ARTISAN®
TECHNOLOGY GROUP

Your **definitive** source for quality pre-owned equipment.

Artisan Technology Group
(217) 352-9330 | sales@artisantg.com | artisantg.com

Full-service, independent repair center
with experienced engineers and technicians on staff.

We buy your excess, underutilized, and idle equipment
along with credit for buybacks and trade-ins.

Custom engineering
so your equipment works exactly as you specify.

- Critical and expedited services
- In stock / Ready-to-ship
- Leasing / Rentals / Demos
- ITAR-certified secure asset solutions

Expert team | Trust guarantee | 100% satisfaction

All trademarks, brand names, and brands appearing herein are the property of their respective owners.

Find the *Noritake Itron CU20045SCPB-T23J* at our website: *Click HERE*

MITSUBISHI CHEMICAL

2-Channel Simultaneous Moisture Measurement
Mitsubishi Karl Fischer Moisture Meter

Model CA-100/KF-100



Moisture Meter Model CA-100 & CH-2 Coulometric
with the optional Water Vaporizer Model VA-100

ISO 9002 JQA-0764

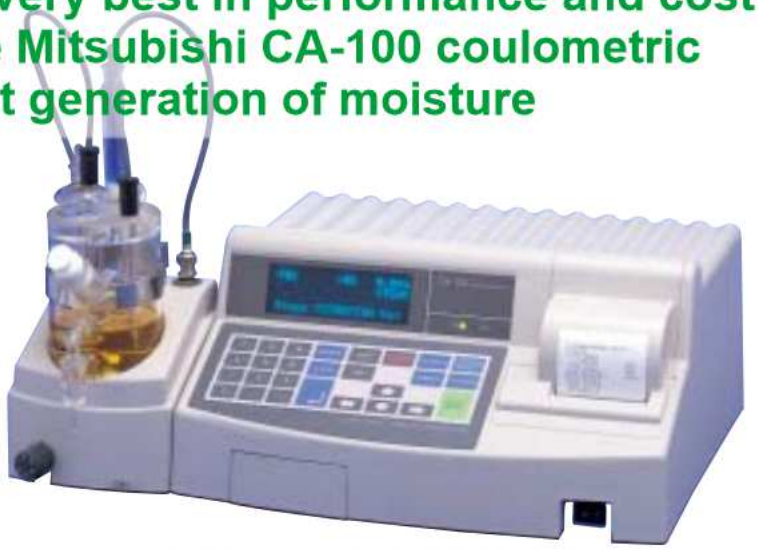
CE

URL : http://www.dins.co.jp
: http://www.mcckf.co.jp

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

Coulometric Moisture Meter Model CA-100

By providing you with the very best in performance and cost effective expandability, the Mitsubishi CA-100 coulometric system represents the next generation of moisture determination systems



Coulometric Moisture Meter Model CA-100

For over 30 years, Mitsubishi Chemical Corporation has been a leader in utilizing Coulometric Karl Fischer technology. The Model CA-100 performs moisture determination on liquid, solid and gasous samples.

The ultimate in power, performance and flexibility.

Up to two titration cells, coulometric and/or volumetric, can be installed and run simultaneously, giving you cost effective flexibility with no compromise in performance.

NEW

Type 1

Coulometric Moisture Meter Model CA-100
CH-1 Coulometric

Basic Model



Type 2

Coulometric Moisture Meter Model CA-100
& CH-2 (Coulometric)
CH-1 Coulometric CH-2 Coulometric

2-Channel Model



Type 3

Coulometric Moisture Meter Model CA-100
& CH-2 (Single-Volumetric)
CH-1 Coulometric CH-2 Single-Volumetric

2-Channel Model



Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

Address the issue of different sample types

The extensive range of vaporizers and accessories for the CA-100/KF-100 enables you to determine moisture content of a wide range of samples.

