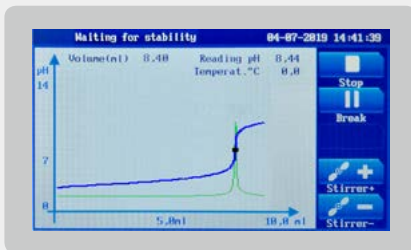


CAT

The easiest titration ever...

CAT Automatic Titrator has been designed to simply and precisely perform the widest range of potentiometric titrations. It has always been the first choice if you were looking for a very easy-to-use automatic titrator for any application. A special training or a deeper knowledge of automatic titration was not necessary to get precise and quick results. That and much more is exactly what the new generation of CAT stands for:

- > High resolution pH/mV-measurement input for pH-, silver-, mV-electrodes and double platinum electrode
- > Pt 100 temperature measurement input for automatic temperature compensation
- > Pre-installed standard methods for alkalinity, total acidity in drinks, free and total SO₂ in wine, chloride etc.
- > Constant and progressive titration to equivalence points
- > Titration to pH and mV-end points
- > Automatic pH measurement (If auto sampler is present)



Typical applications of water/wastewater and environmental analysis

- > Automatic pH measurement
- > Alkalinity (p+m value)
- > Total kjeldahl nitrogen
- > Chloride in wastewater



Typical applications of food analysis

- > Salt content (chloride, sodium chloride)
- > pH-value, total acidity in wine, drinks and other food products
- > Ascorbic acid
- > protein determination (Kjeldahl-nitrogen in milk and dairy products)
- > Free SO₂, total SO₂ determination in wine
- > Iodine and peroxide value

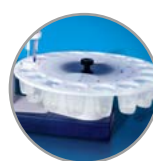


CAT. Everything you need. The advantages at a glance.



Brilliant

Bright display with strong illumination can be viewed easily from a long distance.



Auto-level adjuster

Designed to optimize the procedure of samples auto level, in order to speed up the sample preparation.



Compact

Compact instrument and can be both upgraded and configured to satisfy the everchanging laboratory needs.



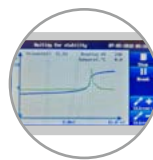
Auto-degassing system

Nitrogen valve for sample degassing.



Easy-to-use

The wide colour touch screen display contains all the messages and the icons that make CAT extremely easy to use. The titrator guides the user in each programming phase, analysis and data interpretation.



Titration curve

During the titration process the graphic trend is displayed in real time, so that the operator is immediately informed about the analysis trend.



Modular design

Up to 2 burettes and 3 peristaltic pumps, operated together or separately, every stage of titration process can be made truly automatic.



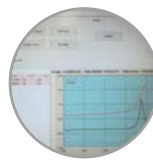
Report

pH electrode calibration report, Standard titration report and Sample titration report.



Peripheral modules

Single analysis stand, 16 positions autosampler, 35 positions autosampler, Printer and Software.



Software

Data management software via external PC



Methods

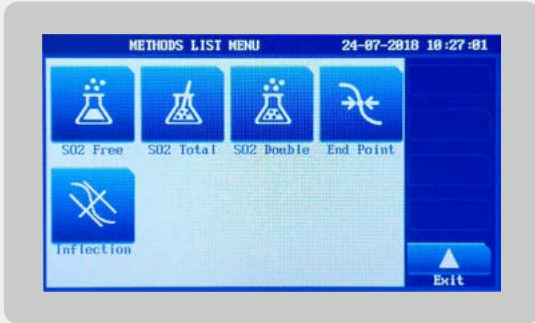
Default methods, Method template make to quickly edit and start your experiments.



Switch on. And off you go.

Intelligent operating concept. Ready for operation with just a few quick and easy steps.

Features



Standard methods

- > Pre-installed standard methods for alkalinity, total acidity in drinks, chloride, SO₂ in wine etc.
- > Each standard method can be used directly or edited according to actual needs
- > The commonly used titration method can be marked and set to the top, which is easy for operators to choose quickly.

