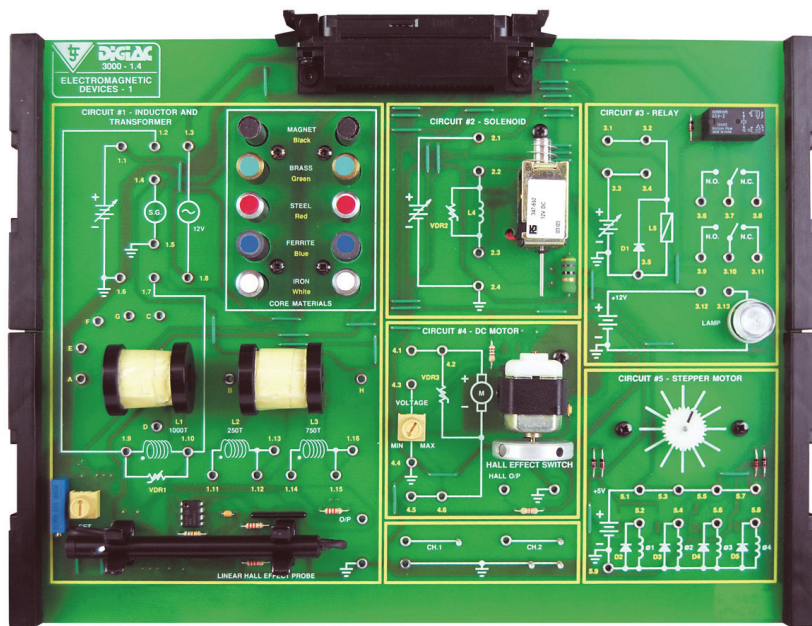


# Product Information Sheet

## Electromagnetic Devices Study Module



This electronics study module is designed to connect to the Advanced Electronics Experiment Platform (300-01) as part of a modular electronics programme.

The study module is designed to introduce students to the principles of magnetism and electromagnetism through a wide range of practical activities.

Using the Advanced Electronics Experiment Platform, a range of faults to be selected and inserted into the study module circuits to develop electronic diagnostic and faultfinding techniques.

The study module is supplied with PDF manuals that provide theory materials, practical tasks, faultfinding activities, and technical information.

### Topics Include the Following:

- Permanent Magnets and Magnetic Field
- Electromagnets
- Electromagnetic Induction
- Inductive Reactance
- The Transformer
- Solenoid
- Relay
- Force on a Conductor and Motor Principle
- Stepper Motor

### Typical Activities Include:

- Assess the properties of magnetic core materials and the field strength around a magnet
- Use the Hall probe to determine the behavior of an electromagnet with different core materials and their relative permeability
- Determine the effect of core materials on coil inductance
- Investigate the effect of turns ratio on voltage ratio
- Investigate the effect of turns ratio on current ratio
- Investigate the frequency response of different core materials
- Investigate pull-in voltage for a solenoid

- Determine pull-in and drop-out voltage and current for a relay
- Diagnose faults in relay circuits
- Investigate the operation of a simple DC motor
- Determine EMF in a generator armature
- Determine the operation of full step and half step motors
- Faultfinding

### Items Included:

- Circuit Card
- Storage Case
- Curriculum Manual in PDF Format

### Other Items Required:

- 300-01 Advanced Electronics Experiment Platform
- Digital Multimeter
- Dual Trace Oscilloscope
- Signal Generator

### General Information:

Dimensions: 81 x 323 x 256 mm (W, H, D)

Shipping Volume: Approx 0.008 m<sup>3</sup>

Shipping Weight: Approx 2 kg

**Order Code: 301-14**

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