

## Electrochemical meters/Multi meters



### 1 Combined pH/conductivity/temperature testers

Simultaneous display of pH- and/or conductivity measurement value and temperature. Automatic temperature compensation of pH- and/or conductivity measurement gives enhanced accuracy. User selection of temperature coefficient enables use in alkaline and acidic media. Easy calibration with pre-programmed pH and conductivity solution values. Integral, robust, carbon conductivity probe. Exchangeable pH electrode HI 73127. Model HI 98130 features a very wide measuring range of 0 to 19.99 mS

Hanna

#### Measuring ranges:

pH:	0.0 to 14.0
EC:	0 to 3999 $\mu$ S (HI 98129) 0 to 19.99mS (only HI 98130)
TDS:	0 to 2000mg/l (HI 98129)
$^{\circ}$ C:	0 to 10.00g/l (HI 98130)

#### Accuracy:

pH:	$\pm 0.05$
EC/TDS:	$\pm 2\%$ of the upper range value
$^{\circ}$ C:	$\pm 0.5$
Batteries:	4 x 1.5 Volt
Ambient conditions:	0 to 50.0 $^{\circ}$ C
Weight:	100g

Type	PK	Cat. No.
HI 98129	1	9.773 995
HI 98130	1	9.773 996



### 2 Waterproof Multimeters HI991300/HI991301 N

**NEW!**

pH or conductivity (TDS) values are displayed together with temperature. Supplied with multi-parameter probe, all measurements can be taken without changing the probe. Automatic temperature compensation ensures high accuracy of the measurements. Automatic calibration with pre-programmed pH buffer (pH 7.01, pH 4.01, pH 10.01) and conductivity solutions 1413 $\mu$ S (for HI 991300) or 12880 $\mu$ S (for HI 991301 N). Graphic symbols guide the user through calibration and measurements.

Hanna

HI991300 and HI991301 are supplied complete with multi-parameter probe with 1 metre cable, 4 x 1.5 Volt batteries, altogether in a carrying case.

#### Measurement range/Accuracy:

pH:	0.00 to 14.00/ $\pm 0.01$
EC:	0 to 3999 $\mu$ S/cm (HI991300) 0 to 20.00mS (HI991301 N)/ $\pm 2\%$ of the measurement range
TDS:	0 to 2000 mg/l (HI991300) 0 to 10.00 g/l (HI991301 N)/ $\pm 2\%$ of the measurement range
$^{\circ}$ C:	0.0 to 60.0

#### Resolution:

pH:	0.01
EC:	1 $\mu$ S/cm (HI991300) 0.01mS/cm (HI991301 N)
TDS:	1mg/l (HI991300) 0.01g/l (HI991301 N)
$^{\circ}$ C:	0.1 $^{\circ}$ C
Batteries:	4 x 1.5 Volt AAA
Dimension:	145 x 80 x 36mm
Weight:	210g

Type	PK	Cat. No.
HI 991300	1	6.231 448
HI 991301 N	1	6.241 705

**1 2 3 4 MultiLine® IDS**

Multiparameter measurement defined. The new MultiLine® handhelds with intelligent digital IDS sensors are perfectly suited for all multiparameter applications. The biggest advantage - signals are directly processed in the sensor. Each sensor logs onto the instrument and transfers its ID data including calibration records. There is no danger of confusion, the digital signal transfer allows the use of long cables for all parameters. The unique QSC functionality for IDS pH sensors gives a realistic rating of the current sensor condition. The pH CMC indicates the optimum pH measuring range. A wide range of IDS pH, conductivity and DO probes covers almost any application. Universal waterproof quick-locks secure the sensor against loss. The robust and waterproof (IP67) MultiLine® handhelds are equipped with a colour graphic display for optimum information. A special silicone keypad provides excellent handling comfort. Two USB host interfaces are provided for data transfer to USB sticks or the user's PC. The latest software updates are provided via the internet. NiMH-rechargeable batteries provide an energy-efficient operation. Available as field case sets including sensors and accessories.

WTW



**5 6 Multiparameter meters, ProfiLine Multi 3410/3420/3430**

There are 3 different models available:

**Multi 3410:** A single channel meter for pH, ORP, conductivity and DO measurement. It is particularly aimed at those users measuring one parameter but occasionally having requirements for measuring a second or third.

**Multi 3420:** A dual channel instrument for simultaneous measurement of two equal or different parameters

**Multi 3430:** A triple channel instrument for simultaneous measurement of up to three equal or different parameters

Selected IDS-Sensors:

**SenTix® 940:** Low maintenance combined pH electrode with ATC, QSC suitable, memory for 10 calibrations, stored serial number, pH 0.000 to 14.000 (±0.004pH), temperature range 0.0 to 80.0°C, ±0.2°C

**SensoLyt® 900:** Low maintenance polymer electrolyte pH electrode with built-in temperature sensor, pressure resistant up to 6 bar, QSC suitable, memory for 10 calibrations, saved serial number, pH 2.000 to 12.000 (±0.004pH), temperature range from 0.0 to 60.0°C, ±0.2°C

**SenTix® 950:** Combined pH-electrode with plastic shaft, 3 mol/l KCl, ATC, QSC-suitable, memory for 10 calibrations, stored serial number, pH 0.000 to 14.000 (±0.004pH), temperature range 0.0 to 80.0°C, ±0.2°C

**SenTix® 980:** Combined pH-electrode with plastic shaft, 3 mol/l KCl, ATC, platinum wire junction, QSC-suitable, memory for 10 calibrations, stored serial number, pH 0.000 to 14.000 (±0.004pH), temperature range 0.0 to 100.0°C, ±0.2°C

**TetraCon® 925:** Robust, general purpose 4-electrode conductivity cell with graphite electrodes incorporating integral temperature sensor. Memory for 10 calibrations, stored serial number, measuring range 10 µS/cm to 2000 mS/cm ±0.5% of value, 0.0 to 100.0°C, ±0.2°C

**LR 925/01:** 2-electrode stainless steel conductivity cell for low conductivities, integrated temperature sensor, flow through vessel, memory for 10 calibrations, stored serial number, measuring range 0.01 µS/cm to 200µS/cm ±0.5% of value, 0.0 to 100.0°C, ±0.2°C

**FDO® 925:** Extremely fast (T99 < 60 s) and precise optical DO sensor for field and laboratory applications. Handy, suits in different BOD bottles. Waterproof for depth measurement to 25m. Bevelled, air bubble repelling membrane, Green light technology for extended operation time. Insensitive against H<sub>2</sub>S. O<sub>2</sub> concentration: 0.00 to 20.00mg/l, O<sub>2</sub> saturation: 0.0 to 200.0% O<sub>2</sub> partial pressure: 0.0 to 400hPa. Accuracy: ±0.5% of value. The information for meter precision refers to the sensors' built-in, electronic, measuring technology.





# ITT



## WTW – The Worldwide No. 1 for Electrochemistry Meters

Founded in 1945, WTW has provided outstanding leadership in the design and production of superior quality water testing instrumentation world-wide for 60 years.

Today WTW is offering the world's most complete line of pH/ORP, D.O./BOD/Respirometry and Conductivity Instruments, Turbidity Meters, Photometers with reagents.



*The new MultiLine® portable instruments with intelligent digital IDS sensors are state of the art in electrochemical measurement technology "made in Germany".*



**WTW Wissenschaftlich-Technische Werkstätten GmbH**

Dr.-Karl-Slevogt-Strasse 1 · D-82362 Weilheim, Germany · Tel.: +49 881 183-0 · Fax: +49 881 183-420 · info@WTW.com · www.WTW.com

## Multiparameter meters, ProfiLine Multi 3410/3420/3430

**NEW!**

WTW

### Measurement ranges

pH: -2.000 to 20.000  
 mV: -2.00 to +20.00  
 ±2500, ±1250

### Oxygen measurement

O<sub>2</sub> saturation: 0.0 to 200.0%  
 O<sub>2</sub> concentration: 0.00 to 20.00 mg/l  
 O<sub>2</sub> partial pressure: 0.0 to 400%

### Conductivity measurement:

0.0mS/cm to 2000mS/cm in 5 mode  
 0.00µS/cm to 19.99µS/cm (at K=0.1cm<sup>-1</sup>)  
 0.000µS/cm to 2.000µS/cm (at K=0.01cm<sup>-1</sup>)

Temp.: -5.0°C to +105°C

Memory: manual or time controlled logger, 10000 records  
 Power supply: 4 x 1.2V NiMH, A-Type, battery charger

Type	Description	PK	Cat. No.
Multi 3410	only unit	1	9.920 051
Multi 3410 Set 1	inclusive SenTix®940	1	9.920 052
Multi 3410 Set 2	inclusive SenTix®940-3	1	9.920 053
Multi 3410 Set 3	inclusive SensoLyt®900-6	1	9.920 054
Multi 3410 Set 4	inclusive FDO® 925	1	9.920 055
Multi 3410 Set 5	inclusive FDO® 925-3 m	1	9.920 046
Multi 3410 Set 6	inclusive FDO® 925-6	1	9.920 056
Multi 3410 Set 7	inclusive TetraCon® 925	1	9.920 057
Multi 3410 Set 8	inclusive TetraCon® 925-3	1	9.920 058
Multi 3410 Set 9	inclusive TetraCon® 925-6	1	9.920 059
Multi 3410 Set A	inclusive LR 925/01	1	9.920 060
Multi 3410 Set B	inclusive SenTix® 940-3, FDO® 925-3	1	9.920 061
Multi 3410 Set C	inclusive SenTix® 940, TetraCon® 925	1	9.920 062
Multi 3410 Set D	inclusive SenTix® 940-3, TetraCon® 925-3	1	9.920 063
Multi 3410 Set E	inclusive SenTix® 980, LR 925/01	1	9.920 047 <b>3</b>
Multi 3420	only unit	1	9.920 064
Multi 3420 Set B	inclusive SenTix® 940-3	1	9.920 065
Multi 3420 Set C	inclusive SenTix® 940, TetraCon® 925	1	9.920 066
Multi 3420 Set D	inclusive SenTix® 940-3, TetraCon® 925-3	1	9.920 067
Multi 3420 Set E	inclusive SenTix®980, LR 925/01	1	9.920 068
Multi 3420 Set H	inclusive SenTix® 950, TetraCon® 925	1	9.920 048 <b>1</b>
Multi 3420 Set G	inclusive SenTix® 940-3, FDO® 925-3, TetraCon® 925-3	1	9.920 049
Multi 3430	only unit	1	9.920 069
Multi 3430 Set C	inclusive SenTix®940, TetraCon® 925	1	9.920 070
Multi 3430 Set D	inclusive SenTix®940-3, TetraCon® 925-3	1	9.920 071
Multi 3430 Set E	inclusive SenTix®980, LR 925/01	1	9.920 072
Multi 3430 Set F	inclusive SenTix®940, FDO 925, TetraCon® 925	1	9.920 073
Multi 3430 Set G	inclusive SenTix® 940-3, FDO® 925-3, TetraCon® 925-3	1	9.920 050 <b>2</b>
Multi 3430 Set K	inclusive SenTix® 980, FDO® 925, TetraCon® 925	1	6.241 477



#### Electrochemical meters/Multi meters

1



#### 1 pH/mV/°C meter HI 2211-02/HI 2215-02

**NEW!**

Hanna

- Extra wide LCD, displays pH/mV value and temperature simultaneously
- The stability indicator makes the calibration procedure calibration error free
- Automatic calibration at two points with pre-programmed standard buffers (pH 7.01; 4.01; 10.01)
- Automatic temperature compensation from -10°C to +120°C
- Graphic symbols guide the user through calibration and measurement

#### Further specifications (HI 2215-02 only):

- Resolution: 0.01 or 0.001pH
- Automatic calibration at two points with 7 pre-programmed standard buffers ( pH 1.68; 4.01; 6.86; 7.01; 9.18; 10.01; 12.45 ) and 2 selectable buffers.
- Recording of up to 100 values with date and time via keystroke
- Data transfer to PC via USB interface

#### Supplied with:

HI 2211-02 is supplied with pH glass electrode HI 1131B, temperature probe, pH 7.01 and pH 4.01 buffer solution (20ml each), electrolyte solution, electrode holder, 12V adapter

#### Measuring range/Accuracy:

pH:	-2.00 to 16.00/±0.01
mV:	±399.9 (ISE); ±2000 (ORP)/ ±0.2 (±699.9); ±1 (2000)
°C:	-9.9 to 120/±0.5 (0.0 to 100.0)

#### Resolution:

pH:	0.01 0.01 or 0.001 (HI 2215-02 only)
mV:	0.1 (±399.9); ±1 (2000)
°C:	0.1
Power supply:	12V d.c. adapter (included)
Operating temp. range:	0 to 50°C
Weight:	2.5

Type	PK	Cat. No.
HI 2211-02	1	9.773 981
HI 2215-02	1	9.773 994
Spare electrode HI 1131B for HI 2211-2 / HI 2215-02	1	9.040 993

We can supply this  
**manufacturer's**  
 whole  
**product range !**



## 1 Multiparameter Multi 350i

WTW

- Multi 350i with combined conductivity/ dissolved oxygen sensor ConOx
- measures pH/oxygen/conductivity/temperature simultaneously
- data logger and memory for 1500 GLP compliant entries
- universal, robust, waterproof

The Multi 350i:  
multifunctional, with high accuracy, flexible usage, universal application.

A multi for every situation:

pH, ORP, ISE, oxygen, conductivity, in a pocket unit. Up to 4 parameters including temperature can be simultaneously measured, displayed and stored by using the new combined conductivity/oxygen sensor ConOx. Beyond this, in addition to pH and combined ISE, every currently-available WTW oxygen or conductivity sensor can be connected to this unit. Menu-driven, backlit graphics display, data logger and 1800 data point memory. Built-in, high-quality NiMH batteries give up to 500 hours of continuous use, universal power supply for charging and operating where power is available. Set includes electrodes and accessories. PC communication package also available.



### Measurement ranges

pH/ion measurement:

- pH: -2.00 to 20.000
- mV: -2000 to +2000
- Conc.: 0.01 to 2000mg/l

### Oxygen measurement

- O<sub>2</sub> concentration: 0.00 to 20.00mg/l (20.0mg/l\*)  
0.0 to 90.0mg/l (90mg/l\*)
- O<sub>2</sub> saturation: 0.00 to 20.00%  
0.0 to 600%
- O<sub>2</sub> partial pressure: 0.0 to 200.0mbar (200mbar\*)  
0.0 to 1250mbar

**Conductivity measurement:** 0.0mS/cm to 2000mS/cm in 5 measuring ranges in AutoRange mode plus:  
0.00µS/cm to 20.00µS/cm (at K=0.1cm<sup>-1</sup>)  
0.000µS/cm to 2.000µS/cm (at K=0.01cm<sup>-1</sup>)

**Temp.:** -5.0°C to +105°C

**Salinity:** 0.0 to 70.0

**TDS:** 0 to 2000mg/l

**Specific resistance:** 0.00 to 2000MW

### Temperature compensation

- pH/ion measurement: auto. -5 to +105.0°C  
man. -20 to +130°C
- oxygen measurement: at ambient temp. 5°C to 30°C:  
±0.5%, < 2% at 0 to +40°C
- conductivity measurement: Temp: ±0.01K  
non-linear function for ultrapure water, water EN 27 888  
linear comp. of 0.01% to 3.00%/K  
compensation can be ad

### Barometric compensation

Oxygen measurement: autom. with integral pressure sensor (500 to 1100hPa)

### Salinity correction

Oxygen measurement: automatic

### Reference temperature

Conductivity measurement: selectable 20°C or 25°C

### Cell constant

Conductivity measurement: 0.475cm<sup>-1</sup>, 0.1cm<sup>-1</sup>, 0.01cm<sup>-1</sup>,  
adjustable between 0.25 to 2.5cm<sup>-1</sup>, 0.09 to 0.11cm<sup>-1</sup>

Description	PK	Cat. No.
with pH/DIN input, a.c. adapter, operating instructions, without sensors, PC communication pack	1	9.920 035
with pH/DIN input and SenTix 41-3m, ConOx-3m, transport case incl. accessories and PC com.	1	9.920 036
Sentix 41-1m, accessories in transport case	1	9.920 023
Set with multi parameter sonde MPP350 and transport case	1	9.920 024

## Electrochemical meters/Multi meters

1



### 1 ProfiLine Multi 1970i

Multi 1970 is robust - waterproof - reliable - a true versatile instrument for measuring at depth

WTW

The new WTW ProfiLineMulti 1970i is not only protected from strong water jets (IP66) but also submersion (IP67). It has a GLP-compliant memory with real-time clock (500 data records) as well as a RS232 interface. It accommodates simultaneous connection of pH, conductance and oxygen sensors. The parameter to be measured is set into the display with the "M" function key and can then be measured or stored. Includes a combination carrying handle/stand bracket as well as a carrying strap. The Multi 1970i has an integrated preamplifier which makes it suitable for depth measurements (down to 100m) in single parameter mode when combined with the WTW depth probe.