Model	Typical Applications
VA-100	General Use (Plastics, Rubbers, Foods etc...)
VA-110	Oil (Lubricating Oils, Heavy Oils etc...)
VA-21	High Temperature (Ore, Clay, etc...)
VA-124S	Solids:Automatic Sample Analysis (24 Samples)

Method development is easy. Offers VA Ramp Heating (Stepped Temperature Control Program), an ideal feature to optimize the temperature condition when measuring unknown samples.

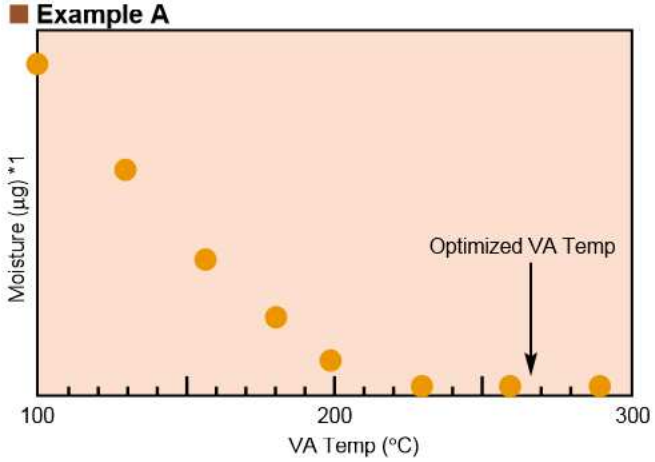
NEW

When using a vaporizer, you can use the stepped temperature control program to optimise conditions for unknown samples. This new automated method development feature gives you the answers you need in the minimum of time.

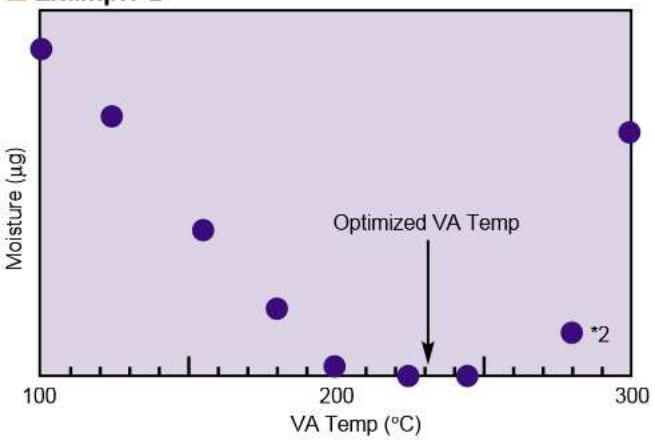
VA Ramp Heating

Two examples for the optimization of oven temperature using the VA ramp heating feature.

■ Example A



■ Example B



*1 Shows moisture amount generated at each temperature.
*2 Probably due to moisture generated by thermal decomposition (sugars, etc.), or ammonia gas (reacting with iodine).
*3 Water Vaporizers using the VA Ramp Heating feature are the Model VA-100, the Model VA-110, and the Model VA-124S.

Karl Fischer Reagents

Coulometric Reagents

There are two types of coulometric reagents: the anolyte (generating solution), which is placed in the anode chamber of the electrolysis cell, and the catholyte (counter-electrolyte), which is placed in the cathode chamber. These coulometric reagents can be used in coulometric moisture measurement systems sold by various companies, and they have gained a worldwide reputation for excellent performance. In addition to reagents for general moisture measurement, there are also special types for use with ketones, lower carboxylic acids and silicone oils. The AQUAMICRON® series catholyte CXU can be used for both.

AQUAMICRON® Series

Grade	Product Name	Package	Use
For General use	AQAMICRON® AX	500㎖ glass bottle	Organic solvents, inorganic chemicals, petroleum products, various kinds of gases, etc.
	AQAMICRON® CXU	5㎖ ampule, 10 ampules/case	
For Ketones	AQUAMICRON® AKX	500㎖ glass bottle	Ketones, silicone oils, lower carboxylic acids, etc.
	AQUAMICRON® CXU	5㎖ ampule, 10 ampules/case	

When using AQUAMICRON® AX in a water vaporization system, replenish the vaporized amount with methanol.

