

CUSTOMIZE PARAMETERS

1. BUZZER CANCEL SETTING

- (a) Check that the ODO display is on, and turn the power switch off and then on. If other display is on, change it to the ODO display.
- (b) Within 6 seconds, push and hold the ODO/TRIP switch for 10 seconds or more.
- (c) Following the table below, set the buzzer cancel setting.

Buzzer	Operation
Seat belt buzzers for driver's seat	Driver's seat buckle switch OFF → ON (Seat belt unfastened → fastened)
Seat belt buzzer for passenger seat	Passenger seat buckle switch OFF → ON (Seat belt unfastened → fastened)
A/T reverse buzzer	A/T R position → P position

HINT:

The ODO/TRIP display changes from "b-on" to "b-off", entering the cancel mode.

- (d) During the cancel mode, each time the ODO/TRIP switch is pushed, the setting is switched between*¹ b-on and *² b-off.

HINT:

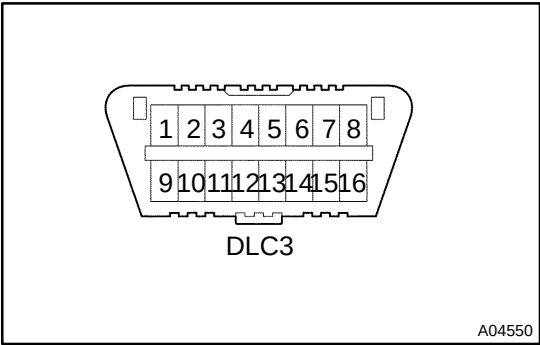
*¹ b-on: Cancel is invalid

*² b-off: Cancel is valid

- (e) After the setting, the mode will be canceled by either not operating the switch for 10 seconds or more, or turning the power switch from on to off.

HINT:

The setting can be reset when reconnecting the battery connector or removing/installing the meter connector(Buzzer on).



DIAGNOSIS SYSTEM

INSPECT THE DLC3

The vehicle's combination meter (ECU) uses ISO 9141-2 for communication. The terminal arrangement of the DLC3 complies with SAE J1962 and matches the ISO 9141-2 format. If there are any open or short circuits in the chart below, perform troubleshooting with the "SFI System [05-13](#)".

Tester connection	Condition	Specified condition
7 (Bus ⊕ Line) – 5 (Signal ground)	During communication	Pulse generation
4 (Chassis Ground) – Body	Always	Below 1 Ω
5 (Signal Ground) – Body	Always	Below 1 Ω
16 (B+) – Body	Always	9 to 14 V

HINT:

If the display shows **UNABLE TO CONNECT TO VEHICLE** when you have connected the cable of the OBD II scan tool or hand-held tester to the DLC3, turned the power switch ON (IG) position and operated the scan tool, there is a problem either on the vehicle side or tool side.

- If communication is normal when the tool is connected to another vehicle, inspect the DLC3 on the original vehicle.
- If communication is still impossible when the tool is connected to another vehicle, the problem is probably in the tool itself, so consult the Service Department listed in the tool's instruction manual.

DATA LIST/ACTIVE TEST

1. DATA LIST

DATA LIST

According to the DATA LIST displayed by the hand-held tester, you can read the value of the switch, sensor, actuator and so on without parts removal. Reading the DATA LIST as the first step of troubleshooting is one method to shorten work time.

- (a) Warm up the engine.
- (b) Turn the power switch to OFF.
- (c) Connect the hand-held tester to DLC3.
- (d) Turn the power switch to ON (IG).
- (e) Operate the hand-held tester according to the steps on the display and select "DATA LIST".

ALL (ECM):

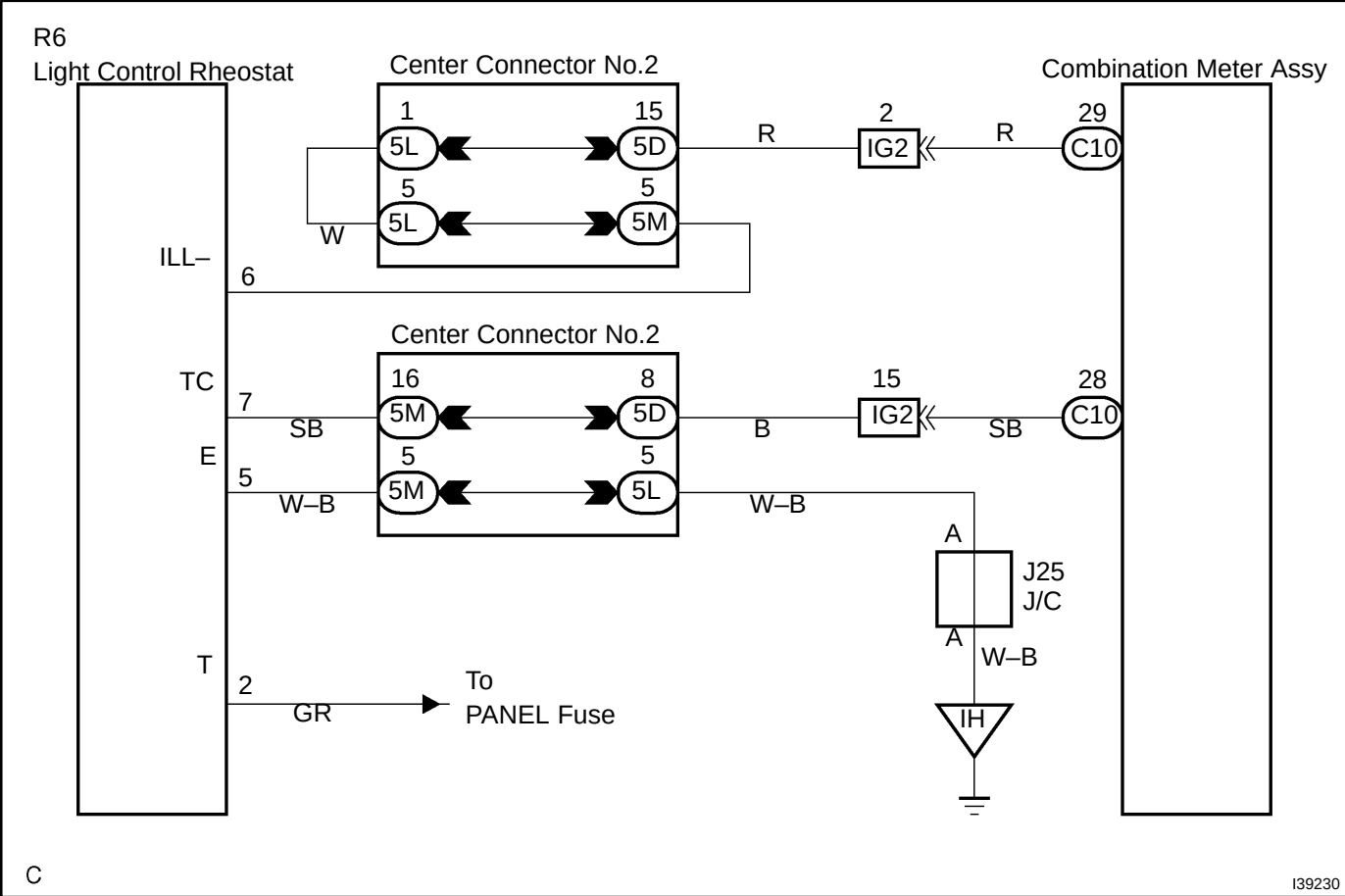
Item	Measurement Item/ Range (Display)	Normal Condition	Diagnostic Note
VEHICLE SPEED	Vehicle speed / Min.: 0 km/h (0 mph), Max.: 255 km/h (158 mph)	Almost the same as the actual vehicle speed (When driving)	—
ENGINE SPD	Engine speed / Min.: 0 rpm, Max.: 16,383 rpm	Almost the same as the actual engine speed (When engine is running)	—
COOLANT TEMP	Coolant temperature / Min.: -40°C (-40°F), Max.: 140°C (284°F)	After warming up: 80 to 95°C (176 to 203°F)	If the value is "-40°C (-40°F)" or "140°C (284°F)", sensor circuit is open or shorted.

ABS:

Item	Measurement Item/ Range (Display)	Normal Condition	Diagnostic Note
(FR/FL/RR/RL) SPD	Vehicle speed / Min.: 0 km/h (0 mph), Max.: 326 km/h (202 mph)	Almost same as actual speed (When driving)	—

OPERATING LIGHT CONTROL RHEOSTAT DOES NOT CHANGE LIGHT BRIGHTNESS

WIRING DIAGRAM



INSPECTION PROCEDURE

1	INSPECT ODO/TRIP SWITCH
Light illumination level does not change.	A
Tail cancel switch does not operate.	B
Light illumination level does not change and tail cancel switch does not operate.	A
B	Go to step 6

A

2 CHECK SYSTEM

- (a) Check if the light illumination level changes normally on other systems such as the multi-display and the radio receiver.

OK: Other systems operate normally.

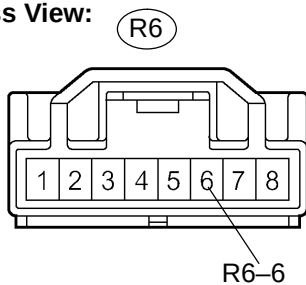
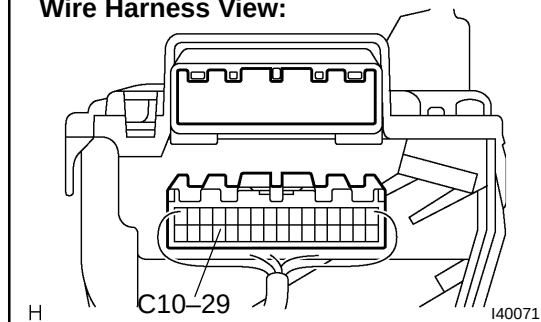
NG

Go to step 4

OK

3 CHECK HARNESS AND CONNECTOR(ODO/TRIP SWITCH – COMBINATION METER ASSY)(SEE PAGE 01-37)**Light Control Rheostat Wire**

Harness View:

**Combination Meter Assy Wire Harness View:**

- (a) Disconnect the C10 and R6 connectors.
(b) Measure the resistance according to the value(s) in the table below.

Standard:

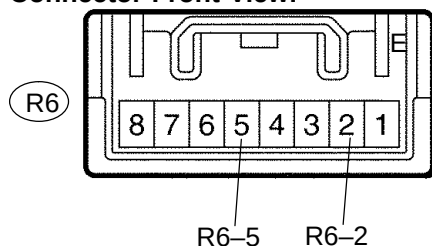
Tester Connection	Condition	Specified Condition
C10-29 – R6-6	Always	Below 1 Ω
C10-29 – Body ground	Always	10 k Ω or higher

NG

REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE COMBINATION METER ASSY(SEE PAGE 71-19)

4 INSPECT ODO/TRIP SWITCH**ODO/TRIP Switch
Connector Front View:**

- (a) Disconnect the R6 connector.
 (b) Measure the voltage according to the value(s) in the table below.

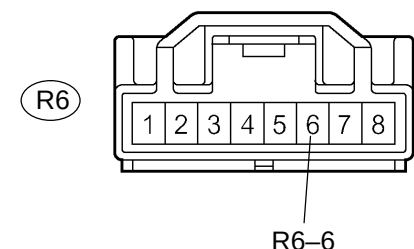
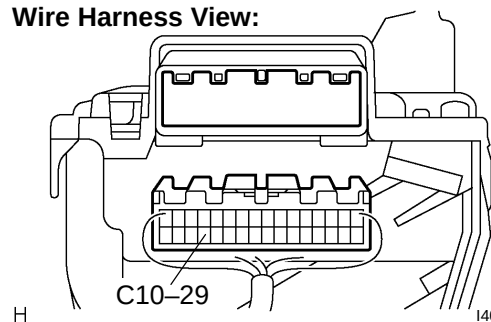
Standard:

Terminal No	Condition	Specified condition
R6-2 – Body ground	Headlight Dimmer SW OFF → TAIL	Below 1 V → 10 to 14 V

- (c) Measure the resistance according to the value(s) in the table below.

Standard:

Terminal No	Condition	Specified condition
R6-5 – Body ground	Always	Below 1 Ω

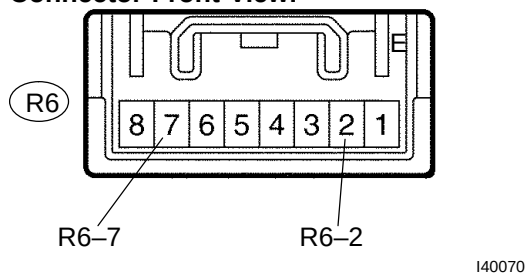
NG**REPAIR OR REPLACE HARNESS OR CONNECTOR****OK****5 CHECK HARNESS AND CONNECTOR(ODO/TRIP SWITCH – COMBINATION METER ASSY)(SEE PAGE 01-37)****ODO/TRIP Switch Wire
Harness View:****Combination Meter Assy
Wire Harness View:**

- (a) Disconnect the C10 and R6 connectors.
 (b) Measure the resistance according to the value(s) in the table below.

Standard:

Tester Connection	Condition	Specified Condition
C10-29 – R6-6	Always	Below 1 Ω
C10-29 – Body ground	Always	10 k Ω or higher

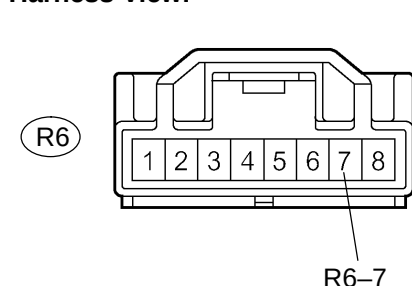
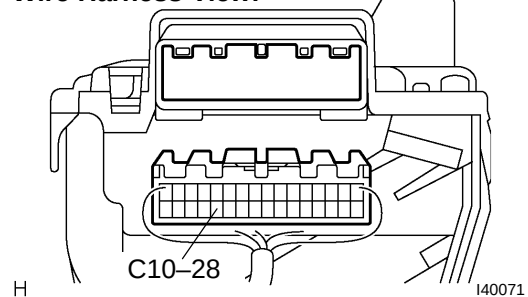
NG**REPAIR OR REPLACE HARNESS OR CONNECTOR****OK****REPLACE COMBINATION METER ASSY(SEE PAGE 71-19)**

6 INSPECT ODO/TRIP SWITCH**ODO/TRIP Switch****Connector Front View:**

- Disconnect the R6 connector.
- Measure the resistance according to the value(s) in the table below.

