

SECTION PCS

POWER CONTROL SYSTEM

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RELAY CONTROL SYSTEM

< FUNCTION DIAGNOSIS >

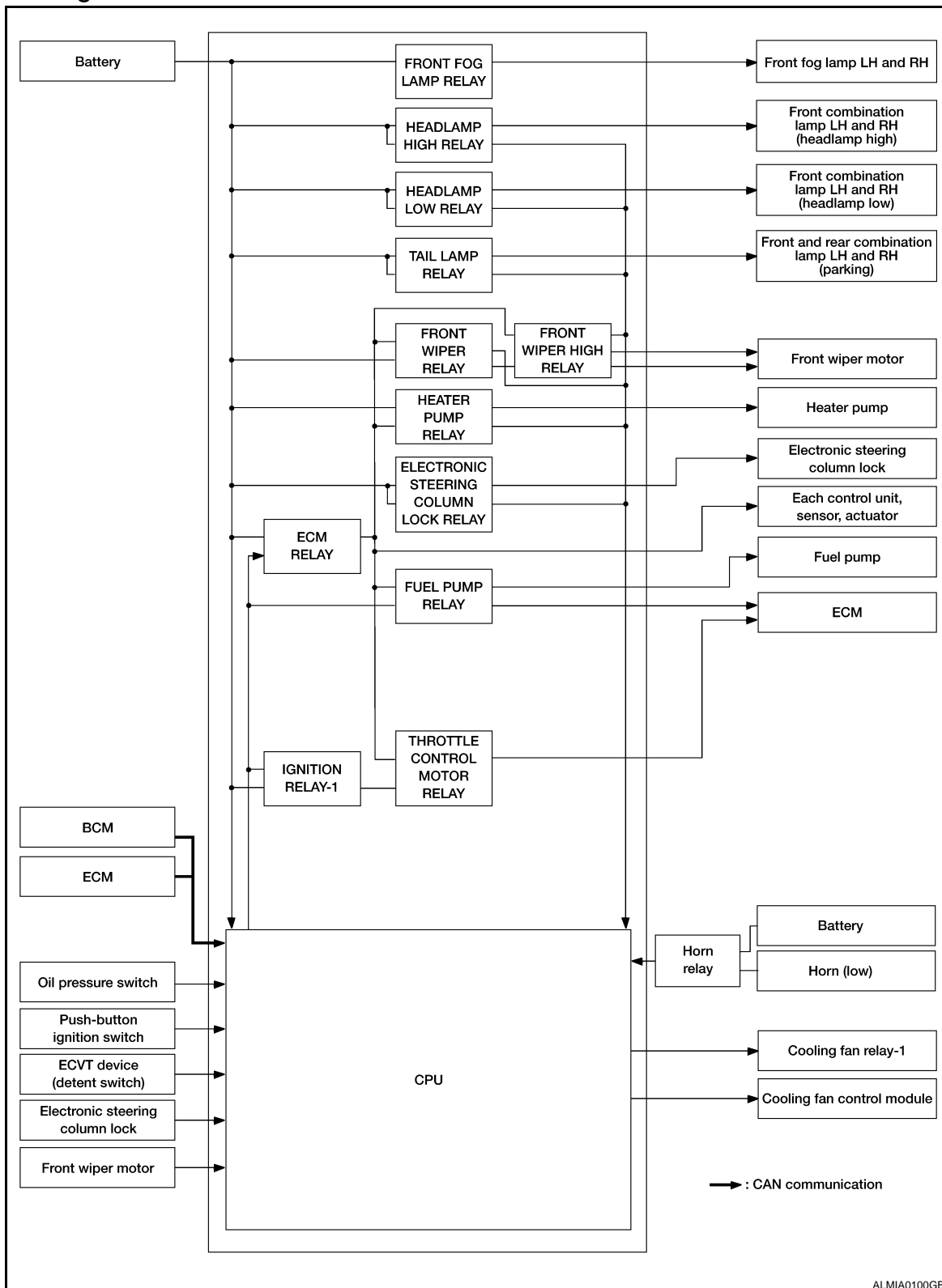
[IPDM E/R]

FUNCTION DIAGNOSIS

RELAY CONTROL SYSTEM

System Diagram

INFOID:000000001505295



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RELAY CONTROL SYSTEM

< FUNCTION DIAGNOSIS >

[IPDM E/R]

System Description

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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.

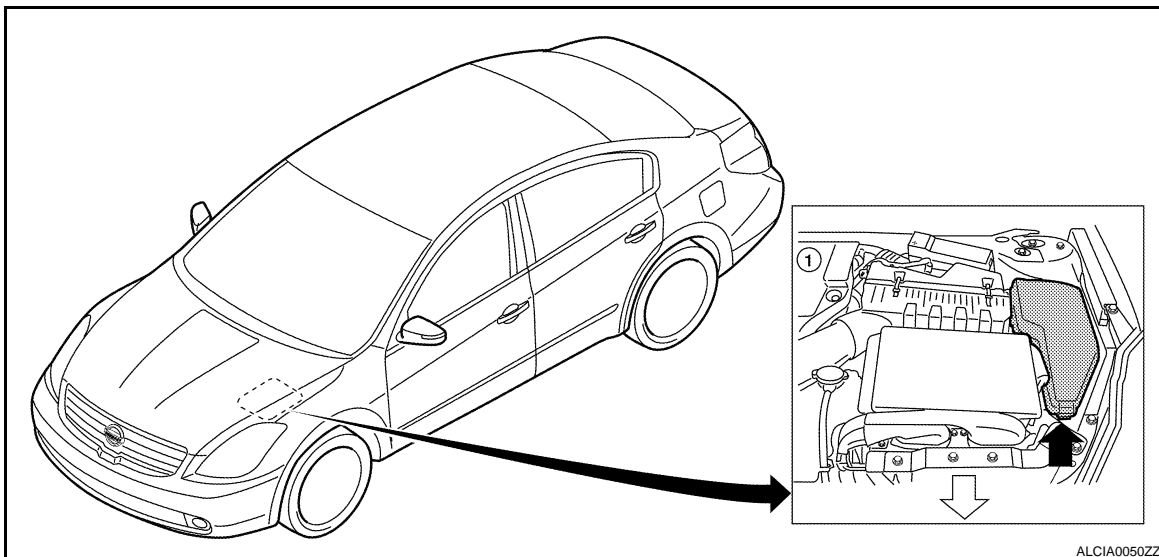
CAUTION:

IPDM E/R integrated relays cannot be removed.

Control relay	Input/output	Transmit unit	Control part	Reference page
<ul style="list-style-type: none"> Headlamp low relay Headlamp high relay 	<ul style="list-style-type: none"> Low beam request signal High beam request signal 	BCM (CAN)	<ul style="list-style-type: none"> Headlamp low Headlamp High 	EXL-31 EXL-29
Front fog lamp relay	Front fog lamp request signal	BCM (CAN)	Front fog lamps	EXL-33
Tail lamp relay	Position light request signal	BCM (CAN)	<ul style="list-style-type: none"> Parking lamp License plate lamp Tail lamp Illuminations 	EXL-35
<ul style="list-style-type: none"> Front wiper relay Front wiper high relay 	Front wiper request signal	BCM (CAN)	Front wiper	WW-31
	Front wiper auto stop signal	Front wiper motor		
Electronic steering column lock relay	Electronic steering column lock relay signal	BCM (CAN)	Electronic steering column lock unit	STC-7
	Electronic steering column lock unit condition signal	Electronic steering column lock unit		
	ECVT device (Detent switch) signal	ECVT device (Detent switch)		
Heater pump relay	Heater pump request signal	ECM (CAN)	Heater pump	HAC-86
Ignition relay-1	Ignition switch ON signal	BCM (CAN)	Ignition relay-1	BCS-6
	Vehicle speed signal	Combination meter (CAN)		
	Push-button ignition switch	Push-button ignition switch		
Fuel pump relay	Fuel pump request signal	ECM	Fuel pump	EC-376
ECM relay	ECM relay control signal	ECM	ECM relay	EC-118
Throttle control motor relay	Throttle control motor relay signal	ECM	Throttle control motor relay	EC-349
Cooling fan relay-1	Cooling fan request signal	ECM (CAN)	Cooling fan relay-1	EC-59

Component Parts Location

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RELAY CONTROL SYSTEM

< FUNCTION DIAGNOSIS >

[IPDM E/R]

1. IPDM E/R E16, E17, E18, E200,
E201, F10

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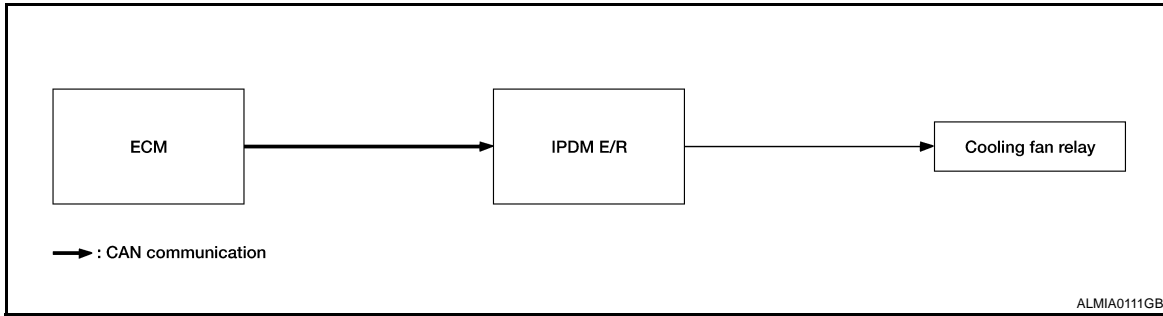
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POWER CONTROL SYSTEM

System Diagram



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System Description

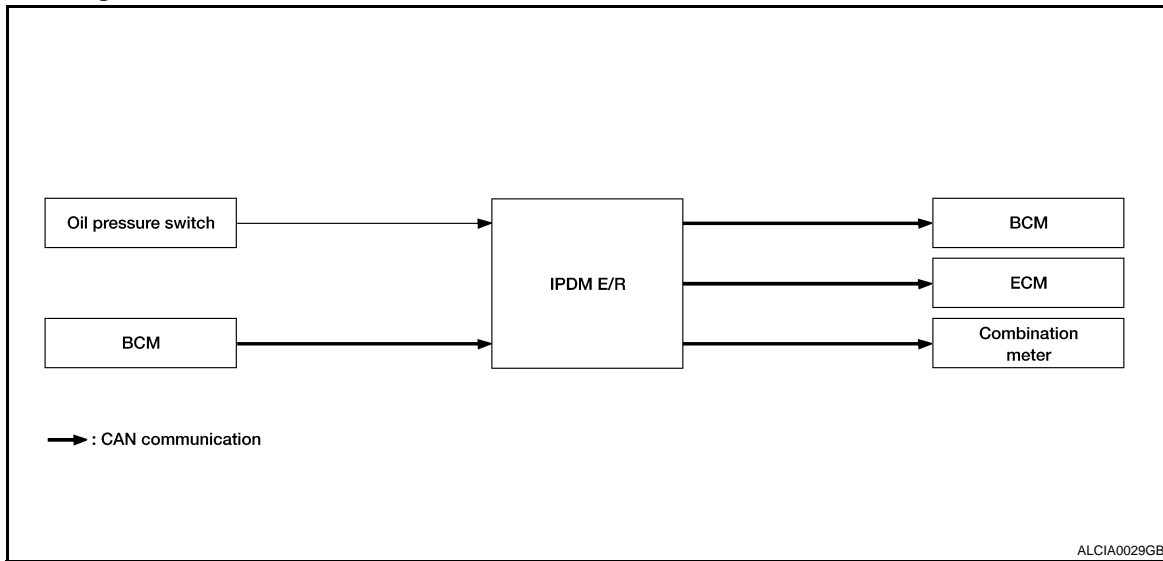
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COOLING FAN CONTROL

IPDM E/R controls cooling fans according to the status of the cooling fan speed request signal received from ECM via CAN communication. Refer to [EC-372, "Description"](#).

