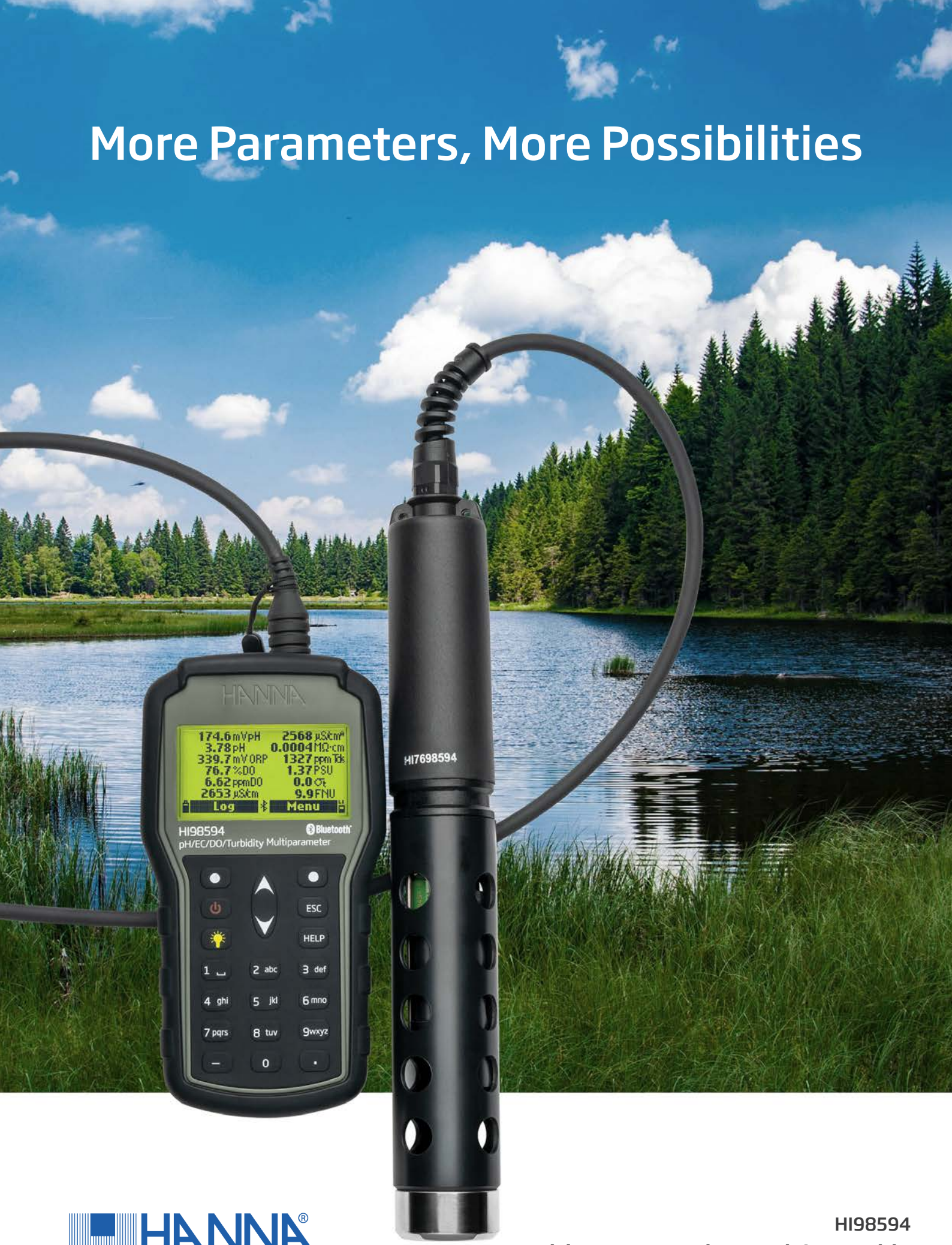
More Parameters, More Possibilities



HANNA® instruments

HI98594

Multiparameter Bluetooth® Portable pH/EC/Turbidity/OPDO® Meter

Multiparameter Bluetooth® Portable pH/EC/Turbidity/OPDO® Meter

Measures **14** parameters

HI7698594

- Probe with integrated temperature sensor
- Input for pH (ORP), EC, Turbidity electrodes and optical sensor for DO

