SECTION PCS
POWER CONTROL SYSTEM

CONTENTS

PRECAUTION

PRECAUTIONS

Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER"

INFOID:0000000011285328

The Supplemental Restraint System such as “AIR BAG” and “SEAT BELT PRE-TENSIONER”, used along with a front seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. This system includes seat belt switch inputs and dual stage front air bag modules. The SRS system uses the seat belt switches to determine the front air bag deployment, and may only deploy one front air bag, depending on the severity of a collision and whether the front occupants are belted or unbelted. Information necessary to service the system safely is included in the “SRS AIR BAG” and “SEAT BELT” of this Service Manual.

WARNING:

Always observe the following items for preventing accidental activation.

- **To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision that would result in air bag inflation, all maintenance must be performed by an authorized NISSAN/INFINITI dealer.**
- **Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system. For removal of Spiral Cable and Air Bag Module, see “SRS AIR BAG”.**
- **Never use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.**

PRECAUTIONS WHEN USING POWER TOOLS (AIR OR ELECTRIC) AND HAMMERS

WARNING:

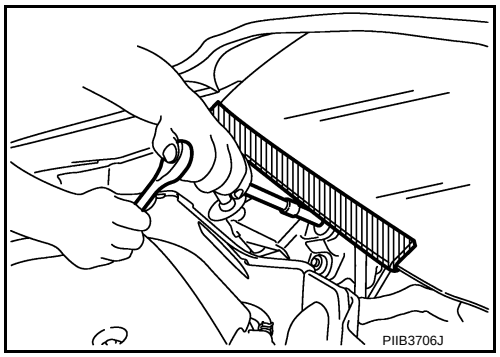
Always observe the following items for preventing accidental activation.

- **When working near the Air Bag Diagnosis Sensor Unit or other Air Bag System sensors with the ignition ON or engine running, never use air or electric power tools or strike near the sensor(s) with a hammer. Heavy vibration could activate the sensor(s) and deploy the air bag(s), possibly causing serious injury.**
- **When using air or electric power tools or hammers, always switch the ignition OFF, disconnect the battery, and wait at least 3 minutes before performing any service.**

Precaution for Procedure without Cowl Top Cover

INFOID:0000000011285329

When performing the procedure after removing cowl top cover, cover the lower end of windshield with urethane, etc to prevent damage to windshield.



Precautions for Removing Battery Terminal

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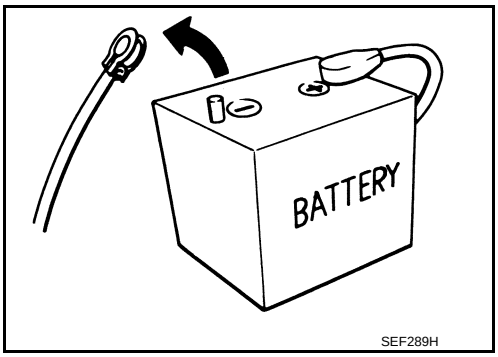


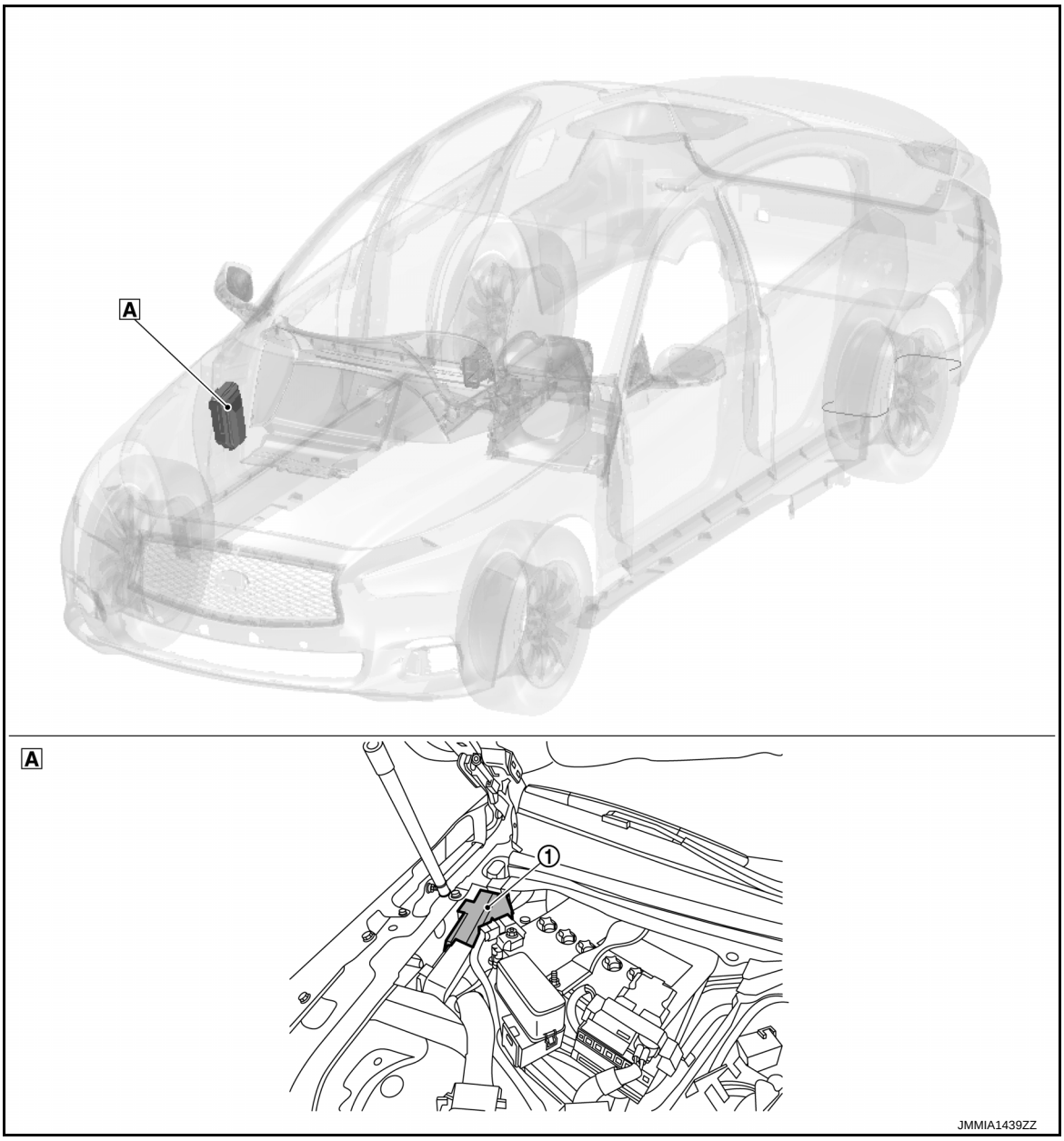
- When removing the 12V battery terminal, turn OFF the ignition switch and wait at least 30 seconds.
  NOTE:
  ECU may be active for several tens of seconds after the ignition switch is turned OFF. If the battery terminal is removed before ECU stops, then a DTC detection error or ECU data corruption may occur.
- For vehicles with the 2-batteries, be sure to connect the main battery and the sub battery before turning ON the ignition switch.
  NOTE:
  If the ignition switch is turned ON with any one of the terminals of main battery and sub battery disconnected, then DTC may be detected.
- After installing the 12V battery, always check "Self Diagnosis Result" of all ECUs and erase DTC.
  NOTE:
  The removal of 12V battery may cause a DTC detection error.

SYSTEM DESCRIPTION

COMPONENT PARTS

Component Parts Location

INFOID:0000000011285330



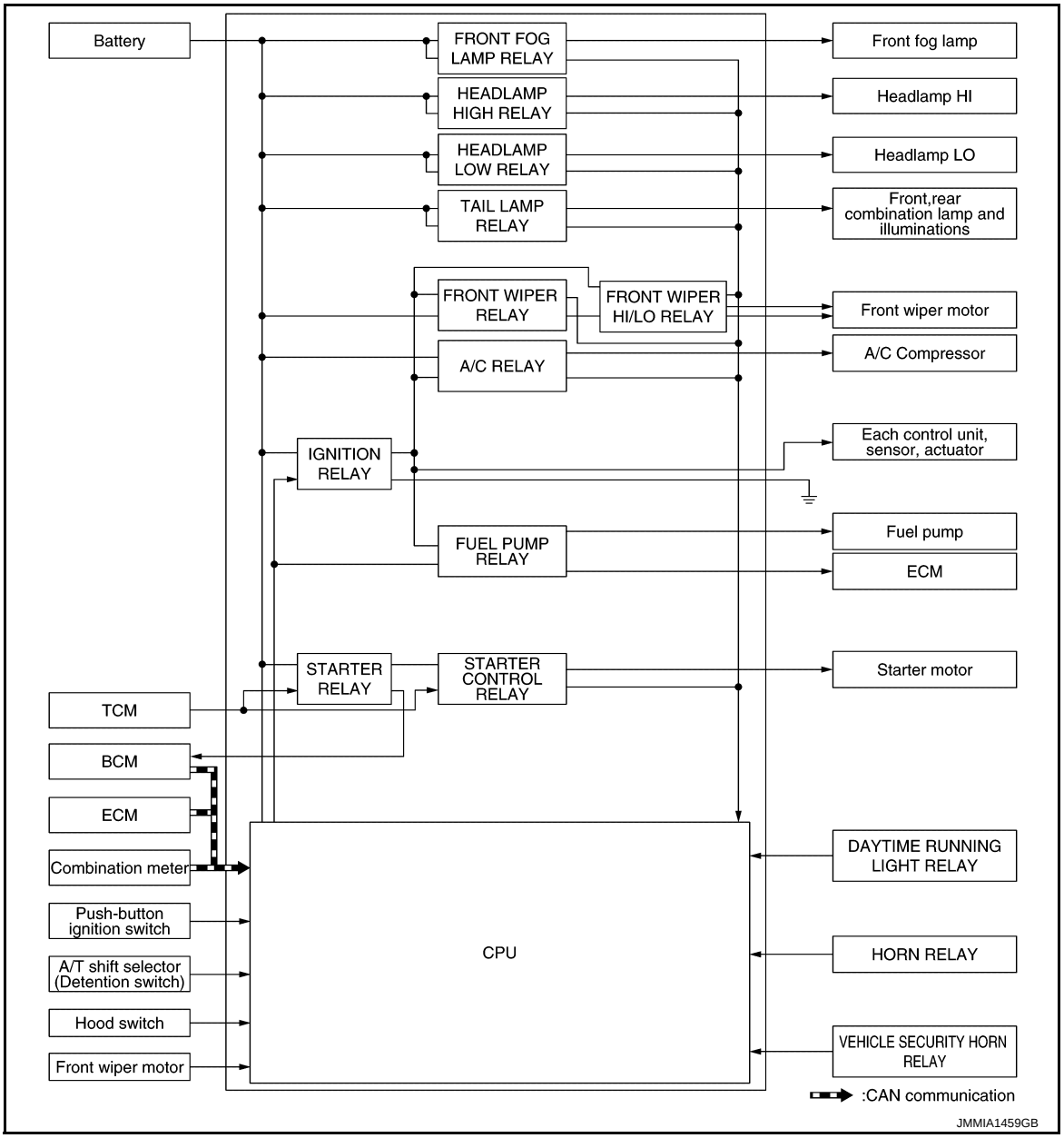
A Engine room dash panel

1 IPDM E/R

SYSTEM
RELAY CONTROL SYSTEM
RELAY CONTROL SYSTEM : System Description

INFOID:0000000011285331

SYSTEM DIAGRAM



DESCRIPTION

IPDM E/R activates the internal control circuit to perform the relay ON-OFF control according to the input signals from various sensors and the request signals received from control units via CAN communication.

NOTE:

To prevent to the parts, IPDM E/R integrated relays cannot be removed.

Control relay	Input/output	Transmit unit	Control part	Reference page
• Headlamp low relay • Headlamp high relay	• Low beam request signal • High beam request signal	BCM (CAN)	• Headlamp (LO) • Headlamp (HI)	EXL-16
Front fog lamp relay	Front fog light request signal	BCM (CAN)	Front fog lamp	EXL-38

Control relay	Input/output	Transmit unit	Control part	Reference page
Tail lamp relay	Position light request signal	BCM (CAN)	• Parking lamp • License plate lamp • Tail lamp • Side marker lamp	EXL-31
			Illumination	INL-13
• Front wiper relay • Front wiper HI/LO relay	• Front wiper request signal • Front wiper service position signal	BCM (CAN)	Front wiper motor	•WW-9 (with rain sensor) •WW-14 (without rain sensor)
	Front wiper stop position signal	Front wiper motor		
Horn relay	Theft warning horn request signal	BCM (CAN)	Horn	SEC-19
Vehicle security horn relay			Vehicle security horn	
• Starter relay* • Starter control relay	Starter control relay signal	BCM (CAN)	Starter motor	SEC-9
	Starter relay control signal	TCM		
A/C relay	A/C compressor request signal	ECM (CAN)	A/C compressor (Magnet clutch)	HAC-16
Daytime running light relay	Daytime running light request signal	BCM (CAN)	Daytime running light	EXL-24
Ignition relay	Ignition switch ON signal	BCM (CAN)	Each control unit, sensor, actuator and relay (Ignition power supply)	PCS-33
	Vehicle speed signal (Meter)	Combination meter (CAN)		
	Push-button ignition switch signal	Push-button ignition switch		

*: BCM controls the starter relay.

RELAY CONTROL SYSTEM : Fail-safe

INFOID:0000000011285332

CAN COMMUNICATION CONTROL

When CAN communication with ECM and BCM is impossible, IPDM E/R performs fail-safe control. After CAN communication recovers normally, it also returns to normal control.

If No CAN Communication Is Available With ECM

Control part	Fail-safe operation
Cooling fan	• Outputs the pulse duty signal (PWM signal) 100%when the ignition switch is turned ON • Outputs the pulse duty signal (PWM signal) 0%when the ignition switch is turned OFF
A/C compressor	A/C relay OFF
Alternator	Outputs the power generation command signal (PWM signal) 0%

If No CAN Communication Is Available With BCM

Control part	Fail-safe operation
Headlamp	• Turns ON the headlamp low relay when the ignition switch is turned ON • Turns OFF the headlamp low relay when the ignition switch is turned OFF • Headlamp high relay OFF
• Parking lamp • License plate lamp • Illumination • Tail lamp • Side marker lamp	• Turns ON the tail lamp relay when the ignition switch is turned ON • Turns OFF the tail lamp relay when the ignition switch is turned OFF

Control part	Fail-safe operation
Front wiper motor	• The status just before activation of fail-safe control is maintained until the ignition switch is turned OFF while the front wiper is operating at LO or HI speed. • The wiper is operated at LO speed until the ignition switch is turned OFF if the fail-safe control is activated while the front wiper is set in the INT mode and the front wiper motor is operating. • Returns automatically wiper to stop position when ignition switch is turned ON if fail-safe control is activated while front wiper motor is operated and wiper stop in the other position than stop position. • The status is held at service position if the fail-safe control is activated while the service position function is operating.
Front fog lamp	Front fog lamp relay OFF
Horn	Horn relay OFF
Ignition relay	The status just before activation of fail-safe is maintained.
Starter motor	Starter control relay OFF

IGNITION RELAY MALFUNCTION DETECTION FUNCTION

- IPDM E/R monitors the voltage at the contact circuit and excitation coil circuit of the ignition relay inside it.
- IPDM E/R judges the ignition relay error if the voltage differs between the contact circuit and the excitation coil circuit.
- If the ignition relay cannot turn OFF due to contact seizure, it activates the tail lamp relay for 10 minutes to alert the user to the ignition relay malfunction when the ignition switch is turned OFF.

Voltage judgment		IPDM E/R judgment	Operation
Ignition relay contact side	Ignition relay excitation coil side		
ON	ON	Ignition relay ON normal	—
OFF	OFF	Ignition relay OFF normal	—
ON	OFF	Ignition relay ON stuck	• Detects DTC “B2098: IGN RELAY ON” • Turns ON the tail lamp relay for 10 minutes
OFF	ON	Ignition relay OFF stuck	Detects DTC “B2099: IGN RELAY OFF”

FRONT WIPER PROTECTION FUNCTION

IPDM E/R detects front wiper stop position by a front wiper stop position signal.
When a front wiper stop position signal is in the conditions listed below, IPDM E/R stops power supply to wiper after repeating a front wiper 10 seconds activation and 20 seconds stop.

Ignition switch	Front wiper switch	Front wiper stop position signal
ON	OFF	The front wiper stop position signal (stop position) cannot be input for 10 seconds.
	ON	The front wiper stop position signal does not change for 10 seconds.

NOTE:
This operation status can be confirmed on the IPDM E/R “Data Monitor” that displays “BLOCK” for the item “WIP PROT” while the wiper is stopped.

STARTER MOTOR PROTECTION FUNCTION

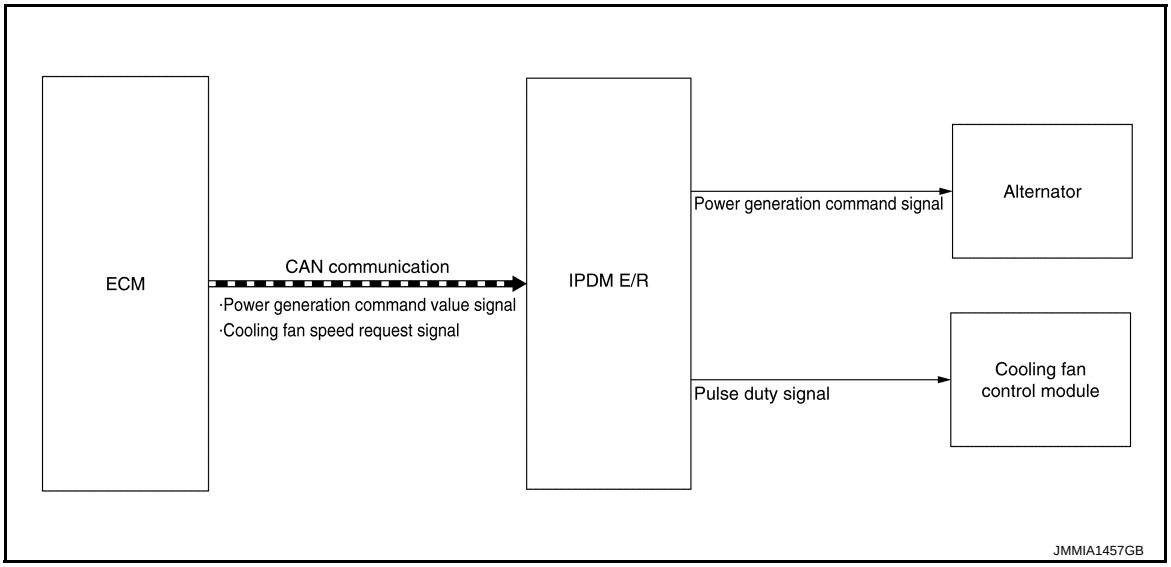
IPDM E/R turns OFF the starter control relay to protect the starter motor when the starter control relay remains active for 90 seconds.

POWER CONTROL SYSTEM

POWER CONTROL SYSTEM : System Description

INFOID:0000000011285333

SYSTEM DIAGRAM



DESCRIPTION

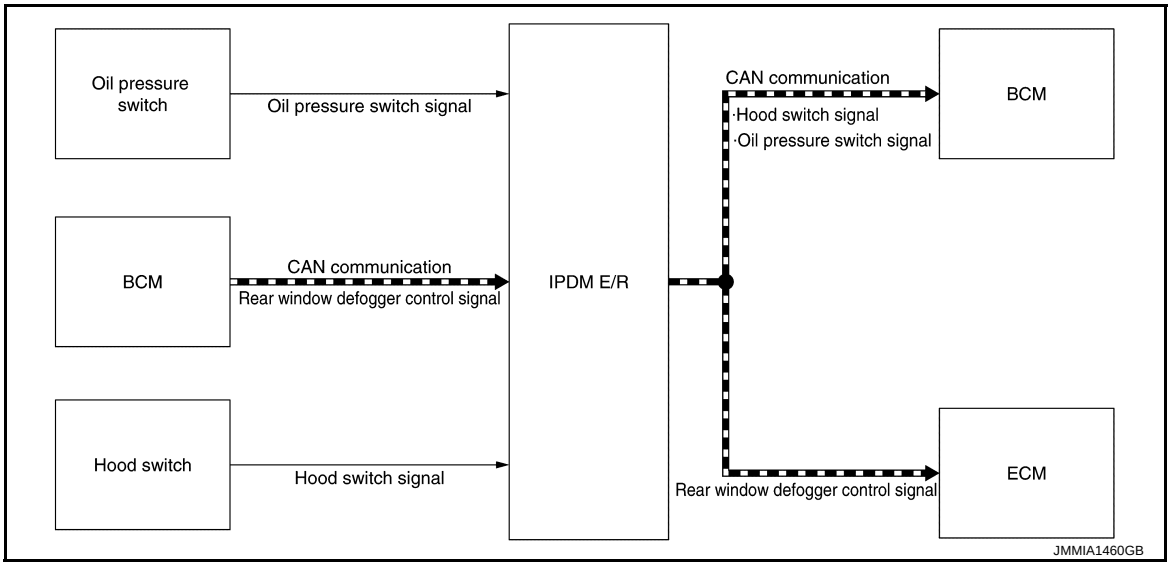
- IPDM E/R outputs power generation command signal (PWM signal) to the alternator according to the status of the power generation command value signal received from ECM via CAN communication. Refer to CHG-7, "POWER GENERATION VOLTAGE VARIABLE CONTROL SYSTEM : System Description".
- IPDM E/R outputs pulse duty signal to the cooling fan control module according to the status of the cooling fan speed request signal received from ECM via CAN communication. Refer to EC-51, "COOLING FAN CONTROL : System Description".

SIGNAL BUFFER SYSTEM

SIGNAL BUFFER SYSTEM : System Description

INFOID:0000000011285334

SYSTEM DIAGRAM



DESCRIPTION

- IPDM E/R reads the status of the hood switch and transmits the hood switch signal to BCM via CAN communication. Refer to SEC-19, "VEHICLE SECURITY SYSTEM : System Description".
- IPDM E/R receives the rear window defogger control signal from BCM via CAN communication and transmits the rear window defogger control signal to ECM via CAN communication. Refer to DEF-6, "System Description".

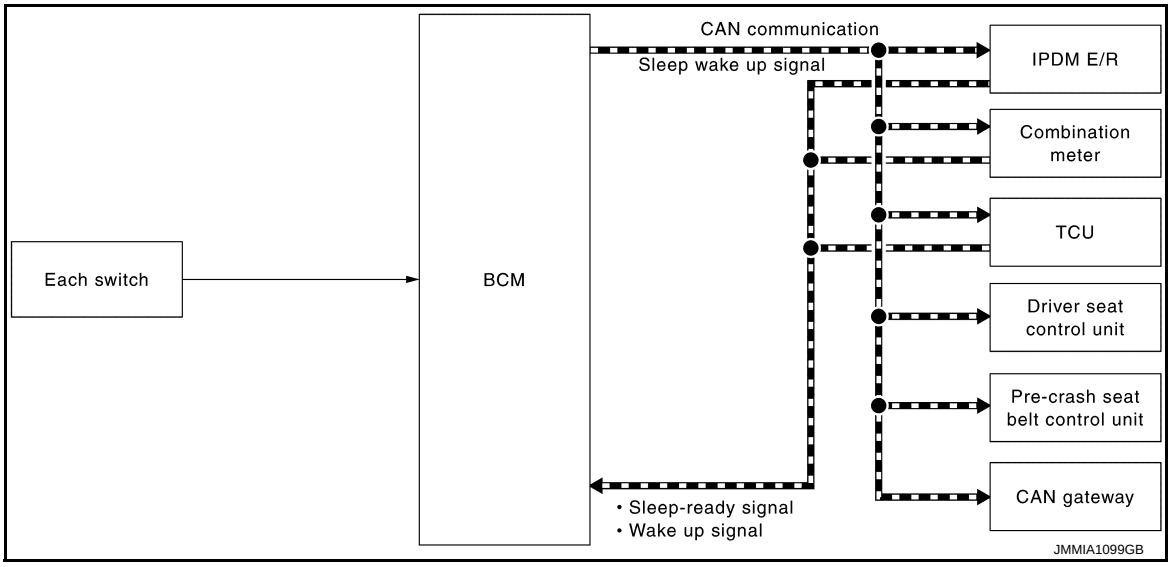
- IPDM E/R reads the status of the oil pressure switch and transmits the oil pressure switch signal to BCM via CAN communication. Refer to EC-57, "INFORMATION DISPLAY (COMBINATION METER) : Engine Oil Pressure Warning".

