SensoDirect 200 (IP 67 waterproof)



Dissolved Oxygen (O_2)
O_2-concentration mg/l
O_2-saturation in %
°C/°F

pH/Redox/ORP
°C/°F

TDS/Conductivity/Salinity
°C/°F

Description of unit

The microprocessor-controlled SensoDirect range of handheld meters from AQUALYTIC® meets the day-to-day demands for sturdy and reliable systems for the measurement of pH value or ORP/Redox, conductivity/TDS and dissolved oxygen.

The water-tight housing complies with **IP67** and is equipped as standard with protective armouring and built-in electrode holder ensuring reliable operation even in extreme ambient conditions.

The support can be flipped up to hang the meter on pipes or branches.

A direct, easily understood user interface, outlining the required configuration options for all three systems, facilitates meter operation both outdoors and in the laboratory.

The automatic Hold function "freezes" stable measuring data in the display and indicates the presence of stable and reproducible results.

The internal memory allows storage of 20 data sets to facilitate subsequent evaluation.

The integral automatic switch-off feature, varying from 1 to 120 minutes, increases the operating life of the units.

The power consumption of all three units has been reduced to a minimum. As a result, the 4 x 1.5 V integrated batteries have an operating life of up to 15000 hours, depending on the unit version.



AQUALYTIC® SensoDirect pH200

- pH / redox measurement and temperature measurement (Pt1000 or NTC 30kOhm)
- Automatic temperature compensation (ATC)
- Auto Hold function
- Internal memory for 20 data sets
- Automatic buffer recognition with Tintometer standard or DIN or individual buffer
- 1, 2 and 3 point calibration
- Low battery and battery change indicator
- Sensor evaluation in the display based on the calibration result (from 10 to 100%)
- Battery operation period up to 15000 hours
- Shock-absorbing rubber protective armouring
- Waterproof

AQUALYTIC® SensoDirect Con200

- Conductivity, Total Dissolved Solids (TDS), Salinity and Temperature measurement
- Dirt-insensitive up-to-date 4-pole conductivity cell offering highest precision
- Automatic temperature compensation (ATC)
- Min/Max value storage
- Internal memory for 20 data sets
- Linear and non-linear temperature compensation (EN27888)
- Calibration against standard solutions
- Low battery and battery change indicator
- Shock-absorbing rubber protective armouring
- Battery operation period up to 3000 hours
- Waterproof

AQUALYTIC® SensoDirect Oxi200

- Oxygen partial pressure, Oxygen concentration, Oxygen saturation, Temperature measurement
- Automatic absolute air pressure measurement
- Auto Hold function
- Easy calibration against oxygen in air
- Salinity correction
- Self-polarising galvanic oxygen probe, allows instant measurement after the system is switched on
- Low battery and battery change indicator
- Sensor evaluation in the display
- Accessories for depth measurement
- Battery operation period up to 12000 hours
- Shock-absorbing rubber protective armouring
- Waterproof

Applications

- Drinking Water
- Cooling/Boiler Water
- Waste Water
- Pool Water
- Surface Water
- Water Treatment Companies
- Industrial and Governmental Laboratories

AQUALYTIC® electrodes/ measuring probes

The wide variety of high-quality electrodes and measuring probes for the SensoDirect 200 meters makes them suitable for almost any application in water analysis, industry and research.

pH combination electrodes made of glass and plastic, with gel or liquid electrolyte, as well as various temperature sensors (NTC 30kOhm, Pt1000) are considered standard for modern pH meters.

Redox electrodes made of plastic with gel electrolyte and platinum tip are hardwearing and easy to use.

The galvanic, membrane-covered oxygen sensor with built-in temperature sensor allows instant measurement without the need for time-consuming polarisation.

The sturdy, dirt-insensitive 4-pole conductivity measuring cell with graphite electrodes is ideal for use in industrial process and waste water analysis. The temperature range from 0…80 °C, for a short period up to 100°C, make this sensor to a practice-oriented, user friendly item.



AQUALYTIC® pH-temperature, conductivity and oxygen probes

pH 200

Technical Data

pH:	0.00 ... 14.00
Accuracy:	± 0.01 pH (at nominal temperature, unit ± 1 digit)
Temperature:	-10.0 ... +110.0 °C 14.0 ... 230.0 ° F
Accuracy:	±0.2 °C (-0..50 °C), otherwise ± 0.4 °C
Redox (ORP):	-1999 ... +2000 mV
Relative Redox:	-1792 ... +2206 Rel mV (based on DIN 38 404
Accuracy:	± 0.1 % FS (mV or Rel mV)
Sensor connections:	DIN 19262 and two 4 mm banana sockets "Temp" and "Ref"
Input resistance:	>1012 Ohm (typ.)
Input current:	<1 pA
Nominal temperature:	25 °C
Operating temperature:	0 to +50 °C
Storage temperature:	-20 to +70 °C
Power supply:	4 x 1.5V battery, type AA Operating time up to >15,000h
Power consumption:	0.2 mA
Auto-Off function:	0 - 120 minutes
Calibration:	1-, 2- or 3-point calibration with auto buffer recognition Tintometer buffer, DIN buffer or user-selectable buffer
CE:	EN 55 022 : 6 / 1993 class B, EN 50 082-1 (EN 61000-4-6, EN 61000-4-4, EN 61000-4-3, EN 61000-4-2 conforms to the EMC Directive 89/336/EEC and 73/23/EEC



