

LEEI-35 Hall Effect Experimental Apparatus

- High performance GaAs Hall element
- Easy to use, stable and reliable
- Affordable



Schematic of generating Hall voltage



Due to small size, ease of use, high accuracy, and suitability for measurement of both AC and DC magnetic fields, Hall devices have been widely used to measure magnetic fields. Together with other devices, they can be used for automatic control and measurements of position, displacement, speed, angle, and other physical quantities. This apparatus is purposed to help students understand the principle of Hall effect, measure the sensitivity of a Hall element, and learn how to use a Hall element to measure magnetic field intensity. It has the following attractions:

- 1. GaAs Hall element has high sensitivity, wide linear range, and small temperature coefficient.
- 2. Small working current of Hall element yields stable and reliable experimental data.
- 3. Visible shape and structure of test sample and Hall element yield intuitive result.
- 4. Durable instrument incorporates protective mechanism.

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Experimental Objectives

- 1. Acquire the relationship between Hall current and Hall voltage under a DC magnetic field.
- 2. Measure the sensitivity of a GaAs Hall element.
- 3. Measure the magnetization curve of silicon steel material using a GaAs Hall element.
- 4. Measure a magnetic field distribution along horizontal direction using a Hall element.

Specifications

Current stabilized DC supply	range 0-500 mA, resolution 1 mA
Voltmeter	4-1/2 digit, range 0-2 V, resolution 0.1 mV
Digital Teslameter	range 0-350 mT, resolution 0.1 mT



Schematic of experimental configuration

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