Single type	AQUAMICRON® FLS*①	500㎖ glass bottle	Organic solvents

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

Coulometric Moisture Meter Model CA-100 Data Capture Version

The Model CA-100 Data Capture Version now comes pre-installed with data capture software.

Provided with KF mode

Allows the user to work in the KF-100 or 2nd channel KF mode.

Dual-Channel Operation

NEW

Installation of the CA8CDB/CA8CDC and an additional computer I/F board for PC connection (CA8KB3) in the CH-2 port of the CA-100 enables the data capture & control software to operate with dual channel models. A separate 9-pin RS-232C cable for PC connection (available from a local distributor) is required for dual channel operation.

Method File Storage & Loading

Store different methods in your computer and load them into the CA-100 when needed.
Method files can also be transferred to the computer from the CA-100.

Plot Moisture Quantities in Real Time

Another unique feature is real time plotting of moisture quantities on a graphic display.

Remote Access

The user can switch the titration on and off remotely by connecting the CA-100 (Data Capture Version) with a computer.

Calibration Mode

Allows the user to set the tolerance range the calibration sample must fall within. Results exceeding the upper or lower limits of the tolerance range will be automatically indicated as a calibration fail.



* Monitor is not included in the Model CA-100 (Data Capture Version).
* Coulometric Moisture Meter Model CA-100 (Data Capture Version) includes
  - •RS-232C P.C.B. for CA-100 . 1 PC
  - •RS-232C Cable : 1 PC
  - •Data Capture & Control Software (Windows®95/98/NT4.0 English based) . 1 set

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

Easy viewing of system status

NEW

The bright, easy-to-see 20 digit, 4-line fluorescent display gives you easy access to the information you need.

Ideal for both routine use and method development

Not only does the CA-100 meet the highest performance criteria it also sets new standards for ease-of-use.
If you are performing routine analysis then 'Simple mode' is ideal as it displays the information you really need and no more. If you are developing a method, you may need more flexibility. Selecting 'Multiple mode' gives you access to every parameter

Bromine Number and Bromine Index measurements come as standard features. (CA and KF modes)

NEW

Single reagent KF titration.

NEW

Single reagent KF determinations are achieved using the optional fritless cathode solution cell.*

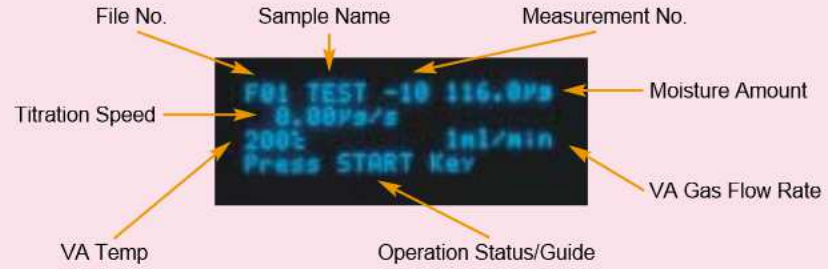
* Dependent upon sample type.



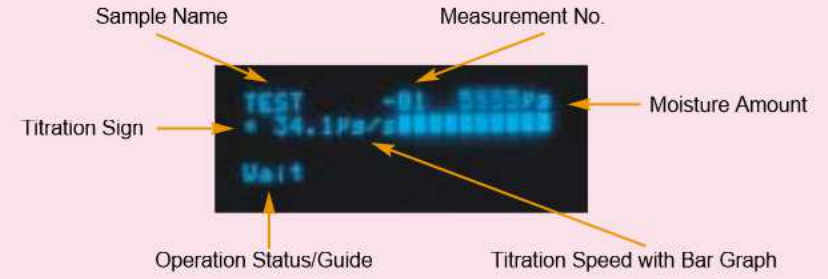
Fritless cathode solution cell (CAM25FS)

