Multiparameter Waterproof Meters

Multiparameter measurement in compact, IP67 rated waterproof enclosures

HANNA® instruments

HI98194

Multiparameter Waterproof Meter

pH, ORP, EC, TDS, Resistivity, Salinity, Seawater σ, Dissolved Oxygen, Atmospheric Pressure and Temperature

- Waterproof
  - IP67 rated waterproof, rugged enclosure for meter, IP68 for probe
- Digital probe
  - Digital probe with integral temperature sensor and three ports for pH (ORP), EC and DO sensors
- Color coded, field replaceable sensors
- Auto-sensor recognition
- Quick calibration feature
- Automatic barometric pressure compensation
- Automatic temperature compensation
- Automatic logging
  - Store up to 45,000 samples
- Log-on-demand
  - Store measurement data at the press of a button
- GLP
  - GLP data provides data from previous five calibrations to ensure Good Laboratory Practices are met
- Dedicated help key
  - On-screen context specific help is readily available at the press of a button
- Backlit LCD display with multifunction virtual keys
- Intuitive keypad
  - Dedicated and virtual soft keys
- Connectivity
  - PC connectivity via opto-isolated micro-USB with Hanna software
- Up to 360 hours of battery life
  - Powered by (4) 1.5V AA batteries

- Quick Connect Probe
  - Fast, secure and waterproof connection

For Universal Applications

HI98184 provides multiparameter measurement in a compact and rugged, IP67 waterproof enclosure. Ideal for demanding applications, this meter features our rugged, quick connect digital probe with field replaceable sensors.

A backlit, graphic LCD provides easy to read resolution even in low-lit areas. A combination of dedicated and soft keys allows easy, intuitive operation in a choice of languages.

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. Logged data can be later transferred to a PC with the HI920015 micro USB cable and Hanna HI9298194 software.

Dedicated HELP Button

The contextual HELP menu can be accessed to obtain on-screen information and assistance about each feature at the touch of a button.

Quick Connect Probe

The HI7698194 probe features a quick connect DIN connector to make attaching and removing the probe simple and easy.

pH: Specific 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: Specific Features

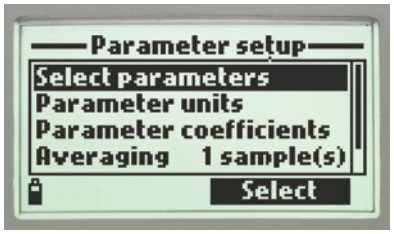
- Choice of units
  - Display units in % saturation or ppm (mg/L)
- Salinity compensation for saline waters
  - Manual entry of salinity values
  - Readings compensated for salinity effects
- Built-in barometer
  - Automatic compensation for changes in atmospheric pressure
  - User selectable units
- 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: Specific Features

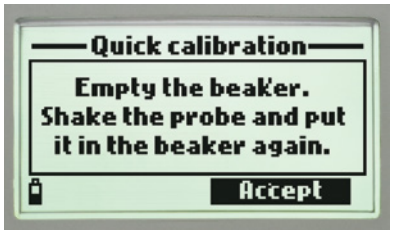
- Calibration
  - Single-point calibration from six standards (84 µS/cm, 1.413 µS/cm, 5.00 mS/cm, 12.88 mS/cm, 80 mS/cm, 111.8 mS/cm or custom point)
- Temperature compensation
  - Automatic Temperature Compensation
  - Configurable temperature coefficient range from 0.00 to 6.00%/°C
  - Choice of reference 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

HI9828-25
Quick Calibration solution

- Field ready with Quick Calibration solution
  - Standardize pH and conductivity with one calibration solution
  - Simply screw the calibration beaker filled with HI 9828-25 (500 mL) or HI9828-27 (1 gallon) solution onto the probe, select "Quick calibration" from the menu and press OK. Individual calibration may also be performed using multiple calibration points



- Setup
  - Extensive setup screen features



- Guides
  - On screen guides are displayed to help you while performing procedures such as calibration

- Rugged carrying case with custom insert included

HI98194 Probe and Sensor Features and Specifications

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	
Wetted Materials	Body	ABS
	Threads	Nylon
	Shield	ABS / 316 SS
	Temperature Probe	316 SS
	O-rings	EPDM

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.

