

## 2007 Dodge Nitro R/T

2007 ENGINE Ignition Control - Electrical Diagnostics - Nitro

### 2007 ENGINE

#### Ignition Control - Electrical Diagnostics - Nitro

## DIAGNOSTIC CODE INDEX

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<b>DTC</b>	<b>Description</b>
<b><u>B2101</u></b>	IGNITION RUN/START INPUT CIRCUIT LOW
<b><u>B2102</u></b>	IGNITION RUN/START INPUT CIRCUIT HIGH
<b><u>B210D</u></b>	BATTERY VOLTAGE LOW
<b><u>B210E</u></b>	BATTERY VOLTAGE HIGH
<b><u>B219A</u></b>	IGNITION UNLOCK RUN/START CONTROL CIRCUIT OVERCURRENT
<b><u>B2206</u></b>	CURRENT VIN MISSING/MISMATCH
<b><u>B222C</u></b>	VEHICLE CONFIGURATION NOT PROGRAMMED
<b><u>U0100</u></b>	LOST COMMUNICATION WITH ECM/PCM
<b><u>U0101</u></b>	LOST COMMUNICATION WITH TCM
<b><u>U0114</u></b>	LOST COMMUNICATION WITH FINAL DRIVE CONTROL MODULE
<b><u>U0121</u></b>	LOST COMMUNICATION WITH ANTI-LOCK BRAKE MODULE
<b><u>U0151</u></b>	LOST COMMUNICATION WITH OCCUPANT RESTRAINT CONTROLLER
<b><u>U0154</u></b>	LOST COMMUNICATION WITH OCCUPANT CLASSIFICATION MODULE
<b><u>U0155</u></b>	LOST COMMUNICATION WITH CLUSTER/CCN
<b><u>U0164</u></b>	LOST COMMUNICATION WITH HVAC CONTROL MODULE
<b><u>U0168</u></b>	LOST COMMUNICATION WITH VEHICLE SECURITY CONTROL MODULE (SKREEM/WCM)
<b><u>U0184</u></b>	LOST COMMUNICATION WITH RADIO
<b><u>U0186</u></b>	LOST COMMUNICATION WITH AUDIO AMPLIFIER