#### Specifications:

Measurement ranges

pH measurement: pH: -2.00 to 19.99  
mV: -1999 to +1999

Oxygen measurement  
O<sub>2</sub> concentration: 0.00 to 19.99mg/l  
0.0 to 90.0mg/l

O<sub>2</sub> saturation: 0.00 to 19.99%  
0.0 to 600%

Conductivity measurement: 0.0mS/cm to 500mS/cm in 4 measurement ranges when in AutoRange mode  
Temp.: -5.0°C to +105.0°C  
Salinity: 0.0 to 70.0

Temperature compensation  
pH measurement: automatic -5 to +105.0°C  
manual -20 to +130°C

Oxygen measurement: for ambient temperatures 5°C to 30°C: ±0.5% < 2% at 0 to +40°C

Conductivity measurement: non-linear function for natural water per EN 27 888

Air pressure compensation  
oxygen measurement: automatic with integral pressure sensor (500 to 1100hPa)

Salinity correction  
oxygen measurement: automatic

Reference temperature  
conductance measurement: 20°C/25°C, selectable

Cell constant  
conductivity measurement: K=0.475cm<sup>-1</sup>

Type	PK	Cat. No.
ProfiLine Multi 1970i	1	9.920 034

We can supply this  
manufacturer's  
whole  
product range !



#### 1 SCHOTT® Instruments pH measuring instrument Lab 870

ID electrodes and meters with automatic identification and data exchange and allocation.

SI Analytics GmbH

- Reliable and precise measuring values due to perfect matching with the measuring system consisting of meter, electrode and buffer solutions.
- fast pH measurement and calibration through advanced measuring algorithm.
- maintains reliability with "CalClock", sensor recognition and calibration timer.
- fast and easy documentation complying with GLP through perfect communication via USB (slave) and RS232.
- highest safety for measuring and calibrating through wireless sensor recognition.
- ID electrodes and meters with automatic identification and data exchange and allocation.
- the special stand - mounting with one click and the stand is positioned firmly and safely.

Items supplied in set:

- measuring instrument
- ID-electrode with integrated temperature sensor
- buffer solutions
- stand
- universal power supply unit
- cover



#### Specifications

pH measuring range:	-2.000pH to +19.999pH -2.00pH to +19.99pH
Accuracy (±1digit):	±0.005 ±0.01
mV measuring range:	-999.9mV to +999.9mV; -999mV to +999mV
Accuracy (±1digit)	±0.3mV ±1mV
Temperature measuring range:	-5.0°C to + 120.0°C
Accuracy (±1digit):	0.1°C

Type	PK	Cat. No.
Lab 870 DIN Set	1	9.773 851
Lab 870 BNC Set	1	9.773 852





## Electrochemical meters/Multi meters



9.773 864



9.773 866

### SCHOTT® Instruments multi-parameter measuring instrument ProLab 1000/2000

SI Analytics GmbH

- highest safety level with measurements and calibration through: automated user identification, user recognition with electronic ID card through wireless transponder technology.
  - wireless sensor recognition ID electrodes and measuring instrument with automatic identification and data exchange and allocation.
  - high-precision and reliable measurements through perfect matching with the measuring system consisting of meter, electrode and buffer solution.
  - safety at a glance with "CalClock", Sensor evaluation and calibration timer.
  - fast and easy documentation complying with GLP via USB (slave) and RS232 ports.
- The special stand - mounting with one click...and the stand is positioned firmly and safely.

Items supplied as set:

- measuring instrument
- electrode with integrated temperature sensor
- buffer solutions
- stand
- universal power supply unit
- cover

**Specifications**

pH measuring range:	-2.000pH to +20.000pH -2.00pH to +20.00pH -2.0pH to +20.0pH
Accuracy (±1digit):	±0.003 ±0.01
mV measuring range:	-1999.9mV to +1999.9mV; -1999mV to +1999mV
Accuracy (±1digit):	±0.2mV ±1mV
Temperature measuring range:	-10.0°C to + 120.0°C
Accuracy (±1digit):	0.1°C
ISE measuring range:	0.000 to 10000mg/l
<b>Only ProLab 2000:</b>	
Conductivity measurement:	0.000µS/cm to 2000mS/cm
O <sub>2</sub> concentration:	0 to 20.00mg/l x 0.01mg/l

Type	PK	Cat. No.
ProLab 1000 DIN Set	1	9.773 864 <b>1</b>
ProLab 1000 BNC Set	1	9.773 865
ProLab 2000 DIN Set	1	9.773 866 <b>2</b>
ProLab 2000 BNC Set	1	9.773 867

We can supply this  
**manufacturer's**  
 whole  
**product range !**



**SI Analytics**

## SCHOTT® Instruments multiparametermeters ProLab 3000/ProLab 4000

- "Windows" interface and operation
- flexible display of measuring values on a high resolution, bright, backlit, colour-graphics display (320x240 pixels)
- 2-channel pH/mV (galvanically isolated) inputs and dU differential measurement
- ID electrodes with automatic identification and data exchange or allocation with the meter
- automatic user identification with electronic identity card including password entry
- recorder functions: display of measurement against time, scalable coordinate axis
- numerical display of measurement value via mouse click (time, data, measurement value, temperature)
- Interfaces: RS232C interface (bi-directional), USB connection (slave, bi-directional), USB master connection with direct connection (without configuration) to: USB-hub, USB-printer, USB-memory, keyboard, mouse, USB-stick

SI Analytics GmbH

1



9.773 857

2



9.773 861

### Specifications

pH measuring range:	-2.000 pH to +20.000pH -2.00 pH to +20.00pH -2.0 pH to +20.0pH
Accuracy (±1digit):	±0.002 ±0.01
mV measuring range:	-2200.0mV to +2200.0mV; -2200mV to +2200mV
Accuracy (±1digit)	±0.1mV ±1mV
ISE measuring range:	1.0E <sup>-40</sup> to 9.9E <sup>39</sup> mg/l
Temperature measuring range:	-35.0°C to + 150.0°C
Accuracy (±1digit):	0.1°C
<b>ProLab 4000 only:</b>	
Conductivity measuring range:	0.000µS/cm to 2000mS/cm
Accuracy (±1digit):	0.5% from measurment value at an ambient temperature of 5°C to 30°C

Type	PK	Cat. No.
ProLab 3000 DIN Set	1	9.773 857 <b>1</b>
ProLab 3000 BNC Set	1	9.773 859
ProLab 4000 DIN Set	1	9.773 861 <b>2</b>
ProLab 4000 BNC Set	1	9.773 863



## Electrochemical meters/Multi meters

### The new inoLab® series from WTW

The new inoLab® benchtops are perfectly designed for modern laboratory surroundings.

WTW

The key pads are clearly outlined and easy-to-operate, their smooth surfaces are easy-to-clean and the operation is self-explanatory. Depending on the type, they have a seven segment display or a backlit black and white graphical display, as well as a USB interface.

The new inoLab® Multi 9310 is an outstanding product. It is the first completely digital single channel benchtop meter for the new intelligent IDS sensor generation with digital signal transfer and intelligent features. All meters include a universal power supply and a convenient stand with sensor support. If desired they can be ordered in application oriented sets including sensors and accessories.

1



### 1 Laboratory instrument inoLab® Multi 9310 IDS

**NEW!**

WTW

The Multi 9310 IDS features a new technology: No longer has the meter determining the parameter but only the sensor. Intelligent, digital IDS sensors promotes the inoLab® Multi 9310 IDS to a perfect all-rounder. The universal digital input is ready for all available laboratory IDS sensors. No matter whether pH, conductivity or dissolved oxygen, when plugged into a suitable sensor the inoLab® Multi 9310 becomes either a pH, conductivity or dissolved oxygen meter. Of course it has a modern backlit graphic display with menu-controlled user interface for easy and intuitive operation. The mini USB-B interface provides fast data transfer to a PC. The internal memory can record up to 5000 GLP complying data including ID, date and time. The housing and the keypad are easy-to-clean. An integrated thermal printer (58mm width) is ready for printout of the measured data (option). Includes meter, power supply, stand and USB cable.

#### Specifications

Display:	backlit graphic LCD
Memory:	manual 200/5000 automatic
Logger:	manual/time controlled
Interface:	Mini USB-B
Power supply:	Universal power supply, 100 to 240 V, 50/60 Hz, 4 x 1.5 V AA or 4 x 1.2 V NiMH

Type	Description	PK	Cat. No.
Multi 9310	Single instrument	1	9.920 120
Multi 9310 Set 1	Incl. SenTix® 940	1	9.920 121
Multi 9310 Set 2	Incl. SenTix® 980	1	9.920 122
Multi 9310 Set 3	Incl. TetraCon®925	1	9.920 123
Multi 9310 Set 4	Incl. FDO® 925	1	9.920 124
Multi 9310 Set C	Incl. SenTix® 940, TetraCon® 925	1	9.920 125
Multi 9310 Set K	Incl. SenTix® 980, FDO® 925 and TetraCon® 925	1	9.920 126
Multi 9310P*	Single instrument	1	9.920 127
Multi 9310P Set 1*	Incl. SenTix® 940	1	9.920 128
Multi 9310P Set 2*	Incl. SenTix® 980	1	9.920 129
Multi 9310P Set 3*	Incl. TetraCon®925	1	9.920 130
Multi 9310P Set 4*	Incl. FDO® 925	1	9.920 131
Multi 9310P Set C*	Incl. SenTix® 940, TetraCon® 925	1	9.920 132
Multi 9310P Set K*	Incl. SenTix® 980, FDO® 925 and TetraCon® 925	1	9.920 133

\* with integrated printer.



Electrodes - please see page 281



#### 1 Multiparameter meter pH/ION/Cond 750

Two independent galvanic pH inputs make it possible to perform simultaneous measurements of pH value, Redox potential or ion concentration. Calibration procedures, with up to 7 standard solutions, can be carried out for exact measurements across the entire range of an ISE electrode. Up to 5 individual calibration routines can be stored in memory. The calculation of the calibration curve makes allowance for non-linear segments. The following processes are available for determining ion concentrations: Direct potentiometry, standard addition/subtraction, specimen addition/subtraction, double standard addition, blank value correction, standard addition with blank value correction, reference measurement.

WTW



The conductivity measurement allows specific resistance, salinity, TDS and specimen-specific temperature coefficients to be determined. Concentration curves for standard chemicals, like NaCl, are already stored in the instrument. A wide range of additional functions, such as measurement data management, PC connection via MultiLab® pilot, GLP compliant calibration and measurement data acquisition, and bi-directional RS 232 interface are also incorporated.

**Measurement ranges/accuracy (±1 digit):**

**pH/ion measurement:**

pH:	-2.000 to +20.000/±0.004
	-2.00 to +20.000/±0.01
mV:	±999.9/±0.2
	±2000/±1
Concentration:	0.001mg/l to 200g/l
Temperature:	automatic: -5.0 to +105.0°C
NTC30 KOhm:	±0.1K
Pt 1000:	±0.1K from 0.01% to 3.00%/K
Conductivity measurement:	0.0µS/cm to 2000mS/cm in 5 ranges when in AutoRange mode
	0.01 to 20.00µS/cm (K=0.1cm <sup>-1</sup> )
	0.001 to 2.000µS/cm (K=0.01cm <sup>-1</sup> )
Temperature:	-5.0 to +105.0°C
Salinity:	0.0 to 70.0
TDS:	0 to 2000mg/l
Spec. resistance:	0.00 to 2000MOhm
Conductance:	±0.5% of measured value
Temperature compensation	-0.5 to +100°C
	manual: -20 to +130°C
	(linear and non-linear function for ultra-pure water and natural water (EN27888))
Deactivate compensation	
Reference temperature	selectable: 20/25°C
Cell constants	fixed: 0.01cm <sup>-1</sup>
	freely adjustable: 0.090 to 0.110cm <sup>-1</sup>
Calibration:	0.450 to 0.500cm <sup>-1</sup>

Type	Description	PK	Cat. No.
inoLab® pH/ION/Cond 750	with 2 DIN inputs and broad range a.c. adapter (individual unit), without printer	1	9.774 396
inoLab® pH/ION/Cond 750 Set	inoLab® pH/Ion/Cond 750 + SenTix® 81 with DIN plugs including TetraCon® 325	1	9.774 397

#### 2 Test strips, AQUADUR®

For determining water hardness. Supplied in boxes of 100 strips.

MACHEREY-NAGEL

Scale gradation °d*	PK	Cat. No.
<3 / >5 / >10 / >15 / >20 / >25	100	9.130 393
<3 / >4 / >7 / >14 / >21	100	9.130 394
<3 / >4 / >8.4 / >14	100	9.130 400

\* German units. Multiply by 1.25 to convert to UK units (°e), and by 10 for US units (mg/l CaCO<sub>3</sub>)



## Electrochemical meters/pH meters

**1**

**1 Litmus paper**

Litmus paper, available in blue, red and neutral.  
Supplied in books of 100 strips, 10 x 75mm W x L.

MACHEREY-NAGEL

Type	PK	Cat. No.
Litmus paper, blue	1	9.130 112
Litmus paper, red	1	9.130 116
Litmus paper, neutral	1	9.130 118

**2**

**2 LLG-Universal indicator paper, rolls**
**NEW!**

For the determination of pH values.

Range	PK	Cat. No.
pH		
1 - 11	1	9.129 800
1 - 14	1	9.129 802

Refill packs containing 3 rolls.

Range	PK	Cat. No.
pH		
1 - 11	3	9.129 801
1 - 14	3	9.129 803

**3**

**3 Universal indicator papers**

For determination of pH- value.  
Plastic dispensing reel with 1 roll of indicator paper and colour scale.

MACHEREY-NAGEL

Range	PK	Cat. No.
pH		
0,5 - 5,5	1	9.130 305
5,5 - 9,0	1	9.130 325
1 - 11	1	9.130 200
1 - 14	1	9.130 210

**4**

**4 Refill packs universal contain 3 rolls.**

MACHEREY-NAGEL

Range	PK	Cat. No.
pH		
0,5 - 5,5	3	9.130 306
1 - 11	3	9.130 203
1 - 14	3	9.130 213
5,5 - 9,0	3	9.130 326

**5**

**5 Indicator paper, DUOTEST**

Roll length 5m, 10mm width. With two colour zones.  
Plastic box with 1 roll of indicator paper and colour scale.

MACHEREY-NAGEL

Range	PK	Cat. No.
pH		
1 - 12	1	9.130 344
1,0 - 4,3	1	9.130 356
3,5 - 6,8	1	9.130 359
5,0 - 8,0	1	9.130 347
7,0 - 10,0	1	9.130 362
9,5 - 14,0	1	9.130 363

**6**

**6 Refill packs DUOTEST contain 3 rolls.**

MACHEREY-NAGEL

Range	PK	Cat. No.
pH		
1 - 12	3	9.130 355
5 - 8	3	9.130 358

### 3. Analytical measurement and testing Electrochemical meters/pH meters

#### 1 Universal indicator paper, TRITEST

For determination of pH- value.  
Roll length 5m, 10mm width. With three colour zones, without hydrophobic zone.  
Plastic container with 1 roll of indicator paper and colour scale.

MACHEREY-NAGEL

Range	PK	Cat. No.
pH 1 - 11	1	9.130 367

#### 2 Refill packs TRITEST contain 3 rolls.

MACHEREY-NAGEL

Range	PK	Cat. No.
pH 1 - 11	3	9.130 368



#### 3 Universal indicator paper TRITEST L

For determination of pH- value.  
Roll length 6m, 14mm width. With three colour zones and 2 hydrophobic zones.  
Plastic container with 1 roll of indicator paper and colour scale.

MACHEREY-NAGEL

Range	PK	Cat. No.
pH 1 - 11	1	9.130 360

#### 4 Refill packs TRITEST L contain 3 rolls.

MACHEREY-NAGEL

Range	PK	Cat. No.
pH 1 - 11	3	9.130 361



#### 5 LLG-Indicator paper strips NEW!

Range	Description	PK	Cat. No.
pH			
0 - 11	pad of 100 strips	100	9.129 804
0 - 14	pad of 100 strips	100	9.129 805
0 - 14	50 strips per pack	50	9.129 806
0 - 14	100 strips per pack	100	9.129 807



#### 6 Indicator paper, PEHANON®

For determination of pH-value in coloured solutions.  
Supplied in packs of 200, 11 x 100mm W x L strips.

