

Professional Waterproof Meters

pH, pH/ISE, EC/TDS and DO



HANNA[®]
instruments

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.

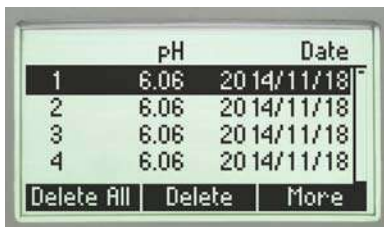


Series Features

- **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





HI98190 • HI98191

Professional Waterproof Meters

pH/ORP and pH/ORP/ISE

- ISE measurement units (HI98191 only)
 - Extensive choice of units to display readings (ppm, ppt, g/L, µg/L, mg/L, M, mol/L, mmol/L, %, w/v, user)
- CAL Check™
 - Alerts users to problems during calibration including dirty/broken electrode, contaminated buffer and overall probe condition
- Automatic or manual temperature compensation
 - pH sensors incorporate a built-in temperature sensor
- Calibration
 - Up to a five-point calibration with seven standard buffers and five custom buffers available
- Approximately 200 hour battery life
 - Powered by (4) 1.5V AA batteries

For Universal Applications

HI98190 and HI98191 are IP67 rated waterproof meters designed for universal applications. HI98190 measures pH/ORP and temperature while HI98191 also includes ISE measurements.

Exchange out the pH probe for an ORP probe to obtain mV readings in the ±2000 mV range. HI98191 adds direct ion concentration readings for ISEs with a choice of units for calibration and display.

Quick Connect Probe

The HI98190 features the HI12963 titanium bodied pH/temperature electrode with a quick connect DIN connector to make attaching and

removing the probe simple and easy. The HI98191 is supplied with the HI72911B titanium bodied pH/temperature electrode with BNC and RCA connectors.

ISE Sensors and Calibration

HI98191 has 17 different standard ISE sensors pre-programmed in the meter. Selecting the appropriate sensor will automatically update the ion charge for slope calibration and can be calibrated up to five points with the choice of seven standards and five custom standards (choice of units). This meter allows an extensive choice of measurement units (ppm, ppt, g/L, ppb, µg/L, mg/mL, M, mol/L, mmol/L, % w/v, user) and has an expanded measuring range of 1.00×10^{-7} to 9.99×10^{10} .

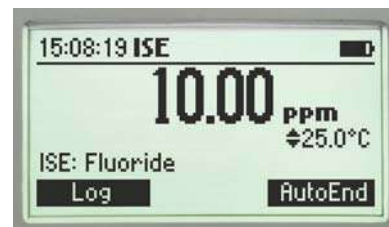
Specifications

Specifications	HI98190/HI98191
pH	Range -2.0 to 20.0 pH; -2.00 to 20.00 pH; -2.000 to 20.000 pH
	Resolution 0.1 pH; 0.01 pH; 0.001 pH
	Accuracy ± 0.1 pH; ± 0.01 pH; ± 0.002 pH
	Calibration up to five-point calibration, seven standard buffers available (1.68, 4.01, 6.86, 7.01, 9.18, 10.01, 12.45) and five custom buffers
	Temperature Compensation automatic or manual from -20.0 to 120.0°C (-4.0 to 248.0°F)
mV	Range ± 2000 mV
	Resolution 0.1 mV
	Accuracy ± 0.2 mV
	Relative mV Offset Range ± 2000 mV
ISE (HI98191 only)	Range from 1.00 E^{-2} to 9.99 E^{10} concentration
	Resolution 3 digits 0.01; 0.1; 1; 10 concentration
	Accuracy $\pm 0.5\%$ of reading (monovalent ions), $\pm 1\%$ of reading (divalent ions)
	Calibration up to five point calibration, seven standard solutions available
Temperature	Range -20.0 to 120.0 °C (-4.0 to 248.0°F)
	Resolution 0.1°C (0.1°F)
	Accuracy $\pm 0.4^\circ\text{C}$ ($\pm 0.8^\circ\text{F}$) (excluding probe error)
Additional Specifications	pH Probe HI98190: HI12963 titanium body, pH electrode with internal temperature sensor, quick DIN connector and 1 m (3.3' cable) HI98191: HI72911B titanium body, pH electrode with internal temperature sensor, BNC connector and 1 m (3.3' cable)
	Slope Calibration from 80 to 110%
	Log-on-demand HI98190: 200 samples (100 each pH/mV range) HI98191: 300 samples (100 each pH/mV/ISE range)
	PC Connection opto-isolated USB with HI92000 software and micro USB cable
	Input Impedance $10^{12} \Omega$
	Battery Type / Life 1.5V AA batteries (4) / approximately 200 hours of continuous use without backlight (50 hours with backlight)
	Auto-off user selectable: 5, 10, 30, 60 min, disabled
	Environment 0 to 50°C (32 to 122°F); RH 100% IP67
	Dimensions / Weight 185 x 93 x 35.2 mm (7.3 x 3.6 x 1.4") / 400 g (14.2 oz.)