Waterproof

- IP67 protection for the instrument
- IP68 protection for the probe (continuous immersion in water)

Backlit LCD display

- Allows reading of all information even under direct sunlight or in low light conditions

Bluetooth®

- Retrieve data logs via the Hanna Lab app to send by e-mail or download to a smart device for review

Data logging

- Automatic storage for up to 50,000 samples at set intervals (1 second to 3 hours)
- Log-on-demand to store measurement data
- Access .CSV file via computer

Quick sensor replacement

- Pre-installed Sensors
- Sensor replacement is quick and easy with screw type connectors
- Sensor are colour coded for quick and easy installation
- These meters automatically recognise sensors

Dual power supply

- The instrument operates with a built-in lithium-ion battery
- When the rechargeable battery is low the meter will automatically switch to 1.5 AA alkaline batteries

Measure 14 parameters

- pH
- mV
- ORP
- Dissolved Oxygen (ppm)
- Dissolved Oxygen (%)
- EC
- EC (absolute)
- Resistivity
- TDS
- Salinity
- Seawater σ
- Turbidity
- Atmospheric Pressure
- Temperature

pH, EC and DO measurements are automatically compensated for temperature variations. Dissolved Oxygen measurements are automatically compensated for barometric pressure and salinity, always providing accurate and reliable results.

The HI98594 can display from 1 to 12 parameters simultaneously (user selectable).

Focus On Sensors

pH/ORP

Combined pH/ORP sensor

- PEI-body pH sensor with a glass tip
- Platinum Sensor for ORP
- Double junction reference with gel KCl electrolyte

HI7698194-1

EC/Turbidity

New Combined EC/Turbidity sensor

- Four-electrode conductivity sensor
- Turbidity Sensor that meets the requirements of ISO 7027 standards
- Turbidity range from 0.0 to 1000 FNU

HI7698594-4

Dissolved Oxygen

Optical Dissolved Oxygen sensor

- No need for frequent calibrations
- Quick readings and great stability
- High precision at very low oxygen values
- Ideal for difficult applications

HI7698594-5

Quick-DIN for waterproof connection

The meter connects to the multiparameter probe through a single waterproof connector, making attaching and removing the probe quick and easy. The meter automatically detects the probe when connected.

Data Transfer & Charging

The USB Type-C port allows for easy data transfer to memory stick, PC, or other compatible devices and is used to charge the internal lithium-ion battery.

Precision In Your Palm:
Reliable water testing anywhere

The **compact size** of the **HI98594** ensures easy portability and convenient use, even in the most challenging of environments.

The **HI98594** is designed to withstand harsh environmental conditions and is ideal for field measurements. The meter meets IP67 standards (30 minute immersion at a depth of 1 m) and the multi-sensor probe is totally sealed against water and dust, meeting IP68 standard (continuous immersion in water).

Surface Water

Surface water monitoring covers different types of environments, including rivers, canals, lakes, and reservoirs. With **HI98594** it is possible to measure 14 parameters, all of which are essential for assessing water quality (pH, ORP, Conductivity, Dissolved Oxygen, Turbidity, Temperature). Supplied with a case and all accessories required for testing.

Seawater

For coastal water monitoring, it is important to use reliable and robust instruments that are resistant to salt corrosion. The **HI98594** is available in various versions, with cable lengths from 4 m up to 50 m for depth measurements. A cap with stainless steel weighted protection facilitates immersion and protects the sensors from shocks and collisions.

Waste Water

A multi-parameter tool is valuable for waste water management: private companies, water treatment plants, laboratories. With a single instrument it is possible to detect up to 14 parameters in a few moments, with immediate information for an initial assessment of the effectiveness of the treatment, allowing timely interventions in the event of abnormal values.

Education & Research

The analysis of environmental water quality is a topic of increasing importance for universities and institutes, both in the fields of research and teaching. Environmental monitoring instrumentation must guarantee precision, ease-of-use and reliability over time. The instruments are often shared and used by various researchers and students within a department.