POWER CONSUMPTION CONTROL SYSTEM

POWER CONSUMPTION CONTROL SYSTEM : System Description

INFOID:0000000011285335

SYSTEM DIAGRAM



DESCRIPTION

Outline

- IPDM E/R incorporates a power consumption control function that reduces the power consumption according to the vehicle status.
- IPDM E/R changes its status (control mode) with the sleep wake up signal received from BCM via CAN communication.

Normal mode (wake-up)

- CAN communication is normally performed with other control units.
- Individual unit control by IPDM E/R is normally performed.

Low power consumption mode (sleep)

- Low power consumption control is active.
- CAN transmission is stopped.

Sleep Mode Activation

- IPDM E/R judges that the sleep-ready conditions are fulfilled when the ignition switch is OFF and none of the conditions below are present. Then it transmits a sleep-ready signal (ready) to BCM via CAN communication.
  - Outputting signals to actuators
  - Switches or relays operating
  - Output requests are being received from control units via CAN communication.
- IPDM E/R stops CAN communication and enters the low power consumption mode when it receives a sleep wake up signal (sleep) from BCM and the sleep-ready conditions are fulfilled.

Wake-Up Operation

- IPDM E/R changes from the low power consumption mode to the normal mode when it receives a sleep wake-up signal (wake up) from BCM or any of the following conditions is fulfilled. In addition, it transmits a sleep-ready signal (not-ready) to BCM via CAN communication to report the CAN communication start.
  - Ignition switch ON
  - Hood switch status changes.
  - An output request is received from a control unit via CAN communication.

DIAGNOSIS SYSTEM (IPDM E/R)

Diagnosis Description

INFOID:0000000011285336

AUTO ACTIVE TEST

Description

In auto active test mode, the IPDM E/R sends a drive signal to the following systems to check their operation.

- Oil pressure warning lamp
- Front wiper motor
- Parking lamp
- License plate lamp
- Tail lamp
- Side marker lamp
- Front fog lamp
- Headlamp (LO, HI)
- A/C compressor (magnet clutch)
- Cooling fan

Operation Procedure

CAUTION:

Wiper arm interferes with hood when wiper is operated while wiper arm is in the raised position. Always perform auto active test without setting wiper arm in the raised position. Always pour water on front windshield glass in advance to auto active test so that damage on front windshield glass surface is prevented.

NOTE:

Never perform auto active test in the following conditions.

- CONSULT is connected
- Passenger door is open

1. Turn the ignition switch OFF.
2. Turn the ignition switch ON, and within 20 seconds, press the driver door switch 10 times. Then turn the ignition switch OFF.
3. Turn the ignition switch ON within 10 seconds. After that the horn sounds once and the auto active test starts.
   NOTE:
   Engine starts when ignition switch is turned ON while brake pedal is depressed.
4. Oil pressure warning lamp starts blinking when the auto active test starts.
5. After a series of the following operations is repeated 3 times, auto active test is completed.

NOTE:

- When auto active test mode has to be cancelled halfway through test, turn the ignition switch OFF.
- When auto active test is not activated, door switch may be the cause. Check door switch. Refer to DLK-111, "Component Function Check".

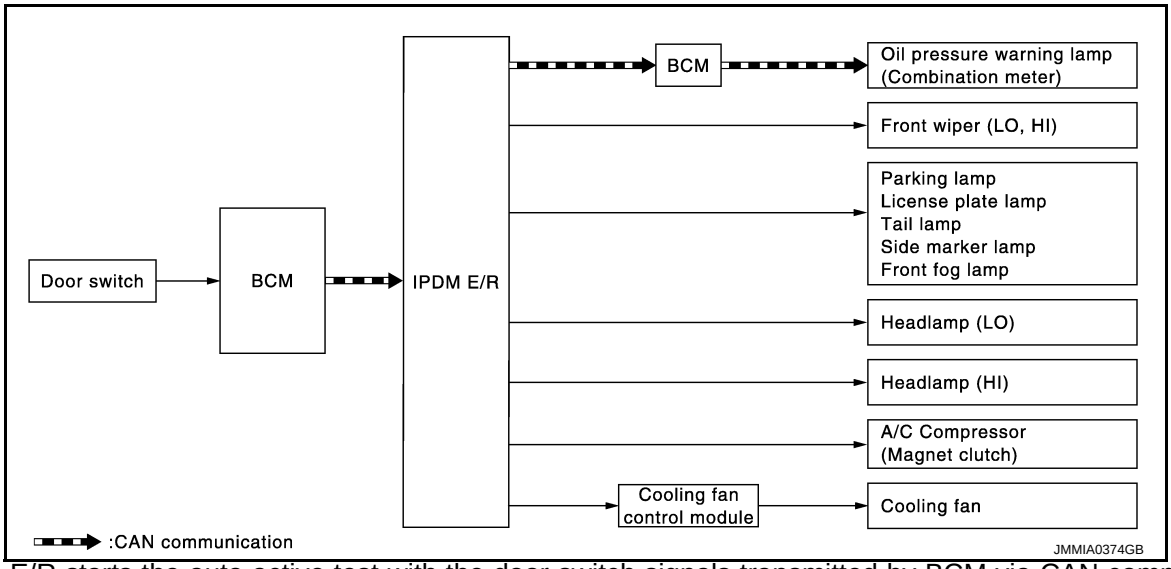
Inspection in Auto Active Test Mode

When auto active test mode is actuated, the following operation sequence is repeated 3 times.

Operation sequence	Inspection location	Operation
1	Oil pressure warning lamp	Blinks continuously during of auto active test
2	Front wiper motor	LO for 5 seconds → HI for 5 seconds
3	• Parking lamp • License plate lamp • Tail lamp • Side marker lamp • Front fog lamp	10 seconds
4	Headlamp	LO for 10 seconds →HI ON ⇔ OFF 5 times
5	A/C compressor (magnet clutch)	ON ⇔ OFF 5 times
6	Cooling fan*	LO for 5 seconds → HI for 5 seconds

*: Outputs duty ratio of 50% for 5 seconds → duty ratio of 100% for 5 seconds on the cooling fan control module.

Concept of auto active test



- IPDM E/R starts the auto active test with the door switch signals transmitted by BCM via CAN communication. Therefore, the CAN communication line between IPDM E/R and BCM is considered normal if the auto active test starts successfully.
- The auto active test facilitates troubleshooting if any systems controlled by IPDM E/R cannot be operated.

Diagnosis chart in auto active test mode

Symptom	Inspection contents		Possible cause
Oil pressure warning lamp does not operate	Perform auto active test. Does the oil pressure warning lamp blink?	YES	• Harness or connector between IPDM E/R and oil pressure switch • Oil pressure switch • IPDM E/R
		NO	• CAN communication signal between BCM and IPDM E/R • CAN communication signal between BCM and combination meter • Combination meter
Any of the following components do not operate • Front wiper motor • Parking lamp • License plate lamp • Tail lamp • Side marker lamp • Front fog lamp • Headlamp (HI, LO)	Perform auto active test. Does the applicable system operate?	YES	BCM signal input circuit
		NO	• Lamp or motor • Lamp or motor ground circuit • Harness or connector between IPDM E/R and applicable system • IPDM E/R
A/C compressor does not operate	Perform auto active test. Does the magnet clutch operate?	YES	• ECM signal input circuit • CAN communication signal between ECM and IPDM E/R
		NO	• Magnet clutch • Harness or connector between IPDM E/R and magnet clutch • IPDM E/R

Symptom	Inspection contents		Possible cause
Cooling fan does not operate	Perform auto active test. Does the cooling fan operate?	YES	• ECM signal input circuit • CAN communication signal between ECM and IPDM E/R
		NO	• Harness or connector between IPDM E/R and cooling fan motor • Cooling fan control module • Cooling fan relay 1 • Cooling fan motor • IPDM E/R

CONSULT Function (IPDM E/R)

INFOID:0000000011285337

APPLICATION ITEM

CONSULT performs the following functions via CAN communication with IPDM E/R.

Diagnosis mode	Description
ECU Identification	Allows confirmation of IPDM E/R part number.
Self Diagnostic Result	Displays the diagnosis results judged by IPDM E/R.
Data Monitor	Displays the real-time input/output data from IPDM E/R input/output data.
Active Test	IPDM E/R can provide a drive signal to electronic components to check their operations.
CAN Diag Support Monitor	The results of transmit/receive diagnosis of CAN communication can be read.

SELF DIAGNOSTIC RESULT

Refer to PCS-23, "DTC Index".

DATA MONITOR

NOTE:

The following table includes information (items) inapplicable to this vehicle. For information (items) applicable to this vehicle, refer to CONSULT display items.

Monitor Item [Unit]	MAIN SIGNALS	Description
RAD FAN REQ [%]	×	Displays the value of the cooling fan speed request signal received from ECM via CAN communication.
AC COMP REQ [Off/On]	×	Displays the status of the A/C compressor request signal received from ECM via CAN communication.
TAIL&CLR REQ [Off/On]	×	Displays the status of the position light request signal received from BCM via CAN communication.
HL LO REQ [Off/On]	×	Displays the status of the low beam request signal received from BCM via CAN communication.
HL HI REQ [Off/On]	×	Displays the status of the high beam request signal received from BCM via CAN communication.
FR FOG REQ [Off/On]	×	Displays the status of the front fog light request signal received from BCM via CAN communication.
FR WIP REQ [Stop/1LOW/Low/Hi]	×	Displays the status of the front wiper request signal received from BCM via CAN communication.
WIP AUTO STOP [STOP P/ACT P]	×	Displays the status of the front wiper stop position signal judged by IPDM E/R.
WIP PROT [Off/BLOCK]	×	Displays the status of the front wiper fail-safe operation judged by IPDM E/R.
IGN RLY1 -REQ [Off/On]		Displays the status of the ignition switch ON signal received from BCM via CAN communication.
IGN RLY [Off/On]	×	Displays the status of the ignition relay judged by IPDM E/R.

Monitor Item [Unit]	MAIN SIGNALS	Description
PUSH SW [Off/On]		Displays the status of the push-button ignition switch judged by IPDM E/R.
INTER/NP SW [Off/On]		Displays the status of the shift position judged by IPDM E/R.
ST RLY CONT [Off/On]		Displays the status of the starter relay status signal received from BCM via CAN communication.
IHBT RLY -REQ [Off/On]		Displays the status of the starter control relay signal received from BCM via CAN communication.
ST/INHI RLY [Off/ ST ON/INHI ON/UNK-WN]		Displays the status of the starter relay and starter control relay judged by IPDM E/R.
DETENT SW [Off/On]		Displays the status of the A/T shift selector (detention switch) judged by IPDM E/R.
S/L RLY -REQ [Off/On]		**NOTE:** The item is indicated, but not monitored.
S/L STATE [LOCK/UNLK/UNKWN]		**NOTE:** The item is indicated, but not monitored.
DTRL REQ [Off/On]		Displays the status of the daytime running light request signal received from BCM via CAN communication.
OIL P SW [Open/Close]		Displays the status of the oil pressure switch judged by IPDM E/R.
HOOD SW [Off/On]		Displays the status of the hood switch judged by IPDM E/R.
HL WASHER REQ [Off/On]		**NOTE:** The item is indicated, but not monitored.
THFT HRN REQ [Off/On]		Displays the status of the theft warning horn request signal received from BCM via CAN communication.
HORN CHIRP [Off/On]		Displays the status of the horn reminder signal received from BCM via CAN communication.
HOOD SW 2 [Off/On]		**NOTE:** The item is indicated, but not monitored.

ACTIVE TEST

Test item	Operation	Description
HORN	On	Operates horn relay for 20 ms.
FRONT WIPER	Off	OFF
	Lo	Operates the front wiper relay.
	Hi	Operates the front wiper relay and front wiper HI/LO relay.
MOTOR FAN	1	OFF
	2	
	3	Operates the cooling fan relay (MID operation).
	4	Operates the cooling fan relay (HI operation).
HEAD LAMP WASHER	On	**NOTE:** The item is indicated, but cannot be tested.

Test item	Operation	Description
EXTERNAL LAMPS	Off	OFF
	TAIL	Operates the tail lamp relay.
	Lo	Operates the headlamp low relay.
	Hi	Operates the headlamp low relay and ON/OFF the headlamp high relay at 1 second intervals.
	Fog	Operates the front fog lamp relay.

ECU DIAGNOSIS INFORMATION

IPDM E/R

Reference Value

INFOID:0000000011285338

VALUES ON THE DIAGNOSIS TOOL

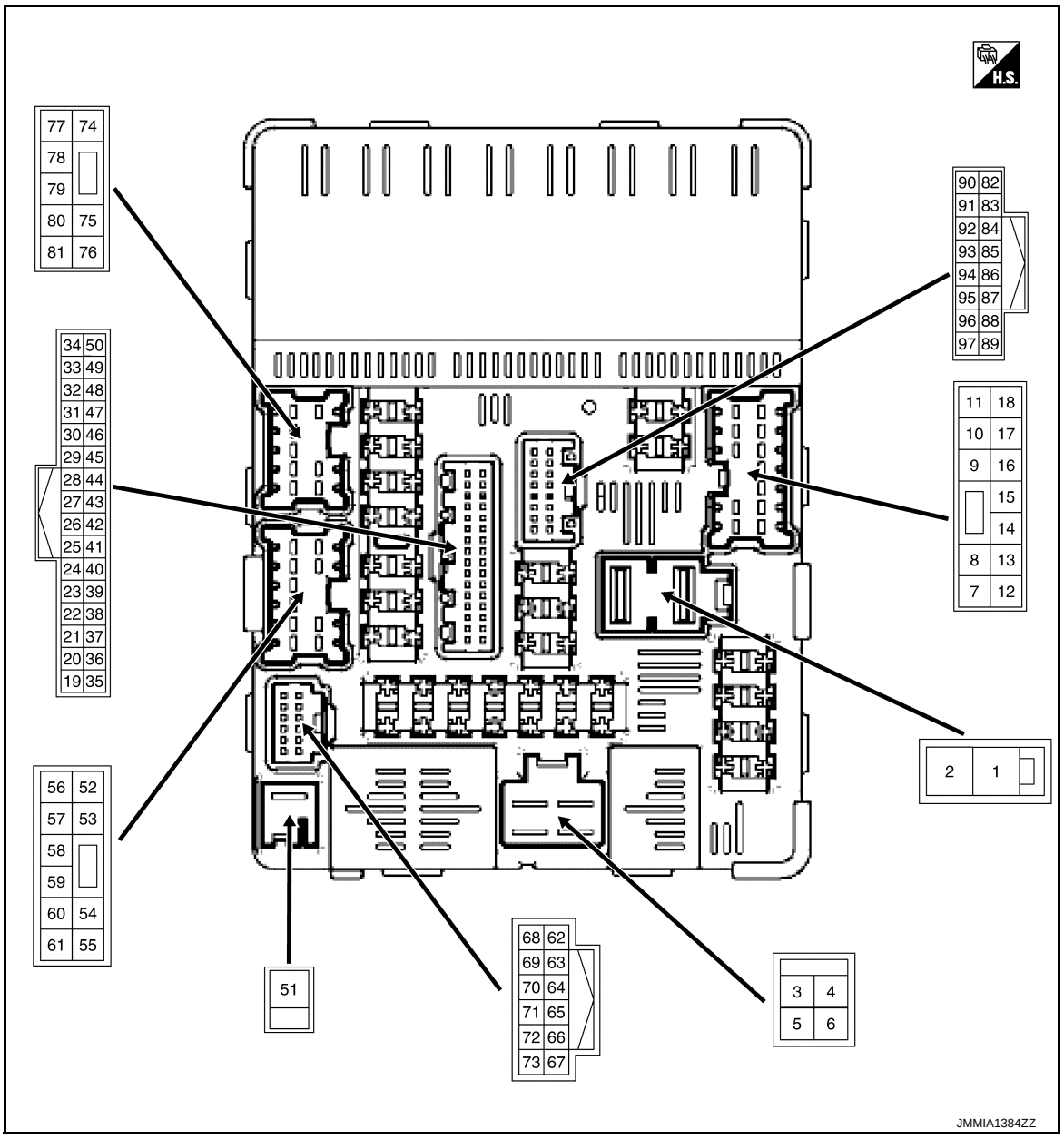
NOTE:

The following table includes information (items) inapplicable to this vehicle. For information (items) applicable to this vehicle, refer to CONSULT display items.

Monitor Item	Condition		Value/Status
RAD FAN REQ	Engine idle speed	Changes depending on engine coolant temperature, air conditioner operation status, vehicle speed, etc.	0 – 100 %
AC COMP REQ	Engine running	A/C switch OFF	Off
		A/C switch ON (compressor is operating)	On
TAIL&CLR REQ	Lighting switch OFF		Off
	Lighting switch 1ST, 2ND or AUTO (light is illuminated)		On
HL LO REQ	Lighting switch OFF		Off
	Lighting switch 2ND or AUTO (light is illuminated)		On
HL HI REQ	Lighting switch 2ND or AUTO (light is illuminated)	Lighting switch other than HI and PASS	Off
		Lighting switch HI or PASS	On
FR FOG REQ	Lighting switch 1ST, 2ND or AUTO (light is illuminated)	Front fog lamp switch OFF	Off
		Lighting switch HI or PASS	
		Front fog lamp switch ON	On
FR WIP REQ	Ignition switch ON	Front wiper switch OFF	Stop
		Front wiper switch INT	1LOW
		Front wiper switch LO	Low
		Front wiper switch HI	Hi
WIP AUTO STOP	Ignition switch ON	Front wiper stop position	STOP P
		Any position other than front wiper stop position	ACT P
WIP PROT	Ignition switch ON	Front wiper operates normally	Off
		Front wiper stops at fail-safe operation	BLOCK
IGN RLY1 -REQ	Ignition switch OFF or ACC		Off
	Ignition switch ON		On
IGN RLY	Ignition switch OFF or ACC		Off
	Ignition switch ON		On
PUSH SW	Release the push-button ignition switch		Off
	Press the push-button ignition switch		On
INTER/NP SW	Ignition switch ON	Selector lever in any position other than P or N	Off
		Selector lever in P or N position	On
ST RLY CONT	Ignition switch ON		Off
	At engine cranking		On
IHBT RLY -REQ	Ignition switch ON		Off
	At engine cranking		On

Monitor Item	Condition		Value/Status
ST/INHI RLY	Ignition switch ON		Off
	At engine cranking		INHI → ST
	The status of starter relay or starter control relay cannot be recognized by the battery voltage malfunction, etc. when the starter relay is ON and the starter control relay is OFF		UNKWN
DETENT SW	Ignition switch ON	• Press the selector button with selector lever in P position • Selector lever in any position other than P	Off
	Release the selector button with selector lever in P position		On
S/L RLY -REQ	**NOTE:** The item is indicated, but not monitored.		Off
S/L STATE	**NOTE:** The item is indicated, but not monitored.		UNLK
DTRL REQ	Daytime running light system is not operated		Off
	Any of the condition below • Daytime running light system is operated • Light switch 1ST, 2ND or AUTO (light is illuminated)		On
OIL P SW	• Ignition switch OFF or ACC • Ignition switch ON (engine running)		Open
	Ignition switch ON (engine stopped)		Close
HOOD SW	Close the hood		Off
	Open the hood		On
HL WASHER REQ	**NOTE:** The item is indicated, but not monitored.		Off
THFT HRN REQ	Not operation		Off
	Theft warning alarm or panic alarm is activated		On
HORN CHIRP	Not operation		Off
	Door locking with Intelligent Key (horn chirp mode)		On
HOOD SW 2	**NOTE:** The item is indicated, but not monitored.		Off

TERMINAL LAYOUT

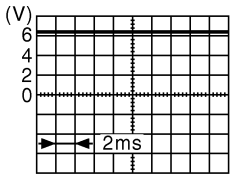
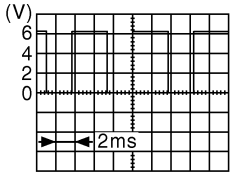
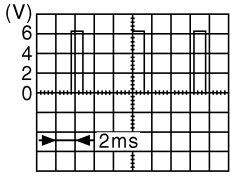


PHYSICAL VALUES

Terminal No. (Wire color)		Description		Condition	Value
+	–	Signal name	Input/ Output		
1 (R)	Ground	Battery power supply	Input	Ignition switch OFF	6 – 16 V
2 (L)	Ground	Battery power supply	Input	Ignition switch OFF	6 – 16 V
3 (GR)	Ground	Battery power supply	Input	Ignition switch OFF	6 – 16 V
7 (B/W)	Ground	Ground	—	Ignition switch ON	0 – 1 V
9 (P)	Ground	Front combination lamp RH	Output	Lighting switch OFF	0 – 1 V
				Lighting switch 1ST or 2ND	9 – 16 V

Terminal No. (Wire color)		Description		Condition		Value
		Signal name	Input/ Output			
+	–					
10 (LG)	Ground	Front combination lamp LH	Output	Lighting switch OFF		0 – 1 V
				Lighting switch 1ST or 2ND		9 – 16 V
11 (V)	Ground	Front wiper LO	Output	Ignition switch ON	Front wiper switch OFF	0 – 1 V
					Front wiper switch LO	9 – 16 V
13 (Y)	Ground	ECM relay power supply	Output	Ignition switch OFF (More than a few seconds after turning ignition switch OFF)		0 – 1 V
				• Ignition switch ON • Ignition switch OFF (For a few seconds after turning ignition switch OFF)		6 – 16 V
14 (SB)	Ground	Daytime running light relay	Output	Ignition switch OFF		6 – 16 V
15 (Y)	Ground	Fuel pump relay power supply	Output	Approximately 1 second or more after turning the ignition switch ON		0 – 1 V
				• Approximately 1 second after turning the ignition switch ON • Engine running		6 – 16 V
17 (GR)	Ground	Rear combination lamp LH	Output	Lighting switch OFF		0 – 1 V
				Lighting switch 1ST or 2ND		9 – 16 V
18 (L)	Ground	Front wiper HI	Output	Ignition switch ON	Front wiper switch OFF	0 – 1 V
					Front wiper switch HI	9 – 16 V
19 (P)	Ground	Ignition power supply	Output	Ignition switch OFF or ACC		0 – 1 V
				Ignition switch ON		6 – 16 V
22 (BG)	Ground	Vehicle security horn relay control	Output	The horn is deactivated		9 – 16 V
				The horn is activated		0 – 1 V
23 (LG)	Ground	Horn relay control	Output	The horn is deactivated		9 – 16 V
				The horn is activated		0 – 1 V
27 (GR)	Ground	Cooling fan relay 1 control	Output	Ignition switch OFF or ACC		0 V
				Ignition switch ON		0.7 V
28 (P)	—	CAN-L	Input/ Output	—		—
29 (L)	—	CAN-H	Input/ Output	—		—
31 (G)	Ground	A/T shift selector (Detention switch)	Input	Ignition switch ON	• Press the selector button (selector lever P) • Selector lever in any position other than P	9 – 16 V
					Release the selector button (selector lever P)	0 – 1 V
33 (SB)	Ground	Starter relay control	Input	At engine cranking		0 – 1 V
				Other than at engine cranking		6 – 16 V
34 (Y)	Ground	Front wiper stop position	Input	Ignition switch ON	Front wiper stop position	0 – 1 V
					Any position other than front wiper stop position	9 – 16 V
35 (G)	Ground	Ignition power supply	Output	Ignition switch OFF or ACC		0 – 1 V
				Ignition switch ON		6 – 16 V