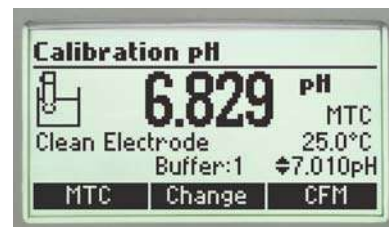


- Log-on-demand
- Store measurement data at the press of a button

On-screen Features



- ISE measurements
- The HI98191 includes ISE measurements when used with our wide selection of ISE electrodes or a custom version



- Calibration
- pH calibration features detailed CAL Check™ messages. Users are guided through the calibration procedure with step-by-step on-screen instructions.

pH Calibration

Choose from seven standard pH buffers and five custom pH buffers to obtain up to five point calibration and achieve high precision readings with a pH accuracy of ± 0.002 and up to ± 0.001 pH resolution.

CAL Check™

Hanna's CAL Check™ maintains a history of past calibrations and monitors the pH electrode and buffers during subsequent calibrations for any signs of wide variances due to a dirty or broken electrode or contaminated pH buffers. During calibration, users are alerted to problems should they occur. After calibration, the electrode's overall condition is displayed as a percentage.

Data Logging

The log-on-demand feature allows users to store up to 200 samples (HI98190) or 300 samples (HI98191) 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.



Shown in HI720190 rugged carrying case with custom insert (included)



Shown in HI720191 rugged carrying case with custom insert (included)

HI98190 includes:



HI12963 titanium body, pH electrode with internal temperature sensor, quick DIN connector and 1 m (3.3' cable)



HI7004M pH 4.01 buffer solution (230 mL)



HI7007M pH 7.01 buffer solution (230 mL)



electrode general cleaning solution sachet (2)



HI72911B titanium body, pH electrode with internal temperature sensor, BNC connector and 1 m (3.3' cable)



HI7004M pH 4.01 buffer solution (230 mL)



HI7007M pH 7.01 buffer solution (230 mL)



electrode general cleaning solution sachet (2)



HI7662 temperature probe (for use with optional ISE's)

All meters are also supplied with:



rugged carrying case with custom insert



100 mL plastic beaker (2)



HI92000 PC software



HI920015 micro USB cable



1.5V AA batteries (4)



quality certificate



instruction manual



quick start guide



We Design, Manufacture, Supply and Support All of Our Products.

When you buy a Hanna product, you're not only buying the best value for your money, but you're also receiving the benefit of Hanna's unsurpassed customer service and post-sale technical support.

With 60 offices in over 40 countries, Hanna dedicates itself to be a worldwide leader in service and selection.

Offering research grade quality at competitive prices, every Hanna office strives to work with each customer to develop a solution tailored to their needs, and within their budget.

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