Groundwater

Groundwater analysis is important for pollution prevention and other purposes. Direct measurements of the aquifer layer can be carried out easily: the probe has a diameter suitable for lowering it into wells and is available with a cable up to 50 m. Another recommended methodology is low-flow sampling, using a submersible pump and flow cell.

Aquaculture

To optimise fish farming, it is essential to have reliable, repeatable data that is accurate over time. That is why our instruments offer the opportunity of continuous data logging. A crucial parameter is Dissolved Oxygen: Hanna's probes are equipped with an optical DO sensor, which guarantees maximum precision and little maintenance.

Construction & Environmental Remediation

A widespread use of portable multi-parameter instruments is for water analysis on construction sites and in construction zones, to ensure compliance and safety in infrastructure projects. Even sites subject to environmental upgrading and redevelopment require surface and groundwater analysis for water restoration in compliance with the limits imposed by law.

Everything you need for on-site testing supplied in a robust case

Fully Equipped

The **HI98594** is supplied with a rugged carrying case, designed to provide years of use and maximise protection. The inside compartment of the carrying case is thermoformed to securely hold and protect all of the components.

It is supplied with:

- Multiparameter probe **HI7698594** with pre-installed pH/ORP, EC/Turbidity and optical Dissolved Oxygen sensors.
- Accessories to maintain and protect the probe, including protective probe shield and maintaining kit.
- Quick CAL solution and standard solution for pH, Conductivity, Turbidity and Dissolved Oxygen.
- Long calibration beaker and zero oxygen solution set.
- Batteries, USB cable, protective rubber boot.

Dual power supply

The **HI98594** is equipped with a primary, internal Li-ion battery and supplied with 4 alkaline, 1.5 V AA batteries.

When the primary, rechargeable battery is completely discharged (0%), the meter will switch to the backup, alkaline batteries.

The instrument is equipped with a BEPS (Battery Error Prevention System) feature, which automatically turns the instrument off when the batteries reach 0%.

HI9828-25

Quick Calibration

Quick Calibration with the **HI98594** provides a speedy and simplified single point calibration for pH, Conductivity and Dissolved Oxygen, that is useful in the field.

For those who desire more precise calibrations, this instrument also offers more advanced options, such as:

- **pH**: calibration up to **three points**
- **Conductivity**: calibration at **one point**
- **Turbidity**: calibration up to **three points**
- **Dissolved Oxygen**: calibration at **one or two points**

The procedures for the two types of calibration have a **tutorial function** with all the steps on the screen.

14 Parameters, 1 Probe

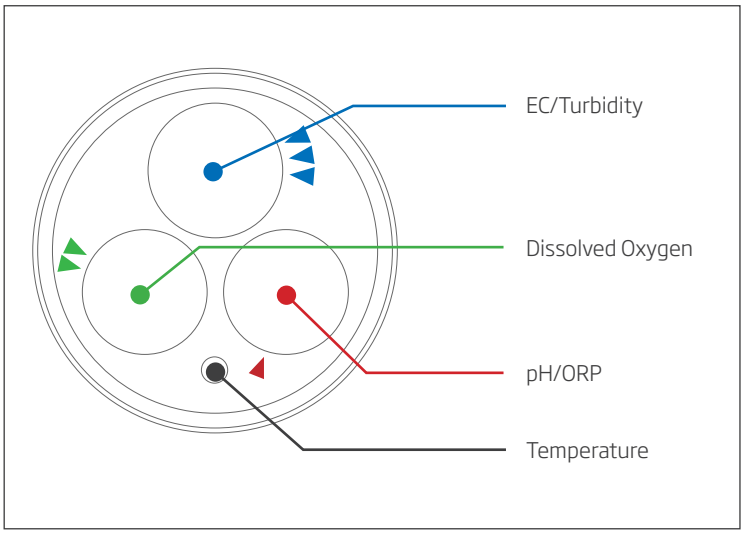
HI7698296

Multi-sensor probe

HI7698594 is a multi-sensor probe designed to offer advanced performance and resistance. It has three screw type connectors that are colour coded for easy and intuitive sensor identification.

It is supplied with a fully waterproof design that makes it makes it ideal for complex application.

