Last Modified: 12-04-2024	6.11:8.1.0	**Doc ID:** RM1000000029A5D
Model Year Start: 2023	**Model:** Prius Prime	**Prod Date Range:** [12/2022 -]
Title: HYBRID / BATTERY CONTROL: HYBRID BATTERY SYSTEM (for M20A-FXS): DATA LIST / ACTIVE TEST; 2023 - 2024 MY Prius Prius Prime [12/2022 -]		

DATA LIST / ACTIVE TEST

DATA LIST

NOTICE:

- Some Data List values may vary significantly if there are slight differences in the environment in which the vehicle is operating when measurements are obtained. Variations may also occur due to aging of the vehicle. Due to these considerations, it is not always possible to provide definite values to be used for judgment of malfunctions. It is possible that a malfunction may be present even if measured values are within the reference range.
- 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) Check the results by referring to the following table.

HINT:

- When reviewing Data List information, try to select only the specific Data List items related to the inspection being performed. If all items are selected when checking the Data List, the interval between updates for each item will be longer, resulting in delayed or incorrect data.
- Using a custom list makes it possible to easily select smaller groups of related Data List items.
- The following custom lists are available:
  - All Data
  - Hybrid/EV Battery
  - Hybrid/EV Battery (Exc IR)
  - Hybrid/EV Battery Temperature

Powertrain > HV Battery > Data List

TESTER DISPLAY	MEASUREMENT ITEM	DIAGNOSTIC NOTE
Vehicle Speed	Vehicle speed Vehicle stopped: 0 km/h (0 mph) While driving at a constant speed: No significant fluctuation	-
Target Engine Power	Requested engine power by hybrid vehicle control ECU to ECM While driving with the engine running: Varies depending on vehicle operating conditions	-
Engine Speed	Engine speed Engine stopped: 0 rpm While engine running at a constant speed: No significant fluctuation	-

TESTER DISPLAY	MEASUREMENT ITEM	DIAGNOSTIC NOTE
Calculate Load	Engine load (value increases in proportion to increase in load)	-
Coolant Temperature	Engine coolant temperature Cold start→Fully warmed up: Gradually rises After warming up: 75 to 100°C (167 to 212°F)	-
Engine Run Time	Elapsed time after starting engine Elapsed time after starting engine	Elapsed time from initial engine start until the ignition switch is turned off.
Accelerator Position	Accelerator pedal depressed angle Accelerator pedal depressed: Changes with accelerator pedal position	-
Throttle Position Sensor No.1 Voltage %	Throttle position sensor	Throttle valve status
Shift Position	Shift position of control Matches currently selected shift position: P, R, N, D or B	-
Atmospheric Pressure	Atmospheric pressure Constant: Atmosphere pressure	-
Ambient Temperature	Ambient air temperature Ignition switch ON: Same as ambient air temperature	-
BATT Voltage	Auxiliary battery voltage (Battery ECU assembly power source voltage) Constant: 11.00 to 15.00 V	-
Smoothed Value of BATT Voltage	Smoothed value of auxiliary battery voltage (Battery ECU assembly power source voltage) Constant: 11.00 to 15.00 V	-

TESTER DISPLAY	MEASUREMENT ITEM	DIAGNOSTIC NOTE
Warmup Cycle Cleared DTC	The number of times the engine is warmed up after clearing DTCs MIL OFF, engine coolant temperature increases from below 22°C (71.6°F) before starting the engine to above 70°C (158°F) after starting the engine: Increases once	-
Distance from DTC Cleared	Drive distance after clearing DTCs	-
Time after DTC Cleared	Elapsed time after clearing DTCs	Time elapsed after DTCs are cleared (Not counted when the ignition switch is off).
MIL	MIL status	-
Running Time from MIL ON	Running time from MIL on	-
Total Distance Traveled	Drive total distance (for km)	-
Total Distance Traveled - Unit	Drive total distance unit	-
MIL ON Run Distance	Drive distance from MIL on	-
Number of Emission DTC	Emissions-related DTCs	-
IGB Signal Status	IGB signal status Ignition switch ON or ON (READY): ON	-
IG2 Signal Status	IG2 signal status Ignition switch ON or ON (READY): ON	-
Ready Signal	Ready signal status Ignition switch ON (READY): ON	-

