

inoLab® - analogue

All benchtop meters are available in application-oriented sets including sensors and accessories.

inoLab
innovations that make sense

3 year
warranty

IP 43

CE



inoLab® pH 7110 SET 4

Technical specifications: inoLab® analogue benchtop pH meters

	inoLab® pH/ION 7320	inoLab® pH 7310	inoLab® pH 7110
Measurement ranges/dissolution	pH -2.000 ... +20.000 pH	-2.0 ... 20.0 ±0.1 pH -2.00 ... 20.00 ±0.01 pH -2.000 ... 19.999 ±0.005 pH	-2.0 ... 20.0 ±0.1 pH -2.00 ... 20.00 ±0.01 pH -2.000 ... 19.999 ±0.005 pH
	mV ±1200.0 mV ± 2500 mV	±1200.0 mV ± 2500 mV	± 1200.0 mV ± 2000 mV
	Temp. -5 ... +105 °C/0.1 °C	-5.0 ... +105.0 °C ±0.1 °C	-5.0 ... +105.0 °C ±0.1 °C
	Conc. 0.000 ... 9.999 (mg/l, µmol/l, 10.00 ... 99.99 mg/kg, ppm, 100.0 ... 999.9) 1000 ... 999999		
Accuracy (±1 digit)	pH ±0.005 pH ±0.01 pH	±0.005 pH ±0.01 pH	±0.005 pH ±0.01 pH
	mV ±0.3 mV, ±1 mV	±0.3 mV, ±1 mV	±0.3 mV, ±1 mV
	Temp. ±0.1 K	±0.1 K	±0.1 K
Calibration		1-, 2-, 3-, 4-, 5-point, WTW techn. buffer, DIN, NIST, as well as additional 20 buffer sets	1-, 2- or 3-point WTW technical buffers or DIN/NIST
	MultiCal® calibration automatic:		
	AutoCal 2-/3-/4-/5 point		
	AutoCal-Tec 2-/3-/4-/5 point		
	ConCal® 1-/2-/5 point		
	ISECal 2 bis 7 points		
	Special functions: Known addition (single) Known subtraction Sample addition Sample subtraction Known addition with blank value correction		

inoLab® pH/ION 7320 - Reliable ISE measurement and documentation

The inoLab® pH/ION 7320 with two pH/mV/ISE inputs is perfectly suited for precision measurement and automatic GLP/AQA compliant documentation in quality laboratories of all industries. Also available with optional built in printer.



inoLab® pH/ION 7320P
(with built-in printer)

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inoLab® pH 7310: Reliable pH documentation



inoLab® pH 7310P (with built-in printer)

- **USB interface for fast data transfer**
- **Data output in *.csv-Format or via optionally installed printer**
- **CMC function for measuring range monitoring**

The inoLab® pH 7310 is perfectly suited for precision measurement and automatic GLP/AQA compliant documentation in quality laboratories of all industries. Also available with optionally installed printer.

Reliable measurements

- Repeatable measurement results due to active automatic AutoRead function for the detection of stable measured values
- The CMC function visualizes the optimal measuring range for correct measurement
- Graphic display with clear text menus for convenient and safe operation

GLP/AQA compliant documentation

- Alphanumeric input of the electrode serial number
- Transfer of all data in *.csv format via USB interface at the PC, formatted takeover into Excel (MultiLab® Importer)
- Output possible via optionally installed printer

Flexible and high performance:

- 1- to 5-point calibration with calibration timer for all requirements
- 24 pre-programmed buffer sets for easy calibration
- 1- to 5-point calibration with customer-specific buffers
- Backlit graphics display



inoLab® pH 7110: Accurate pH measurement



inoLab® pH 7110

- **Active AutoRead function**
- **Easy calibration with adjustable calibration timer**
- **Intuitive operation with well laid out keyboard**

The inoLab® pH 7110 is optimally suited for routine measurement in the laboratory, where automatic documentation has no priority. With a smooth, easy to clean surface.

Reliable measurements

- Repeatable measurement results due to active automatic AutoRead function for the detection of stable measuring values
- Secure operation: Automated functions reduce the number of keys
- Increased measuring accuracy through adjustable calibration timer

Easy and reliable:

- 1 to 3 point calibration with calibration timer
- MultiCal® Calibration system
- Automatic temperature compensation
- Large multi-function display for pH value and temperature

