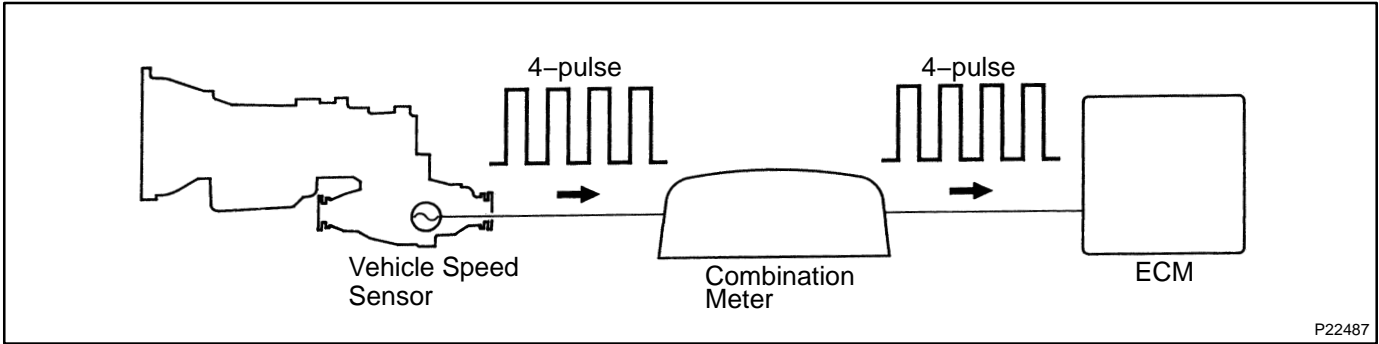


DTC	P0500	Vehicle Speed Sensor "A"
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DTC	P0503	Vehicle Speed Sensor "A" Intermittent/Erratic/High
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CIRCUIT DESCRIPTION

The No.1 vehicle speed sensor outputs a 4-pulse signal for every revolution of the rotor shaft, which is rotated by the transmission output shaft via the driven gear. After this signal is converted into a more precise rectangular waveform by the waveform shaping circuit inside the combination meter, it is then transmitted to the ECM. The ECM determines the vehicle speed based on the frequency of these pulse signals.



DTC No.	Proceed to	DTC Detection Condition	Trouble Area
P0500	Step 1	No vehicle speed sensor signal to ECM under following conditions: (2 trip detection logic) • Vehicle is being driven	<ul style="list-style-type: none"> • Combination meter • Open or short in vehicle speed sensor circuit • Vehicle speed sensor • ECM
P0503	DI-430	Intermittent problem in the vehicle speed sensor circuit	

MONITOR DESCRIPTION

The ECM assumes that the vehicle is driven when the park/neutral position switch is OFF and it has been over 4 sec. since the actual vehicle speed was 5.59 mph (9 km/h) or more.

If there is no signal from the vehicle speed sensor when these conditions are satisfied, the ECM concludes that there is a fault in the vehicle speed sensor. The ECM will turn on the MIL and a DTC is set.

MONITOR STRATEGY

Related DTCs	P0500	Vehicle speed sensor "A" pulse input error
Required sensors/components	Main sensors	Vehicle speed sensor
	Related sensors	Park/Neutral position switch, Engine coolant temperature sensor, Combination meter
Frequency of operation	Continuous	
Duration	500 times	
MIL operation	Immediate	
Sequence of operation	None	

