



Research Grade Meters

pH, ISE, EC and DO

Laboratory bench meters with a color, graphic display and capacitive touch keypad

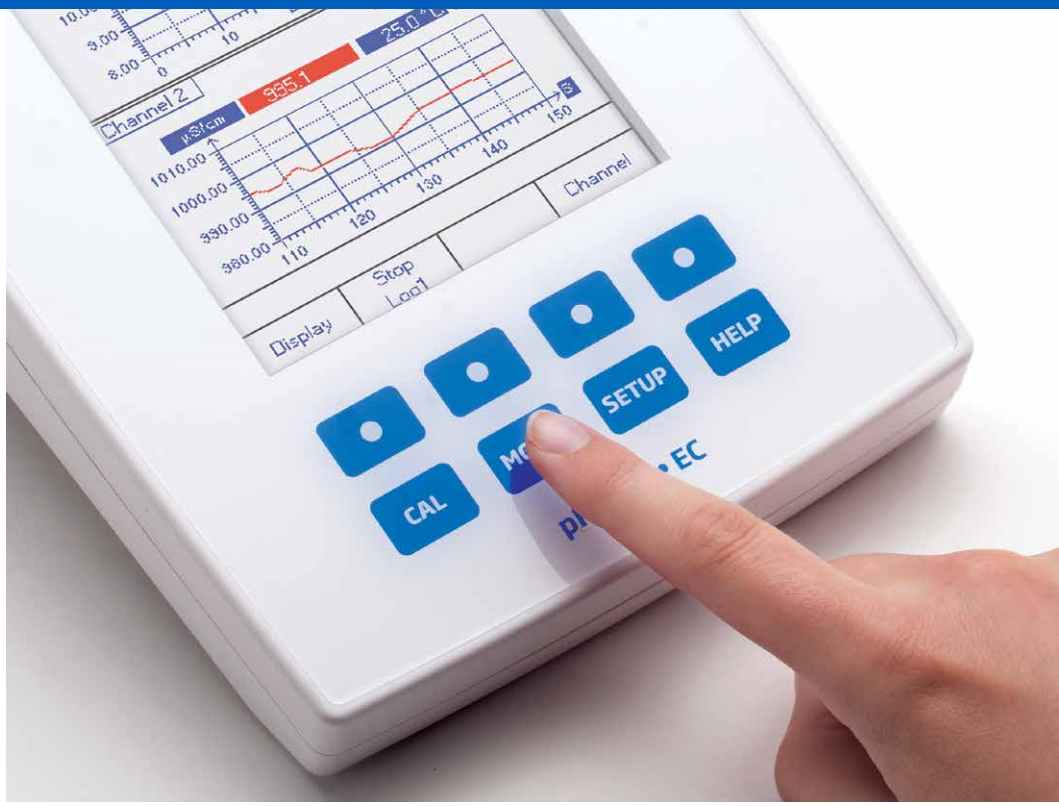
HANNA® instruments

HI5000 Series

Research Grade Meters

pH, ISE, EC and DO

- Capacitive touch keypad
  - This series features a capacitive touch keypad that gives a distinctive, modern look. The keypad is sensitive enough to be used with laboratory gloves and has a fast response. Since the keypad is part of the screen, there are no buttons to get clogged with sample residue
- Clear user interface
- On-screen help
  - Users can consult the on-screen help from any mode simply by pressing the HELP key
- PC compatible via USB
- GLP
  - Storage from all calibrations



CAL Check™ (pH Models)

Hanna's exclusive CAL Check™ diagnostics system ensures accurate pH readings every time by alerting users to potential problems during the calibration process. The CAL Check™ system eliminates erroneous readings due to dirty or faulty pH electrodes or contaminated pH buffer solutions during calibration. After the guided calibration process, the electrode condition is evaluated and an indicator is displayed informing the user of the overall pH electrode status.

- Each time a pH calibration is performed, the meter compares the new calibration with the previous one. When there is a significant difference between the two calibrations a message alerting the user to either clean the electrode, check the buffer or both.
- The condition of the pH electrode displayed as a percentage after calibration and is shown on the display, as well as the date and time.

Highly Customizable

The user interface of all instruments is customizable. The HI5222, HI5521, and HI5522 are capable of displaying two channels simultaneously. These meters are capable of showing the measurements in various modes: basic measurement with or without GLP information, real-time graphing of either channel and the logging of data.

User-friendly features

These instruments offer multi-language support and contextual help is always available through a dedicated help key. Clear tutorial messages and directions are available on-screen to quickly and easily guide users through measurement and calibration procedures to ensure they are performed properly.

Profiles

Up to 10 profiles can be saved and recalled, eliminating the need to reconfigure each time the meter is used for a different application.

