

METER - "portable" - "pH & mV & temperature measurement"



- Offers an economical solution for measuring pH & mV and temperature. Simple to calibrate by one keyboard.
- Easy to replace electrode. The new electrode will be recognised automatically and shown at the display.
- Ergonomic, lightweight and waterproof (which can even float on water) housing enables perfect outdoor practice.
- Measured values are shown by a microprocessor based large LCD display.
- Stores maximum and minimum measured values in memory.
- Offers a switchable temperature selection of °C or °F.
- Featured with a low battery and energy consumption indicator.
- Automatic switch-off function close the circuit after 10 minutes of non use.
- Supplied in a carrying case, with instruction manual and calibration standard set.

Meters are supplied in a sturdy carry case complete with hand held stripe, pH buffer solutions, cleaning solution, instruction manual and other standard accessories.



catalogue no: 616.01.001	pH	mV	Temp
range	-2.00 / 16.00 pH	-1000 / 1000	0 / 90°C
accuracy	± 0.01+1 digit	± 2 + 1 digit	±1 + 1 digit
resolution	0.01 pH	1 mv	0.1°C
compensation	0 / 90°C		

METER - "portable" - "pH & mV & temperature & conductivity & TDS & salt measurement"



Supplied with a protective cap

All measurements are done by single electrode.

- Featured with automatic temperature compensation (ATC). Offers a switchable temperature selection of °C or °F.
- Easy to replace electrode. The new electrode will be recognised automatically and shown at the display.
- Featured with a low battery and energy consumption indicator.
- Automatic switch-off function close the circuit after 10 minutes of non use.
- Supplied in a carrying case, with instruction manual and calibration standard set.

➤ Offers an economical solution for measuring pH & mV & temperature. & conductivity & TDS & salt with one single electrode.

➤ Ergonomic, lightweight and waterproof (which can even float on water) housing enables perfect outdoor practice.

➤ Simple to calibrate by one keyboard.

➤ Memory function stores and recalls different measurements.

➤ Microprocessor based large LCD displays show the measured values and the temperature simultaneously.



Meters are supplied in a sturdy carry case complete with hand held stripe, pH buffer solutions, cleaning solution, instruction manual and other standard accessories.

catalogue no: 616.02.002	pH	mV	Temp	Conductivity	TDS	Salt
range	-2.00 / 16.00 pH	-1999 / 2000	0 / 110°C	0 / 2000 µS 2.00 / 100.00 ms	0 / 1300 ppm 1.30 / 13.00 ppt	0 / 1000 ppm 1.00 / 50.00 ppt
accuracy	± 0.01+1 digit	± 2 + 1 digit	±0,2 + 1 digit	± 2 % FS		
resolution	0.01 pH	0,1 / 1 mv	0.1°C	0.1 µS / 0.01 mS	1 ppm / 0.01 ppt	
compensation	0 / 100°C				0 / 50°C	

density & sedimentation & temperature & time & pH & weight measurement

METERS - "table top"

- Featured with microprocessor based design and rugged housing with splash proof keyboard.
- Microprocessor based large LCD display enables fast and accurate measurements.
- Automatic calibration enables fast measuring cycles.
- Easy replacement of electrode and the type of the electrode would be recognised automatically and shown on the display during insertion.
- Can measure and display (depending on model) pH & mV & temperature & conductivity & TDS & salt & dissolved oxygen in seconds.
- The large backlight LCD displays pH or mV or conductivity or TDS or salt or dissolved oxygen and temperature simultaneously.
- Offers a switchable temperature selection of °C or °F.
- Featured with an automatic temperature compensation (ATC).
- Stores maximum and minimum measured values in memory. Memory function can keep and recall up to 150 data.



Table top meters have a special platform with a magnetic stirrer which enables fast and accurate measurements and results.

Membrane keypad with large backlight LCD displays pH or mV or conductivity or TDS or salt or dissolved oxygen and temperature simultaneously.

catalogue no: 616.11.001

	pH	ORP	Temp
range	-2.00 / 16.00 pH	-1999 / -200 mV -199.9 / 499.9 mV 500 / 2000 mV	0 / 110°C
accuracy	± 0.01+1 digit	± 2 + 1 digit	±1+1 digit
resolution	0.01 pH	0.1 / 1 mv	0.1°C
compensation	ATC: 0 / 100°C	N/A	

catalogue no: 616.12.001

	pH	ORP	Temp	Conductivity	TDS	Salt	DO	O2
range	-2.00 / 16.00 pH	-1999 / -200 mV -199.9 / 499.9 mV 500 / 2000 mV	0 / 110°C	0.0 / 199.9 µS 200 / 1999 µS 2.00 / 19.99 mS 20.0 / 100.0 mS	0.0 / 131.9 ppm 132 / 1319 ppm 1.32 / 13.19 ppt 13.2 / 66.7 ppt	0.0 / 99.9 ppm 100 / 999 ppm 1.00 / 9.99 ppt 10.0 / 50.0 ppt	0 / 20.00 mg/L 0 / 20.00 ppm	0 / 200.0 %
accuracy	± 0.01+1 digit	± 2 + 1 digit	±1+1 digit	± 2 % FS			± 0.2 + 1 digit	± 2 % FS
resolution	0.01 pH	0.1 / 1 mv	0.1°C	0.1 µS / 0.1 mS	0.1 ppm / 0.1 ppt	0.1 ppm / 0.1 ppt	0.01 mg/L	0.10%
compensation	ATC: 0 / 100°C	N/A		ATC: 0 / 60°C			ATC: 0 / 60°C MSC: 0 / 50 ppt MAC: 0 / 20000 ft	

ACCESORIES - "for pH meters"



Soaking solution - 50 ml
Catalog No: 616.01.101



DO solution - 50 ml
Catalog No: 616.11.107



Conductivity solution - 120 ml
Catalog No: 616.11.101



Conductivity solution - 120 ml
Catalog No: 616.11.102

for 616.01.001



pH electrode
Catalog No: 616.01.103

for 616.01.001



ORP electrode
Catalog No: 616.01.104

for 616.02.002



pH electrode
Catalog No: 616.02.101

for 616.02.002



ORP electrode
Catalog No: 616.02.102

for 616.11.001 & 616.12.001



pH electrode
Catalog No: 616.11.103

for 616.12.001



Conductivity electrode
Catalog No: 616.11.104

for 616.12.001



DO probe
Catalog No: 616.11.105

for 616.11.001 & 616.12.001



Temperature probe
Catalog No: 616.11.108

PH BUFFER SOLUTIONS

- Ready to use pH buffer solutions with color coding, accuracy $\pm 0,01$ pH at 20°C.
- Traceable to NIST in unique designed, practical twin-neck dosing bottles!
- **Unique and innovative design of the “twin neck” dosing bottles offers multiple advantages:**
- No need for a separate measuring container during calibration.
- No waste of buffer since exact and correct quantity of buffer is dispensed into the calibrating chamber at all times.
- Ideally suited for field work and easy to carry.

Operation is simple, fast and easy;

- Open safety lock of the integrated calibration chamber.
- Fill calibration chamber from buffer reservoir by pressing the bottle gently.
- Calibrate pH electrode then discard used buffer solution. Bottle is now ready for the following use.



catalogue number	pH range	color	volume	pack quantity
502.04.250	pH 4.00	red	250 ml	1 piece
502.04.500	pH 4.00	red	500 ml	1 piece
502.04.901	pH 4.00	red	1000 ml	1 piece
502.07.250	pH 7.00	yellow	250 ml	1 piece
502.07.500	pH 7.00	yellow	500 ml	1 piece
502.07.901	pH 7.00	yellow	1000 ml	1 piece
502.10.250	pH 10.00	blue	250 ml	1 piece
502.10.500	pH 10.00	blue	500 ml	1 piece
502.10.901	pH 10.00	blue	1000 ml	1 piece



PH/TEMP. POCKET TESTER PT-70

with replaceable electrode

- ▶ Large display screen - displays pH and temperature at the same time
- ▶ 1, 2 or 3 point calibration, with automatic buffer recognition of US and NIST buffer sets.
- ▶ Readings are automatically compensated for temperature (ATC)
- ▶ Electrode efficiency display
- ▶ Replaceable electrode module ensures extended usefulness
- ▶ IP67 water-tight housing
- ▶ Auto power off after 10 minutes of inactivity
- ▶ Battery life over 200 hours

Specification:

Modes:		pH, °C
Ranges:	pH	0 to 14 pH
	Temp.	-9,9...99,9 °C
Resolution:	pH	0,01 pH
	Temp.	0,1 °C
Accuracy:	pH	± 0,02 pH ± 1 digit
	Temp.	± 0,3 °C ± 1 digit
Temperature compensation:		Auto from -9,9 to 99,9°C
pH buffer recognition:		US (pH 4.01, 7,00 10,01) NIST (pH 4,00, 6,86, 9,18)
Buffer temp range:		0,0 - 60 °C
Input impedance:		> 10 ¹² ohms
pH calibration:		1, 2 or 3 point calibration
pH electrode offset recognition:		±90mV at pH 7,00 ±98,3mV to -81,7mV at pH 6,86
pH electrode slope recognition:		±30% at pH 4,00; 4,01; 9,18 and 10,01
Power:		4 x LR44 batteries
Dimensions :		193 x 44 x 25 mm
Weight :		105 grams (incl. batteries)

Code	Description
BOE 5190070	PH/Temp. Tester PT-70
BOE 5190071	Spare pH electrode module PT-70-1 for PT-70

TECHNICAL BUFFER SOLUTIONS

In square plastic bottles, PE, 500 ml, labeled with an individual batch no. on the bottles, traceable to SRM of NIST

Code	Description
BOE 104000	pH 4,00 (20°C), 500 ml
BOE 107000	pH 7,00 (20°C), 500 ml
BOE 110000	pH 10,00 (20°C), 500 ml
BOE 104004	pH 4,00 (20°C), 500 ml, red color coded
BOE 107006	pH 7,00 (20°C), 500 ml, green color coded
BOE 110008	pH 10,00 (20°C), 500 ml, blue color coded

CONDUCTIVITY CALIBRATION SOLUTIONS

In square plastic bottles, PE, 250 ml, labeled with an individual batch no. on the bottles, traceable to PTB and NIST

Code	Description
BOE 300141	1,413 mS/cm KCL 0,01 mol/l (25°C), 250 ml
BOE 301288	12,88 mS/cm KCL 0,1 mol/l (25°C), 250 ml
BOE 311180	111,8 mS/cm KCL 1 mol/l (25°C), 250 ml

ELECTROLYTE SOLUTION

In square plastic bottles, PE, 500 ml, labeled with an individual batch no. on the bottles.

Code	Description
BOE 400300	Potassium chloride 3 mol/l, 500 ml

PH INDICATORS

pH-Fix is the most popular indicator stick for all purposes. The indicator dyes are chemically bound to the cellulose fibres, avoiding bleeding even in strong alkaline samples. Presentation: Box of 100 sticks 6 x 85 mm

Code	Description
M-N 92110	pH-Fix 0-14, pH Graduation 1,0

The budget priced universal indicator papers can be used for most standard applications. For each pH-value these papers show a single colour which can be matched with the colour scale at an interval of 1 pH-unit. Presentation: Reel of 5 m length and 7 mm width

Code	Description
M-N 90201	pH-Universal Indicator Paper, pH 1-11, pH Graduation 1,0
M-N 90204	pH-Universal Indicator Paper, pH 1-14, pH Graduation 1,0/2,0

BOECO PORTABLE DO/TEMP. METER MODEL DO-580

- ▶ Simultaneous display of dissolved oxygen and temperature measurements
- ▶ Automatic temperature compensated (ATC) dissolved oxygen readings
- ▶ User selectable salinity and pressure compensated dissolved oxygen readings
- ▶ Works with accurate and reliable galvanic dissolved oxygen probes
- ▶ 50 data set reviewable memory
- ▶ Automatic shut off function (30 minutes of non-use)
- ▶ Battery life approx. 200-500 hours
- ▶ Low battery indicator
- ▶ IP65 waterproof case

Specification:

Dissolved Oxygen (ppm)	
Ranges	0.00 to 20.00 ppm (mg/L)
Resolution	0.01 ppm (mg/L)
Accuracy	± 2 % of the reading or ±0,2 ppm
Dissolved Oxygen (%)	
Ranges	0,0 to 200.0 %
Resolution	0.1 %
Accuracy	±2 % of the reading or ±0,2 air saturation
Temperature	
Ranges	-6 to 46,0 °C
Resolution	0.1°C
Accuracy	±0,3 °C ±1 digit
Pressure compenssation:	600 to 1100 mBar (450 to 825 mmHg)
Salinity compensation:	From 0,0 to 40,0 ppt
Electrode type:	Galvanic
Temperature sensor:	Thermistor, 10K ohms, at 25 °C
Calibration backup:	Yes
Automatic temp. comp:	Yes
Power	9 Volt battery
Size (LxWxD)	198x70x37 mm
Weight:	0,26 kg (Battery included)

The DO-580 will be delivered incl. the following standard accessories: 1 x Watertight dissolved oxygen probe LD-900G-1, 1 x 30 ml Galvanic O2 Fill Solution, 1 x 9 V battery, 1 x Operating Manual, 1 x carrying case

Code	Description
BOE 5190580	Portable DO/Temperature Meter, Model DO-580 in carrying case wih dissolved oxygen probe LD-900G-1



PH INDICATORS



BOECO PORTABLE DO/TEMP METER MODEL DO-580



PH/TEMP. TESTER PT-70 WITH REPLACEABLE ELECTRODE



ELECTRODE MODULE





BOECO PORTABLE CONDUCTIVITY/
TDS/SALINITY/TEMP METER
MODEL CT-480



**BOECO PORTABLE CONDUCTIVITY/TDS/
SALINITY/TEMP. METER MODEL CT-480**

- ▶ Simultaneous displays of conductivity, salinity or TDS with temperature measurements.
- ▶ Convenient one point calibration. Calibration data is stored in memory and is ready for use on power up.
- ▶ Adjustable TDS coefficient, reference temperature and temperature coefficient
- ▶ Uses one conductivity cell for conductivity, salinity and TDS measurement
- ▶ Accepts 4-wire conductivity cells with k=0,475 cell constant and 2-wire K=0,1 cell constant for improved flexibility and accuracy
- ▶ 50 data set reviewable memory
- ▶ Automatic shut off function (30 minutes of non-use)
- ▶ Battery life approx 200 -500 hours
- ▶ Low battery indicator
- ▶ IP65 waterproof case

Specification:

Conductivity K = 0,475

Range	Resolution	Accuracy
0,0 to 475µS/cm	0,1µS/cm	±1% of reading +2µS/cm
475 to 4750µS/cm	1µS/cm	±1% of reading +5µS/cm
4,75 to 47,50mS/cm	0,01mS/cm	±1% of reading +0,05mS/cm
47,5 to 200,0mS/cm	0,1mS/cm	±2,5% of reading +0,5mS/cm

Conductivity K = 0,1

Range	Resolution	Accuracy
0.00 to 99,99µS/cm	0,01µS/cm	±1% of reading
100 to 200µS/cm	0,1µS/cm	±1% of reading

Salinity

Range	Resolution	Accuracy
0.0 to 70,0 ppt	0,1 ppt	± 0,2 % Full Scale

Temperature

Range	Resolution	Accuracy
-10.0 to 90,0 °C	0,1 °C	±0,2 % or ±4% Full Scale whichever is greater

Reference Temp.:	From 15,0 to 25,0°C, default is 25,0°C
Temperature Coefficient:	From 0.00 to 4,00 °C, default is 1,91°C
TDS Constant:	From 0,30 to 1.00, default is 0,65
Cell Constant	4 wire conductivity cell: K = 0,475
ATC	Thermistor, 10K ohms, at 25°C
Power	9 Volt battery
Size (LxWxD)	196x70x37 mm
Weight	0,26 kg (Battery included)

The CT-480 will be delivered incl. the following standard accessories:
1 x 4-wire conductivity cell 3020P with k=0,475
1 x 9 V battery, 1 x Operating Manual, 1 x carrying case

Code	Description
BOE 5190480	Portable Conductivity/Salinity/TDS/Temperature Meter, Model CT-480 in carrying case with 4-wire Conductivity Cell 3020P with 6 PIN connector, K=0,475 (50µS - 200mS/cm)

Optional Conductivity Cell:

BOE 5190109	2-wire Conductivity Cell 109P with 6 PIN connector, K=0,1 (0,0 - 200,0µS/cm)
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**BOECO BENCH TOP CONDUCTIVITY/ TDS/
SALINITY/TEMP. METER
MODEL CT-676**

- ▶ Simultaneous displays of conductivity, salinity or TDS with temperature measurements.
- ▶ Convenient one point calibration. Calibration data is stored in memory and is ready for use on power up.
- ▶ Adjustable TDS coefficient, reference temperature and temperature coefficient
- ▶ Uses one conductivity cell for conductivity, salinity and TDS measurement
- ▶ Accepts 4-wire conductivity cells with k=0,475 cell constant and 2-wire K=0,1 cell constant for improved flexibility and accuracy
- ▶ Low battery indicator
- ▶ IP54 waterproof case

Specification:

Conductivity K = 0,475

Range	Resolution	Accuracy
0,0 to 475µS/cm	0,1µS/cm	±1% of reading +2µS/cm
475 to 4750µS/cm	1µS/cm	±1% of reading +5µS/cm
4,75 to 47,50mS/cm	0,01mS/cm	±1% of reading +0,05mS/cm
47,5 to 200,0mS/cm	0,1mS/cm	±2,5% of reading +0,5mS/cm

Conductivity K = 0,1

Range	Resolution	Accuracy
0.00 to 99,99µS/cm	0,01µS/cm	±1% of reading
100 to 200µS/cm	0,1µS/cm	±1% of reading

Salinity

Range	Resolution	Accuracy
0,0 to 70,0 ppt	0,1 ppt	± 0,2 % Full Scale

Temperature

Range	Resolution	Accuracy
-10,0 to 90,0 °C	0,1 °C	±0,2 % or ±4% Full Scale whichever is greater

Reference Temp.:	From 15,0 to 25,0°C, default is 25,0°C
Temperature Coefficient:	From 0,00 to 4,00 °C, default is 1,91°C
TDS Constant:	From 0,30 to 1,00, default is 0,65
Cell Constant	4 wire conductivity cell: K = 0,475
ATC	Thermistor, 10K ohms, at 25°C
Power Requirement:	6 x 1,5 Volt AAA batteries or AC adaptor
Dimensions (LxWxH):	150 x 203 x 72 mm
Weight:	0,54 kg (Battery included)

The CT-676 will be delivered incl. the following standard accessories:
1 x 4-wire conductivity cell 3020P with k=0,475, 6 x 1,5V AAA batteries,
1 x Operating Manual, 1 x Flexible electrode holder

Code	Description
BOE 5196760	Bench Top Conductivity/Salinity/TDS/Temperature Meter, Model CT-676 with 4-wire Conductivity Cell 3020P with 6 PIN connector, K=0,475 (50µS - 200mS/cm), with EURO plug
BOE 5196761	Idem, with US plug AC adaptor

Optional Conductivity Cell:

BOE 5190109	2-wire Conductivity Cell 109P with 6 PIN connector, K=0,1 (0,0 - 200,0µS/cm)
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CT-676

WIELOFUNKCYNE URZĄDZENIE POMIAROWE nr katalogowy 06-7011-01

7011-01



Parametry	pH	mV	temp.
Zakres	-2 -16,00	-1000 - 1000	0-90°C
Dokładność	±0,01 +1 cyfra	±2 1 cyfra	±0,2°C 1 cyfra
Rozdzielczość	0,01	1	0,1°C
Aut.kom.temperat.		0-90°C	
Kalibracja		pH 4,0;7,0;10,01	
Zasilanie		baterie DC 1,5V	

Kompletny zestaw zawiera :

1. Roztwory buforowe pH 4 i 7 (dla modelu 7011 i 7200)
2. Roztwór standardowy 1413μS (dla modelu 7121 i 7200)
3. Baterie 1,5V x 4
4. Walizeczkę transportową
5. Opcjonalnie elektrodę ORP
6. Gotowy do pracy przyrząd z elektrodą standardową

Zalety

- szybki i dokładny pomiar dzięki zastosowaniu mikroprocesora
 - umieszczony pod kątem wielofunkcyjny wyświetlacz z przytrzymaniem danych, min/max i wskaźnikiem PTS po kalibracji
 - obudowa wodoodporna
 - automatyczna kompensacja temperatury, łatwa kalibracja (jednym przyciskiem)
 - łatwy do wymiany moduł elektrody.
- Typ elektrody rozpoznawany jest automatycznie i pokazywany na wyświetlaczu podczas wkładania

nr katalogowy 06-7021-02

7021-02



Parametry	cond.	TDS	sol	temp.
Zakres	0-2000nS 2-20mS	0-1300ppm 1,30-13,00ppt	0-1000ppm 1,0-12,00ppt	0-90°C
Dokładność	± 2% (cond , TDS , Sol.)			± 0,2°C1cyfra
Rozdzielczość	1nS 0,01mS	1 ppm 0,01ppt	1ppm 0,01 ppt	0,1°C
Aut.kom.temperat.		0-50°C		
Kalibracja		0,1413uS 12,88mS		
Zasilanie		baterie DC 1,5V		

nr katalogowy 06-7200-03

Parametry	pH	mV	cond.	TDS	sol	temp.
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konduktometr /PH/potencjał REDOX/TDS-ogólna liczba substancji rozpuszczonych/zasolenie/temperatura.

Zestaw w walizce z PP zawiera: przyrząd, elektroda konduktometryczna, bufor 4 i 7 roztwór konduktometryczny oraz baterie.

Automatyczna kompensacja temperatury, łatwa kalibracja (jednym przyciskiem), łatwa wymiana modułu elektrody- typ elektrody rozpoznawany jest automatycznie.