pH/temperature-electrode plastic/gel type 230



SensoDirect pH200 in carrying case

Delivery Content

SensoDirect pH200

Code	Article
4721200	SensoDirect pH200, without electrode, but with instrument, batteries, instruction manual, lanyard, in case
4721220	SensoDirect pH200 (SET 1) complete set with instrument, batteries, pH/temp. plastic-electrode type 230, pH-buffer-set (pH 4.00/7.00/10.00), in case, ready to use
4721221	SensoDirect pH200 (SET 2) as SET1, but with pH/temp. plastic-electrode type 225, and temperature sensor Pt 1000
721225	pH-electrode plastic/gel-type 225
721230	pH/temp.-electrode type 230 plastic/gel/temperature NTC30kOhm
721235	pH-electrode glass/gel-type 235
721240	Redox-electrode plastic-type 240
721245	Temperature sensor
418609	KCl-solution, 3 molar saturated with AgCl, 100 ml
721250	pH buffer-set 4.00/7.00/10.00 (25°C)
721252	pH buffer 4.00 (25°C) 1 litre
721254	pH buffer 7.00 (25°C) 1 litre
721256	pH buffer 10.00 (25°C) 1 litre
721260	Adapter cable DIN19262 - BNC
721265	Adapter cable DIN19262 S7 plug-head
725010	SensoDirect Lanyard
725020	Case SensoDirect (empty)

Con 200

Technical Data

Conductivity:	0.0 ... 200.0 µS/cm 0 ... 2000 µS/cm 0.00 ... 20.00 mS/cm 0.0 ... 200.0 mS/cm
Resistance:	0.005 ... 100.0 kOhm*cm
TDS:	0 ... 1999 mg/l
Salinity:	0.0 ... 70.0 g/kg
Accuracy:	± 0.5 % v. MW ± 0.5 % FS (± 3 digits)
Temperature:	-5.0 ... 100.0 °C 23.0 ... 212 ° F
Accuracy:	±0.3K
Cell constant:	0.50 ± 0.10 cm-1
Temperature compensation:	selectable: - linear , 0.3 to 3.0 %/K - non-linear in acc. with EN 27 888 - no compensation
Reference temperature:	20 °C and 25 °C
Calibration:	1-point calibration in the range from 1000 to 2000 µS/cm
Nominal temperature:	25 °C
Operating temperature:	Unit: 0 to + 50 °C Measuring cell: -5 to 80 °C (up to 100 °C for short periods)
Power supply:	4 x 1.5 V battery, Type AA Operating time up to 3000 h
Power consumption:	ca. 3 mA
Auto-Off function:	0 - 120 minutes
Measuring cell:	4-pole conductivity measuring cell with integrated temperature-sensor (NTC10kOhm). Electrode material: special graphite Shaft material: epoxy Temperature sensor: stainless steel Dimensions: diameter 12 mm, 120 mm long
CE:	EN 55 022 : 6 / 1993 class B, EN 50 082-1 (EN 61000-4-6, EN 61000-4-4, EN 61000-4-3, EN 61000-4-2 conforms to the EMC Directive 89/336/EEC and 73/23/EEC



SensoDirect Con200 in carrying case

Delivery Content

SensoDirect Con200

Code	Article
4722220	SensoDirect Con200 complete set with instrument, batteries, 4-Pole conductivity cell, in case, ready to use
722225	SensoDirect Conductivity Cell, 4-Pole Technology
722250	Calibration solution 1413µS/cm
725010	SensoDirect Lanyard
725020	Case SensoDirect (empty)



