Last Modified: 12-04-2024	6.11:8.1.0	**Doc ID:** RM100000002BME1
Model Year Start: 2023	**Model:** Prius Prime	**Prod Date Range:** [03/2023 -]
Title: M20A-FXS (BATTERY / CHARGING): SOLAR CHARGING SYSTEM: DATA LIST / ACTIVE TEST; 2023 - 2024 MY Prius Prius Prime [03/2023 -]		

DATA LIST / ACTIVE TEST

DATA LIST

NOTICE:

- The value of some Data List items may vary significantly if there are slight differences in the environment in which the vehicle is operating when the Data List is read. Variations may also occur due to the age of the vehicle.
- In the event of a problem with intricate symptoms, collect sample data from another vehicle of the same model operating under identical conditions in order to reach an overall judgment by comparing all the items in the Data List.

(a) Enter the following menus.

(b) Check the results by referring to the following table.

Powertrain > Solar Charging Control > Data List

TESTER DISPLAY	MEASUREMENT ITEM	DIAGNOSTIC NOTE
Total Distance Traveled	Total distance traveled	-
Total Distance Traveled - Unit	Display units for total distance driven	-
ACC Signal	Status of ACC	-
IGCT Signal	Status of IGCT	-
IG2 Information	Status of IG2	-
Hybrid/EV Control System Control Mode	System control mode determined by hybrid vehicle control ECU	-
Solar System Mode	Running state of solar charging	-
Solar System Status	The various modes of solar charging • Stop Mode Stopped, and neither charging nor supplying power • Auxiliary Battery Power Supply Mode When supplying power to auxiliary battery • Generated Power Estimation Mode	-

TESTER DISPLAY	MEASUREMENT ITEM	DIAGNOSTIC NOTE
	When estimating the solar power generation before charging HV battery • HV/EV Battery Charging Mode When charging power to HV battery • Fail Safe Mode When charging stopped due to a malfunction occurring	
AMD Terminal Voltage	Value of AMD terminal voltage sensor Standard: 11 to 15.3 V	-
AMD Terminal Voltage Sensor Voltage	Voltage value of AMD terminal voltage sensor	-
Large Capacity Condenser Voltage	Value of large capacity condenser voltage sensor Standard: 0 to 31.8 V	-
Large Capacity Condenser Voltage Sensor Voltage	Voltage value of large capacity condenser voltage sensor	-
Condenser Discharge Switch Drive Signal	Drive signal ON/OFF status of condenser discharge switch	-
Hybrid/EV Battery Charging Permission Status	Status of HV battery charging by solar charging system permit/prohibit judgment by plug in charge control ECU assembly	-
Hybrid/EV Battery Charge Request	Charging to HV battery permit/prohibit status	-
Hybrid/EV Battery Charging Stop by Converter Temperature High Trigger Counter	Number of times HV battery charging stopped due to increased temperature of converter inside solar energy control ECU assembly	-
Hybrid/EV Battery Charging Stop by Overvoltage Trigger Counter	Number of times HV battery charging stopped due to HV battery overvoltage	-
Hybrid/EV Battery Charging Prohibition by Charging System Trigger Counter	Number of times HV battery charging stopped due to charging system factor	-

TESTER DISPLAY	MEASUREMENT ITEM	DIAGNOSTIC NOTE
Hybrid/EV Battery 1 Voltage	Voltage of HV battery 1	-
Hybrid/EV Battery 1 Voltage Sensor Voltage	Voltage of HV battery 1 voltage sensor	-
Hybrid/EV Battery 2 Voltage	Voltage of HV battery 2	Unused and so displays 0 V
Hybrid/EV Battery 2 Voltage Sensor Voltage	Voltage of HV battery 2 voltage sensor	-
Middle Voltage	Midpoint voltage between solar DC/DC converter, boosting DC/DC converter, and auxiliary battery DC/DC converter Standard: 0 to 31.8 V	-
Middle Voltage Sensor Voltage	Value of middle voltage sensor	-
Middle Circuit Overvoltage Trigger Counter (Hard)	Number of times middle circuit voltage exceeded overvoltage threshold according to hardware	-
Middle Circuit Overvoltage Trigger Counter (Soft)	Number of times middle circuit voltage exceeded overvoltage threshold according to software	-
Middle Circuit Overvoltage (Soft)	Whether middle circuit voltage reached overvoltage threshold according to software	-
Solar Charging Control ECU System Voltage	Internal power source voltage of solar energy control ECU assembly Standard: 0 to 55 V	-
Solar Charging Power Request	Solar charging power command value Standard: 0 to 350 W	-
Solar Charging Mode	Running state of solar system	-
Solar Charging Status	Operating status of the solar energy control ECU assembly	-

