

METER / GAUGE SYSTEM

OPERATION CHECK

1. CHECK LED

(a) Check the LED illumination status.

- (1) Check that each indicator / warning light comes on for the period of time specified below when turning the ignition switch to the ON position.

Standard:

Indicator / Warning	Illumination Condition
Brake, ABS, Slip, VSC, VSC OFF, DAC, Water Temperature Warning (HOT)	When the ignition switch is turned to the ON position, the light comes on for approx. 3 seconds.
Airbag	When the ignition switch is turned to the ON position, the light comes on for approx. 6 seconds.
Check Engine, Charge, Engine Oil Pressure	When the ignition switch is turned to the ON position, the light comes on.
Water Temperature Warning (COOL)	When the ignition switch is turned to the ON position, the water temperature warning light (HOT) comes on, then goes off after the engine is warmed up.

HINT:

- Illumination requests are made by the relevant ECUs. (See page ME-13 for details regarding the ECUs.)
- Check the brake warning light with the parking brake released.

2. INSPECTION OF SPEEDOMETER

(a) Check operation

- (1) Using a speedometer tester, check the indication error of the speedometer and the operation of the odometer.

Standard:

Tester Indication Standard Speed (km/h)	Meter Indication Acceptable Range (km/h) (for EU) Values in parenthesis are for reference	Meter Indication Acceptable Range (km/h) (for general export) Values in parenthesis are for reference
20	(21-25)	(21-25)
40	41.2-47.0	37.2-43.0
60	62.0-68.9	56.2-65.0
80	82.4-91.0	75.1-87.0
100	102.6-113.0	94.1-109.0
120	122.7-134.9	113.0-130.9
140	142.8-156.9	131.9-153.0
160	163.0-178.9	151.0-175.0

NOTICE:

If the tire pressure is improper, the indication error increases.

- (2) Inspect the amount of fluctuation of the speedometer.

Standard:

0.5 km/h or less

3. INSPECTION OF TACHOMETER

(a) Check operation

- (1) Start the engine.



- (2) Using a tachometer (test equipment), check the indication error of the vehicle's tachometer.

Standard:

Tachometer (Test Equipment) Indication (r/min)	Meter Indication Acceptable Range (r/min) Values in parenthesis are for reference
700	500-700
1000	(900-1100)
2000	(1875-2125)
3000	2850-3150
4000	(3850-4150)
5000	4840-5160
6000	(5820-6180)

NOTICE:

Do not run the engine at a speed higher than its maximum permissible speed (indicated by the red zone on the tachometer).

4. INSPECTION OF OIL PRESSURE WARNING INDICATOR

- (a) Check operation

- (1) Disconnect the engine oil pressure switch assembly connector.
- (2) Turn the ignition switch to the ON position.
- (3) Using a test lead wire, check the status of the oil pressure warning indicator when creating a short circuit between the vehicle wire harness connector terminal of the engine oil pressure switch assembly and the body ground.

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Standard:

The engine oil pressure warning indicator comes on.

5. Inspect engine oil pressure switch assembly

- (a) Check the continuity.

- (1) Using the tester, check for continuity between the engine oil pressure switch terminal and the body ground.

Engine Condition	Standard
Engine is stopped	Continuity
Engine is running	No continuity

6. INSPECTION OF FUEL RECEIVER GAUGE AND WARNING LIGHT

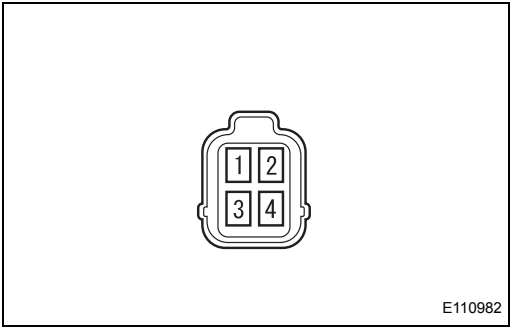
- (a) Inspect circuit

- (1) Disconnect the fuel sender gauge assembly connector.
- (2) Disconnect the negative battery terminal, and reconnect it.
- (3) Check the fuel receiver gauge indication status when turning the ignition switch to the ON position.

Standard:

The gauge indication is below E.

- (4) Using a test lead wire, short the circuit between the fuel sender gauge vehicle harness side connector terminal 1 and terminal 2.
- (5) Disconnect the negative battery terminal, and reconnect it.



- (6) Check the fuel receiver gauge indication status when turning the ignition switch from the OFF to the ON position.

Standard:
Points above F

7. INSPECTION OF BUZZER OPERATION

- (a) Check operation
 - (1) Activate each warning function and check the operation of the buzzer built into the combination meter assembly.

Warning Function	Inspection Condition	Buzzer Sound
Taillight Reminder Warning	Light control switch TAIL, ignition switch OFF, (without key) → driver side door open	Continuous sound
Key Reminder Warning	Taillight OFF, ignition switch OFF, with key, driver side door open	Intermittent sound

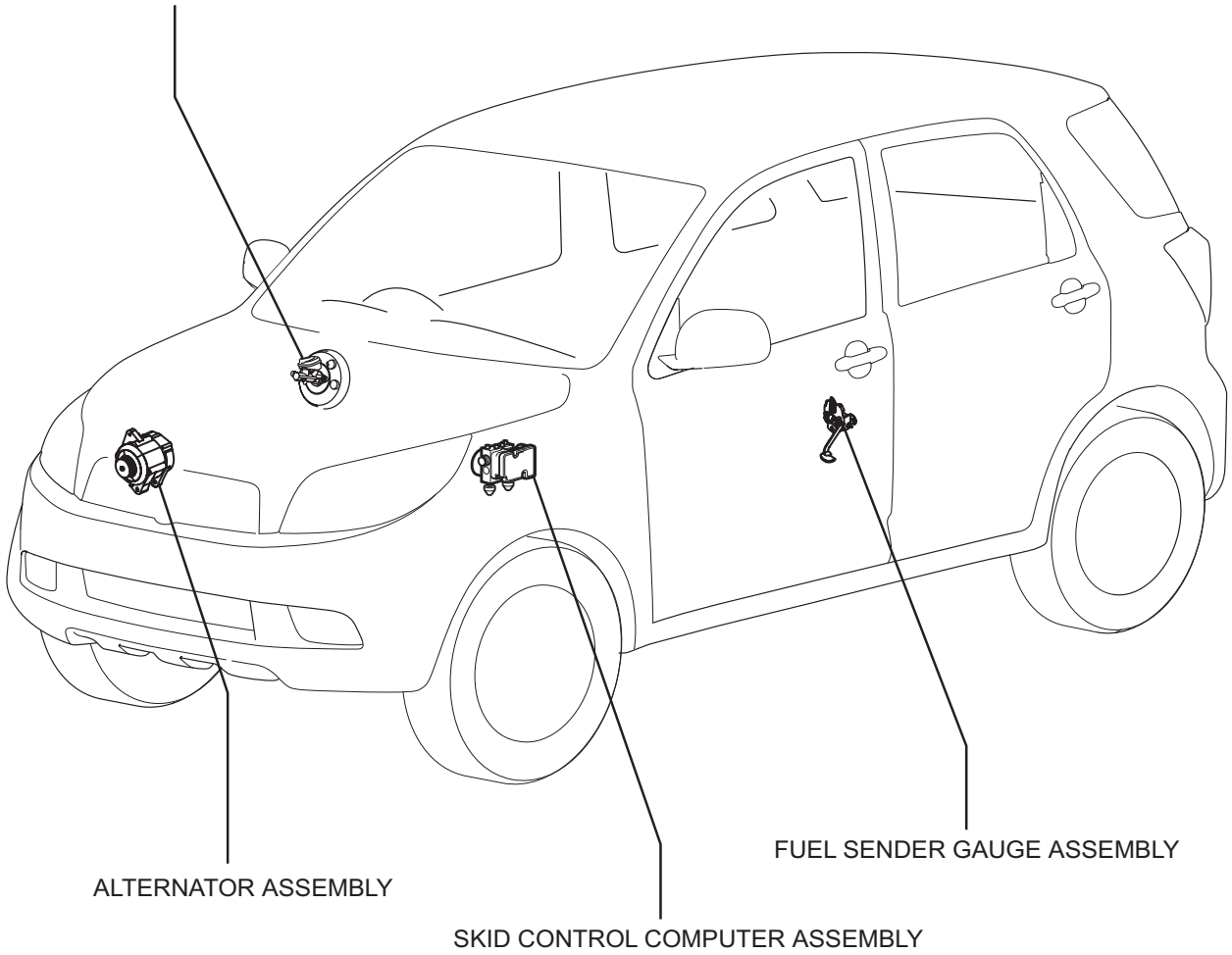
BASIC INSPECTION

1. INSPECTION OF BATTERY VOLTAGE

- (a) Measure the battery voltage when the engine is stopped.
Standard:
10 to 14 V

