| | | |
|---|---|---|
| **Last Modified:** 12-04-2024 | 6.11:8.1.0 | **Doc ID:** RM1000000029FFK |
| **Model Year Start:** 2023 | **Model:** Prius | **Prod Date Range:** [12/2022 - ] |
| **Title:** NETWORKING: CAN COMMUNICATION SYSTEM (for HEV Model): U01BD87,U029100,U029187,U115087,U117687,U117B87; Lost Communication with DC/DC Converter Control Module "C" Missing Message; 2023 - 2024 MY Prius [12/2022 - ] | | |

| | | |
|---|---|---|
| **DTC** | **U01BD87** | **Lost Communication with DC/DC Converter Control Module "C" Missing Message** |

| | | |
|---|---|---|
| **DTC** | **U029100** | **Lost Communication with Gear Shift Control Module "B" (System 2) Missing Message** |

| | | |
|---|---|---|
| **DTC** | **U029187** | **Lost Communication with Gear Shift Control Module "B" Missing Message** |

| | | |
|---|---|---|
| **DTC** | **U115087** | **Lost Communication with Hybrid Powertrain Control Module (ch2) Missing Message** |

| | | |
|---|---|---|
| **DTC** | **U117687** | **Lost Communication with Gear Shift Control Module "A" (Powertrain Bus) Missing Message** |

| | | |
|---|---|---|
| **DTC** | **U117B87** | **Lost Communication with Hybrid/EV Battery Energy Control Module "A" (ch2) Missing Message** |

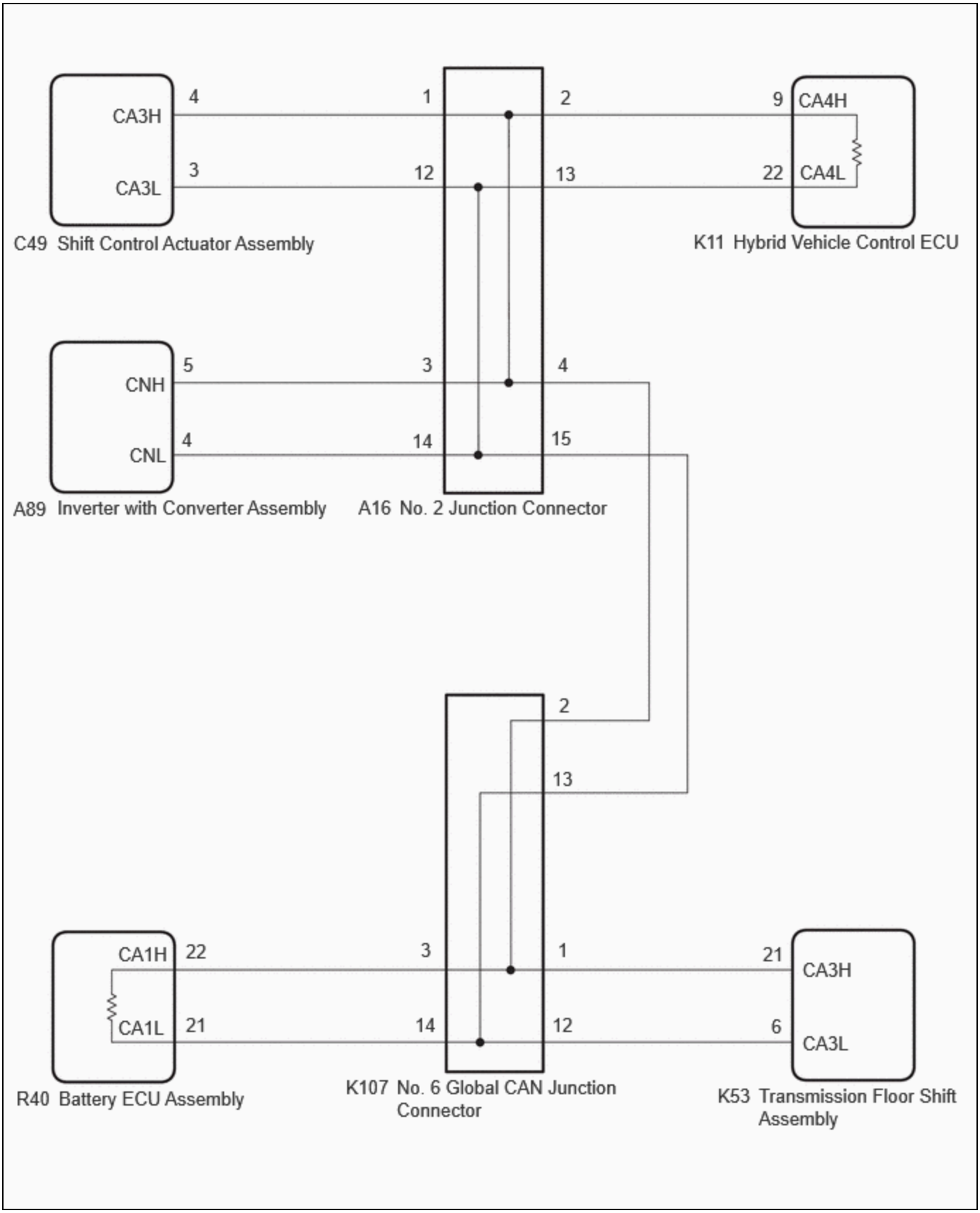
## DESCRIPTION

| DTC NO. | DETECTION ITEM | DTC DETECTION CONDITION | TROUBLE AREA | NOTE |
|---|---|---|---|---|
| U01BD87 | Lost Communication with DC/DC Converter Control Module "C" Missing Message | Communication stops between the hybrid vehicle control ECU and the inverter with converter assembly. | • CAN main/branch bus lines or connector<br>• Hybrid vehicle control ECU<br>• Inverter with converter assembly<br>• No. 2 junction connector | DTC Output from<br>• Hybrid vehicle control ECU |
| U029100 | Lost Communication with Gear Shift Control | Communication stops between the transmission floor shift assembly and | • CAN main/branch | DTC Output from |

| DTC NO. | DETECTION ITEM | DTC DETECTION CONDITION | TROUBLE AREA | NOTE |
|---|---|---|---|---|
| | Module "B" (System 2) Missing Message | the shift control actuator assembly. | bus lines or connector<br>• Transmission floor shift assembly<br>• Shift control actuator assembly<br>• No. 6 global CAN junction connector<br>• No. 2 junction connector | • Transmission floor shift assembly |
| U029187 | Lost Communication with Gear Shift Control Module "B" Missing Message | Communication stops between the hybrid vehicle control ECU and the shift control actuator assembly. | • CAN main/branch bus lines or connector<br>• Hybrid vehicle control ECU<br>• Shift control actuator assembly<br>• No. 6 Global CAN junction connector<br>• No. 2 junction connector | DTC Output from<br>• Hybrid vehicle control ECU |
| U115087 | Lost Communication with Hybrid Powertrain Control Module (ch2) Missing Message | Communication stops between the battery ECU assembly and the hybrid vehicle control ECU. | • CAN main/branch bus lines or connector<br>• Battery ECU assembly<br>• Hybrid vehicle control ECU<br>• No. 6 global CAN junction connector<br>• No. 2 junction connector | DTC Output from<br>• Battery ECU assembly |
| U117687 | Lost Communication with Gear Shift Control Module "A" (Powertrain Bus) Missing Message | Communication stops between the hybrid vehicle control ECU and the transmission floor shift assembly. | • CAN main/branch bus lines or connector<br>• Hybrid vehicle control ECU<br>• Transmission floor shift | DTC Output from<br>• Hybrid vehicle control ECU |

| DTC NO. | DETECTION ITEM | DTC DETECTION CONDITION | TROUBLE AREA | NOTE |
|---|---|---|---|---|
| | | | assembly<br>• No. 6 Global CAN junction connector<br>• No. 2 junction connector | |
| U117B87 | Lost Communication with Hybrid/EV Battery Energy Control Module "A" (ch2) Missing Message | Communication stops between the hybrid vehicle control ECU and the battery ECU assembly. | • CAN main/branch bus lines or connector<br>• Hybrid vehicle control ECU<br>• Battery ECU assembly<br>• No. 6 global CAN junction connector<br>• No. 2 junction connector | DTC Output from<br>• Hybrid vehicle control ECU |

## WIRING DIAGRAM




# CAUTION / NOTICE / HINT

**CAUTION:**

When performing the confirmation driving pattern, obey all speed limits and traffic laws.

