



Directing Reading Liquid Densimeter

AU-300L

Instruction Manual

Please kindly refer to this handbook before using

Quality Insurance

Thank you very much for choosing Quarrz Brand Specific Gravity Instrument.

We guarantee this instrument for two years and life-long maintenance.

We will be responsible for fixing or replacing the instrument if quality issue was arisen,the

service is excluding if the machine is breakdown caused by following reasons:

(1) Wrong operation;

(2) Fixed or refitted personally;

(3) The machine itself is not the reason caused breakdown;

(4)Applying the machine under the serious conditions.such as high

temperature,moist, corrosive gas,or vibration.

(5)Move or transportation as soon as installed.

(6)Consumables and easy-loss components.

(7)Natural disaster

After-sales service:

1. If errors occur,please refer to the troubleshooting tips of the instruction manual.

2. Please contact with our after-sales service department or distribute in time if can't clear fault.

DahoMeter after-sales hot line 400 830 0646

Announcement

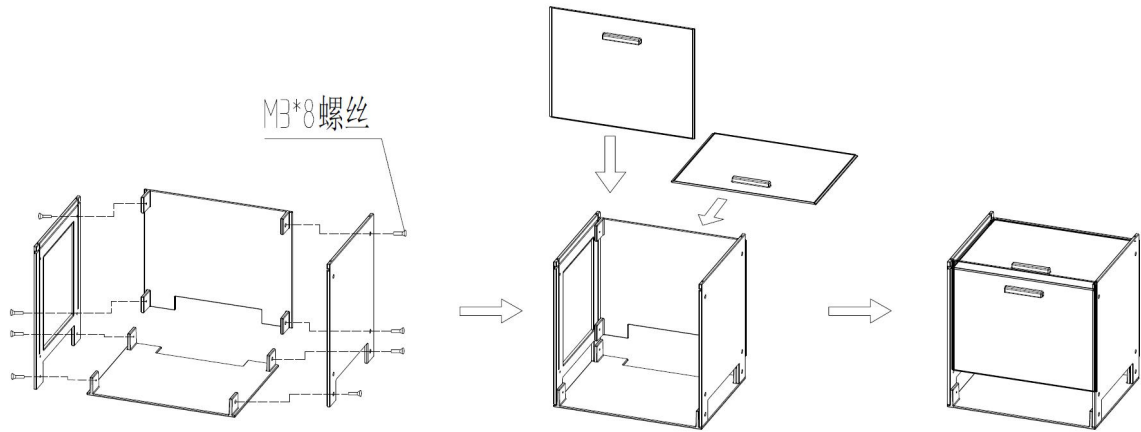
The design of all series of Quarrz Specific Gravity Instruments is aim to meet the demands for products quality management,new materials density researching,testing organization and academic institute laboratory;Quarrz is the primary supplier and manufacturer to the field of densitometer which is applied by Archimedes Principle.Quarrz, authorization facilitator,regional agent,and contributing maintenance centre would provide the all-embracing technical service which is including technical consultant,business transaction,daily maintenance,calibration and so on.

Quarrz reserve all the right for the final explanation;any forms for copy or translation without authorization that absolute is not allowed, otherwise we will retain to take any legal action.

Quarrz reserve the rights of modification for manufacturing technology,feature,technical parameter and design. we will don't give further notice after change.

This handbook is the most completed,accurate and updated version.Quarrz would not take any responsibility if operate this instrument wrongly.

Assembly Drawing for Installing Windproof Cover



Please install and lock according to the picture

Specification

Model	AU-300L
Density Resolution	0.001g/cm ³
Maximum Weight	300g
Minimum Weight	0.005g
Solution Compensation	yes
Temperature Compensation	yes
Measuring Principle	Archimedes

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1. General Information

1.1 Theory

Combining the classical principle of Archimedes and modern techniques of microelectronic, this electronic direct-reading hydrometer AU-300L is very efficient in data reflecting. It's high in accuracy, durable and easy to operate compared with other tradition ones such as Wechsler scale method and Pycnometer method. It's free from the affection of temperature and some other external factors. It applies well to quality management, prescription research and cost control etc.

It's in accordance with the standards of GB/T 611 GB/T11540, GB/T12206 and GB/T5518.

1.2 Application

Application: Chemical liquor, auxiliaries, chemical reagent, oil fuels. Medicament, solvent, cement, paint coating, asphalt, ink, resin, cooking oil, food additives, beverage, diary and other chemical products.