Standard:

Terminal No	Condition	Specified condition
R6-2 – R6-7	Tail cancel position (rheostat knob is fully turned up) → Non-tail cancel position	10 kΩ or higher → Below 1 Ω

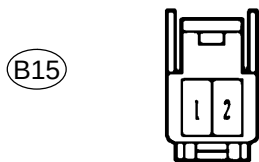
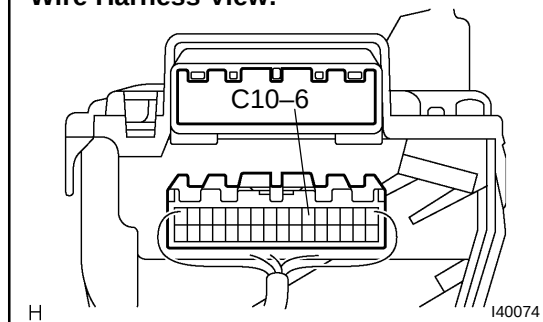
NG**REPLACE ODO/TRIP SWITCH****OK****7 CHECK HARNESS AND CONNECTOR(ODO/TRIP SWITCH – COMBINATION METER ASSY)(SEE PAGE 01-37)****ODO/TRIP Switch Wire****Harness View:****Combination Meter Assy****Wire Harness View:**

- Disconnect the C10 and R6 connectors.
- Measure the resistance according to the value(s) in the table below.

Standard:

Tester Connection	Condition	Specified Condition
C10-28 – R6-7	Always	Below 1 Ω
C10-28 – Body ground	Always	10 kΩ or higher

NG**REPAIR OR REPLACE HARNESS OR CONNECTOR****OK****REPLACE COMBINATION METER ASSY(SEE PAGE 71-19)**

2**CHECK HARNESS AND CONNECTOR(FRONT SEAT INNER BELT ASSY – COMBIATION METER ASSY)(SEE PAGE 01-37)****Front Seat Inner Belt Assy (Driver Side)
Wire Harness View:****Combination Meter Assy
Wire Harness View:**

- (a) Disconnect the C10 and B15 connectors.
- (b) Measure the resistance according to the value(s) in the table below.

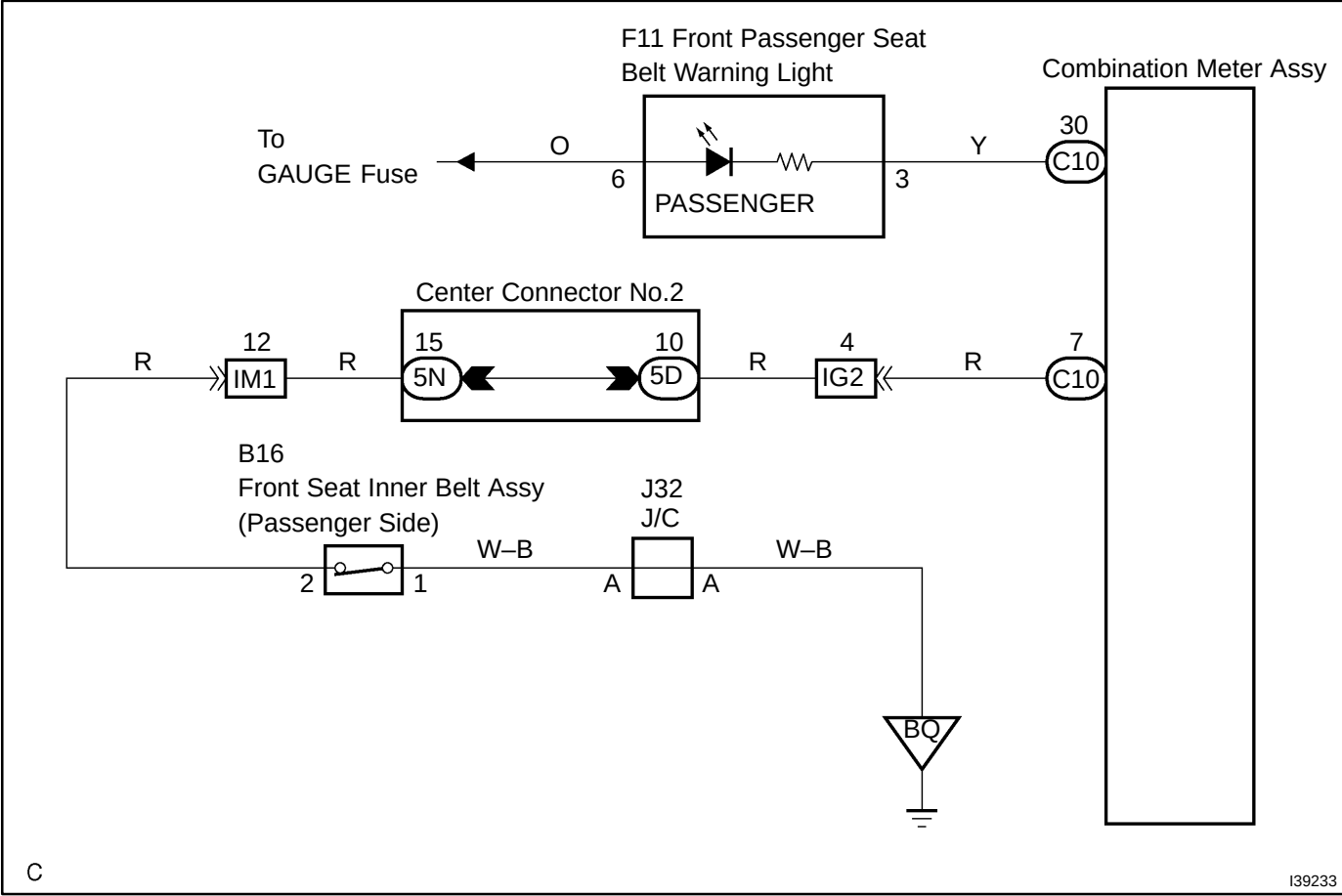
Standard:

Tester Connection	Condition	Specified Condition
C10-6 – B15-2	Always	Below 1 Ω
B15-1 – Body ground	Always	Below 1 Ω
C10-6 – Body ground	Always	10 k Ω or higher

NG**REPAIR OR REPLACE HARNESS OR CONNECTOR****OK****REPLACE COMBINATION METER ASSY(SEE PAGE 71-19)**

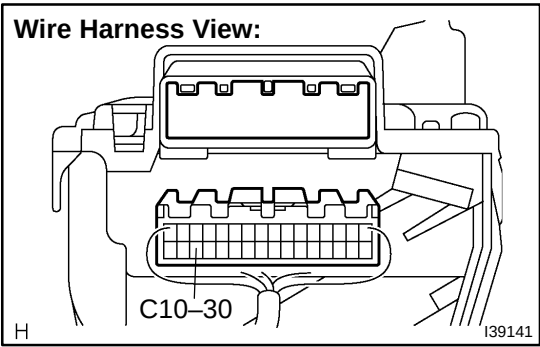
SEAT BELT WARNING LAMP FOR PASSENGER'S SEAT DOES NOT OPERATE

WIRING DIAGRAM



INSPECTION PROCEDURE

1 INSPECT COMBINATION METER ASSY



- (a) Disconnect the C10 connector.
- (b) Measure the voltage according to the value(s) in the table below.

Standard:

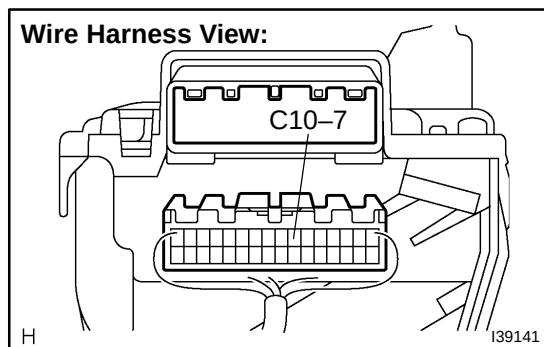
Tester Connection	Condition	Specified Condition
C10-30 - Body ground	Power switch OFF → Power switch ON (IG)	Below 1 V → 10 to 14 V

NG Go to step 5

OK

2 INSPECT COMBINATION METER ASSY

Wire Harness View:



- Disconnect the C10 connector.
- Measure the resistance according to the value(s) in the table below.

Standard:

Tester Connection	Condition	Specified Condition
C10-7 – Body ground	Seat belt is unfastened	Below 1 Ω
C10-7 – Body ground	Seat belt is fastened	10 k Ω or higher

NG

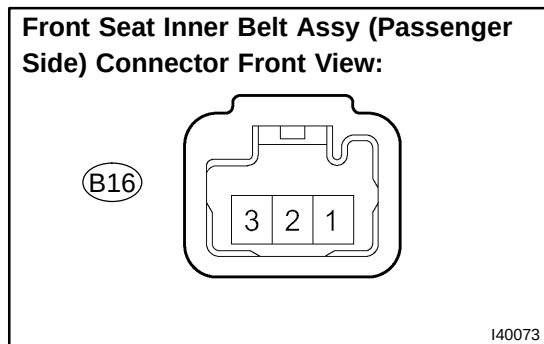
Go to step 3

OK

REPLACE COMBINATION METER ASSY(SEE PAGE 71-19)

3 INSPECT FRONT SEAT INNER BELT ASSY(PASSENGER SIDE)

Front Seat Inner Belt Assy (Passenger Side) Connector Front View:



- Disconnect the front seat inner belt assy connector.
- Measure the resistance according to the value(s) in the table below.

Standard:

Terminal No	Condition	Specified condition
B16-1 – B16-2	Seat belt is fastened	10 k Ω or higher
B16-1 – B16-2	Seat belt is unfastened	Below 1 Ω

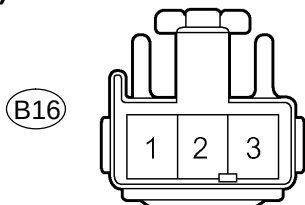
NG

REPLACE FRONT SEAT INNER BELT ASSY (PASSENGER SIDE)

OK

4 CHECK HARNESS AND CONNECTOR(FRONT SEAT INNER BELT ASSY – BODY GROUND)(SEE PAGE 01-37)

Front Seat Inner Belt Assy (Passenger Side) Wire Harness View:



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- Disconnect the front seat inner belt assy connector.
- Measure the resistance according to the value(s) in the table below.

Standard:

Terminal No	Condition	Specified condition
B16-1 – Body ground	Always	Below 1 Ω

NG

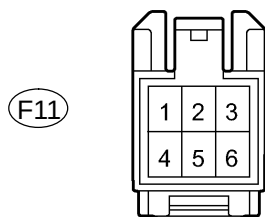
REPAIR OR REPLACE HARNESS OR CONNECTOR(FRONT SEAT INNER BELT ASSY – BODY GROUND)

OK

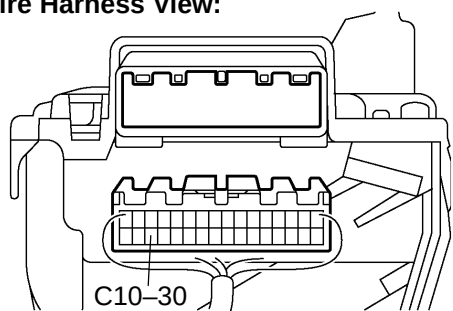
REPAIR OR REPLACE HARNESS OR CONNECTOR(FRONT SEAT INNER BELT ASSY – COMBINATION METER ASSY)

5 CHECK HARNESS AND CONNECTOR(FRONT PASSENGER SEAT BELT WARNING – COMBINATION METER ASSY)(SEE PAGE 01-37)

Front Seat Inner Belt Assy (Passenger Side) Wire Harness View:



Combination Meter Assy Wire Harness View:



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- Disconnect the C10 and F11 connectors.
- Measure the resistance according to the value(s) in the table below.

Standard:

Tester Connection	Condition	Specified Condition
C10-30 – F11-3	Always	Below 1 Ω
C10-30 – Body ground	Always	10 kΩ or higher

- Measure the voltage according to the value(s) in the table below.

Standard:

Tester Connection	Condition	Specified Condition
F11-6 – Body ground	Power switch OFF → Power switch ON (IG)	Below 1 V → 10 to 14 V

NG

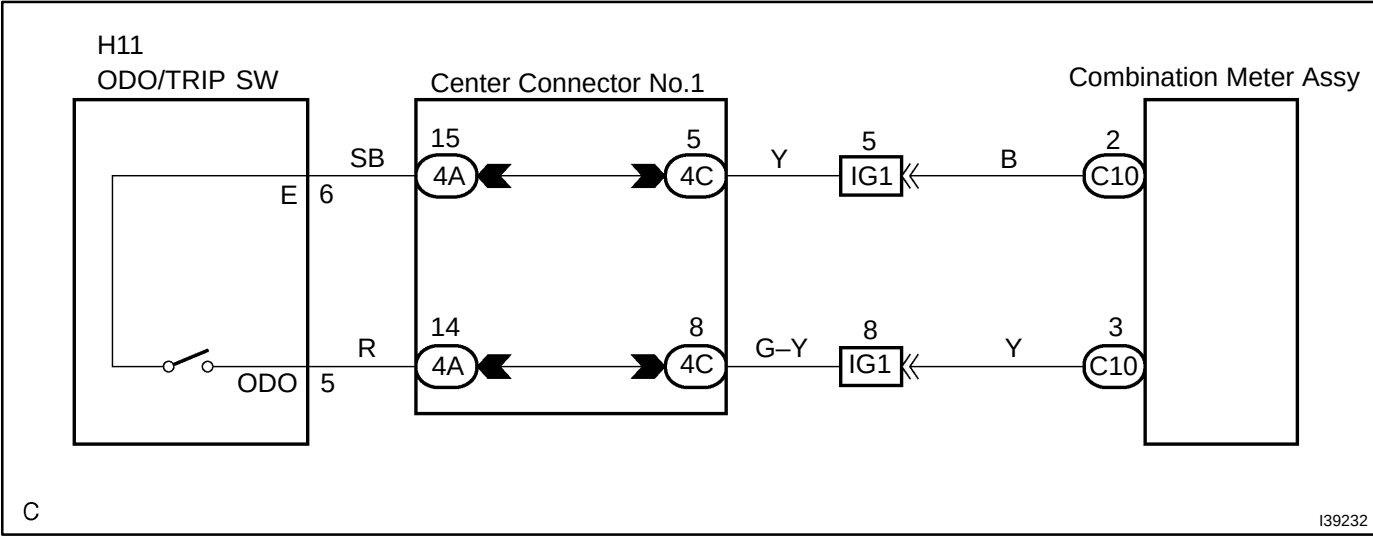
REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE FRONT PASSENGER SEAT BELT WARNING LIGHT(SEE PAGE 61-6)

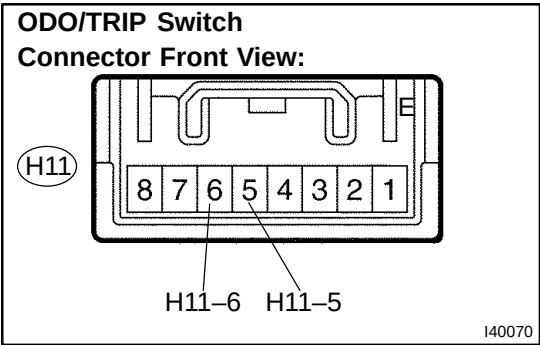
MALFUNCTION IN ODO/TRIP SW

WIRING DIAGRAM



INSPECTION PROCEDURE

1 INSPECT ODO/TRIP SWITCH



- (a) Disconnect the ODO/TRIP switch connector.
- (b) Measure the resistance according to the value(s) in the table below.