TESTER DISPLAY	MEASUREMENT ITEM	DIAGNOSTIC NOTE
Ready ON Prevention Status	Ready ON prevention status	-
HV/EV Activate Condition	Hybrid control system power source mode status Hybrid control system started using ignition switch: Normal Hybrid control system started using remote climate control function: Remote Climate Hybrid control system started using remote starter: Remote	-
SMRG Control Status	Commanded state of SMRG Ignition switch ON (READY): ON	-
SMRB Control Status	Commanded state of SMRB Ignition switch ON (READY): ON	-
WIN Control Limit Power	Power flowing to HV battery (Charging) (detected at battery ECU assembly) -27.40 kW or more	-
WOUT Control Limit Power	Power flowing from HV battery (Discharging) (detected at battery ECU assembly) 25.50 kW or less	-
A/C Consumption Power	A/C consumption power While the air conditioning system is operating: 0 to 5 kW	-
EV Mode	EV mode transition availability In EV mode: ON	-
Stop Light Switch	Stop light switch assembly condition Brake pedal depressed: ON	-

TESTER DISPLAY	MEASUREMENT ITEM	DIAGNOSTIC NOTE
Airbag Status (Collision)	Airbag ECU assembly collision detection Collision detection by the airbag ECU assembly: ON	-
Airbag Status (Normal)	Control state of airbag ECU assembly When the airbag ECU assembly is operating normally: ON	-
Generator Revolution	Generator (MG1) speed (detected by resolver sensor) Generator (MG1) speed is set to obtain requested target engine speed During charge or discharge: Varies depending on vehicle operating conditions	-
Target Generator Torque	Generator (MG1) torque request value During charge or discharge: Varies depending on vehicle operating conditions	-
Motor Revolution	Motor (MG2) speed (detected by resolver sensor) Motor (MG2) speed changes in proportion to vehicle speed. Motor (MG2) speed is not influenced by accelerator pedal opening angle, engine speed or generator (MG1) speed. While driving: Varies depending on vehicle speed	-
Target Motor Torque	Motor (MG2) torque request value While driving: Varies depending on vehicle operating conditions	-
Request Motor Regenerative Brake Torque	Requested motor (MG2) regenerative braking torque While braking: Varies depending on vehicle operation conditions	When regenerative braking is being performed, current flows from the motor (MG2) to charge the HV battery and braking torque is generated. Electronically controlled brake system

TESTER DISPLAY	MEASUREMENT ITEM	DIAGNOSTIC NOTE
Motor Regenerate Brake Execution Torque	Motor (MG2) regenerative braking execution torque While braking: Varies depending on vehicle operation conditions	-
Generator Carrier Frequency	Generator Carrier Frequency	-
Motor Carrier Frequency	Motor (MG2) carrier frequency	-
VL-Voltage before Boosting	High voltage before it is boosted Ignition switch ON (READY): Practically the same as the HV battery voltage	-
VH-Voltage after Boosting	High voltage after it is boosted Engine revving up with shift lever in P: After boosted voltage to below approximately 600 V	-
Hybrid/EV Battery SOC	HV battery state of charge Primary calculated from charging and discharging amperage Constant: 0.0 to 100.0%	-
Delta SOC	Difference between maximum and minimum values of SOC READY indicator on, engine stopped and no electrical load: 0.0 to 60.0%	-
Hybrid/EV Battery SOC just after IG-ON	HV battery state of charge soon after ignition switch ON	-
Hybrid/EV Battery Maximum SOC	Maximum SOC after ignition switch turned to ON in current trip	-
Hybrid/EV Battery Minimum SOC	Minimum SOC after ignition switch turned to ON in current trip	-

TESTER DISPLAY	MEASUREMENT ITEM	DIAGNOSTIC NOTE
Hybrid/EV Battery Voltage	HV battery voltage Ignition switch ON: 150 to 300 V	-
Hybrid/EV Battery Current	HV battery current Ignition switch ON: -4.00 to 4.00 A	-
Hybrid/EV Battery Current for Hybrid/EV Battery Control	HV battery current for hybrid battery control	-
Hybrid/EV Battery Current for Hybrid/EV Battery Control (Sub)	HV battery current for hybrid battery control (Sub)	-
Hybrid/EV Battery Current Sensor Voltage for Hybrid/EV Battery Control	HV battery current sensor voltage for hybrid battery control	-
Hybrid/EV Battery Current Sensor Voltage for Hybrid/EV Battery Control (Sub)	HV battery current sensor voltage for hybrid battery control (Sub)	-
Hybrid/EV Battery Current Sensor Power Supply Voltage	HV battery current sensor power supply voltage	-
Hybrid/EV Battery Current Sensor Offset Learning Value	HV battery current sensor offset learning value	-
Hybrid/EV Battery Current Sensor Offset (High)	HV battery current sensor offset (High)	-
Hybrid/EV Battery Current Sensor Offset Learning Value (Sub)	HV battery current sensor offset learning value (Sub)	-