MACHEREY-NAGEL

Range	PK	Cat. No.
pH		
1 - 12	200	9.130 657
0 - 1,8	200	9.130 658
1,0 - 2,8	200	9.130 651
1,8 - 3,8	200	9.130 652
2,8 - 4,6	200	9.130 656
3,8 - 5,5	200	9.130 603
4,0 - 9,0	200	9.130 659
5,2 - 6,8	200	9.130 605
6,0 - 8,1	200	9.130 626
7,2 - 8,8	200	9.130 660
8,0 - 9,7	200	9.130 366
9,5 - 12,0	200	9.130 661
10,5 - 13,0	200	9.130 663
12,0 - 14,0	200	9.130 666



## Electrochemical meters/pH meters

**1**


### 1 pH-Fix indicator strips

**NEW!**

For determination of pH- value. Permanent colour. Non bleeding.

MACHEREY-NAGEL

Range	PK	Cat. No.
<b>pH</b>		
0 - 6,0	100	<b>9.130 382</b>
0 - 14,0	100	<b>9.130 381</b>
0 - 14,0*	100	<b>9.130 379</b>
0,3 - 2,3	100	<b>9.130 385</b>
1,7 - 3,8	100	<b>9.130 386</b>
2,0 - 9,0	100	<b>9.130 380</b>
3,1 - 8,3 CE 1)	100	<b>9.130 377</b>
3,6 - 6,1* CE **	100	<b>9.130 378</b>
3,6 - 6,1 CE **	100	<b>9.130 387</b>
4,5 - 10,0 CE **	100	<b>9.130 383</b>
5,1 - 7,2	100	<b>9.130 388</b>
6,0 - 7,7	100	<b>9.130 389</b>
6,0 - 10,0	100	<b>9.130 392</b>
7,0 - 14,0	100	<b>9.130 384</b>
7,5 - 9,5	100	<b>9.130 390</b>
7,9 - 9,8	100	<b>9.130 391</b>

\* PlopTop tube

CE-marked according to the IvD-directive 98/79/EG, the directive for medical products 93/42/EWG.

**2**


### 2 pH indicator strips

Non-bleeding. Ranges as indicated. Supplied in packs of 100 strips.

Merck

Type	Range	Increments	PK	Cat. No.
	<b>pH</b>	<b>pH units</b>		
Universal	0 - 14	1	100	<b>9.130 001</b>
Acilit	0 - 6	0.5	100	<b>9.130 016</b>
Neutralit	5 - 10	0.5	100	<b>9.130 017</b>
Alkalit	7,5 - 14	0.5	100	<b>9.130 018</b>

**3**


### 3 Special indicator strips

Non-bleeding. Supplied in packs of 100 strips.

Merck

Range	PK	Cat. No.
<b>pH</b>		
0,0 - 2,5	100	<b>9.130 002</b>
2,0 - 9,0	100	<b>9.130 003</b>
2,5 - 4,5	100	<b>9.130 004</b>
4,0 - 7,0	100	<b>9.130 007</b>
5,2 - 7,2	100	<b>9.130 008</b>
6,5 - 10,0	100	<b>9.130 010</b>
11,0 - 13,0	100	<b>9.130 013</b>

### 3. Analytical measurement and testing Electrochemical meters/pH meters

#### 1 pH tester Checker 1

Pocket pH tester with exchangeable electrode. Ideal for pH testing small amounts of liquid and in narrow vessels.

Hanna

**Specifications:**

Measuring range: 0.00 to 14.00 pH  
 Accuracy: ±0.2 pH  
 Battery: 2 x 1.5V cells  
 Probe dimensions: 66 x 55 x 25 mm  
 Weight: 63g



Type	PK	Cat. No.
Checker 1	1	9.773 930
Spare electrode	1	9.773 931
Calibration kit, 5 x 20 ml pH 4 and pH 7	1	9.773 932
Calibration kit, 10 x 20 ml pH 7	1	9.773 933

#### 2 Pocket pH meters, PICCOLO

Handy pocket pH meters with built-in amplifier electrode for greater measurement stability. Automatic temperature compensation via built-in temperature sensor. Two point calibration. Piccolo Plus model has additional temperature display. Supplied complete with electrode, batteries and buffer solutions in ABS case.

Hanna

**Specifications:**

Measuring range: 0.00 to 13.00pH  
 0 to 70°C (Piccolo Plus only)  
 Accuracy: ±0.01pH  
 ±1°C (Piccolo Plus only)  
 Batteries: 3 x 1.5V cells giving up to 100 hours operation  
 Dimensions: 172 x 29 x 15mm  
 Weight: 80g



Type	PK	Cat. No.
PICCOLO I	1	9.773 946
PICCOLO II	1	9.773 945
PICCOLO Plus	1	9.773 944

#### Spare electrodes for pH meters PICCOLO

Hanna

Type	Length mm	PK	Cat. No.
HI 1280 PICCOLO I	90	1	9.773 947
HI 1290 PICCOLO II	160	1	9.773 948
HI 1295 PICCOLO Plus	160	1	9.773 950

#### 3 pH/°C tester pHep®-4

Recently developed waterproof pH °C tester (IP67). First pH tester with handheld measuring device features. Automatic two point calibration with 3 pre-programmed standard buffers (pH 7.01; pH 4.01; pH 10.01). Stability indicator for high-precision measurements. Simultaneous display of pH value and °C. Optional automatic or manual temperature compensation. Includes exchangeable HI 73127 pH electrode.

Hanna

**Specifications:**

Measuring range: 0.0 to 14.0 pH  
 0.0 to 60.0°C  
 Accuracy: ±0.1 pH  
 ±0.5°C  
 Batteries: 4 x 1.5V  
 Environmental conditions: 0 to +50°C  
 Dimensions: 163 x 40 x 26mm  
 Weight: 100g



Type	PK	Cat. No.
pHep®-4	1	9.773 920
Spare electrode	1	9.773 921
Calibration Kit pH 7.01 + 10.01, 5 x 20 ml	1	9.773 934
Calibration kit pH 4.00 + 7.01, 5 x 20 ml	1	9.773 932



## Electrochemical meters/pH meters

1



### 1 pH/°C Meter HI 991001

- Portable pH/°C -Meter for laboratory use
- displays pH and temperature simultaneously
- stability Indicator prevents unstable measurements
- automatic 2 point calibration with pre-programmed standard buffers ( pH 7.01; 4.01; 10.01)
- automatic temperature compensation enables highest accuracy
- supplied with amplified pH Electrode HI 1296D with integral temperature sensor

Hanna

**Specifications:**

Measuring ranges: -2.00 to 16.00 pH  
-5.0 to 105°C

Accuracy: ±0.02 pH  
±0.5°C

Battery: 1x 9 Volt

Operating temp. range: 0 to 50.0°C

Weight: 500g

Type	PK	Cat. No.
HI 991001	1	9.733 998

2



### 2 Accessories for pH-/°C- Meter HI 991001

Hanna

Type	PK	Cat. No.
Electrode HI 1296 D	1	9.773 982
Calibration Kit pH 7.01 & 4.01 (5 x 20ml each)	1	9.773 932
Calibration Kit pH 7,01 & 10,01 (5 x 20ml)	1	9.773 934

3



### 3 Portable pH/ mV/ °C Meters HI 8314N/83141

**HI 8314N:** supplied complete with plastic-bodied pH electrode HI1217D with integral temperature sensor, calibration screwdriver, 9 Volt Battery.

Hanna

**HI 83141:** supplied complete with plastic-bodied pH electrode HI1230B, separate temperature probe, calibration screwdriver, 9 Volt battery.

**Measuring range/Accuracy:**

pH: 0.00 to 14.00/±0.01

mV: 0 to ±1999 (ORP)/±1

°C: 0.0 to 100.0/±0.4

pH calibration: manual, 2 point, through trimmers, (offset ±1 pH; slope 85 to 105%)

Temperature compensation: automatic, 0 to 70°C (32 to 158°F) or fix at 25°C without temperature probe

Dimensions: 185 x 82 x 45mm

Battery type/operating life: 1 x 9V/approx. 100 hours of continuous use

Type	PK	Cat. No.
HI 8314N	1	9.773 959
HI 83141	1	9.773 953



### 3. Analytical measurement and testing Electrochemical meters/pH meters

#### 1 Waterproof pH-/mV-/°C- Meters HI 9125 and HI 9126

Hanna

- rugged waterproof pH Meters
- pH or mV value and temperature are displayed simultaneously
- graphical symbols guide the user through calibration and measurement
- automatic one or two point calibration with pre-programmed standard buffers (pH 4.01, 6.86, 7.01, 9.18, 10.01)
- automatic or manual temperature compensation
- additionally, HI 9126 displays the electrode status, 2 customs buffers can be programmed
- HI 9125 & HI 9126 are supplied with plastic pH electrode, temperature probe buffer solutions pH 4.01 and 7.01 (20ml each), 3 x 1.5V batteries all contained within a carrying case

1



**Specifications**

Range:	
pH	-2.00 to 16.00
mV	-1999 to +1999
°C	-20.0 to +120.0
Accuracy:	
pH	±0.01
mV	±1
°C	±0.4
Dimensions:	192 x 72 x 36mm
Weight:	525g

Type	PK	Cat. No.
HI 9125	1	9.773 978
HI 9126	1	9.773 979
Spare electrode HI 1230B	1	6.050 012
Temperature sensor, 1m cable	1	9.773 960

#### 2 Calibration Kits for pH meters

Hanna

Type	PK	Cat. No.
Calibration Kit pH 7.01 & 4.01 (5 x 20ml each)	1	9.773 932
Calibration Kit pH 7.01 & 10.01 (5 x 20ml each)	1	9.773 934

2



#### 3 Foodcare pH Meter HI 99161 with penetration electrode

Hanna

The FC202D electrode supplied is highly suitable for measurements in Food products like fruit juices, yoghurt, butter, cheese and meat, due to its conical profile. It has a built in temperature sensor. pH and temperature are displayed simultaneously. With Stability indicator. Automatic 1- or 2-point calibration with pre-programmed standard buffers (pH 4.01; 7.01; 10.01).

Instrument is supplied with Foodcare Electrode FC202D, pH 7.01 & pH 4.01 buffer solutions (one sachet of 20ml each), cleaning solutions (2 x 20ml) 4 x 1.5 Volt batteries, all contained in a carrying case.

3



**Measuring range/Accuracy:**

pH:	-2.00 to 16.00/±0.01
°C:	-5.0 to 105.0/±0.4
Battery type:	4 x 1.5 Volt AAA
Operating range:	0 to 50°C
Weight:	205g

Type	PK	Cat. No.
HI 99161	1	6.233 767

#### Electrochemical meters/pH meters



#### 1 pH/Redox-Meter AL20pH Set

AQUALYTIC

The new, microprocessor-controlled, AL20, hand-held meter range meets the day-to-day requirement for sturdy and reliable systems to measure pH or redox, conductivity/TDS, temperature and dissolved oxygen.

The water-tight housing complies with IP67 and is fitted with protective armouring to ensure reliable operation, even in extreme ambient conditions. The support can be flipped up to hang the meter on pipes or branches.

- battery operation period up to 15000 hours (4 x 1.5V type AA batteries)
- auto Hold function
- internal memory for 20 data sets
- 1/2 or 3-point-Calibration
- automatic buffer recognition
- sensor connections: DIN 19262 and two 4mm banana sockets "Temp" and "Ref"
- pH electrode: Gel-Type, plastic, with integral temperature sensor

Items supplied: AL20pH, batteries and manual, carrying case, combined pH/Temperature electrode (9.699 272) and buffer solutions.

#### Specifications:

pH:	0.00 to 14.00
Accuracy:	±0.01 pH at 25°C, ±1 sig. digit
Temperature:	-10.0 to +110.0°C
	14.0 to 230.0°F
Accuracy:	±0.2°C (0 to 50°C, otherwise ±0.4°C)
Redox (ORP):	-1999 to +2000mV
Redox (relative):	-1792 to +2206mV (DIN 38 404)
Accuracy:	±0.1% fsd (mV or rel. mV)
Impedance:	>10 <sup>12</sup> Ω (typ.)
Input current:	<1 pA
Nominal temperature:	25°C
Operating temperature:	0 to 50°C
Storage temperature:	-20 to 70°C
Power consumption:	0.2mA
Auto off function:	0 to 120min

Type	PK	Cat. No.
AL20pH Set	1	9.699 260

#### Accessories for pH meter AL20pH

**NEW!**

AQUALYTIC

Description	PK	Cat. No.
Redox electrode	1	9.699 263
pH electrode plastic/gel with integr. temperature sensor	1	7.620 687
pH buffer solution set incl. 90ml pH 4.00, pH 7.00 and pH 10.00 each	1	9.699 272

We can supply this  
**manufacturer's**  
 whole  
**product range !**



## 1 pH meter Vario pH

Ergonomic design, with a variety of uses

WTW

Attractive: as well as its eye-catching design, the new Vario has no buttons but an innovative touchscreen instead. All functions can easily be called up and set - with just one hand. A slight touch on the display suffices - and the Vario is ready to measure. Immersing the probe in the sample solution starts measurement automatically. The stable measurement value, including temperature, is easily legible on the large display; a Hold function freezes the display. GLP compliant memory stores up to 50 measurements for subsequent evaluation.

But the Vario can do even more.

Included in Vario Set accessories is an adapter which makes the device compatible with conventional precision electrodes. This allows the Vario to measure as accurately and reliably as a manual unit.

If the Vario is not in use for pH measurements, it is useful as a lab clock or timer.



### Specifications:

range:	-2.00 to 16.00 pH
accuracy:	±0.01 pH
Temperature measurement range:	-5.0 to 100.0°C
Automatic temperature compensation:	yes
Automatic buffer detection:	TEC/NIST
Calibration points:	3 (MultiCal®)
Calibration alarm:	yes
Calibration date (GLP):	yes
Memory:	50
AutoRead:	automatic AutoRead function
	Hold function to freeze measurement display

Description	PK	Cat. No.
Vario single unit including case, buffer 4/7	1	9.774 385
Vario Set 1 (case, DIN adapter, buffer 4/7 and SenTix 21)	1	9.774 386
Vario Set 2 (case, DIN adapter, buffer 4/7 and SenTix 41)	1	9.774 387
Vario Set 3 (case, S7 and DIN adapter, buffer 4/7 and SenTix 20)	1	9.774 388
Vario Set 4 (case, S7 and DIN adapter, buffer 4/7 and SenTix 60)	1	9.774 389
Vario Set 5 (case, short electrode including temperature probe, buffer 4/7)	1	9.774 392

## Accessories for Vario pH meters

WTW

Description	PK	Cat. No.
S7-Adapter	1	9.774 393
DIN-Adapter	1	9.774 394
Electrode with temperature sensor	1	9.774 395



## Electrochemical meters/pH meters

### Pocket pH meters

The WTW ProfiLine, hand-held, pH/mV meters are robust and waterproof, according to IP67. They have LCD or graphics displays. The proven DIN socket for connecting pH electrodes permits pH measurement even in wet environments. The instruments can be operated by standard alkaline or rechargeable batteries.

WTW

1



2



### 1 2 Portable pH meter pH 3110

Make testing simple. Easy operation virtually eliminates errors. All function keys of the 3110 can be operated even when wearing gloves; automatic calibration and AutoRead functions ensure stable and reproducible results. The multifunctional display for pH, and temperature is always easy to read.

WTW

#### Measuring ranges

pH:	-2.0 ... +19.9
	-2.00 ... +19.99
	-2.000 ... +19.999
Accuracy:	±0.01 pH (±1 digit)
	±0.005 from +15°C to +35°C
mV/Accuracy:	±1200.0/±0.3
	±2000/±0.1
Temperature:	-5.0 to +105.0°C
Accuracy:	±0.1°C
Temperature compensation:	Automatic via pH electrodes with integral temperature probe, TFK 325 or Pt100

Type	Description	PK	Cat. No.
pH 3110	meter only	1	9.774 367
pH 3110 Set 1	case set including SenTix 21 and accessories	1	9.774 376
pH 3110 Set 2	case set including SenTix 41 and accessories	1	9.774 354
pH 3110 Set 3	case set including SenTix 81 and accessories	1	9.774 317

3



### 3 Portable pH meter pH 3210

Convenient and versatile pH/mV meter with backlit graphics display and menu controlled operation. Waterproof and robust. With 5 point calibration for WTW technical or DIN/NIST buffers. Additional 20 pre-programmed buffer sets. The new CMC function (Continuous Measurement Control) helps maintain the optimum measuring range and warns when limits are exceeded.

