



Automatic Potentiometric Titrator

< AT-500 & CHA-500 >



KYOTO ELECTRONICS

AT-500&CHA-500

AT-500 Automatic Potentiometric Titrator

Features : Low Cost and High Performance

- 1) Easy to use : All the operator has to do is just press [Start] key for routine measurement.
- 2) Many applications : The instrument can perform in many ways including acid-base and redox titration.
- 3) Various standard interface : The interfaces for RS-232C to PC, Balance and Printer are standard supplied.
- 4) Two types of AT-500 : AT-500-1 is supplied with single power burette, and AT-500-2 with twin burettes.

Specification

Type and Model	AT-500-1	AT-500-2
Measuring range	-2000 to +2000mV, 0.00 to 14.00pH,	
Titration mode	1) Blank 2) Auto control 3) Auto cut off 4) Intermittent constant/Continuous constant speed	
Number of method	4 standard methods, 16 user defined methods (total 20 methods)	
Types of titration	Potentiometry (Acid-base titration, Redox titration, Precipitation titration), Photometric titration, Polarization titration)	
Titration form	Full titration, EP Stop titration, Level Stop titration	
Display	16 digits by 2 lines LCD	
Displayed contents	Titration potential and volume, measurement results, titration condition parameters. (Titration curve not displayed)	
Computation	Concentration conversion and statistics (mean value, SD, RSD)	
Power burette	One built-in burette	Two built-in burettes
Kinds of burette	1, 5, 10, 20, 50mL (standard 20mL)	

Preamplifier	1) STD-510: pH (mV) and mV 2-way input amplifier (standard) 2) PTA-510: pH (mV), mV and photometry 3-way input (option) 3) POT-510: pH (mV), mV and polar 3-way input (option)	
sample changer	Optional multiple sample changer model CHA-500	
Interface	Balance, Printer, RS-232C	
Printer	Optional IDP-100 and other printers	
Ambient condition	5 to 35°C, less than 85%RH (no condensation)	
Power source	AC100~120/200~240V 50/60Hz	
Power consumption	25W	30W
Dimension	Main unit : 288(W) x 468(D) x 481(H)mm Titration stand : 118(W) x 225(D) x 336(H)mm	
Weight	10kg	12kg
CE marking	EMC: EN55022, EN55088-1 LVD: EN61010-1	
Supplied parts	Stirrer Spinner.....1pce Piston rod.....1pce Wrench.....1pce	Power cord.....1pce Operation manual.....1copy
With out Electrodes		

CHA-500 Multiple Sample Changer

Features

- 1) Improved operations by setting all the operating conditions of CHA-500 on the titrator side.
- 2) Easier connection of the new built-in preamplifier with the electrodes.
- 3) Selection of measuring sequence replete with such operations as shower/soak washing or drain disposal.
- 4) More compact design on a reduced dimension -approx. 30% reduction (compared with our previous model) of the occupied space.
- 5) An equipment respecting ISO 9002, GLP and GMP

Specification

Type and Model	CHA-500-12	CHA-500-18
Number of samples	12	18
Sample vessels	Standard : 200ml beaker or 300ml tall beaker Optional : 50ml beaker, 100ml beaker, 100ml tall beaker, 200ml tall beaker or 200ml Erlenmeyer flask	
Washing method	Standard : shower Optional : soaking; shower plus soaking	
Washing mechanism	Standard : a standard pump with 10-liter container Optional : 1) For soaking, add a solenoid valve should 2) For shower plus soaking, add a 2-system pump A	
Washing solution	Pure water, solvents (methanol, ethanol, isopropanol, acetic acid, chloroform, acetone or toluene) and acid, alkali water solution	
Drain mechanism	Standard : Natural falling from the washing vessel Optional : For shower plus soaking drain, 1) Mixing drain : Add a drain pump 2) Separating drain : Add a drain pump and 2-system pump B	
Stirring method	Standard : a magnetic stirrer is attached at the titration position. Optional : a magnetic stirrer can be attached at the position of washing and/or pre-treatment.	

Dosing of the pre-treatment solution	Standard : Not Available Optional : APB-410 or a pump connectable to contact I/O terminal	
Sequence function	Four programmed sequential procedures including washing method adequate for each titration: 1 : Acid-base titration 2 : Precipitation titration 3 : Non-aqueous f titration 4 : Petrochemical neutralization number titration	
Control of operations	1) Automatic : start with signal from AT- 500 and automatically operate. 2) Manual : tap the keys operation by operation. 3) External : PC through RS 232C	
Detection of beakers	Optical reflector sensor	
Ambient condition	1) 5 - 35°C 2) Below 85% RH (no condensation allowed)	
Power source	AC 100 - 120V / 200 - 240V , 50/60 Hz	
Power consumption	50W	
Dimension	400(W) x 520(D) x 600(H) mm	580(W) x 690(D) x 600(H) mm
Weight	16kg	20kg
CE marking	1) EMC (noise) : EN55022, EN50082 -1 2) LVD (safety) : EN61010 -1	
Supplied parts	Stirrer Spinner.....6pce Drain tube.....1set BJP20 tube.....1pce Wrench.....1pce	Rinse container.....1pce Power tube fuse.....2pce Power cord.....1pce Operation manual.....1copy

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Optional

Connect CHA-500 Multiple Sample Changer to AT-500 Automatic Potentiometric Titrator



AT-500 Automatic Potentiometric Titrator with twin burettes mounted

- Application :
- 1) One burette doses fixed reagent and the second burette back-titrates with excess titrant.
 - 2) After pH of a sample is adjusted by the first burette, the second burette works for the intended titration.
 - 3) For titration using two different kinds of reagent.