TESTER DISPLAY	MEASUREMENT ITEM	DIAGNOSTIC NOTE
Hybrid/EV Battery Current Sensor Offset (Sub)	HV battery current sensor offset (Sub)	-
Hybrid/EV Battery Control Mode	HV battery control mode	-
Hybrid/EV Battery Determination Signal 1	HV battery signal Normal condition: Hi	If "Lo" is displayed, an incorrect HV supply stack subassembly is installed.
Hybrid/EV Battery Determination Signal 2	HV battery signal Normal condition: Hi	If "Lo" is displayed, an incorrect HV supply stack subassembly is installed.
Hybrid/EV Battery Cell Circuit Open Information for Monitoring IC 1	HV battery cell circuit open information for monitoring IC 1 Normal condition: 0	-
Hybrid/EV Battery Cell Circuit Open Information for Monitoring IC 2	HV battery cell circuit open information for monitoring IC 2 Normal condition: 0	-
Hybrid/EV Battery Cell Circuit Open Information for Monitoring IC 3	HV battery cell circuit open information for monitoring IC 3 Normal condition: 0	-
Hybrid/EV Battery Stack 1 Cell Average Voltage	No. 1 HV supply stack sub-assembly cell average voltage Ignition switch ON: 3.00 to 4.00 V	-
Hybrid/EV Battery Stack 2 Cell Average Voltage	No. 2 HV supply stack sub-assembly cell average voltage Ignition switch ON: 3.00 to 4.00 V	-
Hybrid/EV Battery Block 1 Cell Average Voltage	Hybrid/EV battery block 1 cell average voltage Ignition switch ON: 3.00 to 4.00 V	-

TESTER DISPLAY	MEASUREMENT ITEM	DIAGNOSTIC NOTE
Hybrid/EV Battery Block 2 Cell Average Voltage	Hybrid/EV battery block 2 cell average voltage Ignition switch ON: 3.00 to 4.00 V	-
Hybrid/EV Battery Block 3 Cell Average Voltage	Hybrid/EV battery block 3 cell average voltage Ignition switch ON: 3.00 to 4.00 V	-
Hybrid/EV Battery Cell Maximum Voltage Up to 1 trip before	HV battery cell maximum voltage up to 1 trip before Ignition switch ON: 3.00 to 4.00 V	-
Hybrid/EV Battery Cell Minimum Voltage Up to 1 trip before	HV battery cell minimum voltage up to 1 trip before Ignition switch ON: 3.00 to 4.00 V	-
Hybrid/EV Battery Cell 1 Voltage	HV battery cell voltage of each battery cell Ignition switch ON: 3.00 to 4.00 V	-
Hybrid/EV Battery Cell 2 Voltage	HV battery cell voltage of each battery cell Ignition switch ON: 3.00 to 4.00 V	-
Hybrid/EV Battery Cell 3 Voltage	HV battery cell voltage of each battery cell Ignition switch ON: 3.00 to 4.00 V	-
Hybrid/EV Battery Cell 4 Voltage	HV battery cell voltage of each battery cell Ignition switch ON: 3.00 to 4.00 V	-
Hybrid/EV Battery Cell 5 Voltage	HV battery cell voltage of each battery cell Ignition switch ON: 3.00 to 4.00 V	-
Hybrid/EV Battery Cell 6 Voltage	HV battery cell voltage of each battery cell Ignition switch ON: 3.00 to 4.00 V	-

