

## The Hack Mechanic Guide to European Automotive Electrical Systems

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Price: \$49.95  
 Bentley Stock Number: BHME  
 Publication Date: 2016.jun.27  
 ISBN: 978-0-8376-1751-0  
 Softcover, 8 1/2 in. x 11 in.  
 420 pages, over 400 photos, illustrations and diagrams

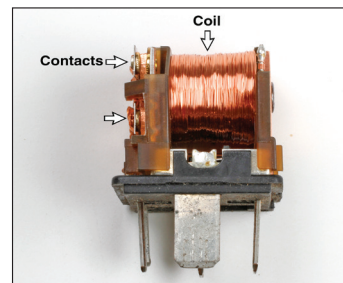
Electrical issues in European cars can be intimidating. *The Hack Mechanic Guide to European Automotive Electrical Systems* offers a car-person's guide to how electrical systems work and gives step-by-step coaching on electrical diagnosis and repair.

Supported by hundreds of full-color illustrations, the Hack Mechanic's approach balances theory with practical ways to get things done. Detailed, hands-on advice will arm you with the confidence to tackle projects like adding a new circuit, measuring voltage drops, or figuring out if you have a bad fuel pump relay.

A focus on European vehicles leverages the common elements of the DIN system, similar schematic diagrams, and German component makers such as Bosch. The principles discussed, however, can be applied to most conventional internal-combustion-engined vehicles spanning the past six decades.

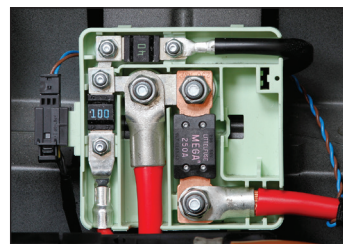
**Hack Mechanic Wisdom on**  
 Battery • Circuits • Starter • Alternator • Ignition  
 Switches & Relays • Fuses • Modules & Buses  
 How to Make Wire Repairs • Wiring Harnesses  
 DIN Standard • Energy Diagnosis & Parasitic Drain  
 Multimeters & Related Tools • And Much More

**Step-by-Step Testing for**  
 Temperature Sensors • Wheel Speed Sensors  
 Oxygen Sensors • Throttle Position Sensors  
 Crankshaft & Camshaft Position Sensors  
 Mass Airflow Sensors • Ignition Stick Coils  
 Fuel Injectors • Fuel Pumps • Solenoids



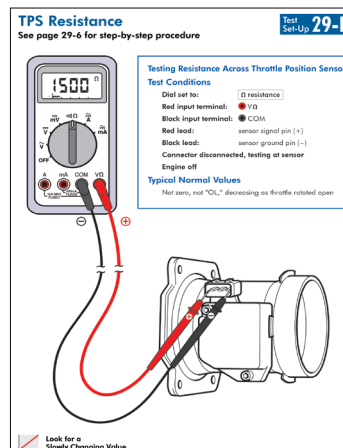
When power and ground are applied to the relay coil, the mechanical contacts complete (or open) a circuit.

Chapter 7 - Switches and Relays



The BMW X3's power distribution box with one MEGA and two MIDI bolt-down fuses

Chapter 10 - Fuses



Using a multimeter to test throttle position sensor resistance.

Chapter 29 -Testing Throttle Position Sensors

This book applies to gasoline and diesel powered internal combustion engine vehicles.  
 Not intended for hybrid or electric vehicles.