

Standard pH electrodes

Supplied with 1 m of cable and BNC plug + 2 banana plugs

SP10B

- General purpose, pH
- Glass body, 0...14 pH, 0...80 °C
- Single junction, sealed
- 110xØ12 mm

SP10T = SP10B + ATC/temperature (Pt1000)

SP10B-KIT = SP10B + 3x50 ml (pH 4, pH 7, 3 M KCl)

SP10T-KIT = SP10T + 3x50 ml (pH 4, pH 7, 3 M KCl)



Application: Field use, Production, Education, Agriculture, ...

SP21B

- General purpose, pH
- Glass body, 0...14 pH, 0...100 °C
- Single junction, refillable
- 110xØ12 mm

SP21T = SP21B + ATC/temperature (Pt1000)

SP21B-KIT = SP21B + 3x50 ml (pH 4, pH 7, 3 M KCl)

SP21T-KIT = SP21T + 3x50 ml (pH 4, pH 7, 3 M KCl)



Application: Laboratory use, Research, Production, Education, Agriculture, ...

Special pH electrodes

Supplied with S7 plug head

SP11X

- Rugged Tuff-Tip®, pH
- Epoxy body, 0...14 pH, 0...100 °C
- Double junction, sealed
- 110xØ12 mm

SP11X-KIT = SP11X + 3x50 ml (pH 4, pH 7, 3 M KCl)



Application: Resistant to fouling, Easy to clean, Dairy, Dough, Cosmetics, Waste water, Soil, ...

SP21X

- General purpose, pH
- Glass body, 0...14 pH, 0...100 °C
- Single junction, refillable
- 110xØ12 mm

SP21X-KIT = SP21X + 3x50 ml (pH 4, pH 7, 3 M KCl)



Application: Laboratory use, Research, Production, Education, Agriculture, ...

SP22X

- High temperature, pH
- Glass body, 0...14 pH, 5...110 °C
- Double junction, sealed
- 110xØ12 mm

SP22X-KIT = SP22X + 3x50 ml (pH 4, pH 7, 3 M KCl)



Application: Alkaline solutions, High temperature fluids, Photo bath, Ink, Agar, Tris buffer, ...

SP24X

- Spear tip, pH
- Ultem/Glass body, 0...14 pH, 0...80 °C
- Double junction, sealed
- 25xØ5 mm

SP24X-KIT = SP24X + 3x50 ml (pH 4, pH 7, 3 M KCl)



Application: Semi-solids, Meat, Cheese, Bread, Fish, Soil, ...

SP26X

- Sleeve junction, pH
- Glass body, 0...14 pH, 0...100 °C
- Double junction, refillable
- 110xØ12 mm

SP26X-KIT = SP26X + 3x50 ml (pH 4, pH 7, 3 M KCl)



Application: Suspensions, Emulsions, High viscosity, Distilled water, Oil in water, ...

SP27X

- Flat surface, pH
- Epoxy body, 0...14 pH, 0...80 °C
- Single junction, sealed
- 110xØ12 mm

SP27X-KIT = SP27X + 3x50 ml (pH 4, pH 7, 3 M KCl)



Application: Surface applications, Paper, Skin, Small flat volumes, Fruit, ...

SP28X

- Micro electrode, pH
- Glass body, 0...14 pH, 0...80 °C
- Single junction, refillable
- 130xØ4 mm

SP28X-KIT = SP28X + 3x50 ml (pH 4, pH 7, 3 M KCl)



Application: Micro volumes (min. 10 mm depth), Test tubes, ...

SP29X

- Test tube, pH
- Glass body, 0...14 pH, 0...100 °C
- Single junction, refillable
- 250xØ8 mm

SP29X-KIT = SP29X + 3x50 ml (pH 4, pH 7, 3 M KCl)



Application: Tall form laboratory flasks, Micro volumes, ...

ORP electrodes

Supplied with S7 plug head

SP50X

- General purpose, platinum ORP
- Epoxy body
- 0...±2000 mV, 0...80°C
- Single junction, sealed
- 110xØ12 mm



Application: Field or laboratory use, Redox determinations, Swimming pool control, ...

