Portable oxygen meter with GLP functions handylab OX 12

The handylab OX12 portable meter in a shock-proof, water-tight casing is also ideally suited for on-site oxygen measurements in rivers, lakes or effluent, as well as for BOD measurements.

Measurement parameters

The oxygen concentration, saturation index and temperature measurement parameters mean that the SCHOTT Instruments handylab OX 12 has a variety of uses.

Measurement memory and interface

The meter has a data memory, whereby measurements can be saved manually or automatically using a timer control, and then evaluated later on. In addition, the oxygen meter has a configurable interface with a recognition function (RS-232) so that it can be connected to a computer (bi-directional) or a recorder.

Measurement reliability

The special AutoRead function, which can be additionally activated, serves to monitor the drift of the combination electrode. The measured value is only released when the stability criteria are fulfilled. This ensures the reproducibility of measurement results.

Measurements

During the measurement process, influence variables such as temperature and air pressure are automatically taken into account and compensated. Even the influence of a higher salinity level on oxygen determination can be corrected by entering the salinity that has been determined using a conductivity meter.

Calibration

Calibration of the handylab OX12 can be performed easily on-site using the air calibration vessel. The vessel ensures a defined humidity and therefore ideal calibration conditions. After automatic calibration, a sensor symbol indicates the status of the oxygen combination electrode. The adjustable calibration timer can remind the user when the next calibration is due to be performed.
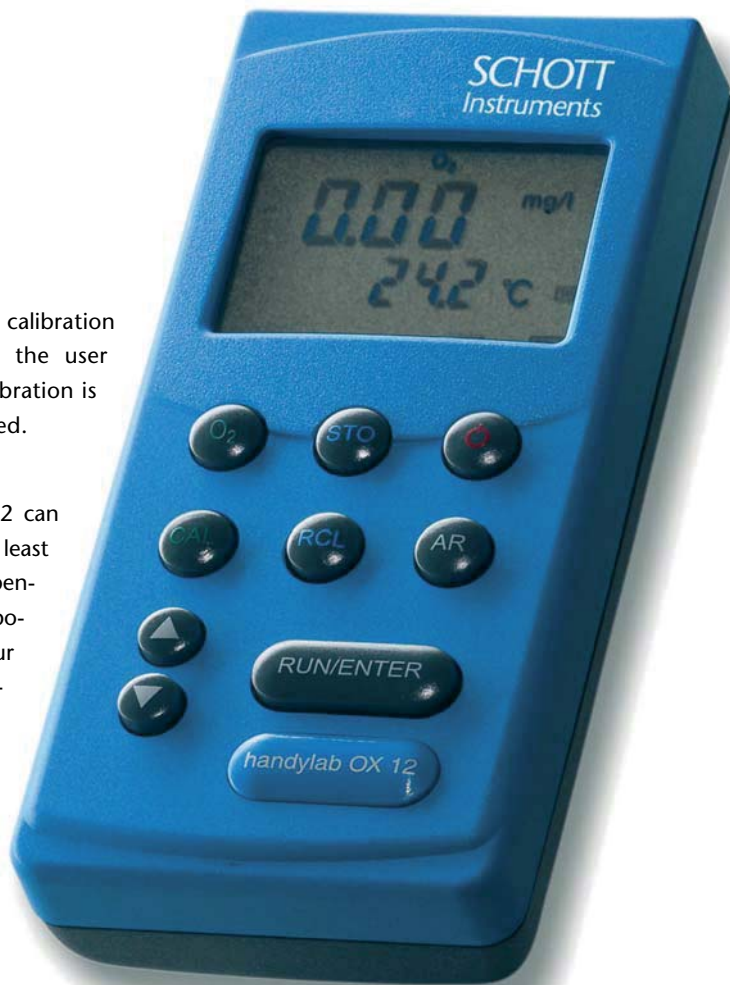
Power supply

The handylab OX12 can be operated for at least 2,000 hours independently of a mains power supply using four conventional batteries. A reminder for the user to replace the batteries appears on the display in good time. The calibration data are retained when the batteries are changed.

Sensor

The modern, zero current free, galvanic sensor 9009/61, which is included with the meter and can be used immediately for measuring purposes, ensures precise, reliable and rapid measurement of oxygen concentrations.

