



BAT-1 Autotitrator

BAT-1 Autotitrator

The zeta potential of materials depends strongly on the dispersion medium, especially the solution pH, which not only affects the magnitude of zeta potential, but also the symbol of charged particle systems.

The BAT-1 Autotitrator is equipped with three high-precision titration pumps (with precision of 0.28 μ L), and a magnetic stirrer, and is in combination with the BeNano series nanoparticle size and zeta potential analyzer for automatic acid-base titration and determination of isoelectric point (IEP). The pinch valve can close the circuit of the sample during the measurement, leading to high efficiency, accurate titration, good repeatability and the results being independent of operators. The disposable sample container can avoid the sample cross-contamination.



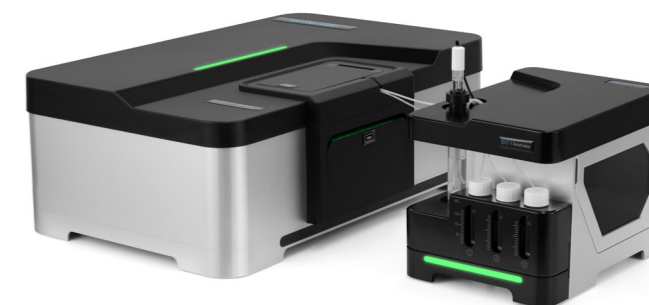
Measurement Parameters

- Zeta potential vs. pH
- Isoelectric point (IEP)

Titration Operation

The BAT-1 Autotitrator is designed to be used with the BeNano series for the measurement of zeta potential over a wide pH range, providing the information of zeta potentials and the stability of samples in different conditions. The operation flow is as follows:

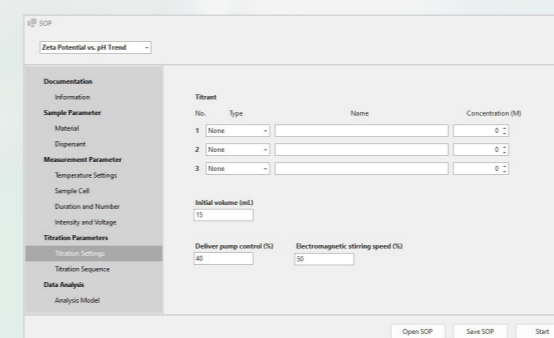
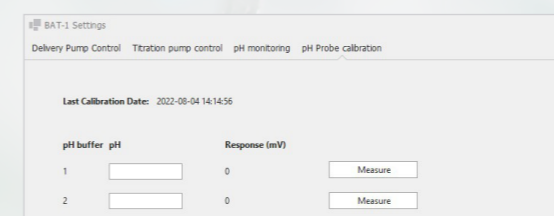
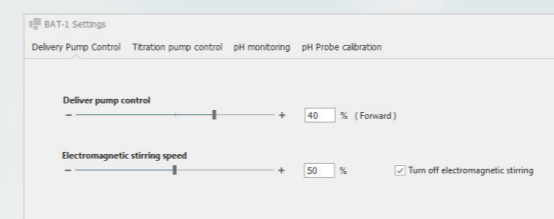
- Preparing the samples to be detected and the titrants in the containers, respectively;
- Creating or editing a titration SOP in BeNano software by setting the volume of the sample to be measured, the concentrations of the titrants, the initial pH, the target pH, the pH interval and the target pH tolerance, etc.;
- To start the determination, the sample is titrated to approach to the first pH value through automatic calculation, and is injected into the folded capillary cell by the peristaltic pump for zeta potential measurement;
- Repeating the above procedures until approaching the final target pH automatically;
- Saving and outputting complete data and the trend plot of zeta potential vs. pH;
- Giving the isoelectric point if it is included in the setting pH range.



Features

- Combination electrode with high precision and high feedback speed**
 Real-time accurate pH measurement and feedback
- High precision ternary titration pumps**
 Multiple acid or base titrants are allowed with precision of 0.28 μ L
- Controllable peristaltic pump with high flow capacity and high flow rate**
 Ensuring efficient delivery of samples during titration
- Internal magnetic stirrer system**
 Programmable stirring rate ensures a great mixture between samples and titrants during titration
- SOP operation**
 Titration SOP built in the BeNano software simplifies the operation and guarantees the standard measurement conditions
- Replaceable tubes**
 All tubes are connected via standard connections for easy replacement
- Corrosion resistant design**
 The parts in contact with samples are made of PTFE and PP, possessing high strength and corrosion resistance
- General purpose electrode**
 Compatible with BT-C1 and BT-C1-PT folded capillary cells, no additional purchase required
- Intelligentization**
 According to the initial pH and the target pH, the required titrants can be chosen automatically via the software
- Determination of isoelectric point**
 Built-in computational logic can output isoelectric points of the samples

User-friendly Software

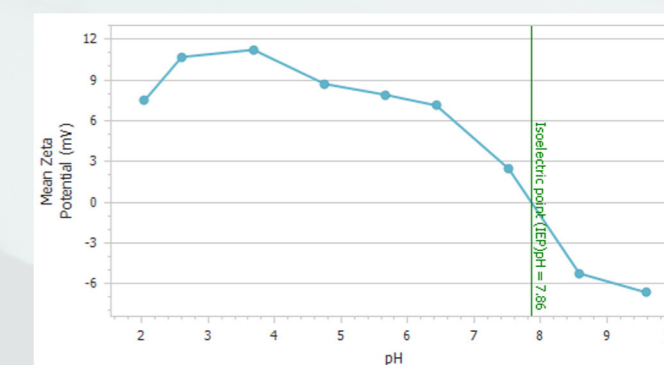


Titration control

Easy to control the motors, such as sample delivery pump, titration pumps and magnetic stirrer, and monitor the pH of the sample in real time at the titration interface, which is convenient for titration preparation and instrument maintenance.

pH probe calibration

The built-in procedure in the software facilitates users to calibrate pH probe regularly and ensures the precision and repeatability of the results.



Zeta potential vs. pH

Specifications

Functions & Parameters	
Analyzer compatibility	BeNano Zeta, 90 Zeta, 180 Zeta, 180 Zeta Pro
Cuvette compatibility	BT-C1, BT-C1-Pt
pH range	1 – 13
Typical sample volume	15 mL
Minimum sample volume	10 mL
Titration Pump	
Quantity	3
Accuracy	0.28 µL
Titrant container volume	25 mL
Sample Delivery Pump	
Principle	Peristaltic pump
Peak flow rate	45 mL/min
Direction	Forward and reverse
pH probe	
Type	Liquid filled glass combination electrode
Calibration	Multipoint calibration
Sample dispersion	
Method	Magnetic stirrer
Stirring rate	Adjustable
Materials in contact with sample	
Sample container	PP (polypropylene)
Titrant containers	PP (polypropylene)
Delivery tubes	PTFE hard tube, Silicone tubing
System parameters	
Size (W×D×H) and weight	220 x 300 x 220 cm (6 kg)
Power	AC 100 – 240 V, 50-60 Hz, 4.0 A
Communication	Serial port

Bettersize

BETTER PARTICLE SIZE SOLUTIONS

Bettersize Instruments Ltd.

Website: <https://www.bettersizeinstruments.com>

Email: info@bettersize.com

Address: No. 9, Ganquan Road, Jinqun Industrial Park, Dandong, Liaoning, China

Visit Our Official YouTube Channel:

Postcode: 118009

Tel: +86-415-6163800

Fax: +86-415-6170645

