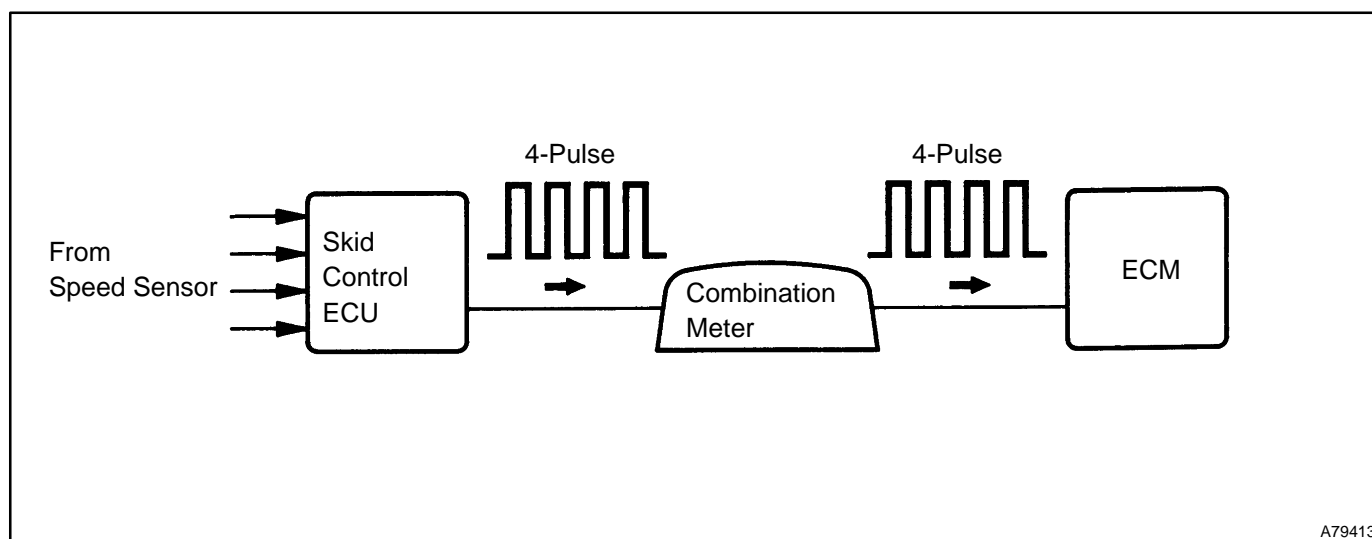


DTC	P0500	VEHICLE SPEED SENSOR "A"
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DTC	P0503	VEHICLE SPEED SENSOR "A" INTERMITTENT/ERRATIC/HIGH
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CIRCUIT DESCRIPTION

The speed sensor detects the wheel speed and sends the appropriate signals to the skid control ECU. The skid control ECU converts these wheel speed signals into a 4-pulse signal and outputs it to the ECM via the combination meter. The ECM determines the vehicle speed based on the frequency of these pulse signals.



DTC No.	DTC Detection Condition	Trouble Area
P0500 P0503	The ECM detects the following conditions simultaneously for 2 seconds (1 trip detection logic): <ul style="list-style-type: none"> • No SPD (speed sensor) signal is output when ECM detects NC (transmission counter gear) signal is more than 300 rpm. • Park/Neutral position switch is OFF (when shift lever is in other than P and N positions) 	<ul style="list-style-type: none"> • Open or short in speed sensor circuit • Speed sensor • Combination meter • ECM • Skid control ECU

MONITOR DESCRIPTION

The ECM assumes that the vehicle is being driven when the transmission counter gear indicates more than 300 rpm and over 30 seconds have passed since the park/neutral position switch was turned OFF. If there is no signal from the vehicle speed sensor with these conditions satisfied, the ECM concludes that the vehicle speed sensor is malfunctioning. The ECM will turn on the MIL and will set a DTC.

MONITOR STRATEGY

Related DTCs	P0500: VSS Circuit
Required sensors/ components (Main)	Vehicle speed sensor (VSS), Combination meter, ABS ECU
Required sensors / components (Related)	Transmission counter gear Speed (CS) sensor, PNP switch, ECT sensor
Frequency of operation	Continuous
Duration	2 seconds
MIL operation	Immediate
Sequence of operation	None

