HI3512

pH/ORP/ISE/EC/Resistivity/TDS/ NaCl/Temperature Bench Meter

HI3512 is a dual input professional pH/ ORP/ISE/EC/Resistivity/TDS/NaCl/ Temperature bench meter with a graphic LCD designed to provide high accuracy and ease of use both in the laboratory as well as in harsh industrial conditions. This instrument is a dual input model measuring pH, ORP, or ISE and temperature on channel 1; and EC, Resistivity, TDS, and Salinity (utilizing an EC probe) on channel 2. A Relative mV feature is also available.

This meter features Hanna's exclusive Calibration Check diagnostics system that eliminates erroneous readings due to dirty (faulty) pH electrodes or contaminated buffer solution by alerting users of potential problems during the calibration process.

Throughout the calibration process, users are guided step-by-step by the on-screen tutorial. After calibration, a probe condition indicator informs users of the overall electrode status.

A variety of interactive user support is available before, during and after measurement. On-screen tutorials guide users through set-up, calibration and measurement while context sensitive help of any screen is available at a push of a button. The HELP screen accessed by a dedicated HELP button, includes language specific assistance for menu parameters, calibration, log, contact information and accessories.

Main Features

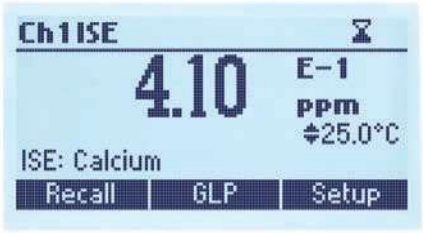
- Dual input channel
  - pH/mV/ISE and temperature measurements (Channel 1)
  - EC/TDS, NaCl/Resistivity and temperature measurements (Channel 2)
- Up to 5 point pH calibration with 7 standard buffers and 2 custom buffers to choose from
- Up to 2 point EC calibration with 7 memorized standards to choose from
- Calibration with millesimal pH buffers (with meter resolution set to 0.001 pH)
- Messages on the graphic LCD for an easy and accurate calibration
- Diagnostic features to alert the user when the electrode needs cleaning
- Relative mV measurements
- Log on demand, up to 400 samples
- Log interval with log on stability feature, up to 600 records
- Auto Hold feature, to freeze first stable reading on the LCD
- GLP, last calibration data for pH, Rel mV, ISE, EC, or NaCl
- PC interface

Measurement Screen Examples

pH

mV

Relative mV



ISE

EC

Resistivity

TDS

NaCl

Calibration Features

Automatic Calibration

The HI3000 series features on screen instructions to guide users step-by-step throughout the calibration process.

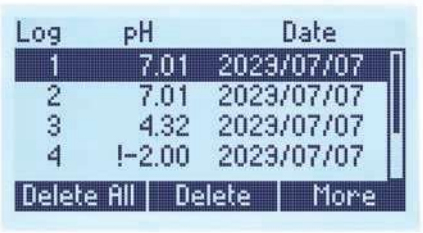
Calibration with Millesimal pH Buffers

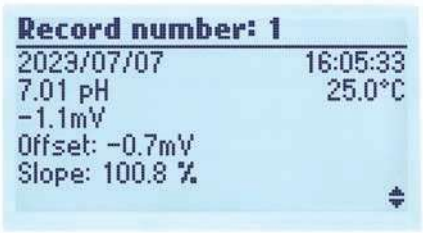
Closely bracket the measurement range of interest and ensure an accurate measurement using these buffers when the resolution of the meter set to 0.001 pH.

Error Screens

On-screen warnings alert users of pH, mV or ISE calibration issues such as Wrong Buffer, Electrode Dirty/Broken, Buffer Contaminated, Wrong Standard, and Wrong Relative Offset.

Logging Features





Log Measurements

To store the current reading, press LOG while in measurement mode.

When Lot Logging is enabled, press the StartLog key to start log interval and StopLog key to stop.

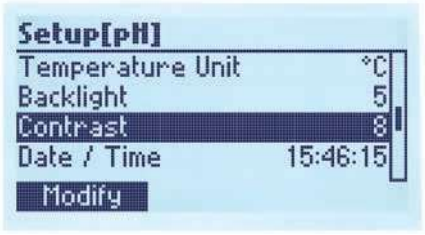
Access Logged Data

Press the Recall key to retrieve stored information.

