



**OMEGA TYPE ES-247** Experimental Set Up has been designed specifically for the Measurement of magnetic susceptibility of paramagnetic solution by Quincke's method. Also find the ionic molecular susceptibility of the ion and magnetic moment of the ion in terms of Bohr magneton. The set-up consists of Electromagnet, Constant Current Power supply (0 - 4Amp), Digital Gauss meter with Hall probe, Traveling microscope, Quincke's tube with stand, sample (FeCl<sub>3</sub>).

The set up is complete in all respect and requires no other apparatus.

Practical experience on this set up carries great educative value for Science and Engineering Students.

#### OBJECT

01 Measurement of magnetic susceptibility of paramagnetic solution by Quincke's method. Also find the ionic molecular susceptibility of the ion and magnetic moment of the ion in terms of Bohr magneton.

#### FEATURES

The complete Experimental Set-up consists of the following:

01 **ELECTROMAGNET** : The electromagnet have the most widely used 'U' shaped softiron yoke. The soft iron is of a special quality, structurally uniform, well machined and finished to meet the rigid standards.

Specifications

Field intensity : 7.5 KG at 10mm air-gap which flat pole pieces.

Pole pieces : 50mm diameter.

Energising coils: Two, each a resistance of about 3.0 ohm.

Power requirement: 0-30V dc, 4A, its coils are connected in series.

#### 02 CONSTANT CURRENT POWER SUPPLY

Current range : 0 - 4 Amp.

Load regulation : Better than 0.5% of the highest Omega type CCP-30/4 (No Load to Full Load) specified output current.

Line regulation : Better than  $\pm 2\%$  of the specified output (For  $\pm 10\%$  Mains Variation) current.

Metering : 3 ½ digit 7 segment LED DPM.

#### 03 DIGITAL GAUSS METER

: operates on the principle of Hall Effect in semiconductor. The small Hall Voltage is amplified with hall probe through a high stability amplifier so that millivoltmeter connected at the output of the amplifier Omega type DGM-020 can be calibrated directly in magnetic field unit (gauss).

Specifications

Range : 0.2KG & 0-20KG.

Resolution : 1G at 0-2KG range

Accuracy :  $\pm 0.5\%$ .

Special Feature : Indicate the direction of the magnetic field.

#### 04 TRAVELLING MICROSCOPE :

T-shape model with horizontal and vertical scales. The base is fitted with three leveling screws.

05 Quin Cke's tube with stand

06 Sample - Fecl<sub>3</sub>

07 Hall probe wooden stand

08 Hall probe with Plastic Box

09 Weight : 52 Kg. (Approx.)

10 Strongly supported by detailed Operating Instructions, giving details of Object, Theory, Design procedures, Report Suggestions and Book References.

We are committed to the continuous development of our products, and therefore reserve the right to amend specifications without prior notice.

**OMEGA ELECTRONICS**

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