Field and Process

	Digital				Conventional				
	Multi 3410	Multi 3420	Multi 3430	Oxi 3315	pH/Cond 340i	pH/Oxi 340i	Multi 340i	Multi 350i	pH/ION 340i
pH/ORP	All SenTix® 9xx, SensoLyt® 900, and conventional electrodes with S7 plug head via ADA S7/IDS				All SenTix® electrodes with DIN plug			All SenTix® electrodes with DIN plug and combined ISE electrodes of the 800 series	All SenTix® electrodes with DIN plug and ISE electrodes
Dissolved oxygen	FDO® 925-x			FDO® 925-x		CellOx® 325	CellOx® 325	CellOx® 325, DurOx® 325, ConOx	
Conductivity	TetraCon® 925, LR 925/01				TetraCon® 325		TetraCon® 325	All state-of-the-art WTW conductivity cell, ConOx	
Multi-parameter probes								ConOx, MPP 350-x	
Routine measurements	❍			❍	❍			❍	❍
Routine measurements with documentation	●			●	●			●	●
AQS/GLP	●			●	●			●	●
High precision	●			●	—			●	●
Control measurements	●			●	●			●	●
LIMS connection	●			●	❍			●	❍
Quality Assurance	●			●	●			●	●
Training	❍			❍	●			❍	❍
Service	●			●	●			●	●
Laboratory measurements	❍			❍	❍			❍	❍
Field measurements	●			●	●			●	●
Depth measurements	●			●	—			●	—
Measurements acc. to pharmacopoeia (conductivity/D.O.)	— / ●			●	— / ❍			● / ❍	—
PC interface	●			●	●			●	●
External control	—			—	●			—	●

Laboratory Measurements

	Digital		
	inoLab® Multi 9310	inoLab® Multi 9420	inoLab® Multi 9430
pH/ORP	All SenTix® 9xx and conventional electrodes with S7 plug head via ADA S7/IDS, 9420/9430 additionally via retractable DIN/BNC adapter also conventional electrodes can be connected		
Dissolved oxygen	FDO® 925		
Conductivity	TetraCon® 925, LR 925/01		
Routine measurements	❍		
Routine measurement with documentation	●		
AQS/GLP	●		
High precision	●		
Control measurements	●		
LIMS connection	●		
Quality Assurance	●		
Training	❍		
Service	—		
Laboratory measurements	●		
Field measurements	❍		
Depth measurements	—		
Measurements acc. to pharmacopoeia (conductivity/D.O.)	— / ●		
PC interface	●		
External control	—		

pH 3110	pH 3210	pH 3310	Oxi 3205	Oxi 3210	Oxi 3310	Cond 3110	Cond 3210	Cond 3310
All SenTix® electrodes with DIN plug								
			CellOx®, DurOx®					
						KLE 325, TetraCon® 325	All state-of-the-art WTW conductivity cell	
●	●	❍	●	●	❍	●	●	❍
—	—	●	—	—	●	—	—	●
—	—	●	—	—	●	—	—	●
—	●	●	—	●	●	—	●	●
—	●	●	—	●	●	—	●	●
—	—	●	—	—	●	—	—	●
—	❍	●	—	❍	●	—	❍	●
●	❍	❍	●	❍	❍	●	❍	❍
●	●	●	●	●	●	●	●	●
—	—	❍	—	—	❍	—	—	❍
●	●	●	●	●	●	●	●	●
—	—	—	—	—	—	—	—	—
—	—	—	—	●	●	—	●	●
—	—	●	—	—	●	—	—	●
—	—	—	—	—	—	—	—	—

Conventional

inoLab® pH 7110	inoLab® pH 7310	inoLab® Oxi 7310	inoLab® Cond 7110	inoLab® Cond 7310	inoLab® pH/ION 7320
All SenTix® electrodes with DIN or BNC plug					All SenTix® electrodes with DIN or BNC plug and ISE electrodes
		CellOx® 325, StirrOx® G			
			All state-of-the-art WTW conductivity cells		
●	❍	❍	●	❍	❍
—	●	●	—	●	●
—	●	●	—	●	●
—	●	●	—	●	●
—	●	●	—	●	●
—	●	●	—	●	●
—	●	●	—	●	●
●	❍	❍	●	❍	❍
—	—	—	—	—	—
●	●	●	●	●	●
—	—	—	—	—	—
—	—	—	—	—	—
—	—	❍	●	●	—
—	●	●	—	●	●
—	—	—	—	—	—

Multi-parameter Measurements

... redefined

IDS

The IDS concept from WTW: intelligent, digital sensors for the standard parameters pH, conductivity and dissolved oxygen.

The IDS system consists of two components: digital sensors and the matching field and laboratory instruments.

New: measuring values are now processed directly in the sensor and not by the instrument.

IDS advantages

- The sensitive measuring signals are converted into interference-free data in the sensor.
- All sensor, instrument, and user data are available for automatic documentation.
- Calibration data are independently stored in the sensor and cannot go lost.
- Besides the measuring and calibration data further additional information can be transmitted.

Proven sensor technology

Based on the thousandfold proven sensors of SenTix®, SensoLyt® and the TetraCon® series, the IDS sensors provide additional precision and reliability for almost any application.

I **Intelligent:**

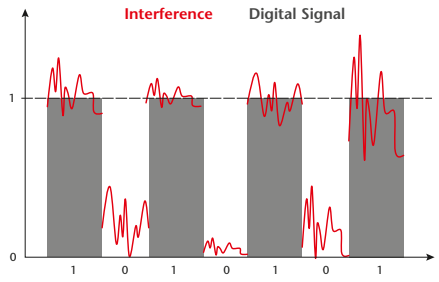
Intelligent sensors always store their identification data

- Every sensor is identified uniquely
- Automatic login to the meter
- Calibration values are stored directly in the sensor

D **Digital:**

Digital signal processing and transmission

- No interference with digital signal transmission
- Long cable lengths do not affect signal
- High accuracy through digital signal processing directly in the sensor



S **Sensor:**

Sensors for every application

- Application-specific IDS sensors for every parameter
- Built upon proven WTW technology
- Special pH electrodes can be connected by using an adapter

MultiLine® and inoLab® IDS

Not only for the field but also for the laboratory: Besides the modern portable MultiLine® meters Multi 3410, 3420 and 3430 there is a new generation of laboratory benchtop meters: the inoLab® IDS series with the inoLab® Multi 9310 IDS, the inoLab® Multi 9420 IDS and the inoLab® Multi 9430 IDS.

