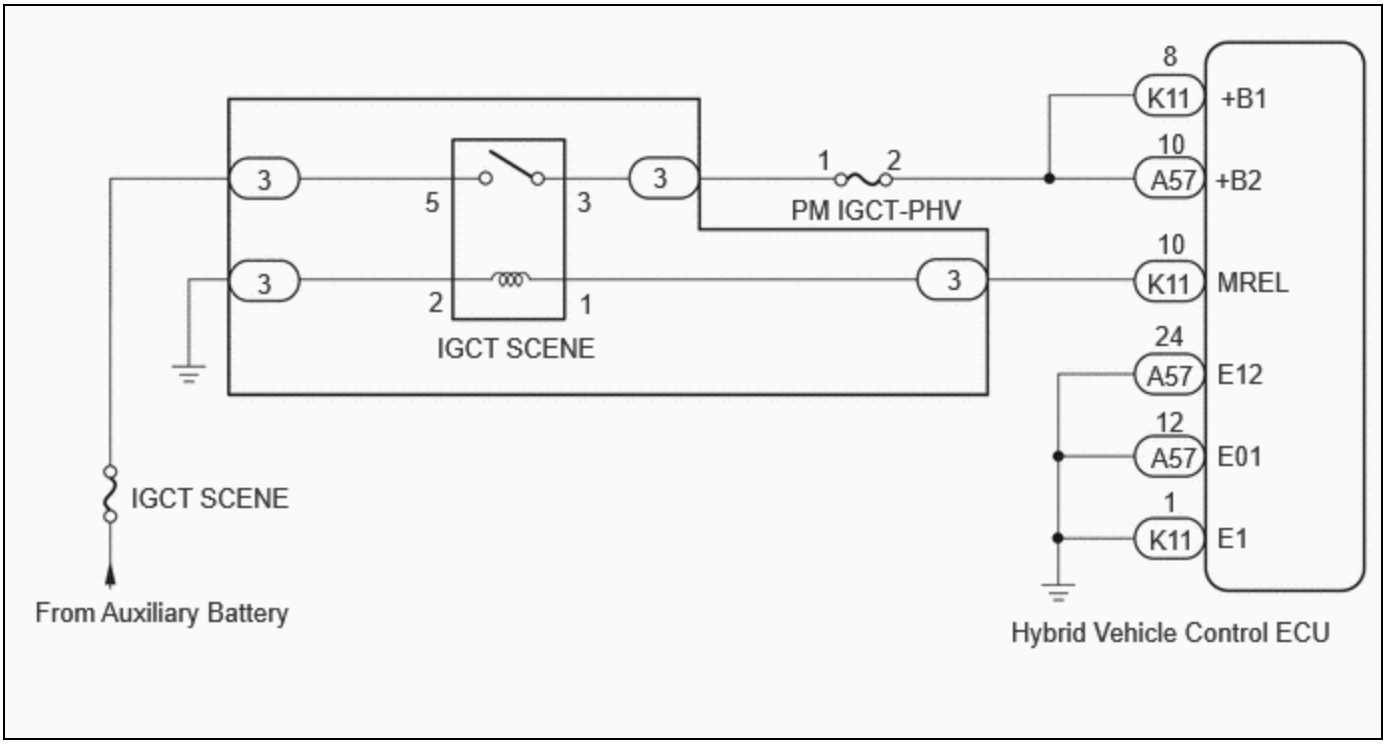
Last Modified: 12-04-2024	6.11:8.1.0	**Doc ID:** RM100000002BI1K
Model Year Start: 2023	**Model:** Prius Prime	**Prod Date Range:** [03/2023 -]
Title: HYBRID / BATTERY CONTROL: HYBRID CONTROL SYSTEM (for PHEV Model): ECU Power Source Circuit; 2023 - 2024 MY Prius Prime [03/2023 -]		

ECU Power Source Circuit

DESCRIPTION

If the ignition switch is ON, the hybrid vehicle control ECU applies current to the MREL terminal to turn the IGCT SCENE relay on. This supplies power to the +B1 and +B2 terminal.

