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HI 903 Karl Fischer Volumetric Titrator

Measures 100 ppm to 100% water content

- **Precision titrant delivery system**
 - 40,000 step, piston dosing pump
 - Accurate to 0.1%
 - Delivers as little as 0.125 µL of titrant
- Precision ground, 5 mL glass burette with PTFE plunger, PTFE burette tubing, and polyurethane tube jacketing (thermally insulating, light blocking)
- Glass anti-diffusion dispensing tip
- Clip-Lock™ exchangeable burette system enables users to exchange reagent burettes in a matter of seconds
- **Sealed solvent system**
 - Change to fresh solvent in a matter of seconds without opening the titration vessel
 - Minimizes exposure to ambient humidity, reducing titrant consumption and saving time
 - PTFE solvent tubing is resistant to harsh KF solvents and titrants
- **Beaker top**
 - Chemically-resistant reaction vessel cap and fittings
 - Quick-remove sample port plug with replaceable silicone rubber septum
- **Anti-diffusion burette tip**
 - Delivers titrant in high turbulence zone, ensuring rapid reaction
 - Prevents unwanted diffusion of titrant
- **Built-in stirrer**
 - Automatic, integrated magnetic stirrer adjustable from 200-2000 RPM
 - Optical feedback for automatic speed control
 - Optional external stirrer available
- **Rechargeable indicating desiccant**
 - Prevents the ingress of ambient humidity into the sealed solvent system while maintaining full titrator functionality
 - Minimizes changes to titrant titre
 - Indicates when adsorption capacity is depleted
 - Regenerates at 150°C
- **PTFE bottle cap**
 - Caps fit any GL45-threaded bottle
 - Chemically resistant caps and fittings
 - Removable desiccant cartridges

SPECIFICATIONS		HI 903
Range		100 ppm to 100%
Resolution		1 ppm (0.0001%)
Result Units		%, ppm, mg/g, µg/g, mg, µg, mg/mL, µg/mL, mg/pc, µg/pc
Sample Type		liquid or solid
Determination	Pre-Titration Conditioning	automatic
	Background Drift Correction	automatic or user selectable value
	Endpoint Criteria	fixed mV persistence, relative drift stop or absolute drift stop
	Dosing	dynamic with optional pre-dispensing rate
	Result Statistic	mean, standard deviation
	Dosing Pump Resolution	1/40000 of the burette volume (0.125 µL per dose)
Clip Lock™ Exchangeable Burette System	Dosing Pump Accuracy	±0.1% of full burette volume
	Syringe	5 mL precision ground glass with PTFE plunger
	Valve	motor driven 3-way, PTFE liquid contact material
	Tubing	PTFE with light block and thermal jacketing
	Dispensing Tip	glass, fixed position, anti-diffusing
	Titration Vessel	conical with operation volume between 50-150 mL
Electrode	Solvent Handling System	sealed system, integrated diaphragm air pump
	Type	dual platinum pin, polarization electrode
	Connection	BNC
	Polarization Current	1, 2, 5, 10, 15, 20, 30 or 40 µA
	Voltage Range	2 mV to 1000 mV
	Voltage Resolution	0.1 mV
External Stirrer	Accuracy (@25°C/77°F)	±0.1 mV
	Type	magnetic, optically regulated, digital stirrer
	Speed	200-2000 rpm
	Resolution	100 rpm
	PC	easily view, transfer, print or delete methods and reports via HI900PC application
	USB Flash Drive	easily upgrade software or transfer methods and reports between devices using a USB drive
Peripheral Devices	Laboratory Analytical Balance	RS232 to connect any laboratory balance
	Printer	print directly from the HI 903 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
Graphic Display		5.7" (320 x 240 pixel) color LCD
Titration Methods		up to 100 (standard and user) methods
Data Storage		up to 100 complete titration reports and drift rate reports can be stored
GLP Conformity		Good Laboratory Practice and instrument data storage and printing
Languages		English, Portuguese and Spanish
Enclosure Material		ABS plastic and steel
Keypad		polycarbonate
Power Supply		"-01" model: 115VAC, 50/60 Hz; "-02" model: 230VAC, 50/60 Hz;
Operating Environment		10 to 40°C, up to 95% RH
Storage Environment		-20 to 70°C, up to 95% RH
Dimensions		390 x 350 x 380 mm (15.3 x 13.8 x 14.9")
Weight		approximately 10 kg (22 lbs.)