The common feature: all meters work with the IDS sensors. The portable meters are waterproof and robust and are equipped with one, two or three measuring channels. The brilliant color display with menu control allows to display important additional information. Via the two USB interfaces a memory stick, an external printer or a PC can be connected for documentation.

The inoLab® Multi 9310 IDS is a digital single-channel meter at an outstanding price/performance ratio. It is ideal for all applications in quality assurance.

The inoLab® Multi 9420 IDS and inoLab® Multi 9430 IDS are digital high-performance dual- or triple-channel laboratory meters with a glass shielded color display, high-quality zinc die-casting lower case and antibacterial keypad. Any parameters can be measured simultaneously and documented.

Unique and Distinctive: IDS Sensors

The new IDS sensors – intelligent, digital sensors – represent the next generation of WTW electrochemical sensor technology. Equipped with innovative measurement electronics, IDS sensors automatically store their unique serial number and calibration data. IDS sensors not only store data, but also process signals providing superior data integrity. This enables effective evaluation of the sensor quality by means of the Quality Sensor Control (QSC) function.

IDS pH/ORP Electrodes

pH/ORP electrodes are the most commonly used electrochemical sensors. At the same time, they provide the most sensitive measuring signals and must be serviced and calibrated on a routine basis. The concept of IDS sensors precisely takes effect here.

IDS pH/ORP Electrodes

- Fail-safe measuring signal
- Calibration status in the electrode
- Proven reliability and accuracy

Interference-free measurements

The conversion of the measuring signal into an interference-proof digital signal takes place directly in the electrode. This also means a pH measurement with long cables is now possible.

Calibration data in the sensor

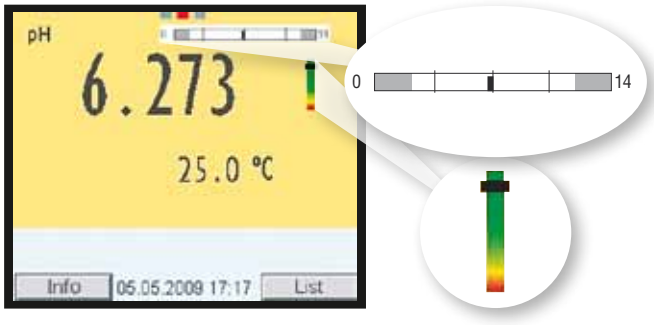
The calibration data are stored in the electrode itself, transmitted to the meter and displayed. In addition to the proven CMC function for the visual presentation of the calibration point, the new QSC function provides a graphic assessment of the actual electrode quality for IDS pH electrodes.

Proven electrodes

The technology of the new IDS pH/ORP electrodes is built on the proven, high quality electrodes of the SenTix® and SensoLyt® series. Measurement and maintenance of the electrodes remain unchanged: the only difference is in the electrode head.

CMC function:

The CMC function graphically supports the continuous monitoring of the measuring range. The measuring range is displayed as a graphic bar with the calibration points as vertical lines. Each calibration point includes a confidence range of ± 2 pH. A moving cursor shows the current measured value and indicates if the measurement range is within the range or whether the calibration should be adjusted to match the giving measuring requirements.



QSC function

QSC (Quality Sensor Control) is a system to monitor the condition of the IDS pH electrode. An initial calibration is performed and thereafter the sensor status is monitored over time. The result is displayed as a graphical symbol. For the MultiLine® and inoLab® Multi 9420/9430 IDS meters this is a green to red shaded bar, for the inoLab® Multi 9310 IDS it is a black and white scale element.

ADA S7/IDS

The ADA S7/IDS® connects special electrodes such as penetration, split ring or surface electrodes. The S7 plug head can be easily connected to a MultiLine® or inoLab® IDS instrument.

IDS pH/ORP Electrodes

Model	SenTix® 940	SenTix® 940-3	SensoLyt® 900-6	SensoLyt® 900-25	SenTix® 950	SenTix® 980	SenTix® ORP 900	SensoLyt® ORP 900-6	SensoLyt® ORP 900-25
Order No.	103 740	103 741	103 742	103 745	103 750	103 780	103 790	103 746	103 747
pH measuring range	pH: 0.000 … 14.000 ± 0.004		pH: 2.000 … 12.000 ± 0.004		pH: 0.000 … 14.000 ± 0.004		mV: ± 1200.0 ± 0.2		
Temperature range	0 … 80 °C (32 … 176 °F)		0 … 60 °C (32 … 140 °F)		0 … 80 °C (32 … 176 °F)	0 … 100 °C (32 … 212 °F)	0 … 100 °C (32 … 212 °F)	0 … 60 °C (32 … 140 °F)	
Reference electrolyte	Gel		Polymer		3 mol/l KCl		3 mol/l KCl	Polymer	
Membrane shape	Cylinder		Cylinder		Cylinder	Cone	—		
Diaphragm	Fiber		Hole		Ceramic	Platinum wire	Ceramic	Hole	
Shaft material	Plastic		Glass		Plastic	Glass	Glass		
Shaft dimensions	Length 120 mm (0.39 ft.) ± 2 mm, Ø 12 mm (0.04 ft.) ± 0.5 mm								
Temp. accuracy	± 0.2 °C						—	± 0.2 °C	
Cable length	1.5 m (4.92 ft.)	3 m (9.84 ft.)	6 m * (19.68 ft.)	25 m * (82.02 ft.)	1.5 m (4.92 ft.)	1.5 m (4.92 ft.)	1.5 m (4.92 ft.)	6 m * (19.68 ft.)	25 m * (82.02 ft.)

