

HI 84430

Total Titratable Acidity Titrator

with pH and Temperature Measurement Capability



ISO 9001:2000 Certified

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instruments
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Total Titratable Acidity Titrator
with pH and Temperature Measurement Capability

- User-friendly interface
- Dedicated HELP key
- Simple to operate
- Log on demand up to 100 samples (50 for pH measurement; 50 for titration results)
- GLP feature, to view last calibration data for pH electrode and pump
- PC interface via USB connection



Peristaltic Pump

The HI 84430 features a precision peristaltic based titrant delivery system. Titrant only makes direct contact with the titrant tubing and not the pump interior virtually eliminating titrant contamination and ensuring a long pump operating life.

Total Titratable Acidity Measurement

The HI 84430 is an automatic titrator designed for easy, fast and accurate analysis of Total Titratable Acidity in water. Potentiometric endpoint determination, peristaltic titrant delivery and integrated magnetic stirring systems eliminate the error and technique dependent results associated with manual titrations.

The accuracy of the instrument is ensured by performing a peristaltic pump calibration using the provided HANNA standard. The HI 84430 endpoint determination algorithm analyzes the pH vs. volume curve to determine the exact pH endpoint and performs the necessary calculations. The results are displayed in mg/L CaCO₃ or meq/L CaCO₃ units on the graphic display.

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

HI 84430 features include: log on demand for up to 100 samples (50 pH measurements, 50 titration results), GLP compliance and PC interface via USB.

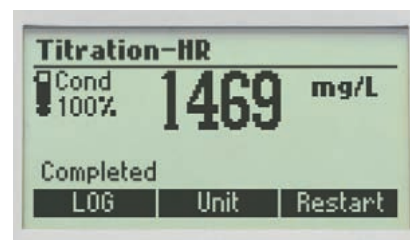
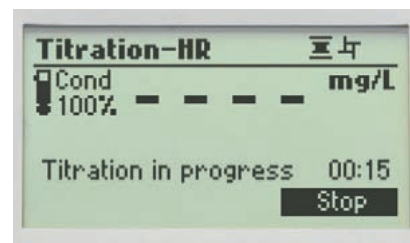
Principle of Operation

The HI 84430 determines the total titratable acidity in water by potentiometric titration. As titrant is slowly added to the sample solution the pH and temperature are carefully monitored. The software analyzes the resulting pH curve and determines the volume of titrant required to reach the endpoint.

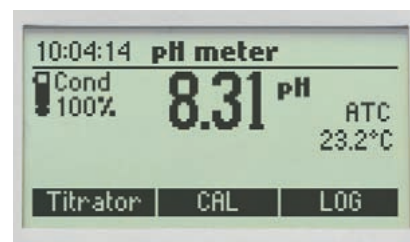
Titration is conducted using the low range reagent (15 to 500 mg/L as CaCO₃) or the high range reagent (400 to 4000 mg/L as CaCO₃).



2 Instruments in One



The HI 84430 is a single parameter titrator designed to measure total acidity in a few easy steps. The HI 84430 displays the results directly on the screen in user selectable units.



The HI 84430 also features a pH meter. The HI 84430 displays the electrode condition on the LCD using HANNA's exclusive electrode diagnostics.

Measurement Significance

Water Acidity is an important parameter to monitor, it can affect the corrosive capacity of water, chemical reaction rates and biological processes. Acidity can also be used to monitor pollution in wastewater and drinking water.

Total Titratable Acidity is a measure of all of the hydrogen ions present in a sample. Many factors can contribute to the acidity of a water sample including strong acids (hydrochloric, sulfuric, nitric, etc.), weak acids (organic acids) and other acidic components (aluminum, iron, etc.).

There are two accepted methods for the determination of acidity by titration and one method that requires a standard pH meter (according to The Standard Methods for the Examination of Water and Wastewater). The HI 84430 incorporates all three methods:

- Strong acidity determination by titration of the water sample with alkaline standard to a 3.7 pH end point (known as methyl orange acidity).
- Total acidity determination by titration of the water sample with alkaline standard to a 8.3 pH end point (known as phenolphthalein acidity).
- Direct pH measurement using the meter in pH mode.

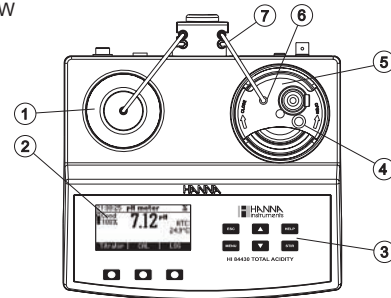
The dispensed titrant volume is used to automatically calculate the water acidity, which can be displayed in either mg/L CaCO₃ or meq/L.