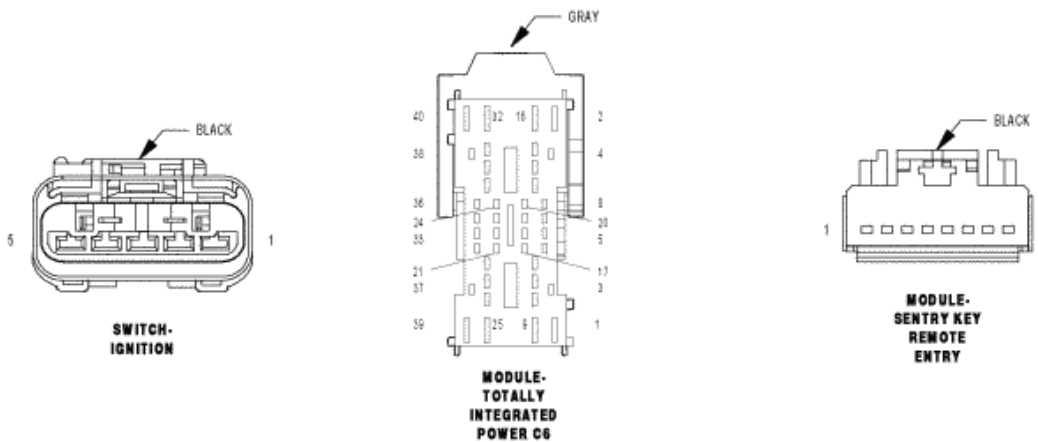
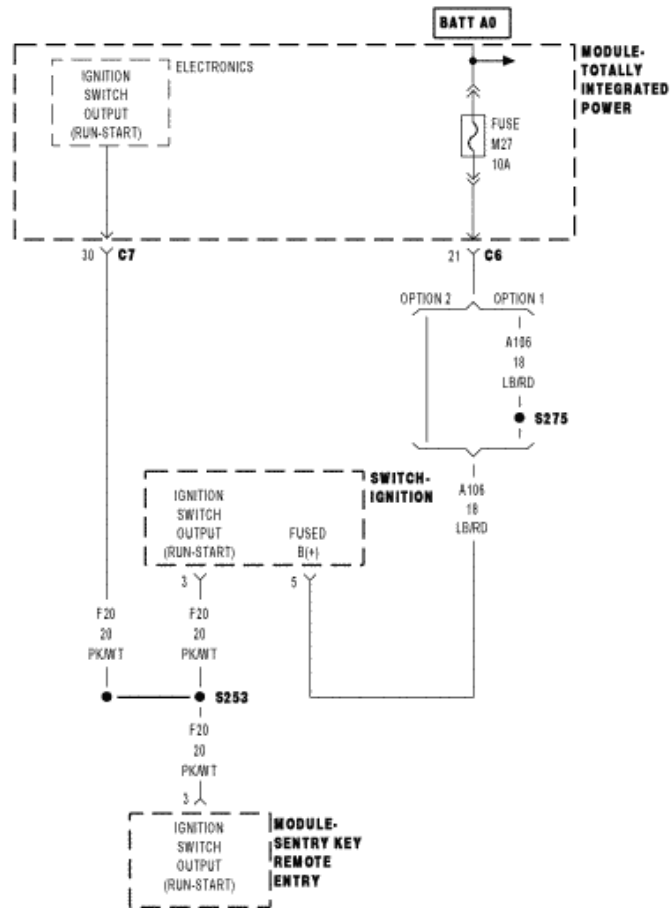
## IGNITION CONTROL- ELECTRICAL DIAGNOSTICS

### DIAGNOSIS AND TESTING

#### B2101-IGNITION RUN/START INPUT CIRCUIT LOW

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0100-1120

**Fig. 1: Identifying Ignition Run/Start Input Circuit**  
Courtesy of CHRYSLER LLC

For complete wiring diagrams refer to **SYSTEM WIRING DIAGRAMS** article.

**When Monitored:**

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With the ignition switch on.

### Set Condition:

The WCM/WIN (SKREEM) Module has detected the ignition switch input voltage below a calibrated value.

### Possible Causes

(F20) IGNITION SWITCH OUTPUT (RUN-START) CIRCUIT OPEN  
(A106) FUSED B+ SHORTED TO GROUND  
IGNITION SWITCH  
TIPM

### Diagnostic Test

#### 1) CHECK FOR ACTIVE DTC

Turn the ignition on.

With a scan tool, read, record and erase TIPM DTCs.

Turn the ignition off for 30 seconds, then back on.

Using the scan tool, read TIPM DTCs.

**Does the scan tool display this DTC as active?**

**Yes**

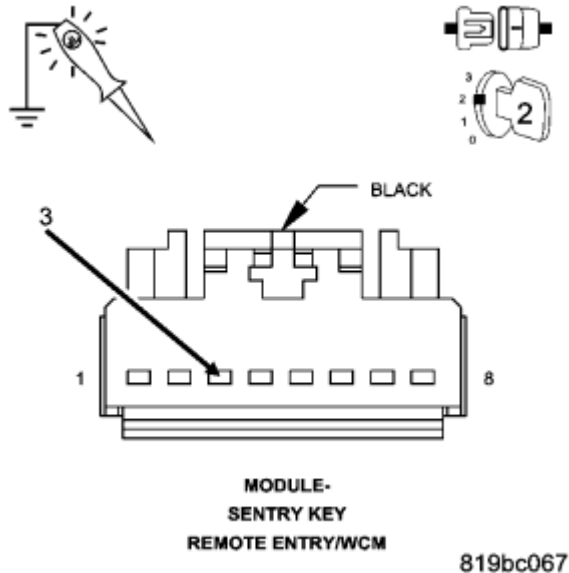
Go to 2).

