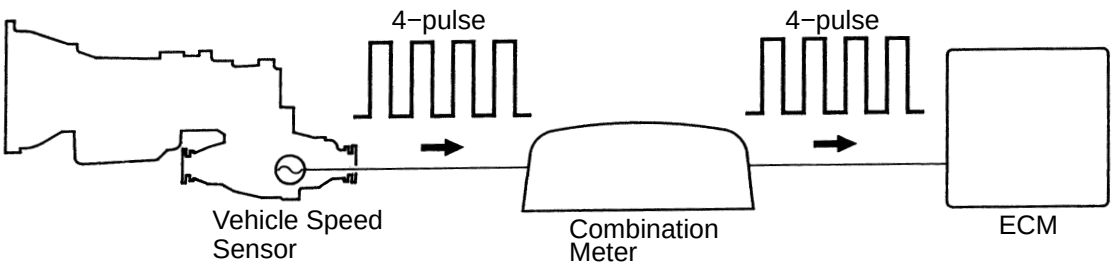
DIDTS−01

DTC	P0500	Vehicle Speed Sensor ”A”

DTC	P0503	Vehicle Speed Sensor ”A” Intermittent/ Erratic/High

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.



P22487

DTC No.	Proceed to	DTC Detection Condition	Trouble Area
P0500	Step 1	No vehicle speed sensor signal to ECM under following conditions: (1 trip detection logic) • Vehicle is being driven	• Combination meter • Open or short in vehicle speed sensor circuit • Vehicle speed sensor • ECM
P0503	DI−11	Intermittent problem in the vehicle speed sensor circuit	• Combination meter • Open or short in vehicle speed sensor circuit • Vehicle speed sensor • ECM

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 6 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	Case 1: 500 times Case 2: 8 sec.	
MIL operation	Case 1: Immediate Case 2: 2 driving cycles	
Sequence of operation	None	

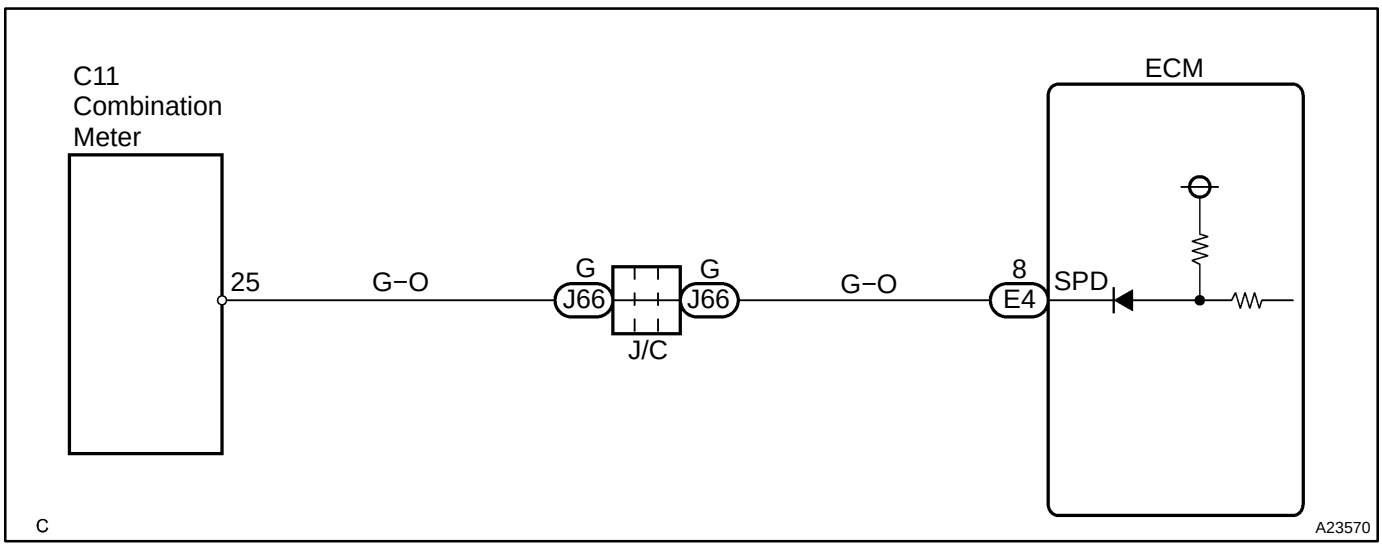
TYPICAL ENABLING CONDITIONS

Item	Specification	
	Minimum	Maximum
The monitor will run whenever this DTC is not present	See page DI−18	
Case 1:		
Vehicle speed is 5.59 mph (9 km/h) or more	4 sec.	−
Park/neutral position switch	OFF	
Case 2:		
ECT	70°C (158°F)	−
Fuel cut at high engine speed	Not executing	
Engine RPM	2,000 rpm	6,800 rpm
Battery voltage	8 V	−
Ignition switch	ON	
Starter	OFF	

TYPICAL MALFUNCTION THRESHOLDS

Detection Criteria	Threshold
Case 1, 2	
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:

(a) Connect the hand−held tester to the DLC3.
(b) Turn the ignition switch to ON and push the hand−held tester main switch ON.
(c) Start the engine.
(d) 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.

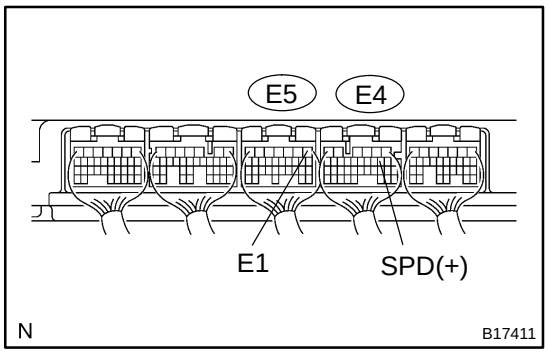
RESULT:

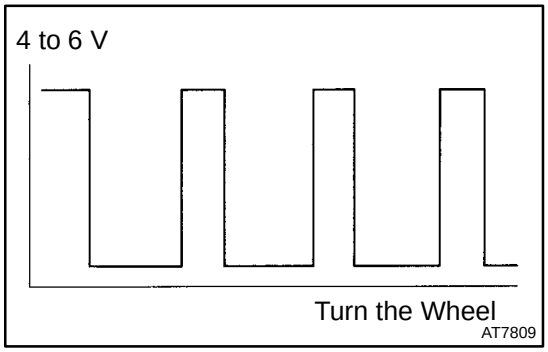
Vehicle speed	Proceed to
Vehicle speed remains 0 km/h (0 mph)	A
Vehicle speed is lower than actual speed	A
Vehicle speed is same as actual speed	B

NG → **Check speedometer circuit. See combination meter troubleshooting (See page BE−2).**

OK

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





PREPARATION:

(a) Shift the shift lever to neutral.
(b) Jack up the rear wheel on one side.
(c) Turn the ignition switch to ON.

CHECK:

Measure the voltage between the specified terminal of the E4 and E5 ECM connectors 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.

NG → **Check and repair harness and connector between combination meter and ECM.**

OK

Replace ECM (See page SF−66).