* IP 68

FDO® 925 – the Optical Dissolved Oxygen Sensor for Field and Lab

FDO® 925

- Robust and waterproof
- Extremely fast (t_{99} < 60s)
- Free of incident flow with beveled membrane
- Factory calibrated sensor cap with intelligent chip

In laboratory and process applications

The FDO® 925's small dimensions make it suitable for **lab and process**. The flow-free, easy-to-clean, beveled membrane allows it to be used in containers with low sample volumes. Low oxygen concentrations under 1 mg/l can also be detected accurately.

In the field

The fast and flow-free FDO® 925 is perfectly suited for **field measurement**. Accessories such as protective armor made of plastic or stainless steel, make this sensor ideal for use in harsh environments. The Kevlar®-strengthened cables of varying lengths allow reliable measurements in deep lakes or raging rivers.

In the wastewater plant

In the **sewage plant**, FDO® 925 excels at BOD measurement in the Karlsruhe bottle as well as in the monitoring of stationary measurement systems. In connection with the AutoRead function of the MultiLine® devices, its characteristics can be aligned to that of the online sensor FDO® 700 IQ and thus guarantees comparable measured values.

IDS Dissolved Oxygen Sensors	
Model	**FDO® 925**
Order No.	201 300
Concentration measuring range	0.00…20.00 mg/l ± 0.5 % of value
Saturation measuring range	0.0 … 200.0 % ± 0.5 % of value
Partial pressure measuring range	0.0 to 400 hPa ± 0.5 % of value
Temperature	0 … 50.0 °C (32 … 122 °F) ± 0.2 °C
Membrane shape	Beveled
Shaft material	POM, Stainless steel
Shaft dimensions	length, 140 mm (0.46 ft.) ± 1 mm, Ø 15,3 mm (0.05 ft.) ± 0,2 mm
Cable length	1,5 m* (4.92 ft.)

IP 68

**Also available in 3 m, 6 m and 25 m (9.84 ft., 19.68 ft. and 82.02 ft.)*

IDS Conductivity Cells

WTW offers decades of expertise in high quality, rugged conductivity cell technology, and now the new IDS conductivity cells build upon this proven technology including the automatic transfer of the cell constant feature to eliminate operation errors.

IDS Conductivity Cells

- Proven sensor technology
- Easy-to-handle
- Wide range of applications

Two models are available to cover the entire conductivity range:

Medium and high conductivities

are perfectly covered by the dirt-insensitive 4-electrode conductivity measuring cell TetraCon® 925.

Low conductivity

regarding for example measurements in pure water is recorded using the concentric electrode LR 925/01.

TetraCon® 925 *LR 925/01*

IDS Conductivity Cells

Model	TetraCon® 925	LR 925/01
Order No.	301 710	301 720
Type	4-electrode, graphite	2-electrode, stainless steel
Conductivity	10 µS/cm … 2000 mS/cm ± 0.5 % of value	0.01 … 200 µS/cm ± 0.5 % of value
Specific resistance	0.5 Ohm cm ...100 kOhm cm ± 0.5 % of value	5 kOhm cm … 100 MOhm cm ±0.5 % of value
Salinity	0.0 … 70.0 ± 0.5 % of value	—
TDS	0 … 1999 mg/l, 0,0 … 199.9 g/l ± 0.5 % of value	—
Temperature	0 … 100.0 °C (32 … 212 °F) ± 0,2 °C	0 … 100.0 °C (32 … 212 °F) ± 0.2 °C
Cell constant	0.475 cm^{-1} ± 1.5 %	0.1 cm^{-1} ± 2 %
Shaft material	Epoxy	Stainless steel
Shaft dimensions	Length 120 mm (0.39 ft.) ± 1 mm, Ø 15.3 mm (0.05 ft.) ± 0.2 mm	Length 120 mm (0.39 ft.) ± 1 mm, Ø 12 mm (0.04 ft.) ± 0.2 mm
Cable length	1.5 m* (4.92 ft.)	1.5 m (4.92 ft.)

IP 68

**Also available at 3 m, 6 m and 25 m (9.84 ft., 19.68 ft. and 82.02 ft.)*

Accessories: Protective Armor for IDS Sensors

Removable armor for electrode protection in harsh environments or when additional weight is required for depth measurement: Removable armor for the pressure-resistant IDS sensors, type SensoLyt® 900, FDO® 925 and TetraCon® 925. Available with protective shrouds made of plastic or stainless steel.

Ordering Information

		Order No.
A 925/K	Removable plastic armor suitable for IDS FDO® 925, TetraCon® 925 and SensoLyt® 900	903 836
A 925/S	As above, but with stainless steel shroud	903 837

A 925/S *A 925/K*

NEW

Laboratory Multi-parameter Instruments

Securely...

... with the state-of-the-art multi-channel instruments inoLab® Multi 9430 IDS and inoLab® Multi 9420 IDS

Cutting edge technology from WTW for demanding laboratory applications. Two digital inoLab® multi-parameter instruments for IDS sensors for parallel measuring of one identical or varying parameters. Up to three sensors (inoLab® Multi 9430 IDS) can be connected. A large glass shield protects the graphic display and supports the presentation of the measuring values and recognition of important information. The innovative and antibacterial keypad helps to protect against microbiological contamination. The solid zinc die-casting lower case gives the meters a safe standing and also protection from the environment. As a special feature, both models can be upgraded with an additional module for conventional pH measurement.

inoLab® Multi 9430/9420 IDS

- Measuring safety without compromises
- Digital sensor recognition
- Antibacterial keypad

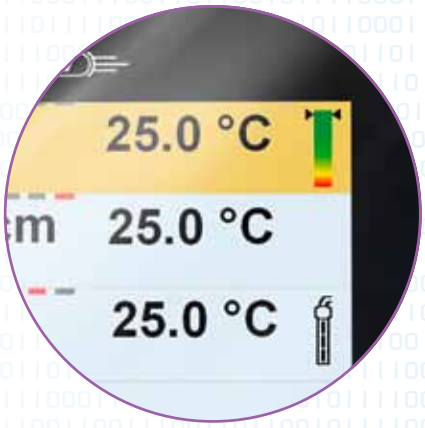
For information visit **www.WTW.com** for a customer care center near you or inside US: call **WTW 800 645 5999**.

