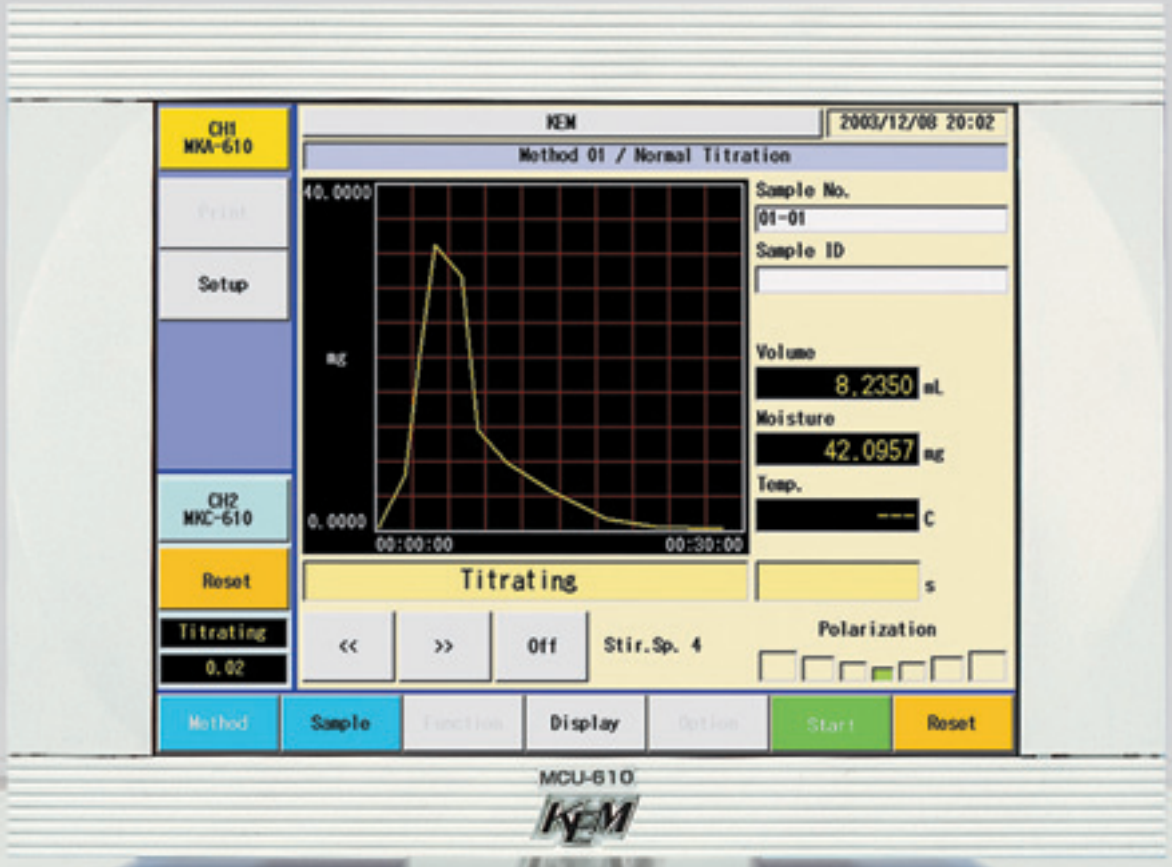
Karl Fischer Moisture Titrator

MKA-610 / MKC-610

New!



Touch Screen Key-entry

2-channel Simultaneous Titration

KYOTO ELECTRONICS

Karl Fischer Moisture Titrator

Both MKA-610 for volumetric moisture titration and MKC-610 for coulometry are the solutions to worldwide users' need for reliability and precision in measurement of water content. These two models are the results of KEM's many years' experience and know-how in developing advanced technology, and they are highly valued in measurements as conforming to such an international standard as ISO, ASTM, EP or USP.

