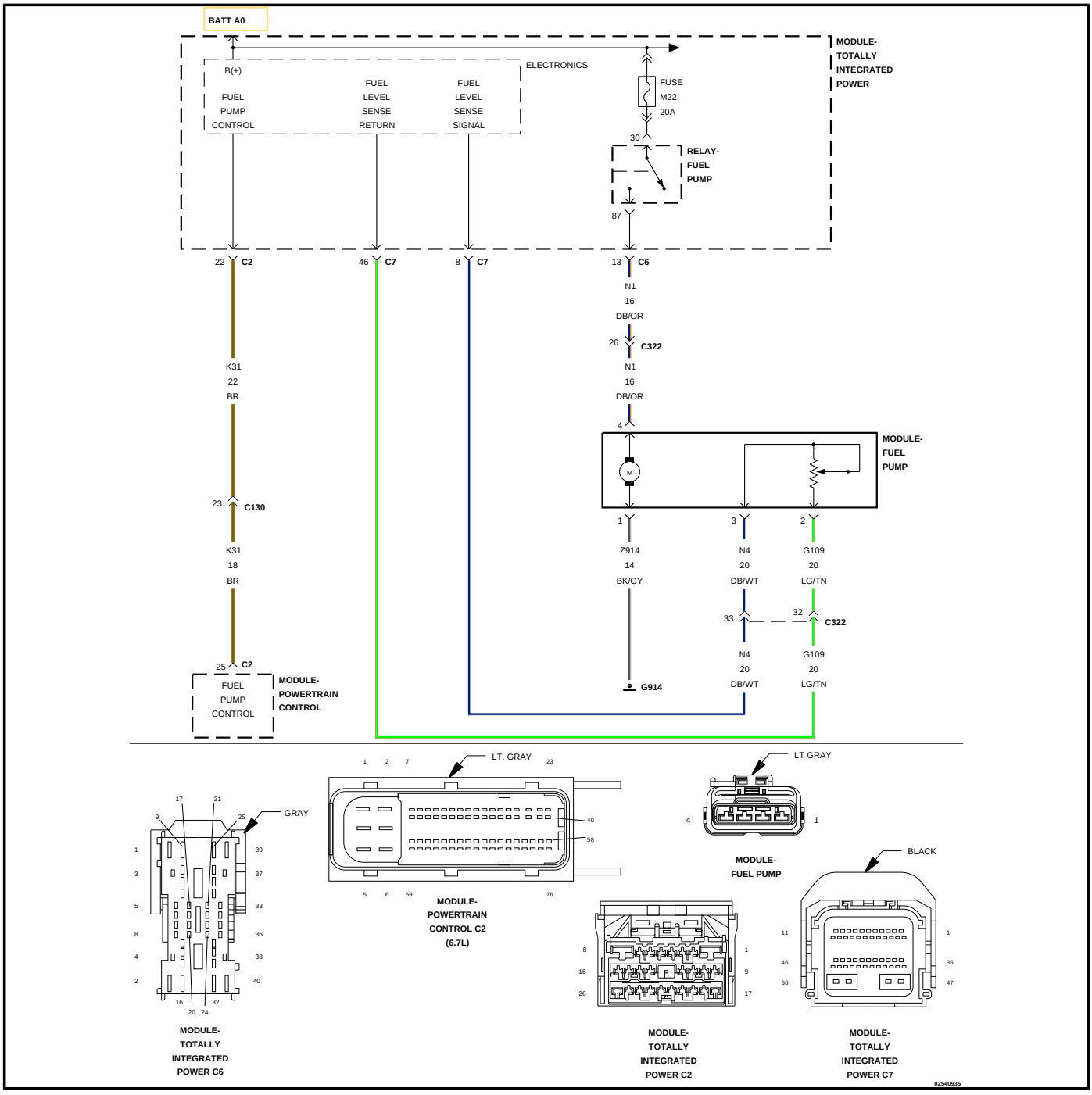
P0463-FUEL LEVEL SENSOR 1 CIRCUIT HIGH



For a complete wiring diagram, **refer to the Wiring Information**.

Theory of Operation

The Fuel Level Sensor is attached to the side of the Fuel Pump Module. The sending unit consists of a float, an arm and a variable resistor track (card). The fuel transfer pump is also attached to the Fuel Pump Module. A constant 5-Volt signal is supplied to the resistor track of the fuel gauge sending unit. The resistor track is a variable resistor used to vary the voltage signal depending on fuel tank float position. As fuel level increases, the float and arm move up, which decreases voltage. As fuel level decreases, the float and arm move down which increases voltage. When the fuel tank level is measured

below 15%, the following fuel system monitors are shut off: P0191 (Fuel Pressure Idle Diagnostic portion of it), and DTCs P0300, P0301, P0302, P0303, P0304, P0305, P0306. The PCM will illuminate the MIL lamp immediately after this diagnostic runs and fails. The PCM will turn off the MIL lamp after the diagnostic runs and passes in four consecutive drive cycles.