7200-03

ORP elektroda do modeli 7011-01 i 7200-3

Standard elektroda pH

Naczynko konduktometryczne do modeli 7021-2 i 7200-03



ELEKTRODA pH

Elektroda szklana lub w plastikowej osłonie służy do pomiaru pH w roztworach wodnych w zakresie 0 do 14 pH. cechuje niska impedancja, krótki okres stabilizacji, dobra liniowość na krańcach zakresu pomiarowego. Elektrolit w formie żelu nie jest uzupełniany. Tylko w modelach szklanych GL42 i GL43 istnieje możliwość napełnienia. Membrana pomiarowa szklana, kulista nie wymaga przetrzymywania w naczyniu z wodą destylowaną lub KCl w celu uaktywnienia, gdyż tą rolę spełnia pojemniczek z nasyconym KCl, nakładany na koniec elektrody i zdejmowany przed pomiarem. Takie rozwiązanie pozwala na utrzymanie membrany w ciągłej gotowości do pracy i przedłuża żywotność elektrody. Specjalny pierścień uszczelniający uniemożliwia wyciek elektrolitu z pojemniczka. Posiada chlorosrebrowe półogniwo odniesienia. W komplecie złącze BNC oraz kabel długości 1 m.

parametry	PB 40	PY 41	GL 42	GL 43
Typ obudowy	tworzywo PC	tworzywo PC	szklany	szklany
Zakres pH	0-14	0-14	0-14	0-14
Zakres temp.[°C]	0-80°C	0-80°C	0-90°C	0-90°C
Złącze	BNC	BNC	BNC	BNC
Wielokrotne napełnienie	nie	nie	tak	tak
Wymiary[mm]	160x12	165 x 12	155x12	155x12
nr kat.	06-38PB40	06-38PY41	06-38GL42	06-38GL43



ELEKTRODA ORP

Elektroda jest ogniwem pomiarowym, przeznaczonym do pomiarów potencjałów utleniająco-redukujących (ORP, redoks) w roztworach wodnych. Składa się ona z półogniwa wskaźnikowego w postaci platynowego pierścienia o potencjale zależnym od równowagi utleniająco-redukującej w roztworze oraz z chlorosrebrowego półogniwa odniesienia o potencjale stałym. Elektroda może być przydatna w pomiarach laboratoryjnych, a także w okresowych lub ciągłych pomiarach przemysłowych. Korpus elektrody posiada boczny tubus (tylko model GO51), umożliwiający uzupełnianie roztworu odniesienia. Do typowych zastosowań elektrody należą: kontrola przebiegu reakcji utlenienia i redukcji w procesach chemicznego lub biologicznego uzdatniania ścieków przemysłowych lub komunalnych, badania czystości wód powierzchniowych, kontrola procesów fermentacyjnych itp. Jako przykłady można wymienić utlenianie cyjanów chlorem lub podchlorynem oraz redukcję chromianów do jonów chromowych w ściekach powstałych w procesach galwanicznych lub powierzchniowej obróbki metali. Elektroda także znaleźć zastosowanie w laboratoriach analitycznych, jako wskaźnik punktu końcowego miareczkowania w reakcjach utlenienia i redukcji (np.. w jodometrii, bromianometrii lub manganometrii). Posiada kabel długości 1m.

parametry	PO 50	GO 51
Typ obudowy	tworzywo PC	szkło
przewodność [mV]	±2000	±2000
Zakres temp.[°C]	0-80°C	0-80°C
Półogniwo odniesienia	Ag/AgCl	Ag/AgCl
Łącznik elektrolityczny	ceramiczny	ceramiczny
Złącze	BNC	BNC
Wielokrotne napełnienie	nie	tak
Wymiary[mm]	160x12	160x12
nr kat.	06-38PO50	06-38GO51



STATYW DO ELEKTROD I CZUJNIKÓW
Nr katalogowy 03-79EH10



CZUJNIK KONDUKTOMETRYCZNY

Czujnik konduktometryczny jest przeznaczony do pomiarów przewodności elektrycznej roztworów wodnych. Konstrukcja czujnika oraz użyte materiały umożliwiają wykorzystanie czujnika w pomiarach próbek o szerokim zakresie przewodności, również próbek agresywnych chemicznie. Czujnik CD-60B przeznaczony jest do pomiarów przewodności w zakresie $0 \mu\text{S}/\text{cm} \div 100 \text{ mS}/\text{cm}$. Czujnik ten nie może być wykorzystywany do pomiarów w skoncentrowanych roztworach soli i roztworach kwasów mineralnych. Jest czujnikiem zanurzeniowym. Czujnik nie może być używany do pomiarów w roztworach które są silnie zanieczyszczone osadami, tłuszczami lub olejami. Posiada kabel 1m.

nr katalogowy: 06-38CD60B

Parametry	CD60B
Typ obudowy	szkło
Zakres	$0 \mu\text{S}/\text{cm} - 100 \text{ mS}/\text{cm}$
Zakres temp.[°C]	0-80
Zakres stałej K	$1,0 \pm 0,2 \text{ cm}^{-1}$
Złącze	BNC
Wymiary[mm]	155x12

RĘCZNY MIERNIK pH MP103

Kompaktowy miernik mikroprocesorowy w obudowie odpornej na zachłapania. Duży wyświetlacz LCD . Możliwość jednoczesnego wyświetlania pH oraz temperatury. Automatyczna lub ręczna kompensacja temperatury. Przełącznik °C / °F. Prosty w kalibracji wartość może być regulowana w razie potrzeby. Wskazuje procent nachylenia (PTS) po kalibracji. Wskaźnik niskiego poziomu baterii . Zasilanie: bateria lub zasilacz. Automatyczne wyłączenie po 10 minutach nie używania.

nr katalogowy: 06-38MP103



Zestaw zawiera:
 Roztwór buforowy 4 i 7
 Bateria 9V.
 Uchwyt elektrody.
 Instrukcja obsługi.
 Pudełko.
 elektroda pH
 Sonda temperatury.
 Opcjonalnie: Elektroda ORP.

Parametry	pH	mV	temp.
Zakres	0-14	± 1999	0-100°C
Dokładność	$\pm 0,01$	± 1	$\pm 0,2$
Kompensacja [°C]	ATC 0- 100		
Kalibracja	pH 4.00, 7.00, 10.00		
Wymiary	108 x 75 x 30 mm		

PRZENOŚNY MULTITESTER PP-206

Kompaktowy, wygodny i stylowy. Urządzenie jest wykonane z wysokiej jakości komponentów elektronicznych. Obudowa wykonana jest z lekkiego i wytrzymałego tworzywa sztucznego. Duży wyświetlacz LCD wbudowany w regulowaną osłonę "flip-up". Możliwość podpięcia paska do wygodnego noszenia na szyi. Jednoczesne wyświetlanie pH oraz temperatury. Zastosowanie: hydroponika, akwarium, systemy uzdatniania wody i oczyszczania ścieków, baseny i spa, kotły grzewcze, laboratoria itp.

Automatyczna lub ręczna kompensacja temperatury. Przełącznik °C / °F. Prosty w kalibracji, wartość może być regulowana w razie potrzeby. Wskazuje procent odchylenia (PTS) po kalibracji. Pamięć do 20 punktów z możliwością przypomnienia. Funkcje minimalnej i maksymalnej wartości. Wskaźnik niskiego poziomu i zużycia baterii. Automatyczne wyłączenie w celu oszczędzania energii, gdy urządzenie nie jest używane przez 10 minut.

nr katalogowy: 06-38PP206



Parametry	pH	mV	temp.
Zakres [°C]	0-14	±1999	0-100
Dokładność	± 0,01	± 1	± 0,2
Kompensacja [°C]	ATC 0- 100		
Kalibracja [pH]	4.00, 7.00, 10.01		
Wymiary [mm]	96 x 120 x 46		

MULTITESTER

nr katalogowy 06-PL600

pH / mV / temp / RS 232

Mikroprocesorowy, obudowa bryzgoszczelna
Podświetlany ekran LCD
Automatyczna lub manualna kompensacja temp
Przełączenie °C/°F
Wykonanie wg standardów GLP
Przechowywanie do 64 odczytów
Transmisja danych do komputera

Kompletny zestaw zawiera :

1. Szklana elektroda pH
2. Czujnik temperatury PT 1000
3. Roztwór buforowy pH 4 i 7
4. Adapter PC/AC
5. Uchwyt do elektrod
6. Oprogramowanie RS232 i kabel



Parametry	pH	mV	temp.
Zakres (°C)	0 -14,00	± 2000	-5 -+105
Dokładność (°C)	± 0,01 +1 cyfra	± 1% mV/FS	± 0,2 +1 cyfra
Rozdzielczość	0,01	1	0,1
Aut.kom.temperat. (°C)	0-100		
Pamięć	64 odczyty		
Zasilanie	sieciowe i bateryjne		
Wymiary (mm)	200x160x65		
Waga (g)	600		



MĘTNOŚCIOMIERZ TUB-430

Mętność wody przedstawia ogólny pomiar stężenia cząstek nie rozpuszczonych. Mętnościomierz TUB-4330 sprawdza się zarówno w przemyśle spożywczym, farmaceutycznym, w oczyszczalniach ścieków czy w rybołówstwie. Szybki i dokładny pomiar. Metoda pomiaru jest zgodna z normą ISO 7027. Duży wyświetlacz LCD 45x25mm. Jednostka miary NTU, FTU, EBC może zostać wybrana zgodnie z życzeniem użytkownika.

Funkcja pamięci, która może przechowywać i wyświetlać do 150 punktów.

Wskaźnik wyczerpania baterii. Automatyczne wyłączenie po 10 minutach

nr.katalogowy: 06-38TUB430

Parametry

Zakres	0~19,99 NTU 20,0~199,9 NTU 200~1000 NTU
Dokładność	± 3% z odczytu +1 cyfra <500NTU ± 5% z odczytu +1 cyfra >500NTU
Temperatura pracy (°C)	0-50
Czas reakcji	>10sek
Zasilanie	4x baterie
Wymiary (mm)	70 x 135 x 65



MULTITESTER Z MIESZADŁEM MAGNETYCZNYM PL-700 PVS

pH;

Potencjał utleniania-redukcji (ORP);

Temperatura;

*Duży wyświetlacz LCD.

*Automatyczna kompensacja temperatury.

*Pamięć do 150 wartości.

*Min / max wartości.

*Jednostka temperatury: °C / °F.

*Podłączanie urządzenia do komputera za pomocą kabla USB

*Łatwa obsługa.

*Kompaktowy rozmiar.

Elektroda pH szklana, czujnik temperatury, bufor pH 4 i 7, standardowe roztwory kalibracyjne, zasilacz AC / DC, uniwersalny uchwyt elektrody, oprogramowanie USB i kabel połączeniowy, instrukcja obsługi i certyfikat kalibracji, mieszadło magnetyczne.

nr.katalogowy: 06-700PVS

Parametry	pH	mV(ORP)	temp.
Zakres	-2-16	1999-200 mV 199,9 +499,9 mV 500 do 2000mV	0-110°C
Dokładność	± 0,01+ 1 cyfra	± 2 + 1 cyfra	± 0,2+ 1cyfra
Kompensacja (°C)		ATC 0- 100	
Kalibracja		wielopunktowa	
Wymiary (mm)		103 x 145x 32	

MULTITESTER Z MIESZADŁEM MAGNETYCZNYM

PL-700 ALS

pH;

Potencjał utleniania-redukcji (ORP);

Tlenu (O₂), rozpuszczonego tlenu (DO);

Przewodnictwo elektryczne;

Zasolenie;

Całkowita ilość związków organicznych i nieorganicznych (TDS);

Temperatura (° C / ° F).

*Duży wyświetlacz LCD.

*Automatyczna kompensacja temperatury.

*Pamięć do 150 wartości.

*Min / max wartości.

*Jednostka temperatury: ° C / ° F.

*Podłączanie urządzenia do komputera za pomocą kabla USB

*Łatwa obsługa.

*Kompaktowy rozmiar.

nr katalogowy

06 700ALS



3. Analytical measurement and testing pH-measurement/Portable devices

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
Dimensions without probe:	66 x 50 x 25 mm
Weight:	63g

Type	PK	Cat. No.
Checker 1	1	9.773 930
Spare electrode HI1270	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 pH tester PHX 800

- Housing made of ABS
- Automatic switch-off after 15 minutes
- Hold-function
- Auto-lock-function
- Automatic deactivation
- Battery level indicator
- Exchangeable battery
- Robust
- Waterproof
- Adjustable

Specifications

Measuring range:	0 to 14pH
Accuracy:	±0.1pH
Resolution:	±0.2pH
Operating temperature:	0 to +50°C
Storage temperature:	-25 to +60°C
Battery:	4 x 1.5V A76/LR44
Battery lifetime:	approx. 150 hours
Dimensions (W x L x H):	170 x 32 x 15mm
Weight:	approx. 70 g

Type	Description	PK	Cat. No.
PHX 800	pH tester	1	6.266 914 2



6.266 914

3 pH/°C tester pHep®-4

Recently developed waterproof pH and temperature tester (IP67).

This is the 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 temperature.

Optional automatic or manual temperature compensation. Includes exchangeable HI 73127 pH electrode.

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 HI 73127	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



3. Analytical measurement and testing

pH-measurement/Portable devices

1



6.262 991

pH meter PHT 810

Portable pH meter with external electrode.

ebro

- BNC connection
- With automatic pH calibration
- Handy and robust
- Current value memory
- Simple calibration with keypad
- Electrodes for different applications
- Min/Max- and hold function

Plastic electrode AT 200: Housing material: Plastic, Diam.: 12mm, Length shaft: 120mm

Glass electrode AT 201: Housing material shaft: Glass, Diam. shaft: 12mm, Length shaft: 900mm

Penetration electrode AT 206 for measurements in semi-solid food stuff and other materials. Housing material: Glass, Diameter shaft/electrode: 25mm/5mm, Length shaft/electrode: 65mm/12mm, with 1m cable and BNC plug

pH meter set contains: pH meter PHT 810, penetration electrode AT 206, punching pin, buffer solutions pH4 and pH7, KCl solution, carrying case, 2-point calibration certificate

2



6.252 036

3



6.266 915

Specifications

Measuring range:	0 to 14pH
Accuracy:	±0.03pH
Resolution:	±0.01pH
Operating temperature:	0 to +50°C
Storage temperature:	-25 to +60°C
Battery:	Lithium 3V/1Ah
Battery lifetime:	approx.. 5 years
Dimensions (W x L x H):	54 x 110 x 22mm
Weight:	approx. 200g

Type	Description	PK	Cat. No.
PHT 810	pH meter (without electrode)	1	6.262 991 1
AT 200	Plastic electrode for PHT 810	1	6.267 164
AT 201	Glass electrode for PHT 810	1	6.267 165
AT 206	Penetration electrode for PHT 810	1	6.252 036 2
ST 1000	pH meter set	1	6.266 915 3

4



4 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.

Hanna

Piccolo Plus model has additional temperature display.

Supplied complete with electrode, batteries and buffer solutions in ABS case.

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
Weight:	80g

Type	Dimensions (W x D x H) mm	PK	Cat. No.
PICCOLO I with electrode HI 1280	194 x 29 x 15	1	9.773 946
PICCOLO II with electrode HI 1280	265 x 29 x 15	1	9.773 945
PICCOLO Plus with electrode HI 1280	265 x 29 x 15	1	9.773 944
Spare electrode HI 1280 for PICCOLO I (length 90 mm)		1	9.773 947
Spare electrode HI 1290 for PICCOLO II (length 160 mm)		1	9.773 948
Spare electrode HI 1295 for PICCOLO Plus (length 160 mm)		1	9.773 950

3. Analytical measurement and testing pH-measurement/Portable devices

1 pH/°C Meter HI 991001

Hanna

- 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

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
Spare electrode HI 1296D	1	9.773 982

2 pH/ mV/ °C Meters HI 8314N/HI 83141

Hanna

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

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:	185mm x 82mm 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
Spare electrode HI 1217D for HI 8314N	1	6.234 050
Spare electrode HI 1230B for HI 83141	1	6.050 012

3 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

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



3. Analytical measurement and testing

pH-measurement/Portable devices



1 Foodcare pH Meter HI 99161 with penetration electrode

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).

Hanna

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.

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
Spare electrode FC 202D	1	6.235 596

Pocket pH meters ProfiLine Series

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

2 3 pH meter pH 3110 ProfiLine

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 ... +20.0
-2.00 ... +20.0
-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. Analytical measurement and testing pH-measurement/Portable devices

1 2 pH meter pH 3210/pH 3310 ProfiLine

pH meter pH 3210

WTW

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.

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.

Measuring ranges

pH:	-2.0 ... +20.0
	-2.00 ... +20.00
	-2.000 ... +19.999
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
Interface (pH3310 only):	Mini USB-B
Memory	
pH3210:	200 records (measured value, temperature, date, time, ID)
pH3310:	5000 records (measured value, temperature, date, time, ID)



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
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 SM Pro, for ProfiLine handheld meters

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. Analytical measurement and testing

pH-measurement/Portable devices

1



1 Portable pH meter Education Line EL2

Experience science with portable pH meters.

Mettler-Toledo Online

- Simple intuitive operation helps you save time during classes
- Ideally suited for classroom and field-based measurements alike
- Robust, low-maintenance, yet reliable electrodes available in kit version

EL2-Basic: pH instrument incl. electrode clip, wrist strap, operating manual, "Quick guide", 4 x batteries

EL2-Kit: Instrument and accessories as with EL2 Basic, also with LE407 pH electrode, IP54 connection caps, 2 x pH 4.01 and 2 x pH 7.00 buffer sachets

EL2-Fieldkit: Instrument and accessories as for EL2 Kit, also with carry bag incl. 4 sample bottles

Please note: These articles are only available for schools and universities.

Specifications

pH-range/accuracy:	0.00 to 14.00/±0.01
mV-range/accuracy:	-1999 to +1999/±1
Temperature range/accuracy:	0.0 to +100.0°C/±0.5°C
Calibration:	Max. 2 points, 3 predefined buffer groups
Free disk space:	30 datasets
Display:	LCD
Batteries:	4 AAA, 1.5V
Dimensions (WxDxH):	169 x 82 x 36mm
Weight:	180g (without batteries)

Type	PK	Cat. No.
EL2-Basic	1	9.704 000
EL2-Kit	1	9.704 001
EL2-Fieldkit	1	9.704 002
Spare electrode LE407	1	9.041 619
Additional electrode LE409	1	9.041 620

2



2 pH meter FiveGo™ pH FG2

FiveGo™ pH is a handy, portable meter ideal for those who require rapid and reliable results on the go. This meter is suitable for a wide range of applications in various areas such as food and beverage, agriculture, industry, water and environment

Mettler-Toledo Online

- Outstanding functions including storage capacity for up to 30 measurements, mV/ORP measuring mode and IP54 protection against dust and water ingress are combined with useful features such as automatic endpoint recognition and calibration with automatic buffer recognition.
- Five self-explanatory operating and function buttons for easy measurement, menu access, saving and recalling results and calibration recall
- A big, well organised display that simultaneously shows readings, temperature and endpoint criteria along with helpful icons
- Useful accessories such as the electrode clip, wrist strap and laminated quick guide are enclosed with every FiveGo. The electrode kit version also includes the LE438 electrode (Food Kit with LE427 puncture electrode) and the Field Kit version comes in a handy carry bag with 4 sample bottles.

FG2-Basic: pH instrument incl. electrode clip, wrist strap, operating manual, "Quick guide", 4 x batteries

FG2-Kit: Instrument and accessories as with FG2-Basic, with LE438 pH electrode, IP54 connection caps, 2 x pH 4.01 and 2 x pH 7.00 buffer sachets

FG2-Fieldkit: Instrument and accessories as for FG2-Kit, with carry bag incl. 4 sample bottles

FG2-Food Kit: Instrument and accessories as with FG2-Basic, with LE427 puncture pH electrode, IP54 connection caps, 2 x pH 4.01 and 2 x pH 7.00 buffer sachets, with carry bag incl. 4 sample bottles

Specifications:

Measuring range (Accuracy)	
pH:	0.00 to 14.00pH (±0.01pH)
mV:	-1999 to +1999mV (±1mV)
Temperature:	0 to +100°C (±0.5°C)
Calibration:	2 points, 4 predefined buffer groups
Input:	BNC/Cinch (NTC)
Temperature compensation:	ATC and MTC
Memory:	30 measurements
Power supply:	4 x AAA
Protection class acc. to DIN EN 60529:	IP 54

Type	PK	Cat. No.
FG2-Basic	1	9.972 060
FG2-Kit	1	7.619 615
FG2-Fieldkit	1	9.972 061
FG2-Food Kit	1	9.972 062

3. Analytical measurement and testing

pH-measurement/Portable devices

pH-meter Seven2Go™ S2

**1**

Portable routine model for pH measurement

Mettler-Toledo Online

- New, intuitive menu structure with fast and easy T-Pad navigation in 12 languages
- Robust design with IP67 protection for use in harsh and demanding environments
- Intelligent Sensor Management (ISM®) functionality reduces the risk of errors
- Up to 5 point calibration with automatic buffer recognition and temperature compensation
- 4 predefined buffer groups and 1 user defined buffer group
- Automatic, manual and time dependant endpoint recording
- Data memory storage for 200 data points
- Power requirements: 4 x 1.5V AA or 1.3V NiMH accumulators

Items supplied:

S2-Meter: Instrument, electrode clip, operating instructions, quick guide, test certificate, declaration of conformity and batteries.

S2-Standard kit: As S2-Meter, but also with InLab Expert Pro-ISM-IP67, buffer sachets for pH 4.01, 7.00, 9.21 and 10.00.

S2-Field kit: As S2-Standard kit, but also with bottles for calibration and uGo™ carrying case.

S2-Food kit: As S2-Field kit, but with InLab Solids Pro-IP67 instead of InLab Expert Pro-ISM-IP67.