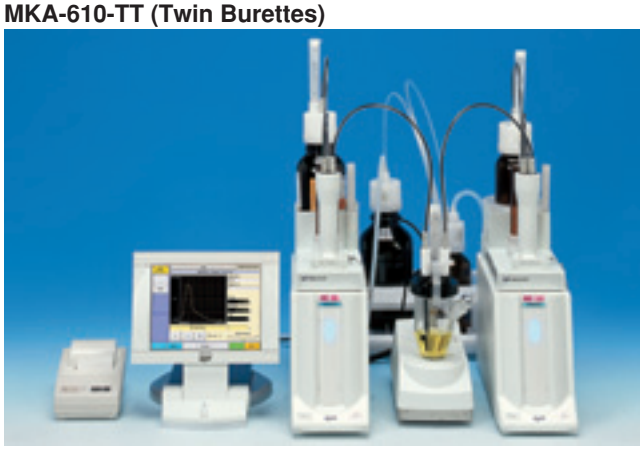
Coulometry, Volumetry and Evaporator

Option : IDP-100 Impact dot printer

Features

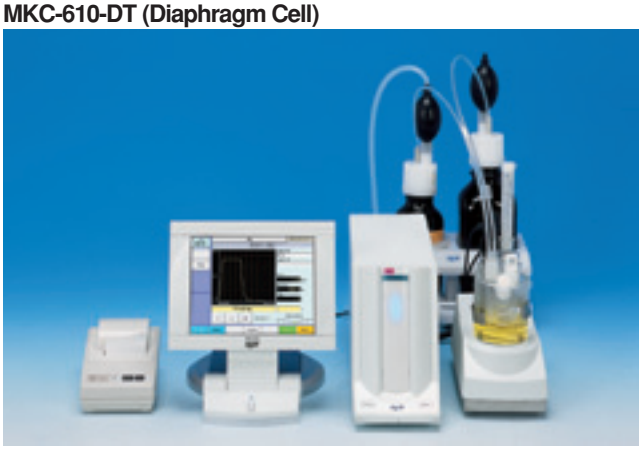
- **The large color LCD (8-inch wide) provides easy operations and better view of screen.**
- **Direct operations and maneuverability is now made possible with Touch screen LCD.**
- **Simultaneous two titrations can be controlled individually.**
- **Built-in Compact Flash (CF) card slot for an additional user interface.**
- **Operating unit and measuring unit can be separated**
  The detachable measuring unit is convenient and useful for those samples requiring separation from operating unit.
- **Real time display of titration curve**
  User can view the on-going titrations on display screen in real time.
- **Dispenser is now a standard equipment**
  The reagent dispenser eliminates troublesome replacement of Karl Fischer reagent.
- **GLP/GMP conformance**
  Check results on the titration unit with standard substances are recorded, which are self-filed in a series for review, and the advance notice automatically appears on display to prompt periodic check and reagent replacement on schedule.
- **Measuring time is shortened by accelerated electrolysis (1.3 times faster than our previous models)**
  Pre-titration and sample measurement time are now shortened 1.3 times faster by accelerated electrolysis.(MKC-610 only)
- **No necessity of changing the electrode sensitivity and endpoint potential**
  KEM's patented unique technology of end point detection by compensating liquid resistance eliminates the necessity of adjusting the electrode sensitivity and end point potential level to the individual solvent or sample type.(MKA-610 only)
- **Oven temperature can be easily set by scan mode for optimum evaporating temperature.**
  (ADP-611 only)

MKA-610-TT (Twin Burettes)



Option : Printer IDP-100

MKC-610-DT (Diaphragm Cell)



