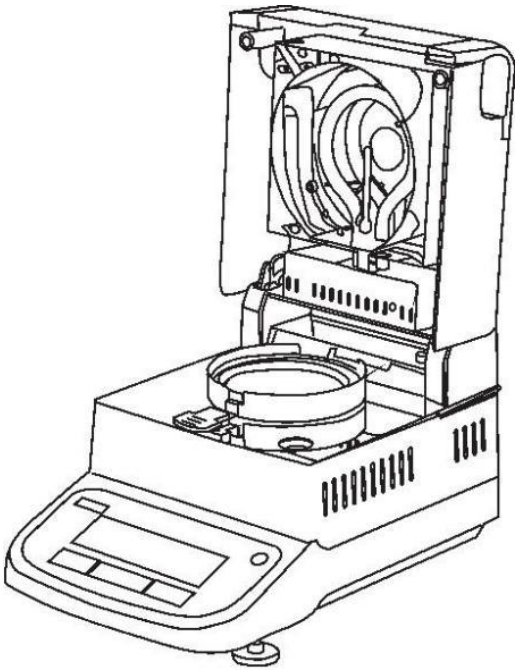


苏州亚诺天下仪器有限公司

YANUO WORLD Physical testing equipment expert

FMA120A水分测定仪使用说明书（英文版）

Part One: Brief Introduction

1.1 Safety Precaution

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

• Please make sure there is enough space around moisture analyzer, at least 1 meter space on the top of the moisture analyzer.

Moisture analyzer for heating mode!

• Do not put any combustible materials on the top, bottom or side of the moisture analyzer.

• In the process of using moisture analyzer, be careful to move the test sample. Samples, heating elements and the surrounding may be very hot, easy to cause burns, part of the sample need to be particularly cautious.

• For any sample material with safety hazard, please considering the possible dangerous consequences carefully.

• Fire / Explosion: Containing solvent, flammable or explosive samples will produce flammable or explosive gas or steam when are heated. Please work under the environment with dry and low temperature to avoid fire and explosion in the use of such samples.

• Toxic / Combustible: Samples with toxic or combustible components could only be dried inside ventilating cabinet.

• Corrosion: Samples containing corrosive solvent will evaporate once heated and generate corrosive gas at the same time, so we suggest take a small amount of material for testing.

1.2 Environmental requirements

To improve the weighing stability and the accuracy of testing result, the halogen moisture analyzer should be used under the condition of conventional laboratory or

industrial metering room .

A. Ambient temperature should be between 5℃~35℃, humidity should be controlled below 85%;

B. The instrument should be placed on a stationary, fixed grounded table (recommended to be placed on a marble platform), the table should be placed in places with little vibration;

C. Workbench should be away from doors and windows to reduce the impact 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;

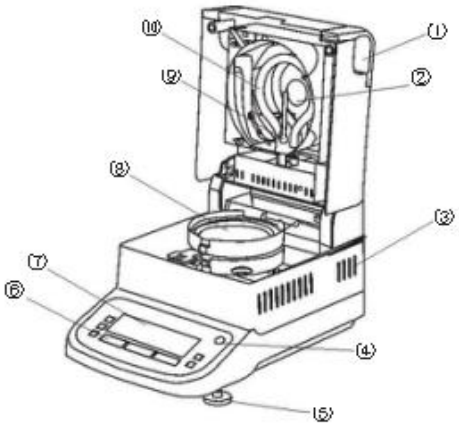
F. Dry environment prone to generate static electricity, please take appropriate measures to avoid the impact of static electricity on the instrument.

Part Two: Technical specification:

Model Number	QL-720A
Max. Capacity	120g
Display index value	0.001g
Readability	0.01%
Heating source	Ring-shaped halogen lamp
Heating temperature range	40℃~200℃
Weight calibration	100g
Pan size	Φ90mm
Sensor	Electromagnetic force sensor
Display	LCD
Heating procedure	Standard heating
Power-off mode	Time-off, Auto-off
Heating time range	1~99 minutes
External dimension	310mm*205mm*200mm

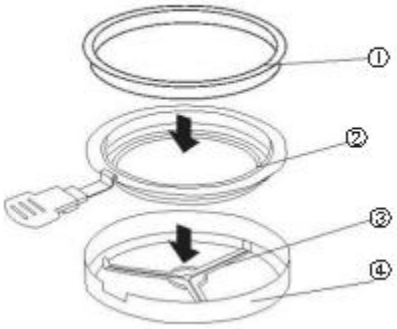
Part Three: Installation

3.1 Schematic Diagram of the Instrument



① Handle for opening and closing
② Air vent for Dissipate heat
③ Air vent for Dissipate heat
④ Level bubble
⑤ Level feet
⑥ Control Panel
⑦ Display screen
⑧ Measurement Assembly
⑨ Temperature sensor
⑩ Heating chamber

3.2 Measuring assembly



① sample plate
② sample plate support
③ sample plate stand
④ wind proof plate

3.3 Component installation

■ 3.3.1 Place wind proof plate: Note that the small opening is faced the front, the rear is screwed by two screws.

