



**HI 84530**

Total Acidity Mini Titrator  
for Water Analysis





### Piston Driven Pump with Dynamic Dosing

The HI 84530 incorporates dynamic dosing to provide precision titrant delivery. Dynamic dosing adjusts the amount of titrant dosed as the end point is approached for increased accuracy in endpoint detection.

### Piston Burette

Piston burettes provide an exceptionally reliable titrant delivery. This highly accurate dosing method is attained by combining a pulse controlled step motor with a 5 mL polypropylene syringe. The rigid and stable body of our syringe allows for less frequent pump calibration. Users no longer have to account for the changing elasticity of tubing associated with peristaltic pumps.

### More About Dynamic Dosing

With the integration of our piston burette, our titrator can adjust the volume and frequency of titrant dosed based on relative mV changes in the testing solution. This titrant delivery system is known as dynamic dosing, where titrant is delivered in larger doses at the start of the titration and smaller doses near the end point. These differences in dosing volume and frequency result in a faster titration without sacrificing accuracy. With larger doses in the beginning of the titration, the speed of the titration is increased, where smaller doses near the end point allow for more time for the titrant and analyte to react. Smaller doses also prevent the over titration of a sample and a more accurate determination of titrant volume used.

### pH Electrode

The HI 84530 is supplied with the HI 1131B refillable, double junction, combination pH electrode. By design, the HI 1131B has a spherical tip for use in aqueous or liquid solutions. This versatile electrode provides a wide surface of contact with a sample and is ideal for any general acid/base titration in the water industry.

# HI 84530 Mini Titrator for Water Applications

- **Piston Driven pump with Dynamic Dosing**

This piston driven dosing pump incorporates dynamic dosing to provide highly accurate, repeatable results.

- **CAL CHECK™**

CAL CHECK alerts users to potential problems during calibration such as contaminated buffers or dirty/broken electrodes.

- **pH/mV Meter**

In addition to automatic titration, the HI 84530 can also be used as a pH/mV meter.

- **Log-on-Demand**

Log data up to 400 samples (200 for titration; 200 for pH/mV).

- **Graphic Mode/Exportable Data**

Displays in-depth data on titration, which can then be stored and exported to either a USB drive or PC using the USB connection.

- **Automatic Stirrer Speed Control**

Maintains stirrer speed at approximately 600 rpm regardless of viscosity of solution.

- **GLP Feature**

The HI 84530 includes a GLP Feature that allows users to view calibration data for the pH electrode and dosing pump.

- **Easy to use interface**

User intuitive design with large keys and easy to navigate screens.

- **pH Electrode**

The HI 84530 is supplied with the HI 1131B pH electrode. This versatile electrode can be used in all types of water.



## Easy to Use, Fast and Affordable All-in-one Solution

The HI 84530 is an easy to use, fast and affordable mini automatic titrator with a pH meter designed for the rapid and accurate analysis of Total Titratable and Strong Acidity in water. This new generation of mini automatic titrator improves upon the titrant delivery system and measuring ranges for increased accuracy compared to previous models. This meter reflects Hanna's years of experience as a manufacturer of analytical instruments.

The HI 84530 incorporates a precise piston dosing system, which allows for a highly accurate determination of the amount of titrant used. It is also capable of dynamic dosing, making testing both faster and more accurate. Pump calibrations are performed with the provided Hanna standard, help assure the accuracy of the measurement.

An intuitive interface makes the instrument simple to use and the dedicated HELP key guides the user through set-up, calibration status, and troubleshooting.

This mini titrator includes a pre-programmed analysis method based on the Standard Methods of Water and Wastewater

Determination. It uses a powerful algorithm which analyzes the shape of the electrode response in order to determine when the titration reaction has reached completion.

This mini-titrator is also designed to be used as a benchtop pH/mV meter. As a pH meter, it has many features of a professional grade benchtop including automatic calibration up to 3 points with 4 available buffers, a 0.01 pH resolution, accuracy of +/- 0.01 pH, automatic temperature compensation and comprehensive GLP Data. The GLP data includes date, time, offset, slope, and buffers used for calibration. Accuracy is always ensured with Hanna's unique Cal-Check feature, which analyzes the response of the electrode during the calibration process. Based on electrode response in the buffer, indicators are displayed on screen to alert the user of potential problems during calibration. These indicators include Buffer Contaminated, Electrode Dirty/Broken, and overall probe condition as a percentage that is based on both the offset and slope characteristic of the electrode.