Option : Printer IDP-100

Specifications

Item	Technical Data	
Type and model name	Karl Fischer Moisture Titrator MKA-610	
	MKA-610-ST	MKA-610-TT
Measuring method	Karl Fischer volumetric titration	
Range	1) Titration volume: 0.005 ~ 99.995mL 2) Water content: 0.1 ~ 500mgH_2O (subject to KF reagent factor) 3) Water concentration: 10ppm ~ 100%H_2O	
Burette	Single burette	Twin burettes
Burette precision	1) Capacity: 10mL burette 2) Discharge precision: ±0.015mL 3) Repeatability: ±0.005mL	
EP detection method	Polarized potential level detection with twin platinum electrode	
EP sense method	EP is determined when preset polarized potential elapses wait time. Wait time range: 1 ~ 99 sec	
Titration form	Regular titration	Regular/Back/Auto factor calibration with water and methanol
Key entry	Direct input with keys on the touch screen Cable between the panel and titration unit can be extended.	
Display	1) 8-inch (163.2x122.4mm) 256-color Liquid Crystal Display with 800 x 600 dots 2) Language: English or Japanese 3) Real-time display of titration and evaporation curve	
Calculation	Water concentration, Statistics (Mean, SD and RSD), Auto averaging, Blank level and Factor value	
Other features	1) Stirrer with auto reagent dispenser as standard equipment 2) Auto drift cancellation with potential stat to maintain EP level 3) Auto titration start by sensing sample discharge into the flask 4) Up to 10 storage of blank values and factor values	
GLP conformance	Check with standards: Notice of check date and record of check results Reagent factor calibration: Prior notice of date for calibration and reagent change and record of calibration results Operator registration: Up to 50 operators can be registered.	
Required solvent	30 ~ 100mL (for S-shape flask)	
External I/O	1) COM port (Mini-DIN) x 2 channels for Printer and Balance 2) LAN port (RJ45) x 1 channel for Personal Computer	
Ambient condition	Temperature: 5 ~ 35˚C, Humidity: Under 85 %RH	
Power source	AC 100~120V / 200~240V, 50 / 60Hz	
Power consumption	1) Touch-screen control unit : 20W 2) Measuring unit and stirrer : 60W	
Dimension	1) Touch-screen control unit: 230W x 280D x 255H [mm] 2) Measuring unit: 120W x 363D x 610H [mm] 3) Stirrer: 118W x 225D x 320H [mm] 4) Solvent change unit: 240W x 170D x 280H [mm] 5) Power burette: 120W x 363D x 610H [mm]	
Standard components and parts	Volumetric Karl Fischer measuring unit (1 unit) Solvent change unit (1 set) Touch screen main control unit (1 unit) Magnetic stirrer (1 set) S-shape flask (1 piece) Twin platinum electrode M714 (1 piece) Operation manual (1 copy) Others	

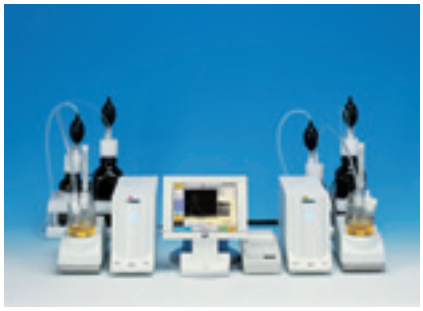
Item	Technical Data	
Type and model name	Karl Fischer Moisture Titrator MKC-610	
	MKC-610-DT	MKC-610-NT
Measuring method	Karl Fischer coulometric titration	
Range	Water content: 10µg ~ 100mg	
Measuring cell	Two-component cell	One-component cell
Precision	1) Under 0.3% (n=10) of RSD for water-methanol 1mg H_2O 2) Display resolution: 0.1µg	
Control method	Constant-current pulse time control	
EP detection method	Polarized alternate current with twin platinum electrode	
EP sense method	EP is determined by sensing drift stability (selective) or titration limit time setup	
Titration speed	Max. 2.5mg/min	Max. 2mg/min
Key entry	Direct input with keys on the touch screen Cable between the panel and titration unit can be extended.	
Display	1) 8-inch (163.2x122.4 mm) 256-color Liquid Crystal Display with 800 x 600 dots 2) Language: English or Japanese 3) Real-time display of titration and evaporation curve	
Calculation	Water concentration, Statistics (Mean, SD and RSD), Auto averaging, Blank level and Factor value	
Other features	1) Manual reagent dispenser as standard equipment 2) Auto drift adjustment 3) Auto titration start by sensing sample discharge into the flask 4) Up to 10 storage of blank values	
GLP conformance	Check with standards: Notice of check date and record of check results Reagent life control: Prior notice of reagent shelf life and date for reagent replacement Operator registration: Up to 50 operators can be registered.	
Required reagents	Anolyte: 100mL Catholyte: 5mL	Anolyte: 150mL
External I/O	1) COM port (Mini-DIN) x 2 channels for Printer and Balance 2) LAN port (RJ45) x 1 channel for Personal Computer	
Ambient condition	Temperature: 5 ~ 35 ˚C, Humidity: Under 85 %RH	
Power source	AC 100~120V / 200~240V, 50 / 60Hz	
Power consumption	1) Touch-screen control unit : 20W 2) Measuring unit and stirrer : 60W	
Dimension	1) Touch-screen control unit: 230W x 280D x 255H [mm] 2) Measuring unit: 120W x 363D x 200H [mm] 3) Stirrer: 118W x 225D x 332H [mm] 4) Solvent change unit: 240 W x 170D x 405H [mm]	
Standard components and parts	Coulometric Karl Fischer measuring unit (1 unit) Manual solvent exchanger (1 set) Touch screen main control unit (1 unit) Magnetic stirrer (1 set) Titration flask (1 piece) Inner burette (1 piece) Twin platinum electrode M713 (1 piece) Operation manual (1 copy) Others	

