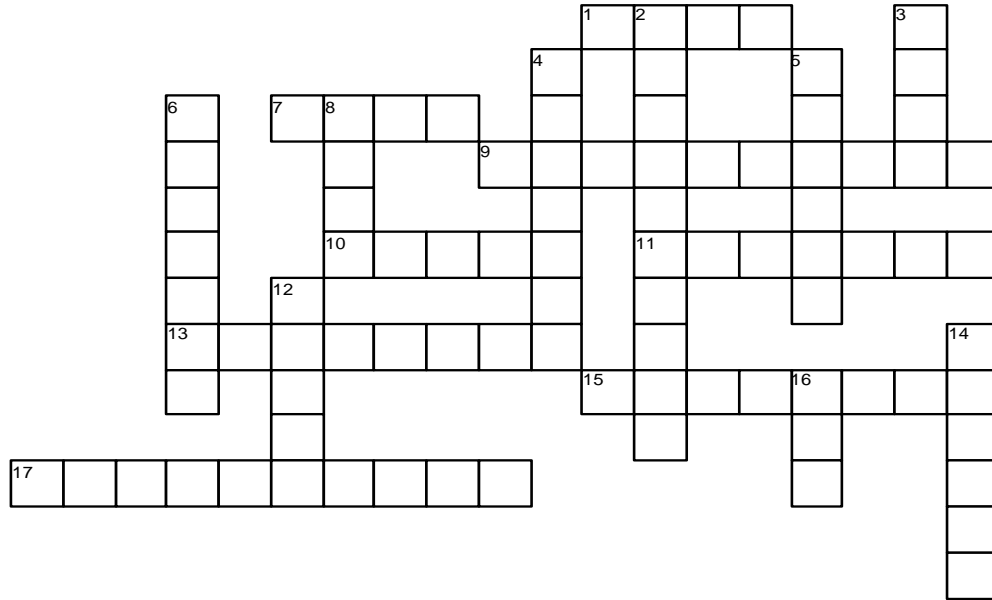


Automotive Electrical and Engine Performance 9th Edition

Chapter 3 - Electrical Circuits and Ohm's Law



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ACROSS

- 1 ____ circuit: A circuit with a break that interrupts the flow of current, causing the circuit to become non-functional.
- 7 A device within the circuit that consumes electrical power and converts it into another energy form, such as heat or light.
- 9 The unbroken state of a circuit, allowing electrical flow without interruption through all components and connections.
- 10 ____-to-ground: A fault where a power conductor touches a ground path, often causing a blown fuse or damaged components.
- 11 A complete path through which electrons travel from a power source, through a load, and back to the power source.
- 13 A condition where a defective circuit component or conductor comes into contact with the ground path, often resulting in a blown fuse or damaged wiring.
- 15 ____ circuit: A circuit where the path from the power source to the load and back to the source is uninterrupted, ensuring current flow.
- 17 ____ load: A component, such as a light bulb or motor, that converts electrical energy into another form of energy like light, heat, or motion.

DOWN

- 2 Devices like fuses, circuit breakers, or fusible links that prevent excessive current flow, protecting the circuit from damage.
- 3 A unit of power that measures the rate of energy transfer in a circuit, represented as one ampere of current under one volt of potential difference.
- 4 A condition where two conductors or wires come into unintended contact, bypassing resistance and leading to circuit malfunction.
- 5 Power ____: The origin of electrical power, such as a battery, that provides the energy needed for the circuit to function.
- 6 Short-to-____: A fault where two power-side wires touch, causing electrical current to flow along an unintended path.
- 8 ____ law: A fundamental electrical principle stating that the current in a circuit equals the voltage divided by the resistance ($I = E / R$).
- 12 ____ path: The conductor or wiring that carries electrical current from the power source to the load in a circuit.
- 14 ____ path (ground): The route through which electrical current returns from the load back to the power source, usually involving the vehicle's metal frame or body.
- 16 Watt's ____: A principle stating that the power in a circuit equals the product of the voltage and the current ($P = I \times E$).