Order information: Benchtop pH meters inoLab® analogue

Model	Description	Order no.
inoLab® pH 7310P	Convenient, menu-guided pH/mV benchtop meter (DIN) for measurements/GLP/AQA compliant documentation with built-in thermal printer. Single meter with universal power supply, stand, operating manual, CD-ROM with software, USB cable.	1AA310P
inoLab® pH 7310 SET 4	Convenient, menu-guided pH/mV benchtop meter (DIN) for measurements/GLP/AQA compliant documentation. Meter with universal power supply, stand and operating instructions, pH electrode SenTix® 81, buffer 4,7 and 10.01, 3 mol/l KCl, CD-ROM with software, USB cable.	1AA314
inoLab® pH 7110 SET 2	Simple, easy-to-use pH/mV benchtop meter (DIN) for routine measurements. Meter with universal power supply, stand and operating instructions, pH electrode SenTix® 41, buffer 4, 7 and 10.01, 3 mol/l KCl.	1AA112

Further SETs and electrodes in the SET or BNC versions see price list or www.WTW.com

Portable pH meters

pH value is a parameter, which also plays an important role with on-site measurements. The spectrum ranges from measuring pH in surface water up to the measurement in the process of a chemical plant.

MultiLine® IDS – digital



pH measurements with the new digital MultiLine® multi-parameter measuring instruments:

Multi 3630 IDS: Measure three parameters simultaneously

Three galvanically isolated measurement channels, can be freely combined for the same or different parameters. Simultaneous multi measurement without compromises.



MultiLine® Multi 3630 IDS

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Multi 3620 IDS: Measure two parameters simultaneously

Two galvanically isolated measurement channels, can be used simultaneously for identical or different parameters. Economic multi-parameter meter for many applications in which two parameters must be measured and/or stored simultaneously.



MultiLine® Multi 3620 IDS

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MultiLine® Multi 3510 IDS: Digital single parameter solution

The single-channel multi-parameter instrument Multi 3510 IDS is ideal for portable pH measurement in all conditions both outdoors and in a plant. Like all MultiLine® IDS meters, it is also suitable for pH measurement with cable lengths of up to 100 m.



MultiLine® Multi 3510 IDS

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pHotoFlex® Series

A successful combination of photometer and optional turbidity measurement in conjunction with a built-in pH / mV meter.



pHotoFlex® pH

see "pHotoFlex® pH – Portable photometer with pH measurement function" on page 145

ProfiLine – analogue

All portable meters are available including sensors and accessories in a practical field case.



3 year warranty

IP 67



ProfiLine pH 3310 SET 2

Technical specifications: Profiline portable analogue pH meters

ProfiLine		Multi 3320	pH/Cond 3320	pH/ION 3310	pH 3310	pH 3110
Measurement ranges/resolution	pH	-2.0 ... 20.0	-2.0 ... 20.0	-2.0 ... 20.0	-2.0 ... 20.0	-2.0 ... 20.0
		-2.00 ... 20.00	-2.00 ... 20.00	-2.00 ... 20.00	-2.00 ... 20.00	-2.00 ... 20.00
		-2.000 ... 19.999	-2.000 ... 19.999	-2.000 ... 19.999	-2.000 ... 19.999	-2.000 ... 19.999
	mV	± 1200.0	± 1200.0	± 1200.0	± 1200.0	± 1200.0
		± 2500	± 2500	± 2500	± 2500	± 2000
	Temp.	-5.0 ... +105.0 °C	-5.0 ... +105.0 °C	-5.0 ... +105.0 °C	-5.0 ... +105.0 °C	-5.0 ... +105.0 °C
	Conc.	0.000 ... 9.999	0.000 ... 9.999	0.000 ... 9.999	–	–
	(mg/l, µmol/l,	10.00 ... 99.99	10.00 ... 99.99	10.00 ... 99.99		
	mg/kg, ppm,	100.0 ... 999.9	100.0 ... 999.9	100.0 ... 999.9		
	%)	1000 ... 999999	1000 ... 999999	1000 ... 999999		
Accuracy (±1 digit)	pH	± 0.1 pH	± 0.1 pH	± 0.1 pH	± 0.1 pH	± 0.1 pH
		± 0.01 pH	± 0.01 pH	± 0.01 pH	± 0.01 pH	± 0.01 pH
		± 0.005 pH	± 0.005 pH	± 0.005 pH	± 0.005 pH	± 0.005 pH
	mV	± 0.3 mV	± 0.3 mV	± 0.3 mV	± 0.3 mV	± 0.3 mV
		± 1 mV	± 1 mV	± 1 mV	± 1 mV	± 1 mV
	Temp.	± 0.1 °C	± 0.1 °C	± 0.1 °C	± 0.1 °C	± 0.1 °C
Calibration		1-, 2-, 3-, 4-, 5-point, WTW techn., DIN, NIST as well as additional 22 buffer sets, 1- to 5-point ConCal® calibration with arbitrary buffers				1-, 2-, 3-point, WTW techn. and DIN buffers
	ISE	2-7 points	2-7 points	2-7 points	–	–
CMC		Yes	Yes	Yes	Yes	–
Data memory		Manual 200/5000 automatic	Manual 200/5000 automatic	Manual 200/5000 automatic	Manual 200/5000 automatic	–
Logger		Manually/time-controlled	Manually/time-controlled	Manually/time-controlled	Manually/time-controlled	–
Display		LCD graphics, backlit	LCD graphics, backlit	LCD graphics, backlit	LCD graphics, backlit	7-Segment LCD
Permanent operation		Up to 800 h without/ 100 h with illumination	Up to 800 h without/ 100 h with illumination	Up to 800 h without/ 100 h with illumination	Up to 800 h without/ 100 h with illumination	Up to 2500 h

