

HI 84432 Automatic miniTitrator and pH Meter

For Titratable Acidity Determination in Fruit Juices

Fruit Juice Titrator, pH Meter,
pH Electrode and Magnetic
Stirrer in one compact unit!



 **FOODCARE**
line

 **HANNA**[®]
instruments
With Great Products, Come Great Results™
www.hannainst.com

DIGITAL

ISO 9001:2000
CERTIFIED

GLP Good Laboratory Practice

mini <

datalog

2 YEAR WARRANTY



FOODCARE
line



HI 84432 is a low cost, easy to use automatic titrator and pH meter that provides professional results quickly and accurately.

The HI 84432 digital automatic minititrator and pH meter is designed for quick and accurate analysis of Total Titratable Acidity in fruit juices. By eliminating subjective factors including color indicators, errors in mathematical calculations or erratic titrant additions from the measurement, the HI 84432 provides accurate, repeatable results with no guesswork.

A clear and intuitive user interface allows users to navigate the HI 84432's menus and functions quickly. A HELP key located on the keypad aids in set-up, calibration status and troubleshooting.

By simply pressing the START key, the HI 84432 automatically starts pump operation and titrates the sample to the end point.

This instrument employs a powerful and effective algorithm to analyze the pH response to determine the exact pH endpoint, then uses this to make the necessary calculations.

The Titratable Acidity determination is instantaneously displayed in selected measurement units on the large dot matrix display. The instrument is immediately ready for the next analysis.

The HI 84432 has a simple and accurate peristaltic pump to ensure the best accuracy and repeatability. To ensure instrument accuracy, perform a pump calibration with the provided HANNA standard.

HI 84432
A Better Product for
Quality Fruit Juice Production

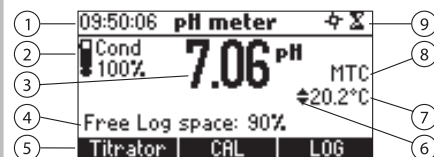


HI 84432 Advantage

- Methodology used is based on the AOAC International accepted method for acidity determination.
- Eliminates subjective factors
- Built in magnetic stirrer and electrode, titrant and beaker holders.
- Log on demand up to 100 samples (50) pH measurement; (50) titration
- GLP feature to view last calibration data for pH electrode and pump.
- Can measure in % of Citric, Malic and Tartaric acid.
- PC interface via USB connection
- Enhanced pH accuracy with 3 point calibration
 - Automatic pH temperature compensation
 - Automatic "anytime" help feature
 - Dot matrix backlit LCD with an intuitive user interface

Backlit Digital Display

- Unstable reading.
- Pump running.
- Stirrer on.
- Parameter can be changed.



1. Current time and instrument mode information (pH meter or Titrator)
2. pH electrode condition information
3. Main reading information
4. Instrument status information
5. Functional key area
6. Indicates that the displayed value can be changed using ARROW keys
7. Temperature value (Manual or Automatic)
8. pH temperature compensation mode (Manual or Automatic)
9. Stirrer and reading status area



Why This Instrument is So Important...

The measurement of titratable acidity in fruit juices measures the concentration of titratable hydrogen ions contained in the fruit juice samples by neutralization with strong base solution to a fixed pH. This value includes all the substances of an acidic nature in the fruit juice: free hydrogen ions, organic acids, acid salts and cations.

Because the organic acid is the most acidic component of the fruit juices that react with strong base solutions, the titratable acidity is usually expressed as a percentage (mass/volume) of the predominant acid:

- **Citric Acid is present in many fruit species.**
- **Tartaric Acid is essentially found in grapes.**
- **Malic Acid is present in many fruit species, sometimes together with citric acid or tartaric acid in unripe grapes.**

The HI 84432 miniTitrator uses a method based on the Official Methods of Analysis of AOAC International. The fruit juice is titrated with a sodium hydroxide solution until the end point at 8.2 pH is reached (determined by potentiometric method). Additionally the HI 84432 has a built-in pH meter for pH measurement (electrode and meter must be calibrated).

Titratable Acidity of fruit is an important parameter to determine fruit maturity.