SIGNAL BUFFER SYSTEM

System Diagram



System Description

INFOID:000000001505301

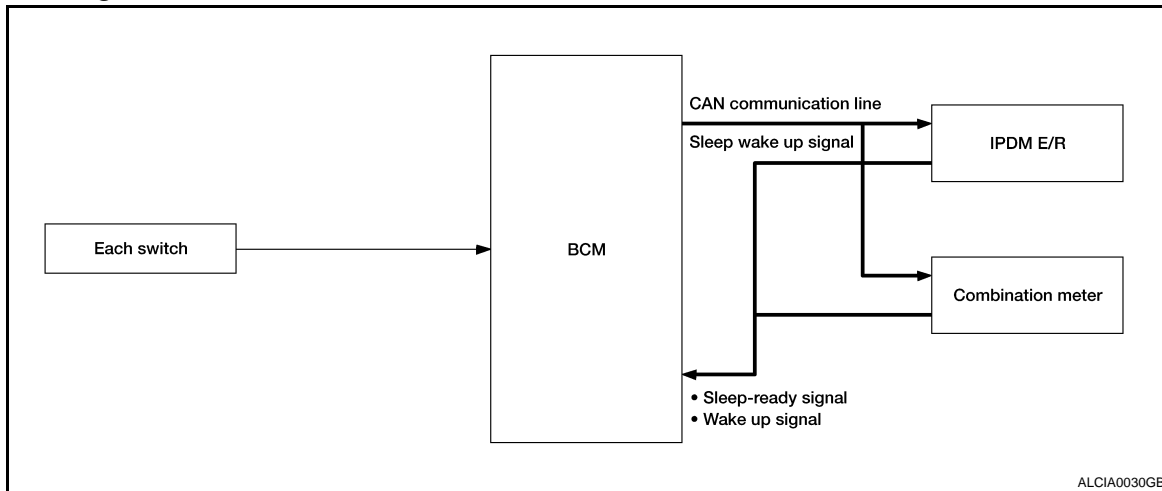
- IPDM E/R reads the status of the oil pressure switch and transmits the oil pressure switch signal to BCM via CAN communication. Refer to [PCS-7, "System Description"](#).
- IPDM E/R receives the rear window defogger status signal from BCM via CAN communication and transmits it to ECM via CAN communication. Refer to [PCS-7, "System Description"](#).

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POWER CONSUMPTION CONTROL SYSTEM

System Diagram



System Description

INFOID:000000001505303

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.
 - Front wiper fail-safe operation
 - Outputting signals to actuators
 - Switches or relays operating
 - Auto active test is starting
 - Emergency OFF
 - 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
 - An output request is received from a control unit via CAN communication.

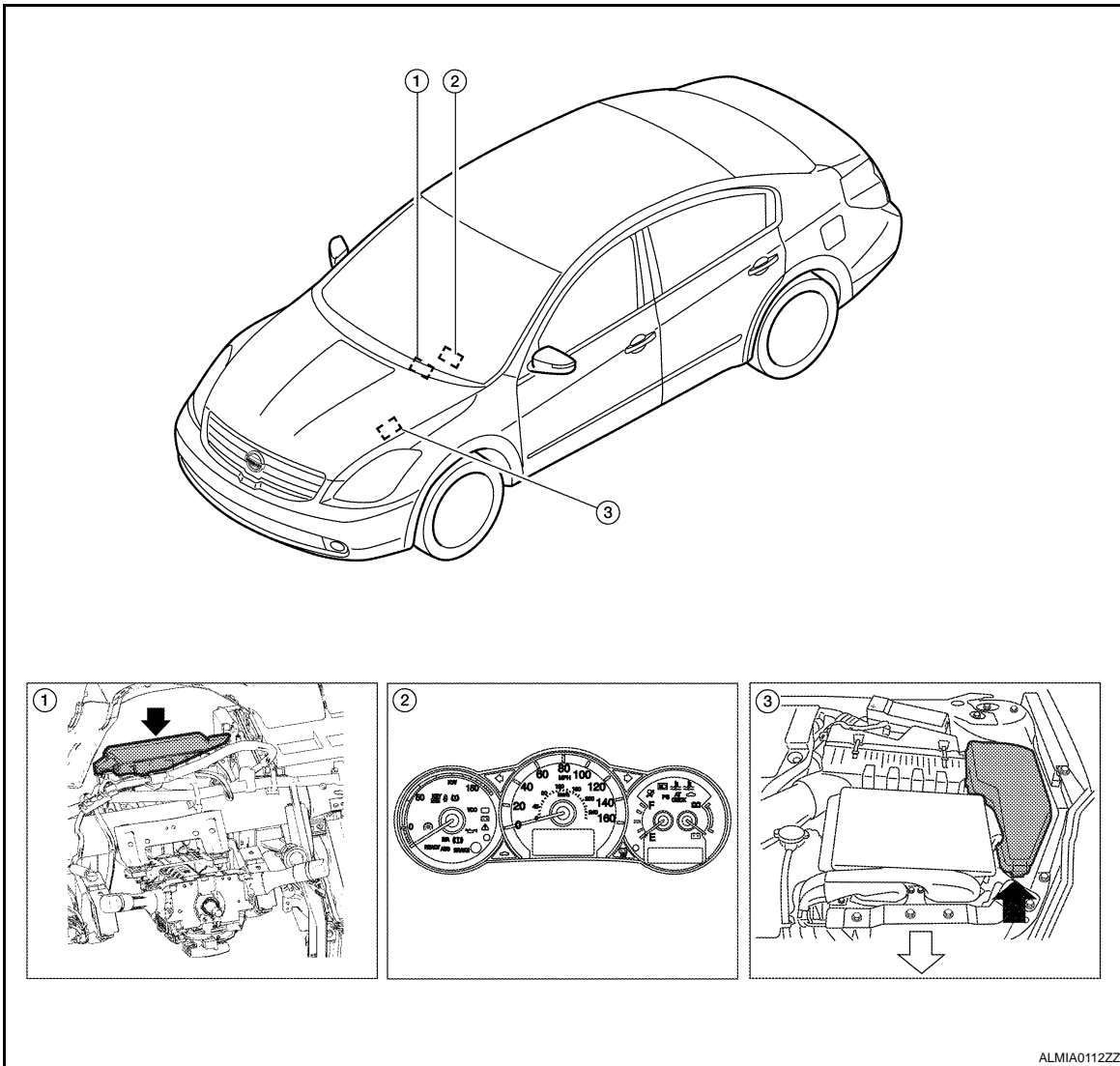
POWER CONSUMPTION CONTROL SYSTEM

< FUNCTION DIAGNOSIS >

[IPDM E/R]

Component Parts Location

INFOID:000000001505304



1. BCM (view with instrument panel re-moved)
2. Combination meter
3. IPDM E/R

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DIAGNOSIS SYSTEM (IPDM E/R)

Diagnosis Description

INFOID:000000001505305

AUTO ACTIVE TEST

Description

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

- Oil pressure warning lamp
- Front wiper (LO, HI)
- Parking lamps
- License plate lamps
- Tail lamps
- Front fog lamps
- Headlamps (LO, HI)
- Heater pump
- Cooling fans

Operation Procedure

1. Close the hood and lift the wiper arms from the windshield. (Prevent windshield damage due to wiper operation)

NOTE:

When auto active test is performed with hood opened, sprinkle water on windshield before hand.

2. Turn ignition switch OFF.
3. Turn the ignition switch ON, and within 20 seconds, press the front door switch LH 10 times. Then turn the ignition switch OFF.

CAUTION:

Close front door RH.

4. Turn the ignition switch ON within 10 seconds. After that the horn sounds once and the auto active test starts.
5. The oil pressure warning lamp starts blinking when the auto active test starts.
6. After a series of the following operations is repeated 3 times, auto active test is completed.

NOTE:

When auto active test mode has to be cancelled halfway through test, turn ignition switch OFF.

CAUTION:

- If auto active test mode cannot be actuated, check door switch system. Refer to [DLK-52, "Component Function Check"](#).
- Do not start the engine.

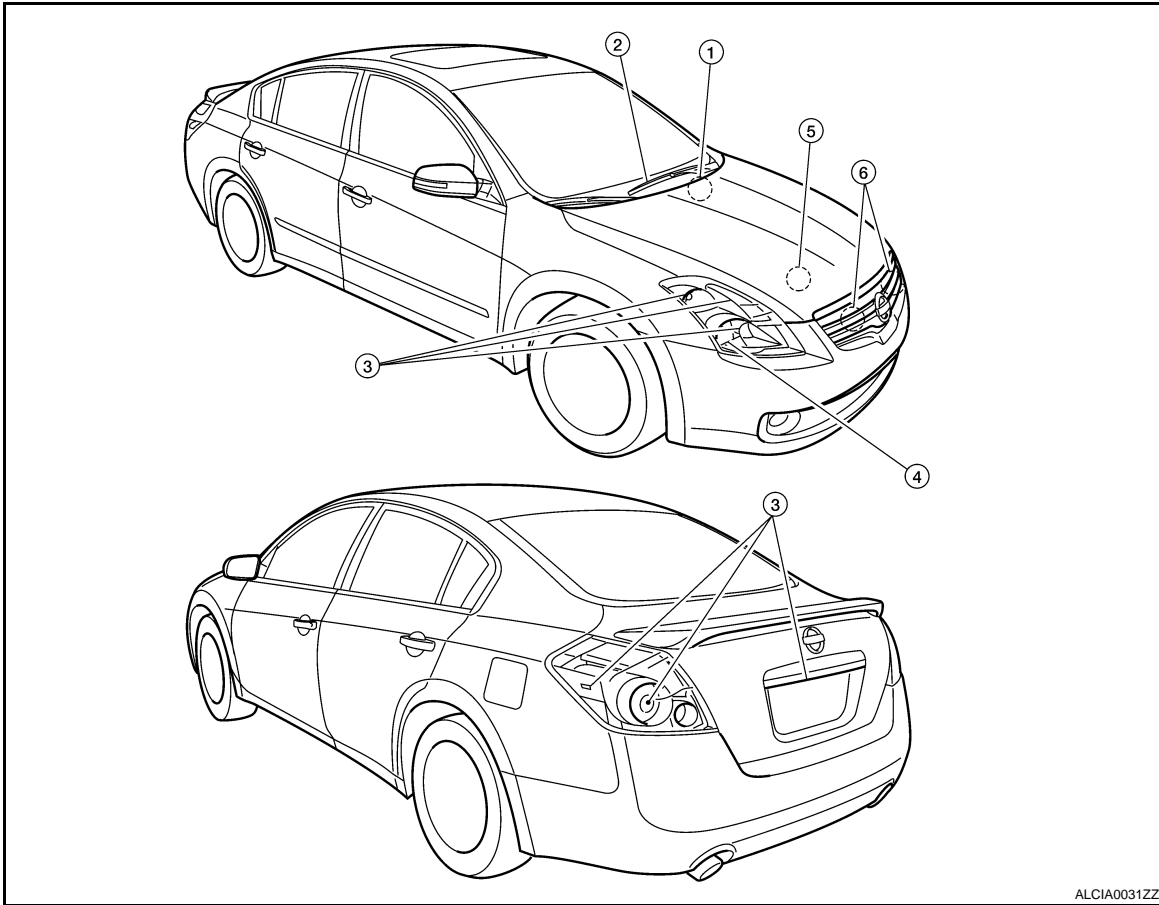
Inspection in Auto Active Test Mode

DIAGNOSIS SYSTEM (IPDM E/R)

< FUNCTION DIAGNOSIS >

[IPDM E/R]

When auto active test mode is actuated, the following 6 steps are repeated 3 times.



