13.Read Current Data

A: OPERATION

NOTE:
For detailed operation procedures, refer to “PC application help for Subaru Select Monitor”.

1. HYBRID POWERTRAIN CONTROL SYSTEM

1) On «Main Menu» display, select {Each System Check}.
2) On «Each System Check» display, select {HEV System}.
3) On «HEV System» display, select {Hybrid Powertrain Control System}.
4) On «Hybrid Powertrain Control System» display, select {Current Data Display & Save}.

Display	Content	Note (when normal)	Unit of measure
Vehicle speed	Vehicle speed calculated by VDC CM (CAN communication data)	0 — 210	km/h
Vehicle Speed (Control)	Vehicle speed for control	0 — 255	km/h
Ambient Temperature	Ambient temperature calculated by combination meter (CAN communication data)	–40 — 80	°C
Power Target	Target drive power	–2100 — 9650	N
Target Acceleration (Cruise Control)	Target acceleration during the cruise control	–5.5 — 5.5	m/s^2
Acceleration by Driver Request	Target acceleration calculated from an accelerator opening angle and a vehicle speed for control	–5.5 — 5.5	m/s^2
Engine Torque	Engine axle torque calculated by ECM (CAN communication data)	–1000 — 2276.7	Nm
Engine Torque Target	Target engine axle torque	–70 — 191	Nm
Engine Torque Upper (ECM)	Upper limit of target engine torque calculated by ECM (CAN communication data)	0 — 408	Nm
Engine Speed	Engine speed calculated by ECM (CAN communication data)	0 — 6400	rpm
Coolant Temperature	Engine coolant temperature calculated by ECM (CAN communication data)	–40 — 214	°C
Conventional Starter ON Permit Signal	Status of permission from HPCM for starting engine by starter	OFF ON	—
CVT Input Torque Upper (TCM)	Upper limit of input torque to transmission calculated by TCM (CAN communication data)	0 — 510	Nm
Gear Ratio Target	Target gear ratio	0 — 3.99	—
Gear Ratio	Gear ratio calculated by TCM (CAN communication data)	0 — 3.99	—
Input Clutch Target	Target status of input clutch	No Request Req.Engaged Req.Disengage	—
Input Clutch Actual	Input clutch status judged by TCM (CAN communication data)	Engaging2 Engaged Disengaged Engaging1 Disengaging	—
Output Clutch Target	Target status of output clutch	No Request Req.Engaged Req.Disengage	—
Output Clutch Actual	Output clutch status judged by TCM (CAN communication data)	Engaging Engaged Disengaged Disengaging	—

Display	Content	Note (when normal)	Unit of measure
Transmission Turbine Speed	Transmission turbine speed calculated by TCM (CAN communication data)	0 — 6600	rpm
Output Shaft Speed	Transmission output axle speed calculated by TCM (CAN communication data)	0 — 12300	rpm
ATF Temp.	ATF temperature calculated by TCM (CAN communication data)	–50 — 205	°C
Trip Count	Number of IG ON judged by the body integrated unit (CAN communication data)	—	times
Count	Number of IG ON, synchronous/asynchronous identification information of the elapsed time after IG ON	Common Originally	—
Time Count	Detailed time elapsed after IG ON calculated by body integrated unit (CAN communication data)	—	ms
Ignition switch	Ignition switch status	OFF ON	—
Starter SW	Starter switch status	OFF ON	—
P Range	Parking range status judged by TCM (CAN communication data)	OFF ON	—
R Range	Reverse range status judged by TCM (CAN communication data)	OFF ON	—
N Range	Neutral range status judged by TCM (CAN communication data)	OFF ON	—
D Range	Drive range status judged by TCM (CAN communication data)	OFF ON	—
Accel opening angle	Accelerator opening angle ratio calculated by ECM (CAN communication data)	0 — 100	%
Master Cylinder Pressure	Brake fluid pressure calculated by VDC CM (CAN communication data)	0 — 29.3	MPa
ECU ACC	Voltage supplied to HPCM	10 — 15	V
Main Brake Pedal Stroke	Brake stroke calculated from main brake stroke sensor voltage	0 — 100	%
Main Brake Pedal Position Sensor Voltage	Voltage detected by main brake stroke sensor	0 — 5.16	V
Sub Brake Pedal Stroke	Brake stroke calculated from sub brake stroke sensor voltage	0 — 100	%
Sub Brake Pedal Position Sensor Voltage	Voltage detected by sub brake stroke sensor	0 — 5.16	V
Brake Booster Pressure 1	Vacuum pressure calculated from brake vacuum sensor voltage 1	13.3 — 106.7	kPa
Brake Booster Pressure Sensor Voltage 1	Voltage detected by brake vacuum sensor 1	0 — 5.16	V
Brake Booster Pressure 2	Vacuum pressure calculated from brake vacuum sensor voltage 2	13.3 — 106.7	kPa
Brake Booster Pressure Sensor Voltage 2	Voltage detected by brake vacuum sensor 2	0 — 5.16	V
Atmospheric pressure	Atmospheric pressure calculated by ECM (CAN communication data)	13 — 115	kPa
12V Battery Relay Target Mode	12V battery relay commanded status	Close Open	—

Display	Content	Note (when normal)	Unit of measure
12V Battery Relay Close Signal	12V battery relay close operation request status	OFF ON (regularly ON for 100 ms every 10 seconds while Close)	—
12V Battery Relay Open Signal	12V battery relay open operation request status	OFF ON (regularly ON for 100 ms every 10 seconds while Open)	—
Vacuum Pump Relay ON Signal	Brake vacuum pump relay operation request status	OFF ON	—
Vacuum Pump Relay Actual	Voltage applied to brake vacuum pump relay	0 — 20	V
Clutch Solenoid Control Signal	Output clutch solenoid operation request status	OFF ON	—
Power Sensor Voltage 1	Voltage supplied to main brake stroke sensor	5	V
Power Sensor Voltage 2	Voltage supplied to sub brake stroke sensor	5	V
Power Sensor Voltage 3	Voltage supplied to brake vacuum sensors 1 and 2	5	V
HPCM Target Control Mode	Target control mode of HPCM	00 01 02 03 04 06 09	—
HPCM Current Control Mode	Current control mode of HPCM	00 01 02 03 04 06 09	—
Auto Start Stop Function Permit Signal	Permission status of Auto Start Stop	OFF ON	—
Auto Start Stop or EV Status	Auto Start Stop/EV traveling status	OFF ON	—
Ready Status	HEV-READY status	OFF Ready Status	—
Drive Motor Inverter Operation Signal	Drive motor inverter operation request status	OFF ON	—
Drive Motor Inverter Input Voltage	Drive motor inverter input voltage calculated by DMCM (CAN communication data)	9 — 155	V
Drive Motor Inverter Temperature (MAX)	The highest temperature among values of drive motor inverter temperature detected through multiple sensors by DMCM (CAN communication data)	–50 — 150	°C
Drive Motor Output Torque Actual	Drive motor output torque calculated by DMCM (CAN communication data)	–65 — 65	Nm
Drive Motor Torque Target	Target torque of drive motor	–65 — 65	Nm
Drive Motor Torque Upper Limit (DMCM)	Upper limit of drive motor torque calculated by DMCM (CAN communication data)	0 — 65	Nm
Drive Motor Torque Lower Limit (DMCM)	Lower limit of drive motor torque calculated by DMCM (CAN communication data)	–65 — 0	Nm

