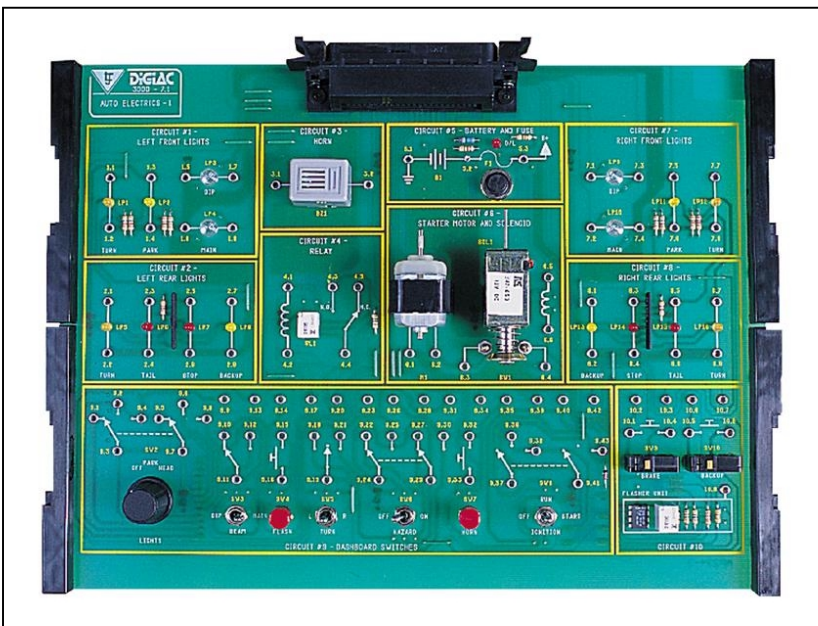


D3000 7.1 - Automotive Electrics



The D3000 7.1 study module introduces students to automotive electrical circuits through a wide range of practical activities.

This study module has been designed specifically to operate within a DIGIAC modular electronics program. It comprises a circuit board and student laboratory manual housed in an injection molded storage case.

When used in conjunction with a student personal computer (PC), the laboratory manual is fully compatible with the ClassAct computer managed learning system.

The laboratory manual is divided into a series of chapters. Each covers a specific topic area and provides background theory, practical activities and student assessment questions.

Each chapter is designed around a list of performance objectives. These objectives are used by the ClassAct management system to generate a student competency report.

An instructor's solutions book is available, providing solutions to all of the questions and practical activities contained in the laboratory manual.

Typical topic areas include:

- Fault Finding - The Basics
- Battery and Fuse
- Starter and Solenoid
- Horn and Relay
- Park, Tail and Headlamps
- Turn Signal and Hazard Warning Lights
- Brake and Backup Lights

Typical activities include:

- Recognize circuit faults as short, Open and resistance circuit faults.
- Identify the effects of short, open and resistance circuit faults.
- Identify the internal construction of the battery.
- Diagnose faults in the battery and fuse circuit.
- Recognize inertia, pre-engaged, axial and co-axial starter motors.
- Measure voltage, current and resistance in the starter and solenoid circuit.
- State how multi-horn circuits are electrically connected.
- Identify the difference between NO and NC relays.
- Construct a circuit diagram of the turn signal and hazard circuit.
- Interpret the parking and headlamp circuit diagram.
- Identify applications for each of the bulb types used in the automotive industry

Typical activities include:

Continued ...

- Identify through taking measurements, live and switched live points of the backup light circuit.
- Diagnose faults in the Brake and Backup circuits.

Items supplied with the D3000 7.1 study module include:

- Circuit board
- Laboratory manual
- Storage case

Additional items required:

- D3000 Experiment Platform (EP) or D3000 Virtual Instrument Platform (VIP)
- Digital Multimeter*

* Note that separate test instruments are not needed if the D3000 VIP is used, as all required test equipment is provided in the form of on-screen 'virtual' instruments.

If a D3000 VIP is used, or if the study module is to be used in a ClassAct computer managed learning environment, then a student PC will also be required.

Optional supporting items include:

- Instructor's Solutions Book.

Module Facts

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| | No. | Average time |
|--------------|-----|-------------------|
| Chapters | 15 | 90 minutes |
| Total | | 22.5 hours |



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