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<b>Model Year Start:</b> 2023	<b>Model:</b> Prius Prime	<b>Prod Date Range:</b> [12/2022 - ]
<b>Title:</b> SEAT BELT: SEAT BELT WARNING SYSTEM (w/o Occupant Classification System): Front Passenger Side Seat Belt Warning Light does not Operate; 2023 - 2024 MY Prius Prius Prime [12/2022 - ]		

### Front Passenger Side Seat Belt Warning Light does not Operate

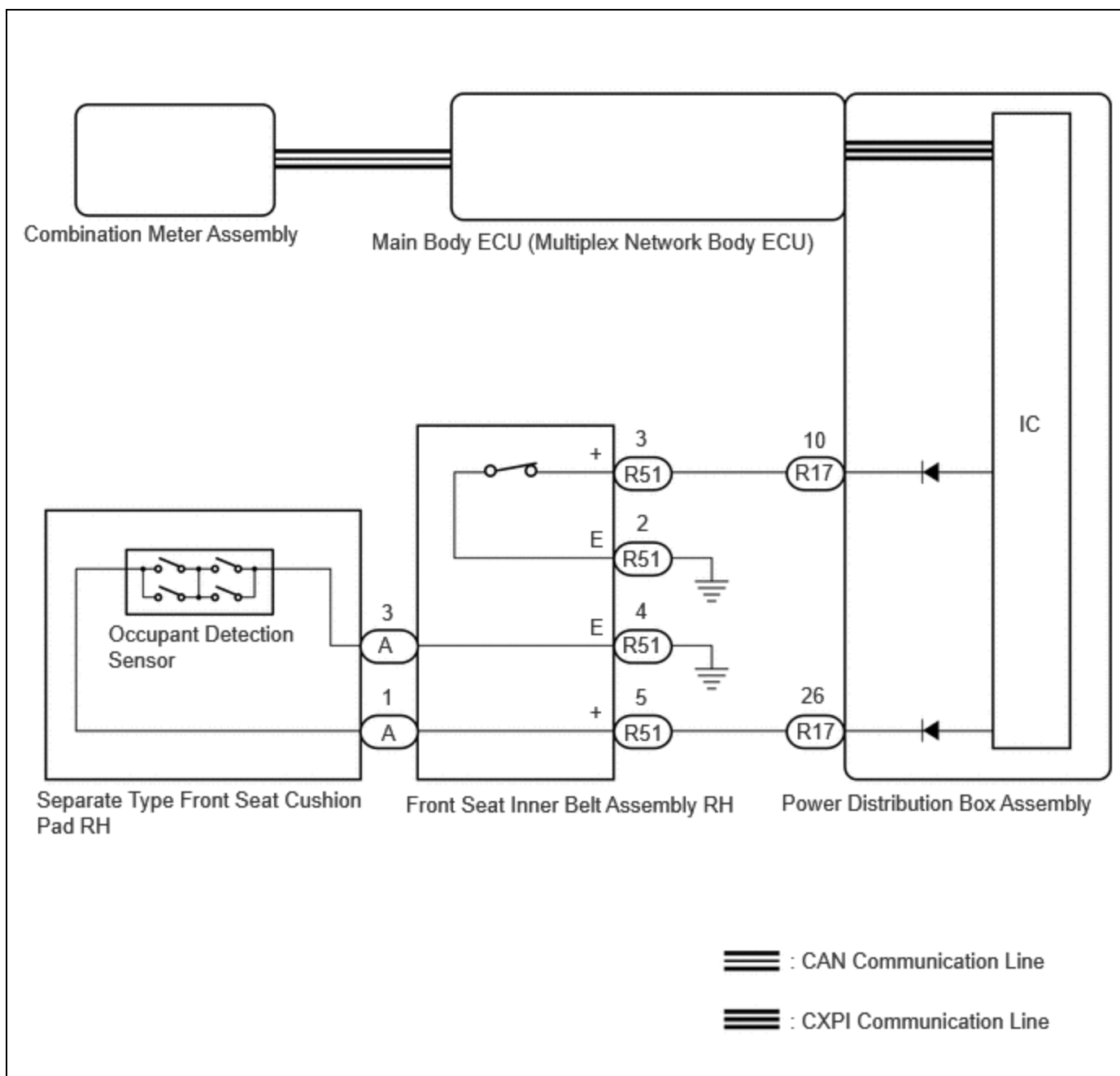
## DESCRIPTION

When the ignition switch is ON, the power distribution box assembly detects the front passenger seat occupant status and the front seat inner belt assembly (front passenger seat) status and sends a signal to the main body ECU (multiplex network body ECU) via CXPI communication.

The main body ECU (multiplex network body ECU) sends the front passenger seat occupant status and front seat inner belt assembly (front passenger seat) status to the combination meter assembly via CAN communication.

Depending on the parking brake status, shift position, vehicle speed, front passenger seat occupant status and front seat inner belt assembly (front passenger seat) status, the combination meter assembly illuminates, flashes or turns off the seat belt warning light on the combination meter assembly.

## WIRING DIAGRAM



## CAUTION / NOTICE / HINT

### NOTICE:

- The seat belt warning system uses the CAN communication system and CXPI communication system. First, confirm that there is no malfunction in the CAN communication system and CXPI communication system. Refer to the How to Proceed with Troubleshooting procedure.

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- When replacing the combination meter assembly, always replace it with a new one. If a combination meter assembly which was installed to another vehicle is used, the information stored in it will not match the information from the vehicle and a DTC may be stored.