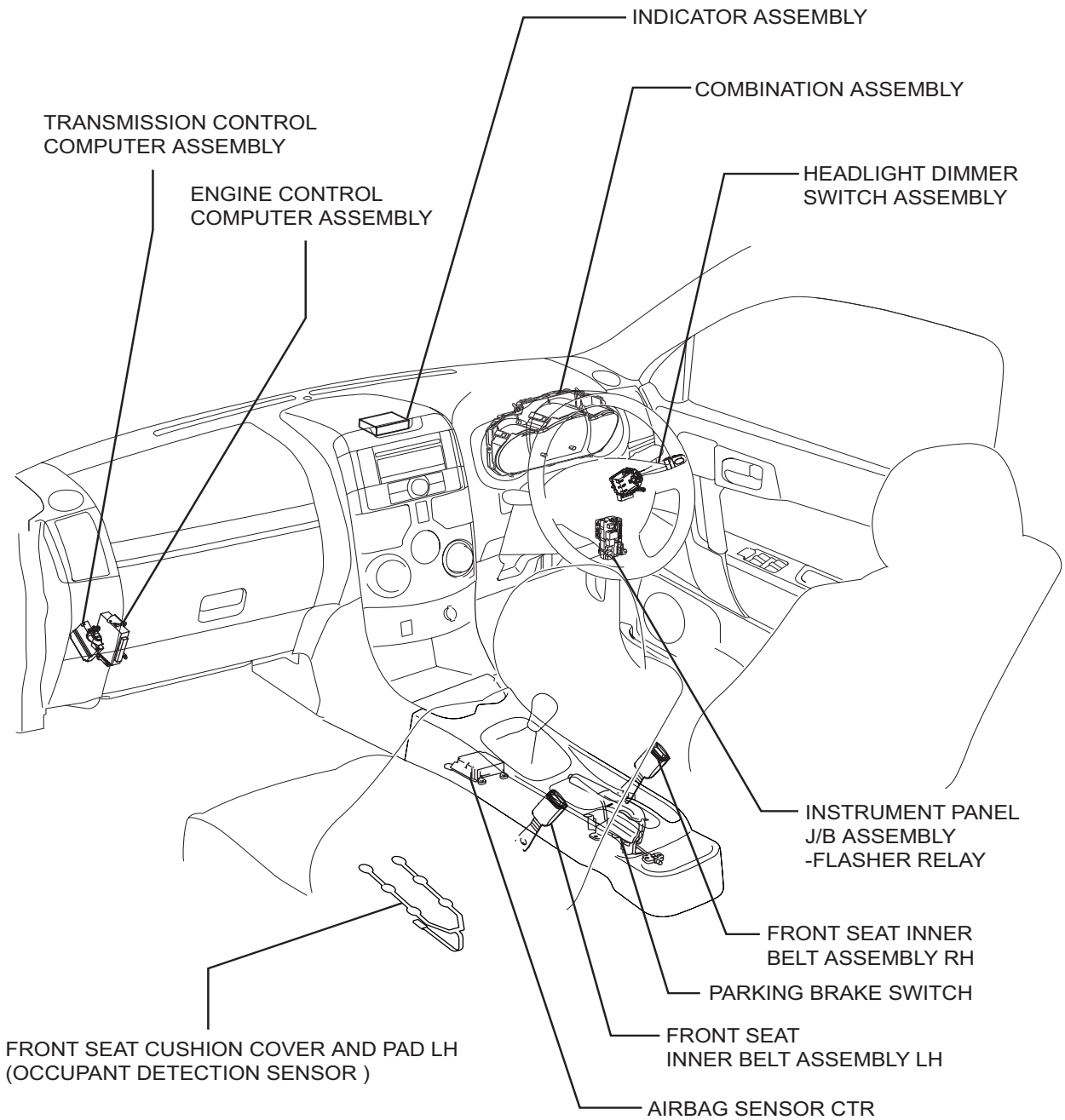
LOCATION

BRAKE LEVEL WARNING SWITCH

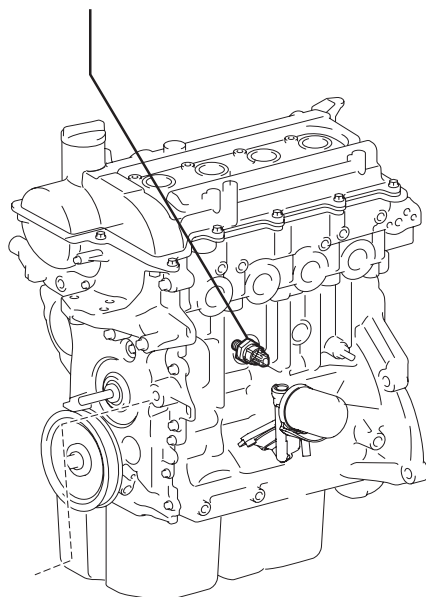


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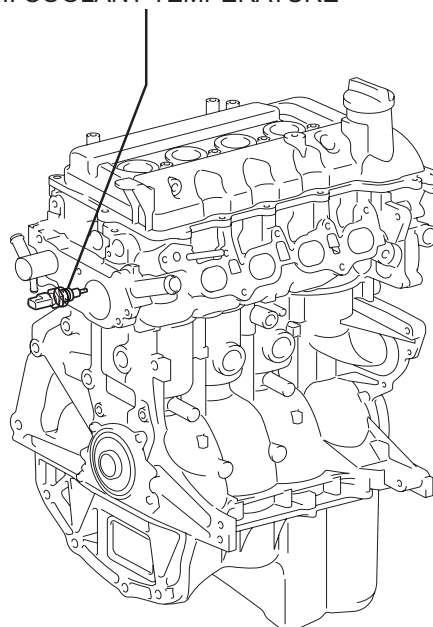
ME



ENGINE OIL PRESSURE SWITCH ASSEMBLY



E.F.I. COOLANT TEMPERATURE



E131196J02

PROBLEM SYMPTOMS TABLE

METER / GAUGE

Symptom	Suspected Area	See Page
Speedometer operation malfunction (Vehicles without VSC attachment)	See troubleshooting flowchart (speedometer malfunction) (Vehicles without VSC attachment)	ME-28
Speedometer operation malfunction (Vehicles equipped with VSC)	See troubleshooting flowchart (speedometer malfunction) (Vehicles equipped with VSC)	ME-26
Tachometer malfunction	See troubleshooting flowchart (tachometer malfunction)	ME-19
Fuel receiver gauge malfunction	See troubleshooting flowchart (fuel receiver gauge malfunction)	ME-21
Water temperature warning light malfunction	See troubleshooting flowchart (water temperature warning light malfunction)	ME-24

INDICATOR / WARNING LIGHTS

Symptom	Suspected Area	See Page
Check engine warning light malfunction	Check LED	ME-1
	Check vehicle W/H and connectors (combination meter ↔ ECM)	-
	Inspect engine ECU	ES-16