- The **HI7698594** is supplied with **pre-installed** pH/ORP, EC/Turbidity and optical DO sensors.
- **Quick sensor replacement:** sensor replacement is quick and easy with screw type connectors and are colour coded for easy identification. This meter automatically recognises the sensors.



Probe Specifications	HI7698594	
Sensor inputs	3 (pH or pH/ORP, EC or EC/Turbidity, DO)	
Sample environment	Fresh, brackish, seawater	
Waterproof protection	IP68	
Operating temperature	−5.0 to 50.0 °C	
Storage temperature	−20.0 to 70.0 °C	
Maximum depth	20 m (66')	
Dimensions (without cable)	Length 342 mm (13.5") Diameter 46 mm (1.8")	
Weight (without sensors)	570 g	
Cable specification	Multistrand-multiconductor shielded cable with internal strength member rated for 90 kg (200 lbs) intermittent use	
Wetted materials	Body	ABS
	Threads	Nylon
	Shield	ABS and 316 stainless steel
	Temperature probe	316 stainless steel
	O-rings	EPDM (ethylene propylene diene monomer rubber)

pH/ORP - Installed

Sensor Specifications	HI7698194-1
Description	pH/ORP sensor
Measurement unit	pH mV (pH) mv (ORP)
Measurement range	0.00 to 12.00 pH ±600.0 mV (pH) ±2000.0 mV (ORP)
Operational temperature	−5.0 to 50.0 °C
Colour code	Red

pH - Optional

Sensor Specifications	HI7698194-0
Description	pH sensor
Measurement unit	pH mV (pH)
Measurement range	0.00 to 12.00 pH ±600.0 mV (pH)
Operational temperature	−5.0 to 50.0 °C
Colour code	Red

EC/Turbidity - Installed

Sensor Specifications	HI7698594-4
Description	EC/Turbidity sensor
Measurement unit	µS/cm mS/cm FNU
Measurement range	0 to 200.0 mS/cm 0.0 to 400 mS/cm (assoluto) 0.0 to 1000 FNU
Operational temperature	−5.0 to 50.0 °C
Colour code	Blue

EC - Optional

Sensor Specifications	HI7698594-3
Description	EC sensor
Measurement unit	EC
Operational temperature	0 to 200.0 mS/cm 0.0 to 400 mS/cm (assoluto)
Operational temperature	−5.0 to 50.0 °C
Color code	Blue

DO opdo® - Installed

Sensor Specifications	HI7698594-5
Description	DO sensor opdo® (Optical)
Measurement unit	% Saturation mg/L
Measurement range	0.0 to 500.0 % 0.00 to 50.00 mg/L
Operational temperature	−5.0 to 50.0 °C
Colour code	Green

RFID tag

HI764113-1

Optical Dissolved Oxygen Smart Caps

The optical dissolved oxygen sensor uses a smart cap that has an RFID tag that stores calibration coefficients unique to each cap. The RFID keeps track of the age of the cap and alerts the user when it should be replaced.

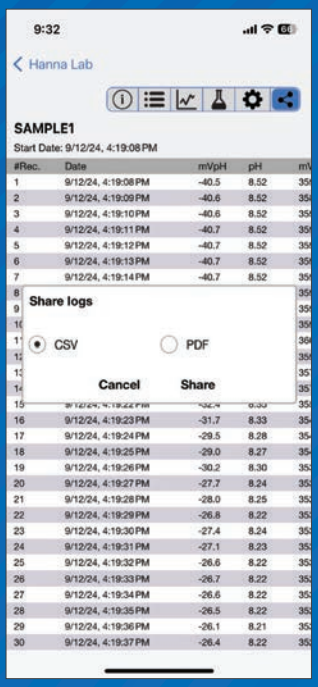
Smart Solutions for Practical Water Testing

Log On Demand and Automatic Logging for all Parameters

The **HI98594** allows you to log one data point or continuously log at selected time intervals. All logs have the option to store data into a named lot and the ability to add comments.