Measuring stability

- No errors with the digital signal transmission, calibration data is allocated safely, sensor data is easily transmitted. eliminates errors
- The intelligent sensor evaluation (QSC) gives a status about the condition of the sensor and increases the operational reliability.
- The CMC function visualizes the ideal measuring range and supports correct measuring.
- Visual display of channels for allocation of sensors and parameters

Documentation complying with GLP/AQA

- Automatic, digital collection of all sensor data for unique traceability of measuring values
- User administration can be activated for correct allocation of user and measuring value
- Transfer of all data in .csv format via USB interface to PC and export to Excel (via MultiLab® Importer software, included in the delivery scope or available as download)
- Additional transfer of all stored data in ASCII and .csv format onto USB memory stick.
- Includes 2 printer drivers for external printers

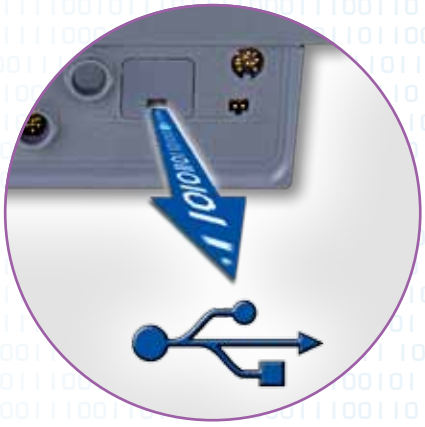


Compatible for conventional pH measurement

- With integrated pH module, compatible for pH and Redox sensors with DIN or BNC plug as well as 4 mm temperature sensor

Flexible and powerful

- Measures pH, ORP, dissolved oxygen and conductivity
- Free combination of identical or varying parameters
- Backlit graphic display CMC-, QSC- and channel display
- Including high-quality stand
- Storage for up to 10,000 data entries
- Exchangeable firmware for special measuring tasks



Securely traceable...

... with the innovative inoLab® Multi 9310 IDS

The new inoLab® Multi 9310 IDS with one digital measuring channel is perfectly suited for entering the digital multi-parameter measuring with the IDS sensors. The IDS technology enables ideal measurements and efficient documentation in the most easiest and convenient way.

inoLab® Multi 9310 IDS

- A single-channel multi-paramter benchtop meter for IDS sensors
- Digital sensor recognition
- Optional built-in printer

Measuring stability

- Error-free processing of measuring signals in the sensor
- Digital transmission of measuring signals and additional information
- Automatic adoption of calibration data and parameterization

Documentation acc. to GLP/AQA

- Automatic, digital collection of the complete sensor data for unique traceability of measuring values
- User administration of correct allocation of user and measuring value can be activated
- Transfer of all data in .csv format via USB interface to PC, formatted export into Excel also possible (using the MultiLab® Importer software, included in the delivery scope or available as download).
- Output directly via the meter or the optional built-in printer.

Flexible and powerful

- Different IDS sensors can be connected
- Measures pH, ORP, conductivity or dissolved oxygen
- Manual or time-controlled data logger
- Stores up to 5000 entries

Technical data

	inoLab® Multi 9310 IDS	inoLab® Multi 9420 IDS	inoLab® Multi 9430 IDS
Parameter	pH, mV, saturation, concentration, partial pressure, conductivity, special resistance, salinity, TDS, temperature		
Digital/IDS sensor	●	●	●
Universal measuring channels	1	2	3
Analog pH/Redox Sensors	ADA S7/IDS (optional)	ADA S7/IDS (optional)	
Temperature compensation	all except ORP	all except ORP	
Calibration points **pH** **dissolved oxygen** **conductivity**	 1–5 1 1	 1–5 1 1	
Calibration storage	max. 10	max. 10	
Calibration timer	1 – 999 days	1 – 999 days	
Data storage	manual: 500 data sets/ automatic: 5.000 data sets	manual: 500 data sets/ automatic: 10.000 data sets	
Logger	●	●	
Interface	Mini USB	USB-A, Mini USB	
GLP/AQA supported	●	●	
Display	graphic, SW	color display	
Printer option	yes	external	
Others	CMC, QSC	antibacterial keypad, QSC, CMC	
Power supply	Universal power supply, Battery (4 x 1,5 V AA Type)	Universal power supply	