■ 3.3.2 Place the sample plate stand in the central hole of moisture analyzer

■ 3.3.3 After place the sample plate support(the part with handle should be faced the front), Put the sample plate on the support stably.

Note: There is no interference between support and stand.

3.4 Configuration List

Standard Configuration	Quantity	Remarks
Moisture analyzer main body	1	
Wind proof plate	1	Stainless steel
Sample plate stand	1	
Sample plate support	1	
Sample plate	2	
Glass-fiber paper	1 box	select
Printer	1	select
100g standard weight	1	
English user Manual	1	
Packing list / product qualification certificate	1	
Warranty card / certificate of accreditation	1	

3.5 Connection of Power Supply

Plug one end of the provided power cable to the input groove on the back of moisture analyzer, then connect the other end to the power outlet.

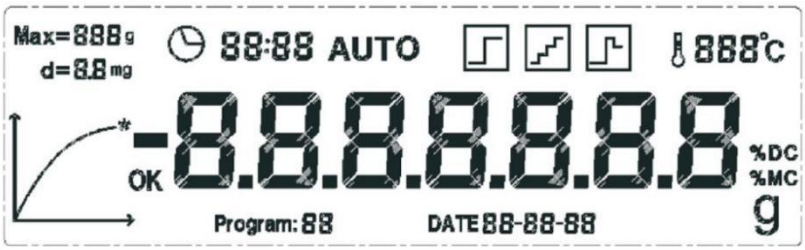
Part Four: Instrument Manual

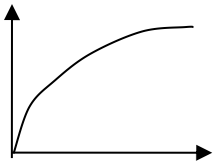
4.1 Levelling

Moisture analyzer has a level and two level adjusting feet. In order to compensate the influence of the inclination of sample' s position during weighing, please adjust the level feet till the level bubble located in the central position.

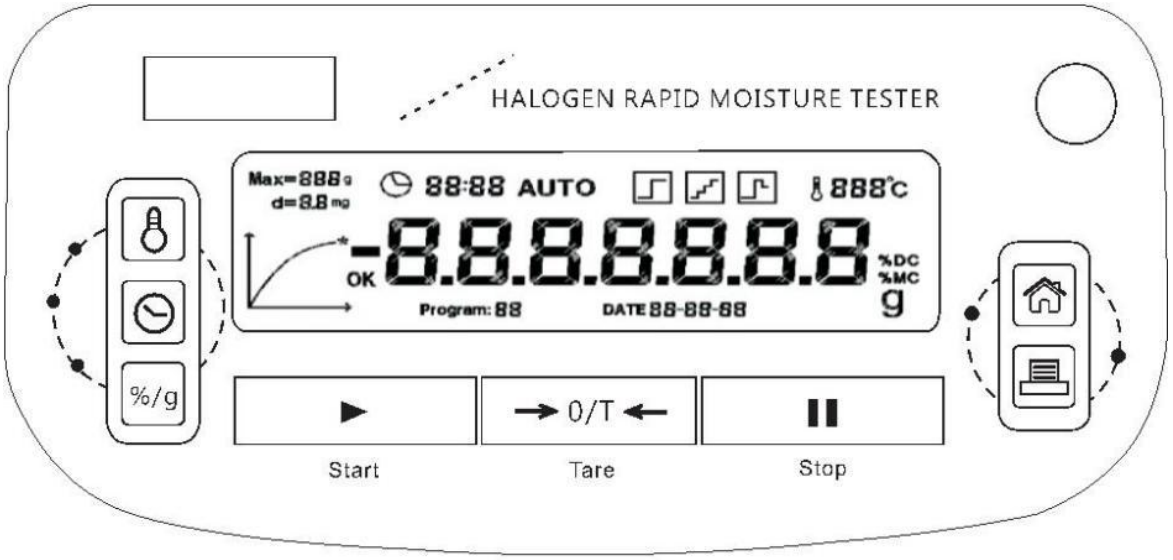
Attention: As long as the position changed, it must be readjusted!