**No**

The condition that caused this code to set is not present at this time. Check for an intermittent condition by inspecting the related wiring harness for chafed, pierced, pinched, and partially broken wires. Also inspect the related connectors for broken, bent, pushed out, spread, corroded, or contaminated terminals.

Perform **BODY VERIFICATION TEST - VER 1** .

#### 2) (F20) IGNITION SWITCH OUTPUT (RUN-START) CIRCUIT OPEN



**Fig. 2: Using 12-Volt Test Light Connected To Ground To Probe (F20) Ignition Switch Output (Run-Start) Circuit In TIPM C7 Harness Connector**  
 Courtesy of CHRYSLER LLC

**NOTE:** Check the related fuse (TIPM 46) to the (F20) Ignition Switch Output (Run-Start) circuit. If blown, use the wiring diagrams as a guide to make necessary repairs.

Turn the ignition off.

Disconnect the TIPM C7 harness connector.

Turn the ignition on.

Using a 12-volt test light connected to ground, probe the (F20) Ignition Switch output (Run-Start) circuit in the TIPM C7 harness connector.

**Does the test light illuminate brightly?**

**Yes**

Replace the TIPM in accordance with the service information.

Perform **BODY VERIFICATION TEST - VER 1** .

**No**

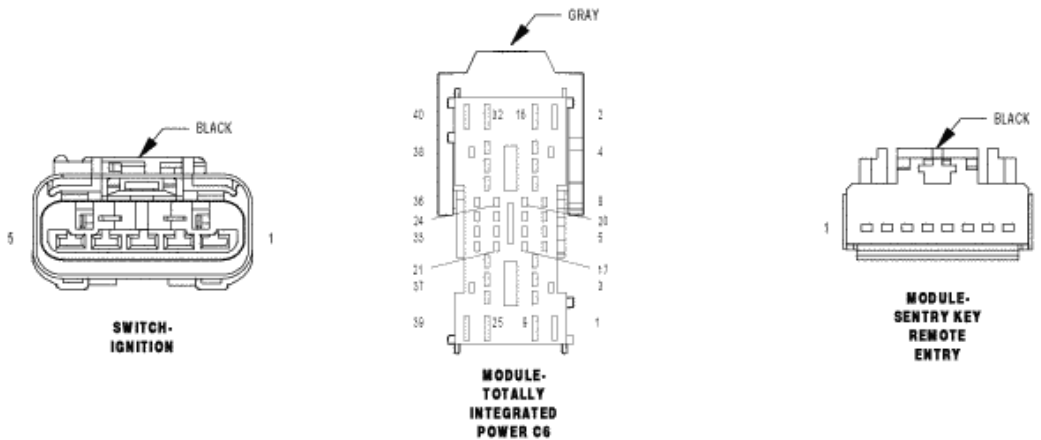
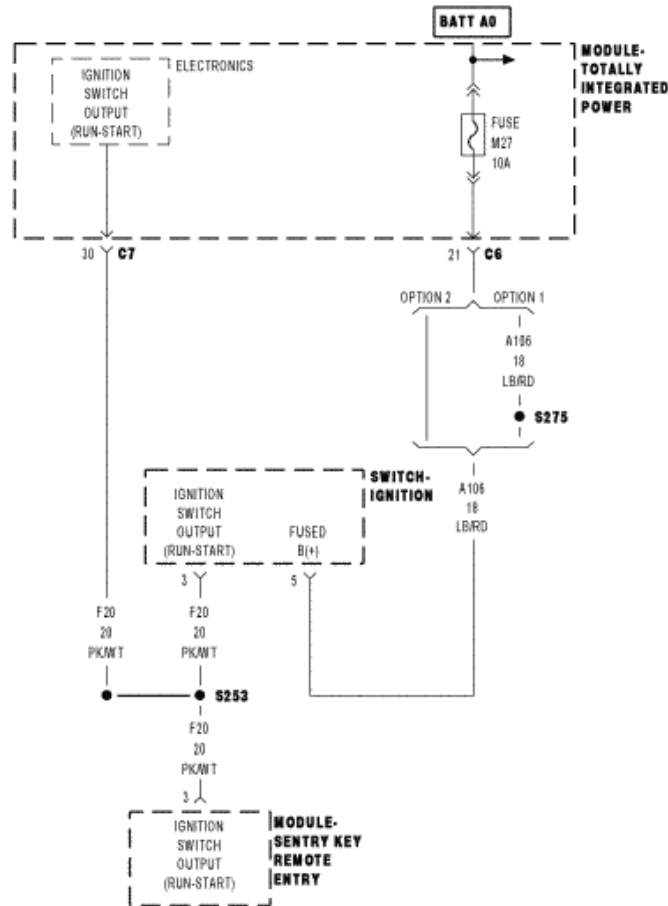
Repair the (F20) Ignition switch output circuit for an open.