**NOTICE:**

- Because the order of diagnosis is important to allow correct diagnosis, make sure to begin troubleshooting using How to Proceed with Troubleshooting when CAN communication system related DTCs are output.

  Click here INFO
- Before measuring the resistance of the CAN bus, turn the ignition switch off and leave the vehicle for 1 minute or more without operating the key or any switches, or opening or closing the doors. After that, disconnect the cable from the negative (-) auxiliary battery terminal and leave the vehicle for 10 minutes or more before measuring the resistance.
- After the ignition switch is turned off, there may be a waiting time before disconnecting the negative (-) auxiliary battery terminal.

  Click here INFO
- When disconnecting and reconnecting the auxiliary battery.

  **HINT:**

  When disconnecting and reconnecting the auxiliary battery, there is an automatic learning function that completes learning when the respective system is used.

  Click here INFO
- Some parts must be initialized and set when replacing or removing and installing parts.

  Click here INFO
- After performing repairs, perform the DTC check procedure and confirm that the DTCs are not output again.

  DTC check procedure: Turn the ignition switch to ON and wait for 1 minute or more. Then operate the suspected malfunctioning system and drive the vehicle at 60 km/h (37 mph) or more for 5 minutes or more.
- After the repair, perform the CAN bus check and check that all the ECUs and sensors connected to the CAN communication system are displayed as normal.

  Click here INFO
- Before replacing the hybrid vehicle control ECU, refer to Registration.

  Click here INFO

**HINT:**

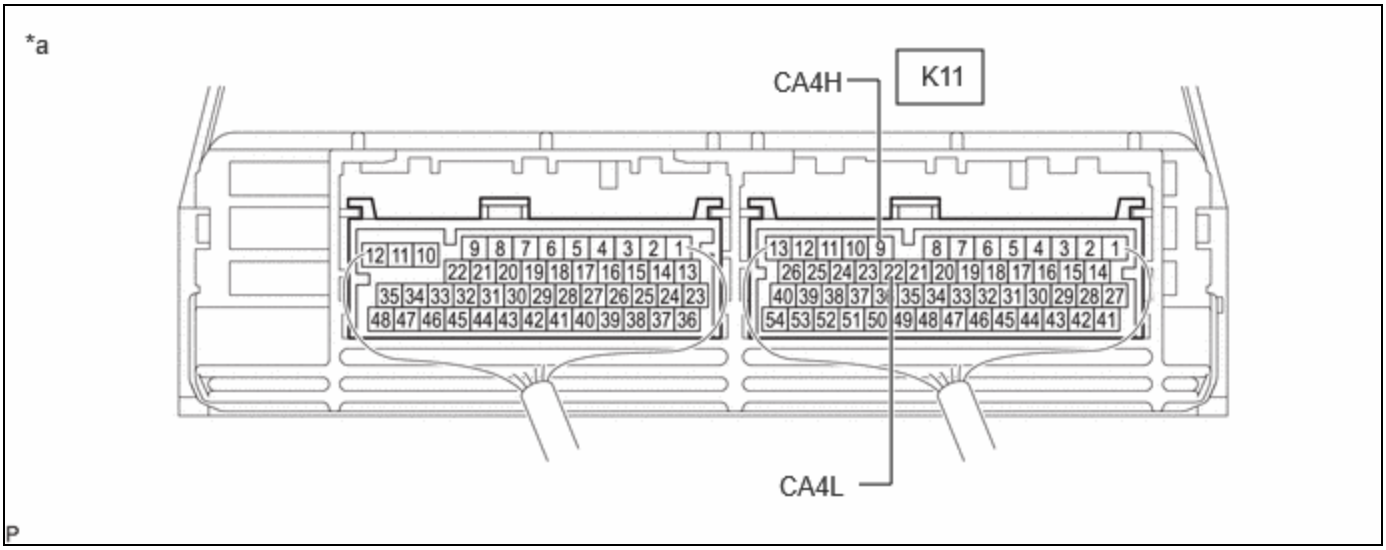
- Before disconnecting related connectors for inspection, push in on each connector body to check that the connector is not loose or disconnected.
- When a connector is disconnected, check that the terminals and connector body are not cracked, deformed or corroded.

## PROCEDURE

| | |
|---|---|
| 1. | **CHECK FOR OPEN IN CAN MAIN BUS LINES** |

(a) Disconnect the cable from the negative (-) auxiliary battery terminal.

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




| | | | |
|---|---|---|---|
| *a | Component with harness connected (Hybrid Vehicle Control ECU) | - | - |

Standard Resistance:

EWD INFO

**Click Location & Routing(K11)**
**Click Connector(K11)**

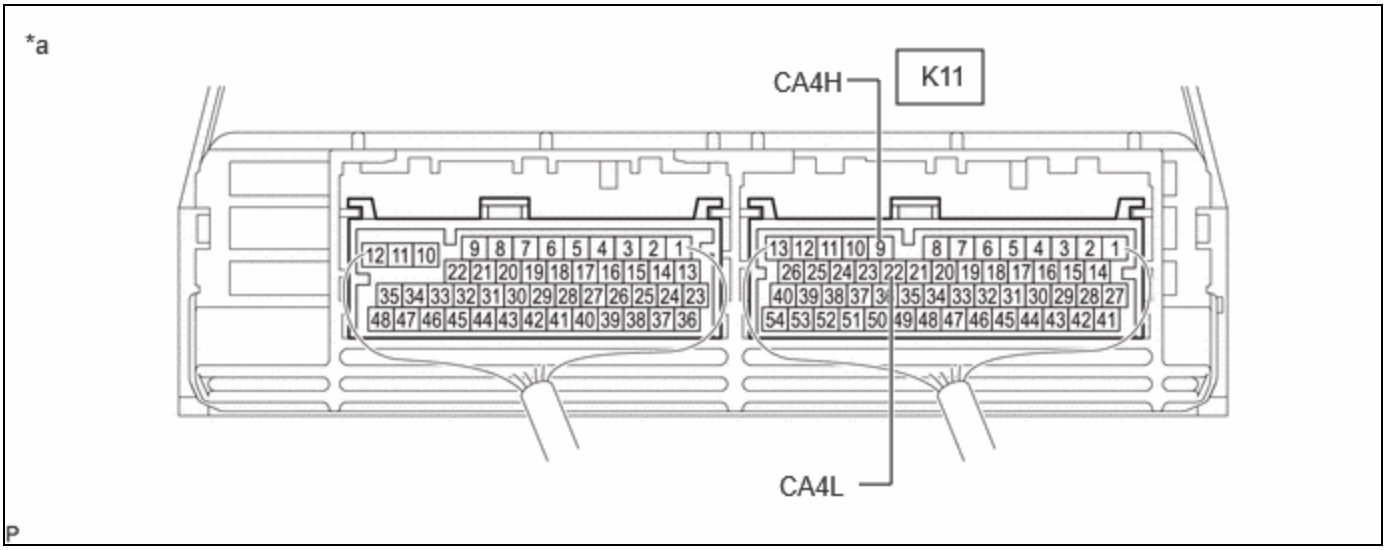
| TESTER CONNECTION | CONDITION | SPECIFIED CONDITION |
|---|---|---|
| K11-9 (CA4H) - K11-22 (CA4L) | Cable disconnected from negative (-) auxiliary battery terminal | Below 70 Ω |

