

SECTION PCS

POWER CONTROL SYSTEM

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PRECAUTION

PRECAUTIONS

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

INFOID:000000008143455

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 12V battery, and wait at least 3 minutes before performing any service.

Precaution Necessary for Steering Wheel Rotation after 12V Battery Disconnect

INFOID:000000008143456

For vehicle with steering lock unit, if the 12V battery is disconnected or discharged, the steering wheel will lock and cannot be turned.

If turning the steering wheel is required with the 12V battery disconnected or discharged, follow the operation procedure below before starting the repair operation.

OPERATION PROCEDURE

1. Connect both 12V battery cables.
NOTE:
Supply power using jumper cables if 12V battery is discharged.
2. Turn the ignition switch to ACC position.
(At this time, the steering lock will be released.)
3. Disconnect both 12V battery cables. The steering lock will remain released with both 12V battery cables disconnected and the steering wheel can be turned.
4. Perform the necessary repair operation.
5. When the repair work is completed, re-connect both 12V battery cables. With the brake pedal released, turn the ignition switch from ACC position to ON position, then to LOCK position. (The steering wheel will lock when the ignition switch is turned to LOCK position.)
6. Perform All DTC Reading using CONSULT and delete DTC.
NOTE:
Multiple DTCs are detected when 12V battery cable is disconnected while ignition switch is in ACC position.

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PRECAUTIONS

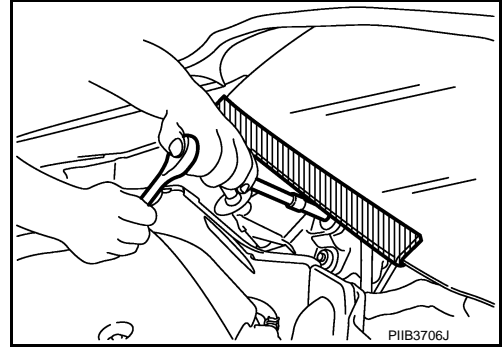
[IPDM E/R]

< PRECAUTION >

Precaution for Procedure without Cowl Top Cover

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



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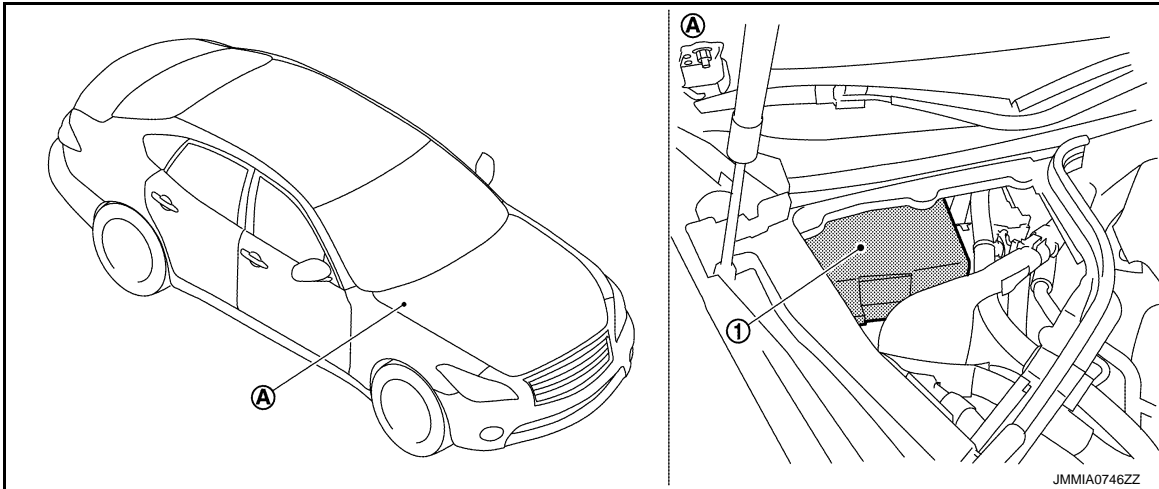
SYSTEM DESCRIPTION

COMPONENT PARTS

IPDM E/R

IPDM E/R : Component Parts Location

INFOID:000000008143458



- 1. IPDM E/R
- A. Engine room dash panel (RH)

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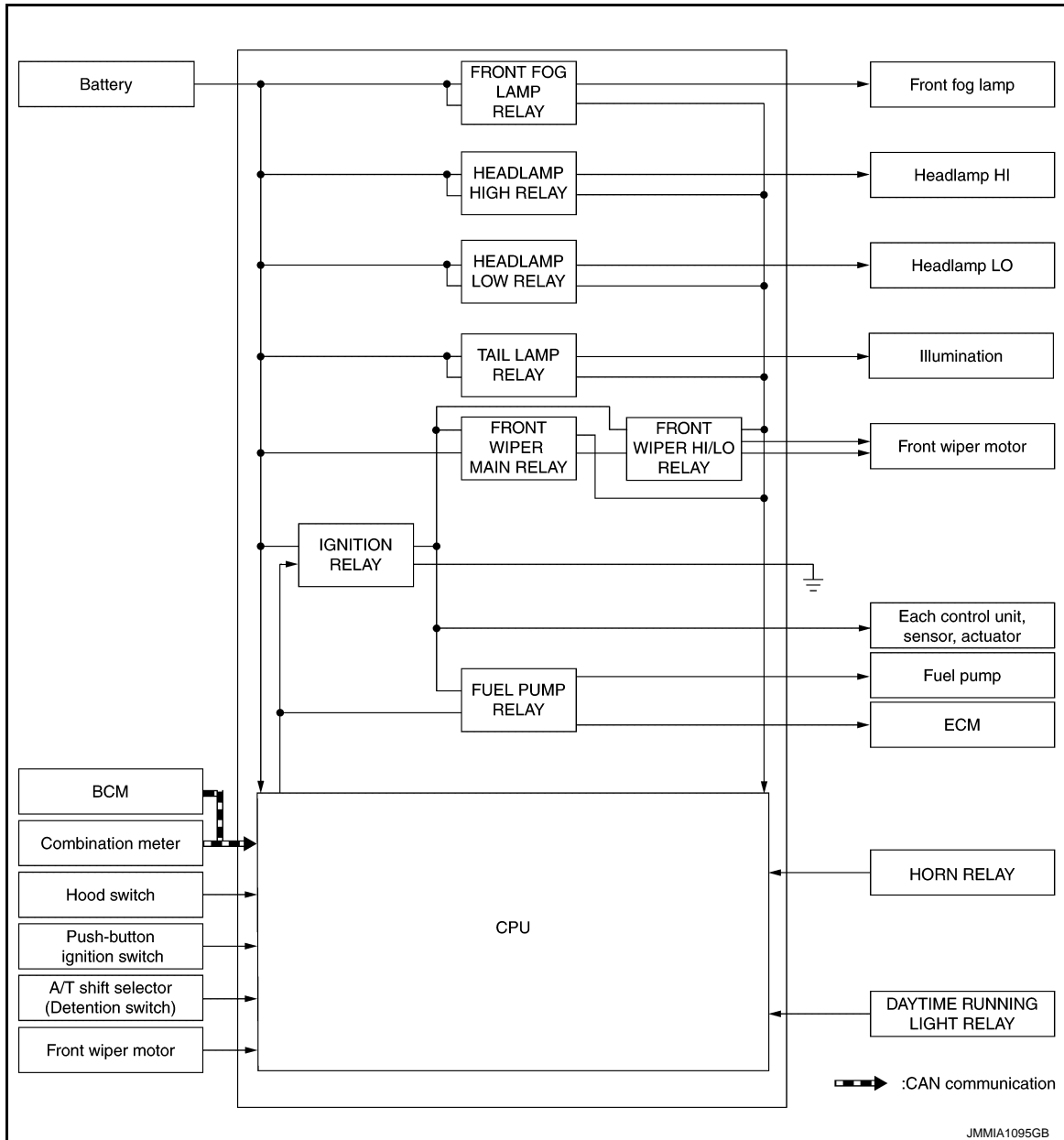
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SYSTEM

RELAY CONTROL SYSTEM

RELAY CONTROL SYSTEM : System Diagram

INFOID:000000008143459



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RELAY CONTROL SYSTEM : System Description

INFOID:000000008143460

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.

CAUTION:

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

Control relay	Input/output	Transmit unit	Control part	Reference page
Headlamp low relay	<ul style="list-style-type: none"> • Low beam request signal • Daytime running light request signal 	BCM (CAN)	Headlamp (LO)	<ul style="list-style-type: none"> • EXL-12 (Without DTRL) • EXL-13 (With DTRL)
Headlamp high relay	High beam request signal	BCM (CAN)	Headlamp (HI)	
Front fog lamp relay	Front fog light request signal	BCM (CAN)	Front fog lamp	EXL-20

SYSTEM

< SYSTEM DESCRIPTION >

[IPDM E/R]

Control relay	Input/output	Transmit unit	Control part	Reference page
Tail lamp relay	Position light request signal	BCM (CAN)	<ul style="list-style-type: none"> • Parking lamp • License plate lamp • Tail lamp • Side marker lamp 	<ul style="list-style-type: none"> • EXL-22 (Without DTRL) • EXL-23 (With DTRL)
			Illumination	INL-6
<ul style="list-style-type: none"> • Front wiper main relay • Front wiper HI/LO relay 	Front wiper request signal	BCM (CAN)	Front wiper motor	WW-8
	Front wiper position signal	Front wiper motor		
<ul style="list-style-type: none"> • Horn relay • Vehicle security horn relay 	<ul style="list-style-type: none"> • Theft warning horn request signal • Horn reminder signal 	BCM (CAN)	<ul style="list-style-type: none"> • Horn (high) • Vehicle security horn 	SEC-15
Ignition relay	Vehicle speed signal	Combination meter (CAN)	Each control unit, sensor, actuator and relay (ignition power supply)	PCS-26
	Push-button ignition switch signal	Push-button ignition switch		
	Daytime running light request signal	BCM (CAN)		
Position light request signal	<ul style="list-style-type: none"> • Headlamp (LO) • Parking lamp • License plate lamp • Tail lamp • Side marker lamp 		EXL-16	

NOTE:

BCM controls the starter relay.

RELAY CONTROL SYSTEM : Fail-safe

INFOID:000000008269002

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	<ul style="list-style-type: none"> • 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

If No CAN Communication Is Available With BCM

Control part	Fail-safe operation
Headlamp	<ul style="list-style-type: none"> • 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
<ul style="list-style-type: none"> • Parking lamp • License plate lamp • Illumination • Tail lamp • Side marker lamp 	<ul style="list-style-type: none"> • Turns ON the tail lamp relay and daytime running light relay when the ignition switch is turned ON • Turns OFF the tail lamp relay and daytime running light relay when the ignition switch is turned OFF
Front wiper motor	<ul style="list-style-type: none"> • 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 AUTO 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 than stop position.
Front fog lamp	Front fog lamp relay OFF

SYSTEM

< SYSTEM DESCRIPTION >

[IPDM E/R]

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

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 and daytime running light 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	<ul style="list-style-type: none"> • Detects DTC “B2098: IGN RELAY ON” • Turns ON the tail lamp relay and daytime running light 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 five times.

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.

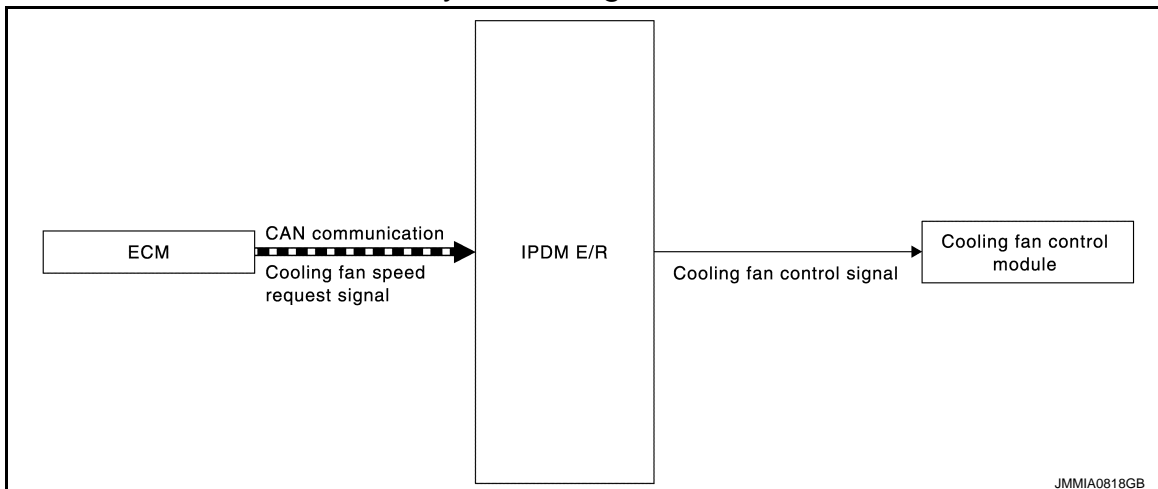
NOTE:

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.

POWER CONTROL SYSTEM

POWER CONTROL SYSTEM : System Diagram

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POWER CONTROL SYSTEM : System Description

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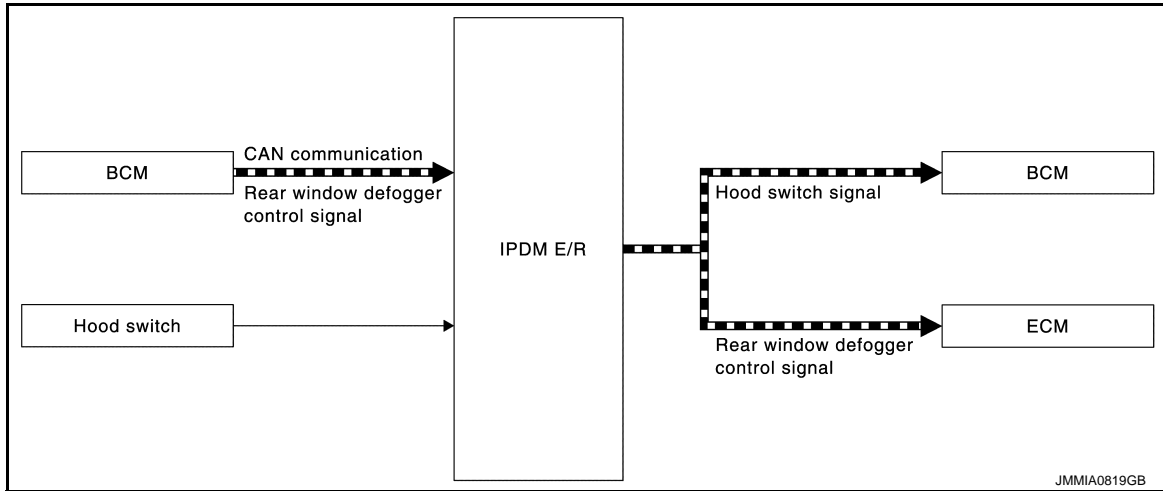
COOLING FAN CONTROL

IPDM E/R outputs pulse duty signal (PWM 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-36, "COOLING FAN CONTROL : System Description"](#).

