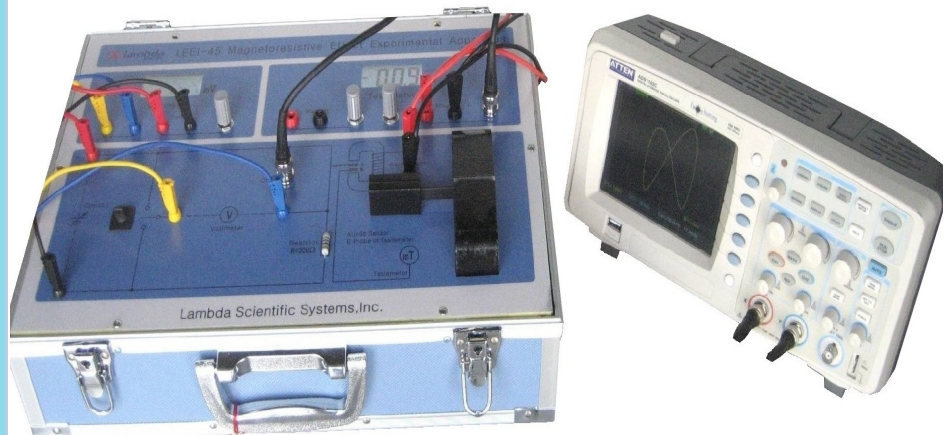


LEEI-45 Magnetoresistive Effect Experimental Apparatus

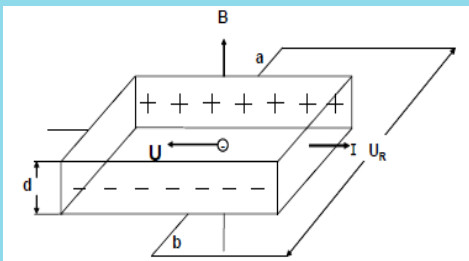
- Rectangular sample with small gap
- Easy to use, stable and reliable
- Affordable



Note: oscilloscope not included

Due to the high sensitivity and strong anti-interference ability, magnetoresistive sensors have wide applications in communications and industrial instrumentation such as: digital compass, vehicle testing, navigation systems, counterfeit detection, position measurement, and so on. InSb sensor is a typical magneto-resistance sensor due to its affordability and high sensitivity.

This experimental apparatus is simple and informative. It uses a GaAs Hall sensor to measure the magnetic field intensity and the magneto-resistance values of an InSb magnetoresistive sensor under different magnetic field intensities.



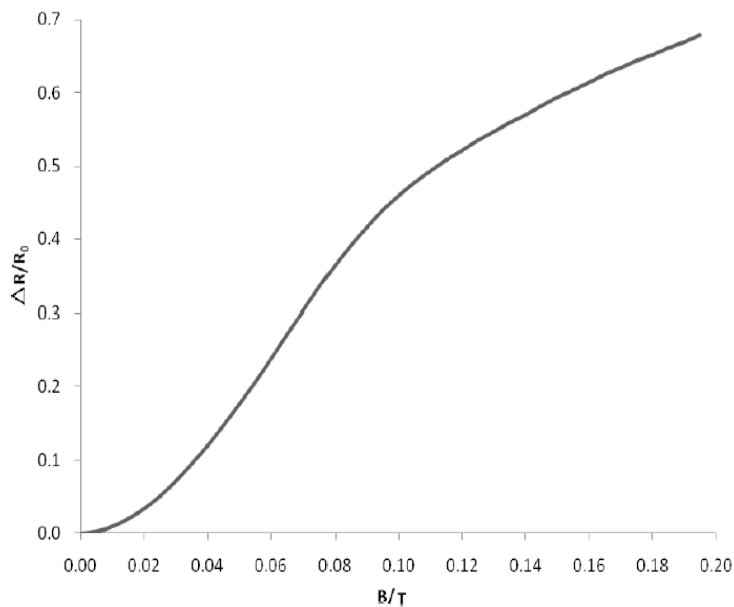
Schematic of magnetoresistive effect

Experimental Contents

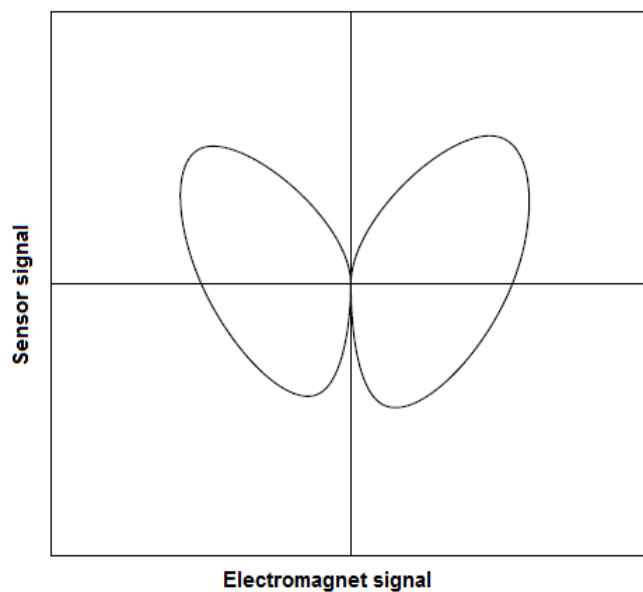
1. Study the relationship between the resistance change $\Delta R/R_0$ of an InSb sensor and the applied magnetic field intensity B to find the empirical formula.
2. Plot the relationship curve of InSb sensor resistance versus magnetic field intensity.
3. Study the AC characteristics of an InSb magnetoresistive sensor under a weak magnetic field (frequency doubling effect).

Parts & Specifications

Power supply of magneto-resistance sensor	0-3 mA adjustable
Digital voltmeter	range 0-1.999 V resolution 1 mV
Digital milli-Teslameter	range 0-199.9 mT, resolution 0.1 mT



Relationship between magnetic field intensity and magnetoresistive sensitivity



Lissajous graph observed on oscilloscope

Note: above product information is subject to change without notice.