HI901C

Automatic Titration System

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The HI901C automatic titrator complements our wide range of products dedicated to efficient and accurate laboratory analysis. The HI901C potentiometric titrator can perform acid/base, redox (ORP), complexometric, precipitation, non-aqueous, argentometric, and ion selective titrations. This powerful titrator dispenses the titrant, detects the endpoint, and performs all necessary calculations and graphs automatically. In addition to titration mode, the HI901C also operates as a fully functional pH, mV/ORP, and ion selective electrode (ISE) meter.

This titrator is supplied with a pack of standard methods or you can create your own. Methods (standard or user) can be easily transferred between titrators via USB flash drive or PC application.

Titration Capabilities

Dynamic Titrant Dosing

The dynamic dosing feature allows for timely and accurate titration results by relating the titrant volume dosed to the mV response from the titration reaction. This provides for larger doses near the beginning of a titration and smaller, more precise doses near the titration endpoint.

Signal Stability Timing

The signal stability feature monitors when the mV response of the titration reaction stabilizes before providing the next titrant dose. This ensures reliable measurement values throughout the length of a titration.

Equivalence Endpoint Detection

Equivalence endpoint detection is critical in applications where fixed endpoints are not specified in standard methods. This endpoint indicates where the mV response from the titration is greatest with respect to the volume of titrant dosed.

Multiple Titration Types

Paired with the right electrode from our sensor line, our potentiometric titrator can perform acid/base, redox (ORP), complexometric, precipitation, non-aqueous, argentometric, and titrations with an ion selective electrode.

Methods of Analysis

Customizable Methods

The HI901C can store up to 100 user-defined or standard titration methods. Each method may be customized and optimized for performance based on application and user requirements.

Titration Method Support

Onsite installation, training, and customization is available from one of our Applications or Service experts. Hanna offers continued support via phone or webinar for any questions you might have along the way.

Market Specific Methods Packs

Hanna offers titration method packages for various markets including food, beverage, dairy, wine, and more. Ask our Sales Consultants about which methods in our library are available for your specific needs.

Adaptable Standard Methods

Our technical experts can program and customize standard methods developed by such affiliations as ISO, ASTM, AOAC, AOCS, EPA, and more directly onto your titrator. Ask our Sales Consultants which standard methods are possible with our HI901C system.
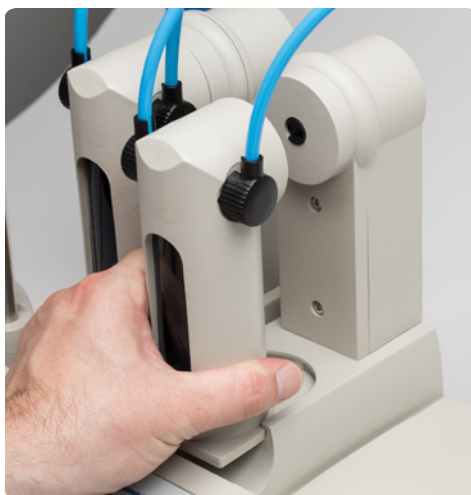
Burettes and Dosing System

Exchangeable Burette System

With Hanna's Clip-Lock burette, it only takes a few seconds to exchange titrants and reagents, preventing cross-contamination and saving time.

Multiple Burette Sizes

The HI901C comes standard with a 25 mL burette but may be equipped with a 5 mL, 10 mL, or 50 mL burette. Each burette is constructed with a ground glass syringe and chemically resistant PTFE plunger.

Precision Dosing Pump

Our unmatched 40,000 step piston driven pump is capable of dosing extremely small and precise volumes of titrant or reagent.

Chemically Resistant Tubing

Aspiration and dispensing tubes are constructed of durable, chemically resistant PTFE and feature a light-blocking polyurethane outer sleeve to protect light sensitive reagents.

Flexibility

The titrator offers support for two burettes, which allows you to switch between titrants effortlessly.

Interface and Display

Detailed Titration Graphs

A real-time titration curve can be displayed during each titration; this feature is useful when new methods are tested or when a procedure requires optimization.

Interactive Color Display

A large, color LCD screen clearly shows the chosen titration method along with results, units, titration volume, temperature, and mV or pH values. The HI901C also offers multi-language support.

Simple and Quick Navigation

Virtual key selections present on the display allow for simple and quick navigation between screens and menus without getting lost in a nest of information.

Data and Storage

Customizable Titration Reports

Each titration report is fully customizable so users can ensure they are storing and filing the appropriate data required for their application and procedures.

Flexible GLP Management

All necessary GLP (Good Laboratory Practice) information can be recorded with each sample including: sample identification, company and operator name, date, time, electrode ID codes, and calibration information.

