

# Automatic Titration System

## ATS-3090-C

The ATS-3090-C automatic titrator complements our wide range of products dedicated to efficient and accurate laboratory analysis. The ATS-3090-C 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 endpoint, and perform all necessary calculations and graphs automatically. In addition to titration mode, the ATS-3090-C 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 ATS-3090-C 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. Analytical technologies offers continued support via phone or webinar for any questions you might have along the way.

#### Market Specific Methods Packs:

Analytical 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 ATS-3090-C system



## Burettes and Dosing System

### Exchangeable Burette System:

With Analytical'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 ATS-3090-C comes standard with a 25mL burette but may be equipped with a 5mL, 10mL, or 50mL 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. Burette validation certificate traceable to NIST.

### 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 buretters, 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 Values. The ATS-3090-C 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 filling 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 Analytical ATS-2090-C 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 ATS-2090-C functions as a titrator, pH meter, mV/ORP meter and ISA meter. Valuable laboratory bench space is saved, and multiple analysis can be performed on one sample.

### Multiple Connections (ATS-2090-C 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

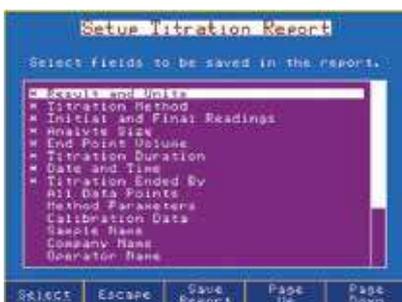
Users can print reports directly from the titrator using a standard parallel printer. An external monitor and keyboard may be attached for added versatility, as well as an analytical balance for automatic sample mass entry for titrations.

## Versatile Data Management

ATS-2090-C 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 Analytical ATS-2090-C 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



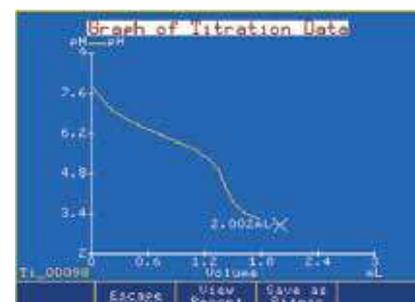
### Customizable reports

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

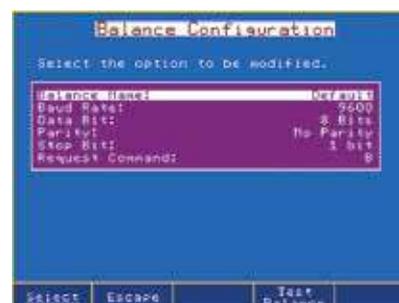


### Titration graphs

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



Fully customizable titration methods.



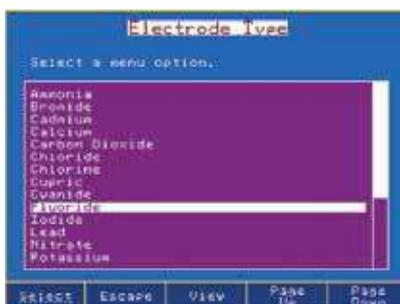
Fully configurable balance interface.



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.

## Technical Specifications

Specifications		ATS-3090-C1	ATS-3090-C2	
pH	Range	-2.0 to 20.0 pH; -2.00 to 20.00pH; -2.000 to 20.000pH		
	Resolution	0.1; 0.01; 0.001pH		
	Accuracy (@25°C/77°F)	±0.001pH		
	pH Calibration	up to five-point calibration, eight standard buffers and custom buffers		
mV	Range	-2000.0 to 2000.0		
	Resolution	0.1mV/0.1µA		
	Accuracy (@25°C/77°F)	±0.1mV		
	mV Calibration	single point offset		
ISE	Range	1-10 <sup>-6</sup> to 9-99.10 <sup>10</sup>		
	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 378.2K		
	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 Specification	Temperature Compensation	manual (MTC) or automatic (ATC)		
	Analog Board(s) Each Analog Board Provides: 1) BNC (pH/mV/ISE) input, 2) Reference Input, 3) temperature Input, 4) Stirrer Input	1	2	
	Analog Board(S) Capacity	1	2	
	Dosing Pump Capacity	2	2	
	Burette Included	1 (25 mL)	1 (25 mL)	
	Burette Size Capability	5, 10, 25, 50mL		
	Burette Resolution	1/40000		
	Display Resolution	0.001mL		
	Dosing Accuracy	+0.1% of full burette volume		
	Methods	load up to 100 methods (standard and use-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, 200-2500RPM, resolution 100RPM		
	Polarized Sensor Measurement range:	0 ... ±2000 mV / 0 ... ±80µA	Resolution: : 0.1 mV / 0.1 µA	

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
Operation Environment	10 to 40°C (50 to 104°F), up to 95%RH
Storage Enviroment	-20 to 70°C (-4 to 158°F), up to 95% RH
Power	100-240 VAC "-10" models, US plug (type A); "-2" models, European plug (type C)
Dimention	390x350x380mm (15.3x13.8x14.9 in)
Weight	approxomately 9 kg (20 lbs.) with one pump, stirrer and sensors

## About Analytical Tecnologies

Analytical Technologies is synonymous for offering technologies for doing analysis and is the Fastest Growing Global Brand having presence in at least 96 countries across the globe. Analytical Technologies Limited is an ISO :9001 Certified Company engaged in Designing, Manufacturing, Marketing & providing Services for the Analytical, Chromatography, Spectroscopy, Bio Technology, Bio Medical, Clinical Diagnostics, Material Science & General Laboratory Instrumentation. Analytical Technologies, India has across the Country operations with at least 4 Regional Offices, 6 Branch Offices & Service Centers. Distributors & Channel partners worldwide.



## Regulatory compliances



## Corporate Social Responsibility



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# Analytical Foundation

Analytical Foundation is a nonprofit organization (NGO) found for the purpose of:

1. Research & Innovation Scientist's awards / QC Professional Award : Quality life is possible by innovation only and the innovation is possible by research only, hence ANALYTICAL FOUNDATION is committed to identify such personalities for their contributions across various fields of Science and Technology and awarding them yearly. To participate for award, send us your details of research / testing / publication at [Info@analyticalfoundation.org](mailto:Info@analyticalfoundation.org)

2. Improving quality of life by offering YOGA Training courses, Work shops / Seminars etc.

3. ANALYTICAL FOUNDATION aims to DETOXYFY human minds, souls and body by means of yoga, Meditation, Ayurveda, Health Care, Awards, Media, Events, Comps etc.

## Reach us @



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