Display	Content	Note (when normal)	Unit of measure
Drive Motor Speed	Drive motor speed calculated by DMCM (CAN communication data)	–7000 — 7000	rpm
Drive Motor Speed Target	Target speed of drive motor	—	rpm
Drive Motor Inverter Control Mode Target	Target control mode of drive motor inverter	—	—
Drive Motor Temperature A	Drive motor temperature A calculated by DMCM (CAN communication data)	–55 — 140	°C
Drive Motor Temperature B	Drive motor temperature B calculated by DMCM (CAN communication data)	–55 — 140	°C
ISG cranking demand	Integrated starter generator cranking request status	OFF ON	—
ISG prohibit drive demand	Integrated starter generator drive prohibition request status	OFF ON	—
ISG Terminal Voltage	Terminal voltage calculated by integrated starter generator (LIN communication data)	10.6 — 16.975	V
ISG Cranking Status	Cranking demand acceptance status judged by integrated starter generator (LIN communication data)	W/O Request Request	—
ISG Control Mode Actual	Current control mode judged by integrated starter generator (LIN communication data)	Neutral GeneratePower Restart First Start Stop assistance	—
ISG Control Mode Target	Target control mode of integrated starter generator	Neutral GeneratePower Start Start Ant. Preliminary excitation Stop assistance	—
ISG Cranking Permit Signal	Cranking permission status judged by integrated starter generator (LIN communication data)	OFF ON	—
ISG Excitation Current Actual	Excitation current calculated by integrated starter generator (LIN communication data)	0 — 25.5	A
ISG Excitation Current Upper Target	Excitation current upper limit of integrated starter generator	0 — 16	A
ISG Rotor Speed	Rotor speed calculated by integrated starter generator (LIN communication data)	0 — 19125	rpm
ISG Temperature	Temperature calculated by integrated starter generator (LIN communication data)	–42 — 210	°C
ISG Voltage Target	Target generated voltage of integrated starter generator	10.6 — 16	V
DCDC Converter Status	Operating condition of DC/DC converter judged by DMCM (CAN communication data)	Inactive ON	—
DCDC Converter Output Permit Signal	Output permission status of DC/DC converter	OFF ON	—
DCDC Converter Output Voltage Actual	DC/DC converter output voltage calculated by DMCM (CAN communication data)	10 — 15.5	V
DCDC Converter Output Voltage Target	DC/DC converter target output indicate voltage	0 — 25.5	V
DCDC Converter Output Amperage	DC/DC converter output current calculated by DMCM (CAN communication data)	0 — 130	A
DCDC Converter Temperature	DC/DC converter temperature calculated by DMCM (CAN communication data)	–50 — 160	°C

Display	Content	Note (when normal)	Unit of measure
Electric Oil Pump Output Current	Output current calculated by electric oil pump (CAN communication data)	0 — 15.9375	A
Electric Oil Pump Motor Speed	Motor speed calculated by electric oil pump (CAN communication data)	0 — 4095	rpm
Service Plug Status	Service disconnect plug lock status judged by BECM (CAN communication data)	OFF ON	—
High Voltage Battery SOC	High voltage battery residual quantity calculated by BECM (CAN communication data)	5 — 95	%
High Voltage Battery SOH	Battery status auxiliary parameter of high voltage battery calculated by BECM (CAN communication data)	25 — 100	%
High Voltage Battery Total Voltage	High voltage battery voltage calculated by BECM (CAN communication data)	70 — 140	V
High Voltage Battery Amperage	High voltage battery current calculated by BECM (CAN communication data)	–110 — 180	A
High Voltage Battery Discharge Power Limit 1	High voltage battery discharge power limit calculated by BECM (CAN communication data)	0 — 14.0	kW
High Voltage Battery Charge Power Limit 1	High voltage battery charge power limit calculated by BECM (CAN communication data)	0 — 14.0	kW
High Voltage Battery SOC Subservience Parameter (MIN)	SOC auxiliary parameter of high voltage battery calculated by BECM (CAN communication data)	0 — 100	%
High Voltage Battery Temperature (MAX)	The highest temperature among values of high voltage battery temperature detected through multiple sensors by BECM (CAN communication data)	–40 — 63	°C
High Voltage Battery Temperature (MIN)	The lowest temperature among values of high voltage battery temperature detected through multiple sensors by BECM (CAN communication data)	–40 — 63	°C
High Voltage Battery Intake Air Temperature	High voltage battery intake air temperature calculated by BECM (CAN communication data)	–40 — 86.5	°C
High Voltage Battery Cooling Fan Speed	High voltage battery cooling fan speed calculated by DMCM (CAN communication data)	0 — 6000	rpm
High Voltage Battery Cooling Fan Duty Target	High voltage battery cooling fan target duty request	0 — 100 (20 — 70%: normal, 100%: failure, 0 — 20%: dead zone)	%
Blower Fan Level	Blower fan level judged by auto A/C CM (CAN communication data)	OFF LO M1 M2 M3 M4 M5 Hi	—
BECM Control Status	BECM control mode judged by BECM (CAN communication data)	Init. Normal Output Limit Open Request Forced Open NG OFF Signal	—
Contactor Close Status	Contactor close status judged by BECM (CAN communication data)	Non Close	—
Contactor Open Status	Contactor open status judged by BECM (CAN communication data)	Non Open	—

Display	Content	Note (when normal)	Unit of measure
Contactor Signal	Contactor operation request status	OFF ON Abnormal OFF	—
12V Engine Restart Battery Voltage	12 volt engine restart battery voltage calculated by 12 volt engine restart battery sensor (LIN communication data)	0 — 50	V
12V Engine Restart Battery Amperage	12 volt engine restart battery current calculated by 12 volt engine restart battery sensor (LIN communication data)	–200 — 200	A
12V Engine Restart Battery SOC	12 volt engine restart battery capacity calculated by 12 volt engine restart battery sensor (LIN communication data)	0 — 100	%
12V Engine Restart Battery SOC Control	12 volt engine restart battery control capacity	0 — 100	%
12V Engine Restart Battery SOC Validity	Validity of 12 volt engine restart battery capacity judged by 12 volt engine restart battery sensor (LIN communication data)	Invalid Valid	—
12V Engine Restart Battery Temperature	12 volt engine restart battery temperature calculated by 12 volt engine restart battery sensor (LIN communication data)	–40 — 125	°C
12V Auxiliary Battery Voltage	12 volt auxiliary battery voltage	0 — 25.5	V
12V Auxiliary Battery Temperature	12 volt auxiliary battery temperature	–40 — 100	°C
12V Auxiliary Battery Temperature Sensor Voltage	Voltage detected by 12 volt auxiliary battery temperature sensor, calculated by ECM (CAN communication data)	0 — 5	V
OBD Test Status	Diagnosis status of emission-related diagnosis	Test Not Comp Normal Abnormal	—
ECM Fail Safe Request Status	On/off status of fail safe request from ECM	Req.Now Req.Cur.Dri. Req.LastDri. Req.Past No Request	—
ECM Fail Safe Request Check	Fail safe request detailed information from ECM	00 — FF	—
TCM Fail Safe Request Status	On/off status of fail safe request from TCM	Req.Now Req.Cur.Dri. Req.LastDri. Req.Past No Request	—
TCM Fail Safe Request Check	Fail safe request detailed information from TCM	00 — FF	—
DMCM Fail Safe Request Status	On/off status of fail safe request from DMCM	Req.Now Req.Cur.Dri. Req.LastDri. Req.Past No Request	—
DMCM Fail Safe Request Check	Fail safe request detailed information from DMCM	00 — FF	—
BECM Fail Safe Request Status	On/off status of fail safe request from BECM	Req.Now Req.Cur.Dri. Req.LastDri. Req.Past No Request	—
BECM Fail Safe Request Check	Fail safe request detailed information from BECM	00 — FF	—