Standard:

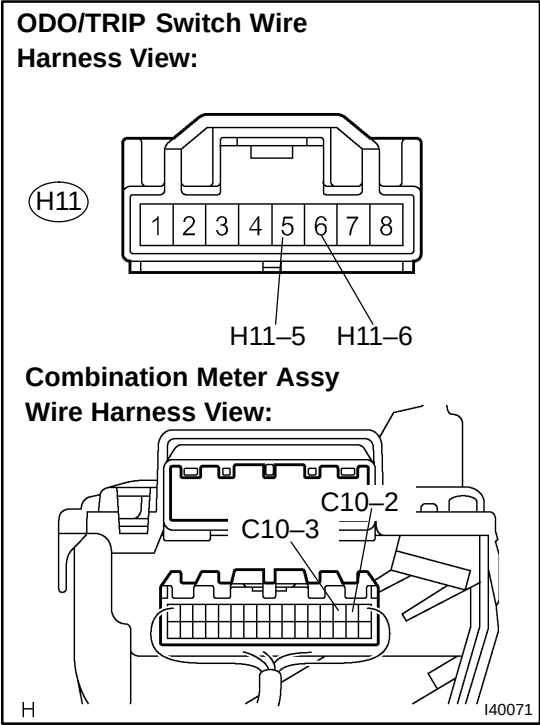
Terminal No	Condition	Specified condition
5 - 6	Push ODO/TRIP SW	Below 1 Ω
5 - 6	Release ODO/TRIP SW	10 kΩ or higher

NG REPLACE ODO/TRIP SWITCH

OK

2

CHECK HARNESS AND CONNECTOR(ODO/TRIP SWITCH – COMBIATION METER ASSY)(SEE PAGE 01-37)



- (a) Disconnect the C10 and H11 connectors.
- (b) Measure the resistance according to the value(s) in the table below.

Standard:

Tester Connection	Condition	Specified Condition
C10-2 – H11-6	Always	Below 1 Ω
C10-3 – H11-5	Always	Below 1 Ω
C10-2 – Body ground	Always	10 kΩ or higher
C10-3 – Body ground	Always	10 kΩ or higher

OK

NG

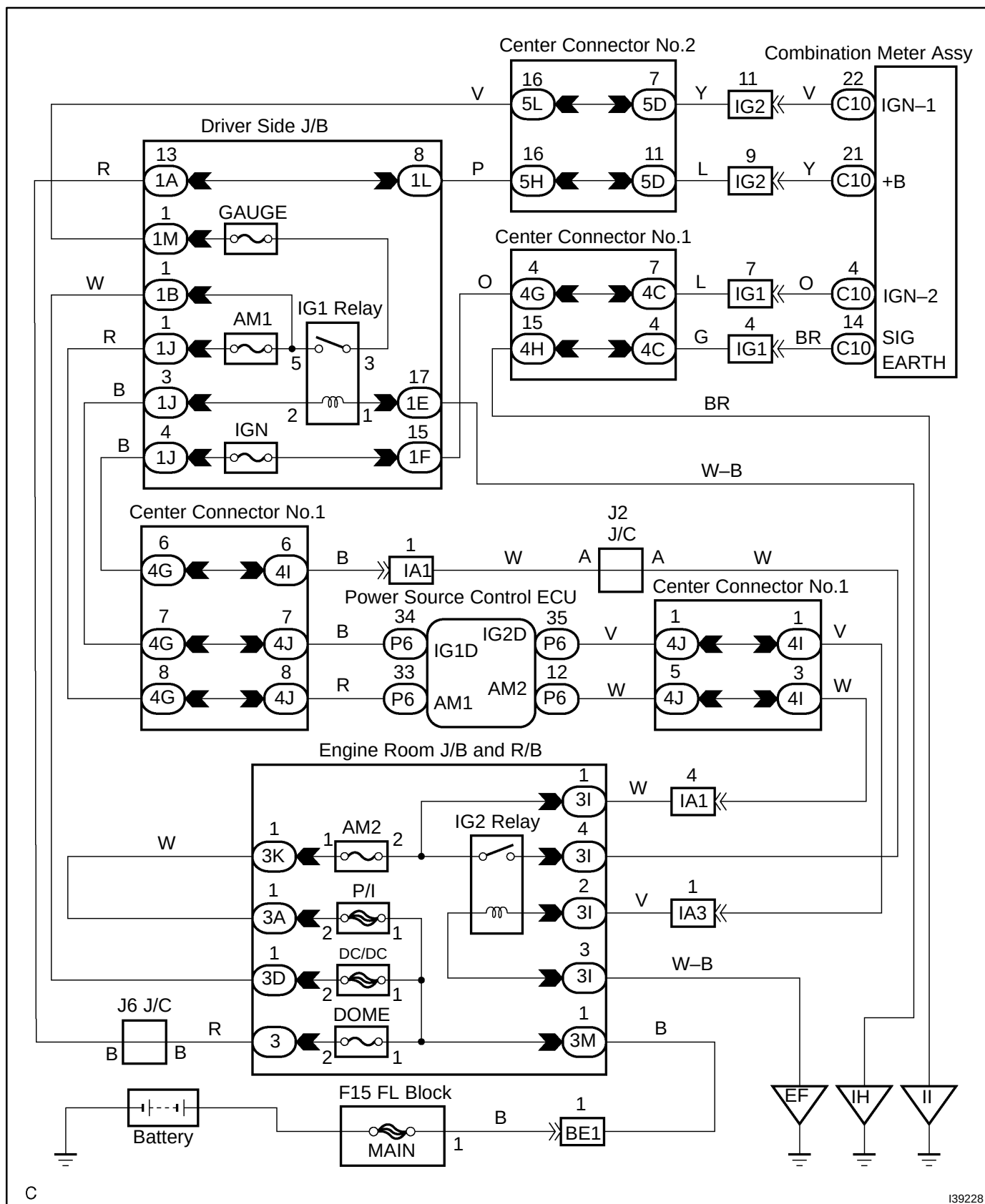
REPAIR OR
CONNECTOR

REPLACE HARNESS OR

REPLACE COMBINATION METER ASSY(SEE PAGE 71-19)

ENTIRE COMBINATION METER DOES NOT OPERATE

WIRING DIAGRAM

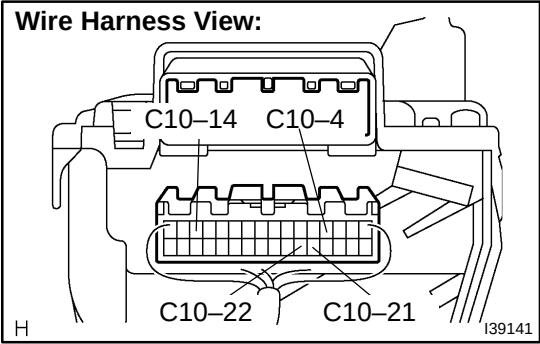


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INSPECTION PROCEDURE

1 INSPECT COMBINATION METER ASSY



(a) Measure the resistance according to the value(s) in the table below.

Standard:

Terminal No	Condition	Specified condition
C10-14 – Body ground	Always	Below 1 Ω

(b) Measure the voltage according to the value(s) in the table below.

Standard:

Terminal No	Condition	Specified condition
C10-21 – Body ground	Always	10 to 14 V
C10-4, 22 – Body ground	Power switch ON (IG)	10 to 14 V

NG

REPAIR OR CONNECTOR

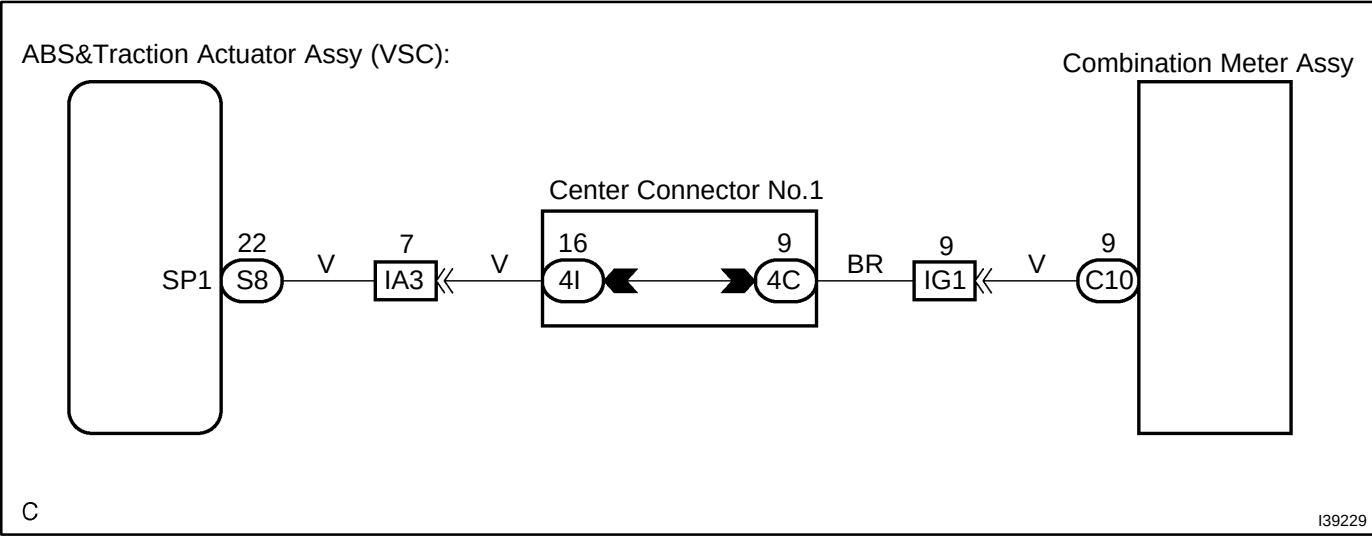
REPLACE HARNESS OR

OK

REPLACE COMBINATION METER ASSY(SEE PAGE 71-19)

MALFUNCTION IN SPEEDOMETER

WIRING DIAGRAM



INSPECTION PROCEDURE

1 READ VALUE OF HAND-HELD TESTER(VEHICLE SPEED SIGNAL)

- (a) Operate the hand-held tester according to the steps on the display and select the "DATA LIST".
- ABS:**

Item	Measurement Item/ Range (Display)	Normal Condition	Diagnostic Note
(FR/FL/RR/RL) SPD	Vehicle speed / Min.: 0 km/h (0 mph), Max.: 326 km/h (202 mph)	Almost same as actual speed (When driving)	–

OK:

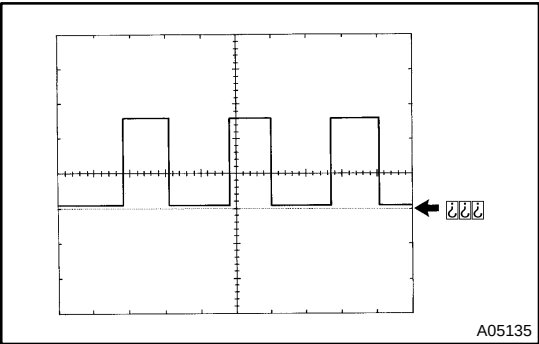
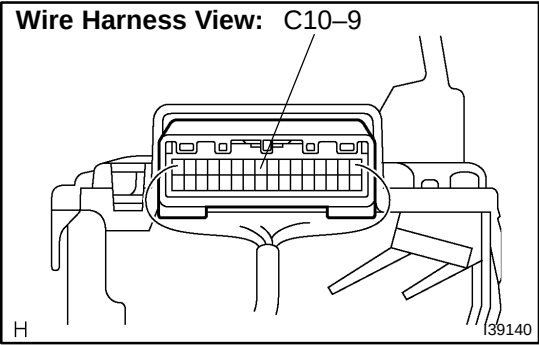
Vehicle speed displayed on the tester is almost the same as the actual vehicle speed.

NG → GO TO BRAKE CONTROL SYSTEM
(SEE PAGE 05-952)

OK

2

INSPECT COMBINATION METER ASSY



INSPECTION USING OSCILLOSCOPE

- (a) Check the input signal waveform.
- (1) Remove the combination meter assy.
 - (2) Connect the oscilloscope to the terminals C10-9 and body ground.

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

Item	Condition
Tool setting	5 V/DIV, 20 ms/DIV
Vehicle condition	Driving at approx. 20 Km/h (12 mph)

OK:
As shown in the illustration

HINT:
As vehicle speed increases, the cycle of the signal waveform narrows.

NG

Go to step 3

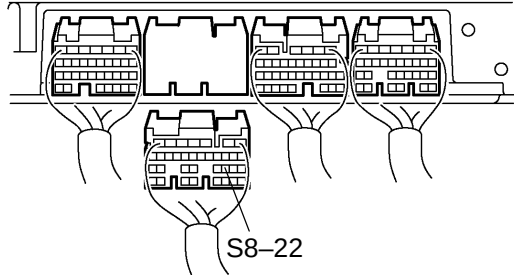
OK

REPLACE COMBINATION METER ASSY(SEE PAGE 71-19)

3 CHECK HARNESS AND CONNECTOR(ABS&TRACTION ACTUATOR ASSY(VSC) – COMBINATION METER ASSY)(SEE PAGE 01-37)

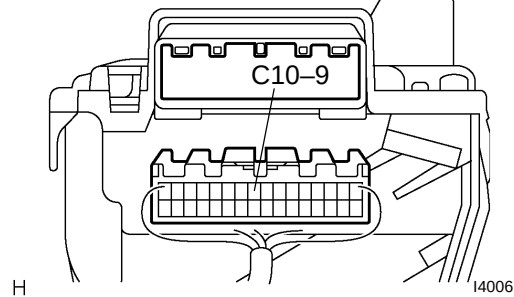
ABS&Traction Actuator Assy (VSC)

Wire Harness View:



Combination Meter Assy

Wire Harness View:



- Disconnect the C10 and S8 connectors.
- Measure the resistance according to the value(s) in the table below.

Standard:

Tester Connection	Condition	Specified Condition
C10-9 – S8-22	Always	Below 1 Ω
C10-9 – Body ground	Always	10 k Ω or higher

NG

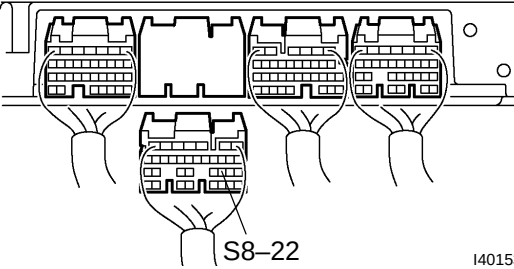
REPAIR OR REPLACE HARNESS AND CONNECTOR

OK

4 INSPECT ABS&TRACTION ACTUATOR ASSY(VSC)

ABS&Traction Actuator Assy (VSC)

Wire Harness View:



- Disconnect the S8 connector.
- Measure the resistance according to the value(s) in the table below.