SIGNAL BUFFER SYSTEM

SIGNAL BUFFER SYSTEM : System Diagram

INFOID:000000008143464



SIGNAL BUFFER SYSTEM : System Description

INFOID:000000008143465

- IPDM E/R reads the status of the hood switch and transmits the hood switch signal to BCM via CAN communication. Refer to [SEC-9, "Hood Switch"](#).
- IPDM E/R receives the rear window defogger control signal from BCM via CAN communication and transmits it to ECM via CAN communication. Refer to [DEF-5, "System Diagram"](#).

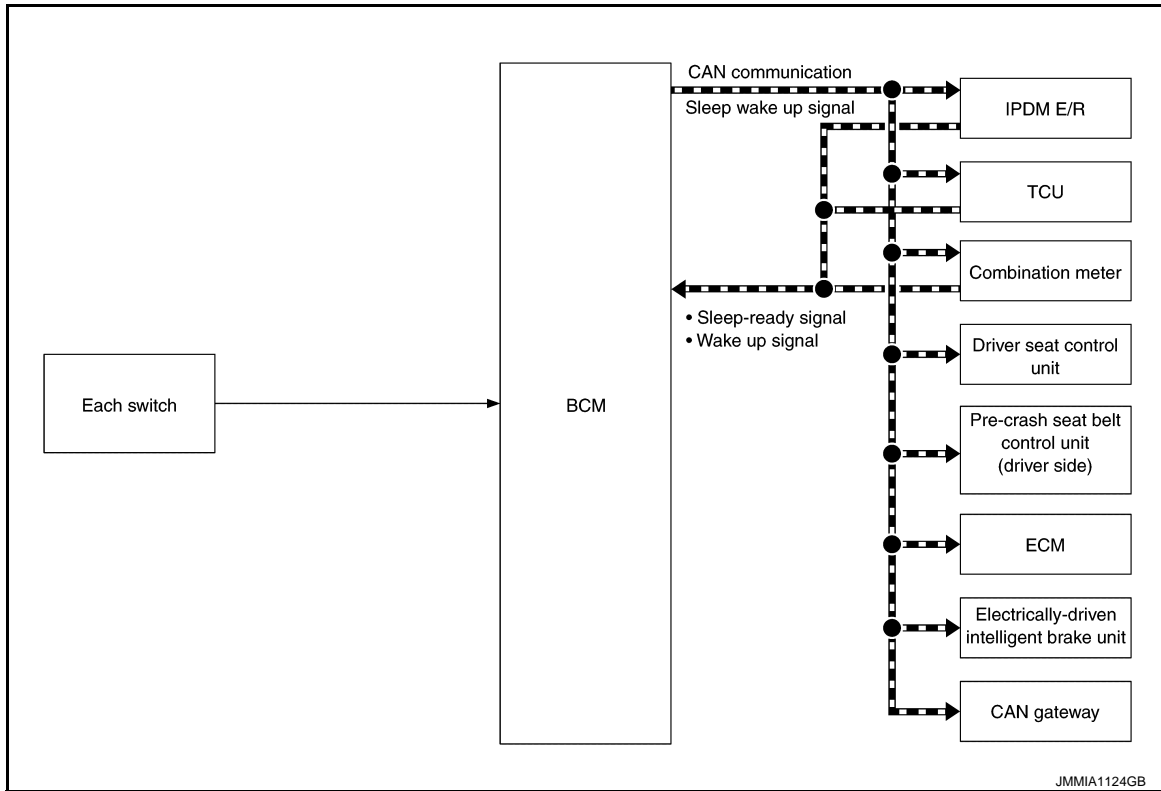
POWER CONSUMPTION CONTROL SYSTEM

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POWER CONSUMPTION CONTROL SYSTEM : System Diagram

INFOID:000000008266704



POWER CONSUMPTION CONTROL SYSTEM : System Description

INFOID:000000008143467

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
 - Hood switch status is kept 50 ms or less.
 - 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
 - The hood switch status changes.
 - An output request is received from a control unit via CAN communication.

DIAGNOSIS SYSTEM (IPDM E/R)

Diagnosis Description

INFOID:000000008143468

AUTO ACTIVE TEST

Description

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

- Front wiper (LO, HI)
- Parking lamp
- License plate lamp
- Tail lamp
- Side marker lamp
- Front fog lamp
- Headlamp (LO, HI)
- Cooling fan (cooling fan control module)

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 condition.

- 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 front door switch (driver side) 10 times. Then turn the ignition switch OFF.

NOTE:

Within 5 seconds after ignition switch is turned to the ON position and when driver door switch is pressed 6 times or more within 4 seconds, self-diagnosis function for BOSE amp. activates and speaker sounds. After waiting for 5 seconds or more after ignition switch is turned to the ON position and when driver door switch is operated, self-diagnosis function for BOSE amp. does not activate.

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. After a series of the following operations is repeated 3 times, auto active test is completed.

NOTE:

- When auto active test 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-61, "Component Function Check"](#).

Inspection in Auto Active Test

When auto active test is actuated, the following 4 steps are repeated 3 times.

Operation sequence	Inspection location	Operation
1	Front wiper motor	LO for 5 seconds → HI for 5 seconds
2	<ul style="list-style-type: none"> • Parking lamp • License plate lamp • Tail lamp • Side marker lamp • Front fog lamp 	10 seconds
3	Headlamp	<ul style="list-style-type: none"> • LO 10 seconds • HI ON ⇔ OFF 5 times
4	Cooling fan	MID for 5 seconds → HI for 5 seconds

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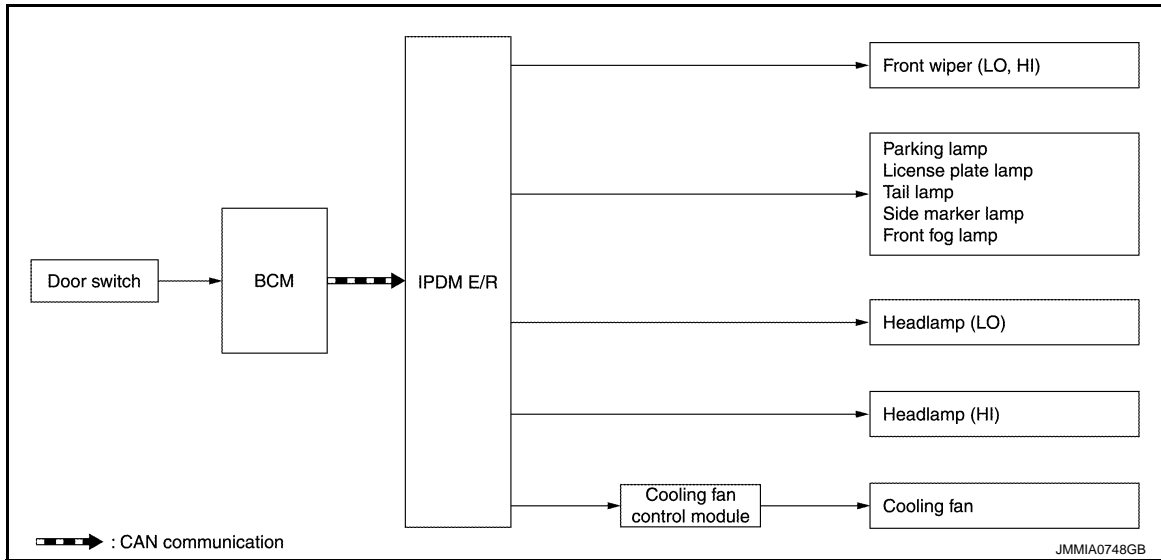
DIAGNOSIS SYSTEM (IPDM E/R)

[IPDM E/R]

< SYSTEM DESCRIPTION >

*: 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

Symptom	Inspection contents	Possible cause
Any of the following components do not operate <ul style="list-style-type: none"> • Parking lamp • License plate lamp • Tail lamp • Side marker lamp • Front fog lamp • Headlamp (HI, LO) • Front wiper motor 	Perform auto active test. Does the applicable system operate?	YES BCM signal input circuit
		NO <ul style="list-style-type: none"> • Lamp or motor • Lamp or motor ground circuit • Harness or connector between IPDM E/R and applicable system • IPDM E/R
Cooling fan does not operate	Perform auto active test. Does the cooling fan operate?	YES <ul style="list-style-type: none"> • ECM signal input circuit • CAN communication signal between ECM and IPDM E/R
		NO <ul style="list-style-type: none"> • Cooling fan • Harness or connector between cooling fan and cooling fan control module • Cooling fan control module • Harness or connector between IPDM E/R and cooling fan control module • Cooling fan relay • Harness or connector between IPDM E/R and cooling fan relay • IPDM E/R

CONSULT Function (IPDM E/R)

INFOID:000000008143469

APPLICATION ITEM

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

DIAGNOSIS SYSTEM (IPDM E/R)

< SYSTEM DESCRIPTION >

[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-21, "DTC Index"](#).

DATA MONITOR

Monitor item

Monitor Item [Unit]	MAIN SIG- NALS	Description
RAD FAN REQ [%]	×	Displays the value of the cooling fan speed signal received from ECM via CAN communication.
AC COMP REQ [Off/On]	×	NOTE: This item is indicated, but not monitored.
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.
PUSH SW [Off/On]		Displays the status of the push-button ignition switch judged by IPDM E/R.
INTER/NP SW [Off/On]		NOTE: This item is indicated, but not monitored.
ST RLY CONT [Off/On]		NOTE: This item is indicated, but not monitored.
IHBT RLY -REQ [Off/On]		NOTE: This item is indicated, but not monitored.
ST/INHI RLY [Off/ ST /INHI/UNKWN]		NOTE: This item is indicated, but not monitored.
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]		Displays the status of the steering lock relay request received from BCM via CAN communication. NOTE: For models without steering lock unit, this item is not monitored.

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DIAGNOSIS SYSTEM (IPDM E/R)

< SYSTEM DESCRIPTION >

[IPDM E/R]

Monitor Item [Unit]	MAIN SIG- NALS	Description
S/L STATE [LOCK/UNLK/UNKWN]		Displays the status of the steering lock judged by IPDM E/R. NOTE: For models without steering lock unit, this item is not monitored.
DTRL REQ [Off/On]		Displays the status of the daytime running light request signal received from BCM via CAN communication. NOTE: This item is monitored only on the vehicle with daytime running light system.
OIL P SW [Open/Close]		NOTE: This item is indicated, but not monitored.
HOOD SW [Off/On]		Displays the status of the hood switch judged by IPDM E/R.
HL WASHER REQ [Off/On]		NOTE: This 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.
CRNRNG LMP REQ [Off/On]		NOTE: This item is indicated, but not monitored.

ACTIVE TEST

Test item

Test item	Operation	Description
CORNERING LAMP	Off	NOTE: This item is indicated, but cannot be tested.
	LH	
	RH	
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 high relay.
MOTOR FAN	1	OFF
	2	Transmits 50% pulse duty signal (PWM signal) to the cooling fan control module.
	3	Transmits 75% pulse duty signal (PWM signal) to the cooling fan control module.
	4	Transmits 100% pulse duty signal (PWM signal) to the cooling fan control module.
HEAD LAMP WASHER	On	NOTE: This item is indicated, but cannot be tested.
EXTERNAL LAMPS	Off	OFF
	TAIL	Operates the tail lamp relay and the daytime running light 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:000000008143470

VALUES ON THE DIAGNOSIS TOOL

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	NOTE: This item is indicated, but not monitored.		Off
TAIL&CLR REQ	Lighting switch OFF		Off
	<ul style="list-style-type: none"> Lighting switch 1ST, 2ND or AUTO (light is illuminated) Daytime running light system is operated 		On
HL LO REQ	Lighting switch OFF		Off
	Lighting switch 2ND or AUTO (light is illuminated)		On
	Daytime running light system is operated		
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 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 AUTO	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	NOTE: This item is indicated, but not monitored.		Off
ST RLY CONT	NOTE: This item is indicated, but not monitored.		Off
IHBT RLY -REQ	NOTE: This item is indicated, but not monitored.		Off
ST/INHI RLY	NOTE: This item is indicated, but not monitored.		Off

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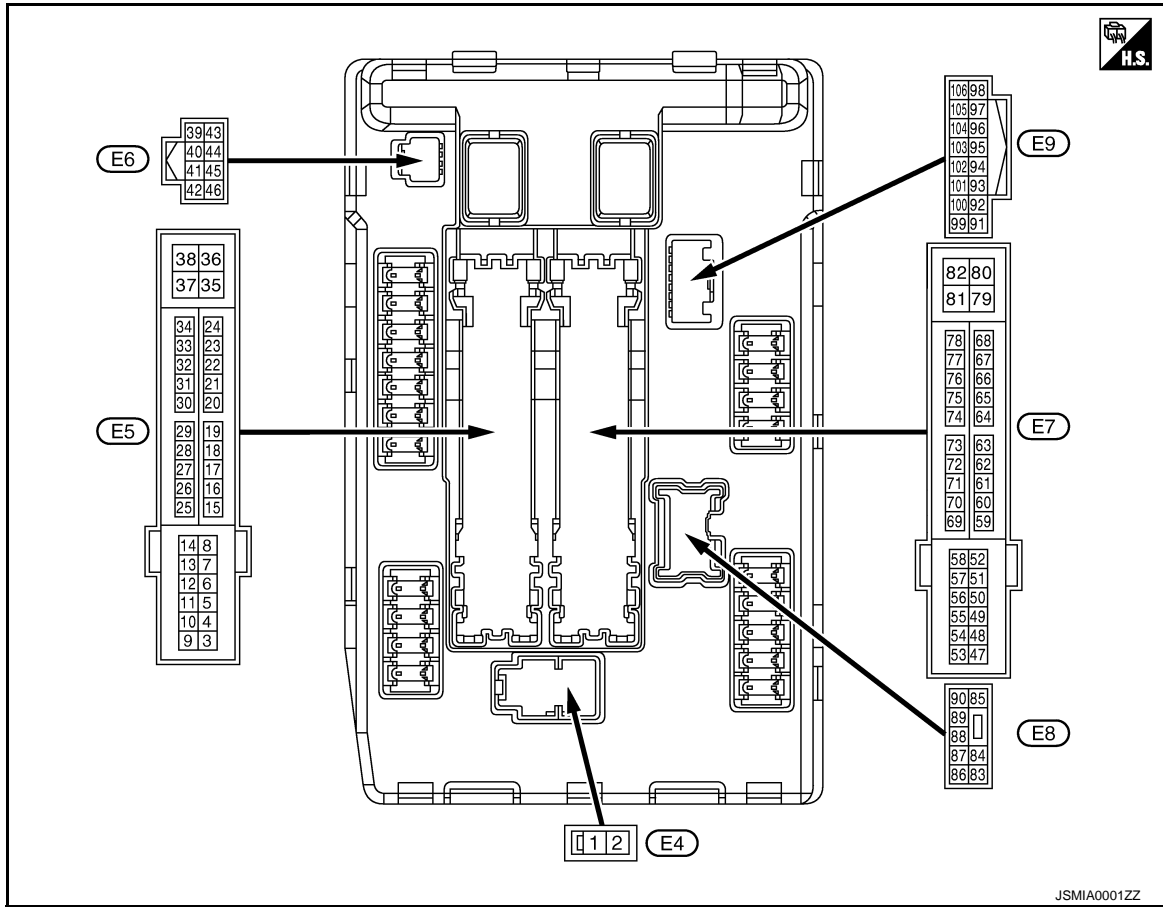
IPDM E/R