As a set

The handylab OX 12 portable oxygen meter is available as a complete set in a carrying case together with the 9009/61 sensor, the OX 925 maintenance set and the OxiCal®-SL calibration vessel.

Technical data	9009/61 O_2 sensor
Measuring principle	membrane covered galvanic sensor
temperature compensation	IMT
measurement range	0…50 mg/l O_2
temperature range	0…50 °C
max. over-pressure	6 bar
immersion depth	min. 6 cm
	max. 20 m water depth
Material	membrane head and shaft: POM
	membrane FEP
	thermistor housing VA steel (1.4571)
Dimensions	shaft length: 145 mm
	diameter: 15.25 mm
	membrane thickness: 13 µm
Cable connection	fixed cable length: 1.5 m (standard); max. length: 20 m
Approach velocity	> 3 cm/s at 10 % measuring accuracy
	10 cm/s at 5 % measuring accuracy
	18 cm/s at 1 % measuring accuracy
Specifications of sensor when new	
zero signal	< 0.1 % of saturation value
reaction time at 20 °C	t_{90} (90 % of final value) after < 10 sec.
	t_{95} (95 % of final value) after < 16 sec.
	t_{99} (99 % of final value) after < 60 sec.
internal consumption	0.008 µg/h
drift	approx. 3 % per month under operating conditions
service life	min. 6 months per electrolyte filling
polarization time	not required; sensor can be used immediately

Technical data handylab OX 12

Oxygen meter		handylab OX 12
Measuring ranges		
O_2 concentration	ranges	0.00…19.99 mg/l / 0…90.0 mg/l
	resolution max.	0.01
	accuracy	± 0.5 % of measured value
O_2 saturation index	ranges	0.0…199.9 % / 0…600 %
	resolution max.	0.1 %
	accuracy	± 0.5 % of measured value
O_2 partial pressure	ranges	0.0…199.9 mbar / 0…1250 mbar
temperature	range	0…+50.0 °C
	resolution	0.1 K
	accuracy	± 0.1 K
drift control	can be switched off	yes
Correction functions		
air pressure	automatic (built-in pressure sensor)	500…1100 hPa
temperature	automatic (IMT)	0…+40 °C
salinity	using setting keys	0.0…70.0
Calibration		
procedure		air calibration procedure
slope range		0.60…1.25
calibration interval control		1…999 days
calibration data storage		yes
sensor evaluation	via symbol on display	yes
real time clock	integrated with time/date	yes
Data storage		
storage by depression of key		800 data records
time controlled storage	in 7 intervals (5 sec…60 min)	800 data records
Connections		
oxygen sensor		8 pole socket
Interface		
for analogue recorder cable Z 394		4 pole socket
for RS-232 cable Z 395, bi-directional		4 pole socket
Ambient temperature		
operating temperature		-10…+55 °C
relative humidity (annual average)		< 90 %
Power supply		
battery operated		4 x 1.5 V mignon cells (type AA)
battery life time (data remain when changing batteries)		approx. 2,000 h
power supply (no akku)		optionally
automatic switch-off at operation		60 min
Housing		ABS, water-tight key pad
dimensions (H x W x D)		172 mm x 80 mm x 37 mm
weight		approx. 0.3 kg
Display		
LCD multi-function display		60 mm x 45 mm
Instrument safety	protection class	3, EN 61010-1 A2
	protection type	IP 66, EN 60529
approvals/marks of conformity		cETLus, CE
instrument warranty		3 years