Perform **BODY VERIFICATION TEST - VER 1** .

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### B2102-IGNITION RUN/START INPUT CIRCUIT HIGH



**Fig. 3: Identifying Ignition Run/Start Input Circuit**  
Courtesy of CHRYSLER LLC

For complete wiring diagrams refer to **SYSTEM WIRING DIAGRAMS** article.

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### When Monitored:

With the ignition switch on.

### Set Condition:

The WCM/WIN (SKREEM) Module has detected the ignition switch input voltage above a calibrated value.

### Possible Causes

(F20) IGNITION SWITCH OUTPUT (RUN-START) CIRCUIT SHORTED TO BATTERY VOLTAGE  
WCM/WIN (SKREEM) MODULE

### Diagnostic Test

#### 1) CHECK FOR ACTIVE DTC

**NOTE:** Check to make sure the battery and charging system are operating properly. Battery and charging system problems may cause these DTC's to set.

**NOTE:** Diagnose any related Powertrain DTC(s) before continuing.

Turn the ignition on.

With a scan tool, read, record and erase WCM/WIN (SKREEM) DTC(s).

Perform 5 ignition cycles, leaving the ignition switch on for a minimum of 90 seconds per cycle.

Using the scan tool, read WCM/WIN (SKREEM) DTC(s).

**Does the scan tool display this DTC as active?**

**Yes**

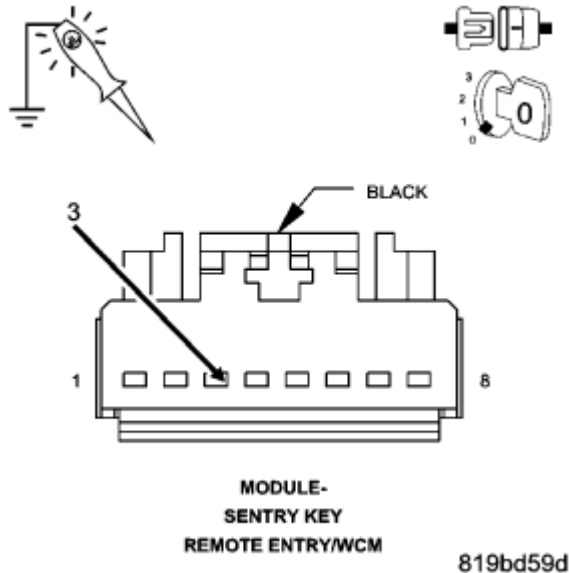
Go to 2).

**No**

The condition that caused this code to set is not present at this time. Check for an intermittent condition by inspecting the related wiring harness for chafed, pierced, pinched, and partially broken wires. Also inspect the related connectors for broken, bent, pushed out, spread, corroded, or contaminated terminals.

Perform **BODY VERIFICATION TEST - VER 1** .

