

HI98194

# Multiparameter Waterproof Meter

pH, ORP, EC, TDS, Resistivity, Salinity, Seawater  $\sigma$ , Dissolved Oxygen, Atmospheric Pressure and Temperature

## pH Features

- **Calibration**
  - Up to a three-point calibration with five standard buffers and one custom buffer available
- **pH in mV option**
  - Useful for diagnostics
- **GLP data**
  - Offset, slope, date, time and buffers used
- **Automatically temperature compensated readings**
- **pH or pH/ORP field replaceable sensors**
  - Gel filled and maintenance free
  - Double junction for reduced contamination of reference cell

## Dissolved Oxygen Features

- **Choice of units**
  - 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**
- **Polarization**
  - Automatic polarization of probe at startup
- **Membrane caps**
  - Ready-to-use HDPE pre-tensioned membrane caps are easy to replace

## EC/TDS/Resistivity Features

- **Calibration**
  - 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



The HI98194 is a waterproof portable logging multiparameter meter that monitors up to 12 different water quality parameters. It's multi-sensor probe allows for the measurement of key parameters including pH, ORP, conductivity, dissolved oxygen, and temperature. The probe transmits readings digitally to the meter, where data points can be displayed and logged. The complete system is simple to setup and easy to use.

### Backlit Graphic LCD Display

The HI98194 features a backlit graphic LCD with on-screen help and the capability to display up to twelve parameters simultaneously. The graphic display allows for the use of virtual keys to provide for an intuitive user interface.

### Waterproof Protection

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

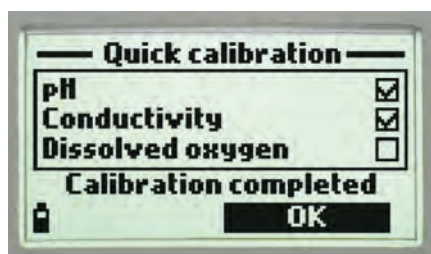


### Quick Connect Digital Probe

The HI7698194 probe features a Quick Connect DIN connector that makes a waterproof connection with the meter.

### Color Coded, Field Replaceable Sensors

Sensor replacement is quick and easy with field replaceable, screw type connectors that are color coded for easy sensor port identification.



### Standard or Quick Calibration

Quick Calibration provides a speedy, single-point calibration for pH, conductivity, and dissolved oxygen. Standard pH calibration options are available for calibrating up to three points from a selection of five standard buffers and one custom buffer. Conductivity calibration is a single point from six standard selections or one custom standard. Dissolved oxygen calibration is up to two standard points or a single custom point.

### Auto-sensor Recognition

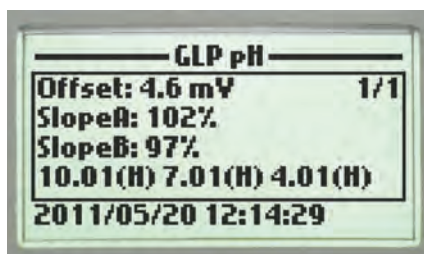
The probe and meter automatically recognize the sensors that are connected. Any ports not used on the probe will not have the parameter displayed or be configurable.

### Automatic Temperature Compensation

Integrated temperature sensor allows for automatic temperature compensation of pH, conductivity, and dissolved oxygen measurements.

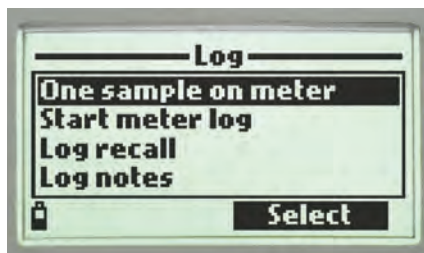
### Automatic Barometric Pressure Compensation

The meter features a built-in barometer with user-selectable units for dissolved oxygen pressure compensation.



### GLP Data

HI98194 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.