Standard:

Tester Connection	Condition	Specified Condition
S8-22 – Body ground	Power switch ON (IG)	10 to 14 V

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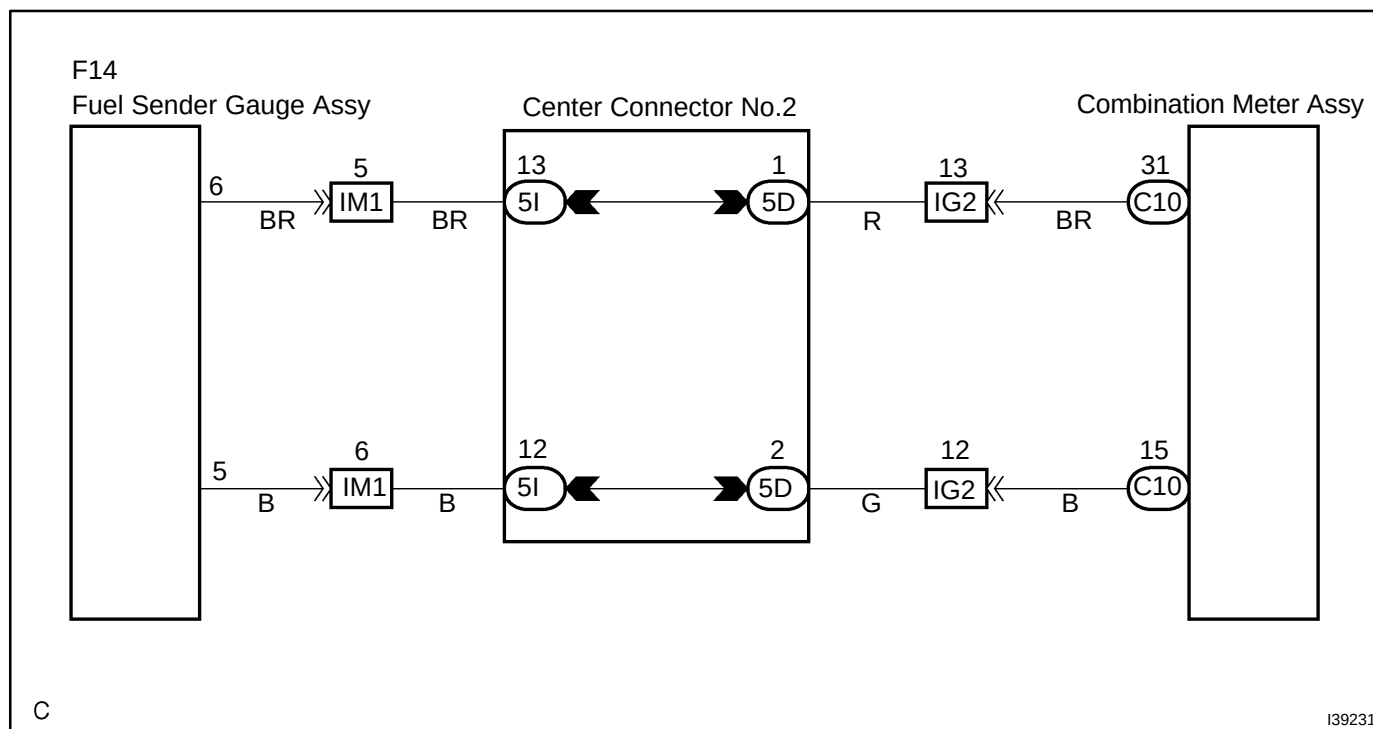
REPLACE COMBINATION METER ASSY (SEE PAGE 71-19)

OK

GO TO BRAKE CONTROL SYSTEM(SEE PAGE 05-952)

MALFUNCTION IN FUEL RECEIVER GAUGE

WIRING DIAGRAM

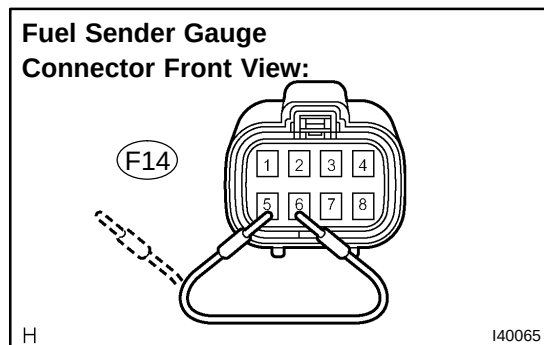


INSPECTION PROCEDURE

HINT:

The inclination sensor built in combination meter (See page 05-2016).

1 CHECK HARNESS AND CONNECTOR



- Disconnect the Fuel sender gauge connector.
- Check the needle indications according to the table below.

Standard:

Wire Connection	Condition	Specified Condition
5 to 6	Short circuit (Power switch ON (IG))	Fuel gauge indicates "F"
5 to 6	Open circuit (Power switch ON (IG))	Fuel gauge indicates "EMPTY"

- Measure the voltage according to the value(s) in the table below.

Standard:

Tester Connection	Condition	Specified Condition
F14-5 – Body ground	Power switch ON (ACC or IG)	4 to 7 V

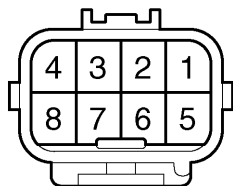
NG

Go to step 3

OK

2 INSPECT FUEL SENDER GAUGE

Fuel Sender Gauge Connector:



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- Disconnect the Fuel sender gauge connector.
- Measure the resistance according to the value(s) in the table below.

Standard:

Fuel level	Specified Condition
Full	Approx. 430 Ω
Half	Approx. 1,000 to 2,000 Ω
Empty	Approx. 5,000 Ω

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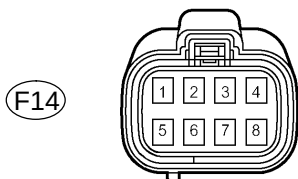
REPLACE FUEL TANK ASSY

OK

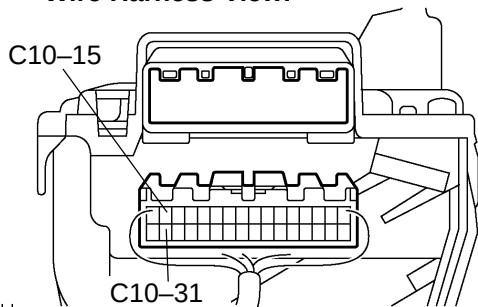
REPLACE COMBINATION METER ASSY(SEE PAGE 71-19)

3 CHECK HARNESS AND CONNECTOR(BETWEEN FUEL SENDER GAUGE ASSY AND COMBIATION METER ASSY)(SEE PAGE 01-37)

Fuel Sender Gauge Connector Front View:



Combination Meter Assy Wire Harness View:



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- Disconnect the F14 and C10 connectors.
- Measure the resistance according to the value(s) in the table below.

Standard:

Tester Connection	Condition	Specified Condition
C10-31 – F14-6	Always	Below 1 Ω
C10-15 – F14-5	Always	Below 1 Ω
C10-15 – Body ground	Always	10 k Ω or higher

NG

REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE COMBINATION METER ASSY(SEE PAGE 71-19)

ON-VEHICLE INSPECTION

1. INSPECT SPEEDOMETER

(a) Check the operation.

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

Reference: km/h (Canada)

Standard indication	Acceptable range
20 km/h	18.0 to 22.0 km/h
40 km/h	38.0 to 42.0 km/h
60 km/h	58.0 to 62.0 km/h
80 km/h	78.0 to 82.0 km/h
100 km/h	97.0 to 103.0 km/h
120 km/h	117.0 to 123.0 km/h
140 km/h	137.0 to 143.0 km/h
160 km/h	157.0 to 163.0 km/h

Reference: mph (U.S.A)

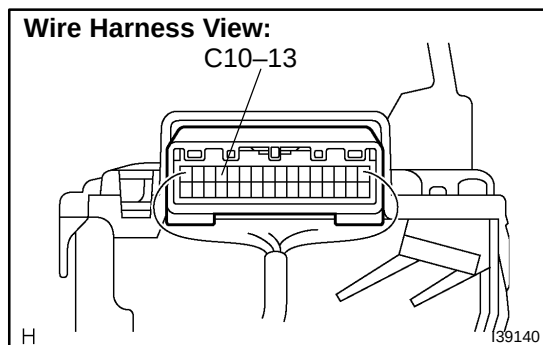
Standard indication	Acceptable range
20 mph	18.0 to 22.0 mph
40 mph	38.0 to 42.0 mph
60 mph	59.0 to 63.0 mph
80 mph	79.0 to 83.0 mph
100 mph	99.0 to 104.0 mph
120 mph	119.0 to 125.0 mph

NOTICE:

Tire wear and over or under tire pressure will affect indication error.

- (2) Check the deflection width of the speedometer indicator.

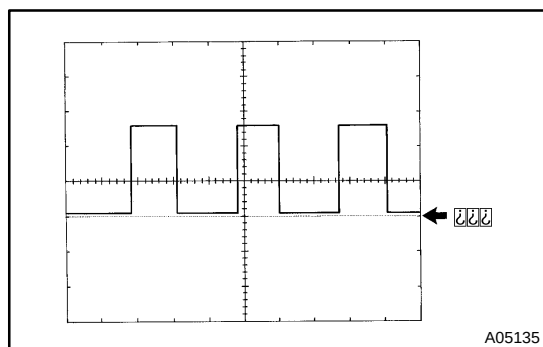
Reference: Below 0.5 km/h (0.3 mph)



2. INSPECT OUTPUT SIGNAL OF VEHICLE SPEED

(a) Check the output signal waveform.

- (1) Remove the combination meter assy.
 (2) Connect the oscilloscope to the terminals C10-13 and body ground.
 (3) Start the engine.



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

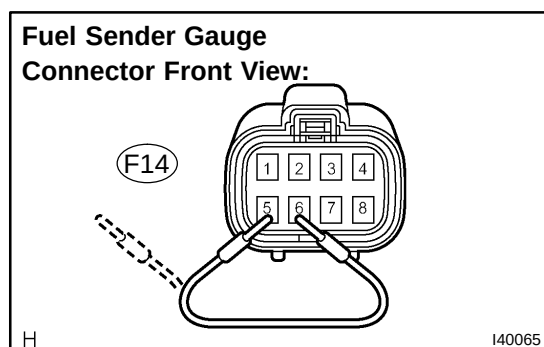
Item	Condition
Tool setting	5 V/DIV, 20 ms/DIV
Vehicle condition	Driving at approx. 20 Km/h (12 mph)

OK:

As shown in the illustration

HINT:

As vehicle speed increases, the cycle of the signal waveform narrows.

**3. INSPECT FUEL RECEIVER GAUGE**

- (a) Disconnect the connector from the sender gauge.
- (b) Turn the power switch ON (IG) position, then check the position of the receiver gauge needle.

OK:**Needle position is on (EMPTY).**

- (c) Connect terminals 5 and 6 on the wire harness side connector of the fuel sender gauge.
- (d) Turn the power switch to the ON (IG) position, then check the position of the receiver gauge needle.

OK:**Needle position is on (FULL).****4. INSPECT FUEL LEVEL WARNING**

- (a) Disconnect the connector from the sender gauge.
- (b) Turn the power switch ON (IG) position, then check that the fuel level needle indicates EMPTY and the fuel level warning light comes on.

OK:**EMPTY (The No.1 segment blinks).****5. INSPECT LOW OIL PRESSURE WARNING LIGHT**

- (a) Disconnect the connector from the low oil pressure switch.
- (b) Turn the power switch ON (IG) position.
- (c) Ground the terminal of the wire harness side connector, then check the master warning light.

OK:**Master warning light comes on.****6. INSPECT BRAKE WARNING LIGHT**

- (a) Inspect the parking brake warning light.
 - (1) Disconnect the connector from the parking brake switch.
 - (2) Turn the power switch ON (IG) position.
 - (3) Ground the terminal of the wire harness side connector, then check the parking brake warning light.

OK:**Brake warning light comes on.**

- (b) Inspect the brake fluid level warning light.
 - (1) Disconnect the connector from the brake fluid level warning switch.
 - (2) Turn the power switch ON (IG) position.
 - (3) Connect a terminal to the other terminal of the wire harness side connector, then check the brake fluid level warning switch.

OK:**Brake warning light comes on.**

7. INSPECT BRAKE FLUID LEVEL WARNING SWITCH

- (a) Remove the reservoir tank cap and strainer.
- (b) Disconnect the connector.
- (c) Measure the resistance between the terminals.

Standard:**Float up (switch off): 10 k Ω or higher**

- (d) Use a syphon, etc. to take fluid out of the reservoir tank.
- (e) Measure the resistance between the terminals.

Standard:**Float down (switch on): Below 1 Ω**

- (f) Pour the fluid back in the reservoir tank.
- (g) Reconnect the connector.

8. MAINTENANCE LIQUID RESETTING PROCEDURE (U.S.A. models)**Indicator Condition:**

State	Condition	Specified State
Blinking	The vehicle runs 4,500 miles after the previous setting	The indicator blinks for 15 seconds after the power switch on (IG) (including 3 seconds for a valve check).
Continuously Illuminated	The vehicle runs 5,000 miles after the previous setting	The indicator is continuously illuminated after the power switch on (IG).

- (a) Set the display window to ODO.
- (b) Turn the power switch off.
- (c) Pressing the reset switch, turn the power switch to the ON (IG) position (keep pressing for at least 5 seconds).
- (d) Reset procedure is completed.

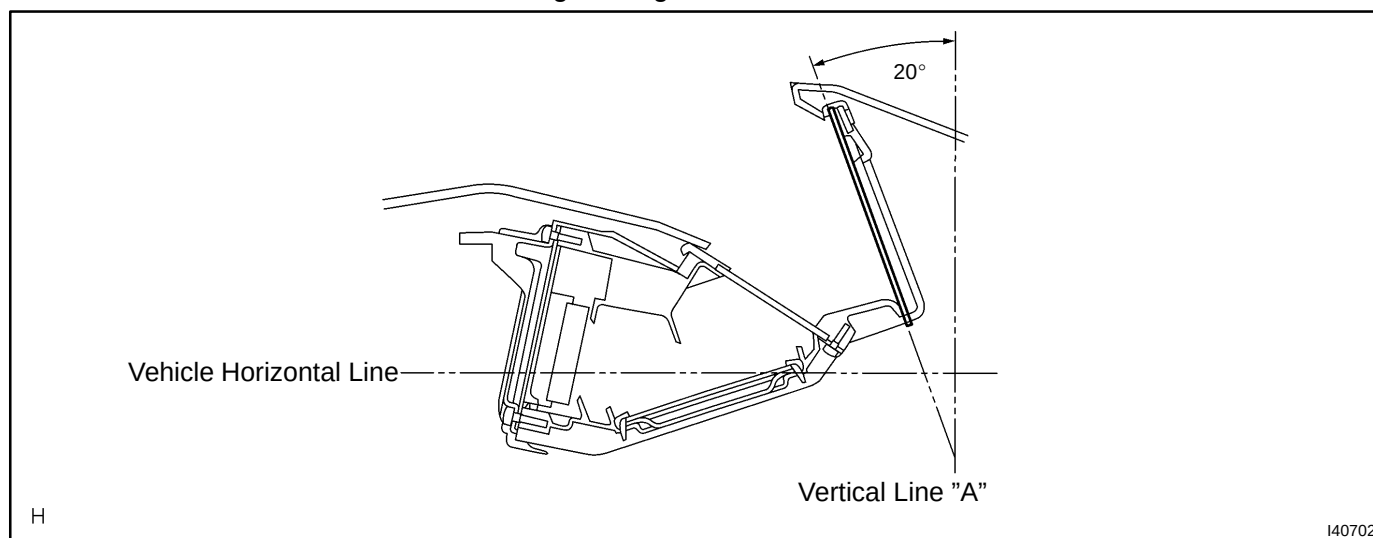
HINT:

- If the power switch is turned off during reset procedure, reset mode is canceled.
- If the reset switch is turned off during the reset procedure, reset mode is canceled and the display shows the condition prior to the reset procedure.