Display	Content	Note (when normal)	Unit of measure
VDCM Fail Safe Request Status	On/off status of fail safe request from VDC CM	Req.Now Req.Cur.Dri. Req.LastDri. Req.Past No Request	—
Hybrid Fail Lamp Signal	Illumination request status of hybrid fail lamp	OFF ON Blink	—
Hybrid Fail Lamp Signal (DMCM)	Hybrid fail lamp illumination request from DMCM (CAN communication data)	OFF ON	—
Hybrid Fail Lamp Signal (BECM)	Hybrid fail lamp illumination request from BECM (CAN communication data)	OFF ON	—
CHARGE Lamp Signal	Illumination request status of charge warning light	OFF ON	—
Vacuum Pump Fail Lamp Signal	Illumination request status of brake vacuum pump warning light	OFF ON	—
A/C Request for Cooperation Mode	Requested engine speed change operation mode judged by auto A/C CM (CAN communication data)	W/O Request Cooling H Heating H Cooling L Heating L Heating M Heating LL	—
SI Drive Mode	SI-DRIVE mode judged by ECM (CAN communication data)	I S ECO-C	—
AUTO/MANUAL Mode Switch	Manual mode switch status judged by TCM (CAN communication data)	OFF ON	—
Up Switch	Manual mode up switch status judged by TCM (CAN communication data)	OFF ON	—
Down Switch	Manual mode down switch status judged by TCM (CAN communication data)	OFF ON	—
Oil Pressure Switch	Oil pressure switch status	OFF ON	—
Oil pressure Lamp	Illumination request status of oil pressure waning light	OFF ON	—
EV Mode Lamp	Illumination request status of EV mode lamp	OFF ON	—
High Voltage Battery SOC (MFD Display)	High voltage battery capacity indicated in multi-function display	0 — 100	%
Energy Flow (MFD Display)	Energy flow request status indicated in multi-function display	Idling Auto Start Stop Motor Assist EV Powering EV Regenerate Engine Drive MotorGenerate EngBrakeRegen DGenerate Engine Stop	—

Display	Content	Note (when normal)	Unit of measure
Interrupt Information (MFD Display)	Interrupt information request status indicated in multi-function display	No Display Alarm General AlarmSpec.1 AlarmSpec.2 Protect Mode EV Door Open AutoOffCrash AutoOffPast Maintenance	—
Fuel Saving Amount (MFD Display)	Fuel saving amount indicated by multi-function display	0 — 2.55	cc/sec
Fuel Saving Amount Sign (MFD Display)	Fuel saving amount sign indicated by multi-function display	+ –	—
Auto Start Stop Buzzer Signal	Buzzer beeping request status of Auto Start Stop	No Buzzer Continue	—
Manual Mode Gear Position (MFD Display)	Gear shift position indication request status of the select indicator/shift position indicator light (in manual mode)	OFF 1 2 3 4 5 6	—
Up (MFD Display)	Upshifting possible indicator light illumination request status (in manual mode)	OFF ON	—
Down (MFD Display)	Downshifting possible indicator light illumination request status (in manual mode)	OFF ON	—
Buzzer Signal	Buzzer beeping request status (in manual mode)	No Buzzer Pattern 2	—
Memorized Cruise Speed	Set vehicle speed during the cruise control	40 — 145	km/h
Main switch	Cruise switch status judged by ECM (CAN communication data)	OFF ON	—
SET/COAST SW	SET/– switch status judged by ECM (CAN communication data)	OFF ON	—
RESUME/ACCEL SW	RES/+ switch status judged by ECM (CAN communication data)	OFF ON	—
Distance Change Switch Signal	Distance setting switch status judged by ECM (CAN communication data)	OFF ON	—
Cruise Control Cancel Switch Signal	CANCEL switch status judged by ECM (CAN communication data)	OFF ON	—
Neutral switch	Neutral switch status judged by cruise control	Other than Neutral Neutral	—
Brake SW	Brake switch status judged by ECM (CAN communication data)	OFF ON	—
Judgment of Main Brake Pedal Position Sensor	Judgment of brake by main brake stroke sensor	OFF ON	—
Judgment of Sub Brake Pedal Position Sensor	Judgment of brake by sub brake stroke sensor	OFF ON	—
Stop light SW	Stop light status judged by body integrated unit (CAN communication data)	OFF ON	—
Brake Pedal Position Learning Status	Brake stroke sensor learning status	Incomplete Complete	—

Display	Content	Note (when normal)	Unit of measure
Main Brake Pedal Position Sensor Learning Value	Main brake stroke sensor learning value	–12.8 — 10.4	deg
Sub Brake Pedal Position Sensor Learning Value	Sub brake stroke sensor learning value	–12.8 — 10.4	deg
HPCM Check 1	Detailed information of control	—	—
HPCM Check 2	Detailed information of control	—	—
HPCM Check 3	Detailed information of control	—	—
HPCM Check 4	Detailed information of control	—	—
HPCM Check 5	Total number of 12V battery relay operation	—	times
HPCM Check 6	Total number of brake vacuum pump operation	—	times
HPCM Check 7	Total hours of brake vacuum pump operation	—	Sec
HPCM Check 9	Detailed information of control	—	—
HPCM Check 10	Detailed information of control	—	—
HPCM Check 11	Detailed information of control	—	—
HPCM Check 20	Detailed information of control	—	—
HPCM Check 21	Detailed information of control	—	—
HPCM Check 22	Detailed information of control	—	—
HPCM Check 23	Detailed information of control	—	—
HPCM Check 24	Detailed information of control	—	—
HPCM Check 25	Detailed information of control	—	—
HPCM Check 40	Detailed information of control	—	mΩ
HPCM Check 41	Detailed information of control	—	mΩ
HPCM Check 75	Detailed information of control	—	%
HPCM Check 76	Detailed information of control	—	%
HPCM Check 77	Detailed information of control	—	—
HPCM Check 80	Detailed information of control	—	—
HPCM Check 81	Detailed information of control	—	—
HPCM Check 82	Detailed information of control	—	—
HPCM Check 85	Detailed information of control	—	—
HPCM Check 86	Detailed information of control	—	—
HPCM Check 87	Detailed information of control	—	—
HPCM Check 90	Detailed information of control	—	—
HPCM Check 92	Detailed information of control	—	—
HPCM Check 100	Detailed information of control	—	—
HPCM Check 103	Detailed information of control	—	—
HPCM Check 104	Detailed information of control	—	—
HPCM Check 114	Detailed information of control	—	—
HPCM Check 117	Detailed information of control	—	—
HPCM Check 125	Detailed information of control	—	—
HPCM Check 126	Detailed information of control	—	—
HPCM Check 131	Detailed information of control	—	—
HPCM Check 132	Detailed information of control	—	—
HPCM Check 137	Detailed information of control	—	—
HPCM Check 138	Detailed information of control	—	—
HPCM Check 139	Detailed information of control	—	—
HPCM Check 140	Detailed information of control	—	—
HPCM Check 141	Detailed information of control	—	—
HPCM Check 142	Detailed information of control	—	—
HPCM Check 143	Detailed information of control	—	—