Effortless Data Transfer

Data can easily be transferred to a USB flash drive or PC with the Hanna HI900PC application software. The USB port allows for the transfer of titration methods, titration reports, and software upgrades via USB flash drive.

Connectivity and Functionality

Multifunctional with Four Working Modes

The HI901C functions as a titrator, pH meter, mV/ORP meter, and ISE meter. Valuable laboratory bench space is saved, and multiple analyses can be performed on one sample.

Multiple Connections (HI901C2 only)

The titrator offers device support for two analog boards, which allows two electrodes and two stirrers to be simultaneously connected to one unit.

Multiple Peripherals

Users can print reports directly from the titrator using a standard parallel printer. An external monitor and keyboard may be attached for added versatility, as well as an analytical balance for automatic sample mass entry for titrations.

Versatile Data Management

- HI901C titration system 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 Hanna HI900PC software
- The USB port allows for the easy transfer of methods, reports and software upgrades via 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
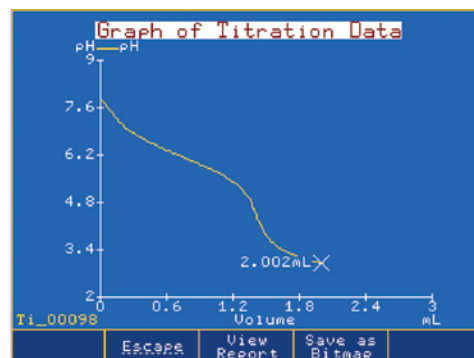
Customizable reports
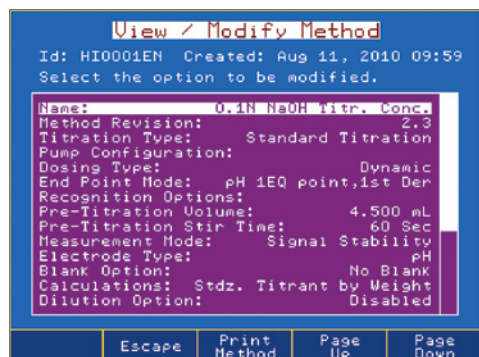Data to be stored in titration reports is fully customizable
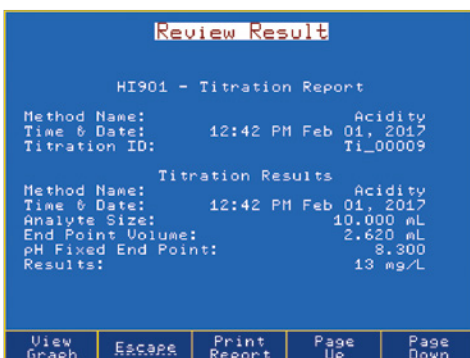
Titration reports
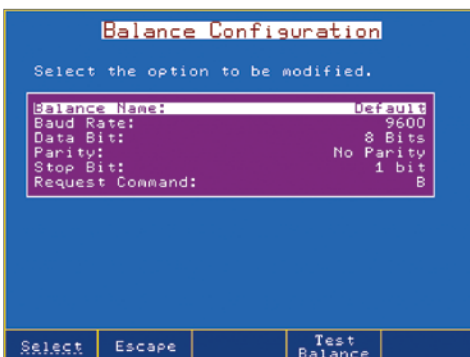Titration or pH/mV/ISE results can be viewed on-screen or transferred to a USB flash drive or PC
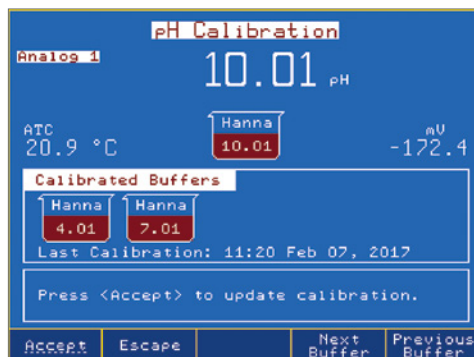
Titration graphs
Titration graphs can be viewed on-screen or saved as images and transferred along with titration report
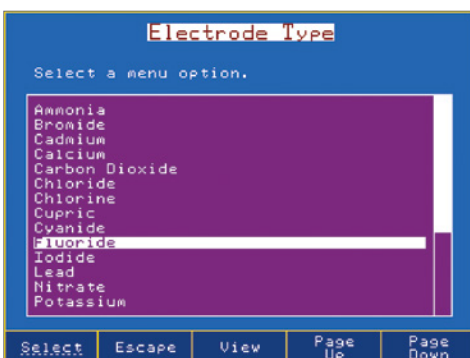
Fully customizable titration methods

