

pH Electrodes, METTLER TOLEDO

Routine pH electrodes

These InLab® electrodes cover most laboratory applications in aqueous samples. Due to ARGENTHAL®-lead off system and silver ion scavenger, a contamination by sulfide-containing media is excluded and an improved temperature stability can be attained. This ensures that the electrolyte is completely free of silver ions and therefore also suitable for biological specimens.

Technical data:

Shaft material: glass
Reference electrolyte/storage: 3 mol/L KCl
Temperature range: 0 – 100°C
Shaft diameter: 12 mm
Reference: ARGENTHAL® with Ag-scavenger

Type	pH	Temp. sensor	Installed length mm	Diaphragm model	Connection	Order No.
① Routine	0 – 14		120	Ceramic	S7	10 50 03050
② Routine-L	0 – 14		170	Ceramic	S7	10 50 03053
③ Routine Pro	0 – 14	NTC 30kΩ	120	Ceramic	MultiPin	10 50 03054
④ Routine Pt1000	0 – 14	Pt1000	120	Ceramic	MultiPin	10 50 03056
⑤ Routine Pro-L	0 – 14	Pt1000	170	Ceramic	DIN cable/4 mm	10 50 03057
⑥ Science	0 – 12		120	flex. glass grinding	S7	10 50 03070
⑦ Science Pro	0 – 12	NTC 30kΩ	170	flex. glass grinding	MultiPin	10 50 03071

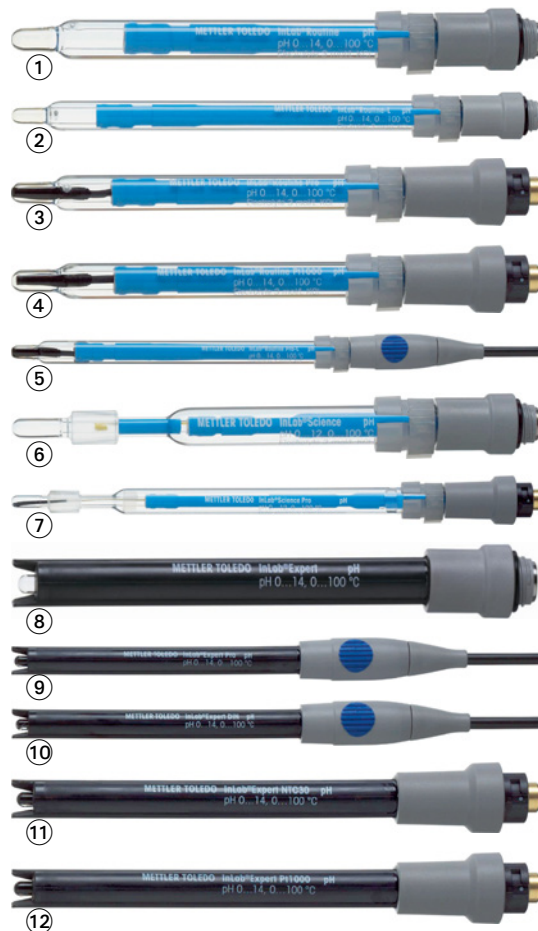
Professional pH electrodes

With their open connection, the electrodes are especially unsusceptible to contaminations. The polymer reference electrode on these sensors is in direct contact with the measurement medium, therefore the diaphragm cannot clog. The PEEK-shaft is extremely resistant both chemically and mechanically.

Technical data:

Shaft material: PEEK (state-of-the-art)
Reference electrolyte: polymer electrolyte XEROLYT®
Temperature range: 0 – 100°C
Shaft diameter: 12 mm
Diaphragm type: open connection
Reference system: ARGENTHAL®
Storage: FRISCOLYT-B®

Type	pH	Temp. sensor	Installed length mm	Connec.	Order No.
⑧ Expert	0 – 14		120	S7	10 50 03100
⑨ Expert Pro	0 – 14	NTC 30 kΩ	120	1.2 m BNC cable	10 50 03101
⑩ Expert DIN	0 – 14	Pt1000	120	1.2 m DIN cable	10 50 03103
⑪ Expert NTC30	0 – 14	NTC 30 kΩ	120	MultiPin	10 50 03104
⑫ Expert Pt1000	0 – 14	Pt1000	120	MultiPin	10 50 03105



pH expert electrodes

Extreme specialist or top generalist - these electrodes are either one or the other. Here, you can find special electrodes for small, cold samples containing hydrofluoric acid and pure, viscous and very adherent samples. The puncture electrode InLab®Solids was designed for pH-measurement for foods such as fruit, cheese or meat. The InLab®Surface was developed for pH-measurement of surfaces, e.g. paper or skin. It is also perfectly suitable for determining drop-sized samples on a glass carrier.

