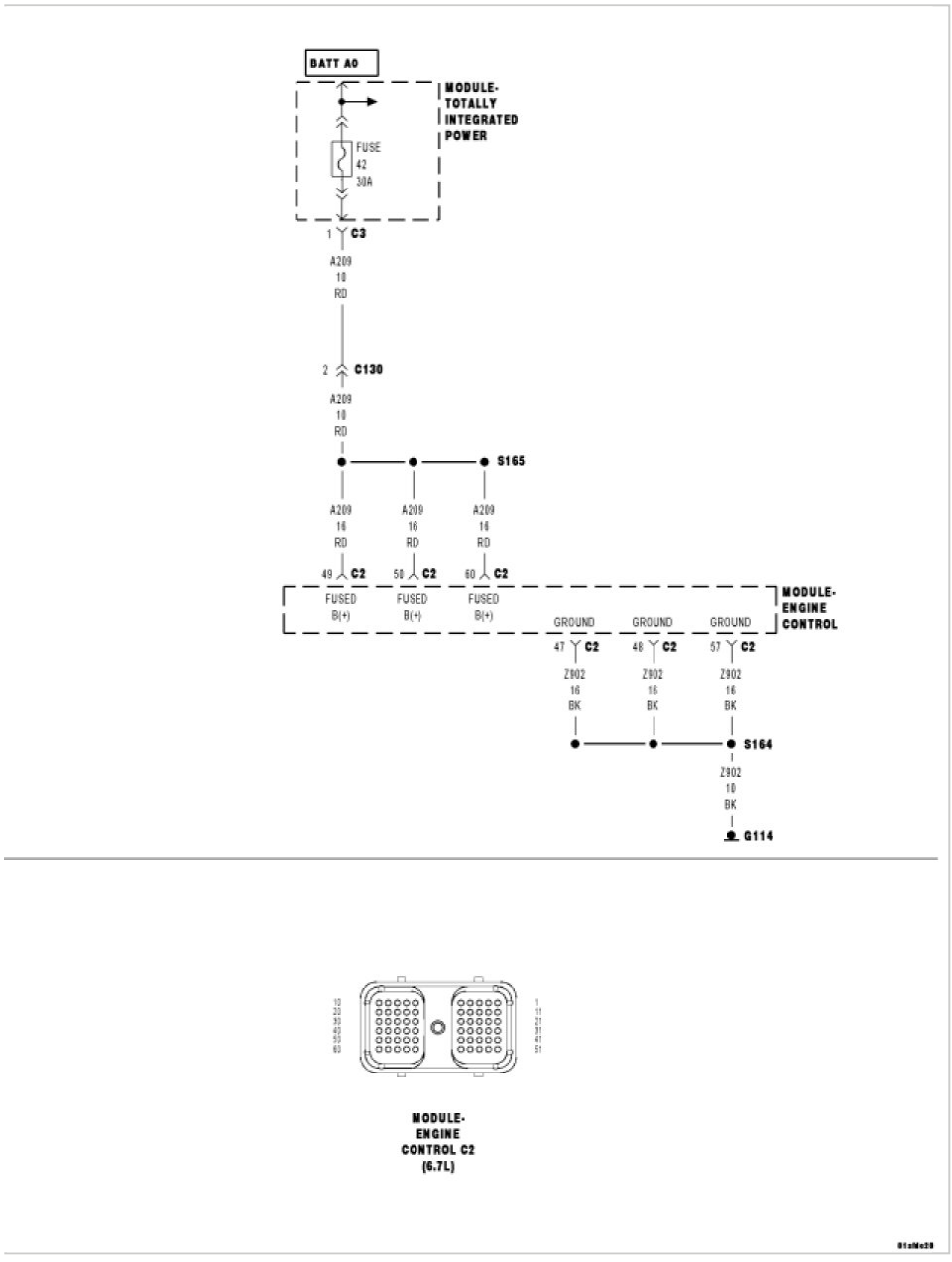
6.7L DIESEL

P2509-ECM/PCM POWER INPUT SIGNAL INTERMITTENT



For complete wiring diagrams refer to Diagrams/Electrical.

