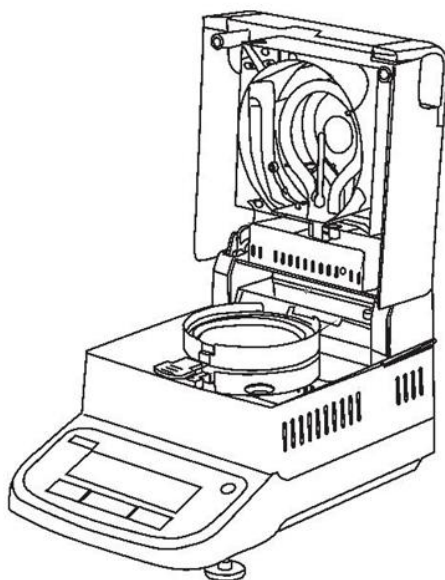


Halogen Moisture Analyzer

Operation Manual



Please read the instructions carefully before using the instrument.

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1、 Introduction

1.1 Precaution

For safe and reliable use of the moisture analyzer, please observe the following precautions:

- Make sure there is enough space around the moisture meter, at least 1 meter above the instrument.

Note: Moisture Analyzer works by heating!

- Do not place combustible materials around the moisture analyzer.
- Be careful when moving the sample during use. The sample and heating element will be very hot, which can easily cause burns.
- For samples with safety concerns, carefully consider whether they are suitable for heating testing.
- Fire/Explosion: Samples containing solvents, flammable or explosive, may generate flammable and explosive gases or vapors during heating. If you want to measure such samples, please test in a dry and low temperature environment to avoid fire or explosion.
- Toxic/Flammable: Samples with toxic or corrosive components should only be tested in a fume hood.
- Corrosion: Samples containing corrosive solvents will release corrosive gases during heating. It is recommended to take a small sample for testing.

1.2 Environmental requirements

The moisture meter should be used in conventional laboratories or industrial measurement rooms, which can improve the stability of weighing and the accuracy of test results.

- A. The ambient temperature should be between 5°C and 35°C, and the humidity should be controlled below 85%;
- b. It is recommended to place moisture analyzer on a workbench that is not affected by vibration;

- c. The workbench should be kept away from doors and windows to reduce the influence of airflow and sunlight on the moisture analyzer;
- d. The instrument should be away from objects and equipment with magnetic or magnetic fields to avoid the moisture analyzer be influenced;
- e. Avoid connecting with large machines or equipment with interference to ensure the instrument not suffering interference from other equipment;
- f. Dry environment prone to generate static electricity, please take appropriate measures to avoid the impact of static electricity on the instrument.

Friendly Reminder

- Please perform the first calibration after 30 minutes of warm-up;
- A test can be carried out as a warm-up after the calibration;
- The time interval between switching on and off is more than 5 seconds;
- If the continuous test is carried out, please perform a new test after the temperature drops below 40 ℃.
- When covering the heater, do not leave the weight on the weighing pan to avoid crushing the halogen lamp;
- Be sure to cut off the power when leaving the moisture analyzer;
- Never leave the moisture analyzer unattended.

2、 Technical Specifications

Model	MD-610A
Max. Capacity	120g
Weighing Accuracy	0.005g
Readability	0.01%
Heating Source	Ring-shaped halogen lamp
Heating Temperature Range	40℃~160℃
Weight Calibration	100g
Pan Size	Φ90mm
Sensor	Gold plated ceramic sensor

