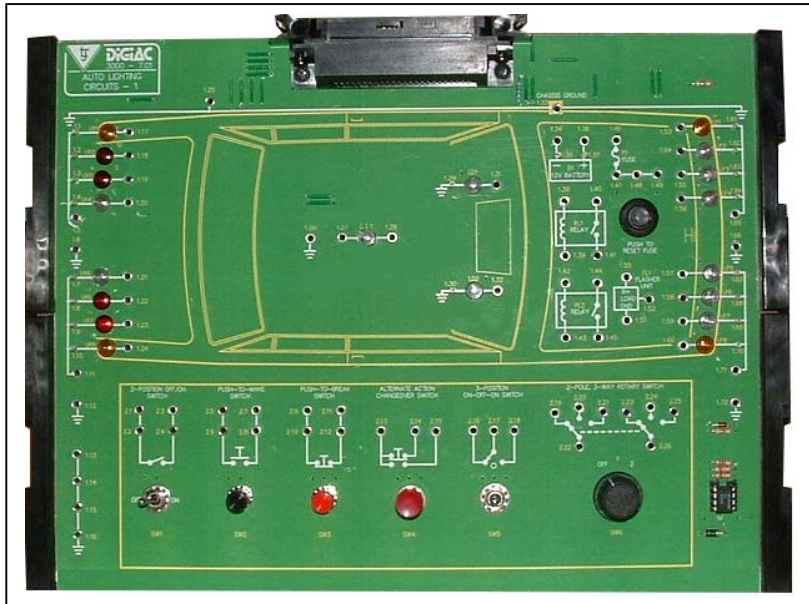


D3000 7.01 – Auto Lighting Circuits



The circuit board provides the following features:

- On-board mimic of a car, with access to the following circuit components:
 - 12V battery
 - Fuse (resettable)
 - Two relays
 - Flasher unit
 - Six different types of switches
 - Interior light
 - Dashboard lights
 - Brake (stop) lights
 - Reverse (backup) lights
 - Headlamp circuits with dip/main (Lo/Hi) beams
 - Direction indicator (turn signal) lights
 - Side and rear (park and tail) lights

Items provided with D3000 7.01:

- Auto Lighting Circuits board.
- Laboratory manual
- Storage case

The D3000 7.01 Auto Lighting Circuits module introduces students to the lighting circuits that are used in modern vehicles.

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

The laboratory manual provides a range of hands-on practical activities that students carry out using the circuit board.

An optional solutions book is available separately. This provides solutions and typical results for all of the activities contained in the laboratory manual.

An optional computer aided instruction (CAI) package provides on-screen student learning materials and PowerPoint® presentations.

The on-screen student learning materials include practical activities and student assessment questions. When used in conjunction with a PC, these materials are fully compatible with the LJ ClassAct computer managed learning system.

The PowerPoint® presentations provide supporting theory for the practical activities contained in the on-screen student learning materials.

Topics covered:

- Interior light circuits
- Brake (stop) circuit
- Reverse (backup) circuit
- Dip/main (Lo/Hi) beam circuit
- Hazard warning circuit
- Direction indicator (turn signal) circuit
- Side and rear (park and tail) circuits
- Introduction to headlamp circuits
- Relay circuits

Typical activities include:

- Use a multimeter to investigate a simple vanity light circuit.
- Troubleshoot a faulty vanity light circuit with a multimeter.
- Build an interior light circuit operated by a door contact and add a manual override.
- Troubleshoot a faulty brake (stop) light circuit with a multimeter.
- Investigate a reversing (backup) light circuit with a multimeter.
- Troubleshoot a faulty dip/main (Lo/Hi) beam circuit.
- Investigate how a flasher unit works.
- Construct a hazard warning circuit.
- Troubleshoot a faulty hazard warning circuit with a multimeter.
- Troubleshoot a faulty direction indicator (turn signal) circuit.
- Troubleshoot a faulty side and rear (park and tail) circuit.
- Construct a relay-operated headlamp circuit.
- Build a complete vehicle lighting system.

Additional items required:

- D3000 Experiment Platform (EXP) or Virtual Instrument Platform (VIP)
- Digital multimeter (DMM)*

* 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.

Optional items:

- D3000 IS 7.01 Auto Lighting Circuits solutions book
- D3000 CAI 7.01 computer aided instruction package (single user)
- D3000 CAI 7.01/SL computer aided instruction package (lab license)
- ST520/SRS ClassAct®/SRS Student Response System. This allows students to respond to questions in instructor-delivered PowerPoint® presentations via remote keypads.



LJ Technical Systems
 Web site: www.ljgroup.com