WTW

#### Measuring ranges

pH:	-2.0 ... +20.0
	-2.00 ... +20.00
	-2.000 ... +20.000
Accuracy:	±0.005 pH from +15°C to +35°C
mV/Accuracy:	±1200.0/±0.3 mV
	±2500/±0.1 mV
Temperature:	-5.0 to +105°C
Accuracy:	±0.1°C

Type	Description	PK	Cat. No.
pH 3210	meter only	1	9.774 377
pH 3210 Set 2	case set including SenTix 41 and accessories	1	9.774 355
pH 3210 Set 3	case set including SenTix 81 and accessories	1	9.774 318
pH 3210 Set 4	case set including SenTix 51 and accessories	1	9.774 319

1



2



### 1 2 pH-Meter pH 3310

The pH/mV handheld meter with integral, time controlled, data logger and memory for 5000 GLP compliant records is ideal for extended data collection. With 1 to 5-point pH calibration. Menu controlled, with backlit graphics display for comfortable and safe operation. Unique CMC-function for controlling the optimum measuring range. 100% waterproof, USB interface for fast data transfer. Includes driver software and cable. WTW

#### Measuring ranges

pH: -2.0 ... +20.0  
 -2.00 ... +20.00  
 -2.000 ... +20.000  
 Accuracy: ±0.005 pH from +15°C to +35°C  
 mV/Accuracy: ±1200.0/±0.3 mV  
 ±2500/±0.1 mV  
 Temperature: -5.0 to +105°C  
 Accuracy: ±0.1°C  
 Memory: 5000 records (measured value, temperature, date, time, ID)

Type	Description	PK	Cat. No.
pH 3310	meter only	1	9.774 337
pH 3310 Set 2	case set including SenTix 41 and accessories	1	9.774 356
pH 3310 Set 3	case set including SenTix 81 and accessories	1	9.774 375
pH 3310 Set 4	case set including SenTix 51 and accessories	1	9.774 329

### Protective armouring for ProfiLine handheld meters, SM Pro

Soft rubber, shock absorbing cover for ProfiLine handheld meters WTW

Type	PK	Cat. No.
SM Pro	1	9.774 118

### 3 Storage and maintenance kit for pH meters

Kit with one pH storage sleeve, technical buffer solution pH 4 and pH 7, 30ml KCl, 50ml cleaning and 50ml storage solutions. WTW

Type	PK	Cat. No.
Safe Kit	1	9.774 117

3



## Electrochemical meters/pH meters

1



### 1 SCHOTT® Instruments pH Meters, Lab 850 and 860

SI Analytics GmbH

CalClock function keeps your calibration under control: This unique combination of sensor evaluation and calibration timer monitors all calibration relevant parameters (buffer, electrode, curve slope, zero-point, time) and immediately indicates any errors.

**Features:**

- keypad
- clock
- large LCD display
- calibration interval adjustable
- alarm

Lab 850 is now equipped with:

- bi-directional RS 232C interface
- memory: 800 data records
- GLP compliant
- 3 point calibration

Additional features Lab 860:

- USB (slave) connection
- 5 point calibration

Items supplied: pH meter Lab 850 or pH meter Lab 860, electrode BlueLine pH14 with temperature sensor, support, cover, power supply and DIN buffers 4.01 and 6.87.

**Specifications**

Measuring range:	-2.00 to +19.999pH or -999.9 to +999.9mV and -1999 to +1999mV
Temperature range:	-5.0 to +120.0°C

Type	PK	Cat. No.
Lab 850 Set	1	9.773 850
Lab 860 Set	1	9.773 855

2



### 2 3 Laboratory instrument inoLab® pH 7110

**NEW!**

WTW

The new inoLab® pH 7110 is a basic pH/mV benchtop meter for fast and accurate results without efforts. A big LCD segment display makes readings easy; a well-arranged keypad provides convenient operation. The automatic AutoRead function supports correct and repeatable results. An adjustable built-in calibration timer reminds the user of periodical calibration. Each meter comes including stand and accessories.

**Specifications**

Ranges	All values ±1 digit
pH:	-2.0 ... 19.9 ±0.1 pH -2.00 ... 19.99 ±0.01 pH -2.000 ... 19.999 ±0.005 pH
mV:	±(1200.0 ±0.3) mV ±(2000 ±1) mV
Calibration:	1-, 2- or 3 point WTW technical buffer or DIN/NIST
Temperature:	-5.0 ... 105.0°C ±0.1°C
Power supply:	Universal power supply 100 to 240V, 50/60Hz, 4 x 1.5V AA or 4 x 1.2V NiMH rechargeable batteries

3



Type	Description	PK	Cat. No.
pH 7110	Single unit incl. accessories	1	9.920 090
pH 7110 SET 2	Meter incl. SenTix® 41 and accessories	1	9.920 091
pH 7110 SET 4	Meter incl. SenTix® 81 and accessories	1	9.920 092
pH 7110 BNC	Single instrument including accessories, BNC input	1	9.920 093
7110 BNC SET 7	Meter incl. SenTix® 42 and accessories	1	9.920 094
7110 BNC SET 9	Meter incl. SenTix® 82 and accessories	1	9.920 095

## 1 Laboratory instrument inoLab® pH 7310



WTW

Reliable Documentation for pH measurement, if desired also available with built-in printer: This is the new inoLab® pH 7310 or inoLab® pH 7310P. A modern backlit graphic display with menu controlled user interface allows easy and intuitive operation. The mini USB-B interface provides fast data transfer to a PC. The internal memory can record up to 5000 GLP complying data including ID, date and time. The housing and the keypad are easy-to-clean. Up to five calibration points covering almost the complete pH range. A calibration history of the 10 last calibrations allows conclusions on the state of the sensor. An integrated thermal printer (58mm width) is ready for printout of the measured data (option). The scope of delivery includes meter, power supply, stand and USB cable.

1



### Specifications

Ranges	All values ±1 digit
pH:	-2.0 ... 20.0 ±0.1 pH -2.00 ... 20.00 ±0.01 pH -2.000 ... 20.000 ±0.005 pH
mV:	±(1200.0 ±0.3) mV ±(2500 ±1) mV
Temperature:	-5.0 ... 105.0°C ±0.1°C
Calibration:	1-, 2-, 3-, 4-, 5 point WTW technical. DIN, NIST and 20 additional buffer sets
Calibration memory:	Up to 10 calibrations recallable
Display:	LCD Graphic, backlit
Memory:	manual 200/5000 automatic
Logger:	manual/time controlled
Interface:	Mini USB-B
Power supply:	Universal power supply, 100 to 240V, 50/60 z, 4 x 1.5V AA or 4 x 1.2V NiMH

Type	Description	PK	Cat. No.
pH 7310	Meter only incl. accessories	1	9.920 100
pH 7310 Set 2	Meter incl. SenTix® 41and accessories	1	9.920 101
pH 7310 Set 4	Meter incl. SenTix® 81 and accessories	1	9.920 102
pH 7310P	Meter incl. integrated printer	1	9.920 104
pH 7310P Set 2	Meter with integrated printer, incl. SenTix® 41and accessories	1	9.920 105
pH 7310P Set 4	Meter with integrated printer, incl. SenTix® 81 and accessories	1	9.920 106
pH 7310P BNC	Meter with integrated printer, incl. accessories, BNC input	1	9.920 107

## LLG-pH-Electrodes economy line



pH combination electrodes, PPO plastic shaft black, fixed protection basket, cartridge-style conductive system, salt reservoir. The salt reservoir helps to increase the service life of the electrode. This is recommended when using the electrode in media with fewer ions.

### Specifications

Temperature range:	0 to +60°C
pH range:	UW-Glass: pH 0 to 12, briefly pH 14
Dimensions (L x dia.):	120 x 12mm
Electrolyte:	solid electrolyte
Diaphragm:	1 x ceramic

2



9.040 811

3



9.040 810

Description	Cable	PK	Cat. No.
	<b>m</b>		
Electrode with cable (DIN plug)	2	1	9.040 812
Electrode with cable (BNC plug)	2	1	9.040 811 <b>2</b>
Electrode without cable (S7 connector head, please order Art. no. 9.040 817 or 9.040 818 separately)	-	1	9.040 810 <b>3</b>
Cable, dia. 5 mm, applicable up to +75°C, with DIN plug	3	1	9.040 817
Cable, dia. 5 mm, applicable up to +75°C, with BNC plug	3	1	9.040 818



## Electrochemical meters/pH meters

### 1 LLG-pH-Electrodes laboratory line



pH combination electrodes, glass shaft, cartridge-style conductive system, salt reservoir.

The salt reservoir helps to increase the service life of the electrode. This is recommended when using the electrode in media with fewer ions.

#### Specifications:

Temperature range:	-5 to +80°C
pH range:	U-Glass: pH 0 to 12, briefly pH 14
Dimensions (L x dia.):	120 x 12mm
Electrolyte:	gel-sealed
Diaphragm:	1 x zircon dioxide

Description	Cable m	PK	Cat. No.
Electrode with cable (BNC plug)	1	1	9.040 814 <sup>2</sup>
Electrode without cable (S7 connector head, please order Art. no. 9.040 817 or 9.040 818 separately)	-	1	9.040 813 <sup>3</sup>
Connecting cable, dia. 5mm, applicable up to +75°C, with DIN plug	3	1	9.040 817
Connecting cable, dia. 5mm, applicable up to +75°C, with BNC plug	3	1	9.040 818



1



2

9.040 814



3

9.040 813



4

### 4 pH combination electrodes, gel electrolyte, SenTix®

Basic pH combination electrodes, with gel electrolyte.

WTW

Type	Connector	Cable m	Int. temp. probe	PK	Cat. No.
SenTix® 20	Plug-in head	-	no	1	9.040 851
SenTix® 21	DIN, waterproof	1	no	1	9.040 872
SenTix®21-3	DIN, waterproof	3	no	1	9.040 873
SenTix® 22	BNC	1	no	1	9.040 840
SenTix® 41	DIN, waterproof	1	yes	1	9.040 876
SenTix® 41-3	DIN, waterproof	3	yes	1	9.040 877
SenTix® 42	BNC	1	yes	1	9.040 841



5

### 5 pH combination electrodes, liquid electrolyte, SenTix®

Standard pH combination electrodes with non-solid electrolytes, length 120mm.

WTW

Type	Connector	Cable m	Int. temp. probe	PK	Cat. No.
SenTix® 60	Plug head	-	no	1	9.040 842
SenTix® 61	DIN, watertight	1	no	1	9.040 881
SenTix® 62	BNC	1	no	1	9.040 843
SenTix® 81	DIN, watertight	1	yes	1	9.040 886
SenTix® 82	BNC	1	yes	1	9.040 844



6

### 6 pH combination electrode, liquid electrolyte, SenTix® H with plug head

Precision pH combination electrodes with plug head. Length 165mm.

WTW

Description	PK	Cat. No.
SenTix® H	1	9.040 845



7

### 7 pH electrodes, SenTix®

pH electrodes with plug head for special applications.

WTW

Type	Description	PK	Cat. No.
SenTix® Sp	for penetration measurements	1	9.040 890
SenTix® Sur	for surface measurements	1	9.040 891
SenTix® Mic	pH micro combination electrode	1	9.040 892

#### Application table for pH electrodes

Application	Sample type	BlueLine Type-Nr.	Integrated temperature probe
General Laboratory	General purpose	14 pH	YES
		12 pH	NO
	Small sample volume	16 pH	NO
	High ionic strength - extreme pH Non-aqueous -solvents, alcohols	13 pH	NO
	Titration	14 pH	YES
		12 pH	NO
	Harsh environment, rugged use	54 pH	YES
	Low maintenance	24 pH	YES
		23 pH	NO
		27 pH	NO
Food, Beverage and Dairy	Flat surface - cheese, meat, agar	21 pH	NO
	Semi solids - fruit, meat, cheese, jam	14 pH	YES
	Titration	12 pH	NO
		14 pH	YES
	Juices	12 pH	NO
Cosmetics	General purpose	14 pH	YES
		12 pH	NO
	Emulsions - cosmetics, oil	13 pH	NO
Manufacturing	Flat surface - paper	27 pH	NO
	Harsh environment - rugged use, field or plant	54 pH	YES
	Emulsions - petroleum, paint	13 pH	NO
		24 pH	YES
Education	Economic	23 pH	NO
		24 pH	YES
	Research Grade	13 pH	NO

#### 1 Electrode BlueLine 11 pH

SCHOTT® Instruments pH combination electrode with glass body, Ag/AgCl reference system, cone membrane, platinum junction and screw head. LB 1A or LB 1BNC cable combination please order separately.

Application: Universal use in chemical, pharmaceutical and food industries.

SI Analytics GmbH



#### Specifications:

Temperature range:	-5 to 100°C
pH range:	0 to 14pH
Temperature sensor:	No
Length/ Dia.:	120mm/12mm
Electrolyte:	Liquid, KCl 3 mol/l
Diaphragm:	Platinum
Membrane resistance at 25°C:	250MΩ
Refill hole cover:	Slide

Type	PK	Cat. No.
BlueLine 11 pH	1	9.041 140

#### 2 Electrode BlueLine 12 pH

Generally as BlueLine 11 pH, but with 1 metre x 3mm dia. fixed cable and DIN plug connection.

SI Analytics GmbH



Type	PK	Cat. No.
BlueLine 12 pH	1	9.041 141

#### 3 Electrode BlueLine 13 pH

SCHOTT® Instruments pH-combination electrode with glass body, Ag/AgCl reference system and plug-in head. LB 1A or LB 1BNC cable combination please order separately.

Applications: Universal use in chemical, pharmaceutical and food industries. Ideal for low ionic strength materials (Cremes, Emulsions, Dispersions and Suspensions).

SI Analytics GmbH

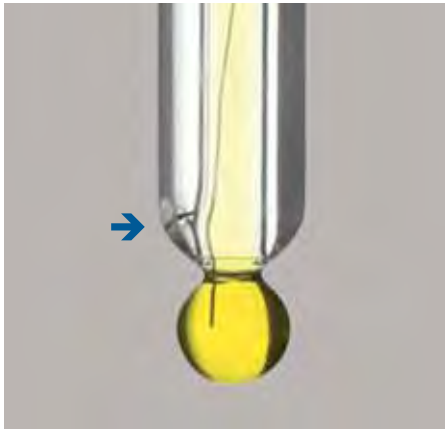


#### Specifications:

Temperature range:	-5 to 100°C
pH range:	0 to 14pH
Temperature sensor:	No
Length/Dia.:	170mm/12mm
Electrolyte:	Fluid, KCl 3mol/l
Diaphragm:	Ground joint
Membrane resistance at 25°C:	300 MΩ
Refill hole cover:	Slide

Type	PK	Cat. No.
BlueLine 13 pH	1	9.041 142

# Notes for the successful measuring with pH and Redox electrodes



The platinum diaphragm developed by SCHOTT® gives electrodes particularly constant and reproducible measuring characteristics.

It consists of twisted platinum wires potted into the glass shaft of the electrode. The defined intermediate space between the platinum wires ensures a continuously uniform electrolyte flow rate in all mediums and at all temperatures, which remains constant over the entire lifetime of the electrode.



Maintenance and care, as well as the choice of the appropriate electrode for the application are essential for a maximum lifetime of an electrode and therefore especially precise and reproducible measurements. The following points are of high importance:

## Measuring

Open the refill hole on refillable electrodes before processing measurements and calibrations. Immerse the sensor into the solution at least up to the diaphragm. When using refillable sensors please pay attention that the electrolyte fill level is 5 cm above the level of the medium (see refilling). Rinse the sensor with distilled water between measurements, however do not wipe off. Carefully dab off excess drops.

## Calibration

In order to minimize false measuring results with pH electrodes being used under extreme conditions or at the limit of the specified application areas, the electrodes should be calibrated more frequently to assure the appropriate condition for measuring safety. The measurement can only be as precise as the accuracy of the last calibration and its actuality. For determining whether the pH electrode has changed since the last calibration, the electrode should be controlled by measuring the pH value of a buffer solution. When deviations are discovered, a setting of the individual electrode's data (slope and zero point) on the pH meter is necessary.

