

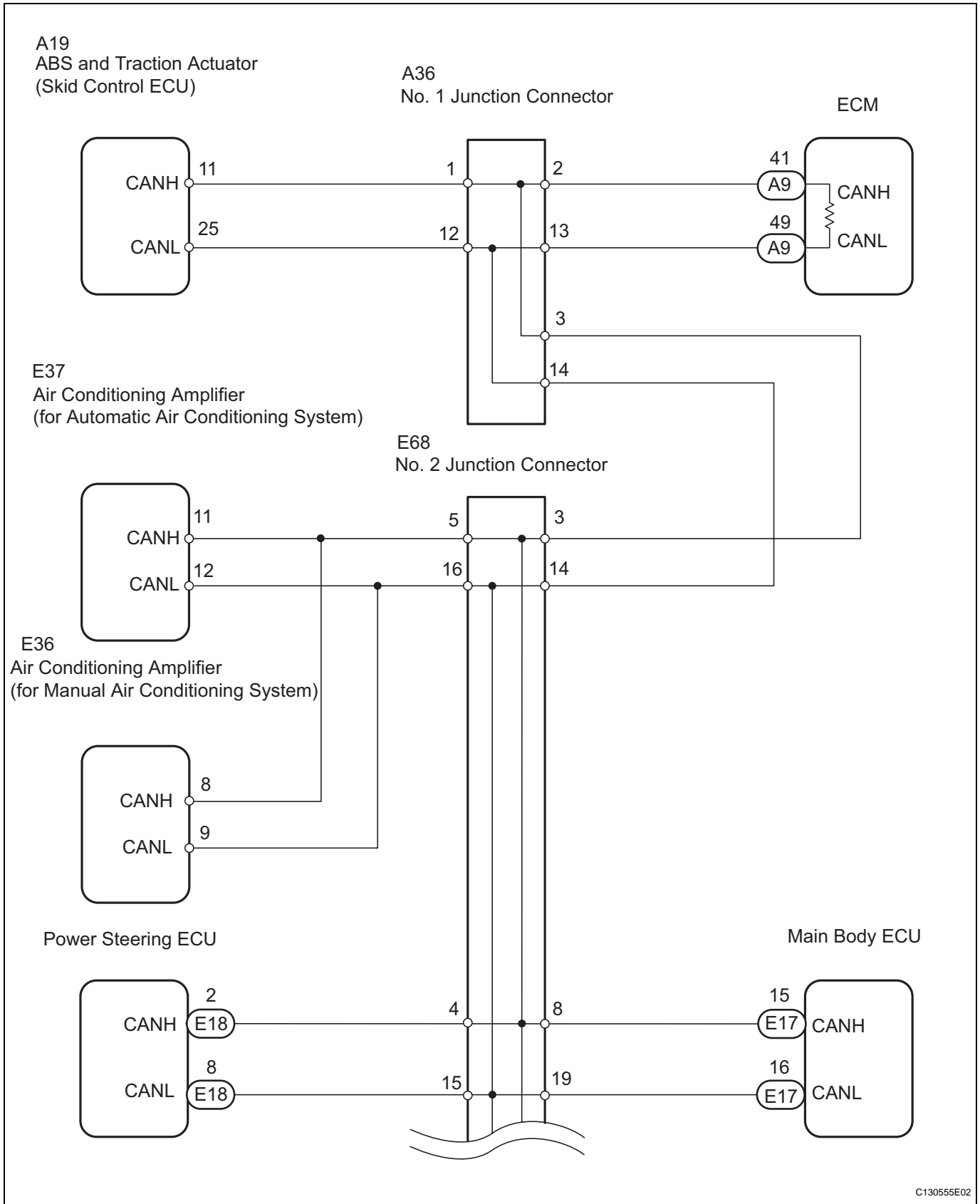
Open in One Side of CAN Branch Line

DESCRIPTION

If 2 or more ECUs and/or sensors do not appear on the intelligent tester's "BUS CHECK" screen via the CAN VIM, one side of the CAN branch wire may be open. (One side of the CANH [branch wire] /CANL [branch wire] of the ECU and/or sensor is open.)