ProfiLine Multi 3320: The environment specialist

The Multi 3320 for the measurement of pH, ISE, ORP, conductivity and dissolved oxygen (electrochemical) is an ideal meter for environmental applications in the area of ground and surface water measurement, aquaculture, as well as in a wastewater treatment plant and much more.

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ProfiLine Multi 3320

ProfiLine pH/Cond 3320: Perfect in process

The pH / Cond 3320 with two inputs for pH, mV, ISE and conductivity measurement is an all-rounder for almost all applications in process chemistry from life science, food and beverage to the pharmaceutical industry (measurement of pH and conductivity according to pharmacopoeia).

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ProfiLine pH/Cond 3320

ProfiLine pH/ION 3310: pH-, mV- and concentration measurement in one hand

pH/ISE portable meter for pH, mV and concentration measurement - suitable for all areas where accuracy and high-quality results are important.

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ProfiLine pH/ION 3310



ProfiLine pH 3310: Reliable pH documentation



ProfiLine pH 3310

- ⦿ **Waterproof USB interface for fast data transfer**
- ⦿ **Data output in *.csv-Format**
- ⦿ **Data logger for up to 5000 data sets**

The pH 3310 is an elegant combination of a robust portable meter and data logger for anyone who wants to automatically save measurement series and process them further on the PC.

Reliable measurements

- Repeatable measurement results due to active automatic AutoRead function
- The CMC function visualises the optimal measuring range and supports correct measuring
- Graphic display with plain text menus for convenient and safe operation

GLP/AQA compliant documentation

- Transmission of all data in *.csv format via USB interface at the PC
- Formatted takeover into Excel (MultiLab® Importer included in the delivery or as a download)

Flexible and high performance:

- 1- to 5-point calibration with calibration timer for all measuring tasks
- 24 pre-programmed buffer sets for easy calibration
- Backlit graphic display with CMC display



ProfiLine pH 3110: Easy pH measurement



ProfiLine pH 3110

- **pH or ORP measurement**
- **Simple 1 to 3 point calibration with adjustable calibration timer**
- **Robust and waterproof (IP 67)**

The pH 3110 is ideal for anyone looking for a simple, robust and waterproof meter for portable pH measurement.

Reliable measurements

- Repeatable measurement results due to active automatic AutoRead function for the detection of stable measured values
- For the safe operation automated functions and simplified keyboard
- A waterproof DIN socket enables for measurement also in a humid environment

Easy and reliable:

- Easily readable display for measured value and temperature
- Silicon keyboard with tactile key click, operable with gloves
- For field use in a carrying case set with proven electrodes

Order information: ProfiLine portable measuring pH meters

Model	Description	Order no.
ProfiLine pH 3310 SET 2	Robust and waterproof portable pH meter with data logger and USB Mini-B interface, for battery operation, in a carrying case kit with SenTix® 41	2AA312
ProfiLine pH 3110 SET 2	Robust and waterproof portable pH meter for battery operation, in a carrying case kit with SenTix® 41	2AA112

Further electrodes in SET see price list or www.WTW.com

ORP measurement



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72 IDS ORP Electrodes - digital

73 SenTix® ORP Electrodes - analogue

Applications and meters overview

The ORP measurement maps the intensity of oxidation and reduction reactions proceeding in aqueous solution. The resulting voltage signal is for example used as a measure of the cleaning power of disinfectants such as chlorine or ozone in the swimming pool.