Menu

Built-in system setting, date and time setting, calibration solution setting, operator setting, burette manual operation, creep pump manual operation, electrode lifting device manual setting, and continuous titration turntable manual setting function

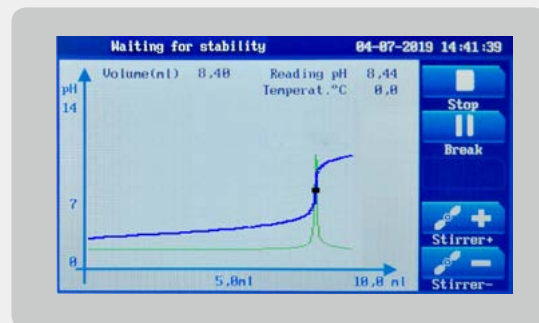


Utility

Including: manual setting of cleaning steps, manual filling of burette, calibration program settings, pH measurement settings, titration results query, import, transfer and deletion, calibration reports and records

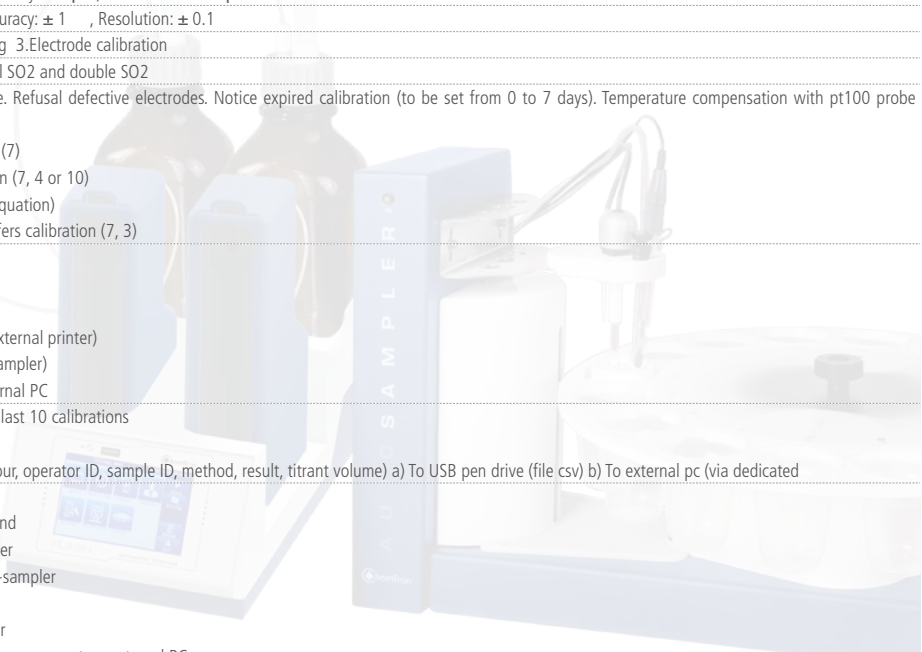
Titration curve

- > During the titration process, the titration curve is displayed in real time, and the integral curve will be shown after the titration is finished
- > After titration, display titration results, including starting values, ending values and calculation results