Fluorescent Display

Multiple-Mode



Simple-Mode



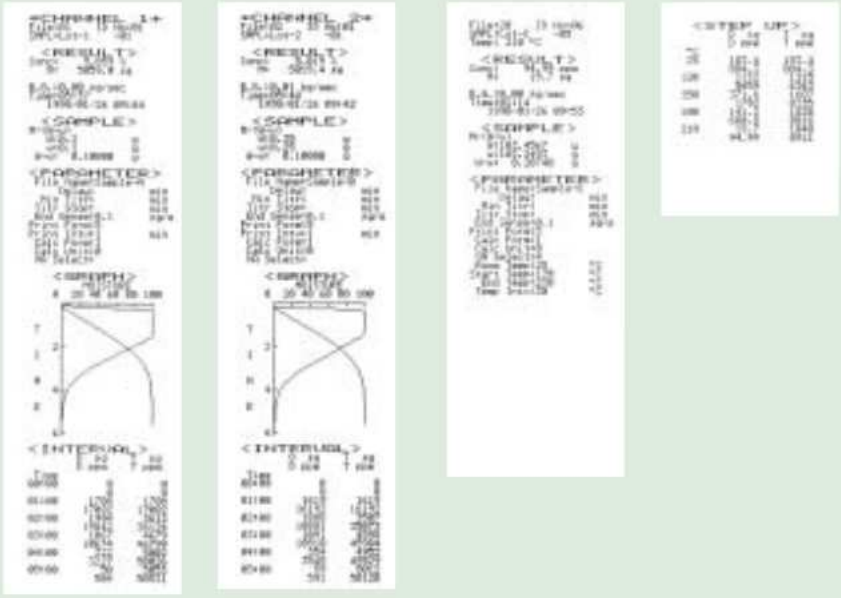
Data Print

2-Channel

CH-1 Coulometric
CH-2 Coulometric
Print results for the 2-channel simultaneous measurements.

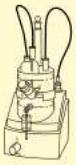
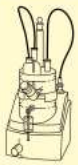
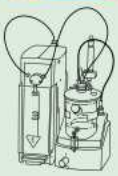
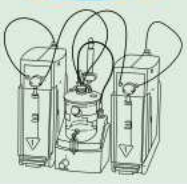
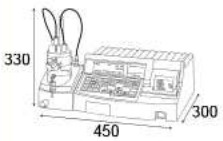
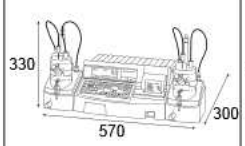
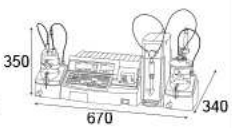
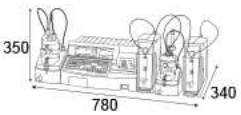
VA Ramp Heating

Print results for the VA Ramp Heating.



Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

Model CA-100 Quick Chart

Type	Coulometric Moisture Meter Model CA-100				
	Basic Model	Data Capture Version	2-Channel Model	2-Channel Model	2-Channel Model
P/N	CA08B(120V) CA08C(220/240V)	CA8CDB(120V) CA8CDC(220/240V)	CA8CCB(120V) CA8CCC(220/240V)	CA8CKB(120V) CA8CKC(220/240V)	CA8CLB(120V) CA8CLC(220/240V)
Model	Coulometric Moisture Meter Model CA-100	Coulometric Moisture Meter Model CA-100 (Data Capture Version)	Coulometric Moisture Meter Model CA-100 & CH-2 (Coulometric)	Coulometric Moisture Meter Model CA-100 & CH-2 (Single-Volumetric)	Coulometric Moisture Meter Model CA-100 & CH-2 (Double-Volumetric)
Channel-1 (CH-1)	Coulometric 	Coulometric 	Coulometric 	Coulometric 	Coulometric 
Channel-2 (CH-2)	———	———	Coulometric 	Single-Volumetric 	Double-Volumetric 
Data Capture Software	———	○ (CH-1)	———	———	———
RS232C I/F P.C.B.	———	○ (CH-1)	———	———	———
RS-232C Cable	———	○ (CH-1)	———	———	———
Dimensions (mm)					
Weight (kg)	Approx. 7.3 kg	Approx. 7.4 kg	Approx. 8.4 kg	Approx. 11.8 kg	Approx. 15.2 kg

