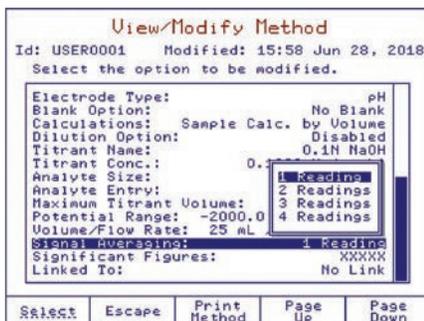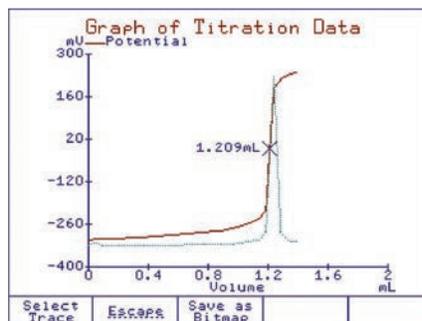HI932

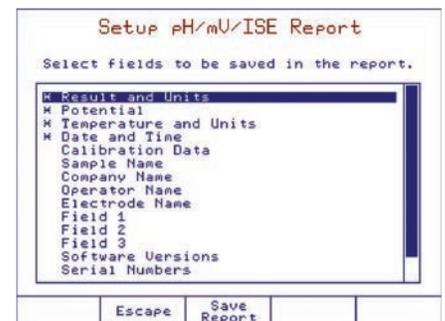# Automatic Potentiometric Titration Systems (pH/mV/ISE)

Fully customizable titration methods

Titration graphs

Titration graphs can be viewed on-screen or saved as images and transferred along with titration report

Customizable reports

Data to be stored in tiration reports is fully customizable

Redesigned and improved

- Compact Design.
  - Takes up half the lab space compared to the HI900 family

- Redesigned electrode holder.
  - Spring-loaded actuator allows you to quickly raise or lower the stirrer/electrodes with the push of a button.
  - Space-saving geometry allows for sample sizes less than 50 mL.
  - Support rods mount directly to the titrator – no need for special mounting hardware.
- Peristaltic Pumps
  - Add reagents to your samples automatically before every titration using integrated peristaltic pumps.

- Redesigned burette well
  - The burette well is sealed on the bottom to catch drips and spills

Titrator 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.

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.

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.

Multiple equivalence point detection

HI932 can detect multiple equivalence points during one titration as specified and required in certain standard methods and applications.

Method sequencing

The HI932 offers users the option of linking two methods. This allows for two analyses to be run on the same sample including direct measurements, single endpoint titrations, multiple equivalence point titrations, and back titrations.

Multiple titration types

Paired with the right electrode from our sensor line, our potentiometric titrators can perform acid/base, redox (ORP), complexometric, precipitation, non-aqueous, argentometric, and ion selective titrations, as well as back titrations and titre determinations.

Direct measurement functionality

The HI932 performs as a high accuracy pH, ORP, and ion selective meter that can link, log, and report direct measurements. Users can easily track and manage data without the hassle of manual record keeping.

Burettes & Dosing System

Exchangeable burette system

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

Multiple burette sizes

The HI932 comes supplied 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 highly accurate volumes of titrant or reagent.

Automatic reagent addition

A peristaltic pump or a second burette may be programmed to volumetrically dispense reagent prior to titration or direct measurement. This helps achieve consistent and accurate results and prevents operator errors such as incorrect volumes or forgetting reagent addition.

Interface & display

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.

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.

Methods of analysis

Customizable methods

These titrators can store up to 100 user-defined or standard titration and direct measurement methods. Each method may be modified 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 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 our library of market specific titration methods.

Adaptable standard methods

Our technical experts can program and optimize 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 titration systems.

Data

Data storage

up to 100 titration and pH/mV/ISE reports. Transfer data via USB.

Flexible GLP management

All necessary GLP (Good Laboratory Practice) information can be recorded with each sample.

Connectivity & functionality

Multifunctional

These titrators also function 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

The HI932 offers support for two analog boards, allowing up to two electrodes, two burettes, and two stirrers to be connected to one unit simultaneously.

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Specifications		HI932C1 / HI932C2
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	Analog Board(s) Capability	2
	Dosing Pump Capability	2
	Burette Included	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
	Display	5.7" (320 x 240 pixel) backlit color LCD
	GLP Conformity	instrumentation data storage and printing capabilities
	Linked Methods	yes
	Back Titrations	yes
	HI921 Compatible	yes
	Power	100-240 VAC "-01" models, US plug (type A) "-02" models, European plug (type C)

Ordering Information		
	HI932C1-01 and **HI932C1-02** includes titrator with one analog board*.	
	HI932C2-01 and **HI932C2-02** includes titrator with two analog boards*.	
	All models also include: overhead propeller stirrer with stand, 25 mL glass burette, dosing pump, temperature sensor, USB cable, USB flash drive and PC software.	

HI930101	dosing pump with peristaltic pump	
HI930100	dosing pump	
HI930150	50 mL burette assembly (includes syringe, aspiration, and dispensing tubes)	
HI930125	25 mL burette assembly (includes syringe, aspiration, and dispensing tubes)	
HI930110	10 mL burette assembly (includes syringe, aspiration, and dispensing tubes)	
HI930105	5 mL burette assembly (includes syringe, aspiration, and dispensing tubes)	

*Each Analog Board Provides: (1) BNC (pH/mV/ISE) Input, (1) Reference Input,
(1)Temperature Input, (1) Stirrer Input

Autosampler connectivity

The HI932 works seamlessly with our HI922 Autosampler featuring 16 or 18 sample tray options, automatic tray identification, and automatic beaker detection. Up to three peristaltic pumps for reagent addition and removal can be connected and real-time analysis and sequencing progress is visible on the HI932 display as well as indicated by the LED lights of the Autosampler.