If buffer solutions are taken from a bottle, ensure that the bottle is reclosed immediately after removal. Never refill the used buffer solution into the bottle, always dispose it. For an accurate calibration we recommend to operate with our buffer ampoules certified according to DIN 19266, which are sterilized in superheated steam. Pay attention to a constant temperature of the buffers during the calibration. Redox sensors cannot be calibrated. They can be checked for proper function using appropriate test solutions.

## Refilling of liquid electrolyte electrodes

The missing solution in the electrolyte chamber of the reference system must be refilled regularly. For most electrodes a 3M KCl is a suitable solution for refill-

ing. In individual cases it can be recommended to check the appropriate refilling solution with the help of the electrode's technical data.

## Storage

The electrodes should be stored between 0 and 40°C in aqueous solution (use e.g. our storing solution L 911). They must not be stored in distilled water. Depending on the storage conditions (temperature and humidity) the aqueous solution in the cap can run dry preterm. In this case the electrode must be stored for a minimum of 24 hours in storing solution (e.g. L 911). The usability of the electrode must then be checked by performing a calibration.

## Cleaning

Contaminations on the pH glass membrane/Redox sensor (measuring electrode) and the diaphragm (reference electrode) cause measuring deviations. Before heading to further cleaning steps, the glass membrane should be cleaned with an ethanol tintured cloth. For the case that further deviations should appear during the calibration, the cleaning process should be continued by the following steps. Depending on the degree of contamination, submerge only the measuring electrode or the complete electrode, i.e. also including the diaphragm into the cleaning solution:

- Coverings can be removed with diluted inorganic acid (e.g. hydrochloric acid 0.1 mol/l or NaOH 0.1 mol/l).
- Organic contamination can be dissolved with suitable solutions (e.g. acetone or ethanol).
- Fat is removed with tenside solution.
- Protein is removed with hydrochloric pepsin solution (cleaning solution L 510).

When cleaning please note:

- Ensure that any cleaning agent, which has leaked into the electrode, does not come into contact with the reference system; if necessary rinse out the reference electrode with electrolyte solution.
- After cleaning the electrode please rinse it with distilled water, do not rub dry.
- Platinum diaphragms must not be maintained mechanically. Always clean them chemically by dipping them into the different cleaning solutions.



ITT

# *The first address for pH electrodes*



SCHOTT® Instruments IoLine  
Electrodes with Iodine/Iodide  
Reference System

- ▶ No metal contamination: 100% free of undesirable metal ions
- ▶ High stability of measured values with changing temperatures
- ▶ Patented 3-chamber iodine reservoir for long lifetime



SI Analytics

[www.si-analytics.com](http://www.si-analytics.com)

## Electrochemical meters/pH meters



### 1 Electrode BlueLine 14 pH with temperature sensor

SCHOTT® Instruments pH-combination electrode with glass shaft, Ag/AgCl reference system and 1 metre x 5mm dia. fixed cable, with DIN and 4mm pin plug connections. Applications: Universal use in the chemical, pharmaceutical and food industries.

SI Analytics GmbH

#### Specifications:

Temperature range:	-5 to 100°C
pH range:	0 to 14pH
Temperature sensor:	NTC 30kΩ
Length/Dia.:	120mm/12mm
Electrolyte:	Fluid, KCl 3mol/l
Diaphragm:	Platinum
Membrane resistance at 25°C:	300MΩ
Refill hole cover:	Slide

Type	PK	Cat. No.
BlueLine 14 pH	1	9.041 143
BlueLine 14 pH ID	1	6.233 381



### 2 Electrode BlueLine 15 pH

As BlueLine 14 pH, but with built-in ATC, 1 metre long x 5mm diameter fixed cable, BNC plug and 4mm banana plug.

SI Analytics GmbH

Type	PK	Cat. No.
BlueLine 15 pH	1	9.041 144
BlueLine 15 pH ID	1	9.041 155



### 3 Micro Electrode BlueLine 16 pH

SCHOTT® Instruments micro-pH-combination electrode with glass body, Ag/AgCl reference system and plug-in head. LB 1A or LB 1BNC cable combination please order separately.

SI Analytics GmbH

Ideal for small sample volumes.

#### Specifications:

Temperature range:	-5 to 100°C
pH range:	0 to 14pH
Temperature sensor:	No
Length // Dia.:	40/80mm // 12/5mm
Electrolyte:	Fluid, KCl 3mol/l
Diaphragm:	Platinum
Membrane resistance at 25°C:	300MΩ
Refill hole cover:	Slide

Type	PK	Cat. No.
BlueLine 16 pH	1	9.041 145



### 4 Spear-tip electrode, BlueLine 21 pH

SCHOTT® Instruments pH combination electrode with glass body, Ag/AgCl reference system, spear membrane tip and plug head. LB 1 A or LB 1 BNC cable combination please order separately.

SI Analytics GmbH

Particularly suitable for penetration measurements in semi-solid media.

#### Specifications:

Temperature range:	-5 to + 80°C
pH range:	2 to 13 pH
Temperature sensor:	No
Taper length // Dia. max./min.	65/25mm // 12/5mm
Electrolyte:	Referid®
Diaphragm:	Hole
Membrane resistance at 25°C:	400 MΩ
Refill hole cover:	No refill hole

Type	PK	Cat. No.
BlueLine 21 pH	1	9.041 146

#### 1 Plastic bodied electrode, BlueLine 22 pH

SCHOTT® Instruments pH combination electrode with plastic body, Ag/AgCl reference system and plug head LB 1A or LB 1BNC cable combination please order separately. Use: Universal application in chemical, pharmaceutical and food industries, and in water/waste water plants and for field use.

SI Analytics GmbH



##### Specifications:

Temperature range:	-5 to 80°C
pH range:	0 to 14pH
Temperature sensor:	No
Length/Dia.:	120mm/12mm
Electrolyte:	Gel
Junction:	Fibre
Membrane resistance at 25°C:	400MΩ
Refill hole cover:	No refill hole

Type	PK	Cat. No.
BlueLine 22 pH	1	9.041 147

#### 2 Electrode BlueLine 23 pH

As BlueLine 22 pH, but with 1 metre long x 3mm diameter fixed cable and DIN plug.

SI Analytics GmbH



Type	PK	Cat. No.
BlueLine 23 pH	1	9.041 148

#### 3 Electrode, BlueLine 24 pH, with temperature sensor

SCHOTT® Instruments pH combination electrode with plastic body, Ag/AgCl reference system and 1 metre fixed cable with 5mm DIN and 4mm pin plug connections.

SI Analytics GmbH

Applications: Universal use, such as in water supply and effluent treatment departments of chemical, pharmaceutical and food factories and for field use.

##### Specifications:

Temperature range:	-5 to 80°C
pH range:	0 to 14pH
Temperature sensor:	NTC 30kΩ
Length/Ø:	120mm/12mm
Electrolyte:	Gel
Diaphragm:	Fibre
Membrane resistance at 25°C:	400MΩ
Refill hole cover:	No refill hole

Type	PK	Cat. No.
BlueLine 24 pH	1	9.041 149



#### 4 Electrode, BlueLine 25 pH

As BlueLine 24 pH, but without temperature sensor and with 1 metre long, 3mm dia. fixed cable, BNC plug.

SI Analytics GmbH



Type	PK	Cat. No.
BlueLine 25 pH	1	9.041 150

#### 5 Electrode, BlueLine 26 pH, with temperature sensor

As BlueLine 24 pH, but with built-in ATC, 1 m long, 5mm dia. fixed cable, BNC plug and 4mm banana plug.

SI Analytics GmbH



Type	PK	Cat. No.
BlueLine 26 pH	1	9.041 151

## Electrochemical meters/pH meters



### 1 Electrode, BlueLine 27 pH, for surface measurements

SCHOTT® Instruments pH-combination electrode with glass body, Ag/AgCl reference system and plug-in head. LB 1A or LB 1BNC cable combination please order separately. Specially suitable for surface measurements.

SI Analytics GmbH

#### Specifications:

Temperature range:	-5 to 50°C
pH range:	2 to 13 pH
Temperature sensor:	no
Length/Dia.:	120mm/12mm
Electrolyte:	Referid®
Diaphragm:	Annular space
Membrane resistance at 25°C:	400 MΩ
Refill hole cover:	No refill hole

Type	PK	Cat. No.
BlueLine 27 pH	1	9.041 152



### 2 Redox (ORP) electrodes, BlueLine 31 RX

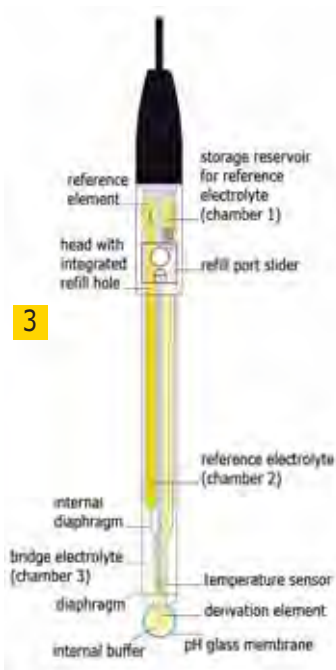
SCHOTT® Instruments Redox combination electrode with glass body, Ag/AgCl reference system and plug head. LB 1A or LB 1BNC cable combination please order separately. Application: Universal applications in chemical and food industries.

SI Analytics GmbH

#### Specifications:

Temperaturbereich:	-5 to 100°C
Sensor:	Pt disc
Temperature sensor:	No
Length/Dia.:	120mm/12mm
Electrolyte:	liquid, KCl 3mol/l
Junction:	Ceramic
Membrane:	Platinum
Refill hole cover:	Slide

Type	PK	Cat. No.
BlueLine 31 RX	1	9.041 153



### 3 4 SCHOTT® Instruments electrodes, IoLine

pH electrodes for the most demanding measuring tasks

SI Analytics GmbH

The new SCHOTT® Instruments IoLine electrode family with iodine/iodide reference system has been developed to meet the most demanding laboratory measurement tasks. These electrodes are 100% metal ion free and hence ideally suited for measurements that may cause sample contamination by such ions (e.g. silver ions) and for pH measurements in Tris buffers too.

Advantages of IoLine Electrodes over classical Ag/AgCl reference systems are notably by:

- longer service life thanks to a patented three-chambers Iodine reservoir in the reference electrode.
- fast reaction, precise measurement and clearly improved stability of measurement values, especially with changing temperatures or at temperatures other than the calibration temperature. This is due to the lower temperature sensitivity of the iodine/iodide reference potential.
- free choice of the bridge electrolyte, hence optimum adaptation to the sample by double electrolyte system.



The electrodes are available in different membrane glass shapes and types and with different plugs to ensure that the user gets the instrument best suited to his needs. ID versions are available for use with Schott Instruments ProLab line of high-end laboratory meters.

IoLine electrodes are the right choice for the most critical pH measurements in research and quality control in pharmacy, biotechnology or food industry.

#### Specifications:

Temp. range	-5 to +100°C
Zero point	pH = 7.00 ±0.25
pH range	0 to 14
Shaft material	Glass
Diaphragm:	Platinum

Type	Length mm	PK	Cat. No.
IoLine-pHT-A 120-MF*	120	1	9.041 163
IoLine-pHT-A 170-MF*	170	1	9.041 164
IoLine-pHT-A 120-MF-DIN	120	1	9.041 165
IoLine-pHT-A 120-MF-DIN N**	120	1	9.041 166
IoLine-pHT-A 170-MF-DIN N**	170	1	9.041 167

\*S7

\*\*banana plug

#### 1 SCHOTT® Instruments ID-Electrodes for pH measurement

SI Analytics GmbH

**Specifications**

Shaft material: glass  
 Zero point: pH = 7.00 ±0.25  
 pH range: 0 to 14  
 Fixed cable: 1m long, with DIN  
 (BNC plug available on request)

Type	PK	Cat. No.
A 7780 1M-DIN-ID	1	6.235 995
A 157 1M-DIN-ID	1	9.041 156



#### 2 Cable combinations, LB 1 A and LB 1 BNC

For BlueLine pH electrodes, ScienceLine and IoLine.

SI Analytics GmbH

Type	PK	Cat. No.
LB1-A	1	9.041 303
LB1-BNC	1	9.041 304



#### Combination pH Electrodes

SI Analytics GmbH

Type	PK	Cat. No.
Combination electrode N 6000 A	1	9.041 160 <sup>3</sup>
Combination pH electrode N 1042 A	1	9.041 217 <sup>4</sup>



#### 5 Metal (ORP) electrodes, ScienceLine

SI Analytics GmbH

Type	PK	Cat. No.
Redox electrode Pt 6280	1	9.041 207
Electrode Ag 6280	1	9.041 211



#### 6 SCHOTT® Instruments pH-Electrodes ScienceLine

With plug head, glass shaft, ceramic diaphragm, 3mol/l KCl electrolyte, 12mm dia. spherical membrane. pH range: 0 to 14.

SI Analytics GmbH

Type	Temp. range °C	Length mm	Material	PK	Cat. No.
N 6280, with plug head	-5 ... +100	120	N-glass	1	9.041 117
N 6180	-5 ... +100	170	N-glass	1	9.041 180
N 42 A	-5 ... +100	120	A-glass	1	9.041 182



#### 7 SCHOTT® Instruments pH-combination electrodes

With plug head, glass shaft, platinum diaphragm, 3mol/l KCl electrolyte, Silamid® reference system and 12mm dia. spherical membrane.

SI Analytics GmbH

Type	Temp. range °C	Length mm	Material	PK	Cat. No.
N 61	-5 ... +100	170	A-glass	1	9.041 100
H 61	+10 ... +100	170	H-glass	1	9.041 105
N 62	-5 ... +100	120	A-glass	1	9.041 110
H 62	+10 ... +100	120	H-glass	1	9.041 112
N 64	-5 ... +100	170	A-glass	1	9.041 120



#### 8 Accessories for combination electrodes

Connection cable for pH electrodes with plug head connection to plugs as indicated.

WTW

Type	Connector	Cable m	PK	Cat. No.
AS/DIN	DIN	1	1	9.040 895
AS/DIN-3	DIN	3	1	9.040 896
AS/BNC	BNC	1	1	9.040 897





## Electrochemical meters/pH meters

**1**


### 1 Electrode stand

With flexible electrode holder for two electrodes and temperature sensor.