9. CENTERED VALUE SETTING (INCLINATION SENSOR)

Perform the following procedures to correct inclination of the meter and inclination sensors when installing/removing/replacing the meter or after replacing the inclination sensors or main base.

- (a) Setting procedure
 - (1) Connect the connector and install the meter securely in the position as shown in the illustration so that it is inclined at a 20 degree angle to the vehicle's vertical line A.



- (2) Turn the power switch on while the trip switch is on.
- (3) Within 5 seconds of turning the power switch on, push the trip switch two times.
- (4) Within 5 seconds, push and hold the trip switch for 5 seconds or more. Turn the trip switch off and check that the inclination sensor information is displayed on the ODO display.

HINT:

Perform the procedure from step (2) again if there is not information displayed.

- (5) During the setting mode, push and hold the trip switch for 5 seconds or more to update the centered value.

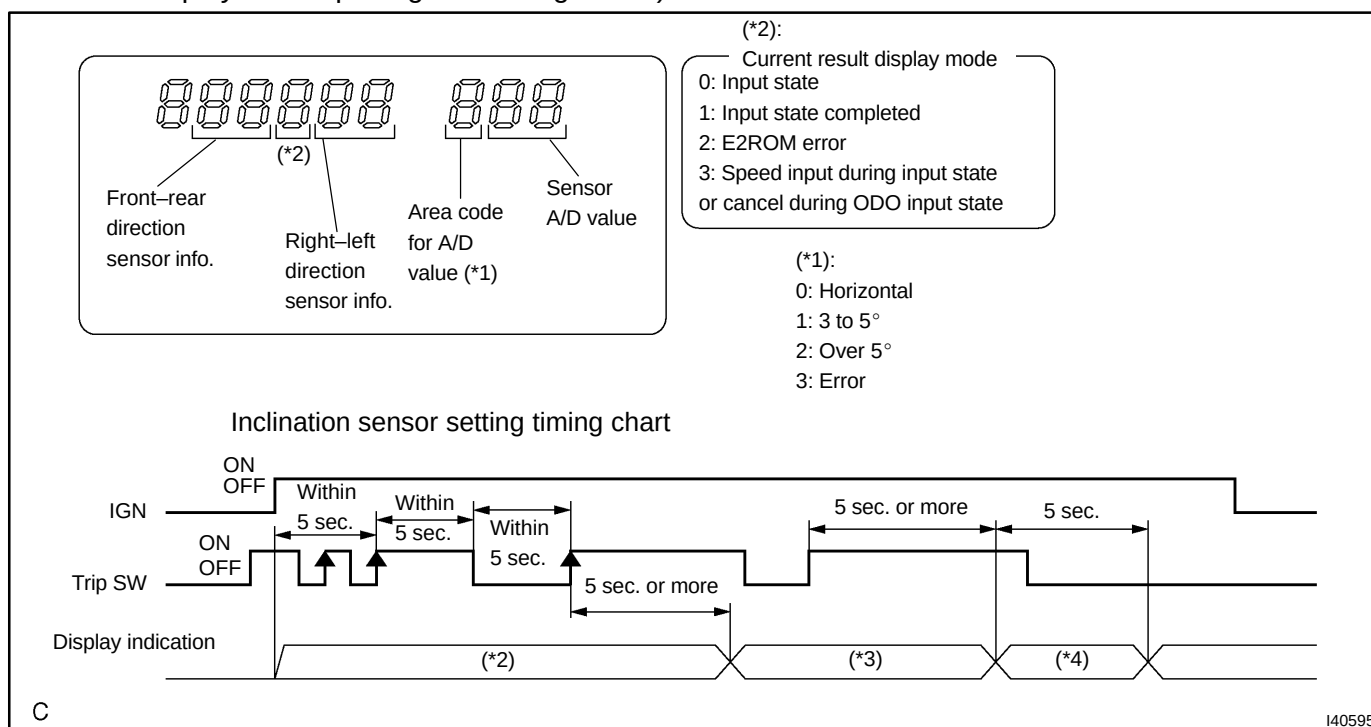
HINT:

Turning the trip switch off within 5 seconds will return to the normal mode without updating the value.

- (6) After the value is input into the meter display, the current result will be displayed on the third digit for 5 seconds.

HINT:

Do not turn the power switch off while the information is displayed. (Turning the power switch off will prevent the meter display from inputting the setting value.)



*2: ODO/TRIP display (Normal mode)

*3: Sensor information display (Setting mode)

*4: Current result display

SYSTEM DESCRIPTION

1. METER GAUGE AND WARNING/INDICATOR

GAUGE:

Item	Signal Description
Speedometer	Based on a signal received from the wheel speed sensor, the skid control ECU calculates vehicle speed and transmits the data to the meter .
Fuel	Displays a fuel level receiving a signal from the fuel sender gauge (Direct line).

WARNING / INDICATOR:

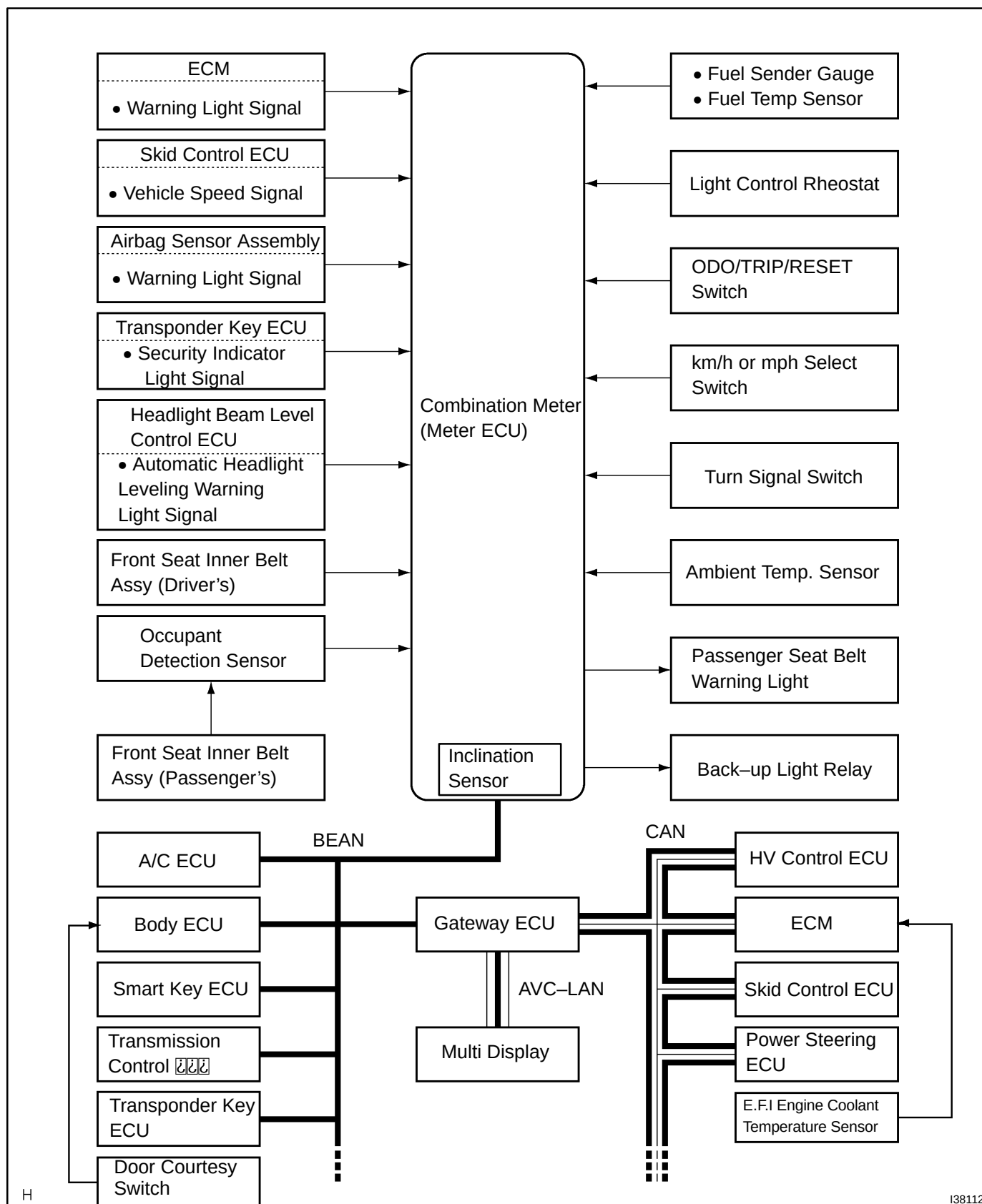
Item	Signal Description
TURN	Turn signal switch is ON.
BEAM	Displays receiving a signal from the body ECU (Direct line).
CHARGE	Receives the malfunction signal from the alternator.
CHECK ENGINE	Receives the malfunction signal from the ECM.
DOOR	Open door indicator comes on receiving a signal from the body ECU (Direct line).
SEAT BELT	Driver's seat belt buckle switch is OFF (Unfastened).
BRAKE	Displays when the parking brake switch is ON or the brake fluid level warning switch is ON.
MAINT REQUID (Blinks)	Blinks when running 4,500 miles after ODO/TRIP switch is set.
MAINT REQUID (Comes on)	Comes on when running 5,000 miles after ODO/TRIP switch is set.
CRUISE	Receives the malfunction signal from the ECM.
AIRBAG	Receives the malfunction signal from the airbag ECU.
FUEL	Receives the fuel empty signal from the fuel sender gauge.
A/T P	Receives the P signal from the hybrid vehicle control ECU (BEAN).
A/T R	Receives the R signal from the hybrid vehicle control ECU (BEAN).
A/T N	Receives the N signal from the hybrid vehicle control ECU (BEAN).
A/T D	Receives the D signal from the hybrid vehicle control ECU (BEAN).
A/T B	Receives the B signal from the hybrid vehicle control ECU (BEAN).
SLIP	Receives the malfunction signal from the skid control ECU.
VSC	Receives the malfunction signal from the skid control ECU.
ABS	Receives the malfunction signal from the skid control ECU.
ECB	Receives the malfunction signal from the skid control ECU.
LOW AMBIENT TEMP.	Receives the LOW AMBIENT TEMP. signal from A/C ECM (BEAN).
A/C AUTO	Receives the A/C AUTO signal from A/C ECM (BEAN).
RECIRCULATE	Receives the RECIRCULATE signal from A/C ECM (BEAN).
Rr DEF	Receives the Rr DEF signal from A/C ECM (BEAN).
Fr DEF	Receives the Fr DEF signal from A/C ECM (BEAN).
SECURITY	Receives the SECURITY signal from Security ECU (BEAN).
SMART	Receives the SMART signal from Smart key ECU (BEAN).

2. GENERAL

- The combination meter is digital display type.
- The meter ECU and buzzer are installed in the combination meter. The meter ECU maintains communication with other ECUs through the BEAN. It also maintains communication with the ECUs (or components) that compose the CAN and AVC-LAN through the gateway ECU.
- The "READY" light comes on to inform the driver that the vehicle is ready to be driven.
- The low ambient temperature indicator light comes on to inform the driver that the ambient temperature is low (below 3°C).
- The master warning light comes on with buzzer sounding if there is a malfunction in each system (see page 05-1986).
- The two inclination sensors are built in the combination meter to detect the inclination (longitudinal and latitudinal) of the vehicle.

- The oil replacement reminder light comes on/blinks to remind the driver to change the engine oil depending on the vehicle driving distance.
- 3. LOW AMBIENT TEMPERATURE INDICATOR LIGHT**
- When turning the power switch on, the meter ECU turns on the low ambient temperature warning light for 3 seconds for the bulb check.
 - The meter ECU determines the ambient temperature with the ambient temperature sensor signal from the air conditioning system. The meter ECU turns on the warning light, which blinks for 3 seconds and then remains on when it determines that the ambient temperature is below 3°C. The meter ECU turns off the warning light once the ambient temperature increases above 5°C.
- 4. OIL REPLACEMENT REMINDER WARNING LIGHT (U.S.A. models)**
- 4500 miles after ODO/TRIP switch is set, the maintenance indicator begins to blink for 15 seconds after the power switch ON(ACC or IG) position.
 - 5000 miles after ODO/TRIP switch is set, the maintenance indicator comes on. For resetting procedure (see page [05-2016](#)).
- 5. FUEL GAUGE**
- For the purpose of correcting the calculation of the fuel level by the meter ECU, two inclination sensors that detect the vehicle's longitudinal and latitudinal inclinations have been provided in the meter ECU. The fuel temperature sensor has been provided in the fuel tank to detect the temperature in the fuel tank.
 - The fuel level is calculated by the meter ECU in accordance with the signals of the sender gauge located in the sub tank and the vehicle speed signal received from the brake ECU. At this time, corrections are made by the signals from the inclination sensor that detect the vehicle's longitudinal and latitudinal inclinations and the fuel temperature sensor that detects the temperature in the fuel tank. For the inclination sensor centered value setting (see page [05-2016](#)).