Symptom	Suspected Area	See Page
Charge warning light malfunction	Check LED	ME-1
	Check vehicle W/H and connectors (alternator ←→ combination meter)	-
	Alternator L terminal	-
	Replace combination meter assembly	-
Oil pressure warning light malfunction	Check LED	ME-1
	Inspect engine oil pressure switch assembly	ME-33
	Check vehicle W/H and connectors (engine oil pressure switch ←→ combination meter)	-
	Replace combination meter assembly	-
A/T shift position indicator light (P, R, N, D) malfunction	CAN communication system	CA-24
	Replace combination meter assembly	-
Brake warning light malfunction (vehicles without ABS or VSC)	Check LED	ME-1
	See troubleshooting flowchart (brake warning light remains on)	BC-123
ABS warning light malfunction	Check LED	ME-1
	See troubleshooting flowchart (ABS warning light remains on) (vehicles without VSC)	BC-43
	See troubleshooting flowchart (ABS warning light remains on) (vehicles with VSC)	BC-120
Slip indicator light malfunction	Check LED	ME-1
	Replace combination meter assembly	-
VSC warning light malfunction	See troubleshooting flowchart (VSC warning light is on but no trouble code is output) (vehicles with VSC)	BC-135
	Replace combination meter assembly	-
Downhill assist control OFF indicator light malfunction	Inspect combination meter assembly	ME-16
	Check vehicle wire harness and connectors (downhill assist control OFF switch ←→ combination meter)	-
	Replace combination meter	-
SRS airbag warning light malfunction	Check LED	ME-1
	See troubleshooting flowchart (warning light remains on)	RS-155
	Replace combination meter assembly	-
High beam indicator light malfunction	Inspect combination meter assembly	ME-16
	Check vehicle wire harness and connectors (headlight dimmer switch ←→ combination meter)	-
Turn indicator light malfunction (lighting system operates normally)	Inspect combination meter assembly	ME-16
	Check vehicle wire harness and connectors (flasher relay ←→ combination meter)	-
Front fog indicator light malfunction	Inspect combination meter assembly	ME-16
	Check vehicle wire harness and connectors (front fog light switch, front fog light relay ←→ combination meter)	-
	Replace combination meter assembly	-
Rear fog indicator light malfunction (front fog light operates normally)	Inspect combination meter assembly	ME-16
	Check vehicle wire harness and connectors (rear fog light switch ←→ combination meter)	-
	Replace combination meter assembly	-
Door warning light malfunction (courtesy light switches and room light assembly No. 3 operate normally)	Inspect indicator assembly	ME-37
	Inspect combination meter assembly	ME-16
	Replace combination meter assembly	-
Fuel level warning light malfunction (fuel gauge operates normally)	Inspect combination meter assembly	ME-16
	Replace combination meter assembly	-

Symptom	Suspected Area	See Page
Driver's seat belt warning light malfunction	Inspect indicator assembly	ME-37
	Seat belt warning system	SB-2
	Replace combination meter assembly	-
Passenger seat belt warning light malfunction	Inspect indicator assembly	ME-37
	Seat belt warning system	SB-2
	Replace combination meter assembly	-

BUZZER FUNCTION

Symptom	Suspected Area	See Page
None of the buzzers sound	Replace combination meter assembly	-
A/T reverse buzzer malfunction (shift position R is normal)	Replace combination meter assembly	-
Light reminder buzzer malfunction (lighting system is normal/door warning turns on when driver side door is opened)	Replace combination meter assembly	-
Seat belt buzzer malfunction (warning light is normal)	Seat belt warning system	SB-2
	Replace combination meter assembly	-
Key reminder warning buzzer malfunction	Key reminder warning system	DL-58
	Replace combination meter assembly	-

Multi information display

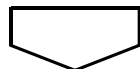
Symptom	Suspected Area	See Page
The clock, average fuel consumption, current fuel consumption, possible travel distance, or altitude are very inaccurate (other meter functions are normal)	Replace combination meter assembly	-
Pressing MODE switch does not change multi-display indication	Check vehicle wire harness and connectors (combination meter assembly ←→ MODE switch)	-
	Inspect combination meter assembly (MODE SW terminal)	ME-16

OTHER FUNCTIONS

Symptom	Suspected Area	See Page
ODO /TRIP liquid crystal display malfunction (speedometer function is normal)	Replace combination meter assembly	-
Ambient temperature indication malfunction	Go to heater and air conditioning system	AC-15
	Replace combination meter assembly	-
Multi-display malfunction	Replace combination meter assembly	-

HOW TO PROCEED WITH TROUBLE-SHOOTING

1 VEHICLE BROUGHT TO WORKSHOP



2 CONDUCT CUSTOMER PROBLEM ANALYSIS AND CHECK SYMPTOMS

HINT:
See page ME-11.

Result	Proceed to
Symptoms can be confirmed	A

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Result	Proceed to
Symptoms cannot be confirmed	B

B**GO TO SYMPTOM SIMULATION (IN-33)****A****3****CHECK LIN COMMUNICATION SYSTEM**

HINT:

See page MP-3.

Result	Proceed to
No problem	A
There is a problem	B

B**GO TO LIN COMMUNICATION SYSTEM SECTION (MP-2)****A****4****CHECK CAN COMMUNICATION SYSTEM**

HINT:

See page CA-10.

Result	Proceed to
No problem	A
There is a problem	B

B**GO TO CAN COMMUNICATION SYSTEM SECTION (CA-5)****A****5****PROBLEM SYMPTOMS TABLE**

HINT:

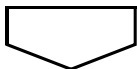
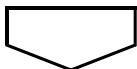
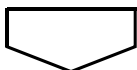
See page ME-6.

Result	Proceed to
Symptom is not listed in problem symptoms table	A
Symptom is listed in problem symptoms table	B

B**GO TO STEP 7****A**

6**PERFORM TROUBLESHOOTING BASED ON PROBLEM SYMPTOM**

- (a) CHECK FUNCTION (See page ME-1.)
- (b) ECU terminals (See page ME-16.)
- (c) INSPECTION

**7****ADJUST, REPAIR OR REPLACE****8****CONFIRMATION TEST****END****ME**

CUSTOMER PROBLEM ANALYSIS CHECK

Combination Meter System Check Sheet

Inspector's Name:

Customer's Name		License Plate No.
		First Registration Year
		Frame No.
Date Vehicle Brought In	/ /	Odometer Reading km
Date Problem First Occured	/ /	
Frequency Problem Occurs	Constant Occasionally ___times/day	
Weather	Clear Cloudy Rainy Others ()	
Ambient Air Temperature	Approximately °C	
Problem Symptoms	Speedometer operation malfunction Fails to move Large discrepancy Others ()	
	Tachometer operation malfunction Fails to move Large discrepancy Others ()	
	Fuel gauge operation malfunction Fails to move Large discrepancy Others ()	
	Coolant temperature gauge operation malfunction Fails to move Large discrepancy Others ()	
	Indicator/warning light does not illuminate (_____light)	
	Indicator/warning light always illuminates (_____light)	
	Buzzer does not sound (Buzzer)	
	Others	

DIAGNOSIS SYSTEM

1. DTC CHECK (read from meter LCD display) (See page MP-3)

- (a) With the ignition switch in the OFF position, short the circuit between terminals 13 (ECUT) and 4 (E) of the DLC.
- (b) Turn the ignition switch to the ON position and read the DTCs displayed on the LCD in the meter.

HINT:

The following DTCs appear on the meter LCD.

DTC No.	DTC designation
0011	ITC Communication error (See page MP-8.)
0021	Short to communication line / Short to communication circuit inside ECU (See page MP-12.)
0045(*1)	Door lock signal reception status
0046(*1)	Door unlock signal reception status
0047(*1)	Line registration initiation signal reception status
0048(*1)	Line registration completion signal reception status
0051	EFI ECU Communication error (See page CA-30 for details)
0052	E-A/T communication error (See page CA-24 for details)
0053	ABS ECU Communication error (See page CA-24 for details)
0054	Helm sensor communication error (See page CA-26 for details)
0055	Yaw and G sensor communication error (See page CA-28 for details)
0056(*2)	Auto air conditioner communication error (See page CA-32 for details.)