< ECU DIAGNOSIS INFORMATION >

[IPDM E/R]

Monitor Item	Condition	Value/Status
DETENT SW	Ignition switch ON <ul style="list-style-type: none"> • 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: For models without steering lock unit, this item is not monitored.	None of the conditions below are present	Off
	<ul style="list-style-type: none"> • Open the driver door after the ignition switch is turned OFF (for a few seconds) • Press the push-button ignition switch when the steering lock is activated 	On
S/L STATE NOTE: For models without steering lock unit, this item is not monitored.	Steering lock is activated	LOCK
	Steering lock is deactivated	UNLOCK
	[DTC: B210A] is detected	UNKWN
DTRL REQ	Daytime running light system is not operated	Off
	Any of the condition below <ul style="list-style-type: none"> • Daytime running light system is operated • Light switch 1ST, 2ND or AUTO (light is illuminated) 	On
OIL P SW	NOTE: This item is indicated, but not monitored.	Open
HOOD SW	Close the hood	Off
	Open the hood	On
HL WASHER REQ	NOTE: This item is indicated, but not monitored.	Off
THFT HRN REQ	Not operation	Off
	<ul style="list-style-type: none"> • Panic alarm is activated • Theft warning alarm is activated 	On
HORN CHIRP	Not operation	Off
	Door locking with Intelligent Key (horn chirp mode)	On
CRNRNG LMP REQ	NOTE: This item is indicated, but not monitored.	Off

TERMINAL LAYOUT



PHYSICAL VALUES

Terminal No. (Wire color)		Description		Condition	Value (Approx.)
+	-	Signal name	Input/ Output		
1 (W)	Ground	Battery power supply	Input	Ignition switch OFF	Battery voltage
2 (L)	Ground	Battery power supply	Input	Ignition switch OFF	Battery voltage
5 (O)	Ground	ECM relay power supply	Output	Ignition switch OFF (More than a few seconds after turning ignition switch OFF)	0 V
				<ul style="list-style-type: none"> Ignition switch ON Ignition switch OFF (For a few seconds after turning ignition switch OFF) 	Battery voltage
6 (LG)	Ground	ECM relay power supply	Output	Ignition switch OFF (More than a few seconds after turning ignition switch OFF)	0 V
				<ul style="list-style-type: none"> Ignition switch ON Ignition switch OFF (For a few seconds after turning ignition switch OFF) 	Battery voltage

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IPDM E/R

< ECU DIAGNOSIS INFORMATION >

[IPDM E/R]

Terminal No. (Wire color)		Description		Condition	Value (Approx.)
+	-	Signal name	Input/ Output		
7 (Y)	Ground	Throttle control motor relay power supply	Output	Ignition switch OFF (More than a few seconds after turning igni- tion switch OFF)	0 V
				<ul style="list-style-type: none"> • Ignition switch ON • Ignition switch OFF (For a few seconds after turning ignition switch OFF) 	Battery voltage
10 (W)	Ground	ECM power supply	Output	Ignition switch OFF	Battery voltage
11 (B)	Ground	Ground	—	Ignition switch ON	0 V
12 (G)	Ground	Ignition relay power supply	Output	Ignition switch OFF or ACC	0 V
				Ignition switch ON	Battery voltage
13 (P)	Ground	Fuel pump relay power supply	Output	Approximately 1 second or more after turning the ignition switch ON	0 V
				<ul style="list-style-type: none"> • Approximately 1 second after turning the ignition switch ON • Engine running 	Battery voltage
16 (V)	Ground	Front wiper stop posi- tion	Input	Ignition switch ON	Front wiper stop position
					Any position other than front wiper stop position
18 (Y)	Ground	Ignition relay monitor	Input	Ignition switch OFF or ACC	Battery voltage
				Ignition switch ON	0 V
23 (SB)	Ground	Daytime running light relay control	Output	<ul style="list-style-type: none"> • Parking lamp • License plate lamp • Tail lamp 	Turned OFF
					Turned ON
24 (O)	Ground	Hood switch	Input	Close the hood	12 V
				Open the hood	0 V
25 (R)	Ground	Ignition relay power supply	Output	Ignition switch OFF or ACC	0 V
				Ignition switch ON	Battery voltage
30 (G)	Ground	Push-button ignition switch	Input	Press the push-button ignition switch	0 V
				Release the push-button ignition switch	12 V
39 (P)	—	CAN-L	Input/ Output	—	—
40 (L)	—	CAN-H	Input/ Output	—	—
41 (B)	Ground	Ground	—	Ignition switch ON	0 V
42 (V)	Ground	Cooling fan relay 1 control	Input	Ignition switch OFF or ACC	0 V
				Ignition switch ON	0.7 V
43 (SB)	Ground	A/T shift selector (Detention switch)	Input	Ignition switch ON	<ul style="list-style-type: none"> • Press the selector but- ton (selector lever P) • Selector lever in any po- sition other than P
					Release the selector but- ton (selector lever P)
44 (R)	Ground	Horn relay control	Input	The horn is deactivated	Battery voltage
				The horn is activated	0 V

IPDM E/R

< ECU DIAGNOSIS INFORMATION >

[IPDM E/R]

Terminal No. (Wire color)		Description		Condition		Value (Approx.)	
		Signal name	Input/ Output				
+	-						
45 (O)	Ground	Vehicle security horn relay control	Input	The horn is deactivated		Battery voltage	A
				The horn is activated		0 V	B
51 (O)	Ground	Ignition relay power supply	Output	Ignition switch OFF or ACC		0 V	
				Ignition switch ON		Battery voltage	C
52 (G)	Ground	Ignition relay power supply	Output	Ignition switch OFF or ACC		0 V	
				Ignition switch ON		Battery voltage	D
53 (L)	Ground	Front wiper HI (ground)	Output	Ignition switch ON	Front wiper switch OFF or HI	0 V	
54 (P)	Ground	Front wiper LO	Output	Ignition switch ON	Front wiper switch OFF	0 V	E
					Front wiper switch LO	Battery voltage	
55 (R)	Ground	Illuminations	Output	Lighting switch OFF		0 V	
				Lighting switch 1ST		Battery voltage	F
56 (GR)	Ground	Ignition relay power supply	Output	Ignition switch OFF or ACC		0 V	
				Ignition switch ON		Battery voltage	G
57 (V)	Ground	Ignition relay power supply	Output	Ignition switch OFF or ACC		0 V	
				Ignition switch ON		Battery voltage	H
58 (SB)	Ground	Ignition relay power supply	Output	Ignition switch OFF or ACC		0 V	
				Ignition switch ON		Battery voltage	
70 (LG)	Ground	ECM relay control	Output	Ignition switch OFF (More than a few seconds after turning ignition switch OFF)		Battery voltage	I
				<ul style="list-style-type: none"> • Ignition switch ON • Ignition switch OFF (For a few seconds after turning ignition switch OFF) 		0 – 1.5 V	J
71 (O)	Ground	Throttle control motor relay control	Output	Ignition switch ON → OFF		0 – 1.0 V ↓ Battery voltage ↓ 0 V	K
				Ignition switch ON		0 – 1.0 V	L
73 (G)	Ground	Ignition relay power supply	Output	Ignition switch OFF or ACC		0 V	
				Ignition switch ON		Battery voltage	PCS
74 (SB)	Ground	Ignition relay power supply	Output	Ignition switch OFF or ACC		0 V	
				Ignition switch ON		Battery voltage	
76 (Y)	Ground	Ignition relay power supply	Output	Ignition switch OFF or ACC		0 V	N
				Ignition switch ON		Battery voltage	
77 (B)	Ground	Fuel pump relay control	Output	<ul style="list-style-type: none"> • Approximately 1 second after turning the ignition switch ON • Engine running 		0 – 1.0 V	O
				Approximately 1 second or more after turning the ignition switch ON		Battery voltage	P
83 (R)	Ground	Headlamp LO (RH)	Output	Lighting switch OFF		0 V	
				Lighting switch 2ND or AUTO (light is illuminated)		Battery voltage	
				Daytime running light operated			

IPDM E/R

< ECU DIAGNOSIS INFORMATION >

[IPDM E/R]

Terminal No. (Wire color)		Description		Condition	Value (Approx.)
+	-	Signal name	Input/ Output		
84 (W)	Ground	Headlamp LO (LH)	Output	Lighting switch OFF	0 V
				Lighting switch 2ND or AUTO (light is illuminated)	Battery voltage
				Daytime running light operated	
86 (G)	Ground	Front fog lamp (RH)	Output	Lighting switch 2ND or AUTO (light is illuminated)	Battery voltage
				Lighting switch HI or PASS	0 V
				Front fog lamp switch OFF	
87 (L)	Ground	Front fog lamp (LH)	Output	Lighting switch 2ND or AUTO (light is illuminated)	Battery voltage
				Lighting switch HI or PASS	0 V
				Front fog lamp switch OFF	
88 (O)	Ground	Front wiper motor power supply	Output	Ignition switch ON	Battery voltage
89 (BR)	Ground	Headlamp HI (RH)	Output	Lighting switch 2ND or AUTO (light is illuminated)	Battery voltage
				Lighting switch HI or PASS	0 V
90 (P)	Ground	Headlamp HI (LH)	Output	Lighting switch 2ND or AUTO (light is illuminated)	Battery voltage
				Lighting switch HI or PASS	0 V
96 (R)	Ground	Wiper reverse relay	Input	Ignition switch OFF or ACC	0 V
				Ignition switch ON	Battery voltage
				Front wiper operates at LO	Battery voltage
				Front wiper operates at HI	0 V
97 (V)	Ground	Cooling fan control	Output	Engine idling	0 – 5 V

Fail-safe

INFOID:000000008143471

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	<ul style="list-style-type: none"> 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

If No CAN Communication Is Available With BCM

Control part	Fail-safe operation
Headlamp	<ul style="list-style-type: none"> 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
<ul style="list-style-type: none"> Parking lamp License plate lamp Illumination Tail lamp Side marker lamp 	<ul style="list-style-type: none"> Turns ON the tail lamp relay and daytime running light relay when the ignition switch is turned ON Turns OFF the tail lamp relay and daytime running light relay when the ignition switch is turned OFF

Control part	Fail-safe operation
Front wiper motor	<ul style="list-style-type: none"> 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 AUTO 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 than stop position.
Front fog lamp	Front fog lamp relay OFF
Horn	Horn OFF
Ignition relay	The status just before activation of fail-safe is maintained.

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 and daytime running light 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	<ul style="list-style-type: none"> Detects DTC “B2098: IGN RELAY ON” Turns ON the tail lamp relay and daytime running light 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 five times.

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.

DTC Index

INFOID:000000008143472

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.

PCS

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IPDM E/R

< ECU DIAGNOSIS INFORMATION >

[IPDM E/R]

×: Applicable


CONSULT display	Fail-safe	Reference
No DTC is detected. further testing may be required.	—	—
U1000: CAN COMM CIRCUIT	×	PCS-25
B2098: IGN RELAY ON	×	PCS-26
B2099: IGN RELAY OFF	—	PCS-27

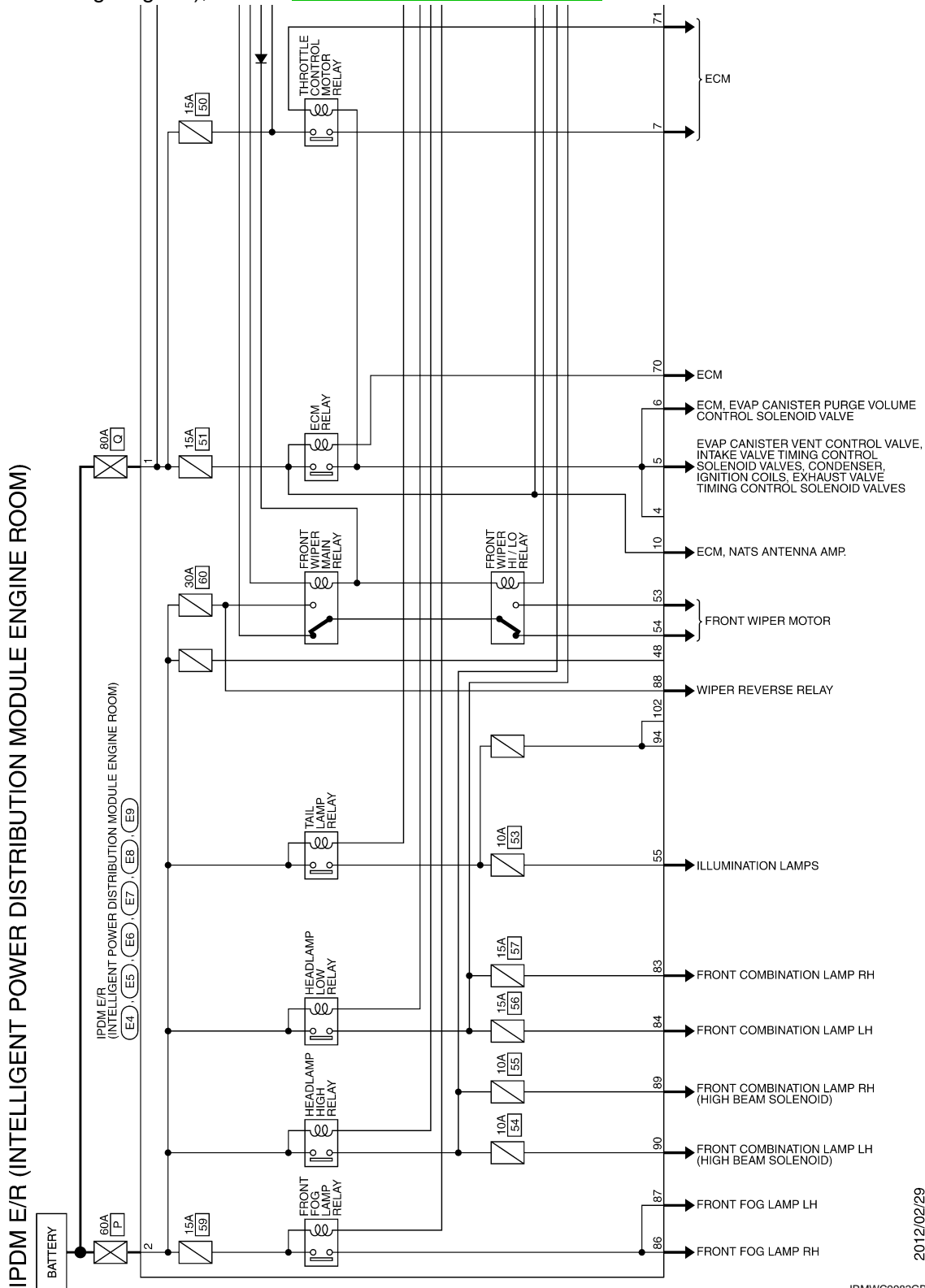
WIRING DIAGRAM

IPDM E/R

Wiring Diagram

INFOID:000000008143473

For connector terminal arrangements, harness layouts, and alphabets in a  (option abbreviation; if not described in wiring diagram), refer to [GI-13. "Connector Information"](#).