S2-Light kit: As S2-Standard kit, but with InLab Versatile Pro instead of InLab Expert Pro-ISM-IP67.



6.265 415

Specifications

pH

Measuring range: -2 to 20 pH

Resolution: 0.01/0.1

Accuracy: ±0.01

mV

Measuring range: -1999 ... +1999mV

Resolution: 1

Accuracy: ±1

Relative mV-measurement: yes

Temperature

Measuring range: -5.0 ... 105.0°C

Resolution: 0.1°C

Accuracy: ±0.5°C

Dimensions (WxDxH): 222 x 70 x 35mm

Type	PK	Cat. No.
S2-Meter	1	6.265 414
S2-Standard kit	1	6.265 415 1
S2-Field kit	1	6.265 416
S2-Food kit	1	6.265 417
S2-Light kit	1	6.265 418

3. Analytical measurement and testing

pH-measurement/Portable devices

1



6.265 259

pH/Ion-Meter Seven2Go™ pro S8

Portable professional model for pH measurement

Mettler-Toledo Online

- New, intuitive menu structure with fast and easy T-Pad navigation
- Robust design with IP67 protection for use in harsh and demanding environments
- Intelligent Sensor Management (ISM®) functionality reduces the risk of errors
- New sunlight-proof screen guarantees screen readability even in direct sunlight
- New StatusLight gives a fast, visual confirmation showing if the meter is ready to measure or not
- Operating support for 12 languages with information shown in complete words and sentences
- Up to 5 point calibration with automatic buffer recognition and temperature compensation
- 8 predefined buffer groups and 1 user defined buffer group (1 user defined ion-standard)
- Automatic, manual and time dependant endpoint recording
- Data memory storage for 2000 GLP data points with weatherproof Micro-USB connection for data export
- Power requirements: 4 x 1.5V AA or 1.3V NiMH accumulators

Items supplied:

S8-Meter: Instrument, LabX direct pH, USB cable, electrode clip, base accessory, operating instructions, quick guide, test certificate, declaration of conformity and batteries.

S8-Standard kit: As S8-Meter, but also with InLab Expert Pro-ISM-IP67 and buffer sachets for pH 4.01, 7.00, 9.21 and 10.00.

S8-Field kit: As S8-Standard kit, but also with bottles for calibration and uGo™ carrying case.

S8-Biotech kit: As S8-Field kit, but with InLab Routine Pro ISM (incl. cable) instead of InLab Expert Pro-ISM-IP67.

S8-Fluoride kit: As S8-Standard kit, but with perfectION Fluoride instead of InLab Expert Pro-ISM-IP67, without buffer sachets.

Specifications

pH

Measuring range: -2 to 20 pH
Resolution: 0.001/0.01/0.1
Accuracy: ±0.002

mV (rel. mV)

Measuring range: -2000 ... +2000 mV
Resolution: 0.1/1
Accuracy: ±0.1

Ion

Measuring range: 1.00e-09 ... 9.99e+09
Resolution: 3 or 4 digits (auto-range)
Accuracy: ±0.5%

Temperature

Measuring range: -5.0 ... 130°C (ATC)
-30.0 ... 130°C (MTC)
Resolution: 0.1°C
Accuracy: ±0.2°C if T = 0°C ... 105°C
±0.5°C if T < 0°C or T > 105°C
Dimensions (WxDxH): 222 x 70 x 35mm
Units: mg/L, mmol/L, mol/L, %, ppm, pX

Type	PK	Cat. No.
S8-Meter	1	6.265 258
S8-Standard kit	1	6.265 259 1
S8-Field kit	1	6.265 260
S8-Biotech kit	1	6.265 261
S8-Fluoride kit	1	6.265 262

3. Analytical measurement and testing

pH-measurement/Portable devices

1 pH-meter HandyLab 100

The portable allrounder for pH/mV measurements. The HandyLab 100 increases the measuring speed and accuracy thanks to the AutoRead and the CMC function. AutoRead displays when the measuring value is stable and eliminates the risk of a premature reading of the faulty measuring value. CMC (Continuous Measurement Control) visualizes whether the measuring value is still within the calibration limits. Having storage capacity for up to 200 data sets, stored data can be viewed. The HandyLab 100 can process 1- to 5-point calibration with a choice of 22 stored buffer sets easily and comfortably.

SI Analytics

Supplied with:

HL100Versatile: pH meter set HandyLab 100 with pHT combination electrode A7780-NTC30-DIN-N for general applications

HL100Field: pH meter set HandyLab 100 with pHT-electrode BlueLine 24 pH and reinforcement for on-site measurements

Specifications

pH

Measuring range: -2 ... 20 pH
Resolution: $\pm 0.1/\pm 0.01/\pm 0.001$ pH
Accuracy: ± 0.005 pH

mV

Measuring range: -2500 ... +2500 mV
Resolution: ± 1 mV
Accuracy: ± 0.3 mV

Temperature

Measuring range: -5.0 ... +105.0°C
Resolution: ± 0.1 °C
Accuracy: ± 0.1 °C

Type	PK	Cat. No.
HL100Versatile	1	6.265 283
HL100Field	1	7.910 240



2 pH meter HandyLab 600

- IDS technology (Intelligent Digital Sensor). The digitalization of the measuring signal eliminates interferences.
- AutoRead function. Autoread provides a stable, precise measuring value.
- CMC (Continuous Measurement Control) visualizes whether the measuring value is within the calibration range.
- QSC (Quality Sensor Control) informs about the actual condition of the electrode and therefore increases operation safety.
- IDS Technology. The secure allocation of the calibration data to the sensor eliminates any uncertainty about the date and results of its last calibration. This saves time and money while assuring the highest confidence in your measurements.
- Traceability of the measuring values by the digital and automatic capture of all sensor data.
- Transmission of all data in *.csv format via USB interface to the PC. Or as an alternative, formatted transfer into Excel via MultiLabImporter (included in the delivery).

SI Analytics

Supplied with:

HL600Versatile: pH meter Set HandyLab 600 with pHT electrode A7780 IDS for general applications

HL600Food: pH meter Set HandyLab 600 with pH electrode BlueLine 21 pH IDS. (with reinforcement and integrated temperature sensor) for penetration measurements in the food section.

Specifications

pH

Measuring range: 0.000 ... 14.000pH
Resolution: ± 0.001 pH
Accuracy: ± 0.004 pH

mV

Measuring range: ± 1200.0 mV
Resolution: ± 0.1 mV
Accuracy: ± 0.2 mV
Relative mV-measurement:

Temperature

Measuring range: -5.0 ... +105.0°C
Resolution: ± 0.1 °C
Accuracy: ± 0.2 °C

Type	PK	Cat. No.
HL600Food	1	6.265 288
HL600Versatile	1	6.265 296



3. Analytical measurement and testing

pH-measurement/Portable devices

1



1 pH-meter HandyLab 680

The HandyLab 680 increases the measuring accuracy via:

- IDS technology. The digitalization of the measuring signal eliminates interferences.
- AutoRead function. Autoread provides a stable, precise measuring value.
- CMC (Continuous Measurement Control) visualizes whether the measuring value is within the calibration range.
- QSC (Quality Sensor Control) informs about the actual condition of the electrode and therefore increases operation safety.

The HandyLab 680 increases the operator comfort via:

- IDS Technology. The secure allocation of the calibration data to the sensor eliminates any uncertainty about the date and results of its last calibration. This saves time and money while assuring the highest confidence in your measurements.
- Traceability of the measuring values by the digital and automatic capture of all sensor data.
- User administration can be activated to allow tiered access and capabilities ensuring security and confidence of your data.
- Transmission of all data in *.csv format via USB interface to the PC or the USB memory stick, or, as an alternative, formatted transfer to Excel by means of MultiLabImporter (included in the delivery).

Supplied with:

HL680pHVersatile: pH meter Set HandyLab 680 with pHT electrode A7780 IDS and Z389 for general applications

HL680pHField: pH meter Set HandyLab 680 with pHT electrode BlueLine 24 pH IDS and Z389 for on-site measurements

HL680pHFood: pH meter Set HandyLab 680 with pH electrode BlueLine 21 pH IDS (with reinforcement and integrated temperature sensor) and Z389 for penetration measurements in the food section

Specifications

pH

Measuring range: 0.000 ... 14.000pH

Resolution: ±0.001pH

Accuracy: ±0.004pH

mV

Measuring range: ±1200.0mV

Accuracy: ±0.02mV

Relative mV-measurement:

Temperature

Measuring range: -5.0 ... +105.0°C

Resolution: ±0.1°C

Accuracy: ±0.2°C

Type	PK	Cat. No.
HL680pHVersatile	1	6.265 612
HL680pHField	1	6.265 603
HL680pHFood	1	6.265 604

Accessories for HandyLab

For HandyLab 100/200/600/680.

SI Analytics

Description	PK	Cat. No.
Protective reinforcement Z389	1	6.265 613
Case Z530 incl. reinforcement Z389, buffer solutions, conductivity testing solution	1	6.265 614

1 pH meter HandyLab 700/750

Portable pH measuring devices by SI Analytics with Memosens® technology offers increased safety and a user-friendly interface

SI Analytics

- Durable design for daily measurements
- Connection: 2 x 4mm diam. for integrated or separate temperature sensor
- Contrast-rich and scratch-resistant clear glass LCD display
- Self-explanatory operation with one clear text line
- Display of the sensor status at one glance with Sensoface
- Calibration of up to 3 points with automatic buffer detection (from 10 buffers)
- Manual calibration by indicating random buffer values
- Real-time clock and display of battery charging status
- Extended operating time of more than 1.000 hours with standard batteries (4 x AA)

HandyLab 750 additional features:

- Store up to 5.000 data points.
- Micro-USB connection to communicate with the software HandyLab Pilot software for evaluation of data from digital Memosens® sensors.
- HandyLab Pilot software (included with delivery), allows easy management and evaluation of stored data and can be used for device configuration.

Supplied with: Set with pH meter, AquaLine 90pH, SKK K1A and DIN buffer solutions in ampoules

Specifications

pH measurement Memosens (also ISFET)

Measuring range: -2.000 ... +16.000pH

mV measurement Memosens Redox

Messbereich: -2000 ... +2000mV

pH/mV measurement (analog)

pH measurement measuring range: -2 ... 16pH

mV measurement measuring range: -1300 ... +1300mV

Temperature measurement

Measuring range with sensor NTC 30kOhm: -20 ... +120°C

Measuring range with sensor Pt 1000: -40 ... +250°C

Type	PK	Cat. No.
HL700AL90pH	1	6.266 645
HL750AL90pH	1	6.266 646



2 3 pH/Redox-Meter SD300pH

Rugged, water resistant (IP67) designed for field use

AQUALYTIC

- Automatic buffer detection for calibration
- Data logger and alarm function (min./max.), Good Laboratory Practice (GLP-features)
- Clear, concise result reading: easy-to-read backlit LCD display
- Automatic temperature compensation
- PC interface for data download (USB/serial or analog)
- High resolution (0.001 pH/0.1 mV)

Supplied with:

SD300PH: Meter without electrode, incl. batteries and manual

SD300PH Set-1: Meter complete in case, incl. manual and batteries, pH electrode with temperature sensor plastic/gel-BNC plug, buffer solution 4/7/10 pH (90 ml each)

SD300PH Set-2: Meter complete in case, incl. manual and batteries, pH electrode with temperature sensor plastic/gel-BNC plug, temperature sensor PT 100, buffer solution 4/7/10 pH (90 ml each)

Specifications

pH: -2.000 to 16.000
 Accuracy: ±0.005
 Temperature: -5.0 to +150°C
 Accuracy: ±0.2°C
 Redox (ORP): -2000.0 to 2000.0mV
 Accuracy: ±0.05% FS (mV or mVH)
 Dimensions (WxDxH): 86 x 160 x 37mm
 Power supply: 2 x AAA battery
 Power consumption: < 1.0mA
 Protection class acc. to: IP 67

Type	PK	Cat. No.
SD300PH	1	9.699 275
SD300PH Set-1	1	9.699 276
SD300PH Set-2	1	9.699 277



3. Analytical measurement and testing

pH-measurement/Table devices

1



1 Laboratory pH Meter with built in Magnetic Stirrer, HI 208-02

Compact, easy to use pH Meter with built in Magnetic Stirrer, suitable for educational purposes.
 - pH and temperature value are displayed together on the Dual Level LCD
 - Automatic 1- /2- Point Calibration with pre-programmed buffers (pH 4.01, 7.01 and 10.01)
 - Automatic temperature compensation from -5.0 to 105.0°C

Hanna

HI 208-02 is supplied with pH Electrode HI 1291D (with internal temperature sensor), pH Electrode holder and plastic beaker, stirring bar, 9V battery, 12V adapter, pH buffer solutions (2 sachets of 20ml each)

Specifications

Measuring range/Accuracy: -2.00 to 16.00pH/±0.01pH
 Temperature range/Accuracy: -5.0 to +105.0°C/±0.5°C (up to 60°C)
 Power Supply: 12V Adapter or 9V battery (included)
 Weight: 500g

Type	PK	Cat. No.
pH meter HI 208-02	1	6.233 844
Spare electrode HI 1291D	1	6.235 794
Measuring beaker HI 740036P, 50ml	10	9.773 919

2



2 pH/mV/°C meter HI 2211-02/HI 2215-02

- 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

Hanna

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

3. Analytical measurement and testing

pH-measurement/Table devices

1 2 pH meter edge

Features tablet meter edge:

Hanna

- thin and lightweight (approx. 280g only)
- large 140mm LCD display with clear full text readout capacitive touch screen
- ergonomic design, versatile, can be used as a benchtop docking station with electrode holder, as a portable meter or wall mounted (included in delivery)
- Rechargeable battery (about 8 hours of continuous use), battery charge via mains connection or USB cable, table station and wall mounting can also be used to charge the battery
- Integrated measured data storage for up to 1000 data records, manual storage or time-controlled by defining a storage interval
- Data transfer from device to PC via USB ports (no software needed)
- All electrodes are supplied with integrated temperature sensor and a 3.5mm plug with 1m cable

pH meter HI 2020-02:

- Sensor type, ID and calibration information are automatically recognized when connecting the electrode to the instrument
- GLP: data of last calibration (buffers, date, time, electrodes offset, slope) are stored and be checked at any time
- Calibration time out warns the user when set calibration time has been exceeded
- Instrument can be used in Basic or Standard mode: Basic mode ideally for routine measurements for a simplified screen and features. In Basic mode, resolution is 0.01 pH, calibration can be performed automatically at 1, 2, 3 points with pre-programmed buffer series (pH 4.01; 6.86; 7.01; 9.18; 10.01). The standard mode offers additional features. In Standard mode the resolution can be selected between 0.01 pH and 0.001 pH, calibration can be performed automatically at 3, 4, 5 points with 7 standard buffers and 2 custom buffers for special applications.
- Calibration Check Function (pH electrode only): controlling of calibration process, displays electrode status after calibration

pH Kit supplied with: instrument incl. electrode HI 11310, buffer solution pH 4, pH 7 and pH 10 (2 sachets each), cleaning solution for electrodes, bench top docking station with electrode holder, wall mounting, USB cable, 5 V adapter

Specifications Measuring range // Resolution // Accuracy

pH:	2.00 to 16.00 // 0.01 // $\pm 0.01/\pm 0.002$
	-2.000 to 16.000 // 0.001 // $\pm 0.01/\pm 0.002$
Temperature:	-20.0 to +120.0°C // 0.1°C // $\pm 0.2^\circ\text{C}$

Type	Description	PK	Cat. No.
HI 2020-02	pH meter edge, kit with pH electrode and accessories	1	6.261 874
HI 11310	Refillable pH electrode, glass body, ceramic diaphragm, double junction	1	6.261 876



3. Analytical measurement and testing

pH-measurement/Table devices

1



1 pH Meters, Lab 850 and 860

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.

SI Analytics

Features:

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

Additional features Lab 850:

- 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 Lab 850/860 Set: 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.

Items supplied Lab 850/860 BNC Set: pH meter Lab 850 or pH meter Lab 860, electrode BlueLine pH15 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
Lab 850 BNC Set	1	6.260 750
Lab 860 BNC Set	1	6.260 751

2



2 pH measuring instrument Lab 870

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

SI Analytics

- 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

3. Analytical measurement and testing pH-measurement/Table devices

1 Laboratory instrument inoLab® pH 7110

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 ... 20.0 ± 0.1 pH -2.00 ... 20.00 ± 0.01 pH -2.000 ... 19.999 ± 0.005 pH
mV:	$\pm(1200.0 \pm 0.3)$ mV $\pm(2000 \pm 1)$ 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

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



3 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 cover 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).

Supplied with: meter, power supply, stand and USB cable.

Specifications

Ranges	All values ± 1 digit
pH:	-2.0 ... 20.0 ± 0.1 pH -2.00 ... 20.00 ± 0.01 pH -2.000 ... 19.999 ± 0.005 pH
mV:	$\pm(1200.0 \pm 0.3)$ mV $\pm(2500 \pm 1)$ 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 Hz, 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® 41 and 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® 41 and 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

3



3. Analytical measurement and testing

pH-measurement/Table devices

1



1 Benchtop pH meter Education Line EL20

Experience science with pH bench meters

Mettler-Toledo Online

- Simple intuitive operation: helps you save time during classes
- Compact, robust benchtop instrument
- Robust, low-maintenance, yet reliable electrodes available in kit version
- Ideal for schools and universities

EL20-Basic: pH instrument incl. operating manual, "Quick guide", power adapter

EL20-Kit: Instrument and accessories as with EL20 Basic, also with LE407 pH electrode, electrode arm, 2 x pH 4.01 and 2 x pH 7.00 buffer sachets

Please note: These articles are only available for schools and universities.

Specifications

pH-range/accuracy:	0.00 to 14.00/±0.01
mV-range/accuracy:	-1999 to +1999/±1
Temperature range/accuracy:	0.0 to +100.0°C/±0.5°C
Calibration:	Max. 2 points, 3 predefined buffer groups
Display:	LCD
Power supply:	100-240V/50-60Hz, 9V DC
Dimensions (WxDxH):	200 x 175 x 52mm
Weight:	600g

Type	PK	Cat. No.
EL20-Basic	1	9.704 147
EL20-Kit	1	9.704 148
LE407	1	9.041 619
LE409	1	9.041 620

2



2 pH meter FiveEasy™ pH FE20/FiveEasy Plus™ pH FEP20

FiveEasy™ and FiveEasy Plus™ pH are compact, easy to use bench meters suitable for a wide range of applications in various areas such as food and beverage, agriculture, industry, water and environment.

Mettler-Toledo Online

- Outstanding functions include a separate reference electrode input, mV/ORP measuring mode and a self-test combined with useful features such as automatic endpoint recognition and calibration with automatic buffer recognition.
- Five self-explanatory operating and function buttons for easy measurement, menu access and calibration recall
- A big, well organised display that simultaneously shows readings, temperature and endpoint criteria along with helpful icons

FE20-Basic: pH instrument incl. operating manual, "Quick guide", power adapter

FE20-Kit: Instrument and accessories as with FE20-Basic, also with LE409 pH electrode, electrode arm, 2 x pH 4.01 and 2 x pH 7.00 buffer sachets

FE20 ATC Kit: Instrument and accessories as with FE20-Basic, also with LE438 "3-in-1" pH electrode, electrode arm, 2 x pH 4.01 and 2 x pH 7.00 buffer sachets

FEP20-Basic: pH instrument incl. operating manual, "Quick guide", power adapter

FEP20 ATC Kit: Instrument and accessories as with FEP20-Basic, also with LE438 "3-in-1" pH electrode, electrode arm, 2 x pH 4.01 and 2 x pH 7.00 buffer sachets

Specifications

Measuring range (Accuracy)

pH:	0.00 to 14.00 pH (±0.01pH)
mV:	-1999 to 1999 (±1mV)
Temperature:	0°C to 100°C (±0.1°C)
Input:	BNC/RCA, Cinch (NTC)
Temperature compensation:	ATC and MTC
Power supply:	100-240V/50-60Hz/9V DC
Calibration FE20:	2 points, 4 predefined buffer groups
Calibration FEP20:	3 points, 4 predefined buffer groups

FEP20 only:

Memory:	99 measurements
Interface FEP20:	RS232

Type	PK	Cat. No.
FE20-Basic	1	6.234 716
FE20-Kit	1	6.232 715
FE20 ATC Kit	1	9.972 070
FEP20-Basic	1	9.773 702
FEP20 ATC Kit	1	9.773 703
FiveEasy AC adaptor (incl. connectors) input 230V, output DC 9V	1	7.900 515
FiveEasy electrode arm (complete)	1	6.235 935

3. Analytical measurement and testing

pH-measurement/Table devices

1 2 pH meter SevenCompact™ S210

The SevenCompact™ pH meter S210 is the perfect choice for a wide range of applications. At the same time, working with the S210 is like child's play. Starting a measurement or calibration has never been easier, requiring only a single keypress.

- Fast and accurate measurements
- User-friendly operation
- Menu guidance in 12 languages
- Clear, well arranged color display
- Many peripheral options
- GLP compliant

Supplied with:

S210-Basic: Instrument, electrode holder, protective cover, operating instructions, quick guide, declaration of conformity and test certificate

S210-Kit: As per S210-Basic, additionally with InLab® Expert Pro-ISM, guide to pH measurements and 2 buffer sachets for pH 4.01, 7.00, 9.21 and 10.00.

S210-Bio: As per S210-Kit, but with InLab® Routine Pro-ISM cable kit instead of InLab® Expert Pro-ISM.

S210-U: As per S210-Kit, but with InLab® Versatile Pro instead of InLab® Expert Pro-ISM.