WIRING DIAGRAM



CAUTION / NOTICE / HINT

NOTICE:

- 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.

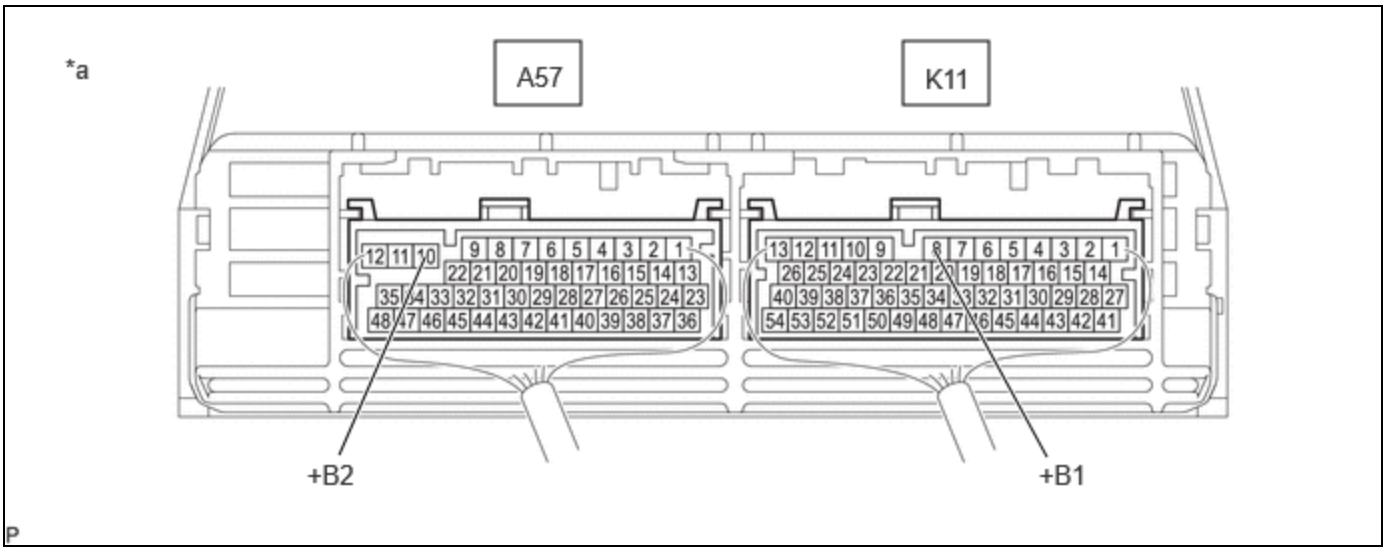
Click here INFO

PROCEDURE

1.	**CHECK HYBRID VEHICLE CONTROL ECU (+B1, +B2 VOLTAGE)**

(a) Turn the ignition switch to ON.

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



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

Standard Voltage:

EWD INFO

Click Location & Routing(K11,A57)
Click Connector(K11)
Click Connector(A57)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
K11-8 (+B1) - Body ground	Ignition switch ON	11 to 14 V
A57-10 (+B2) - Body ground	Ignition switch ON	11 to 14 V

(c) Turn the ignition switch off.

NG ▶ **GO TO STEP 3**

OK ▼

2.	**CHECK HARNESS AND CONNECTOR (HYBRID VEHICLE CONTROL ECU - BODY GROUND)**

(a) Disconnect the hybrid vehicle control ECU connectors.

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

Standard Resistance:

EWD INFO

Click Location & Routing(A57,K11)
Click Connector(A57)
Click Connector(K11)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
A57-12 (E01) - Body ground	Always	Below 1 Ω
A57-24 (E12) - Body ground	Always	Below 1 Ω
K11-1 (E1) - Body ground	Always	Below 1 Ω

(c) Reconnect the hybrid vehicle control ECU connectors.