Examples of Karl Fischer titration system

Coulometry and Volumetry
MKC-610-DT + MKA-610-T/2nd

Option : Printer IDP-100

Two Coulometric Titrators
MKC-610-NT + MKC-610-D/2nd



Option : Printer IDP-100

Two Volumetric Titrators
MKA-610-TT + MKA-610-T/2nd

Option : Printer IDP-100

Option

Evaporator ADP-611

Features:

- The sample boat maneuvers within the heating unit by magnetic control, eliminating hygroscopic permeation, thus allowing an operator to make reliable measurements of trace water.
- Automatic blank heating of sample boat shortens measurement intervals.
- Oven temperature can be easily set by scan mode for optimum evaporating temperature.
- Measurement conditions can be conveniently set on the titrator side.
- Simple structure of the heating tube facilitates cleaning of it.

Specification:

Model name	Evaporator ADP-611
Heating system	Electrically-conductive transparent heating glass
Heating range	50 ~ 300˚C
Temperature control	Range: 50 ~ 300˚C (Minimum settable interval: 1˚C) Temperature measurement: K-thermocouple (Precision: ±2˚C)
Display (Temp. / Flow)	3-digit digital display with LED's on temperature and flow rate
Heating tube	Pyrex® glass tube: ϕ30 (O.D.) x 335L [mm]
Sample boat	Pyrex® glass boat: 68 L x 25 W x 15 H [mm]; Capacity: 16mL
Carrier gas	Nitrogen gas: Not included in supplied parts Air: Built-in air pump (Optional)
Drying method on gas	Zeolite tube (100g x 2 units)
Gas flow rate	70 ~ 300 mL/min.
External I/O	Communication with KF titrator via RS-232C port (Mini DIN 9-pin)
Power source	AC 100~120V or AC 200~230V, 50/60 Hz
Power consumption	150W (Max. 700W)
Dimension	312 W x 195 D x 217 H [mm]
Weight	Approx. 7kg

KYOTO ELECTRONICS
MANUFACTURING CO., LTD.

Overseas Division : 8-3 Niban-cho Chiyoda-ku TOKYO 102-0084, JAPAN
Fax : +81-3-3237-0537, Phone : +81-3-3239-7333
URL : http://www.kyoto-kem.com

ISO 9001 for quality assurance
CE marked for product safety
GLP/GMP conformed
ISO 14001 environmental management systems

Distributed by

42TD53A