*1 The Automatic Burette can be connected up to 2 units. (Maximum numbers connectable to the Model CA-100.)
*2 Recommended moisture range using the coulometric method is 10 µg–100 mg H_2O.

Volumetric Moisture Meter Model KF-100

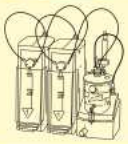
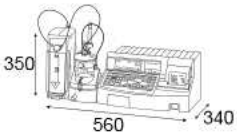
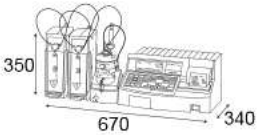
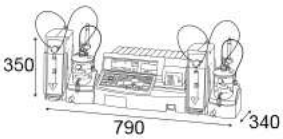
High Accuracy-Volumetric Moisture Meter Utilizing the Syringe Type Burette



Volumetric Moisture Meter Model KF-100

Introducing the Volumetric moisture meter, the Model KF-100. Representing Mitsubishi Chemical Corporations' over 30 years' experience in moisture determination, this new syringe burette system delivers high accuracy and performance.
Furthermore, new standards of flexibility and throughput can be achieved using the 2-channel simultaneous moisture determination options.

Model KF-100 Quick Chart

Type	Volumetric Moisture Meter Model KF-100		
	Basic Model	Double-Burette	2-Channel Model
P/N	KF08B(120V) KF08C(220/240V)	KF8LB(120V) KF8LC(220/240V)	CA8KKB(120V) CA8KKC(220/240V)
Model	Volumetric Moisture Meter Model KF-100	Volumetric Moisture Meter Model KF-100 (Double-Volumetric)	Volumetric Moisture Meter Model KF-100 & CH-2 (Volumetric)
Channel-1 (CH-1)	Single-Volumetric 	Double-Volumetric 	Single-Volumetric 
Channel-2 (CH-2)	———	———	Single-Volumetric 
Dimensions (mm) Weight (kg)	 Approx. 10.7 kg	 Approx. 14.1 kg	 Approx. 15.2 kg

* Maximum 2 sets (Automatic Burette) can be connected to the Model KF-100.
* Recommended moisture range using the volumetric method is 0.1–999 mg H_2O

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

OPTIONS

A full range of options are provided to handle various samples.

Water Vaporizer (For Solid Samples)

The Water Vaporizer is used on solid samples that are difficult to dissolve in solvent or contain ingredients that interfere with the Karl Fischer reaction. The sample is heated in the vaporizer to the optimum temperature and dry gas carries the released moisture to the titration cell.

Water Vaporizer Model VA-100
(For general use)

VA Ramp Heating



Uses
- Various types of plastics.
- Flakes and rubbers.
- Foods, pesticides and fertilizers.
- Cosmetics and medicines.
- Other typical solid and powdered samples.

