DTC C0116

Circuit Description

The electronic brake control module (EBCM) supplies ground to activate the Antilock Brake System (ABS) pump motor. An internal system relay in the EBCM supplies battery positive voltage to the pump motor when the ignition is turned ON. The EBCM monitors pump motor feedback voltage after activation to detect a stalled or binding pump motor.

DTC Descriptor

This diagnostic procedure supports the following DTC:

DTC C0116 Pump Motor Relay Circuit

DTC Symptom	DTC Symptom Descriptor
04	Open

Conditions for Running the DTC

- Ignition voltage is greater than 8 volts.
- The system enable relay is ON.
- The pump motor has been commanded ON.

Conditions for Setting the DTC

- Voltage across the pump terminals is less than 8 volts.
- Voltage on the positive terminal of the pump is less than 9.25 volts.
- The pump relay coil is not shorted to battery voltage or open.

Action Taken When the DTC Sets

- The EBCM disables the ABS system.
- The ABS indicator turns ON.
- Dynamic rear proportion (DRP) function is degraded.

Conditions for Clearing the DTC

- The condition for the DTC is no longer present and the DTC is cleared with a scan tool.
- The EBCM automatically clears the history DTC when a current DTC is not detected in 100 consecutive drive cycles.

Diagnostic Aids

The pump motor is integral to the brake pressure modulator valve (BPMV). The pump motor is not serviceable.

Test Description

The number below refers to the step number on the diagnostic table.

5. This step tests the ability of the EBCM to control the pump motor. If the test lamp illuminates, the pump motor circuit within the EBCM is good.

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Step	Action	Yes	No
Schematic Reference: Antilock Brake System Schematics **Connector End View Reference:** Antilock Brake System Connector End Views			
1	Did you perform the Diagnostic System Check – Vehicle?	Go to Step 2	Go to Diagnostic System Check - Vehicle
2	1. Use the scan tool in order to clear the DTCs. 2. Cycle the ignition to the OFF position. 3. Start the engine. 4. In Park or Neutral, release the brake. 5. Turn OFF the engine. Does the DTC reset?	Go to Step 3	Go to Testing for Intermittent Conditions and Poor Connections
3	1. Remove the electronic brake control module (EBCM) from the brake pressure modulator valve (BPMV). Refer to Electronic Brake Control Module Replacement. 2. Inspect the EBCM to BPMV connector for conditions which could cause an intermittent, such as damage, corrosion, poor terminal contact, or presence of brake fluid. Is the connector OK and the cavity free of brake fluid?	Go to Step 5	Go to Step 4
4	1. If connector corrosion or damage is evident, replace BPMV and/or EBCM, as necessary. 2. If brake fluid is present, replace both BPMV and EBCM. Refer to Brake Pressure Modulator Valve Replacement and Control Module References for replacement, setup, and programming. Did you complete the repair?	Go to Step 8	—
5	1. Connect the EBCM harness to the EBCM with the BPMV still separated. 2. Connect a test lamp between the pump motor circuits, internal EBCM side, using the **J 35616** GM Terminal Test Kit . 3. Cycle the ignition to the OFF position. 4. Start the engine. 5. In Park or Neutral, release the brake.	Go to Step 7	Go to Step 6

Step	Action	Yes	No
	Does the test lamp illuminate?		
6	Replace the EBCM. Refer to Control Module References for replacement, setup, and programming. Did you complete the repair?	Go to Step 8	—
7	Replace the BPMV. Refer to Brake Pressure Modulator Valve Replacement. Did you complete the repair?	Go to Step 8	—
8	1. Use the scan tool in order to clear the DTCs. 2. Operate the vehicle within the Conditions for Running the DTC, as specified in the supporting text. Does the DTC reset?	Go to Step 2	System OK