Last Modified: 12-04-2024	6.11:8.1.0	**Doc ID:** RM100000002BSVK
Model Year Start: 2023	**Model:** Prius Prime	**Prod Date Range:** [03/2023 -]
Title: M20A-FXS (BATTERY / CHARGING): CHARGING SYSTEM: P058A01; Auxiliary Battery Monitor Module Range/Performance; 2023 - 2024 MY Prius Prius Prime [03/2023 -]		

DTC	**P058A01**	**Auxiliary Battery Monitor Module Range/Performance**

DESCRIPTION

The battery state sensor assembly detects the auxiliary voltage, current and temperature of the auxiliary battery. The battery state sensor assembly calculates State of Charge (SOC) based on the voltage and current of the auxiliary battery and sends it to the hybrid vehicle control ECU. Based on the signals received, the hybrid vehicle control ECU adjusts the charging voltage of the DC/DC converter.

The battery state sensor assembly calculates the auxiliary battery temperature based on changes in resistance of a built-in thermistor and sends it to the hybrid vehicle control ECU. The hybrid vehicle control ECU reduces the amount of charging current based on this signal in order to protect the auxiliary battery.

DTC NO.	DETECTION ITEM	DTC DETECTION CONDITION	TROUBLE AREA	MIL	WARNING INDICATE	DTC OUTPUT FROM	PRIORITY	NOTE
P058A01	Auxiliary Battery Monitor Module Range/Performance	Any of the following conditions is met with the ignition switch ON (1 trip detection logic): • The current is 999.939 A or more, or -1000 A or less for 3.2 seconds or more. • A current detection circuit malfunction signal is received for 3.2 seconds or more. • The auxiliary battery temperature is 105°C (221°F) or more or -40°C (-40°F) or less for 12.288	• Battery state sensor assembly • Auxiliary battery • Wire harness or connector	Does not come on	Charge warning is not displayed	Hybrid Control	B	SAE Code: P058A

DTC NO.	DETECTION ITEM	DTC DETECTION CONDITION	TROUBLE AREA	MIL	WARNING INDICATE	DTC OUTPUT FROM	PRIORITY	NOTE
		seconds or more. • A temperature detection circuit malfunction signal is received for 12.288 seconds or more. • The voltage is 15.98 V or more, or 6.0 V or less for 3.2 seconds or more. • A voltage detection circuit malfunction signal is received for 3.2 seconds or more. • A writing error occurs in the auxiliary battery state sensor internal memory (battery identification data). • A pulse discharge circuit malfunction condition continues for 4.6 seconds or more. • The difference between the maximum and							

DTC NO.	DETECTION ITEM	DTC DETECTION CONDITION	TROUBLE AREA	MIL	WARNING INDICATE	DTC OUTPUT FROM	PRIORITY	NOTE
		minimum current is 0.0305 A or less for 100 seconds or more.						

DTC Detection Condition

		Vehicle Condition					
		Pattern 1	Pattern 2	Pattern 3	Pattern 4	Pattern 5	Pattern 6
Diagnosis Condition	Ignition switch is ON	○	○	○	○	○	○
Malfunction Status	Current value is 999.939 A or more	○	-	-	-	-	-
	Current value is -1000 A or less	-	○	-	-	-	-
	Current detection circuit malfunction condition is received	-	-	○	-	-	-
	Auxiliary battery temperature is 105°C or more	-	-	-	○	-	-
	Auxiliary battery temperature is -40°C or less	-	-	-	-	○	-
	Temperature detection circuit malfunction signal is received	-	-	-	-	-	○
Detection Time		3.2 seconds or more	3.2 seconds or more	3.2 seconds or more	12.288 seconds or more	12.288 seconds or more	12.288 seconds or more
Number of Trips		1 trip	1 trip	1 trip	1 trip	1 trip	1 trip