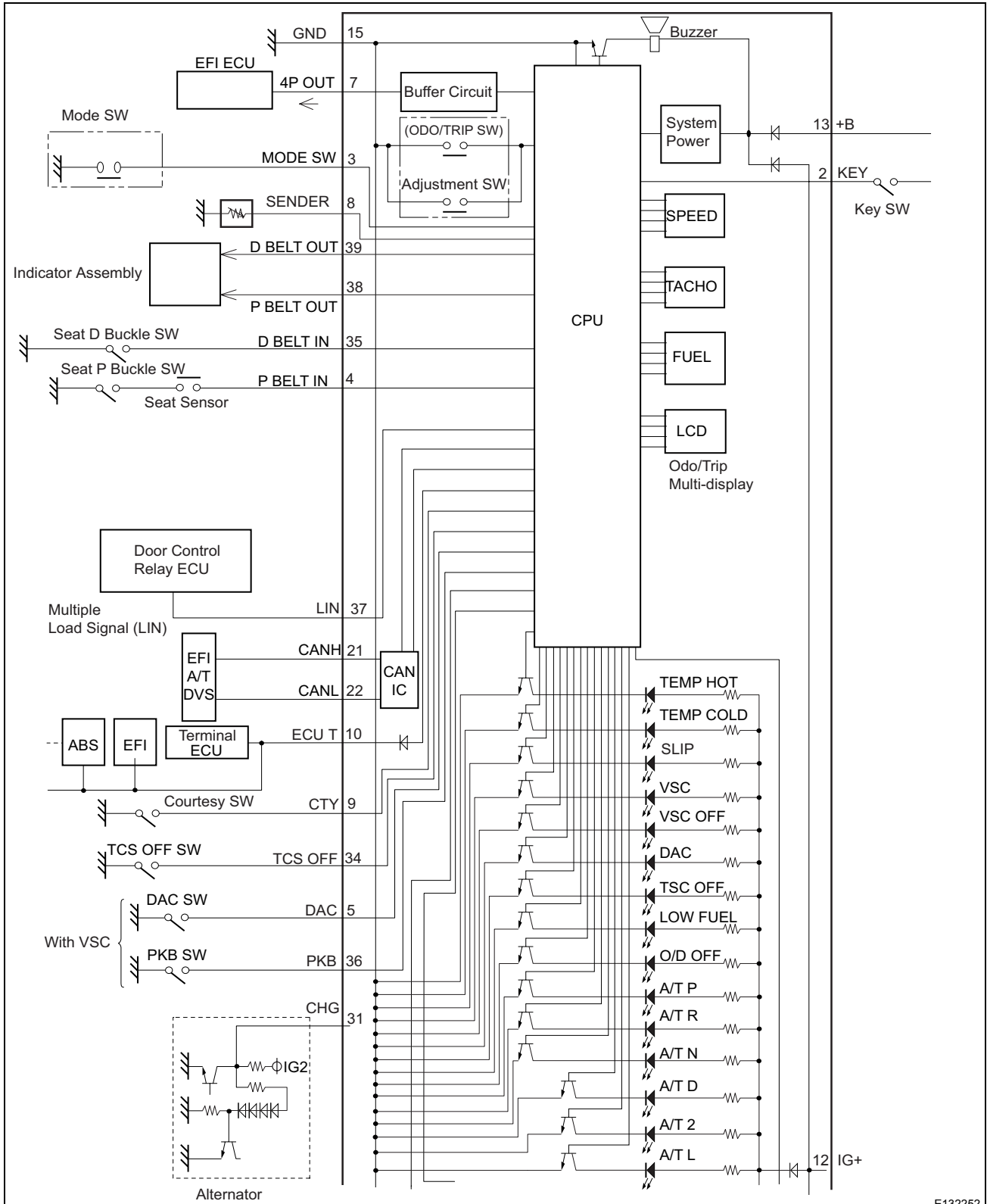
HINT:

- *1: These DTCs are for inspection and do not indicate any error.
- *2: The DTC for automatic air conditioner communication error appearing on manual air conditioners does not indicate an error.

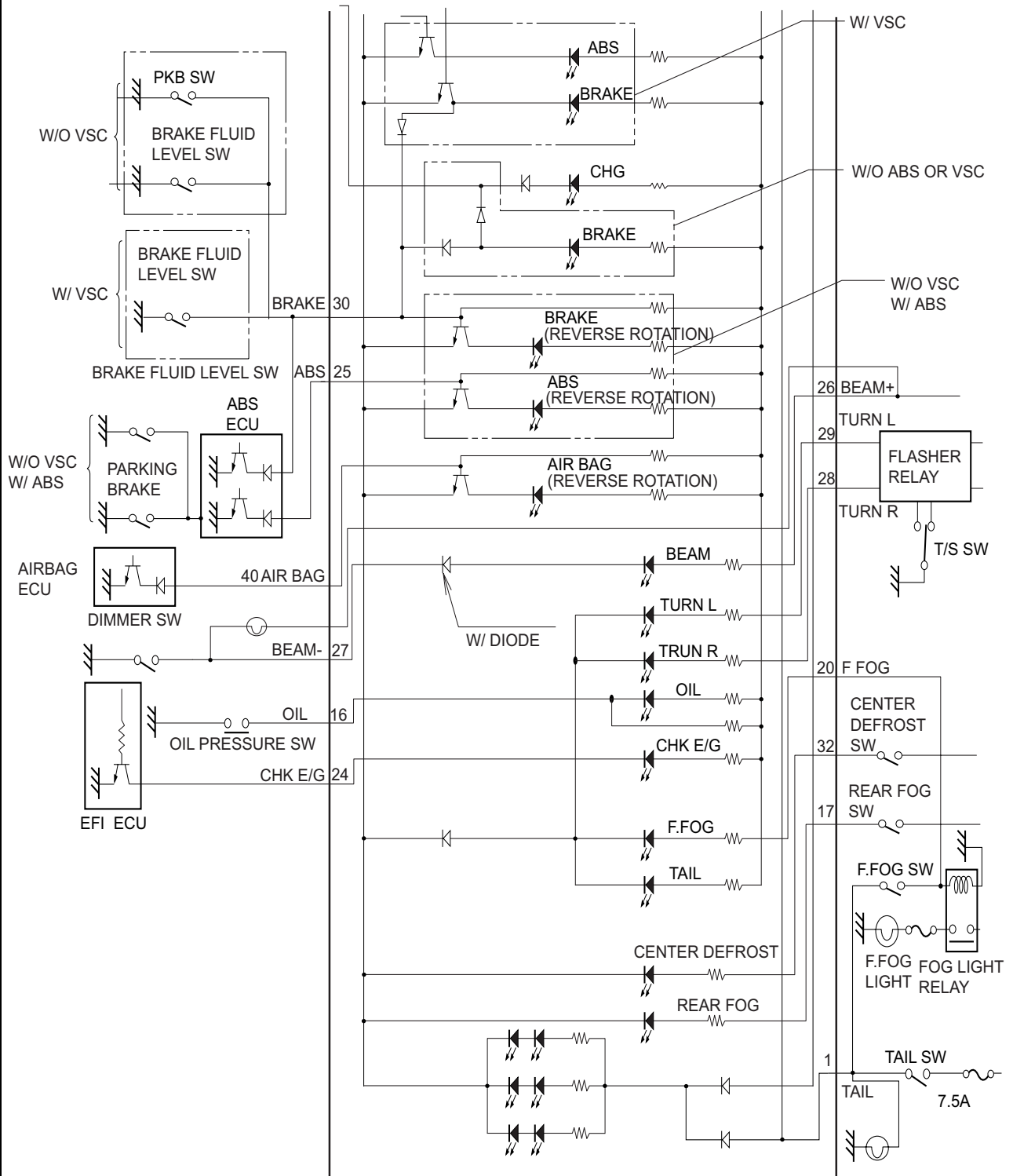
- (c) Correct the contents of each DTC.
- (d) Once again short the DLC and read the DTCs. Check and make sure that none of the above DTCs (except *1, including *2 for vehicles with manual air conditioning) are output.