Display	Content	Note (when normal)	Unit of measure
HPCM Check 144	Detailed information of control	—	—
HPCM Check 145	Detailed information of control	—	—
HPCM Check 146	Detailed information of control	—	—
HPCM Check 147	Detailed information of control	—	—
HPCM Check 148	Detailed information of control	—	—
HPCM Check 149	Detailed information of control	—	—
HPCM Check 151	Detailed information of control	—	—
HPCM Check 153	Detailed information of control	—	—
HPCM Check 154	Detailed information of control	—	—
HPCM Check 155	Detailed information of control	—	—
HPCM Check 156	Detailed information of control	—	—
HPCM Check 157	Detailed information of control	—	—
HPCM Check 158	Detailed information of control	—	—
HPCM Check 159	Detailed information of control	—	—
HPCM Check 160	Detailed information of control	—	—
HPCM Check 161	Detailed information of control	—	—
HPCM Check 162	Detailed information of control	—	—
HPCM Check 163	Detailed information of control	—	—
HPCM Check 164	Detailed information of control	—	—
HPCM Check 165	Detailed information of control	—	—
HPCM Check 166	Detailed information of control	—	—
HPCM Check 167	Detailed information of control	—	—
HPCM Check 168	Detailed information of control	—	—

2. HYBRID POWERTRAIN CONTROL SYSTEM (Auto Start Stop AND EV TRAVELING CONDITIONS)

NOTE:
For Auto Start Stop and EV traveling conditions of hybrid powertrain control system, refer to the table below.

Display	Auto Start Stop		EV traveling		Note
	Condition for permission	Condition for cancel	Condition for permission	Condition for cancel	
Brake Booster Pressure 1	< 63.83 kPa	> 69.83 kPa	< 63.83 kPa	> 69.83 kPa	Those values change depending on vehicle speed or atmospheric pressure. As a reference, values shown in upper row expects that atmospheric pressure is 1 bar and vehicle speed is 0 km/h (0 MPH). Values shown in lower row expects that atmospheric pressure is 1 bar and vehicle speed is 50 km/h (31.1 MPH).
Brake Booster Pressure 2	< 51.33 kPa	> 55.33 kPa	< 51.33 kPa	> 55.33 kPa	
12V Engine Restart Battery SOC Control	≥ 70.0%	< 60.0%	≥ 70.0%	< 60.0%	When the level decreases below 60%, the operation is not permitted until the level increases to at 70%. Also, when the level is recovered to 70%, the operation is permitted until the level decreases to 60%.
12V Engine Restart Battery Voltage	≥ 12.6 V	≤ 11.4 V	≥ 12.6 V	≤ 11.4 V	—
12V Engine Restart Battery Temperature	≥ –10°C (14°F) and ≤ 78°C (172.4°F)	< –12°C (10.4°F) or ≥ 80°C (176°F)	≥ –10°C (14°F) and ≤ 78°C (172.4°F)	< –12°C (10.4°F) or ≥ 80°C (176°F)	—
HPCM Check 40	< 10 mΩ	≥ 15 mΩ	< 10 mΩ	≥ 15 mΩ	—
HPCM Check 41	< 10 mΩ	≥ 15 mΩ	< 10 mΩ	≥ 15 mΩ	—
Coolant Temperature	≥ 60°C (140.0°F)	≤ 57°C (134.6°F)	≥ 60°C (140.0°F)	≤ 57°C (134.6°F)	—
D Range	ON	OFF	ON	OFF	• Although the initial shift range for Auto Start Stop is “D range” only, the control operation continues even if the shifter moves to one of the following ranges. Shifting positions: P range, R range, N range • Although the initial shift range for EV traveling is “D range” only, operation continues in R range as well. Also, EV traveling may continue when shifter is transitionally moving through N range or P range.
High Voltage Battery SOC	≥ 40.0%	≤ 38.5%	≥ 43.0% and < 73.0%	≤ 40.0% or > 76.0%	—

Display	Auto Start Stop		EV traveling		Note
	Condition for permission	Condition for cancel	Condition for permission	Condition for cancel	
ISG Temperature	< 100°C (212°F)	≥ 140°C (284°F)	< 100°C (212°F)	≥ 140°C (284°F)	Canceled when the temperature increases above 140°C (284°F), and the operation is not permitted until the temperature decreases to 100°C (212°F). Also, when the temperature decreases to 100°C (212°F), the operation is permitted until the temperature increases to 140°C (284°F).
Vehicle Speed (Control)	≤ 0.1 km/h (0.1 MPH)	> 8 km/h (5 MPH)	—	—	Vehicle speed range suitable for EV traveling is 20 — 60 km/h (12 — 37 MPH).
HPCM Check 76	≤ | 0 — ±8 | %	> | ±8 | %	< 5 — 20%	≥ 15 — 100%	—
Accel opening angle	≤ 0.5%	≥ 0.7%	—	> 19.9%	—
Main Brake Pedal Stroke	≥ 10.6%	≤ 9.0%	< 11.8 — 23.5%	≥ 11.8 — 23.5%	Brake stroke for permitting/canceling the EV traveling depends on vehicle speed. However, threshold values for both permission and prohibition are the same.
DCDC Converter Status	ON	Inactive	ON	Inactive	—

3. DRIVE MOTOR CONTROL SYSTEM

1) On «Main Menu» display, select {Each System Check}.
2) On «Each System Check» display, select {HEV System}.
3) On «HEV System» display, select {Drive Motor Control System}.
4) On «Drive Motor Control System» display, select {Current Data Display & Save}.

Display	Content	Note (when normal)	Unit of measure
ECU ACC	Voltage supplied to DMCM	10 — 15	V
Ignition switch	Ignition switch status	OFF ON	—
Ignition Switch Signal (CAN receive)	Ignition switch status detected by HPCM (CAN communication data)	OFF ON	—
Accel opening angle	Accelerator opening angle ratio detected by ECM (CAN communication data)	0 — 100	%
Judgment of Idling	Idle switch status detected by ECM (CAN communication data)	OFF ON	—
Main Brake Pedal Stroke	Main brake stroke sensor status calculated by HPCM (CAN communication data)	0 — 100	%
Engine Speed	Engine speed detected by ECM (CAN communication data)	0 — 6400	rpm
Vehicle speed	Vehicle speed calculated by VDC CM (CAN communication data)	0 — 210	km/h
Coolant Temperature	Engine coolant temperature calculated by ECM (CAN communication data)	–40 — 214	°C
ATF Temp.	ATF temperature calculated by TCM (CAN communication data)	–50 — 205	°C
D Range	Drive range status judged by TCM (CAN communication data)	OFF ON	—
N Range	Neutral range status judged by TCM (CAN communication data)	OFF ON	—
R Range	Reverse range status judged by TCM (CAN communication data)	OFF ON	—
P Range	Parking range status judged by TCM (CAN communication data)	OFF ON	—
Trip Count	Number of IG ON judged by the body integrated unit (CAN communication data)	—	times
Time Count	Detailed time elapsed after IG ON calculated by body integrated unit (CAN communication data)	—	ms
Detailed Time Counter	Calculated detailed time elapsed after IG ON	0 — 100	ms
Count	Number of IG ON, synchronous/asynchronous identification information of the elapsed time after IG ON	Common Originally	—
Drive Motor Torque Target (HPCM)	Drive motor target torque calculated by HPCM (CAN communication data)	–65 — 65	Nm
Drive Motor Output Torque Actual	Drive motor torque	–65 — 65	Nm
Drive Motor Torque Upper Limit	Upper limit of drive motor torque	0 — 65	Nm
Drive Motor Torque Lower Limit	Lower limit of drive motor torque	–65 — 0	Nm
Drive Motor Speed Target (HPCM)	Target drive motor speed calculated by HPCM (CAN communication data)	—	rpm
Drive Motor Speed	Drive motor speed	–7000 — 7000	rpm
Drive Motor Inverter Input High Voltage Sensor (Serial)	Drive motor inverter input high voltage (serial reception value)	9 — 155	V
High Voltage Battery Total Voltage	High voltage battery voltage calculated by BECM (CAN communication data)	70 — 140	V