SYSTEM DIAGRAM



GATEWAY:

ECU	Signals from/to Combination meter (Meter ECU)
GATEWAY ECU	• Receives ODO METER information signal

BEAN:

ECU	Signals from/to Combination Meter (Meter ECU)
A/C ECU	• Transmits ambient temperature signal (for low ambient temperature warning light) • Transmits indicator light (A/C AUTO, RECIRCULATE, Front DEF, Rear DEF) ON demand signal • Receives vehicle speed signal
Body ECU	• Receives vehicle speed signal • Receives tail cancel signal • Transmits D seat door courtesy SW signal (for headlamp reminder control) • ACC switch signal • Transmits D seat door courtesy SW signal • Transmits warning ON signal (HEAD and TAIL) • Transmits headlight ON signal (HI-BEAM) • Transmits front fog light ON signal (FOG indicator light) • Transmits meter illumination light dimmer demand signal • Transmits warning ON signal (all door courtesy switch)
Smart Key ECU	• Receives vehicle speed signal • Transmits inside cabin key detection signal (Smart Key System) • Transmits buzzer sounding demand signal
Transmission Control ECU	• Transmits P state signal • Transmits master warning light (P control malfunction) ON demand signal • Transmits shift position (N, P) signal
Transponder Key ECU	• Transmits master warning light (shift warning) ON demand signal • Transmits buzzer sounding demand signal • Receives vehicle speed signal
Steering Lock ECU	• Transmits buzzer sounding demand signal • Transmits meter display signal

CAN:

ECU	Signals from/to Combination Meter (Meter ECU)
HV ECU	• Transmits shift position signal (P, R, N, D, B) (for shift position indicator light) • Transmits cruise indicator light ON demand signal • Transmits master warning light (HV system, main battery, NDB warning, Motor inverter, CHARGE) ON demand signal • Transmits READY indicator ON/blink & buzzer sounding signal • Transmits starter ON signal • Transmits EV indicator ON/blink & buzzer sounding signal
ECM	• Receives fuel tank level signal • Transmits engine coolant temperature signal (for master warning light [engine coolant temperature warning]) • Transmits engine speed signal (for trip information operation) • Transmits fuel injection volume signal (for trip information operation) • Transmits test mode signal • Transmits master warning light (OIL. P) ON signal
Skid Control ECU	• Transmits warning signal (ABS, VSC, BRAKE, ECB) ON/blink demand signal • Transmits diagnosis signal (ABS, VSC, ECB) ON/blink demand signal • Transmits SLIP indicator light ON/blink demand signal
Power Steering ECU	• Transmits EPS warning light ON/blink demand signal

AVC-LAN:

ECU	Signals from/to Combination Meter (Meter ECU)
Multi-display	• Transmits trip information operation signal • Receives warning (fuel level, headlight leveling, EPS) display signal • Receives trip information display signal • Receives km/h (mph) selector switch signal • Receives taillight cancel switch signal

CUSTOMER PROBLEM ANALYSIS CHECK

COMBINATION METER SYSTEM Check Sheet

Inspector's name: _____

Customer's Name		VIN	
		Production Date	
		Licence Plate No.	
Date of Vehicle Brought In	/ /	Odometer Reading	km mile

Date Problem First Occurred		/ /
Frequency Problem Occurs		☐ Constantly ☐ Sometimes (Times per day, month) ☐ Once only
Weather Conditions When Problem Occurred	Weather	☐ Fine ☐ Cloudy ☐ Rainy ☐ Snowy ☐ Various/Others
	Outside temperature	☐ Hot ☐ Warm ☐ Cool ☐ Cold (Approx. °F (°C))

Problem Symptom	Gauge	☐ Malfunction in speedometer
		☐ Malfunction in fuel receiver gauge
	Others	☐ Entire combination meter does not operate
		☐ Operating light control rheostat does not change light brightness
		☐ Malfunction in ODO/TRIP SW
		☐ Seat belt warning lamp for driver's seat does not operate
		☐ Seat belt warning lamp for passenger's seat does not operate
		☐
		☐
		☐
		☐
		☐
		☐
		☐
		☐
		☐

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HOW TO PROCEED WITH TROUBLESHOOTING

1 VEHICLE BROUGHT TO WORKSHOP



2 CUSTOMER PROBLEM ANALYSIS (SEE PAGE 05-1984)

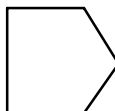


3 PROBLEM SYMPTOM CONFIRMATION (SEE PAGE 05-1986)

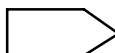


4 CHECK MULTIPLEX COMMUNICATION SYSTEM (SEE PAGE 05-2549)

(a) Check for DTC outputs.



MULTIPLEX DTC OUTPUTS (PROCEED TO "BODY MULTIPLEX COMMUNICATION SYSTEM")



NO MULTIPLEX DTC (GO TO STEP 5)

5 CIRCUIT INSPECTION (SEE PAGE 05-1998 – 05-2013)



6 REPAIR OR REPLACE

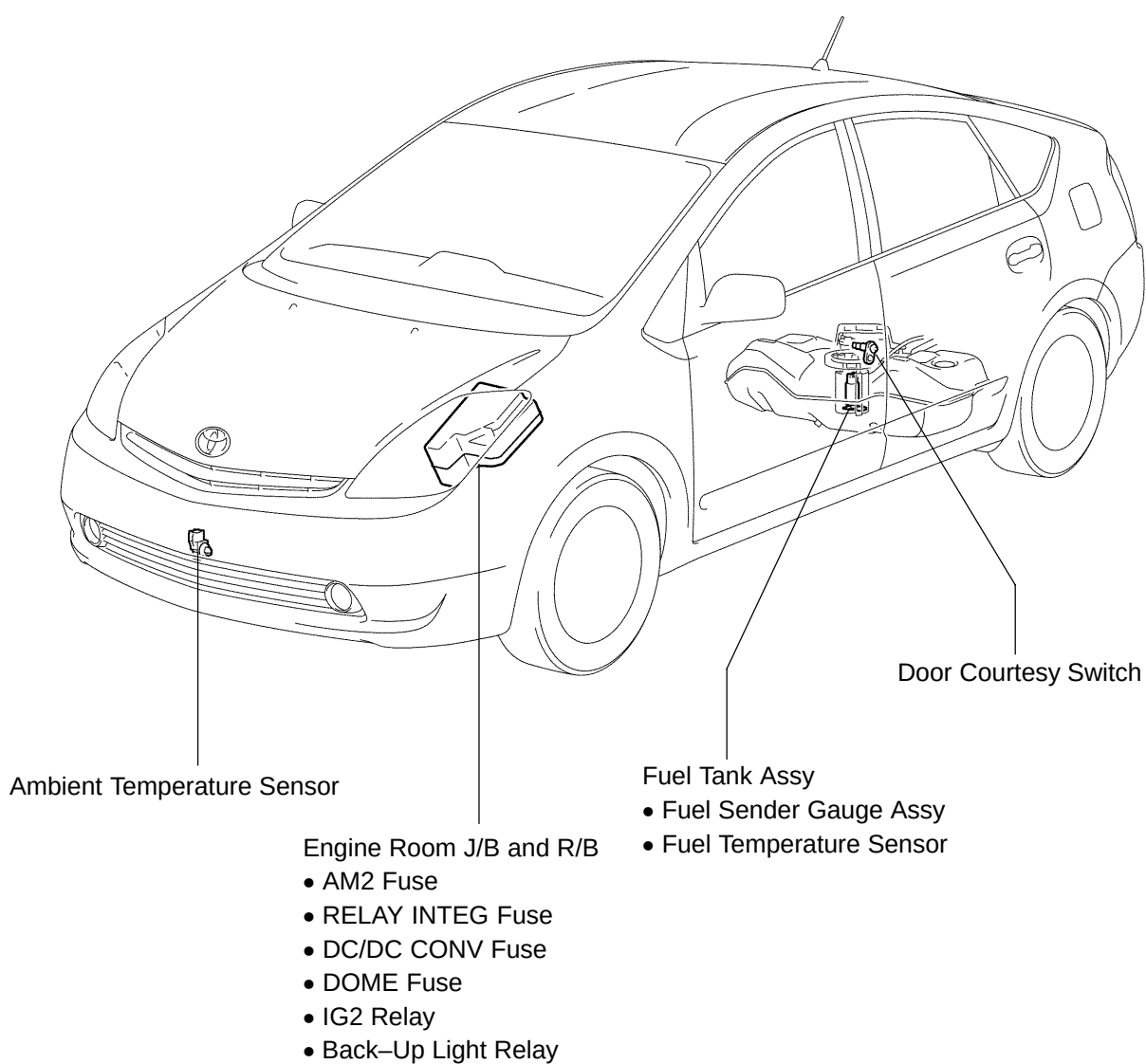


7 CONFIRMATION TEST



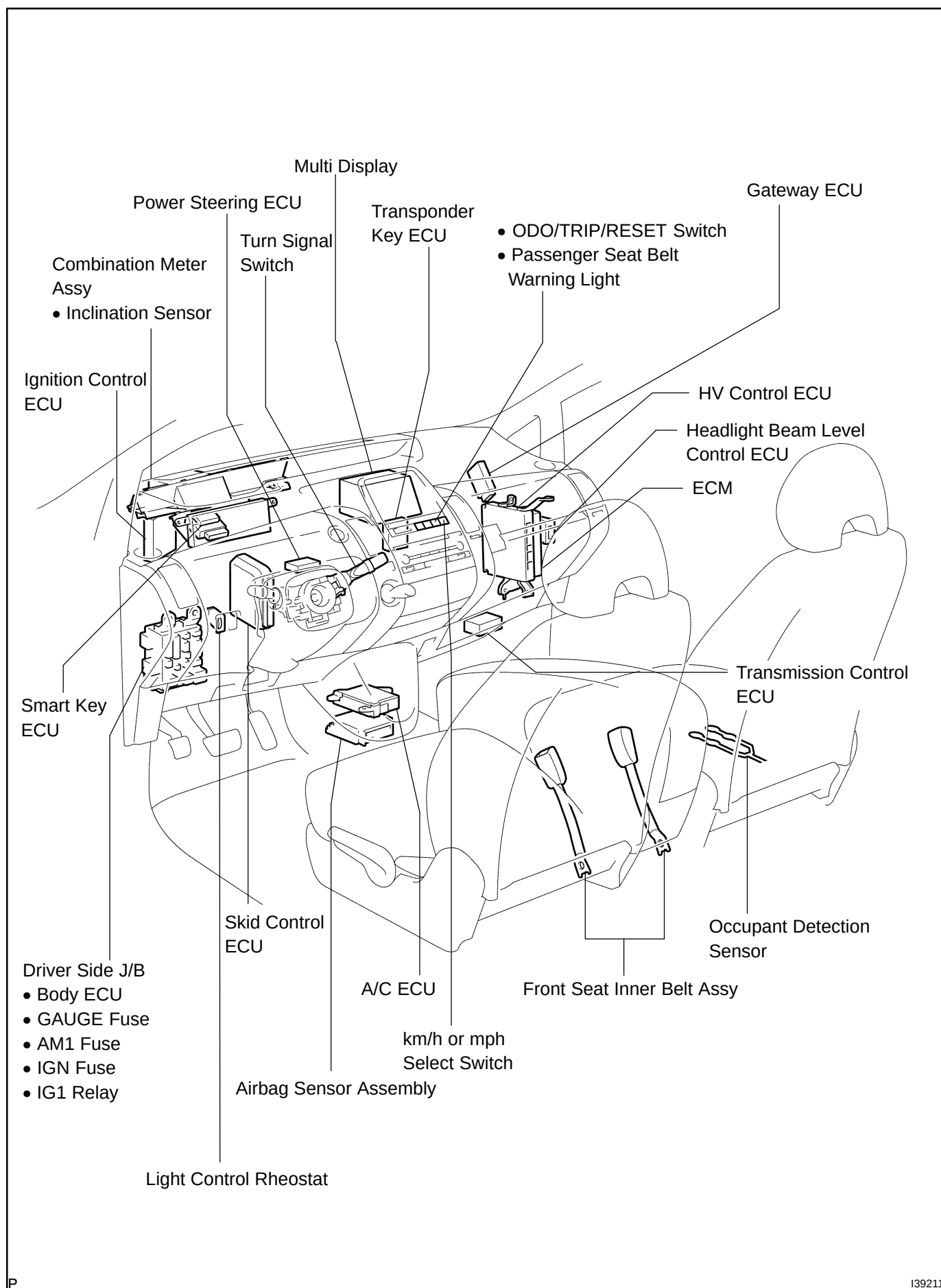
END

LOCATION



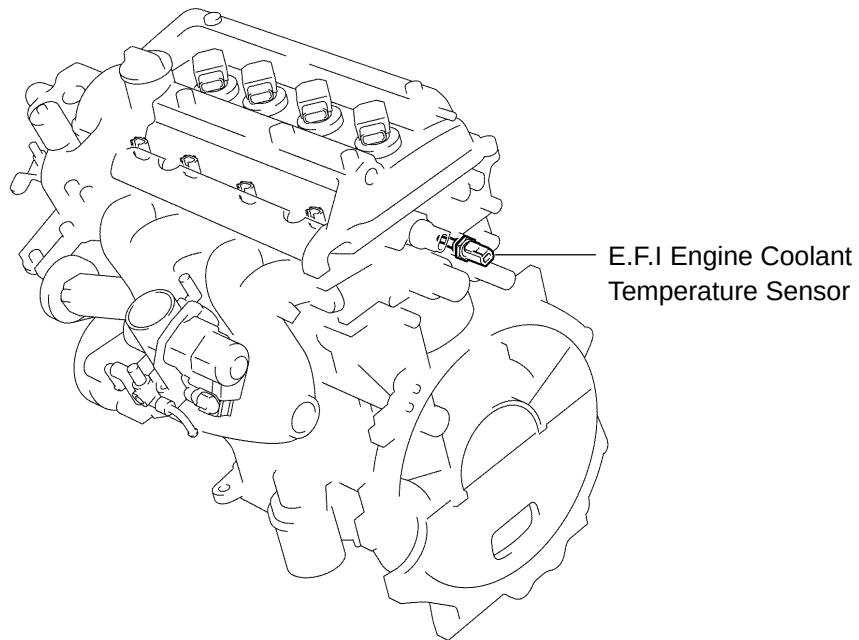
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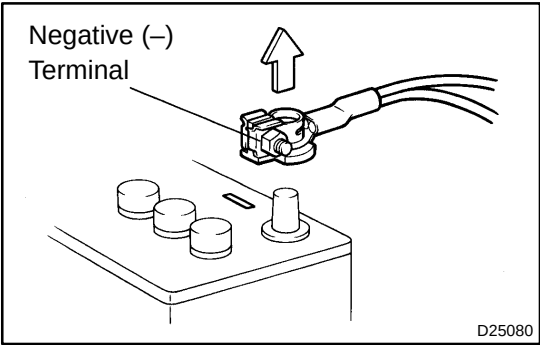
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COMBINATION METER PRECAUTION

05J0J-01

REMOVAL AND INSTALLATION OF BATTERY TERMINAL

- (a) Before performing electronic work, disconnect the battery negative (-) terminal cable in order to prevent it from shorting and burning out.
- (b) When disconnecting and reconnecting the battery cable, turn the power switch and lighting switch off and loosen the terminal nut completely. Perform operations without twisting or prying on the terminal.
- (c) When the battery terminal cable is removed, the memories of the clock, radio, DTCs, etc. are erased. So before removing it, check and make a note of them.

NOTICE:

- **When disconnecting the battery negative (-) terminal, initialize the following systems after the terminal is reconnected.**

System Name	See Page
Power Window Control System	01-28

- **FOR HYBRID SYSTEM ACTIVATION:**
When the warning lamp is illuminated or the battery has been disconnected and reconnected, pressing the power switch may not start the system on the first try. If so, press the power switch again.
- **FOR HYBRID SYSTEM ACTIVATION:**
With the power switch's power mode changed to ON (IG), disconnect the battery. If the key is not in the key slot during reconnection, DTC B2799 may be output.