Specifications:

pH-range:	-2.000 to 20.000
pH-relative accuracy:	±0.002
pH-resolution User-definable:	0.001/0.01/0.1
mV-range:	-2000.0 to 2000.0
mV-relative accuracy:	±0.2
mV-resolution User-definable:	0.1/1
Temperature range	
MTC:	-30.0 to 130.0°C
ATC:	-5.0 to 130.0°C
Temperature accuracy:	±0.1°C
Display:	4.3 inch, TFT color
Ext. power supply:	9-12V/10W
Protection class:	IP54

Type	PK	Cat. No.
S210-Basic	1	9.704 156
S210-Kit	1	9.704 157
S210-Bio	1	9.704 158
S210-U	1	9.704 159



3. Analytical measurement and testing

pH-measurement/Table devices

1



1 pH/Ion meter SevenCompact™ S220

Mettler-Toledo Online

The colour display with its well-designed icons and menu settings in 10 languages makes operation genuinely intuitive. Applications range from routine measurements through sample analysis, data handling and data archiving in compliance with GLP regulations. Simply innovative design that meets the requirements for a universal, easy-to-operate pH/Ion meter.

- User friendly instrument for demanding users
- Security and high reproducibility thanks to Intelligent Sensor Management (ISM®)
- Improved quality of measurements through professional calibration support
- Comprehensive service package including IQ/OQ
- Integrated USB and RS232 interfaces for data exchange

Supplied with:

S220-Basic: Instrument, electrode holder, protective cover, operating instructions, quick guide, declaration of conformity and test certificate

S220-Kit: As per S220-Basic, additionally with InLab® Expert Pro-ISM, guide to pH measurements and 2 buffer sachets for pH 4.01, 7.00, 9.21 and 10.00.

S220-Bio: As per S220-Kit, but with InLab® Routine Pro-ISM cable kit instead of InLab® Expert Pro-ISM.

S220-U: As per S220-Kit, but with InLab® Versatile Pro instead of InLab® Expert Pro-ISM.

Specifications:

pH-range:	-2.000 to 20.000
pH-relative accuracy:	±0.002
pH-resolution User-definable:	0.001/0.01/0.1
mV-range:	-2000.0 to 2000.0
mV-relative accuracy:	±0.2
mV-resolution User-definable:	0.1/1
Ion-Concentration range:	1.00E-9 to 9.99E+9
Ion-Concentration accuracy:	±0.5%
Temperature range	
MTC:	-30.0 to 130.0°C
ATC:	-5.0 to 130.0°C
Temperature accuracy:	±0.1°C
Display:	4.3 inch, TFT color
Ext. power supply:	9-12V/10W

Type	PK	Cat. No.
S220-Basic	1	9.704 160
S220-Kit	1	9.704 161
S220-Bio	1	9.704 162
S220-U	1	9.704 163

2



6.252 178

Printers for Mettler Toledo instruments

Mettler-Toledo Online

Suitable for the following Mettler Toledo instruments:

RS-P25, RS-P26, RS-P28: SevenExcellence™, SevenCompact™, FiveEasy Plus™, SevenMulti™

RS-P25/USB-P25: SevenExcellence™

RS-P26, RS-P28: SevenGo pro™, SevenGo pro Duo™, Densito, Refracto, SevenEasy™

Supplied with: Printer, power cable (country specific), interface cable, paper roll (1 pcs), ribbon cartridge (1 pcs)

Features

Built-in real-time clock, Zero/Tare key:
Statistic application, totalling application:
RS232 Schnittstelle:
Printer unit:
Ribbon cartridge:
Paper roll:
Print quality:
Interface:
Dimensions (WxDxH):
Net weight:

For model

RS-P26, RS-P28
RS-P28
RS-P25, RS-P26, RS-P28
Dot matrix printer
Exchangeable, black ink
Standard paper 57.5 mm (W), max. Ø 60 mm
Thermally stable and lightfast paper (GxP)
RS232C, 9pin male connector or USB* (*SevenExcellence ONLY)
120 x 203 x 73mm
740g (paper roll included)

3



9.773 710

Type	PK	Cat. No.
RS-P25/USB-P25	1	6.252 178 2
RS-P26	1	6.251 155
RS-P28	1	9.773 710 3

3. Analytical measurement and testing pH-measurement/Table devices-Electrodes

1 2 pH meter, SevenExcellence™ S400

Mettler-Toledo Online

Modular professional system for measurements of pH, redox potential, conductivity, salinity/TDS and ion concentration. Fits up to three modules in any composition and order, can be expanded with additional measurement parameters at any time.

- Large, high resolution 7" colour touch display (capacitive), very clear and easy to operate.
- Modularity and flexibility; up to 3 measuring modules can work in parallel, expansion to 2 or 3 channels possible.
- Universal communication via 2 x USB, Ethernet (LAN) and RS232.
- Plain text user interface in 10 languages with menu guidance in full sentences.
- OneClick™ operation concept to quickly start frequently used functions and preferred methods.
- Storage for user methods.
- Highest security and GxP support (ID protection, sophisticated user management, limits/alarms, integrated radio clock, etc.).
- Intelligent sensor management (ISM®).
- Connection of stirrer, sample changer, PC, barcode reader, keyboard, local or network printer possible.
- Storage up to 20000 data sets (measurements, calibrations, methods).
- 17 predefined, 60 user-defined methods
- 5 point calibration (pH), 8 pre-defined and 20 user-defined buffer groups, incl. temperature chart
- uPlace™ electrode arm with perfect vertical movement.
- Compatible with all METTLER TOLEDO electrodes (Recommended: ISM® electrodes).

S400-Basic: Includes instrument, 1 x pH/mV expansion unit, 2 x blank expansion units, uPlace™ electrode holder, semi-transparent cover, operating instructions, installation and quick guide, LabX® direct pH PC software, declaration of conformity and test certificate.

S400-Kit: As S400-Basic, but also with InLab® Expert Pro-ISM, guide to pH measurements and 2 buffer sachets for pH 4.01, 7.00, 9.21 and 10.00.

S400-Bio: As S400-Kit but with InLab® Routine Pro-ISM cable kit instead of InLab® Expert Pro-ISM.

S400-ISFET: As S400-Kit but with InLab® 490 instead of InLab® Expert Pro-ISM.

Specifications

Temperature range MTC/ATC:

pH:

mV:

Rel. mV:

ISFET pH:

Measuring range // Resolution // Accuracy

-30.0 to 130.0°C // 0.1°C // ±0.1°C

-2.000 to 20.000 // 0.001/0.01/0.1 // ±0.002

-2000.0 to 2000.0 // 0.1/1 // ±0.1

-2000.0 to 2000.0 // 0.1/1 // ±0.1

0.000 to 14.000 // 0.001/0.01/0.1 // ±0.05

Type	PK	Cat. No.
S400-Basic	1	9.704 350
S400-Kit	1	9.704 351
S400-Bio	1	9.704 352
S400-ISFET	1	9.704 353



Accessories for Printers for Mettler Toledo instruments

Mettler-Toledo Online

Description	PK	Cat. No.
Normal paper	5	9.947 538
Printer ribbon, black	1	9.947 539
Paper roll adhesive	1	9.947 540

3. Analytical measurement and testing

pH-measurement/Electrodes

1



1 pH combination electrodes, gel electrolyte, SenTix®, refillable

Basic pH combination electrodes, with plastic body, gel reference system. SenTix® 20 with plug head (AS/DIN or AS/BNC cable combination please order separately).

WTW

Specifications

Temperature range:	0 to 80°C
pH range:	0 to 14pH
Length/diam.:	120mm/12mm
Electrolyte:	Gel
Diaphragm:	Fibre
Membrane shape:	Cylindrical
Membrane resistance at 25°C:	1 GΩ
Refill hole cover:	Slide

Type	Temperature sensor	Connector	Cable m	PK	Cat. No.
SenTix® 20	-	Plug-in head	-	1	9.040 851
SenTix® 21	-	DIN, waterproof	1	1	9.040 872
SenTix® 21-3	-	DIN, waterproof	3	1	9.040 873
SenTix® 22	-	BNC	1	1	9.040 840
SenTix® 41	NTC 30 kΩ	DIN, waterproof	1	1	9.040 876
SenTix® 41-3	NTC 30 kΩ	DIN, waterproof	3	1	9.040 877
SenTix® 42	NTC 30 kΩ	BNC	1	1	9.040 841

2



6.232 743

2 pH combination electrodes, liquid electrolyte, SenTix® 51/SenTix® 52, refillable

Standard pH combination electrodes with plastic shaft, non-solid electrolytes. With fixed cable (1m).

WTW

Specifications

Temperature range:	0 to 80°C
pH range:	0 to 14pH
Length/diam.:	120/12mm
Electrolyte:	Liquid, KCl 3mol/l
Diaphragm:	Ceramic
Membrane shape:	Cylindrical
Membrane resistance at 25°C:	1 GΩ
Refill hole cover:	Slide

Type	Temperature sensor	Connector	PK	Cat. No.
SenTix® 51	NTC 30 kΩ	DIN + Banana	1	6.223 092
SenTix® 52	NTC 30 kΩ	BNC + Banana	1	6.232 743 2

3



3 pH combination electrodes, liquid electrolyte, SenTix®, refillable

Standard pH combination electrodes with glass shaft, non-solid electrolytes. With fixed cable (1m). SenTix® 60 with screw head (AS/DIN or AS/BNC cable combination please order separately).

WTW

Specifications

Temperature range:	0 to 100°C
pH range:	0 to 14pH
Length/diam.:	120/12mm
Electrolyte:	Liquid, KCl 3mol/l
Diaphragm:	Platinum
Membrane shape:	Conical
Membrane resistance at 25°C:	600 MΩ
Refill hole cover:	Slide

Type	Temperature sensor	Connector	PK	Cat. No.
SenTix® 60	-	Plug head	1	9.040 842
SenTix® 61	-	DIN, watertight	1	9.040 881
SenTix® 62	-	BNC	1	9.040 843
SenTix® 81	NTC 30 kΩ	DIN, watertight	1	9.040 886
SenTix® 82	NTC 30 kΩ	BNC	1	9.040 844

3. Analytical measurement and testing

pH-measurement/Electrodes

1 pH combination electrode, SenTix® H, refillable

Precision pH combination electrodes with glass shaft and liquid electrolyte.
With plug head (AS/DIN or AS/BNC cable combination please order separately).

WTW

Specifications

Temperature range:	0 to 80°C
pH range:	0 to 14pH
Length/diam.:	170/12mm
Electrolyte:	Liquid, KCl 3mol/l
Diaphragm:	Ground joint
Membrane shape:	Cylindrical
Membrane resistance at 25°C:	2GΩ
Refill hole cover:	Slide

Type	Temperature sensor	Connector	PK	Cat. No.
SenTix® H	-	DIN + BNC	1	9.040 845

1



2 pH electrodes, SenTix®, not refillable

pH electrodes with glass shaft and polymer electrolyte.
With plug head (AS/DIN or AS/BNC cable combination (please order separately).
For surface measurements.

WTW

Specifications

Temperature range:	0 to 50°C
pH range:	2 to 13pH
Length/diam.:	120mm/12mm
Electrolyte:	Polymer
Diaphragm:	Split ring
Membrane shape:	Flat
Membrane resistance at 25°C:	<1GΩ

Type	Temperature sensor	Connector	PK	Cat. No.
SenTix® Sur	-	DIN + BNC	1	9.040 891

2



3 pH electrodes, SenTix® Mic, refillable

pH micro combination electrode glass shaft and liquid electrolyte. With plug head (AS/DIN or AS/BNC cable combination please order separately).

WTW

Specifications

Temperature range:	0 to 100°C
pH range:	0 to 14pH
Length // diam.:	40/80mm // 12/5mm
Electrolyte:	Liquid, KCl 3mol/l
Diaphragm:	Ceramic
Membrane shape:	Cylindrical
Membrane resistance at 25°C:	< 700MΩ

Type	Temperature sensor	Connector	PK	Cat. No.
SenTix® Mic	-	DIN + BNC	1	9.040 892

3



4 pH electrodes, SenTix® SP, not refillable

pH electrodes with plastic shaft and liquid electrolyte. SenTix® SP with plug head (AS/DIN or AS/BNC cable combination please order separately). SenTix® SP-DIN with 1m-fixed cable.
For penetration measurements.

WTW

Specifications

Temperature range:	0 to 80°C
pH range:	2 to 13pH
Length // diam.:	65/25 mm // 15/5 mm
Electrolyte:	Polymer
Diaphragm:	Hole
Membrane shape:	Spear
Membrane resistance at 25°C:	400MΩ

Type	Temperature sensor	Connector	PK	Cat. No.
SenTix® SP	-	DIN + BNC	1	9.040 890
SenTix® SP-DIN	-	DIN	1	7.655 158

4



3. Analytical measurement and testing

pH-measurement/Electrodes

1



1 pH electrodes, SenTix® 940 digital IDS

pH electrodes with plastic shaft and liquid gel electrolyte with built-in temperature sensor. Cable length 1.5m, SenTix® 940-3 with 3m cable.

WTW

Specifications

Temperature range:	0 to 80°C
pH range:	0.000 to 14.000pH
Length // diam.:	120mm/12mm
Electrolyte:	Gel
Diaphragm:	Fibre
Membrane shape:	Cylinder
Membrane resistance at 25°C:	< 1GΩ

Type	PK	Cat. No.
SenTix® 940-3	1	6.239 769
SenTix® 940	1	6.240 824

2



2 pH electrodes, SenTix® 980 digital IDS

pH electrodes with glass shaft and KCl electrolyte with built-in temperature sensor. Cable length 1.5m

WTW

Specifications

Temperature range:	0 to 100°C
pH range:	0.000 to 14.000pH
Length // diam.:	120mm/12mm
Electrolyte:	3 mol/l KCL
Diaphragm:	Platinum wire
Membrane shape:	Cone
Membrane resistance at 25°C:	> 600MΩ

Type	PK	Cat. No.
SenTix® 980	1	6.238 921

3



9.040 895

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 3
AS/DIN-3	DIN	3	1	9.040 896
AS/BNC	BNC	1	1	9.040 897

4



4 Electrode stand

With flexible electrode holder for two electrodes and temperature sensor.

WTW

Type	PK	Cat. No.
Electrode stand	1	9.040 870

3. Analytical measurement and testing

pH-measurement/Electrodes

Application table for the BlueLine pH electrodes

Application	Sample type	BlueLine Type-Nr.	Integrated temperature probe
General Laboratory	General purpose	14/15 pH	YES
		12 pH	NO
	Small sample volume	16 pH	NO
	High ionic strength - extreme pH Non-aqueous -solvents, alcohols	13 pH	NO
	Titration	14/15 pH	YES
		12 pH	NO
	Harsh environment, rugged use	54 pH	YES
Food, Beverage and Dairy	Low maintenance	24-29 pH	YES
		22/23 pH	NO
	Flat surface - cheese, meat, agar	27 pH	NO
	Semi solids - fruit, meat, cheese, jam	21 pH	NO
	Titration	14/15 pH	YES
		12 pH	NO
	Juices	14/15 pH	YES
Cosmetics		12 pH	NO
	General purpose	14/15 pH	YES
	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
Education	Economic	24-29 pH	YES
		22/23 pH	NO
	Research Grade	13 pH	NO

pH electrodes BlueLine, refillable

pH combination electrode with glass body, Ag/AgCl reference system. With fixed cable, length 1m (BlueLine 14 pH IDS 1.5m).
BlueLine 11 pH and BlueLine13 pH with screw head (LB 1A or LB 1BNC cable combination please order separately).

SI Analytics

Specifications

Temperature range:	-5 to 100°C
pH range:	0 to 14pH
Zero point:	pH=7.0 ±0.3
Length/diam.:	120/12mm
BlueLine 13 pH:	170/12mm
Electrolyte:	Liquid, KCl 3mol/l
Diaphragm:	Platinum
BlueLine 13 pH:	Ground joint
Membrane shape:	Conical
BlueLine 13 pH:	Cylindrical
Membrane resistance at 25°C:	250MΩ
BlueLine 13 pH:	300MΩ
Refill hole cover:	Slide

Type	Temperature sensor	Connector	PK	Cat. No.
BlueLine 11 pH	-	Plug head	1	9.041 140 1
BlueLine 12 pH	-	DIN	1	9.041 141
BlueLine 13 pH	-	Plug head	1	9.041 142 2
BlueLine 14 pH	NTC 30 kΩ	DIN + Banana	1	9.041 143
BlueLine 14 pH ID	NTC 30 kΩ	DIN + 4-mm-banana, ID function	1	6.233 381
BlueLine 14 pH IDS	NTC 30 kΩ	Digital plug	1	6.265 620
BlueLine 15 pH	NTC 30 kΩ	BNC + Banana	1	9.041 144
BlueLine 15 pH ID	NTC 30 kΩ	BNC + 4-mm-banana, ID function	1	9.041 155
BlueLine 15 pH Cinch	NTC 30 kΩ	BNC + Cinch	1	6.240 767
BlueLine 17 pH	-	BNC	1	7.608 144
BlueLine 18 pH	Pt 1000	DIN + Banana	1	7.054 864
BlueLine 19 pH	Pt 1000	BNC + Banana	1	7.658 006

1



9.041 140

2



9.041 142



1 pH-electrodes, BlueLine, not refillable

Low maintenance pH combination electrode with plastic body, Ag/AgCl reference system. With fixed cable, length 1m (BlueLine 24 pH IDS 1.5m). BlueLine 22 pH with plug head (LB 1A or LB 1BNC cable combination please order separately).

SI Analytics

Specifications

Temperature range:	-5 to 80°C
pH range:	0 to 14pH
Zero point:	pH=7.0 ±0.3
Length/diam.:	120mm/12mm
Electrolyte:	Gel
Diaphragm:	Fibre
Membrane shape:	Cylindrical
Membrane resistance at 25°C:	400MΩ

Type	Temperature sensor	Connector	PK	Cat. No.
BlueLine 22 pH	-	Plug head	1	9.041 147
BlueLine 23 pH	-	DIN	1	9.041 148
BlueLine 24 pH	NTC 30 kΩ	DIN + Banana	1	9.041 149
BlueLine 24 pH IDS	NTC 30 kΩ	Digital plug	1	6.265 622
BlueLine 25 pH	-	BNC	1	9.041 150
BlueLine 26 pH	NTC 30 kΩ	BNC + Banana	1	9.041 151
BlueLine 26 pH-Cinch	NTC 30 kΩ	BNC + Cinch	1	6.251 893
BlueLine 28 pH	Pt 1000	DIN + Banana	1	7.075 024
BlueLine 28 pH-P	Pt 1000	DIN + 2-mm-pin	1	6.204 522
BlueLine 29 pH	Pt 1000	BNC + Banana	1	6.261 445
BlueLine 29 pH-P	Pt 1000	BNC + 2-mm-pin	1	6.226 741



2 Micro Electrode BlueLine 16 pH, refillable

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. Ideal for small sample volumes.

SI Analytics

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



3 Spear-tip electrode, BlueLine 21 pH, not refillable

pH combination electrode with plastic body, Ag/AgCl reference system and spear membrane tip. BlueLine 21 pH IDS mit 1.5 m fixed cable and digital plug. BlueLine 21 pH with plug head. LB 1A or LB 1BNC cable combination please order separately. Particularly suitable for penetration measurements in semi-solid media.

SI Analytics

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

Type	PK	Cat. No.
BlueLine 21 pH	1	9.041 146
BlueLine 21 pH IDS	1	6.265 621

3. Analytical measurement and testing

pH-measurement/Electrodes

1 pH electrode A 7780

Glass shaft, Silamid®-reference system, with 1m or 1.5 m (A 7780 IDS) fixed cable.

SI Analytics

Specifications

Temperature range:	-5 to + 80°C
pH range:	0 to 14pH
Zero point:	pH=7.0 ±0.3
Taper length/Dia.:	120mm/12mm
Electrolyte:	Gel
Diaphragm:	3 x ceramic
Membrane shape:	Sphere
Membrane resistance at 25°C:	250 MOhm

Type	Temperature sensor	Connector	PK	Cat. No.
A 7780 1M-DIN-ID	Pt 1000	DIN + 4-mm	1	6.235 995
A 7780 IDS	NTC 30 kΩ	Digital	1	6.265 619

1



2 pH electrode A 157

Microelectrode, glass shaft, Silamid® reference system, with 1m or 1.5m (A 157 IDS) fixed cable.

SI Analytics

Specifications

Temperature range:	-5 to +100°C
pH range:	0 to 14pH
Zero point:	pH=7.0 ±0.25
Temperature sensor:	NTC 30kOhm
Taper length // Dia. max./min.	200(70/130)mm/12/5mm
Electrolyte:	KCl 3mol/l
Diaphragm:	Platinum
Membrane shape:	Cylindrical
Membrane resistance at 25°C:	500MOhm

Type	Temperature sensor	Connector	PK	Cat. No.
A 157 1M-DIN-ID	Pt 1000	DIN+ 4 mm	1	9.041 156
A 157 IDS	NTC 30 kOhm	Digital	1	6.265 615

2



3 Electrode, BlueLine 27 pH, for surface measurements, not refillable

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

SI Analytics

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

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

3



4 Redox (ORP) electrodes, BlueLine 31 RX, refillable

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

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

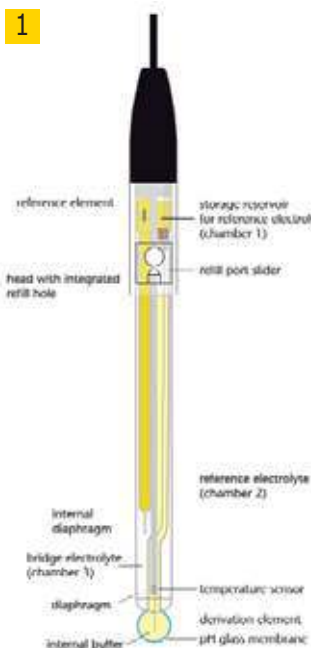
4



3. Analytical measurement and testing

pH-measurement/Electrodes

1



2



1 2 pH electrodes, IoLine

pH electrodes for the most demanding measuring tasks.