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 ; ±600.0 mV	0.00 to 13.00 pH; ±600.0 mV; ±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
Materials	Tip	glass (pH)	glass (pH); Pt (ORP)	stainless steel electrodes AISI 316	cat/an: Ag/Zn
	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')

Specifications		HI98194
pH / mV	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
ORP	Range	±2000.0 mV
	Resolution	0.1 mV
	Accuracy	±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	**manual:** 1 µS/cm; 0.001 mS/cm; 0.01 mS/cm; 0.1 mS/cm; 1 mS/cm; **automatic:** 1 µS/cm from 0 to 9999 µS/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	±1% of reading or ±1 µS/cm whichever is greater
	Calibration	automatic single point, with six standard solutions (84 µS/cm, 1413 µS/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	**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	±1% of reading or ±1 ppm (mg/L) whichever is greater
	Calibration	based on conductivity calibration
Resistivity	Range	0 to 999999 Ω•cm; 0 to 1000.0 kΩ•cm; 0 to 1.0000 MΩ•cm
	Resolution	dependent on resistivity reading
	Calibration	based on conductivity calibration
Salinity	Range	0.00 to 70.00 PSU
	Resolution	0.01 PSU
	Accuracy	±2% of reading or ±0.01 PSU whichever is greater
	Calibration	based on conductivity calibration
Seawater σ	Range	0.0 to 50.0 σ_t, σ_0, σ_{15}
	Resolution	0.1 σ_t, σ_0, σ_{15}
	Accuracy	±1 σ_t, σ_0, σ_{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%: ±1.5% of reading or ±1.0% whichever is greater; 300.0 to 500.0%: ±3% of reading; 0.00 to 30.00 ppm (mg/L): ±1.5% of reading or ±0.10 ppm (mg/L), whichever is greater; 30.00 ppm (mg/L) to 50.00 ppm (mg/L): ±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	±3 mm Hg within ±15°C from the temperature during calibration
	Calibration	automatic at one custom point
Temperature	Range	-5.00 to 55.00°C; 23.00 to 131.00°F; 268.15 to 328.15K
	Resolution	0.01°C; 0.01°F; 0.01K
	Accuracy	±0.15°C; ±0.27°F; ±0.15K
	Calibration	automatic at one custom point
Additional Specifications	Temperature Compensation	automatic from -5 to 55°C (23 to 131°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°C (32 to 122°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.)

HI98195

Multiparameter Waterproof Meter

pH, ORP, EC, TDS, Resistivity, Salinity, Seawater σ and Temperature

- Waterproof
  - IP67 rated waterproof, rugged enclosure for meter, IP68 for probe
- Digital probe
  - Digital probe with integral temperature sensor and two ports for pH (ORP) and EC sensors
- Color coded, field replaceable sensors
- Auto-sensor recognition
- Quick calibration feature
- Automatic temperature compensation
- Automatic logging
  - Store up to 45,000 samples
- Log-on-demand
  - Store measurement data at the press of a button
- GLP
  - GLP data provides data from previous five calibrations to ensure Good Laboratory Practices are met
- Dedicated help key
  - On-screen context specific help is readily available at the press of a button
- Backlit LCD display with multifunction virtual keys
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  - PC connectivity via opto-isolated micro-USB with Hanna software
- Up to 360 hours of battery life
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- Quick Connect Probe
  - Fast, secure and waterproof connection

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Data Logging

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GLP and On-Screen Help

Comprehensive GLP data includes data from last five calibrations. The contextual HELP menu can be accessed to obtain on-screen information and assistance about each feature at the touch of a button.

Quick Connect Probe

The HI7698195 probe features a quick connect DIN connector to make attaching and removing the probe simple and easy.

