# Electrical Circuits And DVOM Usage (ELE01)

## Module 1–Electrical Circuits

A. Parts Of A Circuit
   1. Learning Objectives
   2. Parts Of A Circuit
   3. Battery As Load And Power Source
   4. Ground
   5. Making Ground Connections
   6. Wire Gauge Chart (Metric And AWG)
   7. Conductors
   8. Circuit Protection/Switch

B. Circuit Board
   1. Circuit Board
   2. Making A One-Load Circuit
   3. Making A One-Load Circuit (cont'd)

C. DVOM
   1. DVOM
   2. DVOM Features

D. Voltage
   1. Electrical Or Electronic Circuits
   2. DVOM
   3. DC Volts (DCV) Scale
   4. Voltage Readings
   5. Measuring Voltage
   6. DVOM Readings
   7. Determining An Unknown Value
   8. Circuit Value Measurement #1
   9. Voltage Measurement #1
   10. Voltage Measurement #1 (cont'd)
   11. Voltage Measurement #2
   12. Voltage Measurement #2 (cont'd)
   13. Voltage Measurement #3
   14. Voltage Measurement #4
   15. Voltage Measurement #4 (cont'd)
   16. Voltage Measurement #5
   17. Voltage Measurement #5 (cont'd)
   18. Voltage Measurement #6
   19. Voltage Measurement #6 (cont'd)
   20. Broken Wire

E. Current
   1. Current
   2. Direct Current (DC)
   3. Measuring Current With A DVOM
   4. Steps To Prevent Blowing A Meter Fuse
   5. Current Measurement #1

 

2. Current In The Two-Bulb Parallel Circuit
3. Measuring Branch Current
4. Measuring Branch Voltage
5. Resistance In Connected Parallel Circuit
6. Circuit Board Schematic
7. Three-Bulb Parallel Circuit
8. Measuring Total Current In A Three-Bulb Parallel Circuit
9. Making An Unequal Load
10. Three-Bulb Parallel Circuit With An Unequal Load
11. Unequal Load Results
12. Troubleshooting Blown Fuses In A Parallel Circuit

K. Review
1. Review
2. Review #2
3. Review #3

L. Conclusion
1. Conclusion
2. Conclusion (cont'd)
3. Conclusion (cont'd)
4. Conclusion (cont'd)

**Module 2–Electrical Parts And Troubleshooting**

A. Power Supplies
1. Learning Objectives
2. Automotive Batteries

B. Circuit Protection
1. Types Of Circuit Protection
2. Fuse (Fusible) Link And Maxi-Fuses
3. Fuses And Fusible Links
4. Video: Fuse Blowing Exercise Part 1
5. Fuse Blowing Exercise Part 1
6. Video: Fuse Blowing Exercise Part 2
7. Fuse Blowing Exercise Part 2
8. Circuit Breaker

C. Switches
1. Switches
2. Switch Problems
3. Testing A Switch For Continuity
4. Voltage Drop Test On Circuit Board Switch

D. Connectors
1. Connectors
2. Do not Back Probe A Waterproof Connector
3. Connector Damage
4. Connector Disassembly
5. Connector Repair

E. Wire Repairs
1. Wire Repair
2. Keeping The Same Wire Length