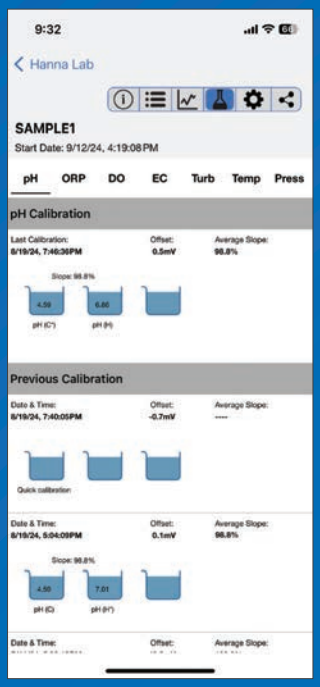
Bluetooth® 5.0 Connectivity and Hanna Lab

Using the Bluetooth connection and Hanna Lab app, logged data batches can be easily transferred to a smart device for review or shared as an e-mail. Automatic firmware updates for the meter are available via the Hanna Lab app.



Share Results

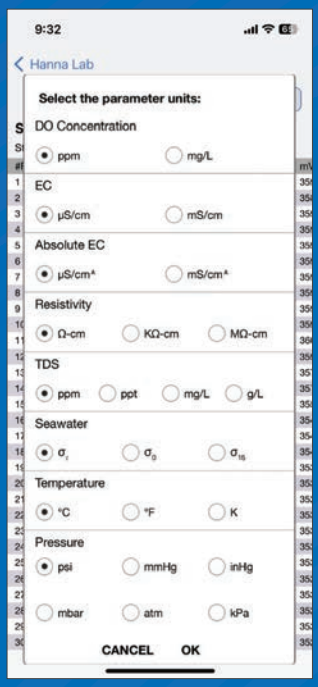
Logs can be shared as a .CSV or .PDF file.



GLP Data

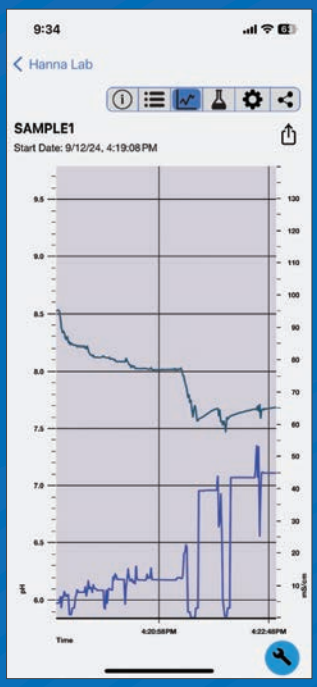
The last 5 calibrations are automatically stored.

Comprehensive GLP data can be reviewed for all parameters when the logged data is downloaded to a smart device.



Unit Selection

When reviewing data on a smart device there is an option to select the measurement units to be displayed independently of the meter settings.



Data Graphing

For trend analysis, the Hanna Lab App offers the option to graph logged data.

Hanna Cloud

Hanna Cloud is a free service offered with the **HI98594**: a web-based application connected with Hanna Lab app. The service enables you to:

- Save data so it is easily accessible from remote PC, tablet, or phone.
- Set measurement units for each parameter.
- View data tables for all measured parameters.
- View 4 parameter graphs simultaneously.

Hanna Cloud incorporates security for your personal information. We protect your information using

Enhance your analysis with a flow cell

Continuous monitoring

Hanna's flow cell is an indispensable accessory for continuous and stable measurements when analysing parameters such as pH, Conductivity, Dissolved Oxygen, and Turbidity. Designed to allow uniform sample flow, it ensures optimal contact between the sensors and the liquid, minimising external interferences.

Easy to install and use, our flow cell allows for in-line analysis with fully immersed sensors and constant flow management.

Low-flow sampling

Low-flow sampling is a technique used in groundwater analysis that involves the slow and controlled extraction of water from the ground, using a submersible pump and a multi-parameter probe installed in a flow cell. This approach offers several advantages over other sampling techniques:

- **Less disturbance of the aquifer**: slow extraction (typically between 0.1 and 0.5 liters per minute) reduces the possibility of mixing water from different areas of the aquifer layer.
- **Representative samples**: Prevents phenomena such as desorption of substances from well walls or oxidation of iron ores and maintains the integrity of concentrations of volatile compounds for sensitive parameters such as pH, Dissolved Oxygen, Redox and Temperature.
- **Reduction of stabilisation times and costs**: It is not necessary to withdraw large volumes of water to stabilise the chemical-physical parameters of the well, such as in comparison to traditional techniques.
- **Lower environmental impact**: this process does not require large volumes of water to be disposed of, reducing management costs and environmental impacts related to pumping and treating extracted water.
- **Compliance with international standards**: Low-flow sampling is recommended by many laws, regulations and guidelines to obtain reliable and representative results.