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pH: Specific 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

EC/TDS/Resistivity: Specific Features

- Calibration
  - Single-point calibration from six standards (84 µS/cm, 1.413 µS/cm, 5.00 mS/cm, 12.88 mS/cm, 80 mS/cm, 111.8 mS/cm or custom point)
- 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

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Quick Calibration solution

- Field ready with Quick Calibration solution
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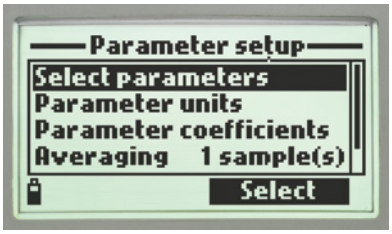

- Setup
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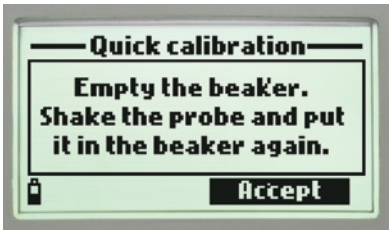

- Guides
  - On screen guides are displayed to help you while performing procedures such as calibration

- Rugged carrying case with custom insert included

HI98195 Probe and Sensor Features and Specifications

Specifications	HI7698195	
Sensor Inputs	two (pH or pH/ORP, 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	
Wetted Materials	Body	ABS
	Threads	Nylon
	Shield	ABS / 316 SS
	Temperature Probe	316 SS
	O-rings	EPDM

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

or

Sensor Specifications		HI7698194-0	HI7698194-1	HI7698194-3
Description		pH sensor	pH/ORP sensor	EC sensor
Measurement Type		pH, mV (pH)	pH, mV (pH), ORP	EC
Measurement Range		0.00 to 13.00 pH ; ±600.0 mV	0.00 to 13.00 pH; ±600.0 mV; ±2000.0 mV	0.0 to 200.0 mS/cm; 0.0 to 400 mS/cm (absolute)
Temperature Range		-5 to 55°C	-5 to 55°C	-5 to 55°C
Color Code		red	red	blue
Materials	Tip	glass (pH)	glass (pH); Pt (ORP)	stainless steel electrodes AISI 316
	Junction	ceramic	ceramic	
	Body	PEI	PEI	ABS/epoxy
	Electrolyte	gel	gel	
	Reference	double	double	
Maintenance Solution		HI70300 (storage solution)	HI70300 (storage solution)	none
Dimensions		118 x 15 mm	118 x 15 mm	111 x 17 mm
Depth		20 m (65')	20 m (65')	20 m (65')

Specifications		HI98195
pH / mV	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
ORP	Range	±2000.0 mV
	Resolution	0.1 mV
	Accuracy	±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	**manual:** 1 µS/cm; 0.001 mS/cm; 0.01 mS/cm; 0.1 mS/cm; 1 mS/cm; **automatic:** 1 µS/cm from 0 to 9999 µS/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	±1% of reading or ±1 µS/cm whichever is greater
	Calibration	automatic single point, with six standard solutions (84 µS/cm, 1413 µS/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	**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	±1% of reading or ±1 ppm (mg/L) whichever is greater
	Calibration	based on conductivity or salinity calibration
Resistivity	Range	0 to 999999 Ω•cm; 0 to 1000.0 kΩ•cm; 0 to 1.0000 MΩ•cm
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Salinity	Range	0.00 to 70.00 PSU
	Resolution	0.01 PSU
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Seawater σ	Range	0.0 to 50.0 σ_t, σ_0, σ_{15}
	Resolution	0.1 σ_t, σ_0, σ_{15}
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	Resolution	0.01°C; 0.01°F; 0.01K
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Additional Specifications	Temperature Compensation	automatic from -5 to 55°C (23 to 131°F)
	Logging Memory	45,000 records (continuous logging or log-on-demand of all parameters)
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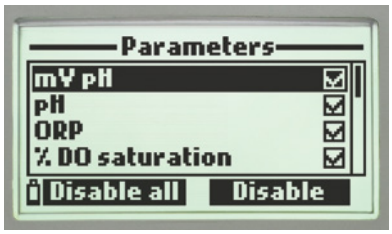