**2) (F20) IGNITION SWITCH OUTPUT (RUN-START) SHORTED TO BATTERY VOLTAGE**



**Fig. 4: Using 12-Volt Test Light Connected To Ground To Probe (F20) Ignition Switch Output (Run-Start) Circuit In WCM/WIN (SKREEM) Harness Connector**  
 Courtesy of CHRYSLER LLC

Turn the ignition off.

Disconnect the WCM/WIN (SKREEM) harness connector.

Using a 12-volt test light connected to ground, probe the (F20) Ignition Switch Output (Run-Start) circuit in the WCM/WIN (SKREEM) harness connector.

**Does the test light illuminate brightly?**

**Yes**

Repair the (F20) Ignition Switch Output (Run-Start) circuit for a short to battery voltage.  
 Perform **SKREEM/SKIM VERIFICATION TEST** .

**No**

Replace and program the WCM/WIN (SKREEM) in accordance with the service information.  
 Perform **SKREEM/SKIM VERIFICATION TEST** .

#### **B210D-BATTERY VOLTAGE LOW**

For complete wiring diagrams refer to **SYSTEM WIRING DIAGRAMS** article.

**When Monitored:**

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With the ignition on.

### Set Condition:

Battery voltage less than 9 volts for approximately 5 to 6 seconds.

### Possible Causes

GENERATOR OPERATION  
PCM

### Diagnostic Test

#### 1) CHECK FOR ANY POWERTRAIN CONTROL MODULES DTCS

**NOTE:** Make sure the Battery is in good condition. Using the Midtronics Battery Tester, test the Battery before continuing.

**NOTE:** Inspect the vehicle for after market accessories that may exceed the Generator System output.

**NOTE:** Make sure the generator drive belt is in good operating condition.

**NOTE:** Inspect the fuses in the TIPM. If an open fuse is found, use the wire diagram/schematic as a guide, inspect the wiring and connectors for damage.

Turn the ignition on.

With the scan tool, read active PCM DTC's.

**Does the scan tool display any active PCM DTC's?**

**Yes**

Refer to **DIAGNOSIS AND TESTING** for the diagnostic test procedure

**No**

Check the above conditions that can cause a low voltage condition. Repair as necessary.

Perform **BODY VERIFICATION TEST - VER 1** .

### B210E-BATTERY VOLTAGE HIGH

For complete wiring diagrams refer to **SYSTEM WIRING DIAGRAMS** article.



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### When Monitored:

With the ignition on.

### Set Condition:

Battery voltage greater than 16 volts for approximately 15 seconds.

### Possible Causes

GENERATOR  
PCM

### Diagnostic Test

#### 1) CHECK FOR ANY POWERTRAIN CONTROL MODULES DTCS

**NOTE:** Make sure the Battery is in good condition. Using the Midtronics Battery Tester, test the Battery before continuing.

**NOTE:** Inspect the vehicle for after market accessories that may exceed the Generator System output.

**NOTE:** Make sure the generator drive belt is in good operating condition.

**NOTE:** Inspect the fuses in the TIPM. If an open fuse is found, use the wire diagram/schematic as a guide, inspect the wiring and connectors for damage.

Turn the ignition on.

With the scan tool, read active PCM DTC's.

**Does the scan tool display any active PCM DTC's?**

**Yes**

Refer to the appropriate Engine ELECTRICAL DIAGNOSTICS article for the diagnostic test procedure

**No**

Check the above conditions that can cause a high voltage condition. Repair as necessary.  
Perform **BODY VERIFICATION TEST - VER 1** .

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### B2142 IGNITION OFF DRAW (IOD) FUSE NOT PRESENT

For complete wiring diagrams refer to [SYSTEM WIRING DIAGRAMS](#) article.

#### When Monitored:

With the Ignition on. This DTC will set only if vehicle has less than 50 miles on it. After 50 miles, DTC B219F will set.

#### Set Condition:

IOD Fuse not installed in the TIPM.