WTW

Type	PK	Cat. No.
Electrode stand	1	9.040 870

**2**


### 2 pH-Electrode LIQ-GLASS

Hamilton

- Robust, combination pH electrode for daily laboratory use
- Universally applicable, in strong acids as well as in strong bases
- Ideally suited for acid/base titrations
- Serial number, certificate

**Specifications:**

Temperature range:	-10 to 100°C
pH range:	0 to 14 pH
Electrolyte:	3M KCl (refillable)
Shaft material:	glass
Diaphragm:	ceramic
Reference system:	EVEREF
Temperature sensor:	no
Electrical connection:	S7 connector head

Type	PK	Cat. No.
LIQ-GLASS	1	2.000 520

**3**


### 3 pH-Electrode POLILYTE LAB

Hamilton

- Maintenance-free, robust, combination easy-to-use pH electrode
- Universally applicable, well suited for measurements in emulsions and suspensions
- Thanks to the SINGLE PORE clogging of the diaphragm is practically impossible
- Serial number, certificate

**Specifications:**

Temperature range:	-10 to 80°C
pH range:	0 to 14 pH
Electrolyte:	Poli solve (maintenance-free)
Shaft material:	glass
Diaphragm:	SINGLE PORE
Reference system:	EVEREF-B
Temperature sensor:	no
Electrical connection:	S7 connector head

Type	PK	Cat. No.
POLILYTE LAB	1	7.600 302

**4**


### 4 pH-Electrode FLUSHTRODE

Hamilton

- Easy-to-clean, combination glass electrode with sleeve diaphragm
- Ideally suited for viscous samples, ion-weak media, or media containing protein (e.g. cosmetics)
- For samples containing protein, the electrolyte should be replaced with Protelyt (6.801 556)
- Serial number, certificate

**Specifications:**

Temperature range:	-10 to 80°C
pH range:	0 to 14 pH
Electrolyte:	3M KCl (refillable)
Shaft material:	glass
Diaphragm:	sleeve diaphragm
Reference system:	EVEREF
Temperature sensor:	no
Electrical connection:	S7 connector head

Type	PK	Cat. No.
FLUSHTRODE	1	6.800 798
Electrolyte solution Protelyt (100ml)	1	6.801 556

#### 1 pH-Electrode GEL-GLASS

**NEW!**

Hamilton

- Maintenance-free, excellent value, pH electrode for less rigorous applications
- Serial number, certificate

**Specifications:**

Temperature range:	-10 to 60°C
pH range:	0 to 14 pH
Electrolyte:	gel (maintenance-free)
Shaft material:	glass
Diaphragm:	ceramic
Reference system:	Ag/AgCl
Temperature sensor:	no
Electrical connection:	S7 connector head

Type	PK	Cat. No.
GEL-GLASS	1	6.204 431

1



#### 2 pH-Electrode MINITRODE

**NEW!**

Hamilton

- Combination pH electrode with shaft diameter 3mm for measurements in very small volumes, e.g. vials
- Long-term-stable EVEREF system
- Requires an immersion depth of only 7mm
- Serial number, certificate

**Specifications:**

Temperature range:	-10 to +100°C
pH range:	0 to 14 pH
Electrolyte:	3M KCl (refillable)
Shaft material:	glass
Diaphragm:	ceramic
Reference system:	EVEREF
Temperature sensor:	no
Electrical connection:	S7 connector head

Type	PK	Cat. No.
MINITRODE	1	6.300 498

2



#### 3 pH-Electrode FOODTRODE

**NEW!**

Hamilton

- Robust, combination pH electrode for measurements in media containing proteins
- 3 ceramic diaphragms guarantee quick and accurate measurements
- Easy to clean
- Long-term-stable, thanks to EVEREF system
- Serial number, certificate

**Specifications:**

Temperature range:	-10 to +100°C
pH range:	0 to 14 pH
Electrolyte:	Protelyte (refillable)
Shaft material:	glass
Diaphragm:	3 x ceramic
Reference system:	EVEREF
Temperature sensor:	no
Electrical connection:	S7 connector head

Type	PK	Cat. No.
FOODTRODE	1	7.620 639
Electrolyte solution Protelyte (100ml)	1	6.801 556

3



## Electrochemical meters/pH meters

**1**


### 1 pH-Electrode DOUBLE PORE

**NEW!**

Hamilton

- Maintenance-free, combination pH puncture electrode
- Especially for use with solid and semisolid samples
- Ideally suited for measurements in meat and cheese
- SINGLE PORE makes clogging of the diaphragm practically impossible
- Serial number, certificate

**Specifications:**

Temperature range:	-10 to +60°C
pH range:	0 to 14 pH
Electrolyte:	POLISOLVE (maintenance-free)
Shaft material:	glass
Diaphragm:	2 x SINGLE PORE
Reference system:	Ag/AgCl
Temperature sensor:	no
Electrical connection:	S7 connector head

Type	PK	Cat. No.
DOUBLE PORE	1	6.201 033

**2**


6.8020 338

### pH-Electrodes POLYPLAST

**NEW!**

Hamilton

- Robust, maintenance-free, combination pH electrode
- Shatter-proof plastic shaft
- Excellent for water and sewage
- Serial number, certificate

**Specifications**

Temperature range:	0 to +60°C
pH range:	0 to 14 pH
Electrolyte:	POLISOLVE (maintenance-free)
Shaft material:	Plastic
Diaphragm:	SINGLE PORE
Reference system:	Ag/AgCl

Type	Temperature sensor	Connection	PK	Cat. No.
POLYPLAST	no	S7 connector head	1	6.802 338 <b>2</b>
POLYPLAST BNC	no	1m cable with BNC Plug	1	6.232 325
POLYPLAST TEMP DIN	NTC 30 kOhm	1m DIN cable / 1 x 4mm banana plug	1	6.206 824

**3**


### 3 pH buffer solutions in sachets with certificate of analysis

Hanna

One 20ml sachet is sufficient for each calibration. Sachets are well sealed and protected against light. Single use only, so no risk of contamination. Accuracy:  $\pm 0.01$  pH at 25°C. The outer box contains a certificate of analysis, showing the date of production and Lot Nr. (Expiry date). The solutions are produced against NIST standards.

pH-value at 25 °C	PK	Cat. No.
pH 4.01	25	6.803 609
pH 7.01	25	6.803 610
pH 10.01	25	6.803 611

**4**


### 4 pH buffer solutions

Reagecon

Clear, Colourless Solutions. Tested and Certified at 20°C, produced in accordance with NIST standard (NBS). Available in 500ml or 1L containers. Accuracy  $\pm 0.01$  pH.

pH-value at 20 °C	Capacity ml	PK	Cat. No.
pH 2.00	500	1	6.228 059
pH 3.50	1000	1	7.632 597
pH 4.00	500	1	9.040 911
pH 4.00	1000	1	9.040 912
pH 6.00	500	1	6.203 561
pH 6.00	1000	1	6.321 027
pH 6.80	500	1	6.206 693
pH 6.865	500	1	7.900 066
pH 7.00	500	1	9.040 913
pH 7.00	1000	1	9.040 914
pH 9.00	500	1	6.225 161
pH 9.00	1000	1	6.206 691
pH 10.00	500	1	9.040 915
pH 10.00	1000	1	9.040 916
pH 12.00	500	1	6.234 641

### 3. Analytical measurement and testing Electrochemical meters/pH meters

#### 1 2 pH buffer solutions (Coloured)

Coloured solutions. Tested and Certified at 20°C. Formulated in accordance with NIST standards (NBS). Supplied in 500ml, 1L or 5L containers. Tolerance ±0.01 pH.

Reagecon

pH-value at 20 °C	Capacity ml	Colour	PK	Cat. No.
pH 4.00	500	Red	1	9.040 920
pH 4.00	1000	Red	1	9.040 921
pH 4.00	5000	Red	1	9.040 922
pH 7.00	500	Yellow	1	9.040 923
pH 7.00	1000	Yellow	1	9.040 924
pH 7.00	5000	Yellow	1	9.040 925
pH 10.00	500	Blue	1	9.040 926
pH 10.00	1000	Blue	1	9.040 927
pH 10.00	5000	Blue	1	9.040 928



#### 3 pH buffer solutions with colour code, with/without certificate

Colored buffer solutions, standardized against NIST references, accuracy ±0.01 pH at 25°C, 500ml bottles with label that indicates correlation between pH-value and temperature.

Hanna

pH-value at 25 °C	Description	PK	Cat. No.
pH 7.01	with certificate	1	6.225 206
pH 4.01	with certificate	1	6.225 208
pH 10.01	with certificate	1	6.225 207
pH 7.01	without certificate	1	6.053 384
pH 4.01	without certificate	1	6.053 383
pH 10.01	without certificate	1	6.090 412



#### Storage and cleaning solutions for electrodes

Hanna

Type	PK	Cat. No.
Storage Solution, 500ml	1	9.773 987
Cleaning solution, general purpose, 500ml	1	6.080 217
Cleaning solution for proteins, 500ml	1	6.223 522

#### 4 Technical pH buffer solutions

**NEW!**

Reagecon

Colour coded. Tested and Certified at 25°C. Provided with label that gives the pH value at different temperatures. Tolerance ±0.02 pH.

These buffer solutions are suitable for use where very accurate measurements are required. All buffers are supplied with a detailed Certificate of Analysis which outlines traceability to N.I.S.T (the N.I.S.T SRM(s) Lot No. is stated on the certificate). Temperature dependence data is printed on the label as are lot numbers and expiry dates.

This item has a 24 month shelf life from date of manufacture.

pH-value at 25 °C	Capacity ml	Colour	PK	Cat. No.
2.0	250	Red	1	9.040 949
4.01	250	Red	1	9.040 950
4.01	500	Red	1	6.206 907
4.01	1000	Red	1	9.040 955
7.02	250	Yellow	1	6.240 744
7.02	500	Yellow	1	6.229 762
7.02	1000	Yellow	1	6.238 677
9.21	250	Blue	1	9.040 951
10.00	250	Blue	1	6.240 745
10.00	1000	Blue	1	6.238 676



#### 5 Standard buffer solutions

To DIN/NIST. Supplied in 250ml bottles.

WTW

pH-value at 25 °C	PK	Cat. No.
4.01	1	9.040 744
6.87	1	9.040 746
9.18	1	9.040 749



## Electrochemical meters/pH meters

**1**


### 1 Buffer solutions, sterile

Steam sterilised. Individually batch numbered. Without preservatives.

*SI Analytics GmbH*

Type	Capacity	PK	Cat. No.
pH 4.01	250ml DURAN® bottle	1	<b>9.041 004</b>
pH 6.87	250ml DURAN® bottle	1	<b>9.041 007</b>
pH 9.18	250ml DURAN® bottle	1	<b>9.041 009</b>

Other buffer solutions available on request.

**2**


### 2 Technical buffer solutions

Identified by colour-coded labels.

*WTW*

Type	pH-value	Capacity ml	PK	Cat. No.
STP 4	4.01	50	1	<b>9.040 734</b>
TEP 4	4.01	1000	1	<b>9.040 722</b>
STP 7	7.00	50	1	<b>9.040 735</b>
TEP 7	7.00	1000	1	<b>9.040 723</b>
TEP 10	10.00	1000	1	<b>9.040 724</b>
TEP 10 TRACE	10.01*	1000	1	<b>9.040 725</b>
TPL 4	4.01	250	1	<b>9.040 727</b>
TPL 7	7.00	250	1	<b>9.040 728</b>
TPL 10	10.00	250	1	<b>9.040 729</b>

\* For handheld meters 315i, 330i, 340i, 350i, 3110, 3210, 3310 and Inolab® 720, 730, 740 and 750.

**3**


### 3 SCHOTT® Instruments pH buffer solutions

Without colour coding. Stated pH values at 25°C. Available in 250ml containers. Shelf life approx. 2 years, accuracy ±0.02 pH. Calibration set for pH measurement. Set contains 20 x 17ml ampoules filled with pH 4.00, 7.00 and 10.00 solutions (at 25°C).

*SI Analytics GmbH*

Type	Capacity ml	Colour	PK	Cat. No.
pH 4,00	250	clear	1	<b>9.041 043</b>
pH 7,00	250	clear	1	<b>9.041 045</b>
pH 10.01	250	clear	1	<b>9.041 048</b>
Set	17	3 x 20 x 17 ml ampoules	1	<b>9.041 081</b>

**4**


### 4 SCHOTT® Instruments pH buffer solutions

Colour coded. pH values at 25°C. Provided with label that gives the pH value at different temperatures. Supplied in 250ml containers. Tolerance ±0.02 pH.

*SI Analytics GmbH*

Type	Capacity ml	Colour	PK	Cat. No.
pH 4.01	250	yellow	1	<b>9.041 050</b>
pH 7.00	250	green	1	<b>9.041 051</b>
pH 10.01	250	orange	1	<b>9.041 052</b>

**5**


### 5 Regeneration solution and storage solution

For pH-probes.

*SI Analytics GmbH*

Type	Capacity ml	PK	Cat. No.
Regeneration solution / Storage solution	250	1	<b>9.041 034</b>

### 3. Analytical measurement and testing Electrochemical meters/pH meters

#### 1 Calibration and maintenance solution set SORT/K

Supplied in box with three 250ml bottles of pH 4.01, 6.87, 9.18 buffer solutions, pepsin cleaning solution and KCl filling solution 3mol/l.

WTW

Type	PK	Cat. No.
SORT/K	1	9.040 760



#### 2 KCL electrolyte solutions

For refilling or replacing reference electrolyte. Supplied in 250ml bottles.

**NEW!**  
Reagecon

Type	PK	Cat. No.
3 mol/l KCL, free from silver ions, 250ml	1	9.040 957
3 mol/l KCL, saturated with AgCl, 250ml	1	9.040 958



#### 3 Cleaning and storage solutions for pH-probes

Reagecon

Type	Capacity ml	PK	Cat. No.
Pepsin / HCL, for cleaning media containing protein	500	1	9.040 940
Thiourea / HCL, for cleaning media containing sulphide	500	1	9.040 941
Organic cleaning solution	500	1	9.040 942
Regeneration solution	100	1	9.040 943
Storage solution	100	1	9.040 945
Storage solution	500	1	9.040 944



#### 4 KCL electrolyte solutions, test solutions

For refilling or replacing reference electrolyte. Supplied in 250ml DURAN® bottles. Redox buffer solutions available on request.

SI Analytics GmbH

Type	PK	Cat. No.
2mol/L KNO <sub>3</sub> + 0.001mol/l KCl for Ag-probes	1	9.041 072
3 mol/l KCl	1	9.041 092
3 mol/l KCl, Ag/AgCl saturated	1	9.041 036
4.2 mol/l KCl	1	9.041 033



**1**

**1 Redox buffer solution**

For testing ORP electrodes. 427mV, pH7.  
Supplied in pack of 250ml.

WTW

Type	PK	Cat. No.
Redox	1	9.040 782

**2**

**2 Pepsin cleaning solution PEP/pH**

DIN. Supplied in bottles of 250ml.

WTW

Type	PK	Cat. No.
Pepsin cleaning solution	3	9.040 796

**3**

**3 Conductivity testers, DIST 3 and DIST 4**

Pocket measuring device with digital display for testing the conductivity in drinking water and industry

Hanna

**DIST 3:**  
suitable for measuring drinking water, reverse osmosis monitoring and in the laboratory.

**DIST 4:**  
ideal for measurements required in industry, horticulture, sewage, cooling towers.

**Specifications:**

Measuring range:	DIST 3: 0 to 1990µS DIST 4: 0 to 19.90mS
Resolution:	DIST 3: 1µS/cm DIST 4: 0.01mS
Accuracy:	±2% measuring range
Batteries:	4 x 1.5V button cells (MP 675H)
Dimensions:	175 x 41 x 23mm
Weight:	78g

Type	PK	Cat. No.
DIST 3	1	9.704 010
DIST 4	1	9.704 014

### 3. Analytical measurement and testing Electrochemical meters/Conductivity meters

#### 1 Conductivity testers, Dist 5 and Dist 6

Watertight pH-/ conductivity-/ TDS- /°C-testers. Simultaneous display of conductivity and/or TDS and temperature values. Automatic temperature compensation for highest measuring accuracy. User selection of temperature coefficient enables use in alkaline and acidic media. Stability indicator prevents incorrect measurements

Hanna

**Specifications:**

Measuring range: DIST 5 : 0 to 3990mS (0 to 2000ppm)  
DIST 6 : 0 to 20.00mS (0 to 10.00ppm)

Temperature range: 0.0 to 60.0°C

Resolution EC/TDS: ±2% in each measuring range

Resolution: ±0.5°C

Batteries: 4 x 1.5V button cells

Operating temp. range: 0 to 50.0°C

Weight: 100g

Type	PK	Cat. No.
DIST 5	1	9.704 012
DIST 6	1	9.704 013



#### 2

#### 2 Conductivity meter HI 8733

- Multi range conductivity meter for laboratory use
- Can be used for various applications from deionized water to brine
- Automatic temperature enables highest accuracy
- For various strong acids or bases the temperature coefficient can be adjusted between 0% and 2.5% per °C
- Instrument is supplied with 4-ring, potentiometric probe for all 4 ranges

Hanna

**Specifications:**

Ranges/Resolution: 0.00 to 199µS/0.1 µS  
0 to 1999µS/1 µS  
0 to 19.99mS/0.01mS  
0 to 199.9mS/ 0.1mS

Accuracy: ±1% Full Scale

Temperature compensation: automatic from 0 to +50°C

Calibration: manual single point trough trimmer

Battery: 1 x 9 Volt

Operating temp. range: 0 to +50°C

Dimensions: 164 x 76 x 45mm

Weight: 500g

Type	PK	Cat. No.
HI 8733N	1	9.704 016





## Electrochemical meters/Conductivity meters

1



### 1 Conductivity meters HI 99300/HI 99301

**NEW!**

Hanna

- Waterproof conductivity meters with microprocessor
- Conductivity (or TDS value) and temperature are displayed simultaneously
- Automatic temperature compensation from 0 to 60.0°C
- Temperature compensation coefficient is adjustable from 0 to 2.4%/°C
- Automatic one point calibration with conductivity solution 1413µS (HI 99300) or 12.880µS (HI 99301)

Supplied with:

Conductivity probe with 1 meter cable, 4x 1.5V AAA alkaline batteries and transport case

**Specifications:**

Measuring range/Resolution EC:	
HI 99300:	0 to 3999µS/1µS
HI 99301:	0.00 to 20.00mS/0.01mS
Measuring range/Resolution TDS:	
HI 99300:	0 to 2000ppm (mg/l)/1ppm (mg/l)
HI 99301:	0.00 to 10.00ppt (g/l)/0.01ppt (g/l)
Accuracy:	±2% full scale
Measuring range/Resolution T:	0.0 to 60°C/±0.5°C
Battery:	4 x 1.5V
Dimensions (L x W x H):	143 x 80 x 38mm
Weight:	210g

Type	PK	Cat. No.
HI 99300	1	7.618 482
HI 99301	1	6.240 795

2



### 2 Conductivity meter HI 9033

Hanna

Waterproof housing, perfect for laboratory and field work.

