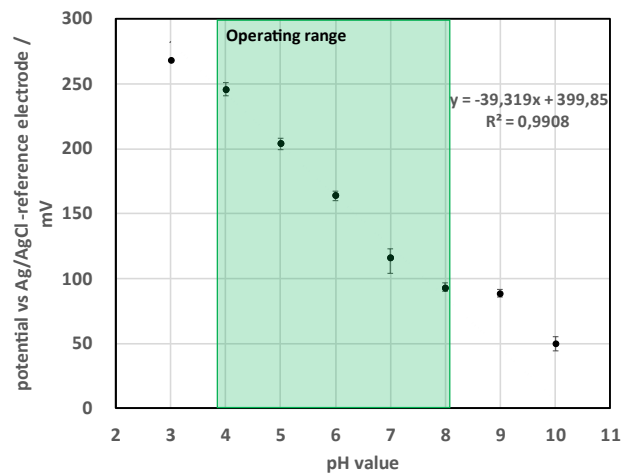

Schematic example for a measuring circuit including an operational amplifier as voltage follower
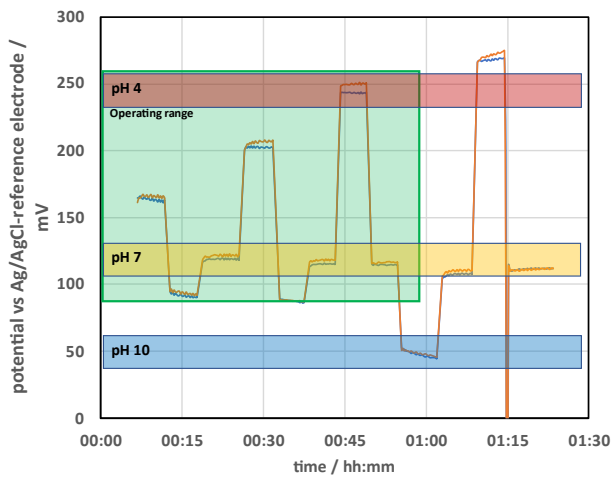
Example output readings for different pH buffer solutions

Potential dependency for different pH buffer solutions and linearity approximation in the range of pH 4 to 8

In the second chart: $y = -39{,}319x + 399{,}85$, $R^2 = 0{,}9908$

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Version history:

Version	Release date	Changes
0.1	04.05.2023	First release
0.2	11.07.2023	Layout adjustments
1.0	15.05.2024	B-sample update
1.1	19.03.2025	Layout adjustment due to company rename