

ID electrodes – reliable and precise pH measurements through automatic electrode recognition

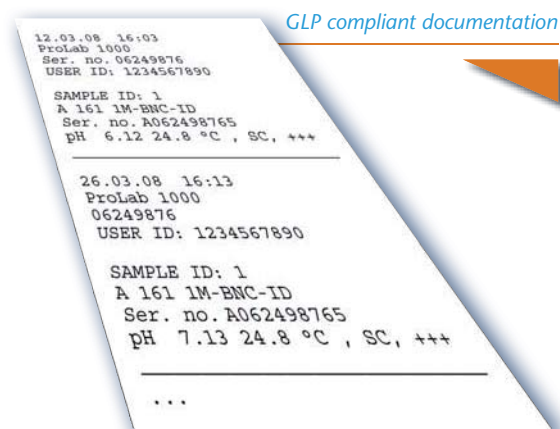
Measurements of utmost accuracy with matching systems from SCHOTT Instruments

The demand for accuracy, reproducibility and primarily the stability of the pH measurement is exceedingly high. It has become even more important to have an application focussed measuring system at hand, consisting of electrodes, measuring instrument and buffer solutions, as each measurement is unique. SCHOTT Instruments has taken this into account and hence offers premium components ideally corresponding to all your applications. Only a perfectly harmonising system will enable measurements of utmost accuracy.

Automatic electrode recognition guarantees the accuracy of the measurement

Basis for the accuracy of pH measurement is the calibration. So far the main efforts for optimizing the calibration focussed on instrument-based help functions, such as for example the automatic buffer recognition. Still the uncertainty regarding the electrode remained, not knowing for sure if the connected electrode was the one matching the calibration data stored with the instrument. For assuring that the electrode's slope and zero point corresponded to the instrument stored data for calculating the pH value it was necessary to calibrate once more.

The Lab 870 and 970 and the instruments belonging to the ProLab family can recognize the ID electrodes automatically – making the wishes of all quality control reality. The electrode recognition works with especially for this purpose developed ID sensors. Individual sensor data is now transferred to the instrument automatically and wireless thanks to a tiny transponder integrated in the cable plug. The sensor data with pH electrodes is for example the slope and zero point, data of last calibration, buffer used as well as sensor type and serial number. The measuring instrument always uses this specific data for each corresponding ID electrode in order to calculate the pH value out of the measured mV, regardless whether using the ID electrode with multiple instruments or various ID electrodes on one instrument.





Continuous updating of sensor data

When the ID electrode is calibrated afresh with the Lab 870/970 or the ProLabs, the data on the electrode are accordingly updated. The instrument will recognize and access the data with the next measurement. This process runs in the background without any interaction of the user. The result shows stable measurements and no necessity for repeated calibrations when changing the sensor.

Records include sensor type and serial number

The instruments also fulfil the increasing documentation requirements. The entire data, such as sensor type and serial number along with measuring values, data and time are part of the measuring record, which can be transferred to the PC via interfaces.

- ▶ **Each ID sensor with unique identification.**
- ▶ **Qualified quality**
- ▶ **Highest comfort** – data exchange between sensor and instrument runs fully automatic in the background.
- ▶ Several ID sensors can interact with one instrument and one ID sensor can interact with multiple instruments via recognition, **without having to calibrate at every changing process.**
- ▶ **Accurate and safe measurements** through continuous usage of sensor specified data.
- ▶ **GLP at its best:**
Automatic and complete documentation of calibrations and measurements including the used electrode (model and serial number) with date, time and measuring values.

Advantages
ID

ID electrodes for highest safety

... with fixed cable and integrated electrode recognition

ID electrodes for pH measurement

Shaft material: glass
Zero point: pH = 7.0 ± 0.3
pH range: 0 ... 14
Reference system¹⁾: iodine/iodid,
 Silamid®,
 Ag/AgCl
Reference electrolyte: KCl 3 mol/l
Fixed cable: 1 m long,
 with DIN or
 BNC plug and
 banana plug
 with the versions
 including an
 integrated
 temperature
 sensor



IL-pHT-A120-DIN-N

IL-pHT-A120-BNC-N

IL-pHT-A170-DIN-N

IL-pHT-A170-BNC-N

A 7780 1M-DIN-ID

A 7780 1M-BNC-ID

A 161 1M-DIN-ID

A 161 1M-BNC-ID

A 164 1M-DIN-ID

A 164 1M-BNC-ID

BlueLine 14 pH ID

BlueLine 15 pH ID

¹⁾ please view the following pages for the technical data of each electrode

ID electrodes for conductivity measuring with temperature sensor

Temperature sensor: NTC 30 kΩ
Fixed cable: 1 m long,
 8-pole plug

* LFOX 1400 ID additionally with oxygen measurement



LF 213 T-ID

LF 313 T-ID

LF 413 T-ID

LF 913 T-ID

LFOX 1400 ID*

A selection of the SCHOTT Instruments ID electrodes programme

ID electrodes for pH measuring

Micro, spear tip and surface combination electrodes

Shaft material: glass
(except BlueLine 21:
plastic shaft)

Zero point: pH = 7.0 ± 0.3

pH range: 0 ... 14
(except BlueLine 21
and 27:
1 ... 13 pH)

Reference system¹⁾: iodine/iodid,
Silamid®,
Ag/AgCl

Reference electrolyte: KCl 3 mol/l,
gel or Referid®

Fixed cable: 1 m long,
with DIN or
BNC plug and
banana plug
with the versions
including an
integrated
temperature
sensor



¹⁾ please view the following pages for
the technical data of each electrode

Electrodes