Why use the HI7698297 flow cell?

- **Improve analysis accuracy**: Ensures optimal contact between sensors and the sample. This also prevents the introduction of air or pressure variation, which could alter the composition of the sample.
- **Field monitoring**: Perfect for in-situ monitoring and sampling, including via wells for groundwater monitoring.
- **Robustness**: Our flow cell is manufactured from high-quality materials that guarantee long life and resistance to wear.

HI7698297
(ordered seperately)

Specifications

Specifications		HI98594		
pH / mV	Range	0.00 to 13.00 pH / ±600.0 mV		
	Resolution	0.01 pH / 0.1 mV		
	Accuracy	±0.05 pH / ±3.0 mV		
	Calibration	One point using **HI9828-25** Quick calibration solution Up to three points using pH 4.01, pH 6.86, pH 7.01, pH 9.18, pH 10.01 standard buffers and one custom buffer		
ORP	Range	±2000.0 mV		
	Resolution	0.1 mV		
	Accuracy	±10.0 mV		
	Calibration	Automatic at one custom point (relative mV)		
Dissolved Oxygen	Range	0.0 to 500.0 % saturation; 0.00 to 50.00 ppm (mg/L)		
	Resolution	0.1 % saturation 0.01 ppm (mg/L)		
	Accuracy	±1.5 % of reading from 0.0 to 200.0 % saturation ±5 % of reading from 200.0 to 500.0 % saturation ±1.5 % of reading from 0.00 to 20.00 mg/L ±5 % of reading from 20.00 to 50.00 mg/L		
	Calibration	One point, quick calibration in water-saturated air One or two points, at 100 % and 0 % One point, using a custom solution (% saturation or mg/L)		
Pressure compensation		Automatic 450 to 850 mmHg		
EC	Range	0 to 200 mS/cm 0 to 400 mS/cm (absolute)		
	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	One point using **HI9828-20** Quick calibration solution One point using 84 µS/cm, 1413 µS/cm, 5.00 mS/cm, 12.88 mS/cm, 80.0 mS/cm, 111.8 mS/cm standard solutions or custom point		
Resistivity	Range	0 to 999999 Ω·cm 0 to 1000.0 kΩ·cm 0 to 1.0000 MΩ·cm	depending on resistivity reading	
	Resolution	1 Ω·cm; 0.1 kΩ·cm; 0.0001 MΩ·cm		
	Calibration	Based on conductivity calibration		
TDS	Range	0 to 400,000 ppm (mg/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		
Salinity	Range	0.00 to 70.00 PSU		
	Resolution	0.01 PSU		
	Accuracy	±2% of reading or ±0.01 PSU, whichever is greater		
	Calibration	One point, using a custom solution		
Seawater Sigma	Range	0.0 to 50.0 σ_t, σ_0, σ_{15}		
	Resolution	0.1 σ_t, σ_0, σ_{15}		
	Accuracy	±1.0 σ_t, σ_0, σ_{15}		
	Calibration	Based on conductivity or salinity calibration		
Turbidity	Range	0.0 to 99.9 FNU; 100 to 1000 FNU		
	Resolution	0.1 FNU from 0.0 to 99.9 FNU; 1 FNU from 100 to 1000 FNU		
	Accuracy	±0.3 FNU or ±2 % of reading, whichever is greater		
	Calibration	Automatic Up to three points using 0 FNU, 20 FNU, 200 FNU, and a custom.		
Atmospheric pressure	Range	450.0 to 850.0 mmHg 17.72 to 33.46 inHg	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 mmHg 0.01 inHg	0.1 mbar 0.001 psi	0.0001 atm 0.01 kPa
	Accuracy	±3.0 mmHg within ±15 °C from calibration temperature		
	Calibration	Automatic at one custom point		
Temperature	Range	−5.00 to 50.00 °C; 23.00 to 122.00 °F; 268.15 to 323.15 K		
	Resolution	0.01 °C; 0.01 °F; 0.01 K		
	Accuracy	±0.15 °C; ±0.27 °F; ±0.15 K		
	Calibration	Automatic at one custom point		