Ordering Information

inoLab®		Order No.
inoLab® Multi 9310	Digital multiparameter benchtop meter for IDS sensors, for measurements/documentation according GLP/AQA. With single channel input for pH/mV, dissolved oxygen and conductivity. Single instrument with universal power supply, stand and operation manual, software and USB cable.	1FD350
inoLab® Multi 9310P	Same as 1FD350, but with integrated thermal printer.	1FD350P
inoLab® Multi 9310 SET K	Same as 1FD350, in set with IDS sensors: digital IDS pH electrode SenTix® 980, buffer 4, 7 and 10.01, 3 mol/l KCl, optical IDS DO senor FDO® 925, digital IDS conductivity cell TetraCon® 925, 0.01 mol/l KCl, conductivity standard.	1FD35K
inoLab® Multi 9420	Professional digital multiparameter benchtop meter for IDS sensors, for measurements/documentation according GLP/AQA. With dual channel input for pH/mV, dissolved oxygen and conductivity. Single instrument with universal power supply, stand and operation manual, software and USB cable.	1FD460
inoLab® Multi 9420 SET B	Same as 1FD460, in set with IDS sensors: digital IDS pH electrode SenTix® 980, buffer 4, 7 and 10.01, 3 mol/l KCl, optical IDS DO senor FDO® 925.	1FD46B
inoLab® Multi 9420 SET C	Same as 1FD460, in set with IDS sensors: digital IDS pH electrode SenTix® 980, buffer 4, 7 and 10.01, 3 mol/l KCl, digital IDS conductivity cell TetraCon® 925, 0.01 mol/l KCl, conductivity standard.	1FD46C
inoLab® Multi 9420 SET E	Same as 1FD460, in set with IDS sensors: digital IDS pH electrode SenTix® 980, buffer 4, 7 and 10.01, 3 mol/l KCl, digital IDS conductivity cell LR 925/01.	1FD46E
inoLab® Multi 9420 SET K	Same as 1FD460, in set with IDS sensors: digital IDS pH electrode SenTix® 980, buffer 4, 7 and 10.01, 3 mol/l KCl, optical IDS DO senor FDO® 925, digital IDS conductivity cell TetraCon® 925, 0.01 mol/l KCl, conductivity standard.	1FD46K
inoLab® Multi 9430	Professional digital multiparameter benchtop meter for IDS sensors, for measurements/documentation according GLP/AQA. With triple channel input for pH/mV, dissolved oxygen and conductivity. Single instrument with universal power supply, stand and operation manual, software and USB cable.	1FD470
inoLab® Multi 9430 SET B	Same as 1FD470, in set with IDS sensors: digital IDS pH electrode SenTix® 980, buffer 4, 7 and 10.01, 3 mol/l KCl, optical IDS DO senor FDO® 925.	1FD47B
inoLab® Multi 9430 SET C	Same as 1FD470, in set with IDS sensors: digital IDS pH electrode SenTix® 980, buffer 4, 7 and 10.01, 3 mol/l KCl, digital IDS conductivity cell TetraCon® 925, 0.01 mol/l KCl, conductivity standard.	1FD47C
inoLab® Multi 9430 SET E	Same as 1FD470, in set with IDS sensors: digital IDS pH electrode SenTix® 980, buffer 4, 7 and 10.01, 3 mol/l KCl, digital IDS conductivity cell LR 925/01.	1FD47E
inoLab® Multi 9430 SET K	Same as 1FD470, in set with IDS sensors: digital IDS pH electrode SenTix® 980, buffer 4, 7 and 10.01, 3 mol/l KCl, optical IDS DO senor FDO® 925, digital IDS conductivity cell TetraCon® 925, 0.01 mol/l KCl, conductivity standard.	1FD47K
ADA 94pH/IDS DIN	Integrable pH/mV module for inoLab® Multi 9420/9430 IDS for pH/ORP electrodes with DIN- and 4 mm banana plug. Including mounting accessories.	108 131
ADA 94pH/IDS BNC	Integrable pH/mV module for inoLab® Multi 9420/9430 IDS for pH/ORP electrodes with BNC- and 4 mm banana plug. Including mounting accessories.	108 132

CE cETLus **3 Year Warranty**

Portable Multi-parameter Instruments

Multi-parameter portable meters are precise measuring instruments for mobile applications in the field and operation where more than just one parameter hast o be measured. They are available in the versions for intelligent digital IDS sensors but also for operation with conventional electrodes. The advantage is not limited to the solid design, covering the functions of up to three conventional meters, it is also the convincing excellent cost/performance ratio. All meters are available in functional sets with sensors and accessories for immediate operation.

MultiLine® INTELLIGENT DIGITAL SENSORS

MultiLine® IDS Digital multi-parameter portable meters

The intelligent digital sensors give new opportunities for multi-parameters measurements. The measuring signal is not processed in the instrument, it is generated directly in the sensor and transmitted to the meter with additional information. For documentation purposes and traceability, all measuring values are completed with instrument and sensor data; on demand also with user information. The digital signal transmission for pH measurements with IDS pH sensors enables an error-free usage of long cables.

Quality at a Glance

Housing
MultiLine® instruments feature a waterproof housing and are equipped with rubber armor in all sets. The silicon mat keypad is also fully waterproof, and the large keys, with defined pressure points, ensure reliable operation, even while wearing gloves and in rough conditions.

Display
The brilliant, high-resolution graphic display guarantees excellent readability under adverse lighting conditions. The color coding icons on the display clearly differentiate the parameters being measured simultaneously. Important maintenance and measuring functions are excellently visualized.

Connector jack panel
All MultiLine® connector panels are injection molded and fully waterproof, including the two USB interfaces. The Mini-USB interface is used to transmit data to a PC or to update the firmware. The devices also have a USB-A interface that enables data to be transmitted directly to a USB stick or a selected printer without needing a PC.

The waterproof, color coded connector jacks with locking system are simple and secure. Color coding is clearly visible on the display and directly correlates with the sensor connected. The locking system ensures proper electrode connection.

One – Two – Three …

Measure every parameter sequentially or simultaneously:

Three…

… with the Multi 3430

Three galvanically isolated measuring channels, user defined combination of one parameter or varying parameters. Simultaneous multi-measuring without compromises.

Multi 3430

- Three universal measuring channels
- Clearly structured display
- Simultaneous recording of all measuring values

Two...

... with the Multi 3420

Two galvanically isolated measuring channels, user defined combination of one parameter or varying parameters. Economic multi-parameter instrument for many applications where two parameters have to be simultaneously measured and / or stored.

Multi 3420

- Two universal measuring channels
- Clearly structured display
- Simultaneous recording of all measuring values

One...

... with the Multi 3410

One measuring channel for different parameters: for measuring mainly one parameter, but with occasional need to measure a second or third parameter.

Multi 3410

- One universal measuring channel
- Large display giving additional information
- Sensor exchange made easy

Immediately ready to measure...

... with a single parameter set Multi 3410 SET 4 and the Multi 3430 SET F

Immediately ready to measure: MultiLine® sets for measuring on location. Depending on the number of sensors, sets come complete with the meters and accessories conveniently packaged in a carry case.