TESTER DISPLAY	MEASUREMENT ITEM	DIAGNOSTIC NOTE
	• Stop Mode Solar charging stopped • Solar Charging Mode During solar charging • Repro Mode For repro use	
Solar Charging Permission Signal (Line)	Solar charging permission signal (Line) judgment by plug-in charge control ECU	-
Solar Charging Permission Signal (CAN)	Solar charging permission signal (CAN) judgment by plug-in charge control ECU	-
Solar Charging Stop Factor (Hybrid/EV)	Factor in end of solar charging judged by hybrid vehicle control ECU	-
Solar Generation Power Stop by Converter Temperature High/Overvoltage Trigger Counter	Number of times solar power generation was canceled due to increased temperature of converter inside solar energy control ECU assembly	-
Auxiliary Battery Charging Stop by Converter Temperature High Trigger Counter	Number of times auxiliary power supply was canceled due to increased temperature of converter inside solar energy control ECU assembly	-
Solar Panel 1 Output Voltage	Solar panel 1 output voltage Standard: 0 to 55 V	
Solar Panel 1 Output Voltage Sensor Voltage	Value of solar panel 1 output voltage sensor	-
Solar Panel 2 Output Voltage	Solar panel 2 output voltage Standard: 0 to 55 V	-
Solar Panel 2 Output Voltage Sensor Voltage	Value of solar panel 2 output voltage sensor	-
Auxiliary Battery DC/DC Converter Drive Request	Status of auxiliary battery DC/DC converter drive on/off	-
Auxiliary Battery DC/DC Converter Target Limit Voltage	Auxiliary battery upper limit voltage command value Standard:	-

TESTER DISPLAY	MEASUREMENT ITEM	DIAGNOSTIC NOTE
	0 to 15.3 V	
Auxiliary Battery DC/DC Converter Target Power Feeding	Auxiliary power supply power command value Standard: 0 to 320 W	-
Auxiliary Battery DC/DC Converter Output Voltage	Auxiliary battery DC/DC converter output voltage Standard: 0 to 15.3 V	-
Auxiliary Battery DC/DC Converter Output Voltage Sensor Voltage	Value of auxiliary battery DC/DC converter output voltage sensor	-
Auxiliary Battery DC/DC Converter Output Current 1	Auxiliary battery DC/DC converter output current Standard: 0 to 24.75 A	-
Auxiliary Battery DC/DC Converter Output Current 2	Value of auxiliary battery DC/DC converter output current sensor	-
Auxiliary Battery DC/DC Converter Output Power	Auxiliary battery DC/DC converter output power Standard: 0 to 320 W	-
Auxiliary Battery DC/DC Converter 1 Temperature	Auxiliary battery DC/DC converter 1 temperature Standard: -30 to 80°C (-22 to 176°F)	-
Auxiliary Battery DC/DC Converter 2 Temperature	Auxiliary battery DC/DC converter 2 temperature Standard: -30 to 80°C (-22 to 176°F)	-
Auxiliary Battery DC/DC Converter 3 Temperature	Auxiliary battery DC/DC converter 3 temperature Standard: -30 to 80°C (-22 to 176°F)	-
Auxiliary Battery DC/DC Converter Temperature Limit	Whether auxiliary battery DC/DC converter restricted due to temperature factor	-