TESTER DISPLAY	MEASUREMENT ITEM	DIAGNOSTIC NOTE
Hybrid/EV Battery Cell 7 Voltage	HV battery cell voltage of each battery cell Ignition switch ON: 3.00 to 4.00 V	-
Hybrid/EV Battery Cell 8 Voltage	HV battery cell voltage of each battery cell Ignition switch ON: 3.00 to 4.00 V	-
Hybrid/EV Battery Cell 9 Voltage	HV battery cell voltage of each battery cell Ignition switch ON: 3.00 to 4.00 V	-
Hybrid/EV Battery Cell 10 Voltage	HV battery cell voltage of each battery cell Ignition switch ON: 3.00 to 4.00 V	-
Hybrid/EV Battery Cell 11 Voltage	HV battery cell voltage of each battery cell Ignition switch ON: 3.00 to 4.00 V	-
Hybrid/EV Battery Cell 12 Voltage	HV battery cell voltage of each battery cell Ignition switch ON: 3.00 to 4.00 V	-
Hybrid/EV Battery Cell 13 Voltage	HV battery cell voltage of each battery cell Ignition switch ON: 3.00 to 4.00 V	-
Hybrid/EV Battery Cell 14 Voltage	HV battery cell voltage of each battery cell Ignition switch ON: 3.00 to 4.00 V	-
Hybrid/EV Battery Cell 15 Voltage	HV battery cell voltage of each battery cell Ignition switch ON: 3.00 to 4.00 V	-
Hybrid/EV Battery Cell 16 Voltage	HV battery cell voltage of each battery cell Ignition switch ON: 3.00 to 4.00 V	-
Hybrid/EV Battery Cell 17 Voltage	HV battery cell voltage of each battery cell Ignition switch ON: 3.00 to 4.00 V	-

TESTER DISPLAY	MEASUREMENT ITEM	DIAGNOSTIC NOTE
Hybrid/EV Battery Cell 18 Voltage	HV battery cell voltage of each battery cell Ignition switch ON: 3.00 to 4.00 V	-
Hybrid/EV Battery Cell 19 Voltage	HV battery cell voltage of each battery cell Ignition switch ON: 3.00 to 4.00 V	-
Hybrid/EV Battery Cell 20 Voltage	HV battery cell voltage of each battery cell Ignition switch ON: 3.00 to 4.00 V	-
Hybrid/EV Battery Cell 21 Voltage	HV battery cell voltage of each battery cell Ignition switch ON: 3.00 to 4.00 V	-
Hybrid/EV Battery Cell 22 Voltage	HV battery cell voltage of each battery cell Ignition switch ON: 3.00 to 4.00 V	-
Hybrid/EV Battery Cell 23 Voltage	HV battery cell voltage of each battery cell Ignition switch ON: 3.00 to 4.00 V	-
Hybrid/EV Battery Cell 24 Voltage	HV battery cell voltage of each battery cell Ignition switch ON: 3.00 to 4.00 V	-
Hybrid/EV Battery Cell 25 Voltage	HV battery cell voltage of each battery cell Ignition switch ON: 3.00 to 4.00 V	-
Hybrid/EV Battery Cell 26 Voltage	HV battery cell voltage of each battery cell Ignition switch ON: 3.00 to 4.00 V	-
Hybrid/EV Battery Cell 27 Voltage	HV battery cell voltage of each battery cell Ignition switch ON: 3.00 to 4.00 V	-
Hybrid/EV Battery Cell 28 Voltage	HV battery cell voltage of each battery cell Ignition switch ON: 3.00 to 4.00 V	-

TESTER DISPLAY	MEASUREMENT ITEM	DIAGNOSTIC NOTE
Hybrid/EV Battery Cell 29 Voltage	HV battery cell voltage of each battery cell Ignition switch ON: 3.00 to 4.00 V	-
Hybrid/EV Battery Cell 30 Voltage	HV battery cell voltage of each battery cell Ignition switch ON: 3.00 to 4.00 V	-
Hybrid/EV Battery Cell 31 Voltage	HV battery cell voltage of each battery cell Ignition switch ON: 3.00 to 4.00 V	-
Hybrid/EV Battery Cell 32 Voltage	HV battery cell voltage of each battery cell Ignition switch ON: 3.00 to 4.00 V	-
Hybrid/EV Battery Cell 33 Voltage	HV battery cell voltage of each battery cell Ignition switch ON: 3.00 to 4.00 V	-
Hybrid/EV Battery Cell 34 Voltage	HV battery cell voltage of each battery cell Ignition switch ON: 3.00 to 4.00 V	-
Hybrid/EV Battery Cell 35 Voltage	HV battery cell voltage of each battery cell Ignition switch ON: 3.00 to 4.00 V	-
Hybrid/EV Battery Cell 36 Voltage	HV battery cell voltage of each battery cell Ignition switch ON: 3.00 to 4.00 V	-
Hybrid/EV Battery Cell 37 Voltage	HV battery cell voltage of each battery cell Ignition switch ON: 3.00 to 4.00 V	-
Hybrid/EV Battery Cell 38 Voltage	HV battery cell voltage of each battery cell Ignition switch ON: 3.00 to 4.00 V	-
Hybrid/EV Battery Cell 39 Voltage	HV battery cell voltage of each battery cell Ignition switch ON: 3.00 to 4.00 V	-