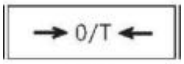
4.2 Display



Max:	Max capacity of this moisture analyzer
D:	Min readability of this moisture analyzer
OK:	Stable state
G:	Unit gram
%DC:	Solid content %
%MC:	Moisture content %
 	135℃: Setting temperature or current temperature (℃) 1:00: Auto-mode: To set up weight loss rate
Timing-mode:	To set up test time
Boot test:	real-time display test time
* 	Humidity display five segment trend " * " shows Drying program is over

4.3 Control Panel



Key	Name	Instruction
	MENU key	Enter into Menu, Save setting value
%/g	Unit conversion key	Conversion between % and g
	PRINT key	Print output
	START key	Start test Reduce setting value Confirmation
	TARE key	Tare Increase setting value
	STOP key	Stop heating /sound alarm
	TIME key	Set heating time
	TEMPERATURE key	Set heating temperature
	CALIBRATION key	Calibrate moisture analyzer
	POWER key	On/Off

* Unit can be converted only when measured

Part Five: Function introduction

5.1 Calibration:

It should be calibrated in the following cases:

- The instrument needs 30 minutes for warm-up before the first time to use it.
- If the placement changed, please reset it.

The instrument displays 0.000g, then open the heating chamber.

► press【Tare】key, instrument displays 0.0000g.(please do not put the sample plate before the calibration.)

► Press【CALIBRATION】key, the instrument displays "CAL 100" , place the 100g weights on the central column of the tray.

► press【CALIBRATION】key, the instrument displays "CAL…… " , about 5~8 seconds later, it displays "100.000g", the calibration finished if the deviation are within ±0.003g. Please re-calibration the balance if the instrument displays "CAL NO "

5.2 Temperature Setting

Press【TEMPERATURE】key to display current temperature, increase or reduce the temperature 1℃ step by step, press【TARE】key for each time, 1℃ will be increased; press【START】key for each time, 1℃ will be reduced. Press【TEMPERATURE】key to confirm saving the setting value and back to normal weighing mode. The Temperature range is 40℃~200℃.

5.3 Shutdown Mode Setting

5.3.1 Auto-off mode setting(Factory default Auto-off mode)

In the normal weighing mode,press【MENU】key the instrument display "AUTO" , shows it in Auto-off mode,press【START】key it display "S---END". About 2 seconds later, the instrument go back to weighing mode after the data are saved and updated. In the right of screen Clock icon display "AUTO" shows the setting finished. If need setting the weight loss rate ,please refer to chapter 5.5 Weight Loss Rate Setting in page 7.

5.3.2 Time-off mode setting

In the normal weighing mode,press【MENU】key the instrument display "AUTO", press【TARE】key it display "CLOC", shows it in Time-off mode, then press【START】key to confirm. If there is no "AUTO" display in the right of screen Clock icon, the setting finished. Now the clock in screen shows the time of auto-off, if want setting it, please refer to chapter 5.4 Time Setting in page 7.

Use instructions:

Time-off mode: the instrument automatically stopped according to the setting time

and displayed the moisture value.
Auto-off mode: the instrument automatically stopped according to the setting weight loss rate and displayed the moisture value.
Note: There is no "AUTO" logo in the screen at Time-off mode. Auto-off mode displays "AUTO" logo in the screen.

5.4 Time Setting
When the instrument in weighing mode, press【Time】key, display the current setting time in minutes. Press the【TARE】key once, increase the setting temperature for 1 minute, and press the【START】key once, reduce the setting temperature for 1 minute. If get the wanted value, then press【TIME】key to confirm saving.
Note: It is used in time-off mode.

5.5 Weight Loss Rate Setting
In the normal weighing mode,press【MENU】key display "AUTO", press【TARE】key switch over A1-A5 to chose the rate, then press【Start】key to confirm. Now the clock in screen shows the current weight loss rate.
Note: A1=20S, A2=50S, A3=90S, A4=120S,
For example: the clock display" 00:30" means 30s weight loss rate.
Remark: The factory default weight loss rate of the moisture analyzer is 50s. If the time of measuring is very long, the weight loss rate can changed into 20s under the condition of didn’ t damage the test result.