Possible Causes
IOD FUSE

#### Diagnostic Test

#### 1) CHECK FOR ACTIVE DTC

With the scan tool, record and erase DTC's.

Cycle the ignition switch from off to on, leaving the ignition off for a minimum of 30 seconds.

With the scan tool, read the active DTC's.

#### Does the scan tool display this DTC as active?

**Yes**

Go to step 2).

**No**

If the DTC is stored, check for an intermittent condition. Using the wiring diagram/schematic as a guide, visually inspect the related wiring harness connectors. Look for broken, bent, pushed out, or corroded terminals.

#### 2) IOD FUSE INSTALLED

Verify IOD Fuse installed in TIPM

#### Is IOD Fuse present?

**Yes**

Go to step 3).

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**No**

Install the IOD Fuse.

Perform **BODY VERIFICATION TEST - VER 1** .

**3) IOD FUSE BLOWN CHECK**

**Is IOD Fuse blown?**

**Yes**

Replace the IOD Fuse.

Perform **BODY VERIFICATION TEST - VER 1** .

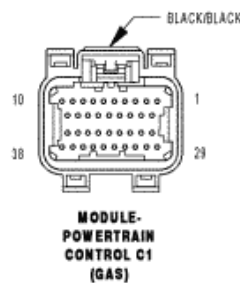
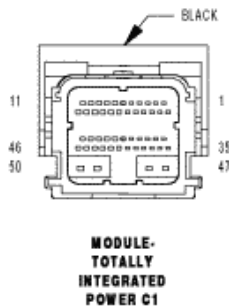
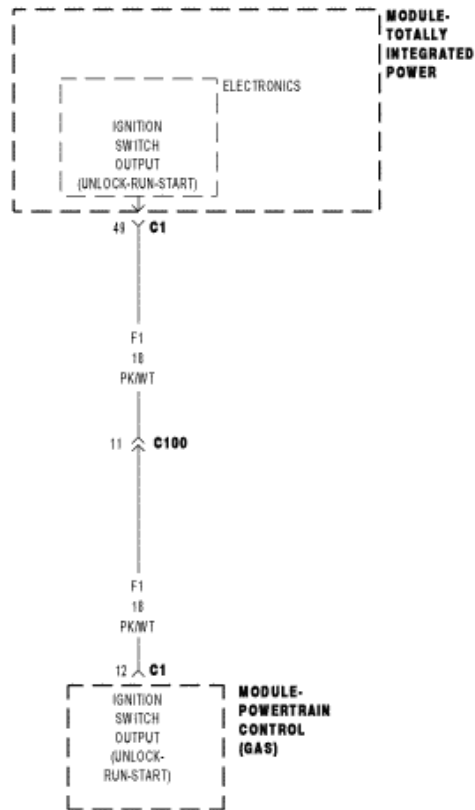
**No**

Test complete.

**B219A-IGNITION UNLOCK RUN/START CONTROL CIRCUIT OVERCURRENT**

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01001101

**Fig. 5: Fused Ignition Switch Output (Run-Start) Circuit Schematic**  
Courtesy of CHRYSLER LLC

For complete wiring diagrams refer to **SYSTEM WIRING DIAGRAMS** article.

**When Monitored:**

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With the ignition on.

### **Set Condition:**

Over current condition detected on the (F1) Fused Ignition Switch Output (Run-Start) circuit.

### **Possible Causes**

TERMINAL DAMAGE OR CORROSION

HIGH RESISTANCE ON THE (F1) IGNITION SWITCH OUTPUT (UNLOCK-RUN-START) CIRCUIT

TIPM

### **Diagnostic Test**

#### **1) CHECK FOR ACTIVE DTC**

With the scan tool, record and erase DTC's.

Cycle the ignition switch from off to on, leaving the ignition off for a minimum of 30 seconds.

With the scan tool, read the active DTC's.

#### **Does the scan tool display this DTC as active?**

**Yes**

Go to 2).