PROBLEM SYMPTOMS TABLE

HINT:

- Inspect the related "Fuse" and "Relay" before confirming the suspected area as shown in the charts below.
- The upper panel (instrument panel) must be removed to inspect the meter connector. The Prius has a sub wire harness connector installed in a different position from the meter connector to shorten labor time. Work on the combination meter can also be done through this sub wire harness connector (see page 05–1989).

MALFUNCTION SYSTEM:

Symptom	Suspected Area	See page
Entire combination meter does not operate.	1. Refer to troubleshooting	05–1998
Malfunction in ODO/TRIP	1. Refer to troubleshooting	05–2009
Operating light control rheostat does not change light brightness.	1. Refer to troubleshooting	05–2005

METER GAUGES:

Symptom	Suspected Area	See page
Malfunction in speedometer	1. Refer to troubleshooting	05–2000
Malfunction in fuel receiver gauge	1. Refer to troubleshooting	05–2003

WARNING LIGHTS:

Symptom	Suspected Area	See page
Check Engine warning light does not come on.	1. ECM 2. Wire Harness or Connector 3. Combination Meter Assy	05–13 – 71–19
Brake Control warning light does not come on.	1. Refer to troubleshooting 2. Wire Harness or Connector 3. Combination Meter Assy	05–952 – 71–19
ABS warning light does not come on.	1. Refer to troubleshooting 2. Wire Harness or Connector 3. Combination Meter Assy	05–952 – 71–19
SRS warning light does not come on.	1. Airbag Sensor Assy Center 2. Wire Harness or Connector 3. Combination Meter Assy	05–1391 – 71–19
Open door warning light does not come on.	1. Refer to troubleshooting 2. Wire Harness or Connector 3. Combination Meter Assy	05–2074 – 71–19
VSC warning light does not come on.	1. Refer to troubleshooting 2. Wire Harness or Connector 3. Combination Meter Assy	05–952 – 71–19
Seat belt warning lamp for driver's seat does not operate	1. Refer to troubleshooting	05–2011
Seat belt warning lamp for passenger's seat does not operate	1. Refer to troubleshooting	05–2013

INDICATOR LIGHTS:

Symptom	Suspected Area	See page
Turn indicator light does not come on.	1. Turn Signal and Hazard Warning System 2. Wire Harness or Connector 3. Combination Meter Assy	05–1669 – 71–19
High beam indicator light does not come on.	1. Headlight Dimmer Switch 2. Wire Harness or Connector 3. Combination Meter Assy	05–1746 – 71–19
A/C AUTO indicator light does not come on.	1. Refer to troubleshooting 2. Wire Harness or Connector 3. Combination Meter Assy	05–1263 – 71–19
Rr DEF indicator light does not come on.	1. Refer to troubleshooting 2. Wire Harness or Connector 3. Combination Meter Assy	05–1263 – 71–19

DIAGNOSTICS – COMBINATION METER

Fr DEF indicator light does not come on.	1. Refer to troubleshooting 2. Wire Harness or Connector 3. Combination Meter Assy	05-1263 – 71-19
RECIRCULATE indicator light does not come on.	1. Refer to troubleshooting 2. Wire Harness or Connector 3. Combination Meter Assy	05-1263 – 71-19
LOW AMBIENT TEMP. indicator light does not come on.	1. Refer to troubleshooting 2. Wire Harness or Connector 3. Combination Meter Assy	05-1263 – 71-19
HEAD indicator light does not come on.	1. Refer to troubleshooting 2. Wire Harness or Connector 3. Combination Meter Assy	05-1746 – 71-19
SMART indicator light does not come on.	1. Refer to troubleshooting 2. Wire Harness or Connector 3. Combination Meter Assy	05-2228 – 71-19
SECURITY indicator light does not come on.	1. Refer to troubleshooting 2. Wire Harness or Connector 3. Combination Meter Assy	05-2499 – 71-19
SLIP indicator light does not come on.	1. Refer to troubleshooting 2. Wire Harness or Connector 3. Combination Meter Assy	05-952 – 71-19
CRUISE indicator light does not come on.	1. ECM 2. Wire Harness or Connector 3. Combination Meter Assy	05-13 – 71-19
All buzzers (key reminder, tail cancel, seat belt) do not operate.	1. Refer to troubleshooting 2. Combination Meter Assy	05-1985 71-19

DISPLAY WARNING:

Symptom	Suspected Area	See page
Malfunction in HV system, Low battery (Main), Charge, and Shift reject.	1. Hybrid Vehicle Control ECU 2. Combination Meter Assy	05-404 71-19
Malfunction in Hi water temperature.	1. ECM 2. Combination Meter Assy	05-13 71-19
Malfunction in Transmission control system.	1. Transmission Control ECU 2. Combination Meter Assy	05-404 71-19
Malfunction in Engine oil pressure.	1. Engine Oil Pressure Switch 2. Combination Meter Assy	05-13 71-19
Malfunction in EPS system.	1. Power Steering ECU 2. Combination Meter Assy	05-1208 71-19
Malfunction in Headlight leveling control.	1. Headlight control ECU 2. Combination Meter Assy	05-1746 71-19

BUZZER:

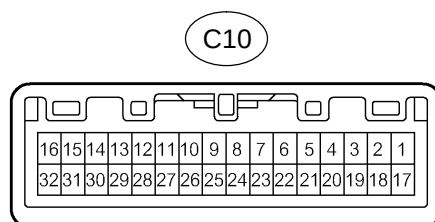
Symptom	Suspect Area	See page
Key reminder warning buzzer does not sound.	1. Refer to troubleshooting 2. Wire Harness or Connector 3. Combination Meter Assy	05-2311 – 71-19
Light reminder warning buzzer does not sound.	1. Refer to troubleshooting 2. Wire Harness or Connector 3. Combination Meter Assy	05-1746 – 71-19
Seat belt warning buzzer does not sound.	1. Refer to troubleshooting 2. Wire Harness or Connector 3. Combination Meter Assy	61-5 – 71-19
Headlight automatic leveling warning buzzer does not sound.	1. Refer to troubleshooting 2. Wire Harness or Connector 3. Combination Meter Assy	05-1746 – 71-19

Warning buzzer does not sound (READY, A/T R, N/D warning, HV system, Main battery, Charge, Shift reject) .	1. Refer to troubleshooting 2. Wire Harness or Connector 3. Combination Meter Assy	05-404 – 71-19
Warning buzzer does not sound (Hi water temperature, Oil pressure).	1. Refer to troubleshooting 2. Wire Harness or Connector 3. Combination Meter Assy	05-13 – 71-19
Warning buzzer does not sound (Smart key system) .	1. Refer to troubleshooting 2. Wire Harness or Connector 3. Combination Meter Assy	05-2228 – 71-19
Steering lock warning buzzer does not sound.	1. Refer to troubleshooting 2. Wire Harness or Connector 3. Combination Meter Assy	05-1208 – 71-19

HINT:

Refer to On-vehicle inspection in combination meter (see page [05-2016](#)).

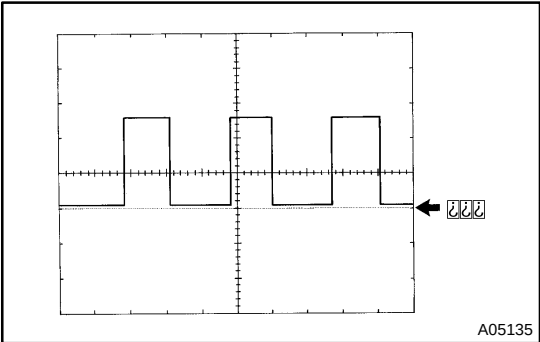
TERMINALS OF ECU COMBINATION METER ASSY:



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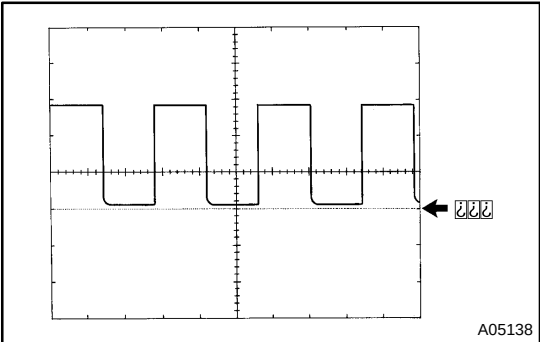
Symbols (Terminals No.)	Wiring Color	Terminal Description	Condition	Specified Condition
km/h or mph (C10-1) – Body ground	L – Body ground	km/h or mph signal	Power switch ON (ACC or IG) and km/h or mph switch ON → OFF	Below 1 V → 4 to 5.5 V
TRIP EARTH(C10-2) – Body ground	B – Body ground	GND signal FOR ODO/ TRIP SWITCH	Always	Below 1 Ω
ODO/TRIP/RESET (C10-3) – Body ground	R – Body ground	ODO/TRIP/RESET signal	ODO/TRIP/RESET switch ON → OFF	Below 1 V → 4 to 5.5 V
IG2 (C10-4) – Body ground	O – Body ground	Power switch signal	Power switch OFF → ON	10 to 14 V
D-BELT SW (C10-6) – Body ground	LG – Body ground	Driver seat belt condition	D-BELT indicator light ON → OFF	Below 1 V → 10 to 14 V
P-BELT SW (C10-7) – Body ground	R – Body ground	Passenger seat belt condition	P-BELT indicator light ON → OFF	Below 1 V → 10 to 14 V
SECURITY (C10-8) – Body ground	R – Body ground	SECURITY signal	Key is inserted → Not inserted	Below 1 V ↔ 10 to 14 V → Below 1 V
SPEED IN (C10-9) – Body ground	V – Body ground	Speed signal (Input)	Power switch ON (ACC or IG) and turn the wheel slowly	Pulse generation (See waveform 1)
AUTO LVL (C10-10) – Body ground	L – Body ground	Headlight automatic leveling signal	Malfunction in headlight leveling System is normally → Malfunction	Below 1 V → 10 to 14 V
AIRBAG (C10-11) – Body ground	B – Body ground	AIRBAG signal	AIRBAG indicator light ON → OFF	Below 1 V → 8 to 14 V
TEMP SSR- (C10-12) – Body ground	L – Body ground	Outside temperature signal	Always	Below 1 V → 4 to 5.5 V
4P OUT (C10-13) – Body ground	V – Body ground	Speed signal (Output)	Power switch ON (ACC or IG) and turn the wheel slowly	Pulse generation (See waveform 2)
SIGNAL EARTH (C10-14) – Body ground	BR – Body ground	GND signal	Always	Below 1 Ω
FUEL IN (C10-15) – Body ground	B – Body ground	Fuel signal	Power switch ON (ACC or IG) and fuel level is FULL → EMPTY	4.0 Ω → 110 Ω
TURN R (C10-18) – Body ground	G – Body ground	Turn signal right	Turn signal RH indicator light OFF → ON	Below 1 V → 10 to 14 V
TURN L (C10-19) – Body ground	Y – Body ground	Turn signal left	Turn signal LH indicator light OFF → ON	Below 1 V → 10 to 14 V
TEMP SSR+ (C10-20) – Body ground	R – Body ground	GND	Always	Below 1 Ω
+B (C10-21) – Body ground	Y – Body ground	Power switch signal	Always	10 to 14 V
IG2 (C10-22) – Body ground	V – Body ground	Power switch signal	Power switch OFF → ON	Below 1 V → 10 to 14 V

BACK-UP LP (C10-23) – Body ground	P – Body ground	BACK-UP light signal	Power switch ON (ACC or IG) and Shift is except R position → Shift is R position	Below 1 V → 10 to 14 V
MPX+ (C10-24) – Body ground	B	Communication signal	Communication circuit	–
MPX- (C10-25) – Body ground	GR	Communication signal	Communication circuit	–
CHECK E/G (C10-26) – Body ground	G – Body ground	CHECK ENGINE signal	Power switch ON (ACC or IG) and CHECK ENGINE warning light ON → OFF	Below 1 V → 10 to 14 V
TC (C10-28) – Body ground	SB – Body ground	Tail cancel (light condition) signal	Power switch ON (ACC or IG)	Pulse generation (See waveform 3)
TR (C10-29) – Body ground	R – Body ground	Rheostat (light control) signal	Light control dimmer switch is OFF → TAIL/HEAD	Below 1 V → 10 to 14 V
P-BELT LP (C10-30) – Body ground	Y – Body ground	Passenger seat belt signal	Power switch ON (ACC or IG) and sit on the passenger seat, seat belt unfastened → fastened	Below 1 V → 10 to 14 V
FUEL EARTH (C10-31) – Body ground	BR – Body ground	GND for fuel sender gauge	Always	Below 1 Ω



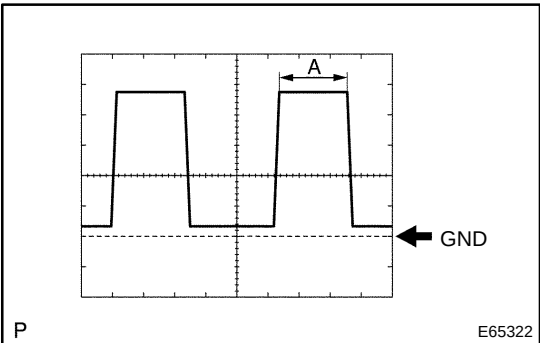
Waveform 1 (Reference):

Item	Contents
Tool setting	5 V/DIV, 20 ms/DIV
Vehicle condition	Driving at approx. 20 Km/h (12 mph)



Waveform 2 (Reference):