A profile is a user-definable configuration that can include: mode, standards, isopotential point, measurement units of ISE and ISE electrode type, temperature units and resolution reading mode. Recalling a pre-defined profile can save time when using the meter for a different measurement.

Choice of Calibration

Automatic, semiautomatic and manual pH calibration is available for up to five points, with eight standard and five custom buffers. The out of calibration range and calibration expiration features alert the user in the event the measurement is far from the calibration point or when the meter is due for recalibration. Proper scheduled calibrations are crucial for accurate and repeatable measurements.

The HI5222 and HI5522 also feature ISE calibration up to five points, with standard solutions and up to five custom solutions, with or without temperature compensation. From the on-screen list, users can select the ISE electrode being used along with the standard configuration profile or create a custom version.

Data Logging

Three selectable logging modes are available: automatic, manual and autohold logging. Automatic and manual logs up to 100 lots, 50,000 records max/lot; 100,000 data points per channel, and up to 100 ISE methods reports (HI5222 and HI5522 only). Automatic logging features the option to save data according to the sampling period and interval. GLP information is stored with each lot recorded. GLP information includes complete data about user calibration of each parameter and identification information for the instrument, user, and company. Data can be transferred to a PC via USB and HI92000 software (optional).

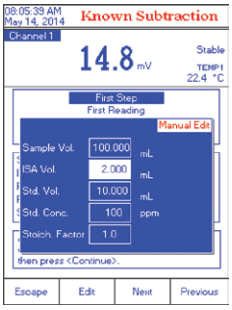
ISE Incremental Methods

Ion concentration determinations with ISEs can be made faster and easier using the streamlined incremental methods.

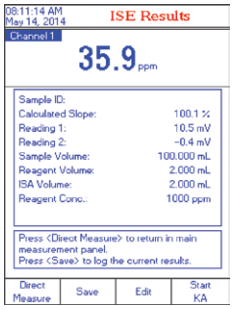
Incremental methods involve adding a standard to a sample or sample to a standard and detecting the mV change that occurs due to the addition. The difference in mV determines the concentration. Historically the user would use mathematical equations to determine the ion concentration of the sample; with either the HI5222 or HI5522, sample concentrations are calculated automatically and then logged into an ISE method report; up to 200 reports can be saved for future recall. The entire process can be repeated on multiple samples without reentering sets of parameters. Reports can be printed using HI92000 PC software.

Incremental method techniques can reduce errors from variables such as temperature, viscosity, pH or ionic strength. The electrodes remain immersed throughout the process, thus reducing measurement time as well as eliminating sample carry over and its associated errors.

Known Addition, Known Subtraction, Analyte Addition, and Analyte Subtraction methods are the choices available in the HI5222 and HI5522.







First Step

The first step in performing an incremental method analysis is to enter the required parameters including sample, ISA and standard volumes, as well as standard concentration and stoichiometric factor.

When repeating the analysis on another sample, the parameters do not need to be reentered.

Sequence of Readings

Once the variables are entered, the user is guided step-by-step through the measurement process.

The initial mV measurement is made before the addition; next is the addition, followed by the second mV measurement.

Results

The results are automatically calculated and shown together with all the parameters used.

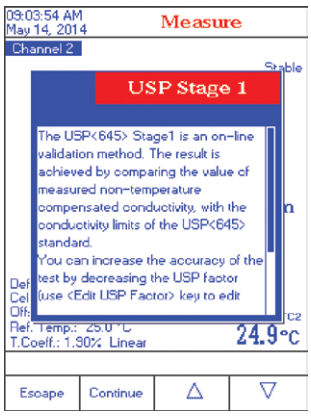
At this time, results can be saved into an ISE Methods Report and printed using the HI92000 PC software.

USP Mode

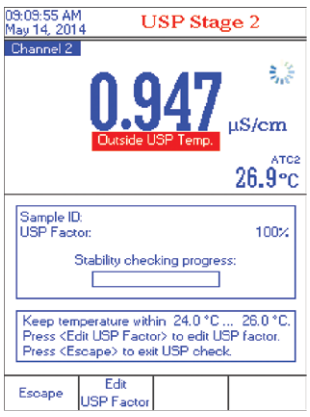
Hanna's HI5522 and HI5521 together with EC probes and pH sensors can be used for conductivity and pH measurements required to prepare water for injection (WFI) according to USP <645>.

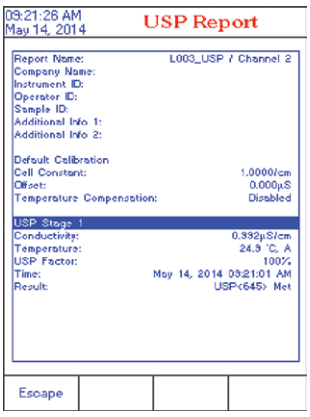
The instruments give clear instructions on how to perform each stage and automatically check that the temperature, conductivity and stability are within USP limits.