All-in-One

Fruit Juice Titrator, pH Meter, pH Electrode and Magnetic Stirrer in one package



LCD Features



Set Up Configuration Menu

Accessed from pH or Titration screens, this menu allow parameters such as measurement units, date formats and language selection to be configured quickly and easily.



Calibration Reminder

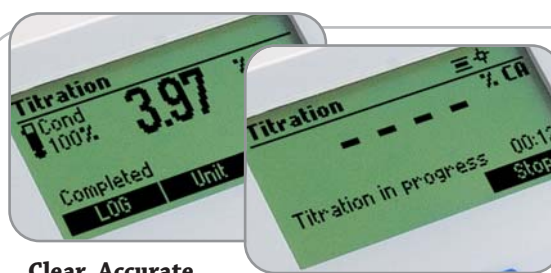
When calibration is required or due, users are reminded on screen.

The HI 84432 can also display when pump and electrode calibration was last performed.



Log and Recall Data

Measurements along with time and date can be stored and recalled at a later date.



Clear, Accurate Measurements

Measurements along with time and date can be stored and recalled at a later date.



Calibration Warnings

For the most accurate performance, The HI 84432 warns users if there are errors in the calibration process.

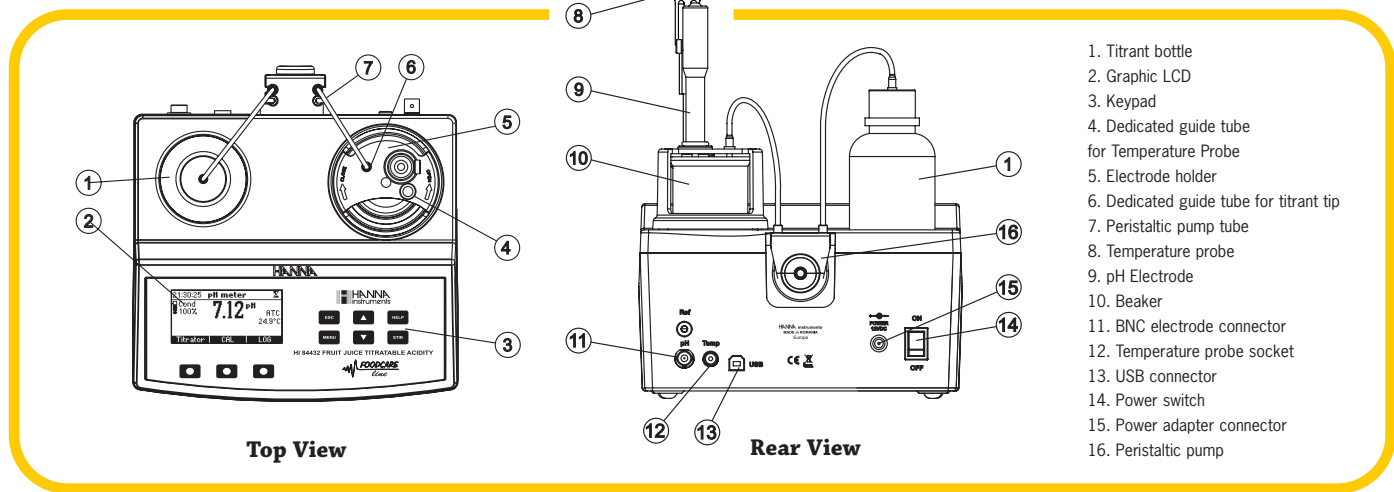
HI 84432 pinpoints the problem and displays the appropriate error message taking the guesswork out diagnosing errors such as dirty or broken electrodes or contaminated buffers.

Other calibration warnings include: wrong buffer temperature, wrong slope (high and low) and wrong buffer.