Specifications

Heating Temperature	70 - 300 °C (Ambient Temperature 25 °C)
Heater	Transparent Electro-conductive Glass, 150 W
Temperature Setting	3-digit setting, PID Control
Sample Size	Up to 10 g
Measuring Range	From 5 ppm (When the Model CA-100 is used.)
Gas Requirement	Nitrogen Gas (Water content must be less than or equal to 0.01%) (Pressure equal to or less than 200 kPa, 100 - 500 ml/min) Recommended Pressure : 80 - 120 kPa Recommended Gas Flow Rate : 250 ml/min
Gas Dryer	Desiccant Tube filled with Sicapent®
Boat Loader	Automatic Boat Loading
Ambient Temperature	5 - 40 °C
Ambient Humidity	85 % or less (Dewfall shall be avoided)
Power Supply	AC 100/120/220/240 V, 150 VA (from CA-100 or KF-100)
Dimensions	Approx. 400(W) x 230(D) x 170(H) mm
Weight	Approx. 3.5 kg

Water Vaporizer Model VA-110
(For oil)

VA Ramp Heating



Uses
- Lubricating oils with additives and greases.
- Amines, tar products and crude oils.
- Paints, adhesives and other viscous liquids.

Specifications

Heating Temperature	70 - 200 °C (Ambient Temperature 25 °C)
Heater	Transparent Electro-conductive Glass, 200 W
Temperature Setting	3-digit setting, PID Control
Sample Size	Up to 50 g
Measuring Range	From 5 ppm (When the Model CA-100 is used.)
Gas Requirement	Nitrogen Gas (Water content must be less than or equal to 0.01%) (Pressure equal to or less than 200 kPa, 100 - 400 ml/min) Recommended Pressure : 80 - 120 kPa Recommended Gas Flow Rate : 250 ml/min
Gas Dryer	Desiccant Tube filled with Sicapent®
Ambient Temperature	5 - 40 °C
Ambient Humidity	85 % or less (Dewfall shall be avoided)
Power Supply	AC 100/120/220/240V, 200 VA (from CA-100 or KF-100)
Dimensions	Approx. 120(W) x 230(D) x 310(H) mm
Weight	Approx. 3 kg

Water Vaporizer Model VA-21
(For high temperature)

Uses •Ore •Clay •Metallic Oxides

Specifications

Heating Temperature	50 - 1,000 °C (Ambient Temperature 25 °C)
Heater	Electric Furnace (Kanthal Wire), 800 W
Temperature Setting	Arbitrary setting, Proportional Control
Sample Size	Up to 10 g
Measuring Range	From 10 ppm (When the Model CA-100 is used.)
Gas Requirement	Nitrogen Gas (Water content must be less than or equal to 0.01%) (Pressure equal to or less than 200 kPa,100 - 500 ml/min) Recommended Pressure : 80 - 120 kPa Recommended Gas Flow Rate : 250 ml/min
Gas Dryer	Desiccant Tube filled with 2 x Sicapent® Desiccant Tube filled with 1 x Silica Gel
Ambient Temperature	5 - 40 °C
Ambient Humidity	85 % or less (Dewfall shall be avoided)
Power Supply	AC 100/120/220/240 V, 1,000 VA
Dimensions	Approx. 360(W) x 280(D) x 410(H) mm
Weight	Approx. 15.5 kg

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

Automatic Water Vaporizer Model VA-124S

VA Ramp Heating



Uses

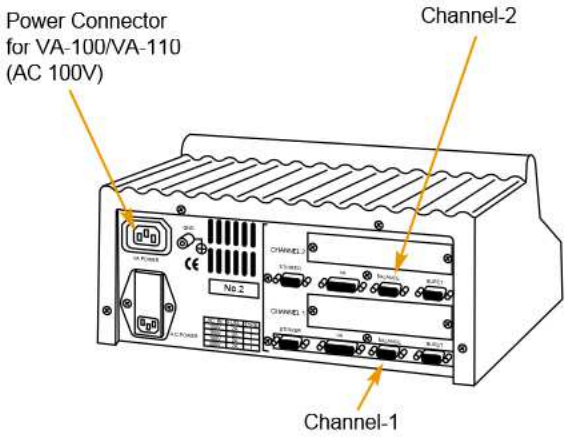
- Various types of plastics.
- Rubbers
- Food stuffs
- Medical products.