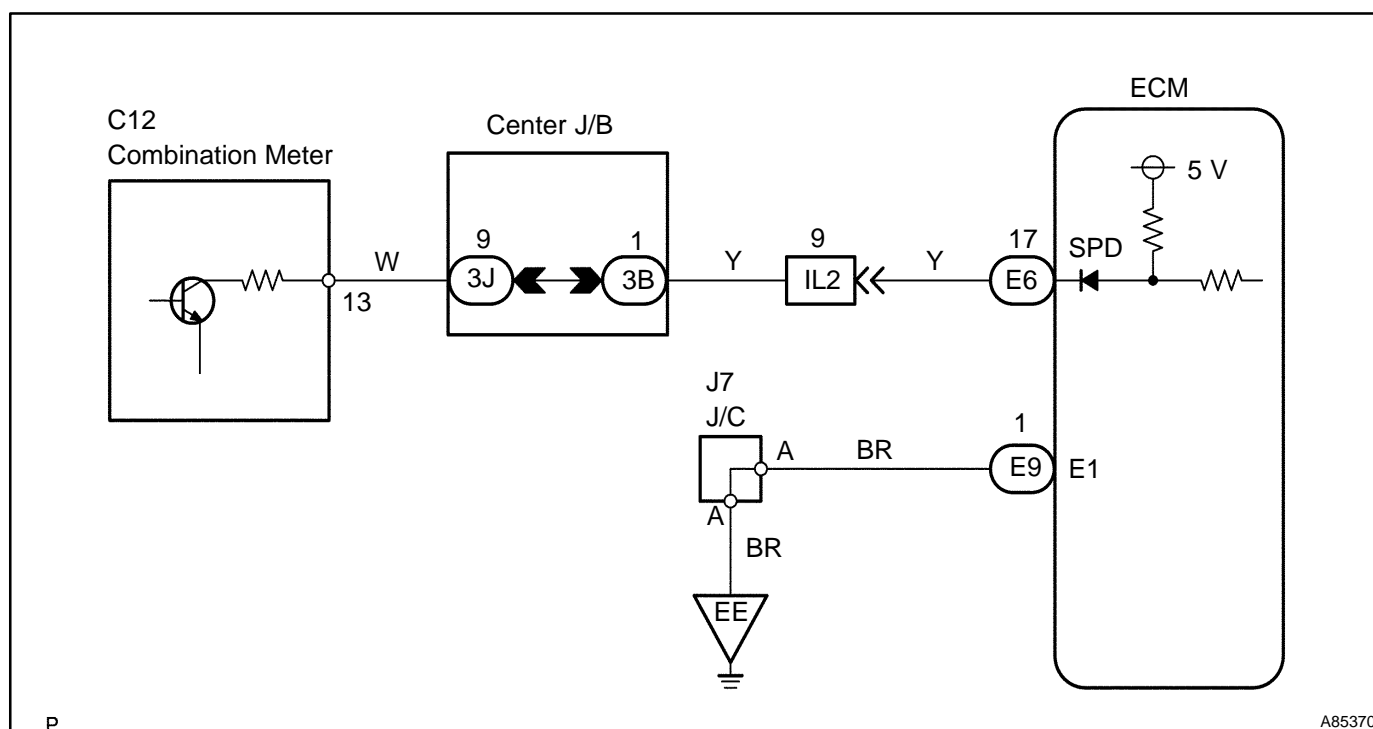
TYPICAL ENABLING CONDITIONS

The monitor will run whenever these DTCs are not present	See page 05-16
Transmission counter gear speed	300 rpm or more
Engine condition	Running
Ignition switch	ON
Battery voltage	8 V or more
Starter	OFF
Either of the following conditions is met:	Condition 1 and 2
Condition 1:	-
Time after PNP switch turns from ON to OFF	2 sec. or more
ECT and ECT sensor	ECT is 20°C (68°F) or more and ECT sensor dose not malfunction (P0115 or P0116)
Condition 2:	-
Time after PNP switch turns from ON to OFF	30 sec. or more
ECT and ECT sensor	ECT is less than 20°C (68°F) or ECT sensor fail is detected (P0115 or P0116)

TYPICAL MALFUNCTION THRESHOLDS

Sensor signal	No pulse input
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WIRING DIAGRAM



INSPECTION PROCEDURE

HINT:

Read freeze frame data using the hand-held tester or the OBD II scan tool. 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, and other data from the time the malfunction occurred.

1 CHECK OPERATION OF SPEEDOMETER

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

HINT:

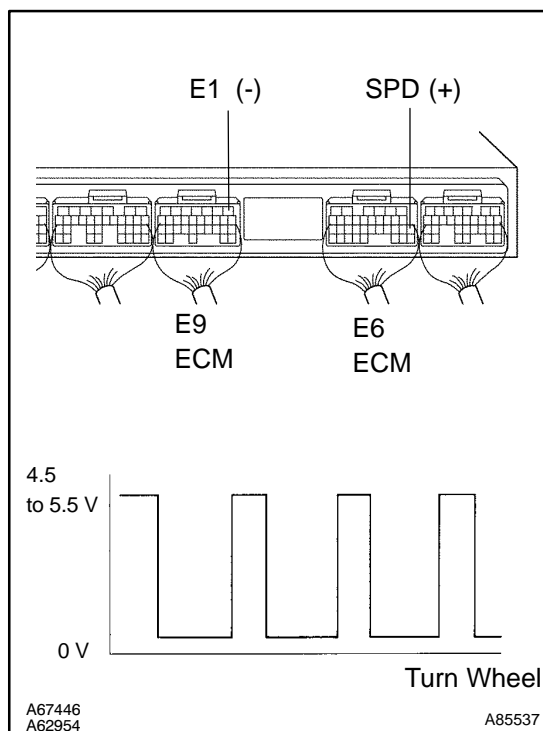
The vehicle speed sensor is operating normally if the speedometer display is normal.

NG

CHECK SPEEDOMETER CIRCUIT
(See page 05-1885)

OK

2 INSPECT ECM (SPD VOLTAGE)



- Shift the lever to the neutral position.
- Jack up the vehicle.
- Turn the ignition switch ON.
- Measure the voltage of the ECM connectors as the wheel is turned slowly.

Standard:

Tester Connection	Specified Condition
E6-17 (SPD) - E9-1 (E1)	Generated intermittently

HINT:

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

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REPAIR OR REPLACE HARNESS AND CONNECTOR

OK

REPLACE ECM (See page 10-9)