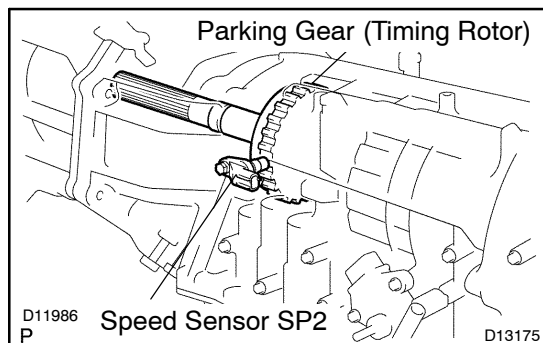


|            |              |                                              |
|------------|--------------|----------------------------------------------|
| <b>DTC</b> | <b>P0722</b> | <b>Output Speed Sensor Circuit No Signal</b> |
|------------|--------------|----------------------------------------------|

## CIRCUIT DESCRIPTION



The speed sensor SP2 detects the rotation speed of the transmission output shaft and sends signals to the ECM. The ECM determines the vehicle speed based on these signals. An AC voltage is generated in the speed sensor SP2 coil as the parking gear mounted on the rear planetary gear assembly rotates, and this voltage is sent to the ECM. The parking gear on the rear planetary gear is used as the timing rotor for this sensor. The gear shift point and lock-up timing are controlled by the ECM based on the signals from this vehicle speed sensor and the throttle position sensor signal. If the speed sensor SP2 malfunctions, the ECM uses input signals from the speed sensor NT as a back-up signal.

| DTC No. | DTC Detection Condition                                                                                                                                                                                                                                                                                                                                                                               | Trouble Area                                                                                                                             |
|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| P0722   | <p>All conditions below are detected 500 times or more continuously (1-trip detection logic)</p> <p>(a) No signal from speed sensor SP2 is input to ECM while 4 pulses of No. 1 vehicle speed sensor signal are sent</p> <p>(b) Vehicle speed is 9 km/h (6 mph) or more for at least 4 sec.</p> <p>(c) Park/neutral position switch is OFF.</p> <p>(d) Transfer position is except neutral (4WD).</p> | <ul style="list-style-type: none"> <li>• Open or short in speed sensor SP2 circuit</li> <li>• Speed sensor SP2</li> <li>• ECM</li> </ul> |

## MONITOR DESCRIPTION

The output speed sensor monitors the output shaft speed. The ECM controls the gearshift point and the lock up timing based on the signals from the output speed sensor and throttle position sensor.

If the ECM detects no signal from the output shaft speed sensor even while the vehicle is moving, it will conclude that is a malfunction of the output speed sensor. The ECM will illuminate the MIL and store the DTC.

## MONITOR STRATEGY

|                             |                             |                                     |
|-----------------------------|-----------------------------|-------------------------------------|
| Related DTCs                | P0722                       | Speed sensor SP2/Verify pulse input |
| Required sensors/Components | Speed sensor SP2            |                                     |
| Frequency of operation      | Continuous                  |                                     |
| Duration                    | 500 output shaft revolution |                                     |
| MIL operation               | Immediate                   |                                     |
| Sequence of operation       | None                        |                                     |