Specifications

Heating Temperature	Room Temp. – 300 °C (Ambient Temperature 25 °C)
Number of Samples	Up to 24 samples
Heater	Kanthal Ribbon Heater, 150 W
Temperature Control	PID Control
Sample Size	Up to 10 g
Measuring Range	From 30 ppm (When the Model CA-100 is used.)
Gas Requirement	Nitrogen Gas (Water content must be less than or equal to 0.01%) (Pressure equal to or less than 200 kPa, 300 - 500 ml/min) Recommended Pressure : 80 - 120 kPa Recommended Gas Flow Rate : 250 ml/min
Gas Dryer	Desiccant Tube filled with 2 x Sicapent®
Ambient Temperature	5 - 40 °C
Ambient Humidity	85 % or less (Dewfall shall be avoided)
Power Supply	AC 100/120/220/240 V, 250 VA
Dimensions	Approx. 340(W) x 455(D) x 360(H) mm
Weight	Approx. 20 kg

VA Connection Guide

Channel-1 and Channel-2 each have a Water Vaporizer unit connector. Use the chart below to find the right Water Vaporizer unit (VA) combination to connect with Model CA-100/KF-100.



Channel	Connectable Vaporizers for Model CA-100/KF-100			
Channel-1 / Channel-2	VA-100	VA-100	VA-110	VA-110
Channel-2 / Channel-1	——	VA-124S	——	VA-124S

* Power is supplied to the VA-100 or VA-110 from the CA-100 or KF-100, so two units cannot be operated simultaneously.

Reagent Changing System Model CA-7SD

Eliminate the hazards of reagent pouring and draining waste liquids with this easy-to-use system.



Data Capture & Control Software Package

You can use a computer for instrument control and data collection with the Windows®95/98/NT4.0 English based data capture & control software package.



Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

Standard Specifications

Model	Coulometric Moisture Meter Model CA-100
Detection Method	Constant Current Polarization Detection
Titration Control	Pulse Electrolytic Current Control
Electrolysis Current	Max. 400 mA
Titration Speed	Max. 2.1 mg H_2O/min
Background Compensation	Automatic Correction, Full-time Display (µg H_2O/sec)
Measuring Range	10 µg~100 mg H_2O
Sensitivity	0.1 µg H_2O
Precision	±3 µg for 10 µg~1 mg H_2O RSD 0.3 % or less for 1 mg H_2O or more
Display	Fluorescent Display (4 lines, 20-digit)
File	20 Files 50 Multiple-files
Data	Latest 100 data usually stored
Additional Functions	2-Channel Simultaneous Measurement Simple Mode & Multiple Mode *1 Bromine Index & Bromine Number Mode *2 VA Ramp Heating (Stepped Temperature Control Program) *3 Electric Balance Connection Computer Connection *4
Automatic Calendar	Display & Print (Year, Month, Day, Hour, Minute, Second)
Calculating Functions	Multiple Mode : 10 fixed formulas, 2 optional formulas 4 fixed units, 2 optional units Simple Mode . 1 fixed formula Bromine Mode : 10 fixed formulas, 2 optional formulas Statistical Calculation : Internal & External Concentration Recalculation
Printer	21-digit Dot Impact Printer (Printer Paper Width 58 mm)
Memory Backup	2 Months or More from Full Charge
Test Mode	All Memories Clear, All Files Clear, Date and Time Setting and Display, Electric Balance Connection Setting, Electric Balance I/F Test Computer I/F Setting, Computer I/F Test Validation (Display Test, Printer Test, Memory Test, Moisture Determination Test)
Ambient Temperature	5 - 40 °C
Ambient Humidity	85 % or less (Dewfall shall be avoided)
Power Supply	AC 100/120/220/240 V, 50/60 Hz, 40 VA
Dimensions	Main Unit . Approx. 320(W) x 300(D) x 163(H) mm Stirrer : Approx. 120(W) x 130(D) x 140(H) mm
Weight	Main Unit . Approx. 6.2 kg Stirrer : Approx. 1.1 kg

*1. Multiple Mode (Factory Setting)
*2. Avoid using the Titration Cell commonly for moisture measurement.
*3. Find the heat decomposition temperature of the sample prior to measuring it (such as by DSC, etc.) and then make sure not to heat the sample enough to exceed this heat decomposition temperature. Otherwise, the sample might even explode in worst cases.
*4. Requires the optional Computer I/F P.C.B.