5.6 Resume to Default Setting
Customer usage mode is the factory default mode.

System Parameter list

Set item	Name	Instruction
AUTO	Auto-off mode	The instrument automatically stopped according to the setting weight loss rate and displayed the result.
CLOC	Manual mode	The instrument automatically stopped according to the setting time and

		displayed the result.
A1 20	20s	0s weight loss rate
A2 50	50s	50s weight loss rate
A3 90	90s	90s weight loss rate
A4 120	120s	120s weight loss rate
USER	Customer use mode	User mode
FACTORY	factory internal mode	Users do not choose
ESC	exit	Exit menu

Part Six: The Measurement Steps

According to the chapter Three: Installation in page 3, installation the moisture components, then plug in the power, the moisture analyzer will automatically power-on and display P FA1L. Press【power】key the analyzer will display 0.000g. Moisture analyzer’ s test has the following steps: (The instrument needs 30 minutes for warm-up after power-on)

1. Calibration (see page 6, 5.1) If the position do not changed, just need calibration once.
2. Set up heating temperature (see page 6, 5.2)
3. Prepare for the test sample
   3.1 Put the empty sample plate on the sample plate support
   3.2 Press【Tare】key to zero the weight on the sample plate
   3.3 Remove the sample plate and put the sample (more than 0.5g)
   3.4 Distribute the sample evenly on the sample plate
   3.5 Put the sample plate with sample back to the plate support, sample’ s weight will be displayed on the display screen
4. Close the heating chamber
5. Press【Start】key to start measurement

6. The current weight will be displayed, press【UNIT】key to convert current measurement result: %MC: shows current Moisture content %

%DC: shows current Solid content %

g: shows weight after drying

7.After the moisture analyzer complete the test, it will make a long sound. Press【Stop】key to stop the sound, press【UNIT】key to show the sample current Moisture content MC%, current Solid content DC% and the weight after drying g. Press【TARE】key return to normal weighing mode.

8. Press【Print】key to transfer the current measurement result to printer or other external equipment. The printer are select device.

Attention：【Stop】key can be pressed at any time to stop measurement in the process of testing.

Press【Stop】key to shut down after using, if do not use for a long time, please unplug the power cable.

Part Seven: Troubleshooting

Failure Phenomenon	Failure Cause	Solution
Can not power on	•Power supply is not connected •Fuse damaged	•Check power supply connection and voltage •Replace fuse
Display "HHHHHH"	•Overload—the weight of sample is above the max weighing capacity	•Reduce the weight of sample
Display "LLLLLL"	•Under load---sample plate support missing	•Insert sample plate support
Weighing reading value unstable	•Bad weighing environment	•To ensure environmental conditions and best position
	•Preheating time is not enough	•Please measure after 30 minutes preheating
	Interference by shell, handle bracket and other external device	•Please make sure the sample plate, sample plate support have no interference with shell, handle bracket etc. •Please make sure sample

		plate support is installed correctly and in good condition
"NO CAL" can not calibrate	•The position of weights incorrect •No tare before calibration •Weighing value is unstable	•Weights are F1 class 100g standard weights •Please make sure to tare the instrument before calibration •Please make sure the display weighing value is stable before calibration
No heating after the instrument is activated	•Halogen lamp damaged or the switch of heating limit damaged	•Please contact with local distributor
The measurement result has a low repetition rate	•Position is not stable and not adjust the level feet •Surrounding environment is not stable (vibration, air, moisture) •Samples are not distributed evenly on the sample plate •The initial mass of the sample does not remain the same •The time in the selected time-off mode are too short for drying •The sample is not sufficiently dried (e.g. the substance of conjunctiva) •The selected temperature is too high, sample is oxidized or decomposed •Sample particle is not even or too large •The sample is boiling, the liquid drop changes the sample quality	•Please adjust the level feet till the level bubble located in the central position •please provide a good test environment(see page 3) •Put the samples evenly on the sample plate •Ensure the initial mass of the sample remain the same •To prolong the drying time or change to appropriate auto-off mode • please use glass-fiber filter paper to dry the sample •please reduce the drying temperature • chose even sample particle, not too large •please reduce the drying temperature

※ If the problem still can not be resolved, please contact with your local distributor.

Friendly reminder:

1. The instrument needs 30 minutes for warm-up after turning on before the first calibration;
2. After the calibration, a moisture test can be carried out as a preheating;
3. Every time you switch on/off the engine, please interval 5 seconds;
4. If a continuous experiment is carried out, please proceed to a new test after the temperature below 40℃.
5. When the heater is covered, do not leave the weight on the pan, otherwise it will crush the halogen lamp;
6. Cut off the power supply, when leave the moisture analyzer;
7. Do not allow the moisture analyzer to work under the condition of no monitoring.

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