Terminal No. (Wire color)		Description		Condition		Value
		Signal name	Input/ Output			
+	–					
36 (SB)	Ground	Ignition relay power supply	Output	Ignition switch OFF or ACC		0 – 1 V
				Ignition switch ON		6 – 16 V
37 (GR)	Ground	P/N position	Input	Ignition switch ON	Selector lever P or N	9 – 16 V
					Selector lever in any position other than P or N	0 – 1 V
38 (BR)	Ground	Push-button ignition switch	Input	Press the push-button ignition switch		0 – 1 V
				Release the push-button ignition switch		6 – 16 V
41 (GR)	Ground	Ground	—	Ignition switch ON		0 – 1 V
43 (V)	Ground	Ignition relay monitor	Input	Ignition switch OFF or ACC		6 – 16 V
				Ignition switch ON		0 – 1 V
51 (W)	Ground	Starter motor	Output	Other than at engine cranking		0 – 1 V
				At engine cranking		6 – 16 V
52 (G)	Ground	ECM relay power supply	Output	Ignition switch OFF (More than a few seconds after turning ignition switch OFF)		0 – 1 V
				• Ignition switch ON • Ignition switch OFF (For a few seconds after turning ignition switch OFF)		6 – 16 V
53 (BR)	Ground	ECM relay power supply	Output	Ignition switch OFF (More than a few seconds after turning ignition switch OFF)		0 – 1 V
				• Ignition switch ON • Ignition switch OFF (For a few seconds after turning ignition switch OFF)		6 – 16 V
54 (Y)	Ground	Ignition relay power supply	Output	Ignition switch OFF or ACC		0 – 1 V
				Ignition switch ON		6 – 16 V
55 (W)	Ground	Ignition relay power supply	Output	Ignition switch OFF or ACC		0 – 1 V
				Ignition switch ON		6 – 16 V
56 (L)	Ground	A/C relay power supply	Output	Engine running	A/C switch OFF	0 – 1 V
					A/C switch ON (A/C compressor is operating)	9 – 16 V
57 (P)	Ground	Throttle control motor relay power supply	Output	Ignition switch OFF (More than a few seconds after turning ignition switch OFF)		0 – 1 V
				• Ignition switch ON • Ignition switch OFF (For a few seconds after turning ignition switch OFF)		6 – 16 V
58 (SB)	Ground	ECM power supply	Output	Ignition switch OFF		6 – 16 V
59 (V)	Ground	ECM relay power supply	Output	Ignition switch OFF (More than a few seconds after turning ignition switch OFF)		0 – 1 V
				• Ignition switch ON • Ignition switch OFF (For a few seconds after turning ignition switch OFF)		6 – 16 V

Terminal No. (Wire color) +	Terminal No. (Wire color) –	Description: Signal name	Description: Input/ Output	Condition		Value
61 (GR)	Ground	Ignition relay power supply	Output	Ignition switch OFF or ACC		0 – 1 V
				Ignition switch ON		6 – 16 V
65 (BG)	Ground	Throttle control motor relay control	Output	When Ignition switch is turned from OFF to ON		6 – 16 V
				Between 2 to 3 seconds after ignition switch is turned from ON to OFF		0 – 1 V
69 (R)	Ground	Fuel pump relay control	Output	• Approximately 1 second after turning the ignition switch ON • Engine running		0 – 1 V
				Approximately 1 second or more after turning the ignition switch ON		6 – 16 V
70 (BR)	Ground	Oil pressure switch	Input	Ignition switch ON	Engine running	9 – 16 V
					Engine stopped	0 – 1 V
71 (Y)	Ground	Power generation command signal	Output	Ignition switch ON		 JPMIA0001GB 6.6 V
				40% is set on “ACTIVE TEST”, “ALTERNATOR DUTY” of “ENGINE”		 JPMIA0002GB 4.0 V
				80% is set on “ACTIVE TEST”, “ALTERNATOR DUTY” of “ENGINE”		 JPMIA0003GB 1.3 V
72 (P)	Ground	ECM relay control	Output	Ignition switch OFF (More than a few seconds after turning ignition switch OFF)		6 – 16 V
				• Ignition switch ON • Ignition switch OFF (For a few seconds after turning ignition switch OFF)		0 – 1 V
74 (G)	Ground	Ignition relay power supply	Output	Ignition switch ON		9 – 16 V
75 (R)	Ground	Headlamp LO (RH)	Output	Lighting switch OFF		0 – 1 V
				Lighting switch 2ND or AUTO (light is illuminated)		9 – 16 V

Terminal No. (Wire color)		Description		Condition		Value
+	–	Signal name	Input/ Output			
76 (V)	Ground	Headlamp LO (LH)	Output	Lighting switch OFF		0 – 1 V
				Lighting switch 2ND or AUTO (light is illuminated)		9 – 16 V
78 (W)	Ground	Front fog lamp (RH)	Output	Lighting switch 1ST, 2ND or AUTO (light is illuminated)	Front fog lamp switch ON	9 – 16 V
					Front fog lamp switch OFF	0 – 1 V
79 (L)	Ground	Front fog lamp (LH)	Output	Lighting switch 1ST, 2ND or AUTO (light is illuminated)	Front fog lamp switch ON	9 – 16 V
					Front fog lamp switch OFF	0 – 1 V
80 (BR)	Ground	Headlamp HI (RH)	Output	Lighting switch 2ND or AUTO (light is illuminated)	Lighting switch HI or PASS	9 – 16 V
					Lighting switch other than HI and PASS	0 – 1 V
81 (P)	Ground	Headlamp HI (LH)	Output	Lighting switch 2ND or AUTO (light is illuminated)	Lighting switch HI or PASS	9 – 16 V
					Lighting switch other than HI and PASS	0 – 1 V
85 (L)	Ground	Daytime running light relay control	Output	• Parking lamp • License plate lamp • Tail lamp • Side marker lamp	Turned OFF	9 – 16 V
					Turned ON	0 – 1 V
90 (BR)	Ground	Rear combination lamp RH (tail lamp), license plate lamp, map lamp and auto leveliz-er control unit	Output	Lighting switch OFF		0 – 1 V
				Lighting switch 1ST and 2ND		9 – 16 V
93 (V)	Ground	Cooling fan control	Output	Engine idling		0 – 5 V
96 (P)	Ground	Hood switch	Input	Close the hood		9 – 16 V
				Open the hood		0 – 1 V

Fail-safe

INFOID:0000000011285339

CAN COMMUNICATION CONTROL

When CAN communication with ECM and BCM is impossible, IPDM E/R performs fail-safe control. After CAN communication recovers normally, it also returns to normal control.

If No CAN Communication Is Available With ECM

Control part	Fail-safe operation
Cooling fan	• Outputs the pulse duty signal (PWM signal) 100%when the ignition switch is turned ON • Outputs the pulse duty signal (PWM signal) 0%when the ignition switch is turned OFF
A/C compressor	A/C relay OFF
Alternator	Outputs the power generation command signal (PWM signal) 0%

If No CAN Communication Is Available With BCM

Control part	Fail-safe operation
Headlamp	• Turns ON the headlamp low relay when the ignition switch is turned ON • Turns OFF the headlamp low relay when the ignition switch is turned OFF • Headlamp high relay OFF
• Parking lamp • License plate lamp • Illumination • Tail lamp • Side marker lamp	• Turns ON the tail lamp relay when the ignition switch is turned ON • Turns OFF the tail lamp relay when the ignition switch is turned OFF
Front wiper motor	• The status just before activation of fail-safe control is maintained until the ignition switch is turned OFF while the front wiper is operating at LO or HI speed. • The wiper is operated at LO speed until the ignition switch is turned OFF if the fail-safe control is activated while the front wiper is set in the INT mode and the front wiper motor is operating. • Returns automatically wiper to stop position when ignition switch is turned ON if fail-safe control is activated while front wiper motor is operated and wiper stop in the other position than stop position. • The status is held at service position if the fail-safe control is activated while the service position function is operating.
Front fog lamp	Front fog lamp relay OFF
Horn	Horn relay OFF
Ignition relay	The status just before activation of fail-safe is maintained.
Starter motor	Starter control relay OFF

IGNITION RELAY MALFUNCTION DETECTION FUNCTION

- IPDM E/R monitors the voltage at the contact circuit and excitation coil circuit of the ignition relay inside it.
- IPDM E/R judges the ignition relay error if the voltage differs between the contact circuit and the excitation coil circuit.
- If the ignition relay cannot turn OFF due to contact seizure, it activates the tail lamp relay for 10 minutes to alert the user to the ignition relay malfunction when the ignition switch is turned OFF.

Voltage judgment		IPDM E/R judgment	Operation
Ignition relay contact side	Ignition relay excitation coil side		
ON	ON	Ignition relay ON normal	—
OFF	OFF	Ignition relay OFF normal	—
ON	OFF	Ignition relay ON stuck	• Detects DTC “B2098: IGN RELAY ON” • Turns ON the tail lamp relay for 10 minutes
OFF	ON	Ignition relay OFF stuck	Detects DTC “B2099: IGN RELAY OFF”

FRONT WIPER PROTECTION FUNCTION

IPDM E/R detects front wiper stop position by a front wiper stop position signal.
When a front wiper stop position signal is in the conditions listed below, IPDM E/R stops power supply to wiper after repeating a front wiper 10 seconds activation and 20 seconds stop.

Ignition switch	Front wiper switch	Front wiper stop position signal
ON	OFF	The front wiper stop position signal (stop position) cannot be input for 10 seconds.
	ON	The front wiper stop position signal does not change for 10 seconds.

NOTE:
This operation status can be confirmed on the IPDM E/R “Data Monitor” that displays “BLOCK” for the item “WIP PROT” while the wiper is stopped.

STARTER MOTOR PROTECTION FUNCTION

IPDM E/R turns OFF the starter control relay to protect the starter motor when the starter control relay remains active for 90 seconds.

DTC Index

INFOID:0000000011285340

NOTE:

- The details of time display are as follows.
- CRNT: A malfunction is detected now.
- PAST: A malfunction was detected in the past.
- IGN counter is displayed on FFD (Freeze Frame Data).
- The number is 0 when is detected now.
- The number increases like 1 → 2 ··· 38 → 39 after returning to the normal condition whenever IGN OFF → ON.
- The number is fixed to 39 until the self-diagnosis results are erased if it is over 39.

×: Applicable

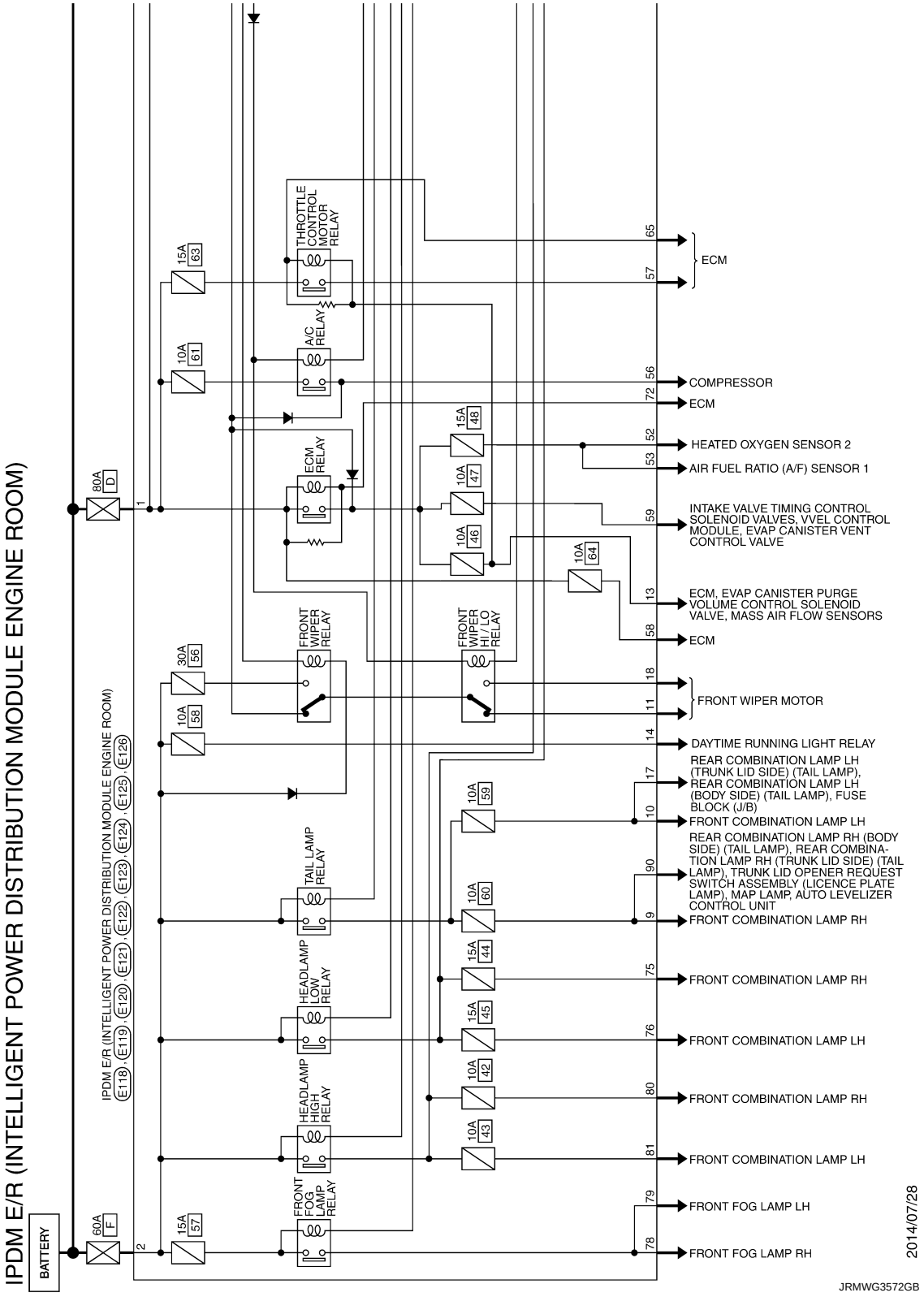
CONSULT display	Fail-safe	Reference
No DTC is detected. further testing may be required.	—	—
U1000: CAN COMM CIRCUIT	×	PCS-30
U1010: CONTROL UNIT	—	PCS-32
B2098: IGN RELAY ON CIRC	×	PCS-33
B2099: IGN RELAY OFF CIRC	—	PCS-35
B210B: STR CONT RLY ON CIRC	—	SEC-102
B210C: STR CONT RLY OFF CIRC	—	SEC-103
B210D: STARTER RLY ON CIRC	—	SEC-105
B210E: STARTER RLY OFF CIRC	—	SEC-107
B210F: INTRLCK/PNP SW ON	—	SEC-109
B2110: INTRLCK/PNP SW OFF	—	SEC-111

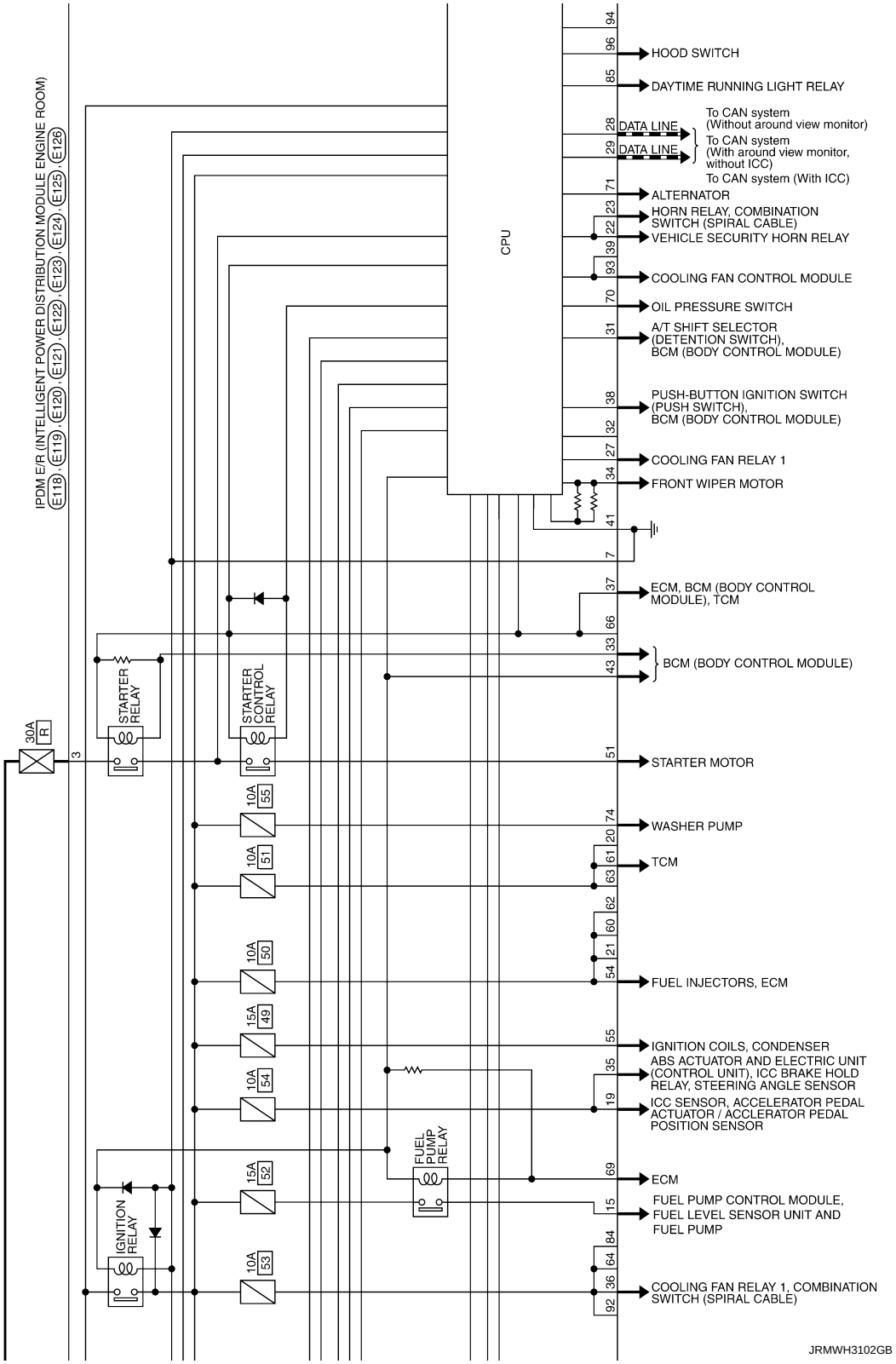
WIRING DIAGRAM

IPDM E/R

Wiring Diagram

INFOID:0000000011285341




IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
(E118), (E119), (E120), (E121), (E122), (E123), (E124), (E125), (E126)
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HOOD SWITCH
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(Without around view monitor)
29
DATA LINE
To CAN system
(With around view monitor, without ICC)
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VEHICLE SECURITY HORN RELAY
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31
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38
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STARTER MOTOR
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WASHER PUMP
10A 51
20
61
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15A 49
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IGNITION COILS, CONDENSER
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ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT), ICC BRAKE HOLD RELAY, STEERING ANGLE SENSOR
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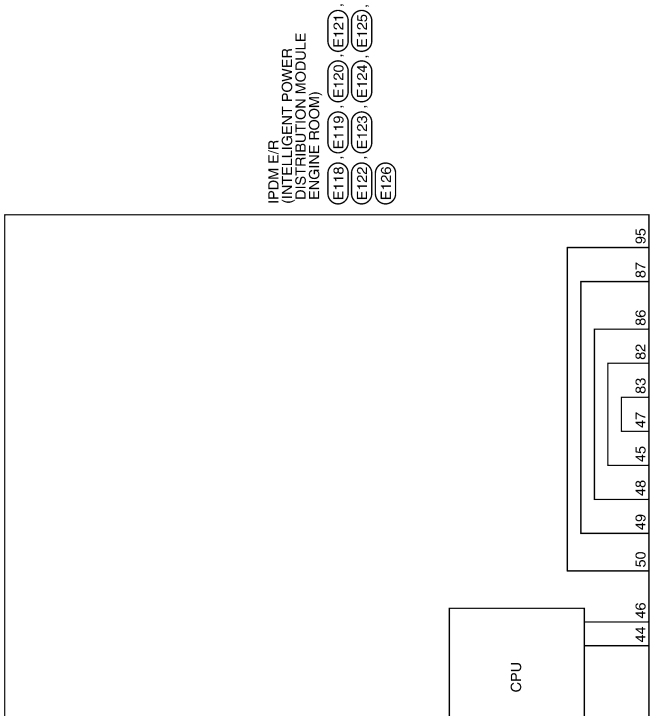
ICC SENSOR, ACCELERATOR PEDAL ACTUATOR / ACCLERATOR PEDAL POSITION SENSOR
FUEL PUMP RELAY
15A 52
69
ECM
15
FUEL PUMP CONTROL MODULE, FUEL LEVEL SENSOR UNIT AND FUEL PUMP
IGNITION RELAY
10A 53
84
64
36
92
COOLING FAN RELAY 1, COMBINATION SWITCH (SPIRAL CABLE)
JRMWH3102GB


IPDM E/R
(INTELLIGENT POWER
DISTRIBUTION MODULE
ENGINE ROOM)
E118, E119, E120, E121,
E122, E123, E124, E125,
E126
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83
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45
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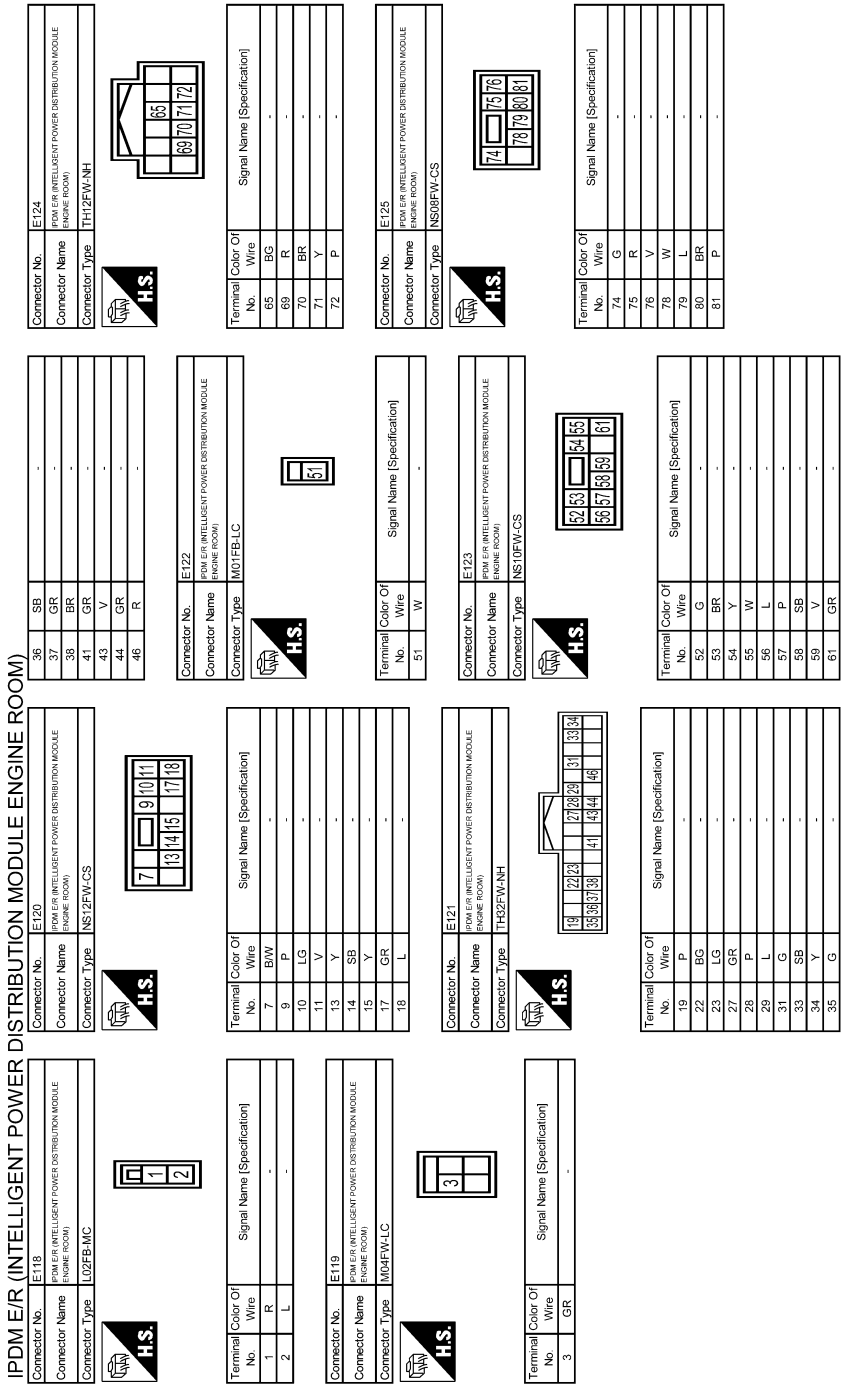
49
50
46
44
CPU
JRMWG3574GB

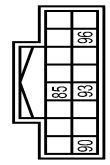
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)



JRMWG3575GB

IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)

Connector No.	E126
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	TH16FW-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
85	L	-
90	BR	-
93	V	-
96	P	-

JRMWG3576GB

DTC/CIRCUIT DIAGNOSIS

U1000 CAN COMM CIRCUIT

DTC Description

INFOID:0000000011285342

CAN (Controller Area Network) is a serial communication line for real time applications. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Modern vehicle is equipped with many electronic control unit, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN-H line, CAN-L line) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.
CAN Communication Signal Chart. Refer to LAN-42, "CAN COMMUNICATION SYSTEM : CAN Communication Signal Chart".