Operation sequence	Inspection Location	Operation
1	Oil pressure warning lamp	Blinks continuously during operation of auto active test
2	Front wiper	LO for 5 seconds → HI for 5 seconds
3	<ul style="list-style-type: none"> • Parking lamps • License plate lamps • Tail lamps • Front fog lamps (if equipped) 	10 seconds
4	Headlamps	LO ↔ HI 5 times
5	Heater pump	ON ↔ OFF 5 times
6*	Cooling fans	MID for 5 seconds → HI for 5 seconds

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

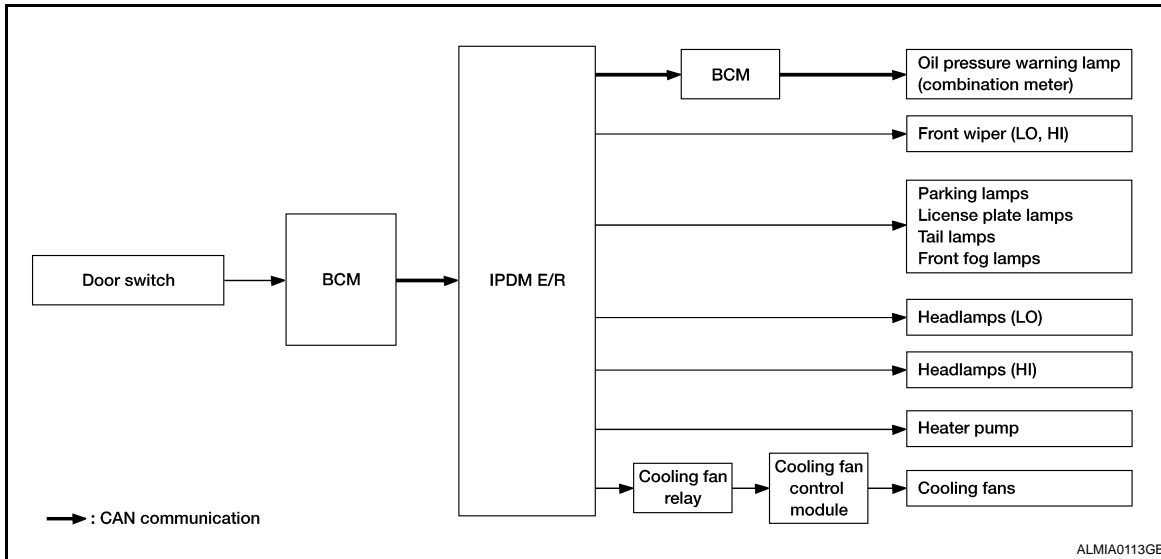
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DIAGNOSIS SYSTEM (IPDM E/R)

< FUNCTION DIAGNOSIS >

[IPDM E/R]

Concept of auto active test



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

Diagnosis chart in auto active test mode

Symptom	Inspection contents	Possible cause
Any of the following components do not operate <ul style="list-style-type: none"> • Parking lamps • License plate lamps • Tail lamps • Front fog lamps • Headlamp (HI, LO) • Front wiper 	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
Heater pump does not operate	Perform auto active test. Does the heater pump operate?	YES <ul style="list-style-type: none"> • Combination meter signal input circuit • CAN communication signal between combination meter and ECM • CAN communication signal between ECM and IPDM E/R
		NO <ul style="list-style-type: none"> • Heater pump • Harness or connector between IPDM E/R and magnet clutch • IPDM E/R
Oil pressure warning lamp does not operate	Perform auto active test. Does the oil pressure warning lamp blink?	YES <ul style="list-style-type: none"> • Harness or connector between IPDM E/R and oil pressure switch • Oil pressure switch • IPDM E/R
		NO <ul style="list-style-type: none"> • CAN communication signal between IPDM E/R and BCM • CAN communication signal between BCM and combination meter • Combination meter

DIAGNOSIS SYSTEM (IPDM E/R)

< FUNCTION DIAGNOSIS >

[IPDM E/R]

Symptom	Inspection contents	Possible cause
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 relays Cooling fan relays Harness or connector between IPDM E/R and cooling fan relays IPDM E/R

CONSULT - III Function (IPDM E/R)

INFOID:000000001505306

APPLICATION ITEM

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

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

SELF DIAGNOSTIC

Refer to [PCS-32, "DTC Index"](#).

DATA MONITOR

Monitor item

Monitor Item [Unit]	MAIN SIGNALS	Description
RADFAN REQ [%]	×	Displays the value of the cooling fan speed signal received from ECM via CAN communication.
TAIL&CLR REQ [OFF/ON]	×	Displays the status of the position light request signal received from BCM via CAN communication.
HL LO REQ [OFF/ON]	×	Displays the status of the low beam request signal received from BCM via CAN communication.
HL HI REQ [OFF/ON]	×	Displays the status of the high beam request signal received from BCM via CAN communication.
FR FOG REQ [OFF/ON]	×	Displays the status of the front fog lamp 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 auto stop 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.

DIAGNOSIS SYSTEM (IPDM E/R)

< FUNCTION DIAGNOSIS >

[IPDM E/R]

Monitor Item [Unit]	MAIN SIG- NALS	Description
PUSH SW [OFF/ON]		Displays the status of the push-button ignition switch judged by IPDM E/R.
DETENT SW [OFF/ON]		Displays the status of the CVT device (detention switch) judged by IPDM E/R.
S/L RLY -REQ [OFF/ON]		Displays the status of the electronic steering column lock relay request received from BCM via CAN communication.
S/L STATE [LOCK/UNLK/UNKWN]		Displays the status of the electronic steering column lock judged by IPDM E/R.
DTRL REQ [OFF]		NOTE: This item is displayed, but cannot be monitored.
OIL P SW [OPEN/CLOSE]		Displays the status of the oil pressure switch judged by IPDM E/R.
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]		NOTE: This item is displayed, but cannot be monitored.

ACTIVE TEST

Test item

Test item	Operation	Description
CORNERING LAMP	OFF	NOTE: This item is displayed, but cannot be monitored.
	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	Outputs 50% pulse duty signal (PWM signal) to the cooling fan control module.
	3	Outputs 80% pulse duty signal (PWM signal) to the cooling fan control module.
	4	Outputs 100% pulse duty signal (PWM signal) to the cooling fan control module.
EXTERNAL LAMPS	OFF	OFF
	TAIL	Operates the tail lamp relay.
	LO	Operates the headlamp low relay.
	HI	Operates the headlamp low relay and ON/OFF the headlamp high relay at 1 second intervals.
	FOG	Operates the front fog lamp relay

U1000 CAN COMM CIRCUIT

< COMPONENT DIAGNOSIS >

[IPDM E/R]

COMPONENT DIAGNOSIS

U1000 CAN COMM CIRCUIT

Description

INFOID:000000001505307

Refer to [LAN-7, "System Description"](#).

DTC Logic

INFOID:000000001505308

DTC DETECTION LOGIC

DTC	CONSULT-III 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	In CAN communication system, any item (or items) of the following listed below is malfunctioning. <ul style="list-style-type: none">• Transmission• Receiving (ECM)• Receiving (BCM)• Receiving (Combination meter)

DTC CONFIRMATION PROCEDURE

Diagnosis Procedure

INFOID:000000001505309

1. PERFORM SELF DIAGNOSTIC

1. Turn ignition switch ON and wait for 2 second or more.
2. Check "SELF-DIAG RESULTS" of IPDM E/R.

Is "CAN COMM CIRCUIT" displayed?

- YES >> Refer to [PCS-15, "DTC Logic"](#).
NO >> Refer to [GI-42, "Intermittent Incident"](#).

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B2098 IGNITION RELAY ON STUCK

< COMPONENT DIAGNOSIS >

[IPDM E/R]

B2098 IGNITION RELAY ON STUCK

Description

INFOID:000000001505310

- IPDM E/R operates the ignition relay when it receives an ignition switch ON signal from BCM via CAN communication.
- Turn the ignition relay OFF by pressing the push-button ignition switch once when the vehicle speed is 4 km/h (2.5 MPH) or less.
- Turn the ignition relay OFF with the following operation when the vehicle speed is more than 4 km/h (2.5 MPH) or when an abnormal condition occurs in CAN communication from the combination meter (Emergency OFF)
 - Press and hold the push-button ignition switch for 2 seconds or more.
 - Press the push-button ignition switch 3 time 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:000000001505311

DTC DETECTION LOGIC

DTC	CONSULT-III 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:000000001505312

1. PERFORM SELF DIAGNOSIS

1. Turn the ignition switch ON.
2. Erase "SELF-DIAG RESULTS" of IPDM E/R.
3. Turn ignition switch OFF, and wait for 1 second or more.
4. Turn the ignition switch ON. Check "SELF-DIAG RESULTS" again.

Is "IGN RELAY ON" displayed?

- YES >> Replace IPDM E/R. Refer to [PCS-34, "Removal and Installation"](#).
NO >> Refer to [GI-42, "Intermittent Incident"](#).

B2099 IGNITION RELAY OFF STUCK

< COMPONENT DIAGNOSIS >

[IPDM E/R]

B2099 IGNITION RELAY OFF STUCK

Description

INFOID:000000001505313

- IPDM E/R operates the ignition relay when it receives an ignition switch ON signal from BCM via CAN communication.
- Turn the ignition relay OFF by pressing the push-button ignition switch once when the vehicle speed is 4 km/h (2.5 MPH) or less.
- Turn the ignition relay OFF with the following operation when the vehicle speed is more than 4 km/h (2.5 MPH) or when an abnormal condition occurs in CAN communication from the combination meter (Emergency OFF)
 - Press and hold the push-button ignition switch for 2 seconds or more.
 - Press the push-button ignition switch 3 time 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:000000001505314

DTC DETECTION LOGIC

DTC	CONSULT-III 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

Diagnosis Procedure

INFOID:000000001505315

1. PERFORM SELF DIAGNOSIS

1. Turn the ignition switch ON.
2. Erase "SELF-DIAG RESULTS".
3. Turn ignition switch OFF.
4. Turn the ignition switch ON. Check "SELF-DIAG RESULTS" again.

Is "IGN RELAY OFF" displayed?

- YES >> Replace IPDM E/R.
 NO >> Refer to [GI-42, "Intermittent Incident"](#).

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POWER SUPPLY AND GROUND CIRCUIT

< COMPONENT DIAGNOSIS >

[IPDM E/R]

POWER SUPPLY AND GROUND CIRCUIT

Diagnosis Procedure

INFOID:000000001505316

1. CHECK FUSES AND FUSIBLE LINK

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

Terminal No.	Signal name	Fuses and fusible link No.
1, 2	Battery power supply	B, E, F
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—		43

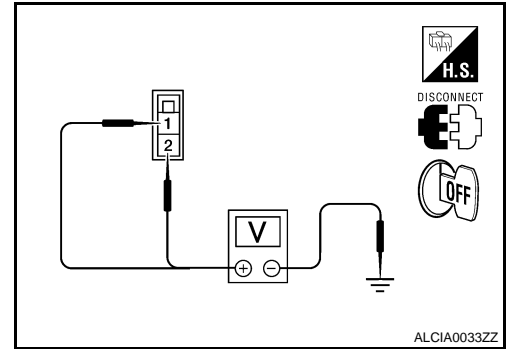
Is the fuse blown?

- YES >> Replace the blown fuse or fusible link after repairing the affected circuit.
 NO >> GO TO 2

2. CHECK POWER SUPPLY CIRCUIT

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

Terminals		Voltage (V) (Approx.)
(+)	(-)	
IPDM E/R		Ground
Connector	Terminal	
E16	1 2	
		Battery voltage



Is the measurement value normal?

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

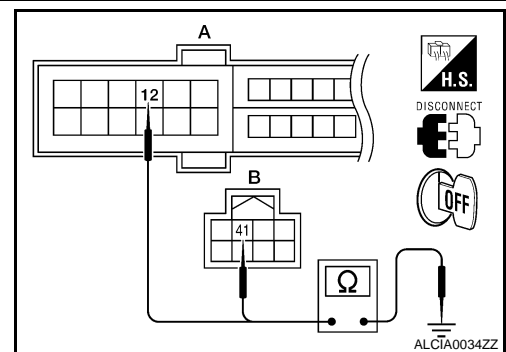
3. CHECK GROUND CIRCUIT

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

IPDM E/R		Ground	Continuity
Connector	Terminal		
E18 (A)	12	Ground	Yes
E17 (B)	41		

Does continuity exist?

- YES >> Inspection End.
 NO >> Repair or replace harness.