Type	pH	Temp. sensor	Temp. range °C	Shaft (d / l) mm	Connec.	Order No.
13 Solids ¹⁾	1 – 11		0 – 80	6/25	S7	10 50 03153
14 Solids Pro ¹⁾	1 – 11	NTC 30 kΩ	0 – 80	6/25	MultiPin	10 50 03154
15 Viscous ²⁾	0 – 14		0 – 100	6/40	S7	10 50 03150
Viscous Pro ²⁾	0 – 14	NTC 30 kΩ	0 – 100	6/120	MultiPin	10 50 03151
16 Reach ³⁾	0 – 14		0 – 100	12/300	S7	10 50 03060
17 Reach Pro ³⁾	0 – 14	NTC 30 kΩ	0 – 100	12/400	MultiPin	10 50 03061
18 Reach Pt1000 ³⁾	0 – 14	Pt1000	0 – 100	12/400	MultiPin	10 50 03062
19 Surface ⁵⁾	1 – 11		0 – 50	12/110	S7	10 50 03157
20 Semi-Micro ⁶⁾	0 – 12		0 – 100	6/100	S7	10 50 03165
21 Semi-Micro-L ³⁾	0 – 14		0 – 100	6/230	S7	10 50 03161
22 Micro ³⁾	0 – 14		0 – 80	3/60	S7	10 50 03160
23 Micro Pro ³⁾	0 – 14	NTC 30 kΩ	0 – 100	5/130	MultiPin	10 50 03162
Flex-Micro ³⁾	0 – 14		0 – 80	6/180	BNC cable	10 50 03164
Ultra-Micro ⁴⁾	1 – 11		0 – 80	3/40	S7	10 50 03163
24 Cool ⁴⁾	1 – 11		-30 – 80	12/120	S7	10 50 03174
25 Hydrofluoric ³⁾	1 – 11		0 – 100	12/120	S7	10 50 03176
26 Pure ⁷⁾	1 – 11		0 – 80	12/120	S7	10 50 03170
27 Pure Pro ³⁾	1 – 11	NTC 30 kΩ	0 – 80	12/170	MultiPin	10 50 03171
28 Power ²⁾	0 – 12		0 – 100	12/120	S7	10 50 03110
29 Power Pro ²⁾	0 – 12	NTC 30 kΩ	0 – 100	12/170	MultiPin	10 50 03111
Nano ⁵⁾	0 – 14		0 – 80	1.7/40	BNC	10 50 02990

Reference system/ reference electrolyte:

- 1) ARGENTHAL / XEROLYT®PLUS polymer
- 2) SteadyForce / FRISCOLYT-C®
- 3) ARGENTHAL with Ag-scavenger / 3 mol/KCl
- 4) ARGENTHAL with Ag-scavenger / FRISCOLYT-B
- 5) Ag/AgCl / 3 mol/KCl AgCl saturated
- 6) ARGENTHAL / XEROLYT®EXTRA polymer
- 7) Ag/AgCl / gel