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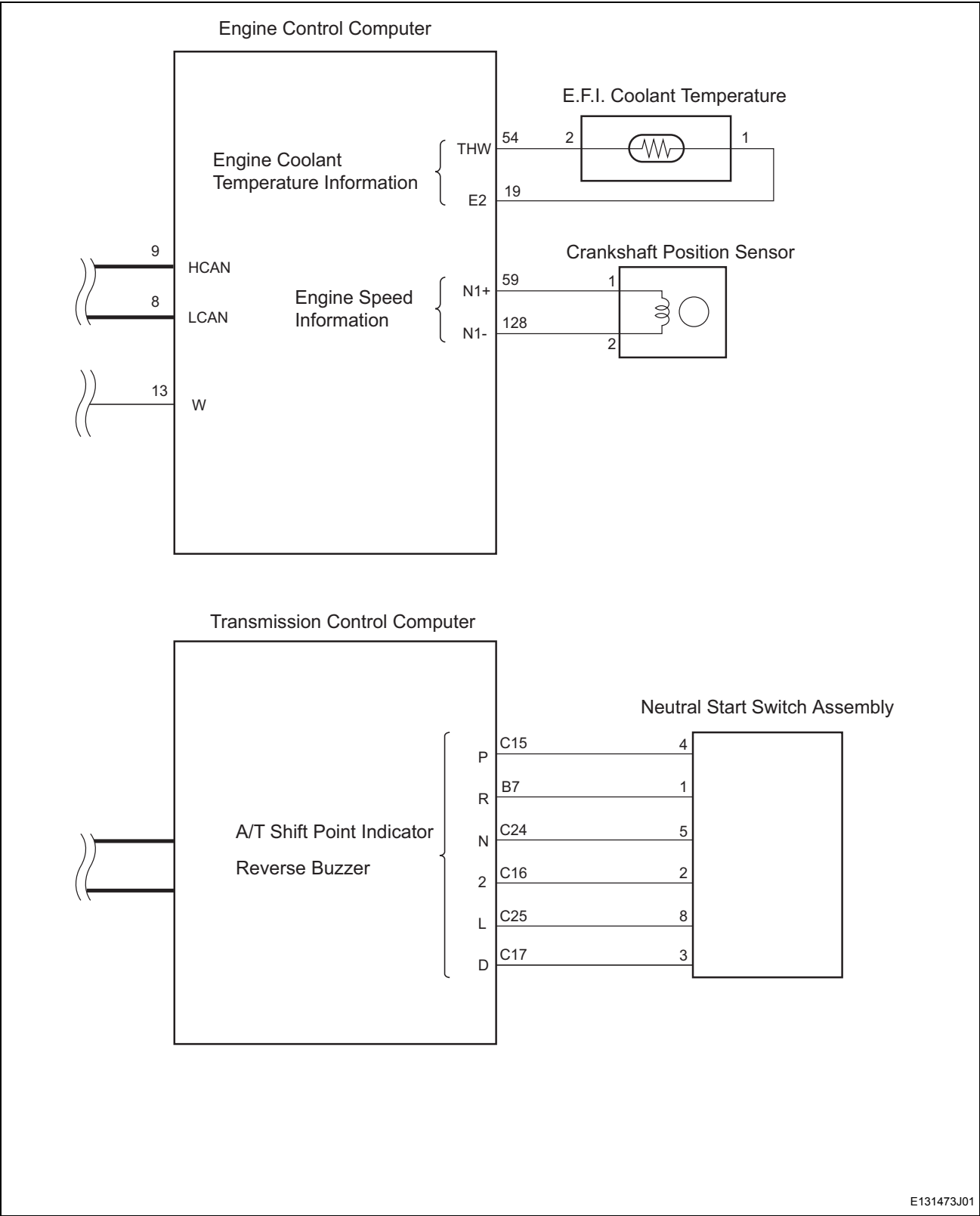
CIRCUIT DIAGRAM



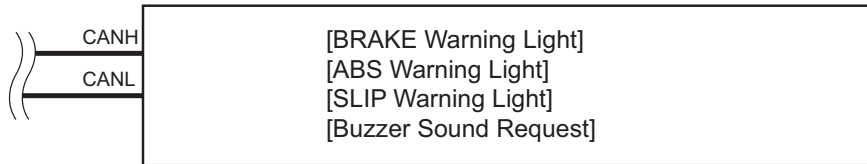
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ABS And Traction Actuator Assembly (VSC Equipped Vehicles)



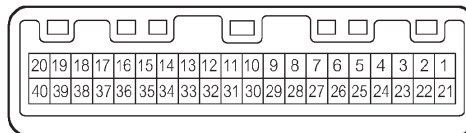
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ECU TERMINALS

1. COMBINATION METER ASSEMBLY

- (a) Check input / output signals
 - (1) Using a tester, connect the connector and check the continuity and the voltage of each terminal by aiming the tester needle from behind the vehicle's wire harness connector .



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Connector A

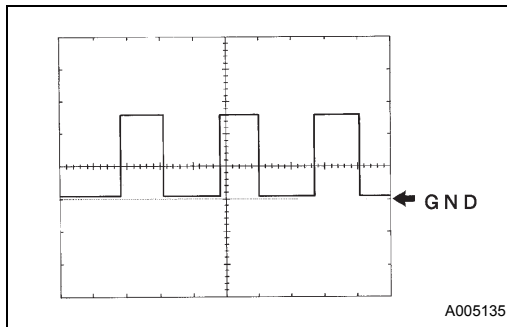
Terminal Symbol (Terminal No.)	Input / Output	Item	Measurement Condition	Standard
TAIL ↔ Body ground (1 ↔ Body ground)	Input	Voltage	Ignition switch ON, light control switch OFF → TAIL, HEAD	1 V or less → 10 to 14 V
KEY ↔ Body ground (2 ↔ Body ground)	Input	Voltage	Ignition key is not in key cylinder → Ignition key is in key cylinder	1 V or less → 10 to 14 V

Terminal Symbol (Terminal No.)	Input / Output	Item	Measurement Condition	Standard
MODE SW ↔ Body ground (3 ↔ Body ground)	Input	Voltage	Ignition switch ON, MODE switch OFF → ON	between 1 V or less and 10 to 14V
P BELT IN- ↔ Body ground (4 ↔ Body ground)	Input	Voltage	Ignition switch ON, passenger seat occupied, seat belt unfastened → fastened	1 V or less → between 1 V or less and 10 to 14V
DAC ↔ Body ground (5 ↔ Body ground)	Input	Voltage	Ignition switch ON, downhill assist control system OFF indicator OFF → ON	1 V or less → 10 to 14 V
SPEED ↔ Body ground (6 ↔ Body ground)	Input	Wave- form	Driving at approx. 20 km/h	Pulse is generated (Waveform 1)
4P OUT ↔ Body ground (7 ↔ Body ground)	Output	Wave- form	Driving at approx. 20 km/h	Pulse is generated (Waveform 1)
FUEL ↔ Body ground (8 ↔ Body ground)	Input	Voltage	Ignition switch ON, fuel F (full) ↔ E (empty)	1 V or less → 4 to 7 V
CTY ↔ Body ground (9 ↔ Body ground)	Input	Voltage	Door indicator OFF ↔ ON	1 V or less → 10 to 14 V
ECU-T ↔ Body ground (10 ↔ Body ground)	-	Continuity	Always	Continuity
IG+ ↔ Body ground (12 ↔ Body ground)	Input	Voltage	Ignition switch OFF → ON	1 V or less → 10 to 14 V
+B ↔ Body ground (13 ↔ Body ground)	-	Voltage	Always	10 to 14 V
GND ↔ Body ground (15 ↔ Body ground)	-	Continuity	Always	Continuity
OIL ↔ Body ground (16 ↔ Body ground)	Input	Voltage	Ignition switch ON, oil pressure warning OFF ↔ ON	1 V or less → 10 to 14 V
R FOG ↔ Body ground (17 ↔ Body ground)	Input	Voltage	Rear fog light indicator ON ↔ OFF	1 V or less → 10 to 14 V
F FOG ↔ Body ground (20 ↔ Body ground)	Input	Voltage	Front fog light indicator OFF ↔ ON	1 V or less → 10 to 14 V
CAN H ↔ Body ground (21 ↔ Body ground)	Input / Output	Wave- form	Engine is stopped, ignition switch ON	Pulse is generated
CAN L ↔ Body ground (22 ↔ Body ground)	Input / Output	Wave- form	Engine is stopped, ignition switch ON	Pulse is generated
CHK E/G ↔ Body ground (24 ↔ Body ground)	Input	Voltage	Ignition switch ON, CHK E/G indicator ON → OFF	1 V or less → 10 to 14 V
ABS ↔ Body ground (25 ↔ Body ground)	Input	Voltage	Ignition switch ON, ABS indicator OFF → ON	2 V or less → 10 to 14 V
BEAM+ ↔ Body ground (26 ↔ Body ground)	Input	Voltage	High beam indicator light OFF → ON	1 V or less → 10 to 14 V
BEAM- ↔ Body ground (27 ↔ Body ground)	Input	Voltage	High beam warning ON ↔ OFF	1 V or less → 10 to 14 V
TURN R ↔ Body ground (28 ↔ Body ground)	Input	Voltage	Turn right indicator OFF → blinking	1 V or less → between 1 V or less and 10 to 14V
TURN L ↔ Body ground (29 ↔ Body ground)	Input	Voltage	Turn left indicator OFF → blinking	1 V or less → between 1 V or less and 10 to 14V
BRAKE (vehicles without VSC) ↔ Body ground (30 ↔ Body ground)	Input	Voltage	Ignition switch ON, parking brake ON → OFF	1 V or less → 10 to 14 V
CHG ↔ Body ground (31 ↔ Body ground)	Input	Voltage	CHG warning ON ↔ OFF	1 V or less → 10 to 14 V

