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| Model Year Start: 2023 | Model: Prius Prime | Prod Date Range: [12/2022 -] |
| Title: PA10/PB10/PB12 (HYBRID TRANSMISSION / TRANSAXLE): ELECTRONIC SHIFT LEVER SYSTEM: FREEZE FRAME DATA; 2023 - 2024 MY Prius Prius Prime [12/2022 -] | | |

FREEZE FRAME DATA

CHECK FREEZE FRAME DATA

HINT:

The hybrid vehicle control ECU records vehicle and driving condition information as freeze frame data the moment a DTC is stored. Freeze frame data can help determine the vehicle conditions when the malfunction occurred and help duplicate conditions when troubleshooting.

(a) Select a DTC in order to display its freeze frame data.

Powertrain > Hybrid Control > Trouble Codes

LIST OF FREEZE FRAME DATA

Powertrain > Hybrid Control

| TESTER DISPLAY | MEASUREMENT ITEM | RANGE |
|-----------------------------------------|-------------------------------------------------------------------------------------------------|------------------------------------------------|
| Vehicle Speed | Vehicle speed | Min.: 0 km/h (0 mph), Max.: 255 km/h (158 mph) |
| Accelerator Position | Accelerator pedal depressed angle | Min.: 0%, Max.: 127.5% |
| Master Cylinder Control Torque | Braking torque equivalent to master cylinder brake fluid pressure (Total braking torque) | Min.: -4096.00 Nm, Max.: 4095.87 Nm |
| Shift Position | Current shift state | P / R / N / D / B (S) |
| Shift Position (Meter) | Shift position on the meter | Not Displayed / P / R / N / D / B (S) |
| Ready Signal | READY state is displayed | ON / OFF |
| HV/EV Activate Condition | Startup state of the hybrid system | Normal / Remote Air Control System / Remote |
| Request Motor Regenerative Brake Torque | Requested motor (MG2) regenerative braking torque | Min.: -4096.00 Nm, Max.: 4095.87 Nm |

| TESTER DISPLAY | MEASUREMENT ITEM | RANGE |
|-----------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| P Control Request Status | Shift actuator ECU (shift control actuator assembly) operation request | No Request / Lock(Normal) / Unlock(Normal) / Lock(Abnormal) / Unlock(Abnormal) / Unlock during Running(Normal) / Unlock during Running(Abnormal) |
| P Control Status | Shift state P status | Control Duty Abnormal / Lock Position(Normal) / Lock Position(Abnormal) / Indefinite Position(Normal) / Indefinite Position(Abnormal) / Unlock Position(Normal) / Unlock Position(Abnormal) / Lock Position(Normal) / Lock Position(Abnormal) / Indefinite Position(Normal) / Indefinite Position(Abnormal) / Unlock Position(Normal) / Unlock Position(Abnormal) |
| Abnormality Informing Status | Malfunction notifications of other systems | ON / OFF |
| Meter Display Request (P Position Switch ON when Running) | Notification from shift control displayed on the meter that the shift stated changed to N as a change to shift state P was attempted while driving | ON or OFF |
| Meter Display Request (Shift N Operation when Running) | Notification from shift control displayed on the meter that the shift stated changed to N | OFF, ON or Shift P Pressed for Extended Time/Repeatedly |
| Meter Display Request (Shift Operation Rejection) | Shift operation rejected message | 0 to 255 |
| Identifying Signal of Shift R/D Operation during Ready OFF | Identification indicating the shift state was changed to R or D with READY indicator not illuminated and the ignition switch ON | ON / OFF |
| P Position Automatic Change Request | P position automatic change function request status | ON / OFF |
| Limiting Driving Force Request from Transmission Control System | Drive torque limit request status of the HV system sent from the electronic shift lever system | ON / OFF |
| SP1 Vehicle Speed | Vehicle speed (SP1) | Min.: 0 km/h (0 mph), Max.: 655.35 km/h (407.23 mph) |