TESTER DISPLAY	MEASUREMENT ITEM	DIAGNOSTIC NOTE
Auxiliary Battery DC/DC Converter Request Duty	Auxiliary battery DC/DC converter duty command	-
Solar DC/DC Converter 1 Input Current	Solar DC/DC converter 1 input current	Changes according to sunlight exposure intensity
Solar DC/DC Converter 1 Output Current	Solar DC/DC converter 1 output current	Changes according to sunlight exposure intensity
Solar DC/DC Converter 2 Input Current	Solar DC/DC converter 2 input current	Changes according to sunlight exposure intensity
Solar DC/DC Converter 2 Output Current	Solar DC/DC converter 2 output current	Changes according to sunlight exposure intensity
Solar DC/DC Converter 1 Input Power	Solar DC/DC converter 1 input power Standard: 0 to 96 W	-
Solar DC/DC Converter 1 Output Power	Solar DC/DC converter 1 output power Standard: 0 to 96 W	-
Solar DC/DC Converter 2 Input Power	Solar DC/DC converter 2 input power Standard: 0 to 129 W	-
Solar DC/DC Converter 2 Output Power	Solar DC/DC converter 2 output power Standard: 0 to 129 W	-
Solar DC/DC Converter 1 Temperature	Solar DC/DC converter 1 temperature Standard: -30 to 80°C (-22 to 176°F)	-
Solar DC/DC Converter 2 Temperature	Solar DC/DC converter 2 temperature Standard:	-

TESTER DISPLAY	MEASUREMENT ITEM	DIAGNOSTIC NOTE
	-30 to 80°C (-22 to 176°F)	
Solar DC/DC Converter 1 Temperature Limit	Whether solar DC/DC converter 1 restricted due to temperature factor	-
Solar DC/DC Converter 2 Temperature Limit	Whether solar DC/DC converter 2 restricted due to temperature factor	-
Solar DC/DC Converter 1 Step Down Upper Duty	Solar DC/DC converter 1 step-down upper duty command value	-
Solar DC/DC Converter 1 Step Down Lower Duty	Solar DC/DC converter 1 step-down lower duty command value	Range Min.: 0.0%, Max.: 655.35%
Solar DC/DC Converter 1 Boost Upper Duty	Solar DC/DC converter 1 boost upper duty command value	-
Solar DC/DC Converter 2 Step Down Upper Duty	Solar DC/DC converter 2 step-down upper duty command value	-
Solar DC/DC Converter 2 Step Down Lower Duty	Solar DC/DC converter 2 step-down lower duty command value	Range Min.: 0.0%, Max.: 655.35%
Solar DC/DC Converter 2 Boost Upper Duty	Solar DC/DC converter 2 boost upper duty command value	-
Boosting DC/DC Converter Input Current	Boosting DC/DC converter input current Standard: 0 to 16 A	-
Boosting DC/DC Converter Input Power	Boosting DC/DC converter input power Standard: 0 to 350 W	-
Boosting DC/DC Converter Temperature	Boosting DC/DC converter temperature Standard: -30 to 80°C (-22 to 176°F)	-
Boosting DC/DC Converter Temperature Limit	Whether boosting DC/DC converter restricted due to temperature factor	-

TESTER DISPLAY	MEASUREMENT ITEM	DIAGNOSTIC NOTE
Boosting DC/DC Converter Request Duty	Boosting DC/DC converter duty command	-
Boosting DC/DC Converter Overvoltage (Soft)	Whether boosting DC/DC converter voltage reached overvoltage threshold according to software	-
Boosting DC/DC Converter Overvoltage Trigger Counter (Hard)	Number of times boosting DC/DC converter voltage exceeded overvoltage threshold according to hardware	-
Boosting DC/DC Converter Overvoltage Trigger Counter (Soft)	Number of times boosting DC/DC converter voltage exceeded overvoltage threshold according to software	-
DC/DC Converter Limit Factor (Middle Circuit Overvoltage (Hard))	Whether overvoltage was detected due to middle circuit overvoltage threshold according to hardware	-
DC/DC Converter Limit Factor (Boosting DC/DC Converter Overvoltage (Hard))	Whether overvoltage was detected due to boosting DC/DC converter overvoltage threshold according to software	-
DC/DC Converter Short Circuit Switch Drive Signal	ON/OFF status of short circuit SW configured in order to check solar DC/DC converter input current sensor	-