1.3 Specification

1.3.1 Density resolution: 0.001 g/cm³

1.3.2 Measuring range: 0.001-99.999 g/cm³

1.3.3 Maximum weight: 300g

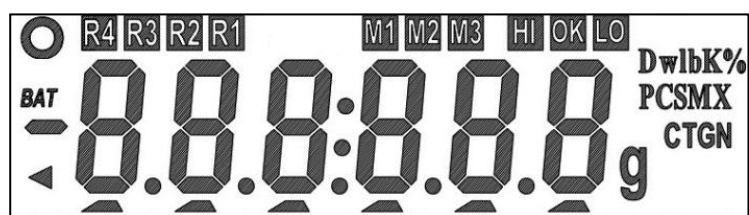
1.3.4 Minimum weight: 0.005g

2. Instrument Introduction

2.1 Key Function

Key	Function
NO/OFF	on/off
A	Function key
B	1、 yes 2 Print
ENTER	memory
ZERO	1、 reset 2、 check

2.2 Control Panel Screen



O	Stable signal	SG	density
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3. Installation Method

3.1 Installation Environment

(1) Ideal surroundings: 20°C/68°F and humidity 50%.

(2) The installation place should be avoided from direct sunlight, vibration, wind, dust and magnetic interference.

(3) Make sure the voltage is conformed to the requirement.

- **Install wind-proof cover. place the instrument into the wind-proof cover.**

- **Horizontal Adjustment**

Adjust the bubble in the gradiometer into the centre position of black circle, makes the whole instrument in horizontal status.

- **Measuring Shelf Installation**

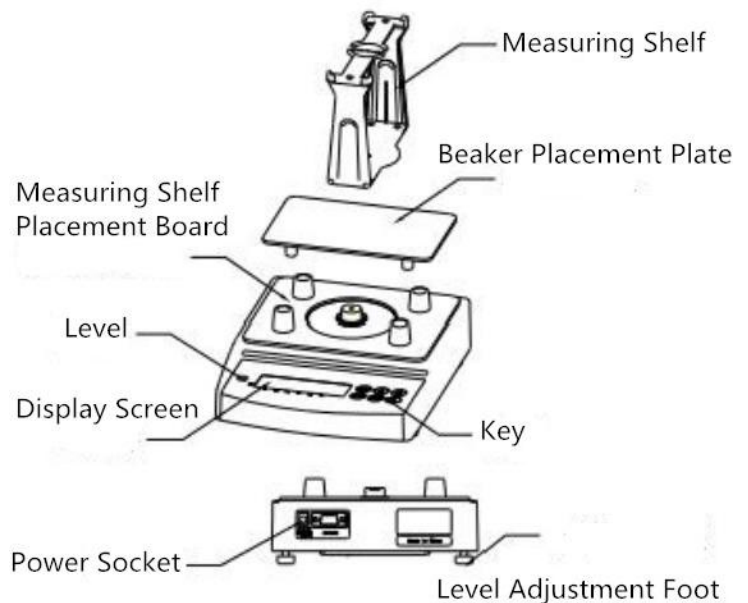
Using screw to have measuring shelf fixed on the aluminum alloy pillar which locate in the host central position.

- **Container Plate Installation**

Put the four feet of container plate into the four round hole on host.

Warm up 30 minutes after turn on machine. If display ERR-1 or the zero is not stable, please check if the installation or the surrounds is correct or not. Then press

【ON/OFF】 key to turn on.



4. Calibration Method

4.1 Turn on machine, screen displaying 0.000. press **【ZERO】** return zero if without showing **【0.000】** .In **【0.000】** status, Long-press **【ZERO】** till shows up **【CAL】** .

4.2 Which means it is entering into calibration mode. several seconds later it will automatically show **【100.000】** along with flickering constantly. place 100g weights onto the centre of testing bridge. the machine will do calibration automatically. when screen display **【END】** firstly, then display **【100.000】** .it indicate the calibration is done.

4.3 Take down the weights, the machine will return to measuring mode automatically and display **【0.000】** .

5. Water Temperature Compensation Method

Specific gravity of water would be changed along with water temperature, there is necessary to do temperature compensation in base with specific gravity 1.0000 at 4°C of water. As for water temperature compensation coefficient, this instrument was stored of memory value for 0~49°C. Using thermometer to get actual temperature before testing, then revise the temperature to the one shows up in thermometer. (specific gravity would differ 0.001 if the difference between water temperature is 6°C). Default temperature of this machine is 25°C. Temperature value and other value would be revised by long-press **【A】** Key. Here below is detail procedure.

(1) Long-press **【A】** till screen display **【C25】** .

(2) Press **【A】** to revise numbers.Press **【ZERO】** to shift.

(3) Press **【ENTER】** to confirm after revise,then get back to measuring mode.