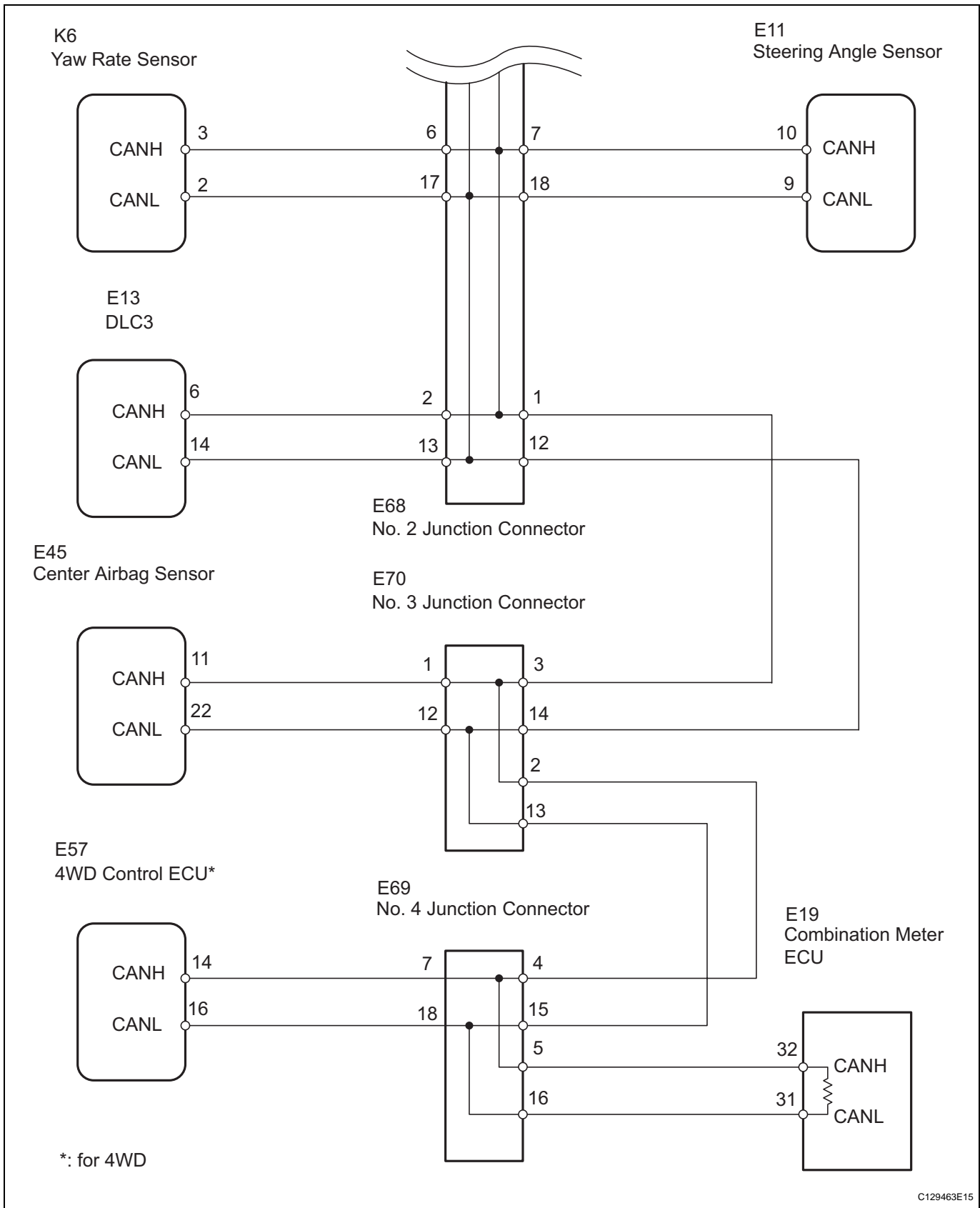
Symptom	Trouble Area
2 or more ECUs and/or sensors do not appear on intelligent tester "BUS CHECK" screen via CAN VIM.	<ul style="list-style-type: none"> • One side of CAN branch wire is open • ABS and traction actuator (skid control ECU) • Power steering ECU • Steering angle sensor • Yaw rate sensor • Center airbag sensor • Air conditioning amplifier • Instrument panel junction block (Main body ECU) • 4WD control ECU • No. 1 junction connector • No. 2 junction connector • No. 3 junction connector • No. 4 junction connector

WIRING DIAGRAM



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C129463E15

INSPECTION PROCEDURE

NOTICE:

- Turn the ignition switch OFF before measuring the resistances of the main wire and the branch wire.