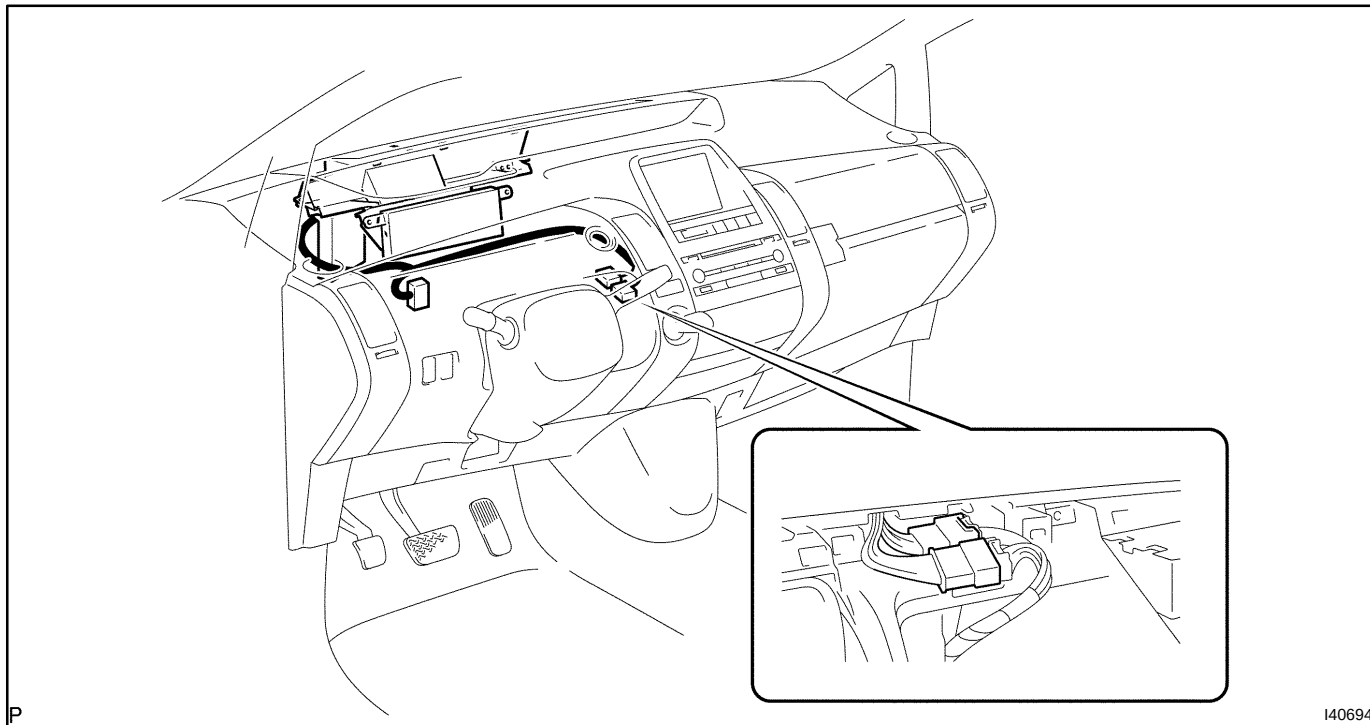
Item	Contents
Tool setting	5 V/DIV, 10 ms/DIV
Vehicle condition	Engine idle speed



Waveform 3 (Reference):

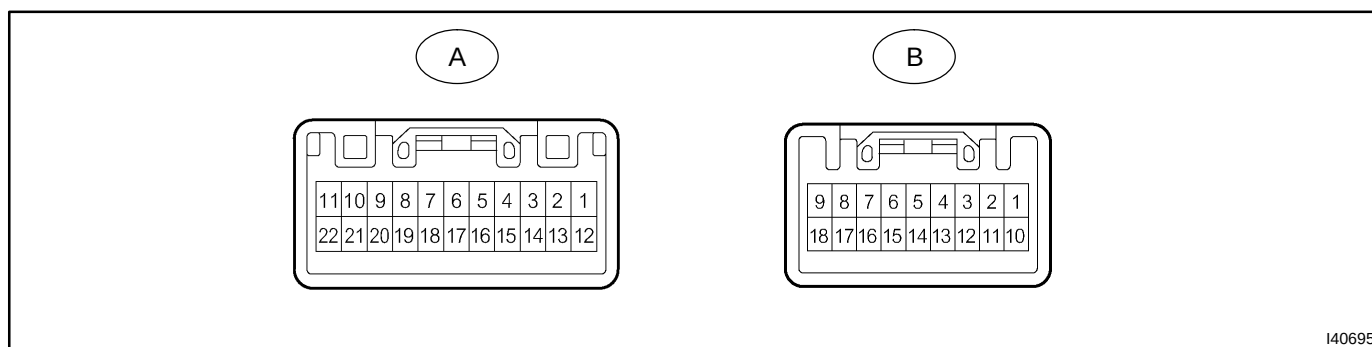
Item	Contents
Tool setting	2 V/DIV, 1 ms/DIV
Vehicle condition	Ignition switch ON

HINT:
Duty ratio changes as illumination becomes darker ("A" becomes longer).

SUB WIRE HARNESS CONNECTOR:

P

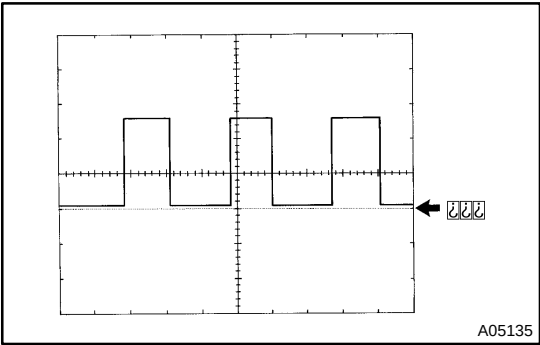
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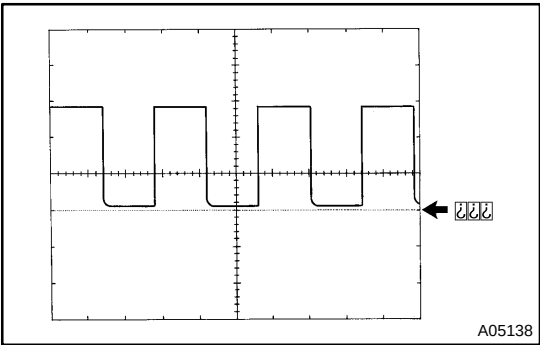
Symbols (Terminals No.)	Wiring Color	Terminal Description	Condition	Specified Condition
SECURITY (A-1) – Body ground	R – Body ground	SECURITY signal	Key is inserted → Not inserted	Below 1 V ↔ 10 to 14 V → Below 1 V
MPX+ (A-2) – Body ground	B	Communication signal	Communication circuit	–
D-BELT SW (A-3) – Body ground	LG – Body ground	Driver seat belt condition	D-BELT indicator light ON → OFF	Below 1 V → 10 to 14 V
SIGNAL EARTH (A-4) – Body ground	BR – Body ground	GND signal	Always	Below 1 Ω
TRIP EARTH (A-5) – Body ground	B – Body ground	GND signal FOR ODO/ TRIP SWITCH	Always	Below 1 Ω
km/h or mph (A-6) – Body ground	L – Body ground	km/h or mph signal	Power switch ON (ACC or IG) and km/h or mph switch ON → OFF	Below 1 V → 4 to 5.5 V
IG2 (A-7) – Body ground	O – Body ground	Power switch signal	Power switch OFF → ON	10 to 14 V
ODO/TRIP/RESET (A-8) – Body ground	R – Body ground	ODO/TRIP/RESET signal	ODO/TRIP/RESET switch ON → OFF	Below 1 V → 4 to 5.5 V
SPEED IN (A-9) – Body ground	V – Body ground	Speed signal (Input)	Power switch ON (ACC or IG) and turn the wheel slowly	Pulse generation (See waveform 1)

CHECK E/G (A-10) – Body ground	G – Body ground	CHECK ENGINE signal	Power switch ON (ACC or IG) and CHECK ENGINE warning light ON → OFF	Below 1 V → 10 to 14 V
TURN L (A-11) – Body ground	Y – Body ground	Turn signal left	Turn signal LH indicator light OFF → ON	Below 1 V → 10 to 14 V
TURN R (A-12) – Body ground	G – Body ground	Turn signal right	Turn signal RH indicator light OFF → ON	Below 1 V → 10 to 14 V
BACK-UP LP (A-13) – Body ground	P – Body ground	BACK-UP light signal	Power switch ON (ACC or IG) and Shift is except R position → Shift is R position	Below 1 V → 10 to 14 V
AIRBAG (A-14) – Body ground	B – Body ground	AIRBAG signal	AIRBAG indicator light ON → OFF	Below 1 V → 8 to 14 V
TR (B-2) – Body ground	R – Body ground	Rheostat (light control) signal	Light control dimmer switch is OFF → TAIL/HEAD	Below 1 V → 10 to 14 V
MPX- (B-3) – Body ground	GR	Communication signal	Communication circuit	–
P-BELT SW (B-4) – Body ground	R – Body ground	Passenger seat belt condition	P-BELT indicator light ON → OFF	Below 1 V → 10 to 14 V
AUTO LVL (B-5) – Body ground	L – Body ground	Headlight automatic leveling signal	Malfunction in headlight leveling System is normally → Malfunction	Below 1 V → 10 to 14 V
TEMP SSR+ (B-8) – Body ground	R – Body ground	GND	Always	Below 1 Ω
+B (B-9) – Body ground	Y – Body ground	Power switch signal	Always	10 to 14 V
TEMP SSR- (B-10) – Body ground	L – Body ground	Outside temperature signal	Always	Below 1 V → 4 to 5.5 V
IG2 (B-11) – Body ground	V – Body ground	Power switch signal	Power switch OFF → ON	Below 1 V → 10 to 14 V
FUEL IN (B-12) – Body ground	B – Body ground	Fuel signal	Power switch ON (ACC or IG) and fuel level is FULL → EMPTY	4.0 Ω → 110 Ω
FUEL EARTH (B-13) – Body ground	BR – Body ground	GND for fuel sender gauge	Always	Below 1 Ω
4P OUT (B-14) – Body ground	V – Body ground	Tachometer signal (Output)	Power switch ON (ACC or IG) and turn the wheel slowly	Pulse generation (See waveform 2)
TC (B-15) – Body ground	SB – Body ground	Tail cancel (light condition) signal	Power switch ON (ACC or IG)	Pulse generation (See waveform 3)



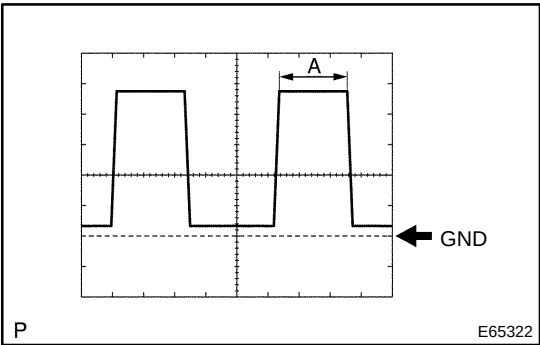
Waveform 1 (Reference):

Item	Contents
Tool setting	5 V/DIV, 20 ms/DIV
Vehicle condition	Driving at approx. 20 Km/h (12 mph)



Waveform 2 (Reference):

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



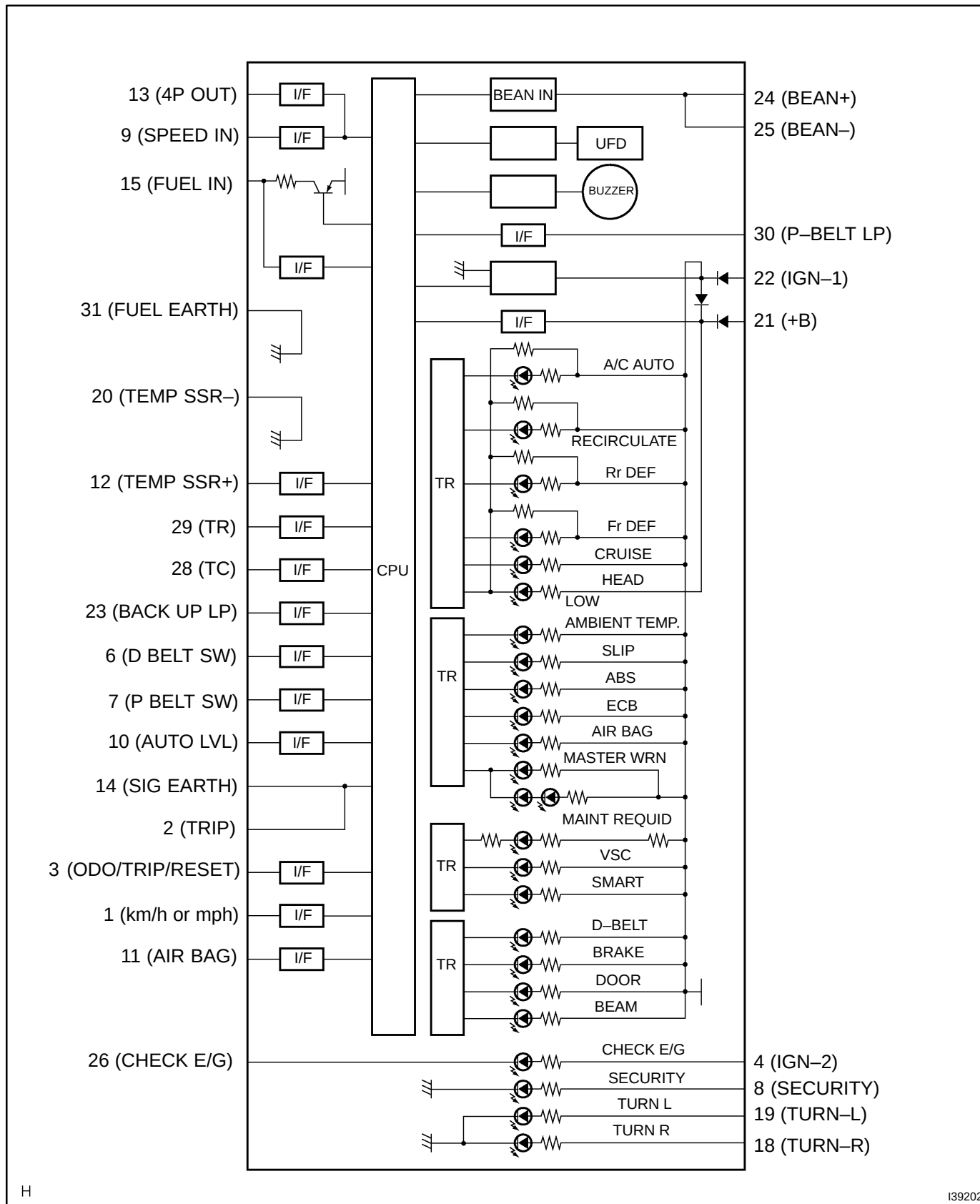
Waveform 3 (Reference):

Item	Contents
Tool setting	2 V/DIV, 1 ms/DIV
Vehicle condition	Ignition switch ON

HINT:

Duty ratio changes as illumination becomes darker ("A" becomes longer).

COMBINATION METER INNER CIRCUIT



Terminal No.	Wire harness side
C10	1 ODO/TRIP Switch
	2 ODO/TRIP Switch
	3 ODO/TRIP Switch
	4 IGN Fuse
	5 –
	6 Front Seat Inner Belt Assy LH
	7 Front Seat Inner Belt Assy RH
	8 Security ECU
	9 Skid Control ECU
	10 Headlight Beam Level Control ECU
	11 Airbag Control Assy Center
	12 Fuel Sender Gauge Assy
	13 4P OUT
	14 GND
	15 Fuel Sender Gauge Assy
	16 –
	17 –
	18 Flasher Relay
	19 Flasher Relay
	20 Fuel Sender Gauge Assy
	21 DOME Fuse
	22 GAUGE Fuse
	23 Back-up Light Relay
	24 Smart Key ECU
	25 Ignition Control ECU
	26 ECM
	27 –
	28 Light Control Rheostat
	29 PANEL Fuse
	30 Passenger Seat Belt Warning Light
	31 Fuel Sender Gauge Assy
	32 –