Dunouy Ring Method Tensiometer

Model: TEN180

Model: TEN202

1, General introduction

Surface / Interfacial tensiometer is an ideal device used to determine water (soil moisture) potential tension in the vadose zone. It's widely used to inspect the insulation oil materials in irrigation works, electric power department; or research and education work in petroleum, chemical engineering, science academy.

2, Principle

Surface tension: To measure the surface tension between a liquid and the air, the Tensiometer duNouy ring is placed below the surface of the liquid. This test is performed by pulling the ring upward through the surface of the liquid. The force needed for the ring to break the surface (overcome the surface tension) is determined.

Interfacial tension: There are applications where the surface tension at the boundary of two liquids needs to be measured. This is called interfacial surface tension.

The Tensiometer for this test needs to pull the ring up through the boundary between the lower, higher density liquid, and the liquid that is floating above. The force needed to break through the surface of the higher density liquid is recorded as interfacial surface tension.

The force needed to break the boundary going from the floating liquid to the greater density liquid is measured by pushing the ring down through the boundary.

Du Nouy ring method: The du Nouy ring method is one technique by which the surface tension of a liquid can be measured. The method involves slowly lifting a ring, often made of platinum, from the surface of a liquid. The force required to raise the ring from the liquid's surface is measured and related to the liquid's surface tension.

Key Features

1, Different kind for selection, manual, automatic, digital, dial, computer etc.,
2, Rapid Measurement - Ring method allows readings to be made in 15-30 sec.
3, Direct Reading - Circular scale is graduated in dynes/cm eliminating the need for mathematical calculations;
4, Portability - Compact unit comes with a carrying case for easy transport;
5, For TEN180 Manual tensioemter is mounted on a cast tripod support with convenient leveling screws.
6, with Standard delivery of 500mg calibration weight mass.

3, Application

Tensiometer it applies to physics is an instrument used to measure the surface tension of liquids or surfaces. Tensiometers are used in research and development laboratories to determine the surface tension of liquids like coatings, lacquers or adhesives. A further application field of tensiometers is the monitoring of industrial production processes like part's cleaning or electroplating.

4, References

ISO 304 "Surface active agents -- Determination of surface tension by drawing up liquid films"

ISO 1409 " Plastics/rubber -- Polymer dispersions and rubber latices (natural and synthetic) -- Determination of surface tension by the ring method"

ISO 6295 " Petroleum products -- Mineral oils -- Determination of interfacial tension of oil against water -- Ring method "

ASTM D1417 "Standard Test Methods for Rubber Latices—Synthetic"

ASTM D1590 "Surface tension of industrial water and Industrial waste water"

ASTM D1331 "Standard Test Methods for Surface and Interfacial Tension of Solutions of Paints, Solvents, Solutions of Surface-Active Agents, and Related Materials"

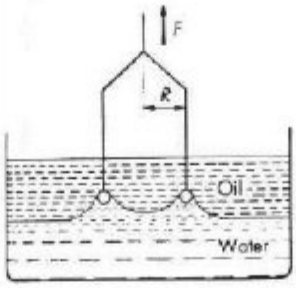
ASTM D971 "Standard Test Method for Interfacial Tension of Oil Against Water by the Ring Method"

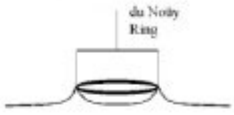
EN14370 "Surface active agents. Determination of surface tension"

ZB2025, GB/T 2960, GB/T 6541, GB/T 22237, GB/T 6541, GB/T 5549 etc.,

Platinum ring

500mg weight for calibration (5 pcs)