Order overview handylab pH meters, conductivity meters and oxygen meters

pH meters	Type no.	Order no.
handylab pH 11, individual meter	handylab pH 11	28 520 2871
handylab pH11, individual meter with carrying case	handylab pH 11/K	28 520 2863
handylab pH 11, case set, complete, ready to use with pH combination electrode BlueLine 23 pH, calibration solutions and plastic beakers	handylab pH 11/23 pH	28 520 2917
handylab pH 11, case set, complete, ready to use with pH combination electrode BlueLine 24 pH, calibration solutions and plastic beakers	handylab pH 11/24 pH	28 520 2982
handylab pH 11, case set, complete, ready to use with pH combination electrode BlueLine 14 pH, calibration solutions and plastic beakers	handylab pH 11/14 pH	28 520 2999
handylab pH 12, individual meter	handylab pH 12	28 520 2896
handylab pH12, individual meter with carrying case	handylab pH 12/K	28 520 2888
handylab pH 12, case set, complete, ready to use with pH combination electrode BlueLine 24 pH, calibration solutions and plastic beakers	handylab pH 12/24 pH	28 520 3054
handylab pH 12, case set, complete, ready to use with pH combination electrode BlueLine 14 pH, calibration solutions and plastic beakers	handylab pH 12/l4 pH	28 520 3062
Conductivity meters		
handylab LF 11, individual meter	handylab LF 11	28 520 3292
handylab LF11, individual meter with carrying case	handylab LF 11/K	28 520 3276
handylab LF11, case set, complete, ready to use with 4-pole conductivity cell LF 413T, calibration solutions and plastic beaker	handylab LF 11/413 T	28 520 3310
handylab LF 11, case set, complete, ready to use with 2-pole conductivity cell LF 513 T, calibration solutions and plastic beaker	handylab LF 11/513 T	28 520 3321
handylab LF 11, case set, complete, ready to use with 4-pole conductivity cell LF 613 T, calibration solutions and plastic beaker	handylab LF 11/613 T	28 520 3346
handylab LF 12, individual meter	handylab LF 12	28 520 3362
handylab LF12, individual meter with carrying case	handylab LF 12/K	28 520 3354
handylab LF12, case set, complete, ready to use with 4-pole conductivity cell LF 413T, calibration solutions and plastic beaker	handylab LF 12/413 T	28 520 3330
handylab LF 12, case set, complete, ready to use with 4-pole conductivity cell LF 613 T, calibration solutions and plastic beaker	handylab LF 12/613 T	28 520 3379
Oxygen meter		
handylab OX12, individual meter with carrying case	handylab LF 12/K	106 3835
handylab OX 12, case set, complete, ready to use with oxygen sensor 9009/61, calibration and maintenance accessories	handylab OX12-Set	28 520 2793

Order overview handylab multi-parameter portable meters

Multi-Parameter meters	Type no.	Order no.
handylab pH/LF 12, individual meter	handylab pH/LF 12	28 520 3465
handylab pH/LF 12, case set, complete, ready to use with pH combination electrode BlueLine 24-3 pH, 4-pole conductivity cell LF 413-3 T, calibration and maintenance accessories	handylab pH/LF 12-Set	28 520 3473
handylab multi 12, individual meter	handylab multi 12	28 520 3502
handylab multi 12, case set, complete, ready to use with pH combination electrode BlueLine 24-3 pH, 4-pole conductivity cell LF 413-3 T, oxygen sensor 9009/63, calibration and maintenance accessories	handylab multi 12-Set	28 520 3519
Accessories		
Redox combination electrode with plug head	BlueLine 31 Rx	28 512 9311
Plug cable combination e.g. for BlueLine 31 Rx, 1 m cable, DIN plug	LB 1 A	28 512 2653
Electrolyte solution KCl 3 mol/l, 1000 ml DURAN® bottle	L 300	28 513 8554
Technical buffer solutions pH 4.00 / 7.00, 2 x 30 ampoules	L 4690	28 513 8398
Redox test solution 180, 430, 600 mV Pt/calomel; 220, 470, 640 mV Pt/Ag/AgCl, 3 x 20 ampoule	L 4648	28 513 8784
Conductivity test solutions KCl 0.01 / 0.1 / 1 mol/l (1.41 mS/cm / 12.9 mS/cm / 112 mS/cm), 3 x 6 ampoules	LF 995	28 512 6293
Field armouring with holder carrying handle and shoulder strap, for handylab pH meters	Z 384	28 520 4848
Protective armouring with holder and carrying handle, for handylab pH meters	Z 385	28 520 4856
Holder set for protective armouring, for handylab OX12 meters	Z 386	28 520 4864
Rubberized elastic protective armouring with handle support, for all handylab meters	Z 387	28 520 4872
Universal mains power supply unit, 100...240 V for all handylab 12 models	Z 850	28 520 4889
Connecting cable for analogue recorder, for handylab pH 12, LF 12, OX12	Z 394	28 520 4942
Connecting cable for PC, for all handylab 12 models (software included)	Z 395	28 520 4959

Subject to technical changes.
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