**NG** ▶ **GO TO STEP 41**

**OK** ▼

| | |
|---|---|
| **2.** | **CHECK FOR SHORT IN CAN BUS LINES** |

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




| | | | |
|---|---|---|---|
| *a | Component with harness connected (Hybrid Vehicle Control ECU) | - | - |

Standard Resistance:

EWD INFO

**Click Location & Routing(K11)**
**Click Connector(K11)**

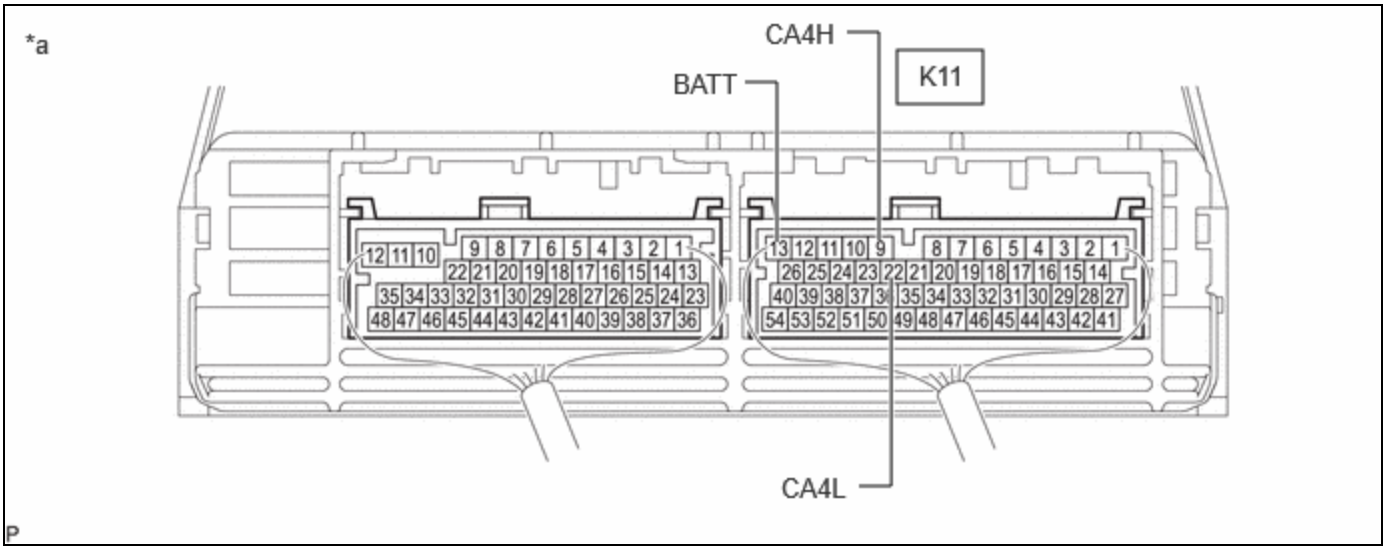
| TESTER CONNECTION | CONDITION | SPECIFIED CONDITION |
|---|---|---|
| K11-9 (CA4H) - K11-22 (CA4L) | Cable disconnected from negative (-) auxiliary battery terminal | 54 Ω or higher |

**NG** ▶ **GO TO STEP 29**

**OK** ▼

| | |
|---|---|
| **3.** | **CHECK FOR SHORT TO +B IN CAN BUS LINE** |

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




| | | | |
|---|---|---|---|
| *a | Component with harness connected (Hybrid Vehicle Control ECU) | - | - |

Standard Resistance:

EWD INFO

**Click Location & Routing(K11)**
**Click Connector(K11)**

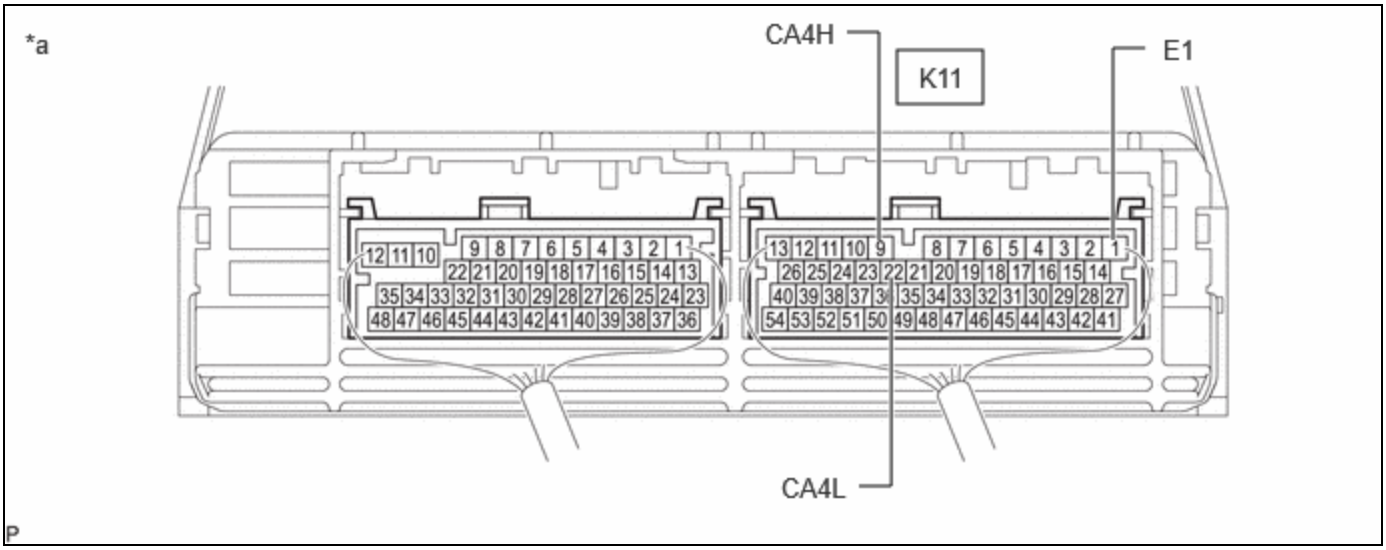
| TESTER CONNECTION | CONDITION | SPECIFIED CONDITION |
|---|---|---|
| K11-9 (CA4H) - K11-13 (BATT) | Cable disconnected from negative (-) auxiliary battery terminal | 6 kΩ or higher |
| K11-22 (CA4L) - K11-13 (BATT) | | |

**NG** ▶ **GO TO STEP 17**

**OK** ▼

| | |
|---|---|
| **4.** | **CHECK FOR SHORT TO GND IN CAN BUS LINE** |

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




| | | | |
|---|---|---|---|
| *a | Component with harness connected (Hybrid Vehicle Control ECU) | - | - |

Standard Resistance:

EWD INFO

**Click Location & Routing(K11)**
**Click Connector(K11)**

| TESTER CONNECTION | CONDITION | SPECIFIED CONDITION |
|---|---|---|
| K11-9 (CA4H) - K11-1 (E1) | Cable disconnected from negative (-) auxiliary battery terminal | 200 Ω or higher |
| K11-22 (CA4L) - K11-1 (E1) | | |

**OK** ▶ **INSPECT FOR INTERMITTENT PROBLEMS**

**NG** ▼

| | |
|---|---|
| **5.** | **CHECK FOR SHORT TO GND IN CAN BUS LINE (NO. 2 JUNCTION CONNECTOR - HYBRID VEHICLE CONTROL ECU)** |

(a) Disconnect the A16 No. 2 junction connector.