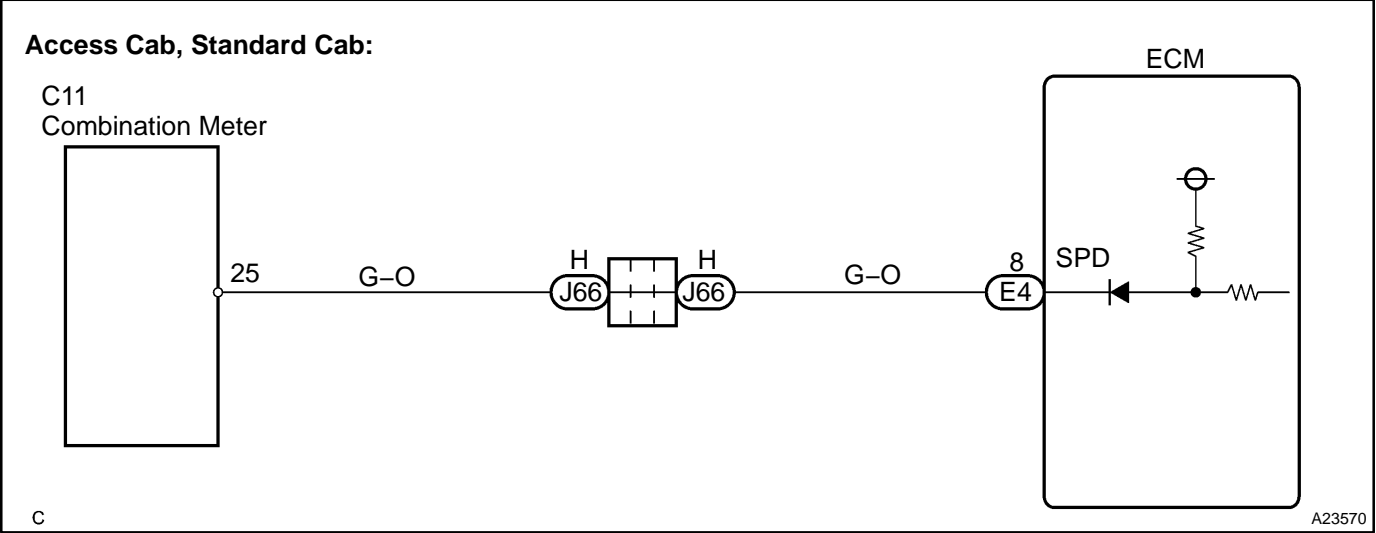
TYPICAL ENABLING CONDITIONS

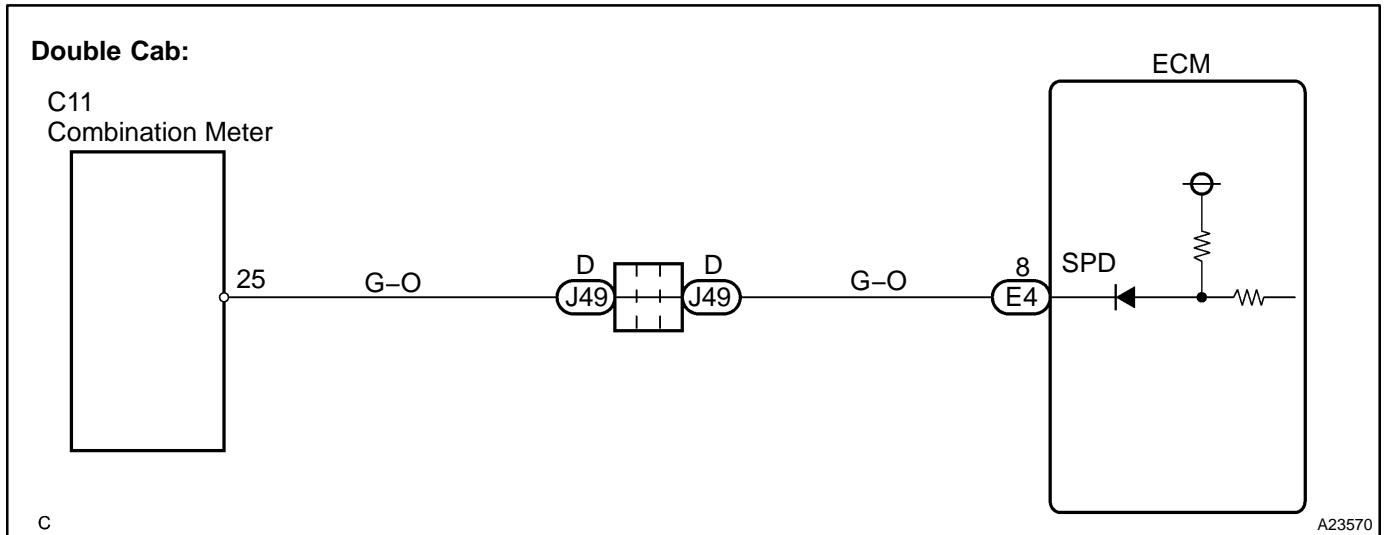
Item	Specification	
	Minimum	Maximum
The monitor will run whenever this DTC is not present	See page DI-437	
Vehicle speed is 5.59 mph (9 km/h) or more	4 sec.	–
Park/neutral position switch	OFF	

TYPICAL MALFUNCTION THRESHOLDS

Detection Criteria	Threshold
Sensor signal	No pulse input

WIRING DIAGRAM





INSPECTION PROCEDURE

HINT:

Read freeze frame data using the hand-held tester. Freeze frame data records the engine conditions when a malfunction is detected. When troubleshooting, freeze frame data can help determine if the vehicle was running or stopped, if the engine was warmed up or not, if the air-fuel ratio was lean or rich, as well as other data from the time when a malfunction occurred.

1	Check operation of speedometer.
---	----------------------------------------

PREPARATION:

- Connect the hand-held tester to the DLC3.
- Turn the ignition switch to ON and push the hand-held tester main switch ON.
- Start the engine.
- When using hand-held tester, enter the following menu: DIAGNOSIS / ENHANCED OBD II / DATA LIST / PRIMARY / VEHICLE SPD.

CHECK:

Read the mass air flow rate on the hand-held tester.