Model	Volumetric Moisture Meter Model KF-100
Detection Method	Constant Current Polarization Detection
Titration Control	Electrolytic Potential Proportional Control
Measuring Range	0.1 mg~999 mg H_2O
Display	Fluorescent Display (4 lines, 20-digit)
File	20 Files 50 Multiple-files
Data	Latest 100 data usually stored
Additional Functions	2-Channel Simultaneous Measurement VA Ramp Heating (Stepped Temperature Control Program) *1 Electric Balance Connection Computer Connection *2
Automatic Calender	Display & Print (Year, Month, Day, Hour, Minute, Second)
Calculating Functions	Multiple Mode . 16 fixed formulas, 2 optional formulas *3 4 fixed units, 2 optional units Statistical Calculation : Internal & External Concentration Recalculation
Printer	21-digit Dot Impact Printer (Printer Paper Width 58 mm)
Automatic Burette	Type : Syringe Type Capacity . 10 ml (Standard), 25 ml (Option) Repeatability : ±0.01 ml
Memory Backup	2 Months or More from Full Charge
Test Mode	All Memories Clear, All Files Clear, Date and Time Setting and Display, Electric Balance Connection Setting, Electric Balance I/F Test Computer I/F Setting, Computer I/F Test Validation (Display Test, Printer Test, Memory Test, Moisture Determination Test)
Ambient Temperature	5 - 40 °C
Ambient Humidity	85 % or less (Dewfall shall be avoided)
Power Supply	AC 100/120/220/240 V, 50/60 Hz, 90 VA
Dimensions	Main Unit: Approx. 320(W) x 300(D) x 163(H) mm Automatic Burette: Approx. 108(W) x 340(D) x 275(H) mm Stirrer: Approx. 120(W) x 130(D) x 140(H) mm
Weight	Main Unit : Approx. 6.2 kg Automatic Burette : Approx. 3.4 kg Stirrer . Approx. 1.1 kg

*1. Find the heat decomposition temperature of the sample prior to measuring it (such as by DSC, etc.) and then make sure not to heat the sample enough to exceed this heat decomposition temperature.
Otherwise, the sample might even explode in worst cases.
*2. Requires the optional Computer I/F P.C.B.
*3. Simple Mode is not available for the Model KF-100.

* Company and product names contained herein are the trademarks or registered trademarks of the companies concerned.

Note:
Follow the instructions in the Manual to correctly install, connect and operate the instruments.
Content of the catalogue is subject to change without prior notice when improvements are made in the performance.
The actual colors of the machine may appear different from colors printed in the Catalogue.

MITSUBISHI CHEMICAL CORPORATION
Instruments Department
370 Enzo, Chigsaki-shi, Kanagawa, 253-0084, Japan
TEL : +81-467-86-3864 FAX : +81-467-86-3862
URL : http://www.dips.co.jp

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

Artisan Technology Group is an independent supplier of quality pre-owned equipment

Gold-standard solutions

Extend the life of your critical industrial, commercial, and military systems with our superior service and support.

We buy equipment

Planning to upgrade your current equipment? Have surplus equipment taking up shelf space? We'll give it a new home.

Learn more!

Visit us at **artisantg.com** for more info on price quotes, drivers, technical specifications, manuals, and documentation.

Artisan Scientific Corporation dba Artisan Technology Group is not an affiliate, representative, or authorized distributor for any manufacturer listed herein.

We're here to make your life easier. How can we help you today?

(217) 352-9330 | sales@artisantg.com | artisantg.com

ARTISAN® TECHNOLOGY GROUP