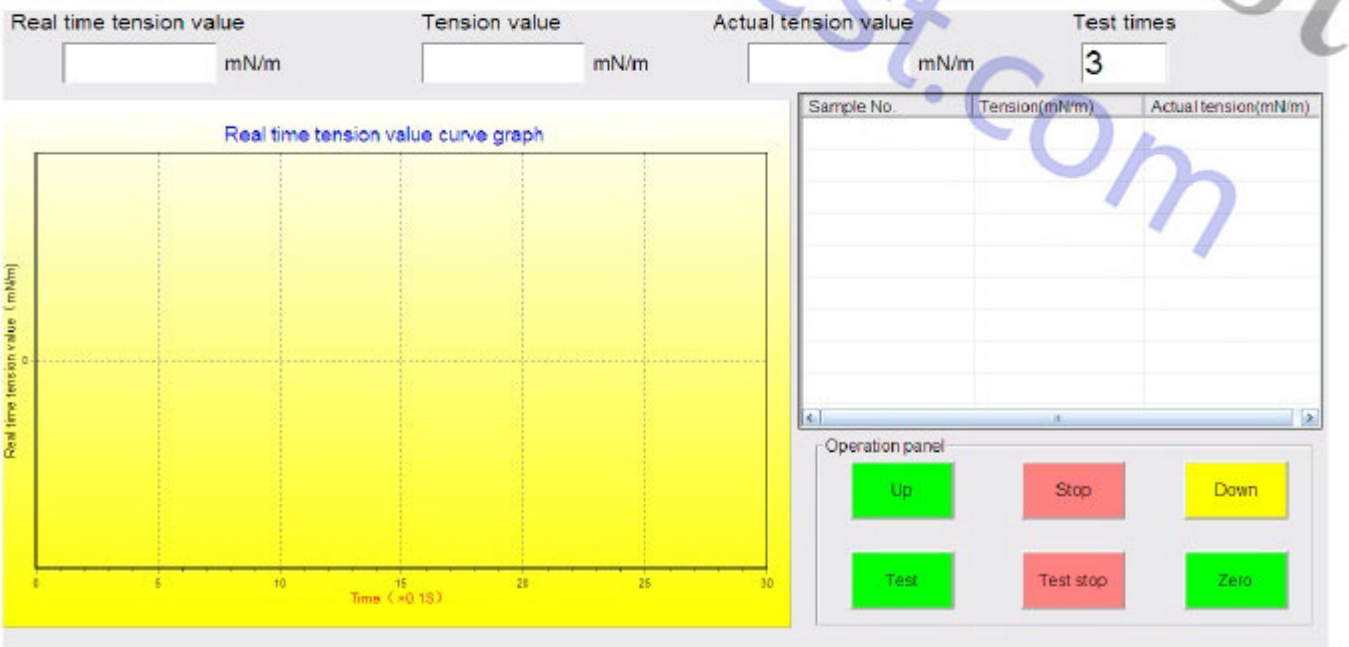
Du Nouy Ring method test

5, Main technical specification

Model	TEN180 (JZHY-180)	TEN201 (JZYW-200A)	TEN202 (JZYW-200AL)	TEN203 (JZYW-200B)
Measuring range	0~180mN/m	0~200mN/m	0~200mN/m	0~200mN/m
Min. dial scale/ resolution	1mN/m	0.1mN/m	0.01mN/m	0.01mN/m
Measuring method	Manual	Automatic	Automatic	Automatic
Platinum ring radius	9.55mm			
Platinum torsion wire	0.3mm			
Platinum ring perimeter length	60mm			
Sample tray stroke	25mm			
Glass cup volume	60ml			
Sample tray speed	Manual	15 mm/min±2 mm/min		
Power supply	NO	220V, 50HZ / 110V,60Hz		
Display	Dial scale	Digit display	LCD display	PC screen
Micro-printer	No	Yes	YES	A4 printer

Model: TEN203

Model: TEN201



6, Comparison

Model	TEN108	TEN201	TEN201	TEN201
Measuring method	Manual	Automatic	Automatic	PC automatic
Display	Dial scale	Digit	LCD	Computer
Printer	No	Micro-printer	Micro-printer	A4 paper Printer
Resolution	1mN/m	0.1mN/m	0.01mN/m	0.01mN/m

7, Main accessories

Item	Quantity
Frame	1 set
Platinum ring (R9.55mm)	1 pc
Torsion wire	1 pc
Pothook	1 pc
Glass cup	1 pc
500mg weight for calibration	5 pcs
Computer (for TEN203)	1 set
English software (For TEN203)	1 set
Documents (Manual, packing list, certificate)	