265 | Automatic Densimeter
Model DSG-2

When determining density, the mass of a substance in air and in solution are calculated using a balance, and based on these values, the density is calculated by calculation.
However, it is difficult to obtain uniform data, and it is both time-consuming and labor intensive.
Automatic Densimeter can determine density with high accuracy in a short time by simply pressing the start button.
The results can be saved in the main unit. (Output to a PC or a small printer is also available as an option.)
A full range of options are available to measure the density of solids such as rubber, plastics, ceramics, and metals, as well as the density of liquids and the rate of change in volume of rubber.

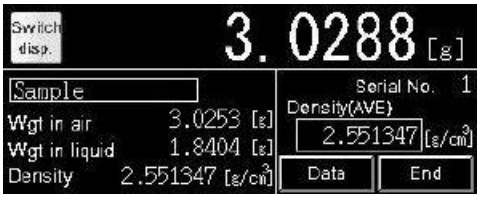
■PRINCIPLE

After entering the air and liquid densities, the sample is fixed to the clamp and the test is started to measure the mass in air.　Then the beaker rises, the sample is submerged in the liquid, and the mass in the liquid is measured.
Each mass data is substituted into the calculation formula to obtain the density and specific gravity.

■FEATURES

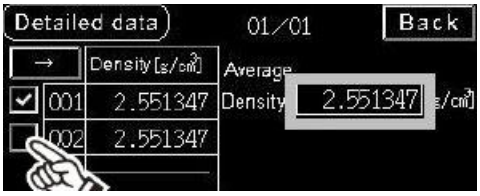
- Can measure a wide range of densities from foams to metals.
- Measurement time can be as short as about 15 seconds.
- Three simple steps for operation: set conditions, attach/detach specimen, and press start button.
- Liquid and air density tables can be stored in the main unit, and the liquid and air densities can be reflected by simply entering air and liquid temperatures.
- In addition to distilled water, other liquid such as alcohol can be used as the immersion liquid.
- The temperature of the liquid can be controlled by using a double-wall beaker and a refrigerated circulator.
- Optional calculation software enables volumetric and other measurements.
- The beaker lifting speed and vertical stop position can be changed to improve testing efficiency.
- A fully-automatic version is also available, in which all measurements are performed automatically by simply setting the sample.

■LCD TOUCH SCREEN



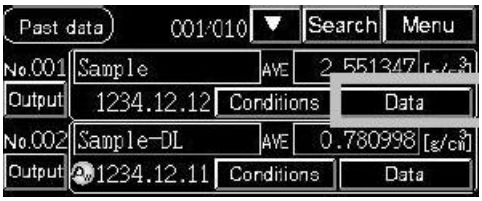
Measurement Results Screen

- Mass in air, mass in liquid, and density can be checked on a single screen.
- The test can be performed continuously and the average density is automatically displayed. (up to 100 times)



Detailed density data screen

- Individual data can be checked in case of continuous testing.
- Unchecking the box allows the average density to be recalculated excluding that data.



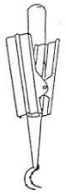
Past data screen

- Data stored in the main unit can be viewed at any time on the touch panel.
- Test conditions can also be verified
- It has a search function, allowing you to search by date or sample name.

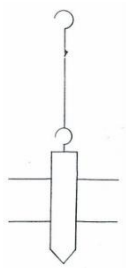
■SPECIMEN CLAMPS

Ω type clamp
Plate-shaped specimen can be sandwiched.

Pierce type clamp
Can be pierced into the sample.



Clip type clamp
Thick plate-shaped specimens, O-ring etc. can be clamped.



Clamp for Films
Can be fixed by sticking it into the film in 4 places.

Other clamps are available as follows

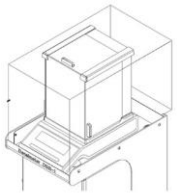
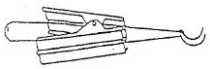
- Ω-type clamp with weights
- Glass ball clamp (for liquid density measurement)
- Clamp for pellets (glass container)
- Clamp for grease

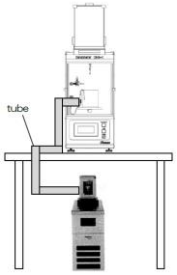
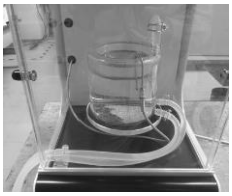
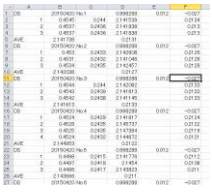
Special types are also available.