- After the ignition switch is turned OFF, check that the key reminder warning system and light reminder warning system are not in operation.
- Before measuring the resistance, leave the vehicle for at least 1 minute and do not operate the ignition switch, any switches or doors. If doors need to be opened in order to check connectors, open the doors and leave them open.

HINT:

- Perform the following inspection for the ECUs (sensors) which are not displayed on the intelligent tester. If a malfunction cannot be identified, perform the following inspections for the ECUs (sensors) connected to the CAN communication system.
- Do not remove the combination meter and ECM, as they are the end parts of the circuit. If removed, CAN communication will not be possible.
- The open circuit confirmation of the combination meter, ECM and main wire is performed in the CHECK CAN BUS LINE procedure of HOW TO PROCEED WITH TROUBLESHOOTING. This inspection only has procedures for checking for an open circuit on one side of the CAN branch wire.

1 CHECK FOR OPEN IN ONE SIDE OF BRANCH WIRE (ABS AND TRACTION ACTUATOR)

- Disconnect the A19 ABS and traction actuator (skid control ECU) connector.
- Select "BUS CHECK" on the intelligent tester display via the CAN VIM (see page CA-34).

Result

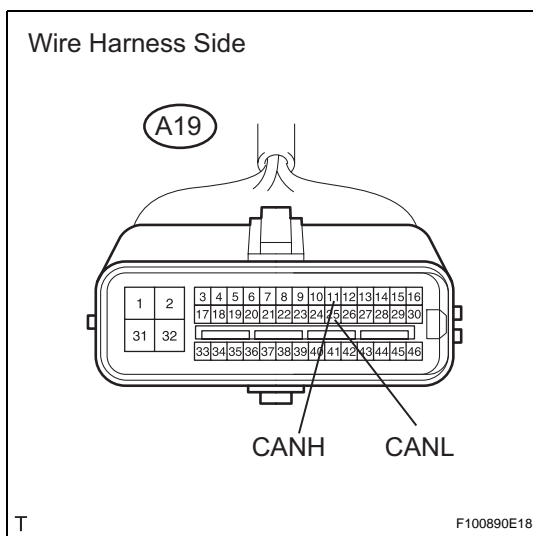
Result	Proceed to
ABS/VSC/TRAC not displayed on intelligent tester.	A
Several ECUs and sensors other than ABS/VSC/TRAC not displayed on intelligent tester.	B

B

Go to step 3

A

2 CHECK FOR OPEN IN ONE SIDE OF BRANCH WIRE (ABS AND TRACTION ACTUATOR BRANCH WIRE)



- Measure the resistance of the wire harness side connector.

Standard resistance:54 to 69 Ω

NG

REPAIR OR REPLACE CAN BRANCH WIRE AND CONNECTOR (ABS AND TRACTION ACTUATOR)

OK

REPLACE ABS AND TRACTION ACTUATOR (SKID CONTROL ECU)

3 CHECK FOR OPEN IN ONE SIDE OF BRANCH WIRE (YAW RATE SENSOR)

- (a) Disconnect the K6 yaw rate sensor connector.
- (b) Select "BUS CHECK" on the intelligent tester display via the CAN VIM (see page CA-34).

