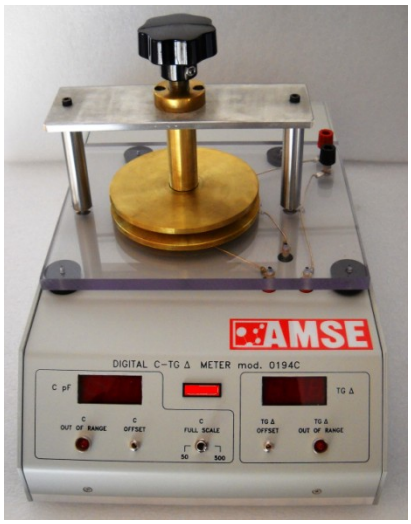
Q-Meter

AMSE offers an instrument for measuring the Capacity and Delta Tangent to the Frequency.

Definition

The Q – Meter model 194 C is a laboratory instrument used for plastic characterization. It enables the measuring of the Capacity and the Delta Tangent (tangent to the loss angle) to the Frequency of 1 MHz with a excitation signal of 1 Volt.
It is used with a dedicated electrode group where the operator will insert the sample to be tested.



Working method

The measurement of the unknown Capacity parameters is done with the method Voltage / Current. A sinusoidal generator at the frequency of 1 MHz is applied to the circuit which consist on a unknown capacity and a reference known capacity. A circuit of counter-reaction provide to keep constant the value of Voltage applied to the unknown capacity . So the current passing through is proportional to the admittance. The equivalent circuit to be referred for the measure is the parallel one. As the measure of the current passing through the unknown capacity is related to the dropping-voltage in a reference capacity, the phase angle of this dropping-voltage is the same of the loss angle. In case of small values of loss angle (δ) coincides with his tangent (Tg δ); in case of higher values a proper correction circuit inserts the necessary increment to obtain the correct indication. The absolute value of the current (which is the measurement of admittance of the unknown condenser) is proportional to the capacity in case of small values of δ and the digital indicator can read directly (and proportionally) the current value. In case of higher values of the Tg δ a compensation circuit inserts automatically the necessary correction.

Technical features

Working Frequency	1 MHz
Working Voltage on a sample	1 Veff
Capacity Range	0… 500 pF
Max error	+/- 2 % +/- 3 pF
Tang Delta measurement field	0 …0,1 max error+/- 2% of the reading value +/-0,001
Tang Delta measurement field	0 …1 max error+/- 2% of the reading value +/-0,01
Power supply	220 V ac +/- 10 % 50 Hz
Power Consumption	< 25 VA

Dimensions

Instrument	mm. 210 x 440 x 130 h	weight	Kg 4,5
Electrode group	mm. 210 x 180 x 200 h	weight	Kg 1,2

AMSE S.r.l.
P.IVA 09762820018
C.so Lombardia, 75
10099 S. Mauro Torinese (TO)
Italy
Tel: +39 011 22 36 304
Fax: +39 011 22 41 393
Web: www.amse.it
E-mail: sales@amse.it