CIRCUIT DESCRIPTION

This sensor detects the rotation speed of the O/D input shaft from the rotation of the O/D direct clutch drum. Its construction is the same as that of the vehicle speed sensor (See page DI–105).

By comparing the O/D direct clutch speed signal and the vehicle speed sensor signal, the ECM detects the shift timing of the gear and appropriately controls the engine torque and hydraulic pressure in response to various conditions, thus performing smooth gear shift.

<table>
<thead>
<tr>
<th>DTC No.</th>
<th>DTC Detection Condition</th>
<th>Trouble Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>P0715</td>
<td>All conditions below are detected 5 secs. or more</td>
<td>• Open or short in O/D direct clutch speed sensor circuit</td>
</tr>
<tr>
<td></td>
<td>(2 trip detection logic)</td>
<td>• O/D direct clutch speed sensor</td>
</tr>
<tr>
<td></td>
<td>(a) Gear change not being performed</td>
<td>• ECM</td>
</tr>
<tr>
<td></td>
<td>(b) Gear position: 1st, 2nd or 3rd</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(c) T/M input shaft rpm: 300 rpm or less</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(d) T/M output shaft rpm: 1,000 rpm or more</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(e) Park/neutral position switch: OFF</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(f) Shift solenoid valves No.1, No.2, SLU and vehicle speed sensor are normal operation</td>
<td></td>
</tr>
</tbody>
</table>

WIRING DIAGRAM
INSPECTION PROCEDURE

1. Check resistance between terminals NCO+ and NCO– of ECM.

   **CHECK:**
   Check resistance between terminals NCO+ and NCO– of ECM.
   **OK:**
   Resistance: 560 – 680 Ω

   **OK**
   Check and replace the ECM.

   **NG**

2. Check O/D direct clutch speed sensor.

   **PREPARATION:**
   Remove the O/D direct clutch speed sensor from transmission.
   **CHECK:**
   Measure resistance between terminals 1 and 2 of O/D direct clutch speed sensor.
   **OK:**
   Resistance: 560 – 680 Ω
   Reference: Check the speed sensor function
   **CHECK:**
   Check voltage between terminals 1 and 2 of the speed sensor when a magnet is put close to the front end of the speed sensor then kept away quickly.
   **OK:**
   Voltage is generated intermittently.
   **HINT:**
   The generated voltage is extremely low.

   **NG**
   Repair the O/D direct clutch speed sensor.

   **OK**

Check and repair harness and connector between ECM and O/D direct clutch speed sensor (See page [IN–28]).

1996 LEXUS LS400 (RM439U)