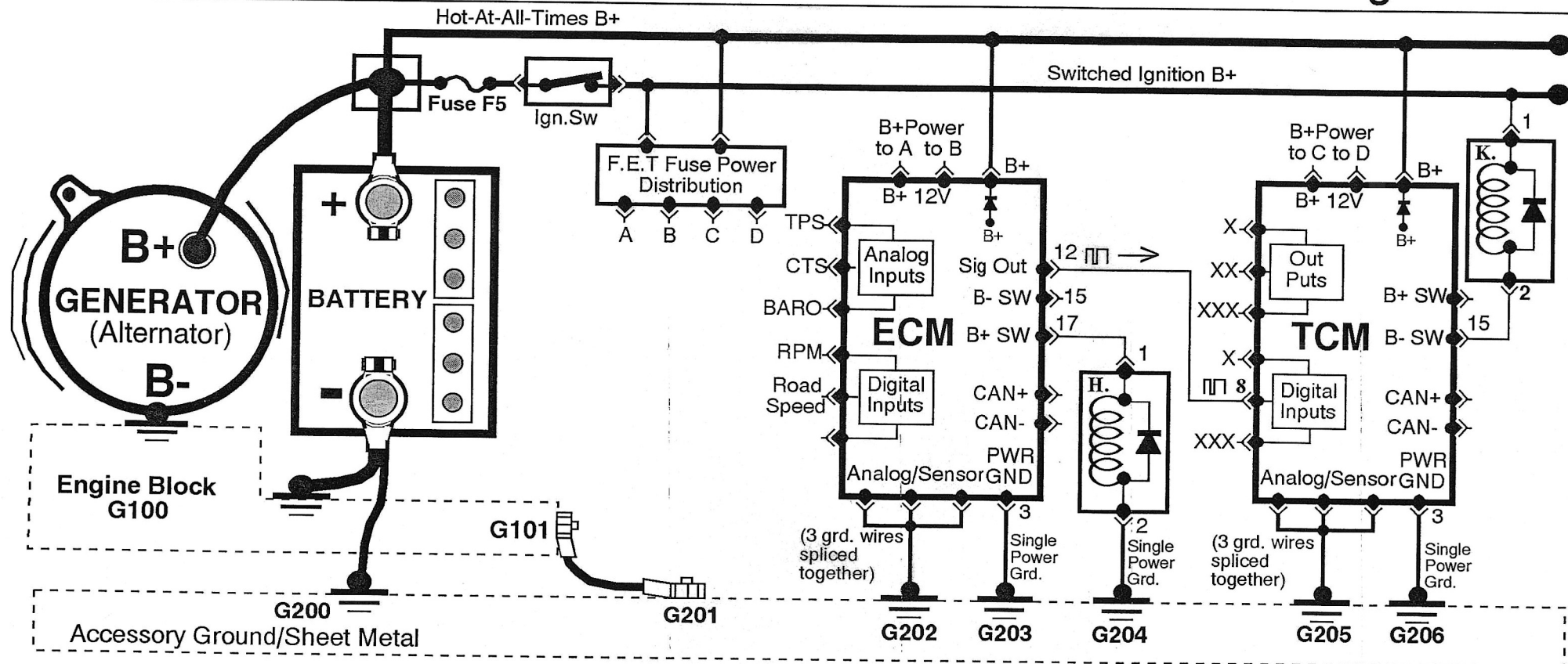


Electrical Power of Computer Circuits - Second Page



Two B+ Bus Circuits For Computer Control:
Most vehicle electronic systems have two B+ Bus Wires in a vehicle with computer control as in the schematic above. The one discussed in the previous Ladder schematic connects to the Ignition Switch. This B+ Bus is called "Switched B+" and is only "hot" when the Ignition Switch is closed or "ON." A second B+ Bus is "Hot-At-All-Times" and is "hot" as long as a battery is connected in the vehicle. This B+ allows critical on-board computer circuits to stay awake, when the ignition key is turned OFF so the PCM can monitor or control functions like alarms and system updates. It also keeps computers powered up for critical memory circuit storage and performs updates after ignition key is OFF.

B+ Supply For Some Computer Circuits:
Computer circuits that supply electron current to relays, coils and solenoids, etc., may be protected from high current with standard thermal type fuses that "blow" and shut down a circuit when circuit current gets too high. Thermal fuses take too long to blow resulting in computer circuit damage requiring a new on-board computer. A F.E.T. fuse will blow **instantly** detecting high current and shut down a circuit before damage can occur. "FET" stands for "Field-Effect Transistor." They can be placed inside a control unit or several can be assembled in a Power Distribution Module as shown above. Wires A, B, C and D connect F.E.T. B+ to each control unit as shown. Each senses amps to ECM and TCM.

Power Distribution Units with FETs may require some familiarization and training as software programs are used by some manufacturers to operate FET Fuse circuits which must be reset after activation. Check the service information.

Computer Ground Circuits Are Critical:

On-board computers may have 2 or 3 ground wires spliced together and share a single ground connection. Ground circuits are critical for normal computer operation. Check the voltage at **each connector ground pin** this way.

1. Ground DMM to -Gen
2. Measure the ground voltage at each ground pin **at the connector during engine Run**. Computer ground pin Vdrops should be very low, 0.05V - 0.10 V. Clean connections if Vdrop is higher.