| TESTER DISPLAY | MEASUREMENT ITEM | RANGE |
|----------------------------------------------------|---------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Gear Shift Control Module Power Supply Voltage | Shift control ECU power supply voltage | Min.: -20.00 V, Max.: 19.84 V |
| Gear Shift Control Module "B" CPU Temperature | Shift actuator ECU internal temperature | Min.: -50°C (-58°F), Max.: 205°C (401°F) |
| IGCT Signal Status (Gear Shift Control Module) | IGCT signal status of the shift control ECU | ON / OFF |
| IGCT Signal Status (Gear Shift Control Module "B") | IGCT signal status of the shift actuator ECU | ON / OFF |
| IGP Signal Status (Gear Shift Control Module) | IGP signal status of the shift control ECU | ON / OFF |
| IG Status (Gear Shift Control Module "B") | IG status of the shift actuator ECU | ON / OFF |
| WAKE Signal Status (Gear Shift Control Module) | WAKE signal status of the shift control ECU | ON / OFF |
| WAKE Signal Status (Gear Shift Control Module "B") | WAKE signal status of the shift actuator ECU | ON / OFF |
| Backup Power Supply Type | Backup supply power type | Capacitor Type / Lithium Type / None |
| Gear Shift Control Module Backup Signal Status | System backup signal from the backup supply power | Wake Up Request / Capacitor Internal Failure / Backup Mode (Low Capacity) / Backup Possible/Remote Charging Complete / Backup Impossible / Communication Stop / Backup Possible/Remote Charging Incomplete / Capacitor Internal Failure (Backup Possible) / Capacitor External Failure / Capacitor External Failure (Backup Possible) / Capacitor External Failure (Brake Factor) |

| TESTER DISPLAY | MEASUREMENT ITEM | RANGE |
|---------------------------------------------------------|--------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Gear Shift Control Module Backup Request | System backup request from the backup supply power | Wake Up/Sleep Permission / Interruption Permission (Not Remote) / ON (Not Remote) / OFF (Not Remote) / ON (Advanced Park) / OFF (Advanced Park) / ON (Stop&Start) |
| Fail Safe Status (Gear Shift Control Module) | Fail-safe status of the shift control ECU | Unknown / OFF / ON |
| Fail Safe Status (Gear Shift Control Module "B" to "A") | Shift control ECU fail-safe status from the shift actuator ECU | Normal / Abnormal / Unknown |
| Fail Safe Power Supply Relay Connect Request | Requested connection status of the shift actuator ECU motor drive relay (fail safe power supply) | ON / OFF |
| Shift Position (Current Position) | Actual shift lever position (judged value) | Home / R / N / D / B/M/S / Not Available |
| Shift Sensor Status | Shift sensor malfunction status | Normal / Abnormal / Abnormal (Extreme) |
| Shift Sensor 1 Status | Shift lever sensor input signal status | H / R / N / D / B/M/S / O / Abnormal / Unknown |
| Shift Sensor 2 Status | Shift lever sensor input signal status | H / R / N / D / B/M/S / O / Abnormal / Unknown |
| Shift Sensor 3 Status | Shift lever sensor input signal status | H / R / N / D / B/M/S / O / Abnormal / Unknown |
| M or S Shift Position Indicator Turn On Request | Shift position indicator (B) illumination status | ON / OFF |
| D Shift Position Indicator Turn On Request | Shift position indicator (D) illumination status | ON / OFF |
| N Shift Position Indicator Turn On Request | Shift position indicator (N) illumination status | ON / OFF |

| TESTER DISPLAY | MEASUREMENT ITEM | RANGE |
|-------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|
| R Shift Position Indicator Turn On Request | Shift position indicator (R) illumination status | ON / OFF |
| P Shift Position Indicator Turn On Request | P position indicator illumination status | ON / OFF |
| Back Up Light Turn On Request | Back-up light illumination command | ON / OFF |
| Stop Light Switch (Gear Shift Control Module) | Stop light switch status | ON / OFF |
| P Position Switch Signal Status (Gear Shift Control Module) | P position switch status | ON / OFF |
| Not P Position Learning Value (Output Side) | Learned value (output axis) in accordance with the shift state other than P | Min.: 0.0 deg, Max.: 124.5 deg |
| Not P Position Learning Value (Motor Side) | Learned value (calculated output axis angle based on the detected motor axis angle) in accordance with the shift state other than P | Min.: 0.00 deg, Max.: 42949672.95 deg |
| Absolute Angle Sensor Value 1 | Value of axis sensor 1 (detected angle) | Min.: 0.0 deg, Max.: 124.5 deg |
| Absolute Angle Sensor Value 2 | Value of axis sensor 2 (detected angle) | Min.: 0.0 deg, Max.: 124.5 deg |
| Gear Shift Actuator Power Supply Voltage (MA1) | Voltage of gear shift motor supply power terminal (MA1) | Min.: 0 V, Max.: 255 V |
| Gear Shift Actuator Power Supply Voltage (MA2) | Voltage of gear shift motor supply power terminal (MA2) | Min.: 0 V, Max.: 255 V |

