DTC P0885 A/T RELAY CIRCUIT MALFUNCTION

COMPONENT LOCATION

GENERAL DESCRIPTION
The automatic transmission supplies power to the solenoid valves by way of a control relay. When the PCM sets the relay to ON, the relay operates and the battery power is supplied to all the solenoid valves. When the PCM sets the relay to OFF, all solenoid valve power is shut off and the transmission is held in the 3rd gear position. (Fail Safe Mode)

DTC DESCRIPTION
The PCM checks the A/T control relay signal by monitoring the control signal. If, after the ignition key is turned on, an unexpected voltage value, which is quite a bit lower than battery voltage, is detected, the PCM sets this code. This code can also be set when the battery power fuse in the ignition switch has been shorted.

DTC DETECTING CONDITION

<table>
<thead>
<tr>
<th>Item</th>
<th>Detecting Condition &amp; Fail Safe</th>
<th>Possible cause</th>
</tr>
</thead>
<tbody>
<tr>
<td>DTC Strategy</td>
<td>Check voltage range</td>
<td>Open or short in circuit</td>
</tr>
<tr>
<td></td>
<td>Engine state=Run</td>
<td>Faulty A/T control relay</td>
</tr>
<tr>
<td></td>
<td>Engine runtime &gt; 9.5 secs</td>
<td>Faulty PCM</td>
</tr>
<tr>
<td></td>
<td>Battery voltage &gt; 11V and 16V</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Transmission relay state . Relay on</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Gear shifting is completed</td>
<td></td>
</tr>
<tr>
<td>Threshold value</td>
<td>PCM detects abnormally low voltage</td>
<td></td>
</tr>
<tr>
<td>Diagnostic Time</td>
<td>2.375 second</td>
<td></td>
</tr>
<tr>
<td>Fail Safe</td>
<td>Locked in 3rd gear.(Control relay off)</td>
<td></td>
</tr>
</tbody>
</table>

DTC DETECTING CONDITION

MONITOR SCAN TOOL DATA
1. Connect SCAN TOOL to data link connector (DLC).
2. Ignition ON & Engine OFF.
3. Monitor the A/T CON. RELAY VOLT parameter on the SCAN TOOL.
   Specification: Approximately B+
4. Is A/T RELAY VOLT within specifications?
   YES > Fault is intermittent caused by poor contact in the sensors and/or PCM's connector or was repaired and PCM memory was not cleared. Thoroughly check connectors for looseness, poor connection, bending, corrosion, contamination, deterioration or damage. Repair or replace as necessary and go to Verification of Vehicle Repair procedure.
   NO > Go to Terminal & connector inspection procedure.

TERMINAL & CONNECTOR INSPECTION
1. Many malfunctions in the electrical system are caused by poor harness and terminals. Faults can also be caused by interference from other electrical systems, and mechanical or chemical damage.
2. Thoroughly check connectors for looseness, poor connection, bending, corrosion, contamination, deterioration, or damage.
3. Has a problem been found?
   YES > Repair as necessary and then go to Verification of vehicle repair procedure.
   NO > Replace the PCM.

VERIFICATION OF VEHICLE REPAIR
After a repair, it is essential to verify that the fault has been corrected.
1. Connect scan tool and select Diagnostic Trouble Codes (DTCs) mode.
2. Using a SCAN TOOL, Clear DTC.
3. Operate the vehicle within DTC Enable conditions in General information.
4. Are any DTCs present?
   YES > Go to the applicable troubleshooting procedure.
   NO > System performing to specification at this time.
DTC P0890 AT RELAY - LOW CIRCUIT

COMPONENT LOCATION
Refer to DTC P0885. See: A L L Diagnostic Trouble Codes (DTC) > P Code Charts > Automatic Transaxle (A5HF1)

GENERAL DESCRIPTION
The automatic transmission supplies power to the solenoid valves by way of a control relay. When the PCM sets the relay to ON, the relay operates and the battery power is supplied to all the solenoid valves. When the PCM sets the relay to OFF, all solenoid valve power is shut off and the transmission is held in the 3rd gear position. (Fail Safe Mode)

DTC DESCRIPTION
The PCM checks the A/T control relay signal by monitoring the control signal. If the voltage applied to A/T solenoids is lower than 0.5 V, the PCM sets this code.