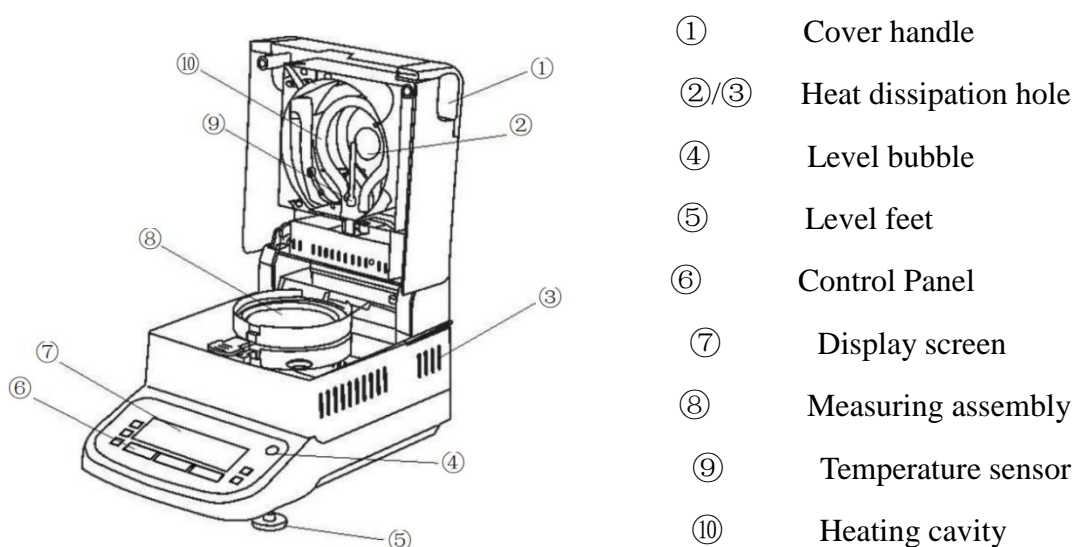
Display	LCD
Heating Procedure	Standard heating, Rapid heating, Step heating
Shutdown Mode	Timing, automatic, manual
Heating Time Range	1~99 mins
Product Size	310*205*200 mm

3、Installation

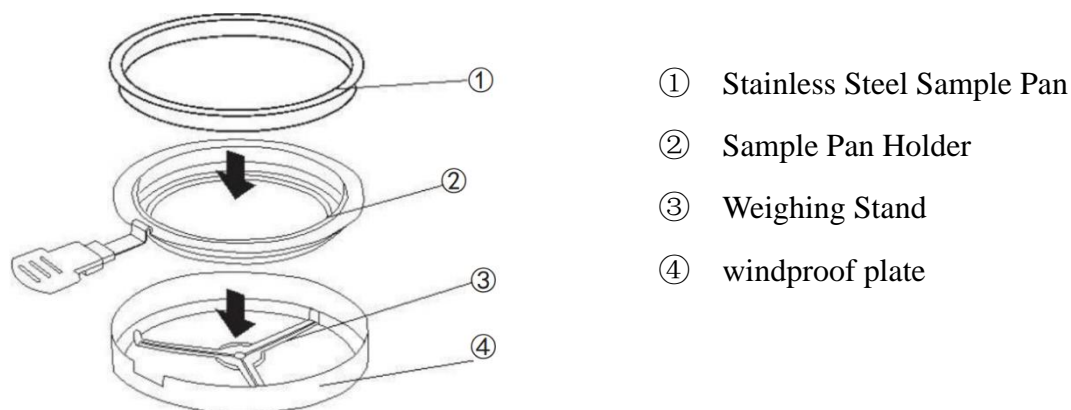
3.1 Standard configuration

Standard configuration	QTN	Remarks
Moisture analyzer Host	1 set	
windproof plate	1 pcs	Stainless steel
Weighing Stand	1 pcs	Stainless steel
Sample Pan Holder	1 pcs	Stainless steel
Stainless Steel Sample Pan	2 pcs	
100g standard weight	1 pcs	F1 class
User Manual	1 copy	
Packing list / product certificate	1 copy	
Warranty card	1 copy	

3.2 Product Diagram



3.3 Measuring assembly



3.4 Installing Components

3.4.1 Placing the windproof plate: The small opening of the windproof plate faces the front, and there are two screws at the rear to fix the windproof plate.

3.4.2 Place weighing stand at the central hole of the moisture analyzer. Notice if the weighing bracket touches all sides.

3.4.3 Place the sample pan holder : the end with the handle is forward. Pay attention to check whether sample pan holder is in contact with weighing stand after placing.

3.4.4 Placing stainless steel sample pan: Place stainless steel sample pan on the weighing stand smoothly.

3.5 Connecting to the power supply

Insert one end of the power cord into the power input slot on the back of the moisture analyzer, and then connect the other end to the power output socket.

4、 Operation

4.1 Adjustment level

The moisture meter has a leveling bubble and two leveling feet. In order to avoid inaccurate weighing results due to the inclination of the placement position during the weighing process, the leveling feet can be adjusted until the leveling bubble is in the center.

Note: Every time you change the position of the instrument, you need to adjust the level!