SI Analytics

The IoLine electrode family with iodine/iodide reference system has been developed to meet the most demanding laboratory measurement tasks. These electrodes are 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
pH range	0 to 14
Zero point	pH = 7.00 ±0.25
Length/diam.	
IL-pHT-A 120:	120mm/12mm
IL-pHT-A 170:	170mm/12mm
Shaft material	Glass
Reference system:	Iodine/Iodide
Diaphragm:	Platinum
Membrane shape:	Sphere
Membrane resistance at 25°C:	200MΩ

Type	Temperature sensor	Connector	PK	Cat. No.
IoLine-pHT-A 120-MF	-	S7	1	9.041 163
IoLine-pHT-A 170-MF	-	S7	1	9.041 164
IoLine-pHT-A 120-MF-DIN	-	DIN	1	9.041 165
IoLine-pHT-A 120-MF-DIN N	Pt 1000	DIN + Banana	1	9.041 166
IoLine-pHT-A 170-MF-DIN N	Pt 1000	DIN + Banana	1	9.041 167

3



3 pH-electrode IL-Micro-pHT-IDS

Micro electrode for measurements in tris buffers or protein-containing solutions with small sample volumes.

SI Analytics

Glass shaft, 1.5 m cable with digital plug, iodine/iodide-reference system.

Specifications

Temperature range:	-5 to +100°C
pH range:	0 to 14pH
Zero point:	pH=7.00 ±0.25
Taper length // Dia. max./min.	70/130mm/12/5mm
Electrolyte:	KCl 3mol/l
Diaphragm:	Platinum
Membrane shape:	Cylindrical
Membrane resistance at 25°C:	500 MOhm

Type	Temperature sensor	Connector	PK	Cat. No.
IL-Micro-pHT-IDS	NTC 30 kOhm	Digital	1	6.265 630

4



4 Cable combinations, LB 1 A and LB 1 BNC

For BlueLine pH electrodes, ScienceLine and IoLine.

SI Analytics

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

3. Analytical measurement and testing pH-measurement/Electrodes

Combination pH Electrodes

SI Analytics

Type	PK	Cat. No.
Combination electrode N 6000 A	1	9.041 160 ¹
Combination pH electrode N 1042 A	1	9.041 217 ²



3 Metal (ORP) electrodes, ScienceLine

SI Analytics

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



4 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

Type	Temp. range max. °C	Length mm	Membrane	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



5 pH-combination electrodes

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

SI Analytics

Type	Temp. range max. °C	Length mm	Membrane	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



6 Electrode vessel Z 453

NEW!

Free standing electrode vessel for storing electrodes with 12mm diam. shaft.

SI Analytics

Type	PK	Cat. No.
Z 453	1	7.624 578



3. Analytical measurement and testing

pH-measurement/Electrodes

Application table for Electrodes Mettler

Common Industries	Common Application(s)	InLab® Electrode Model	Electrode Cat. No.	Cable Cat. No.	Cables available for other manufacturers meters	Temp. Sensor
General, Cosmetic, Food, Beverage, Agriculture, Paint	Aqueous samples, TRIS, Gels/Soaps/Shampoo, Dairy, Soft Drinks, Beer & Wine, Fertilizer, Soil, Suspensions/Emulsions, Water Based Paint	Expert Pro	9.041 506	--	No	Yes
General, Cosmetic, Water, Food, Beverage, Chemical	Aqueous samples, TRIS, Gels/Soaps/Shampoo, Drinking Water, Soft Drinks, Beer & Wine, Jam/Preserves, Galvanic Baths, Corrosive/Hot Acids & bases,	Routine Pro	9.041 454	9.041 757	Yes	Yes
General, Cosmetic, Water, Food, Beverage, Chemical	Aqueous samples, TRIS, Gels/Soaps/Shampoo, Drinking Water, Soft Drinks, Beer & Wine, Jam/Preserves, Galvanic Baths, Corrosive/Hot Acids & bases,	Routine	9.041 450	9.041 759	Yes	No
Pharmaceutical/Biological, Cosmetic, Water, Food, Beverage, Paint, Chemical	Aqueous samples, TRIS, Serums/Gastric Juices, Medicinal formulas, Enzyme solutions, Gels/Soaps/Shampoo, Waste Water, Drinking Water, Dairy, Dough/Cocoa, Suspensions/Emulsions, Water Based Paint, Oily Samples, Varnish/Glue, Colorants/Dyes, Galvanic Baths, Corrosive/Hot Acids & bases, Hydrocarbons	Science Pro	9.041 471	9.041 757	Yes	Yes
Pharmaceutical/Biological, Cosmetic, Water, Food, Beverage, Paint, Chemical	Aqueous samples, TRIS, Serums/Gastric Juices, Medicinal formulas, Enzyme solutions, Gels/Soaps/Shampoo, Waste Water, Drinking Water, Dairy, Dough/Cocoa, Suspensions/Emulsions, Water Based Paint, Oily Samples, Varnish/Glue, Colorants/Dyes, Galvanic Baths, Corrosive/Hot Acids & bases, Hydrocarbons	Science	9.041 470	9.041 759	Yes	No
Pharmaceutical/Biological, Cosmetic	Aqueous samples, TRIS, Vials/NMR Samples, Serums/Gastric Juices, Samples in Test Tubes, Medicinal formulas, Enzyme solutions, Cosmetic Creams/Mascara	Micro Pro	9.041 562	9.041 757	Yes	Yes
Pharmaceutical/Biological, Cosmetic	Aqueous samples, TRIS, Vials/NMR Samples, Serums/Gastric Juices, Samples in Test Tubes, Medicinal formulas, Enzyme solutions, Cosmetic Creams/Mascara	Micro	9.041 560	9.041 759	Yes	No
Pharmaceutical/Biological, Cosmetic, Water, Food, Beverage, Paint	Aqueous samples, TRIS, Serums/Gastric Juices, Samples in Test Tubes, Medicinal formulas, Enzyme solutions, Gels/Soaps/Shampoo, Cosmetic Creams/Mascara, Natural/Synthetic Resins, Dairy, Water Based Paint, Oily Samples	Semi Micro	9.041 565	9.041 759	Yes	No
Pharmaceutical/Biological, Cosmetic, Food	Aqueous samples, TRIS, Medicinal formulas, Enzyme solutions, Cosmetic Creams/Mascara, Butter, Yoghurt, Cheese, Ice Cream, Meats, Fruit/Vegetables, Dough/Cocoa	Solids	9.041 553	9.041 759	Yes	No
Pharmaceutical/Biological, Cosmetic, Textile, Paper	Gelled Agars, Skin, Leather, Textiles/Prints, Paper, Laminates, Drop Size Samples	Surface	9.041 557	9.041 759	Yes	No

3. Analytical measurement and testing

pH-measurement/Electrodes

pH electrodes InLab® Routine Series

Combined pH electrode, glass shaft, ARGENTHAL™ reference with silver-ion trap, detachable cable.

Mettler-Toledo Online

Specifications:

Temperature range:	0 to +100°C
pH range:	0 - 14
Electrode Dia.:	12 mm
Electrolyte:	Liquid, KCl 3 mol/l
Diaphragm:	ceramic
Membrane resistance at 25°C:	< 600 MΩ

1



9.041 450

2



9.041 456

Description	Shaft length min. mm	Temperature sensor	Electrode head	PK	Cat. No.
InLab®Routine	120	-	S7	1	9.041 450
Set InLab®Routine + DIN cable	120	-	S7	1	9.041 451
Set InLab®Routine + BNC cable	120	-	S7	1	9.041 452
InLab®Routine Pro	120	NTC 30 kΩ	MultiPin™	1	9.041 454
Set InLab®Routine Pro + BNC/Cinch cable	120	NTC 30 kΩ	MultiPin™	1	9.041 455
InLab®Routine Pt1000	120	Pt1000	MultiPin™	1	9.041 456
InLab®Routine Pro-L	170	Pt1000	MultiPin™	1	9.041 457
InLab®Routine Pro ISM	120	NTC 30 kΩ	MultiPin™	1	7.629 195
InLab®Routine Pro ISM Set	120	NTC 30 kΩ	MultiPin™	1	9.041 458

3 pH electrodes InLab® Expert Pro

pH-combination electrode with chemically resistant PEEK shaft, ARGENTHAL™ reference system. Fixed BNC/RCA (Cinch) cable.

Mettler-Toledo Online

InLab® Expert Pro ISM for SevenCompact and SevenExcellence.

Specifications

Temperature range:	0 to +100°C
pH range:	0 - 14
Temperature sensor:	NTC 30kΩ
Length/Diam.:	120mm/12mm
Electrolyte:	XEROLYT® polymer
Diaphragm:	open junction
Membrane resistance at 25°C:	< 250MΩ

Type	PK	Cat. No.
InLab® Expert Pro	1	9.041 506
InLab® Expert Pro ISM	1	9.041 508

3



4 pH electrode InLab® Science

pH-combination electrode with glass shaft, ARGENTHAL™ reference system with Ag⁺ trap and S7 electrode head. Cable - please order separately.

Mettler-Toledo Online

Specifications

Temperature range:	0 to +100°C
pH range:	0 - 12
Temperature sensor:	no
Length/Diam.:	120mm/12mm
Electrolyte:	Fluid, KCl 3mol/l
Diaphragm:	movable glass sleeve
Membrane resistance at 25°C:	< 600MΩ

Type	PK	Cat. No.
InLab® Science	1	9.041 470

4



5 pH electrode InLab® Science Pro

pH-combination electrode with glass shaft, ARGENTHAL™ reference system with Ag⁺ trap and MultiPin™ electrode head. Cable - please order separately.

Mettler-Toledo Online

InLab® Science Pro ISM for SevenCompact and SevenExcellence.

Specifications

Temperature range:	0 to +100°C
pH range:	0 - 12
Temperature sensor:	NTC 30kΩ
Length/Diam.:	170mm/12mm
Electrolyte:	Fluid, KCl 3mol/l
Diaphragm:	movable glass sleeve
Membrane resistance at 25°C:	< 600MΩ

Type	PK	Cat. No.
InLab® Science Pro	1	9.041 471
InLab® Science Pro ISM	1	9.041 472

5



3. Analytical measurement and testing

pH-measurement/Electrodes



1 pH electrode InLab® Micro

pH-combination electrode with glass shaft, ARGENTAL™ reference system with Ag⁺ trap and S7 electrode head. Cable - please order separately.

Mettler-Toledo Online

Specifications

Temperature range:	0 to +80°C
pH range:	0 - 14
Temperature sensor:	no
Length/Diam.:	60mm/3mm
Electrolyte:	Fluid, KCl 3mol/l
Diaphragm:	Ceramic type Z (pore size 0.9µm)
Membrane resistance at 25°C:	< 1000MΩ

Type	PK	Cat. No.
InLab® Micro	1	9.041 560



2 pH electrode InLab® Semi-Micro

pH-combination electrode with glass shaft, ARGENTAL™ reference system and S7 electrode head. Cable - please order separately.

Mettler-Toledo Online

Specifications

Temperature range:	0 to +100°C
pH range:	0 - 12
Temperature sensor:	no
Length/Diam.:	100mm/6mm
Electrolyte:	XEROLYT®EXTRA Polymer
Diaphragm:	open junction
Membrane resistance at 25°C:	< 300MΩ

Type	PK	Cat. No.
InLab® Semi-Micro	1	9.041 565



3 pH electrode InLab® Micro Pro

pH-combination electrode with glass shaft, ARGENTAL™ reference system with Ag⁺ trap and MultiPin™ electrode head. Cable - please order separately.
InLab® Micro Pro ISM for SevenCompact and SevenExcellence.

Mettler-Toledo Online

Specifications

Temperature range:	0 to +100°C
pH range:	0 - 14
Temperature sensor:	NTC 30kΩ
Length/Diam.:	130mm/5mm
Electrolyte:	Fluid, KCl 3mol/l
Diaphragm:	Ceramic
Membrane resistance at 25°C:	< 300MΩ

Type	PK	Cat. No.
InLab® Micro Pro	1	9.041 562
InLab® Micro Pro ISM	1	6.243 633



4 pH combination electrode InLab® Solids

With spear-tip membrane. With glass shaft, Argenthal™ reference system and S7 plug head. Cable - please order separately.

Mettler-Toledo Online

Specifications

Temperature range:	0 to +80°C
pH range:	0 - 11
Temperature sensor:	no
Length/Diam.:	25mm/6mm
Electrolyte:	XEROLYT® PLUS polymer electrolyte, non-refillable
Diaphragm:	open junction
Membrane resistance at 25°C:	< 250 MΩ

Type	PK	Cat. No.
InLab® Solids	1	9.041 553

3. Analytical measurement and testing

pH-measurement/Electrodes

1 pH electrode InLab® Surface

pH-combination electrode with polysulfone shaft, Ag/AgCl reference system and S7 electrode head. Cable - please order separately.

Mettler-Toledo Online

Specifications

Temperature range:	0 to +50°C
pH range:	1 - 11
Temperature sensor:	no
Length/Diam.:	100mm/6mm
Electrolyte:	Fluid, KCl 3mol/l, AgCl saturated
Diaphragm:	Safelock™ ABS ring
Membrane resistance at 25°C:	< 800MΩ

Type	PK	Cat. No.
InLab® Surface	1	9.041 557



Connection cables

For connecting pH electrodes with built-in temperature sensors and MultiPin plug head or with S7 plug head (without temperature sensor) as indicated.

Mettler-Toledo Online

Cables suitable for connection of Mettler Toledo electrodes to a variety of other manufacturers meters.

Cat. No. 9.041 757, 7.629 194 (ISM electrodes) and 9.041 759 should be used for connection to Mettler Toledo meters.

Length m	Connector	Electrode head	PK	Cat. No.
1.2	DIN + 4 mm	MultiPin™	1	9.041 754
1.2	BNC + 4 mm	MultiPin™	1	9.041 755
1.2	DIN + Cinch	MultiPin™	1	9.041 756
1.2	BNC + Cinch	MultiPin™	1	9.041 757 2
2.5	BNC + Cinch	MultiPin™	1	9.041 765
1.2	Lemo 00 + 2 x 4 (Metrohm)	MultiPin™	1	9.041 760
1.8	BNC + Cinch - ISM	ISM-MultiPin™	1	7.629 194
1.2	DIN	S7	1	9.041 758 3
1.2	BNC	S7	1	9.041 759 4
1.2	RM	S7	1	9.041 761
5.0	-	S7	1	9.041 764
1.2	-	S7	1	6.700 357



3. Analytical measurement and testing

pH-measurement/Buffer solutions

1



1 LLG-pH-Buffer solution

Tested and certified at 20°C. Provided with label that gives the pH value at different temperatures. Tolerance ± 0.02 pH. Supplied in PE-HD containers. Traceable to NIST (SRM). Temperature dependence data is printed on the label as well as batch numbers and expiry dates. Buffers have a 24 month shelf life from date of manufacture.

pH-value at 20 °C	Capacity ml	Buffer	PK	Cat. No.
pH 4.00	1000	citrate	1	9.041 367
pH 7.00	1000	phosphate	1	9.041 368
pH 9.00	1000	H ₃ BO ₃ -KCl-NaOH	1	9.041 374
pH 10.00	1000	borate	1	9.041 369

LLG-pH buffer solutions with colour coding

The ready-to-use colour coded pH buffer solutions offer excellent quality, precision and are designed to suit all end user requirements.

Supplied in 1L bottles and conveniently colour coded to eliminate any risk of confusion between the 3 pH values.

Features

- Accuracy ± 0.01 pH, tested and certified at 25°C
- Temperature dependence data table printed on the label
- Traceable to NIST
- Shelf-life: 24 months (pH 7 and 10) or 36 months (pH 4) from date of production
- Colour-coded

pH-value at 25 °C	Capacity ml	Colour	PK	Cat. No.
4.00	1000	red	1	9.040 865
7.00	1000	yellow	1	9.040 866
10.00	1000	blue	1	9.040 867

2



2 LLG-pH-Buffer solutions with colour coding in twin-neck dispensing bottles

The ready-to-use buffer solutions offer excellent quality, precision and advantages in use. The calibration vessel, integrated into the twin-neck dispensing bottles, allows the particularly economical dispensing of solution and prevents contamination.

Features

- Accuracy ± 0.01 pH, tested and certified at 25°C
- Temperature dependence data table printed on the label
- Traceable to NIST
- Shelf-life: 24 months (pH 7 and 10) or 36 months (pH 4) from date of production
- Colour-coded

pH-value at 25 °C	Capacity ml	Colour	PK	Cat. No.
4.00	250	red	1	9.040 868
7.00	250	yellow	1	9.040 869
10.00	250	blue	1	9.040 871

3



3 Technical pH buffer solutions

Colour coded. Tested and ISO 17025 Certified at 25°C. Uncertainty of measurement ± 0.02 pH.

Reagecon

Temperature dependence data is printed on the label as are lot numbers and expiry dates.

These pH buffer solutions are suitable for use where very accurate measurements are required and 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. This item has a 12 to 36 month shelf life from date of manufacture depending on pH value.

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

3. Analytical measurement and testing pH-measurement/Buffer solutions

1 pH buffer solutions

Clear, Colourless pH Buffer Solutions. Tested and ISO17025 Certified at 20°C, supplied with a detailed Certificate of Analysis which outlines traceability to N.I.S.T. Temperature dependence data is printed on the label as are lot numbers and expiry dates. Available in 500ml or 1l HDPE containers. *Reagecon*

pH-value	Capacity	Accuracy	PK	Cat. No.
at 20 °C	ml	(±)		
pH 2.00	500	0.02	1	6.228 059
pH 3.50	1000	0.05	1	7.632 597
pH 4.00	500	0.01	1	9.040 911
pH 4.00	1000	0.01	1	9.040 912
pH 6.00	500	0.01	1	6.203 561
pH 6.00	1000	0.01	1	6.321 027
pH 6.80	500	0.01	1	6.206 693
pH 6.865*	500	0.01	1	7.900 066
pH 7.00	500	0.01	1	9.040 913
pH 7.00	1000	0.01	1	9.040 914
pH 9.00	500	0.01	1	6.225 161
pH 9.00	1000	0.01	1	6.206 691
pH 10.00	500	0.01	1	9.040 915
pH 10.00	1000	0.01	1	9.040 916
pH 12.00	500	0.05	1	6.234 641

*at 25°C

1



2 pH buffer solutions (Coloured)

Coloured pH Buffer Solutions solutions. Tested and ISO17025 Certified at 20°C. Uncertainty of measurement ±0.01pH. Supplied with a detailed Certificate of Analysis which outlines traceability to N.I.S.T. Temperature dependence data is printed on the label as are lot numbers and expiry dates. Supplied in 500ml, 1L or 5L *Reagecon*

pH-value	Capacity	Colour	PK	Cat. No.
at 20 °C	ml			
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

2



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	Description	PK	Cat. No.
at 25 °C			
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

3



4 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*

pH-value	Capacity	Colour	PK	Cat. No.
at 25 °C	ml			
pH 4.01	250	yellow	1	9.041 050
pH 7.00	250	green	1	9.041 051
pH 10.01	250	orange	1	9.041 052

4



3. Analytical measurement and testing

pH-measurement/Buffer solutions

1



1 Buffer solutions, sterile

According to DIN 19 266. Values stated at 25°C. To be delivered in DURAN® glass bottles. Hot steam sterilized. Accuracy ± 0.012 pH. Comes with individual batch number and manufacturer certificate.

SI Analytics

pH-value at 25 °C	Capacity	PK	Cat. No.
pH 4.01	250ml DURAN® bottle	1	9.041 004
pH 6.87	250ml DURAN® bottle	1	9.041 007
pH 9.18	250ml DURAN® bottle	1	9.041 009

Other buffer solutions available on request.

2



2 pH buffer solutions, technical

Without colour coding, hot steam sterilized. Stated pH values at 25°C. Available in 250ml containers. Shelf life approx. 2 years, accuracy ± 0.02 pH.

SI Analytics

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).

pH-value at 25 °C	Capacity ml	Colour	PK	Cat. No.
pH 4,00	250	clear	1	9.041 043
pH 7,00	250	clear	1	9.041 045
pH 10.01	250	clear	1	9.041 048
Set	17	3 x 20 x 17 ml ampoules	1	9.041 081

3



3 Technical buffer solutions

Identified by colour-coded labels. Tolerance ± 0.02 pH.

WTW

pH-value at 25 °C	Capacity ml	PK	Cat. No.
4.01	50	1	9.040 734
4.01	1000	1	9.040 722
7.00	50	1	9.040 735
7.00	1000	1	9.040 723
10.00	1000	1	9.040 724
10.01*	1000	1	9.040 725
4.01	250	1	9.040 727
7.00	250	1	9.040 728
10.00	250	1	9.040 729

* For handheld meters 315i, 330i, 340i, 350i, 3110, 3210, 3310 and Inolab® versions from 2004 onwards

4



4 Standard buffer solutions

To DIN/NIST. Supplied in 250ml bottles. Tolerance ± 0.02 pH.

WTW

pH-value at 25 °C	Capacity ml	PK	Cat. No.
4.01	250	1	9.040 744
6.87	250	1	9.040 746
9.18	250	1	9.040 749

5



5 Redox buffer solution

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

WTW

Type	PK	Cat. No.
Redox	1	9.040 782

3. Analytical measurement and testing pH-measurement/Buffer solutions

1 Calibration Kits for pH meters

20ml sachets. Without certificate of analysis .

Hanna

Description	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 pH buffer solutions in sachets with certificate of analysis

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: ± 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 again NIST standards.

Hanna

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



3 LLG-Electrolyte solutions, KCL

Potassium chloride electrolyte for pH electrodes - Filling solution for reference electrolyte.

Type	PK	Cat. No.
3mol/l, 1000ml	1	9.041 370
3 mol/l, 250ml	1	9.041 371
3mol/l, (AgCl saturated.), 250ml	1	9.041 372



4 KCL electrolyte solutions

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

SI Analytics

Type	PK	Cat. No.
2mol/L KNO ₃ + 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



5 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



6 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



3. Analytical measurement and testing

pH-measurement/Buffer solutions-Conductivity measurement/Portable devices

1



1 Regeneration solution and storage solution

For pH-probes.