- 4 different ranges from 0 to 199.9mS can be selected by simply pressing a button
- automatic temperature compensation grants highest accuracy
- manual calibration at 1 point trough trimmer

Supplied in a transport case, complete with 4 ring conductivity probe with 1 metre cable, calibration screwdriver and battery.

**Specifications:**

Measuring range/Resolution:	0.0 to 199.9µS/0.1µS 0 to 1999 µS/1 µS 0 to 19.99 mS/0.1 mS 0 to 199.9 mS/1 mS
Accuracy:	±1% full scale
Temperature compensation:	automatically from 0 to 50°C
Operating range:	0 to 50°C
Battery:	1 x 9V
Weight:	1kg (incl. transport case)

Type	PK	Cat. No.
HI 9033	1	6.095 234

## Pocket conductivity meters ProfiLine

The new ProfiLine hand-held conductivity meters have a waterproof (IP 67) housing and a new, completely sealed silicone membrane keypad with tactile feedback. A separate battery compartment allows easy exchange of standard alkaline, or rechargeable, batteries. The carefully laid out, large displays indicate the reading and other important information. 3210 and 3310 series meters have a backlit, graphics display and menu-controlled operation. A selection of application specific conductivity cells cover virtually all measurement tasks.

### 3. Analytical measurement and testing Electrochemical meters/Conductivity meters

#### 1 2 Portable conductivity meter Cond 3110

Easy to operate rugged conductivity meter for measurement of conductivity and salinity. Simplified keypad for clear and secure operation. Simultaneous display of measurement value and temperature. Large LCD display for easy reading. Automatic nIF compensation for all grades of natural water. Works with four-electrode cell TetraCon® 325 or two-electrode cell KLE 325.

WTW

**Specifications**

Measuring ranges/Resolution  
 Conductivity: 0.0µS/cm to 1000mS/cm  
 with 5 measuring ranges in the Auto Range mode  
 Temperature: -5.0°C to +105.0°C ±0.1°C  
 Salinity: 0.0 to 70.0  
 T<sub>ref</sub>: 20°C/25°C switchable

Type	Description	PK	Cat. No.
Cond 3110	meter only	1	9.774 372
Cond 3110 Set 1	cased set including conductivity probe TetraCon 325 and accessories	1	9.774 358
Cond 3110 Set 2	cased set including conductivity probe TetraCon 325 (3m) and accessories	1	9.774 403
Cond 3110 Set 3	cased set including conductivity probe KLE 325 and accessories	1	9.774 404



#### 3 Portable conductivity meter Cond 3210

Convenient and versatile, hand-held, conductivity meter with backlit graphics display and menu-controlled operation. Waterproof and robust. For the measurement of conductivity, specific resistivity, salinity and TDS. Includes a 200 x GLP-compliant record memory. Wide selection of different conductivity cells attachable. Automatic and manual temperature compensation with linear temperature function and non-linear function for ultra-pure water and natural water in accordance with EN 27888.

WTW



**Specifications**

Measuring ranges/Resolution:  
 Conductivity: as Cond 3110, but additionally with  
 0.00µS/cm to 19.99µS/cm (when K=0.1cm<sup>-1</sup>)  
 0.000µS/cm at 1.999µS/cm (when K=0.01 cm<sup>-1</sup>)  
 TDS: 0 to 1999mg/l  
 0.0 to 199.9g/l  
 Spec. resistance: 0.0 to 999MΩ/cm  
 Memory: 200 data records (measured value, temperature, date, time, ID)

Type	Description	PK	Cat. No.
Cond 3210	meter only	1	9.774 379
Cond 3210 Set 1	cased set including conductivity probe TetraCon 325 and accessories	1	9.774 398
Cond 3210 Set 2	cased set including 4-pole conductivity probe TetraCon 325 (3m) and accessories	1	9.774 405
Cond 3210 Set 4	cased set including 2-pole conductivity probe LR 325 / 01 and accessories	1	9.774 399

## Electrochemical meters/Conductivity meters

**1**


### 1 2 Conductivity meter Cond 3310

Comfortable and versatile conductivity meter with integral, time controlled, data logger and 5000 GLP-compliant record memory for extended data collection. Menu controlled, with backlit, graphics display for comfortable, safe operation. Wide range of conductivity cells attachable. WTW

GLP-supporting functions, enhanced choice of cell constants, automatic and manual temperature compensation (which can be switched off) with linear and non-linear functions for pure water and natural waters acc. to EN 27888.

**Specifications:**

Measuring ranges/Resolution:

Conductivity:

as Cond 3110, but additionally with

 0.00 $\mu$ S/cm to 19.99 $\mu$ S/cm (when  $K=0.1\text{cm}^{-1}$ )

 0.000 $\mu$ S/cm at 1.999 $\mu$ S/cm (when  $K=0.01\text{cm}^{-1}$ )

TDS:

0 to 1999mg/l, 0.0 to 199.9g/l

Spec. resistance:

 0.0 to 999M $\Omega$ /cm

Memory:

5000 records (measured value, temperature, date, time, ID)

**2**


Type	Description	PK	Cat. No.
Cond 3310	meter only	1	9.774 409
Cond 3310 Set 1	case set including conductivity probe TetraCon 325 and accessories	1	9.774 400
Cond 3310 Set 2	case set including 4-pole conductivity probe TetraCon 325 (3m) and accessories	1	9.774 401
Cond 3310 Set 4	case set including 2-pole conductivity probe LR 325 / 01 and accessories	1	9.774 402

**3**


### 3 VARIO C<sub>ond</sub> Set conductivity instrument

The VARIO C<sub>ond</sub> has a lot to offer. This instrument was designed with ergonomic requirements in mind. It is ideal for service work and inspection measurements on process equipment. The TetraCon® 325 measuring cell, recognised around the world, was shortened and modified especially for the VARIO C<sub>ond</sub>. If that is not enough; an adapted ultra-pure water cell with plug-in head and flow-through vessel can also be used with the VARIO C<sub>ond</sub>. WTW

**Specifications:**

Measurement range/Resolution

Conductivity:

 0.0 $\mu$ S/cm to 200mS/cm

Temperature:

-0.5 to +105.0°C

Salinity:

0.0 to 70.0°C

TDS:

0 to 1999mg/l

Spec. resistance:

0.000 to 1999 Mohm/cm

**Accuracy ( $\pm 1$  digit)**

Conductivity:

 $\pm 0.5\%$  of measurement

Temperature:

 $\pm 0.1\text{K}$ 

 Reference temp. ( $T_{ref}$ ):

selectable 20°C or 25°C

Cell constant:

 fixed 0.475  $\text{cm}^{-1}$ , 0.1  $\text{cm}^{-1}$ 

Temperature comp.:

automatic or switched off

Temperature coefficient:

- non-linear function of natural water (nLF) per EN 27888 and ultra-pure water function
- linear compensation of 0.01 to 2.99%/K
- no compensation

Type	Description	PK	Cat. No.
VARIO C <sub>ond</sub> Set A	incl. transport case, TetraCon® 325 and KCL solution	1	9.774 390
VARIO C <sub>ond</sub> Set B	incl. transport case and LR 01/V	1	9.774 391

### The new inoLab® series from WTW

The new inoLab® benchtops are perfectly designed for modern laboratory surroundings. WTW

The key pads are clearly outlined and easy-to-operate, their smooth surfaces are easy-to-clean and the operation is self-explanatory.

Depending on the type, they have a seven segment display or a backlit black and white graphical display, as well as a USB interface. All meters include a universal power supply and a convenient stand with sensor support.

If desired they can be ordered in application oriented sets including sensors and accessories.

#### 1 Laboratory instrument inoLab® Cond 7110

**NEW!**

WTW

Modern conductivity measurement is easy to do. The inoLab® Cond 7110 has all important functions for measuring conductivity like adjustable reference temperature and different methods of temperature compensation. A big LCD segment display makes readings easy and a well-arranged keypad provides convenient operation. The automatic AutoRead function supports correct and repeatable results. Each meter comes with a stand and accessories.

##### Specifications

Ranges:	All values ±1 digit
Conductivity:	0.00 ... 1000 mS/cm ±0.5 % v. Mw. 0.00 ... 19.99 µS/cm at K= 0.1 cm <sup>-1</sup>
Salinity:	0.0 ... 70.0 (acc. IOT)
Temperature:	-5.0 ... 105.0°C ±0.1°C
Cell constants:	0.450...0.500cm <sup>-1</sup> , 0.09 ... 0.110cm <sup>-1</sup> , 0.800 to 0.880cm <sup>-1</sup>
AutoRead:	automatic
Tref:	20°C/25°C
Temperature compensation:	nLF, lin 0.000 ... 3.000%, switch off
Power supply:	Universal power supply, 100V to 240V, 50/60Hz, 4 x 1.5V AA or 4 x 1.2V NiMH



Type	Description	PK	Cat. No.
Cond 7110	Meter only including accessories	1	9.920 096
Cond 7110 Set 1	Meter including TetraCon® 325 and accessories	1	9.920 097
Cond 7110 Set 3	Meter including KLE 325 and accessories	1	9.920 098

#### Conductivity meter inoLab® Cond 7310

**NEW!**

WTW

This is the new inoLab® Cond 7310 or inoLab® Cond 7310P. A modern backlit graphic display with menu controlled user interface allows easy and intuitive operation. The mini USB-B interface provides fast data transfer to a PC. The internal memory can record up to 5000 GLP complying data including ID, date and time. The housing and the keypad are easy-to-clean. The inoLab® Cond 7310 has the possibility to connect different standard and special conductivity electrodes and has automatic and manual temperature compensation (can even be switched off for pure water measurements according pharmacopeia) for linear and non-linear function according EN 27 888. An integrated thermal printer (58mm width) is ready for printout of the measured data (option). The scope of delivery includes meter, stand, power supply and USB cable.

##### Specifications

Ranges:	All values ±1 digit
Conductivity additional:	0.00 ... 1000 mS/cm ±0.5 % v. Mw. 0.000 ... 1.999 µS/cm, K= 0.01 cm <sup>-1</sup> 0.00 ... 19.99 µS/cm, K= 0.1 cm <sup>-1</sup>
Specific resistance:	0.00 ... 20 MOhm cm
Salinity:	0.0 ... 70.0 (acc. IOT)
TDS:	1 ... 1999 mg/l, 0 to 199.9 g/l
Temperature:	-5.0 ... 105.0°C ±0.1°C
Cell constants:	Fix 0.01 cm <sup>-1</sup> , for calibration 0.450...0.500 cm <sup>-1</sup> , 0.800 ... 0.880 cm <sup>-1</sup> , adjustable 0.09 ... 0.110cm <sup>-1</sup> , 0.250 ... 25.0cm <sup>-1</sup>
Calibration:	1 point
Tref:	20°C/25°C
Temperature compensation:	none, nLF, 0.000 ... 10.00 %/K
Calibration memory:	Up to 10 calibrations recallable
Display:	LCD Graphic, backlit
Memory:	manual 200/5000 automatic
Logger:	manual/time controlled
Interface:	Mini USB-B
Power supply:	Universal power supply, 100V to 240V, 50/60Hz, 4 x 1.5V AA or 4 x 1.2V NiMH



9.920 114



9.920 117

Type	Description	PK	Cat. No.
Cond 7310	Meter incl. accessories	1	9.920 114
Cond 7310 Set 2	Meter incl. TetraCon® 325 and accessories	1	9.920 115
Cond 7310 Set 6	Meter incl. USP Kit 1	1	9.920 116
Cond 7310P	Meter with built-in printer and accessories	1	9.920 117
Cond 7310P Set 1	Meter with built-in printer, incl. TetraCon® 325 and accessories	1	9.920 118
Cond 7310P Set 6	Meter incl. USP Kit 1	1	9.920 119

## Electrochemical meters/Conductivity meters



### 1 Conductivity Meter AL20Con Set

AQUALYTIC

The new, microprocessor-controlled, AL20 hand-held meter range meets the day-to-day demand for sturdy and reliable systems for the measurement of pH or redox, conductivity/TDS, temperature and dissolved oxygen.

The water-tight housing complies with IP67 and is fitted with protective armoring to ensure reliable operation, even in extreme ambient conditions. The support can be flipped up to hang the meter on pipes or branches.

- battery operation period 1500 hours and more (4 x 1.5V type AA batteries)
- auto Hold function
- internal memory for 20 data sets
- 1-point calibration in the range 1000 to 2000 $\mu$ S/cm
- temperature compensation selectable: linear (0.3 to 3.0%/K), non-linear (in acc. with EN 27 888) or no compensation
- 4-pole conductivity measuring cell with integrated temperature-sensor (NTC10k $\Omega$ ). Electrode material: special graphite, Shaft material: epoxy. Temperature sensor: stainless steel, dimensions: 120 x 12mm L x dia.

Items supplied: AL20Con, batteries, 4-Pole conductivity cell, in case

#### Specifications:

Conductivity:	0.0 to 200.0 $\mu$ S/cm 0 to 2000 $\mu$ S/cm 0.00 to 20.00mS/cm 0.0 to 200.0mS/cm
Resistance:	0.005 to 100.0k $\Omega$ /cm
TDS:	0 to 1999mg/l
Salinity:	0.0 to 70.0g/kg
Accuracy:	$\pm$ 0.5% v MW $\pm$ 0.5% FS ( $\pm$ 3 Digits)
Temperature:	-5.0 to 100.0 $^{\circ}$ C, meter accuracy $\pm$ 0.3 $^{\circ}$ C
Accuracy:	$\pm$ 0.3K
Cell constant:	0.50 $\pm$ 0.10cm <sup>-1</sup>
Reference temperature:	20 $^{\circ}$ C and 25 $^{\circ}$ C
Nominal temperature:	25 $^{\circ}$ C
Operating temperature	
Sensor:	0 to 50 $^{\circ}$ C
Measuring cell:	-5 to 80 $^{\circ}$ C (up to 100 $^{\circ}$ C for short periods)
Power consumption:	approx. 3 mA
Auto-Off Function:	0 to 120min

Type	PK	Cat. No.
AL20Con Set	1	9.699 255

### Accessories for Conductivity meter AL20Con

AQUALYTIC

Type	PK	Cat. No.
Electrode for CD 24, 4-pole	1	9.699 256
Calibration solution 1413 $\mu$ S/cm, 500ml, according to N.I.S.T	1	9.699 257



### 2 SCHOTT® Instruments Conductivity Meter Lab 970

SI Analytics GmbH

- reliable and precise measurements due to perfect matching with the measuring system consisting of meter, conductivity cell and conductivity testing solution.
- fast and easy documentation complying with GLP through perfect communication via USB (slave) and RS232.
- measuring acc. to USP28.
- complete support including IQ and OQ documentation and qualified service.
- ultimate reliability for measurement and calibration by wireless sensor recognition of ID electrodes.
- the special stand - mounts with one click and the stand is firmly and securely positioned.

Items supplied in set:

- meter
- ID-conductivity cell
- conductivity testing solution
- stand
- universal power supply unit
- cover

#### Specifications

Conductivity measuring range:	0.000 $\mu$ S/cm to 500mS/cm
Accuracy ( $\pm$ 1digit):	$\pm$ 0.5
Temperature measuring range:	-5.0 $^{\circ}$ C to + 120.0 $^{\circ}$ C
Accuracy ( $\pm$ 1digit):	0.1 $^{\circ}$ C

Type	PK	Cat. No.
Lab 970 Set	1	9.773 853

### 3. Analytical measurement and testing Electrochemical meters/Conductivity meters

#### 1 Conductivity testing solutions

Values stated at 25°C. Supplied in containers as indicated. Accuracy ±2%.

SI Analytics GmbH

Type	Capacity ml	PK	Cat. No.
147µS/cm*	17	18	9.041 053
12.9mS/cm*	17	18	9.041 055
1413µS/cm	250	1	9.041 056

\* Supplied in vials!



#### Conductivity cell probes

##### TetraCon® 325 standard conductivity cell probe:

4-pole cell with integral temperature sensor. Cable length 1.5 metres.

Measuring range:  
1µS/cm to 2S/cm.

WTW



9.704 081

##### LR 325/01 ultra-pure water conductivity cell probe:

With integral temperature sensor and flowthrough vessel D 01/T for measuring very low conductivity ranges (<1 µS/cm) e.g. boiler feed water or deionised water. Cable length 1.5 metres.

