

Heat-Drying Moisture Analyzers

MS-74A(T)/MX-53A(T) MF-53A/ML-53A



Engineered for Accuracy. Designed for Usability.

AND
A&D Company, Ltd.

Discover Precision
www.aandd.jp

ABOUT A&D

Who We Are

At A&D Weighing, precision is our passion.

As part of A&D Company, Japan, we've spent over four decades shaping the future of measurement and control technology. Our mission is simple: to empower industries to measure what matters most with unmatched accuracy, reliability, and innovation.

From R&D labs to production floors, A&D solutions combine Japanese engineering excellence with global reach, delivering trusted performance and local support wherever you operate.

Our Heritage

Founded in 1977 by a team of visionary engineers, A&D was built on the fusion of Analog and Digital innovation. From our first electronic balances to today's advanced weighing modules, we've remained true to our roots: precision, reliability, and progress.

Today, A&D is a global network spanning Asia, Europe, and America. United by one purpose: to make precision accessible, scalable, and enduring.

Our Services

We do more than build instruments, we deliver complete weighing solutions.

From concept to calibration, our specialists provide:

- Expert integration into production systems
- On-site installation, service, and training
- Fast, reliable calibration and support

With A&D, you gain more than equipment, you gain a partner committed to your performance.

Touchscreen models: MS-74AT and MX-53AT

Designed for users who demand both precision and usability, these models feature a 5-inch color touch screen with intuitive navigation, real-time graphical feedback, and advanced support tools. The screen responds to pressure, allowing operation even with thick gloves.



Reverse backlit LCD models: MS-74A, MX-53A, MF-53A, and ML-53A

Designed for users who prioritize cost-efficiency and core functionality, these models offer reliable performance with a simplified interface and excellent display visibility. With four models offering different levels of readability, the lineup supports not only high-precision tasks but also applications where moderate accuracy is sufficient.



Touchscreen models: MS-74AT and MX-53AT



- Quick moisture analysis using simple measurement
- Thermal analysis mode
- Weighing mode
- Maintaining accuracy with checks and adjustments
 - Daily-check function
 - Test sample measurement
- Advanced user access control
- 300 measurement program memory capacity (M/A-T only)
- Plastic measurement guide – Step-by-step support for low-moisture samples
 - Sample mass calculation tool
 - Plastic drying temperature search (PITemp)
 - Automatic determination of drying time in Timer mode
- Five measurement guide tools to support setup and accuracy
 - Sample mass calculation tool
 - Sample pretreatment guide
 - Automatic determination of drying time in Timer mode
 - Measurement examples
 - Optimum temperature search (RsTemp)

Reverse backlit LCD models: MS-74A, MX-53A, MF-53A, and ML-53A



- Straightforward moisture measurement with heat-drying technology
- Versatile measurement capabilities
- Level meter – Visual guidance for accurate sample placement
- 200 measurement program memory capacity (M/A only)
- Comparator function – Moisture content evaluation with clear thresholds
- Offset adjustment for consistent results
- Programmed measurement for recurring tasks with tailored settings
- Preset programs – Built-in examples for various samples
- Flexible program identification and selection
- Audible notification via buzzer
- GLP/GMP/GCP/ISO compliance
- Auto power OFF

Communication interfaces and connectors



1. Power inlet

2. RS-232C (D-Sub 9P)

3. USB (Type-C) for connection with a PC

Using internal settings, you can toggle between Quick USB (HID) mode and Virtual COM (CDC) mode. Quick USB allows direct transmission of measurement data to PC applications such as spreadsheets, with a fixed NU2 format containing numeric values only. Virtual COM enables bi-directional communication using dedicated software such as WinCT-Moisture. A 2-meter USB cable is supplied as standard with the MS-74A(T)/MX-53A(T).

4. Ethernet (TCP/IP) (M/A-T only)

5. USB (Type-A) for USB flash drives (M/A-T only)

This interface allows connection of a USB flash drive for saving PDF reports for measurement results (including those from test sample measurements) and optimum temperature search (RsTemp) results. It also supports import/export of measurement programs and internal settings.

Soft-close cover

The heater cover is engineered to close gently and safely without impact even if released, ensuring your safety and operational comfort.

Halogen lamp as heater

A powerful 400 W halogen lamp can heat the sample pan area to 200 °C in under two minutes, enabling fast and efficient moisture measurement, with long service life for reduced maintenance.

Automatic tare/measurement start (MA-T only)

When enabled, tare and measurement start are triggered automatically by simply closing the heater cover, streamlining operation.

Secondary Radiation Assist (SRA)

The heat-conductive glass ensures even heat distribution across the sample pan, supporting efficient and accurate measurement with a single straight halogen lamp. It also shields the lamp from contamination, making maintenance easier.



Real-time display

Changes in moisture content and drying rate (%/min) are constantly shown during measurement. The touchscreen models also display a real-time graph, making it easy to monitor progress at a glance.

Preheating for consistent results

To reduce variability in repeated measurements, the preheating function warms the sample pan area before measurement begins. This helps stabilise thermal conditions, especially for the first measurement. The duration is user-selectable, up to 30 minutes.

High-precision weight sensor

The Super Hybrid Sensor (SHS), also used in analytical balances, ensures accurate and reproducible measurements with minimal sample quantities, reducing both cost and measurement time.