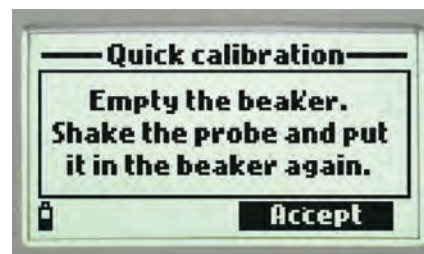


### Data Logging

The HI98194 allows users to store up to 45,000 continuous or log-on-demand samples with logging intervals from one second to three hours.

### Intuitive Keypad

The fitted rubber keypad has dedicated keys for power, backlight, up/down arrows, help and alphanumeric characters. The meter also features two virtual soft keys that navigate the user through the configuration of each parameter, meter setup, and logging of data. The interface is intuitive for any user's level of experience.



### 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 HI920015 micro USB cable and HI9298194 software.

### Long Battery Life

The display of the meter has 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.



### Rugged Custom Carrying Case

The HI98194 meter, probe, and all accessories are supplied in a rugged carrying case designed to provide years of use. The inside compartment of the carrying case is thermoformed to securely hold and protect all of the components.

## Probe and Sensors

The HI7698194 is a multiparameter pH/EC/DO/Temperature probe for use with the HI98194 portable meter. It features a Quick Connect DIN that makes a waterproof connection with the meter. Sensors are automatically recognized by the probe and meter when connected. Any ports not used on the probe will not have the parameter displayed on the meter. Sensor replacement is quick and easy with field replaceable, screw type connectors that are color coded for easy sensor identification. The probe features a multistrand-multiconductor shielded cable with 4m, 10m, 20m, and 40m lengths available. It's rugged, waterproof design makes it ideal for field use.

Probe Specifications	HI7698194
Sensor Inputs	three (pH or pH/ORP, DO, EC)
Sample Environment	fresh, brackish, seawater
Waterproof Protection	IP68
Operating Temperature	-5 to 55°C
Storage Temperature	-20 to 70°C
Maximum Depth	20 m (66')
Dimensions (without cable)	342 mm (13.5"); 46 mm (1.8") dia
Weight (without sensors)	570 g (20.1 oz.)
Cable Specification	multistrand-multiconductor shielded cable with internal strength member rated for 68 kg (150 lb.) intermittent use
	Body ABS
	Threads Nylon
Wetted Materials	Shield ABS / 316 SS
	Temperature Probe 316 SS
	O-rings EPDM



HI9828-25  
Quick Calibration  
solution



Sensor Specifications	HI7698194-0	HI7698194-1	HI7698194-3	HI7698194-2
Description	pH sensor	pH/ORP sensor	EC sensor	DO sensor
Measurement Type	pH, mV (pH)	pH, mV (pH), ORP	EC	DO (% saturation and concentration)
Measurement Range	0.00 to 13.00 pH; $\pm 600.0$ mV	0.00 to 13.00 pH; $\pm 600.0$ mV; $\pm 2000.0$ mV	0.0 to 200.0 mS/cm; 0.0 to 400 mS/cm (absolute)	0.0 to 500.0 %; 0.00 to 50.00 mg/L
Temperature Range	-5 to 55°C	-5 to 55°C	-5 to 55°C	-5 to 55°C
Color Code	red	red	blue	white
	Tip glass (pH)	glass (pH); Pt (ORP)	stainless steel electrodes AISI 316	cat/an: Ag/Zn
	Glass Type LT (low temperature)	LT (low temperature)	-	-
Materials	Junction ceramic	ceramic	-	membrane: HDPE
	Body PEI	PEI	ABS/epoxy	white top ABS
	Electrolyte gel	gel	-	-
	Reference double	double	-	-
Maintenance Solution	HI70300 (storage solution)	HI70300 (storage solution)	none	HI7042S (DO electrolyte)
Dimensions	118 x 15 mm	118 x 15 mm	111 x 17 mm	99 x 17 mm
Depth	20 m (65')	20 m (65')	20 m (65')	20 m (65')

HI7698194



## Multi-function Sensor

- Quick sensor replacement
  - Sensor replacement is quick and easy with field replaceable, screw type connectors and are color coded for easy identification. These meters automatically recognize sensors.