Specification – CAT

	Features
Display	4.3" monochromatic LCD touch screen
Burette dispensation accuracy	Syringe volume: 10mL (It is possible to install up to 2 burettes) Burette for titrant dosage resolution at 12,000 steps (means 0.83 µ L at any step)
Dispensation accuracy	<0.2% (2 µ L with 10ml syringe)
Dispensation repeatability	± 0.2% (2 µ L with 10ml syringe)
Peristaltic pump	Interchangeable pump head (up 3 per unit), 1ml/sec.
pH	Range:0-14pH, Accuracy: ± 0.02pH, Resolution: ± 0.01pH
mV	Range: ± 2000mV, Accuracy: ± 2mV, Resolution: ± 0.1mV
µ A	Range: ± 10 µ A, Accuracy: ± 2 µ A, Resolution: ± 0.1 µ A
Temperature	Range:0-100 , Accuracy: ± 1 , Resolution: ± 0.1
Utility procedures	1.Priming 2.Cleaning 3.Electrode calibration
Method template	EP, EQ, free SO2, total SO2 and double SO2
pH calibration	Buffer auto-recognize. Refusal defective electrodes. Notice expired calibration (to be set from 0 to 7 days). Temperature compensation with pt100 probe during pH calibration 1. 1buffer calibration (7) 2. 2 buffers calibration (7, 4 or 10) 3. Theoretical (Nernst equation) 4. Oenological: 2 buffers calibration (7, 3)
Communication	1. Electrode port (x2) 2. USB A 3. USB B 4. RS232 serial (for external printer) 5. RS232 serial (for sampler) 6. Bluetooth (for external PC)
Internal memory	Last 50 analyses and last 10 calibrations Up 30 methods Data export: (date, hour, operator ID, sample ID, method, result, titrant volume) a) To USB pen drive (file csv) b) To external pc (via dedicated
Accessories	1. Printer 2. Single analyses stand 3. 16 positions sampler 4. 35 positions micro-sampler 5. Auto-level adjuster 6. Automatic degasser 7. Software for data management on external PC



Order index, for your custom unit configuration

Order No.	CAT	M1	T1	S1	B1	P1	G1	L1
M1								
M2								
M3								
M4								
M5								
M6								
M7								
M8								
T0								
T1								
S1								
S2								
S3								
B1								
B2								
P1								
P2								
P3								
G0								
G1								
L1								
L2								

Order Information



CAT1 Automatic titrator with magnetic stirrer

Order No.	Model	Description
CAT1-1-M1	Basis set	Basic unit without electrode, Included CAT1, Magnetic stirrer(1), Stir bar(1), 10ml burette(1), titration tube(1), power supply(1), 1L glass bottle(1), GL45 and S40 adapter(1), drying tube(1).
CAT1-1-M2	For pH titration	CAT1-1-M1 with pH electrode and buffer solution
CAT1-1-M3	For Precipitation titration	CAT1-1-M1 with Ag electrode
CAT1-1-M4	For Redox titration	CAT1-1-M1 with Pt electrode
CAT1-1-M5	For Dead stop titration	CAT1-1-M1 with Double Platinum electrode



CAT2 Automatic titrator with magnetic stirrer

Order No.	Model	Description
CAT2-1-M1	Basis set	Basic unit without electrode, Included CAT2, Magnetic stirrer(1), Stir bar(1), 10ml burette(2), titration tube(2), power supply(1), 1L glass bottle(2), GL45 and S40 adapter(2), drying tube(2).
CAT2-1-M2	For pH titration	CAT2-1-M1 with pH electrode and buffer solution
CAT2-1-M3	For Precipitation titration	CAT2-1-M1 with Ag electrode
CAT2-1-M4	For Redox titration	CAT2-1-M1 with Pt electrode
CAT2-1-M5	For Dead stop titration	CAT2-1-M1 with Double Platinum electrode



CAT2 Automatic titrator with 16 position auto-sampler

Order No.	Model	Description
CAT2-16-M1	Basis set	Basic unit without electrode, Included CAT2, AS24 16 position auto-sampler (1), Stir bar(1), 10ml burette(40), titration tube(2), power supply(1), 1L glass bottle(2), GL45 and S40 adapter(2), drying tube(2).
CAT2-16-M2	For pH titration	CAT2-16-M1 with pH electrode and buffer solution
CAT2-16-M3	For Precipitation titration	CAT2-16-M1 with Ag electrode
CAT2-16-M4	For Redox titration	CAT2-16-M1 with Pt electrode
CAT2-16-M5	For Dead stop titration	CAT2-16-M1 with Double Platinum electrode