Specifications

Common

Heating technology	400 W halogen lamp with Secondary Radiation Assist (SRA)
Drying temperature range (near the sample pan)	30 to 200 °C (1 °C increments)
Heating patterns	Standard heating, Ramp heating, Step heating, Quick heating
Measurement modes	Standard mode, Timer mode, Custom mode
Calculation units	Moisture content based on wet weight, Moisture content based on dry weight (Atro), Solid content, Ratio, Gram
Operating environment	5 to 40 °C (41 to 104 °F), 85% RH or less (no condensation)
Sample pan size	Ø90 mm
External dimensions	215 (W) × 380 (D) × 176 (H) mm
Net weight	Approx. 6 kg (excluding accessories)
Power supply	AC 100–120 V / 3 A or AC 200–240 V / 1.5 A, 50/60 Hz
Power consumption	Max. 500 W

Touchscreen models

Touchscreen models		MS-74AT	MX-53AT
Measurable sample weight range		0.1 to 71 g	0.1 to 51 g
Readability	Moisture content	0.001%	0.01%
		0.01%	0.1%
0.1%			
	Weight	0.0001 g	0.001 g
Reproducibility (standard deviation)	Moisture content ^{*i}	Sample weights ≥ 5 g	0.01%
		Sample weights ≥ 1 g	0.05%
	Weight	0.0002 g	0.001 g
Measurement program memory capacity		300 programs	
Measurement result memory capacity		3,000 results	
Display		5-inch WVGA, TFT LCD color touch screen (resistive type)	
Display language		English, French, German, Italian, Dutch, Spanish, Portuguese, Russian, Korean, Chinese, Japanese	
Communication interface		RS-232C (D-Sub 9P), USB (Type-A), USB (Type-C), Ethernet (TCP/IP), Bluetooth ^{®*ii}	
Standard accessories		Disposable aluminum pan × 100, Sample pan × 20, Glass fiber sheet (Ø86 mm) × 100, Test sample (sodium tartrate dihydrate, 30 g) × 1, USB cable (2 m, Type-A to Type-C) × 1, Sample pan handle × 2, Tweezers × 1, Spoon × 1, Display protection cover × 1, Main unit cover × 1, Cleaning brushes (large and small) × 1 each	

Reverse backlit LCD models

Reverse backlit LCD models		MS-74A	MX-53A	MF-53A	ML-53A
Measurable sample weight range		0.1 to 71 g	0.1 to 51 g		
Readability	Moisture content	0.001%	0.01%	0.05%	0.1%
		0.01%	0.1%	0.1%	1%
		0.1%		1%	
	Weight	0.0001 g	0.001 g	0.002 g	0.005 g
Reproducibility (standard deviation)	Moisture content ^{*i}	Sample weights ≥ 5 g	0.01%	0.02%	0.05%
		Sample weights ≥ 1 g	0.05%	0.1%	0.2%
	Weight	0.0002 g	0.001 g	0.002 g	0.005 g
Measurement program memory capacity		200 programs			
Measurement result memory capacity		200 results			
Display		Reverse backlit LCD (main characters: 11 segments, 17.8 mm height)			
Communication interface		RS-232C (D-Sub 9P), USB (Type-C)			
Standard accessories		Disposable aluminum pan × 100, Sample pan × 20 ^{*iii} , Glass fiber sheet (Ø86 mm) × 100 ^{*iv} , Test sample (sodium tartrate dihydrate, 30 g) × 1 ^{*iv} , USB cable (2 m, Type-A to Type-C) × 1 ^{*iv} , Sample pan handle × 2 ^{*iii} , Tweezers × 1 ^{*iv} , Spoon × 1 ^{*iv} , Display protection cover × 1, Main unit cover × 1 ^{*iv} , Cleaning brushes (large and small) × 1 each ^{*iv}			

^{*i} After preheating, the included test sample (approx. 5 g of sodium tartrate dihydrate) was measured at 160 °C using the standard heating pattern and standard mode (MEDIUM). After each measurement, the heater cover was left open and the unit was allowed to cool at room temperature for 15 minutes.

^{*ii} The Bluetooth[®] function is currently enabled for the US, Canada and Japan only.

^{*iii} For the MF-53A/ML-53A: Sample pan × 10, Sample pan handle × 1

^{*iv} For the MS-74A/MX-53A only.

Accessories

AX-MXA-30	Disposable aluminum pan, Ø90 mm (100 pcs)
AX-MXA-31	Sample pan, Ø90 mm (100 pcs)
AX-MX-32-1	Filtration glass fiber sheet, Ø70 mm (100 pcs) Recommended for liquid samples with strong surface tension.
AX-MXA-32-2	Glass fiber sheet, Ø86 mm (100 pcs)
AX-MX-33	Test sample – sodium tartrate dihydrate, 30 g (12 pcs)
AX-MX-34-120V	Halogen lamp (AC 100 to 120 V)
AX-MX-34-240V	Halogen lamp (AC 200 to 240 V)
AX-MXA-35	Sample pan handle (2 pcs)
AX-MX-36	Tweezers (2 pairs)
AX-MX-37	Spoon (2 pcs)
AX-MXA-38	Display protection cover (5 pcs)
AX-MXAT-38	Display protection cover for touch screen (5 pcs)
AX-MXA-39	Main unit cover
AD1603-20F1	Calibration weight (20 g), OIML Class F1
AX-MXA-43	Temperature adjustment kit
AX-KO7919-200	USB cable, 2 m (Type-A to Type-C)
AX-FST6.3A250V	Fuse (T6.3 A, 250 V)

Note: Some of the accessories listed above are also included as standard, depending on the model (refer to the specification tables for details).

WinCT-Moisture – Dedicated PC software for A&D's moisture analyzers (available as a free download)

- RsFig** Graph moisture content trends in real time or from saved CSV data. Overlay multiple graphs to compare and optimize measurement conditions.
- RsTemp** Automatically identify recommended drying temperatures for new samples using test heating and real-time graphical feedback.
- RsSetup**^{*15} Centrally manage internal settings and measurement programs. Save, edit, and apply configurations as needed to streamline setup and reduce errors across multiple units.

*15 Not supported on previous series.



Demonstration videos available!



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