Terminal Symbol (Terminal No.)	Input / Output	Item	Measurement Condition	Standard
Center differential lock ↔ Body ground (32 ↔ Body ground)	Input	Voltage	Ignition switch ON, center differential lock switch OFF ↔ ON	1 V or less → 10 to 14 V
KLS ↔ Body ground (33 ↔ Body ground)	Input	Voltage	Keyless switch ON ↔ OFF	1 V or less → 10 to 14 V
TCS OFF ↔ Body ground (34 ↔ Body ground)	Input	Voltage	Ignition switch ON, TCS OFF switch ON ↔ OFF	1 V or less → 10 to 14 V
D BELT IN ↔ Body ground (35 ↔ Body ground)	Input	Voltage	Ignition switch ON, driver side seat belt fastened → unfastened	1 V or less → 10 to 14 V
PKB (vehicles with VSC) ↔ Body ground (36 ↔ Body ground)	Input	d Voltage	Ignition switch ON, parking brake indicator ON ↔ OFF	1 V or less → 10 to 14 V
LIN ↔ Body ground (37 ↔ Body ground)	Input / Output	Continuity	Always	Continuity
P BELT OUT ↔ Body ground (38 ↔ Body ground)	Output	Voltage	Ignition switch ON, passenger side seat belt fastened → unfastened	1.5 V or less → 10 to 14 V
D BELT OUT ↔ Body ground (39 ↔ Body ground)	Output	Voltage	Ignition switch ON, driver side seat belt fastened → unfastened	1.5 V or less → 10 to 14 V
AIR BAG ↔ Body ground (40 ↔ Body ground)	Input	Voltage	Ignition switch ON, AIR BAG warning OFF ↔ ON	1 V or less → 10 to 14 V

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(2) Waveform 1



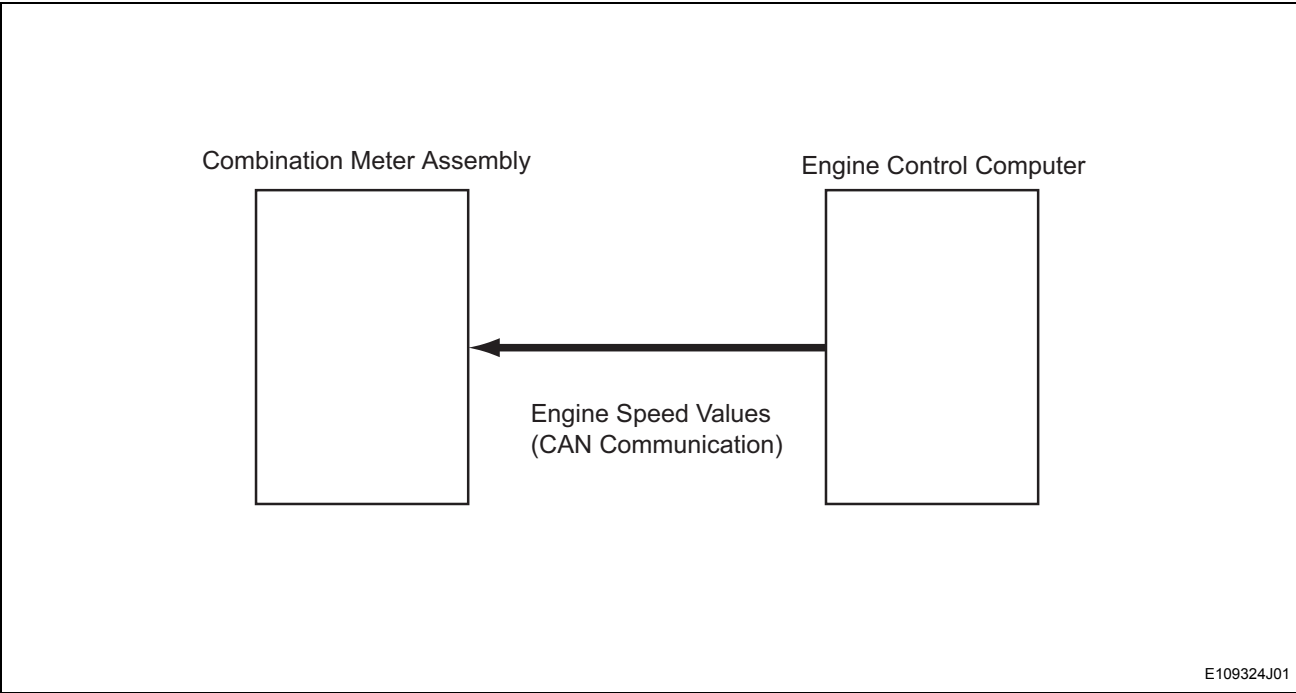
Item	Condition
Tester Connection	4P, Speed input ↔ Body ground
Tool Setting	5 V/DIV, 20 ms/DIV.
Measurement Condition	Driving at approx. 20 km/h

HINT:

As vehicle speed increases, the cycle becomes shorter.

TACHOMETER MALFUNCTION

CIRCUIT DIAGRAM



INSPECTION PROCEDURE

1 CHECK FOR DTCS (METER LCD)

SST 09843-18020

- (a) Check that the meter LCD does not display CAN system DTCs (DTCs no. 0051, 52 and 53).
 - (1) Check for DTC output (See page MP-3)

DTCs are not output	A
DTCs 0051, 52 and 53 are output	B

B

GO TO TROUBLESHOOTING FOR CAN COMMUNICATION SYSTEM

A

2 CHECK DTC OUTPUT (ENGINE CONTROL COMPUTER)

- (a) Check for DTCs using the DS-II.

Standard:
DTCs P0335/13 and U1002/88 are not output

The abovementioned DTCs are not output	A
The abovementioned DTCs are output	B

B**GO TO EFI SYSTEM (DTC SYNOPSIS)****A****3****CHECK POWER SYSTEM (COMBINATION METER ASSEMBLY)**

- (a) Using a tester, check the voltage between the combination meter assembly vehicle side connector of the power terminal and the ground terminal and the body ground.

NG**REPAIR OR REPLACE WIRE HARNESS OR CONNECTOR****OK****4****CHECK POWER SYSTEM (ENGINE CONTROL COMPUTER)**

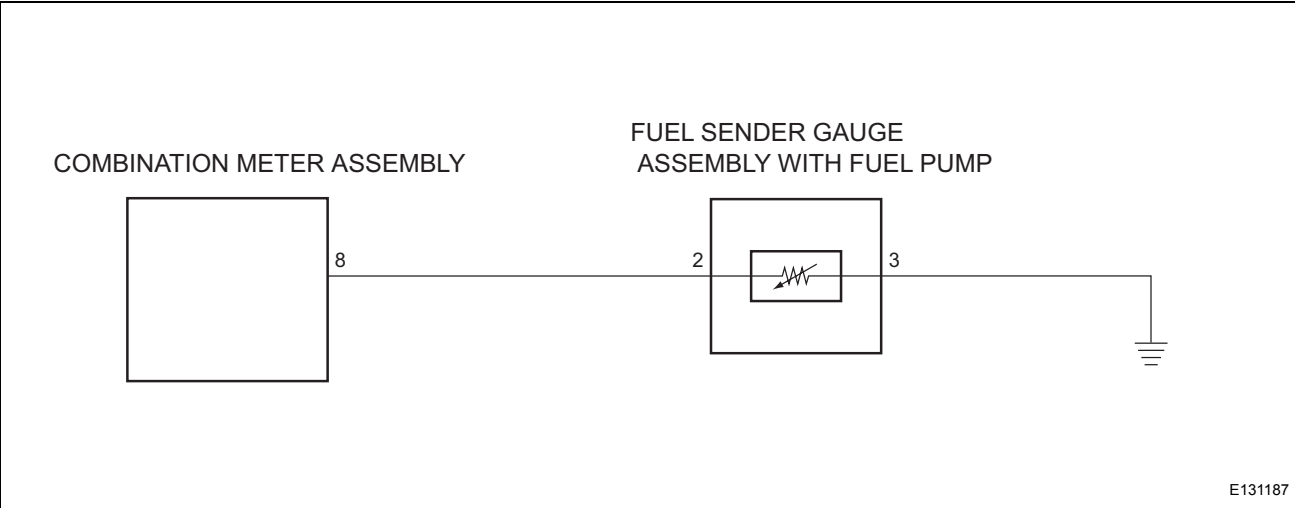
- (a) Using a tester, check the engine control computer of the power system. (See page ES-120.)

NG**REPAIR OR REPLACE WIRE HARNESS OR CONNECTOR****OK****REPLACE COMBINATION METER ASSEMBLY (IF NO IMPROVEMENT IS SEEN, REPLACE ENGINE CONTROL COMPUTER)****ME**

FUEL RECEIVER GAUGE MALFUNCTION

HINT:
If the fuel level warning light operates properly, the combination meter assembly is malfunctioning.