RESULT:

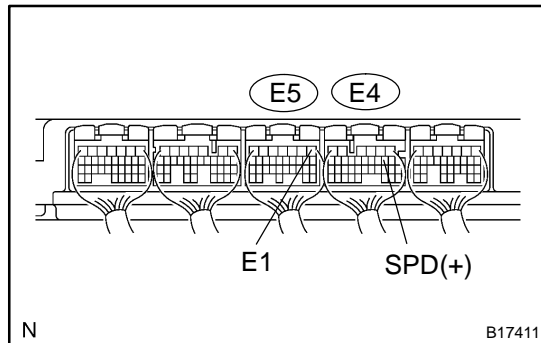
Vehicle speed	Proceed to
Vehicle speed remains 0 km/h (0 mph)	A
Vehicle speed is lower than actual speed	A
Vehicle speed is same as actual speed	B

B

**Check for intermittent problems
(See page DI-430).**

A

2 Check voltage between terminal SPD and E1 of ECM connector.



PREPARATION:

- Shift the shift lever to neutral.
- Jack up the rear wheel on one side.
- Turn the ignition switch ON.

CHECK:

Measure the voltage between the specified terminal of the E4 and E5 ECM connector when the wheel is turned slowly.

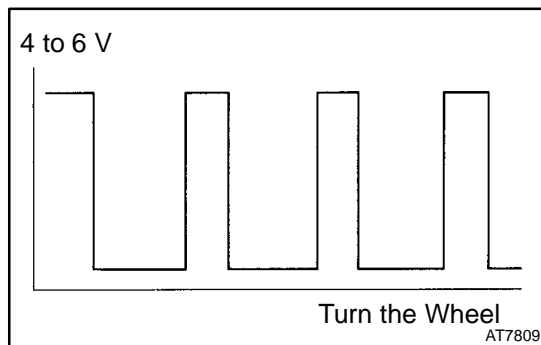
OK:

Standard:

Tester Connection	Specified Condition
SPD (E4-8) – E1 (E5-1)	Generated intermittently

HINT:

The output voltage should fluctuate up and down similarly to the diagram on the left when the wheel is turned slowly.



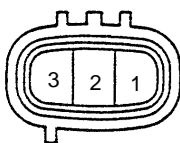
OK

Replace ECM (See page [SF-82](#)).

NG

3 Check vehicle speed sensor.

Component Side Connector:



Vehicle Speed Sensor

I25536

PREPARATION:

- Disconnect the vehicle speed sensor connector.
- Connect the battery positive (+) lead to terminal 1 and the battery negative (–) lead to terminal 2.
- Connect the tester positive (+) lead to terminal 3 and the tester negative (–) lead to terminal 2.
- Shift the shift lever to N position.
- Rotate the shaft.

CHECK:

Check that there is voltage change between terminals 2 and 3.

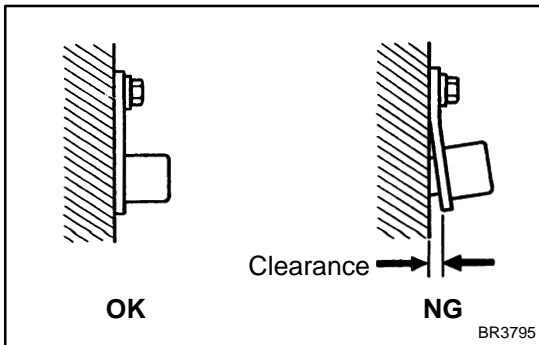
OK:

Standard: 0 V to 10 V or more

NG

Replace vehicle speed sensor.

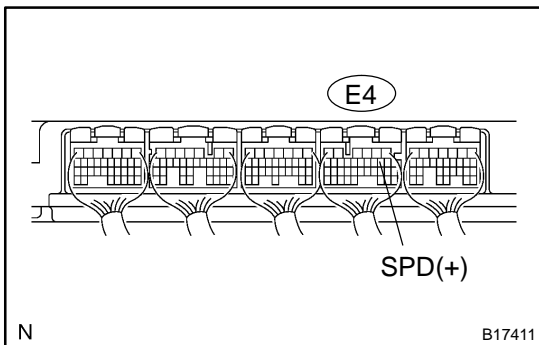
OK

4 Check sensor installation (Vehicle speed sensor).**CHECK:**

Check the vehicle speed sensor installation.

OK:

The vehicle speed sensor is installed properly.

NG**Tighten sensor installation bolt.****OK****5 Check for open and short in harness and connector between combination meter and ECM.****PREPARATION:**

- (a) Disconnect the C11 combination meter connector.
- (b) Disconnect the E4 ECM connector.

CHECK:

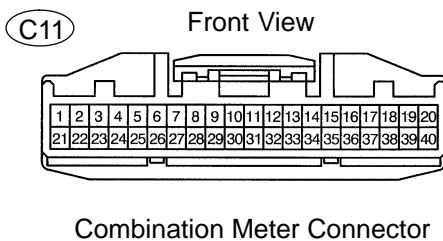
Check for resistance between the wire harness side connectors.

OK:**Standard (Check for open):**

Symbols (Terminal No.)	Specified condition
SPD (E4–8) – C11–23	Below 1 Ω

Standard (Check for short):

Symbols (Terminal No.)	Specified condition
SPD (E4–8) or C11–23 – Body ground	10 k Ω or higher

Wire Harness Side:

Combination Meter Connector

NG**Repair or replace harness or connector.****OK**

Check combination meter circuit (See page [BE-86](#)).