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

Standard Resistance:

EWD INFO

**Click Location & Routing(A16,K8)**

Click Connector(A16)
Click Connector(K8)

| TESTER CONNECTION | CONDITION | SPECIFIED CONDITION |
|---|---|---|
| A16-2 (CANH) - K8-4 (CG) | Cable disconnected from negative (-) auxiliary battery terminal | 200 Ω or higher |
| A16-13 (CANL) - K8-4 (CG) | | |

**NG** ▶ **GO TO STEP 9**

**OK** ▼

| | |
|---|---|
| **6.** | **CHECK FOR SHORT TO GND IN CAN BUS LINE (NO. 2 JUNCTION CONNECTOR - NO. 6 GLOBAL CAN JUNCTION CONNECTOR)** |

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

Standard Resistance:

EWD INFO

Click Location & Routing(A16,K8)
Click Connector(A16)
Click Connector(K8)

| TESTER CONNECTION | CONDITION | SPECIFIED CONDITION |
|---|---|---|
| A16-4 (CANH) - K8-4 (CG) | Cable disconnected from negative (-) auxiliary battery terminal | 200 Ω or higher |
| A16-15 (CANL) - K8-4 (CG) | | |

**NG** ▶ **GO TO STEP 12**

**OK** ▼

| | |
|---|---|
| **7.** | **CHECK FOR SHORT TO GND IN CAN BUS LINE (NO. 2 JUNCTION CONNECTOR - SHIFT CONTROL ACTUATOR ASSEMBLY)** |

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

Standard Resistance:

EWD INFO

Click Location & Routing(A16,K8)
Click Connector(A16)
Click Connector(K8)

| TESTER CONNECTION | CONDITION | SPECIFIED CONDITION |
|---|---|---|
| A16-1 (CANH) - K8-4 (CG) | Cable disconnected from negative (-) auxiliary battery terminal | 200 Ω or higher |
| A16-12 (CANL) - K8-4 (CG) | | |

**NG** ▶ **GO TO STEP 10**

**OK** ▼

| | |
|---|---|
| **8.** | **CHECK FOR SHORT TO GND IN CAN BUS LINE (NO. 2 JUNCTION CONNECTOR - INVERTER WITH CONVERTER ASSEMBLY)** |

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

Standard Resistance:

EWD INFO

Click Location & Routing(A16,K8)
Click Connector(A16)
Click Connector(K8)

| TESTER CONNECTION | CONDITION | SPECIFIED CONDITION |
|---|---|---|
| A16-3 (CANH) - K8-4 (CG) | Cable disconnected from negative (-) auxiliary battery terminal | 200 Ω or higher |
| A16-14 (CANL) - K8-4 (CG) | | |

**OK** ▶ **REPLACE NO. 2 JUNCTION CONNECTOR**

**NG** ▶ **GO TO STEP 11**

| | |
|---|---|
| **9.** | **CHECK FOR SHORT TO GND IN CAN BUS LINE (NO. 2 JUNCTION CONNECTOR - HYBRID VEHICLE CONTROL ECU)** |

(a) Disconnect the K11 hybrid vehicle control ECU connector.

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

Standard Resistance:

EWD INFO

Click Location & Routing(A16,K8)
Click Connector(A16)
Click Connector(K8)

| TESTER CONNECTION | CONDITION | SPECIFIED CONDITION |
|---|---|---|
| A16-2 (CANH) - K8-4 (CG) | Cable disconnected from negative (-) auxiliary battery terminal | 200 Ω or higher |
| A16-13 (CANL) - K8-4 (CG) | | |

**OK** ▶ **REPLACE HYBRID VEHICLE CONTROL ECU**

Click here INFO

**NG** ▶ **REPAIR OR REPLACE CAN MAIN BUS LINE OR CONNECTOR (NO. 2 JUNCTION CONNECTOR - HYBRID VEHICLE CONTROL ECU)**

| | |
|---|---|
| **10.** | **CHECK FOR SHORT TO GND IN CAN BUS LINE (NO. 2 JUNCTION CONNECTOR - SHIFT CONTROL ACTUATOR ASSEMBLY)** |

(a) Disconnect the C49 shift control actuator assembly connector.

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

Standard Resistance:

EWD INFO

Click Location & Routing(A16,K8)
Click Connector(A16)
Click Connector(K8)

| TESTER CONNECTION | CONDITION | SPECIFIED CONDITION |
|---|---|---|
| A16-1 (CANH) - K8-4 (CG) | Cable disconnected from negative (-) auxiliary battery terminal | 200 Ω or higher |
| A16-12 (CANL) - K8-4 (CG) | | |

**OK** ▶ **REPLACE SHIFT CONTROL ACTUATOR ASSEMBLY**

**NG** ▶ **REPAIR OR REPLACE CAN BRANCH LINE OR CONNECTOR (NO. 2 JUNCTION CONNECTOR - SHIFT CONTROL ACTUATOR ASSEMBLY)**

| | |
|---|---|
| **11.** | **CHECK FOR SHORT TO GND IN CAN BUS LINE (NO. 2 JUNCTION CONNECTOR - INVERTER WITH CONVERTER ASSEMBLY)** |

(a) Disconnect the A89 inverter with converter assembly connector.

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

Standard Resistance:

EWD INFO

Click Location & Routing(A16,K8)
Click Connector(A16)
Click Connector(K8)

| TESTER CONNECTION | CONDITION | SPECIFIED CONDITION |
|---|---|---|
| A16-3 (CANH) - K8-4 (CG) | Cable disconnected from negative (-) auxiliary battery terminal | 200 Ω or higher |
| A16-14 (CANL) - K8-4 (CG) | | |

**OK** ▶ **REPLACE INVERTER WITH CONVERTER ASSEMBLY**

**NG** ▶ **REPAIR OR REPLACE CAN BRANCH LINE OR CONNECTOR (NO. 2 JUNCTION CONNECTOR - INVERTER WITH CONVERTER ASSEMBLY)**

| | |
|---|---|
| **12.** | **CHECK FOR SHORT TO GND IN CAN BUS LINE (NO. 6 GLOBAL CAN JUNCTION CONNECTOR - NO. 2 JUNCTION CONNECTOR)** |

(a) Disconnect the K107 No. 6 Global CAN junction connector.