CIRCUIT DIAGRAM



INSPECTION PROCEDURE

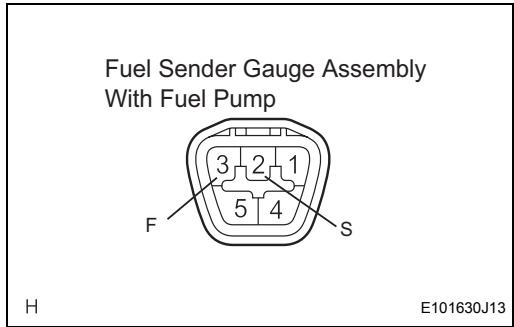
1 INSPECT COMBINATION METER ASSEMBLY

- (a) Disconnect the fuel sender gauge assembly connector.
- (b) Using the tester, measure the voltage at terminal 8 (FUEL) with the combination meter assembly connector connected.

NG REPLACE COMBINATION METER ASSEMBLY

OK

2 INSPECT FUEL SENDER GAUGE ASSEMBLY



- (a) FUEL SENDER GAUGE ASSEMBLY
 - (1) Using the tester, check for continuity between the specified terminals on the connector of the fuel sender gauge assembly with fuel pump.
- Standard:

Tester Connection Sender gauge (main) with fuel pump	Standard
Terminal 1 ↔ Terminal 2	Continuity

NG GO TO STEP 3

OK

3

CHECK OPERATION AFTER SHORT CIRCUITING (FUEL SENDER VEHICLE WIRE HARNESS SIDE)Fuel Sender Gauge
Assembly With Fuel Pump

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- (a) Check operation
- (1) Disconnect the connector of the fuel sender gauge assembly with fuel pump.
 - (2) Using the SST, create a short circuit between the specified terminals of the vehicle wire harness side connector.

Sender Gauge	Terminals to be shorted
Fuel sender gauge assembly with fuel pump	Terminal 1 ↔ Terminal 2

- (3) Disconnect the negative battery terminal, and reconnect it.
- (4) Check the status of the fuel receiver gauge indication when the ignition switch is turned to the ON position.

Standard:

Points above F

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NG

GO TO STEP 5

OK

4

CHECK WIRE HARNESS OR CONNECTOR (BETWEEN METER AND SENDER GAUGE)**HINT:**

For inspection procedures and precautions, see page IN-38.

- (a) Between combination meter and fuel sender assembly with fuel pump
- (1) Disconnect the connectors of the combination meter assembly and the fuel sender gauge assembly with fuel pump.
 - (2) Using the tester, check the wire harnesses between the combination meter assembly and the fuel sender gauge assembly with fuel pump. (For terminal layout, see page ME-16.)

Standard:

Tester Connection	Item	Standard
A8 (FUEL) ↔ 2 (S)	Continuity	There is continuity and there is no short to +B or GND

NG

REPLACE COMBINATION METER ASSEMBLY

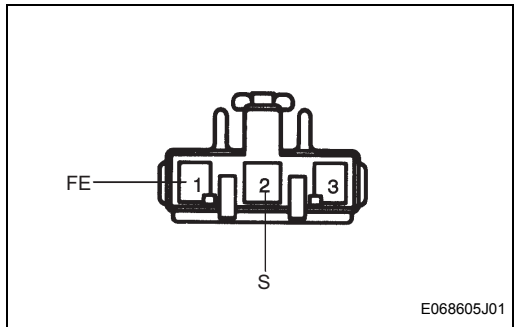
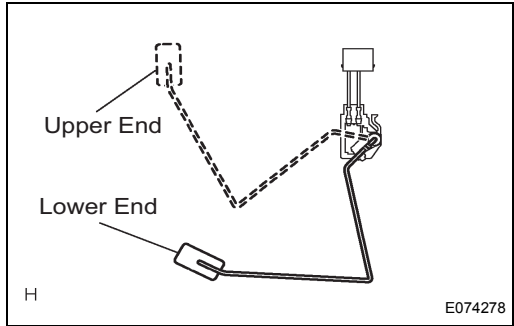
OK

REPAIR OR REPLACE WIRE HARNESS OR CONNECTOR

5

INSPECT FUEL SENDER GAUGE ASSEMBLY

- (a) Check the resistance.



CAUTION:

Be extremely careful with fire.

- (1) Check that the float moves smoothly between the F level (upper position) and E level (lower position).

- (2) Using the tester, measure the resistance between terminals 2 (S) and 1 (FE) of the connector when the float is placed in both the upper and lower positions. Also, check that the resistance continuously changes.

Standard:

Float Position	Specified Value (Ω)
F (upper position)	15.0 $\pm$ 1.5
E (lower position)	410.0 $\pm$ 4.5

NG

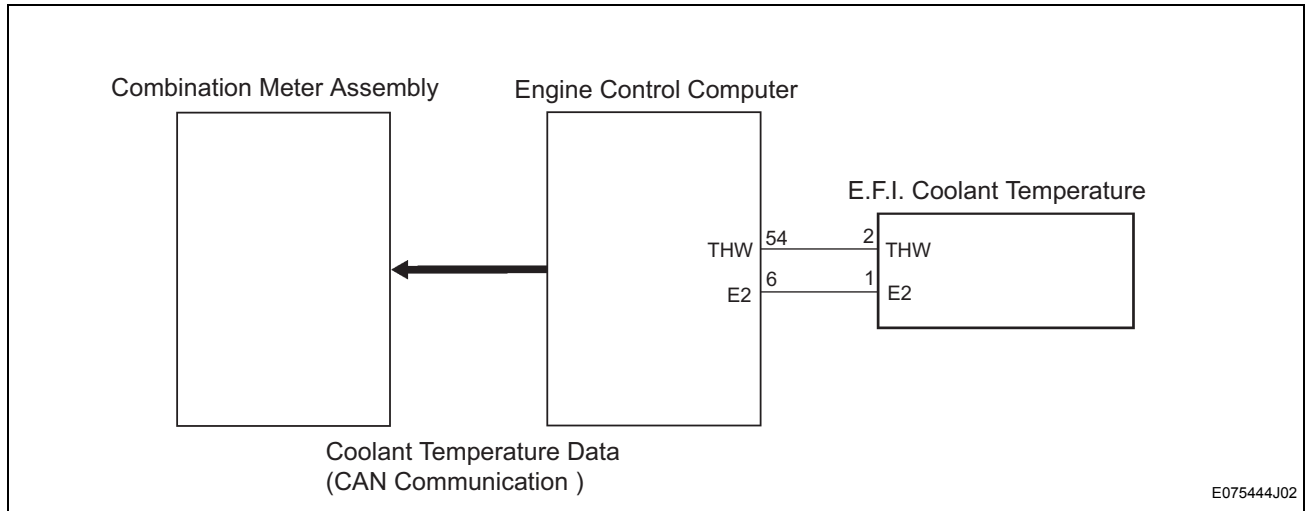
REPLACE FUEL SENDER GAUGE ASSEMBLY

OK

NORMAL (POOR INSTALLATION OF THE FUEL SENDER GAUGE ASSEMBLY)

Water Temperature Receiver Gauge Malfunction

CIRCUIT DIAGRAM



ME

INSPECTION PROCEDURE

1

CHECK FOR DTCS (METER LCD)

SST 09843-18020

- (a) Check that the meter LCD does not display DTC s relating to CAN system (DTCs No. 0051, 52 and 53).
- (b) Check for DTCs (See page MP-3)

DTCs are not output	A
DTCs 0051, 52 and 53 are not output	B

B

GO TO TROUBLESHOOTING FOR CAN COMMUNICATION SYSTEM

A

2

CHECK DTC OUTPUT (ENGINE CONTROL COMPUTER)

- (a) Check for DTCs using the DS-II.

Standard:

DTCs P0115/42 and U1002/88 are not output

The abovementioned DTCs are not output	A
The abovementioned DTCs are output	B

B

GO TO EFI SYSTEM (DTC SYNOPSIS)

A

3	CHECK POWER SYSTEM (COMBINATION METER ASSEMBLY)
---	---

- (a) Using the tester, inspect the voltage between the terminal of the wire harness side connector of the combination meter assembly and the body ground.

NG	REPAIR OR REPLACE WIRE HARNESS OR CONNECTOR
----	---

OK

4	CHECK POWER SYSTEM (ENGINE CONTROL COMPUTER)
---	--

- (a) Using the electrical tester, check the engine control computer of the power system. (See page ES-120.)