**No**

If the DTC is stored, check for an intermittent condition. Using the wiring diagram/schematic as a guide, visually inspect the related wiring harness connectors. Look for broken, bent, pushed out, or corroded terminals.

#### **2) INSPECT THE TIPM, PCM, AND SHIFT LEVER ASSEMBLY (NAG1) TERMINALS & WIRE HARNESS FOR A CONDITION CAUSING HIGH CIRCUIT RESISTANCE**

Turn the ignition off.

Disconnect the TIPM C1 harness connector.

Disconnect the PCM C1 harness connector.

Disconnect the Shift Lever Assembly (NAG1) harness connector

Inspect the connector terminals for signs of corrosion build up and damage.

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Visually inspect the wiring harness for any chafed, pierced, pinched or partially broken wires hidden in the wire insulation.

#### Were any of the above conditions found?

##### Yes

Repair as necessary.

Perform **BODY VERIFICATION TEST - VER 1** .

##### No

Replace the TIPM in accordance with the service information

Perform **BODY VERIFICATION TEST - VER 1** .

#### B219F IGNITION OFF DRAW (IOD) FUSE BLOWN

For complete wiring diagrams refer to **SYSTEM WIRING DIAGRAMS** article.

##### When Monitored:

With the ignition on. This DTC will only set if vehicle has over 50 miles on it.

##### Set Condition:

IOD Fuse not installed or blown.

Possible Causes
IOD FUSE NOT INSTALLED
IOD FUSE BLOWN

#### Diagnostic Test

##### 1) CHECK FOR ACTIVE DTC

With the scan tool, record and erase DTC's.

Cycle the ignition switch from off to on, leaving the ignition off for a minimum of 30 seconds.

With the scan tool, read the active DTC's.

##### Does the scan tool display this DTC as active?

##### Yes

Go to step 2).

**No**

If the DTC is stored, check for an intermittent condition. Using the wiring diagram/schematic as a guide, visually inspect the related wiring harness connectors. Look for broken, bent, pushed out, or corroded terminals.

**2) IOD FUSE**

Verify IOD Fuse installed in TIPM.

**Is IOD Fuse present?**

**Yes**

Go to step 3).

**No**

Replace the IOD Fuse.

Perform **BODY VERIFICATION TEST - VER 1** .

**3) IOD FUSE BLOWN**

Verify IOD Fuse is blown.

**Is IOD Fuse blown?**

**Yes**

Using the wiring diagrams, diagnose for a short to ground condition.

Perform **BODY VERIFICATION TEST - VER 1** .

**No**

Test complete.

**B2206-CURRENT VIN MISSING/MISMATCH**

For complete wiring diagrams refer to **SYSTEM WIRING DIAGRAMS** article.

**When Monitored:**

With the ignition on.

**Set Condition:**

A PCM from another vehicle has been installed in the vehicle.

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### Possible Causes

PCM FROM ANOTHER VEHICLE INSTALLED

#### Diagnostic Test

#### 1) PCM FROM ANOTHER VEHICLE INSTALLED

**NOTE:** This DTC is set when a PCM from another vehicle is installed into the current vehicle.

**Has another PCM been installed?**

**Yes**

Replace the PCM in accordance with the service information.  
Perform **BODY VERIFICATION TEST - VER 1** .

**No**

Go to 2).

#### 2) OTHER CAN-C MODULES SET VIN MISMATCH

**Is VIN Mismatch DTC set in other CAN-C modules?**

**Yes**

Replace the PCM in accordance with the service information.  
Perform **BODY VERIFICATION TEST - VER 1** .

**No**

Replace the TIPM in accordance with the service information.  
Perform **BODY VERIFICATION TEST - VER 1** .

#### B222C-VEHICLE CONFIGURATION NOT PROGRAMMED

For complete wiring diagrams refer to **SYSTEM WIRING DIAGRAMS** article.