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

Standard Resistance:

EWD INFO

Click Location & Routing(K107,K8)
Click Connector(K107)
Click Connector(K8)

| TESTER CONNECTION | CONDITION | SPECIFIED CONDITION |
|---|---|---|
| K107-2 (CANH) - K8-4 (CG) | Cable disconnected from negative (-) auxiliary battery terminal | 200 Ω or higher |
| K107-13 (CANL) - K8-4 (CG) | | |

**NG** ▶ **REPAIR OR REPLACE CAN MAIN BUS LINES OR CONNECTOR (NO. 6 GLOBAL CAN JUNCTION CONNECTOR - NO. 2 JUNCTION CONNECTOR)**

**OK** ▼

| | |
|---|---|
| **13.** | **CHECK FOR SHORT TO GND IN CAN BUS LINE (NO. 6 GLOBAL CAN JUNCTION CONNECTOR - BATTERY ECU ASSEMBLY)** |

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

Standard Resistance:

EWD INFO

**Click Location & Routing(K107,K8)**
**Click Connector(K107)**
**Click Connector(K8)**

| TESTER CONNECTION | CONDITION | SPECIFIED CONDITION |
|---|---|---|
| K107-3 (CANH) - K8-4 (CG) | Cable disconnected from negative (-) auxiliary battery terminal | 200 Ω or higher |
| K107-14 (CANL) - K8-4 (CG) | | |

**NG** ▶ **GO TO STEP 15**

**OK** ▼

| | |
|---|---|
| **14.** | **CHECK FOR SHORT TO GND IN CAN BUS LINE (NO. 6 GLOBAL CAN JUNCTION CONNECTOR - TRANSMISSION FLOOR SHIFT ASSEMBLY)** |

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

Standard Resistance:

EWD INFO

**Click Location & Routing(K107,K8)**
**Click Connector(K107)**
**Click Connector(K8)**

| TESTER CONNECTION | CONDITION | SPECIFIED CONDITION |
|---|---|---|
| K107-1 (CANH) - K8-4 (CG) | Cable disconnected from negative (-) auxiliary battery terminal | 200 Ω or higher |
| K107-12 (CANL) - K8-4 (CG) | | |

**OK** ▶ **REPLACE NO. 6 GLOBAL CAN JUNCTION CONNECTOR**

**NG** ▶ **GO TO STEP 16**

| | |
|---|---|
| **15.** | **CHECK FOR SHORT TO GND IN CAN BUS LINE (NO. 6 GLOBAL CAN JUNCTION CONNECTOR - BATTERY ECU ASSEMBLY)** |

(a) Disconnect the R40 battery ECU assembly connector.

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

Standard Resistance:

EWD INFO

**Click Location & Routing(K107,K8)**
**Click Connector(K107)**
**Click Connector(K8)**

| TESTER CONNECTION | CONDITION | SPECIFIED CONDITION |
|---|---|---|
| K107-3 (CANH) - K8-4 (CG) | Cable disconnected from negative (-) auxiliary battery terminal | 200 Ω or higher |
| K107-14 (CANL) - K8-4 (CG) | | |

**OK** ▶ **REPLACE BATTERY ECU ASSEMBLY**

**NG** ▶ **REPAIR OR REPLACE CAN MAIN BUS LINE OR CONNECTOR (NO. 6 GLOBAL CAN JUNCTION CONNECTOR - BATTERY ECU ASSEMBLY)**

| | |
|---|---|
| **16.** | **CHECK FOR SHORT TO GND IN CAN BUS LINE (NO. 6 GLOBAL CAN JUNCTION CONNECTOR - TRANSMISSION FLOOR SHIFT ASSEMBLY)** |

(a) Disconnect the K53 transmission floor shift assembly connector.

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

Standard Resistance:

EWD INFO

Click Location & Routing(K107,K8)
Click Connector(K107)
Click Connector(K8)

| TESTER CONNECTION | CONDITION | SPECIFIED CONDITION |
|---|---|---|
| K107-1 (CANH) - K8-4 (CG) | Cable disconnected from negative (-) auxiliary battery terminal | 200 Ω or higher |
| K107-12 (CANL) - K8-4 (CG) | | |

**OK** ▶ **REPLACE TRANSMISSION FLOOR SHIFT ASSEMBLY**

**NG** ▶ **REPAIR OR REPLACE CAN BRANCH LINE OR CONNECTOR (NO. 6 GLOBAL CAN JUNCTION CONNECTOR - TRANSMISSION FLOOR SHIFT ASSEMBLY)**

| | |
|---|---|
| **17.** | **CHECK FOR SHORT TO +B IN CAN BUS LINE (NO. 2 JUNCTION CONNECTOR - HYBRID VEHICLE CONTROL ECU)** |

(a) Disconnect the A16 No. 2 junction connector.

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

Standard Resistance:

EWD INFO

Click Location & Routing(A16,K8)
Click Connector(A16)
Click Connector(K8)

| TESTER CONNECTION | CONDITION | SPECIFIED CONDITION |
|---|---|---|
| A16-2 (CANH) - K8-16 (BAT) | Cable disconnected from negative (-) auxiliary battery terminal | 6 kΩ or higher |
| A16-13 (CANL) - K8-16 (BAT) | | |

**NG** ▶ **GO TO STEP 21**

**OK** ▼

| | |
|---|---|
| **18.** | **CHECK FOR SHORT TO +B IN CAN BUS LINE (NO. 2 JUNCTION CONNECTOR - NO. 6 GLOBAL CAN JUNCTION CONNECTOR)** |

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

Standard Resistance:

EWD INFO

Click Location & Routing(A16,K8)
Click Connector(A16)
Click Connector(K8)

| TESTER CONNECTION | CONDITION | SPECIFIED CONDITION |
|---|---|---|
| A16-4 (CANH) - K8-16 (BAT) | Cable disconnected from negative (-) auxiliary battery terminal | 6 kΩ or higher |
| A16-15 (CANL) - K8-16 (BAT) | | |

**NG** ▶ **GO TO STEP 24**

**OK** ▼

| | |
|---|---|
| **19.** | **CHECK FOR SHORT TO +B IN CAN BUS LINE (NO. 2 JUNCTION CONNECTOR - SHIFT CONTROL ACTUATOR ASSEMBLY)** |

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

Standard Resistance:

EWD INFO

Click Location & Routing(A16,K8)
Click Connector(A16)
Click Connector(K8)

| TESTER CONNECTION | CONDITION | SPECIFIED CONDITION |
|---|---|---|
| A16-1 (CANH) - K8-16 (BAT) | Cable disconnected from negative (-) auxiliary battery terminal | 6 kΩ or higher |
| A16-12 (CANL) - K8-16 (BAT) | | |

**NG** ▶ **GO TO STEP 22**

**OK**

| | |
|---|---|
| **20.** | **CHECK FOR SHORT TO +B IN CAN BUS LINE (NO. 2 JUNCTION CONNECTOR - INVERTER WITH CONVERTER ASSEMBLY)** |

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

Standard Resistance:

EWD INFO

Click Location & Routing(A16,K8)
Click Connector(A16)
Click Connector(K8)

| TESTER CONNECTION | CONDITION | SPECIFIED CONDITION |
|---|---|---|
| A16-3 (CANH) - K8-16 (BAT) | Cable disconnected from negative (-) auxiliary battery terminal | 6 kΩ or higher |
| A16-14 (CANL) - K8-16 (BAT) | | |

**OK** ▶ **REPLACE NO. 2 JUNCTION CONNECTOR**

**NG** ▶ **GO TO STEP 23**

| | |
|---|---|
| **21.** | **CHECK FOR SHORT TO +B IN CAN BUS LINE (NO. 2 JUNCTION CONNECTOR - HYBRID VEHICLE CONTROL ECU)** |

(a) Disconnect the K11 hybrid vehicle control ECU connector.

