



pH • Conductivity • Dissolved Oxygen





Shown with optional
HI710034 Orange
Protective silicone
rubber boot

HI98199 pH • EC • DO Waterproof Meter

The HI98199 is a versatile meter that can monitor pH, EC, and dissolved oxygen when paired with the respective probe. Hanna's pH probe is included with the HI98199 and the EC and DO probes can be ordered separately. Each digital probe features Hanna's Quick Connect DIN connector and the included carrying case contains all the accessories necessary to start taking pH measurements.

Backlit Graphic LCD Display

The HI98199 features a backlit graphic LCD with on-screen help and the capability to display multiple parameters simultaneously. The use of virtual keys to provides for an intuitive user interface.

Waterproof Protection

HI98199 is enclosed in an IP67 rated waterproof casing and can withstand immersion in water at a depth of 1m for up to 30 minutes. The probes feature an IP68 rating for continuous immersion in water.

Quick Connect Digital Probe and Auto-sensor Recognition

pH, EC, and DO probes feature a Quick Connect DIN connector that makes a waterproof connection with the meter. The probe and meter automatically recognize the sensors that are connected.

Data Logging

The HI98199 allows users to store up to 45,000 continuous or log-on-demand samples with logging intervals from one second to three hours.

GLP Data

HI98199 includes a GLP feature that allows users to view calibration data and calibration expiration information at the touch of a key. Calibration data includes date, time, buffers/standards used for calibration, and slope characteristics.

Dedicated Help Key

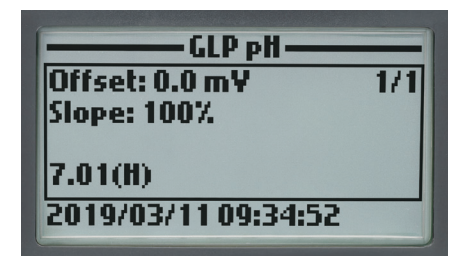
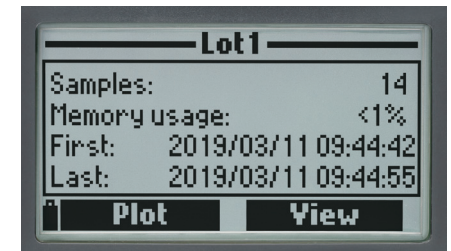
Contextual help is always available through a dedicated "HELP" key. Clear tutorial messages and directions are available on-screen to quickly and easily guide users through setup and calibration. The help information displayed is relative to the setting/option being viewed.

PC Connectivity

Logged data can be transferred to a Window's compatible PC with the included micro USB cable and Hanna software.

Long Battery Life

The meter displays a battery icon indicator to show the remaining power. The meter uses four 1.5V AA batteries that provide up to 360 hours of battery life.



Versatility when you need it.

Each probe transmits readings digitally to the meter, where data points can be displayed and logged.



pH

The HI98199 allows for the measurement of pH and temperature when used with the included HI829113 digital pH probe.

- Up to a three-point calibration with five standard buffers and one custom buffer available
- pH in mV option is useful for diagnostics
- GLP data
 - Offset, slope, date, time and buffers used
- Automatically temperature compensated readings
- pH sensor
 - Gel filled and maintenance free
 - Double junction for reduced contamination of reference cell



Conductivity

The HI98199 allows for the measurement of conductivity, TDS (total dissolved solids), Resistivity, Salinity, seawater σ , and temperature when used with the optional HI763093 digital EC probe.

- Single-point calibration from six standards
- Temperature compensation
 - Automatic Temperature Compensation
 - Configurable temperature coefficient range from 0.00 to 6.00%/°C
 - Choice of reference temperatures at 20 or 25°C
 - Absolute conductivity can be displayed along with the temperature compensated value
- Auto-ranging
- Salinity readings
 - Practical Salinity Scale (PSU) based on conductivity calibration



Dissolved Oxygen

The HI98199 allows for the measurement of dissolved oxygen, atmospheric pressure, and temperature when used with the optional HI764103 digital DO probe.

- Display units in % saturation or ppm (mg/L)
- Salinity compensation for saline waters
 - Manual entry of salinity values
 - Readings compensated for salinity effects
- Built-in barometer
 - Automatic compensation for changes in atmospheric pressure
 - User selectable units
- Temperature compensation
- Automatic polarization of probe at startup
- Ready-to-use HDPE pre-tensioned membrane caps are easy to replace