ORDERING INFORMATION

HI 903-01 115V
HI 903-02 230V

ACCESSORIES

HI 76320 KF electrode
HI 900100 Titrant dosing pump
HI 900520 Beaker assembly
HI 900505 5 mL burette assembly (includes syringe and aspiration and dispensing tubes)
HI 900205 5 mL burette syringe
HI 900260 3-way valve (includes 3 gaskets and 2 screws)
HI 900522 KF beaker
HI 900523 Dispensing tip (2)
HI 900527 Septum (5)
HI 900528 Solvent port plugs (2)
HI 900530 Titrant bottle top assembly

Contact us for more information:
HANNA Instruments USA
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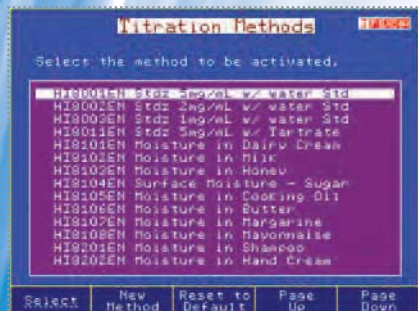
P/L HI903 10/10 PRINTED IN USA

HI 903
Karl Fischer Volumetric Titrator
for Moisture Determination



With great products, come great results™





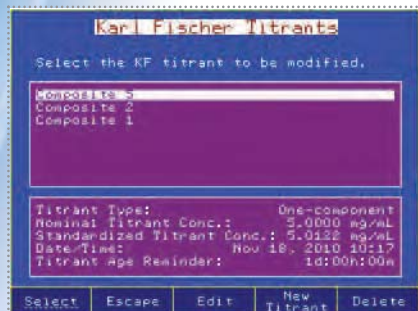
Methods
The HI 903 comes with a standard method pack



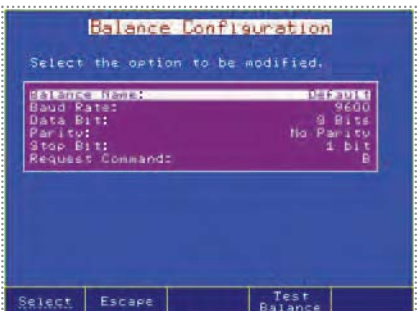
Standby
The HI 903 keeps the solvent dry between samples and monitors the drift rate



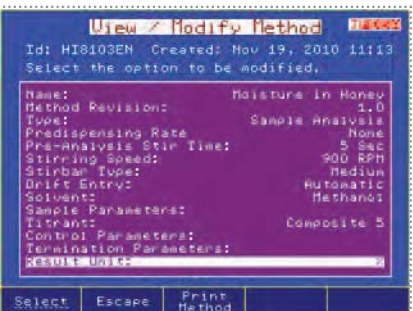
Results
Titration results are displayed with links to average results or a user-customized report



Titrant database
The HI 903 stores standardization information for up to 20 titrants and displays a reminder when standardization is due



Fully configurable balance interface
Enter sample size automatically from any laboratory balance with serial output



Fully customizable titration methods
Customize methods for any application



Adaptable, High Accuracy Moisture Determination

The HI 903 Karl Fischer Volumetric Titrator for moisture analysis is an extension of HANNA's highly successful potentiometric titrant platform. The HI 903 combines an ultra-high precision titrant delivery system with optically regulated magnetic stirring, sophisticated endpoint determination, dynamic dosing and background drift correction algorithms.