DTC DETECTION LOGIC

DTC No.	CONSULT screen items (Trouble diagnosis content)	DTC Detection Condition
U1000	CAN COMM CIRCUIT (CAN communication circuit)	When IPDM E/R cannot communicate CAN communication signal continuously for 2 seconds or more

POSSIBLE CAUSE

CAN communication system

FAIL-SAFE

When CAN communication with ECM and BCM is impossible, IPDM E/R performs fail-safe control. After CAN communication recovers normally, it also returns to normal control.

If No CAN Communication Is Available With ECM

Control part	Fail-safe operation
Cooling fan	• Outputs the pulse duty signal (PWM signal) 100%when the ignition switch is turned ON • Outputs the pulse duty signal (PWM signal) 0%when the ignition switch is turned OFF
A/C compressor	A/C relay OFF
Alternator	Outputs the power generation command signal (PWM signal) 0%

If No CAN Communication Is Available With BCM

Control part	Fail-safe operation
Headlamp	• Turns ON the headlamp low relay when the ignition switch is turned ON • Turns OFF the headlamp low relay when the ignition switch is turned OFF • Headlamp high relay OFF
• Parking lamp • License plate lamp • Illumination • Tail lamp • Side marker lamp	• Turns ON the tail lamp relay when the ignition switch is turned ON • Turns OFF the tail lamp relay when the ignition switch is turned OFF
Front wiper motor	• The status just before activation of fail-safe control is maintained until the ignition switch is turned OFF while the front wiper is operating at LO or HI speed. • The wiper is operated at LO speed until the ignition switch is turned OFF if the fail-safe control is activated while the front wiper is set in the INT mode and the front wiper motor is operating. • Returns automatically wiper to stop position when ignition switch is turned ON if fail-safe control is activated while front wiper motor is operated and wiper stop in the other position than stop position. • The status is held at service position if the fail-safe control is activated while the service position function is operating.
Front fog lamp	Front fog lamp relay OFF
Horn	Horn relay OFF

Control part	Fail-safe operation
Ignition relay	The status just before activation of fail-safe is maintained.
Starter motor	Starter control relay OFF

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Turn the ignition switch ON and wait for 2 seconds or more.
2. Check “Self Diagnostic Result” of IPDM E/R.

Is DTC “U1000” displayed?

YES >> Refer to PCS-31, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-42, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000011285343

1.PERFORM SELF DIAGNOSTIC

1. Turn the ignition switch ON and wait for 2 seconds or more.
2. Check “Self Diagnostic Result” of IPDM E/R.

Is DTC “U1000” displayed?

YES >> Refer to LAN-24, "Trouble Diagnosis Flow Chart".
NO >> Refer to GI-42, "Intermittent Incident".

U1010 CONTROL UNIT (CAN)

DTC Description

INFOID:0000000011285344

DTC DETECTION LOGIC

DTC No.	CONSULT screen items (Trouble diagnosis content)	DTC Detection Condition
U1010	CONTROL UNIT (Control unit)	IPDM E/R detected internal CAN communication circuit malfunction.

POSSIBLE CAUSE

IPDM E/R

FAIL-SAFE

—

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Turn the ignition switch ON and wait for 2 seconds or more.
2. Check “Self Diagnostic Result” of IPDM E/R.

Is DTC “U1000” displayed?

YES >> Refer to PCS-32, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-42, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000011285345

1.REPLACE IPDM E/R

Replace IPDM E/R. Refer to PCS-38, "Removal and Installation"

>> INSPECTION END

B2098 IGNITION RELAY ON STUCK

DTC Description

INFOID:0000000011285346

- IPDM E/R operates the ignition relay when it receives an ignition switch ON signal from BCM via CAN communication.
- Turn the ignition relay OFF by pressing the push-button ignition switch once when the vehicle speed is 4 km/h (2.5 MPH) or less.
- Turn the ignition relay OFF with the following operation when the vehicle speed is more than 4 km/h (2.5 MPH) or when an abnormal condition occurs in CAN communication from the combination meter (Emergency OFF)

- Press and hold the push-button ignition switch for 2 seconds or more.
- Press the push-button ignition switch 3 times within 1.5 seconds.

NOTE:
The ignition relay does not turn ON for 3 seconds after emergency OFF even if the push-button ignition switch is pressed.

DTC DETECTION LOGIC

DTC No.	CONSULT screen items (Trouble diagnosis content)	DTC Detection Condition
B2098	IGN RELAY ON CIRC (Ignition relay ON circuit)	The ignition relay ON is detected for 1 second at ignition switch OFF (CPU monitors the status at the contact and excitation coil circuits of the ignition relay inside it)

POSSIBLE CAUSE

- IPDM E/R
- Harness or connectors (ignition relay circuit is short)

FAIL-SAFE

Turns ON the tail lamp relay for 10 minutes.

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait 1 second or more.
3. Check DTC in “Self Diagnostic Result” mode of “IPDM E/R” using CONSULT.

Is DTC detected?

YES >> Refer to PCS-33, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-42, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000011285347

1.CHECK SELF DIAGNOSTIC RESULT

Check DTC using CONSULT.

What is the display history of DTC “B2098”?

“CRNT”>> GO TO 2.
“PAST” >> GO TO 5.

2.CHECK IGNITION RELAY CONTROL CIRCUIT VOLTAGE 1

1. Turn ignition switch ON
2. Check voltage between IPDM E/R harness connector and ground.

(+)		(–)	Voltage
IPDM E/R			
Connector	Terminal		
E121	43	Ground	0 – 1 V

Is the inspection result normal?

YES >> GO TO 4.
NO >> GO TO 3.

3. CHECK IGNITION RELAY CONTROL CIRCUIT VOLTAGE 2

1. Disconnect IPDM E/R connector.
2. Turn ignition switch ON
3. Check voltage between IPDM E/R harness connector and ground.

(+)		(–)	Voltage (Approx.)
IPDM E/R			
Connector	Terminal		
E121	43	Ground	0 V

Is the inspection result normal?

YES >> Replace IPDM E/R. Refer to PCS-38, "Removal and Installation".
NO >> Repair or replace harness.

4. CHECK IGNITION RELAY CONTROL CIRCUIT

1. Disconnect IPDM E/R connector.
2. Check continuity between IPDM E/R harness connector and ground.

IPDM E/R		Ground	Continuity
Connector	Terminal		
E121	43		Not existed

Is the inspection result normal?

YES >> Perform the diagnosis procedure for DTC B26F2. Refer to PCS-79, "DTC Description".
NO >> Repair or replace harness.

5. CHECK INTERMITTENT INCIDENT

Refer to GI-42, "Intermittent Incident".

>> INSPECTION END

B2099 IGNITION RELAY OFF STUCK

DTC Description

INFOID:0000000011285348

- IPDM E/R operates the ignition relay when it receives an ignition switch ON signal from BCM via CAN communication.
- Turn the ignition relay OFF by pressing the push-button ignition switch once when the vehicle speed is 4 km/h (2.5 MPH) or less.
- Turn the ignition relay OFF with the following operation when the vehicle speed is more than 4 km/h (2.5 MPH) or when an abnormal condition occurs in CAN communication from the combination meter (Emergency OFF)

- Press and hold the push-button ignition switch for 2 seconds or more.
- Press the push-button ignition switch 3 times within 1.5 seconds.

NOTE:
The ignition relay does not turn ON for 3 seconds after emergency OFF even if the push-button ignition switch is pressed.

DTC DETECTION LOGIC

DTC No.	CONSULT screen items (Trouble diagnosis content)	DTC Detection Condition
B2099	IGN RELAY OFF CIRC (Ignition relay OFF circuit)	The ignition relay OFF is detected for 1 second at ignition switch ON (CPU monitors the status at the contact and excitation coil circuits of the ignition relay inside it)

NOTE:
When IPDM E/R power supply voltage is low (Approx. 7 - 8 V for about 1 second), the “DTC: B2099” may be detected.

POSSIBLE CAUSE

- IPDM E/R
- Fuse
- Battery

FAIL-SAFE

—

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait 1 second or more.
3. Check DTC in “Self Diagnostic Result” mode of “IPDM E/R” using CONSULT.

Is DTC detected?

YES >> Refer to PCS-35, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-42, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000011285349

1.CHECK FUSE

Check that all of the fuses installed on the downstream of the contact point side circuit of the ignition relay in IPDM E/R are not blown.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Replace the blown fuse after replacing the affected circuit if a fuse is blown.

2.CHECK IGNITION RELAY CONTROL CIRCUIT VOLTAGE

1. Turn ignition switch ON
2. Check voltage between IPDM E/R harness connector and ground.

(+)		(–)	Voltage
IPDM E/R			
Connector	Terminal		
E121	43	Ground	0 – 1 V

Is the inspection result normal?

YES >> GO TO 3.
NO >> Replace IPDM E/R. Refer to PCS-38, "Removal and Installation".

3.CHECK BATTERY VOLTAGE

Check battery voltage.

Which is the measurement result?

More than 12.4 V>>GO TO 4.
Less than 12.4 V>>Perform battery inspection. Refer to PG-114, "How to Handle Battery".

4.CHECK INTERMITTENT INCIDENT

Refer to GI-42, "Intermittent Incident".

>> INSPECTION END

POWER SUPPLY AND GROUND CIRCUIT

Diagnosis Procedure

INFOID:0000000011285350

1.CHECK FUSIBLE LINK

Check that the following IPDM E/R fusible links are not blown.

Signal name	Fusible link No.
Battery power supply	D (80 A)
	F (60 A)
	R (30 A)

Is the fuse fusing?

YES >> Replace the blown fusible link after repairing the affected circuit if a fusible link is blown.
NO >> GO TO 2.

2.CHECK POWER SUPPLY CIRCUIT

1. Turn the ignition switch OFF.
2. Disconnect IPDM E/R connector.
3. Check voltage between IPDM E/R harness connector and the ground.

(+)		(–)	Voltage
IPDM E/R			
Connector	Terminal		
E118	1	Ground	6 – 16 V
	2		
E119	3		

Is the measurement value normal?

YES >> GO TO 3.
NO >> Repair the harness or connector.

3.CHECK GROUND CIRCUIT

Check continuity between IPDM E/R harness connectors and the ground.

IPDM E/R		Ground	Continuity
Connector	Terminal		
E120	7		Existed
E121	41		

Does continuity exist?

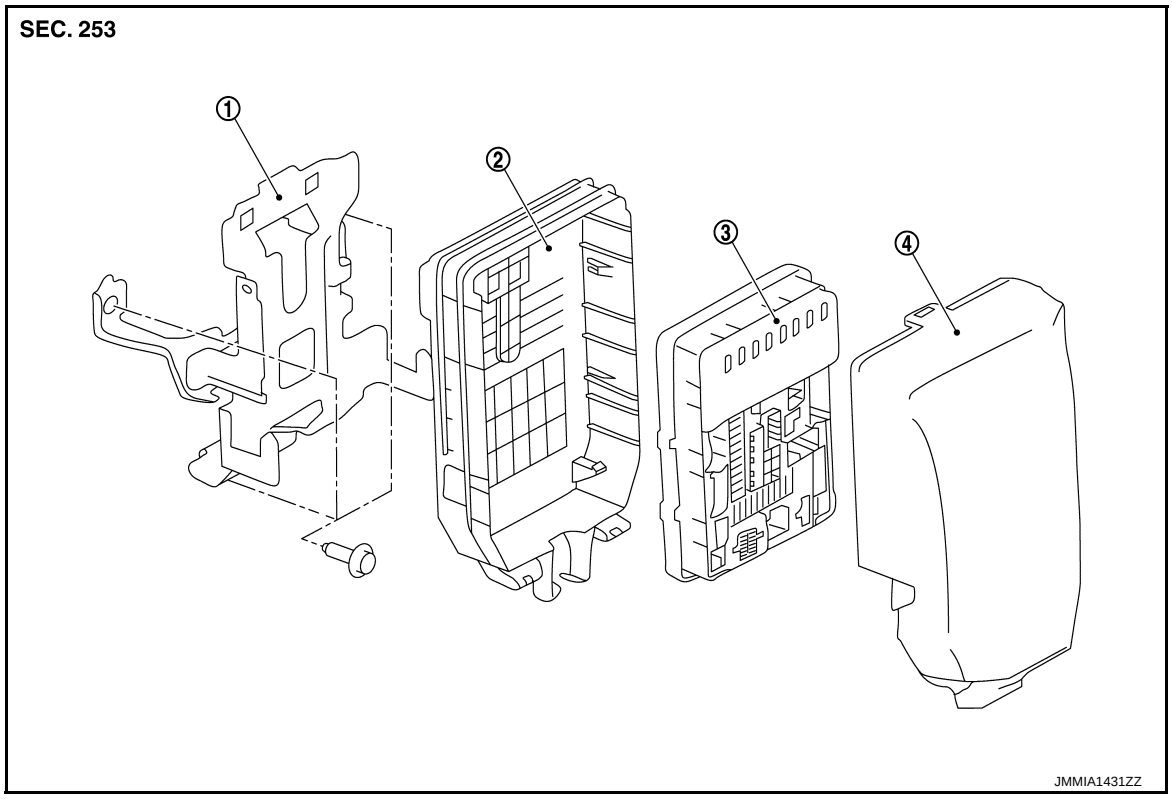
YES >> INSPECTION END
NO >> Repair the harness or connector.

REMOVAL AND INSTALLATION

IPDM E/R

Exploded View

INFOID:0000000011285351



① Bracket
② IPDM E/R cover B
③ IPDM E/R
④ IPDM E/R cover A

Removal and Installation

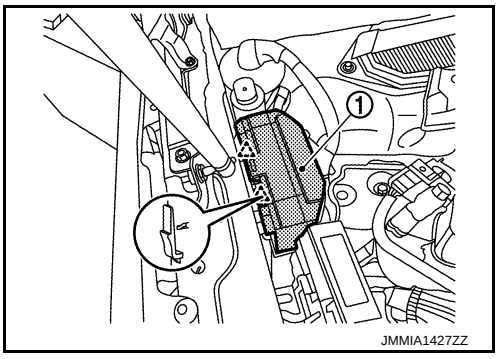
INFOID:0000000011285352

NOTE:
To prevent damage to the parts, IPDM E/R integrated relays cannot be removed.

REMOVAL

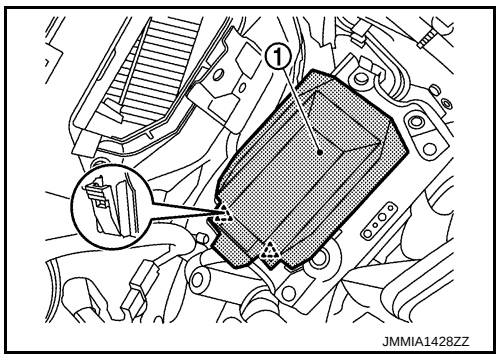
1. Remove the cowl top cover (RH). Refer to EXT-27, "Removal and Installation".
2. Disconnect the battery cable from the negative terminal.
3. Pull up the IPDM E/R assembly ① while pressing the pawls on the back of the IPDM E/R cover B.

△ : Pawl



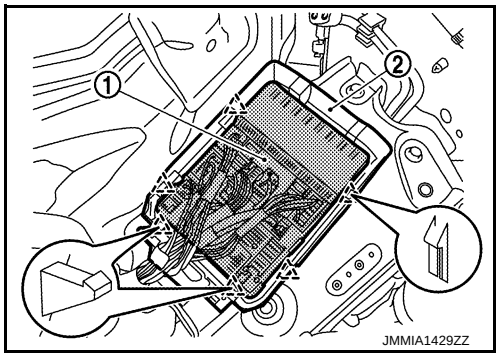
4. Remove IPDM E/R cover A ①.

: Pawl

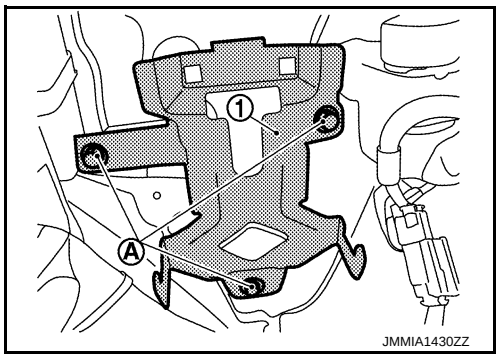


5. Disconnect harness connector and then remove IPDM E/R ① from IPDM E/R cover B ②.

: Pawl



6. Remove the mounting bolts Ⓐ and remove the bracket ①.



INSTALLATION

Install in the reverse order of removal.

PRECAUTION

PRECAUTIONS

Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER"

INFOID:0000000011285353

The Supplemental Restraint System such as “AIR BAG” and “SEAT BELT PRE-TENSIONER”, used along with a front seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. This system includes seat belt switch inputs and dual stage front air bag modules. The SRS system uses the seat belt switches to determine the front air bag deployment, and may only deploy one front air bag, depending on the severity of a collision and whether the front occupants are belted or unbelted. Information necessary to service the system safely is included in the “SRS AIR BAG” and “SEAT BELT” of this Service Manual.

WARNING:

Always observe the following items for preventing accidental activation.

- **To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision that would result in air bag inflation, all maintenance must be performed by an authorized NISSAN/INFINITI dealer.**
- **Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system. For removal of Spiral Cable and Air Bag Module, see “SRS AIR BAG”.**
- **Never use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.**

PRECAUTIONS WHEN USING POWER TOOLS (AIR OR ELECTRIC) AND HAMMERS

WARNING:

Always observe the following items for preventing accidental activation.

- **When working near the Air Bag Diagnosis Sensor Unit or other Air Bag System sensors with the ignition ON or engine running, never use air or electric power tools or strike near the sensor(s) with a hammer. Heavy vibration could activate the sensor(s) and deploy the air bag(s), possibly causing serious injury.**
- **When using air or electric power tools or hammers, always switch the ignition OFF, disconnect the battery, and wait at least 3 minutes before performing any service.**

Precautions for Removing Battery Terminal

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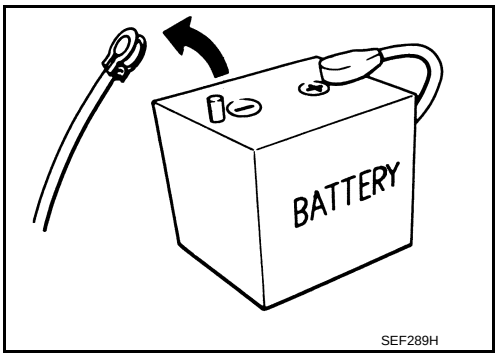


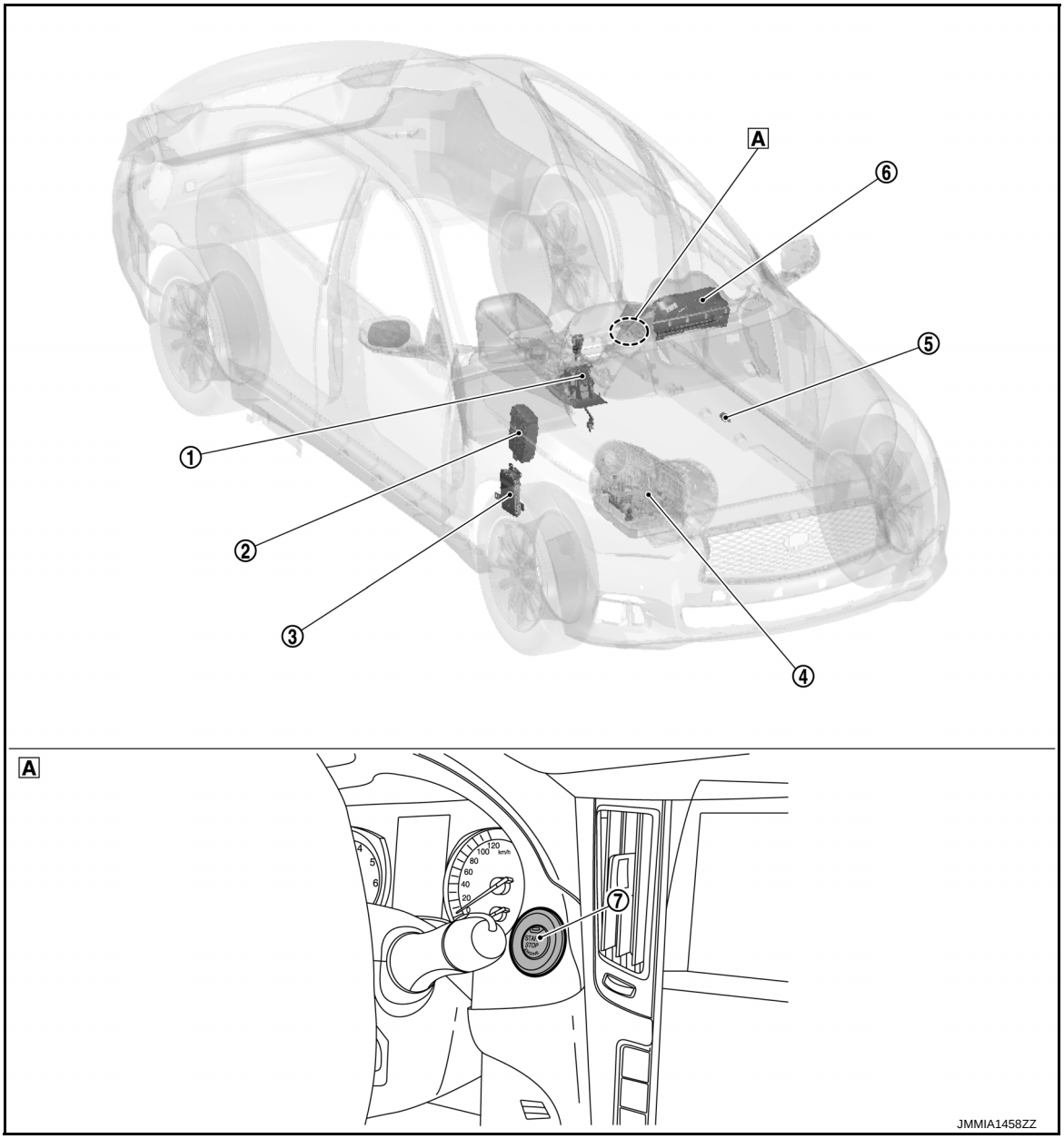
- When removing the 12V battery terminal, turn OFF the ignition switch and wait at least 30 seconds.
  NOTE:
  ECU may be active for several tens of seconds after the ignition switch is turned OFF. If the battery terminal is removed before ECU stops, then a DTC detection error or ECU data corruption may occur.
- For vehicles with the 2-batteries, be sure to connect the main battery and the sub battery before turning ON the ignition switch.
  NOTE:
  If the ignition switch is turned ON with any one of the terminals of main battery and sub battery disconnected, then DTC may be detected.
- After installing the 12V battery, always check "Self Diagnosis Result" of all ECUs and erase DTC.
  NOTE:
  The removal of 12V battery may cause a DTC detection error.