30 pH sensors with ISM function

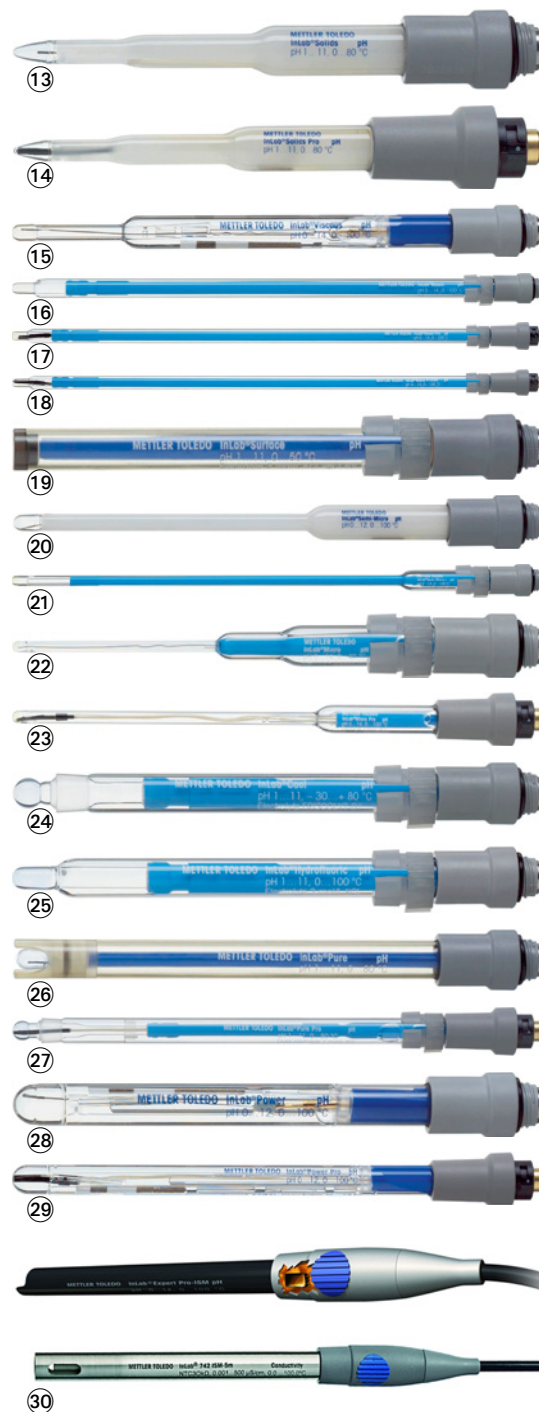
- Sensors with integrated chip for Intelligent Sensor Management (ISM®)
- For SevenCompact-, SevenExcellence-, Seven2Go and SevenGo Duo¹⁾ devices
- Automatic recognition and transfer of data from sensor to device (f.e. calibration data, date, time of day, etc.)
- Integrated temperature sensor for automatic temperature compensation (ATC)
- Easy to clean, low maintenance, long service life

Type	Measuring range	Temp. °C	Length mm	Connec- tion	Temp. sensor	Order No.
Expert Pro-ISM-IP67 ¹⁾	0 – 14 pH	0 – 100	120	BNC/RCA	NTC 30 kΩ	10 50 04102
Expert Pro-ISM-5m-IP67 ¹⁾	0 – 14 pH	0 – 100	120	BNC/RCA	NTC 30 kΩ	10 50 04103
Expert Pro-ISM-10m-IP67 ¹⁾	0 – 14 pH	0 – 100	120	BNC/RCA	NTC 30 kΩ	10 50 04104
InLab OptiOx-ISM-2m	0 – 200% O ₂	0 – 50	100	Mini-LTW	Yes	10 50 04621
InLab OptiOx-ISM-5m	0 – 200% O ₂	0 – 50	100	Mini-LTW	Yes	10 50 04622
InLab OptiOx-ISM-10m	0 – 200% O ₂	0 – 50	100	Mini-LTW	Yes	10 50 04623
Expert Pro-ISM	0 – 14 pH	0 – 100	120	BNC/RCA	NTC 30 kΩ	10 50 04096
Routine Pro-ISM	0 – 14 pH	0 – 100	120	MultiPin	NTC 30 kΩ	10 50 04055
Science Pro-ISM	0 – 12 pH	0 – 100	170	MultiPin	NTC 30 kΩ	10 50 04072
Micro Pro-ISM	0 – 14 pH	0 – 100	130	MultiPin	NTC 30 kΩ	10 50 04163
Pure Pro-ISM	1 – 11 pH	0 – 80	170	MultiPin	NTC 30 kΩ	10 50 04172
Power Pro-ISM	0 – 12 pH	0 – 130	170	MultiPin	NTC 30 kΩ	10 50 04211
Solids Pro-ISM	1 – 11 pH	0 – 80	100	MultiPin	NTC 30 kΩ	10 50 04155

Further ISM electrodes on request.

Accessories

Article	Order No.
ISM cable for pH electrode, 2 m	10 50 04291
ISM cable for pH electrode, 5 m	10 50 04292



Light Edition LE electrodes

Entry level electrodes with gel or fluid electrolyte, suitable for simple measurements in non-soiled media. Fix cable with BNC or DIN plugs (exception: LE427-S7: with S7-screw head). Suitable for all units with BNC or DIN connection (check for proper connection).