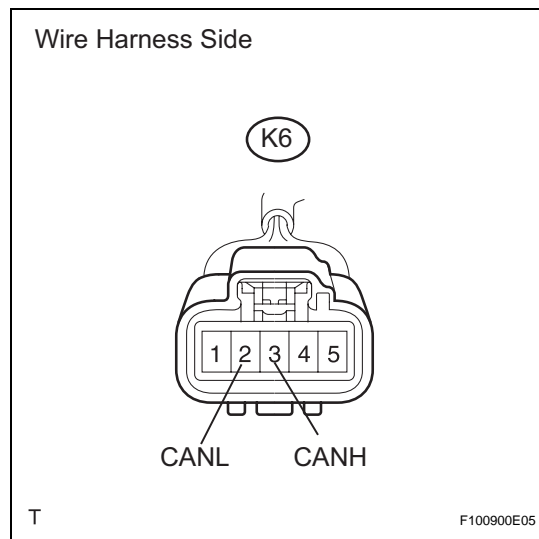
Result

Result	Proceed to
YAW / DECELERAT Sensor not displayed on intelligent tester.	A
Several ECUs and sensors other than YAW / DECELERAT Sensor not displayed on intelligent tester.	B

B Go to step 5

A

4 CHECK FOR OPEN IN ONE SIDE OF BRANCH WIRE (YAW RATE SENSOR BRANCH WIRE)



- (a) Measure the resistance of the wire harness side connector.

Standard resistance:
54 to 69 Ω

NG REPAIR OR REPLACE CAN BRANCH WIRE AND CONNECTOR (YAW RATE SENSOR)

OK

REPLACE YAW RATE SENSOR

5 CHECK FOR OPEN IN ONE SIDE OF BRANCH WIRE (POWER STEERING ECU)

- (a) Disconnect the E18 power steering ECU connector.

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- (b) Select "BUS CHECK" on the intelligent tester display via the CAN VIM (see page [CA-34](#)).

Result

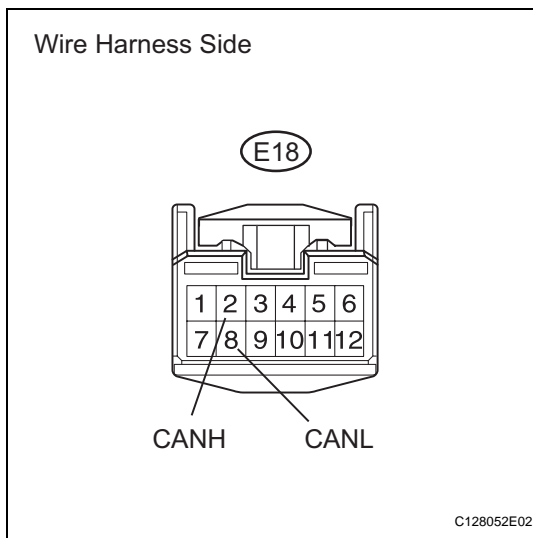
Result	Proceed to
EPS not displayed on intelligent tester.	A
Several ECUs and sensors other than EPS not displayed on intelligent tester.	B

B

Go to step 7

A

6

CHECK FOR OPEN IN ONE SIDE OF BRANCH WIRE (POWER STEERING ECU BRANCH WIRE)

- (a) Measure the resistance of the wire harness side connector.

Standard resistance:54 to 69 Ω

NG

REPAIR OR REPLACE CAN BRANCH WIRE AND CONNECTOR (POWER STEERING ECU)

CA

OK

REPLACE POWER STEERING ECU

7

CHECK FOR OPEN IN ONE SIDE OF BRANCH WIRE (MAIN BODY ECU)

- (a) Disconnect the E17 main body ECU connector.
 (b) Select "BUS CHECK" on the intelligent tester display via the CAN VIM (see page [CA-34](#)).

Result

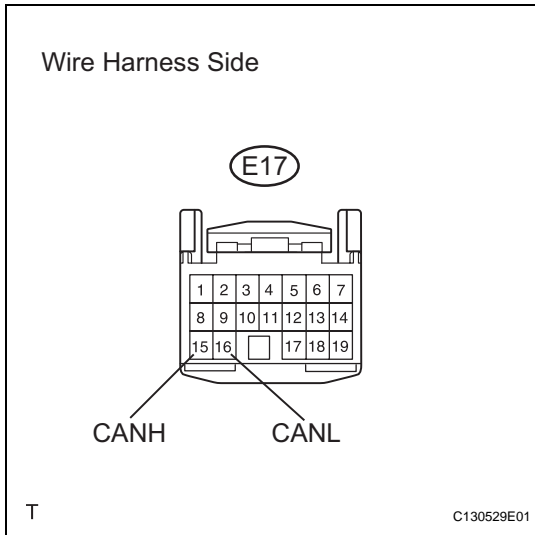
Result	Proceed to
MAIN BODY not displayed on intelligent tester.	A
Several ECUs and sensors other than MAIN BODY not displayed on intelligent tester.	B

B

Go to step 9

A

8 CHECK FOR OPEN IN ONE SIDE OF BRANCH WIRE (MAIN BODY ECU BRANCH WIRE)



(a) Measure the resistance of the wire harness side connector.