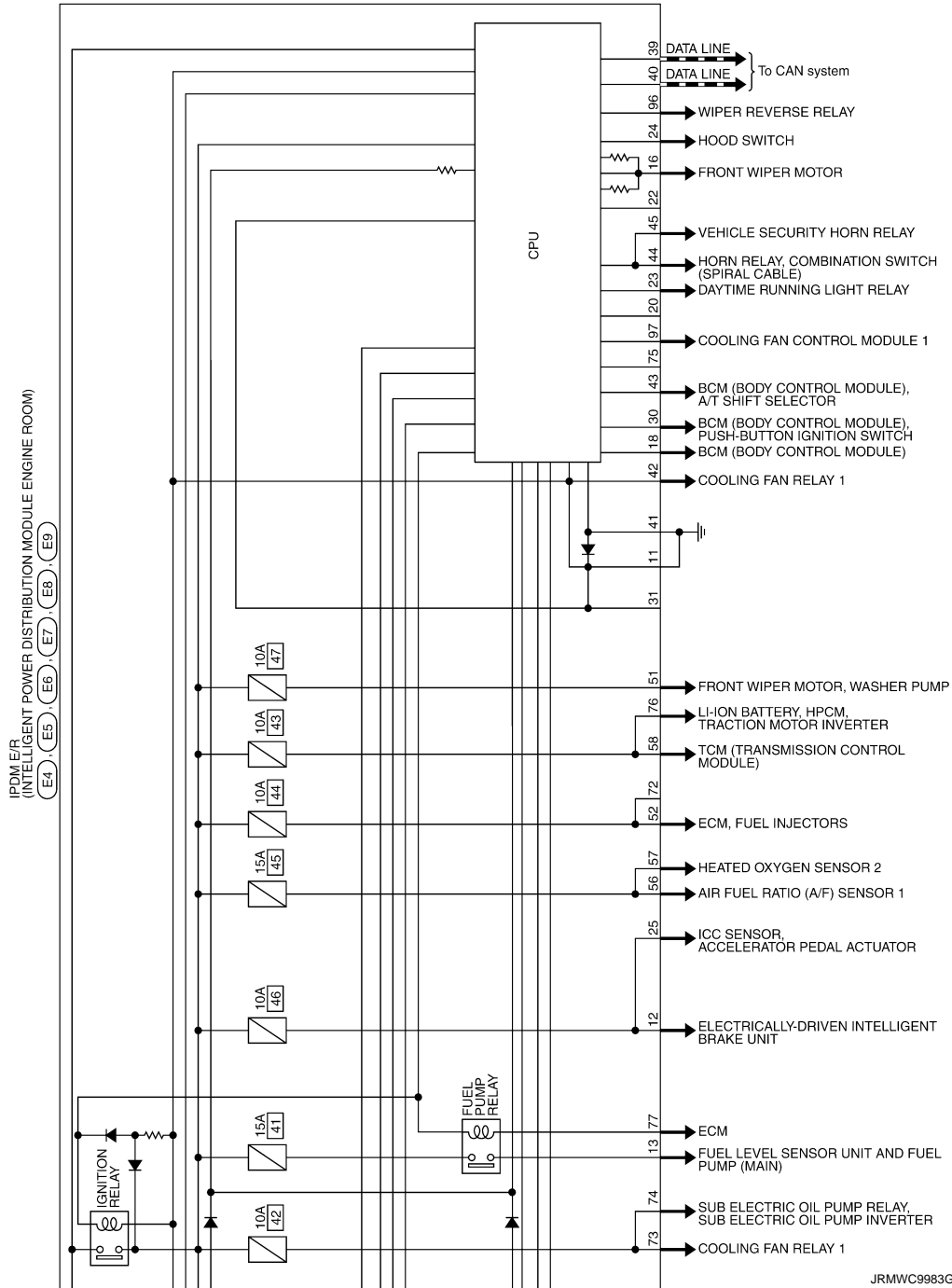


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JRMWC9982GB



JRMWC9983GB

DTC/CIRCUIT DIAGNOSIS

U1000 CAN COMM CIRCUIT

Description

INFOID:000000008143474

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-36, "CAN COMMUNICATION SYSTEM : CAN Communication Signal Chart"](#).

DTC Logic

INFOID:000000008143475

DTC DETECTION LOGIC

DTC	CONSULT display description	DTC Detection Condition	Possible cause
U1000	CAN COMM CIRCUIT	When IPDM E/R cannot communicate CAN communication signal continuously for 2 seconds or more	CAN communication system

Diagnosis Procedure

INFOID:000000008143476

1. PERFORM SELF DIAGNOSTIC

1. Turn ignition switch ON and wait 2 seconds or more.
2. Check "Self Diagnostic Result" of "IPDM E/R" using CONSULT.

Is DTC "U1000" displayed?

- YES >> Refer to [LAN-19, "Trouble Diagnosis Flow Chart"](#).
- NO >> Refer to [GI-49, "Intermittent Incident"](#).

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B2098 IGNITION RELAY ON STUCK

< DTC/CIRCUIT DIAGNOSIS >

[IPDM E/R]

B2098 IGNITION RELAY ON STUCK

Description

INFOID:000000008143477

- 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 unified meter and A/C amp.(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 Logic

INFOID:000000008143478

DTC DETECTION LOGIC

DTC	CONSULT display description	DTC Detection Condition	Possible causes
B2098	IGN RELAY ON	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)	Ignition relay malfunction

Diagnosis Procedure

INFOID:000000008143479

1.PERFORM SELF DIAGNOSIS

1. Turn ignition switch ON.
2. Erase "Self Diagnostic Result" of "IPDM E/R" using CONSULT.
3. Turn ignition switch OFF, and wait 1 second or more.
4. Turn ignition switch ON.
5. Check "Self Diagnostic Result" of "IPDM E/R" using CONSULT.

Is DTC "B2098" displayed?

- YES >> Replace IPDM E/R. Refer to [PCS-29, "Removal and Installation"](#).
- NO >> Refer to [GI-49, "Intermittent Incident"](#).

B2099 IGNITION RELAY OFF STUCK

< DTC/CIRCUIT DIAGNOSIS >

[IPDM E/R]

B2099 IGNITION RELAY OFF STUCK

Description

INFOID:000000008143480

- 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 unified meter and A/C amp.(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 Logic

INFOID:000000008143481

DTC DETECTION LOGIC

DTC	CONSULT display description	DTC Detection Condition	Possible causes
B2099	IGN RELAY OFF	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)	Ignition relay malfunction

NOTE:

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

Diagnosis Procedure

INFOID:000000008143482

1. PERFORM SELF DIAGNOSIS

1. Turn ignition switch ON.
2. Erase "Self Diagnostic Result" of "IPDM E/R" using CONSULT.
3. Turn ignition switch OFF.
4. Turn ignition switch ON.
5. Check "Self Diagnostic Result" of "IPDM E/R" using CONSULT.

Is "B2099" displayed?

- YES >> Replace IPDM E/R. Refer to [PCS-29, "Removal and Installation"](#).
NO >> Refer to [GI-49, "Intermittent Incident"](#).

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POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[IPDM E/R]

POWER SUPPLY AND GROUND CIRCUIT

Diagnosis Procedure

INFOID:000000008143483

1. CHECK FUSES AND FUSIBLE LINK

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

Signal name	Fuses and fusible link No.
Battery power supply	Q (80 A)
	P (60 A)
	50 (15 A)
	51 (15 A)

Is the fuse fusing?

YES >> Replace the blown fuse or fusible link after repairing the affected circuit if a fuse or 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 (Approx.)
IPDM E/R			
Connector	Terminal	Ground	Battery voltage
E4	1		
	2		

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		Existed
E5	11		
E6	41		

Does continuity exist?

YES >> INSPECTION END

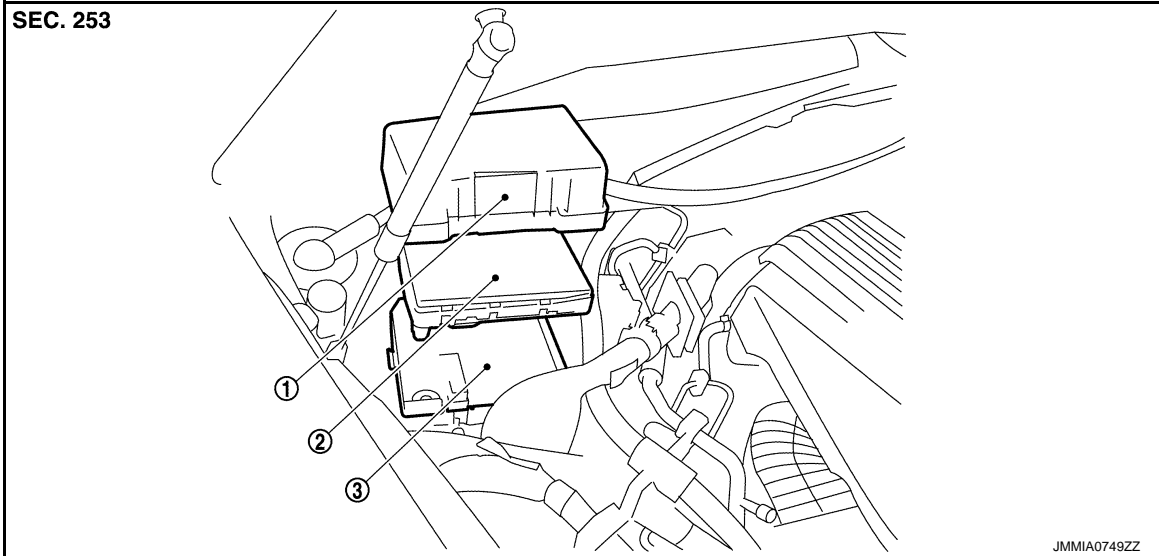
NO >> Repair the harness or connector.

REMOVAL AND INSTALLATION

IPDM E/R

Exploded View

INFOID:000000008143484



1. IPDM E/R cover A

2. IPDM E/R

3. IPDM E/R cover B

Removal and Installation


INFOID:000000008143485

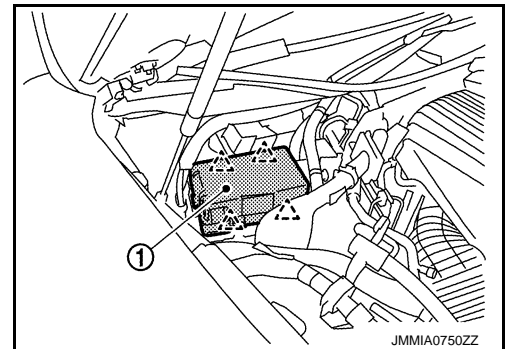
CAUTION:

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


REMOVAL

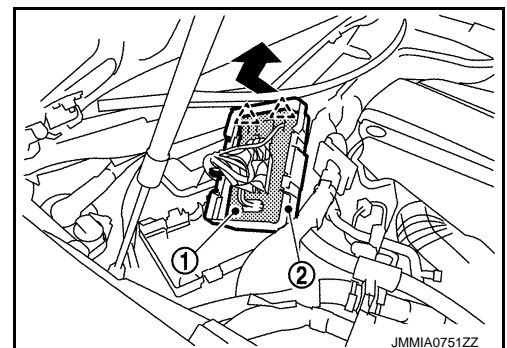
1. Disconnect 12V battery cable from negative terminal.
2. Remove cowl top cover (RH). Refer to [EXT-21, "Removal and Installation"](#).
3. Remove IPDM E/R cover A (1) and IPDM E/R from IPDM E/R cover B while pressing pawls of the IPDM E/R cover B.

 : Pawl



4. Disengage pawls on upper side of IPDM E/R cover A (2), and then remove IPDM E/R (1) in the direction indicated by an arrow as shown in the figure.

 : Pawl



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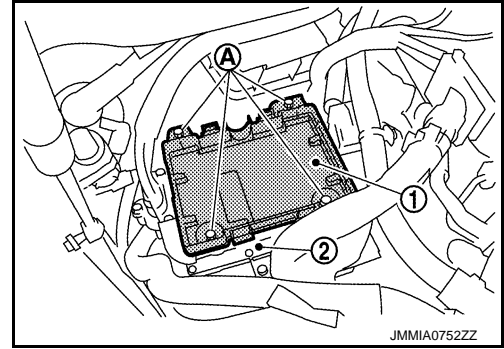
PCS

IPDM E/R

[IPDM E/R]

< REMOVAL AND INSTALLATION >

5. Disconnect harness connector and remove IPDM E/R.
6. Remove IPDM E/R cover B mounting bolts (A), and then remove IPDM E/R cover B (1) from traction motor inverter.



INSTALLATION

Install in the reverse order of removal.

PRECAUTION

PRECAUTIONS

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

INFOID:000000008143486

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 12V battery, and wait at least 3 minutes before performing any service.

Precaution Necessary for Steering Wheel Rotation after 12V Battery Disconnect

INFOID:000000008143487

For vehicle with steering lock unit, if the 12V battery is disconnected or discharged, the steering wheel will lock and cannot be turned.

If turning the steering wheel is required with the 12V battery disconnected or discharged, follow the operation procedure below before starting the repair operation.

OPERATION PROCEDURE

1. Connect both 12V battery cables.
NOTE:
Supply power using jumper cables if 12V battery is discharged.
2. Turn the ignition switch to ACC position.
(At this time, the steering lock will be released.)
3. Disconnect both 12V battery cables. The steering lock will remain released with both 12V battery cables disconnected and the steering wheel can be turned.
4. Perform the necessary repair operation.
5. When the repair work is completed, re-connect both 12V battery cables. With the brake pedal released, turn the ignition switch from ACC position to ON position, then to LOCK position. (The steering wheel will lock when the ignition switch is turned to LOCK position.)
6. Perform All DTC Reading using CONSULT and delete DTC.
NOTE:
Multiple DTCs are detected when 12V battery cable is disconnected while ignition switch is in ACC position.

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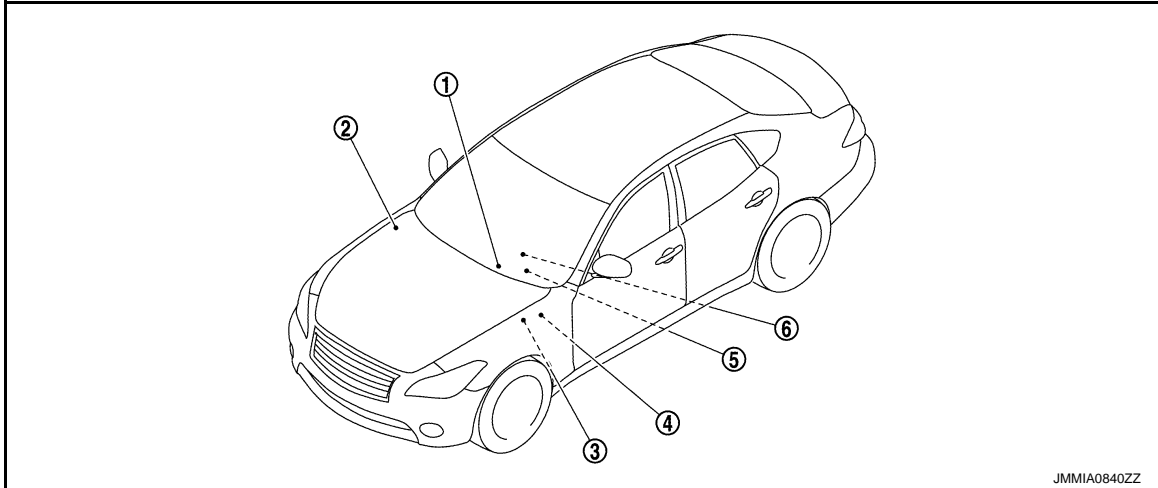
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SYSTEM DESCRIPTION

COMPONENT PARTS

Component Parts Location

INFOID:000000008143488



- | | | |
|--|---|--|
| 1. Push-button ignition switch | 2. IPDM E/R
Refer to PCS-5, "IPDM E/R : Component Parts Location" | 3. Stop lamp switch
Refer to BRC-11, "Component Parts Location" |
| 4. BCM
Refer to BCS-4, "BODY CONTROL SYSTEM : Component Parts Location" | 5. TCM
Refer to TM-13, "A/T CONTROL SYSTEM : Component Parts Location" | 6. A/T shift selector (detention switch)
Refer to TM-19, "A/T SHIFT LOCK SYSTEM : Component Parts Location" |

Component Description

INFOID:000000008143489

BCM	Reference
BCM	PCS-32
Ignition relay	PCS-32
Accessory relay	PCS-33
Blower relay	PCS-33
Push-button ignition switch	PCS-33
TCM	PCS-33
A/T shift selector (detention switch)	PCS-33
Stop lamp switch	SEC-9

BCM

INFOID:000000008143490

BCM controls the various electrical components and simultaneously supplies power according to the power supply position.