SYSTEM DESCRIPTION

COMPONENT PARTS

Component Parts Location

INFOID:0000000011285354



A Cluster lid A

No.	Component	Function
①	A/T shift selector (detention switch)	A/T shift selector (detention switch) detects shift lever status, transmits detention switch signal to BCM. Refer to TM-21, "A/T SHIFT LOCK SYSTEM : Component Parts Location" for detailed installation location.
②	IPDM E/R	• IPDM E/R detects push-button ignition switch (push switch) status, and transmits push-button ignition switch status signal (CAN) to BCM. • IPDM E/R receives ignition relay (IPDM E/R) control signal and ignition switch ON signal (CAN) from BCM, and controls ignition relay (built in IPDM E/R) Refer to PCS-5, "Component Parts Location" for detailed installation location.

No.	Component	Function
③	BCM	• BCM controls power distribution system. • BCM judges ignition switch position by push-button ignition switch (push switch) and vehicle condition • BCM checks the ignition switch position internally. Refer to BCS-4, "BODY CONTROL SYSTEM : Component Parts Location" for detailed installation location.
④	TCM	TCM detects shift position P or N, transmits P/N position signal to BCM. Refer to TM-12, "A/T CONTROL SYSTEM : Component Parts Location" for detailed installation location.
⑤	Stop lamp switch	Stop lamp switch detects that brake pedal is depressed, and transmits the signal to BCM. Refer to BRC-10, "Component Parts Location".
⑥	Combination meter	Combination meter transmits the vehicle speed signal to BCM via CAN communication. BCM also receives the vehicle speed signal from ABS actuator and electric unit (control unit) via CAN communication. BCM compares both signals to detect the vehicle speed.
⑦	Push-button ignition switch	Refer to PCS-42, "Push-button Ignition Switch".

Push-button Ignition Switch

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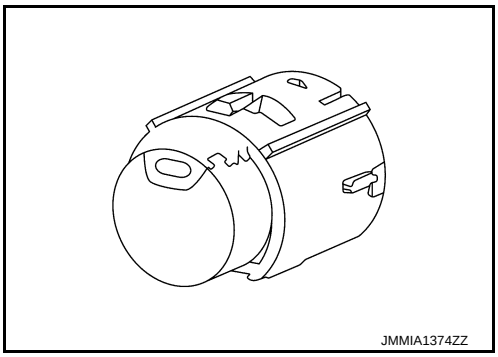
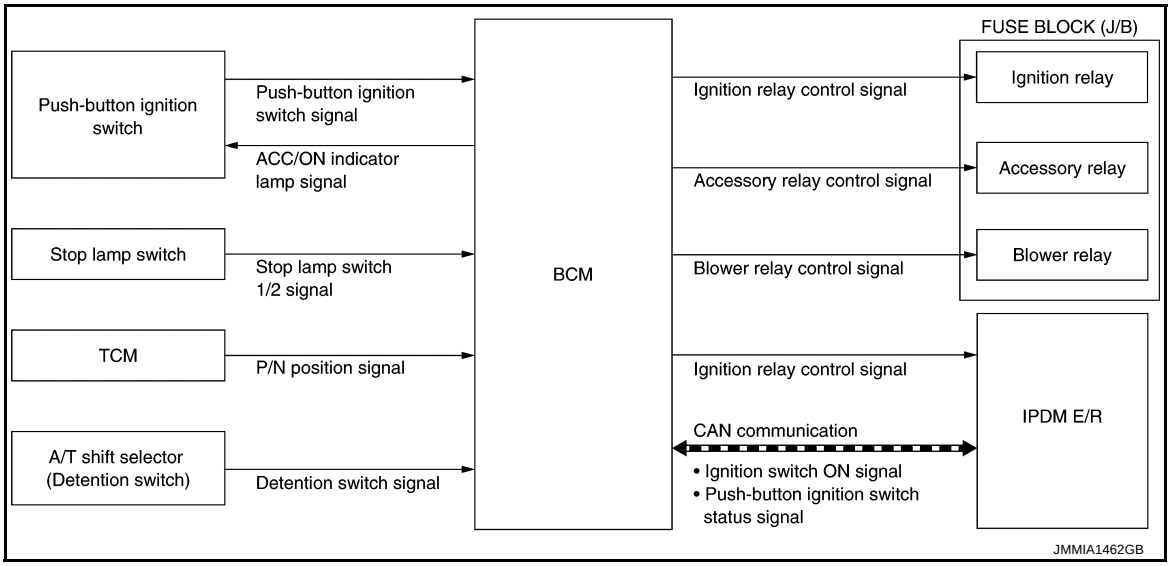
Push-button ignition switch is pressed, and transmits the status signal to BCM and IPDM E/R.



SYSTEM
POWER DISTRIBUTION SYSTEM
POWER DISTRIBUTION SYSTEM : System Description

INFOID:0000000011285356

SYSTEM DIADRAM



SYSTEM DESCRIPTION

- POWER DISTRIBUTION SYSTEM is the system that BCM controls with the operation of push-button ignition switch and performs the power distribution to each power circuit. This system is used instead of the mechanical power supply changing mechanism with the operation of the conventional key cylinder.
- Push-button ignition switch can be operated when Intelligent Key is in the following condition.
  - Intelligent Key is in the detection area of the inside key antenna.
  - Intelligent Key backside is contacted to push-button ignition switch.
- Push-button ignition switch operation is input to BCM as a signal. BCM changes the ignition switch position according to the status and operates the following relays to supply power to each power circuit.
  - Ignition relay (IPDM E/R)
  - Ignition relay [fuse block (J/B)]
  - Accessory relay
  - Blower relay
- The ignition switch position can be confirmed with the lighting of the ACC/ON indicator lamp in push-button ignition switch.

IGNITION BATTERY SAVER SYSTEM

When all the following conditions are met for 30 minutes, the battery saver system will cut off the power supply (ignition switch position ACC/ON → OFF) to prevent battery discharge.

- Ignition switch is in the ACC/ON position
- Turn signal lamp is not in operation
- Selector lever is in the P position

NOTE:

For one minute after thirty minutes have passed or three minutes after twenty-seven minutes are passed, the following display is indicated on information display in combination meter and sounds buzzer in combination meter.

Combination meter		Time
Information display	Buzzer	
Power turned off to save the battery	Pipi-Pipi (two seconds)	For one minute after thirty minutes have passed
		three minutes after twenty-seven minutes are passed

Reset Condition of Ignition Battery Saver System

If any of the following conditions are met the battery saver system is released.

- Ignition switch is not in the ACC/ON position

- Turn signal lamp is in operation
- Selector lever is not in the P position

NOTE:
The ignition battery saver system can be temporarily disabled, without using CONSULT, to prevent it from functioning when performing trouble diagnosis. Refer to PCS-63, "Work Procedure".

IGNITION SWITCH POSITION CHANGE TABLE BY PUSH-BUTTON IGNITION SWITCH OPERATION

Refer to SEC-9, "INTELLIGENT KEY SYSTEM/ENGINE START FUNCTION : System Description".

Fail-safe

INFOID:0000000011285357

FAIL-SAFE CONTROL BY DTC

BCM performs fail-safe control when any DTC are detected.

Display contents of CONSULT	Fail-safe	Cancellation
B2192: ID DISCORD BCM-ECM	Inhibit engine cranking	Erase DTC
B2193: CHAIN OF BCM-ECM	Inhibit engine cranking	Erase DTC
B2195: ANTI-SCANNING	Inhibit engine cranking	Ignition switch ON → OFF
B2198: NATS ANTENNA AMP	Inhibit engine cranking	Erase DTC
B2608: STARTER RELAY	Inhibit engine cranking	500 ms after the following signal communication status becomes consistent • Starter motor relay control signal • Starter relay status signal (CAN)
B260F: ENG STATE SIG LOST	Inhibit engine cranking	When any of the following conditions are fulfilled • Ignition switch position changes to ACC • Receives engine status signal (CAN)
B26F1: IGN RELAY OFF	Inhibit engine cranking	When the following conditions are fulfilled • Ignition switch ON signal (CAN: Transmitted from BCM): ON • Ignition switch ON signal (CAN: Transmitted from IPDM E/R): ON
B26F2: IGN RELAY ON	Inhibit engine cranking	When the following conditions are fulfilled • Ignition switch ON signal (CAN: Transmitted from BCM): OFF • Ignition switch ON signal (CAN: Transmitted from IPDM E/R): OFF
B26F3: START CONT RLY ON	Inhibit engine cranking	When the following conditions are fulfilled • Starter control relay signal (CAN: Transmitted from BCM): OFF • Starter control relay signal (CAN: Transmitted from IPDM E/R): OFF
B26F4: START CONT RLY OFF	Inhibit engine cranking	When the following conditions are fulfilled • Starter control relay signal (CAN: Transmitted from BCM): ON • Starter control relay signal (CAN: Transmitted from IPDM E/R): ON
B26F7: BCM	Inhibit engine cranking by Intelligent Key system	When room antenna and trunk room antenna functions normally

FAIL-SAFE CONTROL BY RAIN SENSOR MALFUNCTION

BCM detects the rain sensor serial link error and the rain sensor malfunction.
BCM controls the following fail-safe when rain sensor has a malfunction.

- Front wiper switch AUTO and sensing rain drop: The condition just before the activation of fail-safe is maintained until the front wiper switch is turned OFF.
- Front wiper switch AUTO and not sensing rain drop: Front wiper is LO operation until the front wiper switch is turned off.

FAIL-SAFE CONTROL OF COMBINATION SWITCH READING FUNCTION CAUSED BY LOW POWER SUPPLY VOLTAGE

If voltage of battery power supply lower, BCM maintains combination switch reading to the status when input voltage is less than approximately 9 V.

NOTE:
When voltage of battery power supply is approximately 9 V or more, combination switch reading function returns to normal operation.

DIAGNOSIS SYSTEM (BCM)

COMMON ITEM

COMMON ITEM : CONSULT Function (BCM - COMMON ITEM)

INFOID:0000000011562357

APPLICATION ITEM

CONSULT performs the following functions via CAN communication with BCM.

Diagnosis mode	Function Description
Work Support	Changes the setting for each system function.
Self Diagnostic Result	Displays the diagnosis results judged by BCM.
CAN Diag Support Monitor	Monitors the reception status of CAN communication viewed from BCM.
Data Monitor	The BCM input/output signals are displayed.
Active Test	The signals used to activate each device are forcibly supplied from BCM.
Ecu Identification	The BCM part number is displayed.
Configuration	• Read and save the vehicle specification. • Write the vehicle specification when replacing BCM.

SYSTEM APPLICATION

BCM can perform the following functions for each system.

NOTE:

It can perform the diagnosis modes except the following for all sub system selection items.

×: Applicable item

System	Sub system selection item	Diagnosis mode		
		Work Support	Data Monitor	Active Test
Door lock	DOOR LOCK	×	×	×
Rear window defogger	REAR DEFOGGER	×	×	×
Warning chime	BUZZER		×	×
Interior room lamp timer	INT LAMP	×	×	×
Exterior lamp	HEAD LAMP	×	×	×
Wiper and washer	WIPER	×	×	×
Turn signal and hazard warning lamps	FLASHER	×	×	×
—	AIR CONDITONER*		×	×
• Intelligent Key system • Engine start system	INTELLIGENT KEY	×	×	×
Combination switch	COMB SW		×	
Body control system	BCM	×		
IVIS - NATS	IMMU	×	×	×
Interior room lamp battery saver	BATTERY SAVER	×	×	×
Trunk lid open	TRUNK		×	
Vehicle security system	THEFT ALM	×	×	×
RAP system	RETAINED PWR		×	
Signal buffer system	SIGNAL BUFFER		×	×
TPMS	AIR PRESSURE MONITOR			×

*: This item is not used.

FREEZE FRAME DATA (FFD)

The BCM records the following vehicle condition at the time a particular DTC is detected, and displays on CONSULT.

CONSULT screen item	Indication/Unit	Description	
Vehicle Speed	km/h	Vehicle speed of the moment a particular DTC is detected	
Odo/Trip Meter	km	Total mileage (Odometer value) of the moment a particular DTC is detected	
Vehicle Condition	SLEEP>LOCK	Power position status of the moment a particular DTC is detected*	While turning BCM status from low power consumption mode to normal mode (Power supply position is “LOCK”*)
	SLEEP>OFF		While turning BCM status from low power consumption mode to normal mode (Power supply position is “OFF”.)
	LOCK>ACC		While turning power supply position from “LOCK” *to “ACC”
	ACC>ON		While turning power supply position from “ACC” to “IGN”
	RUN>ACC		While turning power supply position from “RUN” to “ACC” (Vehicle is stopping and selector lever is except P position.)
	CRANK>RUN		While turning power supply position from “CRANKING” to “RUN” (From cranking up the engine to run it)
	RUN>URGENT		While turning power supply position from “RUN“ to “ACC” (Emergency stop operation)
	ACC>OFF		While turning power supply position from “ACC” to “OFF”
	OFF>LOCK		While turning power supply position from “OFF” to “LOCK”*
	OFF>ACC		While turning power supply position from “OFF” to “ACC”
	ON>CRANK		While turning power supply position from “IGN” to “CRANKING”
	OFF>SLEEP		While turning BCM status from normal mode (Power supply position is “OFF”.) to low power consumption mode
	LOCK>SLEEP		While turning BCM status from normal mode (Power supply position is “LOCK”*.) to low power consumption mode
	LOCK		Power supply position is “LOCK” (Ignition switch OFF)*
	OFF		Power supply position is “OFF” (Ignition switch OFF)
	ACC		Power supply position is “ACC” (Ignition switch ACC)
	ON		Power supply position is “IGN” (Ignition switch ON with engine stopped)
	ENGINE RUN		Power supply position is “RUN” (Ignition switch ON with engine running)
	CRANKING		Power supply position is “CRANKING” (At engine cranking)
IGN Counter	0 - 39	The number of times that ignition switch is turned ON after DTC is detected • The number is 0 when a malfunction is detected now. • The number increases like 1 → 2 → 3...38 → 39 after returning to the normal condition whenever ignition switch OFF → ON. • The number is fixed to 39 until the self-diagnosis results are erased if it is over 39.	

NOTE:
*: Power supply position shifts to “LOCK” from “OFF”, when ignition switch is in the OFF position, selector lever is in the P position, and any of the following conditions are met.
- Closing door
- Opening door
- Door is locked using door request switch
- Door is locked using Intelligent Key

The power supply position shifts to “ACC” when the push-button ignition switch (push switch) is pushed at “LOCK”.

INTELLIGENT KEY

INTELLIGENT KEY : CONSULT Function (BCM - INTELLIGENT KEY)

INFOID:0000000011562358

WORK SUPPORT

Monitor item	Description
INSIDE ANT DIAGNOSIS	This function allows inside key antenna self-diagnosis
LOCK/UNLOCK BY I-KEY	Door lock function (door request switch) mode can be changed to operation in this mode • On: Operate • Off: Non-operation
ENGINE START BY I-KEY	Engine start function mode can be changed to operation with this mode • On: Operate • Off: Non-operation
TRUNK/GLASS HATCH OPEN	Reminder function (trunk lid opener request switch) mode can be changed to operation with this mode • On: Operate • Off: Non-operation
AUTO LOCK SET	Auto door lock operation time can be changed in this mode • MODE 1: OFF • MODE 2: 30 sec. • MODE 3: 1 minute • MODE 4: 2 minutes • MODE 5: 3 minutes • MODE 6: 4 minutes • MODE 7: 5 minutes
SHORT CRANKING OUTPUT	Starter motor can operate during the times below • 70 msec • 100 msec • 200 msec
CONFIRM KEY FOB ID	It can be checked whether Intelligent Key ID code is registered or not in this mode
RETRACTABLE MIRROR SET	**NOTE:** This item is displayed, but cannot be used
TOUCH SENSOR UNLOCK FUNCTION SETTING	One touch unlock function can be changed to operation with this mode • On: Operate • Off: Non-operation
IGN/ACC BATTERY SAVER	Ignition battery saver system mode can be changed to operation with this mode • On: Operate • Off: Non-operation
REMOTE ENGINE STARTE	**NOTE:** This item is displayed, but cannot be used
INTELLIGENT KEY LINK SET	**NOTE:** This item is displayed, but cannot be used
ANSWER BACK	Reminder function (door request switch and Intelligent Key) mode can be selected from the following with this mode • On: S mode (buzzer or horn reminder non-operation) • Off: C mode (buzzer or horn operate)
ANSWER BACK I-KEY LOCK UN-LOCK	Reminder function (door request switch) mode can be selected from the following with this mode • BUZZER: Sound Intelligent Key warning buzzer • HORN: Sound horn • Off: Only hazard warning lamp operate • INVALID: This item is displayed, but cannot be used
ANSWERBACK KEYLESS LOCK UNLOCK	Reminder function (Intelligent Key) mode can be selected from the following with this mode • On: Horn and hazard warning lamp operate • Off: Only hazard warning lamp operate
WELCOME LIGHT OP SET	**NOTE:** This item is displayed, but cannot be used

SELF-DIAG RESULT

Refer to BCS-62, "DTC Index".

DATA MONITOR

NOTE:

The following table includes information (items) inapplicable to this vehicle. For information (items) applicable to this vehicle, refer to CONSULT display items.

Monitor Item	Condition
REQ SW -DR	Indicates [On/Off] condition of front door request switch (driver side)
REQ SW -AS	Indicates [On/Off] condition of front door request switch (passenger side)
REQ SW -BD/TR	Indicates [On/Off] condition of trunk lid opener request switch
PUSH SW	Indicates [On/Off] condition of push-button ignition switch
SHFTLCK SLNID PWR SPLY	Indicates [On/Off] condition of the power supply from BCM to shift lock solenoid
CLUCH SW	**NOTE:** This item is displayed, but cannot be monitored
BRAKE SW 1	Indicates [On/Off]* condition of stop lamp switch power supply
BRAKE SW 2	Indicates [On/Off] condition of stop lamp switch
DETE/CANCL SW	Indicates [On/Off] condition of P position
SFT PN/N SW	Indicates [On/Off] condition of P or N position
UNLK SEN -DR	Indicates [On/Off] condition of driver door UNLOCK status
PUSH SW -IPDM	Indicates [On/Off] condition of push-button ignition switch
IGN RLY1 -F/B	Indicates [On/Off] condition of ignition relay 1
DETE SW -IPDM	Indicates [On/Off] condition of P position
SFT PN -IPDM	Indicates [On/Off] condition of P or N position
SFT P -MET	Indicates [On/Off] condition of P position
SFT N -MET	Indicates [On/Off] condition of N position
ENGINE STATE	Indicates [STOP/STALL/CRANK/RUN] condition of engine states
VEH SPEED 1	Display the vehicle speed signal received from combination meter by numerical value [km/h]
VEH SPEED 2	Display the vehicle speed signal received from ABS or VDC or TCM by numerical value [km/h]
DOOR STAT-DR	Indicates [LOCK/READY/UNLK] condition of driver door status
DOOR STAT-AS	Indicates [LOCK/READY/UNLK] condition of passenger door status
DOOR STAT-RR	Indicates [LOCK/READY/UNLK] condition of rear door RH status
DOOR STAT-RL	Indicates [LOCK/READY/UNLK] condition of rear door LH status
BK DOOR STATE	**NOTE:** This item is displayed, but cannot be monitored
ID OK FLAG	Indicates [Set/Reset] condition of Intelligent Key ID
PRMT ENG STRT	Indicates [Set/Reset] condition of engine start possibility
PRMT RKE STRT	**NOTE:** This item is displayed, but cannot be monitored
I-KEY OK FLAG	Indicates [KEY On/NOT On] condition of Intelligent Key ID and Intelligent Key is detected in-side vehicle
PRBT ENG STRT	Indicates whether or not the engine is in start prohibited status
ID AUTHENT CANCEL TIMER	Indicates whether or not it is in engine start possible status when Intelligent Key verification is unnecessary
ACC BATTERY SAVER	Indicates [On/Off] whether or not ignition battery saver is in operation
CRNK PRBT TMR	Indicates [On/Off] whether or not in cranking prohibited status due to starter motor protection function operation
AUT CRANK TMR	Indicates [On/Off] whether or not in AUTO CRANKING MODE status
CRNK PRBT TME	Indicates the time for changing from cranking prohibited status to cranking possible status
AUT CRANK TMR	Indicates the time that AUTO CRANKING MODE operates
CRANKING TME	Indicates the cranking operation time

Monitor Item	Condition
SHORT CRANK	**NOTE:** This item is displayed, but not used
DETE SW PWR	Indicates [On/Off] condition of the power supply from BCM to the A/T shift selector (detention switch)
IGN RLY3-REQ	Indicates [On/Off] condition of blower relay control signal
ACC RLY-REQ	Indicates [On/Off] condition of accessory relay control signal
RKE OPE COUN1	When remote keyless entry receiver receives the signal transmitted while operating on Intelligent Key, the numerical value start changing
RKE OPE COUN2	**NOTE:** This item is displayed, but cannot be monitored
TRNK/HAT MNTR	Indicates [On/Off] condition of trunk room lamp switch
RKE-LOCK	Indicates [On/Off] condition of LOCK signal from Intelligent Key
RKE-UNLOCK	Indicates [On/Off] condition of UNLOCK signal from Intelligent Key
RKE-TR/BD	Indicates [On/Off] condition of trunk open signal from Intelligent Key
RKE-PANIC	Indicates [On/Off] condition of panic alarm signal from Intelligent Key
RKE-MODE CHG	**NOTE:** This item is displayed, but cannot be monitored
RKE PBD	**NOTE:** This item is displayed, but cannot be monitored

*: OFF is displayed when brake pedal is depressed while brake switch power supply is OFF.