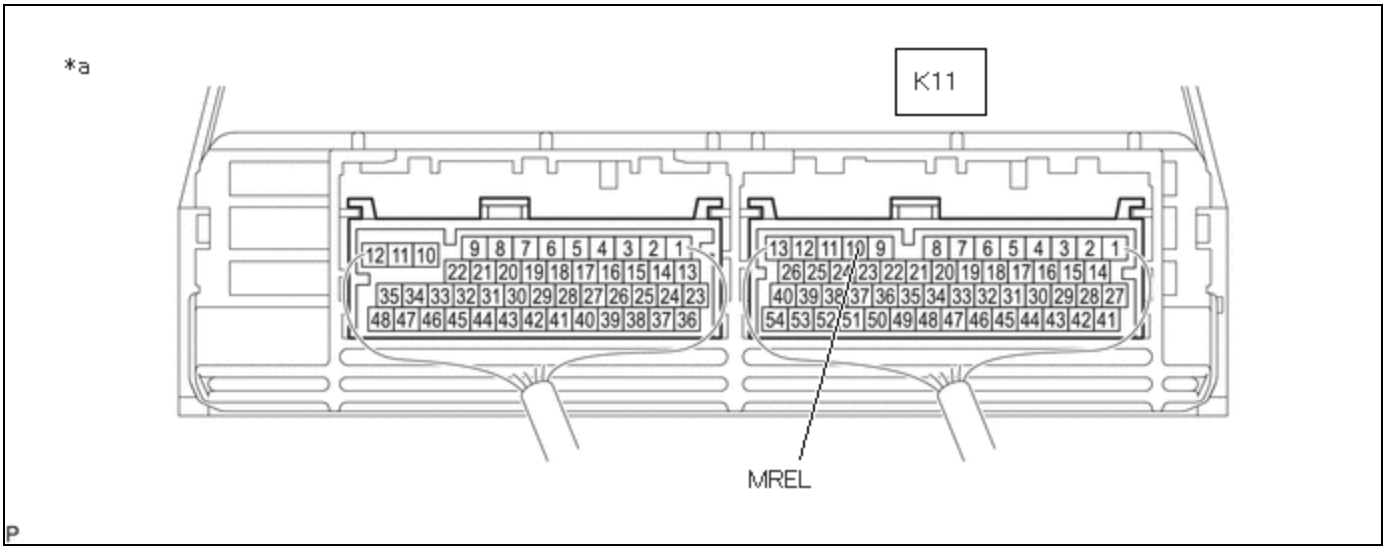
OK ▶ **GO TO PROBLEM SYMPTOMS TABLE**

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

3.	**CHECK HYBRID VEHICLE CONTROL ECU (MREL TERMINAL VOLTAGE)**

(a) Turn the ignition switch to ON.

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



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

Standard Voltage:

EWD INFO

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

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
K11-10 (MREL) - Body ground	Ignition switch ON	11 to 14 V

(c) Turn the Ignition switch off.

NG ▶ **REPLACE HYBRID VEHICLE CONTROL ECU**

OK ▼

4.	**CHECK FUSE (PM IGCT-PHV)**

(a) Remove the PM IGCT-PHV fuse from the fuse block assembly.

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

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
PM IGCT-PHV fuse	Always	Below 1 Ω

(c) Install the PM IGCT-PHV fuse.

NG ▶ **GO TO STEP 10**

OK ▼

5.	**INSPECT RELAY (IGCT SCENE)**

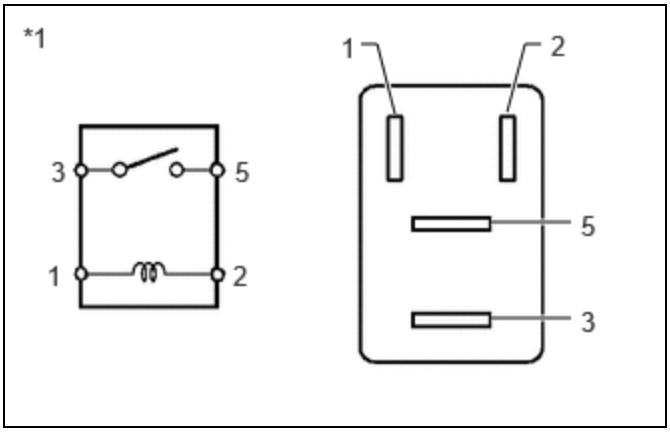
(a) Remove the IGCT SCENE relay from the No. 3 relay block.