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

< ECU DIAGNOSIS >

[IPDM E/R]

ECU DIAGNOSIS

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

Reference Value

INFOID:000000001505317

VALUES ON THE DIAGNOSIS TOOL

Monitor Item	Condition		Value/Status
RADFAN REQ	Engine idle speed	Changes depending on engine coolant temperature, air conditioner operation status, vehicle speed, etc.	0 - 100 %
TAIL&CLR REQ	Lighting switch OFF		OFF
	Lighting switch 1ST, 2ND, HI or AUTO (Light is illuminated)		ON
HL LO REQ	Lighting switch OFF		OFF
	Lighting switch 2ND HI or AUTO (Light is illuminated)		ON
HL HI REQ	Lighting switch OFF		OFF
	Lighting switch HI		ON
FR FOG REQ	Lighting switch 2ND or AUTO (Light is illuminated)	Front fog lamp switch OFF	OFF
		<ul style="list-style-type: none"> • Front fog lamp switch ON • Daytime light activated (Canada only) 	ON
FR WIP REQ	Ignition switch ON	Front wiper switch OFF	STOP
		Front wiper switch INT	1LOW
		Front wiper switch LO	LOW
		Front wiper switch HI	HI
WIP AUTO STOP	Ignition switch ON	Front wiper stop position	STOP P
		Any position other than front wiper stop position	ACT P
WIP PROT	Ignition switch ON	Front wiper operates normally	OFF
		Front wiper stops at fail-safe operation	BLOCK
IGN RLY1 -REQ	Ignition switch OFF or ACC		OFF
	Ignition switch ON		ON
IGN RLY	Ignition switch OFF or ACC		OFF
	Ignition switch ON		ON
PUSH SW	Release the push-button ignition switch		OFF
	Press the push-button ignition switch		ON
DETENT SW	Ignition switch ON	<ul style="list-style-type: none"> • Press the selector button with CVT selector lever in P position • CVT selector lever in any position other than P 	OFF
		Release the CVT selector button with CVT selector lever in P position	
S/L RLY -REQ	None of the conditions below are present		OFF
	<ul style="list-style-type: none"> • Open the front door LH after the ignition switch is turned OFF (for a few seconds) • Press the push-button ignition switch when the steering lock is activated 		ON

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

< ECU DIAGNOSIS >

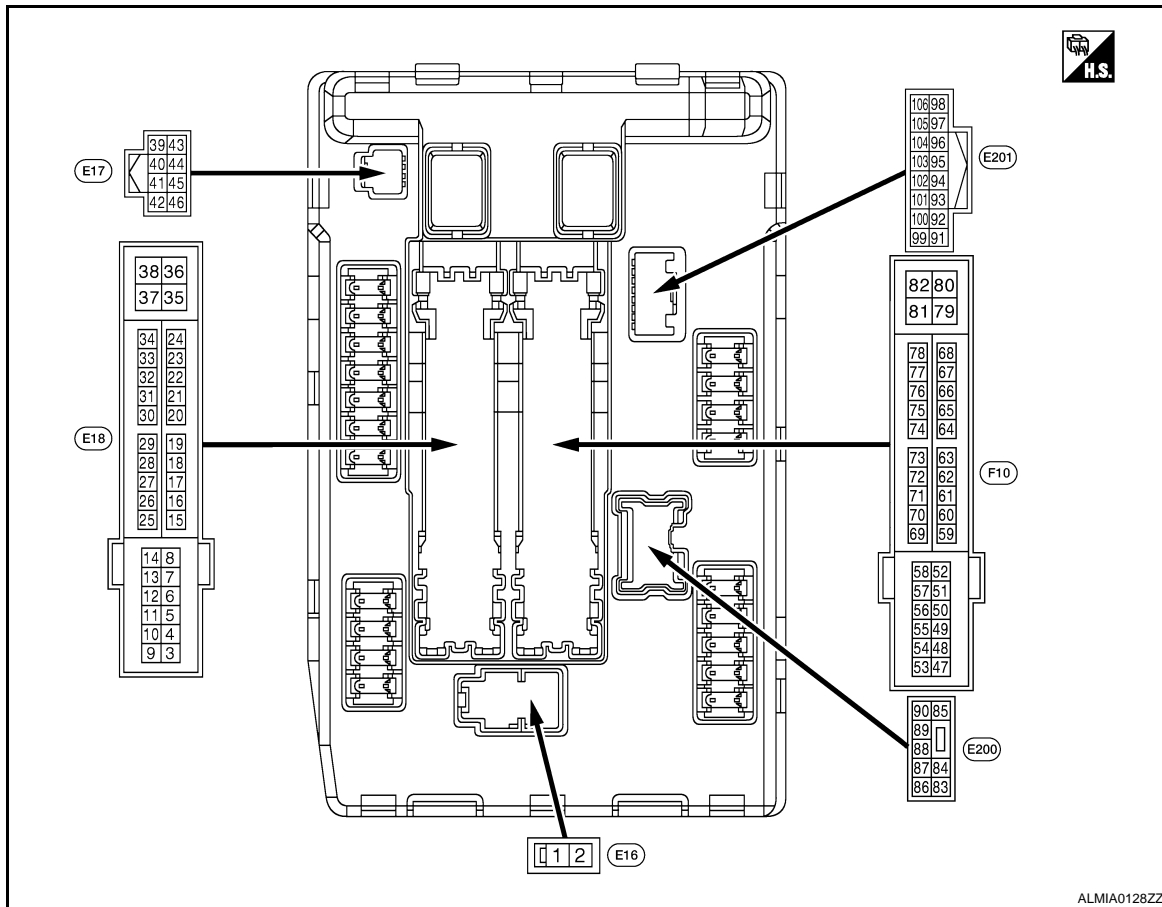
[IPDM E/R]

Monitor Item	Condition	Value/Status
S/L STATE	Steering lock is activated	LOCK
	Steering lock is deactivated	UNLK
	[DTC B210A] is detected	UNKWN
DTRL REQ	NOTE: This item is displayed, but cannot be monitored.	OFF
OIL P SW	Ignition switch OFF, ACC or engine running	OPEN
	Ignition switch ON	CLOSE
THFT HRN REQ	Not operated	OFF
	<ul style="list-style-type: none"> Panic alarm is activated Horn is activated with VEHICLE SECURITY (THEFT WARNING) SYSTEM 	ON
HORN CHIRP	Not operated	OFF
	Door locking with Intelligent Key (horn chirp mode)	ON
CRNRNG LMP REQ	NOTE: This item is displayed, but cannot be monitored.	OFF

Terminal Layout

INFOID:000000001505318

TERMINAL LAYOUT



Physical Values

INFOID:000000001505319

PHYSICAL VALUES

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

< ECU DIAGNOSIS >

[IPDM E/R]

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
1 (R)	Ground	Battery power supply	Input	Ignition switch OFF		Battery voltage
2 (B/Y)	Ground	Battery power supply	Input	Ignition switch OFF		Battery voltage
4 (L/R)	Ground	Front wiper LO	Output	Ignition switch ON	Front wiper switch OFF	0V
					Front wiper switch LO	Battery voltage
5 (L/B)	Ground	Front wiper HI	Output	Ignition switch ON	Front wiper switch OFF	0V
						Front wiper switch HI
6 (SB)	Ground	Daytime light relay power supply (Canada models only)	Output	Ignition switch OFF		Battery voltage
7 (R/L)	Ground	Tail, license plate lamps & interior lamps	Output	Ignition switch ON	Lighting switch OFF	0V
						Lighting switch 1ST
10 (R/B)	Ground	ECM relay power supply	Output	Ignition switch OFF (For a few seconds after turning ignition switch OFF)		0V
				<ul style="list-style-type: none"> • Ignition switch ON • Ignition switch OFF (More than a few seconds after turning ignition switch OFF) 		Battery voltage
11 (P/L)	Ground	Steering lock unit power supply	Output	Ignition switch OFF	A few seconds after opening the driver door	Battery voltage
				Ignition switch LOCK	Press the push-button ignition switch	Battery voltage
				Ignition switch ACC or ON		0V
12 (B)	Ground	Ground	—	Ignition switch ON		0V
13 (W)	Ground	Fuel pump power supply	Output	Approximately 1 second or more after turning the ignition switch ON		0V
				<ul style="list-style-type: none"> • Approximately 1 second after turning the ignition switch ON • Engine running 		Battery voltage
15 (BR)	Ground	Ignition relay-1 power supply	Output	Ignition switch OFF		0V
				Ignition switch ON		Battery voltage
16 (L/Y)	Ground	Front wiper auto stop	Input	Ignition switch ON	Front wiper stop position	0V
						Any position other than front wiper stop position
19 (L/Y)	Ground	Ignition relay-1 power supply	Output	Ignition switch OFF		0V
				Ignition switch ON		Battery voltage
20 (B/Y)	Ground	Ambient sensor ground	—	Ignition switch ON		0V
21 (O/B)	Ground	Ambient sensor	—	Ignition switch ON		5V
22 (G)	Ground	Refrigerent pressure sensor ground	—	Ignition switch ON		0V

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

< ECU DIAGNOSIS >

[IPDM E/R]

Terminal No. (Wire color)		Description		Condition	Value (Approx.)
+	-	Signal name	Input/ Output		
23 (R)	Ground	Refrigerent pressure sensor	—	<ul style="list-style-type: none"> • Ignition switch ON (READY) • Both A/C switch and blower motor switch ON (electric compressor operates) 	1.0 - 4.0V
24 (BR/W)	Ground	Refrigerent pressure sensor power supply	—	Ignition switch ON	5V
25 (G/R)	Ground	Ignition relay-1 power supply	Output	Ignition switch OFF Ignition switch ON	0V Battery voltage
27 (BR/W)	Ground	Ignition relay monitor	Input	Ignition switch OFF or ACC Ignition switch ON	Battery voltage 0V
28 (BR)	Ground	Push-button ignition switch	Input	Press the push-button ignition switch Release the push-button ignition switch	0V Battery voltage
31 (G/W)	Ground	Ignition relay power supply	Output	Ignition switch OFF Ignition switch ON	0V Battery voltage
32 (LG)	Ground	Electronic steering column lock unit condition-1	Input	Electronic steering column lock is activated Electronic steering column lock is deactivated	0V Battery voltage
33 (W)	Ground	Electronic steering column lock unit condition-2	Input	Electronic steering column lock is activated Electronic steering column lock is deactivated	Battery voltage 0V
39 (P)	—	CAN-L	Input/ Output	—	—
40 (L)	—	CAN-H	Input/ Output	—	—
41 (B)	Ground	Ground	—	Ignition switch ON	0V
42 (SB)	Ground	Cooling fan relay-1 control	Input	Ignition switch OFF or ACC Ignition switch ON	0V 0.7V
43 (G/B)	Ground	ECVT device (Detention switch)	Input	Ignition switch ON Press the ECVT selector button (ECVT selector lever P) <ul style="list-style-type: none"> • ECVT selector lever in any position other than P • Release the ECVT selector button (ECVT selector lever P) 	Battery voltage 0V
44 (G/W)	Ground	Horn relay control	Input	The horn is deactivated The horn is activated	Battery voltage 0V
45 (L/O)	Ground	Anti theft horn relay control	Input	The horn is deactivated The horn is activated	Battery voltage 0V
48 (R)	Ground	Heater pump relay power supply	Output	Engine running Heater pump OFF Heater pump ON (Heater pump is operating)	0V Battery voltage

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

< ECU DIAGNOSIS >

[IPDM E/R]

Terminal No. (Wire color)		Description		Condition	Value (Approx.)
		Signal name	Input/ Output		
+	-				
49 (B/R)	Ground	ECM relay power supply	Output	Ignition switch OFF (For a few seconds after turning ignition switch OFF)	0V
				<ul style="list-style-type: none"> • Ignition switch ON • Ignition switch OFF (More than a few seconds after turning ignition switch OFF) 	Battery voltage
51 (LG)	Ground	Ignition relay power supply	Output	Ignition switch OFF	0V
				Ignition switch ON	Battery voltage
53 (R/W)	Ground	ECM relay power supply	Output	Ignition switch OFF (For a few seconds after turning ignition switch OFF)	0V
				<ul style="list-style-type: none"> • Ignition switch ON • Ignition switch OFF (More than a few seconds after turning ignition switch OFF) 	Battery voltage
54 (G/W)	Ground	Throttle control motor relay power supply	Output	Ignition switch OFF (For a few seconds after turning ignition switch OFF)	0V
				<ul style="list-style-type: none"> • Ignition switch ON • Ignition switch OFF (More than a few seconds after turning ignition switch OFF) 	Battery voltage
55 (W/L)	Ground	ECM power supply	Output	Ignition switch OFF	Battery voltage
56 (R/Y)	Ground	Ignition relay power supply	Output	Ignition switch OFF	0V
				Ignition switch ON	Battery voltage
57 (O)	Ground	Ignition relay power supply	Output	Ignition switch OFF	0V
				Ignition switch ON	Battery voltage
69 (W/B)	Ground	ECM relay control	Output	Ignition switch OFF (For a few seconds after turning ignition switch OFF)	Battery voltage
				<ul style="list-style-type: none"> • Ignition switch ON • Ignition switch OFF (More than a few seconds after turning ignition switch OFF) 	0 - 1.5V
70 (O)	Ground	Throttle control motor relay control	Output	Ignition switch ON → OFF	0 - 1.0V ↓ Battery voltage ↓ 0V
				Ignition switch ON	0 - 1.0V
75 (P/L)	Ground	Oil pressure switch	Input	Ignition switch ON	Engine stopped ↓ Engine running
					0V ↓ Battery voltage
77 (B/R)	Ground	Fuel pump relay control	Output	<ul style="list-style-type: none"> • Approximately 1 second after turning the ignition switch ON • Engine running 	0 - 1.0V
				Approximately 1 second or more after turning the ignition switch ON	Battery voltage
83 (R/Y)	Ground	Headlamp LO (RH)	Output	Ignition switch ON	Lighting switch OFF ↓ Lighting switch 2ND
					0V ↓ Battery voltage

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

< ECU DIAGNOSIS >

[IPDM E/R]