Conductivity cell, 4-pole technology

Oxi 200

Technical Data

O_2 partial pressure:	0.0...570.0 hPa, 0...1200 hPa 0.0...427.5 mm Hg, 0...900 mm Hg
O_2 concentration:	0.00...25.00 mg/L, 0.0...70.0 mg/L
O_2 saturation:	0.0...250.0 %, 0...600 %
Accuracy:	± 1.5% ± 0.2 mg/L (0...25 mg/L) ± 2.5% ± 0.3 mg/L (25...70 mg/L) ±1Digit
Temperature:	-5.0 ... + 50.0 °C 23.0 ... 122.0 ° F
Accuracy:	± 0.1 °C
Abs. air pressure:	500..1100 hPa
Accuracy:	± 0.5% full scale
Nominal temperature:	25 °C
Operating temperature:	0 to +50 °C
Storage temperature:	-20 to +70 °C
Power supply:	4 x 1.5 V battery, Type AA Operating time up to 12.000 h
Power consumption:	max. 0.25 mA
Auto-Off function:	0 - 120 minutes
Dimensions:	175 x 140 x 45 mm (L x W x H)
Weight:	approx. 580 g
Electrode:	Self-polarising oxygen electrode with integrated NTC sensor Connection: 7-pin DIN socket Installation diameter: 12.0 ± 0.2 mm Overall length: approx. 220 mm (incl. kink protection) Operating temperature: 0...40 °C
CE:	EN 55 022 : 6 / 1993 class B, EN 50 082-1 (EN 61000-4-6, EN 61000-4-4, EN 61000-4-3, EN 61000-4-2 conforms to the EMC Directive 89/336/EEC and 73/23/EEC



Oxygen sensor, self polarising

Delivery Content

SensoDirect Oxi200

Code	Article
4723220	SensoDirect Oxi200 complete set with instrument, batteries, oxygen sensor (1.5 m cable), electrolyte (KOH), 3 interchangeable membrane heads, in case, ready to use
4723221	SensoDirect Oxi200 complete set as above, but with oxygen sensor (10 m cable)
4723222	SensoDirect Oxi200 complete set as above, but with oxygen sensor (30 m cable)
723201	Oxygen sensor, 1.5 m cable for SensoDirect
723210	Oxygen sensor, 10 m cable for SensoDirect
723230	Oxygen sensor, 30 m cable for SensoDirect
723250	Service Set Oxygen sensor 3 interchangeable membrane heads, 100 ml plastic bottle KOH-solution 3 mol/l
723260	Protection cap for depth measurement
725010	SensoDirect Lanyard
725020	Case SensoDirect (empty)



SensoDirect Oxi200 in carrying case

Tintometer®-Group

SensoDirect 110



Determination of pH and Conductivity

pH110

pH-meter SensoDirect pH110

The SensoDirect pH110 is a high quality, portable, battery operated pH meter with a measuring range of 0 - 14 pH. The instrument is equipped as standard with protective casing and built-in electrode holder, ensuring reliable operation even in extreme ambient conditions. The unit is equipped with an automatic battery check feature. If the low battery indicator appears it is time to change the battery.

The gel electrode of the SensoDirect pH110 is suitable for the full range of 0 - 14 pH and is temperature resistant over the range 0 - 80 °C. It is fitted with a BNC connector as standard.

The SensoDirect pH110 comes in a rugged plastic case complete with electrode, and pH 4 and pH 7 buffer solutions.

Technical data

Range:	0 - 14 pH
Resolution:	0.01 pH
Temperature compensation:	not necessary
Accuracy:	± 0.07 pH (pH5-pH9) ± 0.1 pH (pH4-pH10) ± 0.2 pH (pH1-pH3.9) ± 0.2 pH (pH10,1-pH13) 23 ± 5 °C, after calibration
Ambient conditions:	0 - 50 °C 0 - 80 % rel. humidity (non condensing)
Battery:	9 V block
Dimensions:	208 x 110 x 34 mm (L x W x H)
Weight:	approx. 380 g
CE:	EN 55022-class B (EN 50081-1) IEC 801-2 (EN 50082-1) IEC 801-3 (EN 50082-1)
Order Code	472 13 00

Delivery Content

SensoDirect pH110
complete set, instrument, battery, pH-buffer (4.0 / 7.0), pH plastic electrode-type 110, in case, ready to use



pH electrode

Accessories SensoDirect pH110

Code	Article
721330	pH-electrode plastic/gel, type pH110
721247	pH-buffer, 4.00 (25°C), 90 ml
721248	pH-buffer, 7.00 (25°C), 90 ml
721249	pH-buffer, 10.00 (25°C), 90 ml



SensoDirect pH110 in case

Advantages

- High measuring accuracy
- Light weight
- Protective casing
- Large digital display
- "Low battery" indicator
- Two-Point Calibration

Conductivity meter SensoDirect Con110

The SensoDirect Con110 is a compact and versatile meter that can be used wherever there is a need to measure conductivity, accurately and quickly. The unit is extremely easy to use and is equipped as standard with a protective casing and built-in electrode holder.

It is equipped with a LC display showing two or three decimal places and a measuring range either of 0.001 – 1.999 or 0.01 – 19.99 mS/cm.

As conductivity measurement also depends on temperature, the SensoDirect Con110 includes an automatic temperature compensation feature.

The SensoDirect Con110 can be calibrated and adjusted using a potentiometer.