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

Standard Resistance:

EWD INFO

Click Location & Routing(A16,K8)
Click Connector(A16)
Click Connector(K8)

| TESTER CONNECTION | CONDITION | SPECIFIED CONDITION |
|---|---|---|
| A16-2 (CANH) - K8-16 (BAT) | Cable disconnected from negative (-) auxiliary battery terminal | 6 kΩ or higher |
| A16-13 (CANL) - K8-16 (BAT) | | |

**OK** ▶ **REPLACE HYBRID VEHICLE CONTROL ECU**

Click here INFO

**NG** ▶ **REPAIR OR REPLACE CAN MAIN BUS LINE OR CONNECTOR (NO. 2 JUNCTION CONNECTOR - HYBRID VEHICLE CONTROL ECU)**

| | |
|---|---|
| **22.** | **CHECK FOR SHORT TO +B IN CAN BUS LINE (NO. 2 JUNCTION CONNECTOR - SHIFT CONTROL ACTUATOR ASSEMBLY)** |

(a) Disconnect the C49 shift control actuator assembly connector.

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

Standard Resistance:

EWD INFO

**Click Location & Routing(A16,K8)**
**Click Connector(A16)**
**Click Connector(K8)**

| TESTER CONNECTION | CONDITION | SPECIFIED CONDITION |
|---|---|---|
| A16-1 (CANH) - K8-16 (BAT) | Cable disconnected from negative (-) auxiliary battery terminal | 6 kΩ or higher |
| A16-12 (CANL) - K8-16 (BAT) | | |

**OK** ▶ **REPLACE SHIFT CONTROL ACTUATOR ASSEMBLY**

**NG** ▶ **REPAIR OR REPLACE CAN BRANCH LINE OR CONNECTOR (NO. 2 JUNCTION CONNECTOR - SHIFT CONTROL ACTUATOR ASSEMBLY)**

| | |
|---|---|
| **23.** | **CHECK FOR SHORT TO +B IN CAN BUS LINE (NO. 2 JUNCTION CONNECTOR - INVERTER WITH CONVERTER ASSEMBLY)** |

(a) Disconnect the A89 inverter with converter assembly connector.

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

Standard Resistance:

EWD INFO

**Click Location & Routing(A16,K8)**
**Click Connector(A16)**
**Click Connector(K8)**

| TESTER CONNECTION | CONDITION | SPECIFIED CONDITION |
|---|---|---|
| A16-3 (CANH) - K8-16 (BAT) | Cable disconnected from negative (-) auxiliary battery terminal | 6 kΩ or higher |
| A16-14 (CANL) - K8-16 (BAT) | | |

**OK** ▶ **REPLACE INVERTER WITH CONVERTER ASSEMBLY**

**NG** ▶ **REPAIR OR REPLACE CAN BRANCH LINE OR CONNECTOR (NO. 2 JUNCTION CONNECTOR - INVERTER WITH CONVERTER ASSEMBLY)**

| | |
|---|---|
| **24.** | **CHECK FOR SHORT TO +B IN CAN BUS LINE (NO. 6 GLOBAL CAN JUNCTION CONNECTOR - NO. 2 JUNCTION CONNECTOR)** |

(a) Disconnect the K107 No. 6 Global CAN junction connector.

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

Standard Resistance:

EWD INFO

**Click Location & Routing(K107,K8)**
**Click Connector(K107)**
**Click Connector(K8)**

| TESTER CONNECTION | CONDITION | SPECIFIED CONDITION |
|---|---|---|
| K107-2 (CANH) - K8-16 (BAT) | Cable disconnected from negative (-) auxiliary battery terminal | 6 kΩ or higher |
| K107-13 (CANL) - K8-16 (BAT) | | |

**NG** ▶ **REPAIR OR REPLACE CAN MAIN BUS LINES OR CONNECTOR (NO. 6 GLOBAL CAN JUNCTION CONNECTOR - NO. 2 JUNCTION CONNECTOR)**

**OK** ▼

| | |
|---|---|
| **25.** | **CHECK FOR SHORT TO +B IN CAN BUS LINE (NO. 6 GLOBAL CAN JUNCTION CONNECTOR - BATTERY ECU ASSEMBLY)** |

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

Standard Resistance:

EWD INFO

Click Location & Routing(K107,K8)
Click Connector(K107)
Click Connector(K8)

| TESTER CONNECTION | CONDITION | SPECIFIED CONDITION |
|---|---|---|
| K107-3 (CANH) - K8-16 (BAT) | Cable disconnected from negative (-) auxiliary battery terminal | 6 kΩ or higher |
| K107-14 (CANL) - K8-16 (BAT) | | |

**NG** ▶ **GO TO STEP 27**

**OK** ▼

| | |
|---|---|
| **26.** | **CHECK FOR SHORT TO +B IN CAN BUS LINE (NO. 6 GLOBAL CAN JUNCTION CONNECTOR - TRANSMISSION FLOOR SHIFT ASSEMBLY)** |

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

Standard Resistance:

EWD INFO

Click Location & Routing(K107,K8)
Click Connector(K107)
Click Connector(K8)

| TESTER CONNECTION | CONDITION | SPECIFIED CONDITION |
|---|---|---|
| K107-1 (CANH) - K8-16 (BAT) | Cable disconnected from negative (-) auxiliary battery terminal | 6 kΩ or higher |
| K107-12 (CANL) - K8-16 (BAT) | | |

**OK** ▶ **REPLACE NO. 6 GLOBAL CAN JUNCTION CONNECTOR**

**NG** ▶ **GO TO STEP 28**

| | |
|---|---|
| **27.** | **CHECK FOR SHORT TO +B IN CAN BUS LINE (NO. 6 GLOBAL CAN JUNCTION CONNECTOR - BATTERY ECU ASSEMBLY)** |

(a) Disconnect the R40 battery ECU assembly connector.

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

Standard Resistance:

EWD INFO

**Click Location & Routing(K107,K8)**
**Click Connector(K107)**
**Click Connector(K8)**

| TESTER CONNECTION | CONDITION | SPECIFIED CONDITION |
|---|---|---|
| K107-3 (CANH) - K8-16 (BAT) | Cable disconnected from negative (-) auxiliary battery terminal | 6 kΩ or higher |
| K107-14 (CANL) - K8-16 (BAT) | | |

**OK** ▶ **REPLACE BATTERY ECU ASSEMBLY**

**NG** ▶ **REPAIR OR REPLACE CAN MAIN BUS LINE OR CONNECTOR (NO. 6 GLOBAL CAN JUNCTION CONNECTOR - BATTERY ECU ASSEMBLY)**

| | |
|---|---|
| **28.** | **CHECK FOR SHORT TO +B IN CAN BUS LINE (NO. 6 GLOBAL CAN JUNCTION CONNECTOR - TRANSMISSION FLOOR SHIFT ASSEMBLY)** |

(a) Disconnect the K53 transmission floor shift assembly connector.

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

Standard Resistance:

EWD INFO

**Click Location & Routing(K107,K8)**
**Click Connector(K107)**
**Click Connector(K8)**

| TESTER CONNECTION | CONDITION | SPECIFIED CONDITION |
|---|---|---|
| K107-1 (CANH) - K8-16 (BAT) | Cable disconnected from negative (-) auxiliary battery terminal | 6 kΩ or higher |
| K107-12 (CANL) - K8-16 (BAT) | | |

**OK** ▶ **REPLACE TRANSMISSION FLOOR SHIFT ASSEMBLY**

**NG** ▶ **REPAIR OR REPLACE CAN BRANCH LINE OR CONNECTOR (NO. 6 GLOBAL CAN JUNCTION CONNECTOR - TRANSMISSION FLOOR SHIFT ASSEMBLY)**

| | |
|---|---|
| **29.** | **CHECK FOR SHORT IN CAN BUS LINES (NO. 2 JUNCTION CONNECTOR - HYBRID VEHICLE CONTROL ECU)** |

(a) Disconnect the A16 No. 2 junction connector.