Comprehensive results are shown on a single screen at the end of the test. Up to 200 reports can be saved for future recall.





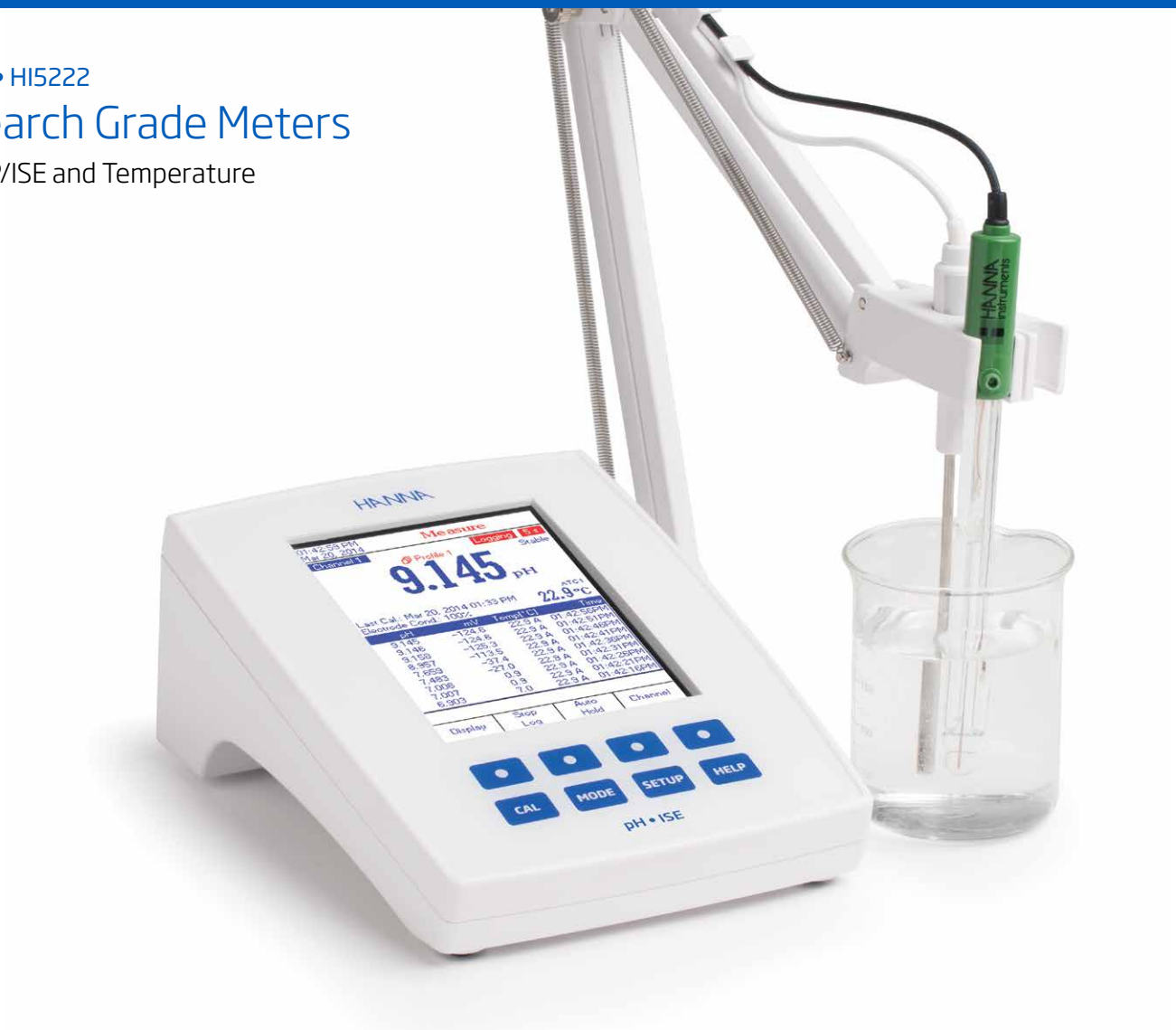




HI5221 • HI5222

Research Grade Meters

pH/ORP/ISE and Temperature



- Five-point calibration
  - Five-point pH with preprogrammed and custom buffers
  - Five-point ISE with preprogrammed and custom standards (HI5222 only)
- Logging
  - Large log memory (100,000 records) with selectable logging modes
- Provided methods (HI5222)
  - ISE incremental methods
- Multiple input channels
  - (HI5222) pH/ORP/ISE and temperature
- Connectivity
  - PC compatible via USB

Display up to 4 Parameters

HI5221 and HI5222 are research grade pH, mV and temperature benchtop meters. HI5222 is a dual channel meter with two independent inputs for pH, ORP and ISE probes. Each channel has it's own temperature input and supports half-cells with a separate reference electrode input.

