

HI 122 • HI 123

pH Benchtop Meters with Built-in Printer

- pH Calibration Check™
- Electrode response time
- Five pH calibration points
- Seven standard and two custom buffers
- Out of calibration range warning
- Large, custom LCD
- Built-in impact printer
- Separate pH and ISE channels (HI 123)
- Automatic data logging of 2000 records and log on demand
- GLP capabilities
- High and low audible alarms



HI 122 and HI 123 are benchtop instruments featuring a built-in printer, Calibration Check™, electrode response time and condition monitoring, and enhanced diagnostic messages during calibration. HI 123 also incorporates dual inputs to measure both pH and ISE simultaneously.

These meters use HANNA's "P" series of electrodes. For more accuracy, these meters also check if the measurement is outside the calibration range and warns the user in case measurements are too far outside the calibration points. Calibration can be performed in up to five points using the standard seven buffers that are automatically recognized, or by using two custom buffer values. The buffer(s) used during calibration are displayed on the LCD even when in measurement mode.

Users can log on demand up to 50 samples (50 samples per channel for dual channel model). These meters have automatic data logging

of up to 1000 points (1000 points per channel for dual channel model) with flexible starting and stopping criteria.

This instrument provides GLP capabilities that allows for the storage and retrieval of all data regarding pH, rel mV, EC and NaCl calibration as well as data regarding the maintenance and status of the electrode.

Printing

The built-in impact printer incorporated into the HI 122 and HI 123 uses regular paper that does not fade with time. A complete set of information based on the measured, set or recorded data can be printed on demand (for current reading in measurement mode, GLP and SETUP modes) or automatically (for autolog and log on demand modes). These models also allow users to print detailed information in four languages for specific help screens and instrument set-up.

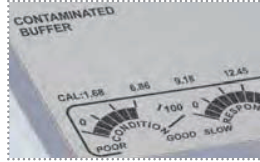
Exclusive pH Calibration Check™

HANNA's exclusive Calibration Check™, a diagnostics system that ensures accurate pH readings every time. By alerting users of potential problems during the calibration process, the Calibration Check™ system eliminates erroneous readings due to dirty or faulty pH electrodes or contaminated pH buffer solutions during calibration. Throughout the calibration process, users are guided step-by-step by the on-screen tutorial. After calibration, the probe condition and response time is evaluated and an electrode condition and response time graph is displayed informing the user of the overall pH electrode status. The Calibration Time Out and Out of Calibration Range warning complete the instruments' calibration features.



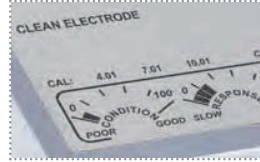
Out of Calibration Range warning:

Measuring samples outside the calibration range may result in loss of accuracy.



Contaminated Buffer warning:

A contaminated buffer solution causes erroneous calibration curve resulting in loss of accuracy during measurement.



Clean pH Electrode warning:

A dirty pH electrode causes erroneous calibration curve resulting in loss of accuracy during measurement.



Check pH Electrode warning:

This message is displayed in the event the junction of the pH electrode is clogged.

SPECIFICATIONS		HI 122	HI 123
Range	pH	-2.00 to 16.00 pH / -2.000 to 16.000 pH	
	mV	±999.9 and ±2000 mV	
	Selective Ions	–	0.001 to 19999 ppm
	Temperature	-20.0 to 120.0°C (-4.0 to 248.0°F)	
Resolution	pH	0.01 pH / 0.001 pH	
	mV	0.1 mV / 1 mV	
	Selective Ions	–	0.001 / 0.01 / 0.1 / 1 ppm
	Temperature	0.1°C (0.1°F)	
Accuracy (@20°C)	pH	±0.01 pH / ±0.002 pH	
	mV	±0.2 mV (±699.9 mV) / ±0.5 mV (±999.9 mV) / ±1 mV (±2000 mV)	
	Selective Ions	–	±0.5% f.s.
	Temperature	±0.4°C (±0.7°F) excluding probe error	
BNC Inputs		1 for pH electrode	2 for pH and/or ISE electrode
pH Calibration Check		status of electrode condition and response time, status of the buffer solutions during calibration	
Relative mV Offset Range		±2000 mV	
pH Calibration		automatic, up to five point calibration standard with seven buffers (1.68, 4.01, 6.86, 7.01, 9.18, 10.01, 12.45) + two custom buffers	
ISE Calibration		–	automatic, one or two point with five standard values (0.1, 1, 10, 100, 1000 ppm)
Temperature Compensation		automatic or manual, -20.0 to 120°C (-4.0 to 248.0°F)	
pH Electrode		HI 1131P glass body pH electrode with BNC + pin connectors and 1 m (3.3') cable (included)	
Temperature Probe		HI 7662-T temperature probe, stainless steel with 1 m (3.3') cable (included)	
Input Impedance		10 ¹² Ohm	
Log On Demand		50 samples	100 samples
Automatic Logging		1000 samples	2000 samples
PC Connection		RS232 serial port, opto-isolated	
Printer		built-in dot matrix printer, with 44 mm plain paper	
Power Supply		12 VDC adapter (included)	
Environment		0 to 50°C (32 to 122°F); RH max 95%	
Dimensions		280 x 203 x 84 mm (11.0 x 8.0 x 3.3")	
Weight		1.9 kg (4.2 lbs.)	

ORDERING INFORMATION

HI 122-01 (115V), HI 122-02 (230V), HI 123-01 (115V) and HI 123-02 (230V) are supplied with HI 1131P pH electrode, HI 7662-T temperature probe, HI 70004 pH 4.01 buffer solution sachet, HI 70007 pH 7.01 buffer solution sachet, HI 70715 electrolyte solution (30 mL), (5) paper rolls, 12 VDC adapter and instructions.

ELECTRODES

All electrode part numbers ending in "P" are supplied with a BNC and PIN connector and 1 m (3.3') cable:

- HI 1043P** Use: strong acid/alkalis; glass-body, double junction, refillable, combination pH electrode
- HI 1053P** Use: emulsions; glass-body, triple ceramic, refillable, combination pH electrode
- HI 1083P** Use: biotechnology; glass-body, open junction, refillable, combination pH electrode
- HI 1131P** Use: general purpose; glass-body, single junction, refillable, combination pH electrode
- HI 7662-T** Stainless steel temperature probe with 1 m (3.3') cable

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 7061L** Electrode cleaning solution, 500 mL
- HI 70300L** Electrode storage solution, 500 mL
- HI 7071** 3.5M KCl+AgCl Electrolyte, 30 mL (4), for single junction electrodes
- HI 7072** 1M KNO₃ Electrolyte, 30 mL (4)
- HI 7082** 3.5M KCl Electrolyte, 30 mL (4), for double junction electrodes

ACCESSORIES

- HI 710032** (10) Plain paper rolls
- HI 710033** Replacement ink cartridge
- HI 76405** Electrode holder
- HI 92000** Windows® compatible software
- HI 920010** RS232 cable for PC connection

For a complete list of Solutions and Electrodes, see the end of pH Section 3 and ISE Section 4.