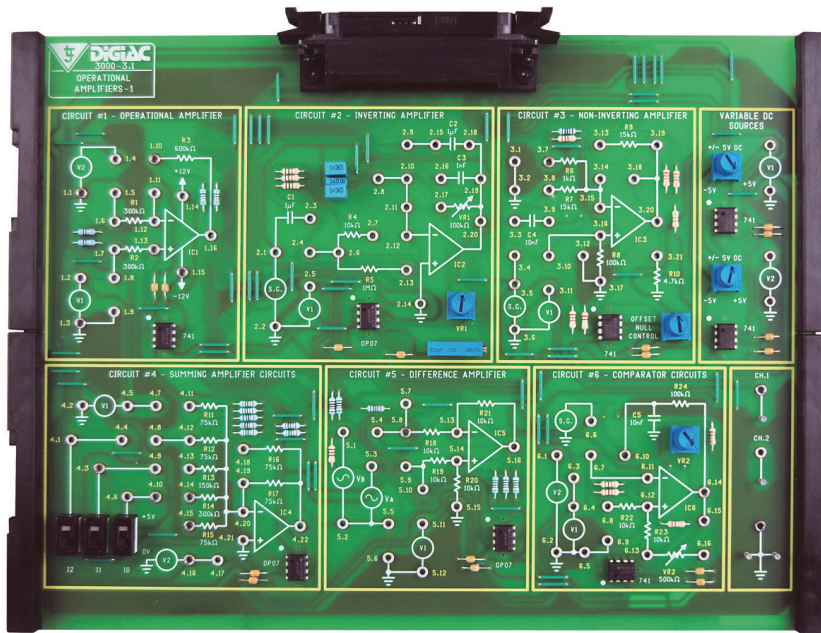


# Product Information Sheet

## Operational Amplifiers 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 operational amplifiers and their applications 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:

- Operational Amplifier
- Basic Operational Amplifier
- Inverting Amplifier - DC Operation
- Inverting Amplifier - Alternating Input
- Integrator
- Non-Inverting Amplifier
- Summing Amplifier
- Difference Amplifier
- Comparator Circuits

### Typical Activities Include:

- Determine the action of a zero crossing detector
- Observe the operation of a comparator circuit
- Diagnose a fault in an op-amp comparator circuit
- Make measurements to calculate voltage gain for different values of feedback resistor
- Determine voltage gain for AC inputs
- Determine limits of bandwidth
- Measure the rate of change of output voltage for an integrator circuit
- Measure the offset voltage for a non-inverting amplifier
- Identify the transfer characteristic for a non-inverting amplifier
- Measure the output of a weighted summing amplifier

- Diagnose faults in a differential AC amplifier circuit
- Observe gain and output polarity for differential mode
- Observe the output of a Schmitt trigger for sine and triangular wave inputs
- Faultfinding operational amplifier circuits

### 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: 302-31

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