ACTIVE TEST

Test item	Description
OUTSIDE BUZZER	This test is able to check Intelligent Key warning buzzer operation • On: Operates • Off: Non-operation
INSIDE BUZZER	This test is able to check warning chime in combination meter operation • Take Out: Take away warning chime sounds when CONSULT screen is touched • Key: Key warning chime sounds when CONSULT screen is touched • Knob: OFF position warning chime sounds when CONSULT screen is touched • Off: Non-operation
INDICATOR	This test is able to check information display (combination meter) operation • KEY ON: [Intelligent Key system malfunction] displays when CONSULT screen is touched • KEY IND: [Steering lock unit ID registration complete] displays when CONSULT screen is touched • Off: Non-operation
INT LAMP	This test is able to check interior room lamp operation • On: Operates • Off: Non-operation
FLASHER	This test is able to check hazard warning lamp operation The hazard warning lamps are activated after “LH/RH/Off” on CONSULT screen is touched
HORN	This test is able to check horn operation • On: Operates
IGN CONT2	This test is able to operate the blower relay in fuse block (J/B) • On: Operates • Off: Non-operation
ENGINE SW ILLUMI	This test is able to check push-ignition switch illumination operation Push-ignition switch illumination illuminates when “On” on CONSULT screen is touched
PUSH SWITCH INDICATOR	This test is able to check push-ignition switch indicator operation when “On” on CONSULT screen is touched
ACC CONT	This test is able to operate the accessory relay in fuse block (J/B) • On: Operates • Off: Non-operation

Test item	Description
IGN CONT1	This test is able to operate the ignition relay in IPDM E/R • On: Operates • Off: Non-operation
IGNITION RELAY	This test is able to operate the ignition relay in fuse block (J/B) • On: Operates • Off: Non-operation
ST CONT LOW	This test is able to operate the starter relay in IPDM E/R • On: Non-operation • Off: Operates
BATTERY SAVER	This test is able to check interior room lamp battery saver operation • On: Outputs interior room lamp power supply to turn interior room lamps ON. • Off: Cuts interior room lamp power supply to turn interior room lamps OFF.
TRUNK/BACK DOOR	This test is able to check trunk lid open operation. This actuator opens when “Open” on CONSULT screen is touched.
RETRACTABLE MIRROR	**NOTE:** This item is displayed, but cannot be used
INTELLIGENT KEY LINK(CAN)	**NOTE:** This item is displayed, but cannot be used
REVERSE LAMP TEST	**NOTE:** This item is displayed, but cannot be used
DOOR HANDLE LAMP TEST	This test is able to check outside handle lamp operation • On: Operates • Off: Non-operation
DR SEAT LAMP TEST	**NOTE:** This item is displayed, but cannot be used
AS SEAT LAMP TEST	**NOTE:** This item is displayed, but cannot be used
SHIFT SPOT LAMP TEST	**NOTE:** This item is displayed, but cannot be used
TRUNK/LUGGAGE LAMP TEST	This test is able to check trunk room lamp operation • On: Operates • Off: Non-operation
KEYFOB P/W TEST	This test is able to check keyless power window up/down operation • Up: Non-operation • Down*: Power window and sunroof open • Off: Non-operation
SHIFTLOCK SORENOID TEST	**NOTE:** This item is displayed, but cannot be used

*: When ignition switch is OFF, driver door opened, power window and sunroof is closed.

ECU DIAGNOSIS INFORMATION

BCM

List of ECU Reference

INFOID:0000000011285360

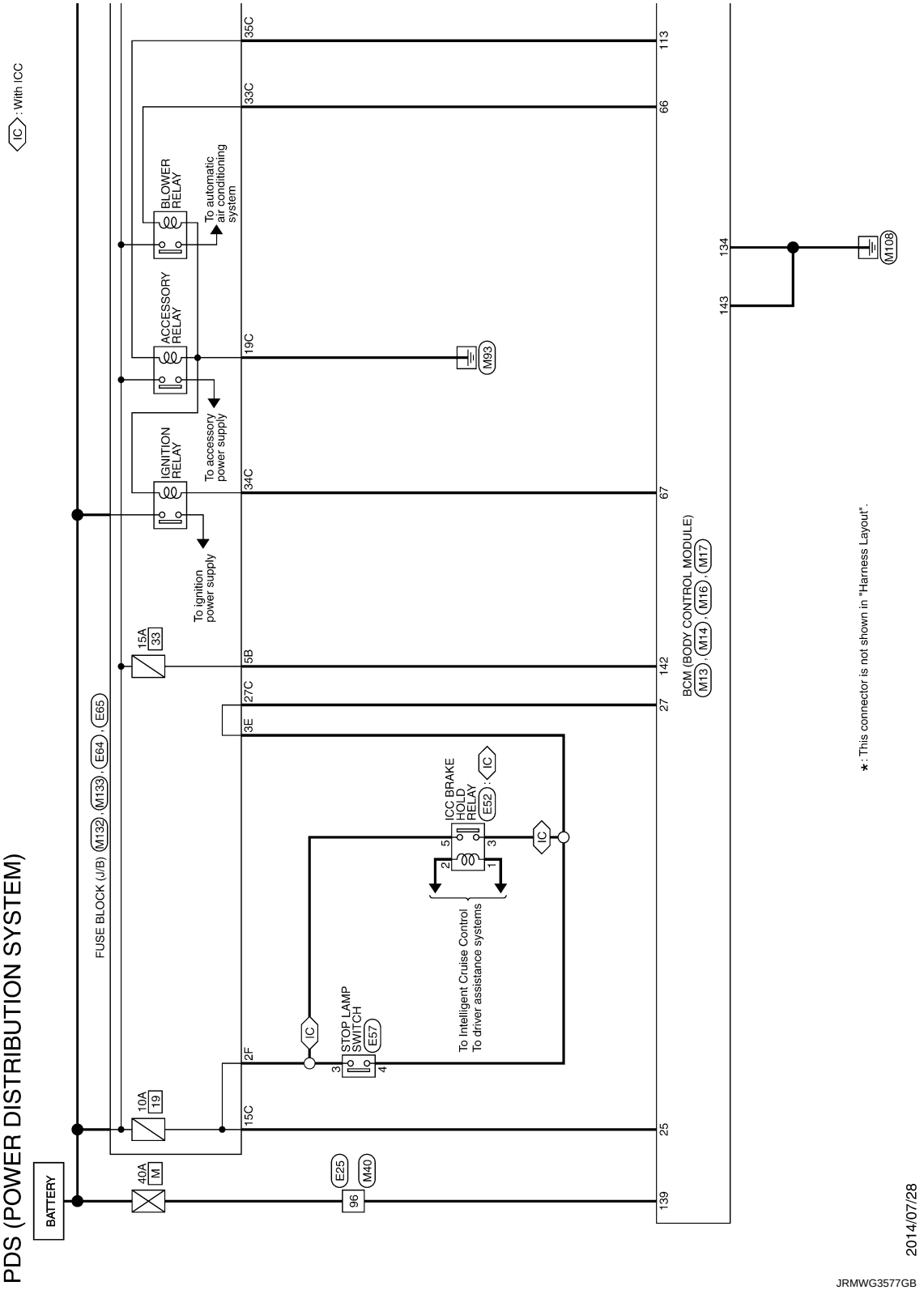
ECU	Reference
BCM	BCS-35, "Reference Value"
	BCS-60, "Fail-safe"
	BCS-61, "DTC Inspection Priority Chart"
	BCS-62, "DTC Index"

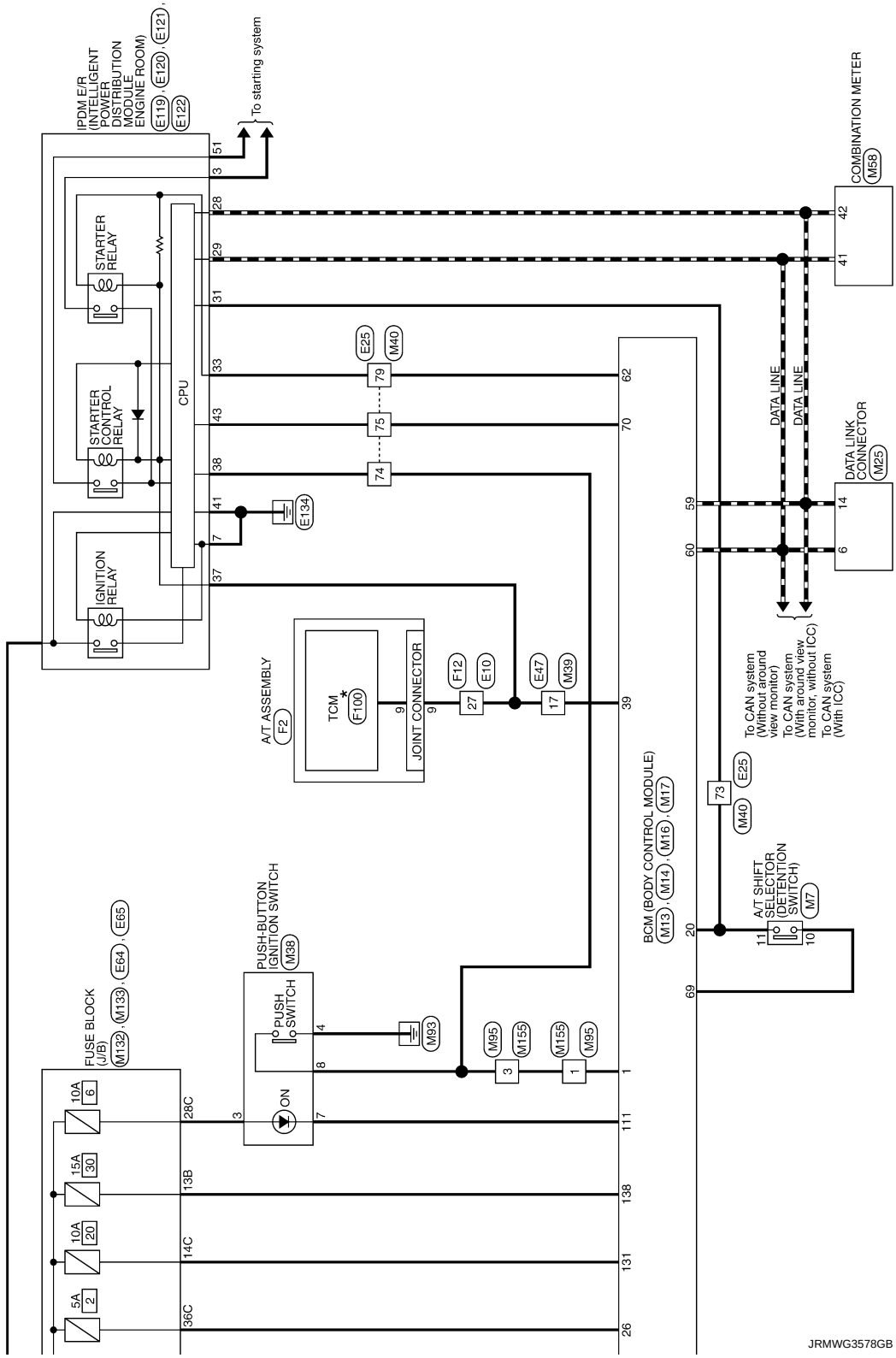
WIRING DIAGRAM

POWER DISTRIBUTION SYSTEM

Wiring Diagram

INFOID:0000000011285361




IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
E119, E120, E121, E122
To starting system
STARTER RELAY
STARTER CONTROL RELAY
IGNITION RELAY
CPU
COMBINATION METER
M58
DATA LINE
DATA LINK CONNECTOR
M25
E134
A/T ASSEMBLY
F2
TCM
F100
JOINT CONNECTOR
F12
E10
E47
M39
E25
M40
To CAN system (Without around view monitor)
To CAN system (With around view monitor, without ICC)
To CAN system (With ICC)
BCM (BODY CONTROL MODULE)
M13, M14, M16, M17
A/T SHIFT SELECTOR (DETENTION SWITCH)
M7
PUSH-BUTTON IGNITION SWITCH
M38
PUSH SWITCH
ON
M93
M95
M155
FUSE BLOCK (J/B)
M132, M133, E64, E65
10A 6
15A 30
10A 20
5A 2
28C
13B
14C
36C
JRMWG3578GB

PDS (POWER DISTRIBUTION SYSTEM)

Connector No.	E10
Connector Name	WIRE TO WIRE
Connector Type	SAA36MB-RS8-SHZ8

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	L/Y	-
2	SHIELD	-
3	L/B	-
4	SHIELD	-
5	BR	-
6	SB	-
7	G	-
8	W	-
9	W	-
10	Y	-
11	P	-
12	SB	-
13	L	-
14	G	-
15	LG	-
16	BR	-
17	L	-
18	P	-
19	GR	-
20	G	-
21	V	-
22	Y	-
23	L	-
24	GR	-
25	V	-
26	BR	-
27	W	-
28	V	-
29	BR	-
30	R	-
31	P	-
32	G	-
33	B	-
34	BG	-
35	LG	-
36	W	-
37	SHIELD	-
38	L	-
39	P	-
40	R	-
41	W	-
42	LG	-
43	G	-
44	V	-
45	Y	-
46	SHIELD	-
47	W	-
48	BR	-
49	G	-
50	B	-
51	SB	-
52	R	-

Connector No.	E25
Connector Name	WIRE TO WIRE
Connector Type	TH80FW-CS16-TM4

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
2	W	-
3	LG	-
4	BR	-
6	V	-
7	L	-
10	BR	-
11	L	-
12	GR	-
13	W	-
14	B	-
15	SB	-
16	Y	-
17	BR	-
18	P	-
31	Y	-
32	GR	-
35	GR	-
36	R	-
37	V	-
38	L	-
39	Y	-
40	SB	-
41	LG	-
44	Y	-
45	W	-
46	B	-
47	G	-
48	SHIELD	-
49	R	-
50	BR	-
51	L	-
52	W	-
53	V	-
54	P	-
55	W	-
56	SB	-
57	BG	-
58	B	-
59	W	-
61	R	-
62	SB	-
63	LG	-
64	Y	-
65	SB	-
66	GR	-
67	LG	-
68	BG	-
71	LG	-
72	V	-
73	G	-
74	BR	-
75	V	-
78	P	-
79	SB	-
83	R	-
86	BG	-
91	G	-
92	Y	-
94	GR	-
95	BG	-
96	W	-
97	LG	-
98	L	-
99	P	-
100	SHIELD	-

Connector No.	E47
Connector Name	WIRE TO WIRE
Connector Type	TH32MW-NH

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	-
2	V	-
3	L	-
4	P	-[Without Gateway]
4	R	-[With Gateway]
7	L	-
8	W	-
13	G	-
15	BR	-
17	W	-
18	BG	-
27	LG	-
28	BR	-
29	W	-
30	Y	-
31	G	-
32	LG	-

Connector No.	E52
Connector Name	ICC BRAKE HOLD RELAY
Connector Type	MS02FL-M2-LC

H.S.

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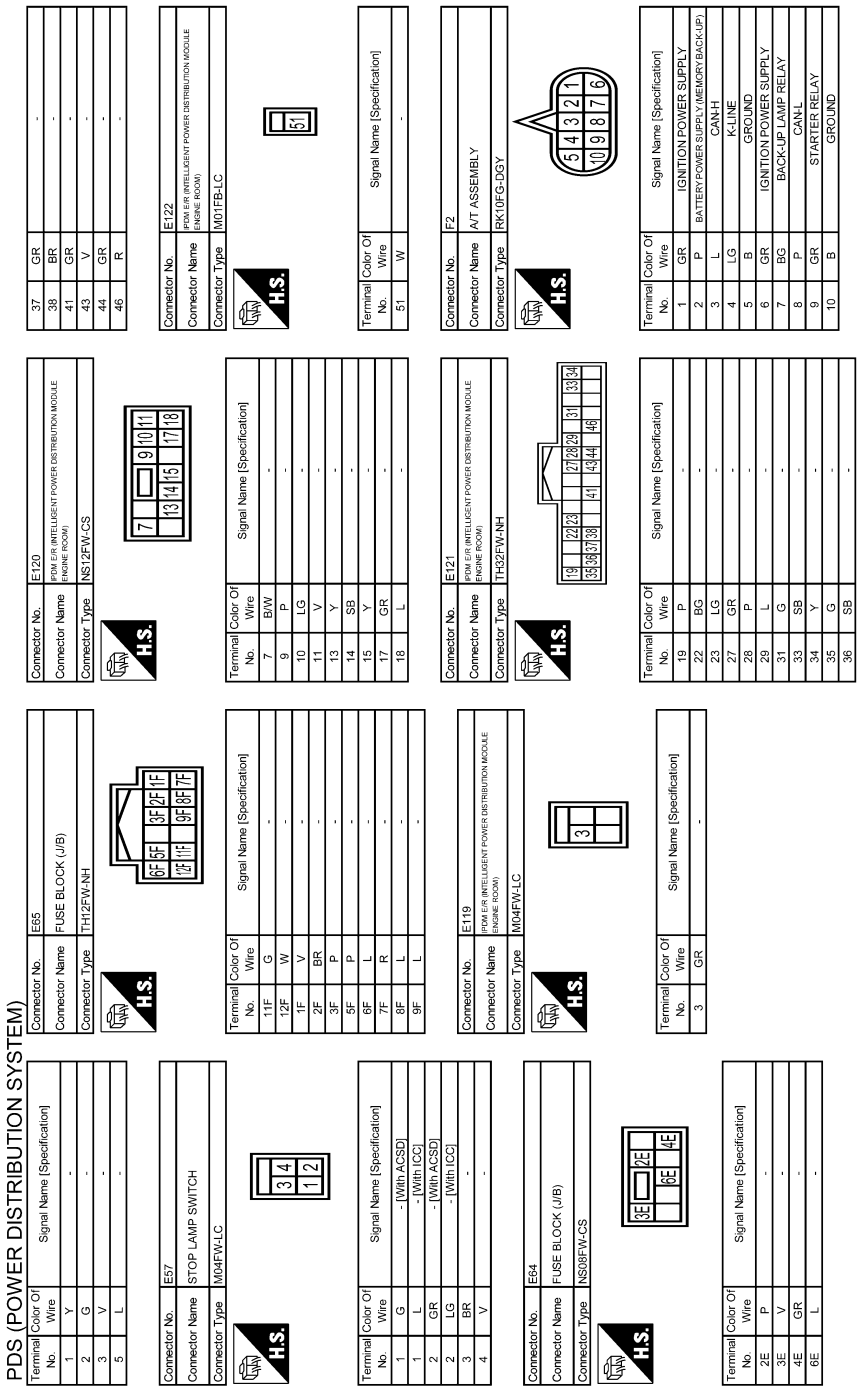
PDS (POWER DISTRIBUTION SYSTEM)



Terminal No.	Color Of Wire	Signal Name [Specification]
1	Y	-
2	G	-
3	V	-
5	L	-

Terminal No.	Color Of Wire	Signal Name [Specification]
11F	G	-
12F	W	-
1F	V	-
2F	BR	-
3F	P	-
5F	P	-
6F	L	-
7F	R	-
8F	L	-
9F	L	-

Terminal No.	Color Of Wire	Signal Name [Specification]
3	GR	-

Terminal No.	Color Of Wire	Signal Name [Specification]
7	B/W	-
9	P	-
10	LG	-
11	V	-
13	Y	-
14	SB	-
15	Y	-
17	GR	-
18	L	-

Terminal No.	Color Of Wire	Signal Name [Specification]
19	P	-
22	B/G	-
23	LG	-
27	GR	-
28	P	-
29	L	-
31	G	-
33	SB	-
34	Y	-
35	G	-
36	SB	-
37	GR	-
38	BR	-
41	GR	-
43	V	-
44	GR	-
46	R	-

Terminal No.	Color Of Wire	Signal Name [Specification]
51	W	-

Terminal No.	Color Of Wire	Signal Name [Specification]
1	GR	IGNITION POWER SUPPLY
2	P	BATTERY POWER SUPPLY (MEMORY BACK-UP)
3	L	CAN-H
4	LG	K-LINE
5	B	GROUND
6	GR	IGNITION POWER SUPPLY
7	BG	BACK-UP LAMP RELAY
8	P	CAN-L
9	GR	STARTER RELAY
10	B	GROUND

Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	- [With ACSD]
1	L	- [With ICC]
2	GR	- [With ACSD]
2	LG	- [With ICC]
3	BR	-
4	V	-

Terminal No.	Color Of Wire	Signal Name [Specification]
2E	P	-
3E	V	-
4E	GR	-
6E	L	-

JRMWG3580GB

PDS (POWER DISTRIBUTION SYSTEM)

Connector No.	F12
Connector Name	WIRE TO WIRE
Connector Type	SAA36FB-RS8-SHZ8

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	L/Y	-
2	SHIELD	-
3	L/B	-
4	SHIELD	-
5	BR	-
6	GR	-
7	G	-
8	W	-
9	W	-
10	G	-
11	R	-
12	P	-
13	L	-
14	LG	-
15	P	-
16	Y	-
17	L	-
18	P	-
19	GR	-
20	BG	-
21	LG	-
22	W	-
23	Y	-
24	LG	-
25	V	-
26	W	-
27	V	-
28	BR	-
29	LG	-
30	R	-
31	P	-
32	GR	-
33	B	-
34	BG	-
35	LG	-
36	SB	-
37	SHIELD	-
38	W	-
39	Y	-
40	G	-
41	B	-
42	GR	-
43	R	-
44	BG	-
45	Y	-
46	SHIELD	-
47	W	-
48	LG	-
49	L	-
50	R	-
51	SB	-
52	G	-

Connector No.	F100
Connector Name	TCM
Connector Type	SP10FG

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	-	IGNITION POWER SUPPLY
2	-	BATTERY POWER SUPPLY (MEMORY BACK-UP)
3	-	CAN-H
4	-	K-LINE
5	-	GROUND
6	-	IGNITION POWER SUPPLY
7	-	BACK-UP LAMP RELAY
8	-	CAN-L
9	-	STARTER RELAY
10	-	GROUND

Connector No.	M7
Connector Name	A/T SHIFT SELECTOR
Connector Type	TH12FW-NH

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	SB	-
2	GR	-
3	BG	-
4	B	-
5	G	-
7	R	-
8	V	-
9	B	-
10	GR	-
11	R	-

Connector No.	M13
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FG-NH

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	R	PUSH SW
3	Y	SENS PWR SPLY
4	BG	OPTICAL SENSOR
5	LG	-
10	W	COMBI SW OUTPUT 5
11	SB	COMBI SW OUTPUT 4
12	L	COMBI SW OUTPUT 3
13	G	COMBI SW OUTPUT 2
14	P	COMBI SW OUTPUT 1
15	G	ONE TOUCH UNLK SENS (DR)
16	G	ONE TOUCH UNLK SENS (PASS)
17	P	RECEIVER/SENSOR GND
18	L	SECURITY IND LAMP CONT
20	R	DETENT SW
21	SB	STEP LAMP CONT
25	R	STOP LAMP SW2
26	R	EXTENDED STORAGE FUSE SW
27	P	STOP LAMP SW
30	W	DR DOOR UNLK SENS
33	V	TR LID OP CANCEL SW
36	G	HAZARD SW
39	BR	P/N POSITION

Connector No.	M14
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FB-NH

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
48	R	PUSH-BTN IGN SW ILL PWR
52	G	DONGLE LINK
54	V	COMM LINE
55	R	RAIN SENSOR
59	P	CAN-L
60	L	CAN-H
61	G	REAR WINDOW DEF RLY CONT
62	R	STARTER RLY CONT
64	V	I-KEY WARN BUZZER
65	B	OUTS HD LAMP CONT
66	B	BLOWER FAN RLY CONT
67	W/B	IGN RLY-AY (F/B) CONT
68	R	DIMMER
69	GR	A/T SHIFT SELECT PWR SPLY
70	B	IGN RLY-AY (IPDM E/R) CONT
71	G	DR DOOR REQ SW
72	SB	PASS DOOR REQ SW
75	BR	COMBI SW INPUT 5
76	BG	COMBI SW INPUT 4
77	V	COMBI SW INPUT 3
78	Y	COMBI SW INPUT 2
79	LG	COMBI SW INPUT 1