Theory of Operation

The ECM receives a constant voltage from the batteries through the unswitched battery wires that are connected directly to the positive (+) battery post. The ECM receives switched battery input through the vehicle Ignition Switch

wire when the vehicle is turned on. The ECM will illuminate the MIL lamp immediately after the diagnostic runs and fails. During the time the customer may experience some performance effects such as engine dying or hard starting Fault information, trip information could be inaccurate. The ECM will turn off the MIL lamp after the diagnostic runs and passes in 4 consecutive drive cycles.

- **When Monitored:**

Continuous - key on or key off.

- **Set Condition:**

Loss of voltage detected at the ECM for a calibrated amount of time. Supply voltage to the PCM fell **below 6.2 volts** momentarily or the ECM was not allowed to power down correctly (retain battery voltage for **30 seconds** after key off).

Possible Causes
POOR CONNECTIONS AT THE BATTERIES
LOW BATTERY VOLTAGE
OPEN FUSED B+ TO ECM
OPEN GROUND CIRCUIT
BATTERY + SHORTED TO OTHER CIRCUITS
RETURN CIRCUIT SHORTED
BATTERY + SHORTED TO GROUND

Always perform the Pre-Diagnostic Troubleshooting procedure before proceeding.

Diagnostic Test

1. POOR CONNECTIONS AT THE BATTERIES

Visually inspect the wiring at the battery for damaged wires, or corrosion.

Are the connections tight and free of corrosion?

Yes

- Go To 2

No

- Repair the poor connections at the batteries.
- Perform POWERTRAIN VERIFICATION TEST. See: A L L Diagnostic Trouble Codes (DTC) > Verification Tests > Powertrain Verification Test

2. LOW BATTERY VOLTAGE

Measure the voltage between the positive and negative posts of the batteries.

Is the battery voltages both above 12 volts?

Yes

- Go To 3

No

- Recharge or replace the battery (s).
- Perform POWERTRAIN VERIFICATION TEST. See: A L L Diagnostic Trouble Codes (DTC) > Verification Tests > Powertrain Verification Test

3. OPEN FUSED B+ TO ECM

Turn the ignition off.

Disconnect the ECM harness connectors.

Turn the ignition on.

Measure the resistance between the positive battery post and the ECM supply circuits.

Is the resistance less than 10 Ohms?

Yes

- Go To 4

No

- Repair the open fused B+ circuit to ECM.
- Perform POWERTRAIN VERIFICATION TEST. See: A L L Diagnostic Trouble Codes (DTC) > Verification Tests > Powertrain Verification Test

4. OPEN GROUND CIRCUIT

Measure the resistance between the negative battery post and the ECM ground circuits.

Is the resistance less than 10 Ohms?

Yes

- Go To 5

No

- Repair the open ground circuit.
- Perform POWERTRAIN VERIFICATION TEST. See: A L L Diagnostic Trouble Codes (DTC) > Verification Tests > Powertrain Verification Test

5. BATTERY + SHORTED TO OTHER CIRCUITS

Measure the resistance between the ECM supply circuits and all other circuits in the ECM harness connector, except other supply circuits.

Is the resistance greater than 100k Ohms?

Yes

- Go To 6

No

- Repair the battery circuit short to other circuits in engine harness.
- Perform POWERTRAIN VERIFICATION TEST. See: A L L Diagnostic Trouble Codes (DTC) > Verification Tests > Powertrain Verification Test

6. RETURN CIRCUIT SHORTED

Measure the resistance between the ECM return circuits and all other circuits in the ECM harness connector, except other return circuits.

Is the resistance greater than 100k Ohms?

Yes

- Go To 7

No

- Repair or replace the engine harness.
- Perform POWERTRAIN VERIFICATION TEST. See: A L L Diagnostic Trouble Codes (DTC) > Verification Tests > Powertrain Verification Test

7. BATTERY + SHORTED TO GROUND

Measure the resistance between the ECM B+ supply circuits and ground.

Is the resistance greater than 100k Ohms?

Yes

- Refer to the INTERMITTENT CONDITION Diagnostic Procedure. See: Computers and Control Systems > Component Tests and General Diagnostics > Intermittent Condition

No

- Repair Battery + shorted to ground.
- Perform POWERTRAIN VERIFICATION TEST. See: A L L Diagnostic Trouble Codes (DTC) > Verification Tests > Powertrain Verification Test