#### **When Monitored:**

Continuously

#### **Set Condition:**

The TIPM is not configured for the vehicle.



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### Possible Causes

TIPM

#### Diagnostic Test

##### 1) CHECK FOR ACTIVE DTC

Turn the ignition on.

With the scan tool, read DTCs.

**Does the scan tool display this DTC as active?**

**Yes**

Go to 2).

**No**

Test complete.

##### 2) ACTIVE TIPM DTC

Cycle the ignition from off to run remaining in run.

With the scan tool, read DTCs.

**Does the scan tool display this DTC as active?**

**Yes**

Go to 3).

**No**

Test complete.

##### 3) VIN MISMATCH DTC PRESENT

Turn the ignition on.

With the scan tool, read DTCs.

**Is DTC: B2206-CURRENT VIN MISSING/MISMATCH also active?**

**Yes**

Refer to repair procedure for **B2206-CURRENT VIN MISSING/MISMATCH**.

No

Replace the TIPM in accordance with the service information.

Perform **BODY VERIFICATION TEST - VER 1** .

**U0100-LOST COMMUNICATION WITH ECM/PCM**

For complete wiring diagrams refer to **SYSTEM WIRING DIAGRAMS** article.

Refer to **DIAGNOSIS AND TESTING** for the diagnostic test procedure

**U0101-LOST COMMUNICATION WITH TCM**

For complete wiring diagrams refer to **SYSTEM WIRING DIAGRAMS** article.

Refer to **DIAGNOSIS AND TESTING** for the diagnostic test procedure

**U0114-LOST COMMUNICATION WITH FINAL DRIVE CONTROL MODULE**

For complete wiring diagrams refer to **SYSTEM WIRING DIAGRAMS** article.

Refer to **DIAGNOSIS AND TESTING** for the diagnostic test procedure

**U0121-LOST COMMUNICATION WITH ANTI-LOCK BRAKE MODULE**

For complete wiring diagrams refer to **SYSTEM WIRING DIAGRAMS** article.

Refer to **DIAGNOSIS AND TESTING** for the diagnostic test procedure

**U0151-LOST COMMUNICATION WITH OCCUPANT RESTRAINT CONTROLLER**

For complete wiring diagrams refer to **SYSTEM WIRING DIAGRAMS** article.

Refer to **DIAGNOSIS AND TESTING** for the diagnostic test procedure

**U0154-LOST COMMUNICATION WITH OCCUPANT CLASSIFICATION MODULE**

For complete wiring diagrams refer to **SYSTEM WIRING DIAGRAMS** article.

Refer to **DIAGNOSIS AND TESTING** for the diagnostic test procedure

**U0155-LOST COMMUNICATION WITH CLUSTER/CCN**

For complete wiring diagrams refer to **SYSTEM WIRING DIAGRAMS** article.

Refer to **DIAGNOSIS AND TESTING** for the diagnostic test procedure

**U0164-LOST COMMUNICATION WITH HVAC CONTROL MODULE**

For complete wiring diagrams refer to **SYSTEM WIRING DIAGRAMS** article.

Refer to **DIAGNOSIS AND TESTING** for the diagnostic test procedure

**U0168-LOST COMMUNICATION WITH VEHICLE SECURITY CONTROL MODULE (SKREEM/WCM)**

For complete wiring diagrams refer to **SYSTEM WIRING DIAGRAMS** article.

Refer to **DIAGNOSIS AND TESTING** for the diagnostic test procedure

**U0184-LOST COMMUNICATION WITH RADIO**

For complete wiring diagrams refer to **SYSTEM WIRING DIAGRAMS** article.

Refer to **DIAGNOSIS AND TESTING** for the diagnostic test procedure

**U0186-LOST COMMUNICATION WITH AUDIO AMPLIFIER**

For complete wiring diagrams refer to **SYSTEM WIRING DIAGRAMS** article.

Refer to **DIAGNOSIS AND TESTING** for the diagnostic test procedure