TESTER DISPLAY	MEASUREMENT ITEM	DIAGNOSTIC NOTE
Hybrid/EV Battery Cell 40 Voltage	HV battery cell voltage of each battery cell Ignition switch ON: 3.00 to 4.00 V	-
Hybrid/EV Battery Cell 41 Voltage	HV battery cell voltage of each battery cell Ignition switch ON: 3.00 to 4.00 V	-
Hybrid/EV Battery Cell 42 Voltage	HV battery cell voltage of each battery cell Ignition switch ON: 3.00 to 4.00 V	-
Hybrid/EV Battery Cell 43 Voltage	HV battery cell voltage of each battery cell Ignition switch ON: 3.00 to 4.00 V	-
Hybrid/EV Battery Cell 44 Voltage	HV battery cell voltage of each battery cell Ignition switch ON: 3.00 to 4.00 V	-
Hybrid/EV Battery Cell 45 Voltage	HV battery cell voltage of each battery cell Ignition switch ON: 3.00 to 4.00 V	-
Hybrid/EV Battery Cell 46 Voltage	HV battery cell voltage of each battery cell Ignition switch ON: 3.00 to 4.00 V	-
Hybrid/EV Battery Cell 47 Voltage	HV battery cell voltage of each battery cell Ignition switch ON: 3.00 to 4.00 V	-
Hybrid/EV Battery Cell 48 Voltage	HV battery cell voltage of each battery cell Ignition switch ON: 3.00 to 4.00 V	-
Hybrid/EV Battery Cell 49 Voltage	HV battery cell voltage of each battery cell Ignition switch ON: 3.00 to 4.00 V	-
Hybrid/EV Battery Cell 50 Voltage	HV battery cell voltage of each battery cell Ignition switch ON: 3.00 to 4.00 V	-

TESTER DISPLAY	MEASUREMENT ITEM	DIAGNOSTIC NOTE
Hybrid/EV Battery Cell 51 Voltage	HV battery cell voltage of each battery cell Ignition switch ON: 3.00 to 4.00 V	-
Hybrid/EV Battery Cell 52 Voltage	HV battery cell voltage of each battery cell Ignition switch ON: 3.00 to 4.00 V	-
Hybrid/EV Battery Cell 53 Voltage	HV battery cell voltage of each battery cell Ignition switch ON: 3.00 to 4.00 V	-
Hybrid/EV Battery Cell 54 Voltage	HV battery cell voltage of each battery cell Ignition switch ON: 3.00 to 4.00 V	-
Hybrid/EV Battery Cell 55 Voltage	HV battery cell voltage of each battery cell Ignition switch ON: 3.00 to 4.00 V	-
Hybrid/EV Battery Cell 56 Voltage	HV battery cell voltage of each battery cell Ignition switch ON: 3.00 to 4.00 V	-
Hybrid/EV Battery Cell 57 Voltage	HV battery cell voltage of each battery cell Ignition switch ON: 3.00 to 4.00 V	-
Hybrid/EV Battery Cell 58 Voltage	HV battery cell voltage of each battery cell Ignition switch ON: 3.00 to 4.00 V	-
Hybrid/EV Battery Cell 59 Voltage	HV battery cell voltage of each battery cell Ignition switch ON: 3.00 to 4.00 V	-
Hybrid/EV Battery Cell 60 Voltage	HV battery cell voltage of each battery cell Ignition switch ON: 3.00 to 4.00 V	-
Hybrid/EV Battery Cell 1 Internal Resistance	Internal resistance of each battery cell Always: 0.006 Ω or less	-

