



Karl Fischer Moisture Titrator [Volumetric titration]

**MKV-710 SERIES**

Karl Fischer Moisture Titrator [Coulometric titration]

**MKC-710 SERIES**



MKV-710M

Option: Additional Burette KF (10mL)

MKC-710M

**KYOTO ELECTRONICS**  
MANUFACTURING CO.,LTD.

# SUMMARY



Option: Additional Burette KF (10mL)

## Flagship model

4-channel multi connection/ High extensibility

Karl Fischer Moisture Titrator [Volumetric titration]

# MKV-710M

## Midrange model

Smooth operation with touch panel

Karl Fischer Moisture Titrator [Volumetric titration]

# MKV-710S



Option: Additional Burette KF (10mL)

## Entry model

Simplify titration

Karl Fischer Moisture Titrator [Volumetric titration]

# MKV-710B



Standard: MS-710VP Magnetic Stirrer /  
Automatic Solvent Change Unit

## Flagship model

4-channel multi connection/ High extensibility

Karl Fischer Moisture Titrator [Coulometric titration]

# MKC-710M

## Midrange model

Smooth operation with touch panel

Karl Fischer Moisture Titrator [Coulometric titration]

# MKC-710S

## Entry model

Simplify titration

Karl Fischer Moisture Titrator [Coulometric titration]

# MKC-710B



Standard: MS-710C Magnetic Stirrer/  
Manual Solvent Change Unit

# FEATURE

## Wireless connection between operation unit, touch panel, and titration unit/ Simultaneous measurement with up to 4 titration units

MKV-710M MKC-710M

By the use of wireless adapters (Bluetooth®, Commercialized product), the operation unit and the titration unit can be used together without being connected to each other with a cable. You can carry out titration of a sample, which emits poisonous gas, safely by keeping the titration unit inside a draft chamber while keeping the operation unit outside of it. You may place the operation unit on the opposite side of aisle or hold it with your hand by connecting a battery (Commercialized product) to it for operation. Attaching a monitor arm to the main control unit allows for flexibility of its mounting position. (The arm mount of the display is compliant with VESA standard 75mm x 75mm.)



MKV-710 [Volumetric titration]

MKC-710 [Coulometric titration]

### New-type burette unit

MKV-710M MKV-710S MKV-710B

The burette unit has the switching valve on top of the cylinder. The structure reduces dead space in the tube between the cylinder and the switching valve. In addition to the reduction of dead space in the cylinder, the structure reduces amount of residual titrant to ease replacement of titrant.

Option : Reagent Bottle



### Maximum electrolysis speed 2.6mgH<sub>2</sub>O/min

MKC-710M MKC-710S

Our unique technology enables maximum electrolysis speed of 2.6mgH<sub>2</sub>O/min. It reduces pre-titration time and measurement time.



# OPTION

## Evaporator ADP-611



This unit vaporizes water content of solid samples, which is unable to be put directly into the titration cell, by heating them. The vaporized moisture is bubbled into the titration cell to be measured.

## Multiple Sample Changer CHK-501



This unit is an evaporator for continuous measurement of multi samples (24 samples). Heating temperature can be set for each sample, thus, different kinds of sample are able to be set at once. (NON-CE)

## Evaporator for Oil Sample ADP-513



This unit is used to measure water content of lubricant oil, grease, tar products, paints and other viscous liquids. (NON-CE)

## Evaporator for Ores ADP-512



This unit vaporizes adherent water and combined water of iron ores, manganese ores, clay, and other inorganic compounds by heating them. (NON-CE)

## Heat Extractor for Sugar Samples ADP-344



This unit extracts water content of a sample in the dehydration solvent by heating the titration cell of Volumetric Karl Fischer Moisture Titrator. This unit is used to measure the water content of chocolates, caramels and other sugar samples. (NON-CE)

## Evaporator for High Temperature ADP-512S



This unit has heating capacity up to 1000°C and is used to measure combined water, etc. (NON-CE)