SI Analytics

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

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

Cleaning solution RL/G

1 bottle with 30ml acetic acid, solution UN 2790, 8, III, (E)

WTW

Capacity ml	PK	Cat. No.
30	1	9.822 552

3. Analytical measurement and testing

Conductivity measurement/Portable devices

1 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

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



2 Conductivity testers, Dist 5 and Dist 6

Watertight 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

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



3 Conductivity meters HI 99300/HI 99301

- 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)

Hanna

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):	143mm x 80mm x 38mm
Weight:	210g

Type	PK	Cat. No.
HI 99300	1	7.618 482
HI 99301	1	6.240 795
Spare electrode HI 76306 for HI 99300 / HI 99301	1	6.241 639



3. Analytical measurement and testing

Conductivity measurement/Portable devices



1 Conductivity meter HI 8733

Hanna

- 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

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:	164mm x 76mm x 45mm
Weight:	500g

Type	PK	Cat. No.
HI 8733	1	9.704 016
Spare probe HI 76302W	1	6.200 643



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
Spare probe HI 76302W	1	6.200 643

3. Analytical measurement and testing

Conductivity measurement/Portable devices

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.

1 2 Portable conductivity meter ProfiLine 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 n/f 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 _{ref} :	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

1



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3 Portable conductivity meter ProfiLine 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 ⁻¹) 0.000µS/cm at 1.999µS/cm (when K=0.01 cm ⁻¹)
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)

3



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 / 01and accessories	1	9.774 399

3. Analytical measurement and testing

Conductivity measurement/Portable devices

1



1 2 Conductivity meter ProfiLine 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. 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.

WTW

Specifications:

Measuring ranges/Resolution:

Conductivity:

as Cond 3110, but additionally with

0.00μS/cm to 19.99μS/cm (when K=0.1cm⁻¹)

0.000μS/cm at 1.999μS/cm (when K=0.01 cm⁻¹)

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

TDS:

Spec. resistance:

Memory:

0.0 to 999MΩ/cm

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 Cond Set conductivity instrument

The VARIO Cond 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.

WTW

The TetraCon® 325 measuring cell, recognised around the world, was shortened and modified especially for the VARIO Cond. 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 Cond.

Specifications:

Measurement range/Resolution

Conductivity:

0.0μS/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 (±1 digit)

Conductivity:

±0.5% of measurement

Temperature:

±0.1K

Reference temp. (T_{ref}):

selectable 20°C or 25°C

Cell constant:

fixed 0.475 cm⁻¹, 0.1 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 Cond Set A	incl. transport case, TetraCon® 325 and KCL solution	1	9.774 390
VARIO Cond Set B	incl. transport case and LR 01/V	1	9.774 391

3. Analytical measurement and testing

Conductivity measurement/Portable devices

1 Portable conductivity meter Education Line EL3

Experience science with portable conductivity meters

Mettler-Toledo Online

- Simple intuitive operation helps you save time during classes
- Ideally suited for classroom and field-based measurements alike
- Robust, low-maintenance, yet reliable electrodes available in kit version

EL3-Basic: Conductivity instrument incl. electrode clip, wrist strap, operating manual, "Quick guide", 4 x batteries

EL3-Kit: Instrument and accessories as with EL3 Basic, also with LE703 conductivity sensor, IP54 connection caps, 2 x 1413 µS/cm and 2 x 12.88 mS/cm standard sachets

EL3-Fieldkit: Instrument and accessories as for EL3 Kit, also with carry bag incl. 4 sample bottles

Please note: These articles are only available for schools and universities.

Specifications

Measuring range/accuracy:

Conductivity: 0.1µS/cm to 199.9mS/cm/±0.5%

Temperature: 0.0°C to +100°C/±0.3°C

Calibration: 1-point, 3 predefined standards

Free disk space: 30 data sets

Display: LCD

Batteries: 4 x AAA

Dimensions (WxDxH): 169 x 82 x 36mm

Weight: 180g (without batteries)

Type	PK	Cat. No.
EL3-Basic	1	9.704 003
EL3-Kit	1	9.704 004
EL3-Fieldkit	1	9.704 006
Spare elektrode LE703	1	9.041 621



2 Conductivity meter FiveGo™ FG3

FiveGo Conductivity is a handy, portable meter ideal for those who require rapid and reliable results on the go. This meter is suitable for a wide range of applications in various areas such as food and beverage, agriculture, industry, water and environment

Mettler-Toledo Online

- Outstanding functions such as storage capacity for 30 measurements, TDS and salinity modes and IP54 ingress protection combined with features such as automatic endpoint, 1 point calibration, linear temperature compensation and selectable reference temperatures
- Five self-explanatory buttons for starting and ending a measurement, for saving and accessing measurement results and for reviewing the latest calibration data.
- A big, well organised display simultaneously showing readings, temperature, endpoint criteria and various helpful icons

FG3-Basic: Conductivity instrument incl. electrode clip, wrist strap, operating manual, "Quick guide", 4 x batteries

FG3-Kit: Instrument and accessories as with FG3-Basic, with LE703 conductivity sensor, IP54 connection caps, 2 x 1413 µS/cm and 2 x 12.88mS/cm standard sachets

FG3-Fieldkit: Instrument and accessories as for FG3-Kit, with carry bag incl. 4 sample bottles

Specifications:

Measuring range (Accuracy) 0.1µS/cm to 199.9mS/cm (±0.5% of measured value)

TDS: 0.1mg/L to 199.9g/L (±0.5% of measured value)

Salinity: 0.00 to 19.99psu (±0.5% of measured value)

Temperature: 0 to +100°C (±0.3°C)

Calibration: 1 point, 3 predefined standards

Input: Mini-DIN

Temperature compensation: Linear: 0.00%/°C to 10.00%/°C

Reference temperature: 20 and 25°C

Memory: 30 measurements

Power supply: 4 x AAA

Protection class acc. to DIN EN 60529: IP 54

Type	PK	Cat. No.
FG3-Basic	1	9.773 720
FG3-Kit	1	9.773 721
FG3-Fieldkit	1	7.652 924



3. Analytical measurement and testing

Conductivity measurement/Portable devices

Conductivity meter Seven2Go™ S3

Portable routine model for conductivity measurement.

Mettler-Toledo Online

- New, intuitive menu structure with fast and easy T-Pad navigation
- Robust design with IP67 protection for use in harsh and demanding environments
- Intelligent Sensor Management (ISM®) functionality reduces the risk of errors
- Easy 1 point calibration with option of manual cell constant entry
- 3 predefined standards and 1 user defined standard
- Automatic, manual and time dependant endpoint recording
- Data memory storage for 200 data points
- Power requirements: 4 x 1.5V AA or 1.3V NiMH accumulators

Supplied with:

S3-Meter: Includes instrument, electrode clip, operating instructions, quick guide, test certificate, declaration of conformity and batteries.

S3-Standard kit: As S3-Meter, but also with InLab 738-ISM and sachets of conductivity standards 1413 µS/cm and 12.88 mS/cm.

S3-Field kit: As S3-Standard kit, but also with bottles for calibration and uGo™ carrying case.

S3-Bioethanol kit: As S3-Field kit, but also with InLab 725 instead of InLab 738-ISM.

Specifications

Conductivity

Measuring range: 0.010µS/cm ... 500mS/cm
Resolution: 0.001 ... 1 (auto-range)
Accuracy: ±0.5%

Temperature

Measuring range: -5.0 ... +105.0°C
Resolution: 0.1°C
Accuracy: ±0.2°C

TDS (Total Dissolved Solids)

Measuring range: 0.01mg/l ... 300g/l
Resolution: 0.01 ... 1 (auto-range)
Accuracy: ±0.5%

Specific resistance

Measuring range: 0.01 ... 100.0MΩcm

Salinity

Measuring range: 0.01 ... 42psu

Conductivity Ash

Measuring range: 0.01 ... 2022%
Dimensions (WxDxH): 222 x 70 x 35mm

Type	PK	Cat. No.
S3-Meter	1	6.265 247
S3-Standard kit	1	6.265 248 ¹
S3-Field kit	1	6.265 249
S3-Bioethanol kit	1	6.265 250



3. Analytical measurement and testing

Conductivity measurement/Portable devices

Conductivity meters Seven2Go™ pro S7

Portable professional model for conductivity measurement

Mettler-Toledo Online

- New, intuitive menu structure with fast and easy T-Pad navigation
- Robust design with IP67 protection for use in harsh and demanding environments
- Intelligent Sensor Management (ISM®) functionality reduces the risk of errors
- New sunlight-proof screen guarantees screen readability even in direct sunlight
- New StatusLight gives a fast, visual confirmation showing if the meter is ready to measure or not
- Operating support for 12 languages with information shown in complete words and sentences
- Easy 1 point calibration with option of manual cell constant entry
- 3 predefined standards and 1 user defined standard
- Automatic, manual and time dependant endpoint recording
- Data memory storage for 2000 GLP data points with weatherproof Micro-USB connection for data export
- Power requirements: 4 x 1.5V AA or 1.3V NiMH accumulators

Supplied with:

S7-Meter: Includes instrument, LabX direct pH, USB cable, electrode clip, base accessory, operating instructions, quick guide, test certificate, declaration of conformity and batteries.

S7-Standard kit: As S7-Meter, but also with InLab 738-ISM and sachets of conductivity standard 1413 µS/cm and 12.88 mS/cm.

S7-Field kit: As S7-Standard kit, but also with bottles for calibration and uGo™ carrying case.

S7-USP/EP kit: As S7-Field kit, but with InLab 742-ISM instead of InLab 738-ISM.

Specifications

Conductivity

Measuring range: 0.010µS/cm ... 1000mS/cm

Resolution: 0.001 ... 1 (auto-range)

Accuracy: ±0.5%

Temperature

Measuring range: -5.0 ... +105°C

Resolution: 0.1°C

Accuracy: ±0.1°C

TDS

Measuring range: 0.01 mg/l ... 600 g/l

Resolution: 0.01 ... 1 (auto-range)

Accuracy: ±0.5 %

Specific resistance

Measuring range: 0.01 ... 100.0MΩcm

Salinity

Measuring range: 0.01 ... 42psu

Conductivity Ash

Measuring range: 0.01 ... 2022%

Dimensions (WxDxH): 222 x 70 x 35mm

Type	PK	Cat. No.
S7-Meter	1	6.265 254
S7-Standard kit	1	6.265 255
S7-Field kit	1	6.265 256
S7-USP/EP kit	1	6.265 257 ¹

1



6.265 257

3. Analytical measurement and testing

Conductivity measurement/Portable devices

1



1 Conductivity meters HandyLab 200

The portable allrounder for conductivity measurements

SI Analytics

Due to the wide selection of 2 and 4 pole measuring cells made by SI Analytics, the system consisting of a sensor and HandyLab 200 can be used for a variety of purposes such as conductivity, salinity, TDS and specific gravity. Autoread provides a stabile, precise measuring value. The backlit display and waterproof design make it especially ideal for field use. For easy reference, the HandyLab 200 has a storage capacity for up to 200 data sets, which can be put out on the display.

Supplied with:

HL200Versatile: Conductivity meter Set HandyLab 200 with conductivity probe LF413T for general applications

Specifications

Conductivity

Measuring range: 0.0 ... 1000mS/cm
Resolution: $\pm 0.1\text{mS/cm}$, $\pm 0.01\mu\text{S/cm}$, $\pm 0.001\mu\text{S/cm}$
Accuracy: $\pm 0.5\%$ of mean value

Temperature

Measuring range: -5.0 ... +105.0°C
Resolution: $\pm 0.1^\circ\text{C}$
Accuracy: $\pm 0.1^\circ\text{C}$

TDS (Total Dissolved Solids)

Measuring range: 0 ... 1999mg/l
Resolution: 1mg/l
Accuracy: $\pm 0.5\%$ of mean value

Specific resistance

Measuring range: 1.000 ... 199.9M Ωcm $\pm 0.5\%$ of mean value

Salinity

Measuring range: 0.0 ... 70.0 (acc. to IOT)

Type	PK	Cat. No.
HL200Versatile	1	6.265 286

2



2 3 Conductivity meter SD320CON

Electrochemistry instrument for the determination of Conductivity, Resistance, Salinity and TDS.

AQUALYTIC

- Rugged, water resistant (IP65), water proof plug connections
- Use of different electrodes
- Data Logger and alarm function
- GLP features (Good Laboratory Practice)
- Interface for Data transfer
- Large backlit display
- Low power consumption, long battery shelf life

Supplied with:

SD320CON (SET 1): Hand-held meter complete in case with 4-pol graphite electrode (diameter 12 mm) measuring range up to 200 ms/cm, batteries, instruction manual.

SD320CON (SET 2): Hand-held meter complete in case with 4-pol graphite electrode (diameter 16 mm) measuring range up to 1000 ms/cm, batteries, instruction manual.

Specifications

Conductivity: 0.0 ... 500.0 $\mu\text{S/cm}$ (cell constant 1/cm)
0.000 ... 5.000 $\mu\text{S/cm}$ (cell constant 0.01/cm)
0.0 ... 500.0mS/cm (cell constant 1/cm)
0 ... 5000 $\mu\text{S/cm}$ (cell constant 0.01/cm)
0 ... 1000mS/cm (cell constant 1/cm)
Temperature: -5.0 ... +150.0°C
TDS: 0.000 ... 10000mg/l*
Resistance: 0.0010k Ωcm ... 50.00M Ωcm *
Salinity: 0.0 ... 70.0g/kg (PSU)
Protection class: IP65
Power supply: 2 x AAA batteries (incl.)

Type	PK	Cat. No.
SD320CON (SET 1)	1	9.699 292
SD320CON (SET 2)	1	9.699 293

*depends on cell constant

3



3. Analytical measurement and testing

Conductivity measurement/Table devices

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.

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 Laboratory instrument inoLab® Cond 7110

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.

WTW

Specifications

Ranges:	All values ± 1 digit
Conductivity:	0.00 ... 1000 mS/cm ± 0.5 % v. Mw. 0.00 ... 19.99 μ S/cm at $K = 0.1 \text{ cm}^{-1}$
Salinity:	0.0 ... 70.0 (acc. IOT)
Temperature:	-5.0 ... 105.0°C ± 0.1 °C
AutoRead:	automatic
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

1



Conductivity meter inoLab® Cond 7310

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 to pharmacopeia) for linear and non-linear function according to 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.

WTW

Specifications

Ranges:	All values ± 1 digit
Conductivity additional:	0.00 ... 1000 mS/cm ± 0.5 % v. Mw. 0.000 ... 1.999 μ S/cm, $K = 0.01 \text{ cm}^{-1}$ 0.00 ... 19.99 μ S/cm, $K = 0.1 \text{ cm}^{-1}$
Specific resistance:	0.00 ... 20 M Ω 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
Calibration:	1 point
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

2



9.920 114

3



9.920 117

Type	Description	PK	Cat. No.
Cond 7310	Meter incl. accessories	1	9.920 114 2
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 3
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

3. Analytical measurement and testing

Conductivity measurement/Table devices

1



1 Conductivity meter Education Line EL30

Experience science with conductivity bench meters

Mettler-Toledo Online

- Simple intuitive operation: helps you save time during classes
- Compact, robust benchtop instrument
- Robust, low-maintenance, yet reliable electrodes available in kit version
- Ideal for schools and universities

EL30-BASIC: Conductivity instrument incl. operating manual, "Quick guide", power adapter

EL30-KIT: Instrument and accessories as with EL30 Basic, also with LE703 conductivity sensor, electrode arm, 2 x 1413µS/cm and 2 x 12.88mS/cm standard sachets

Please note: These articles are only available for schools and universities.

Specifications

Measuring range/accuracy

Conductivity:	0.1µS/cm to 199.9mS/cm/±0.5%
Temperature:	0.0°C to +100°C/±0.3°C
Calibration:	1-point, 3 predefined standards
Display:	LCD
Power supply:	100-240V/50-60Hz, 9V DC
Dimensions (WxDxH):	200 x 175 x 52mm
Weight:	600g

Type	PK	Cat. No.
EL30-Basic	1	9.704 149
EL30-Kit	1	9.704 150
LE703	1	9.041 621

2



2 Conductivity meters FiveEasy™/FiveEasy™ Plus

FiveEasy and FiveEasy Plus Conductivity are compact, easy to use bench meters suitable for a wide range of applications in various areas such as food and beverage, agriculture, industry, water and environment.

Mettler-Toledo Online

- Outstanding functions such as TDS and salinity modes and meter self-test combined with features such as automatic endpoint, 1 point calibration, linear temperature compensation and selectable reference temperature
- Five self-explanatory buttons for starting and ending a measurement or calibration and for accessing the latest calibration data
- A big, well organised display simultaneously showing readings, temperature, endpoint criteria and various helpful icons

FE30-Basic: Conductivity instrument incl. operating manual, "Quick guide", power adapter

FE30-Kit: Instrument and accessories as with FE30-Basic, also with LE703 conductivity sensor, electrode arm, 2 x 1413µS/cm and 2 x 12.88mS/cm standard sachets

FEP30-Basic: Conductivity instrument incl. operating manual, "Quick guide", power adapter

FEP30-Kit: Instrument and accessories as with FEP30-Basic, also with LE703 conductivity sensor, electrode arm, 2 x 1413µS/cm and 2 x 12.88mS/cm standard sachets

Specifications:

Measuring range (Accuracy)

Conductivity:	0.1µS/cm to 199.9mS/cm (±0.5% of measured value)
TDS:	0.1mg/L to 199.9g/L (±0.5% of measured value)
Salinity:	0.00 to 19.99psu (±0.5% of measured value)
Temperature:	0°C to +100°C (±0.3°C)
Calibration:	1 point, 3 predefined standards
Input:	Mini-DIN
Temperature compensation:	Linear: 0.00%/°C to 10.00%/°C
Reference temperature:	20°C and 25°C
Power supply:	100-240 V/50-60 Hz/9V DC

FEP30 only:

Memory:	99 measurements
Output:	RS232 interface

Type	PK	Cat. No.
FE30-Basic	1	9.773 701
FE30-Kit	1	6.251 347
FEP30-Basic	1	9.773 711
FEP30-Kit	1	9.773 712
FiveEasy AC adaptor (incl. connectors) input 230V, output DC 9V	1	7.900 515
FiveEasy electrode arm (complete)	1	6.235 935

3. Analytical measurement and testing

Conductivity measurement/Table devices

1 Conductivity meter SevenCompact™

The colour display with its well-designed icons and menu settings in 10 languages makes operation genuinely intuitive. Applications range from routine measurements through sample analysis, data handling and data archiving in compliance with GLP regulations. Simply innovative design that meets the requirements for a universal, easy-to-operate conductivity meter.

Mettler-Toledo Online

- User friendly instrument for demanding users
- Security and high reproducibility thanks to Intelligent Sensor Management (ISM®)
- Improved quality of measurements through professional calibration support
- Comprehensive service package including IQ/OQ
- Integrated USB and RS232 interfaces for data exchange

Supplied with:

S230-Basic: Instrument, electrode holder, protective cover, operating instructions, quick guide, declaration of conformity and test certificate

S230-Kit: As per S230-Basic, additionally with InLab® 731-ISM, guide to conductivity measurements and 2 calibration sachets for 1413µS/cm and 12.88mS/cm.

S230-USP/EP: As per S230-Kit, but with InLab® 741-ISM instead of InLab® 731-ISM and without calibration sachets for 12.88mS/cm.

Specifications:

Calibration:	13 pre-defined and 1 user-defined standard
Conductivity range:	0.001µS/cm to 1000mS/cm, autoscaling
Conductivity accuracy:	±0.5%
Salinity range:	0.00 to 80.00psu
TDS range:	0.00mg/L to 1000g/L, autoscaling
Resistivity range:	0.00 to 100MΩ*cm, autoscaling
Conductivity ash range:	0.000 to 2022%, autoscaling
Temperature range	
MTC:	-30.0 to 130.0°C
ATC:	-5.0 to 130.0°C
Temperature accuracy:	±0.1°C
Display:	4.3 inch, TFT color
Ext. power supply:	9-12V/10W

Type	PK	Cat. No.
S230-Basic	1	9.704 164
S230-Kit	1	9.704 165
S230-USP/EP	1	9.704 166

1



3. Analytical measurement and testing

Conductivity measurement/Table devices-Electrodes



1 2 Conductivity meter SevenExcellence™ S700

Mettler-Toledo Online

Modular professional system for measurements of pH, redox potential, conductivity, salinity/TDS and ion concentration. Fits up to three modules in any composition and order, can be expanded with additional measurement parameters at any time.

- Large, high resolution 7" colour touch display (capacitive), very clear and easy to operate
- Modularity and flexibility; up to 3 measuring modules can work in parallel, expansion to 2 or 3 channels possible
- Universal communication via 2 x USB, Ethernet (LAN) and RS232
- Plain text user interface in 10 languages with menu guidance in full sentences
- OneClick™ operation concept to quickly start frequently used functions and preferred methods
- Storage for user methods
- Highest security and GxP support (ID protection, sophisticated user management, limits/alarms, integrated radio clock, etc.)
- Intelligent sensor management (ISM®)
- Connection of stirrer, sample changer, PC, barcode reader, keyboard, local or network printer possible
- Storage up to 20000 data sets (measurements, calibrations, methods)
- 17 predefined, 60 user-defined methods
- Calibration: 13 pre-defined and 20 user-defined standards
- uPlace™ electrode arm with perfect vertical movement
- Compatible with all METTLER TOLEDO electrodes (Recommended: ISM® electrodes)

S700-Basic: Includes instrument, 1 x conductivity expansion unit, 2 x blank expansion units, uPlace™ electrode holder, semi-transparent cover, operating instructions, installation and quick guide, LabX® direct pH PC software, declaration of conformity and test certificate.