TESTER DISPLAY	MEASUREMENT ITEM	DIAGNOSTIC NOTE
Hybrid/EV Battery Cell 2 Internal Resistance	Internal resistance of each battery cell Always: 0.006 Ω or less	-
Hybrid/EV Battery Cell 3 Internal Resistance	Internal resistance of each battery cell Always: 0.006 Ω or less	-
Hybrid/EV Battery Cell 4 Internal Resistance	Internal resistance of each battery cell Always: 0.006 Ω or less	-
Hybrid/EV Battery Cell 5 Internal Resistance	Internal resistance of each battery cell Always: 0.006 Ω or less	-
Hybrid/EV Battery Cell 6 Internal Resistance	Internal resistance of each battery cell Always: 0.006 Ω or less	-
Hybrid/EV Battery Cell 7 Internal Resistance	Internal resistance of each battery cell Always: 0.006 Ω or less	-
Hybrid/EV Battery Cell 8 Internal Resistance	Internal resistance of each battery cell Always: 0.006 Ω or less	-
Hybrid/EV Battery Cell 9 Internal Resistance	Internal resistance of each battery cell Always: 0.006 Ω or less	-
Hybrid/EV Battery Cell 10 Internal Resistance	Internal resistance of each battery cell Always: 0.006 Ω or less	-
Hybrid/EV Battery Cell 11 Internal Resistance	Internal resistance of each battery cell Always: 0.006 Ω or less	-
Hybrid/EV Battery Cell 12 Internal Resistance	Internal resistance of each battery cell Always: 0.006 Ω or less	-
Hybrid/EV Battery Cell 13 Internal Resistance	Internal resistance of each battery cell Always: 0.006 Ω or less	-
Hybrid/EV Battery Cell 14 Internal Resistance	Internal resistance of each battery cell Always: 0.006 Ω or less	-
Hybrid/EV Battery Cell 15 Internal Resistance	Internal resistance of each battery cell Always: 0.006 Ω or less	-

TESTER DISPLAY	MEASUREMENT ITEM	DIAGNOSTIC NOTE
Hybrid/EV Battery Cell 16 Internal Resistance	Internal resistance of each battery cell Always: 0.006 Ω or less	-
Hybrid/EV Battery Cell 17 Internal Resistance	Internal resistance of each battery cell Always: 0.006 Ω or less	-
Hybrid/EV Battery Cell 18 Internal Resistance	Internal resistance of each battery cell Always: 0.006 Ω or less	-
Hybrid/EV Battery Cell 19 Internal Resistance	Internal resistance of each battery cell Always: 0.006 Ω or less	-
Hybrid/EV Battery Cell 20 Internal Resistance	Internal resistance of each battery cell Always: 0.006 Ω or less	-
Hybrid/EV Battery Cell 21 Internal Resistance	Internal resistance of each battery cell Always: 0.006 Ω or less	-
Hybrid/EV Battery Cell 22 Internal Resistance	Internal resistance of each battery cell Always: 0.006 Ω or less	-
Hybrid/EV Battery Cell 23 Internal Resistance	Internal resistance of each battery cell Always: 0.006 Ω or less	-
Hybrid/EV Battery Cell 24 Internal Resistance	Internal resistance of each battery cell Always: 0.006 Ω or less	-
Hybrid/EV Battery Cell 25 Internal Resistance	Internal resistance of each battery cell Always: 0.006 Ω or less	-
Hybrid/EV Battery Cell 26 Internal Resistance	Internal resistance of each battery cell Always: 0.006 Ω or less	-
Hybrid/EV Battery Cell 27 Internal Resistance	Internal resistance of each battery cell Always: 0.006 Ω or less	-
Hybrid/EV Battery Cell 28 Internal Resistance	Internal resistance of each battery cell Always: 0.006 Ω or less	-
Hybrid/EV Battery Cell 29 Internal Resistance	Internal resistance of each battery cell Always: 0.006 Ω or less	-

TESTER DISPLAY	MEASUREMENT ITEM	DIAGNOSTIC NOTE
Hybrid/EV Battery Cell 30 Internal Resistance	Internal resistance of each battery cell Always: 0.006 Ω or less	-
Hybrid/EV Battery Cell 31 Internal Resistance	Internal resistance of each battery cell Always: 0.006 Ω or less	-
Hybrid/EV Battery Cell 32 Internal Resistance	Internal resistance of each battery cell Always: 0.006 Ω or less	-
Hybrid/EV Battery Cell 33 Internal Resistance	Internal resistance of each battery cell Always: 0.006 Ω or less	-
Hybrid/EV Battery Cell 34 Internal Resistance	Internal resistance of each battery cell Always: 0.006 Ω or less	-
Hybrid/EV Battery Cell 35 Internal Resistance	Internal resistance of each battery cell Always: 0.006 Ω or less	-
Hybrid/EV Battery Cell 36 Internal Resistance	Internal resistance of each battery cell Always: 0.006 Ω or less	-
Hybrid/EV Battery Cell 37 Internal Resistance	Internal resistance of each battery cell Always: 0.006 Ω or less	-
Hybrid/EV Battery Cell 38 Internal Resistance	Internal resistance of each battery cell Always: 0.006 Ω or less	-
Hybrid/EV Battery Cell 39 Internal Resistance	Internal resistance of each battery cell Always: 0.006 Ω or less	-
Hybrid/EV Battery Cell 40 Internal Resistance	Internal resistance of each battery cell Always: 0.006 Ω or less	-
Hybrid/EV Battery Cell 41 Internal Resistance	Internal resistance of each battery cell Always: 0.006 Ω or less	-
Hybrid/EV Battery Cell 42 Internal Resistance	Internal resistance of each battery cell Always: 0.006 Ω or less	-
Hybrid/EV Battery Cell 43 Internal Resistance	Internal resistance of each battery cell Always: 0.006 Ω or less	-