The result is an extremely adaptable titrator capable of titrating with superior accuracy and precision even for samples with low moisture content.

The HI 903 dispenses the titrant, detects the endpoint and performs all necessary calculations automatically.

The HI 903 comes equipped with a solvent handling system to reduce cell conditioning time and can be connected directly to your laboratory balance via serial interface.

The HI 903's powerful software and intuitive menus are easily navigated on the large, color LCD display making it simple to view results. Choose from included methods or develop a custom method for almost any application or sample type. Using a USB flash drive or connecting the titrator to the HI 900PC application, methods (standard and user) can be upgraded, stored or deleted.

Clip-Lock™ Exchangeable Burette System

With Clip-Lock™, it only takes a couple of seconds to exchange the reagent burettes to perform a different titration.

The Clip-Lock™ exchangeable burette system prevents cross contamination while reducing loss of time and reagents. Burettes simply slide out for quick exchanges, and detaching the aspiration and dispensing tubes from the titrant bottles is easy.

Interrupting an important cycle of analysis due to a malfunctioning burette is a thing of the past. With the HANNA Clip-Lock™ system you can simply substitute the burette and complete all your tests with the same titrant!

Having several prepared burettes on hand will make the HANNA HI 903 one of the fastest and most versatile titration systems available.



Field upgradeable software via USB



Sealed solvent system

Built-in magnetic stirrer

Precise dosing system capable of delivering as little as 0.125 µL of titrant with a single dose

- Large 5.7" (320 x 240 pixel) color LCD with backlight
- **Titrant database**
 - Stores standardization information for up to 20 titrants
 - Standardization reminders
- **Supports up to 100 titration methods (standard and user defined)**
- **Dynamic dosing with optional pre-dispensing**
- **Results displayed directly in the selected units**
- **Titration graph can be displayed on-screen and saved as a bitmap**
- **Multi language support**
- **USB flash drive input**
 - Transfer methods, reports and graphs to either a PC or other titration system
 - Field-upgradeable software
- **Incorporates into any GLP data management program:**
 - Easily record all necessary GLP information with every sample including company and operator name, date, time, electrode ID codes and calibration information
- **Compatible with most major titrant and solvent brands**
- **Proper mixing of titrant and analyte**
 - Digital, magnetic stirring system with optical feedback
 - Conical titration cell to facilitate mixing over a wide volume range
 - Upward dispensing of titrant to ensure rapid reaction
- **Flexible, accurate detection of the titration endpoint**
 - Dual platinum pin polarization electrode for bivalent indication
 - Signal averaging reduces noise
 - Selectable endpoint criteria: fixed mV persistence, relative drift stop or absolute drift stop
- **Balance interface**
 - Automatically acquire sample mass or volume via serial RS-232 interface
- **Easy to operate**
 - User friendly interface
 - Context-sensitive help screens
- **Self diagnostic features for external components including dosing pump, burette and stirrer**
- **Ideal for**
 - Food and beverage, pharmaceuticals, cosmetics, chemical and petrochemical manufacturing and solvents

Versatile Data Management

- HI 900 Series titration systems can be easily incorporated into any existing GLP data management program:
- Easily record all necessary GLP information with every sample such as sample identification, company and operator name, date, time, electrode ID codes and calibration information
- Data can be transferred to a PC using the HANNA HI 900PC software application
- The USB port allows for the easy transfer of methods, reports and software upgrades via a USB flash drive
- Users can print reports of analyses directly from the titrator using a standard parallel printer
- An external monitor and keyboard can be attached for added versatility



Customizable reports
Titration reports are fully customizable



Versatile results
Titration or drift reports can be viewed on-screen or transferred to a USB storage device



Titration graphs
Titration graphs can be viewed on screen or saved as a bitmap and transferred to a PC via USB

HI 903 Connectivity



With great products, come great results™