Display	Content	Note (when normal)	Unit of measure
High Voltage Battery Amperage	High voltage battery current calculated by BECM (CAN communication data)	–110 — 180	A
Phase U Voltage Target	DMCM output value	0 — 100	%
Phase V Voltage Target	DMCM output value	0 — 100	%
Phase W Voltage Target	DMCM output value	0 — 100	%
Phase U Amperage	Drive motor current	–350 — 350	A
Phase U Amperage Sensor Voltage	Current sensor voltage	0.5 — 4.5	V
Phase V Amperage	Drive motor current	–350 — 350	A
Phase V Amperage Sensor Voltage	Current sensor voltage	0.5 — 4.5	V
Phase W Amperage	Drive motor current	–350 — 350	A
Phase W Amperage Sensor Voltage	Current sensor voltage	0.5 — 4.5	V
Drive Motor Amperage Sensor Power Supply Voltage	Current sensor power supply voltage	4.9 — 5.1	V
Drive Motor Output Power Actual	Drive motor output	—	W
High Voltage Battery Temperature (MIN)	The lowest temperature among values of high voltage battery temperature detected through multiple sensors by BECM (CAN communication data)	–40 — 63	°C
Drive Motor Inverter Temperature A	Drive motor inverter temperature (serial reception value)	–50 — 150	°C
Drive Motor Inverter Temperature B	Drive motor inverter temperature (serial reception value)	–50 — 150	°C
Drive Motor Inverter Temperature C	Drive motor inverter temperature (serial reception value)	–50 — 150	°C
Drive Motor Temperature A	Drive motor temperature	–55 — 140	°C
Drive Motor Temperature A Sensor Voltage	Drive motor temperature sensor voltage	0.23 — 4.5	V
Drive Motor Temperature B	Drive motor temperature	–55 — 140	°C
Drive Motor Temperature B Sensor Voltage	Drive motor temperature sensor voltage	0.23 — 4.5	V
Drive Motor Inverter Operation Signal(HPCM)	Drive motor inverter operation request of HPCM (CAN communication data)	OFF ON	—
Drive Motor Inverter Operation Status	Drive motor inverter drive status	OFF ON	—
Drive Motor Inverter Operation Update Signal Count (Serial)	Drive motor inverter operation counter	0 — 255	Count
Drive Motor Inverter Power Supply Relay Output Signal	Drive motor inverter power supply relay operation signal	OFF ON	—
Drive Motor Inverter Power Supply Relay Output Actual	Monitor signal for drive motor inverter power supply relay operation signal	OFF ON	—
Contactor Signal(HPCM)	Contactor operation request status of HPCM (CAN communication data)	OFF ON Abnormal OFF	—
Contactor Weld Diagnosis Status	Contactor adhesion status judged by BECM (CAN communication data)	OFF Processing	—
Contactor Close Status	Contactor close status judged by BECM (CAN communication data)	Non Close	—
Contactor Close Sequence Status	Contactor status judged by BECM (CAN communication data)	OFF Processing	—
Contactor Open Status	Contactor status judged by BECM (CAN communication data)	Non Open	—

Display	Content	Note (when normal)	Unit of measure
High Voltage Battery Cooling Fan Duty Target (HPCM)	High voltage battery cooling fan duty request calculated by HPCM (CAN communication data)	0 — 100 (20 — 70%: normal, 100%: failure, 0 — 20%: dead zone)	%
High Voltage Battery Cooling Fan Duty Output	High voltage battery cooling fan duty	0 — 90	%
High Voltage Battery Cooling Fan Speed	High voltage battery cooling fan speed	0 — 6000	rpm
DCDC Converter Output Permit Signal (HPCM)	DC/DC converter output permission status calculated by HPCM (CAN communication data)	OFF ON	—
DCDC Converter Output Voltage Target (HPCM)	DC/DC converter output indicate voltage calculated by HPCM (CAN communication data)	—	V
DCDC Converter Output Voltage Actual	Voltage output at DC/DC converter	10 — 15.5	V
DCDC Converter Output Amperage	Current output at DC/DC converter	0 — 130	A
DCDC Converter Output Limit Amperage	DC/DC converter set value	130	A
DCDC Converter Input Voltage	Input high voltage detected at DC/DC converter	30 — 160	V
DCDC Converter Temperature	Temperature calculated at DC/DC converter	–50 — 160	°C
DCDC Converter Status Check	DC/DC converter control value	0/8/24	—
DCDC Converter Check 1	DC/DC converter control value	0	—
DCDC Converter Check 2	DC/DC converter control value	0	—
DCDC Converter Operation Update Signal Count (Serial)	DC/DC converter operation counter	0 — 255	Count
DCDC Converter Output Permit Signal (Serial)	DC/DC converter output permission Serial transmission data (DMCM)	OFF ON	—
DCDC Converter Output Voltage Target (Serial)	DC/DC converter output indicate voltage Serial transmission data (DMCM)	—	V
DCDC Converter Output Voltage (Serial)	DC/DC converter output voltage Serial reception data (DC/DC)	10 — 15.5	V
DCDC Converter Output Amperage (Serial)	DC/DC converter output current Serial reception data (DC/DC)	0 — 130	A
DCDC Converter Output Limit Amperage (Serial)	DC/DC converter output limit Serial reception data (DC/DC)	130	A
DCDC Converter Input Voltage (Serial)	DC/DC converter input voltage Serial reception data (DC/DC)	30 — 160	V
DCDC Converter Temperature (Serial)	DC/DC converter temperature Serial reception data (DC/DC)	–50 — 160	°C
DCDC Converter Status Check (Serial)	DC/DC converter status information Serial reception data (DC/DC)	0/8/24	—
DCDC Converter Check 1 (Serial)	DC/DC converter protection information Serial reception data (DC/DC)	0	—
DCDC Converter Check 2 (Serial)	DC/DC converter trouble information Serial reception data (DC/DC)	0	—
DCDC Converter Initialize Completion	DC/DC converter initialize completion status	Incomplete Complete	—
DCDC Converter Serial Check	DC/DC converter serial communication failure	0	—
Hybrid Fail Lamp Signal	Hybrid fail lamp illumination request	OFF ON	—
OBD Test Status	OBD related diagnosis result	Test Not Comp Normal Abnormal	—
Drive Motor Inverter Control Mode Target(HPCM)	Target control mode of drive motor inverter calculated by HPCM	—	—