DTC Detection Condition

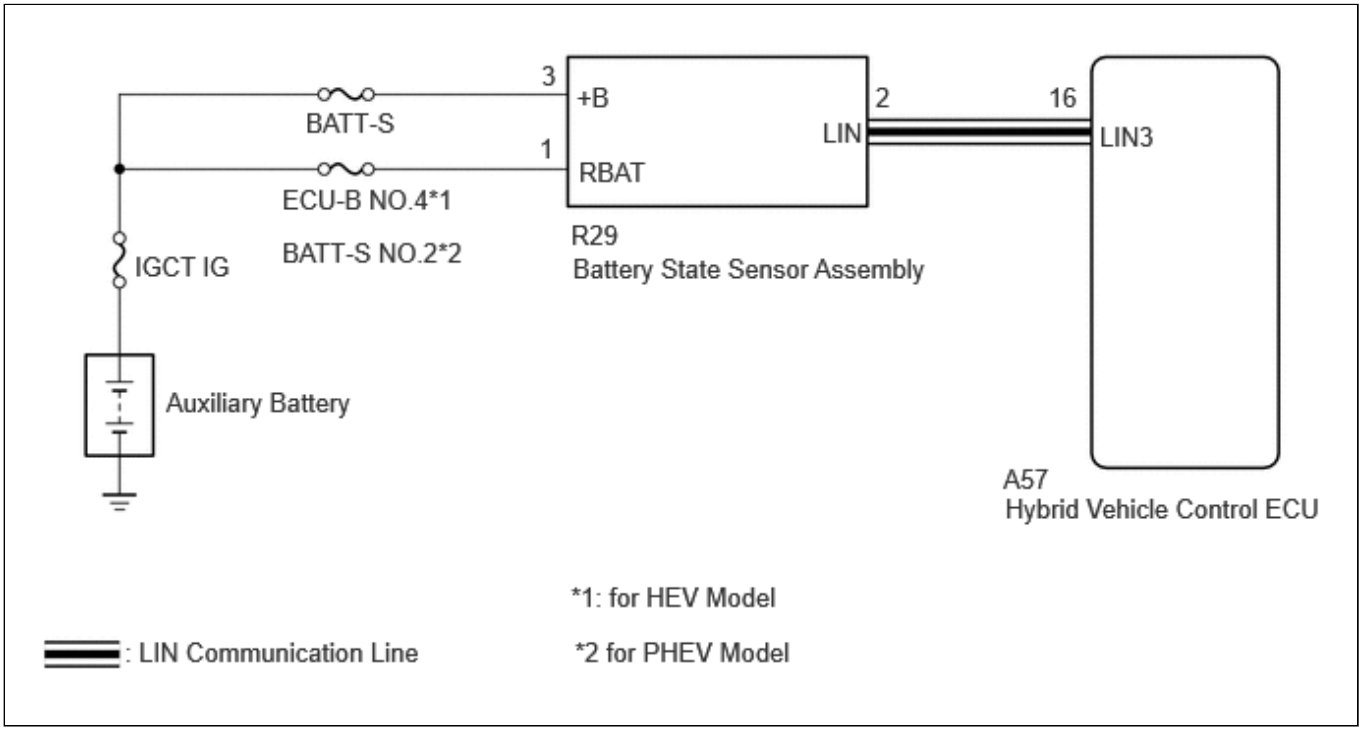
		Vehicle Condition					
		Pattern 7	Pattern 8	Pattern 9	Pattern 10	Pattern 11	Pattern 12
Diagnosis Condition	Ignition switch is ON	○	○	○	○	○	○
Malfunction Status	Voltage value remains at 15.98 V or more	○	-	-	-	-	-

	Voltage value remains at 6.0 V or less	-	○	-	-	-	-
	Voltage detection circuit malfunction signal is received	-	-	○	-	-	-
	Writing error occurs in auxiliary battery state sensor internal memory (battery identification data)	-	-	-	○	-	-
	Pulse discharge circuit malfunction condition continues	-	-	-	-	○	-
	Difference between maximum and minimum current is 0.0305 A or less	-	-	-	-	-	○
Detection Time		3.2 seconds or more	3.2 seconds or more	3.2 seconds or more	-	4.6 seconds or more	100 seconds or more
Number of Trips		1 trip	1 trip	1 trip	1 trip	1 trip	1 trip

HINT:

DTC will be output when conditions for either of the patterns in the table above are met.

WIRING DIAGRAM



CAUTION / NOTICE / HINT

NOTICE:

- Inspect the fuses for circuits related to this system before performing the following procedure.
- Make sure to perform the necessary procedures (adjustment, calibration, initialization, or registration) after parts related to the charging system have been removed/installed or replaced.

Click here INFO

PROCEDURE

1.	**CHECK DTC OUTPUT (HYBRID CONTROL)**

(a) Check for DTCs.

Powertrain > Hybrid Control > Trouble Codes

Result	PROCEED TO
P162B87 is output	A
P162B87 is not output	B

HINT:

When P162B87 (Lost Communication with Battery Monitor Module Missing Message) is output at the same time, perform troubleshooting for P162B87 (Lost Communication with Battery Monitor Module Missing Message) first.

A ▶ **GO TO DTC CHART (P162B87)**

B ▼

2.	**CHECK BATTERY STATE SENSOR ASSEMBLY INSTALLATION CONDITION**

HINT:

Click here INFO

NG ▶ **INSTALL BATTERY STATE SENSOR ASSEMBLY CORRECTLY**

OK ▼

3.	**CHECK HARNESS AND CONNECTOR (POWER SOURCE CIRCUIT)**

Pre-procedure1

(a) Turn the ignition switch off.

(b) Check that the battery state sensor assembly connector is securely connected.

OK:

The connector is securely connected.

(c) Disconnect the R29 battery state sensor assembly connector.

(d) Check the connector case and terminals for deformation or corrosion.

OK:

No deformation or corrosion.

Procedure1

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

Standard Voltage:

EWD INFO

Click Location & Routing(R29)
Click Connector(R29)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION	RESULT
R29-3 (+B) - Body ground	Ignition switch off	11 to 14 V	V
R29-1 (RBAT) - Body ground	Ignition switch off	11 to 14 V	V

Post-procedure1

(f) None

OK ▶ **REPLACE BATTERY STATE SENSOR ASSEMBLY**

NG ▶ **REPAIR OR REPLACE HARNESS OR CONNECTOR (BATTERY STATE SENSOR ASSEMBLY - AUXILIARY BATTERY)**