Specifications

pH / mV (using included pH Probe)	Range	0.00 to 14.00 pH / ± 600.0 mV
	Resolution	0.01 pH / 0.1 mV
	Accuracy	± 0.02 pH / ± 0.5 mV
	Calibration	automatic one, two, or three points with automatic recognition of five standard buffers (pH 4.01, 6.86, 7.01, 9.18, 10.01) or one custom buffer
EC (using EC Probe)	Range	0 to 200 mS/cm (absolute EC up to 400 mS/cm)
	Resolution	manual: 1 μ S/cm; 0.001 mS/cm; 0.01 mS/cm; 0.1 mS/cm; 1 mS/cm; automatic: 1 μ S/cm from 0 to 9999 μ S/cm; 0.01 mS/cm from 10.00 to 99.99 mS/cm; 0.1 mS/cm from 100.0 to 400.0 mS/cm; automatic mS/cm: 0.001 mS/cm from 0.000 to 9.999 mS/cm; 0.01 mS/cm from 10.00 to 99.99 mS/cm; 0.1 mS/cm from 100.0 to 400.0 mS/cm
	Accuracy	$\pm 1\%$ of reading or ± 1 μ S/cm whichever is greater
	Calibration	automatic single point, with six standard solutions (84 μ S/cm, 1413 μ S/cm, 5.00 mS/cm, 12.88 mS/cm, 80.0 mS/cm, 111.8 mS/cm) or custom point
TDS (using EC Probe)	Range	0.0 to 400.0 ppt (g/L) (the maximum value depends on the TDS factor)
	Resolution	manual: 1 ppm (mg/L); 0.001 ppt (g/L); 0.01 ppt (g/L); 0.1 ppt (g/L); 1 ppt (g/L); automatic: 1 ppm (mg/L) from 0 to 9999 ppm (mg/L); 0.01 ppt (g/L) from 10.00 to 99.99 ppt (g/L); 0.1 ppt (g/L) from 100.0 to 400.0 ppt (g/L); automatic ppt (g/L): 0.001 ppt (g/L) from 0.000 to 9.999 ppt (g/L); 0.01 ppt (g/L) from 10.00 to 99.99 ppt (g/L); 0.1 ppt (g/L) from 100.0 to 400.0 ppt (g/L)
	Accuracy	$\pm 1\%$ of reading or ± 1 ppm (mg/L) whichever is greater
	Calibration	based on conductivity calibration
Resistivity (using EC Probe)	Range	0 to 999999 $\Omega \cdot \text{cm}$; 0 to 1000.0 $\text{k}\Omega \cdot \text{cm}$; 0 to 1.0000 $\text{M}\Omega \cdot \text{cm}$
	Resolution	dependent on resistivity reading
	Calibration	based on conductivity calibration
Salinity (using EC Probe)	Range	0.00 to 70.00 PSU
	Resolution	0.01 PSU
	Accuracy	$\pm 2\%$ of reading or ± 0.01 PSU whichever is greater
	Calibration	based on conductivity calibration
Seawater σ (using EC Probe)	Range	0.0 to 50.0 σ_t , σ_{20} , σ_{15}
	Resolution	0.1 σ_t , σ_{20} , σ_{15}
	Accuracy	± 1 σ_t , σ_{20} , σ_{15}
	Calibration	based on conductivity calibration
Dissolved Oxygen (using DO Probe)	Range	0.0 to 500.0%; 0.00 to 50.00 ppm (mg/L)
	Resolution	0.1%; 0.01 ppm (mg/L)
	Accuracy	0.0 to 300.0%: $\pm 1.5\%$ of reading or $\pm 1.0\%$ whichever is greater; 300.0 to 500.0%: $\pm 3\%$ of reading; 0.00 to 30.00 ppm (mg/L): $\pm 1.5\%$ of reading or ± 0.10 ppm (mg/L), whichever is greater; 30.00 ppm (mg/L) to 50.00 ppm (mg/L): $\pm 3\%$ of reading
	Calibration	automatic one or two points at 0, 100% or one custom point

Atmospheric Pressure (using DO Probe)	Range	450 to 850 mm Hg; 17.72 to 33.46 in Hg; 600.0 to 1133.2 mbar; 8.702 to 16.436 psi; 0.5921 to 1.1184 atm; 60.00 to 113.32 kPa
	Resolution	0.1 mm Hg; 0.01 in Hg; 0.1 mbar; 0.001 psi; 0.0001 atm; 0.01 kPa
	Accuracy	± 3 mm Hg within $\pm 15^\circ\text{C}$ from the temperature during calibration
	Calibration	automatic at one custom point
Temperature	Range	-5.00 to 55.00 $^\circ\text{C}$; 23.00 to 131.00 $^\circ\text{F}$; 268.15 to 328.15K
	Resolution	0.01 $^\circ\text{C}$; 0.01 $^\circ\text{F}$; 0.01K
	Accuracy	$\pm 0.15^\circ\text{C}$; $\pm 0.27^\circ\text{F}$; $\pm 0.15\text{K}$
	Calibration	automatic at one custom point
Additional Specifications	Temperature Compensation	automatic from -5 to 55 $^\circ\text{C}$ (23 to 131 $^\circ\text{F}$)
	Logging Memory	45,000 records (continuous logging or log-on-demand of all parameters)
	Logging Interval	one second to three hours
	PC Connectivity	via USB (with Hanna PC software)
	Environment	0 to 50 $^\circ\text{C}$ (32 to 122 $^\circ\text{F}$); RH 100% IP67
	Battery Type / Life	1.5V AA batteries (4) / approximately 360 hours of continuous use without backlight (50 hours with backlight)
	Dimensions / Weight	185 x 93 x 35.2 mm (7.3 x 3.6 x 1.4") / 400 g (14.2 oz.)
Ordering Information	HI98199 is supplied with the HI829113 pH digital probe with 4m (13') cable, pH calibration solution sachets, PC software, micro USB cable, batteries, quality certificate, and instruction manual in a rugged carrying case.	
Probes	HI829113 pH digital probe with 4m (13') cable	
	HI763093 EC digital probe with 4m (13') cable	
	HI764103 DO digital probe with 4m (13') cable	
Accessories	HI710034 orange protective silicone rubber boot	