- Optional shockproof silicon rubber boot
  - Specially designed to protect your instrument from damage or impact

HI710034 Orange

Specifications		HI98194
pH / mV	Range	0.00 to 14.00 pH / $\pm 600.0$ mV
	Resolution	0.01 pH / 0.1 mV
	Accuracy	$\pm 0.02$ pH / $\pm 0.5$ 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
ORP	Range	$\pm 2000.0$ mV
	Resolution	0.1 mV
	Accuracy	$\pm 1.0$ mV
	Calibration	automatic at one custom point (relative mV)
EC	Range	0 to 200 mS/cm (absolute EC up to 400 mS/cm)
	Resolution	<b>manual:</b> 1 $\mu$ S/cm; 0.001 mS/cm; 0.01 mS/cm; 0.1 mS/cm; 1 mS/cm; <b>automatic:</b> 1 $\mu$ S/cm from 0 to 9999 $\mu$ 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; <b>automatic mS/cm:</b> 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 $\pm 1$ $\mu$ S/cm whichever is greater
	Calibration	automatic single point, with six standard solutions (84 $\mu$ S/cm, 1413 $\mu$ S/cm, 5.00 mS/cm, 12.88 mS/cm, 80.0 mS/cm, 111.8 mS/cm) or custom point
TDS	Range	0.0 to 400.0 ppt (g/L) (the maximum value depends on the TDS factor)
	Resolution	<b>manual:</b> 1 ppm (mg/L); 0.001 ppt (g/L); 0.01 ppt (g/L); 0.1 ppt (g/L); 1 ppt (g/L); <b>automatic:</b> 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); <b>automatic ppt (g/L):</b> 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 $\pm 1$ ppm (mg/L) whichever is greater
	Calibration	based on conductivity calibration
Resistivity	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	Range	0.00 to 70.00 PSU
	Resolution	0.01 PSU
	Accuracy	$\pm 2\%$ of reading or $\pm 0.01$ PSU whichever is greater
	Calibration	based on conductivity calibration
Seawater $\sigma$	Range	0.0 to 50.0 $\sigma_t, \sigma_\theta, \sigma_{15}$
	Resolution	0.1 $\sigma_t, \sigma_\theta, \sigma_{15}$
	Accuracy	$\pm 1$ $\sigma_t, \sigma_\theta, \sigma_{15}$
	Calibration	based on conductivity calibration
Dissolved Oxygen	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 $\pm 0.10$ 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	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	$\pm 3$ 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)
Ordering Information	Dimensions / Weight	185 x 93 x 35.2 mm (7.3 x 3.6 x 1.4") / 400 g (14.2 oz.)
	All models are supplied with: HI7698194-1 pH/ORP sensor, HI7698194-3 EC sensor, HI7698295 short protective probe shield, HI7698194-2 DO sensor, HI9828-20 quick calibration solution, HI76981942 probe maintenance kit, HI7698290 calibration beaker, HI9298194 PC software, HI920015 micro USB cable, batteries (4), quality certificate, and instruction manual in a rugged carrying case with custom insert. <b>HI98194</b> is supplied with HI7698194 multiparameter probe with 4m (13') cable <b>HI98194/10</b> is supplied with HI7698194/10 multiparameter probe with 10m (33') cable <b>HI98194/20</b> is supplied with HI7698194/20 multiparameter probe with 20m (66') cable <b>HI98194/40</b> is supplied with HI7698194/40 multiparameter probe with 40m (131') cable	
Accessories	<b>HI710034</b> orange protective rubber boot	
	<b>HI720194</b> spare thermoformed carrying case for HI98194, HI98195, and HI98196	