Con110

Technical data

Range :	0.001 - 1.999 mS/cm 0.01 - 19.99 ms/cm
Resolution :	0.001 / 0.01 mS/cm
Temperature compensation:	0 - 100 °C automatically 2 %/K, 25 °C
Accuracy :	± 3 % Full Scale ± 1 Digit (23 ± 5 °C)
Ambient conditions:	0 - 50 °C 0 - 80 % rel. humidity (non condensing)
Battery:	9 V-Block
Dimensions:	208 x 110 x 34 mm (L x W x H)
Weight:	approx. 380 g
CE:	EN 55022-class B (EN 50081-1) IEC 801-2 (EN 50082-1) IEC 801-3 (EN 50082-1)
Order code	472 23 00

Delivery Content

SensoDirect Con110
complete set, instrument, battery, conductivity sensor, in case, ready to use



SensoDirect Con110 in case

Accessories SensoDirect Con110

Code	Article
722250	Conductivity calibration solution, 1413 µS/cm, 500 ml

MicroDirect (IP67 waterproof)



pH-value
ORP/Redox
TDS
Conductivity
Salinity
Temperature

NEW!

optional with temperature measurement °Celsius/°Fahrenheit

MicroDirect	pH 2	pH 30	ORP/Redox 10	Conductivity EC 11
Range	0...14 pH	0...14 pH	-999...+1000 mV	0...2000 µS/cm 0...20,00 mS/cm[1]
Resolution	0.1 pH	0.01 pH	1 mV	10 µS/cm
Accuracy	± 0,1	± 0,01	± 1 % Full scale	± 1 % Full scale
Calibration	3-Punkt	3-Punkt	1-Punkt	1413 µS/cm 12.88 mS/cm
Display	---	0...50 °C/32-122°F	---	0...50 °C/32-122°F
Resolution	---	0.1°C/°F	---	0.1°C/°F
Accuracy	---	± 0.5°C/0.9°F	---	± 0.5°C/0.9°F
Compensation	yes	0-50 °C / 32-122 °F	---	0-50 °C/32-122 °F
Operation Temp.	---	0-50 °C	---	0-50 °C
Battery Capacity	> 250 h	> 500 h	> 500 h	> 150 h
Auto Off	ca. 8.5 minutes after last keypress			
Size/Weight Tester	ca. 16.5 cm x 3.8 cm ,90 gr			
with Packaging	ca. 22 cm x 6 cm x 5 cm,170 gr			
Order Code	19 46 40	19 46 31	19 46 61	19 46 81

MicroDirect	TDS 11	Salinity 11	Temperature
Range	0...2000 ppm 0...10,00 ppt[2]	0...10.00 ppt[3] NaCl	-40...+200 °C changeable to °F
Resolution	10 ppm 0.10 ppt	0.10 ppt	0.1 °C
Accuracy	± 1 % Full Scale	± 1 % Full Scale	± 1 °C from -10°C...+100°C ± 2 °C > +100°C...+200°C
Calibration	9.98 ppm 9.02 ppt	1-Point	
Display	0-50 °C 32-122°F	0-50 °C 32-122°F	
Resolution	0.1°C/°F	0.1°C/°F	
Accuracy	±0.5°C/0.9°F	±0.5°C/0.9°F	
Compensation	0-50 °C / 32-122°F		
Operation Temp.	0-50 °C		0°C...40 °C max. 80°C (cable)
Battery Capacity	> 150 h	> 150 h	ca. 1 year
Auto Off	ca. 8.5 minutes after last keypress		ca. 15 minutes after last keypress
Size/Weight Tester	ca. 16.5 cm x 3.8 cm ø, 90 gr		ca. 9.5 cm x 6.0 cm x 1.8 cm, ca.130 gr
with Packaging	ca. 22 cm x 6 cm x 5 cm,170 gr		ca. 26 cm x 7.5 cm x 2.0 cm, ca.160 gr
Order Code	19 47 01	19 47 11	19 47 30



The MicroDirect series is a range of waterproof and dust-tight (IP67) units for the determination of pH, ORP/redox, conductivity, TDS, salinity and temperature.
The compact, robust housing and replaceable electrodes meet the high standards required of state of the art technology.

All units are equipped with an automatic switch-off and a "Hold" function which freezes the result in the display with a single keypress.

Delivery Content

Each MicroDirect will be supplied with batteries, lanyard, instruction manual as a ready to use unit.

Conversion table

[1] 0 - 20,00 mS/cm = 0 - 20000 µS/cm
[2] 0 - 10,00 ppt TDS = 0 - 10000 ppm TDS
[3] 0 - 10,00 ppt NaCl = 0 - 10000 ppm NaCl
ppm = Parts per Million (mg/l)
ppt = Parts per Thousand