TESTER DISPLAY	MEASUREMENT ITEM	DIAGNOSTIC NOTE
Hybrid/EV Battery Cell 44 Internal Resistance	Internal resistance of each battery cell Always: 0.006 Ω or less	-
Hybrid/EV Battery Cell 45 Internal Resistance	Internal resistance of each battery cell Always: 0.006 Ω or less	-
Hybrid/EV Battery Cell 46 Internal Resistance	Internal resistance of each battery cell Always: 0.006 Ω or less	-
Hybrid/EV Battery Cell 47 Internal Resistance	Internal resistance of each battery cell Always: 0.006 Ω or less	-
Hybrid/EV Battery Cell 48 Internal Resistance	Internal resistance of each battery cell Always: 0.006 Ω or less	-
Hybrid/EV Battery Cell 49 Internal Resistance	Internal resistance of each battery cell Always: 0.006 Ω or less	-
Hybrid/EV Battery Cell 50 Internal Resistance	Internal resistance of each battery cell Always: 0.006 Ω or less	-
Hybrid/EV Battery Cell 51 Internal Resistance	Internal resistance of each battery cell Always: 0.006 Ω or less	-
Hybrid/EV Battery Cell 52 Internal Resistance	Internal resistance of each battery cell Always: 0.006 Ω or less	-
Hybrid/EV Battery Cell 53 Internal Resistance	Internal resistance of each battery cell Always: 0.006 Ω or less	-
Hybrid/EV Battery Cell 54 Internal Resistance	Internal resistance of each battery cell Always: 0.006 Ω or less	-
Hybrid/EV Battery Cell 55 Internal Resistance	Internal resistance of each battery cell Always: 0.006 Ω or less	-
Hybrid/EV Battery Cell 56 Internal Resistance	Internal resistance of each battery cell Always: 0.006 Ω or less	-
Hybrid/EV Battery Cell 57 Internal Resistance	Internal resistance of each battery cell Always: 0.006 Ω or less	-

TESTER DISPLAY	MEASUREMENT ITEM	DIAGNOSTIC NOTE
Hybrid/EV Battery Cell 58 Internal Resistance	Internal resistance of each battery cell Always: 0.006 Ω or less	-
Hybrid/EV Battery Cell 59 Internal Resistance	Internal resistance of each battery cell Always: 0.006 Ω or less	-
Hybrid/EV Battery Cell 60 Internal Resistance	Internal resistance of each battery cell Always: 0.006 Ω or less	-
Hybrid/EV Battery Temperature 1	HV battery module temperature Vehicle left for 1 day: Same as ambient air temperature	-
Hybrid/EV Battery Temperature 2	HV battery module temperature Vehicle left for 1 day: Same as ambient air temperature	-
Hybrid/EV Battery Temperature 3	HV battery module temperature Vehicle left for 1 day: Same as ambient air temperature	-
Hybrid/EV Battery Temperature 4	HV battery module temperature Vehicle left for 1 day: Same as ambient air temperature	-
Hybrid/EV Battery Temperature 5	HV battery module temperature Vehicle left for 1 day: Same as ambient air temperature	-
Hybrid/EV Battery Temperature 6	HV battery module temperature Vehicle left for 1 day: Same as ambient air temperature	-
Hybrid/EV Battery Temperature Sensor Voltage 1	HV battery temperature sensor voltage 4.75 (-40°C (-40°F)) to 0.46 V (90°C (194°F))	-
Hybrid/EV Battery Temperature Sensor Voltage 2	HV battery temperature sensor voltage 4.75 (-40°C (-40°F)) to 0.46 V (90°C (194°F))	-
Hybrid/EV Battery Temperature Sensor	HV battery temperature sensor voltage	-