SP60X

- Platinum ORP
- Glass body
- 0...±2000 mV, 0...100°C
- Single junction, refillable
- 110xØ12 mm



Application: Laboratory use, Redox determinations, ...

SP65X

- Silver ORP
- Glass body
- 0...±2000 mV, 0...100°C
- Single junction, refillable
- 110xØ12 mm



Application: Laboratory use, Silver and halide titrations, ...

pH/ORP electrode

Supplied with 1 m of cable and 2 BNC plugs

SP35B

- pH/ORP combination electrode
- 0...12 pH, 0...±2000 mV
- Glass body, sealed
- 0...100°C
- 110xØ12 mm



Application: Bio-electronic measurements (rH₂), Fruit, Juice, Vegetables, Tap water, etc...

Titration electrode

Supplied with S7 plug head

SP04X

- General purpose, double platinum
- Titration electrode
- Glass body
- 0...100°C
- 110xØ12 mm



Application: Laboratory use, Free chlorine control in swimming pools, ...

Sterilisable pH electrodes

Supplied with S8 plug head

SP9xY

- For all sterile biotech applications, pH
- 0...13 pH, -5...135°C, max. 10 bar
- Glass body, double junction, sealed
- Steam sterilisable
- Needs no pressurisation



SP91Y: 110xØ12 mm SP92Y: 120xØ12 mm SP93Y: 130xØ12 mm SP94Y: 160xØ12 mm SP95Y: 210xØ12 mm
 SP96Y: 260xØ12 mm SP97Y: 310xØ12 mm SP98Y: 360xØ12 mm SP99Y: 420xØ12 mm

Electrode cables and accessories

CODE	DESCRIPTION
SC01B	S7/S8 cable, 1 m, with BNC plug
SC03B	S7/S8 cable, 3 m, with BNC plug
SC06B	S7/S8 cable, 6 m, with BNC plug
SC15B	S7/S8 cable, 15 m, with BNC plug
SC30B	S7/S8 cable, 30 m, with BNC plug
A4021	Adaptor, BNC to DIN socket
A4022	Adaptor, BNC to 2 banana
S295	Storage bottle for electrodes, 8 ml
→ Other lengths or plugs on demand	



Standard conductivity electrodes

Supplied with 1 m of cable and BNC plug + 2 banana plugs

SK10B

- General purpose, conductivity
- Epoxy body
- 1 cm², 0...80 °C
- Dual graphite plates
- 110xØ12 mm



Application: Field use, Low and medium conductivities, Education, Agriculture, ...

SK10T = SK10B + ATC/temperature (Pt1000)

SK20B

- General purpose, conductivity
- Glass body
- 1 cm², 0...110 °C
- Dual platinum rings
- 110xØ12 mm



Application: Laboratory use, Low and high conductivities, Research, Production, Education, ...

SK20T = SK20B + ATC/temperature (Pt1000)

Special conductivity electrodes

Supplied with 1 m of cable and BNC plug + 2 banana plugs

SK12T

- Low conductivities + ATC/temperature (Pt1000)
- Epoxy body
- 0.1 cm², 0...80 °C
- Dual graphite plates
- 110xØ12 mm



Application: Field use, Very low conductivities, Distilled water, ...

SK21T

- Low conductivities + ATC/temperature (Pt1000)
- Glass body
- 0.1 cm², 0...110 °C
- Dual platinum plates
- 110xØ12 mm



Application: Laboratory use, Very low conductivities, Distilled water, ...

SK23T

- High conductivities + ATC/temperature (Pt1000)
- Glass body
- 10 cm², 0...110 °C
- Dual platinum rings
- 130xØ12 mm



Application: Laboratory use, Very high conductivities, Sea water, ...

SK24T

- Micro electrode + ATC/temperature (Pt1000)
- Glass body, 1 cm², 0...100 °C
- Dual platinum plates
- 110xØ6 mm



Application: Micro volumes (min. 30 mm depth), Test tubes, ...