View Records

Logged records can be viewed individually.

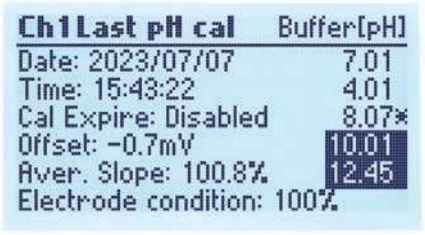
Setup Features

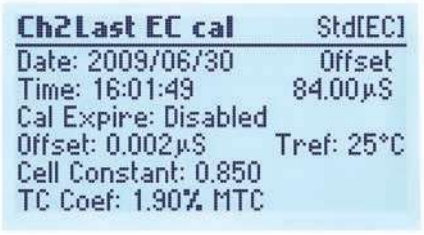


Setup Screens

Use this menu to configure calibration "DUE" reminder, resolution, operating language, temperature unit (°C or °F), log interval, custom buffers, ISE unit and probe type (applicable models), screen backlight and contrast, date and time, and more.

GLP



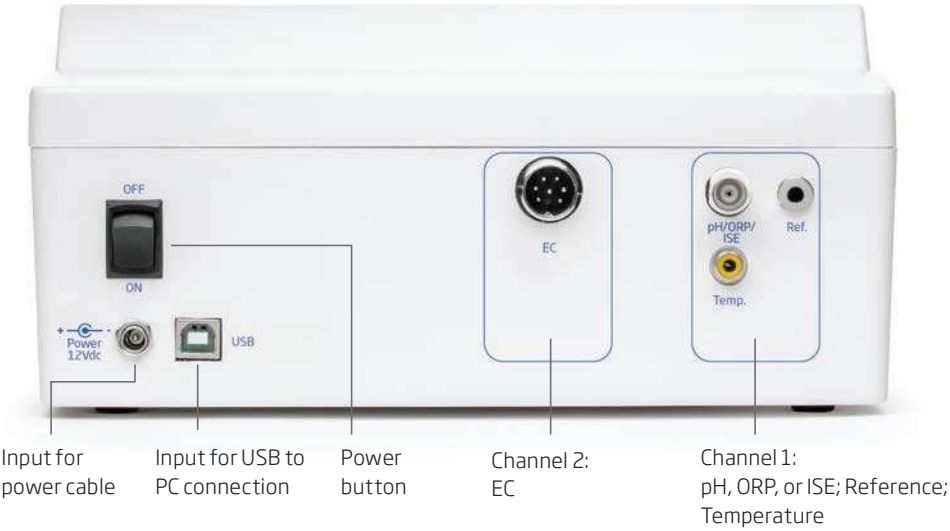


Good Laboratory Practice (GLP)

GLP is a set of functions that allows storage and retrieval of data regarding the maintenance and status of the electrode. All data regarding pH, Rel mV or ISE calibration is stored for the user to review when necessary.

The "expired calibration" status is triggered when the instrument detects a calibration time out. The "CAL DUE" warning is displayed blinking to warn the user that the instrument should be recalibrated.

HI3512 (Dual input)