- **When Monitored:**

  Ignition on and battery voltage above 10.4 Volts.

- **Set Condition:**

  The signal voltage from the sensor goes above a calibrated value for a calibrated amount of time.

Possible Causes
FUEL LEVEL SENSOR
(N4) FUEL LEVEL SENSOR SIGNAL CIRCUIT SHORTED TO VOLTAGE
(N4) FUEL LEVEL SENSOR SIGNAL CIRCUIT OPEN/HIGH RESISTANCE
(G109) FUEL LEVEL SENSOR GROUND CIRCUIT OPEN/HIGH RESISTANCE
TOTALLY INTEGRATED POWER MODULE (TIPM)

Always perform the Pre-Diagnostic Troubleshooting procedure before proceeding. (Refer to 28 - DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure).

1. ACTIVE DTC

1. Ignition on, engine not running.
2. With the scan tool check for active DTCs.

Is the DTC active?

Yes • Go To 2

No • Perform the INTERMITTENT CONDITION diagnostic procedure. (Refer to 28 - DTC-Based Diagnostics/ MODULE, Powertrain Control (PCM) - Standard Procedure).

2. CHECK THE FUEL LEVEL SENSOR

1. Turn ignition off.
2. Disconnect the Fuel Level Sensor harness connector.

NOTE: Check connectors - Clean/repair as necessary.

3. Measure the resistance of the Fuel Level Sensor across the (N4) Fuel Level Sensor Signal circuit and (G109) Fuel Level Sensor Return circuit terminals.

Is the resistance between approximately 20 and 220 Ohms?

Yes • Go To 3

No • Replace the Fuel Level Sensor in accordance with the Service Information.
• Perform the POWERTRAIN VERIFICATION TEST - 6.7L. (Refer to 28 - DTC-Based Diagnostics/ MODULE, Powertrain Control (PCM) - Standard Procedure).

3. CHECK THE FUEL LEVEL SENSOR SIGNAL CIRCUIT FOR A SHORT TO VOLTAGE

1. Disconnect the TIPM C7 harness connector.
2. Turn ignition on.
3. Measure the voltage of the (N4) Fuel Level Sensor Signal circuit at the TIPM C7 harness connector.

Is there any voltage present?

Yes
- Repair the short to voltage in the (N4) Fuel Level Sensor Signal circuit.
- Perform the POWERTRAIN VERIFICATION TEST - 6.7L. (Refer to 28 - DTC-Based Diagnostics/ MODULE, Powertrain Control (PCM) - Standard Procedure).

No
- Go To 4

4. CHECK THE FUEL LEVEL SENSOR SIGNAL CIRCUIT FOR AN OPEN/HIGH RESISTANCE

1. Turn ignition off.
2. Measure the resistance of the (N4) Fuel Level Sensor Signal circuit between the TIPM C7 harness connector and the Fuel Pump Module harness connector.

Is the resistance below 5.0 Ohms?

Yes
- Go To 5

No
- Repair the (N4) Fuel Level Sensor Signal circuit for an open or high resistance.
- Perform the POWERTRAIN VERIFICATION TEST - 6.7L. (Refer to 28 - DTC-Based Diagnostics/ MODULE, Powertrain Control (PCM) - Standard Procedure).

5. CHECK THE FUEL LEVEL SENSOR RETURN CIRCUIT FOR AN OPEN/HIGH RESISTANCE

1. Measure the resistance of the (G109) Fuel Level Sensor Return circuit between the TIPM C7 harness connector and the Fuel Pump Module harness connector.

Is the resistance below 5.0 Ohms?

Yes
- Replace the Totally Integrated Power Module (TIPM) in accordance with the Service Information.
- Perform the BODY VERIFICATION TEST. (Refer to 28 - DTC-Based Diagnostics/MODULE, Totally Integrated Power (TIPM) - Standard Procedure).

No
- Repair the (G109) Fuel Level Sensor Return circuit for an open or high resistance.
- Perform the POWERTRAIN VERIFICATION TEST - 6.7L. (Refer to 28 - DTC-Based Diagnostics/ MODULE, Powertrain Control (PCM) - Standard Procedure).