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	-	Signal name	Input/ Output			
84 (L)	Ground	Headlamp LO (LH)	Output	Ignition switch ON	Lighting switch OFF	0V
					Lighting switch 2ND	Battery voltage
86 (W/R)	Ground	Front fog lamp (RH)	Output	Lighting switch 2ND	<ul style="list-style-type: none"> • Front fog lamp switch ON • Daytime light activated (Canada only) 	Battery voltage
						Front fog lamp switch OFF
87 (L/W)	Ground	Front fog lamp (LH)	Output	Lighting switch 2ND	<ul style="list-style-type: none"> • Front fog lamp switch ON • Daytime light activated (Canada only) 	Battery voltage
						Front fog lamp switch OFF
88 (R/W)	Ground	Washer pump power supply	Output	Ignition switch ON		Battery voltage
89 (L/W)	Ground	Headlamp HI (RH)	Output	Ignition switch ON	<ul style="list-style-type: none"> • Lighting switch HI • Lighting switch PASS 	Battery voltage
						Lighting switch OFF
90 (G)	Ground	Headlamp HI (LH)	Output	Ignition switch ON	<ul style="list-style-type: none"> • Lighting switch HI • Lighting switch PASS 	Battery voltage
						Lighting switch OFF
91 (LG/R)	Ground	Parking lamp (RH)	Output	Ignition switch ON	Lighting switch 1ST	Battery voltage
						Lighting switch OFF
92 (LG/B)	Ground	Parking lamp (LH)	Output	Ignition switch ON	Lighting switch 1ST	Battery voltage
						Lighting switch OFF
97 (V)	Ground	Cooling fan control	Output	Engine idling		0-5V
99 (B/Y)	Ground	Ambient sensor ground	—	Ignition switch ON		0V
100 (O/B)	Ground	Ambient sensor	—	Ignition switch ON		5V
101 (G)	Ground	Refrigerent pressure sensor ground	—	Ignition switch ON		0V
102 (R)	Ground	Refrigerent pressure sensor	—	<ul style="list-style-type: none"> • Ignition switch ON (READY) • Both A/C switch and blower motor switch ON (electric compressor operates) 		1.0 - 4.0V
103 (BR/W)	Ground	Refrigerent pressure sensor power supply	—	Ignition switch ON		5V
105 (V)	Ground	Daytime light relay control (Canada only)	Output	Ignition switch ON	Daytime light system active	Battery voltage
				Ignition switch ON	Daytime light system inactive	0V

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

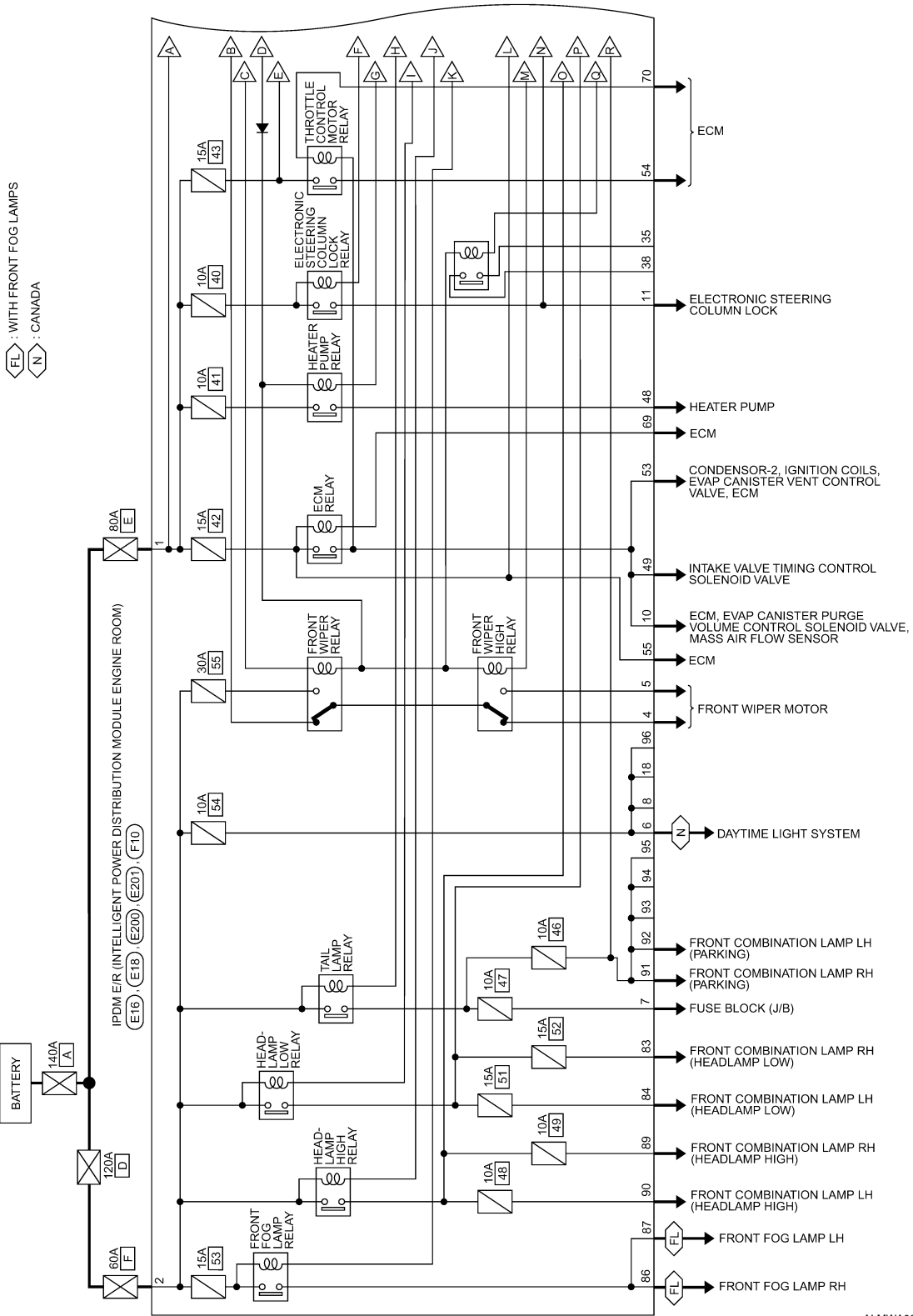
< ECU DIAGNOSIS >

[IPDM E/R]

Wiring Diagram

INFOID:000000001505320

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



◊ FL : WITH FRONT FOG LAMPS
◊ N : CANADA

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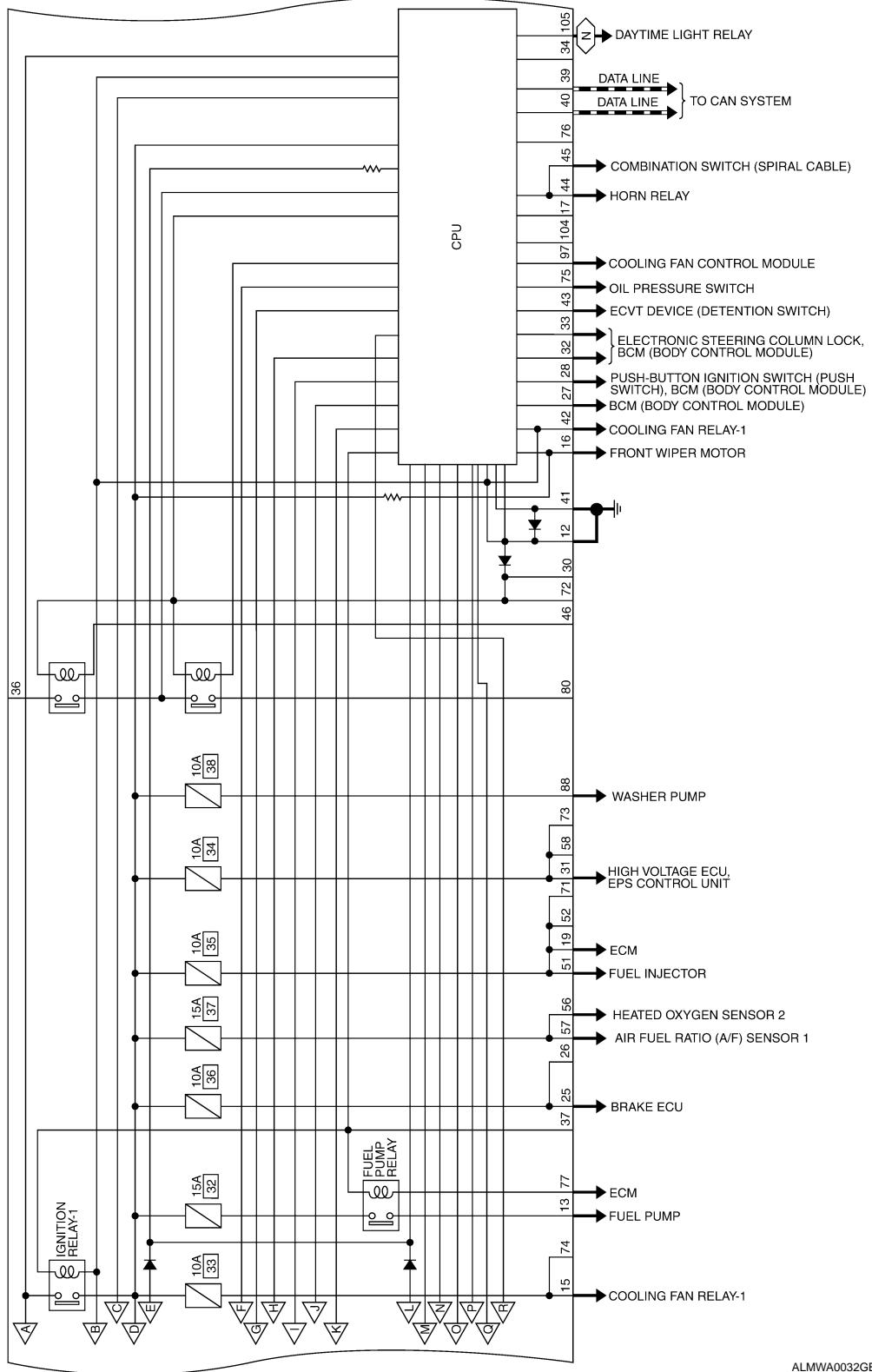
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)

< ECU DIAGNOSIS >

[IPDM E/R]

Ⓝ : CANADA
 ■ : DATA LINE

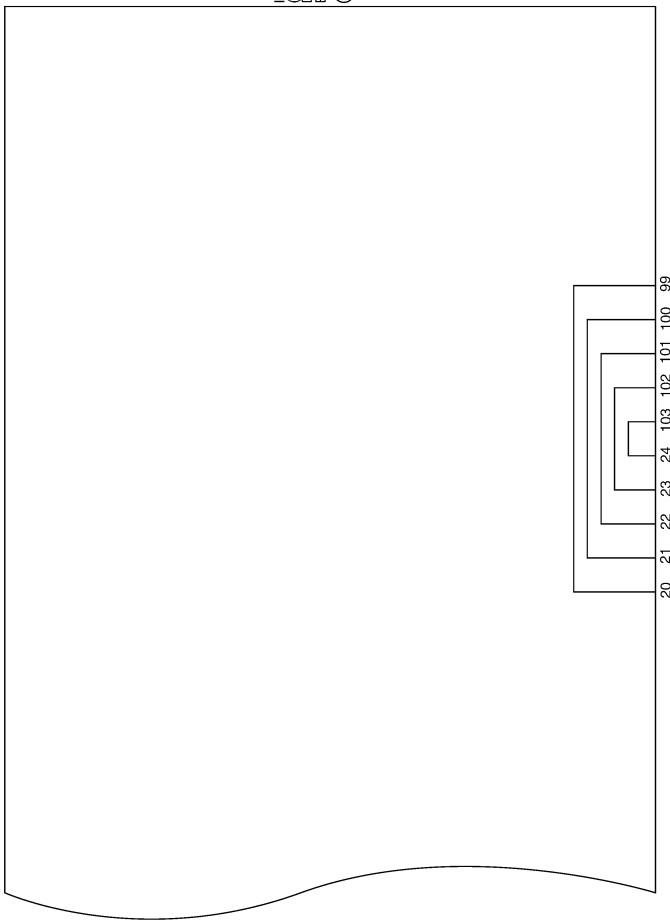
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
 (E17), (E18), (E20), (E20), (E20), (F10)



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IPDM E/R
(INTELLIGENT POWER
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ENGINE ROOM)
(E18) (E20)



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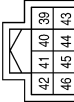
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) CONNECTORS

Connector No.	E16
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Color	BLACK



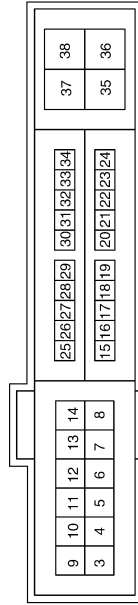
Terminal No.	Color of Wire	Signal Name
1	R	F/L_MAIN
2	B/Y	F/L_USM