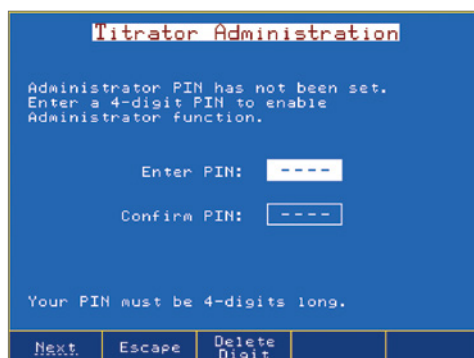### Fully configurable balance interface

Up to five-point pH calibration with automatic buffer recognition

Relative mV calibration allows for a mV offset

Selectable ISEs preprogrammed with molecular weight and ion charge

A 4-digit numeric PIN can be set to prevent unauthorized changes from being made.

Specifications		HI901C1	HI901C2
pH	Range	-2.0 to 20.0 pH; -2.00 to 20.00 pH; -2.000 to 20.000 pH	
	Resolution	0.1; 0.01; 0.001 pH	
	Accuracy (@25°C/77°F)	±0.001 pH	
	pH Calibration	up to five-point calibration, eight standard buffers and five custom buffers	
mV	Range	-2000.0 to 2000.0 mV	
	Resolution	0.1 mV	
	Accuracy (@25°C/77°F)	±0.1 mV	
	mV Calibration	single point offset	
ISE	Range	$1 \cdot 10^{-6}$ to $9.99 \cdot 10^{10}$	
	Resolution	1; 0.1; 0.01	
	Accuracy (@25°C/77°F)	±0.5% monovalent; ±1% divalent	
	ISE Calibration	up to five-point calibration, seven standard solutions and five user-defined standards	
Temperature	Range	-5.0 to 105.0°C; 23.0 to 221.0°F; 268.2 to 378.2 K	
	Resolution	0.1°C; 0.1°F; 0.1K	
	Accuracy (@25°C/77°F)	±0.1°C; ±0.2°F; ±0.1K, excluding probe error	
Additional Specifications	Temperature Compensation	manual (MTC) or automatic (ATC)	
	Analog Board(s) Each Analog Board Provides: (1) BNC (pH/mV/ISE) Input, (1) Reference Input, (1)Temperature Input, (1) Stirrer Input	1	2
	Analog Board(s) Capability	1	2
	Dosing Pump Capability	2	2
	Burette Included	1 (25 mL)	1 (25 mL)
	Burette Size Capability	5, 10, 25 and 50 mL	
	Burette Resolution	1/40000	
	Display Resolution	0.001 mL	
	Dosing Accuracy	±0.1% of full burette volume	
	Methods	load up to 100 methods (standard and user-defined)	
	Potentiometric Titrations	acid-base, redox, precipitation, complexometric, non-aqueous, argentometric	
	Measurement Units	user-specified expression of concentration units to suit specific calculation requirements	
	Burette Auto-Detection	burette size is automatically recognized when inserted into the pump unit	
	Programmable Stirrer	overhead propeller type, 200-2500 RPM, resolution 100 RPM	
	Flow Rate	user-selectable from 0.1 mL/min to 2 x burette volume/min	
	Endpoint Determination	equivalence point (1st or 2nd derivative) or fixed pH/mV value	
	Real Time & Stored Graphs	mV-volume or pH-volume titration curve, 1st derivative curve or 2nd derivative curve pH mode, mV mode or ISE mode: pH/mV/concentration versus time	
	Display	5.7" (320 x 240 pixel) backlit color LCD	
	Languages	English, Portuguese, Spanish	
	Data Storage	up to 100 titration and pH/mV/ISE reports	
	USB Host (Side)	flash drive compatibility for transfers of methods and reports	
	Peripherals (Rear)	connections for VGA display, PC-keyboard, parallel printer, USB device input, RS232	
	GLP Conformity	instrumentation data storage and printing capabilities	
	Operating Environment	10 to 40°C (50 to 104°F), up to 95% RH	
	Storage Environment	-20 to 70°C (-4 to 158°F), up to 95% RH	
	Power	100-240 VAC "-01" models, US plug (type A); "-02" models, European plug (type C)	
	Dimensions	390 x 350 x 380 mm (15.3 x 13.8 x 14.9 in)	
	Weight	approximately 9 kg (20 lbs.) with one pump, stirrer and sensors	

Ordering Information

HI901C1-01 and **HI901C1-02** includes titrator with one analog board, overhead propeller stirrer with stand, 25 mL glass burette, dosing pump, temperature sensor, USB cable, 256 MB USB flash drive and PC software.

HI901C2-01 and **HI901C2-02** includes titrator with two analog boards, overhead propeller stirrer with stand, 25 mL glass burette, dosing pump, temperature sensor, USB cable, 256 MB USB flash drive and PC software.

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