Four-pole conductivity electrodes

Supplied with 1 m of cable and DIN-8 plug

SK40T

- *Only to be used with suitable meters!*
- Epoxy body
- 0.5 cm², 0...80 °C
- Four graphite electrodes
- build-in ATC/temperature (Pt1000)
- 110xØ15 mm



Application: Field use, Permits to measure low and high conductivities with only one electrode, ...

SK41T

- *Only to be used with suitable meters!*
- Glass body
- 1 cm², 0...100 °C
- Four platinum rings
- build-in ATC/temperature (Pt1000)
- 110xØ12 mm



Application: Laboratory use, Permits to measure low and high conductivities with only one electrode, ...

SK43T

- *Only to be used with suitable meters!*
- Glass body
- 10 cm², 0...100 °C
- Four platinum rings
- build-in ATC/temperature (Pt1000)
- 110xØ12 mm



Application: Laboratory use, Permits to measure low and high conductivities with only one electrode, ...

Dissolved oxygen electrode

Supplied with BNC plug + 2 banana plugs + electrolyte + membranes

SZ10T

- Galvanic type + ATC/temperature (Pt1000)
- Delrin body
- 0...60 mg/l, 0...50 °C
- With 3 m submersible cable
- 110xØ12 mm



Application: Field use, Dissolved oxygen measurements in watery solutions, ...

SZ02K

- set of 3 membranes + electrolyte

Temperature Compensators

Supplied with 1 m of cable and 2 banana plugs

ST10N

- General purpose, ATC/temperature
- Stainless steel body, PTFE coated
- -30...+130 °C
- Pt1000
- 110xØ4 mm



Application: Field use, Not suitable for very aggressive fluids, ...

ST20N

- General purpose, ATC/temperature
- Glass body
- -30...+130 °C
- Pt1000
- 110xØ8 mm



Application: Laboratory use, Suitable for all types of fluids, ...

AP414

Thermal printer



- Serial (RS232) and parallel (Centronix) input.
- Thermal dot matrix 9x320 dots.
- Prints 40 columns (normal) or 80 columns (condensed).
- Paper width: 112 mm.
- Roll length: ±28 m.
- For direct connection to all meters with a digital output.
- Supplied with manual, 1 roll of thermal paper, mains adaptor (230 VAC) and RS232 cable.
- Optional rechargeable battery pack.

CODE	DESCRIPTION
AP414	Serial printer + mains adaptor + RS232 cable
AM112	Replacement paper, 112 mm x 25 m
AP4005	Rechargeable battery pack (optional)

SH300

Electrode holder



Model SH300 holds up to three standard electrodes. Its heavy base and very stable flexible arm allow the electrodes to move sideways or up and down while keeping them at a constant vertical angle.

CODE	DESCRIPTION
SH300	Flexible electrode holder

- Polymer membrane electrodes consist of various ion-exchange materials in an inert matrix such as PVC, polythene or silicone rubber. The potential developed at the membrane surface is related to the concentration of the species of interest.
- Solid state electrodes utilise relatively insoluble inorganic salts in a membrane. Solid state electrodes exist in homogeneous or heterogeneous forms. In both types, potentials are developed at the membrane surface due to the ion-exchange process.
- Glass membrane electrodes are formed by the doping of the silicon dioxide glass matrix with various chemicals. The most common of the glass membrane electrodes is the pH electrode. Glass membrane electrodes are also available for the measurement of sodium ions.
- Gas sensing electrodes are available for the measurement of ammonia, carbon dioxides and nitrogen oxides. These electrodes have a gas permeable membrane and an internal filling solution. The pH of the filling solution changes as the gas reacts with it which is detected by the built-in pH sensor.
- All models are combination electrodes and have an epoxy body.
- Dimensions: 110xØ12 mm.
- Each electrode comes with user instructions.
- **Two versions available:** standard (ISE20B...ISE52B) or with replaceable membrane (ISE60B...ISE82B).