Connector No.	E17
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
39	P	CAN-L
40	L	CAN-H
41	B	S-GND
42	SB	MOTOR_FAN_RLY_MID
43	G/B	DETENT_SW
44	G/W	HORN_RLY
45	L/O	HORN_SW
46	-	-

Connector No.	E18
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Color	WHITE



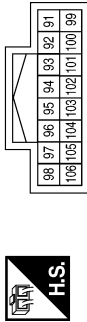
Terminal No.	Color of Wire	Signal Name
3	-	-
4	L/R	FR_WIPER_LO
5	L/B	FR_WIPER_HI
6	SB	DTRL
7	R/L	TAIL/ILLUMI

Terminal No.	Color of Wire	Signal Name
8	-	-
9	-	-
10	R/B	ECM_VB
11	P/L	ESCL
12	B	P-GND
13	W	FUEL_PUMP
14	-	-
15	BR	START_IG-E/R
16	L/Y	WIPER_AUTOSTOP
17	-	-
18	-	-
19	L/Y	BCM_IGNSW
20	B/Y	AMB_SENS_GND-E/R
21	O/B	AMB_SENS_SIG-E/R
22	W/R	PD_SENS_GND-E/R

Terminal No.	Color of Wire	Signal Name
23	B/R	PD_SENS_SIG-E/R
24	BR/W	PD_SENS_PWR-E/R
25	G/R	ABS_ECU
26	-	-
27	BR/W	IGN_SIGNAL
28	BR	PUSH_START_SW
29	-	-
30	-	-
31	G/W	REV_RLY
32	LG	SL_CONDITION_1
33	W	SL_CONDITION_2
34	-	-
35	-	-
36	-	-
37	-	-
38	-	-

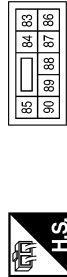
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Connector No.	E201
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
91	LG/R	CLEARANCE_RH
92	LG/B	CLEARANCE_LH
93	-	-
94	-	-
95	-	-
96	-	-
97	V	MOTOR_FAN_PWM
98	-	-
99	BR/W	AMB_SENS_GND-FEM
100	SB	AMB_SENS_SIG-FEM
101	W	PD_SENS_GND-FEM
102	R	PD_SENS_SIG-FEM
103	P	PD_SENS_PWR-FEM
104	-	-
105	V	DTRL_RLY
106	-	-

Connector No.	E200
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
83	R/Y	HEADLAMP_LO_RH
84	L	HEADLAMP_LO_LH
85	-	-
86	W/R	FR_FOG_LAMP_RH
87	L/Y	FR_FOG_LAMP_LH
88	R/W	WASHER_MTR
89	L/W	HEADLAMP_HI_RH
90	G	HEADLAMP_HI_LH

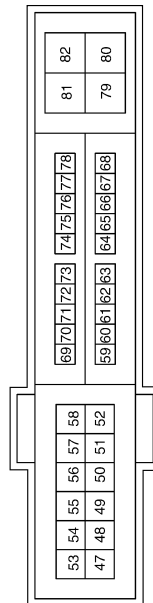
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Terminal No.	Color of Wire	Signal Name
64	-	-
65	-	-
66	-	-
67	-	-
68	-	-
69	W/B	SSOF
70	O	MOTRLY
71	-	-
72	-	-
73	-	-
74	-	-
75	P/L	OIL_PRESSURE_SW
76	-	-
77	B/R	FPR
78	-	-
79	-	-
80	-	-
81	-	-
82	-	-

Terminal No.	Color of Wire	Signal Name
47	-	-
48	R	ENG_SOL
49	B/R	ENG_SOL
50	-	-
51	LG	INJECTOR_#1
52	-	-
53	R/W	IGN_COIL
54	G/W	ETC
55	W/L	ECM_BAT
56	R/Y	O2_SENS_#1
57	O	O2_SENS_#2
58	-	-
59	-	-
60	-	-
61	-	-
62	-	-
63	-	-

Connector No.	F10
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Color	WHITE



Fail Safe

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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

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

< ECU DIAGNOSIS >

[IPDM E/R]

Control part	Fail-safe in operation
Cooling fan	<ul style="list-style-type: none"> • Signals cooling fans ON when the ignition switch is turned ON • Signals cooling fans OFF when the ignition switch is turned OFF
Heater pump	Heater pump relay OFF

If No CAN Communication Is Available With BCM

Control part	Fail-safe in 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 lamps • License plate lamps • Illuminations • Tail lamps 	<ul style="list-style-type: none"> • Turns ON the tail lamp relay when the ignition switch is turned ON • Turns OFF the tail lamp relay when the ignition switch is turned OFF
Front wiper	<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 INT mode and the front wiper motor is operating.
Front fog lamps (if equipped)	Front fog lamp relay OFF
Horn	Horn OFF
Ignition relay	The status just before activation of fail-safe is maintained.
Electronic steering column lock unit	Electronic steering column lock relay OFF

IGNITION RELAY MALFUNCTION DETECTION FUNCTION

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

DTC	Ignition switch	Ignition relay	Tail lamp relay
—	ON	ON	—
—	OFF	OFF	—
B2098: IGN RELAY ON	OFF	ON	ON (10 minutes)
B2099: IGN RELAY OFF	ON	OFF	—

NOTE:

The tail lamp turns OFF when the ignition switch is turned ON.

FRONT WIPER CONTROL

IPDM E/R detects front wiper stop position by a front wiper auto stop signal.

When a front wiper auto stop signal is in the conditions listed below, IPDM E/R stops power supply to wiper after repeating a front wiper 10 second activation and 20 second stop five times.

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

NOTE:

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

STARTER MOTOR PROTECTION FUNCTION

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

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DTC Index

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CONSULT-III display	Fail-safe	TIME ^{NOTE}		Refer to
No DTC is detected. further testing may be required.	—	—	—	—
U1000: CAN COMM CIRCUIT	×	CRNT	1 – 39	PCS-15
B2098: IGN RELAY ON	×	CRNT	1 – 39	PCS-16
B2099: IGN RELAY OFF	—	CRNT	1 – 39	PCS-17
B2108: STRG LCK RELAY ON	—	CRNT	1 – 39	SEC-85
B2109: STRG LCK RELAY OFF	—	CRNT	1 – 39	SEC-86
B210A: STRG LCK STATE SW	—	CRNT	1 – 39	SEC-87

NOTE:

The details of TIME display are as follows.

- CRNT: The malfunctions that are detected now
- 1 - 39: The number is indicated when it is normal at present and a malfunction was detected in the past. It increases like 0 → 1 → 2 ... 38 → 39 after returning to the normal condition whenever IGN OFF → ON. It is fixed to 39 until the self-diagnosis results are erased if it is over 39. It returns to 0 when a malfunction is detected again in the process.

PRECAUTION

PRECAUTIONS

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

INFOID:000000001505323

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 and SB section of this Service Manual.

WARNING:

- To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision which 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 the SRS section.
- Do not 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 For High-Voltage System

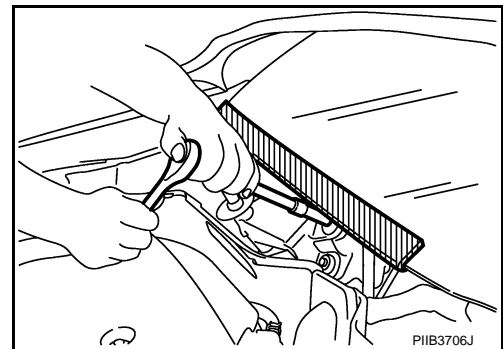
INFOID:000000001505324

Refer to [GI-24. "Precautions For High-Voltage System"](#).

Precaution for Procedure without Cowl Top Cover

INFOID:000000001505325

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



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PCS

ON-VEHICLE REPAIR

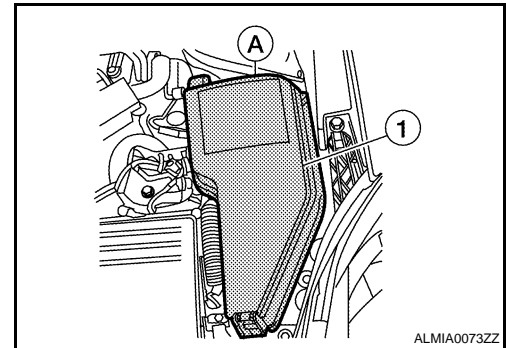
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)

Removal and Installation

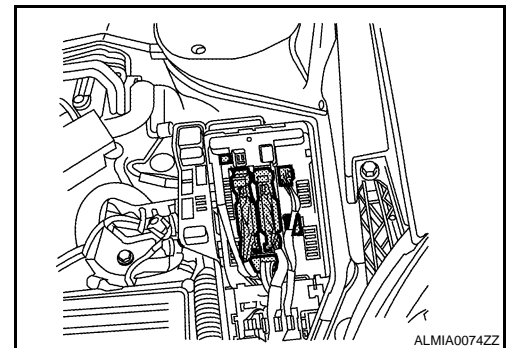
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REMOVAL

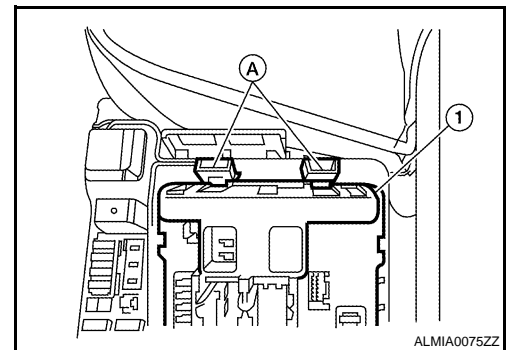
1. Disconnect the 12-volt battery cable from the negative terminal.
2. Remove the IPDM E/R cover (1) while pressing the pawl (A) at the rear end of the IPDM E/R cover (1).



3. Disconnect the harness connectors from the IPDM E/R.



4. While depressing the tabs (A) remove the IPDM E/R (1) from the vehicle.



INSTALLATION

Installation is in the reverse order of removal.

DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

[POWER DISTRIBUTION SYSTEM]

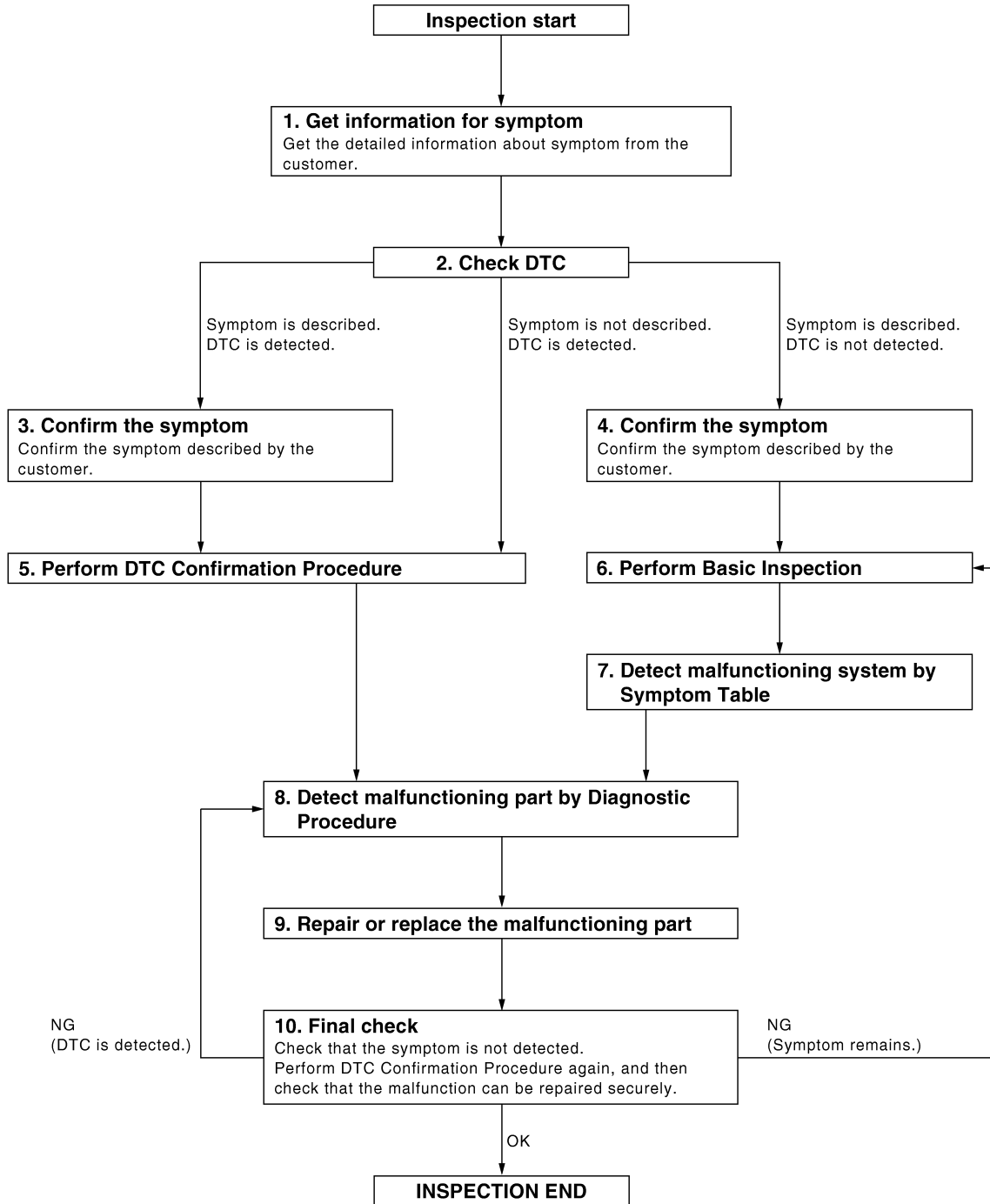
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORKFLOW

Work Flow

INFOID:000000001505327

OVERALL SEQUENCE



DETAILED FLOW

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DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

[POWER DISTRIBUTION SYSTEM]

1. GET INFORMATION FOR SYMPTOM

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

>> GO TO 2

2. CHECK DTC

1. Check DTC.
2. Perform the following procedure if DTC is displayed.
 - Record DTC and freeze frame data.
 - 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.