AT-500 Automatic Potentiometric Titrator with Printer IDP-100 series connected

Application : Measurement data and precision check of the instrument can be printed out in GLP format.

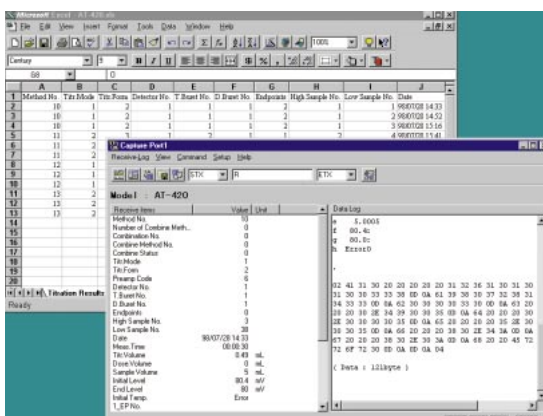
- IDP-100 series :
- IDP-100-10 AC100V
 - IDP-100-11 AC120V
 - IDP-100-12 AC230V

Connecting cable is included.



AT-500 Automatic Potentiometric Titrator with user's personal computer connected where SOFT-CAPe Data Capture Software is installed

- Application :
- 1) Up to 4 KEM titrators can be connected, and each measurement data are directly exported to workbook in Microsoft® Excel.
 - 2) The output data can also be filed in CSV format so that the data is made best use of in user's Lotus1-2-3® spreadsheets.
 - 3) Control commands by Data Capture from User's computer.
 - (1) Start titration
 - (2) Reset titration
 - (3) Pause titration
 - (4) Cancel pause
 - (5) Start multiple sample changer



AT-500&CHA-500

Electrodes

Name	Model	Note
pH glass electrode	H-152	Electrode size : ϕ 12 x 135mm
	H-153	Electrode size : ϕ 12 x 180 mm
Combined glass electrode	C-151	Electrode size : ϕ 12 x 135 mm
	C-152	Microtitration, micro-part size : ϕ 6 x 150 mm
	C-154	Microtitration, micro-part size : ϕ 6 x 130 mm
	C-156	Microtitration, micro-part size : ϕ 6 x 65 mm
	C-157	Electrode size : ϕ 12 x 180 mm
Combined platinum electrode	C-251	Electrode size : ϕ 12 x 135 mm
	C-253	Microtitration, micro-part size : ϕ 6 x 150 mm
	C-254	Microtitration, micro-part size : ϕ 6 x 130 mm
	C-256	Microtitration, micro-part size : ϕ 6 x 65 mm
Platinum electrode	M-111	Electrode size : ϕ 12 x 135 mm
	M-112	Microtitration, micro-part size : ϕ 6 x 110 mm
	M-113	Electrode size : ϕ 12 x 180 mm
	M-115	Microtitration, micro-part size : ϕ 6 x 155 mm
Twin platinum electrode	M-511	2-pin type, electrode size : ϕ 12 x 135 mm
	M-512	2-plate type, electrode size : ϕ 12 x 135 mm
	M-513	2-pin type, electrode size : ϕ 12 x 180 mm
Silver electrode	M-211	Electrode size : ϕ 12 x 135 mm
	M-212	Microtitration, micro-part size : ϕ 2 x 90 mm
	M-214	Non-aqueous titration, electrode size: ϕ 12 x 100 mm
	M-220	Microtitration, micro-part size : ϕ 2 x 135 mm
Ceramic reference electrode	R-116	Electrode size: ϕ 12 x 135 mm
Sleeve reference electrode	R-112	Electrode size: ϕ 12 x 135 mm
Double junction reference electrode	R-114	Liquid junction: ceramic & sleeve, electrode size : ϕ 16 x 135 mm
Cork reference electrode	R-115	Liquid junction: cork, electrode size : ϕ 14 x 135 mm
Ceramic reference electrode	R-117	Electrode size: ϕ 12 x 180 mm
Cork reference electrode	R-118	Liquid junction: cork, electrode size : ϕ 14 x 180 mm
Double junction reference electrode	R-119	Liquid junction: ceramic & sleeve, electrode size : ϕ 16 x 180 mm
Mercury-sulfate reference electrode	R-211	Liquid junction: ceramic, electrode size: ϕ 12 x 135 mm
	R-212	Liquid junction: sleeve, electrode size: ϕ 12 x 135 mm
Temperature compensation	T-111	Electrode size : ϕ 6 x 135 mm
	T-112	Electrode size: ϕ 6 x 180 mm
Photometric sensor	P-114	Sensor size: ϕ 15 x 135 mm
Ion selective electrode		Ion selective electrodes are popularly used in potentiometric titration. Ion selective electrodes are not listed in the catalog because KEM does not manufacture these electrodes.

Preamplifiers

Model	Detections	Titration
STD-510	pH (mV), mV	Acid-base or Oxidation-reduction titration
PTA-510	Transmittance, pH (mV), mV	Photometric, Acid-base or Oxidation-reduction titration
POT-510	Polarization potential, pH (mV), mV	Polarization, Acid-base or Oxidation-reduction titration



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