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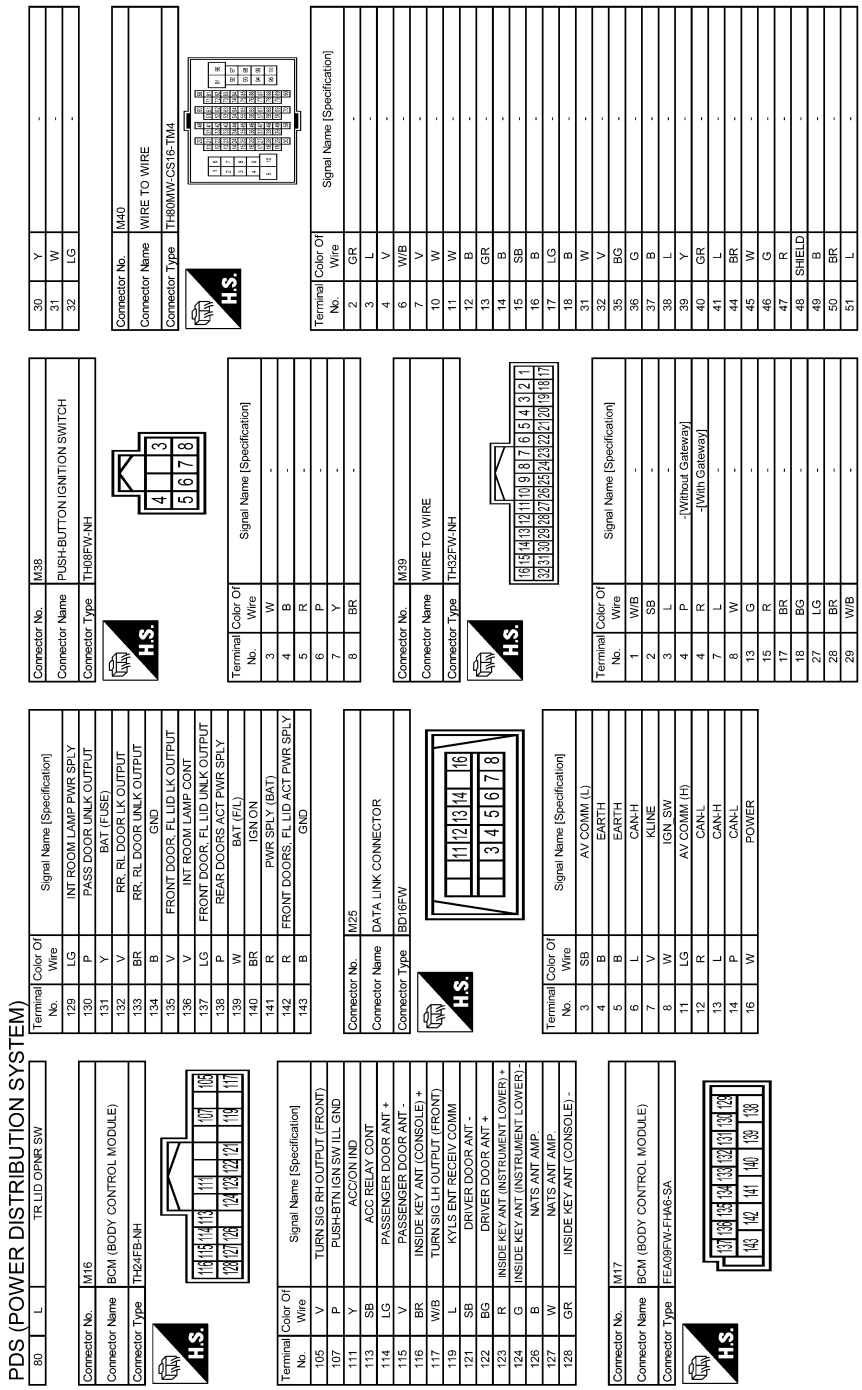

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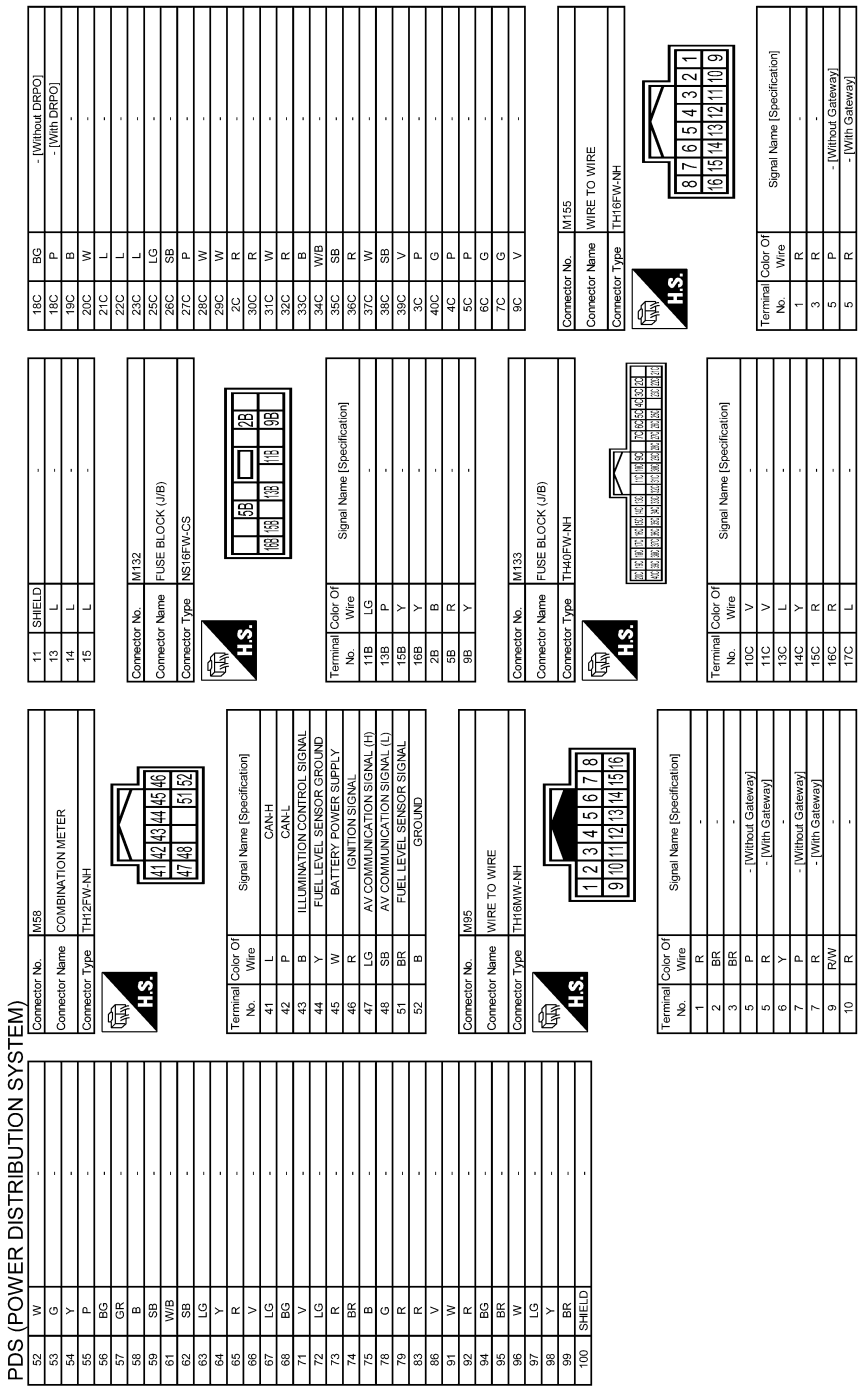

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PDS (POWER DISTRIBUTION SYSTEM)

5	Y	- [With ADAS]
6	Y	-
7	P	- [Without Gateway]
7	R	- [With Gateway]
9	R/W	-
10	R	-
11	SHIELD	-
13	L	-
14	L	-
15	L	-

JRMWG3584GB

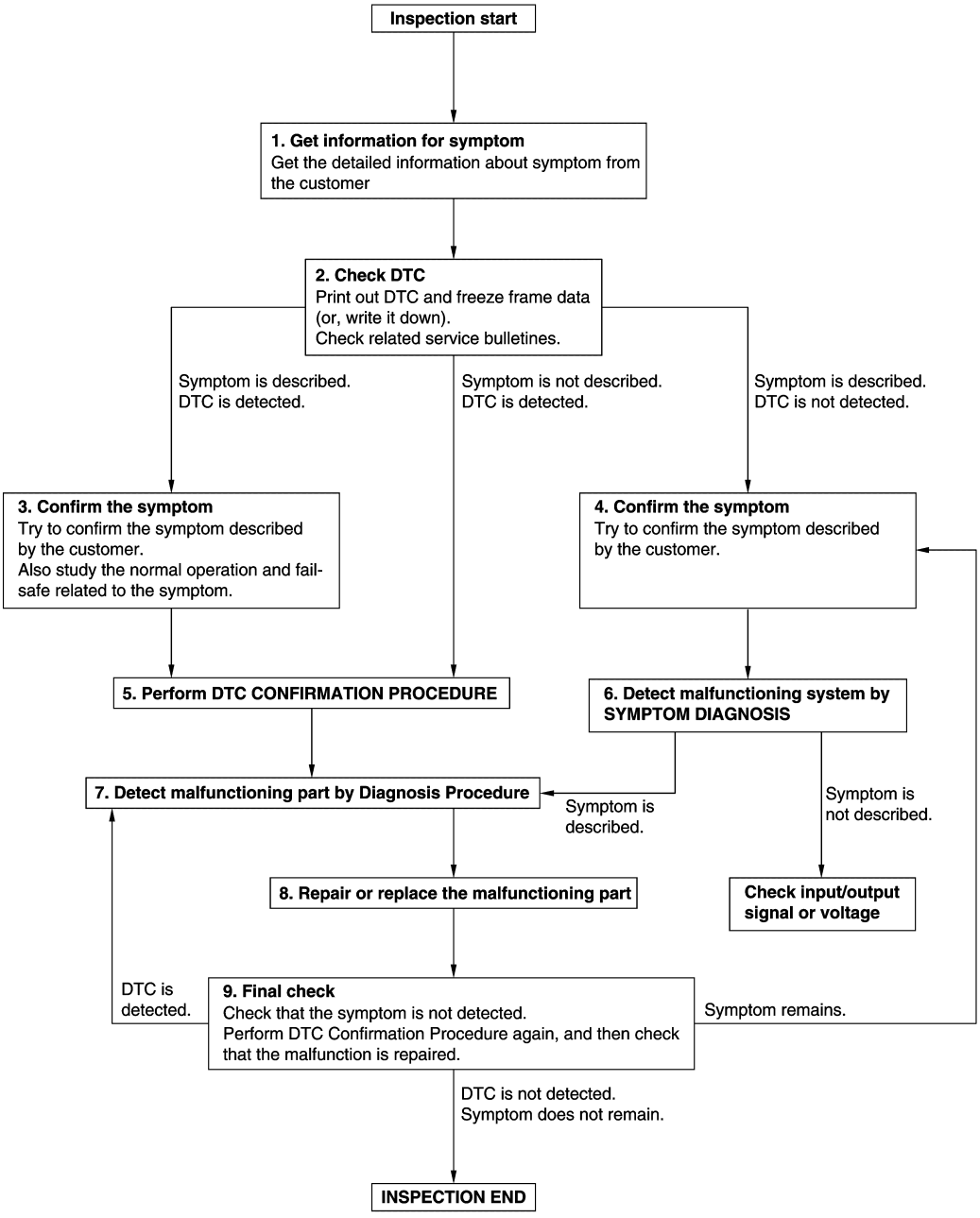
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORK FLOW

Work Flow

INFOID:0000000011285362

OVERALL SEQUENCE



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DETAILED FLOW

1.GET INFORMATION ABOUT SYMPTOM

Get detailed information from the customer about the symptom (the condition and the environment when the incident/malfunction occurs).

>> GO TO 2.

2.CHECK DTC

1. Check DTC for BCM and IPDM E/R.
2. Perform the following procedure if DTC is displayed.
- Record DTC and freeze frame data (Print them out with CONSULT.)
- Erase DTC.
- Study the relationship between the cause detected by DTC and the symptom described by the customer.
3. Check related service bulletins for information.

Are any symptoms described and any DTC detected?

Symptom is described, DTC is displayed>>GO TO 3.
Symptom is described, DTC is not displayed>>GO TO 4.
Symptom is not described, DTC is displayed>>GO TO 5.

3.CONFIRM THE SYMPTOM

Confirm the symptom described by the customer.
Connect CONSULT to the vehicle in the “DATA MONITOR” mode and check real time diagnosis results.
Verify relation between the symptom and the condition when the symptom is detected.

>> GO TO 5.

4.CONFIRM THE SYMPTOM

Confirm the symptom described by the customer.
Connect CONSULT to the vehicle in the “DATA MONITOR” mode and check real time diagnosis results.
Verify relation between the symptom and the condition when the symptom is detected.

>> GO TO 6.

5.PERFORM DTC CONFIRMATION PROCEDURE

Perform DTC Confirmation Procedure for the displayed DTC, and then check that DTC is detected again.
At this time, always connect CONSULT to the vehicle, and check diagnostic results in real time.
If two or more DTCs are detected, refer to BCS-61, "DTC Inspection Priority Chart", and determine trouble diagnosis order.

NOTE:
Perform Component Function Check if DTC Confirmation Procedure is not included in Service Manual. This simplified check procedure is an effective alternative, although DTC cannot be detected during this check.
If the result of Component Function Check is NG, it is the same as the detection of DTC by DTC Confirmation Procedure.

Is DTC detected?

YES >> GO TO 7.
NO >> Refer to GI-42, "Intermittent Incident".

6.DETECT MALFUNCTIONING SYSTEM BY SYMPTOM DIAGNOSIS

Detect malfunctioning system according to SYMPTOM DIAGNOSIS based on the confirmed symptom in step 4, and determine the trouble diagnosis order based on possible causes and symptom.

>> GO TO 7.

7.DETECT MALFUNCTIONING PART BY DIAGNOSTIC PROCEDURE

Inspect according to Diagnostic Procedure of the system.

NOTE:
The Diagnostic Procedure described based on open circuit inspection. A short circuit inspection is also required for the circuit check in the Diagnostic Procedure.

Is malfunctioning part detected?

YES >> GO TO 8.
NO >> Check voltage of related BCM terminals using CONSULT.

8. REPAIR OR REPLACE THE MALFUNCTIONING PART

1. Repair or replace the malfunctioning part.
2. Reconnect parts or connectors disconnected during Diagnostic Procedure again after repair and replacement.
3. Check DTC. If DTC is displayed, erase it.

>> GO TO 9.

9. FINAL CHECK

When DTC was detected in step 2, perform DTC Confirmation Procedure or Component Function Check again, and then check that the malfunction is repaired securely.
When symptom was described by the customer, refer to confirmed symptom in step 3 or 4, and check that the symptom is not detected.

Does the symptom reappear?

YES (DTC is detected)>>GO TO 7.
YES (Symptom remains)>>GO TO 6.
NO >> INSPECTION END

PROCEDURE FOR TEMPORARILY DISABLING THE IGNITION BATTERY SAVER SYSTEM

Description

INFOID:0000000011285363

The ignition battery saver system can be temporarily disabled, without using CONSULT, to prevent it from functioning when performing trouble diagnosis.

Work Procedure

INFOID:0000000011285364

1. Enter the vehicle carrying a registered Intelligent Key.
2. Place the ignition switch in the ACC position by operating the push-button ignition switch without depressing the brake pedal.
3. Press and hold the push button ignition switch continuously for ten seconds.
4. Check that the buzzer in the combination meter sounds for two seconds.
5. Operation is completed.
   NOTE:
   When the ignition switch is placed in any position other than ON, the ignition battery saver system is activated again.

DTC/CIRCUIT DIAGNOSIS

B2614 ACC RELAY CIRCUIT

DTC Description

INFOID:0000000011285365

DTC DETECTION LOGIC

DTC No.	CONSULT screen items (Trouble diagnosis content)	DTC detecting condition
B2614	BCM (Body control module)	The following states are compared, and it do not match for 1 second or more. • State of accessory relay control judged by BCM • State of accessory relay control signal

POSSIBLE CAUSE

- Harness or connectors
  (Accessory relay control signal circuit is open or shorted)
- BCM
- Accessory relay

FAIL-SAFE

—

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Turn ignition switch to ACC, and wait for 1 second or more.
2. Check “Self-diagnosis result” of BCM with CONSULT.

Is DTC detected?

YES >> Refer to PCS-64, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-42, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000011285366

1.CHECK ACCESSORY RELAY CONTROL SIGNAL

Check voltage between BCM harness connector and ground.

(+)		(–)	Condition		Voltage
BCM					
Connector	Terminal				
M16	113	Ground	Ignition switch	OFF	0 – 0.5 V
				ACC or ON	9 – 16 V

Is the inspection result normal?

YES >> GO TO 2.
NO >> GO TO 5.

2.CHECK ACCESSORY RELAY CONTROL SIGNAL CIRCUIT (OPEN)

1. Turn ignition switch OFF.
2. Disconnect BCM connector and remove accessory relay.
3. Check continuity between BCM harness connector and accessory relay harness connector.

BCM		Accessory relay	Continuity
Connector	Terminal	Terminal	
M16	113	Coil upstream side	Existed

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair or replace harness.

3. CHECK ACCESSORY RELAY GROUND CIRCUIT

Check continuity between accessory relay harness connector and ground.

Accessory relay	Ground	Continuity
Terminal		
Coil downstream side		Existed

Is the inspection result normal?

YES >> GO TO 4.
NO >> Repair or replace harness.

4. CHECK ACCESSORY RELAY

Refer to PCS-65, "Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-42, "Intermittent Incident".
NO >> Replace accessory relay.

5. CHECK ACCESSORY RELAY CONTROL SIGNAL CIRCUIT (SHORT TO GROUND)

1. Turn ignition switch OFF.
2. Disconnect BCM connector and remove accessory relay.
3. Check continuity between BCM harness connector and ground.

BCM		Ground	Continuity
Connector	Terminal		
M16	113		Not existed

Is the inspection result normal?

YES >> GO TO 6.
NO >> Repair or replace harness.

6. CHECK ACCESSORY RELAY CONTROL SIGNAL CIRCUIT (SHORT TO BATTERY)

Check voltage between BCM harness connector and ground.

(+)		(–)	Voltage (Approx.)
BCM			
Connector	Terminal		
M16	113	Ground	0 V

Is the inspection result normal?

YES >> Replace BCM. Refer to BCS-98, "Removal and Installation".
NO >> Repair or replace harness.

Component Inspection

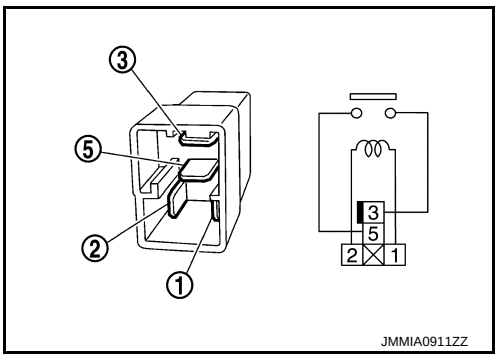
INFOID:0000000011285367

1. CHECK ACCESSORY RELAY

1. Turn ignition switch OFF.
2. Remove accessory relay.

3. Check the continuity between accessory relay terminals.

Terminals	Condition	Continuity
③ and ⑤	12 V direct current supply between terminals ① and ②	Existed
	No current supply	Not existed



Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace accessory relay

B2615 BLOWER RELAY CIRCUIT

DTC Description

INFOID:0000000011285368

DTC DETECTION LOGIC

DTC No.	CONSULT screen items (Trouble diagnosis content)	DTC detecting condition
B2615	BCM (Body control module)	The following states are compared, and it do not match for 1 second or more. • State of blower relay control judged by BCM • State of blower relay control signal

POSSIBLE CAUSE

- Harness or connectors
  (Blower relay control signal circuit is open or shorted)
- BCM
- Blower relay

FAIL-SAFE

—

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Turn ignition switch ON, and wait for 1 second or more.
2. Check “Self-diagnosis result” with CONSULT.

Is DTC detected?

YES >> Refer to PCS-70, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-42, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000011285369

1.CHECK BLOWER RELAY CONTROL SIGNAL

Check voltage between BCM harness connector and ground.

(+)		(–)	Condition		Voltage
BCM					
Connector	Terminal				
M14	66	Ground	Ignition switch	OFF or ACC	0 – 0.5 V
				ON	9 – 16 V

Is the inspection result normal?

YES >> GO TO 2.
NO >> GO TO 5.

2.CHECK BLOWER RELAY CONTROL SIGNAL CIRCUIT (OPEN)

1. Turn ignition switch OFF.
2. Disconnect BCM connector and blower relay connector.
3. Check continuity between BCM harness connector and blower relay harness connector.

BCM		Blower relay	Continuity
Connector	Terminal	Terminal	
M14	66	Coil upstream side	Existed

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair or replace harness.

3.CHECK BLOWER RELAY GROUND CIRCUIT

Check continuity between blower relay harness connector and ground.

Blower relay	Ground	Continuity
Terminal		
Coil downstream side		Existed

Is the inspection result normal?

YES >> GO TO 4.
NO >> Repair or replace harness.

4.CHECK BLOWER RELAY

Refer to PCS-68, "Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-42, "Intermittent Incident".
NO >> Replace blower relay.

5.CHECK BLOWER RELAY CONTROL SIGNAL CIRCUIT (SHORT TO GROUND)

1. Turn ignition switch OFF.
2. Disconnect BCM connector and blower relay connector.
3. Check continuity between BCM harness connector and ground.

BCM		Ground	Continuity
Connector	Terminal		
M14	66		Not existed

Is the inspection result normal?

YES >> GO TO 6.
NO >> Repair or replace harness.

6.CHECK BLOWER RELAY CONTROL SIGNAL CIRCUIT (SHORT TO BATTERY)

Check voltage between BCM harness connector and ground.

(+)		(–)	Voltage (Approx.)
BCM			
Connector	Terminal		
M14	66	Ground	0 V

Is the inspection result normal?

YES >> Replace BCM. Refer to BCS-98, "Removal and Installation".
NO >> Repair or replace harness.

Component Inspection

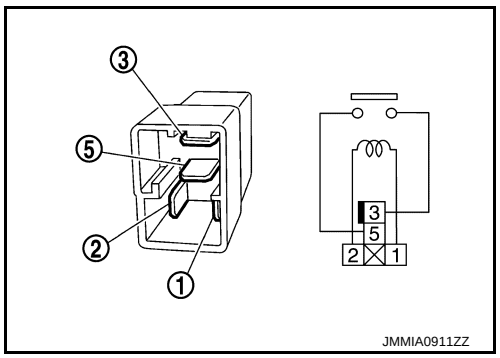
INFOID:0000000011285370

1.CHECK BLOWER RELAY

1. Turn blower switch OFF.
2. Remove blower relay.

3. Check the continuity between blower relay terminals.

Terminals	Condition	Continuity
③ and ⑤	12 V direct current supply between terminals ① and ②	Existed
	No current supply	Not existed



Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace blower relay.

B2616 IGNITION RELAY CIRCUIT

DTC Description

INFOID:0000000011285371

DTC DETECTION LOGIC

DTC No.	CONSULT screen items (Trouble diagnosis content)	DTC detecting condition
B2616	BCM (Body control module)	The following states are compared, and it do not match for 1 second or more. • State of ignition relay (fuse block) control judged by BCM • State of ignition relay (fuse block) control signal

POSSIBLE CAUSE

- Harness or connectors
  [Ignition relay (fuse block) control signal circuit]
- BCM
- Ignition relay [fuse block (J/B)]

FAIL-SAFE

—

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Turn ignition switch ON, and wait for 1 second or more.
2. Check “Self-diagnosis result” with CONSULT.

Is DTC detected?

YES >> Refer to PCS-70, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-42, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000011285372

1.CHECK IGNITION RELAY [FUSE BLOCK (J/B)] CONTROL SIGNAL

Check voltage between BCM harness connector and ground.

(+)		(–)	Condition		Voltage
BCM					
Connector	Terminal				
M14	67	Ground	Ignition switch	OFF or ACC	0 – 0.5 V
				ON	9 – 16 V

Is the inspection result normal?

YES >> GO TO 2.
NO >> GO TO 5.

2.CHECK IGNITION RELAY [FUSE BLOCK (J/B)] CONTROL SIGNAL CIRCUIT (OPEN)

1. Turn ignition switch OFF.
2. Disconnect BCM connector and remove ignition relay [fuse block (J/B)].
3. Check continuity between BCM harness connector and ignition relay [fuse block (J/B)] harness connector.

BCM		Ignition relay [fuse block (J/B)]	Continuity
Connector	Terminal	Terminal	
M14	67	Coil upstream side	Existed

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair or replace harness.