Is any symptom 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-III to the vehicle in "DATA MONITOR" mode and check real time diagnosis results.

Verify relationship 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-III to the vehicle in "DATA MONITOR" mode and check real time diagnosis results.

Verify relationship 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-III to the vehicle, and check diagnostic results in real time.

If two or more DTCs are detected, refer to [PCS-72. "DTC Inspection Priority Chart"](#) and determine trouble diagnosis order.

NOTE:

- Freeze frame data is useful if the DTC is not detected.
- Perform Component Function Check if DTC Confirmation Procedure is not included in Service Manual. This simplified check procedure is an effective alternative though 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 8

NO >> Refer to [GI-42. "Intermittent Incident"](#).

6. PERFORM BASIC INSPECTION

Perform [PCS-82. "Basic Inspection"](#).

Inspection End>>GO TO 7

7. DETECT MALFUNCTIONING SYSTEM BY SYMPTOM TABLE

Detect malfunctioning system according to [PCS-81. "Symptom Table"](#) based on the confirmed symptom in step 4, and determine the trouble diagnosis order based on possible causes and symptom.

>> GO TO 8

DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

[POWER DISTRIBUTION SYSTEM]

8. DETECT MALFUNCTIONING PART BY DIAGNOSTIC PROCEDURE

Inspect according to Diagnostic Procedure of the system.

NOTE:

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

Is malfunctioning part detected?

YES >> GO TO 9

NO >> Check voltage of related BCM terminals using CONSULT-III.

9. 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 10

10. FINAL CHECK

When DTC was detected in step 2, perform DTC Confirmation Procedure or Component Function Check again, and then check that the malfunction have been fully repaired.

When symptom was described from the customer, refer to confirmed symptom in step 3 or 4 and check that the symptom is not detected.

OK or NG

NG (DTC is detected)>>GO TO 8

NG (Symptom remains)>>GO TO 6

OK >> **INSPECTION END**

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PCS

POWER DISTRIBUTION SYSTEM

< FUNCTION DIAGNOSIS >

[POWER DISTRIBUTION SYSTEM]

FUNCTION DIAGNOSIS

POWER DISTRIBUTION SYSTEM

System Description

INFOID:000000001505328

INPUT/OUTPUT SIGNAL CHART

Switch	Input Signal to BCM	BCM system	Actuator
Push-button ignition switch	Push switch	Power distribution system	<ul style="list-style-type: none"> • Ignition relay (IPDM E/R) • Ignition relay (fuse block) • ACC relay • Blower relay
ECVT device	P range		
PNP switch	N, P range		
Stop lamp switch	Brake ON/OFF		

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. Refer to Hybrid System Start Function for details.
 - Intelligent Key is in the detection area of the interior antenna
 - Insert Intelligent Key in to the key slot
- 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-1 (inside IPDM E/R)
 - Ignition relay-2 [inside fuse block (J/B)]
 - ACC relay
 - Blower fan relay

NOTE:

The hybrid system switch operation changes due to the conditions of brake pedal, ECVT selector lever and vehicle speed.

- The power supply position can be confirmed with the lighting of the indicators near the push-button ignition switch.

PUSH-BUTTON IGNITION SWITCH OPERATION PROCEDURE

The power supply position changing operation can be performed with the following operation.

NOTE:

- When an Intelligent Key is within the detection area of inside key antenna and when it is inserted in to the key slot, it is equivalent to the operations below.
- When starting the hybrid system, the BCM monitors under the hybrid system start conditions,
 - Brake pedal operating condition
 - ECVT selector lever position
 - Vehicle speed
- Unless each start condition is fulfilled, the hybrid system will not respond regardless of how many times the push-button ignition switch is pressed. At that time, illumination repeats the position in the order of LOCK→ACC→ON→OFF.

Power supply position	Hybrid System start/stop condition		Push-button ignition switch operation frequency
	Brake pedal	ECVT selector lever position	
LOCK→ACC	Not depressed	Any position	1
LOCK→ACC→ON	Not depressed	Any position	2
LOCK→ACC→ON→OFF	Not depressed	Any position	3
LOCK→START ACC→START ON→START (Hybrid system start)	Depressed	P or N position (*1)	1 [If the switch is pressed once, the hybrid system starts from any power supply position (LOCK, ACC, and ON)]

POWER DISTRIBUTION SYSTEM

< FUNCTION DIAGNOSIS >

[POWER DISTRIBUTION SYSTEM]

Power supply position	Hybrid System start/stop condition		Push-button ignition switch operation frequency
	Brake pedal	ECVT selector lever position	
Hybrid system is running→OFF (Hybrid system stop)	—	Any position	1
Hybrid System is running→ACC (Hybrid System stop)	—	Any position other than P (*2)	1
Hybrid System stall return operation while driving	—	N position	1

*1: When the ECVT selector lever position is N position, the hybrid system start condition is different according to the vehicle speed.

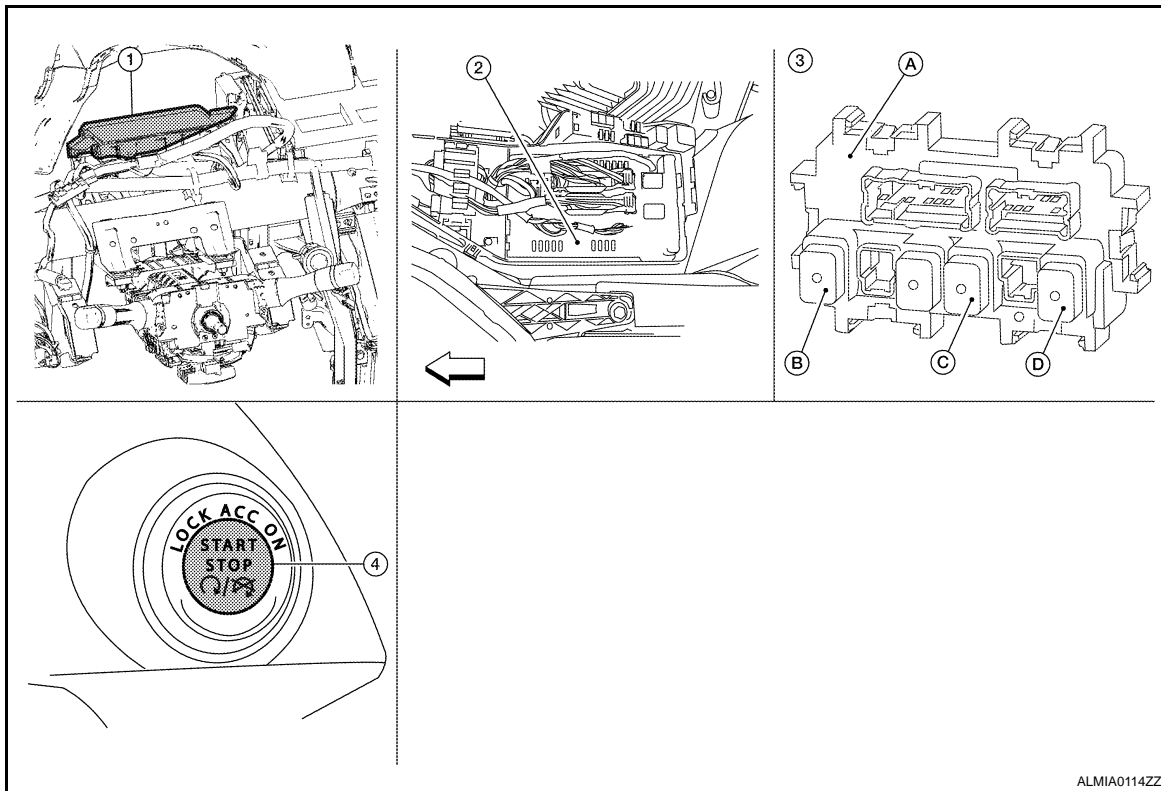
- At vehicle speed of 4 km/h or less, the hybrid system can start only when the brake pedal is depressed.
- At vehicle speed of 4 km/h or more, the hybrid system can start even if the brake pedal is not depressed. (It is the same as "Hybrid System stall return operation while driving".)

*2: When the ECVT selector lever position is in any position other than P position and when the vehicle speed is 5 km/h or more, the hybrid system stop condition is different.

- Press and hold the push-button ignition switch for 2 seconds or more. (When the push-button ignition switch is pressed for too short a time, the operation may be invalid, so properly press and hold to prevent the incorrect operation.)
- Press the push-button ignition switch 3 times or more within 1.5 seconds. (Emergency stop operation)

Component Parts Location

INFOID:000000001505329



←: Vehicle front

- | | | |
|--|--|---|
| <p>1. BCM M16, M17, M18, M19, M21 (view with instrument panel removed)</p> <p>4. Push-button ignition switch M38</p> | <p>2. IPDM E/R E16, E17, E18 (contains Ignition relay-1)</p> | <p>3. A. Fuse block (J/B) M3, M4, M5, E6
B. Ignition relay-2
C. Accessory relay
D. Blower relay</p> |
|--|--|---|

POWER DISTRIBUTION SYSTEM

< FUNCTION DIAGNOSIS >

[POWER DISTRIBUTION SYSTEM]

Component Description

INFOID:000000001505330

BCM	Reference
IPDM E/R	PCS-3
Ignition relay-1 (In IPDM E/R)	PCS-58
Ignition relay-2 [In fuse block (J/B)]	PCS-55
Accessory relay	PCS-47
Blower relay	PCS-52
Stop lamp	SEC-40
Park/neutral position switch	SEC-54
Push-button ignition switch	SEC-81

DIAGNOSIS SYSTEM (BCM)

[POWER DISTRIBUTION SYSTEM]

< FUNCTION DIAGNOSIS >

DIAGNOSIS SYSTEM (BCM)

COMMON ITEM

A

COMMON ITEM : Diagnosis Description

INFOID:000000001505331

B

BCM CONSULT-III FUNCTION

Refer to [BCS-16. "COMMON ITEM : CONSULT-III Function"](#).

COMMON ITEM : CONSULT-III Function

INFOID:000000001505332

C

ECU IDENTIFICATION

Displays the BCM part No.

D

SELF-DIAG RESULT

Refer to [BCS-74. "DTC Index"](#).

INTELLIGENT KEY

E

INTELLIGENT KEY : CONSULT-III Function (BCM - INTELLIGENT KEY)

INFOID:000000001505333

F

BCM CONSULT-III FUNCTION

Refer to [SEC-21. "INTELLIGENT KEY : CONSULT-III Function \(BCM - INTELLIGENT KEY\)"](#).

SELF-DIAG RESULT

Refer to [BCS-74. "DTC Index"](#).

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U1000 CAN COMM CIRCUIT

< COMPONENT DIAGNOSIS >

[POWER DISTRIBUTION SYSTEM]

COMPONENT DIAGNOSIS

U1000 CAN COMM CIRCUIT

Description

INFOID:000000001505334

Refer to [BCS-29, "Description"](#).