Display	Content	Note (when normal)	Unit of measure
Sequence Status Check	DMCM set value	—	—
Drive Motor Inverter Check	DMCM input value	0	—
Drive Motor Torque Limit Check	DMCM output value	0	—
Drive Motor Torque Limit Status	DMCM output value	Normal Limitation	—
Drive Motor Mechanical Angle Pulse	Drive motor mechanical angle	0 — 4095	Pulse
Drive Motor Electrical Angle	Calculated drive motor electrical angle	0 — 2π	rad
d-axis Current Value	DMCM control value	—	A
q-axis Current Value	DMCM control value	—	A
Carrier Period	DMCM set value	—	us
Drive Motor Inverter Temperature Estimated	Drive motor inverter temperature	—	°C
Allow Drive Motor Position Sensor Diagnosis	DMCM control value	OFF ON	—
Allow 14V Condition Diagnosis	DMCM control value	OFF ON	—
Delivery Mode Connector	Delivery mode terminal information detected by ECM	—	—
Drive Motor Inverter Serial Check	Drive motor inverter serial communication failure	—	—
P0A3F-Detail Code 0300	P0A3F - detail code 0300	—	—
P0A3F-Detail Code 0301	P0A3F - detail code 0301	—	—
P0A3F-Detail Code 0302	P0A3F - detail code 0302	—	—
P0A3F-Detail Code 0303	P0A3F - detail code 0303	—	—
P0A3F-Detail Code 0304	P0A3F - detail code 0304	—	—
P0A3F-Detail Code 0305	P0A3F - detail code 0305	—	—
P0A3F-Detail Code 0306	P0A3F - detail code 0306	—	—
P0A3F-Detail Code 0307	P0A3F - detail code 0307	—	—
P0A3F-Detail Code 030A	P0A3F - detail code 030A	—	—
P0A78-Detail Code 0500	P0A78 - detail code 0500	—	—
P0A78-Detail Code 0501	P0A78 - detail code 0501	—	—
P0A78-Detail Code 0502	P0A78 - detail code 0502	—	—
P0A78-Detail Code 0503	P0A78 - detail code 0503	—	—
P0A78-Detail Code 0504	P0A78 - detail code 0504	—	—
P0A78-Detail Code 0505	P0A78 - detail code 0505	—	—
P0A78-Detail Code 0506	P0A78 - detail code 0506	—	—
P0A78-Detail Code 0507	P0A78 - detail code 0507	—	—
P0A78-Detail Code 0508	P0A78 - detail code 0508	—	—
P0A94-Detail Code 0800	P0A94 - detail code 0800	—	—
P0A94-Detail Code 0801	P0A94 - detail code 0801	—	—
P0A94-Detail Code 0802	P0A94 - detail code 0802	—	—
P0A94-Detail Code 0803	P0A94 - detail code 0803	—	—
P0A94-Detail Code 0804	P0A94 - detail code 0804	—	—
P0A94-Detail Code 0805	P0A94 - detail code 0805	—	—
P0A94-Detail Code 0806	P0A94 - detail code 0806	—	—
DMCU Check A	DMCM detailed information A	—	—
DMCU Check B	DMCM detailed information B	—	—
DMCU Check C	DMCM detailed information C	—	—
DMCU Check D	DMCM detailed information D	—	—
CAN Received Check 1	CAN received counter 1	—	Count

Display	Content	Note (when normal)	Unit of measure
CAN Received Check 2	CAN received counter 2	—	Count
CAN Received Check 3	CAN received counter 3	—	Count
CAN Received Check 4	CAN received counter 4	—	Count
CAN Received Check 5	CAN received counter 5	—	Count
DMCM Detail Check A-0	DMCM detailed information A-0	—	—
DMCM Detail Check A-1	DMCM detailed information A-1	—	—
DMCM Detail Check A-2	DMCM detailed information A-2	—	—
DMCM Detail Check A-3	DMCM detailed information A-3	—	—
DMCM Detail Check A-4	DMCM detailed information A-4	—	—
DMCM Detail Check A-5	DMCM detailed information A-5	—	—
DMCM Detail Check A-6	DMCM detailed information A-6	—	—
DMCM Detail Check A-7	DMCM detailed information A-7	—	—
DMCM Detail Check A-8	DMCM detailed information A-8	—	—
DMCM Detail Check A-9	DMCM detailed information A-9	—	—
DMCM Detail Check A-10	DMCM detailed information A-10	—	—
DMCM Detail Check A-11	DMCM detailed information A-11	—	—
DMCM Detail Check A-12	DMCM detailed information A-12	—	—
DMCM Detail Check A-13	DMCM detailed information A-13	—	—
DMCM Detail Check A-14	DMCM detailed information A-14	—	—
DMCM Detail Check A-15	DMCM detailed information A-15	—	—
DMCM Detail Check A-16	DMCM detailed information A-16	—	—
DMCM Detail Check A-17	DMCM detailed information A-17	—	—
DMCM Detail Check B-0	DMCM detailed information B-0	—	—
DMCM Detail Check B-1	DMCM detailed information B-1	—	—
DMCM Detail Check B-2	DMCM detailed information B-2	—	—
DMCM Detail Check B-3	DMCM detailed information B-3	—	—
DMCM Detail Check C-8	DMCM detailed information C-8	—	—
DMCM Detail Check C-9	DMCM detailed information C-9	—	—
DMCM Detail Check D-0	DMCM detailed information D-0	—	—
DMCM Detail Check D-1	DMCM detailed information D-1	—	—
DMCM Detail Check D-2	DMCM detailed information D-2	—	—
DMCM Detail Check D-3	DMCM detailed information D-3	—	—
DMCM Detail Check D-4	DMCM detailed information D-4	—	—
DMCM Detail Check D-5	DMCM detailed information D-5	—	—
DMCM Detail Check D-6	DMCM detailed information D-6	—	—
DMCM Detail Check E-9	DMCM detailed information E-9	—	—
DMCM Detail Check E-10	DMCM detailed information E-10	—	—
DMCM Detail Check E-11	DMCM detailed information E-11	—	—
DMCM Detail Check E-12	DMCM detailed information E-12	—	—
DMCM Detail Check E-13	DMCM detailed information E-13	—	—
DMCM Detail Check F-0	DMCM detailed information F-0	—	—
DMCM Detail Check F-1	DMCM detailed information F-1	—	—
DMCM Detail Check G-0	DMCM detailed information G-0	—	—
DMCM Detail Check G-1	DMCM detailed information G-1	—	—
DMCM Detail Check I-0	DMCM detailed information I-0	—	—
DMCM Detail Check I-1	DMCM detailed information I-1	—	—
DMCM Detail Check I-2	DMCM detailed information I-2	—	—
DMCM Detail Check I-3	DMCM detailed information I-3	—	—
DMCM Detail Check I-4	DMCM detailed information I-4	—	—