User-friendly features

These instruments offer multi-language support and contextual help is always available through a dedicated help key. Clear tutorial messages and directions are available on-screen to quickly and easily guide users through measurement and calibration procedures to ensure they are performed properly.

Highly Customizable

The user interface of both instruments is customizable and the HI5222 is capable of displaying two channels simultaneously. These meters are capable of showing the measurements in various modes: basic measurement with or without GLP information, real-time graphing of either channel and logging of data.

Up to 10 profiles can be saved and recalled for both instruments. A profile is a user-definable configuration that can include: mode, standards, isopotential point, measurement units of ISE and ISE electrode type (HI5222 only), temperature units and resolution reading mode. Recalling a pre-defined profile can save time when changing the meter to a different measurement.

CAL Check™

Hanna's exclusive CAL Check™ diagnostics system ensures accurate pH readings every time by alerting users to potential problems during the calibration process. The CAL Check™ system eliminates erroneous readings due to dirty or faulty pH electrodes or contaminated pH buffer solutions during calibration. After the guided calibration process, the electrode condition is evaluated and an indicator is displayed informing the user of the overall pH electrode status.

Choice of Calibration

Automatic, semiautomatic and manual pH calibration is available for up to five points, with eight standard (1.68, 3.00, 4.01, 6.86, 7.01, 9.18, 10.01 and 12.45) and five custom buffers. The out of calibration range and calibration expiration features alert the user in the event that the measurement is far from the calibration point or when the meter is due for recalibration. Proper, scheduled calibrations are crucial for accurate and repeatable measurements.

HI5222 also features ISE calibration up to five points, with standard solutions and up to five custom solutions, with or without temperature compensation. From the on-screen list, users can select the ISE electrode being used along with the standard configuration profile or create a custom version.

Data Logging

Three selectable logging modes are available: automatic, manual and AutoHold logging. Automatic and manual logs up to 100 lots, 50,000 records max/lot; 100,000 data points per channel, and up to 100 ISE methods reports (HI5222 only). Automatic logging features the option to save data according to sampling period and interval. GLP information is stored with each lot recorded. GLP information includes complete data about user calibration of each parameter and identification information for the instrument, user, and company. Data can be transferred to a PC via USB and HI92000 software (optional).

Specifications		HI5221	HI5222
pH	Range	-2.0 to 20.0 pH; -2.00 to 20.00; -2.000 to 20.000 pH	
	Resolution	0.1 pH; 0.01 pH; 0.001 pH	
	Accuracy	±0.1 pH; ±0.01 pH; ±0.002 pH ±1 LSD	
	Calibration	automatic, up to five point calibration, eight standard buffers available (1.68, 3.00, 4.01, 6.86, 7.01, 9.18, 10.01, 12.45), and five custom buffers	
	Temperature Compensation	automatic or manual from -20.0 to 120.0°C/-4.0 to 248.0°/253.15 to 393.15K	
mV	Range	±2000 mV	
	Resolution	0.1 mV	
	Accuracy	±0.2 mV ±1 LSD	
	Relative mV Offset Range	±2000 mV	
Temperature*	Range	-20.0 to 120°C; -4.0 to 248.0°F; 253.15 to 393.15K	
	Resolution	0.1°C; 0.1°F; 0.1K	
	Accuracy	±0.2°C; ±0.4°F; ±0.2K	
ISE	Range	–	1×10^{-6} to 9.99×10^{10} concentration
	Resolution	–	1; 0.1; 0.01; 0.001 concentration
	Accuracy	–	±0.5% (monovalent ions); ±1% (divalent ions)
	Calibration	–	automatic, up to five-point calibration, five fixed standard solutions available for each measurement unit, and five user defined standards
Additional Specifications	pH Electrode	HI1131B glass body pH electrode with BNC connector and 1 m (3.3') cable (included)	
	Temperature Probe	HI7662-T stainless steel temperature probe with 1 m (3.3') cable (included)	
	Input Channel(s)	1 pH/ORP	2 pH/ORP/ISE
	GLP	calibration points, calibration time stamp, probe offset, slope, date, time and buffers/standards used	
	Logging	**record :** 100,000 data point storage/channel, 100 lots with 50,000 records/lot; **interval:** fourteen presets selectable between 1 second and max log time of 180 minutes; **type:** automatic, manual, AutoHOLD	
	Display	color graphic LCD 240x340 pixels	
	PC Connection	USB	
	Power Supply	12 VDC adapter (included)	
	Environment	0 to 50°C (32 to 122°F; 273 to 323K) RH max 95% non-condensing	
	Dimensions	160 x 231 x 94 mm (6.3 x 9.1 x 3.7")	
	Weight	1.2 kg (2.64 lbs.)	