3. CHECK IGNITION RELAY [FUSE BLOCK (J/B)] GROUND

Check continuity between ignition relay [fuse block (J/B)] harness connector and ground.

Ignition relay [fuse block (J/B)]	Ground	Continuity
Terminal		
Coil downstream side		Existed

Is the inspection result normal?

YES >> GO TO 4.
NO >> Repair or replace harness.

4. CHECK IGNITION RELAY [FUSE BLOCK (J/B)]

Refer to PCS-71, "Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-42, "Intermittent Incident".
NO >> Replace ignition relay [fuse block (J/B)].

5. CHECK IGNITION RELAY [FUSE BLOCK (J/B)] CONTROL SIGNAL CIRCUIT (SHORT TO GROUND)

1. Turn ignition switch OFF.
2. Disconnect BCM connector and remove ignition relay [fuse block (J/B)].
3. Check continuity between BCM harness connector and ground.

BCM		Ground	Continuity
Connector	Terminal		
M14	67		Not existed

Is the inspection result normal?

YES >> GO TO 6.
NO >> Repair or replace harness.

6. CHECK IGNITION RELAY [FUSE BLOCK (J/B)] CONTROL SIGNAL CIRCUIT (SHORT TO BATTERY)

Check voltage between BCM harness connector and ground.

(+)		(–)	Voltage (Approx.)
BCM			
Connector	Terminal		
M14	67	Ground	0 V

Is the inspection result normal?

YES >> Replace BCM. Refer to BCS-98, "Removal and Installation".
NO >> Repair or replace harness.

Component Inspection

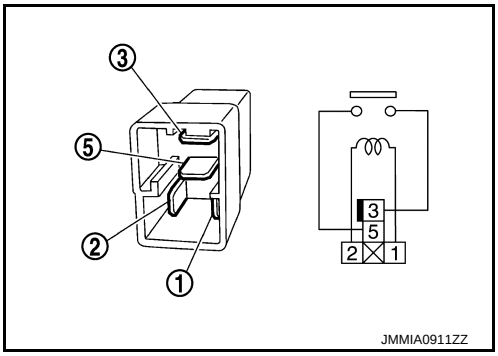
INFOID:0000000011285373

1. CHECK IGNITION RELAY [FUSE BLOCK (J/B)]

1. Turn ignition switch OFF.
2. Remove ignition relay [fuse block (J/B)].

3. Check the continuity between ignition relay [fuse block (J/B)] terminals.

Terminals	Condition	Continuity
③ and ⑤	12 V direct current supply between terminals ① and ②	Existed
	No current supply	Not existed



Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace ignition relay [fuse block (J/B)].

B2618 BCM

DTC Description

INFOID:0000000011285374

DTC DETECTION LOGIC

DTC No.	CONSULT screen items (Trouble diagnosis content)	DTC detecting condition
B2618	BCM (Body control module)	The following states are compared, and it do not match for 1 second or more. • State of ignition relay (IPDM E/R) control judged by BCM • State of ignition relay (IPDM E/R) control signal

POSSIBLE CAUSE

- Harness or connectors
  [Ignition relay (IPDM E/R) control signal circuit]
- BCM
- IPDM E/R

FAIL-SAFE

—

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Turn ignition switch ON, and wait for 1 second or more.
2. Check “Self-diagnosis result” of BCM with CONSULT.

Is DTC detected?

YES >> Refer to PCS-73, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-42, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000011285375

1.CHECK IGNITION RELAY (IPDM E/R) CONTROL SIGNAL

Check voltage between BCM harness connector and ground.

(+)		(–)	Condition		Voltage
BCM					
Connector	Terminal				
M14	70	Ground	Ignition switch	OFF or ACC	9 – 16 V
				ON	0 – 0.5 V

Is the inspection result normal?

YES >> Replace BCM. Refer to BCS-98, "Removal and Installation".
NO >> GO TO 2.

2.CHECK IGNITION RELAY (IPDM E/R) CONTROL SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect BCM connector and IPDM E/R connector.
3. Check continuity between BCM harness connector and IPDM E/R harness connector.

BCM		IPDM E/R		Continuity
Connector	Terminal	Connector	Terminal	
M14	70	E121	43	Existed

4. Check continuity between BCM harness connector and ground.

BCM		Ground	Continuity
Connector	Terminal		
M14	70		Not existed

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair or replace harness.

3. CHECK VOLTAGE OF IGNITION RELAY (IPDM E/R) CONTROL SIGNAL CIRCUIT (IPDM E/R SIDE)

1. Connect IPDM E/R connector.
2. Check voltage between IPDM E/R harness connector and ground.

(+)		(–)	Condition		Voltage
IPDM E/R					
Connector	Terminal				
E121	43	Ground	Ignition switch	OFF	6 – 16 V

Is the inspection result normal?

YES >> Replace BCM. Refer to BCS-98, "Removal and Installation".
NO >> Replace IPDM E/R. Refer to PCS-38, "Removal and Installation".

B261A PUSH-BUTTON IGNITION SWITCH

DTC Description

INFOID:0000000011285376

DTC DETECTION LOGIC

DTC No.	CONSULT screen items (Trouble diagnosis content)	DTC detecting condition
B261A	PUSH-BTN IGN SW (Push-button ignition switch)	The following signal status that BCM receives are compared, and it do not match for 1 second or more. • Push-button Ignition switch (push switch) signal • Push-button Ignition switch (push switch) status signal (CAN)

POSSIBLE CAUSE

- Harness or connectors
  [Push-button ignition switch (push switch) circuit is open or shorted.]
- BCM
- IPDM E/R

FAIL-SAFE

—

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Press push-button ignition switch (push switch) under the following conditions, and wait for 1 second or more.
- Shift position is in the P position
- Do not depress brake pedal
2. Check “Self-diagnosis result” of BCM with CONSULT.

Is DTC detected?

YES >> Refer to PCS-75, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-42, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000011285377

1.CHECK PUSH-BUTTON IGNITION SWITCH (PUSH SWITCH) OUTPUT SIGNAL

1. Disconnect push-button ignition switch connector and IPDM E/R connector.
2. Check voltage between push-button ignition switch harness connector and ground.

(+)		(–)	Voltage
Push-button Ignition switch			
Connector	Terminal		
M38	8	Ground	9 – 16 V

Is the inspection result normal?

YES >> GO TO 3.
NO >> GO TO 2.

2.CHECK PUSH-BUTTON IGNITION SWITCH CIRCUIT (BCM)

1. Disconnect BCM connector.
2. Check continuity between BCM harness connector and push-button ignition switch harness connector.

BCM		Push-button Ignition switch		Continuity
Connector	Terminal	Connector	Terminal	
M13	1	M38	8	Existed

3. Check continuity between push-button ignition switch harness connector and ground.

Push-button Ignition switch		Ground	Continuity
Connector	Terminal		
M38	8		Not existed

Is the inspection result normal?

YES >> Replace BCM. Refer to BCS-98, "Removal and Installation".
NO >> Repair or replace harness.

3. CHECK PUSH-BUTTON IGNITION SWITCH (PUSH SWITCH) OUTPUT SIGNAL (IPDM E/R)

1. Disconnect BCM connector.
2. Connect IPDM E/R connector.
3. Check voltage between IPDM E/R harness connector and ground.

(+)		(–)	Voltage
IPDM E/R			
Connector	Terminal		
E121	38	Ground	6 – 16 V

Is the inspection result normal?

YES >> Replace IPDM E/R. Refer to PCS-38, "Removal and Installation".
NO >> GO TO 4.

4. CHECK PUSH-BUTTON IGNITION SWITCH (PUSH SWITCH) CIRCUIT (IPDM E/R)

1. Check continuity between IPDM E/R harness connector and push-button ignition switch harness connector.

IPDM E/R		Push-button Ignition switch		Continuity
Connector	Terminal	Connector	Terminal	
E121	38	M38	8	Existed

2. Check continuity between push-button ignition switch harness connector and ground.

Push-button Ignition switch		Ground	Continuity
Connector	Terminal		
M38	8		Not existed

Is the inspection result normal?

YES >> GO TO 5.
NO >> Repair or replace harness.

5. CHECK INTERMITTENT INCIDENT

Refer to GI-42, "Intermittent Incident".

>> INSPECTION END

B26F1 IGNITION RELAY

DTC Description

INFOID:0000000011285378

DTC DETECTION LOGIC

DTC No.	CONSULT screen items (Trouble diagnosis content)	DTC detecting condition
B26F1	IGN RELAY OFF (Ignition relay off)	BCM transmits the ignition relay control signal (ON: 0 V) or ignition switch ON signal (ON) (CAN), but does not receives ignition switch ON signal (ON) (CAN) from IPDM E/R.

POSSIBLE CAUSE

- Harness or connectors
  (Ignition relay circuit is open)
- BCM
- IPDM E/R

FAIL-SAFE

Inhibit engine cranking

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Turn ignition switch ON, and wait for 2 seconds or more.
2. Check “Self-diagnosis result” with CONSULT.

Is DTC detected?

YES >> Refer to PCS-77, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-42, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000011285379

1.CHECK IPDM E/R SELF-DIAGNOSTIC RESULT

1. Turn ignition switch ON.
2. Erase the DTC of IPDM E/R.
3. Turn ignition switch OFF.
4. Turn ignition switch ON and check the DTC again.

Is DTC detected?

YES >> Repair or replace the malfunctioning part. Refer to PCS-23, "DTC Index".
NO >> GO TO 2.

2.CHECK IGNITION RELAY (IPDM E/R) CONTROL SIGNAL

Check voltage between BCM harness connector and ground.

(+)		(–)	Condition		Voltage
BCM					
Connector	Terminal				
M14	70	Ground	Ignition switch	ON	0 – 0.5 V

Is the inspection result normal?

YES >> GO TO 3.
NO >> Replace BCM. Refer to BCS-98, "Removal and Installation".

3.CHECK IGNITION RELAY (IPDM E/R) CONTROL SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect BCM and IPDM connectors.
3. Check continuity between BCM harness connector and IPDM E/R harness connector.

BCM		IPDM E/R		Continuity
Connector	Terminal	Connector	Terminal	
M14	70	E121	43	Existed

Is the inspection result normal?

YES >> Replace IPDM E/R. Refer to PCS-38, "Removal and Installation".
NO >> Repair or replace harness.

B26F2 IGNITION RELAY

DTC Description

INFOID:0000000011285380

DTC DETECTION LOGIC

DTC No.	CONSULT screen items (Trouble diagnosis content)	DTC detecting condition
B26F2	IGN RELAY ON (Ignition relay on)	BCM transmits the ignition relay control signal (OFF: 12 V) or ignition switch ON signal (OFF) (CAN), but does not receives ignition switch ON signal (OFF) (CAN) from IPDM E/R.

POSSIBLE CAUSE

- Harness or connectors
  (Ignition relay circuit is short)
- BCM
- IPDM E/R

FAIL-SAFE

Inhibit engine cranking

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Turn ignition switch ON, and wait for 2 seconds or more.
2. Check “Self-diagnosis result” with CONSULT.

Is DTC detected?

YES >> Refer to PCS-79, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-42, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000011285381

1.CHECK IPDM E/R SELF-DIAGNOSTIC RESULT

1. Turn ignition switch ON.
2. Erase the DTC of IPDM E/R.
3. Turn ignition switch OFF.
4. Turn ignition switch ON and check the DTC again.

Is DTC detected?

YES >> Repair or replace the malfunctioning part. Refer to PCS-23, "DTC Index".
NO >> GO TO 2.

2.CHECK IGNITION RELAY (IPDM E/R) CONTROL SIGNAL

1. Turn ignition switch OFF.
2. Check voltage between IPDM E/R harness connector and ground.

(+)		(–)	Condition		Voltage
IPDM E/R					
Connector	Terminal				
E121	43	Ground	Ignition switch	OFF or ACC	6 – 16 V

Is the inspection result normal?

YES >> Replace IPDM E/R. Refer to PCS-38, "Removal and Installation".
NO >> GO TO 3.

3.CHECK IGNITION RELAY (IPDM E/R) CONTROL SIGNAL CIRCUIT - 1

1. Turn ignition switch OFF.
2. Disconnect BCM and IPDM E/R connectors.
3. Check continuity between IPDM E/R harness connector and ground.

IPDM E/R		Ground	Continuity
Connector	Terminal		
E121	43		Not existed

Is the inspection result normal?

YES >> GO TO 4.
NO >> Repair or replace harness.

4. CHECK IGNITION RELAY (IPDM E/R) CONTROL SIGNAL CIRCUIT - 2

1. Connect IPDM E/R connectors.
2. Check voltage between IPDM E/R harness connector and ground.

(+)		(–)	Condition		Voltage
IPDM E/R					
Connector	Terminal				
E121	43	Ground	Ignition switch	OFF or ACC	6 – 16 V

Is the inspection result normal?

YES >> Replace BCM. Refer to BCS-98, "Removal and Installation".
NO >> Replace IPDM E/R. Refer to PCS-38, "Removal and Installation".

B26F6 BCM

DTC Description

INFOID:0000000011285382

DTC DETECTION LOGIC

DTC No.	CONSULT screen items (Trouble diagnosis content)	DTC detecting condition
B26F6	BCM (Body control module)	Ignition switch ON signal (CAN) (ON) is not transmitted from IPDM E/R, when BCM turns ignition relay ON [Transmit ignition switch ON signal (CAN) (ON)].

POSSIBLE CAUSE

BCM

FAIL-SAFE

—

DTC CONFIRMATION PROCEDURE

1.CHECK DTC PRIORITY

If DTC B26F6 is displayed with DTC U1000 or U1010, first perform the trouble diagnosis for DTC U1000 or U1010.

Is applicable DTC detected?

YES >> Perform diagnosis of applicable. U1000: Refer to BCS-85, "DTC Description". U1010: Refer to BCS-86, "DTC Description".

NO >> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

1. Turn ignition switch ON, and wait for 0.5 seconds or more.
2. Check “Self-diagnosis result” of BCM with CONSULT.

Is DTC detected?

YES >> Refer to PCS-81, "Diagnosis Procedure".

NO-1 >> To check malfunction symptom before repair: Refer to GI-42, "Intermittent Incident".

NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000011285383

1.INSPECTION START

1. Turn ignition switch ON.
2. Select “Self-diagnosis result” of BCM with CONSULT.
3. Touch “ERASE”.
4. Perform DTC Confirmation Procedure.
   See PCS-81, "DTC Description".

Is DTC detected?

YES >> Replace BCM. Refer to BCS-98, "Removal and Installation"

NO >> INSPECTION END

PUSH-BUTTON IGNITION SWITCH

Component Function Check

INFOID:0000000011285384

1.CHECK FUNCTION

1. Select “PUSH SW” in “Data Monitor” mode with CONSULT.
2. Check the push-button ignition switch signal under the following conditions.

Test item	Condition	Status
PUSH SW	Push-button ignition switch is pressed	ON
	Push-button ignition switch is not pressed	OFF

Is the indication normal?

YES >> INSPECTION END.
NO >> Refer to PCS-82, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000011285385

1.CHECK PUSH-BUTTON IGNITION SWITCH OUTPUT SIGNAL 1

1. Turn ignition switch OFF.
2. Disconnect push-button ignition switch connector and IPDM E/R connector.
3. Check voltage between push-button ignition switch harness connector and ground.

(+)		(–)	Voltage
Push-button ignition switch			
Connector	Terminal		
M38	8	Ground	9 – 16 V

Is the inspection result normal?

YES >> GO TO 3.
NO >> GO TO 2.

2.CHECK PUSH-BUTTON IGNITION SWITCH CIRCUIT 1

1. Disconnect BCM connector.
2. Check continuity between BCM harness connector and push-button ignition switch harness connector.

BCM		Push-button ignition switch		Continuity
Connector	Terminal	Connector	Terminal	
M13	1	M38	8	Existed

3. Check continuity between BCM harness connector and ground.

BCM		Ground	Continuity
Connector	Terminal		
M13	1		Not existed

Is the inspection result normal?

YES >> Replace BCM. Refer to BCS-98, "Removal and Installation".
NO >> Repair or replace harness.

3.CHECK PUSH-BUTTON IGNITION SWITCH OUTPUT SIGNAL 2

1. Disconnect BCM connector.
2. Connect IPDM E/R connector.
3. Check voltage between IPDM E/R harness connector and ground.

(+)		(–)	Voltage
IPDM E/R			
Connector	Terminal		
E121	38	Ground	6 – 16 V

Is the inspection result normal?

YES >> GO TO 5.
NO >> GO TO 4.

4.CHECK PUSH-BUTTON IGNITION SWITCH CIRCUIT 2

1. Check continuity between IPDM E/R harness connector and push-button ignition switch harness connector.

IPDM E/R		Push-button ignition switch		Continuity
Connector	Terminal	Connector	Terminal	
E121	38	M38	8	Existed

2. Check continuity between IPDM E/R harness connector and ground.

IPDM E/R		Ground	Continuity
Connector	Terminal		
E121	38		Not existed

Is the inspection result normal?

YES >> Replace IPDM E/R. Refer to PCS-38, "Removal and Installation".
NO >> Repair or replace harness.

5.CHECK PUSH-BUTTON IGNITION SWITCH GROUND CIRCUIT

Check continuity between push-button ignition switch harness connector and ground.

Push-button ignition switch		Ground	Continuity
Connector	Terminal		
M38	4		Existed

Is the inspection result normal?

YES >> GO TO 6.
NO >> Repair or replace harness.

6.CHECK PUSH-BUTTON IGNITION SWITCH

Refer to PCS-83, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 7.
NO >> Replace push-button ignition switch. Refer to PCS-89, "Removal and Installation".

7.CHECK INTERMITTENT INCIDENT

Refer to GI-42, "Intermittent Incident".

>> INSPECTION END

Component Inspection

INFOID:0000000011285386

1.CHECK PUSH-BUTTON IGNITION SWITCH

1. Turn ignition switch OFF.
2. Disconnect push-button ignition switch connector.
3. Check continuity between push-button ignition switch terminals.

Push-button ignition switch		Condition	Continuity
Terminal			
4	8	Pressed	Existed
		Not pressed	Not existed

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace push-button ignition switch. Refer to PCS-89, "Removal and Installation".

PUSH-BUTTON IGNITION SWITCH POSITION INDICATOR

Description

INFOID:0000000011285387

Push-button ignition switch changes the ignition switch position.
BCM maintains the ignition switch position status.
BCM changes the ignition switch position with the operation of the push-button ignition switch.

Component Function Check

INFOID:0000000011285388

1.CHECK FUNCTION

Check push-button ignition switch (“PUSH SWITCH INDICATOR”) in Active Test Mode with CONSULT.

Test item		Description	
PUSH SWITCH INDICATOR	ON	Position indicator	Illuminates
	OFF		Does not illuminate

Is the inspection result normal?

YES >> INSPECTION END
NO >> Refer to PCS-85, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000011285389

1.CHECK PUSH-BUTTON IGNITION SWITCH INPUT SIGNAL

1. Turn ignition switch OFF.
2. Disconnect push-button ignition switch connector.
3. Check voltage between push-button ignition switch harness connector and ground.

(+)		(–)	Voltage
Push-button ignition switch			
Connector	Terminal		
M38	3	Ground	Battery voltage

Is the inspection normal?

YES >> GO TO 2.
NO-1 >> Check 10 A fuse [No. 6, located in fuse block (J/B)].
NO-2 >> Check harness for open or short between push-button ignition switch and fuse.

2.CHECK BCM INPUT

1. Connect push-button ignition switch connector.
2. Disconnect BCM connector.
3. Check voltage between BCM connector and ground.

(+)		(–)	Voltage
BCM			
Connector	Terminal		
M16	111	Ground	9 – 16 V

Is the inspection normal?

YES >> Replace BCM. Refer to BCS-98, "Removal and Installation".
NO >> GO TO 3.

3.CHECK PUSH-BUTTON IGNITION SWITCH CIRCUIT

1. Disconnect push-button ignition switch connector.
2. Check continuity between BCM harness connector and push-button ignition switch harness connector.

BCM		Push-button ignition switch		Continuity
Connector	Terminal	Connector	Terminal	
M16	111	M38	7	Existed

3. Check continuity between BCM harness connector and ground.

BCM		Ground	Continuity
Connector	Terminal		
M16	111		Not existed

Is the inspection normal?

YES >> Replace push-button ignition switch. Refer to PCS-89, "Removal and Installation".
NO >> Repair or replace harness.

SYMPTOM DIAGNOSIS

PUSH-BUTTON IGNITION SWITCH DOES NOT OPERATE

Diagnosis Procedure

INFOID:0000000011285390

1. PERFORM WORK SUPPORT

Perform “INSIDE ANT DIAGNOSIS” on Work Support of “INTELLIGENT KEY”.
Refer to DLK-51, "INTELLIGENT KEY : CONSULT Function (BCM - INTELLIGENT KEY)".

>> GO TO 2.

2. PERFORM SELF-DIAGNOSIS RESULT

Perform Self-Diagnosis Result of “BCM”.

Is DTC detected?

YES >> Refer to BCS-62, "DTC Index".
NO >> GO TO 3.

3. CHECK PUSH-BUTTON IGNITION SWITCH

Check push-button ignition switch.
Refer to PCS-82, "Component Function Check".

Is the operation normal?

YES >> GO TO 4.
NO >> Repair or replace malfunctioning parts.

4. REPLACE BCM

Replace BCM. Refer to BCS-98, "Removal and Installation"

Is the inspection result normal?

YES >> INSPECTION END
NO >> Check intermittent incident. Refer to GI-42, "Intermittent Incident".

PUSH-BUTTON IGNITION SWITCH POSITION INDICATOR DOES NOT ILLUMINATE

Diagnosis Procedure

INFOID:0000000011285391

1. CHECK PUSH-BUTTON IGNITION SWITCH INDICATOR

Check push-button ignition switch indicator.
Refer to PCS-85, "Component Function Check".

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair or replace the malfunctioning parts.

2. REPLACE BCM

Replace BCM. Refer to BCS-98, "Removal and Installation"

Is the inspection result normal?

YES >> INSPECTION END
NO >> Check intermittent incident. Refer to GI-42, "Intermittent Incident".

REMOVAL AND INSTALLATION

PUSH-BUTTON IGNITION SWITCH

Removal and Installation

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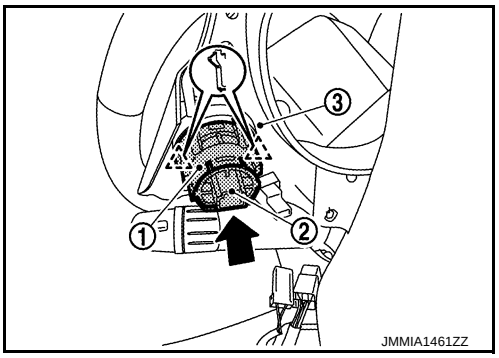
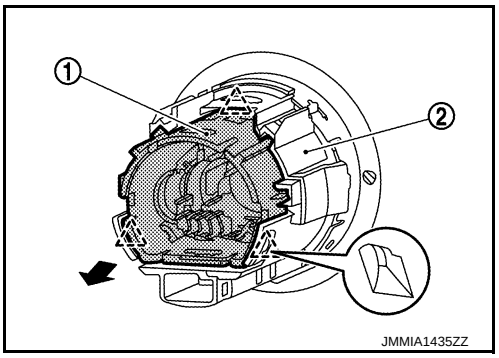
REMOVAL

1. Disengage cluster lid A fixing pawls. Refer to IP-13, "Removal and Installation".
2. Disconnect push-button ignition switch connector and NATS antenna amp. connector.
3. Disengage NATS antenna amp. fixing pawls and then remove NATS antenna amp. ① and push-button ignition switch ② as a set from cluster lid A ③.



△ : Pawl

4. Disengage push-button ignition switch fixing pawl and then remove push-button ignition switch ① from NATS antenna amp. ②.



△ : Pawl

INSTALLATION

Install in the reverse order of removal.