HI 904

Karl Fischer
Coulometric Titrator

HANNA® instruments

Features

- More precise, better accuracy than other water content analysis methods
- Measures 1ppm to 5%
- Low sample volume and preparation is easy
- Can be used for liquids or solids*
- Specific to water - independent of presence of volatile substances
- Closed reagent handling system with integrated diaphragm air pump maintains a dry environment
- Easily transfer methods and results (of drift analysis or titrations) to PC via the USB port
- Choose from diaphragm or diaphragm-less generator cells, depending on the specific application
- Compact shape will fit on any laboratory bench (not composed of many modules that can take up space)

Introducing the newest addition to Hanna's family of Titration Systems: the HI 904 Coulometric Karl Fischer Titrator. The HI 904 excels at determining water content in extremely small concentrations (1 ppm to 5%) and requires no titrant, instead using a generator electrode.

A pulsed DC current is applied to the generator electrode and results in oxidation of free iodide to iodine (the titrant) at the platinum anode. Alcohol, sulfur dioxide and base (pyridine or imidazole) present in the reagents react to form a salt that is oxidized by the generated iodine. This reaction consumes water present in the cell in a 1:1 ratio (iodine:water). Once all of the water is consumed, the excess iodine is detected using a bilvoltammetric detector electrode and signals the end of the titration. The result is calculated from the amount of current applied to complete the reaction and the length of time that the generator electrode is active (A•s, or Coulombs).

HI 904 Specifications

Range	1 ppm to 5%
Resolution	1 ppm (0.0001%)
Accuracy	1%
Result Units	%, ppm, ppt, mg/g, µg/g, mg, µg, mg/mL, µg/mL
Sample Type	Liquid or Solid* (external diss./extract.)
Titration Vessel	Operating volume between 100 - 200 mL
Reagent Handling System	Sealed system with integrated diaphragm air pump and beaker adapter

Generator Cell

Configuration	Fritted or Fritless (w/ or w/o diaphragm)
Dosing	50-400 mA pulsed DC current

Determination

Pre Titration Conditioning	Automatic
Background Drift Correction	Automatic; User Selectable Value
Endpoint Criteria	Fixed mV persistence, relative drift stop, or absolute drift stop
Dosing	Dynamic
Result statistic	Mean, Standard Deviation

Electrode

Type / Connection	dual platinum pin, polarization electrode / BNC
Polarization Current	1, 2, 5, 10
Voltage Range	2 mV to 1000 mV
Voltage Resolution	0.1 mV
Accuracy (@25°C/77°F)	±0.1 mV

Peripheral Devices

PC	Easily view, transfer, print or delete methods and reports via HI 900 pc application
USB Flash Drive	easily upgrade software or transfer methods and reports between devices using a USB drive
Laboratory Analytical Balance	RS232 to connect any laboratory balance
Printer	print directly from the HI 904 to a printer via parallel port
Monitor	instrument status and titrations can be viewed on a larger screen using any VGA compatible external monitor
Keyboard	alphanumeric text can be entered using an optional PS/2 keyboard

Additional Specifications

Graphic Display	5.7" (320 x 240 pixel) color LCD
Titration Methods	Up to 100 (standard and user)
Data Storage	Up to 100 titration and drift rate reports can be stored
GLP Conformity	Good Laboratory Practice and instrument data storage and printingv
Languages	English, Portuguese, Spanish
Enclosure Material	ABS Plastic and Steel
Keypad	Polycarbonate
Power Supply	100-240 VAC, 50 - 60 Hz
Operating Environment	10 - 40°C, up to 80% rel. humidity
Storage Environment	-20 to 70°C, up to 95% RH
Dimensions / Weight	390 x 350 x 380 mm (15.3 x 13.8 x 14.9"); approximately 10 kg (22 lbs.)

* Solid samples must be processed prior to titration either through external extraction or external dissolution.