Standard resistance:
54 to 69 Ω

NG → **REPAIR OR REPLACE CAN BRANCH WIRE AND CONNECTOR (MAIN BODY ECU)**

CA

OK

REPLACE INSTRUMENT PANEL JUNCTION BLOCK (MAIN BODY ECU)

9 CHECK FOR OPEN IN ONE SIDE OF BRANCH WIRE (AIR CONDITIONING AMPLIFIER)

(a) Disconnect the E37*1 or E36*2 air conditioning amplifier connector.

HINT:

- *1: for Automatic air conditioning system.
- *2: for Manual air conditioning system.

(b) Select "BUS CHECK" on the intelligent tester display via the CAN VIM (see page CA-34).

Result

Result	Proceed to
A/C not displayed on intelligent tester.	A
Several ECUs and sensors other than A/C not displayed on intelligent tester.	B

A

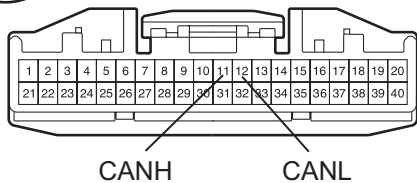
B → **Go to step 11**

10 CHECK FOR OPEN IN ONE SIDE OF BRANCH WIRE (AIR CONDITIONING AMPLIFIER BRANCH WIRE)

Wire Harness Side

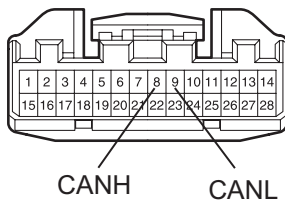
for Automatic Air Conditioning System

E37



for Manual Air Conditioning System

E36



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C128050E19

- (a) Measure the resistance of the wire harness side connector.

Standard resistance:

54 to 69 Ω

NG

REPAIR OR REPLACE CAN BRANCH WIRE AND CONNECTOR (AIR CONDITIONING AMPLIFIER)

OK

CA

REPLACE AIR CONDITIONING AMPLIFIER

11 CHECK FOR OPEN IN ONE SIDE OF BRANCH WIRE (STEERING ANGLE SENSOR)

- (a) Disconnect the E11 steering angle sensor connector.
 (b) Select "BUS CHECK" on the intelligent tester display via the CAN VIM (see page [CA-34](#)).

Result

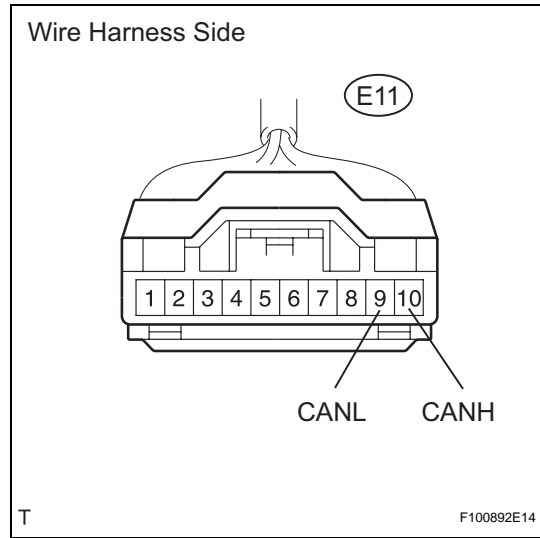
Result	Proceed to
STEERING SENSOR not displayed on intelligent tester.	A
Several ECUs and sensors other than STEERING SENSOR not displayed on intelligent tester.	B

B

Go to step 13

A

12 CHECK FOR OPEN IN ONE SIDE OF BRANCH WIRE (STEERING ANGLE SENSOR BRANCH WIRE)



(a) Measure the resistance of the wire harness side connector.