■ACCESSORIES

Name	Model (Part No.)	Photo	Qty
Balance unit	-----		1
Balance hook	-----		1
Pierce clamp	1-d (2130002)		1
Ohm clamp, without weight	2-a (2130006)		3
Standard beaker	-----		1

■OPTIONS

Name	Model (Part No.)	Photo
Acrylic windshield for balance unit	SC	
Pierce clamp (Heavier than 1-d)	1-e	
Ohm clamp, with weight	2-d (2130008)	
Clip type clamp	3-a (2130005)	
Glass ball clamp for liquid density measurement	-----	
Calculation software (Optional program) ● Volume ● Volume change rate ● Weight change rate ● Forming rate ● *Liquid density measurement *Optional grass ball clamp and small beaker is required.	OP1	
Automatic input of air density	AT-A1	
Automatic input of water density, For standard beaker	AT-L1	

Automatic input of water density, For double-wall beaker	AT-L2	
Refrigerated circulator (Immersion liquid temp. control) ● Closed-loop chiller ● Measurement range: 10 to 30ºC ● Power supply: Single-phase, AC230V, 50Hz	T3	
Refrigerated circulator (Immersion liquid temp. control) ● Closed-loop chiller ● Measurement range: 10 to 30ºC ● Power supply: Single-phase, AC115V, 60Hz	T5	
Double-wall beaker, Open type (For open-loop chiller)	B2OP1	
Double-wall beaker, Closed type (For closed-loop chiller)	B2OP2	
Small beaker for liquid density measurement		
Mini thermal printer		
Data import software for spreadsheet	EX-2	
RS-232C cable (Cross type)	RS-1	
RS-232C cable (Cross type) with USB conversion adapter	RS-2	
Power cord, type B (For USA etc.)	AC-U	
Power cord, type F (For Germany etc.)	AC-C	
Power cord, type F (For South Korea)	AC-K	
Power cord, type G (For UK etc.)	AC-B	
Power cord, type I (For China)	AC-G	

■SPECIFICATIONS

Model	**DSG-2**
Capacity	100g
Calibration weight	Built-in
Minimum display	0.00001g (0.01mg)
Density display resolution	0.000001g/cm^3
Operation panel	4.7″ LCD touch screen
Beaker lifting stroke	100mm
Beaker lifting speed	10, 20, 30mm/s (Selectable)
Data saving	200 lot, 1000 data (Note:1 lot can store up to 100 data)
Immersion liquid	Water, ethanol, acetone etc. (Note: To be used in the range of 10 to 30ºC)
Interface	RS-232C
Power requirements	● Main unit: Single-phase, AC100 to 240V, 50Hz or 60Hz, 0.1kVA ● Balance unit: Single-phase, AC100 to 240V, 50/60Hz, 0.05kVA
Dimensions	W290 x D443 x H610mm
Net weight	Approx. 26kg (Excluding balance unit) Approx. 35kg (Including balance unit)

■RELATED STANDARDS

JIS K 0061	Test methods for density and relative density of chemical products
JIS Z 8807	Methods of measuring density and specific gravity of solid
JIS K 6258	Rubber, vulcanized or thermoplastic-Determination of the effect of liquids
JIS K 6268	Rubber, vulcanized−Determinaion of density
JIS K 7112	Plastics−Methods of determining the density and relative density of non-cellular plastics
JIS Z 8804	Methods of measuring density and specific gravity of liquid
ISO 1183-1	Plastics Methods for determining the density of non-cellular plastics Part 1: Immersion method, liquid pycnometer method and titration method
ISO 1817	Rubber, vulcanized or thermoplastic Determination of the effect of liquids
ISO 2781	Rubber, vulcanized or thermoplastic Determination of density
ASTM D297	Standard Test Methods for Rubber Products—Chemical Analysis
ASTM D792	Standard Test Methods for Density and Specific Gravity (Relative Density) of Plastics by Displacement

Specifications are subject to change without notice.

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