(*) Reduced to actual probe limits

HI5321

Research Grade Conductivity/TDS Meter with USP <645>

EC/TDS/Resistivity/Salinity and Temperature



- Methods
  - Measures pure and ultra pure water
- Calibration
  - Up to four-point EC calibration and one-point salinity calibration
- Logging
  - Automatic, manual and autohold modes available
  - Up to 100 log lots with 50,000 records/lot max. for automatic and manual modes
  - Up to 200 USP reports
- Profiles
  - Up to 10 user profiles can be saved and recalled, eliminating the need for reconfiguration when using for a different application
- Connectivity
  - PC compatible via USB

Research Grade Conductivity Measurement

The HI5321 is a research grade EC/TDS/resistivity/salinity benchtop meter with a large, color, graphic LCD screen with backlight, capacitive touch keypad and conductivity with an extended range from 0.001 µS/cm to 1 S/cm.

Conductivity parameters are fully configurable and include: temperature compensation coefficient, temperature reference, selectable compensation method (linear, natural water and no compensation), adjustable cell constant and TDS factor.

All ranges of conductivity, resistivity and TDS feature autoranging or users can select the unit to measure manually. Three salinity scales are available: natural sea water scale, practical salinity scale and percentage scale.

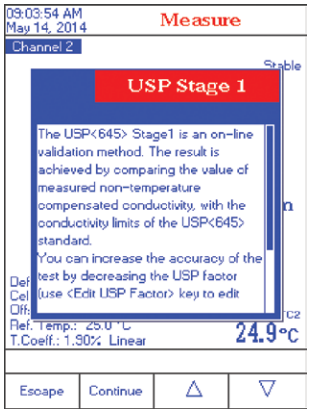
EC USP Mode

Hanna's HI5321 together with EC probes can be used for conductivity measurements required to prepare water for injection (WFI) according to USP <645>. The instruments give clear instructions on how to perform each stage and automatically check that the temperature, conductivity and stability are within USP limits.Comprehensive results are shown on a single screen at the end of the test. Up to 200 reports can be saved for future recall.

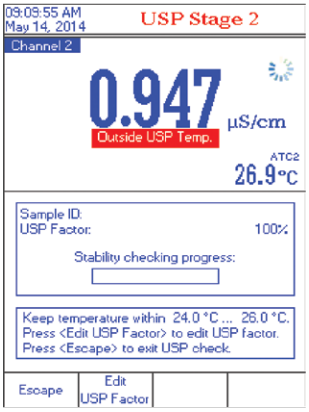
Calibration

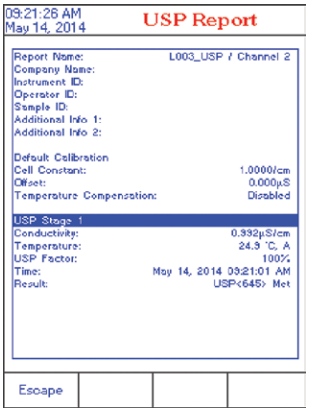
This HI5321 is equipped with auto standard recognition and can support custom calibration solutions. Up to a four point calibration can be obtained for enhanced accuracy over an extended measuring range.

An enhanced warning system alerts users when measuring outside the calibration range or when a new calibration is due.