# SPECIFICATION

**MKV-710** [Volumetric titration]  
[Automatic Solvent Change Unit]

Specification	Contents		
Type	Karl Fischer Moisture Titrator		
Model	MKV-710M	MKV-710S	MKV-710B
Product configuration	MCU-710M+MKV-710+IDP-100+ Automatic Solvent Change Unit	MCU-710S+MKV-710+IDP-100+ Automatic Solvent Change Unit	MKV-710+IDP-100+Automatic Solvent Change Unit
Measuring method	Karl Fischer Volumetric titration		
Measuring range	1) Water content : 0.1 to 500mgH <sub>2</sub> O (depends on KF reagent factor) 2) Concentration : 10ppm to 100% <sub>2</sub> H <sub>2</sub> O		
Burette precision	Volume : 10mL burette Discharge precision : ±0.015mL Repeatability : ±0.005mL		
Endpoint detection	By polarized potential level detected with a twin platinum electrode		
EP sense method	Detection of potential level maintained during preset end time End time range : 1 to 99s		
Titration form	Normal titration / Back titration (Option additional burette required)		
Required solvent	30 to 100mL (in S-type titration vessel)		
Method	120	20	
Key operation	Touch panel		Sheet key
Displays	1) 8.4-inch color LCD 800 × 600 dots		1) White LED-backlit LCD
	2) English / Japanese / Mandarin Chinese / Korean / Russian / Spanish / German / French		2) English / Japanese / Mandarin Chinese / Korean / Russian / Spanish
	3) Simultaneous 4-channel display (Can also display Automatic Potentiometric Titrator simultaneously)	3) 1-channel display	3) 1-channel display
Calculation	Concentration of water content, statistics data processing (mean, SD and RSD) and automatic averaging of blank value and factor value		
Data storage	500 samples		100 samples
GLP conformance	Registration of operator / User group administration Titrant: Reminder of factor measurement date / Alarm to indicate remaining reagent / Reminder of piston replacement date / Reminder of reagent replacement date / History of factor measurement Check performance: Reminder of scheduled check date / Record of check results Management of conduction time : Display of operating time		Registration of operator / Record of check results / Record of factor measurement / Management of conduction time
External I/O	RS-232C port × 4 for Dot matrix printer, Electronic balance, Data Capture Software (SOFT-CAP), Evaporator		RS-232C port × 2 for Dot matrix printer, Electronic balance, Data Capture Software (SOFT-CAP)
	USB × 1 for USB flash drive, Thermal printer, A4 printer, Keyboard, Barcode reader, Foot switch, USB HUB		USB × 1 for USB flash drive, Thermal printer, Keyboard, Barcode reader, Foot switch, USB HUB, Android device
	SS-BUS × 1 : for APB		
	LAN × 1 : for Personal computer (PC)		
Extensibility	Measuring instrument : Automatic Potentiometric Titrator (AT-710), Karl Fischer Moisture Titrator (MKV-710/MKC-710); Three of these instruments can be added.		
	Automatic piston burette : Can control max 2 burette drives (Including two built-in burette drives) Evaporator ADP-611		
Ambient condition	1) Temperature : 5 to 35°C 2) Humidity : 85%RH or below (no condensation)		
Power source	AC100 - 240V ±10% 50/60 Hz		
Power consumption	Main unit : Approx. 30W Printer : Approx. 7W	Main unit : Approx. 20W Printer : Approx. 7W	
Dimensions	Touch panel controller : 225(W) × 190(D) × 42(H) mm		
	Titration unit : 141(W) × 292(D) × 367(H) mm (not incl. tubing)		
	Stirrer : 107(W) × 206(D) × 322(H) mm (not incl. Solvent Change unit)		
	Solvent Change Unit : 240(W) × 140(D) × 400(H) mm (not incl. tubing)		
	Printer : 106(W) × 180(D) × 88(H) mm		
Weight	Touch panel controller : Approx.1.5kg		
	Titration unit : Approx.4.0kg		
	Stirrer : Approx.2.0kg		
	Solvent Change Unit : Approx.0.6kg		
	Printer : Approx.0.4kg		
Conformity standard	CE marking EMC : EN61326-1 LVD: EN61010-1 RE Directive Burette unit EBU FCC Part15 SubpartC FCC ID: 2ABSVBU01		