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

Standard Resistance:

EWD INFO

Click Location & Routing(A16)
Click Connector(A16)

| TESTER CONNECTION | CONDITION | SPECIFIED CONDITION |
|---|---|---|
| A16-2 (CANH) - A16-13 (CANL) | Cable disconnected from negative (-) auxiliary battery terminal | 108 to 132 Ω |

**NG** ▶ **GO TO STEP 33**

**OK** ▼

| | |
|---|---|
| **30.** | **CHECK FOR SHORT IN CAN BUS LINES (NO. 2 JUNCTION CONNECTOR - NO. 6 GLOBAL CAN JUNCTION CONNECTOR)** |

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

Standard Resistance:

EWD INFO

Click Location & Routing(A16)
Click Connector(A16)

| TESTER CONNECTION | CONDITION | SPECIFIED CONDITION |
|---|---|---|
| A16-4 (CANH) - A16-15 (CANL) | Cable disconnected from negative (-) auxiliary battery terminal | 108 to 132 Ω |

**NG** ▶ **GO TO STEP 36**

**OK** ▼

| | |
|---|---|
| **31.** | **CHECK FOR SHORT IN CAN BUS LINES (NO. 2 JUNCTION CONNECTOR - SHIFT CONTROL ACTUATOR ASSEMBLY)** |

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

Standard Resistance:

EWD INFO

Click Location & Routing(A16)
Click Connector(A16)

| TESTER CONNECTION | CONDITION | SPECIFIED CONDITION |
|---|---|---|
| A16-1 (CANH) - A16-12 (CANL) | Cable disconnected from negative (-) auxiliary battery terminal | 200 Ω or higher |

**NG** ▶ **GO TO STEP 34**

**OK** ▼

| | |
|---|---|
| **32.** | **CHECK FOR SHORT IN CAN BUS LINES (NO. 2 JUNCTION CONNECTOR - INVERTER WITH CONVERTER ASSEMBLY)** |

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

Standard Resistance:

EWD INFO

Click Location & Routing(A16)
Click Connector(A16)

| TESTER CONNECTION | CONDITION | SPECIFIED CONDITION |
|---|---|---|
| A16-3 (CANH) - A16-14 (CANL) | Cable disconnected from negative (-) auxiliary battery terminal | 200 Ω or higher |

**OK** ▶ **REPLACE NO. 2 JUNCTION CONNECTOR**

**NG** ▶ **GO TO STEP 35**

| | |
|---|---|
| **33.** | **CHECK FOR SHORT IN CAN BUS LINES (NO. 2 JUNCTION CONNECTOR - HYBRID VEHICLE CONTROL ECU)** |

(a) Disconnect the K11 hybrid vehicle control ECU connector.

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

Standard Resistance:

EWD INFO

Click Location & Routing(A16)
Click Connector(A16)

| TESTER CONNECTION | CONDITION | SPECIFIED CONDITION |
|---|---|---|
| A16-2 (CANH) - A16-13 (CANL) | Cable disconnected from negative (-) auxiliary battery terminal | 1 MΩ or higher |

**OK** ▶ **REPLACE HYBRID VEHICLE CONTROL ECU**

Click here INFO

**NG** ▶ **REPAIR OR REPLACE CAN MAIN BUS LINES OR CONNECTOR (NO. 2 JUNCTION CONNECTOR - HYBRID VEHICLE CONTROL ECU)**

| | |
|---|---|
| **34.** | **CHECK FOR SHORT IN CAN BUS LINES (NO. 2 JUNCTION CONNECTOR - SHIFT CONTROL ACTUATOR ASSEMBLY)** |

(a) Disconnect the C49 shift control actuator assembly connector.

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

Standard Resistance:

EWD INFO

Click Location & Routing(A16)
Click Connector(A16)

| TESTER CONNECTION | CONDITION | SPECIFIED CONDITION |
|---|---|---|
| A16-1 (CANH) - A16-12 (CANL) | Cable disconnected from negative (-) auxiliary battery terminal | 1 MΩ or higher |

**OK** ▶ **REPLACE SHIFT CONTROL ACTUATOR ASSEMBLY**

**NG** ▶ **REPAIR OR REPLACE CAN BRANCH LINES OR CONNECTOR (NO. 2 JUNCTION CONNECTOR - SHIFT CONTROL ACTUATOR ASSEMBLY)**

| | |
|---|---|
| **35.** | **CHECK FOR SHORT IN CAN BUS LINES (NO. 2 JUNCTION CONNECTOR - INVERTER WITH CONVERTER ASSEMBLY)** |

(a) Disconnect the A89 inverter with converter assembly connector.

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

Standard Resistance:

EWD INFO

**Click Location & Routing(A16)**
**Click Connector(A16)**

| TESTER CONNECTION | CONDITION | SPECIFIED CONDITION |
|---|---|---|
| A16-3 (CANH) - A16-14 (CANL) | Cable disconnected from negative (-) auxiliary battery terminal | 1 MΩ or higher |

**OK** ▶ **REPLACE INVERTER WITH CONVERTER ASSEMBLY**

**NG** ▶ **REPAIR OR REPLACE CAN BRANCH LINES OR CONNECTOR (NO. 2 JUNCTION CONNECTOR - INVERTER WITH CONVERTER ASSEMBLY)**

| | |
|---|---|
| **36.** | **CHECK FOR SHORT IN CAN BUS LINES (NO. 6 GLOBAL CAN JUNCTION CONNECTOR - NO. 2 JUNCTION CONNECTOR)** |

(a) Reconnect the A16 No. 2 junction connector.

(b) Disconnect the K107 No. 6 Global CAN junction connector.

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

Standard Resistance:

EWD INFO

**Click Location & Routing(K107)**
**Click Connector(K107)**

| TESTER CONNECTION | CONDITION | SPECIFIED CONDITION |
|---|---|---|
| K107-2 (CANH) - K107-13 (CANL) | Cable disconnected from negative (-) auxiliary battery terminal | 108 to 132 Ω |

**NG** ▶ **REPAIR OR REPLACE CAN MAIN BUS LINES OR CONNECTOR (NO. 6 GLOBAL CAN JUNCTION CONNECTOR - NO. 2 JUNCTION CONNECTOR)**

**OK** ▼

| | |
|---|---|
| **37.** | **CHECK FOR SHORT IN CAN BUS LINES (NO. 6 GLOBAL CAN JUNCTION CONNECTOR - BATTERY ECU ASSEMBLY)** |

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

Standard Resistance:

EWD INFO

**Click Location & Routing(K107)**
**Click Connector(K107)**

| TESTER CONNECTION | CONDITION | SPECIFIED CONDITION |
|---|---|---|
| K107-3 (CANH) - K107-14 (CANL) | Cable disconnected from negative (-) auxiliary battery terminal | 108 to 132 Ω |

**NG** ▶ **GO TO STEP 39**

**OK** ▼

| | |
|---|---|
| **38.** | **CHECK FOR SHORT IN CAN BUS LINES (NO. 6 GLOBAL CAN JUNCTION CONNECTOR - TRANSMISSION FLOOR SHIFT ASSEMBLY)** |

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

Standard Resistance:

EWD INFO

**Click Location & Routing(K107)**
**Click Connector(K107)**

| TESTER CONNECTION | CONDITION | SPECIFIED CONDITION |
|---|---|---|
| K107-1 (CANH) - K107-12 (CANL) | Cable disconnected from negative (-) auxiliary battery terminal | 200 Ω or higher |

**OK** ▶ **REPLACE NO. 6 GLOBAL CAN JUNCTION CONNECTOR**

**NG** ▶ **GO TO STEP 40**

| | |
|---|---|
| **39.** | **CHECK FOR SHORT IN CAN BUS LINES (NO. 6 GLOBAL CAN JUNCTION CONNECTOR - BATTERY ECU ASSEMBLY)** |

(a) Disconnect the R40 battery ECU assembly connector.