Specifications		HI5321
EC	Range	0.000 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 1000.0 mS/cm actual EC*
	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
	Accuracy	±1% of reading (±0.01 µS/cm)
	Cell Constant	0.0500 to 200.00/cm
	Cell Type	4-pole cell
	Calibration	automatic standard recognition, user standard single point / multi-point calibration
	Calibration Reminder	yes
	Temperature Coefficient	0.00 to 10.00 %/°C
	Temperature Compensation	disabled, linear and non-linear (natural water)
	Reference Temperature	5.0 to 30.0°C
	Profiles	up to 10
	USP Compliant	yes
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 ppt; 10.00 to 99.99 ppt; 100.0 to 400.0 ppt actual TDS* (with 1.00 factor)
	Resolution	0.001 ppm; 0.01 ppm; 0.1 ppm; 0.001 ppt; 0.01 ppt; 0.1 ppt
	Accuracy	±1% of reading (±0.01 ppm)
Resistivity	Range	1.0 to 99.9 Ω•cm; 100 to 999 Ω•cm; 1.00 to 9.99 kΩ•cm; 10.0 to 99.9 kΩ•cm; 100 to 999 kΩ•cm; 1.00 to 9.99 MΩ•cm; 10.0 to 100.0 MΩ•cm
	Resolution	0.1 Ω•cm; 1 Ω•cm; 0.01 kΩ•cm; 0.1 kΩ•cm; 1 kΩ•cm; 0.01 MΩ•cm; 0.1 MΩ•cm
	Accuracy	±2% of reading (±1 Ω•cm)
Salinity	Range	practical scale: 0.00 to 42.00 psu; natural sea water scale: 0.00 to 80.00 ppt; percent scale: 0.0 to 400.0%
	Resolution	0.01 for practical scale/natural sea water scale; 0.1% for percent scale
	Accuracy	±1% of reading
	Calibration	percent scale–one-point (with HI7037 standard); all others through EC
Temperature**	Range	-20.0 to 120°C; -4.0 to 248.0°F; 253.15 to 393.15K
	Resolution	0.1°C; 0.1°F; 0.1K
	Accuracy	±0.2°C ; ±0.4°F; ±0.2K (without probe)
Additional Specifications	EC Probe	HI76312 platinum, four-ring EC/TDS probe with and 1 m (3.3') cable (included)
	GLP	cell constant, reference temperature/coefficient, calibration points, cal time stamp, probe offset for conductivity
	Logging	**record :** 100,000 data point storage/channel, up to 100 lots with max. 50,000 records/lot; **interval:** fourteen presets selectable between 1 second and max log time of 180 minutes; **type:** automatic, manual, AutoHOLD; **additional:** 200 records USP
	PC Connection	USB
	Power Supply	12 VDC adapter (included)
	Environment	0 to 50°C (32 to 122°F; 273 to 323K) RH max 95% non-condensing
	Dimensions / Weight	160 x 231 x 94 mm (6.3 x 9.1 x 3.7") / 1.2 kg (2.64 lbs.)

(*) Uncompensated conductivity (or TDS) is the conductivity (or TDS) value without temperature compensation.
(**) Reduced to actual probe limits

HI5521 • HI5522

Research Grade Meters

pH/ORP/ISE and EC/TDS/Resistivity/Salinity and Temperature



- Five-point calibration
  - Five-point pH with preprogrammed and custom buffers
  - Five-point ISE with preprogrammed and custom standards (HI5222 only)
- Logging
  - Large log memory (100,000 records) with selectable logging modes
- Multiple input channels
  - pH/ORP/(ISE, HI5522) and EC/TDS/ Resistivity/Salinity
- Specific Applications
  - EC specific applications: USP <645> method, salinity in seawater, TDS
  - ISE specific applications: incremental methods
- Connectivity
  - PC compatible via USB

Display up to Eight Parameters

HI5521 and HI5522 are research grade benchtop meters that feature up to eight measurement parameters: pH, mV (for Oxidation Reduction Potential), ISE (HI5522 only), conductivity, resistivity,TDS, salinity and temperature.

These meters incorporate dual channels with a separate temperature probe input and support external reference electrodes required by half cell pH and ISE sensors.

An automatic or custom standard conductivity calibration can be performed in up to four points, as well as adjustable probe cell constant. One fixed-point salinity calibration can be performed on the percent scale only. Three salinity ranges are available: practical scale, natural sea water scale and percent scale.

HI5522 features up to five-point manual selection and custom standard ISE calibration with up to five standard solutions and up to five custom solutions with or without temperature compensation. From the on-screen list, users can select their ISE electrode parameter along with the standard configuration profile or create their own.