Single parameter set – Multi 3410 SET 4 with optical dissolved oxygen sensor FDO® 925 in a handy carry case with accessories.

Multi 3430 SET F with IDS pH sensor SenTix® 940, optical dissolved oxygen sensor FDO® 925, IDS conductivity cell TetraCon® 925 in field case with accessories.

General Features

Model	**MultiLine®**
Data storage	manual: 500 data sets/ automatic: 10.000 data sets
Data logger	manual/time scheduled
Interface	USB-A and Mini USB
Power supply	unit with charge function or 4 x 1.2 V NiMH battery pack

Ordering Information

MultiLine®		Order No.
Multi 3410	Professional digital multi meter for portable field measurement, with single channel input, color graphic display incl. data logger and USB interfaces. Single instrument with short instruction manual, CD-ROM, rechargeable batteries, driver software for USB, cable and universal power supply.	2FD450
Multi 3410 SET 4	Same as 2FD450, but in multi case set with optical DO probe FDO® 925, stand, beaker and accessories.	2FD454
Multi 3410 SET C	Same as 2FD450, but in multi case set with IDS sensors: digital pH electrode SenTix® 940, digital conductivity 4-electrode cell TetraCon® 925, QSC Kit, stand, beaker and accessories.	2FD45C
Multi 3420	Professional digital multi meter for portable field measurement, with dual channel input, color graphic display incl. data logger and USB interfaces. Single instrument with short instruction manual, CD-ROM, rechargeable batteries, driver software for USB, cable and universal power supply.	2FD460
Multi 3420 SET C	Same as 2FD460, but in multi case set with IDS sensors: digital pH electrode SenTix® 940, digital conductivity 4-electrode cell TetraCon® 925, QSC Kit, stand, beaker and accessories.	2FD46C
Multi 3430	Professional digital multi meter for portable field measurement, with triple channel input, color graphic display incl. data logger and USB interfaces. Single instrument with short instruction manual, CD-ROM and rechargeable batteries, driver software for USB, cable and universal power supply.	2FD470
Multi 3430 SET F	Same as 2FD470, but in multi case set with IDS sensors: digital pH electrodes SenTix® 940, digital conductivity cell TetraCon® 925, optical DO probe FDO® 925, QSC Kit, stand, beaker and accessories.	2FD47F
Multi 3430 SET G	Same as 2FD470, but in multi case set with IDS sensors: digital pH electrode SenTix® 940-3, digital conductivity cell TetraCon® 925-3, optical DO probe FDO® 925-3, QSC Kit, stand, beaker and accessories.	2FD47G

IP 67 CE cETLus 3 Year Warranty

Conventional multi-parameter portable instruments

Multi 350i/3500i*

- Multi-functional, high degree of accuracy
- Flexible
- All parameters simultaneously displayed

Multi 350i/3500i* –
Compact precision without compromises

pH, mV, ISE, dissolved oxygen, conductivity: The new Multi 350i/3500i* can measure all of these parameters. If desired, pH, DO, conductivity and temperature can be measured simultaneously: In the laboratory using the **combined conductivity/DO probe ConOx**, or in the field with the multi-parameter probe **MPP 350**. All current WTW pH, combination ISEs, DO and conductivity probes can be connected.

High resolution, high precision, simple, menu-driven operation. Even in poor lighting conditions the backlit graphics display provides clearly readable values. With a data logger, memory for 1,800 data sets and a real-time clock support GLP requirements.

Includes built-in NiMH rechargeable battery for up to 1,000 hours of continuous measurements, and appropriate AC adaptor.

MultiLine®

The new digital MultiLine® multi-parameter measuring instruments
see page 18

** North American version*

ConOx

- Slender
- Convenient
- Measures conductivity, dissolved oxygen and temperature simultaneously

Conductivity and dissolved oxygen measurement with fully automatic salinity correction.

The ConOx sensor is a combination probe that allows for the simultaneous measurement of conductivity, dissolved oxygen, and temperature, and features automatic salinity correction as well. The conductivity portion of the sensor incorporates a proven 4-electrode system which helps to prevent inaccurate readings sometimes caused by difficult or dirty samples. The DO portion of the probe is a galvanic sensor that allows for immediate use after cleaning – eliminating the required "warm-up" time associated with other probes. The ConOx requires little maintenance and is suitable for all water analysis applications, whether in the laboratory or field environments.

MPP 350

- pH, conductivity, dissolved oxygen and temperature at the same time
- For all areas of application in surface waters and 2 inch boreholes
- Depth measurement up to 100 m (330 ft)

An all-new Multi-parameter probe, perfect probe for use with the Multi 350i/3500i*:

The MPP 350 is designed for use with the Multi 350i/3500i* with a diameter of 41.5 mm (1.6 in.) and a length of 290 mm (11.42 in.), providing versatility for a wide range of applications. The MPP 350 allows for the simultaneous measurement of pH, dissolved oxygen and conductivity suitable for use in lakes, rivers, saltwater, brackish water, ground water or spring water, or for measurements in boreholes down to a maximum depth of 100 m (330 ft.). The special pH sensor SensoLyt® MPP-A (sold separately) provides reproducible measurement values even at low conductivity levels. The conductivity cell, with proven 4-electrode measurement technology, has a range of 1 µS/cm to 2 S/cm. The MPP 350 is available with 8 different cable lengths up to 100 m (330 ft).