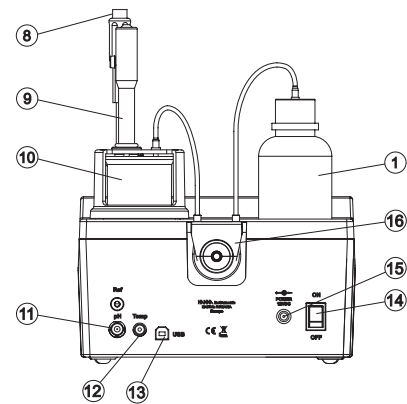
HI 84430

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TOP VIEW



REAR VIEW



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

SPECIFICATIONS

HI 84430

Range	Titrateable Acidity (Low Range)	mg/L : 15.0 - 500.0 mg/L as CaCO ₃ meq/L : 0.3 - 10.0 meq/L
	Titrateable Acidity (High Range)	mg/L : 400 - 4000 mg/L as CaCO ₃ meq/L : 8 - 80 meq/L
	pH	-2.0 to 16.0 pH / -2.00 to 16.00 pH
	Temperature	-20.0 to 120.0 °C (-4.0 to 248.0 °F)
Resolution	Titrateable Acidity (Low Range)	0.1 mg/L; 0.1 meq/L
	Titrateable Acidity (High Range)	1 mg/L; 1 meq/L
	pH	0.1 pH / 0.01 pH
	Temperature	0.1 °C
Accuracy	Titrateable Acidity (Low Range)	5% of reading
	Titrateable Acidity (High Range)	5% of reading
	pH	± 0.01 pH
	Temperature	±0.4 °C without probe error
Titration Method	Acid-base titration (total acidity)/(strong acidity)	
Titration Principle	End point titration : 8.30 pH / 3.7 pH	
Pump Volume	0.5 mL/min	
Stirring Speed	600 rpm	
pH Temperature Compensation	manual or automatic from: -20 to 120 °C (-4 to 248 °F)	
Logging	Titration	Up to 50 samples
	pH	Up to 50 samples
pH Calibration	1, 2 or 3 point calibration; 3 available buffers (1.68, 4.01; 8.30)	
pH Electrode	HI 1131B (included)	
Temperature Probe	HI 7662-M (included)	
Environment	0 to 50 °C (32 to 122 °F); max 95% RH non-condensing	
Power Supply	12 Vdc power adapter	
Dimensions/Weight	208 × 214 × 163 mm (8.2 × 8.4 × 6.4") (with beaker)/2200 g (77 oz.)	

ORDERING INFORMATION

HI 84430-01 (115V) and **HI 84430-02** (230V) are supplied with HI 1131B pH electrode, HI 7071 filling solution (30 mL), HI 7662-M temperature probe, HI 84430-50 titrant low range (100 mL), HI 84430-51 titrant high range (100 mL), HI 84430-55 pump calibration solution (230 mL), HI 84430 additional reagent (30 mL), HI 7061 cleaning solution, HI 7001M pH 1.68 buffer solution (230 mL), HI 7004M pH 4.01 buffer solution (230 mL), HI 70083M pH 8.30 buffer solution (230 mL), 100 mL beakers (2), tube set with dispensing tip, stir bars (medium 2 pcs.), 12 Vdc power adapter, instruction manual, and quick reference guide.

ACCESSORIES

- HI 84430-50** Titrant solution for low range (100 mL)
- HI 84430-51** Titrant solution for high range (100 mL)
- HI 84430-55** Pump calibration solution (500 mL)
- HI 84430-58** Additional reagent (30 mL)
- HI 84430-70** Reagents kit for low and high range (about 150 titrations)
- HI 84430-71** Reagents kit for low range (about 150 titrations)
- HI 84430-72** Reagents kit for high range (about 150 titrations)
- HI 70483M** Tube set with cap for titrant bottle and tip
- HI 731319** Stir bar, 25 x 7 mm (10 pcs)
- HI 731342** Pipette for automatic dosage 2000 µL
- HI 731352** Tip for 2000 µL graduated pipette (4pcs.)
- HI 731341** Pipette for automatic dosage 1000 µL
- HI 731351** Tip for 1000 µL graduated pipette (25pcs.)