4.2 Display



Max: Maximum weighing;

d: Minimum readable value for weighing;

ok: Weighing stability indicator;

g: Unit gram;

%DC: Solid content%;

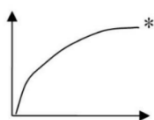
%MC: Moisture content%;

Program 01: Current program name (test method);

888°C : Current temperature (°C);

88:88 : The set timing time;
Total drying time;

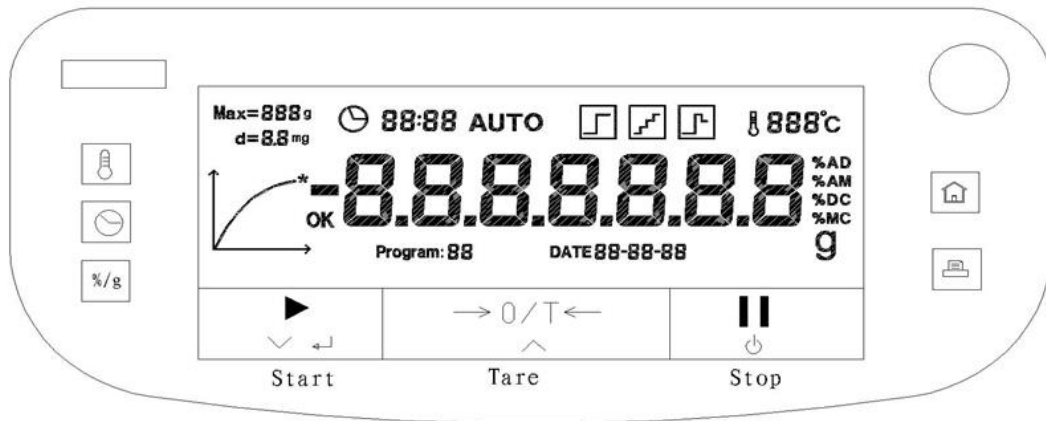
AUTO : Measurement mode;











Humidity display five segment trend;

“ * ” shows Drying program is over.

4.3 Control Panel



Key	Name	Instruction
	Menu	Enter the settings menu; Save the setting value;
	Unit Conversion	Convert between % and g
	Print	Print output
 Start	Start	Start testing; Decrease set value; Confirm;
 Tare	Tare	Clear/Tare Increase set Value
 Stop	Stop	Stop testing Shutdown
	Time	Set heating time
	Temperature	Set heating temperature

5、 Function Introduction



5.1 Calibration

Calibration is required in the following cases:

- Using the instrument for the first time.
- Move moisture analyzer
 - a、 Open the heating cavity;
 - b、 Press “Tare” key, screen will display 0.000g (don’t put the stainless steel sample pan during the calibration process);
 - c、 Press and hold the "Tare" key until the screen displays "LoAd 100"; put the 100g weight on the center of the weighing stand.
 - D、 Press the "Tare" key, the screen will display "-----", and after about 5s, the screen will display "100.000g". Calibration is complete. The error is $\pm 0.015g$.

If the screen displays “CAL NO”, it means the calibration failed, please re-calibrate.

5.2 Temperature Setting


Press  to display the current set temperature value. Press the "Tare" key once, the temperature will decrease by 1°C; press the "Start" key once, the temperature will increase by 1°C. After setting, press , save and return to weighing state. The temperature setting range is from 40° C to 160° C.

5.3 Measurement Mode Setting

5.3.1 Automatic Mode Setting (Factory Default Automatic Mode)

In the weighing state, press the menu key, the instrument will display "AUTO", which means automatic mode. Press the Start key, the instrument will display "S---END", wait for 2 seconds, the instrument will store and update the data and return to the weighing state. "AUTO" is displayed on the right side of the clock, indicating that the setting is complete. If you need to set the weight loss rate, please refer to ——5.5 Weight loss rate setting.

5.3.2 Timing mode setting

In the weighing state, press  key, the instrument will display "AUTO"; press the Tare key, it will display "CLOC", which represents the timing mode. Press the Start key to confirm, and the right side of the clock will no longer display "AUTO", indicating that the setting is complete. The time on the screen at this time represents the measurement time. If you need to set the time, please refer to 5.4 Time Setting.



Situation statement:

Timing mode: The instrument automatically completes the measurement and displays the moisture value according to the set time.

Automatic mode: The instrument automatically completes the measurement and displays the moisture value according to the weight loss rate we set.


Remarks: There is no "AUTO" mark on the top of the screen in timing mode, and the "AUTO" mark is displayed in automatic mode.