CAT2 Automatic titrator with 35 position micro-sampler

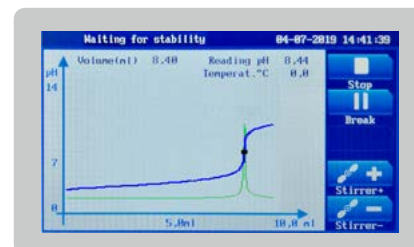
Order No.	Model	Description
CAT2-35-M1	Basis set	Basic unit without electrode, Included CAT2, AS24 35 position micro-sampler (1), Stirring paddle(2), 10ml burette(2), titration tube(2), power supply(1), 1L glass bottle(2), GL45 and S40 adapter(2), drying tube(2).
CAT2-35-M2	For pH titration	CAT2-35-M1 with Micro pH electrode and buffer solution
CAT2-35-M3	For Precipitation titration	CAT2-35-M1 with Micro Ag electrode
CAT2-35-M4	For Redox titration	CAT2-35-M1 with Micro Pt electrode
CAT2-35-M5	For Dead stop titration	CAT2-35-M1 with Micro Double Platinum electrode

Case study



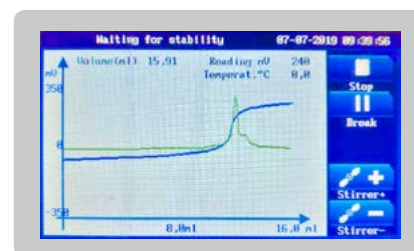
Case 1. Determination of total acidity in fruit juice

Application	This method is used for the quantitative determination of total acidity in fruit juice. Here, the citric acid is used as the main reference.
Model Recommendations	CAT1-1-M2, CAT2-1-M2, CAT2-16-M2, CAT2-35-M2
Reagents	Titrant: sodium hydroxide solution 0.1 mol/l Soda lime for carbon dioxide uptake of the reagent. Titer: potassium hydrogen phthalate (reference material)

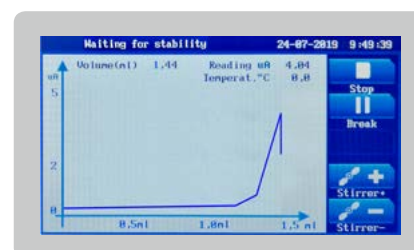


Case 2. Determination of chloride/sodium chloride (salt) in food samples

Application	Potentiometric determination of chloride/sodium chloride (" salt ") in food samples such as salt, spice mixtures, cheese, meat or tomato sauce.
Model Recommendations	CAT1-1-M3, CAT2-1-M3, CAT2-16-M3, CAT2-35-M3
Reagents	Solvent: distilled water Titration agent: silver nitrate solution (AgNO ₃) 0.1 mol/L Standard: NaCl titrimetric standard, HNO ₃ 1 mol/l

Case 3. Determination of Free and Total SO₂ in Wine and fruit juice

Application	This application note describes the titration procedure with iodine solution.
Model Recommendations	CAT1-1-M5, CAT2-1-M5, CAT2-16-M5, CAT2-35-M5
Reagents	Solvent: distilled water Standardisation: Na ₂ S ₂ O ₃ Titrant: Iodine solution (I ₂) 0.025 mol/L or 0.01 mol/L Other reagents: H ₂ SO ₄ 10 %, NaOH 4 mol/l, KI-solution 5 %



Case 4. Quantitative analysis of ascorbic acid with Iodine titrant

Application	This method is used to determine the content of ascorbic acid (Vitamin C) with the iodine titrant in juices like orange or apple juice. The sulfite (SO ₂) in the juice is masked before with glyoxal solution.
Model Recommendations	CAT1-1-M5, CAT2-1-M5, CAT2-16-M5, CAT2-35-M5
Reagents	Titration agent: Iodine solution 0.01 mol/L Other reagents: H ₂ SO ₄ 25 % and Glyoxal solution 40 %