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

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
3 - 5	Auxiliary battery voltage not applied between terminals 1 and 2	10 kΩ or higher

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
	Auxiliary battery voltage applied between terminals 1 and 2	Below 1 Ω



*1	IGCT-MAIN NO. 1 Relay

(c) Install the IGCT SCENE relay.

NG ▶ **REPLACE RELAY (IGCT SCENE)**

OK ▼

6.	**CHECK HARNESS AND CONNECTOR (HYBRID VEHICLE CONTROL ECU - FUSE BLOCK ASSEMBLY)**

(a) Disconnect the hybrid vehicle control ECU connector.

(b) Remove the PM IGCT-PHV fuse from the fuse block assembly.

(c) 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
K11-8 (+B1) - 3 (PM IGCT-PHV fuse holder)	Always	Below 1 Ω

(d) Install the PM IGCT-PHV fuse.

(e) Reconnect the hybrid vehicle control ECU connector.

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

OK

7.	**CHECK HARNESS AND CONNECTOR (RELAY BLOCK NO.3 - FUSE BLOCK ASSEMBLY)**

(a) Remove the PM IGCT-PHV fuse from the No. 3 relay block.

(b) Remove the IGCT SCENE relay from the fuse block assembly.

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

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
3 (IGCT SCENE relay holder) - 1 (PM IGCT-PHV fuse holder)	Always	Below 1 Ω

(d) Install the IGCT SCENE relay.

(e) Install the PM IGCT-PHV fuse.

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

OK

8.	**CHECK HARNESS AND CONNECTOR (HYBRID VEHICLE CONTROL ECU - NO.3 RELAY BLOCK)**

(a) Disconnect the hybrid vehicle control ECU connector.

(b) Remove the IGCT SCENE relay from the No. 3 relay block.

(c) 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
K11-10 (MREL) - 1 (IGCT SCENE relay holder)	Always	Below 1 Ω
K11-10 (MREL) or 1 (IGCT SCENE relay holder) - Body ground and other terminals	Always	10 kΩ or higher

(d) Install the IGCT- SCENE relay.

(e) Reconnect the hybrid vehicle control ECU connector.

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

OK ▼

9.	**CHECK HARNESS AND CONNECTOR (NO.3 RELAY BLOCK)**

(a) Remove the IGCT SCENE relay from the No. 3 relay block.

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

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
2 (IGCT SCENE relay holder) - Body ground	Always	Below 1 Ω

(c) Install the IGCT SCENE relay.

OK ▶ **CHECK FOR INTERMITTENT PROBLEMS**

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

10.	**CHECK HARNESS AND CONNECTOR (HYBRID VEHICLE CONTROL ECU - FUSE BLOCK ASSEMBLY)**

(a) Remove the PM IGCT-PHV fuse from the fuse block assembly.

(b) Disconnect the hybrid vehicle control ECU connector.

(c) 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
K11-8 (+B1) or 3 (PM IGCT-PHV fuse holder) - Body ground and other terminals	Always	10 kΩ or higher

(d) Reconnect the hybrid vehicle control ECU connector.

(e) Install the PM IGCT-PHV fuse.

OK ▶ **REPLACE FUSE (PM IGCT-PHV)**

NG
▼

11.	**REPAIR OR REPLACE HARNESS OR CONNECTOR**

NEXT ▶ **REPLACE FUSE (PM IGCT-PHV)**