S700-Kit: As S700-Basic, but also with InLab® 731-ISM, guide to conductivity measurements and 2 calibration sachets for 1413 µS/cm and 12.88 mS/cm.

S700-Trace: As S700-Kit but with InLab® Trace instead of InLab® 731-ISM, with Flow-Cell and without calibration sachets.

Specifications

Temperature MTC/ATC:

Conductivity:

TDS:

Salinity:

Resistivity:

Conductivity Ash:

Measuring range // Resolution // Accuracy

-30.0 to 130.0°C // 0.1°C // ±0.1°C

0.001 to 999999 µS/cm // 0.001 to 1 // ±0.5%

0.001 to 2000 mS/cm // 0.001 to 1 // ±0.5%

0.001 to 200 S/m // 0.0001 to 1 // ±0.5%

0.001 to 200000 mS/m // 0.0001 to 1 // ±0.5%

0.1 to 999999 µS/m // 0.001 to 1 // ±0.5%

0.001 to 1000 g/L, ppt // 0.001 to 1 // ±0.5%

0.001 to 999999 mg/L, ppm // 0.001 to 1 // ±0.5%

0.01 to 80.0 psu, ppt // 0.01 to 0.1 // ±0.5%

0.01 to 100.0 MΩxcm // 0.0001 to 1 // ±0.5%

0.01 to 999999 Ωxcm // 0.01 to 1 // ±0.5%

0.000 to 2022% // 0.001 to 1 // ±0.5%

Type	PK	Cat. No.
S700-Basic	1	9.704 354
S700-Kit	1	9.704 355
S700-Trace	1	9.704 356



9.704 081

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

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.

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.



9.704 078

Type	Electrode	Shaft	Length mm	Cell constant	PK	Cat. No.
TetraCon® 325	Graphite	Epoxy resin	120	K = 0,475	1	9.704 081 3
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 4
KKDU 325	Connection cable	-	100	-	1	9.704 079

3. Analytical measurement and testing

Conductivity measurement/Electrodes-Solutions

1 Conductivity measuring cell LF413TIDS

For versatile applications. IDS® 4-pole cell, plastic shaft, 1.5m cable with digital plug, sensor material graphite, temperature sensor NTC 30 kOhm.

SI Analytics

Specifications

Temperature range: -5 to +80°C
Conductivity range: 1µS/cm to 2000mS/cm
Taper length/Dia.: 120mm/15.3mm

Type	Electrode	Shaft	Length mm	Cell constant	PK	Cat. No.
LF413TIDS	Graphite	Plastic	120	K=0.475	1	6.265 636



Conductivity sensors for Mettler Toledo conductivity meters

InLab® 731

4 graphite pole cell with integral temperature sensor. Cable length 1.2 metres. Measuring range: 0.01 to 1000mS/cm.

Mettler-Toledo Online

InLab® 741

2 steel pole cell with integral temperature sensor. Cable length 1.2 metres. Measuring range: 0.001 to 500µS/cm

InLab® 710

4 platinum pole cell with integral temperature sensor. Cable length 1 metres. Measuring range: 0.01 to 500mS/cm

InLab® 720

2 platinum pole cell with integral temperature sensor. Cable length 1 metres. Measuring range: 0.1 to 500µS/cm

InLab® 751-4mm

2 platinum pole micro cell with integral temperature sensor. Cable length 1 meter. Measuring Range: 0.01 to 100mS/cm

InLab® 752-6mm

2 platinum pole semi-micro cell with integral temperature sensor. Cable length 1 meter. Measuring Range: 0.01 to 112mS/cm



9.041 443

Type	Material shaft	Shaft diameter mm	Length mm	Cell constant	PK	Cat. No.
InLab® 731	Graphite	12	120	K=0.57	1	9.041 447
InLab® 731-ISM	Graphite	12	120	K=0.57	1	9.041 448
InLab® 741	V4A steel	12	120	K=0.105	1	6.242 844
InLab® 741-ISM	V4A steel	12	120	K=0.105	1	9.041 442
InLab® 710	Glass	12	120	K=0.80	1	9.041 443 2
InLab® 720	Glass	12	120	K=0.06	1	9.041 446
InLab® 751-4mm	Glass	4	120	K=1.0	1	9.041 475
InLab® 752-6mm	Glass	6	120	K=1.0	1	9.041 476

3 LLG-Conductivity Solutions

- Directly traceable to NIST
- ISO17025 Certificate including actual value, expiration date and uncertainty of measurement
- Actual expiry and temperature dependence data on label.
- All standards are aqueous based and non-hazardous.
- Supplied in unbreakable PE-HD bottle.
- Values stated at 25°C: Accuracy ±1%

Type	Capacity ml	PK	Cat. No.
84 µS/cm	500	1	9.040 861
147 µS/cm	500	1	9.040 862
1.413 µS/cm	500	1	9.040 863
12.880 µS/cm	500	1	9.040 864



4 Conductivity solutions for Conductivity meters

Bottle with 500ml.

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



3. Analytical measurement and testing

Conductivity measurement/Solutions-Oxygen measurement/Devices



1 Conductivity Solutions

Conductivity standards, aqueous based and non-hazardous for handling and transport. Tested and ISO17025 certified at 25°C with an uncertainty of measurement of $\pm 1\%$. Directly traceable to N.I.S.T. Temperature dependence data is printed on the label as are lot numbers and expiry dates. Supplied in 500ml and HDPE bottle (1.3 μ S/cm single use in 250ml bottle)

Reagecon

Type	Capacity ml	PK	Cat. No.
1.3 μ S/cm*	250	1	6.225 059
5 μ S/cm	500	1	6.901 629
10 μ S/cm	500	1	6.901 622
20 μ S/cm	500	1	6.802 901
50 μ S/cm	500	1	6.074 754
84 μ S/cm	500	1	9.040 904
100 μ S/cm	500	1	6.234 859
147 μ S/cm	500	1	9.040 905
200 μ S/cm	500	1	6.802 902
500 μ S/cm	500	1	6.205 415
1000 μ S/cm	500	1	6.901 670
1413 μ S/cm	500	1	9.040 906
5000 μ S/cm	500	1	6.205 412
10000 μ S/cm	500	1	6.901 671
12880 μ S/cm	500	1	9.040 907
50000 μ S/cm	500	1	6.210 129
100000 μ S/cm	500	1	6.205 413
350000 μ S/cm	500	1	9.040 987

*Accuracy $\pm 1\%$

Conductivity solutions with Certificate of Analysis

Bottles with 500ml.

Hanna

Type	PK	Cat. No.
84 μ S	1	6.230 626
1413 μ S	1	7.970 290



2 Conductivity testing solutions

Values stated at 25°C. Supplied in containers as indicated. Accuracy $\pm 2\%$.

SI Analytics

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

* Supplied in vials!



3 Waterproof Oxygen Meter HI9146

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.

Hanna

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 ₂ concentration:	0.00 to 45.00mg/l $\pm 1.5\%$ of Measuring range
O ₂ saturation:	0.0 to 300.0% $\pm 1.5\%$ of Measuring range
Temperature:	0.0 to 50.0°C/ $\pm 0.5^\circ$ C

Resolution:

O ₂ concentration:	0.01mg/l
O ₂ 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

3. Analytical measurement and testing

Oxygen measurement/Devices

1 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:

O2 concentration:	0.00 to 20.0mg/l (19.9mg/l*) 0.0 to 90.0mg/l (90mg/l*)
O2 saturation:	0.0 to 200.0% (200%*) 0 to 600%
Temperature:	0.0 to +50.0°C, ±0.1°C * when using DurOx oxygen sensor probes

Accuracy:

O2 concentration:	±0.5% of reading
O2 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 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:

O2 concentration:	0.00 to 20.00mg/l (19.9mg/l*) 0.0 to 90.0mg/l (90mg/l*)
O2 saturation:	0.0 to 200.0% (199%*) 0 to 600%
Partial pressure:	0.0 to 200.0mbar (199 mbar*) 0 to 1250mbar
Temperature:	0.0 to +50.0°C, ±0.1°C * when using DurOx oxygen sensor probes

Accuracy:

O2 concentration:	±0.5% of reading
O2 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



3. Analytical measurement and testing

Oxygen measurement/Devices

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. 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



1 Oxygen meter inoLab® Oxi 7310

WTW

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.

Specifications

Ranges:	All values±1 digit
Dissolved oxygen concentration:	0.00 ... 20.00 mg/l ±0.5 % Mw. 0 ... 90 mg/L ±0.5 %
Saturation:	0.0 ...200.0 % ±0.5 % v. Mw. 0 ... 600 % ±0.5 v Mw.
Partial pressure:	0 ... 200.0 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 5/5000 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

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



3. Analytical measurement and testing

Oxygen measurement/Devices

1 Portable dissolved oxygen meter FiveGo™ DO

FiveGo™ DO is a handy, portable meter ideal for those who require rapid and reliable results on the go. This meter is suitable for a wide range of applications in various areas such as food and beverage, agriculture, industry, water and environment

Mettler-Toledo Online

- Outstanding functions such as storage capacity for 30 measurements, %, mg/L and ppm measuring modes plus IP54 ingress protection combined with features such as automatic endpoint recognition, calibration in air and automatic temperature compensation when a temperature sensor is connected
- Five self-explanatory buttons for starting and ending a measurement, for saving and accessing measurement results and for reviewing the latest calibration data.
- A big, well organised display simultaneously showing readings, temperature, endpoint criteria and various helpful icons

FG4-Basic: Dissolved oxygen meter incl. electrode clip, wrist strap, operating manual, "Quick guide", 4 x batteries

FG4-Kit: Instrument and accessories as for FG4-Basic, but with LE621 sensor, NTC 30 kΩ temperature sensor, IP54 connection caps

FG4-Fieldkit: Instrument and accessories as for FG4-Kit, with carry bag incl. 4 sample bottles

Measuring range (Accuracy) DO:	0.0 to 199.9% and 200 to 400% (±1%)
	0.0 to 45.0mg/L (±1%)
	0.0 to 45.0ppm (±1%)
Temperature:	0 to +50°C (±0.3%)
Salinity (Resolution):	0.0 to 50.0ppt (0.1ppt)
Barometric pressure (Resolution):	500 to 1100mbar (1mbar)
	500 to 1100hPa (1hPa)
Calibration:	2 points, 100% and 0%
Input:	BNC, Cinch, NTC 30 kΩ
Temperature compensation:	ATC and MTC
Memory:	30 measurements
Power supply:	4 x AAA
Protection class acc. to DIN EN 60529:	IP 54

Type	PK	Cat. No.
FG4-Basic	1	9.773 722
FG4-Kit	1	9.773 723
FG4-Fieldkit	1	9.773 724



Dissolved oxygen meter Seven2Go™ S4

Portable routine model for dissolved oxygen measurement

Mettler-Toledo Online

- New, intuitive menu structure with fast and easy T-Pad navigation
- Robust design with IP67 protection for use in harsh and demanding environments
- Intelligent Sensor Management (ISM®) functionality reduces the risk of errors
- Up to 2 calibration points and a choice of 2 predefined oxygen standards
- Automatic, manual and time dependant endpoint recording
- Data memory storage for 200 data points
- Power requirements: 4 x 1.5V AA or 1.3V NiMH accumulators

Supplied with:

S4-Meter: Includes instrument, electrode clip, operating instructions, quick guide, test certificate, declaration of conformity and batteries.

S4-Standard kit: As S4-Meter, but also with InLab 605-ISM and zero oxygen tablets.

S4-Field kit: As S4-Standard kit, but also with bottles for calibration, uGo™ carrying case.

Specifications

Measuring range (O ₂ Saturation):	0.1 ... 600.0%
Resolution:	0.1
Accuracy:	±10%
Measuring range (Temperature):	0.0 ... 60.0°C
Resolution:	0.1°C
Accuracy:	±0.2°C
Measuring range (O ₂ concentration):	0.01 ... 99.99mg/L (ppm)
Accuracy (display):	±0.2mg/L in range 0 ... 15mg/L
	±10% in range 15 ... 60mg/L
Measuring range (Pressure):	500 ... 1100mbar
Resolution:	1
Accuracy:	±2%
Dimensions (WxDxH):	222 x 70 x 35mm

Type	PK	Cat. No.
S4-Meter	1	6.265 251
S4-Standard kit	1	6.265 252 2
S4-Field kit	1	6.265 253



6.265 252

3. Analytical measurement and testing

Oxygen measurement/Devices



6.265 264

Dissolved oxygen meter Seven2Go™ pro S9

Portable professional model for dissolved oxygen measurement

Mettler-Toledo Online

- New, intuitive menu structure with fast and easy T-Pad navigation
- Robust design with IP67 protection for use in harsh and demanding environments
- Intelligent Sensor Management (ISM®) functionality reduces the risk of errors
- New sunlight-proof screen guarantees screen readability even in direct sunlight
- New StatusLight gives a fast, visual confirmation showing if the meter is ready to measure or not
- Operating support for 12 languages with information shown in complete words and sentence
- Up to 2 calibration points and a choice of 2 predefined oxygen standards
- Automatic, manual and time dependant endpoint recording
- Data memory storage for 2000 GLP data points with weatherproof Micro-USB connection for data export
- Power requirements: 4 x 1.5V AA or 1.3V NiMH accumulators

Supplied with:

S9-Meter: Includes instrument, LabX direct pH, USB cable, electrode clip, base accessory, operating instructions, quick guide, test certificate, declaration of conformity and batteries.

S9-Standard kit: As S9-Meter, but also with InLab OptiOx and zero oxygen tablets.

S9-Field kit: As S9-Standard kit, but also with bottles for calibration, uGo™ carrying case and InLab OptiOx with protective guard.

S9-BOD kit: As S9-Field kit, but including InLab OptiOx (without protective guard), BOD adapter and BOD application note.

Specifications

DO Saturation

Measuring range: 0.1 ... 500.0%
Resolution: 0.1
Accuracy: ±10%

Temperature

Measuring range: 0.0 ... 50.0°C
Resolution: 0.1°C
Accuracy: ±0.1°C

Dissolved Oxygen

Measuring range: 0.01 ... 50.00mg/L (ppm)
Resolution: 0.01
Accuracy: ±0.1mg/L in range 0 ... 8mg/L
±0.2mg/L in range 8 ... 20mg/L
±10% in range 20 ... 50mg/L

Pressure

Measuring range: 500 ... 1100mbar
Resolution: 1
Accuracy: ±2%
Dimensions (WxDxH): 222 x 70 x 35mm

Type	PK	Cat. No.
S9-Meter	1	6.265 263
S9-Standard kit	1	6.265 264 1
S9-Field kit	1	6.265 265
S9-BOD kit	1	6.265 266

3. Analytical measurement and testing

Oxygen measurement/Electrodes and accessories

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.

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

1



2 Oxygen sensor DurOx® 325

For use with Oxi 3xxi, ProfiLine Oxi 1970i, ProfiLine 3205, 3210, 3310.

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

2



3 Dissolved oxygen electrode FDO1100IDS

For versatile applications. IDS® optical oxygen sensor (photoluminescence), plastic shaft, temperature sensor NTC30kOhm, 1.5 m fixed cable with digital plug.

Specifications

Temperature range:	0 to +50°C
DO range:	0 to 20.00mg/l (0 to 20.00ppm)
Resolution:	0.01mg/l (0.01ppm)
DO saturation:	0 to 200.0%
Resolution:	0.1%
Taper length/Dia.:	150mm/15.3mm

Type	Temperature sensor	Connector	PK	Cat. No.
FDO1100IDS	NTC 30 kOhm	Digital	1	6.265 629

3



Electrolyte solution ELY/G for dissolved oxygen electrodes

Capacity ml	PK	Cat. No.
50	1	9.822 553

WTW

3. Analytical measurement and testing

Multiparameter measurement/Devices



1 Combined pH/conductivity/temperature testers

Simultaneous display of pH- and/or conductivity measurement value and temperature.

Hanna

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

Measuring ranges:

pH:	0.0 to 14.0
EC:	0 to 3999 μ S (HI 98129)
	0 to 19.99mS (only HI 98130)
TDS:	0 to 2000mg/l (HI 98129)
°C:	0 to 10.00g/l (HI 98130)

Accuracy:

pH:	±0.05
EC/TDS:	±2% of the upper range value
°C:	±0.5
Batteries:	4 x 1.5 Volt
Ambient conditions:	0 to 50.0°C
Weight:	100g

Type	PK	Cat. No.
HI 98129	1	9.773 995
Spare electrode HI 73127	1	9.773 921
HI 98130	1	9.773 996



2 Waterproof Multimeters HI991300/HI991301 N

pH or conductivity (TDS) values are displayed together with temperature. Supplied with multi-parameter probe, all measurements can be taken without changing the probe.

Hanna

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 μ S (for HI 991300) or 12880 μ S (for HI 991301 N). Graphic symbols guide the user through calibration and measurements.

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

Measurement range/Accuracy:

pH:	0.00 to 14.00/±0.01
EC:	0 to 3999 μ S/cm (HI991300)
	0 to 20.00mS (HI991301 N)/
	±2 % of the measurement range
TDS:	0 to 2000 mg/l (HI991300)
	0 to 10.00 g/l (HI991301 N)/
	±2 % of the measurement range
°C:	0.0 to 60.0

Resolution:

pH:	0.01
EC:	1 μ S/cm (HI991300)
	0.01mS/cm (HI991301 N)
TDS:	1mg/l (HI991300)
	0.01g/l (HI991301 N)
°C:	0.1°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
Spare probe HI 1288	1	6.901 328

3. Analytical measurement and testing

Multiparameter measurement/Devices

1 2 Multiparameter meter edge

Hanna

Features tablet meter edge:

- Single-channel instrument for measuring pH, conductivity and TDS
- thin and lightweight (approx. 280g only)
- large 140mm LCD display with clear full text readout capacitive touch screen
- ergonomic design, versatile, can be used as a benchtop docking station with electrode holder, as a portable meter or wall mounted (included in delivery)
- Rechargeable battery (about 8 hours of continuous use), battery charge via mains connection or USB cable, table station and wall mounting can also be used to charge the battery
- Integrated measured data storage for up to 1000 data records, manual storage or time-controlled by defining a storage interval
- Data transfer from device to PC via USB ports (no software needed)
- All electrodes are supplied with integrated temperature sensor and a 3.5mm plug with 1m cable

1



pH meter HI 2020-02:

- Sensor type, ID and calibration information are automatically recognized when connecting the electrode to the instrument
- GLP: data of last calibration (buffers, date, time, electrodes offset, slope) are stored and can be checked at any time
- Calibration time out warns the user when set calibration time has been exceeded
- Instrument can be used in Basic or Standard mode: Basic mode ideally for routine measurements for a simplified screen and features. In Basic mode, resolution is 0.01 pH, calibration can be performed automatically at 1, 2, 3 points with pre-programmed buffer series (pH 4.01; 6.86; 7.01; 9.18; 10.01). The standard mode offers additional features. In Standard mode the resolution can be selected between 0.01 pH and 0.001 pH, calibration can be performed automatically at 3, 4, 5 points with 7 standard buffers and 2 custom buffers for special applications.
- Calibration Check Funktion (pH electrode only): controlling of calibration process, displays electrode status after calibration

2



Conductivity meter HI 2030-02:

- Conductivity or TDS and temperature are displayed simultaneously
- Auto ranging or manual range selection
- Automatic Temperature compensation, or no temperature compensation for measurement of absolute EC
- Selectable reference temperature (20 or 25°C), adjustable temperature correction coefficient
- 1 point offset calibration, 1 point slope in EC standards (84µS; 1413µS; 12.88mS)

pH Kit supplied with: instrument incl. electrode HI 11310, buffer solution pH 4, pH 7 and pH 10 (2 sachets each), cleaning solution for electrodes, bench top docking station with electrode holder, wall mounting, USB cable, 5 V adapter

Conductivity Kit supplied with: instrument incl. digital 4-Ring conductivity probe HI 763100, conductivity solution 1413 µS/cm and 12880µS/cm (3 sachets each), bench top docking station with electrode holder, wall mounting, USB cable, 5 V adapter

Specifications

Measuring range // Resolution // Accuracy

pH:	2.00 to 16.00 // 0.01 // ±0.01/±0.002 -2.000 to 16.000 // 0.001 // ±0.01/±0.002
Conductivity:	0.00µS to 200.0mS/cm // 0.01µS to 0.1mS (depending on measuring range) // ±1% of measured value ±1 digit 0.00µS to 500.0mS/cm (absolute conductivity) // 0.01µS to 0.1mS (depending on measuring range) // ±1% of measured value ±1 digit
TDS:	0.00 to 100.00g/l // 0.01mg/l to 0.1g/l (depending on measuring range) // ±1% of measured value ±1 digit 0.00 to 400.0g/l (absolute TDS) // 0.01mg/l to 0.1g/l (depending on measuring range) // ±1% of measured value ±1 digit
Temperature:	-20.0 to +120.0°C // 0.1°C // ±0.2°C

Type	Description	PK	Cat. No.
HI 2020-02	pH meter edge, kit with pH electrode and accessories	1	6.261 874
HI 2030-02	Conductivity meter edge, kit with conductivity probe and accessories	1	6.261 875
HI 11310	Refillable pH electrode, glass body, ceramic diaphragm, double junction	1	6.261 876
HI 11311	Refillable pH electrode, matching pin, glass body, ceramic diaphragm, double junction	1	6.261 877
HI 12301	pH electrode, matching pin, gel-filled, plastic body, double junction	1	6.261 878
HI 10530	Refillable pH electrode, conical tip, glass body, triple diaphragm, single junction	1	6.261 879
HI 12300	pH electrode, gel-filled, plastic body, double junction	1	6.261 880
HI 10430	Refillable pH electrode, glass body, ceramic diaphragm, double junction	1	6.261 881
HI 763100	Digital 4-ring-conductivity probe	1	6.261 882

3. Analytical measurement and testing

Multiparameter measurement/Devices

1



9.773 857

Multiparametermeters ProLab 3000/ProLab 4000

SI Analytics

- "Windows" interface and operation
- In ISE measuring mode controll of Titronic® burettes for dosing of TISAB, standards or sample.
- 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

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 ⁻⁴⁰ to 9.9E ³⁹ mg/l
Temperature measuring range:	-35.0°C to + 150.0°C
Accuracy (±1digit):	0.1°C

ProLab 4000 only:

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 1
ProLab 3000 BNC Set	1	9.773 859
ProLab 4000 DIN Set	1	9.773 861
ProLab 4000 BNC Set	1	9.773 863

2



2 Multiparameter meters AL15

AQUALYTIC

Dissolved Oxygen/O2-concentraion in mg/l/Conductivity/TDS/pH/Redox/Temperature
The AL15 combines the features of several electrochemistry meters. It is designed for multi purpose operation and measures pH/Redox, dissolved oxygen and conductivity/TDS. The AL15 incorporates an intuitive user interface, large, easy to read display and is supplied with a sturdy handy case with electrodes, buffer solution and accessories.