Specifications		HI3512
pH	Range	-2.0 to 20.0 pH; -2.00 to 20.00 pH; -2.000 to 20.000 pH
	Resolution	0.1 pH; 0.01 pH; 0.001 pH
	Accuracy	±0.01 pH; ±0.002 pH
	Calibration	Up to 5 points 7 standard buffers (1.68, 4.01, 6.86, 7.01, 9.18, 10.01, 12.45) 2 custom buffers
ORP	Range	±2000.0 mV
	Resolution	0.1 mV
	Accuracy	±0.2 mV
ISE	Range	1.00 E-7 to 9.99 E10 conc.
	Resolution	3 digits 0.01, 0.1, 1, 10 conc.
	Accuracy	±0.5% of reading (monovalent ions) ±1% of reading (divalent ions)
	Calibration	Up to 5 points 6 standards (0.1, 1, 10, 100, 1000, 10000 ppm)
Temperature Channel 1	Range	-20.0 to 120.0 °C (-4.0 to 248.0 °F)
	Resolution	0.1 °C (0.1 °F)
	Accuracy	±0.2 °C (±0.4 °F) (excluding probe error)
Additional Specifications Channel 1	Relative mV Offset Range	±2000 mV
	Slope calibration	From 80 to 110%
	pH Temperature compensation	Manual Automatic
	Electrode	Hanna BNC connection pH, ORP, and ISE electrodes
	Temperature probe	RCA connection Recommended option: HI7662-TW
EC	Range	0 to 400 mS/cm (shows values up to 1000 mS/cm) Actual conductivity 1000 mS/cm 0.001 to 9.999 µS/cm; 10.00 to 99.99 µS/cm; 100.0 to 999.9 µS/cm; 1.000 to 9.999 mS/cm; 10.00 to 99.99 mS/cm; 100.0 to 999.9 mS/cm; 1000 mS/cm; (autoranging)
	Resolution	0.001 µS/cm; 0.01 µS/cm; 0.1 µS/cm; 0.001 mS/cm; 0.01 mS/cm; 0.1 mS/cm; 1 mS/cm
	Accuracy	±1% of reading (±0.01 µS/cm or 1 digit whichever greater) excluding probe error
	Calibration	Up to 2 points 7 standards (0.00 µS/cm, 84.0 µS/cm, 1.413 mS/cm, 5.00 mS/cm, 12.88 mS/cm, 80.0 mS/cm, 111.8 mS/cm)
Resistivity	Range	1.0 to 99.9 Ω; 100 to 999 Ω; 1.00 to 9.99 KΩ; 10.0 to 99.9 KΩ; 100 to 999 KΩ; 1.00 to 9.99 MΩ; 10.0 to 100.0 MΩ (autoranging)
	Resolution	0.1 Ω; 1 Ω; 0.01 KΩ; 0.1 KΩs; 1 KΩ; 0.01 MΩ; 0.1 MΩ
	Accuracy	±1% of reading (±10 Ω or 1 digit whichever greater) excluding probe error
TDS	Range	0.000 to 9.999 ppm; 10.00 to 99.99 ppm; 100.0 to 999.9 ppm; 1.000 to 9.999 g/L; 10.00 to 99.99 g/L; 100.0 to 400.0 g/L (autoranging)
	Resolution	0.001 ppm; 0.01 ppm; 0.1 ppm; 0.001 g/L; 0.01 g/L; 0.1 g/L
	Accuracy	±1% of reading (±0.05 ppm or 1 digit whichever greater) excluding probe error
	TDS factor	0.40 to 1.00
Salinity	Range	% NaCl: 0.0 to 400.0 %
	Resolution	0.1 %
	Accuracy	±1% of reading excluding probe error
	NaCl Calibration	Max. 1 point only (with HI7073 standard)
Temperature Channel 2	Range	-20.0 to 120.0 °C (-4.0 to 248.0 °F)
	Resolution	0.1 °C (0.1 °F)
	Accuracy	±0.2 °C (±0.4 °F) (excluding probe error)
Additional Specifications Channel 2	Cell constant setup	0.010 to 10.000
	EC probe	DIN connection; Recommended option: HI76310
	Temperature source	Automatic Manual
	EC temperature compensation	NoTC, MTC, ATC
	Reference temperature	15, 20, 25 °C
	Temperature coefficient	0.00 to 10.00 %/°C
Additional Specifications	LOG on demand	400 samples
	Lot Logging	5, 10, 30 seconds 1, 2, 5, 10, 15, 30, 60, 120, 180 minutes, AutoEnd (maximum 600 samples)
	Power Supply	12 Vdc power adapter
	PC Interface	opto-isolated USB
	Environment	0 to 50 °C (32 to 122 °F); max. RH 55% non-condensing
	Dimensions	235 x 207 x 110 mm (9.2 x 8.14 x 4.33")
	Weight	1.8 Kg (4.1 lb)
Ordering Information	**HI3512-01** (115V) and **HI3512-02** (230V) are supplied with HI 1131B glass body combination double-junction pH electrode, HI76310 four-ring conductivity probe with built-in temperature, HI7662-T stainless steel temperature probe with 1 m (3.3') cable, HI70004 pH 4.01 buffer solution (20 mL sachet), HI70007 pH 7.01 buffer solution (20 mL sachet), HI700661 cleaning solution (2x20 mL each), HI7082S electrolyte solution, HI76404N electrode holder, 12 Vdc power adaptor and quick reference guide with instrument quality certificate.	