Digital Liquid Density Meter

User Manual

1. (1) Principle

The liquid density meter is based on Archimedes' buoyancy method, according to the provisions of GB/T21862, T15223, GB/T6750, ASTMD1475, ISO1675, DIN53217-3, using Archimedes' immersed ball volume displacement method, combined with a special design of a special hydrometer, to accurately read the measured value.

(2) Application

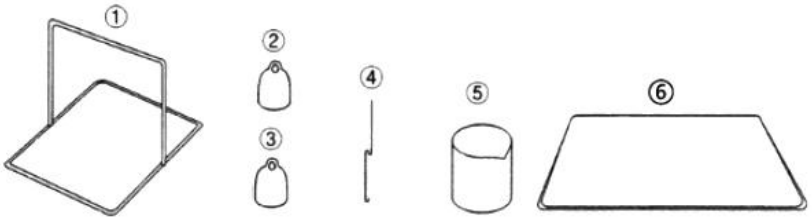
This machine is mainly used for chemical solutions, chemical additives, modern energy, petroleum combustion, pharmaceuticals, paints and coatings, asphalt, edible oil and other liquid density and concentration tests.

Instrument Description

Model	300Y	600Y	300YT	120YT
Measurement Range	0.01 ~ 300g	0.01 ~ 600g	0.005 ~ 300g	0.001 ~ 120g
Apparent Density Analysis	0.001g/cm^3	0.001g/cm^3	0.0001g/cm^3	0.0001g/cm^3

(3) Standard Accessories

① Liquid-Specific Stand
② Glass Weights
③ Calibration Weights
④ Hook
⑤ 50cc Beaker
⑥ Support Plate



2. How to Install the Liquid Density Meter

- Do not install the density meter in dusty, windy, vibrating, temperature and pressure changes and magnetic fields.
- Do not place the density meter on an unstable table to avoid level changes.
- Do not place it in direct sunlight.
- Do not place it near a heater or air conditioner.
- It is not advisable to use unstable AC power supply.
- It is not advisable to place it in places with flammable, explosive and corrosive gases.
- Before use, please adjust the balance temperature to keep it consistent with the ambient temperature.

① After placing the main unit, adjust the four corners of the main unit and adjust the horizontal bubble in front of the main unit to the center point.

② Place the liquid special rack on the weighing pan and use the four corners on the weighing pan to clamp the special rack.

③ Align the four cylindrical holes under the support plate with the circular holes of the support plate rack and put it in.

3. Control Panel

	Control the instrument power on and off
	232 communication/drive the micro printer to print out the measurement data
	Measurement data conversion display
	Memory data
	Long press: set machine parameters Short press: return function
	Long press: enter the calibration function Short press: weight value is set to zero

4. Calibration

Situations where calibration weights are required:

- When the apparent density tester is used for the first time
- When the apparent density tester is moved elsewhere
- When the surrounding environment changes
- Regular adjustment

Plug in the power supply and warm up for 30 minutes (for colder northern regions). The display shows 0.000g.

(1) When the tester is in weighing mode, long press the ZERO key.

(2) When CAL is displayed, let go and the calibration procedure will begin:

When you see the weight flashing on the screen, followed by "300.00g" flashing (Note: the calibration value displayed at this time is only used as a reference calibration value. Users can select any weight of the linear calibration point on the weighing pan according to actual needs. The program will automatically determine the weight value and complete the calibration). Put the calibration weight on the weighing pan, the displayed value flashes faster, until the value stops flashing, then remove the weight. The calibration is complete.

5. Set measurement parameters

In "Air" state, long press the "SET" key to enter the measurement parameter setting.
Press the "SET" key to modify the setting parameters, press the "PRINT" key to set the parameter shift, press "ENTER" to enter the next setting, press the "MODE" key to switch the positive and negative signs of the parameters, and press the "ZERO" key to exit the setting mode.

