



HI 98140, HI 98150 and HI 98160  
**PORTABLE pH METERS WITH CALIBRATION CHECK™**



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## PORTABLE pH METERS WITH CALIBRATION CHECK™

HI 98140, HI 98150 and HI 98160 are portable Calibration Check™ pH meters, designed to provide laboratory accurate results under harsh industrial conditions.

HI 98140 and HI 98150 work with SMART amplified electrodes. These electrodes incorporate a chip, which stores the calibration data performed with a specific instrument. When the SMART electrode is attached to the meter again, it is automatically recognized. This technology allows the operator to optimize time and efficiency with unsurpassed safety.

These instruments can also measure with ORP electrodes (HI 98150 & HI 98160), thanks to their capability to measure mV with a resolution up to 0.1 mV.

The auto Endpoint feature allows the user to freeze the first stable reading on the LCD display. The backlight feature is automatically disabled when batteries are getting low and a clear indication is displayed to warn the user of this condition. In addition, these meters allow the user to enter an ID code to uniquely identify the instrument.

## FEATURES

- **Calibration Check™ Electrode Diagnostics**  
Alerts users when the electrode needs cleaning
- **Waterproof**
- **SMART electrode compatible**  
(HI 98140 and HI 98150)
- **Relative mV measurements**  
(HI 98150 and HI 98160)
- **Up to 8 automatically recognized pH buffers** (HI 98160)
- **Up to 5 point pH calibration and up to 2 custom buffers**  
(HI 98150 and HI 98160)
- **Backlit, Multi-level LCD display**  
The meters display the current measurement simultaneously with the current temperature. A quick-guide is also displayed to aid users in instrument operation.
- **Log on demand (500 samples)**
- **Auto Hold feature**  
Freezes first stable reading on LCD



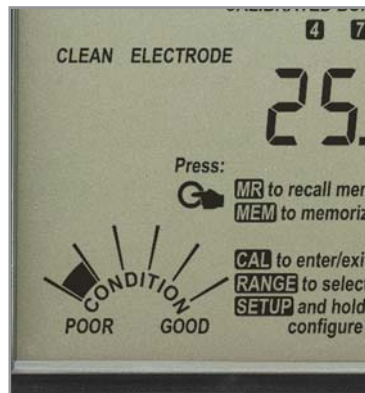
**B.E.P.S. ±**  
Battery Error  
Prevention System



ISO 9001:2000  
CERTIFIED  
COMPANY

## EXCLUSIVE CALIBRATION CHECK™

Each time pH calibration is performed, these meters internally compare the new calibration with the one previously stored. When this comparison indicates a significant difference, the clean message blinks on the LCD to advise the user that the pH electrode may need to be cleaned and another calibration will need to be performed.



## EXPIRED CALIBRATION

These meters are provided with a real time clock (RTC) in order to monitor the time elapsed since the last pH calibration.

The RTC is reset every time the meter detects a calibration time-out. The CAL tag will start blinking to warn the user that the meter should be calibrated.

- **GLP feature**

View last calibration data for pH, Rel mV

- **Auto Endpoint**

Freezes first stable reading on the LCD display

- **User-selectable "calibration time out"**

Alerts users when a new calibration is needed.

- **Opto-isolated USB**

- **Long battery life**

Extended battery life (up to 300 hours).

- **% battery life on display**

- **BEPS**

BEPS (Battery Error Prevention System) alerts the user in the event that low battery power could adversely affect readings.

## WE DESIGN, MANUFACTURE, SUPPLY AND SUPPORT ALL OF OUR PRODUCTS.

### THAT'S 360° VALUE

Over the past 30 years, HANNA has never failed to design fresh and innovative products and the HI 98140, HI 98150 and HI 98160 are no exception. We are excited to introduce such high accuracy and ease of use in a compact, modern design that fits right in your hand.

HANNA is the largest family-owned manufacturer of analytical instrumentation in the world. These instruments are manufactured in our European state-of-the-art ISO 9001:2000 production facility and is CE compliant to EN 61326-1 and EN 61010-1 standards.

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

## HI 1618D SMART AMPLIFIED pH ELECTRODE

SMART electrodes incorporate a chip, which stores the calibration data performed with a specific instrument. When the "SMART" electrode is attached to the meter again, it is automatically recognized. This allows the operator to optimize time and efficiency with unsurpassed safety. It also avoids erroneous measurements taken in the event the pH electrode is substituted after calibration.