BCM checks the power supply position internally.

Ignition Relay

INFOID:000000008143491

BCM turns ON the following relays to supply ignition power supply or ignition switch ON signal to each ECU when the ignition switch is turned ON.

- Ignition relay (fuse block)
- Ignition relay (IPDM E/R)
- Blower relay

BCM compares following status comparing.

COMPONENT PARTS

< SYSTEM DESCRIPTION >

[POWER DISTRIBUTION SYSTEM]

- Ignition relay (fuse block) control signal, and power supply position judged by BCM
- Ignition relay (IPDM E/R) control request, and Ignition relay (IPDM E/R) status

A

Accessory Relay

INFOID:000000008143492

BCM turns ON the accessory relays to supply accessory power supply or ignition switch ACC signal to each ECU when the ignition switch is turned ACC or ON.

B

BCM compares status of accessory relay control signal, and power supply position judged by BCM.

Blower Relay

INFOID:000000008143493

BCM turns ON the following relays to supply ignition power supply or ignition switch ON signal to each ECU when the ignition switch is turned ON.

C

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- Ignition relay (fuse block)
- Ignition relay (IPDM E/R)
- Blower relay

BCM compares status of blower relay control signal, and power supply position judged by BCM.

E

Push-Button Ignition Switch

INFOID:000000008143494

BCM transmits the change in the power supply position with the push-button ignition switch to IPDM E/R via CAN communication line. IPDM E/R transmits the power supply position status via CAN communication line to BCM.

F

TCM

INFOID:000000008143495

TCM transmits the P/N position signal to BCM.

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H

A/T Shift Selector (Detention Switch)

INFOID:000000008143496

Detention switch detects that A/T shift selector is in the P position, and then transmits the signal to BCM and IPDM E/R.

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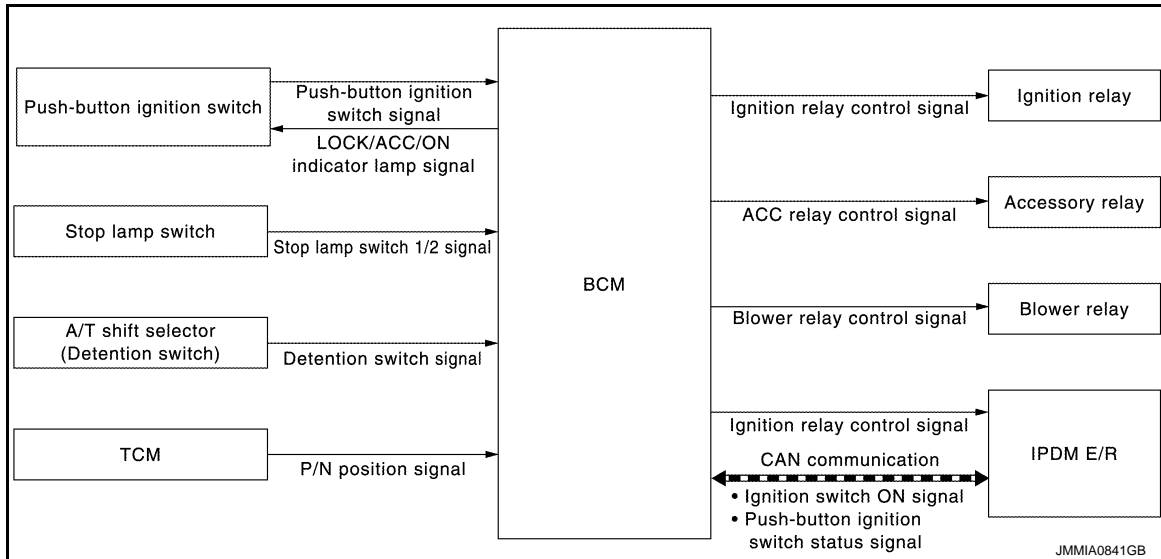
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SYSTEM

POWER DISTRIBUTION SYSTEM

POWER DISTRIBUTION SYSTEM : System Diagram

INFOID:000000008143497



POWER DISTRIBUTION SYSTEM : System Description

INFOID:000000008143498

SYSTEM DESCRIPTION

- PDS (POWER DISTRIBUTION SYSTEM) is the system that BCM controls with the operation of the 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.
- The 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.
- The push-button ignition switch operation is input to BCM as a signal. BCM changes the power supply 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)
 - Accessory relay
 - Blower relay
- The power supply position changes due to the conditions of push-button ignition switch operation, brake pedal, clutch pedal, selector lever and vehicle speed.
- Refer to the following for details at the power supply position.
 - LOCK: Ignition switch OFF with steering is locked.
 - OFF: Ignition switch OFF with steering is unlocked.
 - ACC: Ignition switch ACC
 - IGN: Ignition switch ON (Not vehicle condition REDEY)
 - RUN: Ignition switch ON (Vehicle condition READY or running)
 - CRANKING: Shifting to vehicle condition READY (Transmitting the READY signal from BCM to HPCM)

NOTE:

- The power supply position can be confirmed with the lighting of the indicators near the push-button ignition switch.
- For models without steering lock unit, power supply position changes from “OFF” to “LOCK” when steering lock conditions are satisfied.

BATTERY SAVER SYSTEM

When all the following conditions are met for 60 minutes, the battery saver system will cut off the power supply to prevent 12V battery discharge.

- The ignition switch is in the ACC position
- All doors are closed
- Selector lever is in the P position

SYSTEM

[POWER DISTRIBUTION SYSTEM]

< SYSTEM DESCRIPTION >

Reset Condition of Battery Saver System

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

- Opening any door
- Operating with door request switch on door lock
- Operating with Intelligent Key on door lock
- Press push-button ignition switch and ignition switch will change to ACC position from OFF position.

READY SET CONDITION TABLE BY PUSH-BUTTON IGNITION SWITCH OPERATION

The vehicle can be set to READY by the following operations.

NOTE:

- When an Intelligent Key is within the detection area of inside key antenna and when Intelligent Key backside is contacted to push-button ignition switch, it is equivalent to the operations below.
- When setting the vehicle to READY, the BCM monitors the following conditions.
 - Brake pedal operating condition
 - Selector lever position
 - Vehicle speed

Vehicle speed: less than 4 km/h (2.5 MPH)

	Vehicle condition		Push-button ignition switch operation frequency
	Selector lever	Brake pedal operation condition	
OFF → ACC	—	Not depressed	1
OFF → ACC → ON	—	Not depressed	2
OFF → ACC → ON → OFF	—	Not depressed	3
OFF → READY ACC → READY ON → READY	P or N position	Depressed	1
READY → OFF	—	—	1

Vehicle speed: 4 km/h (2.5 MPH) or more

	Vehicle condition		Push-button ignition switch operation frequency
	Selector lever	Brake pedal operation condition	
READY → ACC	—	—	Emergency stop operation
ACC → READY (Return operation after emergency stop operation while driving)	N position	—	1

Emergency stop operation

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

Fail-safe

INFOID:000000008490156

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 setting the vehicle to READY	Erase DTC
B2193: CHAIN OF BCM-ECM*	Inhibit setting the vehicle to READY	Erase DTC
B2195: ANTI-SCANNING	Inhibit setting the vehicle to READY	Ignition switch ON → OFF
B2196: DONGLE NG	Inhibit setting the vehicle to READY	Erase DTC

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< SYSTEM DESCRIPTION >

[POWER DISTRIBUTION SYSTEM]

Display contents of CONSULT	Fail-safe	Cancellation
B2198: NATS ANTENNA AMP	Inhibit setting the vehicle to READY	Erase DTC
B26F1: IGN RELAY OFF	Inhibit setting the vehicle to READY	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 setting the vehicle to READY	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
B26F7: BCM	Inhibit setting the vehicle to READY by Intelligent Key system	When room antenna and luggage room antenna functions normally

*: "ECM" is indicated on CONSULT display, however this means HPCM on this vehicle.

FAIL-SAFE CONTROL BY RAIN SENSOR MALFUNCTION

BCM detects the light and 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)

[POWER DISTRIBUTION SYSTEM]

< SYSTEM DESCRIPTION >

DIAGNOSIS SYSTEM (BCM)

COMMON ITEM

COMMON ITEM : CONSULT Function (BCM - COMMON ITEM)

INFOID:000000008266705

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	<ul style="list-style-type: none"> 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.

x: Applicable item

System	Sub system selection item	Diagnosis mode		
		Work Support	Data Monitor	Active Test
Door lock	DOOR LOCK	x	x	x
Rear window defogger	REAR DEFOGGER		x	x
Warning chime	BUZZER		x	x
Interior room lamp timer	INT LAMP	x	x	x
Exterior lamp	HEAD LAMP	x	x	x
Wiper and washer	WIPER	x	x	x
Turn signal and hazard warning lamps	FLASHER	x	x	x
—	AIR CONDITONER*		x	x
<ul style="list-style-type: none"> Intelligent Key system Engine start system 	INTELLIGENT KEY	x	x	x
Combination switch	COMB SW		x	
Body control system	BCM	x		
IVIS - NATS	IMMU	x	x	x
Interior room lamp battery saver	BATTERY SAVER	x	x	x
Trunk lid open	TRUNK		x	
Vehicle security system	THEFT ALM	x	x	x
RAP system	RETAINED PWR		x	
Signal buffer system	SIGNAL BUFFER		x	x
—	AIR PRESSURE MONITOR*	x	x	x

*: 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.

DIAGNOSIS SYSTEM (BCM)

[POWER DISTRIBUTION SYSTEM]

< SYSTEM DESCRIPTION >

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"
	OFF		Power supply position is "OFF"
	ACC		Power supply position is "ACC"
	ON		Power supply position is "IGN"
	ENGINE RUN		Power supply position is "RUN"
CRANKING	Power supply position is "CRANKING"		
IGN Counter	0 - 39	The number of times that ignition switch is turned ON after DTC is detected <ul style="list-style-type: none"> • 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:

*: Refer to [PCS-34, "POWER DISTRIBUTION SYSTEM : System Description"](#) for details of the power supply position.

INTELLIGENT KEY

INTELLIGENT KEY : CONSULT Function (BCM - INTELLIGENT KEY)

INFOID:000000008266706

WORK SUPPORT

Monitor item	Description
INSIDE ANT DIAGNOSIS	This function allows inside key antenna self-diagnosis
LOCK/UNLOCK BY I-KEY	Door lock/unlock function by door request switch mode can be changed to operation in this mode <ul style="list-style-type: none"> • On: Operate • Off: Non-operation
ENGINE START BY I-KEY	Engine start function mode can be changed to operation with this mode <ul style="list-style-type: none"> • On: Operate • Off: Non-operation

DIAGNOSIS SYSTEM (BCM)

< SYSTEM DESCRIPTION >

[POWER DISTRIBUTION SYSTEM]

Monitor item	Description
TRUNK/GLASS HATCH OPEN	Buzzer reminder function mode by trunk lid opener request switch and Intelligent Key can be changed to operation with this mode <ul style="list-style-type: none"> • On: Operate • Off: Non-operation
PANIC ALARM SET	Panic alarm button pressing time on Intelligent Key remote control button can be selected from the following with this mode <ul style="list-style-type: none"> • MODE 1: 0.5 sec • MODE 2: Non-operation • MODE 3: 1.5 sec
TRUNK OPEN DELAY	Trunk button pressing on Intelligent Key can be selected as per the following in this mode. <ul style="list-style-type: none"> • MODE 1: Press and hold • MODE 2: Press twice • MODE 3: Press and hold, or press twice
LO- BATT OF KEY FOB WARN	Intelligent Key low battery warning mode can be changed to operation with this mode <ul style="list-style-type: none"> • On: Operate • Off: Non-operation
ANTI KEY LOCK IN FUNCTI	Key reminder function mode can be changed to operation with this mode <ul style="list-style-type: none"> • On: Operate • Off: Non-operation
HAZARD ANSWER BACK	Hazard reminder function mode by door request switch and Intelligent Key button can be selected from the following with this mode <ul style="list-style-type: none"> • Lock Only: Door lock operation only • Unlock Only: Door unlock operation only • Lock/Unlock: Lock and unlock operation • Off: Non-operation
ANS BACK I-KEY LOCK	Buzzer reminder function (lock operation) mode by door request switch can be selected from the following with this mode <ul style="list-style-type: none"> • Horn Chirp: Sound horn • Buzzer: Sound Intelligent Key warning buzzer • Off: Non-operation
ANS BACK I-KEY UNLOCK	Buzzer reminder function (unlock operation) mode by door request switch can be changed to operation with this mode <ul style="list-style-type: none"> • On: Operate • Off: Non-operation
SHORT CRANKING OUTPUT	Starter motor can operate during the times below <ul style="list-style-type: none"> • 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
AUTO LOCK SET	Auto door lock operation time can be changed in this mode <ul style="list-style-type: none"> • 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
HORN WITH KEYLESS LOCK	Horn reminder function mode by Intelligent Key button can be selected from the following with this mode <ul style="list-style-type: none"> • On: Operate • Off: Non-operation
PW DOWN SET	Unlock button pressing time on Intelligent Key button can be selected from the following with this mode <ul style="list-style-type: none"> • MODE 1: 3 sec • MODE 2: Non-operation • MODE 3: 5 sec

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DIAGNOSIS SYSTEM (BCM)

< SYSTEM DESCRIPTION >

[POWER DISTRIBUTION SYSTEM]

Monitor item	Description
WELCOME LIGHT SELECT	Welcome light function mode can be selected from the following with this mode <ul style="list-style-type: none"> • Puddle/Outside Handle • Room lamp • Head & Tail Lamps (this item is displayed, but cannot be used) • Heart Beat
WELCOME LIGHT OP SET	Welcome light function mode can be changed to operation with this mode <ul style="list-style-type: none"> • On: Operate • Off: Non-operation
INTELLIGENT KEY SETUP	Intelligent Key interlock function mode can be changed to operation with this mode <ul style="list-style-type: none"> • On: Operate • Off: Non-operation

SELF-DIAG RESULT

Refer to [BCS-55. "DTC Index"](#).