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

Standard Resistance:

EWD INFO

**Click Location & Routing(K107)**
**Click Connector(K107)**

| TESTER CONNECTION | CONDITION | SPECIFIED CONDITION |
|---|---|---|
| K107-3 (CANH) - K107-14 (CANL) | Cable disconnected from negative (-) auxiliary battery terminal | 1 MΩ or higher |

**OK** ▶ **REPLACE BATTERY ECU ASSEMBLY**

**NG** ▶ **REPAIR OR REPLACE CAN MAIN BUS LINES OR CONNECTOR (NO. 6 GLOBAL CAN JUNCTION CONNECTOR - BATTERY ECU ASSEMBLY)**

| | |
|---|---|
| **40.** | **CHECK FOR SHORT IN CAN BUS LINES (NO. 6 GLOBAL CAN JUNCTION CONNECTOR - TRANSMISSION FLOOR SHIFT ASSEMBLY)** |

(a) Disconnect the K53 transmission floor shift assembly connector.

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

Standard Resistance:

EWD INFO

**Click Location & Routing(K107)**
**Click Connector(K107)**

| TESTER CONNECTION | CONDITION | SPECIFIED CONDITION |
|---|---|---|
| K107-1 (CANH) - K107-12 (CANL) | Cable disconnected from negative (-) auxiliary battery terminal | 1 MΩ or higher |

**OK** ▶ **REPLACE TRANSMISSION FLOOR SHIFT ASSEMBLY**

**NG** ▶ **REPAIR OR REPLACE CAN BRANCH LINES OR CONNECTOR (NO. 6 GLOBAL CAN JUNCTION CONNECTOR - TRANSMISSION FLOOR SHIFT ASSEMBLY)**

| | |
|---|---|
| **41.** | **CHECK FOR OPEN IN CAN MAIN BUS LINES (HYBRID VEHICLE CONTROL ECU)** |

(a) Disconnect the K11 hybrid vehicle control ECU connector.

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

Standard Resistance:

EWD INFO

**Click Location & Routing(K11)**
**Click Connector(K11)**

| TESTER CONNECTION | CONDITION | SPECIFIED CONDITION |
|---|---|---|
| K11-9 (CA4H) - K11-22 (CA4L) | Cable disconnected from negative (-) auxiliary battery terminal | 108 to 132 Ω |

**OK** ▶ **REPLACE HYBRID VEHICLE CONTROL ECU**

Click here INFO

**NG** ▼

| | |
|---|---|
| **42.** | **CHECK FOR OPEN IN CAN MAIN BUS LINES (NO. 2 JUNCTION CONNECTOR - HYBRID VEHICLE CONTROL ECU)** |

(a) Reconnect the K11 hybrid vehicle control ECU connector.

(b) Disconnect the A16 No. 2 junction connector.

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

Standard Resistance:

EWD INFO

**Click Location & Routing(A16)**
**Click Connector(A16)**

| TESTER CONNECTION | CONDITION | SPECIFIED CONDITION |
|---|---|---|
| A16-2 (CANH) - A16-13 (CANL) | Cable disconnected from negative (-) auxiliary battery terminal | 108 to 132 Ω |

**NG** ▶ **REPAIR OR REPLACE CAN MAIN BUS LINES OR CONNECTOR (NO. 2 JUNCTION CONNECTOR - HYBRID VEHICLE CONTROL ECU)**

**OK** ▼

| | |
|---|---|
| **43.** | **CHECK FOR OPEN IN CAN MAIN BUS LINES (NO. 2 JUNCTION CONNECTOR - NO. 6 GLOBAL CAN JUNCTION CONNECTOR)** |

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

Standard Resistance:

EWD INFO

**Click Location & Routing(A16)**
**Click Connector(A16)**

| TESTER CONNECTION | CONDITION | SPECIFIED CONDITION |
|---|---|---|
| A16-4 (CANH) - A16-15 (CANL) | Cable disconnected from negative (-) auxiliary battery terminal | 108 to 132 Ω |

**OK** ▶ **REPLACE NO. 2 JUNCTION CONNECTOR**

**NG** ▼

| | |
|---|---|
| **44.** | **CHECK FOR OPEN IN CAN MAIN BUS LINES (NO. 6 GLOBAL CAN JUNCTION CONNECTOR - NO. 2 JUNCTION CONNECTOR)** |

(a) Reconnect the A16 No. 2 junction connector.

(b) Disconnect the K107 No. 6 Global CAN junction connector.

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

Standard Resistance:

EWD INFO

Click Location & Routing(K107)
Click Connector(K107)

| TESTER CONNECTION | CONDITION | SPECIFIED CONDITION |
|---|---|---|
| K107-2 (CANH) - K107-13 (CANL) | Cable disconnected from negative (-) auxiliary battery terminal | 108 to 132 Ω |

**NG** ▶ **REPAIR OR REPLACE CAN MAIN BUS LINES OR CONNECTOR (NO. 6 GLOBAL CAN JUNCTION CONNECTOR - NO. 2 JUNCTION CONNECTOR)**

**OK** ▼

| | |
|---|---|
| **45.** | **CHECK FOR OPEN IN CAN MAIN BUS LINES (NO. 6 GLOBAL CAN JUNCTION CONNECTOR - BATTERY ECU ASSEMBLY)** |

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

Standard Resistance:

EWD INFO

Click Location & Routing(K107)
Click Connector(K107)

| TESTER CONNECTION | CONDITION | SPECIFIED CONDITION |
|---|---|---|
| K107-3 (CANH) - K107-14 (CANL) | Cable disconnected from negative (-) auxiliary battery terminal | 108 to 132 Ω |

**OK** ▶ **REPLACE NO. 6 GLOBAL CAN JUNCTION CONNECTOR**

**NG** ▼

| | |
|---|---|
| **46.** | **CHECK FOR OPEN IN CAN MAIN BUS LINES (BATTERY ECU ASSEMBLY)** |

(a) Reconnect the K107 No. 6 Global CAN junction connector.

(b) Disconnect the R40 battery ECU assembly connector.

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

Standard Resistance:

EWD INFO

**Click Location & Routing(R40)**
**Click Connector(R40)**

| TESTER CONNECTION | CONDITION | SPECIFIED CONDITION |
|---|---|---|
| R40-22 (CA1H) - R40-21 (CA1L) | Cable disconnected from negative (-) auxiliary battery terminal | 108 to 132 Ω |

**OK** ▶ **REPLACE BATTERY ECU ASSEMBLY**

**NG** ▶ **REPAIR OR REPLACE CAN MAIN BUS LINES OR CONNECTOR (BATTERY ECU ASSEMBLY - NO. 6 GLOBAL CAN JUNCTION CONNECTOR)**