Titrateable Acidity of Fruit Juice

Fruit Juices	Titrateable Acidity (g/100mL)	Predominant Acid	Fruit Juices	Titrateable Acidity (g/100mL)	Predominant Acid	Fruit Juices	Titrateable Acidity (g/100mL)	Predominant Acid
Apple	0.36–0.80	Malic	Guava	1.16	Citric	Peach	0.24–0.94	Citric
Cherry, Sour	0.94–1.64	Malic	Lemon	4.0–6.2	Citric	Pineapple	0.7–1.6	Citric
Cherry, Sweet	0.24–0.94	Citric	Lime	7.4–7.8	Citric	Pear	0.36–0.80	Malic
Cranberry	1.6–3.6	Citric	Mango	0.34–0.84	Citric	Plum	0.94–1.64	Malic
Grape, Table	0.4–0.9	Tartaric	Nectarine	0.24–0.94	Citric	Strawberry	0.6–1.1	Citric
Grapefruit	1.2–2.0	Citric	Orange	0.8–1.4	Citric	Tomato	0.34–1.00	Citric

Additional sample preparation may be required. Actual values subject to site, climate, season and variety variations.



1. Titrant bottle
2. Graphic LCD
3. Keypad
4. Dedicated guide tube for Temperature Probe
5. Electrode holder
6. Dedicated guide tube for titrant tip
7. Peristaltic pump tube
8. Temperature probe
9. pH Electrode
10. Beaker
11. BNC electrode connector
12. Temperature probe socket
13. USB connector
14. Power switch
15. Power adapter connector
16. Peristaltic pump

SPECIFICATIONS

HI 84432

Titrator	Titrateable Acidity Range	g/100 mL as citric acid : 0.20 – 8.00% CA g/100 mL as tartaric acid : 0.23 – 9.30% TA g/100 mL as malic acid : 0.21 – 8.30% MA
	Titrateable Acidity Resolution	0.01%
	Accuracy	5% of reading ±0.05
	Titration Method	Acid-base titration
	Principle	End point titration: 8.20 pH
	Pump Debit	0.5 mL/min
	Stirring Speed	600 rpm
	Log Data	Up to 50 samples
pH Meter	Range	-2.0 to 16.0 pH / -2.00 to 16.00 pH
	Resolution	0.1 pH / 0.01 pH
	Accuracy	±0.01 pH
	Calibration	1, 2 or 3 calibration points; 3 available buffers (4.01; 7.01; 8.20)
	Temperature Compensation	manual or automatic from -20 to 120°C (-4 to 248°F)
Temperature	Log Data	Up to 50 samples
	Range	-20.0 to 120.0°C (-4.0 to 248.0°F)
	Resolution	0.1°C
Electrode	Accuracy	±0.4°C without probe error
	Temperature Probe	HI 1131B (included)
Environment		HI 7662-M (included)
Power Supply		0 to 50°C (32 to 122°F); max 95% RH non-condensing
Dimensions		12 Vdc adapter (included)
Weight		208 x 214 x 163 mm (8.2 x 8.4 x 6.4") (with beaker)
		2200 g (77 oz.)

Ordering Information

HI 84432-01 (115V) and HI 84432-02 (230V) are supplied with HI 1131B pH electrode, HI 7662-M temperature probe, HI 84432-50 titrant (100 mL), HI 84432-55 pump calibration solution (100 mL), HI 7061M cleaning solution (230 mL), HI 70300M storage solution (230 mL), HI 7071 filling solution (30 mL), HI 7004M pH 4.01 buffer solution (230 mL), HI 7007M pH 7.01 buffer solution (230 mL), HI 70082M pH 8.20 buffer solution, (2) 100 mL beakers, tube set with dispensing tip, (2) Medium magnetic stir bars, 12 Vdc power adapter and instruction manual.

Required Reagents

HI 84432-50 Titrant (1 mL/analysis)
HI 84432-55 Pump Calibration Solution (2.00 mL/calibration)

Reagents

HI 84432-50 Titrant Solution (100 mL)
HI 84432-55 Pump Calibration Solution (100 mL)
HI 84432-70 Reagents Kit (about 150 titration)

pH Calibration Solutions

HI 7004M Buffer Solution pH 4.01 (230 mL)
HI 7007M Buffer Solution pH 7.01 (230 mL)
HI 70082M Buffer Solution pH 8.20 (230 mL)

Electrode Storage Solution

HI 70300M Storage Solution, 230 mL bottle