5.4 Time setting

In the weighing state, press  key, the displayed value is the current setting time, and the unit is minute. Press the Tare key to decrease, press the Start key to increase, and press  key to confirm the time setting after the setting is completed.

Note: Time setting can only be used in timing mode.

5.5 Weight loss rate setting

In the weighing state, press  key, the instrument will display "AUTO"; press the Tare key to switch until A1-A4 is displayed, press the start key to confirm after selection, and the screen clock will display the current weight loss rate.

Note: A1 20 stands for 20s; A2 40 stands for 40s; A3 60 stands for 60s; A4 90 stands for 90s. For example: the clock displays "00:40", representing the 40s weightless rate.

Remarks: The default weight loss rate of the moisture analyzer is 40s. If the


measurement time is long, the weight loss rate can be adjusted to 20s without affecting the test results.

System Parameter Table

Setting Item	Name	Significance
AUTO	Automatic Mode	Automatically complete the measurement and display the result according to the set weight loss rate.
CLOC	Timing Mode	Automatically complete the measurement and display the result according to the set time.
A1 20	20 seconds	The weightlessness rate is 20 seconds.
A2 40	40 seconds	The weightlessness rate is 40 seconds.
A3 60	60 seconds	The weightlessness rate is 60 seconds.
A4 90	90 seconds	The weightlessness rate is 90 seconds.
ESC	EXIT	Exit menu.

6、 Measurement Steps

Test steps: (It needs to warm up for 30 minutes after starting up)


- A. Calibration;
- B. Set the heating temperature;
- C. Prepare test samples:
 - a. Put the stainless steel sample pan on the weighing stand;
 - b. Press the Tare key to remove the weight of the stainless steel sample pan;
 - c. Pour the sample into the stainless steel sample pan and spread it evenly;
 - d. The display shows the weight of the sample;
- D. Cover the heating cavity;
- E. Press the Start key to start the measurement.
- F. The instrument sounds three beeps of "Dididi", indicating that the test is over. What is displayed on the screen is the moisture content.
- G. The display shows the current moisture value MC%, press  key to display the current measurement result:


%MC: represents the current moisture content;


%DC: represents the current solid content;

g : represents the weight after drying;

Press the Tare key to return to weighing mode.

H. Press  key to send the current measurement result to the printer or other peripherals. The printer is an optional accessory.

Note: Press the  key during the test to terminate the test in advance.

After use, press and hold the  key to turn it off. If it is not used for a long time, please unplug the power supply.

7、 Troubleshooting

Fault Phenomenon	Cause of Failure	Solution
Can not boot	Not connected to power; The fuse is damaged;	Check the power connection and voltage; Replace the fuse;
The screen displays "HHHHHH"	Overload - the weight of the sample exceeds the maximum weighing capacity of the weighing unit;	Reduce the weight of the sample
The screen displays "LLLLLL"	The weighing stand is not installed;	Insert weighing stand
Unstable weighing readings	Weighing environment is not good; Preheating time is not enough; The weighing unit touches the windproof disk and other peripheral equipment;	Ensuring environmental conditions; Preheat for 30 minutes; Make sure that the sample pan, weighing stand and peripheral equipment such as the windproof pan are not in contact;
NO CAL - cannot calibrate	There is a problem with the calibration weights; The weight was not reset to zero before calibration; Unstable weighing readings;	Please press the Tare key to reset the weight before calibration; Calibrate with the configured F1-level 100-gram standard weight; Make sure that the weighing reading is stable before calibrating;
The instrument does not heat up after starting	Halogen lamp or heating limit switch damaged;	Please contact the manufacturer;
Low repeatability	The position of the instrument is not stable; There is vibration or airflow in the	Adjust the feet to center the horizontal bubble; Please provide a good test environment;

	<p>surrounding environment; The sample is not evenly spread on the stainless steel sample pan; The weight of the samples did not maintain a similar value; In timing mode, the drying time is too short; The sample was not sufficiently dried (e.g. conjunctiva-prone substances); If the drying temperature is too high, the sample is oxidized or decomposed; Sample particles are uneven or too large; The sample boils, and the splashed droplets change the sample weight;</p>	<p>Spread the sample evenly on the stainless steel sample pan; Make sure the samples are of similar weight; Extend the drying time or change the timer mode to automatic mode; Dry the sample with glass fiber filter paper; reduce the drying temperature; Select sample particles with uniform size; reduce the drying temperature;</p>
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