Specifications		HI5521	HI5522
pH	Range	-2.000 to 20.000 pH	
	Resolution	0.1 pH; 0.01 pH; 0.001 pH	
	Accuracy	±0.1 pH; ±0.01 pH; ±0.002 pH ±1 LSD	
	Calibration	automatic, up to five-point calibration, eight standard buffers available, and five custom buffers	
	Temperature Compensation	automatic or manual from -20.0 to 120.0°C/-4.0 to 248.0°/253.15 to 393.15K	
mV	Range	±2000 mV	
	Resolution	0.1 mV	
	Accuracy	±0.2 mV ±1 LSD	
ISE	Range	–	1 x 10^{-6} to 9.99 x 10^{10} concentration
	Resolution	–	1; 0.1; 0.01; 0.001 concentration
	Accuracy	–	±0.5% (monovalent ions); ±1% (divalent ions)
	Calibration	–	automatic, up to five-point calibration, five fixed standard solutions available for each measurement unit, and five user defined standards
Temperature**	Range	-20.0 to 120°C; -4.0 to 248.0°F; 253.15 to 393.15K	
	Resolution	0.1°C; 0.1°F; 0.1K	
	Accuracy	±0.2°C ; ±0.4°F; ±0.2K (without probe)	
EC	Range	0.000 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 1000.0 mS/cm absolute EC*	
	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	
	Accuracy	±1% of reading (±0.01 µS/cm)	
	Cell Constant	0.0500 to 200.00/cm	
	Cell Type	4-pole cell	
	Calibration	automatic standard recognition, user standard single point / multi-point calibration	
	Calibration Reminder	yes	
	Temperature Coefficient	0.00 to 10.00 %/°C	
	Temperature Compensation	disabled, linear and non-linear (natural water)	
	Reference Temperature	5.0 to 30.0°C	
	Profiles	up to 10, 5 each channel	
	USP Compliant	yes	
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 ppt; 10.00 to 99.99 ppt; 100.0 to 400.0 ppt actual TDS* (with 1.00 factor)	
	Resolution	0.001 ppm; 0.01 ppm; 0.1 ppm; 0.001 ppt; 0.01 ppt; 0.1 ppt	
	Accuracy	±1% of reading (±0.01 ppm)	
Resistivity	Range	1.0 to 99.9 Ω•cm; 100 to 999 Ω•cm; 1.00 to 9.99 kΩ•cm; 10.0 to 99.9 kΩ•cm; 100 to 999 kΩ•cm; 1.00 to 9.99 MΩ•cm; 10.0 to 100.0 MΩ•cm	
	Resolution	0.1 Ω•cm; 1 Ω•cm; 0.01 kΩ•cm; 0.1 kΩ•cm; 1 kΩ•cm; 0.01 MΩ•cm; 0.1 MΩ•cm	
	Accuracy	±2% of reading (±1 Ω•cm)	
Salinity	Range	practical scale: 0.00 to 42.00 psu; natural sea water scale: 0.00 to 80.00 ppt; percent scale: 0.0 to 400.0%	
	Resolution	0.01 for practical scale/natural sea water scale; 0.1% for percent scale	
	Accuracy	±1% of reading	
	Calibration	percent scale–one-point (with HI7037 standard); all others through EC	
Additional Specifications	pH Electrode	HI1131B glass body pH electrode with BNC connector and 1 m (3.3') cable (included)	
	EC Probe	HI76312 platinum, four-ring EC/TDS probe with and 1 m (3.3') cable (included)	
	Temperature Probe	HI7662-T stainless steel temperature probe with 1 m (3.3') cable (included)	
	Input Channel(s)	1 pH/ORP + 1 EC	1 pH/ORP/ISE + 1 EC
	GLP	cell constant, reference temperature/coefficient, calibration points, cal time stamp, probe offset for conductivity	
	Logging	**record :** 100,000 data point storage/channel, up to 100 lots with max. 50,000 records/lot; **interval:** fourteen presets selectable between 1 second and max log time of 180 minutes; **type:** automatic, manual, AutoHOLD; **additional:** 200 records USP; 200 records incremental methods (HI5522)	
	PC Connection	USB	
	Power Supply	12 VDC adapter (included)	
	Environment	0 to 50°C (32 to 122°F; 273 to 323K) RH max 95% non-condensing	
	Dimensions / Weight	160 x 231 x 94 mm (6.3 x 9.1 x 3.7") / 1.2 kg (2.64 lbs.)	

(*) Uncompensated conductivity (or TDS) is the conductivity (or TDS) value without temperature compensation.
(**) Reduced to actual probe limits

HI5421

Research Grade Bench Meter

Dissolved Oxygen and BOD



- Methods
  - % saturated, ppm, mg/L, BOD, OUR and SOUR
- Logging
  - Large log memory with different logging methods
  - Up to 100 log lots with 50,000 records/lots
- Hold feature
  - DO direct, DO direct/autohold
- Connectivity
  - PC compatible via USB

Extensive DO Capabilities

The HI5421 is a research grade dissolved oxygen bench meter with extensive capabilities in measuring DO as well as BOD (Biological Oxygen Demand), OUR (Oxygen Uptake Rate), SOUR (Specific Oxygen Uptake Rate) and temperature.

DO measurements can be performed with ppm, mg/L or in % air saturation units of measurement and feature automatic or manual temperature and atmospheric pressure compensation, as well as manual salinity compensation.

The HI76483 12mm DO probe uses the polarographic principal of measurement and has a built-in temperature sensor.

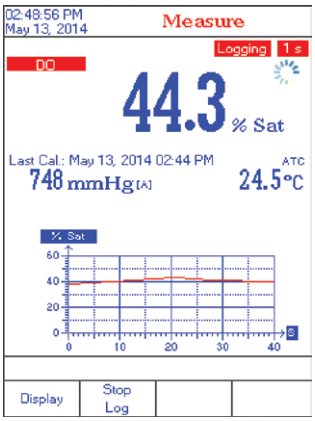
Profiles

Up to 10 profiles can be saved and recalled, eliminating the need to reconfigure each time when a different application is used. User-definable configurations can include: reading mode (direct or BOD, OUR, and SOUR), measurement units, temperature units, stability criteria, and temperature, atmospheric pressure and salinity compensation.