DATA MONITOR

Monitor Item	Condition
REQ SW -DR	Indicates [On/Off] condition of door request switch (driver side)
REQ SW -AS	Indicates [On/Off] condition of 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
CLUTCH 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
S/L -LOCK	NOTE: This item is displayed, but cannot be monitored
S/L -UNLOCK	NOTE: This item is displayed, but cannot be monitored
S/L RELAY -F/B	NOTE: This item is displayed, but cannot be monitored
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	NOTE: This item is displayed, but cannot be monitored
S/L LOCK-IPDM	NOTE: This item is displayed, but cannot be monitored
S/L UNLK-IPDM	NOTE: This item is displayed, but cannot be monitored
S/L RELAY-REQ	NOTE: This item is displayed, but cannot be monitored
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]

DIAGNOSIS SYSTEM (BCM)

< SYSTEM DESCRIPTION >

[POWER DISTRIBUTION SYSTEM]

Monitor Item	Condition
DOOR STAT-DR	Indicates [LOCK/READY/UNLK] condition of driver side door status
DOOR STAT-AS	Indicates [LOCK/READY/UNLK] condition of passenger side door status
ID OK FLAG	Indicates [Set/Reset] condition of 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
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 button of Intelligent Key
RKE-MODE CHG	Indicates [On/Off] condition of MODE CHANGE signal from Intelligent Key
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

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

ACTIVE TEST

Test item	Description
BATTERY SAVER	This test is able to check interior room lamp operation <ul style="list-style-type: none"> • On: Operate • Off: Non-operation
OUTSIDE BUZZER	This test is able to check Intelligent Key warning buzzer operation <ul style="list-style-type: none"> • On: Operate • Off: Non-operation
INSIDE BUZZER	This test is able to check warning chime in combination meter operation <ul style="list-style-type: none"> • 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 warning lamp operation <ul style="list-style-type: none"> • KEY ON: "KEY" Warning lamp illuminates when CONSULT screen is touched • KEY IND: "KEY" Warning lamp blinks when CONSULT screen is touched • Off: Non-operation
INT LAMP	This test is able to check interior room lamp operation <ul style="list-style-type: none"> • On: Operate • Off: Non-operation
LCD	This test is able to check meter display information <ul style="list-style-type: none"> • Engine start information displays when "BP N" on CONSULT screen is touched • Engine start information displays when "BP I" on CONSULT screen is touched • Key ID warning displays when "ID NG" on CONSULT screen is touched • Steering lock information displays when "ROTAT" on CONSULT screen is touched NOTE: For models without steering lock unit, "ROTAT" is displayed but can not be monitored. <ul style="list-style-type: none"> • P position warning displays when "SFT P" on CONSULT screen is touched • INSR: This item is displayed, but cannot be monitored • BATT: This item is displayed, but cannot be monitored • Take away through window warning displays when "NO KY" on CONSULT screen is touched • Take away warning display when "OUTKEY" on CONSULT screen is touched • OFF position warning display when "LK WN" on CONSULT screen is touched
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

DIAGNOSIS SYSTEM (BCM)

[POWER DISTRIBUTION SYSTEM]

< SYSTEM DESCRIPTION >

Test item	Description
P RANGE	This test is able to check A/T shift selector power supply <ul style="list-style-type: none">• On: Operate• 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
LOCK INDICATOR	This test is able to check LOCK indicator (push-button ignition switch) operation <ul style="list-style-type: none">• On: Operate• Off: Non-operation
ACC INDICATOR	This test is able to check ACC indicator (push-button ignition switch) operation <ul style="list-style-type: none">• On: Operate• Off: Non-operation
IGNITION ON IND	This test is able to check ON indicator (push-button ignition switch) operation <ul style="list-style-type: none">• On: Operate• Off: Non-operation
HORN	This test is able to check horn operation <ul style="list-style-type: none">• On: Operate• Off: Non-operation
TRUNK/BACK DOOR	This test is able to check trunk lid open operation <ul style="list-style-type: none">• Open: Operate
INTELLIGENT KEY LINK	This test is able to check Intelligent Key interlock function <ul style="list-style-type: none">• ID No1: BCM transmits Intelligent Key ID No1 to each control unit• ID No2: BCM transmits Intelligent Key ID No2 to each control unit
INTELLIGENT KEY LINK (CAN)	This test is able to check Intelligent Key interlock function <ul style="list-style-type: none">• Off: Non-operation• ID No1: BCM transmits Intelligent Key ID No1 to each control unit via CAN communication line• ID No2: BCM transmits Intelligent Key ID No2 to each control unit via CAN communication line• ID No3: BCM transmits Intelligent Key ID No3 to each control unit via CAN communication line• ID No4: BCM transmits Intelligent Key ID No4 to each control unit via CAN communication line• ID No5: This item is displayed, but cannot be used

ECU DIAGNOSIS INFORMATION

BCM

List of ECU Reference

INFOID:000000008143502

ECU	Reference
BCM	BCS-34. "Reference Value"
	BCS-54. "Fail-safe"
	BCS-54. "DTC Inspection Priority Chart"
	BCS-55. "DTC Index"

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POWER DISTRIBUTION SYSTEM

< WIRING DIAGRAM >


[POWER DISTRIBUTION SYSTEM]

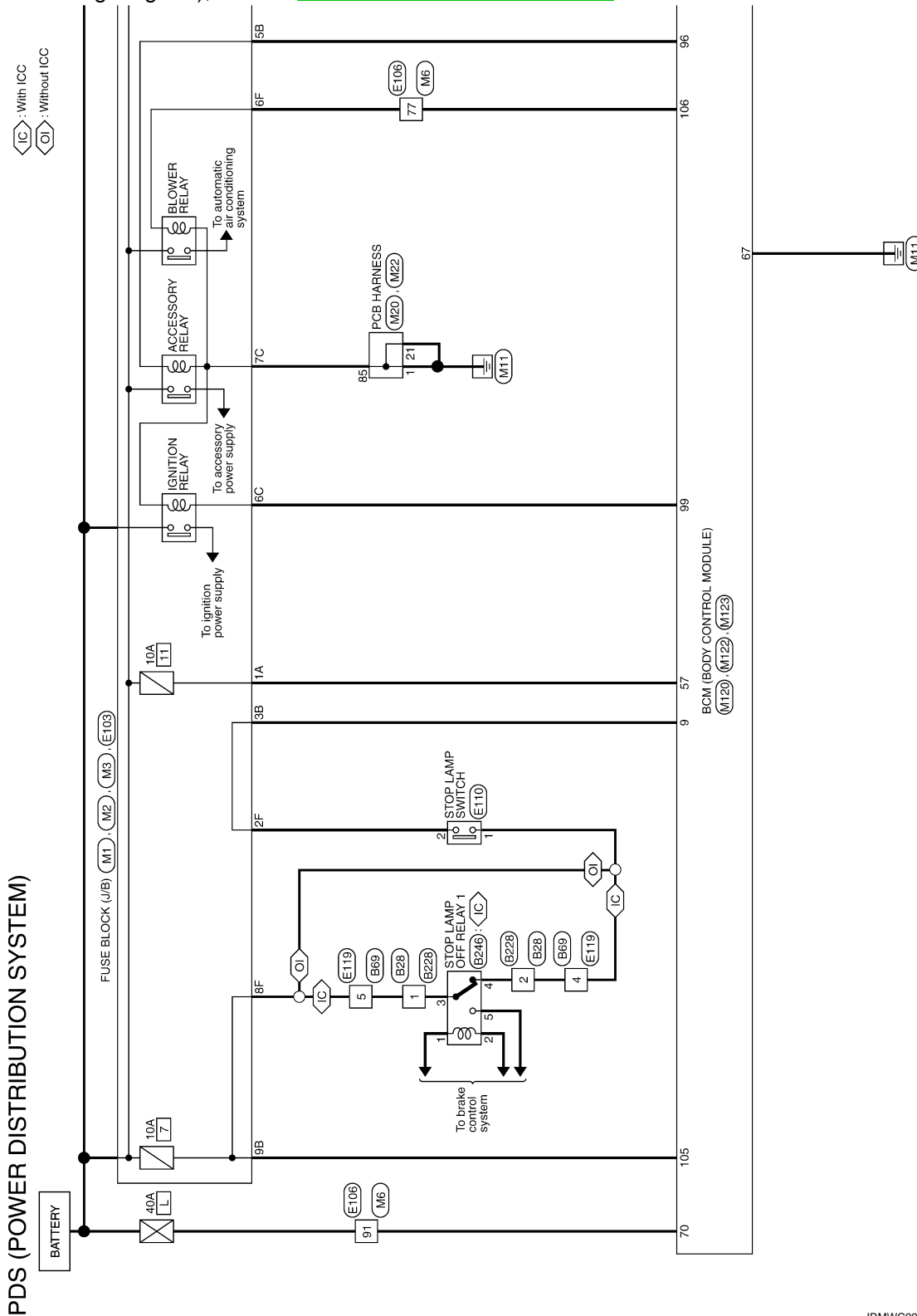
WIRING DIAGRAM

POWER DISTRIBUTION SYSTEM

Wiring Diagram

INFOID:000000008143503

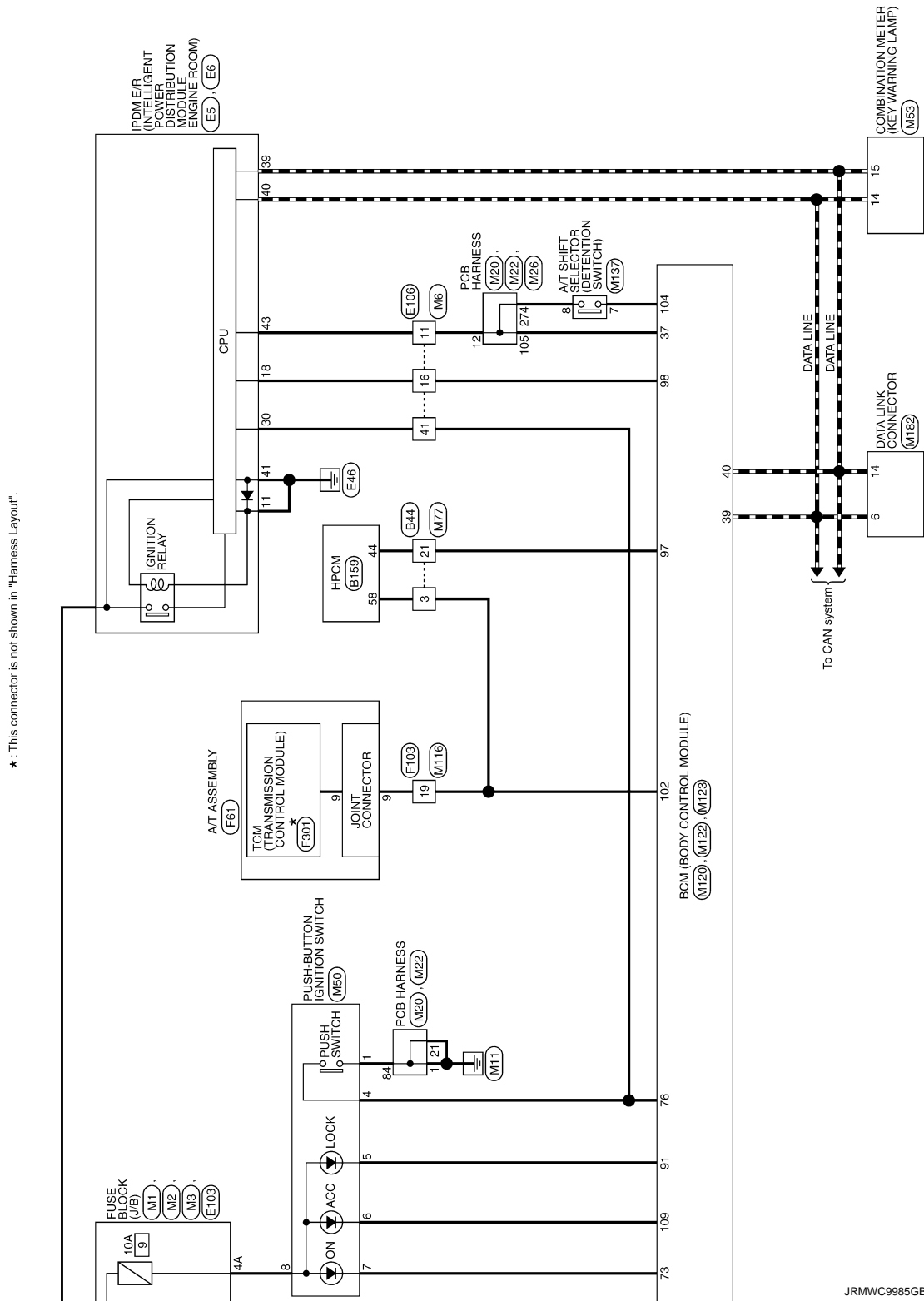
For connector terminal arrangements, harness layouts, and alphabets in a  (option abbreviation; if not described in wiring diagram), refer to [GI-13. "Connector Information"](#).



POWER DISTRIBUTION SYSTEM

< WIRING DIAGRAM >

[POWER DISTRIBUTION SYSTEM]



*: This connector is not shown in "Harness Layout".