Type	pH	Temp. range °C	Installed length mm	Connec- tion	Temp. sensor	Order No.
LE407	0 – 14	0 – 80	120	BNC		10 50 00330
LE407-DIN	0 – 14	0 – 80	120	DIN		10 50 00341
LE408	0 – 14	0 – 80	120	BNC		10 50 00347
LE408-DIN	0 – 14	0 – 80	120	DIN		10 50 00342
LE409	0 – 14	0 – 80	120	BNC		10 50 00331
LE409-DIN	0 – 14	0 – 80	120	DIN		10 50 00343
③① LE410-DIN	0 – 14	0 – 80	120	DIN	NTC 30 kΩ	10 50 00348
LE420	0 – 12	0 – 80	120	BNC		10 50 00332
LE420-DIN	0 – 12	0 – 80	120	DIN		10 50 00345
LE427	0 – 11	0 – 80	120	BNC		10 50 00333
LE427-S7	0 – 11	0 – 80	120	S7		10 50 00334
③② LE438	0 – 14	0 – 80	120	BNC	NTC 30 kΩ	10 50 00242
LE438-DIN	0 – 14	0 – 80	120	DIN	NTC 30 kΩ	10 50 00346
③③ LE422 (Micro, 4 mm)	0 – 14	0 – 80	120	BNC		10 50 09747

Economy ph electrodes

The economy ph-electrodes offer an excellent price-performance ratio. With maintenance-free gel electrolytes, the InLab®Easy Din, Easy BNC and Easy are easy to operate and thus are perfectly suitable for certain applications, e.g. in schools.

Type	pH	Temp. sensor	Installed length mm	Diaphragm model	Connection	Order No.
③④ Easy	0 – 14		120	Ceramic	S7	10 50 03010
③⑤ Easy BNC	0 – 14		120	Ceramic	1.2 m BNC cable	10 50 03011
③⑥ Easy DIN	0 – 14		120	Ceramic	1.2 m DIN cable	10 50 03012
Easy Pt1000	0 – 14	Pt1000	120	Ceramic	1.2 m DIN cable	10 50 03015
③⑦ Basics BNC	0 – 14		120	Ceramic	1.2 m BNC cable	10 50 03020
Basics DIN	0 – 14		120	Ceramic	1.2 m DIN cable	10 50 03021
③⑧ Basics Pt1000	0 – 14	Pt1000	120	Ceramic	1.2 m DIN cable	10 50 03023
Versatile	0 – 14		120		BNC	10 50 03030
Versatile Pro	0 – 14	NTC 30 kΩ	120		BNC	10 50 03031

③⑨ PerfectION™ combined ion-selective electrodes

New sensors with improved measuring performance and optimized handling for a wide range of applications:

- Click&Clear system for ultra-easy diaphragm cleaning and drift reduction
- Plug&Measure kit incl. solutions, detailed application support, and background information
- Polymer electrodes with replaceable membrane
- Matching calibration standards can be ordered to go with the electrodes

Shaft material:

Epoxy (except for Na⁺: glass)

Scope of delivery:

Electrode with fixed cable BNC connector (DIN and LEMO connectors available on request), reference and ISA solution, guide book and information on the application

Type	Measuring range mg/l	Temp. °C	Membrane	optimum pH range	Order No.
Ag ⁺ /S ²⁻	0.01 – 108000	0 – 80	Solid state	2 – 12	10 50 04700
Ca ²⁺	0.02 – 40100	0 – 40	Polymer	2.5 – 11	10 50 04703
Cl ⁻	1.8 – 35500	0 – 80	Solid state	2 – 12	10 50 04706
CN ⁻	0.2 – 260	0 – 80	Solid state	10 – 14	10 50 04709
Cu ²⁺	0.00064 – 6354	0 – 80	Solid state	2 – 12	10 50 04712
F ⁻	0.02 – gesättigt	0 – 80	Solid state	4.5 – 5.5	10 50 04715
I ⁻	0.005 – 127000	0 – 80	Solid state	0 – 12	10 50 04718
K ⁺	0.04 – 39000	0 – 40	Polymer	2.5 – 11	10 50 04721
NO ³⁻	0.1 – 14000	0 – 40	Polymer	2.5 – 11	10 50 04727
Pb ²⁺	0.2 – 20700	0 – 80	Solid state	4 – 7	10 50 04730
Na ⁺	0.002 – 23000	0 – 80	Na ⁺ glass	8 – 11	10 50 04724