	Digital			Analogue			Digital			Analogue						
	Laboratory ORP meters						Portable ORP meters									
	inoLab® IDS			inoLab®			MultiLine® IDS			ProfiLine						pHotoFlex® pH
	Multi 9630	Multi 9620	Multi 9310	pH/ION 7320	pH 7310	pH 7110	Multi 3630	Multi 3620	Multi 3510	Multi 3320	pH/Cond 3320	pH/ION 3310	pH 3310	pH 3110		
✓ yes																
● yes																
✓ recommended																
✓ recommended for some applications																
– not recommended																
2 parameters simultaneously*	✓	✓		✓			✓	✓		✓	✓					
3 parameters simultaneously	✓						✓									
ORP	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
Additional parameters	●	●	●	●			●	●	●	●	●	●			●*	
Routine measurements	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Routine measurements with documentation	✓	✓	✓	✓	✓	–	✓	✓	✓	✓	✓	✓	✓	–	✓	
AQA with documentation	✓	✓	✓	✓	✓	–	✓	✓	✓	✓	✓	✓	✓	–	✓	
R&D High resolution and precision	✓	✓	✓	✓	✓	–	✓	✓	✓	✓	✓	✓	✓	–	✓	
Control measurements	✓	✓	✓	✓	✓	–	✓	✓	✓	✓	✓	✓	✓	–	✓	
LIMS connection	✓	✓	✓	✓	✓	–	✓	✓	✓	✓	✓	✓	✓	–	✓	
Quality assurance	✓	✓	✓	✓	✓	–	✓	✓	✓	✓	✓	✓	✓	–	✓	
Education	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Service	–	–	–	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Laboratory measurements	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Field measurements	–	–	–	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Depth measurements	–	–	–	–	–	–	✓	✓	✓	–	–	–	–	–	–	
PC connection	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓		✓	
Memory	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓			
USB interface	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓			
Graphic display			✓	✓	✓			✓	✓	✓	✓	✓	✓		✓	
Color graphic display	✓	✓					✓	✓								
	Compatible sensors															
	Digital IDS electrodes															
IDS ORP electrodes	72	✓	✓	✓			✓	✓	✓							
	Analogue electrodes															
ORP electrodes	73	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	Multi 9630	Multi 9620	Multi 9310	pH/ION 7320	pH 7310	pH 7110	Multi 3630	Multi 3620	Multi 3510	Multi 3320	pH/Cond 3320	pH/ION 3310	pH 3310	pH 3110	pHotoFlex® pH	
see page	40	40	41	56	56	57	44	45	46	49	50	47	61	62	145	

* see chapter "Photometric determination" on page 130

ORP measurements can be carried out with all WTW pH/mV meters.

ORP electrodes

All ORP electrodes consist of a metal electrode made of a precious metal and a reference electrode. As with all SenTix® and SensoLyt® electrodes, the reference system is silver/silver chloride, typically with a platinum electrode.

WTW meters with pH function also measure the ORP voltage

IDS ORP electrodes - digital



- Short response time due to ideal contact to the sample
- Precise measurement results due to liquid electrolyte
- Refillable for a long life
- Platinum electrode for universal application

SenTix® ORP-T900 (-P)

ORP electrodes with liquid electrolyte and ceramic diaphragm



- No maintenance due to life-long KCl supply
- Insensitive to soiling due to open connection
- Wide application range due to universal platinum metal electrode

SensoLyt® ORP 900-P

ORP electrodes with polymer electrolyte and split ring or hole junction

Technical data and order information:

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SenTix® ORP electrodes – analogue

Technical data and order information: SenTix® ORP electrodes – analogue

	SenTix® ORP	SenTix® Ag*	SenTix® Au	SenTix® PtR
Order no.	103648	103664	103665	103666
working temperature °C	0 ... 100 °C	-5 ... 100 °C	-5 ... 100 °C	-5 ... 100 °C
Reference electrolyte	KCl 3 mol/l	ELY/ORP/Ag	KCl 3 mol/l	Gel
Sensor	Platinum	Silver	Gold	Platinum
Sensor form	(4 mm)	Cylinder cap	Cylinder cap	(6 mm)
Diaphragm	Ceramics	Ceramics	Ceramics	Split ring
Shaft material	Glass	Glass	Glass	Glass
Shaft length (±2 mm)	120 mm	120 mm	120 mm	120 mm
Shaft-Ø (±0,5 mm)	12 mm	12 mm	12 mm	12 mm
Temperature sensor	-	-	-	-
Connection	AS/DIN, AS/DIN-3, AS/BNC	AS/DIN, AS/DIN-3, AS/BNC	AS/DIN, AS/DIN-3, AS/BNC	AS/DIN, AS/DIN-3, AS/BNC

* for argentometry



SenTix® ORP

Universal ORP electrode with platinum round, glass shaft



SenTix® Ag

Combined Ag electrode (argentometry)



SenTix® Au

Au ORP electrode with AU cap, liquid electrolyte



SenTix® PtR

Maintenance-free Pt ORP electrode with polymer electrolyte

Order information: Test and maintenance agents for the ORP measurement

Model	Description	Order no.
RH 28	ORP buffer solution, 1 bottle with 250 ml: pH 7, $U_H = 427$ mV	109740
ELY/ORP/AG	Electrolyte with 2 mol/l KNO_3 + 0.001 mol/l KCl for combined ORP electrode with silver electrode	109735
Accessories & cables see price list or www.WTW.com		