JRMWC9985GB

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PCS

DIAGNOSIS AND REPAIR WORK FLOW

< BASIC INSPECTION >

[POWER DISTRIBUTION SYSTEM]

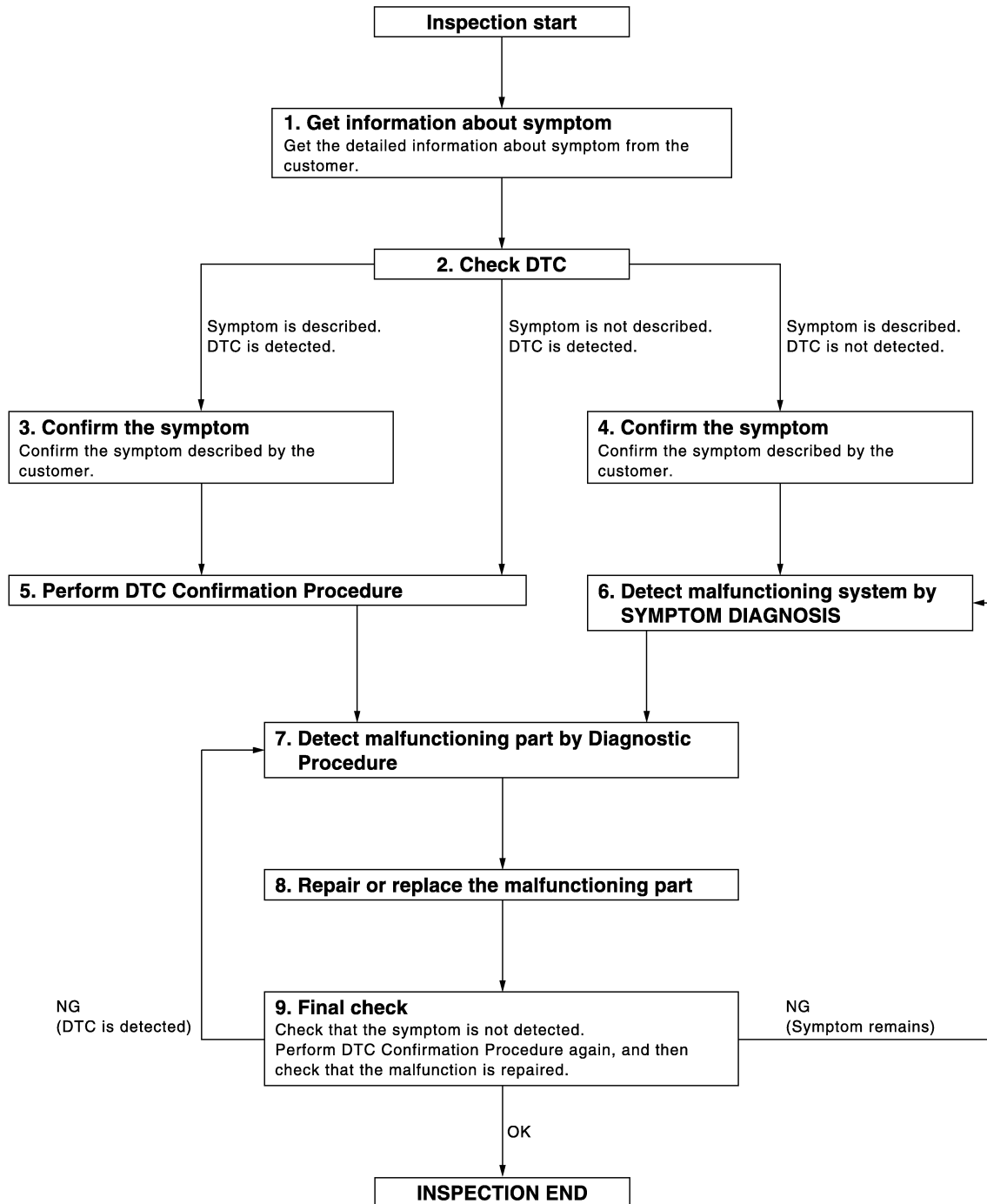
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORK FLOW

Work Flow

INFOID:000000008143504

OVERALL SEQUENCE



DETAILED FLOW

JMKIA3449GB

DIAGNOSIS AND REPAIR WORK FLOW

< BASIC INSPECTION >

[POWER DISTRIBUTION SYSTEM]

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-54, "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-49, "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.

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PCS

DIAGNOSIS AND REPAIR WORK FLOW

[POWER DISTRIBUTION SYSTEM]

< BASIC INSPECTION >

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

B2614 ACC RELAY CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[POWER DISTRIBUTION SYSTEM]

DTC/CIRCUIT DIAGNOSIS

B2614 ACC RELAY CIRCUIT

DTC Logic

INFOID:000000008143505

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B2614	BCM	An immediate operation of accessory relay is requested by BCM, but there is no response for more than 2 second.	<ul style="list-style-type: none"> • Harness or connectors (Accessory relay circuit is open or shorted) • BCM • Accessory relay

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Turn the power supply position to ACC under the following conditions, and wait for 2 second or more.
 - Selector lever is in the P position
 - Do not depress brake pedal
2. Check "Self-diagnosis result" of BCM with CONSULT.

Is DTC detected?

- YES >> Go to [PCS-49, "Diagnosis Procedure"](#).
 NO >> INSPECTION END

Diagnosis Procedure

INFOID:000000008143506

1.CHECK ACCESSORY RELAY POWER SUPPLY-1

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

(+)	(-)	Condition	Voltage (V) (Approx.)
Accessory relay Terminal			
1	Ground	Ignition switch	0
		OFF ACC or ON	12

Is the inspection result normal?

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

2.CHECK ACCESSORY RELAY POWER SUPPLY CIRCUIT

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

Accessory relay Terminal	BCM		Continuity
	Connector	Terminal	
1	M123	96	Existed

4. Check continuity between accessory relay harness connector and ground.

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B2614 ACC RELAY CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[POWER DISTRIBUTION SYSTEM]

Accessory relay	Ground	Continuity
Terminal		
1		Not existed

Is the inspection result normal?

YES >> Replace BCM. Refer to [BCS-80, "Removal and Installation"](#).

NO >> Repair or replace harness.

3.CHECK ACCESSORY RELAY GROUND CIRCUIT

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

Accessory relay	Ground	Continuity
Terminal		
2		Existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair accessory relay ground circuit.

4.CHECK ACCESSORY RELAY POWER SUPPLY CIRCUIT-2

1. Turn ignition switch ACC.
2. Check voltage between accessory relay harness connector and ground.

(+)	(-)	Voltage (V) (Approx.)
Accessory relay		
Terminal		
5	Ground	Battery voltage

Is the inspection result normal?

YES >> GO TO 5.

NO >> Check continuity open or short between accessory relay and 12V battery.

5.CHECK ACCESSORY RELAY

Refer to [PCS-50, "Component Inspection"](#).

Is the inspection result normal?

YES >> GO TO 6.

NO >> Replace accessory relay.

6.CHECK INTERMITTENT INCIDENT

Refer to [GI-49, "Intermittent Incident"](#).

>> INSPECTION END

Component Inspection

INFOID:000000008143507

1.CHECK ACCESSORY RELAY

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

B2614 ACC RELAY CIRCUIT

[POWER DISTRIBUTION SYSTEM]

< DTC/CIRCUIT DIAGNOSIS >

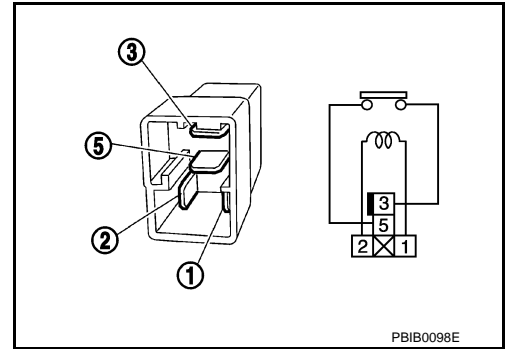
3. Check the continuity between accessory relay terminals.

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



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B2615 BLOWER RELAY CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[POWER DISTRIBUTION SYSTEM]

B2615 BLOWER RELAY CIRCUIT

DTC Logic

INFOID:000000008143508

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B2615	BCM	BCM detects a difference of signal for 1 second or more between the following items. <ul style="list-style-type: none"> Blower relay ON/OFF request Blower relay feedback 	<ul style="list-style-type: none"> Harness or connectors (Blower relay circuit is open or shorted) BCM Blower relay

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

- Turn ignition switch ON under the following conditions, and wait for 1 second or more.
 - Selector lever is in the P position
 - Do not depress brake pedal
- Check "Self-diagnosis result" of BCM with CONSULT.

Is DTC detected?

- YES >> Go to [PCS-52. "Diagnosis Procedure"](#).
NO >> INSPECTION END

Diagnosis Procedure

INFOID:000000008143509

1. CHECK BLOWER RELAY POWER SUPPLY

- Turn ignition switch OFF.
- Disconnect blower relay.
- Check voltage between blower relay harness connector and ground.

(+)	(-)	Condition	Voltage (V) (Approx.)
Blower relay Terminal			
1	Ground	Ignition switch	OFF or ACC
			ON
			0
			Battery voltage

Is the inspection result normal?

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

2. CHECK BLOWER RELAY POWER SUPPLY CIRCUIT

- Turn ignition switch OFF.
- Disconnect BCM connector.
- Check continuity between blower relay harness connector and BCM harness connector.

Blower relay Terminal	BCM		Continuity
	Connector	Terminal	
1	M123	106	Existed

- Check continuity between blower relay harness connector and ground.

Blower relay Terminal	Ground	Continuity
1		
		Not existed

Is the inspection result normal?

B2615 BLOWER RELAY CIRCUIT

[POWER DISTRIBUTION SYSTEM]

< DTC/CIRCUIT DIAGNOSIS >

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

3.CHECK BLOWER RELAY GROUND CIRCUIT

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

Blower relay	Ground	Continuity
Terminal		Existed
2		

Is the inspection result normal?

- YES >> GO TO 4.
 NO >> Repair blower relay ground circuit.

4.CHECK BLOWER RELAY POWER SUPPLY CIRCUIT-2

1. Turn ignition switch ON.
2. Check voltage between blower relay harness connector and ground.

(+)	(-)	Voltage (V) (Approx.)
Blower relay		
Terminal		Ground
5		

Is the inspection result normal?

- YES >> GO TO 5.
 NO >> Check continuity open or short between blower relay and 12V battery.

5.CHECK BLOWER RELAY

Refer to [PCS-53, "Component Inspection"](#).

Is the inspection result normal?

- YES >> GO TO 6.
 NO >> Replace blower relay.

6.CHECK INTERMITTENT INCIDENT

Refer to [GI-49, "Intermittent Incident"](#).

>> INSPECTION END

Component Inspection

INFOID:000000008143510

PCS

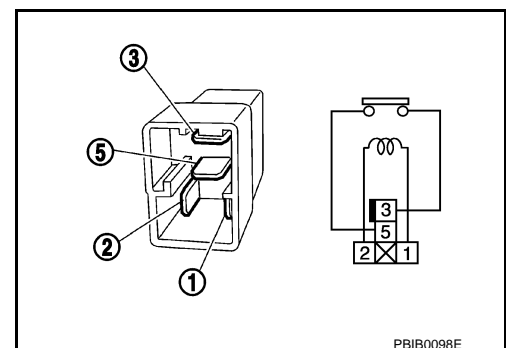
1.CHECK BLOWER RELAY

1. Turn ignition 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



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B2616 IGNITION RELAY CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[POWER DISTRIBUTION SYSTEM]

B2616 IGNITION RELAY CIRCUIT

DTC Logic

INFOID:000000008143511

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B2616	BCM	An immediate operation of ignition relay is requested by BCM, but there is no response for more than 1 second	<ul style="list-style-type: none"> • Harness or connectors (Ignition relay circuit is open or shorted) • BCM • Ignition relay

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Turn ignition switch ON under the following conditions, and wait for 1 second or more.
 - Selector lever is in the P position
 - Do not depress brake pedal
2. Check "Self-diagnosis result" with CONSULT.

Is DTC detected?

- YES >> Go to [PCS-54. "Diagnosis Procedure"](#).
 NO >> INSPECTION END

Diagnosis Procedure

INFOID:000000008143512

1. CHECK IGNITION RELAY POWER SUPPLY

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

(+)	(-)	Condition	Voltage (V) (Approx.)
Ignition relay Terminal			
2	Ground	Ignition switch	OFF or ACC
			ON
			0
			Battery voltage

Is the inspection result normal?

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

2. CHECK IGNITION RELAY POWER SUPPLY CIRCUIT

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

Ignition relay Terminal	BCM		Continuity
	Connector	Terminal	
2	M123	99	Existed

4. Check continuity between ignition relay harness connector and ground.

Ignition relay Terminal	Ground	Continuity
2		Not existed

Is the inspection result normal?

B2616 IGNITION RELAY CIRCUIT

[POWER DISTRIBUTION SYSTEM]

< DTC/CIRCUIT DIAGNOSIS >

- YES >> Replace BCM. Refer to [BCS-80. "Removal and Installation"](#).
 NO >> Repair or replace harness.

3.CHECK IGNITION RELAY GROUND CIRCUIT

- Turn ignition switch OFF.
- Check continuity between ignition relay harness connector and ground.

Ignition relay	Ground	Continuity
Terminal		Existed
1		

Is the inspection result normal?

- YES >> GO TO 4.
 NO >> Repair ignition relay ground circuit.

4.CHECK IGNITION RELAY POWER SUPPLY CIRCUIT-2

- Turn ignition switch ON.
- Check voltage between ignition relay harness connector and ground.

(+)	(-)	Voltage (V) (Approx.)
Ignition relay		Battery voltage
Terminal		
5	Ground	

Is the inspection result normal?

- YES >> GO TO 5.
 NO >> Check continuity open or short between ignition relay and 12V battery.

5.CHECK IGNITION RELAY

Refer to [PCS-55. "Component Inspection"](#).

Is the inspection result normal?

- YES >> GO TO 6.
 NO >> Replace ignition relay.

6.CHECK INTERMITTENT INCIDENT

Refer to [GI-49. "Intermittent Incident"](#).

>> INSPECTION END

Component Inspection

INFOID:000000008143513

PCS

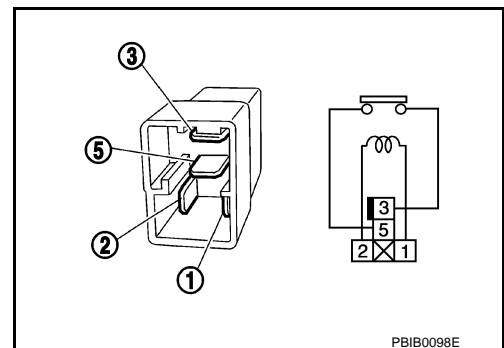
1.CHECK IGNITION RELAY

- Turn ignition switch OFF.
- Remove ignition relay.
- Check the continuity between ignition 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 Ignition relay



PBIB0098E

< DTC/CIRCUIT DIAGNOSIS >

B2618 BCM**DTC Logic**

INFOID:000000008143514

DTC DETECTION LOGIC**NOTE:**

- If DTC B2618 is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to [BCS-67, "DTC Logic"](#).
- If DTC B2618 is displayed with DTC U1010, first perform the trouble diagnosis for DTC U1010. Refer to [BCS-68, "DTC Logic"](#).

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B2618	BCM	An immediate operation of ignition relay (IPDM E/R) is requested by BCM, but there is no response for more than 1 second	BCM

DTC CONFIRMATION PROCEDURE**1. PERFORM DTC CONFIRMATION PROCEDURE**

1. Turn ignition switch ON under the following conditions, and wait for 1 second or more.
 - Selector lever is in the P or N position
 - Do not depress brake pedal
2. Check "Self-diagnosis result" of BCM with CONSULT.

Is DTC detected?

- YES >> Go to [PCS-56, "Diagnosis Procedure"](#).
 NO >> INSPECTION END

Diagnosis Procedure

INFOID:000000008143515

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-56, "DTC Logic"](#).

Is the 1st trip DTC B2618 displayed again?

- YES >> Replace BCM. Refer to [BCS-80, "Removal and Installation"](#)
 NO >> INSPECTION END

B261A PUSH-BUTTON IGNITION SWITCH

< DTC/CIRCUIT DIAGNOSIS >

[POWER DISTRIBUTION SYSTEM]

B261A PUSH-BUTTON IGNITION SWITCH

DTC Logic

INFOID:000000008143516

DTC DETECTION LOGIC

NOTE:

- If DTC B261A is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to [BCS-67, "DTC Logic"](#).
- If DTC B261A is displayed with DTC U1010, first perform the trouble diagnosis for DTC U1010. Refer to [BCS-68, "DTC Logic"](#).

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B261A	PUSH-BTN IGN SW	BCM detects a difference of signal for 1 second or more between the following items. <ul style="list-style-type: none"> • Push-button ignition switch signal • Push-button ignition switch status signal (CAN) 	<ul style="list-style-type: none"> • Harness or connectors (Push-button ignition switch circuit is open or shorted.) • BCM • IPDM E/R

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

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

Is DTC detected?