DTC DETECTING CONDITION

<table>
<thead>
<tr>
<th>Item</th>
<th>Detecting Condition &amp; Fall Safe</th>
<th>Possible cause</th>
</tr>
</thead>
<tbody>
<tr>
<td>DTC Strategy</td>
<td>Check voltage range</td>
<td>Open or short in circuit</td>
</tr>
<tr>
<td>Enable Conditions</td>
<td>Engine state = Power off relay or engine shutdown process</td>
<td>Faulty A/T control relay</td>
</tr>
<tr>
<td></td>
<td>Battery voltage &gt; 11V and &lt; 15V</td>
<td>Faulty PCM</td>
</tr>
<tr>
<td></td>
<td>A/T power relay is enabled</td>
<td></td>
</tr>
<tr>
<td></td>
<td>No TCM power relay diag fail</td>
<td></td>
</tr>
<tr>
<td>Threshold value</td>
<td>Voltage applied to A/T solenoids ≤ 0.5 V</td>
<td></td>
</tr>
<tr>
<td>Diagnostic Time</td>
<td>2 seconds</td>
<td></td>
</tr>
<tr>
<td>Fail Safe</td>
<td>Locked in 3rd gear (Control relay off)</td>
<td></td>
</tr>
</tbody>
</table>

MONITOR SCAN TOOL DATA
Refer to DTC P0885. See: A L L Diagnostic Trouble Codes (DTC) > P Code Charts > Automatic Transaxle (A5HF1)

TERMINAL & CONNECTOR INSPECTION
Refer to DTC P0885. See: A L L Diagnostic Trouble Codes (DTC) > P Code Charts > Automatic Transaxle (A5HF1)

POWER SUPPLY CIRCUIT INSPECTION
1. Ignition ON & Engine OFF.
2. Disconnect the A/T CONTROL RELAY connector.
3. Measure the voltage between the power terminal of the A/T CONTROL RELAY in the engine room relay box and chassis ground.
   Specification: Approximately B+

Specification: Approx. B+

![Specification Diagram]
4. Is voltage within specifications?
   YES > Go to Signal circuit inspection procedure.
   NO > Check that A/T-20A fuse in engine room junction is installed or not blown. Check for Open in harness. Repair as necessary and go to Verification of Vehicle Repair procedure.

SIGNAL CIRCUIT INSPECTION
1. CHECK A/T control relay harness
   1. Ignition OFF.
   2. Disconnect the ATM CONTROL RELAY connector.
   3. Measure the voltage between terminal 60 of the PCM harness connector A and chassis ground.
   4. Turn ignition switch OFF - ON.
   Specification: **12 V is measured only for approximately 0.5 sec**
   5. Is voltage within specifications?
      YES > Go to Check supplying power to solenoid valve procedure.
      NO > Check for open in harness. Repair as necessary and go to Verification of Vehicle Repair procedure. If signal circuit is OK, substitute with a known-good PCM and check for proper operation. If the problem is corrected, replace PCM and then go to Verification of Vehicle Repair procedure.

2. CHECK supplying power to solenoid valve harness
   1. Ignition OFF.
   2. Disconnect the ATM CONTROL RELAY and PCM connector.
   3. Measure the resistance between the terminal shown of the A/T CONTROL RELAY in the engine room relay box and terminal 20 of the PCM harness connector A.
   Specification: **Approximately 0 Ohms**

3. Ground circuit inspection
   1. Ignition OFF.
   2. Disconnect A/T CONTROL RELAY connector.
   3. Measure the resistance between the terminal shown of the A/T CONTROL RELAY in the engine room relay box and chassis ground.
   Specification: **Approximately 0 Ohms**
4. Is resistance within specifications?
   YES > Go to Component inspection procedure.
   NO > Check for open in harness. Repair as necessary and go to Verification of Vehicle Repair procedure.

COMPONENT INSPECTION
1. Ignition OFF.
2. Remove A/T CONTROL RELAY
3. Measure the resistance between each terminal of the sensor.
   Specification: Infinite except between those two terminals below

VERIFICATION OF VEHICLE REPAIR
Refer to DTC P0885. See: A L L Diagnostic Trouble Codes (DTC) > P Code Charts > Automatic Transaxle (A5HF1)

© 2016 ALLDATA, LLC. All Rights Reserved. (Version 2.0.13792)