NG	REPAIR OR REPLACE WIRE HARNESS OR CONNECTOR
----	---

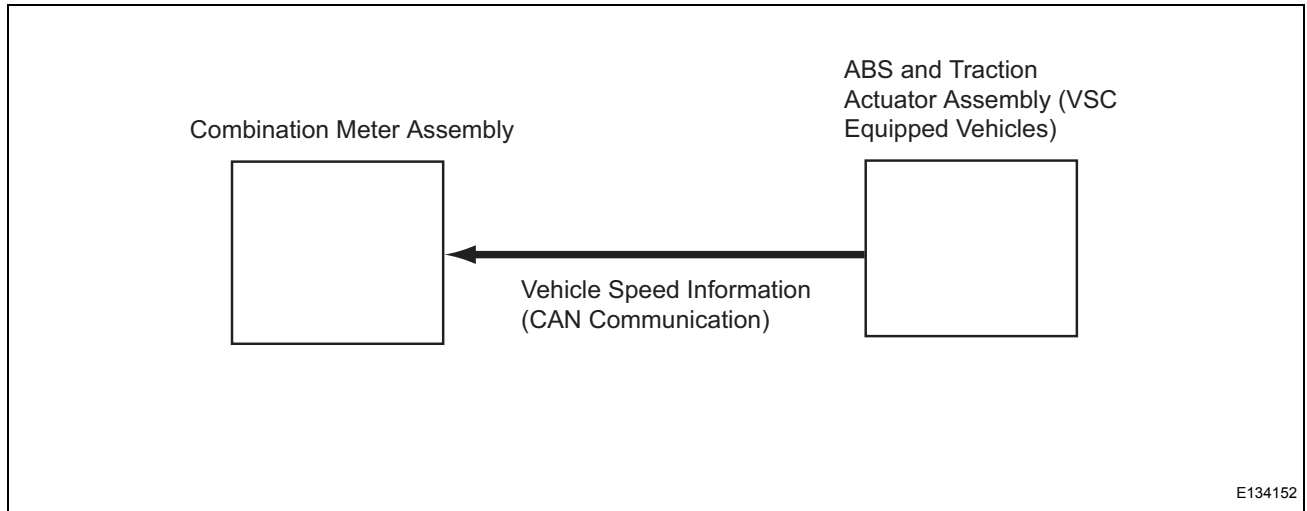
OK

REPLACE COMBINATION METER ASSEMBLY (IF NO IMPROVEMENT IS SEEN, REPLACE ENGINE CONTROL COMPUTER)

ME

Speedmeter Malfunction (Vehicles Equipped with VSC)

CIRCUIT DIAGRAM



ME

INSPECTION PROCEDURE

1

CHECK FOR DTCS (METER LCD)

SST 09843-18020

- (a) Check that the meter LCD does not display DTCs relating to CAN system (DTCs No. 0051, 52 and 53).
- (1) Check for DTCs (See page MP-3)

DTCs 0051, 52 and 53 are not output	A
DTCs 0051, 52 and 53 are output	B

B

GO TO TROUBLESHOOTING FOR CAN COMMUNICATION SYSTEM

A

2

CHECK FOR DTCS (ABS ECU)

- (a) Check for DTCs using the DS-II.

Standard:

DTCs C0200/21, C0205/22, C0210/23, C0215/24, C0235/25, C0236/26, C0238/27, C0239/28, C1241/15 and C1301/79 are not output.

The abovementioned DTCs are not output	A
The abovementioned DTCs are output	B

B

GO TO ABS WITH EBD & TRC & VSC & BA SYSTEM

A

3	CHECK POWER SYSTEM (COMBINATION METER ASSEMBLY)
----------	--

- (a) Using a tester, measure the voltage between the combination meter assembly vehicle side connector of the power terminal and the ground terminal and the body ground.

NG

REPAIR OR REPLACE WIRE HARNESS OR CONNECTOR

OK

4	CHECK POWER SYSTEM (ABS AND TRACTION ACTUATOR ASSEMBLY)
----------	--

- (a) Using a tester, measure the voltage between the ABS / traction actuator assembly vehicle side connector of the power terminal and the ground terminal and the body ground.

NG

REPAIR OR REPLACE WIRE HARNESS OR CONNECTOR

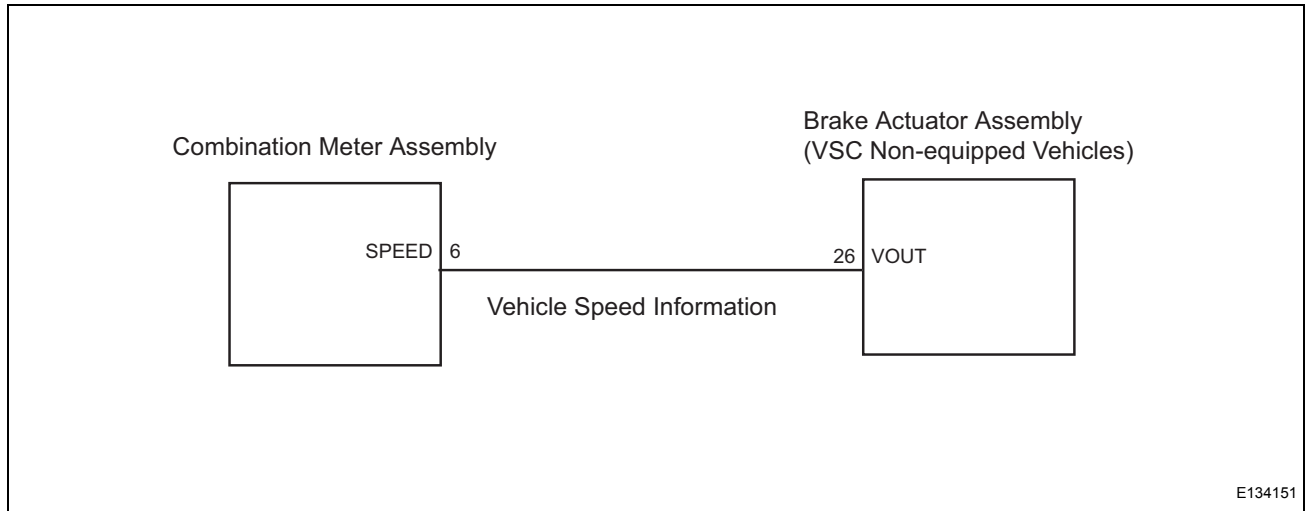
OK

REPLACE COMBINATION METER ASSEMBLY (IF NO IMPROVEMENT IS SEEN, REPLACE ABS / TRACTION ACTUATOR ASSEMBLY)

ME

Speedometer Malfunction (Vehicles without VSC)

CIRCUIT DIAGRAM



ME

INSPECTION PROCEDURE

1 CHECK VEHICLE SPEED SIGNAL INPUT

(a) CHECK VEHICLE SPEED SIGNAL OUTPUT (See page MP-3.)

NG

GO TO STEP 3

OK

2 CHECK POWER SYSTEM (COMBINATION METER ASSEMBLY)

(a) Using a tester, check the voltage between the combination meter assembly vehicle side connector of the power terminal and the ground terminal and the body ground.

NG

REPAIR OR REPLACE WIRE HARNESS OR CONNECTOR

OK

REPLACE COMBINATION METER ASSEMBLY

3 CHECK FOR DTCs (ABS ECU)

(a) Check for DTCs using the DS-II.

Standard:

DTCs C0200/21, C0205/22, C0210/23, C0215/24, C0235/25, C0236/26, C0238/27, C0239/28, C1241/15 and C1301/79 are not displayed.

The abovementioned DTCs are not out-put	A
The abovementioned DTCs are output	B

B

ABS WITH EBD SYSTEM (See Page BC-4)

A

4

CHECK POWER SYSTEM (BRAKE ACTUATOR ASSEMBLY)

- (a) Using a tester, check the voltage between the power terminal of the connector of brake actuator assembly and the body terminal and the body ground.

NG

REPAIR OR REPLACE WIRE HARNESS OR CONNECTOR

ME

OK

5

INSPECT WIRE HARNESS AND CONNECTOR (BETWEEN COMBINATION METER ASSEMBLY AND BRAKE ACTUATOR ASSEMBLY)

- (a) Using a tester, check the continuity between the vehicle side 6 (SPEED) connector of the combination meter assembly and the vehicle side connector 26 (VOUT) of the brake actuator assembly.

NG

REPAIR OR REPLACE WIRE HARNESS OR CONNECTOR

OK

REPLACE BRAKE ACTUATOR ASSEMBLY