MODEL	ION	SENSOR	RANGE (M)	RANGE (ppm)	°C	INTERFERENCES	pH	ELECTROLYTE
ISE20B ISE60B	Ammonium NH ₄ ⁺	polymer	5.10 ⁻⁶ - 10 ⁰	0.1 - 18000	0 - 50	K ⁺	4 - 10	NaCl
ISE21B ISE61B	Bromide Br ⁻	solid state	5.10 ⁻⁶ - 10 ⁰	0.4 - 79900	0 - 50	I ⁻ , CN ⁻ , S ²⁻ , high levels of Cl ⁻ and NH ₃	2 - 14	KNO ₃
ISE22B ISE62B	Cadmium Cd ²⁺	solid state	10 ⁻⁷ - 10 ⁻¹	0.01 - 11200	0 - 50	Cu ²⁺ , Hg ²⁺ , Ag ⁺ , high levels of Fe ²⁺ and Pb ²⁺	2 - 12	KNO ₃
ISE23B ISE63B	Calcium Ca ²⁺	polymer	5.10 ⁻⁶ - 10 ⁰	0.2 - 40000	0 - 50	Pb ²⁺ , Hg ²⁺ , Cu ²⁺ , Ni ²⁺	3 - 10	KCl
ISE24B ISE64B	Chloride Cl ⁻	solid state	5.10 ⁻⁵ - 10 ⁰	1.8 - 35500	0 - 50	I ⁻ , Br ⁻ , CN ⁻ , S ²⁻	1 - 12	KNO ₃
ISE25B ISE65B	Copper Cu ²⁺	solid state	10 ⁻⁸ - 10 ⁻¹	0.00064 - 6350	0 - 50	Hg ²⁺ , Ag ⁺ , high levels of Cl ⁻ , Br ⁻ , Fe ²⁺ and Cd ²⁺	2 - 12	KNO ₃
ISE26B ISE66B	Cyanide CN ⁻	solid state	5.10 ⁻⁶ - 10 ⁻²	0.13 - 260	0 - 50	Cl ⁻ , Br ⁻ , I ⁻ , S ²⁻	11 - 13	KNO ₃
ISE27B ISE67B	Fluoride F ⁻	solid state	10 ⁻⁶ - sat.	0.02 - sat.	0 - 50	OH ⁻	5 - 8	KCl
ISE28B ISE68B	Fluoroborate BF ₄ ⁻	polymer	7.10 ⁻⁶ - 10 ⁰	0.1 - 10800	0 - 50	I ⁻ , ClO ₄ ⁻ , CN ⁻	2.5 - 11	(NH ₄) ₂ SO ₄
ISE29B ISE69B	Iodide I ⁻	solid state	5.10 ⁻⁸ - 10 ⁰	0.006 - 127000	0 - 50	S ²⁻ , CN ⁻ , Cl ⁻ , Br ⁻ , S ₂ O ₃ ²⁻ , NH ₃	0 - 14	KNO ₃
ISE30B ISE70B	Lead Pb ²⁺	solid state	10 ⁻⁶ - 10 ⁻¹	0.2 - 20700	0 - 50	Hg ²⁺ , Ag ⁺ , Cu ²⁺ , high levels of Fe ²⁺ and Cd ²⁺	3 - 8	KNO ₃
ISE31B ISE71B	Nitrate NO ₃ ⁻	polymer	7.10 ⁻⁶ - 10 ⁰	0.5 - 62000	0 - 50	I ⁻ , ClO ₄ ⁻ , CN ⁻ , BF ₄ ⁻	2.5 - 11	(NH ₄) ₂ SO ₄
ISE32B ISE72B	Perchlorate ClO ₄ ⁻	polymer	7.10 ⁻⁶ - 10 ⁰	0.7 - 99500	0 - 50	-	2.5 - 11	(NH ₄) ₂ SO ₄
ISE33B ISE73B	Potassium K ⁺	polymer	10 ⁻⁶ - 10 ⁰	0.04 - 39000	0 - 50	Cs ⁺ , NH ₄ ⁺	2 - 12	NaCl
ISE34B ISE74B	Silver/Sulphide Ag ⁺ /S ²⁻	solid state	10 ⁻⁷ - 10 ⁰	0.01 - 107900 0.003 - 32000	0 - 50	Hg ⁺ , Hg ²⁺	2 - 12	KNO ₃
ISE35B	Sodium Na ⁺	glass	10 ⁻⁶ - sat.	0.02 - sat.	0 - 50	H ⁺ , K ⁺ , Li ⁺ , Ag ⁺ , Cs ⁺ , Tl ⁺	5 - 12	NH ₄ Cl
ISE36B ISE76B	Surfactant X ⁻ /X ⁻	polymer	10 ⁻⁵ - 5.10 ⁻²	1 - 12000	0 - 50	similar types of surfactants	2 - 12	KCl
ISE37B ISE77B	Water hardness Ca ²⁺ /Mg ²⁺	polymer	10 ⁻⁵ - 10 ⁰	0.4 - 4000 (Ca ²⁺)	0 - 50	Cu ²⁺ , Zn ²⁺ , Ni ²⁺ , Fe ²⁺	5 - 10	KCl
ISE50B ISE80B	Ammonia NH ₃	gas sensing	5.10 ⁻⁷ - 10 ⁰	0.01 - 17000	0 - 50	volatile amines	11 - 13	NH ₄ Cl
ISE51B ISE81B	Carbon dioxide CO ₂ /CO ₃ ²⁻	gas sensing	10 ⁻⁴ - 10 ⁻²	4.4 - 440	0 - 50	volatile weak acids	4.8 - 5.2	NaHCO ₃
ISE52B ISE82B	Nitrogen oxides NO _x	gas sensing	5.10 ⁻⁶ - 5.10 ⁻³	0.2 - 220	0 - 50	SO ₂ , HF, acetic acid	1.1 - 1.7	NaNO ₂