Water temperature comparison table:

Temp. (°C)	Density (g/cm ³)	Temp. (°C)	Density (g/cm ³)	Temp. (°C)	Density (g/cm ³)	Temp. (°C)	Density (g/cm ³)
0	0.99984						
1	0.99990	11	0.99961	21	0.99799	31	0.99534
2	0.99994	12	0.99950	22	0.99777	32	0.99503
3	0.99996	13	0.99938	23	0.99754	33	0.99471
4	0.99997	14	0.99925	24	0.99730	34	0.99438
5	0.99996	15	0.99910	25	0.99705	35	0.99404
6	0.99994	16	0.99894	26	0.99679	36	0.99369
7	0.99990	17	0.99878	27	0.99652	37	0.99333
8	0.99985	18	0.99860	28	0.99624	38	0.99297
9	0.99978	19	0.99841	29	0.99595	39	0.99260
10	0.99970	20	0.99821	30	0.99565	40	0.99222

6. Operation Method

Standard Weights Parameter Setting:

1. Place the pothook in the middle of testing bridge,press **【ZERO】** .

2. Put standard weights on the pothook.Screen will display air weight of weights.After stable sign "O" showing,press **【ENTER】** and **【A】** key at the same time to enter into weights

setting. The previous setting number will be changed into the current testing air weight automatically. If users still think need to adjust. Press **【A】** to change number, Press **【ZERO】** to shift. If no need to modify, press **【ENTER】** .

3. Place beaker on the centre of plate, put standard weights at the end of "J" and submerge it into distilled water totally. Screen will display water weight for weights. please note that standard weights can not touch with beaker, no bubbles on surface, distilled water can not be overflow. After stable sign "O" showing, press **【ENTER】** and **【B】** key at the same time to enter into weights setting. The previous setting number will be changed into the current testing water weight automatically. If users still think need to adjust. Press **【A】** to change number, Press **【ZERO】** to shift. If no need to modify, press **【ENTER】** .

If air weight and water weight for weights is known. In the status of 0.000. Press **【ENTER】 and **【A】** key at the same time to modify air weight setting. Press **【ENTER】** and **【B】** key at the same time to modify water weight setting. Press **【A】** to change number, press **【ZERO】** shift. Press **【ENTER】** to confirm.**

Standard Measuring Procedure:

1. In the status of 0.000 measuring mode.
2. Put 40-50ml sample into beaker. Place beaker on the plate centre, Put pothook on the centre of measuring bridge. Have "J" end submerged into sample totally. Press **【ZERO】** .
3. Put standard weights on the pothook. and then place pothook on the centre of measuring bridge. After stable sign "O" is showing, press **【ENTER】** key, density value will be displayed. the arrow sign is directing to SG (SG is the specific gravity).

7. Precaution and Maintenance

7.1 Attention before using

Please do weights calibration before using or after removing.

Tips:

Please prepare alcohol before testing to get accurate measuring data.(The best purity of ethanol is 95%)

Since it is the precision instrument,please be careful to operate this machine.

Take out wind shield and install it well.Place the densitometer into shield.(this action can protect measuring from wind)

7.2 Attention when using

(1)Keep the static specimen away from measuring table,it will take effect on testing result otherwise.

(2)All the action should be gentle.Specimen should be placed into centre of measuring table,

(3)Specimen putted into nacelle should be submerged into water,also there is no bubble on the surface of specimen.

(4)Don't hit the Key by using sharp hard staff.

(5)Press ZERO Key every time before using can avoid the error measuring.

7.3 Special notice

(1) Keep this machine away from hit and drop

(2) Please don't disassemble by yourself

(3) Please don't wipe this machine with organic solvent

(4) Please avoid inside of machine from dust and water

(5) Please do not use overload

(6) Please pull out power and take down measuring table and sink if don't use for a long time

8. Troubleshooting Method

8.1 When the weights is not stable

Please check out:whether the windproof and dustproof cover is closed well;whether the measuring shelf is touched with container plate;whether there is dirty or water drop is underneath of plate..if it is,please clean up the dirty or water drop,re-install container plate and measuring shelf.

8.2 When the measuring is not correct

Please do calibration again.and put the weight on the centre of measuring bridge.for 300 model,the error should be within $100\text{g}\pm 0.005\text{g}$;for 120g model,the error should be within $100\text{g}\pm 0.001\text{g}$.

Please check if it is surroundings take effect on measuring.

Please check if there is bubble on specimen when it is put into water.

Remark:

If this instrument still can't get back to normal according to above procedure.please call Dahometer after-sale hot line:400 830 0646

9. Standard Accessories

No	Name	Unit	qty	Remark
01	AU-300L main body	set	1	
02	Measuring frame	pcs	1	
03	Container plate	pcs	1	
04	220V power transformer	pcs	1	
05	100g weights	pcs	1	
06	Standard glass weights	pcs	1	
07	Standard steel weights	pcs	1	
08	50ml flask	pcs	2	
09	Hanger	pcs	2	
10	Wind-proof shield	pcs	1	
11	Thermometer	pcs	1	
12	Tweezers	pcs	1	
13	Screw	box	1	
14	Instructions	copy	1	