# SPECIFICATION

## MKC-710 [Coulometric titration]

Specification	Contents		
Type	Karl Fischer Moisture Titrator		
Model	MKC-710M	MKC-710S	MKC-710B
Product configuration	MCU-710M+MKC-710+IDP-100+Manual Solvent Change Unit	MCU-710S+MKC-710+IDP-100+Manual Solvent Change Unit	MKC-710+IDP-100+Manual Solvent Change Unit
Measuring method	Karl Fischer Coulometric titration		
Measuring range	Water content / Bromine index : 10ug to 300mg (depends on reagent)		
Measurement cell	2-Component or 1-Component		
Precision	Relative standard deviation : less than 0.3% (n=10) *Per KEM standard measurement conditions and standard liquids		
Display resolution	0.1ug		
Control method	Constant current pulse time control		
Endpoint detection	Alternate current polarization method with a twin platinum electrode		
EP sense method	Selective drift stability or limit measurement time		
Required solvent	Anolyte 100mL (max 150mL) Catholyte 5mL		
Method	120	20	
Key operation	Touch panel		Sheet key
Displays	1) 8.4-inch color LCD 800 × 600 dots		1) White LED-backlit LCD
	2) English / Japanese / Mandarin Chinese / Korean / Russian / Spanish / German / French		2) English / Japanese / Mandarin Chinese / Korean / Russian / Spanish
	3) Simultaneous 4-channel display (Can also display Automatic Potentiometric Titrator simultaneously)	3) 1-channel display	3) 1-channel display
Calculation	Concentration of water content, statistics data processing (mean, SD and RSD) and automatic averaging of blank value		
Data storage	500 samples		100 samples
GLP conformance	Registration of operator / User group administration Check performance with standard substance: Reminder of scheduled check date / Record of check results Reagent life control: Reminder of expiration / Reminder of reagent replacement date Management of conduction time : Display of operating time		Registration of operator / Check performance with standard substance / Reagent life control / Management of conduction time
External I/O	RS-232C port × 4 for Dot matrix printer, Electronic balance, Data Capture Software (SOFT-CAP), Evaporator, Multiple sample changer		RS-232C port × 2 for Dot matrix printer, Electronic balance, Data Capture Software (SOFT-CAP)
	USB × 1 for USB flash drive, Thermal printer, A4 printer, Keyboard, Barcode reader, Foot switch, USB HUB		USB × 1 for USB flash drive, Thermal printer, Keyboard, Barcode reader, Foot switch, USB HUB, Android device
	LAN × 1 : for Personal computer (PC)		
Extensibility	Measuring instrument : Automatic Potentiometric Titrator (AT-710), Karl Fischer Moisture Titrator (MKV-710/MKC-710); Three of these instruments can be added.		
	Evaporator : ADP-611		
	Multiple sample changer : CHK-501		
Ambient condition	1) Temperature : 5 to 35°C 2) Humidity : 85%RH or below (no condensation)		
Power source	AC100 - 240V ±10% 50/60 Hz		
Power consumption	Main unit : Approx. 30W Printer : Approx. 7W	Main unit : Approx. 20W Printer: : Approx. 7W	
Dimensions	Touch panel controller : 225(W) × 190(D) × 42(H) mm		
	Titration unit : 141(W) × 292(D) × 244(H) mm		
	Stirrer : 107(W) × 206(D) × 340(H) mm (not incl. Solvent Change unit)		
	Solvent Change Unit : 240(W) × 140(D) × 405(H) mm (not incl. tubing)		
	Printer : 106(W) × 180(D) × 88(H) mm		
Weight	Touch panel controller : Approx.1.5kg		
	Titration unit : Approx.3.0kg		
	Stirrer : Approx.2.0kg		
	Solvent Change Unit : Approx.0.6kg		
	Printer : Approx.0.4kg		
Conformity standard	CE marking : EMC : EN61326-1 LVD: EN61010-1		