SP11Y

- Rugged easy to clean Tuff-Tip®, pH
- Epoxy body
- 0...14 pH, 0...100°C
- Double junction, sealed
- 110xØ12 mm



Application: Resistant to fouling, Easy to clean, Swimming pool, Waste water, ...

SP23Y

- High temperature, pH
- Glass body
- 0...14 pH, 5...110°C
- Double junction, sealed
- 110xØ12 mm



Application: Alkaline solutions, High temperature fluids, Photo bath, Ink, ...

SP50Y

- General purpose, ORP
- Epoxy body
- 0...±2000 mV, 0...80°C
- Single junction, sealed
- 110xØ12 mm



Application: Redox determinations, Swimming pool control, ...

SP61Y

- General purpose, ORP
- Glass body
- 0...±2000 mV, 0...100°C
- Single junction, sealed
- 110xØ12 mm



Application: Redox determinations, High temperature fluids, ...

SK10Y

- General purpose, conductivity
- Epoxy body
- 1 cm⁻¹, 0...80°C
- Dual graphite plates
- 110xØ12 mm



Application: Low and medium conductivities, Agriculture, ...

SK20Y

- General purpose, conductivity
- Glass body
- 1 cm⁻¹, 0...110°C
- Dual platinum rings
- 110xØ12 mm



Application: Low and high conductivities, Production, ...

SK22Y

- Low conductivities
- Glass body
- 0.1 cm⁻¹, 0...110°C
- Dual platinum plates
- 110xØ12 mm



Application: Very low conductivities, Distilled water, ...

SK23Y

- High conductivities
- Glass body
- 10 cm⁻¹, 0...110°C
- Dual platinum rings
- 110xØ12 mm



Application: Very high conductivities, Sea water, ...

ST21Y

- General purpose, ATC/temperature
- Glass body
- -30...+130°C
- Pt1000
- 110xØ12 mm



Application: Suitable for all types of fluids, ...

SZ12T

- Dissolved oxygen, galvanic type + ATC (Pt1000)
- Delrin body
- 0...60 mg/l
- 0...50°C
- With 15 m cable + 2 BNC plugs
- 110xØ12 mm



Application: Dissolved oxygen control in watery solutions, ...

SZ02K

- set of 3 membranes + electrolyte

CODE	DESCRIPTION
SC01B	S7/S8 cable, 1 m, with BNC plug
SC03B	S7/S8 cable, 3 m, with BNC plug
SC06B	S7/S8 cable, 6 m, with BNC plug

CODE	DESCRIPTION
SC15B	S7/S8 cable, 15 m, with BNC plug
SC30B	S7/S8 cable, 30 m, with BNC plug
→ Other lengths or plugs on demand	