TESTER DISPLAY	MEASUREMENT ITEM	DIAGNOSTIC NOTE
Voltage 3	4.75 (-40°C (-40°F)) to 0.46 V (90°C (194°F))	
Hybrid/EV Battery Temperature Sensor Voltage 4	HV battery temperature sensor voltage 4.75 (-40°C (-40°F)) to 0.46 V (90°C (194°F))	-
Hybrid/EV Battery Temperature Sensor Voltage 5	HV battery temperature sensor voltage 4.75 (-40°C (-40°F)) to 0.46 V (90°C (194°F))	-
Hybrid/EV Battery Temperature Sensor Voltage 6	HV battery temperature sensor voltage 4.75 (-40°C (-40°F)) to 0.46 V (90°C (194°F))	-
Hybrid/EV Battery Cooling Fan	Battery cooling blower assembly operation mode 0: Ignition switch ON or ON (READY), and Battery cooling blower assembly stopped 1 to 6: Ignition switch ON or ON (READY), and Battery cooling blower assembly low speed to high speed 10: Battery cooling blower assembly in fail-safe mode due to battery cooling blower assembly malfunction (Refer to diagnostic procedure for related output hybrid system DTCs) 20: Battery cooling blower assembly in fail-safe mode due to HV battery malfunction (Refer to diagnostic procedure for related output hybrid system DTCs) 30: Battery cooling blower assembly stopped to protect parts	-
Hybrid/EV Battery Cooling Fan 1 Drive Request	Battery cooling blower assembly operation request	-
Hybrid/EV Battery Cooling Fan 1 Drive Status	Battery cooling blower assembly operation mode	-

TESTER DISPLAY	MEASUREMENT ITEM	DIAGNOSTIC NOTE
Hybrid/EV Battery Cooling Fan 1 Frequency	Battery cooling blower assembly frequency Proportional to Battery cooling blower assembly speed	-
Hybrid/EV Battery Cooling Fan Low Speed Request	Battery cooling blower assembly Lo speed requested Constant: ON or OFF	-
Hybrid/EV Battery Cooling Fan Intake Air Temperature 1	HV battery intake air temperature Vehicle left for 1 day: Same as ambient air temperature	-
Hybrid/EV Battery Cooling Fan Intake Air Temperature Sensor Voltage 1	HV battery intake air temperature sensor voltage	-

ACTIVE TEST

Using the GTS to perform Active Tests allows relays, VSVs, actuators and other items to be operated without removing any parts. This non-intrusive functional inspection can be very useful because intermittent operation may be discovered before parts or wiring is disturbed. Performing Active Tests early in troubleshooting is one way to save diagnostic time. Data List information can be displayed while performing Active Tests.

NOTICE:

- It is necessary to use caution, because if the tester DLC connector becomes disconnected or if a communication error occurs during an Active Test, the vehicle could become inoperative (the READY light may go off).
- After performing the Active Test, turn the ignition switch off before proceeding to the next step.

(a) According to the display on the GTS perform the appropriate Active Test.

Powertrain > HV Battery > Active Test

TESTER DISPLAY	MEASUREMENT ITEM	CONTROL RANGE	RESTRICT CONDITION	DIAGNOSTIC NOTE
Control the Hybrid/EV Battery Cooling Fan	To check operation of the cooling fan, and check if there is sufficient air flow	0 to 6	Ignition switch ON	• Test Details Stops the cooling fan or changes air volume mode If the value of a cooling fan drive request from the vehicle is larger than that used for the Active Test, Active Test is prohibited (remains prohibited during the same trip). **Related Data List** ◦ Hybrid/EV Battery Cooling Fan

TESTER DISPLAY	MEASUREMENT ITEM	CONTROL RANGE	RESTRICT CONDITION	DIAGNOSTIC NOTE
				◦ Hybrid/EV Battery Cooling Fan 1 Drive Request ◦ Hybrid/EV Battery Cooling Fan 1 Drive Status ◦ Hybrid/EV Battery Cooling Fan 1 Frequency ◦ Hybrid/EV Battery Cooling Fan Low Speed Request ◦ Hybrid/EV Battery Temperature 1 to 6 ◦ Hybrid/EV Battery Cooling Fan Intake Air Temperature 1