The Cal-Check function not only ensures an accurate pH reading when the HI 84530 is used as a pH meter but also an accurate titration since the end point is determined by a set pH value.

## Why Titratable Total Acidity is So Important

Acidity is a quantitative measurement of the water sample's ability to react with a strong base solution to a specific pH value. Many chemical species can contribute to the acidity measurement depending on the method of analysis. These species can include strong acids (hydrochloric acid, nitric acid, sulfuric acid, etc.), weak acids (acetic acid, carbonic acid, etc.), and hydrolyzing salts (iron, aluminum, manganese, etc.).

Acidity is an important parameter used to determine the quality of water (surface, drinking, wastewater). It is an essential monitoring device to define and control the pollution levels. Acidity affects many things including chemical reaction rates, biological processes, and corrosiveness.



## All-in-One

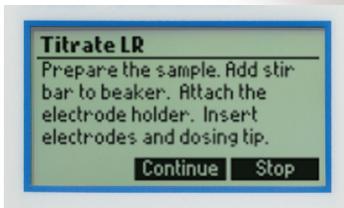
Water Titrator, pH Meter, Electrode and Magnetic Stirrer in one package

# Features



Setup Screens

The LCD features an easy to use setup screen that allows the user to change measuring range, time, date, language and more.

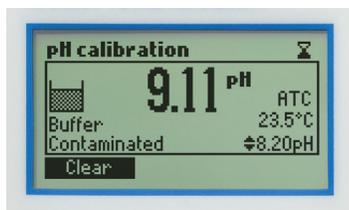


Tutorial and HELP Screens

Accessing the tutorial menu provides helpful information during calibration and titration.

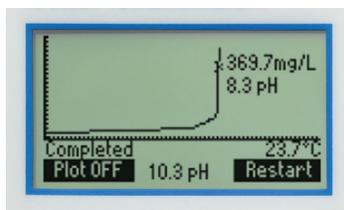
## Rear USB Outputs

For PC connection and to export data to a USB drive



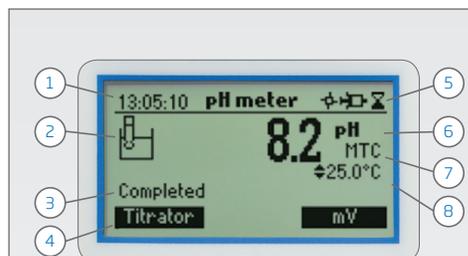
CAL CHECK™

CAL CHECK is a Hanna exclusive process for checking the condition of electrodes which helps keep measurements accurate.



Titration Curve Displayed On Screen

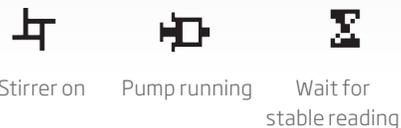
The HI 84530 offers real time graphing of the titration curve on the LCD.



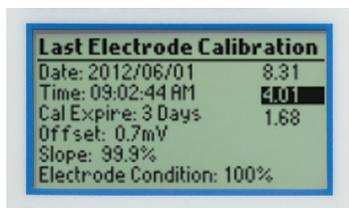
## Display

- 1) Current time and instrument mode information (pH meter or Titrator)
- 2) Procedural indicators
- 3) Instrument status
- 4) Virtual option keys
- 5) Stirrer and icon status

During the instrument's operation a set of information are displayed on the LCD. Displayed icons:

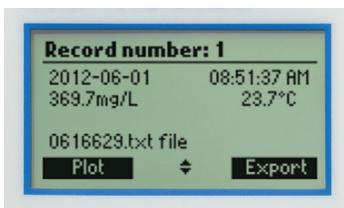


- 6) Main reading information
- 7) pH temperature compensation mode (Manual or Automatic)
- 8) Temperature reading



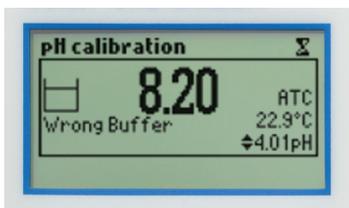
GLP

The GLP feature records electrode and pump calibration data to help keep measurements accurate and reliable.



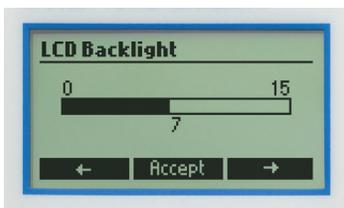
Log and Recall data

The HI 84530 can log up to 400 samples (200 for titration results; 200 for mV/pH) and recall or export data to a USB stick or PC.



