



Professional Waterproof Meters

pH, pH/ISE, EC/TDS and DO





HI9819X Series Professional Waterproof Meters



New Quick Connect Probes
(HI98190, HI98192 and HI98193 only)

Benchtop Performance in a Portable Meter

The HI9819X series of meters combine all of the features of a benchtop into a portable IP67 rated waterproof enclosure making them one of the most versatile meters on the market.

All meters in the series are supplied with a rugged, custom carrying case that securely holds the meter and all accessories.

A backlit, graphic LCD provides easy to read resolution even in low-lit areas. A combination of dedicated and soft keys allows for intuitive operation in a choice of languages while the extended battery life assures long operation.

GLP and On-Screen Help

Comprehensive GLP data is directly accessible by pressing the GLP key; the contextual help menu can be accessed to obtain on-screen information and assistance at the touch of a button.

AutoHold

Pressing AutoHold during measurement will automatically hold the first stable reading on the display.

Enhanced Calibration

An "out of calibration range" warning can be engaged to keep the user informed of the current calibration and help to avoid performing measurements that are out of range.



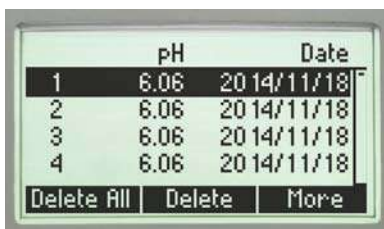
Series Features

- **Designed for professionals**
 - These instruments can be easily operated with one hand and is housed in an IP67 rated waterproof, rugged enclosure. The meter and accessories all fit in our rugged carrying case with custom insert.

- **Waterproof**
 - IP67 rated waterproof, rugged enclosure
- **Clear display**
 - Dot matrix display with multifunction virtual keys
- **AutoHold**
 - Automatically holds the first stable reading on the display
- **Calibration timeout**
 - Alerts when calibration is due at a specified interval
- **Connectivity**
 - PC connectivity via opto-isolated micro-USB with HI92000 software

- **GLP**
 - GLP data provides data from previous calibration to ensure Good Laboratory Practices are met
- **Intuitive keypad**
 - Most of the available options such as GLP information, help, range, calibration and backlight have a dedicated button
- **Supplied complete**
 - Each meter is supplied complete with sensor, calibration solution, beakers, PC software and connection cable, instruction manual, quick start guide and batteries in a rugged, custom carrying case.

On-screen Features



- **Backlit LCD**
 - Press the backlight button to view the display in low-light conditions

- **Log-on-demand**
 - Store measurement data at the press of a button. Data can be viewed on-screen or transferred to a PC



- **GLP data**
 - Comprehensive GLP functions are directly accessible by pressing the GLP key. Calibration data, including date, time and calibration values are stored for retrieval at a later time

- **Setup screen**
 - Our extensive setup screen features a host of configurable options such as time, date, temperature units and language for help screens and guides

- **Calibrate right in the case with custom beaker holders**
 - Our custom carrying case features beaker holders for calibration out in the field



HI98193 Professional Waterproof Meters

Dissolved Oxygen and BOD

- **Choice of units**
 - Display units in % saturation or mg/L (ppm)
- **Salinity compensation**
 - Users can set the salinity value
- **Automatic pressure compensation**
 - Built-in barometer with user-selectable units (mmHg, inHg, atm, psi, kPa, mbar)
- **Built-in calculations**
 - Determination of Biochemical Oxygen Demand (BOD), Oxygen Uptake Rate (OUR) and Specific Oxygen Uptake Rate (SOUR)
- **Polarization**
 - Automatic polarization of probe at startup
- **Membrane caps**
 - Ready-to-use PTFE preformed membrane caps
- **200 hour battery life**
 - Approximately 200 hours of continuous use

For Universal Applications

The HI98193 portable dissolved oxygen meter has extended ranges of up to 50 ppm and 600% saturation. When measuring dissolved oxygen, compensations for salinity, temperature and pressure are essential to improve the accuracy and precision of readings.

Salinity compensation allows for direct determination of dissolved oxygen in saline waters. Temperature compensation is automatic with the probes built-in sensor, which features

a one or two-point calibration. Pressure compensation with the meter's built-in barometer can be validated against a reference barometer, and if needed, can be recalibrated in user-selectable units (mmHg, inHg, atm, psi, kPa, mbar). With the internal barometer, the HI98193 is able to compensate for changes in barometric pressure so there is no need for charts, altitude information or external barometric pressure information.

Other features include measurement, methods and calculations for BOD, OUR and SOUR.