- YES >> Go to [PCS-57, "Diagnosis Procedure"](#).
 NO >> INSPECTION END

Diagnosis Procedure

INFOID:000000008143517

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

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 (V) (Approx.)
Push-button ignition switch			
Connector	Terminal	Ground	12
M50	4		

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	
M123	100	M50	4	Existed

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

Push-button ignition switch		Ground	Continuity
Connector	Terminal		
M50	4		Not existed

B261A PUSH-BUTTON IGNITION SWITCH

[POWER DISTRIBUTION SYSTEM]

< DTC/CIRCUIT DIAGNOSIS >

Is the inspection result normal?

YES >> Replace BCM. Refer to [BCS-80. "Removal and Installation"](#).

NO >> Repair or replace harness.

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

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

(+)		(-)	Voltage (V) (Approx.)
IPDM E/R			
Connector	Terminal		
E5	30	Ground	12

Is the inspection result normal?

YES >> Replace IPDM E/R.

NO >> GO TO 4.

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

1. Disconnect IPDM E/R connector.
2. 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	
E5	30	M50	4	Existed

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

Push-button ignition switch		Ground	Continuity
Connector	Terminal		
M50	4		Not existed

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace harness.

5. CHECK INTERMITTENT INCIDENT

Refer to [GI-49. "Intermittent Incident"](#).

>> INSPECTION END

B26F1 IGNITION RELAY

< DTC/CIRCUIT DIAGNOSIS >

[POWER DISTRIBUTION SYSTEM]

B26F1 IGNITION RELAY

DTC Logic

INFOID:000000008143518

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B26F1	IGN 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.	<ul style="list-style-type: none"> • Harness or connectors (ignition relay circuit is open) • BCM • IPDM E/R

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Turn ignition switch ON under the following conditions, and wait for 2 seconds or more.
 - Selector lever is in the P or N position
 - Do not depress brake pedal
2. Check "Self-diagnosis result" with CONSULT.

Is DTC detected?

- YES >> Go to [PCS-59. "Diagnosis Procedure"](#).
 NO >> INSPECTION END

Diagnosis Procedure

INFOID:000000008143519

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-21. "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 (V) (Approx.)
BCM					
Connector	Terminal	Ground	Ignition switch	ON	0
M123	98				

Is the inspection result normal?

- YES >> GO TO 3.
 NO >> Replace BCM. Refer to [BCS-80. "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	
M123	98	E5	18	Existed

Is the inspection result normal?

- YES >> Replace IPDM E/R.

B26F1 IGNITION RELAY

< DTC/CIRCUIT DIAGNOSIS >

[POWER DISTRIBUTION SYSTEM]

NO >> Repair or replace harness.

B26F2 IGNITION RELAY

< DTC/CIRCUIT DIAGNOSIS >

[POWER DISTRIBUTION SYSTEM]

B26F2 IGNITION RELAY

DTC Logic

INFOID:000000008143520

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B26F2	IGN 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.	<ul style="list-style-type: none"> • Harness or connectors (ignition relay circuit is short) • BCM • IPDM E/R

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Turn ignition switch ON under the following conditions, and wait for 2 seconds or more.
 - Selector lever is in the P or N position
 - Do not depress brake pedal
2. Check "Self-diagnosis result" with CONSULT.

Is DTC detected?

- YES >> Go to [PCS-61, "Diagnosis Procedure"](#).
 NO >> INSPECTION END

Diagnosis Procedure

INFOID:000000008143521

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-21, "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 (V) (Approx.)
IPDM E/R					
Connector	Terminal	Ground	Ignition switch	OFF or ACC	12
E5	18				

PCS

Is the inspection result normal?

- YES >> Replace IPDM E/R.
 NO >> GO TO 3.

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

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

IPDM E/R		Ground	Continuity
Connector	Terminal		
E5	18		Not existed

Is the inspection result normal?

- YES >> GO TO 4.

B26F2 IGNITION RELAY

< DTC/CIRCUIT DIAGNOSIS >

[POWER DISTRIBUTION SYSTEM]

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 (V) (Approx.)
IPDM E/R					
Connector	Terminal				
E5	18	Ground	Ignition switch	OFF or ACC	12

Is the inspection result normal?

- YES >> Replace BCM. Refer to [BCS-80. "Removal and Installation"](#).
NO >> Replace IPDM E/R.

B26F6 BCM

DTC Logic

INFOID:000000008143522

DTC DETECTION LOGIC

NOTE:

- If DTC B26F6 is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to [BCS-67, "DTC Logic"](#).
- If DTC B26F6 is displayed with DTC U1010, first perform the trouble diagnosis for DTC U1010. Refer to [BCS-68, "DTC Logic"](#).

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B26F6	BCM	Ignition relay ON signal is not transmitted from IPDM E/R when BCM turns ignition relay ON.	BCM

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Turn ignition switch ON under the following conditions, and wait for 1 second or more.
 - Selector lever is in the P or N position
 - Do not depress brake pedal
2. Check "Self-diagnosis result" of BCM with CONSULT.

Is DTC detected?

- YES >> Go to [PCS-63, "Diagnosis Procedure"](#).
- NO >> INSPECTION END

Diagnosis Procedure

INFOID:000000008143523

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-63, "DTC Logic"](#).

Is DTC detected?

- YES >> Replace BCM. Refer to [BCS-80, "Removal and Installation"](#)
- NO >> INSPECTION END

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PCS

PUSH-BUTTON IGNITION SWITCH

< DTC/CIRCUIT DIAGNOSIS >

[POWER DISTRIBUTION SYSTEM]

PUSH-BUTTON IGNITION SWITCH

Component Function Check

INFOID:000000008143524

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 >> Go to [PCS-64, "Diagnosis Procedure"](#).

Diagnosis Procedure

INFOID:000000008143525

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 (V) (Approx.)
Connector	Terminal		
M50	4	Ground	Battery voltage

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	
M123	76	M50	4	Existed

3. Check continuity between BCM harness connector and ground.

BCM		Ground	Continuity
Connector	Terminal		
M123	76		Not existed

Is the inspection result normal?

- YES >> Replace BCM. Refer to [BCS-80, "Removal and Installation"](#).
NO >> Repair or replace harness.

3.CHECK PUSH-BUTTON IGNITION SWITCH OUTPUT SIGNAL 2

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

PUSH-BUTTON IGNITION SWITCH

< DTC/CIRCUIT DIAGNOSIS >

[POWER DISTRIBUTION SYSTEM]

(+)		(-)	Voltage (V) (Approx.)
IPDM E/R			
Connector	Terminal		
E5	30	Ground	Battery voltage

Is the inspection result normal?

YES >> GO TO 5.

NO >> GO TO 4.

4.CHECK PUSH-BUTTON IGNITION SWITCH CIRCUIT 2

1. Disconnect BCM connector.
2. 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	
E5	30	M50	4	Existed

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

IPDM E/R		Ground	Continuity
Connector	Terminal		
E5	30		Not existed

Is the inspection result normal?

YES >> Replace IPDM E/R.

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		
M50	1		Existed

Is the inspection result normal?

YES >> GO TO 6.

NO >> Repair or replace harness.

6.CHECK PUSH-BUTTON IGNITION SWITCH

Refer to [PCS-65, "Component Inspection"](#).

Is the inspection result normal?

YES >> GO TO 7.

NO >> Replace push-button ignition switch.

7.CHECK INTERMITTENT INCIDENT

Refer to [GI-49, "Intermittent Incident"](#).

>> INSPECTION END

Component Inspection

INFOID:000000008143526

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.

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PCS

PUSH-BUTTON IGNITION SWITCH

< DTC/CIRCUIT DIAGNOSIS >

[POWER DISTRIBUTION SYSTEM]

Push-button ignition switch		Condition	Continuity
Terminal			
4	1	Pressed	Existed
		Not pressed	Not existed

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace push-button ignition switch.

PUSH-BUTTON IGNITION SWITCH POSITION INDICATOR

< DTC/CIRCUIT DIAGNOSIS >

[POWER DISTRIBUTION SYSTEM]

PUSH-BUTTON IGNITION SWITCH POSITION INDICATOR

Description

INFOID:000000008143527

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

Component Function Check

INFOID:000000008143528

1.CHECK FUNCTION

Check push-button ignition switch ("LOCK INDICATOR", "ACC INDICATOR" and "IGNITION ON IND") in Active Test Mode with CONSULT.

Test item		Description	
LOCK INDICATOR ACC INDICATOR IGNITION ON IND	ON	Position indicator	Illuminates
	OFF		Does not illuminate

Is the inspection result normal?

- YES >> INSPECTION END.
NO >> Refer to [PCS-67, "Diagnosis Procedure"](#).

Diagnosis Procedure

INFOID:000000008143529

1.CHECK PUSH-BUTTON IGNITION SWITCH INPUT SIGNAL

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

(+)		(-)	Voltage (V) (Approx.)
Push-button ignition switch			
Connector	Terminal	Ground	Battery voltage
M50	8		

Is the inspection normal?

- YES >> GO TO 2.
NO-1 >> Check 10 A fuse [No.9, 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

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

(+)		(-)	Voltage (V) (Approx.)
BCM			
Connector	Terminal	Ground	Battery voltage
M123	73		
	91		
	109		

Is the inspection normal?

- YES >> Replace BCM. Refer to [BCS-80, "Removal and Installation"](#).
NO >> GO TO 3.

3.CHECK PUSH-BUTTON IGNITION SWITCH CIRCUIT

- Disconnect push-button ignition switch connector.

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PCS

PUSH-BUTTON IGNITION SWITCH POSITION INDICATOR

< DTC/CIRCUIT DIAGNOSIS >

[POWER DISTRIBUTION SYSTEM]

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

Indicator	BCM		Push-button ignition switch		Continuity
	Connector	Terminal	Connector	Terminal	
LOCK	M123	91	M50	5	Existed
ACC		109		6	
ON		73		7	

3. Check continuity between BCM harness connector and ground.

Indicator	BCM		Ground	Continuity
	Connector	Terminal		
LOCK	M123	91	Ground	Not existed
ACC		109		
ON		73		

Is the inspection normal?

YES >> Replace push-button ignition switch.

NO >> Repair or replace harness.

PUSH-BUTTON IGNITION SWITCH DOES NOT OPERATE

< SYMPTOM DIAGNOSIS >

[POWER DISTRIBUTION SYSTEM]

SYMPTOM DIAGNOSIS

PUSH-BUTTON IGNITION SWITCH DOES NOT OPERATE

Description

INFOID:000000008143530

Check that vehicle is under the condition shown in “Conditions of vehicle” before starting diagnosis, and check each symptom.

NOTE:

The engine start function, door lock function, power distribution system, and NATS-IVIS/NVIS in the Intelligent Key system are closely related to each other regarding control. The vehicle security function can operate only when the door lock and power distribution system are operating normally.

Conditions of Vehicle (Operating Conditions)

- “ENGINE START BY I-KEY” in “WORK SUPPORT” is ON when setting on CONSULT.
- One or more of Intelligent Keys with registered Intelligent Key ID is in the vehicle.

Diagnosis Procedure

INFOID:000000008143531

1.PERFORM WORK SUPPORT

Perform “INSIDE ANT DIAGNOSIS” on Work Support of “INTELLIGENT KEY”.

Refer to [DLK-33, "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-55, "DTC Index"](#).

NO >> GO TO 3.

3.CHECK PUSH-BUTTON IGNITION SWITCH

Check push-button ignition switch.

Refer to [PCS-64, "Component Function Check"](#).

Is the operation normal?

YES >> GO TO 4.

NO >> Repair or replace malfunctioning parts.

4.CONFIRM THE OPERATION

Confirm the operation again.

Is the inspection normal?

YES >> Check intermittent incident. Refer to [GI-49, "Intermittent Incident"](#).

NO >> GO TO 1.

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PUSH-BUTTON IGNITION SWITCH POSITION INDICATOR DOES NOT ILLUMINATE

< SYMPTOM DIAGNOSIS >

[POWER DISTRIBUTION SYSTEM]

PUSH-BUTTON IGNITION SWITCH POSITION INDICATOR DOES NOT ILLUMINATE

Description

INFOID:000000008143532

- Before performing the diagnosis in the following table, check "Work Flow". Refer to [PCS-46, "Work Flow"](#).
- Check that vehicle is under the condition shown in "Conditions of vehicle" before starting diagnosis, and check each symptom.

Conditions of Vehicle (Operating Conditions)

- "ENGINE START BY I-KEY" in "WORK SUPPORT" is ON when setting on CONSULT.
- One or more of Intelligent Keys with registered Intelligent Key ID is in the vehicle.

Diagnosis Procedure

INFOID:000000008143533

1. CHECK PUSH-BUTTON IGNITION SWITCH INDICATOR

Check push-button ignition switch indicator.

Refer to [PCS-67, "Component Function Check"](#).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace the malfunctioning parts.

2. CONFIRM THE OPERATION

Confirm the operation again.

Is the result normal?

YES >> Check intermittent incident. Refer to [GI-49, "Intermittent Incident"](#).

NO >> GO TO 1.

PUSH-BUTTON IGNITION SWITCH

< REMOVAL AND INSTALLATION >

[POWER DISTRIBUTION SYSTEM]

REMOVAL AND INSTALLATION


PUSH-BUTTON IGNITION SWITCH

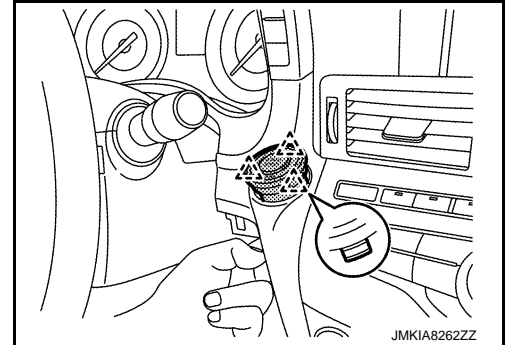
Removal and Installation

INFOID:000000008143534


REMOVAL

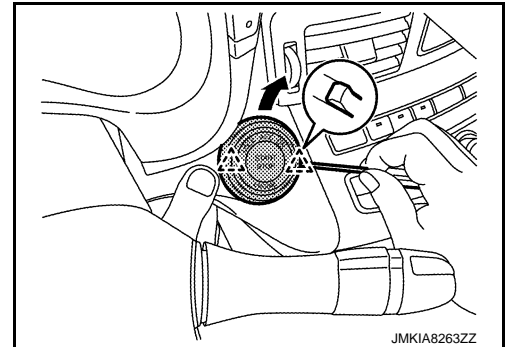
1. Remove front body side welt. Refer to [INT-36. "BODY SIDE WELT : Removal and Installation"](#).
2. Remove instrument side finisher LH. Refer to [IP-13. "Removal and Installation"](#).
3. Remove instrument lower panel LH. Refer to [IP-13. "Removal and Installation"](#).
4. Disconnect NATS antenna amp. connector and push-button ignition switch connector.
5. Disengage the NATS antenna amp. fixing pawls while pushing NATS antenna amp. from its back side, so that NATS antenna amp. and push-button ignition switch are lifted up from instrument panel assembly.

 : Pawl



6. While pushing the push-button ignition switch from its back side, disengage the push-button ignition switch fixing pawls using a minus driver etc., and then remove push-button ignition switch.

 : Pawl



INSTALLATION

Install in the reverse order of removal.

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PCS