Specifications

Measuring range

pH:	0 - 14pH
ORP:	-1999 to +1999mV
Conductivity:	0 to 200.0µS 0.2 to 2.000mS 2 to 200.0mS
TDS:	0 to 132.000 ppm
Temperature:	0 to +60°C or +32 to +140°F
Oxygen:	0 to 20.0mg/l 0 to 100.0% in Air
Display:	Large LCD with contrast adjustment
Interface:	USB, RS232
Power supply:	DC 1.5V battery (UM3, AA) x 4 PCs or DC 9V Adapter

Type	PK	Cat. No.
AL15 pH/Con/Oxi	1	6.241 474
AL15 pH/Con	1	6.241 983
AL15 pH/Oxi	1	6.256 805
AL15 pH/Redox	1	9.699 295

3. Analytical measurement and testing

Multiparameter measurement/Devices

1



1 Multi parameter HandyLab 680

SI Analytics

The HandyLab 680 increases the measuring accuracy via:

- IDS technology. The digitalization of the measuring signal eliminates interferences.
- AutoRead function. Autoread provides a stable, precise measuring value.
- CMC (Continuous Measurement Control) visualizes whether the measuring value is within the calibration range.
- QSC (Quality Sensor Control) informs about the actual condition of the electrode and therefore increases operation safety.

The HandyLab 680 increases the operator comfort via:

- IDS Technology. The secure allocation of the calibration data to the sensor eliminates any uncertainty about the date and results of its last calibration. This saves time and money while assuring the highest confidence in your measurements.
- Traceability of the measuring values by the digital and automatic capture of all sensor data.
- User administration can be activated to allow tiered access and capabilities ensuring security and confidence of your data.
- Transmission of all data in *.csv format via USB interface to the PC or the USB memory stick, or, as an alternative, formatted transfer to Excel by means of MultiLabImporter (included in the delivery).

Supplied with:

HL680pH/CondVersat: pH/Cond meter Set HandyLab 680 with conductivity electrode LF413T IDS, pHElectrode A7780 IDS, Z530 and Z389 for general applications

HL680pH/Cond/OxVer: pH/Cond/OX meter Set HandyLab 680 with oxygen electrode FDO1100 IDS, conductivity electrode LF413T IDS, pH electrode A7780 IDS, Z530 and Z389 for general applications

Specifications

pH

Measuring range: 0.000 ... 14.000pH
Resolution: ± 0.001 pH
Accuracy: ± 0.004 pH

mV

Measuring range: ± 1200.0 mV
Resolution: ± 0.1 mV
Accuracy: ± 0.2 mV

Temperature

Measuring range: -5.0 ... $+105.0^{\circ}\text{C}$
Resolution: $\pm 0.1^{\circ}\text{C}$
Accuracy: $\pm 0.2^{\circ}\text{C}$

Conductivity

Measuring range: 0.00 ... 2000mS/cm
Resolution: ± 0.1 mS/cm, ± 0.01 S/cm, ± 0.001 μ S/cm
Accuracy: $\pm 0.5\%$ of mean value
Specific resistance: 0.00 Ω cm ... 100 M Ω cm $\pm 0.5\%$ of mean value
Salinity: 0.0 ... 70.0 (acc. to IOT)
TDS: 0 ... 1999 mg/l, 0 ... 199.9g/l $\pm 0.5\%$ of mean value

Oxygen measurement

DO concentration: 0.00 ... 20.00mg/l $\pm 0.5\%$ of mean value
DO saturation: 0.0 ... 200.0 % $\pm 0.5\%$ of mean value
DO partial pressure: 0 ... 400 hPa $\pm 0.5\%$ of mean value

Type	PK	Cat. No.
HL680pH/CondVersat	1	6.265 601
HL680pH/Cond/OxVer	1	6.265 299

3. Analytical measurement and testing

Multiparameter measurement/Devices

1 Multiparameter meter HandyLab 780

Portable pH measuring devices by SI Analytics with Memosens® technology offers increased safety and a userfriendly interface

SI Analytics

- With Memosens® sensor measurement of pH, conductivity and dissolved oxygen by simple sensor exchange
- Automatic detection of the measuring parameter with Memosens® sensors
- Automatic compensation of the ambient pressure for oxygen measurement
- Storage of up to 10.000 data points
- Micro-USB connection to communicate with the HandyLab Pilot software for evaluation of data from digital Memosens® sensors. HandyLab Pilot software (included with delivery), allows for easy management and evaluation of stored data and can be used for device configuration.
- Contrast-rich and scratch-resistant clear glass display
- Self-explanatory operation with extensive information and help text
- Display of the sensor status at one glance with Sensoface
- Calibration of up to 3 points with automatic buffer detection
- Manual calibration by indicating random buffer values
- Real-time clock and display of battery charging status
- Extended operating time of more than 1.000 hours with standard batteries (4 x AA) or Li-Ion accumulators, even with very high or low operating temperatures. The batteries are charged via the USB interface.

Supplied with: Set pH-Meter HandyLab 780 incl. AquaLine 90pH, SKK K1A and DIN buffer solutions in ampoules

Specifications

pH measurement Memosens (also ISFET)

Measuring range: -2.000 ... +16.000pH

mV measurement Memosens Redox

Messbereich: -2000 ... +2000mV

pH/mV measurement (analog)

pH measurement measuring range: -2 ... 16pH

mV measurement measuring range: -1300 ... +1300mV

Temperature measurement

Measuring range with sensor NTC 30kOhm: -20 ... +120°C

Measuring range with sensor Pt 1000: -40 ... +250°C

Conductivity measurement (only Memosens®)

Measuring range:

- 0.001 $\mu\text{S}/\text{cm}$ ($c < 0.05 \text{ cm}^{-1}$)
- 0.01 $\mu\text{S}/\text{cm}$ ($c = 0.05 \dots 0.2 \text{ cm}^{-1}$)
- 0.1 $\mu\text{S}/\text{cm}$ ($c > 0.2 \text{ cm}^{-1}$)

Specific resistance: 00.00 ... 99.99 $\text{M}\Omega\text{cm}$

Salinity: 0.0 ... 45.0g/kg (0 ... 30°C)

TDS: 0 ... 1999mg/l (10 ... 40°C)

Oxygen measurement (only Memosens®)

DO concentration: 000 $\mu\text{g}/\text{l}$... 20.00 mg/l

DO saturation: 0.000 ... 200.0 %

DO partial pressure: 0.0 ... 1000mbar

Type	PK	Cat. No.
HL780AL90pH	1	6.266 647



3. Analytical measurement and testing

Multiparameter measurement/Devices

1 2 3 4 MultiLine® IDS

Multiparameter measurement new 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 ($\pm 0.004\text{pH}$), temperature range 0.0 to 80.0°C, $\pm 0.2^\circ\text{C}$

SensoLyt® 900: Low maintenance polymer electrolyte pH electrode with built-in temperature sensor, pressure resistant up to 10 bar, QSC suitable, memory for 10 calibrations, saved serial number, pH 2.000 to 12.000 ($\pm 0.004\text{pH}$), temperature range from 0.0 to 60.0°C, $\pm 0.2^\circ\text{C}$

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 ($\pm 0.004\text{pH}$), temperature range 0.0 to 80.0°C, $\pm 0.2^\circ\text{C}$

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 ($\pm 0.004\text{pH}$), temperature range 0.0 to 100.0°C, $\pm 0.2^\circ\text{C}$

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 $\mu\text{S/cm}$ to 2000 mS/cm $\pm 0.5\%$ of value, 0.0 to 100.0°C, $\pm 0.2^\circ\text{C}$

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 $\mu\text{S/cm}$ to 200 $\mu\text{S/cm}$ $\pm 0.5\%$ of value, 0.0 to 100.0°C, $\pm 0.2^\circ\text{C}$

FDO® 925: Extremely fast ($T_{99} < 60\text{ s}$) and precise optical DO sensor for field and laboratory applications. Handy, suits in different BOD bottles. Waterproof for depth measurement to 100m. Bevelled, air bubble repelling membrane, Green light technology for extended operation time. Insensitive against H_2S . O_2 concentration: 0.00 to 20.00mg/l, O_2 saturation: 0.0 to 200.0% O_2 partial pressure: 0.0 to 400hPa. Accuracy: $\pm 0.5\%$ of value. The information for meter precision refers to the sensors' built-in, electronic, measuring technology.



3. Analytical measurement and testing

Multiparameter measurement/Devices

Multiparameter meters, ProfiLine Multi 3410/3420/3430

WTW

Measurement ranges

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

Oxygen measurement

O2 concentration: 0.00 to 20.00 mg/l
O2 saturation: 0.0 to 200.0%
O2 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-1)
0.000µS/cm to 2.000µS/cm (at K=0.01cm-1)
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	meter only	1	9.920 051
Multi 3410 Set 1	incl. SenTix®940	1	9.920 052
Multi 3410 Set 2	incl. SenTix®940-3	1	9.920 053
Multi 3410 Set 3	incl. SensoLyt®900-P incl. 6m cable	1	9.920 054
Multi 3410 Set 4	incl. FDO® 925	1	9.920 055
Multi 3410 Set 5	incl. FDO® 925-3 m	1	9.920 046
Multi 3410 Set 6	incl. FDO® 925-P incl. 6m cable	1	9.920 056
Multi 3410 Set 7	incl. TetraCon® 925	1	9.920 057
Multi 3410 Set 8	incl. TetraCon® 925-3	1	9.920 058
Multi 3410 Set 9	incl. TetraCon® 925-6	1	9.920 059
Multi 3410 Set A	incl. LR 925/01	1	9.920 060
Multi 3410 Set B	incl. SenTix® 940-3, FDO® 925-3	1	9.920 061
Multi 3410 Set C	incl. SenTix® 940, TetraCon® 925	1	9.920 062
Multi 3410 Set D	incl. SenTix® 940-3, TetraCon® 925-3	1	9.920 063
Multi 3410 Set E	incl. SenTix® 980, LR 925/01	1	9.920 047 ¹
Multi 3420	meter only	1	9.920 064
Multi 3420 Set B	incl. SenTix® 940-3, FDO 925-3	1	9.920 065
Multi 3420 Set C	incl. SenTix® 940, TetraCon® 925	1	9.920 066
Multi 3420 Set D	incl. SenTix® 940-3, TetraCon® 925-3	1	9.920 067
Multi 3420 Set E	incl. SenTix®980, LR 925/01	1	9.920 068
Multi 3420 Set H	incl. SenTix® 950, TetraCon® 925	1	9.920 048 ²
Multi 3420 Set G	incl. SenTix® 940-3, FDO® 925-3, TetraCon® 925-3	1	9.920 049
Multi 3430	meter only	1	9.920 069
Multi 3430 Set C	incl. SenTix®940, TetraCon® 925	1	9.920 070
Multi 3430 Set D	incl. SenTix®940-3, TetraCon® 925-3	1	9.920 071
Multi 3430 Set E	incl. SenTix®980, LR 925/01	1	9.920 072
Multi 3430 Set F	incl. SenTix®940, FDO 925, TetraCon® 925	1	9.920 073
Multi 3430 Set G	incl. SenTix® 940-3, FDO® 925-3, TetraCon® 925-3	1	9.920 050 ³
Multi 3430 Set K	incl. SenTix® 980, FDO® 925, TetraCon® 925	1	6.241 477



9.920 047



9.920 048



9.920 050

3. Analytical measurement and testing

Multiparameter measurement/Devices

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. 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 2 Laboratory instrument inoLab® Multi 9310 IDS pH

The Multi 9310 IDS features a new technology: No longer is 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.

WTW

Specifications

Display:	backlit graphic LCD
Memory:	manual: 500/automatic: 5000
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

*Meter with integrated printer

1



2



3. Analytical measurement and testing

Multiparameter measurement/Devices

Laboratory instruments inoLab® Multi 9420 IDS/9430 IDS

Securely traceable with the cutting edge inoLab® Multi 9430 IDS and inoLab® Multi 9420 IDS

WTW

- Secure measurement data
- Digital sensor recognition
- Complete documentation

High-tech made by WTW for challenging applications. Two digital inoLab® multi parameter instruments for IDS sensors for simultaneous measurement of equal or different parameters and sensors. Two (inoLab® Multi 9420 IDS) or three sensors (inoLab Multi 9430 IDS) could be connected. A large color graphic display protected by a glass plate supports the representation of readings and information. The anti-bacterial keypad minimizes the danger of microbiological contaminations. The robust lower case made of zinc diecast provides proper stand and perfect shielding against interferences. A high quality stand for alternative left or right mounting allows easy adaptation to the requirements at the working place. By end of 2013 firmware packages for ISE applications will be available.

Secure measurements

- Digital data transfer eliminates interferences, provide secure calibration data and makes documentation of sensor data easy.
- The smart sensor rating (QSC) gives information about the true condition of an IDS pH electrode and increases safety of operation
- The CMC function for pH visualizes the optimum measuring range and supports correct measurements.
- Visual display for the channel in order to provide correct allocation of channel and sensor.

Documentation according GLP/AQA

- Automatic digital recording of all sensor data for distinct documentation
- Optional user administration for clear allocation of user and measurement results
- Transfer of data as *.csv format via USB to PC, if desired transfer direct to Excel (MultiLab Importer, part of scope of delivery or as download from internet)
- Additional transfer to USB memory drive or selected printer

Compatible to conventional pH measurement

- pH module (accessory) capable of being integrated for pH, ISE and ORP electrodes with DIN or BNC plug and 4 mm banana plug. For temperature sensor.

Specifications

Measuring channels

inoLab® Multi 9420 IDS: 2

inoLab® Multi 9430 IDS: 3

Display: Color graphic, glass plate protected

Memory: manual: 500/automatic: 10000

Logger: manual/time controlled

Interface: USB-A, Mini USB-B

Power supply: Universal power supply, 100 to 240 V, 50/60 Hz

Type	Description	PK	Cat. No.
Multi 9420	Single instrument	1	6.257 359 ¹
Multi 9420 Set C	Incl. SenTix® 980 and TetraCon® 925	1	7.656 860
Multi 9430	Single instrument	1	9.920 134 ²
Multi 9430 Set C	Incl. SenTix® 980 and TetraCon® 925	1	6.254 755

Separate IDS electrodes available on request.



6.257 359



9.920 134

3. Analytical measurement and testing

Multiparameter measurement/Devices

1 2 pH/Ion meter SevenExcellence™ S500

Mettler-Toledo Online

Modular professional system for measurements of pH, redox potential, conductivity, salinity/TDS and ion concentration. Fits up to three modules in any composition and order, can be expanded with additional measurement parameters at any time.

- Large, high resolution 7" colour touch display (capacitive), very clear and easy to operate
- Modularity and flexibility; up to 3 measuring modules can work in parallel, expansion to 2 or 3 channels possible
- Universal communication via 2 x USB, Ethernet (LAN) and RS232
- Plain text user interface in 10 languages with menu guidance in full sentences
- OneClick™ operation concept to quickly start frequently used functions and preferred methods
- Storage for user methods
- Highest security and GxP support (ID protection, sophisticated user management, limits/alarms, integrated radio clock, etc.)
- Intelligent sensor management (ISM®)
- Connection of stirrer, sample changer, PC, barcode reader, keyboard, local or network printer possible
- Storage up to 20000 data sets (measurements, calibrations, methods)
- 17 predefined and 60 user-defined methods
- 12 most commonly used ion types pre-programmed for convenience
- 5 point calibration (pH), 8 pre-defined and 20 user-defined buffer groups, incl. temperature chart
- uPlace™ electrode arm with perfect vertical movement
- Compatible with all METTLER TOLEDO electrodes (Recommended: ISM® electrodes)
- Capable of ion concentration measurements using a suitable Ion Selective Electrode
- Methods included for the most common incremental ion measurement techniques

S500-Basic: Includes instrument, 1 x pH/Ion expansion unit, 2 x blank expansion units, uPlace™ electrode holder, semi-transparent cover, operating instructions, installation and quick guide, LabX® direct pH PC software, declaration of conformity and test certificate.

S500-Kit: As S500-Basic, but also with InLab® Expert Pro-ISM, guide to pH measurements and 2 buffer sachets for pH 4.01, 7.00, 9.21 and 10.00.

S500-Bio: As S500-Kit but with InLab® Routine Pro-ISM cable kit instead of InLab® Expert Pro-ISM.

S500-F: As S500-Kit but with PerfectION™ Fluoride instead of InLab® Expert Pro-ISM.

Specifications

Temperature MTC/ATC:

Measuring range // Resolution // Accuracy

pH:

-30.0 to 130.0°C // 0.1°C // ±0.1°C

mV:

-2.000 to 20.000 // 0.001/0.01/0.1 // ±0.002

Rel. mV:

-2000.0 to 2000.0 // 0.1/1 // ±0.1

Ion concentration:

-2000.0 to 2000.0 // 0.1/1 // ±0.1

0 to 999 999 mg/L, ppm // 0.001 to 1 // ±0.5%

0 to 100 mol/L, % // 0.0001 to 1 // ±0.5%

0 to 100 000 mmol/L // 0.001 to 1 // ±0.5%

-2 to 20 pX // 0.001 to 1 // ±0.5%

Type	PK	Cat. No.
S500-Basic	1	9.704 357
S500-Kit	1	9.704 358
S500-Bio	1	9.704 359
S500-F	1	9.704 360



3. Analytical measurement and testing

Multiparameter measurement/Devices-Balances/Pocket balances

1 2 pH/mV, pH/Ion, Conductivity meter, SevenExcellence™ S475

Modular professional system for measurements of pH, redox potential, conductivity, salinity/TDS and ion concentration. Fits up to three modules in any composition and order, can be expanded with additional measurement parameters at any time.

Mettler-Toledo Online

- Large, high resolution 7" colour touch display (capacitive), very clear and easy to operate
- Modularity and flexibility; up to 3 measuring modules can work in parallel
- Universal communication via 2 x USB, Ethernet (LAN) and RS232
- Plain text user interface in 10 languages with menu guidance in full sentences
- OneClick™ operation concept to quickly start frequently used functions and preferred methods
- Storage for user methods
- Highest security and GxP support (ID protection, sophisticated user management, limits/alarms, integrated radio clock, etc.)
- Intelligent sensor management (ISM®)
- Connection of stirrer, sample changer, PC, barcode reader, keyboard, local or network printer possible
- Storage up to 20000 data sets (measurements, calibrations, methods)
- 17 predefined, 60 user-defined methods
- 5 point calibration (pH), 13 pre-defined and 20 user-defined buffer groups, incl. temperature chart
- uPlace™ electrode arm with perfect vertical movement
- Compatible with all METTLER TOLEDO electrodes (Recommended: ISM® electrodes)
- Measurement of the ion concentration with the corresponding electrode

S475-Basic: Includes 1 x pH/Ion expansion unit, 1 x pH/mV expansion unit, 1 x conductivity expansion unit, uPlace™ electrode holder, semi-transparent cover, operating instructions, installation and quick guide, LabX® direct pH PC software, declaration of conformity and test certificate.

Specifications

Temperature range MTC/ATC:

pH:

mV:

Rel. mV:

ISFET pH:

Ion concentration:

Measuring range // Resolution // Accuracy

-30.0 to 130.0°C // 0.1°C // ±0.1°C

-2.000 to 20.000 // 0.001/0.01/0.1 // ±0.002

-2000.0 to 2000.0 // 0.1/1 // ±0.1

-2000.0 to 2000.0 // 0.1/1 // ±0.1

0.000 to 14.000 // 0.001/0.01/0.1 // ±0.05

0 to 999 999 mg/L, ppm // 0.001 to 1 // ±0.5%

0 to 100 mol/L, % // 0.0001 to 1 // ±0.5%

0 to 100 000 mmol/L // 0.001 to 1 // ±0.5%

-2 to 20 pX // 0.001 to 1 // ±0.5%

Conductivity:

0.001 to 999999 µS/cm // 0.001 to 1 // ±0.5%

0.001 to 2000 mS/cm // 0.001 to 1 // ±0.5%

0.001 to 200 S/m // 0.0001 to 1 // ±0.5%

0.001 to 200000 mS/m // 0.0001 to 1 // ±0.5%

0.1 to 999999 µS/m // 0.001 to 1 // ±0.5%

TDS:

0.001 to 1000 g/L, ppt // 0.001 to 1 // ±0.5%

0.001 to 999999 mg/L, ppm // 0.001 to 1 // ±0.5%

Salinity:

0.01 to 80.0 psu, ppt // 0.01 to 0.1 // ±0.5%

Resistivity:

0.01 to 100.0 MΩxcm // 0.0001 to 1 // ±0.5%

0.01 to 999999 Ωxcm // 0.01 to 1 // ±0.5%

Conductivity Ash:

0.000 to 2022% // 0.001 to 1 // ±0.5%

Type	PK	Cat. No.
S475	1	9.704 364