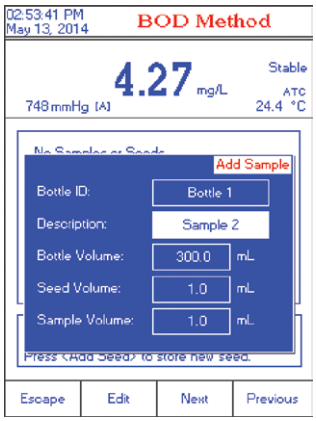
Dedicated Help Menu

Clear tutorial messages and directions for DO measurement and calibration as well as BOD, OUR and SOUR methods are available on-screen to guide users.

On-screen Features



Direct measurement



BOD (Biological Oxygen Demand)



OUR (Oxygen Uptake Rate)



SOUR (Specific Oxygen Uptake Rate)

Specifications		HI5421
DO	Range	0.00 to 90.00 ppm (mg/L); 0.0 to 600.0 % saturation
	Resolution	0.01 ppm; 0.1% saturation
	Accuracy	±1.5% of reading ±1 digit
	Calibration	automatic using single or two-point calibration; user calibration single point
Barometric Pressure	Range	450 to 850 mmHg; 600 to 1133 mBar; 60 to 133 KPa; 17 to 33 inHg; 8.7 to 16.40 psi; .592 to 1.118 atm
	Resolution	1 mm Hg
	Accuracy	±3 mm Hg + 1 least significant digit
Temperature	Range	-20.0 to 120°C; -4.0 to 248.0°F; 253.15 to 393.15K
	Resolution	0.1°C; 0.1°F; 0.1K
	Accuracy	±0.2°C ; ±0.4°F; ±0.2K (without probe)
Additional Specifications	Measurement Modes	direct DO; BOD (biochemical oxygen demand); OUR (oxygen uptake rate); SOUR (specific oxygen uptake rate)
	Temperature Compensation	0.0 to 50.0°C; 32.0 to 122.0°F; 237.1 to 323.1 K
	Salinity Compensation	0 to 45 g/L; 0-42psu; 0-70%
	Barometric Pressure Calibration	single point calibration
	Probe	HI76483 thin body, polarographic dissolved oxygen probe with internal temperature sensor and 1 m (3.3') cable (included)
	Record Samples Logging	100,000 records storage, 100 lots each for automatic and manual logs; maximum 50,000 records/log for automatic logging
	Interval Logging	fourteen presets selectable between 1 second and max log time of 180 minutes
	Logging Type	manual AutoHOLD, automatic
	Alarm (DO, BOD, OUR, SOUR)	inside and outside limits
	PC Connection	opto-isolated USB
	Display	graphic color LCD with 240x340 pixels
	Power Supply	12 VDC adapter (included)
	Dimensions	160 x 231 x 94 mm (6.3 x 9.1 x 3.7")
	Weight	1.2 kg (2.6 lbs.)

Ordering Information

HI5221/HI5222



HI5221-01 (115V), **HI5221-02** (230V), **HI5222-01** (115V) and **HI5222-02** (230V) also includes:



HI1131B pH electrode,

HI7662-T temperature probe

sachets of pH 7 buffer solutions

sachets of pH 4 buffer solutions

sachets of electrode cleaning solutions

HI7082 3.5M KCL electrolyte solution (30 mL),

HI5521/HI5522



HI5521-01 (115V), **HI5521-02** (230V), **HI5522-01** (115V) and **HI5522-02** (230V) also includes:



HI76312 EC/TDS probe

HI1131B pH electrode

HI7662-T temperature probe

sachets of pH 7 buffer solutions

sachets of pH 4 buffer solutions

sachets of electrode cleaning solutions

HI7082 3.5M KCL electrolyte solution (30 mL)

HI5321



HI5321-01 (115V) and **HI5321-02** (230V) also includes:



HI76312 conductivity Probe

sachets of 1413 µS/cm conductivity standard

sachets of 12880 µS/cm conductivity standard

sachets of 5000 µS/cm conductivity standard

sachets of electrode rinse solution

HI5421



HI5421-01 (115V) and **HI5421-02** (230V) also includes:



HI764083 dissolved oxygen electrode

HI7041S refill electrolyte solution

2 DO membrane caps

2 DO membrane cap o-rings

All meters are also supplied with:



electrode holder

12 VDC power adapter

capillary dropper pipette (pH models)

meter and electrode quality certificates

quick start guide

instruction manual

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