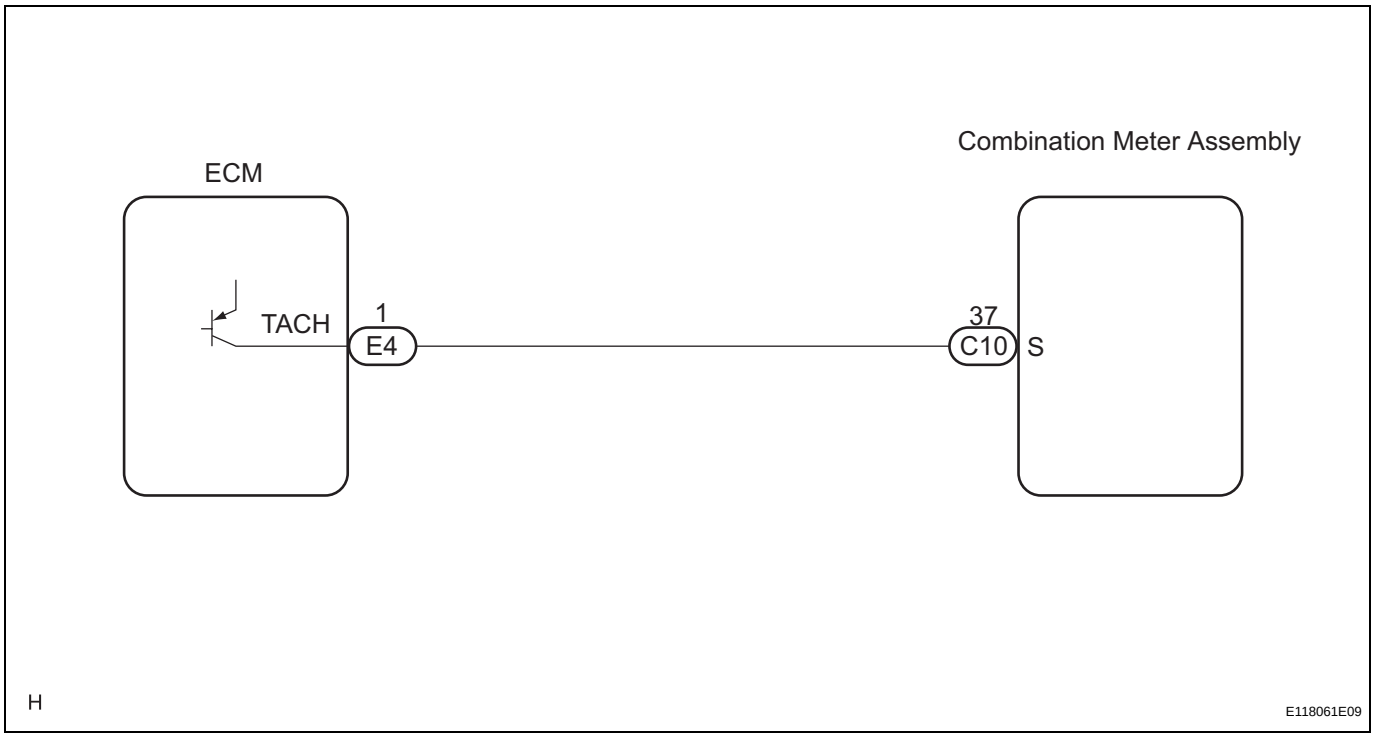
Tachometer Malfunction

DESCRIPTION

The meter CPU receives the engine revolution signal from the ECM via the direct lines. The meter CPU displays engine revolution data that is calculated based on the data received from the ECM.

WIRING DIAGRAM



ME

INSPECTION PROCEDURE

1	PERFORM ACTIVE TEST BY INTELLIGENT TESTER

(a) Connect the intelligent tester to the DLC3.
(b) Turn the switch to the ON position.
(c) Turn the tester ON.
(d) Enter the following menus: DIAGNOSIS / OBD/MOBD / METER / ACTIVE TEST.
(e) Check the operation by referring to the values in the table below.

METER:

Tester Display	Test Part	Test Details	Diagnostic Note
TACHO METER	Tachometer	0, 1,000, 2,000, 3,000, 4,000, 5,000, 6,000, 7,000 (rpm)	-

OK:
Needle indication is normal.

NG → **REPLACE COMBINATION METER ASSEMBLY**

OK

2	READ VALUE OF INTELLIGENT TESTER (ENGINE SPEED SIGNAL)

(a) Connect the intelligent tester to the DLC3.
(b) Turn the switch to the ON position.
(c) Turn the tester ON.
(d) Enter the following menus: DIAGNOSIS / OBD/MOBD / METER / DATA LIST.
(e) Check the values by referring to the values in the table below.