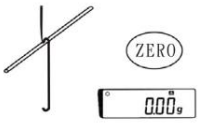
Setting item menu function table:

Item	Parameter	Description
DDo	0000.000	Density lower limit
DUP	0000.000	Density upper limit
UDE	0000.000	Solid medium (glass weight) density
COa	0000.000	Concentration value a
COb	0000.000	Concentration value b

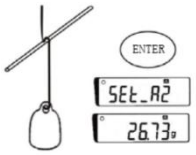
Note: The setting value of the density lower limit should be less than the density upper limit, otherwise a logical error will occur.

6. Measurement steps

(1) "AIR" is displayed in the power-on status display area. Hang the hook in the center of the liquid-specific rack, press the "ZERO" key, and deduct the weight of the hook.

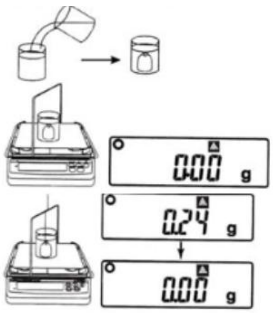


(2) Use the hook to hook up the standard glass weight, and press the "ENTER" key after it stabilizes. When the weight of the glass weight in the air is confirmed, "SAV-A" is displayed, indicating that the weight value in the air has been recorded.



(3) At this time, "Llq" is displayed in the status display area. Remove the glass weight. And take 50ml of the liquid sample to be tested into the beaker, and put the glass weight into the liquid.

(4) Place the beaker in the center of the support plate, use the hook to hook up the glass weight (make sure that the measured liquid is higher than the glass weight, and the glass weight cannot touch the beaker wall), and press the "ENTER" key after it stabilizes. When the weight of the glass weight in the liquid is confirmed, "SAV-B" is displayed, indicating that the weight value in the liquid has been recorded.



(5) Automatically display the density value of the measured liquid. Press the "MODE" key to switch to display the concentration value of the sample.

(6) Press the "PRINT" key to input test results and other data through RS232 communication or print out test time, statistics of various test data, etc. through a dedicated micro printer.

(7) Press the "SET" key to return to the test state and measure the next set of samples. (When testing continuously, clean the hook and glass weight)

7. Operation precautions

(1) The instrument is a precision density tester for density. Please designate a person to be responsible for management and operation.

(2) When using this density tester, if water or other liquids in the water container are accidentally overflowed, be sure to inform the supervisor in time to avoid delaying the repair opportunity.

(3) To know whether the machine has been flooded or malfunctioned, please ask the supervisor to turn on the machine before leaving get off work every day to check whether the screen can display 0.000g. If it displays ————————, it means that the machine has malfunctioned.

(4) What should I do if the machine is flooded?

First, unplug the power supply, then turn the machine upside down and dry it in the shade. Immediately notify the supplier's professional maintenance personnel to check and repair. Do not disassemble by yourself to avoid damaging the load cell.

8. Maintenance

(1) 300Y must not measure objects exceeding 300g; 600Y must not measure objects exceeding 600g. During installation and use, avoid subjecting the machine to excessive pressure.

(2) The surface of the machine must be wiped with a dry cloth to prevent dust accumulation.

(3) If the machine is not used for a long time, the measuring frame should be removed.

(4) The machine should be protected from collision, extrusion and moisture. If it is not used for a long time, please remove the power supply and cover it with a dust cover.

9. Troubleshooting

(1) Unstable weight

Troubleshooting method: Remove the measuring table and water tank to see if there are any foreign objects or water drops under the support table. If there are foreign objects or water drops, please remove the foreign objects or wipe off the water drops first.

(2) If the number shows ---------- or -E

Troubleshooting method: Press ZERO first to see if it can return to zero stably. If it does not return to zero, remove the objects on the measuring table first, and then contact the supplier's relevant personnel for repair.

(3) If a fault that cannot be corrected by yourself occurs, do not open the machine without authorization, and contact the supplier's relevant personnel for repair in a timely manner.