### HINT:

- The seat belt warning light on the combination meter assembly is used for both the driver seat and front passenger seat. Check that the operation of the seat belt warning light is normal first.
- If the seat belt warning light does not operate for both the driver seat and front passenger seat, replace the combination meter assembly.

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- When replacing the combination meter assembly, update the ECU security key.

[Click here](#) INFO

## PROCEDURE

<b>1.</b>	<b>READ VALUE USING GTS</b>
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(a) Read the Data List according to the display on the GTS.

**Body Electrical > Power Distribution Box > Data List**

TESTER DISPLAY	MEASUREMENT ITEM	RANGE	NORMAL CONDITION	DIAGNOSTIC NOTE
Passenger Seat Buckle Switch Status	Front passenger seat belt buckle switch	Set, Unset or Unknown	Set: Front passenger seat belt buckle switch fastened  Unset: Front passenger seat belt buckle switch unfastened  Unknown: Data is not determined	-
Passenger Seat Occupant Sensor Status	Front passenger occupant detection sensor	OFF, ON or Unknown	OFF: Front passenger seat not occupied  ON: Front passenger seat occupied  Unknown: Data is not determined	-

**Body Electrical > Power Distribution Box > Data List**

TESTER DISPLAY
Passenger Seat Buckle Switch Status
Passenger Seat Occupant Sensor Status

OK:

The GTS display changes correctly in response to the rear seat belt buckle switch condition.

RESULT	PROCEED TO
The value of "Passenger Seat Buckle Switch Status" and "Passenger Seat Occupant Sensor Status" changes correctly.	A
The value of "Passenger Seat Buckle Switch Status" is "Unknown".	B

RESULT	PROCEED TO
The value of "Passenger Seat Buckle Switch Status" does not change in accordance with the fastening and unfastening of the front passenger seatbelt.	C
The value of "Passenger Seat Occupant Sensor Status" is "Unknown".	D
The value of "Passenger Seat Occupant Sensor Status" does not change with the presence or absence of the weight of an occupant on the front passenger seat.	

**B** ▶ REPLACE POWER DISTRIBUTION BOX ASSEMBLY INFO

**C** ▶ GO TO STEP 3

**D** ▶ GO TO STEP 5

**A**  
▼

<b>2.</b>	<b>PERFORM ACTIVE TEST USING GTS</b>
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(a) Perform the Active Test according to the display on the GTS.

**Body Electrical > Combination Meter > Active Test**

TESTER DISPLAY	MEASUREMENT ITEM	CONTROL RANGE	DIAGNOSTIC NOTE
Driver Side Seat Belt Warning	Front seat belt warning light	ON or OFF	-

OK:

The GTS display changes correctly in response to the warning light condition.

**OK** ▶ REPLACE POWER DISTRIBUTION BOX ASSEMBLY INFO

**NG** ▶ REPLACE COMBINATION METER ASSEMBLY

<b>3.</b>	<b>CHECK HARNESS AND CONNECTOR (FRONT SEAT INNER BELT ASSEMBLY RH - POWER DISTRIBUTION BOX ASSEMBLY AND BODY GROUND)</b>
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(a) Disconnect the R51 front seat inner belt assembly RH connector.

(b) Disconnect the R17 power distribution box assembly connector.

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

Standard Resistance:



[Click Location & Routing\(R51,R17\).](#)

[Click Connector\(R51\).](#)

[Click Connector\(R17\).](#)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
R51-3 (+) - R17-10	Always	Below 1 $\Omega$
R51-2 (E) - Body ground	Always	Below 1 $\Omega$
R51-3 (+) or R17-10 - Body ground	Always	10 k $\Omega$ or higher

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

**OK**



<b>4.</b>	<b>INSPECT FRONT SEAT INNER BELT ASSEMBLY RH</b>
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Click here

**OK** **REPLACE POWER DISTRIBUTION BOX ASSEMBLY**

**NG** **REPLACE FRONT SEAT INNER BELT ASSEMBLY RH**

<b>5.</b>	<b>CHECK HARNESS AND CONNECTOR (FRONT SEAT INNER BELT ASSEMBLY RH - POWER DISTRIBUTION BOX ASSEMBLY AND BODY GROUND)</b>
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- (a) Disconnect the R51 front seat inner belt assembly RH connector.
- (b) Disconnect the R17 power distribution box assembly connector.
- (c) Measure the resistance according to the value(s) in the table below.

Standard Resistance:



[Click Location & Routing\(R51,R17\).](#)

[Click Connector\(R51\).](#)

[Click Connector\(R17\).](#)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
R51-5 (+) - R17-26	Always	Below 1 $\Omega$

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
R51-4 (E) - Body ground	Always	Below 1 $\Omega$
R51-5 (+) or R17-26 - Body ground	Always	10 k $\Omega$ or higher

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

**OK**



<b>6.</b>	<b>INSPECT FRONT SEAT INNER BELT ASSEMBLY RH</b>
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Click here [INFO](#)

**NG**  **REPLACE FRONT SEAT INNER BELT ASSEMBLY RH**

[INFO](#)

**OK**



<b>7.</b>	<b>INSPECT OCCUPANT DETECTION SENSOR (SEPARATE TYPE FRONT SEAT CUSHION PAD)</b>
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Click here [INFO](#)

**OK**  **REPLACE POWER DISTRIBUTION BOX ASSEMBLY**

[INFO](#)

**NG**  **REPLACE OCCUPANT DETECTION SENSOR (SEPARATE TYPE FRONT SEAT CUSHION PAD)** [INFO](#)

