

## CIRCUIT INSPECTION

<b>DTC</b>	<b>P0500/42</b>	<b>Vehicle Speed Sensor Malfunction (Transmission Output Speed Sensor)</b>
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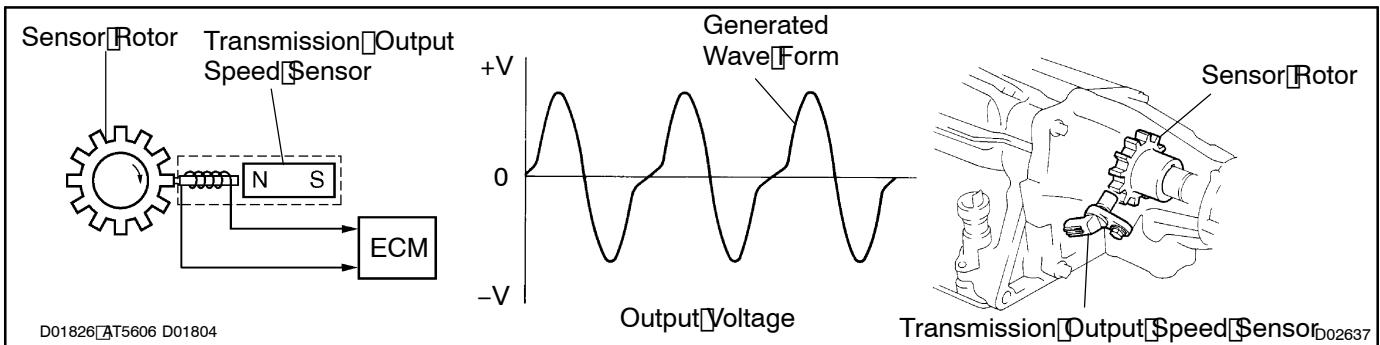
### CIRCUIT DESCRIPTION

The transmission output speed sensor detects the rotation speed of the transmission output shaft and sends signals to the Engine and ECT ECU. The Engine and ECT ECU determines the vehicle speed based on these signals.

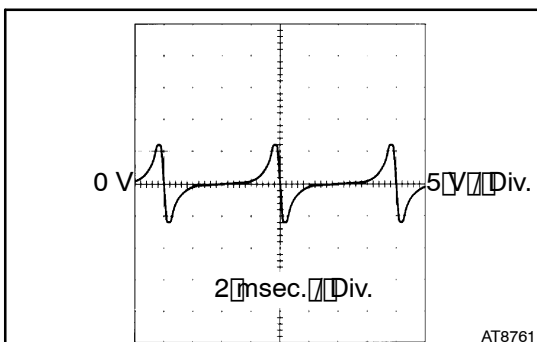
An AC voltage is generated in the transmission output speed sensor coil as the rotor mounted on the output shaft rotates, and this voltage is sent to the Engine and ECT ECU.

The gear shift point and lock-up timing are controlled by the Engine and ECT ECU based on the signals from this transmission output speed sensor and the throttle position sensor signal.

If the vehicle speed sensor malfunctions, the Engine and ECT ECU uses input signals from the transmission input speed sensor as a back-up signal.



DTC No.	DTC Detecting Condition	Trouble Area
P0500	All conditions below are detected 8 secs. or more (1-trip detection logic)	<ul style="list-style-type: none"> <li>• Open or short in vehicle speed sensor circuit</li> <li>• Transmission output speed sensor</li> <li>• Engine and ECT ECU</li> <li>• Automatic transmission (clutch, brake or gear etc.)</li> </ul>
	(a) No signal from transmission output speed sensor are input to Engine and ECT ECU. (b) Neutral start switch: OFF (Other than P or N)	
	Clutch or brake slips or gear is broken	



#### HINT:

Refer to the chart for the wave form between terminals SP2<sup>+</sup> and SP2<sup>-</sup> when vehicle speed is approx. 60 km/h (37 mph).

### WIRING DIAGRAM

See page DI-91.

**INSPECTION PROCEDURE****1 Check operation of speedometer.****PREPARATION:**

- (a) Connect hand-held tester to DLC3.  
 (b) Start engine and hand-held tester main switch ON.

**CHECK:****HINT:**

Drive the vehicle and check if the operation of the speedometer in the combination meter is normal.

**OK:**

Vehicle speed matches tester speed value.

OK

Check and replace Engine and ECT ECU  
 (See page IN-32).

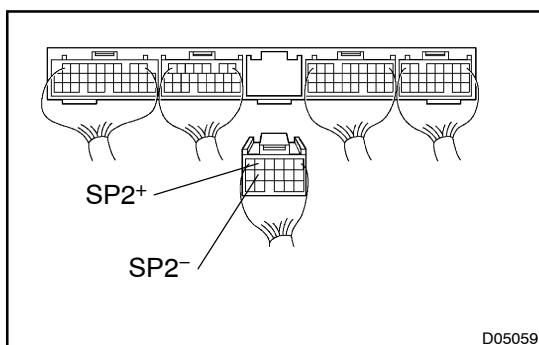
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**2 Check speedometer circuit (See page BE-83).**

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Repair or replace speedometer circuit.

OK

**3 Check resistance between terminals SP2+ and SP2- of Engine and ECT ECU.****PREPARATION:**

Disconnect the connector from Engine and ECT ECU.

**CHECK:**

Check resistance between terminals SP2+ and SP2- of Engine and ECT ECU.

**OK:**

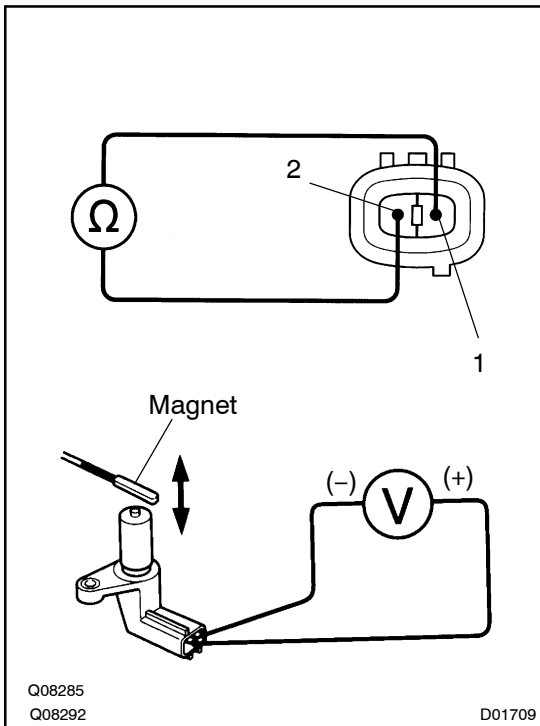
Resistance: 560 - 680  $\Omega$  at 20  $^{\circ}$ C (68  $^{\circ}$ F)

OK

Check and replace the Engine and ECT ECU  
 (See page IN-32).

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#### 4 Check transmission output speed sensor.



#### PREPARATION:

Remove the transmission output speed sensor from the transmission.

#### CHECK:

- Measure resistance between terminals 1 and 2 of vehicle speed sensor.
- Check voltage between terminals 1 and 2 of transmission output speed sensor when a magnet is put close to the front end of the transmission output speed sensor then taken away quickly.

#### OK:

- Resistance: 560 - 680 Ω at 20 °C (68 °F)
- Voltage is generated intermittently.

#### HINT:

The generated voltage is extremely low.

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Replace the transmission output speed sensor.

OK

Check and repair the harness and connector between Engine and ECT ECU and transmission output speed sensor (See page IN-32).