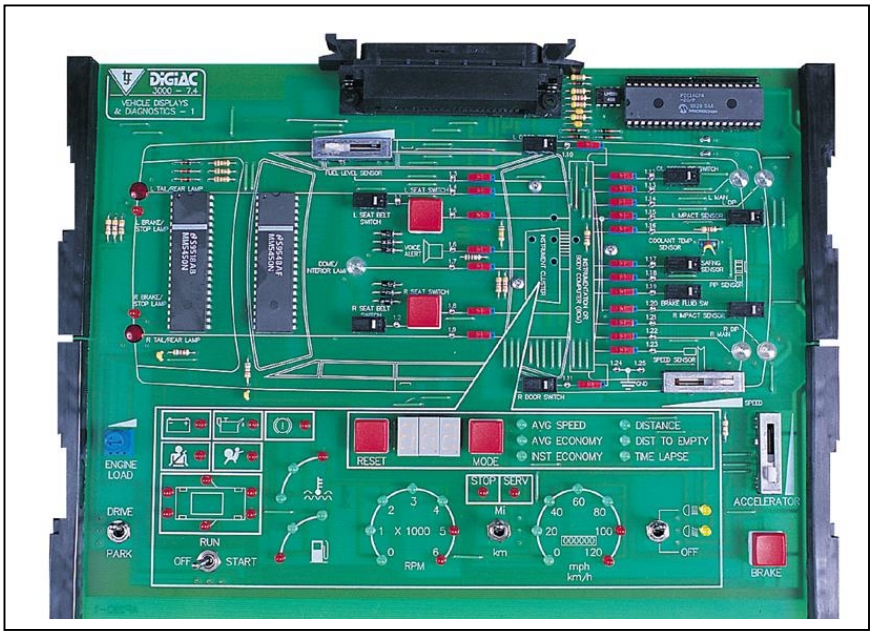
D3000 7.4 - Vehicle Displays and Diagnostics



The D3000 7.4 study module introduces students to automotive display and warning systems 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:

- Instrument Cluster
- Levels & Lighting
- Passenger Safety
- Trip Computer

Typical activities include:

- Identify the constructional differences between the coil type and bi-metal gauges and their basic operation.
- Perform timebase readings on an oscilloscope at the PIP and vehicle speed sensors.
- Calculate engine speed from the TDC reference signal.
- State the effect of changing vehicle speed on the speed sensor signal.
- Recognize the operating principle of the lamp failure detection system.
- Diagnose faults in the coolant temperature indication circuit.
- Recognize how to test gauges through grounding out the sender feed wire.
- Recognize the operating principle of the oil pressure indication circuit and low oil level warning lamp system.
- Recognize the operation and function of the impact sensor.
- Diagnose faults in the interior lamp system.
- Identify symptoms of failure of the vehicle speed sensor.
- Identify the component used by the fuel level sensor to send signals to the trip computer.
- Diagnose faults in the air bag system.

Items supplied with the D3000 7.4 study module include:

- Circuit board
- Laboratory manual
- Storage case

Additional items required:

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

* 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	12	70 minutes
	Total	14 hours

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Web site: www.ljgroup.com

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