Display	Content	Note (when normal)	Unit of measure
DMCM Detail Check I-5	DMCM detailed information I-5	—	—
DMCM Detail Check I-6	DMCM detailed information I-6	—	—
DMCM Detail Check I-7	DMCM detailed information I-7	—	—
DMCM Detail Check I-8	DMCM detailed information I-8	—	—
DMCM Detail Check I-9	DMCM detailed information I-9	—	—
DMCM Detail Check I-10	DMCM detailed information I-10	—	—
DMCM Detail Check I-11	DMCM detailed information I-11	—	—
DMCM Detail Check I-12	DMCM detailed information I-12	—	—
DMCM Detail Check I-13	DMCM detailed information I-13	—	—
DMCM Detail Check I-14	DMCM detailed information I-14	—	—
DMCM Detail Check I-15	DMCM detailed information I-15	—	—
DMCM Detail Check J-0	DMCM detailed information J-0	—	—
DMCM Detail Check J-1	DMCM detailed information J-1	—	—
DMCM Detail Check J-2	DMCM detailed information J-2	—	—
DMCM Detail Check J-3	DMCM detailed information J-3	—	—
DMCM Detail Check J-4	DMCM detailed information J-4	—	—
DMCM Detail Check J-5	DMCM detailed information J-5	—	—
DMCM Detail Check J-6	DMCM detailed information J-6	—	—
DMCM Detail Check J-7	DMCM detailed information J-7	—	—
DMCM Detail Check J-8	DMCM detailed information J-8	—	—
DMCM Detail Check J-9	DMCM detailed information J-9	—	—
DMCM Detail Check -10	DMCM detailed information J-10	—	—
DMCM Detail Check -11	DMCM detailed information J-11	—	—
DMCM Detail Check J-12	DMCM detailed information J-12	—	—
DMCM Detail Check J-13	DMCM detailed information J-13	—	—
DMCM Detail Check J-14	DMCM detailed information J-14	—	—
DMCM Detail Check J-15	DMCM detailed information J-15	—	—
DMCM Detail Check J-16	DMCM detailed information J-16	—	—
DMCM Detail Check K-0	DMCM detailed information K-0	—	—
DMCM Detail Check K-1	DMCM detailed information K-1	—	—
DMCM Detail Check K-2	DMCM detailed information K-2	—	—
DMCM Detail Check K-3	DMCM detailed information K-3	—	—
DMCM Detail Check K-4	DMCM detailed information K-4	—	—
DMCM Detail Check K-5	DMCM detailed information K-5	—	—
DMCM Detail Check K-6	DMCM detailed information K-6	—	—
DMCM Detail Check L-0	DMCM detailed information L-0	—	—
System Check 1	Detailed information 1	—	—
System Check 2	Detailed information 2	—	—
System Check 8	Detailed information 8	—	—
System Check 9	Detailed information 9	—	—
System Check 11	Detailed information 11	—	—
System Check 12	Detailed information 12	—	—
Drive Motor Control Mode Check 1	DMCM control information 1	—	—
Drive Motor Control Mode Check 4	DMCM control information 4	—	—
Drive Motor Control Mode Check 5	DMCM control information 5	—	—
Drive Motor Control Mode Check 6	DMCM control information 6	—	—

4. BATTERY ENERGY CONTROL SYSTEM

1) On «Main Menu» display, select {Each System Check}.
2) On «Each System Check» display, select {HEV System}.
3) On «HEV System» display, select {Battery Energy Control System}.
4) On «Battery Energy Control System» display, select {Current Data Display & Save}.

Display	Content	Note (when normal)	Unit of measure
High Voltage Battery Control Status	BECM control mode	01 — 06	—
High Voltage Battery SOC	High voltage battery residual quantity	5 — 95	%
High Voltage Battery SOH	Battery status auxiliary parameter of high voltage battery	25 — 100	%
High Voltage Battery Total Voltage	High voltage battery voltage	70 — 140	V
High Voltage Battery Amperage	High voltage battery current	–110 — 180	A
High Voltage Battery Charge Power Limit 1	High voltage battery charge control power value	0 — 14.0	kw
High Voltage Battery Discharge Power Limit 1	High voltage battery discharge control power value	0 — 14.0	kw
High Voltage Battery Temperature 1	High voltage battery temperature 1	–40 — 63	Deg.c
High Voltage Battery Temperature 2	High voltage battery temperature 2	–40 — 63	Deg.c
High Voltage Battery Temperature 3	High voltage battery temperature 3	–40 — 63	Deg.c
High Voltage Battery Intake Air Temperature	High voltage battery intake temperature	–40 — 86.5	Deg.c
High Voltage Battery Internal Resistance	High voltage battery internal resistance	0 — 4.0	ohm
HEV System Leakage Resistance (+)	Entire hybrid system leakage resistance on + side	1000	kohm
High Voltage Battery Pack Leakage Resistance (+)	High voltage battery internal leakage resistance on + side	1000	kohm
HEV System Leakage Resistance (–)	Entire hybrid system leakage resistance on – side	1000	kohm
High Voltage Battery Pack Leakage Resistance (–)	High voltage battery internal leakage resistance on – side	1000	kohm
OBD Test Status	Diagnosis status of emission-related diagnosis	Test Not Comp Normal Abnormal	—
Hybrid Fail Lamp Signal	Hybrid fail lamp illumination request by BECM	OFF ON	—
Trip Count	Number of IG ON judged by the body integrated unit (CAN communication data)	—	times
Time Count	Detailed time elapsed after IG ON calculated by body integrated unit (CAN communication data)	—	ms
Count	Number of IG ON, synchronous/asynchronous identification information of the elapsed time after IG ON	Common Originally	—
Ignition switch	Ignition switch condition	OFF ON	—
Service Plug Status	Service disconnect plug lock status	OFF ON	—
High Voltage Battery Fuse Condition	High voltage battery fuse status	Normal Blowout	—
Positive Contactor Status	+ side contactor open/close status	Open Close	—

Display	Content	Note (when normal)	Unit of measure
Negative Contactor Status	– side contactor open/close status	Open Close	—
Pre-Charge Contactor Status	Precharge contactor open/close status	Open Close	—
BECM Control Check 22	Detailed information of control	—	—
BECM Control Check 23	Detailed information of control	—	—
High Voltage Battery Block 1 SOC	High voltage battery block SOC	5 — 95	%
High Voltage Battery Block 2 SOC	High voltage battery block SOC	5 — 95	%
High Voltage Battery Block 3 SOC	High voltage battery block SOC	5 — 95	%
High Voltage Battery Block 4 SOC	High voltage battery block SOC	5 — 95	%
High Voltage Battery Block 5 SOC	High voltage battery block SOC	5 — 95	%
High Voltage Battery Block 6 SOC	High voltage battery block SOC	5 — 95	%
High Voltage Battery Block 7 SOC	High voltage battery block SOC	5 — 95	%
High Voltage Battery Block 8 SOC	High voltage battery block SOC	5 — 95	%
High Voltage Battery Block 9 SOC	High voltage battery block SOC	5 — 95	%
High Voltage Battery Block 10 SOC	High voltage battery block SOC	5 — 95	%
High Voltage Battery Block 11 SOC	High voltage battery block SOC	5 — 95	%
High Voltage Battery Block Voltage 1	High voltage battery block voltage	8 — 14	V
High Voltage Battery Block Voltage 2	High voltage battery block voltage	8 — 14	V
High Voltage Battery Block Voltage 3	High voltage battery block voltage	8 — 14	V
High Voltage Battery Block Voltage 4	High voltage battery block voltage	8 — 14	V
High Voltage Battery Block Voltage 5	High voltage battery block voltage	8 — 14	V
High Voltage Battery Block Voltage 6	High voltage battery block voltage	8 — 14	V
High Voltage Battery Block Voltage 7	High voltage battery block voltage	8 — 14	V
High Voltage Battery Block Voltage 8	High voltage battery block voltage	8 — 14	V
High Voltage Battery Block Voltage 9	High voltage battery block voltage	8 — 14	V
High Voltage Battery Block Voltage 10	High voltage battery block voltage	8 — 14	V
High Voltage Battery Block Voltage 11	High voltage battery block voltage	8 — 14	V
High Voltage Battery Voltage 0	High voltage battery block voltage (voltage sensor value)	9.6 — 96	V
High Voltage Battery Voltage 1	High voltage battery block voltage (voltage sensor value)	6.4 — 64	V
High Voltage Battery Voltage 2	High voltage battery block voltage (voltage sensor value)	3.2 — 32	V

