Portable conductivity meters with GLP functions handylab LF 11 and LF 12

The handylab LF 11 and LF 12 portable conductivity meters in shock-proof, water-tight casings are ideally suited for field work.

Measurement parameters

The versatile conductivity meters can be used to measure electrical conductivity, total dissolved solids (TDS), salinity and temperature.

Measurement memory and interface

In comparison with the handylab LF 11, the handylab LF 12 additionally has a data memory, which makes it possible to save measurements manually or automatically using a timer control, and then evaluate them at a later time. Furthermore, this conductivity meter has a configurable interface with a recognition function (RS-232) so that it can be connected to a computer (bidirectional) or a recorder.

Measurement reliability

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

Temperature compensation

The automatic temperature compensation works in various selectable modes:
- with an adjustable linear temperature coefficient,
- with a fixed non-linear temperature coefficient or
- with the temperature compensation deactivated.

A reference temperature of 20 °C or 25 °C can be selected.

Calibration

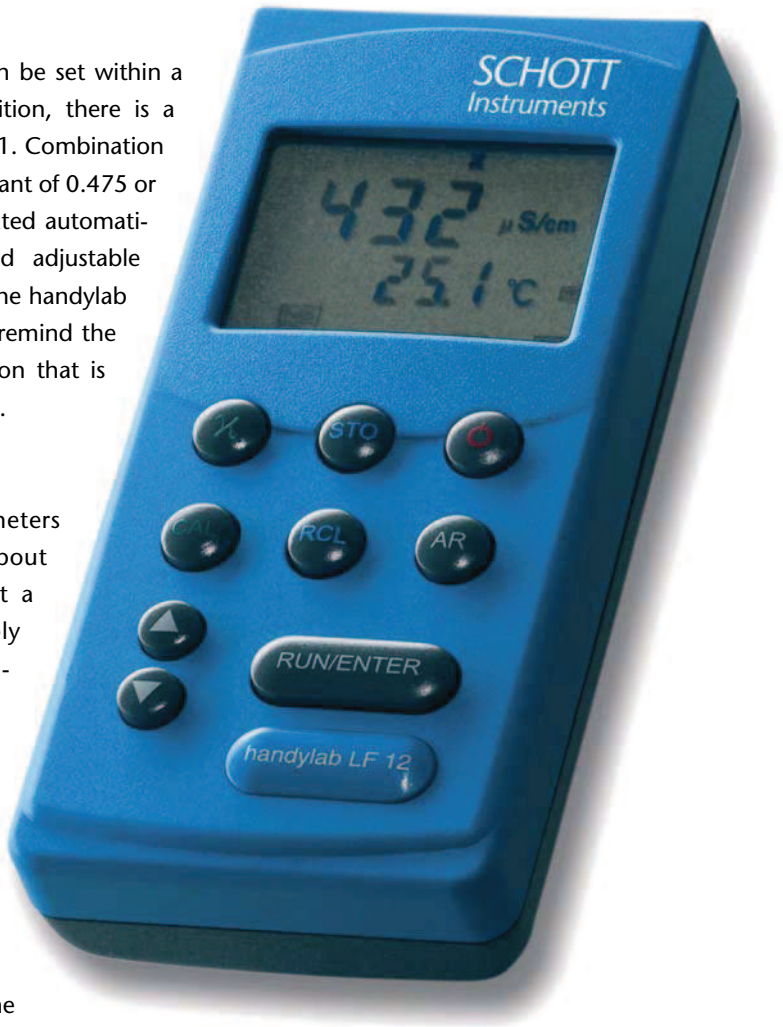
The cell constant can be set within a wide range. In addition, there is a fixed constant of 0.01. Combination cells with a cell constant of 0.475 or 1 can also be calibrated automatically. The integrated adjustable calibration timer in the handylab LF 12 can be set to remind the user of any calibration that is due to be performed.

Power supply

The conductivity meters can be used for about 2,500 hours without a mains power supply using four conventional batteries. A reminder is shown on the display when the batteries have to be replaced. When the batteries are changed, the calibration data are retained in the memory. The handylab LF12 can also be operated with the optional powerpack.

Sensors

Either type LF 513 T electrodes (two pole technology) or type LF 613 T electrodes (four pole technology) can be utilized alternatively. Both types have an integrated temperature sensor. We would be pleased to advise you about your specific application.



Included in the set

The LF 11 and LF 12 conductivity meters are also available as part of a cost-effective set in a carrying case, which includes a combination electrode, calibration solutions and a measuring beaker. With this set, you can get to work right away.

Technical data
handylab LF 11, handylab LF 12

Parameter		handylab LF 11	handylab LF 12
Measuring ranges			
conductivity	in 5 ranges or AutoRange	0.0 µS/cm…500 mS/cm	0.0 µS/cm…500 mS/cm
	at k = 0.1 and k = 0.01	0.00 µS/cm…19.99 µS/cm	0.00 µS/cm…19.99 µS/cm
	at k = 0.01	0.000 µS/cm…1.999 µS/cm	0.000 µS/cm…1.999 µS/cm
specific resistance		0.000…1999 MΩ·cm	0.000…1999 MΩ·cm
salinity	acc. to IOT table	0.0…70.0	0.0…70.0
TDS	factor adjustable 0.40…1.00	0…1999 mg/l	0…1999 mg/l
temperature	automatic, 3 modes selectable	-5.0…+105.0 °C	-5.0…+105.0 °C
	resolution	0.1 K	0.1 K
	manual adjustment	-5…+100 °C	-5…+100 °C
Cell constants	adjustable	0.01; 0.090…0.110;	0.01; 0.090…0.110;
		0.250…2.500	0.250…2.500
	calibrate	0.450…0.500 ; 0.800…1.200	0.450…0.500 ; 0.800…1.200
	calibration interval control	-	1…999 days
Accuracy			
	conductivity	± 0.5 % of measured value	± 0.5 % of measured value
	salinity	± 0.2	± 0.2
	TDS	± 2 %	± 2 %
	temperature (NTC 30)	±0.1 K	±0.1 K
Reference temperature	selectable	20 °C or 25 °C	20 °C or 25 °C
temperature compensation mode			
non-linear function natural water	acc. to EN 27 888 (DIN 38 404)	yes	yes
linear compensation		0.001…3.000 %/K	0.001…3.000 %/K
no compensation		yes	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			
for 2 and 4 pole cells			
with/without temperature sensor (NTC 30)		8 poles socket	8 poles socket
Interface			
for analogue recorder cable Z 394		-	4 poles socket
for RS-232 cable Z 395, bi-directional		-	4 poles socket
Ambient temperature			
operating temperature		-10…+55 °C	-10…+55 °C
relative humidity (annual average)		< 90 %	< 90 %
Power supply			
battery operated		4 x 1.5 V mignon cells	4 x 1.5 V mignon cells
battery life time (data remain when changing batteries)		approx. 2,500 h	approx. 2,500 h
power supply (no akku)		-	optionally
automatic switch-off at operation		60 min	60 min
Housing		ABS, water-tight key pad	ABS, water-tight key pad
dimensions (H x W x D)		172 mm x 80 mm x 37 mm	172 mm x 80 mm x 37 mm
weight		approx. 0.3 kg	approx. 0.3 kg
Display			
LCD multi-function display		60 mm x 45 mm	60 mm x 45 mm
Instrument safety	protection class	3, EN 61010-1 A2	3, EN 61010-1 A2
	protection type	IP 66, EN 60529	IP 66, EN 60529
approvals/marks of conformity		cETLus, CE	cETLus, CE
instrument warranty		3 years	3 years