This series of electrodes also incorporates a temperature sensor, eliminating the need for an additional temperature probe. This electrode is compatible with both the HI 98140 or HI 98150.

## HI 1230B pH ELECTRODE

The HI 1230B's advanced thermoplastic body is designed for the rugged handling of every day use.

The HI 1230B's double junction minimizes electrode contamination leading to accurate, consistent results and extended electrode life.

**pH Electrode, Starter Solutions and Carrying Case Included!**



SPECIFICATIONS		HI 98140	HI 98150	HI 98160
Range	pH		-4.0 to 20.0 pH; -4.00 to 19.99 pH	
	mV	–	±699.9; ±2000 mV	
	Temperature		20.0 to 120.0°C / -4.0°F to 248.0°F	
Resolution	pH		0.1 pH; 0.01 pH	
	mV	–	0.1 mV; 1 mV	
	Temperature		0.1°C / 0.1°F	
Accuracy (@20°C)	pH		±0.1 pH; ±0.01 pH	
	mV	–	±0.2 mV (±699.9 mV); ±1 mV (±2000)	
	Temperature		±0.2°C (±0.4°F) excluding probe error	
SMART Electrode Compatible			Yes	–
Auto-endpoint Feature			–	Yes
pH Calibration		up to 3 point (HI 98140) or up to 5 point (HI 98150) calibration with 7 standard buffers (1.68, 4.01, 6.86, 7.01, 9.18, 10.01, 12.45), and 2 custom buffers		up to 5 points with 8 standard buffers (1.68, 3.00, 4.01, 6.86, 7.01, 9.18, 10.01, 12.45) and 2 custom buffers
Offset Calibration		±1 pH		
Slope Calibration		From 80 to 108%		
Rel mV Offset Range		–	±2000 mV	
Temperature Compensation		automatic or manual, -20 to 120°C (-4 to 248°F)		automatic or manual, -20 to 120°C (-4 to 248°F) without temperature probe
pH Electrode		HI 1618D amplified pH electrode with built-in temperature sensor, plastic body and DIN connector (included)		HI 1230B, double junction, PEI body, gel filled, BNC connector and 1 m (3.3') cable (included)
Temperature Probe		–	HI 7662 with 1 m (3.3') cable (included)	
Logging		on-demand, 500 samples		
PC Connection		opto-isolated USB		
Input Impedance		10 <sup>12</sup> Ohm		
Battery Type / Life		(4) 1.2V AAA / approx. 200 hours of continuous use (with backlight off); auto-off after 20 minutes of non-use (can be disabled) (HI 98140 and HI 98150); user-selectable auto shut-off (5, 10, 20, 60 min or disabled) (HI 98160)		
Environment		0 to 50°C (32 to 122°F); RH max 100%		
Dimensions / Weight		192 x 71.6 x 36 mm (7.5 x 2.8 x 1.4") / 425 g (15 oz.)		

## ORDERING INFORMATION

**HI 98140** and **HI 98150** are supplied with HI 1618D Amplified pH electrode with built-in temperature sensor, EEPROM and DIN connector, starter set of calibration solution sachets, (4) 1.2 AAA batteries, instructions and carrying case.

**HI 98160** is supplied with HI 1230B combination double-junction, gel-filled pH electrode, HI 7662 stainless steel temperature probe with 1 m (3.3') cable, starter set of calibration solution sachets, (4) 1.2 AAA batteries, instructions and carrying case.

## ELECTRODES

**HI 1230B** pH electrode, double junction, PEI body, BNC connector, 1 m (3.3') cable

**HI 1618D** "SMART" pre-amplified pH electrode with PEI body and DIN connector

**HI 3620D** Pre-amplified ORP electrode with PEI body and DIN connector

**HI 3620D** "SMART" Pre-amplified ORP electrode with glass body and DIN connector

**HI 7662** Temperature probe

## SOLUTIONS

**HI 5004L** pH 4.01 buffer solution, 500 mL

**HI 5007L** pH 7.01 buffer solution, 500 mL

**HI 5010L** pH 10.01 buffer solution, 500 mL

**HI 70300L** Electrode storage solution, 500 mL

**HI 7061L** Electrode cleaning solution, 500 mL

## ACCESSORIES

**HI 92000** Windows® compatible software

**HI 920013** USB connection cable



**HANNA**<sup>®</sup>  
instruments  
With Great Products, Come Great Results™