METER:

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
TACHO METER	Engine speed/Min.: 0 rpm, Max.: 12,750 rpm	Almost same as actual engine speed (When engine is running)	-

OK:
Engine speed displayed on the tester is almost the same as the actual engine speed.

NG → **Go to step 3**

OK

REPLACE COMBINATION METER ASSEMBLY

ME

3	READ VALUE OF INTELLIGENT TESTER (ENGINE SPEED SIGNAL)

(a) Connect the intelligent tester to the DLC3.
(b) Turn the switch to the ON position.
(c) Turn the tester ON.
(d) Enter the following menus: DIAGNOSIS / OBD/MOBD / ENGINE / ACTIVE TEST.
(e) Check the values by referring to the values in the table below.

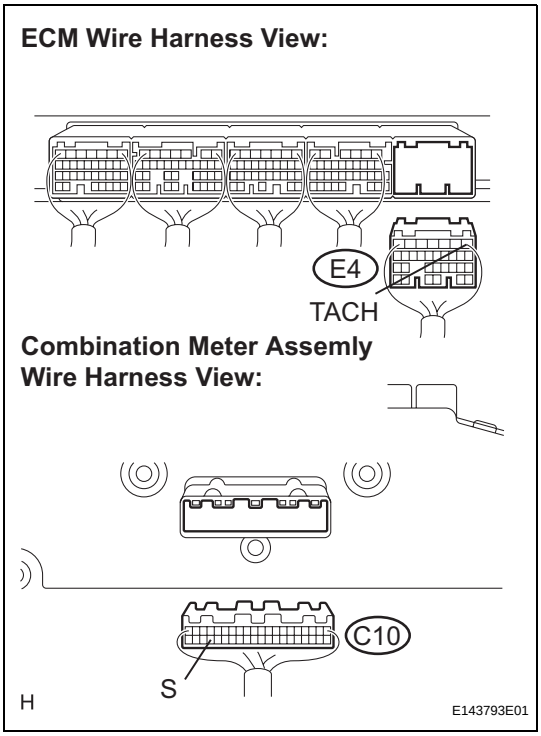
ENGINE:

Item	Measurement Item/Range	Normal Condition	Diagnostic Note
ENGINE SPD	Engine speed/Min.: 0 rpm, Max.: 12,750 rpm	Almost same as actual engine speed (When engine is running)	-

NG → **GO TO SFI SYSTEM**

OK

4 CHECK HARNESS AND CONNECTOR (COMBINATION METER - ECM)



(a) Disconnect the E4 and C10 connectors.
(b) Measure the resistance according to the value(s) in the table below.

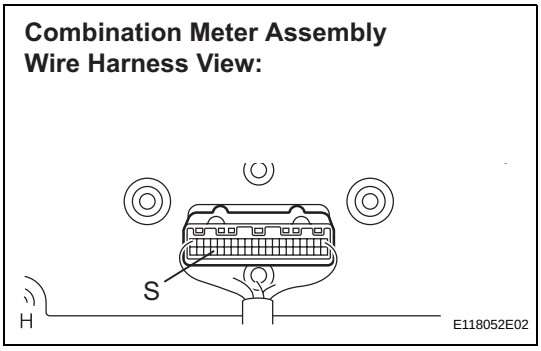
Standard resistance

Tester Connection	Condition	Specified Condition
E4-1 (TACH) - C10-37 (S)	Always	Below 1 Ω
E4-1 (TACH) - Body ground	Always	10 kΩ or higher

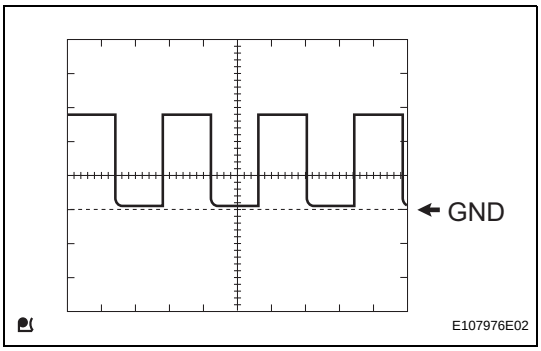
NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

5 INSPECT COMBINATION METER ASSEMBLY



(a) Check the input signal waveform.
(1) Remove the combination meter with the connector still connected.
(2) Connect the oscilloscope to terminal C10-37 (S) and body ground.
(3) Start the engine.



(4) Check the signal waveform according to the condition(s) in the table below.

Item	Condition
Tool setting	5 V/DIV., 10 ms./DIV.
Vehicle condition	Engine idle speed

OK:

The waveform is displayed as shown in the illustration.

OK → **REPLACE COMBINATION METER ASSEMBLY**

NG

REPLACE ECM