Standard resistance:

54 to 69 Ω

NG → **REPAIR OR REPLACE CAN BRANCH WIRE AND CONNECTOR (STEERING ANGLE SENSOR)**

OK

REPLACE STEERING ANGLE SENSOR

13 CHECK FOR OPEN IN ONE SIDE OF BRANCH WIRE (4WD CONTROL ECU)

NOTICE:

For vehicles without 4WD, go to "CHECK FOR OPEN IN ONE SIDE OF BRANCH WIRE (CENTER AIRBAG SENSOR ASSEMBLY BRANCH WIRE)".

- (a) Disconnect the E57 4WD control ECU connector.
- (b) Select "BUS CHECK" on the intelligent tester display via the CAN VIM (see page CA-34).

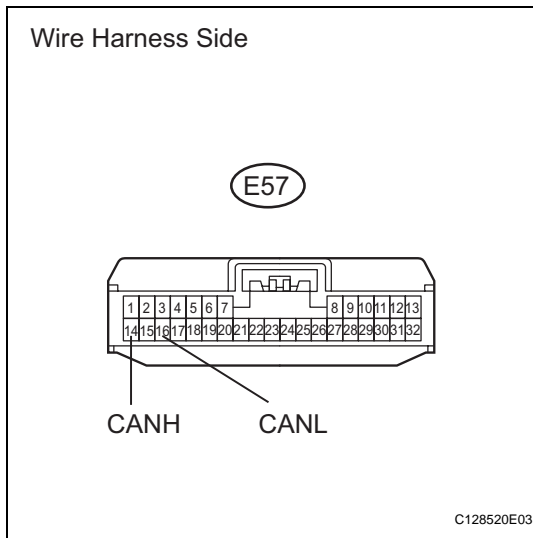
Result

Result	Proceed to
4WD not displayed on intelligent tester.	A
Several ECUs and sensors other than 4WD not displayed on intelligent tester.	B

A

B → **Go to step 15**

14 CHECK FOR OPEN IN ONE SIDE OF BRANCH WIRE (4WD CONTROL ECU BRANCH WIRE)



- (a) Measure the resistance of the wire harness side connector.

Standard resistance:

54 to 69 Ω

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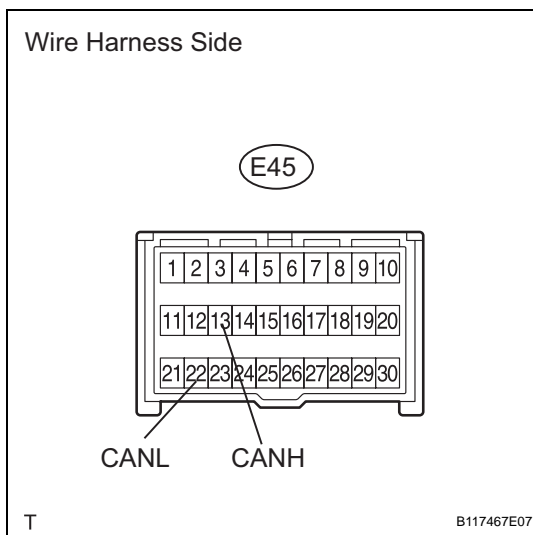
REPAIR OR REPLACE CAN BRANCH WIRE AND CONNECTOR (4WD CONTROL ECU)

OK

CA

REPLACE 4WD CONTROL ECU

15 CHECK FOR OPEN IN ONE SIDE OF BRANCH WIRE (CENTER AIRBAG SENSOR ASSEMBLY BRANCH WIRE)



- (a) Disconnect the E45 center airbag sensor connector.
 (b) Measure the resistance of the wire harness side connector.

Standard resistance:

54 to 69 Ω

NG

REPAIR OR REPLACE CAN BRANCH WIRE AND CONNECTOR (CENTER AIRBAG SENSOR ASSEMBLY)

OK

REPLACE CENTER AIRBAG SENSOR ASSEMBLY