Display	Content	Note (when normal)	Unit of measure
High Voltage Battery Voltage 3	High voltage battery block voltage (voltage sensor value)	–2.1 — 2.1	V
High Voltage Battery Voltage 4	High voltage battery block voltage (voltage sensor value)	–16 — –1.6	V
High Voltage Battery Voltage 5	High voltage battery block voltage (voltage sensor value)	–48 — –4.8	V
High Voltage Battery Voltage 6	High voltage battery block voltage (voltage sensor value)	–72 — –7.2	V
BECM Control Check 24	Detailed information of control	—	—
BECM Control Check 25	Detailed information of control	—	—
High Voltage Battery Amperage Sensor Output	High voltage battery current sensor value	–110 — 180	A
High Voltage Battery Amperage Offset Value	High voltage battery current sensor offset value	0 — 1	A
ECU ACC	Voltage supplied to BECM	10 — 15	V
Drive Motor Inverter Input Voltage	Drive motor inverter input voltage calculated by DMCM (CAN communication data)	9 — 155	V
Contactor Signal (HPCM)	Contactor operation request status judged by HPCM (CAN communication data)	OFF ON Abnormal OFF	—
Engine Speed	Engine speed calculated by ECM (CAN communication data)	0 — 6400	rpm
P Range	Parking range status judged by TCM (CAN communication data)	OFF ON	—
Vehicle speed	Vehicle speed calculated by VDC (CAN communication data)	0 — 210	km/h
Drive Motor Inverter Operation Status	Drive motor inverter operation status calculated by DMCM (CAN communication data)	OFF ON	—
Drive Motor Torque Target (HPCM)	Target drive motor torque calculated by HPCM (CAN communication data)	–65 — 65	Nm
Drive Motor Output Torque Actual	Drive motor output torque calculated by DMCM (CAN communication data)	–65 — 65	Nm
Drive Motor Speed Target (HPCM)	Target drive motor speed calculated by HPCM (CAN communication data)	—	rpm
Drive Motor Speed	Drive motor speed calculated by DMCM (CAN communication data)	–7000 — 7000	rpm
High Voltage Battery Cooling Fan Duty Target (HPCM)	High voltage battery cooling fan duty request calculated by HPCM (CAN communication data)	0 — 100 (20 — 70%: normal, 100%: failure, 0 — 20%: dead zone)	%
High Voltage Battery Cooling Fan Speed	High voltage battery cooling fan speed calculated by DMCM (CAN communication data)	0 — 6000	rpm
High Voltage Battery Charge Power Limit 2	High voltage battery charge control power value (assist)	—	—
High Voltage Battery Discharge Power Limit 2	High voltage battery discharge control power value (assist)	—	—
BECM Control Check 26	Detailed information of control	—	—
BECM Control Check 27	Detailed information of control	—	—
BECM Control Check 28	Detailed information of control	—	—
BECM Control Check 29	Detailed information of control	—	—
BECM Control Check 15	Detailed information of control	—	—
BECM Control Check 16	Detailed information of control	—	—
BECM Control Check 30	Detailed information of control	—	—
BECM Control Check 32	Detailed information of control	—	—
High Voltage Battery SOC Subservience Parameter 1	Detailed information of control	—	—
High Voltage Battery SOC Subservience Parameter 2	Detailed information of control	—	—

Display	Content	Note (when normal)	Unit of measure
High Voltage Battery SOC Subservience Parameter 3	Detailed information of control	—	—
High Voltage Battery SOC Subservience Parameter 4	Detailed information of control	—	—
High Voltage Battery SOC Subservience Parameter 5	Detailed information of control	—	—
High Voltage Battery SOC Subservience Parameter 6	Detailed information of control	—	—
High Voltage Battery SOC Subservience Parameter 7	Detailed information of control	—	—
High Voltage Battery SOC Subservience Parameter 8	Detailed information of control	—	—
High Voltage Battery SOC Subservience Parameter 9	Detailed information of control	—	—
High Voltage Battery SOC Subservience Parameter 10	Detailed information of control	—	—
High Voltage Battery SOC Subservience Parameter 11	Detailed information of control	—	—
BECM Check 1	Detailed information of control	—	—
BECM Check 2	Detailed information of control	—	—
BECM Check 3	Detailed information of control	—	—
BECM Check 4	Detailed information of control	—	—
BECM Control Check 1	Detailed information of control	—	—
BECM Control Check 2	Detailed information of control	—	—
BECM Control Check 3	Detailed information of control	—	—
BECM Control Check 4	Detailed information of control	—	—
BECM Control Check 5	Detailed information of control	—	—
BECM Control Check 6	Detailed information of control	—	—
BECM Control Check 7	Detailed information of control	—	—
BECM Control Check 8	Detailed information of control	—	—
BECM Control Check 9	Detailed information of control	—	—
BECM Control Check 10	Detailed information of control	—	—
BECM Control Check 11	Detailed information of control	—	—
BECM Control Check 12	Detailed information of control	—	—
BECM Control Check 13	Detailed information of control	—	—
BECM Control Check 14	Detailed information of control	—	—
BECM Control Check 17	Detailed information of control	—	—
BECM Control Check 18	Detailed information of control	—	—
BECM Control Check 19	Detailed information of control	—	—
BECM Control Check 20	Detailed information of control	—	—
BECM Control Check 21	Detailed information of control	—	—
High Voltage Battery Temp. Info 1(IGON)	Detailed information of control	—	—
High Voltage Battery Temp. Info 2(IGON)	Detailed information of control	—	—
High Voltage Battery Temp. Info 3(IGON)	Detailed information of control	—	—
High Voltage Battery Temp. Info 4(IGON)	Detailed information of control	—	—
High Voltage Battery Temp. Info 5(IGON)	Detailed information of control	—	—

Display	Content	Note (when normal)	Unit of measure
High Voltage Battery Temp. Info 6(IGON)	Detailed information of control	—	—
High Voltage Battery Temp. Info 7(IGON)	Detailed information of control	—	—
High Voltage Battery Temp. Info 8(IGON)	Detailed information of control	—	—
High Voltage Battery Temp. Info 9(IGON)	Detailed information of control	—	—
High Voltage Battery Temp. Info 10(IGON)	Detailed information of control	—	—
High Voltage Battery Temp. Info 11(IGON)	Detailed information of control	—	—
High Voltage Battery Temp. Info 12(IGON)	Detailed information of control	—	—
High Voltage Battery Temp. Info 13(IGON)	Detailed information of control	—	—
High Voltage Battery Temp. Info 1(IGOFF)	Detailed information of control	—	—
High Voltage Battery Temp. Info 2(IGOFF)	Detailed information of control	—	—
High Voltage Battery Temp. Info 3(IGOFF)	Detailed information of control	—	—
High Voltage Battery Temp. Info 4(IGOFF)	Detailed information of control	—	—
High Voltage Battery Temp. Info 5(IGOFF)	Detailed information of control	—	—
High Voltage Battery Temp. Info 6(IGOFF)	Detailed information of control	—	—
High Voltage Battery Temp. Info 7(IGOFF)	Detailed information of control	—	—
High Voltage Battery Temp. Info 8(IGOFF)	Detailed information of control	—	—
High Voltage Battery Temp. Info 9(IGOFF)	Detailed information of control	—	—
High Voltage Battery Temp. Info 10(IGOFF)	Detailed information of control	—	—
High Voltage Battery Temp. Info 11(IGOFF)	Detailed information of control	—	—
High Voltage Battery Temp. Info 12(IGOFF)	Detailed information of control	—	—
High Voltage Battery Temp. Info 13(IGOFF)	Detailed information of control	—	—