Procedure Warnings

Users are warned if there is an error in procedures such as the use of a wrong buffer.



Adjustable Backlit LCD

The HI 84530 offers a backlit LCD with adjustable brightness levels. This ensures that the LCD is always easy to read.

## Specifications

## HI 84530 - Total Acidity

### Titrator

Range	Low Range: 15.0 - 400.0 mg/L (ppm) as CaCO <sub>3</sub> meq/L: 0.3 - 8.0 meq/L as CaCO <sub>3</sub> High Range: 300 - 4000 mg/L (ppm) as CaCO <sub>3</sub> meq/L: 6.0 - 80.0 meq/L as CaCO <sub>3</sub>
Resolution	Low Range: 0.1 mg/L / 0.1 meq/L High Range: 1 mg/L / 0.1 meq/L
Accuracy (@25°C/77°F)	Low Range: ± 1 ppm or 3% of reading, whichever is greater High Range: ± 15 ppm or 3% of reading, whichever is greater
Method	acid-base titration - total acidity (phenolphthalein) / strong acidity (Methyl Orange)
Principle	end point titration : 8.30 pH / 3.7 pH
Pump speed	10 mL/min
Stirring Speed	600 rpm
Logging Data	up to 200 samples

### pH Meter

Range	-2.0 to 16.0 pH / -2.00 to 16.00 pH
Resolution	0.1 pH / 0.01 pH
Accuracy (@25°C/77°F)	±0.01 pH
Calibration	1, 2 or 3 calibration points; 4 available buffers (4.01, 7.01, 8.30, 10.01)
Temperature Compensation	manual or automatic from -20 to 120°C (-4 to 248°F)
Logging Data	Up to 200 samples (pH or mV)

### mV Meter

Range	-2000.0 to 2000.0 mV
Resolution	0.1 mV
Accuracy	± 1.0 mV
Logged Data	Up to 200 samples (pH or mV)

### Temperature

Range	-20.0 to 120.0°C (-4.0 to 248.0°F)
Resolution	0.1°C
Accuracy	±0.4°C without probe error

### Additional Specifications

pH Electrode	HI 1131B glass body, refillable, with BNC connector and 1 m (3.3') cable (included)
Temperature Probe	HI 7662-T stainless steel temperature probe with 1 m (3.3') cable (included)
Environment	0 to 50°C (32 to 122°F); RH max 95% non-condensing
Power Supply	12 VDC adapter (included)
Dimensions	235 x 200 x 150 mm (9.2 x 7.9 x 5.9")
Weight	1.9 kg (67.0 oz.)

## Accessories

### Reagents

HI 84530-50	Titrant solution for Low Range (100 mL)
HI 84530-51	Titrant solution for High Range (100 mL)
HI 84530-55	Calibration Standard (100 mL)
HI 84530-60	Hydrogen Peroxide (30 mL)

### pH Calibration Solutions

HI 7004M	Buffer solution pH 4.01 (230 mL)
HI 7007M	Buffer solution pH 7.01 (230 mL)
HI 70083M	Buffer solution pH 8.30 (230 mL)
HI 7010M	Buffer solution pH 10.01 (230 mL)

### Electrode Fill and Storage Solutions

HI 7082	Electrode fill solution (4 x 30 mL)
HI 70300L	Electrode storage solution (500 mL)

### Electrode Cleaning Solution

HI 7061M	Electrode Cleaning Solution (230 mL)
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### Electrodes

HI 1131B	pH Electrode
HI 7662-T	Temperature probe

### Other Accessories

HI 70500	Tube set with cap for titrant bottle, tip and valve
HI 71005/8	115 Vac to 12 Vdc, 800 mA
HI 71006/8	230 Vac to 12 Vdc, 800 mA
HI 731319	Stir bar, 25 x 7 mm (10 pcs.)
HI 740036P	100 mL Beaker (10 pcs.)
HI 740236	5 mL Syringe for minititrator
HI 920013	PC Connection Cable

## Ordering Information

HI 84530-01 (115V) and HI 84530-02 (230V) are supplied with:



HI 84530-70  
Reagent Kit for  
Water Analysis



HI 1131B  
pH electrode



HI 7662-T  
temperature probe



HI 740036P  
Two 100 mL  
beakers



HI 70500  
Tube set (aspiration  
tube with titrant  
bottle cap and  
dispensing tube  
with tip),



Dosing Pump Valve



HI 740236  
5 mL Syringe



1 mL plastic pipette



HI 731319  
stir bar



HI 920013  
power adapter



Instruction  
manual and quality  
certificate

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