Min./max. insertion depth 35/110mm and flowthrough, measuring range: 0.001µS/cm to 200µS/cm.



9.704 078

##### TetraCon® DU/T conductivity flowthrough cell:

4-pole conductivity cell with integral temperature sensor for standard applications. Connection via 10mm diameter tubing nozzles (the adapter cable KKDU with 1 metre cable is required for connection).

Filling volume 7ml. Measuring range: 1µS/cm to 1000mS/cm.

Type	Electrode	Shaft diameter	Length mm	Cell constant	PK	Cat. No.
TetraCon® 325	Graphite	Epoxy resin	120	K = 0,475	1	9.704 081
LR 325/01	V4A steel	V4A steel	121	K = 0.1	1	9.704 083
TetraCon® DU/T	Graphite	Epoxy resin	155	K approx. 0.8	1	9.704 078
KKDU 325	Connection cable	-	100	-	1	9.704 079

#### 4 Conductivity solutions for Conductivity meter HI 8733

Hanna

Type	PK	Cat. No.
12880 µS	1	9.704 017
1413 µS	1	9.704 018
84 µS	1	9.773 992
80.000 µS	1	9.773 993



#### 5 Conductivity solutions

Values are outlined at 25°C, manufactured in accordance with NIST standards (NBS).  
Supplied in 500ml bottles as outlined below - accuracy ±1%.

Reagecon

Type	Capacity ml	PK	Cat. No.
1.3 µS/cm	250	1	6.225 059
5 µS/cm	500	1	6.901 629
10 µS/cm	500	1	6.901 622
20 µS/cm	500	1	6.802 901
50 µS/cm	500	1	6.074 754
84 µS/cm	500	1	9.040 904
100 µS/cm	500	1	6.234 859
147 µS/cm	500	1	9.040 905
200 µS/cm	500	1	6.802 902
500 µS/cm	500	1	6.205 415
1000 µS/cm	500	1	6.901 670
1413 µS/cm	500	1	9.040 906
5000 µS/cm	500	1	6.205 412
10000 µS/cm	500	1	6.901 671
12880 µS/cm	500	1	9.040 907
50000 µS/cm	500	1	6.210 129
100000 µS/cm	500	1	6.205 413
450000 µS/cm	500	1	6.243 175



## Electrochemical meters/Oxygen meters

1



### 1 Waterproof Oxygen Meter HI9146

Hanna

DO measurements can be displayed in ppm (mg/l) or in % saturation, together with temperature value. Automatic calibration in the air, at 100%. Automatic temperature compensation from 0 to 50°C. Instrument allows manual compensation of altitude and salinity. Hold-Function allows the user to "freeze" the reading on the LCD. Auto-off after 4 hours of inactivity, input for 12V d.c. adapter.

Waterproof Oxygen Meter supplied complete with Oxygen Probe, electrolyte solution for DO probe (30 ml), 2 membranes, 4 batteries and a hard carrying case.

**Measuring range/Accuracy:**

O<sub>2</sub> concentration: 0.00 to 45.00mg/l  
±1.5% of Measuring range  
O<sub>2</sub> saturation: 0.0 to 300.0%  
±1.5% of Measuring range  
Temperature: 0.0 to 50.0°C/±0.5°C

**Resolution:**

O<sub>2</sub> concentration: 0.01mg/l  
O<sub>2</sub> saturation: 0.1%  
Temperature: 0.1°C  
Temperature compensation: automatic from 0 to 50°C  
Height compensation: 0 to 4km/resolution 0.1km  
Salinity compensation: 0 to 80g/l/resolution 1g  
Environment: 0 to 50°C  
Dimensions: 196 x 80 x 60mm  
Weight: 500g

Type	Description	PK	Cat. No.
HI 9146-04	incl. Oxygen Probe with 4m cable	1	9.773 997
HI 9146-10	incl. Oxygen Probe with 10m cable	1	9.773 999

### 2 Portable dissolved oxygen meter Oxi 3205

Robust and easy to use dissolved oxygen meter for standard alkaline, or rechargeable, batteries. Menu-controlled with backlit graphics display for ease of use under all lighting conditions. Suitable for use in harsh environments.

WTW

**Measuring ranges:**

O<sub>2</sub> concentration: 0.00 to 19.99mg/l (19.9mg/l\*)  
0.0 to 90.0mg/l (90mg/l\*)  
O<sub>2</sub> saturation: 0.0 to 199.9% (199%\*)  
0 to 600%  
Temperature: -5.0 to +105°C, ±0.1°C  
\* when using DurOx oxygen sensor probes

**Accuracy:**

O<sub>2</sub> concentration: ±0.5% of reading  
O<sub>2</sub> saturation: ±0.5% of reading

Type	Description	PK	Cat. No.
Oxi 3205	meter only	1	9.774 378
Oxi 3205 Set 1	case set including DO sensor CellOx 325 and accessories	1	9.774 340
Oxi 3205 Set 2	case set including DO sensor CellOx 325 (3m) and accessories	1	9.774 406
Oxi 3205 Set 3	case set including DO sensor DurOx 325 (3m) and accessories	1	9.774 343

2



### 3. Analytical measurement and testing Electrochemical meters/Oxygen meters

#### 1 Portable dissolved oxygen meter Oxi 3210

Convenient and versatile dissolved oxygen meter. Menu controlled, with backlit, graphics display. Memory, including GLP supporting functions, temperature compensation, barometric pressure and salinity. Powered by standard alkaline, or rechargeable, batteries.

WTW



**Measuring ranges:**

- O<sub>2</sub> concentration: 0.00 to 19.99mg/l (19.9mg/l\*)  
0.0 to 90.0mg/l (90mg/l\*)
- O<sub>2</sub> saturation: 0.0 to 199.9% (199%\*)  
0 to 600%
- Partial pressure: 0.0 to 199.9mbar (199 mbar\*)  
0 to 1250mbar
- Temperature: -5.0 to +105°C, ±0.1°C  
\* when using DurOx oxygen sensor probes

**Accuracy:**

- O<sub>2</sub> concentration: ±0.5% of reading
- O<sub>2</sub> saturation: ±0.5% of reading
- Partial pressure: ±0.5% of reading
- Datalogger: 200 records (Reading, Temperature, Date, Time, ID)

Type	Description	PK	Cat. No.
Oxi 3210	meter only	1	9.774 350
Oxi 3210 Set 1	cased set including DO sensor CellOx 325 and accessories	1	9.774 351
Oxi 3210 Set 2	cased set including DO sensor CellOx 325 (3m) and accessories	1	9.774 407
Oxi 3210 Set 3	cased set including DO sensor DurOx 325 (3m) and accessories	1	9.774 357

#### 2 3 Portable dissolved oxygen meter Oxi 3310

Comfortable and versatile DO meter with integral, time controlled, data logger and memory for 5000 GLP compliant records for extended data collection. Menu controlled, with backlit graphics display for comfortable and safe operation. Calibration against external standards possible. Automatic temperature, barometric pressure and salinity compensation. 100% waterproof, USB interface for fast data transfer. Includes driver software and cable.

WTW



**Measuring ranges:**

- O<sub>2</sub> concentration: 0.00 to 19.99mg/l (19.9mg/l\*)  
0.0 to 90.0mg/l (90mg/l\*)
- O<sub>2</sub> saturation: 0.0 to 199.9% (199%\*)  
0 to 600%
- Temperature: -5.0 to +50.0°C  
\* when using DurOx oxygen sensor probes

**Accuracy:**

- O<sub>2</sub> concentration: ±0.5% of reading
- O<sub>2</sub> saturation: ±0.5% of reading
- Memory: 5000 records (measured value, temperature, date, time, ID)



Type	Description	PK	Cat. No.
Oxi 3310	meter only	1	9.774 338
Oxi 3310 Set 1	cased set including DO sensor CellOx 325 and accessories	1	9.774 339
Oxi 3310 Set 2	cased set including DO sensor CellOx 325 (3m) and accessories	1	9.774 408



## Electrochemical meters/Oxygen meters



### 1 Dissolved oxygen meter AL200Xi

The new, microprocessor-controlled, AL20 hand-held meter range meets the day-to-day requirement for sturdy and reliable systems for pH or redox, conductivity/TDS, temperature and dissolved oxygen measurement. The water-tight housing complies with IP67 and is fitted with protective armouring to ensure reliable operation even in extreme ambient conditions. The support can be flipped up to hang the meter on pipes or branches.

- battery operation period up to 12.000 hours (4 x 1.5V Type AA batteries)
- auto Hold function
- internal memory for 20 data sets
- self-polarising oxygen electrode with integral NTC sensor

#### Specifications:

O <sub>2</sub> partial pressure:	0.0 to 570.0hPa, 0.0 to 427.4mmHg, or 0 to 1200hPa, 0 to 900mmHg
O <sub>2</sub> concentration:	0.00 to 25.00mg/l or 0.0 to 70.0mg/l
O <sub>2</sub> saturation:	0.0 to 250.0% or 0 to 600%
Accuracy:	±1.5 ±0.2mg/l (0 to 25mg/l) or ±2.5 ±0.3mg/l (25 to 70mg/l) ±1 digit
Temperature:	-5.0 to +50.0°C 23.0 to 122.0°F
Accuracy:	±0.1°C
Abs. air pressure:	500 to 1100hPa
Accuracy:	±0.5% full scale
Nominal temperature:	25°C
Operating temperature:	0 to 50°C
Storage temperature:	-20 to 70°C
Power consumption:	max. 0.25mA
Auto-Off Function:	0 to 120min

Type	Description	PK	Cat. No.
AL200Xi Set	complete in carrying case	1	9.699 245

### Accessories for Dissolved-Oxygen-Meter AL200Xi

AQUALYTIC

Type	PK	Cat. No.
Oxygen electrode, 1.5m cable	1	9.699 248
Oxygen electrode, 10m cable	1	9.699 249
Oxygen electrode, 30m cable	1	9.699 250
Service Set for Oxygen electrode with 3 Membrane Heads, 100ml KOH solution	1	9.699 251



### 2 Portable/bench dissolved oxygen meters, ProfiLine Oxi 1970i

With robust and impact resistant housing. Splashproof (IP66) and submersible (IP67). Cable lengths up to 100 metres are available on request for oxygen measurement at depth. With rechargeable battery giving up to 600 hours of operating time, shoulder strap, hinged carrying handle which also acts as a stand, and electrode case. User friendly, multi-function display, auto test, non-volatile data memory for 50 pairs of readings and RS232 output interface.

#### ProfiLine Oxi 1970i:

Unbreakable oxygen meter with rechargeable battery and network operation, data storage, GLP test functions, OxiCal® rapid calibration, automatic air pressure correction by integral barometric pressure sensor (500 to 1100 hPa), automatic temperature compensation via IMT compensation procedure, automatic salinity correction of 0.0 to 70.0 (adjustable via display), AutoRead for better reproducibility ±0.05mg/l.

Accessories required for oxygen measurement at depth can be obtained upon request.

#### Measuring range:

O <sub>2</sub> concentration:	0.00 to 19.99mg/l 0.0 to 90.0mg/l
O <sub>2</sub> saturation:	0.0 to 199.9% 0 to 600%
Temperature:	-5.0 to +50.0°C

#### Accuracy:

O <sub>2</sub> concentration:	±0.5% of reading
O <sub>2</sub> saturation:	±0.5% of reading
Temperature:	±0.1K

Type	PK	Cat. No.
ProfiLine Oxi 1970i	1	9.822 592

#### The new inoLab® series from WTW

The new inoLab® benchtops are perfectly designed for modern laboratory surroundings. The key pads are clearly outlined and easy-to-operate, their smooth surfaces are easy-to-clean and the operation is self-explanatory. Depending on the type, they have a seven segment display or a backlit black and white graphical display, as well as a USB interface. All meters include a universal power supply and a convenient stand with sensor support. If desired they can be ordered in application oriented sets including sensors and accessories.

WTW

#### 1 Oxygen meter inoLab® Oxi 7310



Reliable Documentation for dissolved oxygen measurement, if desired also available with built-in printer. This is the inoLab® Oxi 7310 or inoLab® Oxi 7310P. A modern backlit graphic display with menu controlled user interface allows easy and intuitive operation. The mini USB-B interface provides fast data transfer to a PC. The internal memory can record up to 5000 GLP complying data including ID, date and time. The housing and the keypad are easy-to-clean. The inoLab® Oxi 7310 supports the long proven WTW galvanic sensors, CelloX® 325 and StirrOx® G. A calibration history of the 10 last calibrations allows conclusions on the state of the sensor. Calibrations versus external standards e.g. Winkler titration, are possible, too. The meter includes automatic barometric pressure and temperature compensation. An integrated thermal printer (58 mm width) is ready for printout of the measured data (option). The scope of delivery includes meter, stand, power supply and USB cable.

WTW



#### Specifications

Ranges:	All values ±1 digit
Dissolved oxygen concentration:	0.00 ... 19.99 mg/l ±0.5 % Mw. 0 ... 90 mg/L ±0.5 %
Saturation:	0.0 ... 199.9 % ±0.5 % v. Mw. 0 ... 600 % ±0.5 v Mw.
Partial pressure:	0 ... 199.9 hPa, 0 ... 1250 hPa
Temperature:	-5.0 ... 105.0°C ±0.1°C
Calibration:	1-point air calibration (water vapour saturated air) or versus external standard
Calibration memory:	Up to 10 calibrations recallable
Display:	Backlit graphic LCD
Memory:	manual 200/5000 automatic
Logger:	manual/time controlled
Interface:	Mini USB-B
Power supply:	Universal power supply, 100 to 240 V, 50/60 Hz, 4 x 1.5 V AA or 4 x 1.2 V NiMH

Type	Description	PK	Cat. No.
Oxi 7310	Meter only including accessories	1	9.920 108
Oxi 7310 Set 1	Meter including CelloX® 325 and accessories	1	9.920 109
Oxi 7310 Set 4	Meter including StirrOx® G and accessories	1	9.920 110
Oxi 7310P	Meter including integrated printer	1	9.920 111
Oxi 7310P Set 1	Meter including integrated printer, incl. CelloX® 325 and accessories	1	9.920 112
Oxi 7310P Set 4	Meter including integrated printer, incl. StirrOx® G and accessories	1	9.920 113



## Electrochemical meters/Oxygen meters

1



### 1 Accessories for Oxygen meters

**StirrOx® G:**

For inoLab® Oxi 730, ProfiLine 197i/1970i, inoLab® 740 Oxi, inolab Oxi 7310

Self-stirring oxygen sensor.

- single-handed use
  - high reproducibility
  - ready for immediate use, no polarisation period necessary
  - extremely low internal consumption of oxygen by the electrode
  - no zero point calibration necessary
  - OxiCal®-SL calibration and storage vessel included
  - 6 months operation with one electrolyte filling
  - IMT function compensation
  - membrane leakage monitoring, damaged membranes are indicated.
- Supplied with case, spare parts and maintenance solutions.

WTW

**CellOx® 325:**

For Oxi 3xx, Oxi 3xxi, ProfiLine Oxi 197, ProfiLine Oxi 197i, ProfiLine Multi 197i, Multi 340i, Oxi 3205, Oxi 3210, Oxi 3310, ProfiLine Oxi 1970i, ProfiLine Multi 1970i, inoLab®

Membrane-covered, galvanic oxygen sensor.

- ready for immediate use, no polarisation period necessary
- IMT function compensation
- 6 months operation with one electrolyte filling
- stable zero point
- 1.5 metre cable and waterproof plug (to IP 67) (other cable lengths available on request)
- OxiCal®-SL calibration and storage vessel included

Type	PK	Cat. No.
StirrOx® G	1	9.822 560
CellOx® 325	1	9.822 551



BOD (Karlsruher) bottles - please see page 1138.

2



### 2 Oxygen sensor DurOx® 325

For use with Oxi 3xxi, ProfiLine Oxi 197i, ProfiLine 3205, 3210, 3310.

WTW

Membrane-covered oxygen sensor with low flow requirement and removable cage guard, for field applications (fish farm revival pools) and for educational purposes.

- ready to measure - no polarisation time
- IMT compensation via two integral temperature sensors
- service life with one electrolyte filling approx. 6 months
- minimal flow requirement
- no zero current
- sensor is watertight (IP 68 - 2)
- standard with 3m cable and watertight plug
- standard with calibration/storage vessel OxiCal® -D
- standard with cage guard SK-D

Type	PK	Cat. No.
DurOx® 325	1	9.920 045