Additional Specifications

Additional specifications	Temperature compensation	Automatic	−5 to 50°C; 23 to 122 °F; 268.15 to 323.15 K
	Logging memory	Interval logging 50,000 records Log-on-demand (all parameters) 20,000 records	
	Logging interval	1 second to 3 hours	
	USB-C (Host) functions	Mass-storage host	
	USB-C (Device) functions	Mass-storage device	
	Protection rating	IP67	
	Environment	0 to 50 °C; RH 100 %	
	Battery type	4 x 1.5 V AA alkaline batteries; 1 x internal, Li-ion rechargeable battery	
	Battery life	≈ 126 hours 90 hours using alkaline AA batteries; 36 hours using Li-ion battery**	
	Dimensions	185 x 93 x 35.2 mm	
	Weight	435 g	

** Estimated time given without backlight and Bluetooth®

Ordering Information & Accessories

Ordering information	All **HI98594** models are supplied with: **HI7698594** multisensor probe; **HI7698296** protective probe shield; **HI76984942** probe maintenance kit; **HI7698194-1** pH/ORP sensor; **HI7698594-4** EC/Turbidity sensor; **HI7698594-5** optical DO sensor; **HI764113-1** DO Smart Cap with o-ring; **HI7698293** long calibration beaker; **HI9828-25** quick calibration standard solution (230 mL); **HI7040** zero oxygen solution set (120 mL); **HI9829-16** 0 FNU calibration solution (230 mL); **HI9829-17** 20 FNU calibration solution (230 mL); **HI9829-18** 200 FNU calibration solution (230 mL); **HI710036** protective rubber boot; **HI920016** USB cable; 1.5V AA alkaline batteries (4 pieces); quality certificates (instrument, probe, DO Smart Cap); and quick reference guide. **HI98594** is supplied with multisensor probe with 4m cable **HI98594/10** is supplied with multisensor probe with 10m cable **HI98594/20** is supplied with multisensor probe with 20m cable **HI98594/30** is supplied with multisensor probe with 30m cable **HI98594/40** is supplied with multisensor probe with 40m cable **HI98594/50** is supplied with multisensor probe with 50m cable
Accessories	**HI710034** Orange protective rubber boot **HI710036** Black protective rubber boot **HI764113-1** Smart Caps for Optical Dissolved Oxygen Sensor **HI7698297** Flow cell

Stay Secure

Quality Certificate

All Hanna instruments are subjected to a double quality control process. Each instrument, probe and electrode is accompanied by a quality certificate.

Certification

The calibration certificate specifies the corrections to be applied to your measurement results, making them more accurate.

For organizations involved in quality management systems, standardisation guidelines strongly recommend regular calibration and maintenance of measurement systems, validated by a calibration certificate which can be checked during an audit.

Measuring equipment needs to be checked periodically. With Hanna Instruments calibration services, you can ensure the reliability and quality of your measuring equipment. You optimise their smooth operation and reduce your costs.

Support

Our technical team is here to help you:

- Phone support
- Quick assistance
- Advice on choosing the right electrodes for your application
- Calibration services
- Repairs on our premises

Discover our Family of Multiparameter Portable Meters

Code	HI9829	*NEW* HI98594	HI98494	HI98194	HI98195	HI98196
Parameters	17	14	12	12	10	7
pH/ORP	•	•	•	•	•	•
EC/Resistivity/Salinity/Seawater Sigma	•	•	•	•	•	
Dissolved Oxygen (Galvanic)	•			•		•
Dissolved Oxygen (opdo®)		•	•			
Turbidity	•	•				
ISE (Ammonium, Nitrates, Chlorides)	•					
Atmospheric pressure	•	•	•	•	•	•
Quick Calibration	•	•	•	•	•	•
Bluetooth®		•	•			
GPS	•					
Logging memory	44,000	50,000	45,000	45,000	45,000	45,000
Logging probe	140,000					
Fast Tracker	•					

HANNA® instruments

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