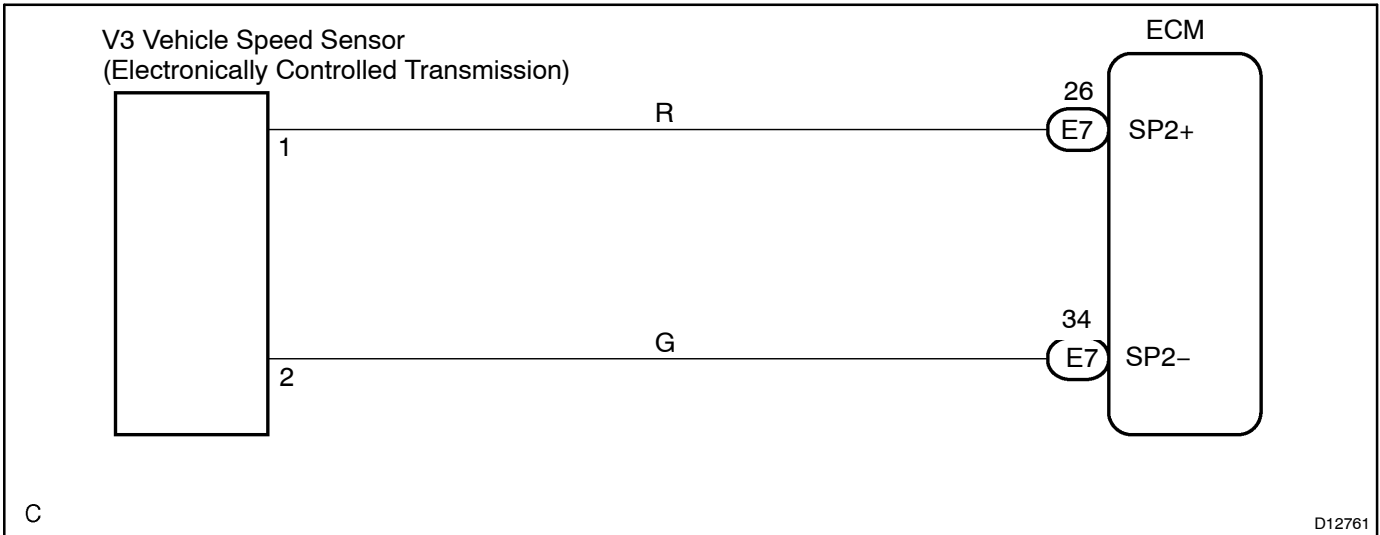
# TYPICAL ENABLING CONDITIONS

| Item                                                              | Specification                   |         |
|-------------------------------------------------------------------|---------------------------------|---------|
|                                                                   | Minimum                         | Maximum |
| The monitor will run whenever the following DTCs are not present. | See page <a href="#">DI-368</a> |         |
| Vehicle speed range (4 sec. or more)                              | 9 km/h (5.59 mph) or more       | –       |
| NSW switch                                                        | OFF                             |         |
| Transfer neutral switch                                           | OFF                             |         |

# TYPICAL MALFUNCTION THRESHOLDS

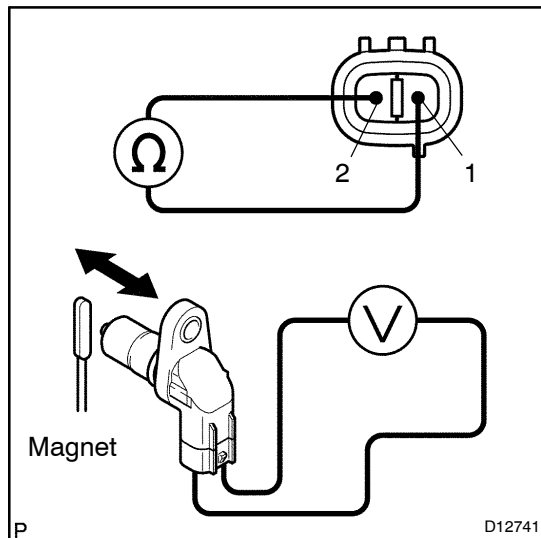
| Detection criteria                                       | Threshold         |
|----------------------------------------------------------|-------------------|
| No pulse input during 4 vehicle speed sensor pulse input | 500 times or more |

# WIRING DIAGRAM



## INSPECTION PROCEDURE

## 1 Check speed sensor SP2.

**PREPARATION:**

Remove the speed sensor SP2.

**CHECK:**

- (a) Measure the resistance between the sensor terminals.  
**Standard: 560 to 680  $\Omega$  at 20°C (68°F)**
- (b) Measure the voltage between the sensor terminals when a magnet is put close to the front end of the sensor then moved away quickly.  
**Standard: Sensor generates voltage intermittently.**

**HINT:**

The generated voltage is extremely low.

**OK:**

**Standard**

**NG**

**Replace speed sensor SP2.**

**OK**

2 Check harness and connector between ECM and speed sensor SP2 (See page [IN-36](#)).

**NG**

**Repair or replace harness and connector.**

**OK**

**Check and replace the ECM (See page [IN-36](#)).**