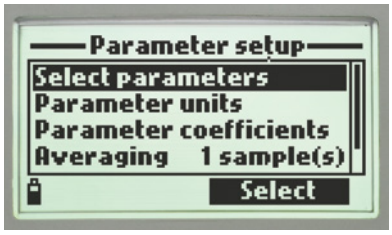

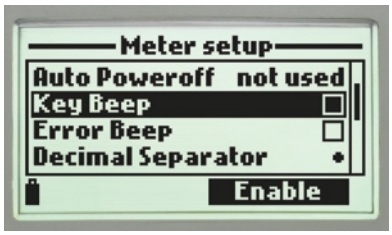

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  - Offset, slope, date, time and buffers used
- Automatically temperature compensated readings
- pH or pH/ORP field replaceable sensors
  - Gel-filled and maintenance free
  - Double junction for reduced contamination of reference cell

Dissolved Oxygen: Specific 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

- rugged carrying case with custom insert included

HI98196 Probe and Sensor Features and Specifications

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Sensor Inputs	two (pH or pH/ORP, DO)	
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')	
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Cable Specification	multistrand-multiconductor shielded cable with internal strength member rated for 68 kg (150 lb.) intermittent use	
Wetted Materials	Body	ABS
	Threads	Nylon
	Shield	ABS / 316 SS
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	O-rings	EPDM

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Description		pH sensor	pH/ORP sensor	DO sensor
Measurement Type		pH, mV (pH)	pH, mV (pH), ORP	DO (% saturation and concentration)
Measurement Range		0.00 to 13.00 pH ; ±600.0 mV	0.00 to 13.00 pH; ±600.0 mV; ±2000.0 mV	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
Color Code		red	red	white
Materials	Tip	glass (pH)	glass (pH); Pt (ORP)	cat/an: Ag/Zn
	Junction	ceramic	ceramic	membrane: HDPE
	Body	PEI	PEI	white top ABS
	Electrolyte	gel	gel	
	Reference	double	double	
Maintenance Solution		HI70300 (storage solution)	HI70300 (storage solution)	HI7042S (DO electrolyte)
Dimensions		118 x 15 mm	118 x 15 mm	99 x 17 mm
Depth		20 m (65')	20 m (65')	20 m (65')

Specifications		HI98196
pH / mV	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 up to 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	±2000.0 mV
	Resolution	0.1 mV
	Accuracy	±1.0 mV
	Calibration	automatic at one custom point (relative mV)
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%: ±1.5% of reading or ±1.0% whichever is greater; 300.0 to 500.0%: ±3% of reading; 0.00 to 30.00 ppm (mg/L): ±1.5% of reading or ±0.10 ppm (mg/L), whichever is greater; 30.00 ppm (mg/L) to 50.00 ppm (mg/L): ±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	±3 mm Hg within ±15°C from the temperature during calibration
	Calibration	automatic at one custom point
Temperature	Range	-5.00 to 55.00°C; 23.00 to 131.00°F; 268.15 to 328.15K
	Resolution	0.01°C; 0.01°F; 0.01K
	Accuracy	±0.15°C; ±0.27°F; ±0.15K
	Calibration	automatic at one custom point
Additional Specifications	Temperature Compensation	automatic from -5 to 55°C (23 to 131°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°C (32 to 122°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.)

HI98194 includes:

HI7698194/4
probe

HI7698194-0
pH sensor

HI7698194-3
EC sensor

HI7698194-2
DO sensor

HI9828-25
quick calibration
solution

HI76981942
probe maintenance
kit

HI98195 includes:

HI7698195/4
probe

HI7698194-0
pH sensor

HI7698194-3
EC sensor

HI9828-25
quick calibration
solution

HI76981952
probe maintenance
kit

HI98196 includes:

HI7698196/4
probe

HI7698194-0
pH sensor

HI7698194-2
DO sensor

HI9828-25
quick calibration
solution

HI76981942
probe maintenance
kit

All meters are also supplied with:

rugged carrying case
with custom insert

HI76981943
calibration beaker

HI9298194 PC software

HI920015 micro USB cable

quality certificate

instruction manual

1.5V AA batteries (4)

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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.

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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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