| TESTER DISPLAY | MEASUREMENT ITEM | RANGE |
|------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|----------------------------------------|
| Gear Shift Actuator Motor Angle Sensor Value | Value of motor axis sensor (detected angle) | Min.: 0.00 deg, Max.: 358.59 deg |
| Gear Shift Actuator Motor Speed | Gear shift motor rotation speed | Min.: 0.00 rpm deg, Max.: 10160.15 rpm |
| Gear Shift Actuator Power Supply Relay Downstream Voltage | Internal voltage of the actuator downstream of the motor supply power relay | Min.: 0 V, Max.: 255 V |
| U Phase Parking Lock Motor Current-Carrying Status (Gear Shift Control Module "B") | Parking lock motor (U phase) drive signal | ON / OFF |
| V Phase Parking Lock Motor Current-Carrying Status (Gear Shift Control Module "B") | Parking lock motor (V phase) drive signal | ON / OFF |
| W Phase Parking Lock Motor Current-Carrying Status (Gear Shift Control Module "B") | Parking lock motor (W phase) drive signal | ON / OFF |
| U Phase Parking Lock Motor Terminal Current | Current of the parking lock motor terminal (U phase) | Min.: -64.0 A, Max.: 63.5 A |
| V Phase Parking Lock Motor Terminal Current | Current of the parking lock motor terminal (V phase) | Min.: -64.0 A, Max.: 63.5 A |
| W Phase Parking Lock Motor Terminal Current | Current of the parking lock motor terminal (W phase) | Min.: -64.0 A, Max.: 63.5 A |
| ACT Relay Connect Status | Connection status of drive relay of the shift actuator ECU motor | ON / OFF |

| TESTER DISPLAY | MEASUREMENT ITEM | RANGE |
|----------------------------------------------------------|----------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ACT Relay Connect Request | Requested connection status of drive relay of the shift actuator ECU motor | ON / OFF |
| ACT Position Status | Status of the shift actuator ECU | Other than P / None / Shift in P |
| ACT Position Drive Request | Operation request position of the shift actuator ECU | Output NG / Shift in P / Other than P |
| ACT Operation Status | Operation status of the shift actuator ECU | ON / OFF |
| ACT Function Informing Status | Function failure status of the shift actuator ECU | Normal / Maintenance / Outside Judgment Guaranteed / Outside Operation Guaranteed / Outside Judgment/Operation Guaranteed / Operation NG / Operation NG/Outside Judgment Guaranteed |
| ACT Monitoring Information | Monitor status of the shift actuator ECU | Normal / Driver Malfunction 1 / Driver Malfunction 2 / Driver Malfunction 3 / Driver Malfunction 4 / Driver Malfunction 5 / Driver Malfunction 6 / Sensor Malfunction 1 / Sensor Malfunction 2 / Sensor Malfunction 3 / Driver Malfunction 7 / Motor Malfunction 1 / Motor Malfunction 2 / Motor Malfunction 3 |
| Shift Request during Advanced Drive/Park | Shift request during advanced park operation | OFF / ON (Gear Shift Control Module) / ON (Clearance Warning Control Module Semi-Auto) / ON (Clearance Warning Control Module Full-Auto) / ON (Advanced Drive Control Module) |
| IGCT-Scene Signal Status (Gear Shift Control Module) | IGCT-SCENE signal status of the shift control ECU | ON / OFF |
| IGCT-Scene Signal Status (Gear Shift Control Module "B") | IGCT-SCENE signal status of the shift actuator ECU | ON / OFF |

