

DTC B0184 or B0189 sunload sensor

Circuit Description

The following DTCs are for the right sunload sensor and for the left sunload sensor:

- DTC B0184 is for the left sunload sensor.
- DTC B0189 is for the right sunload sensor.

The HVAC control module monitors the ambient light on the left and right side of the vehicle through a light sensitive photodiode called a sunload sensor assembly. The HVAC control module uses this information to compensate for the effect of the sun on the inside air temperature of the vehicle. When the sensor is in direct sunlight, the signal voltage is low. When the sensor is shaded, the signal voltage is high. The HVAC control module requests A/C compressor clutch engagement and controls the air temperature actuator door positions in order to maintain the selected air temperature on the HVAC control module.

Conditions for Running the DTC

The ignition is turned ON.

Conditions for Setting the DTC

The HVAC control module detects the signal circuit is less than 5 counts (0.09 volts) or greater than 250 counts (4.90 volts).

Action Taken When the DTC Sets

The HVAC control module uses a default sunload sensor value for further automatic control calculations. The default values are not displayed on the scan tool.

Conditions for Clearing the DTC

- The DTC will become history if the HVAC control module no longer detects a failure.

- The history DTC will clear after 50 fault free ignition cycles.
- The DTC can be cleared with a scan tool.

Diagnostic Aids

If condition not present refer to Testing for Intermittent and Poor Connections on page 8-13 in Wiring Systems.

Test Description

The numbers below refer to the step numbers on the diagnostic table.

2. Verifies that the temperature displayed is not within the calibrated range.
3. Tests for the proper operation of the circuit in the high voltage range.
4. Tests for the proper operation of the circuit in the low voltage range. If the fuse in the jumper opens when you perform this test, the signal circuit is shorted to voltage.

DTC B0184 or B0189

Step	Action	Values	Yes	No
Schematic Reference: HVAC Schematics on page 1-4				
1	Did you perform the Vehicle Diagnostic System Check?	—	Go to Step 2	Go to Diagnostic System Check -Vehicle in Vehicle DTC Information
2	1).Install a scan tool. 2).Turn ON the ignition, with the engine OFF. 3).With a scan tool, observe the appropriate Sunload Sensor parameter in the HVAC Systems Automatic data list. Does the scan tool indicate that the appropriate Sunload Sensor parameter is with in the specified range?	5–250 Counts	Go to Diagnostic Aids	Go to Step 3

Step	Action	Values	Yes	No
3	<p>1).Turn OFF the ignition. 2).Disconnect the sunload sensor assembly. 3).Turn ON the ignition, with the engine OFF. 4). With a scan tool, observe the appropriate Sunload Sensor parameter.</p> <p>Does the scan tool indicate that the appropriate Sunload Sensor parameter is greater than the specified value?</p>	250 Counts	Go to Step 4	Go to Step 5
4	<p>1).Turn OFF the ignition. 2).Connect a 3-amp fused jumper wire between the appropriate signal circuit of the sunload sensor assembly and the low reference circuit of the sunload sensor. 3).Turn ON the ignition, with the engine OFF. 4).With a scan tool, observe the appropriate Sunload Sensor parameter.</p> <p>Does the scan tool indicate that the appropriate Sunload Sensor parameter is less than the specified value?</p>	5 Counts	Go to Step 8	Go to Step 6
5	<p>Test the appropriate signal circuit of the sunload sensor assembly for a short to ground. Did you find and correct the condition?</p>	—	Go to Step 12	Go to Step 9
6	<p>Test the appropriate signal circuit of the sunload sensor assembly for a short to voltage, a high resistance, or an open. Did you find and correct the condition?</p>	—	Go to Step 12	Go to Step 7

Step	Action	Values	Yes	No
7	Test the low reference circuit of the sunload sensor assembly for a high resistance or an open. .Did you find and correct the condition?	—	Go to Step 12	Go to Step 9
8	Inspect for poor connections at the harness connector of the sunload sensor assembly. Did you find and correct the condition?	—	Go to Step 12	Go to Step 10
9	Inspect for poor connections at the harness connector of the HVAC control module. Did you find and correct the condition?	—	Go to Step 12	Go to Step 11
10	Replace the sunload sensor assembly. Did you complete the replacement?	—	Go to Step 12	.

Step	Action	Values	Yes	No
11	Important: Perform the calibration procedure for the HVAC control module. Replace the HVAC control module. Did you complete the replacement?	—	Go to Step 12	—
12	1).Use the scan tool in order to clear the DTCs. 2).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

LAUNCH