** North American version*

Technical Data Multi 350i/3500i*

	pH measurement	Dissolved oxygen measurement	Conductivity measurement
Range/ Resolution	pH: -2...20.000 -2.00...20.00 mV: -999.9 ... +999.9 -2000 ... +2000 Conc.: 0.01 ... 2000 mg/l Temp.: -5.0 °C ... 105.0 °C (23.0 ...221.0 °F)	O_2 Conc.: 0.00 ... 20.00 mg/l (19.9 mg/l**) 0.0 ... 90.0 mg/l (90 mg/l**) O_2 saturation: 0.00 ... 200.0% (200%**) O_2 part. pressure: 0.0 ... 200.0 mbar (200 mbar**) 0.0 ... 1250 mbar Temp.: 0.0 °C ... 50.0 °C (32.0 ... 122.0 °F)	0.0 µS/cm ... 2000 mS/cm in 5 ranges in AutoRange mode additional: 0.00 µS/cm ... 20.00 µS/cm (K=0.1 cm^{-1}) 0.000 µS/cm ... 2.000 µS/cm (K=0.01 cm^{-1}) Temp.: -5.0 °C ... +105.0 °C Salinity: 0.0 ... 70.0 TDS: 0 ... 2000 mg/l Spec. resistivity: 0.00 ... 2000 MOhm
Accuracy (±1 digit)	pH: ± 0.004 pH. ± 0.01 pH mV: ± 0.2 mV. ± 1 mV	O_2 Conc.: ±0.5% of value O_2 saturation: ±0.5% of value O_2 part. pressure: ±0.5% of value	LF: ±0.5% of value
Temperature compensation	Automatic -5 ... +105.0 °C (23 ...221 °F) Manual -20 ... +130 °C (-4 ... 266 °F) NTC 30 kOhm: ± 0.1 K Pt 1000: ± 0.1 K	0 °C ... 50 °C (32 ... 122 °F) (on ambient temperature 5...30 °C/41 ... 86 °F) <2% at 0 ... +40 °C (32 ... 104 °F) Temperature: ±0.1 K	-5.0 ... 100 °C (23 ... 212 °F) • Linear and non-linear function for ultrapure and natural waters to EN 27 888 • Linear comp. from 0.01% ... 3.00%/K • Compensation can be switched off NTC 30 kOhm: ± 0.1 K Pt 1000: ± 0.1 K
Air pressure compensation	—	Automatic with built-in pressure sensor (500 ... 1100 mbar)	—
Salinity correction	—	Automatic or manual	—
Reference temperature	—	—	20 °C/25 °C (68 °F/77 °F) selectable
Cell constants	—	—	Fixed 0.01 cm^{-1}, Freely selectable 0.090 ...0.110 cm^{-1}, 0.250 ... 25.000 cm^{-1} With calibration 0.450 ... 0.500 cm^{-1}, 0.800 ... 1.200 cm^{-1}

Technical Data ConOx

Electrode material	Graphite
Shaft material	Epoxy/POM
Shaft length	145 mm (5.7 in.)
Cell constant	K=0.475 cm^{-1}
Diameter	15.3 mm (0.60 in.)
Range	1 µS/cm ... 2 S/cm
Temperature range	0...50 °C (32 ... 122 °F)
Dissolved oxygen sensor	Galvanic sensor
Working time	6 months with 1 electrolyte filling, zero current free

Technical Data MPP 350

Range	pH: 4 ... 12 O_2: 0 ... 600% Cond.: 1 µS/cm ... 2 S/cm Temp.: 0...50 °C (32 ... 122 °F)
Dimensions	Diameter 41.5 mm (1.6 in.)
Weight/Length	Approx. 290 mm (11.42 in.) to 410 mm (16.14 in.) (depends on special accessories) approx. 700 g (1.54 lb.)
Materials	POM, Stainless steel 1.4571 (additional weight), PVC (Cable)

Ordering Information

Portable Multi-parameter SET		Order No.
Multi 350i/3500i* SET 5	Robust and waterproof portable multi-parameter instrument with data logger and serial interface, including SenTix® 41-3 and ConOx-3, NiMH batteries and battery charger, PC communication package, professional case and accessories	2F40-114B0E
ConOx-3	Combined conductivity-DO-probe with 3 m (9.8 ft) cable and accessories	401 010
MPP 350-3	pH/DO/conductivity probe without pH electrode, with 3 m (9.8 ft) cable and accessories	401 100
SensoLyt® MPP-A	Armored pH electrode for MPP 350	401 152
SensoLyt® MPP-A Pt	Armored ORP electrode for MPP 350	401 153
A 325/S	Stainless steel armor for ConOx and CellOx®	903 831
SK 325	Protective hood suitable for A 325/S	201 580

Multi 350i/3500i:*

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** North American version*

*** also valid for DurOx®*

Multi 340i/3400i*

- Waterproof
- Robust
- GLP compliant

The rugged, versatile Multimeter
This waterproof (IP 66) instrument with battery or optional line adaptor also meets the requirements of IP 67 and is optimally suited for use in the field, in laboratories or at production sites. Simultaneous connection of a pH/ORP electrode and a dissolved oxygen sensor or conductivity cell allows up to three parameters (including temperature) to be measured at the same time.

Additional features include:
- Up to 2500 hours continuous operation
- Easy-to-use
- Complete set available

Multi 340i/3400i* SET
- Multi-parameter instrument Multi 340i/3400i*
- Professional case with built-in measuring set-up, two STH 320 stands, two beakers, SM 325 protective armor and carrying strap with two cases
- Calibration and maintenance supplies, operating instructions

pH/Oxi 340i/3400i*, pH/Cond 340i/3400i*

- Waterproof
- Robust
- GLP compliant

Multi-parameter instruments pH/Oxi 340i/3400i* and pH/Cond 340i/3400i*

WTW portable multi-parameter instruments stand for precise multi-parameter measuring technology. The pH/Oxi 340i/3400i* for the determination of pH, dissolved oxygen and temperature and the pH/Cond 340i/3400i* for the determination of pH, conductivity and temperature, are alternatives to the single parameter instruments for applications that require the measurement of several parameters. The instruments are waterproof and also meet the requirements of IP 67. They are extremely robust and optimally suited for use in the field, in laboratories or at production sites.