Specifications

HI98193

DO	Range	0.00 to 50.00 mg/L (ppm); 0.0 to 600.0% saturation
	Resolution	0.01 mg/L (ppm); 0.1% saturation
	Accuracy (@25°C/77°F)	±1.5% of reading ±1 digit
	Calibration	automatic one or two point at 100 % (8.26 mg/L) and 0 % (0 mg/L); manual one point using a value entered by the user in % saturation or mg/L
Atmospheric Pressure	Range	450 to 850 mmHg
	Resolution	1 mmHg
	Accuracy (@25°C/77°F)	± 3 mmHg within ±15% from the calibration point
	Calibration	one point at any in range pressure value
Temperature	Range	-20.0 to 120.0°C; -4.0 to 248.0°F
	Resolution	0.1°C; 0.1°F
	Accuracy (@25°C/77°F)	±0.2°C; ±0.4°F (excluding probe error)
	Calibration	one or two point at any in range temperature value
Additional Specifications	Measurement Modes	direct DO; BOD (biochemical oxygen demand); OUR (oxygen uptake rate); SOUR (specific oxygen uptake rate)
	Barometric Compensation	automatic from 450 to 850 mmHg
	Salinity Compensation	automatic from 0 to 70 g/L
	Temperature Compensation	automatic from 0.0 to 50.0 °C (32.0 to 122.0 °F)
	Probe	HI764073 polarographic DO probe with protective sleeve, internal temperature sensor, DIN connector and 4m (13') cable (included)
	Logging	log-on-demand up to 400 samples
	PC Connectivity	opto-isolated USB (with HI92000 software)
	Battery Type / Life	1.5V (4) AA batteries / approximately 200 hours of continuous use without backlight (50 hours with backlight)
	Auto-off	user-selectable: 5, 10, 30, 60 min or can be disabled
	Environment	0 to 50°C (32 to 122°F); RH 100% IP67
	Dimensions	185 x 93 x 35.2 mm (7.3 x 3.6 x 1.4")
	Weight	400 g (14.2 oz.)

- Automatic barometric pressure compensation



- Results in mg/L (ppm) or % saturation

Quick connect probe

The HI764073 polarographic dissolved oxygen probe features a quick connect DIN connector to make attaching and removing the probe simple and easy.

Data Logging

The HI98193's log-on-demand features allows users to store up to 400 samples that can be later transferred to a PC with the HI920015 USB cable and HI92000 software.

GLP and On-Screen Help

Comprehensive GLP data is directly accessible by pressing the GLP key; the contextual help menu can be accessed to obtain on-screen information and assistance at the touch of a button.

On-screen Features



- BOD results
 - BOD is calculated in mg per liter from the difference between the initial and final dissolved oxygen concentration readings.



- BOD parameters and records
 - All necessary parameters for BOD testing can be set and displayed at once.
 - A list of all saved BOD data can be easily retrieved and shown on the LCD display.



- OUR results
 - Measured in mg of oxygen consumed per L per hour.



- SOUR results
 - Measured in mg of oxygen consumed per g of volatile suspended solids per hour.



Shown in HI720192 rugged carrying case with custom insert (included)



Shown in HI720193 rugged carrying case with custom insert (included)

HI98192 includes:



HI763133 platinum, four-ring conductivity/TDS probe with internal temperature sensor and 1 m (3.3') cable



HI7031M 1413 μS/cm calibration solution (230 mL)



HI7035M 111.8 mS/cm calibration solution (230 mL)

HI98193 includes:



HI764073 polarographic DO probe with protective sleeve, internal temperature sensor, DIN connector and 4m (13') cable



HI7040 bi-component zero oxygen solution (230 mL + 30 mL)



HI7041S electrolyte solution (30 mL)



preformed PTFE membrane caps (2)



DO protective cap



O-rings (2)

Optional Electrodes for HI98190 pH/ORP Meter

pH Electrodes



HI11313
Single ceramic, double junction, glass body, refillable pH electrode with temperature sensor
Recommended for laboratory and general purpose



HI12303
Single ceramic, double junction, gel filled, PEI body, pH electrode with temperature sensor
Recommended for field applications



HI10533
Triple ceramic, double junction, glass body, refillable pH electrode with conical tip and temperature sensor
Recommended for fats, creams, soil and low conductivity samples



HI36183
Single ceramic, double junction, glass body, refillable ORP probe with temperature sensor
Recommended for laboratory and general purpose



HI11103
Single ceramic, single junction, gel filled, glass body, pH electrode with temperature sensor
Recommended for laboratory and general purpose



FC2323
Open viscolene reference electrolyte, double junction, PVDF body pH electrode with conical tip and temperature sensor
Recommended for meat applications with use of optional FC098 20 mm (0.8") or FC099 35 mm (1.4") stainless steel blade



FC2023
Open viscolene reference electrolyte, double junction, PVDF body pH electrode with conical tip and temperature sensor
Recommended for dairy analysis including cheese, yogurt, and other semi-solids



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