Additional features include:
- Up to 2500 hours continuous operation
- Easy-to-use
- Complete set available

pH/Oxi 340i/3400i* SET
Kit includes:
Professional case with sample beakers included, pH/Oxi 340i/3400i*, pH electrode and dissolved oxygen, STH 320 stand and calibration and maintenance supplies

pH/Cond 340i/3400i* SET
Kit includes:
Professional case with sample beakers included, pH/Cond 340i/3400i*, pH electrode and conductivity cell, STH 320 stand and calibration and maintenance supplies

** North American version*

Protective Armor

For safe in-the-field use

① **SM 325** *Shock-absorbing, rubber protective armor with support handle and sensor cable management.*

② **TG/ML** *Sleeve set, suitable for SM 325 protective armor, consisting of 2 sensor sleeves, holding device and additional carrying strap for field use. Can also be used for storing the sensor.*

③ **FM/ML** *Field armor, specially designed for rough use in-the-field and in industry, is extremely robust and shock-resistant. With 2 sensor sleeves, carrying handle and additional carrying strap with holding device, sensor cable management and folding support for laboratory measurements.*

Technical Data

Model	pH/Oxi 340i/3400i*, pH/Cond 340i/3400i*, Multi 340i/3400i*	pH/Oxi 340i/3400i*, Multi 340i/3400i*	pH/Cond 340i/3400i*, Multi 340i/3400i*
	pH measurement	**Dissolved oxygen measurement**	**Conductivity measurement**
Range/ Resolution	pH: -2.00 … +19.99 mV: -1999 …+1999	O_2 concentration: 0.00 … 19.99 mg/l 0.0 … 90.0 mg/l O_2 saturation: 0.00 … 19.99% 0.0 … 600%**	1 µS/cm … 500 mS/cm in 4 ranges Salinity: 0.0 … 70.0
Accuracy (±1 digit)	pH: ± 0.01 pH mV: ± 1 mV	±0.5% of value	±1% of value
Temperature compensation	Automatic -5 … +105.0 °C (23 … 221 °F) Manual -20 … +130 °C (-4 … 266 °F)	Automatic via IMT Compensation from 0 … 40 °C (32 … 104 °F)	Non-linear function for ultrapure and natural waters to EN 27 888
Reference temperature	—	—	20/25 °C (68/77 °F) selectable
Calibration	1-2 point calibration with technical buffers	Automatic calibration	Automatic calibration

Ordering Information

Portable Multi-parameter instrument SETs		Order No.
pH/Oxi 340i/3400i* SET 2	Robust and waterproof portable multi-parameter instrument with data logger and serial interface for battery operation, including SenTix® 41-3, CellOx® 325-3, professional case and accessories	2D30-101B20
pH/Cond 340i/3400i* SET 2	Robust and waterproof portable multi-parameter instrument with data logger and serial interface for battery operation, including SenTix® 41-3, TetraCon® 325-3, professional case and accessories	2E30-101B02
Multi 340i/3400i* SET B	Robust and waterproof portable multi-parameter instrument with data logger and serial interface for battery operation, including SenTix® 41-3, CellOx® 325-3, TetraCon® 325-3, professional case and accessories	2F30-104B22
Universal power supply	100 V - 240 V, 50-60 Hz; for 340i/3400i* series	902 867

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For other electrodes/sensors in SET, see WTW Product Details.

** North American version* *** depending on sensor and/or sample*

Portable Multi-parameter Field Meter

The WTW ProfiLine Multi 1970i, supplied with integrated powerful NiMH rechargeable batteries, is both waterproof (IP 66) and submersible (IP 67). With its RS 232 output, real-time clock and 500 data file data logger, this rugged meter conforms to all GLP requirements. It allows the simultaneous connection of pH, conductivity and dissolved oxygen probes. The parameter to be measured is set in the display via the "M" function key and can then be measured or stored. Comes equipped with a handle and carrying strap.

ProfiLine Multi 1970i

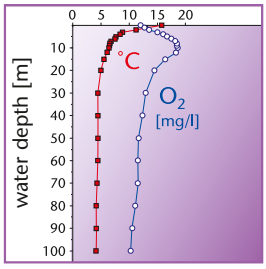
- Robust, shockproof
- Waterproof, submersible
- Most versatile multi for depth measurements

The Multi 1970i has a built-in preamplifier and is therefore suitable in combination with the WTW depth armatures for single-parameter operation at depths down to 100 m (330 ft).

Up to three depth armatures can be simultaneously connected using the adapter ADA/TA 197 pH.

Measurement at depth profiles

Dissolved oxygen, pH and conductivity: Depth armatures with integrated temperature measurement sensors, up to 100 m (330 ft) of cable with a waterproof plug (IP 67), VA 1.4571 steel armor and protective hood, pressure resistant to max. 10 bar, suitable for small boreholes (2" diameter).



From left to right:
DO depth armature TA 197 Oxi and battery-powered stirrer BR 325,
pH depth armature TA 197 pH,
4-electrode depth measuring cell TA 197 LF

Technical Data ProfiLine Multi 1970i

Model	pH measurement	Dissolved oxygen measurement	Conductivity measurement
Range/ Resolution	pH: -2.00 … +19.99 mV: -1999 …+1999	O_2 concentration: 0.00 … 19.99 mg/l 0.0 … 90.0 mg/l O_2 saturation: 0.00 … 19.99% 0.0 … 600%*	1 µS/cm … 500 mS/cm in 4 ranges Salinity: 0.0 … 70.0
Accuracy (±1 digit)	pH: ± 0.01 pH, mV: ± 1 mV	±0.5% of value	±1% of value
Temperature compensation	Automatic -5 … +105.0 °C (23 … 221 °F) Manual -20 … +130 °C (-4 … 266 °F)	Automatic via IMT compensation from 0 … 40 °C (32 … 104 °F)	Non-linear function for ultrapure and natural waters to EN 27 888
Reference temperature	—	—	20/25 °C (68/77 °F) selectable
Calibration	1-2 point calibration with technical buffers	Automatic calibration	Automatic calibration

Ordering Information

Portable Multi-parameter Field Meter		Order No.
ProfiLine Multi 1970i	Robust, waterproof, submersible multi-parameter instrument	3F30-110

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** depends on DO sensor and medium*

For sensors, depth armatures and accessories, see WTW Product Details.