DTC Logic

INFOID:000000001505335

DTC DETECTION LOGIC

CONSULT-III display description	DTC Detection Condition	Possible cause
CAN COMM CIRCUIT [U1000]	When IPDM E/R cannot communicate CAN communication signal continuously for 2 seconds or more	In CAN communication system, any item (or items) of the following listed below is malfunctioning. <ul style="list-style-type: none">• ECTV• Receiving (ECM)• Receiving (VDC/TCS/ABS)• Receiving (METER/M&A)• High voltage ECU• Receiving (BCM)

Diagnosis Procedure

INFOID:000000001505336

1. PERFORM SELF DIAGNOSTIC

1. Turn ignition switch ON and wait for 2 seconds or more.
2. Check "SELF-DIAG RESULTS".

Is "CAN COMM CIRCUIT" displayed?

- YES >> Refer to [LAN-8, "CAN Communication Control Circuit"](#).
NO >> Refer to [GI-42, "Intermittent Incident"](#).

U1010 CONTROL UNIT (CAN)

< COMPONENT DIAGNOSIS >

[POWER DISTRIBUTION SYSTEM]

U1010 CONTROL UNIT (CAN)

DTC Logic

INFOID:000000001505337

DTC DETECTION LOGIC

CONSULT-III display description	DTC Detection Condition	Possible cause
CAN COMM CIRCUIT [U1010]	BCM detected internal CAN communication circuit malfunction.	BCM

Diagnosis Procedure

INFOID:000000001505338

1. REPLACE BCM

When DTC U1010 is detected, replace BCM.

>> Replace BCM. Refer to [BCS-78, "Removal and Installation"](#).

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B2553 IGNITION RELAY

< COMPONENT DIAGNOSIS >

[POWER DISTRIBUTION SYSTEM]

B2553 IGNITION RELAY

Description

INFOID:000000001505339

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

- Ignition relay-1 (inside IPDM E/R)
- Ignition relay-2 [inside fuse block (J/B)]
- Blower relay

BCM checks any ignition relay ON request for consistency with the actual ignition relay operation status.

DTC Logic

INFOID:000000001505340

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B2553	IGNITION RELAY	BCM detects a difference of signal for 2 seconds or more between the following information. <ul style="list-style-type: none"> • Ignition relay-2 (fuse block) ON/OFF operation • Ignition relay-2 (fuse block) feedback. 	<ul style="list-style-type: none"> • Harness or connectors (ignition relay-2 feedback circuit is open or short)

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Turn ignition switch ON under the following conditions, and wait for at least 2 seconds.
 - CVT selector lever is in the P or N position.
 - Release brake pedal.
2. Check "SELF-DIAG RESULTS" with CONSULT-III.

Is DTC detected?

- YES >> Refer to [PCS-44, "Diagnosis Procedure"](#).
 NO >> INSPECTION END

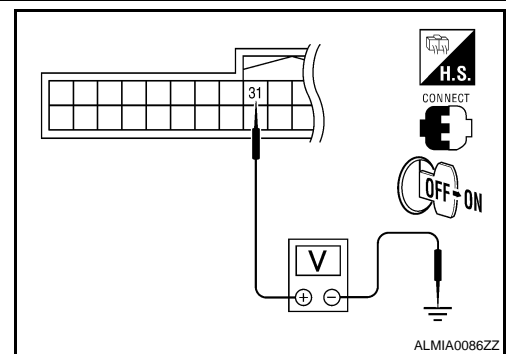
Diagnosis Procedure

INFOID:000000001505341

1. CHECK IGNITION RELAY FEEDBACK INPUT SIGNAL

Check voltage between BCM harness connector and ground under the following conditions.

Terminals		Condition	Voltage (V)
(+)	(-)		
BCM			
Connector	Terminal		
M18	31	ON	Battery voltage



Is the inspection result normal?

- YES >> Replace BCM. Refer to [BCS-78, "Removal and Installation"](#).
 NO >> GO TO 2

2. CHECK IGNITION RELAY FEEDBACK CIRCUIT

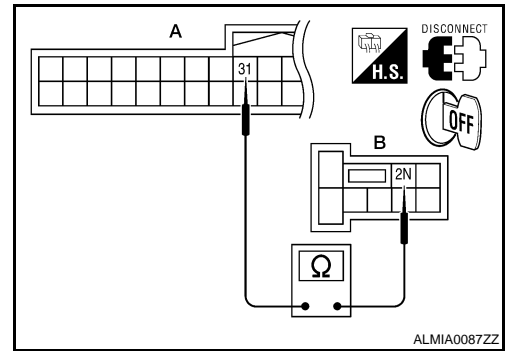
B2553 IGNITION RELAY

[POWER DISTRIBUTION SYSTEM]

< COMPONENT DIAGNOSIS >

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

BCM		Fuse block		Continuity
Connector	Terminal	Connector	Terminal	
M18	31	M5	2N	Yes

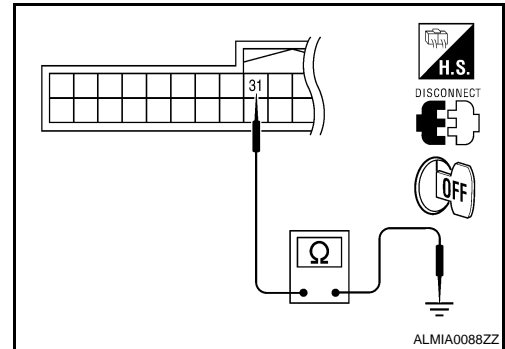


4. Check continuity between BCM harness connector and ground.

BCM		Ground	Continuity
Connector	Terminal		
M18	31		No

Is the inspection result normal?

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



3. CHECK INTERMITTENT INCIDENT

Refer to [GI-42. "Intermittent Incident"](#).

>> INSPECTION END

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B260A IGNITION RELAY

< COMPONENT DIAGNOSIS >

[POWER DISTRIBUTION SYSTEM]

B260A IGNITION RELAY

Description

INFOID:000000001505342

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

- Ignition relay-1 (inside IPDM E/R)
- Ignition relay-2 [inside fuse block (J/B)]
- Front blower motor relay

BCM checks any ignition relay ON request for consistency with the actual ignition relay operation status.

DTC Logic

INFOID:000000001505343

DTC DETECTION LOGIC

NOTE:

- If DTC B260A is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to [PCS-42, "DTC Logic"](#).
- If DTC B260A is displayed with DTC U1010, first perform the trouble diagnosis for DTC U1010. Refer to [PCS-43, "DTC Logic"](#).
- If DTC B260A is displayed with DTC B261A, first perform the trouble diagnosis for DTC B261A. Refer to [PCS-59, "DTC Logic"](#).

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B260A	IGNITION RELAY	BCM detects a difference of signal for 2 second or more between the following information. <ul style="list-style-type: none">• Ignition relay-1 (ON/OFF) operation• Ignition relay-1 feedback	<ul style="list-style-type: none">• Harness or connectors (Ignition relay-1 operation circuit is open or shorted.)

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Turn ignition switch ON under the following conditions, and wait for at least 2 seconds.
 - CVT selector lever is in the P or N position.
 - Release the brake pedal.
2. Check "SELF-DIAG RESULTS" with CONSULT-III.

Is DTC detected?

- YES >> Refer to [PCS-46, "Diagnosis Procedure"](#).
NO >> INSPECTION END

Diagnosis Procedure

INFOID:000000001505344

1. CHECK DTC WITH IPDM E/R

Check "SELF-DIAG RESULTS" with CONSULT-III. Refer to [PCS-32, "DTC Index"](#).

Is DTC detected?

- YES >> Replace IPDM E/R. Refer to [PCS-34, "Removal and Installation"](#).
NO >> GO TO 2

2. CHECK INTERMITTENT INCIDENT

Refer to [GI-42, "Intermittent Incident"](#).

>> INSPECTION END

B2611 ACC RELAY

< COMPONENT DIAGNOSIS >

[POWER DISTRIBUTION SYSTEM]

B2611 ACC RELAY

Description

INFOID:000000001505345

BCM turns ON the ACC relay to supply ACC power to each ECU when the power supply position changes to ACC.

BCM check ACC relay ON request for consistency with the actual ACC relay operation status.

DTC Logic

INFOID:000000001505346

DTC DETECTION LOGIC

NOTE:

- If DTC B2611 is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to [PCS-42, "DTC Logic"](#).
- If DTC B2611 is displayed with DTC U1010, first perform the trouble diagnosis for DTC U1010. Refer to [PCS-43, "DTC Logic"](#).

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B2611	ACC RELAY	BCM detects a difference of signal for 2 seconds or more between the following information. <ul style="list-style-type: none"> • ACC relay ON/OFF operation • ACC relay feedback. 	<ul style="list-style-type: none"> • Harness or connectors (ACC relay feed back circuit is open or shorted)

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Turn the power supply position to ACC under the following conditions, and wait for at least 2 seconds.
 - CVT selector lever is in P or N position
 - Brake not depressed
2. Check "SELF-DIAG RESULTS" with CONSULT-III.

Is DTC detected?

- YES >> Refer to [PCS-47, "Diagnosis Procedure"](#).
 NO >> INSPECTION END

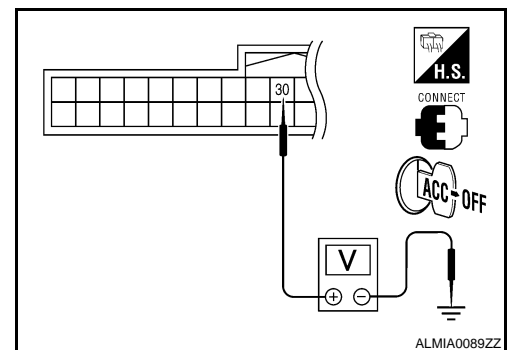
Diagnosis Procedure

INFOID:000000001505347

1. CHECK ACC RELAY FEED BACK INPUT SIGNAL

Check voltage between BCM harness connector and ground under the following conditions.

Terminals		Condition	Voltage (V)
(+)	(-)		
BCM			
Connector	Terminal		
M18	30	Ignition switch OFF	Battery voltage
		ACC	



Is the inspection result normal?

- YES >> GO TO 5
 NO >> GO TO 2

2. CHECK ACC RELAY POWER SUPPLY CIRCUIT

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

B2611 ACC RELAY

< COMPONENT DIAGNOSIS >

[POWER DISTRIBUTION SYSTEM]

Terminals		Voltage (V)
(+)	(-)	
ACC relay	Ground	Battery voltage
Terminal		
5		

Is the inspection result normal?

YES >> GO TO 3

NO >> Repair or replace harness.

3. CHECK FUSE

Check 10A fuse [No. 19, located in the fuse block (J/B)].

Is the inspection result normal?

YES >> GO TO 4

NO >> Replace fuse.

4. CHECK ACC RELAY FEEDBACK CIRCUIT

1. Check continuity between ACC relay harness connector and BCM harness connector.

ACC relay Terminal	BCM		Continuity
	Connector	Terminal	
3	M18	30	Yes

2. Check continuity between ACC relay harness connector and ground.

ACC relay Terminal	Ground	Continuity
3		

Is the inspection result normal?

YES >> GO TO 5

NO >> Repair or replace harness.

5. CHECK INTERMITTENT

Refer to [GI-42, "Intermittent Incident"](#).

>> INSPECTION END

B2614 ACC RELAY CIRCUIT

< COMPONENT DIAGNOSIS >

[POWER DISTRIBUTION SYSTEM]

B2614 ACC RELAY CIRCUIT

Description

INFOID:000000001505348

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

DTC Logic

INFOID:000000001505349

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B2614	ACC relay circuit	An immediate operation of ACC relay is requested by BCM, but there is no response for more than 1 second.	<ul style="list-style-type: none">• Harness or connectors (ACC relay circuit is open or shorted)• ACC relay

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Turn the power supply position to ACC under the following conditions, and wait for at least 1 second.
 - CVT selector lever is in the P or N position.
 - Release the brake pedal.
2. Check "SELF-DIAG RESULTS" with CONSULT-III.

Is DTC detected?

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

Diagnosis Procedure

INFOID:000000001505350

1. CHECK ACCESSORY RELAY POWER SUPPLY

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

Terminals		Condition	Voltage (V)
(+)	(-)		
Accessory relay	Ground	Ignition	OFF
Terminal			ACC
1		0	
			Battery voltage

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.
3. Check continuity between accessory relay harness connector and BCM harness connector.

Accessory relay	BCM		Continuity
Terminal	Connector	Terminal	
1	M19	83	Yes

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

B2614 ACC RELAY CIRCUIT

< COMPONENT DIAGNOSIS >

[POWER DISTRIBUTION SYSTEM]

Accessory relay	Ground	Continuity
Terminal		
1		No

Is the inspection result normal?

- YES >> GO TO 6
- 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		Yes

Is the inspection result normal?

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

4. CHECK ACCESSORY RELAY POWER SUPPLY CIRCUIT-2

Check voltage between accessory relay harness connector and ground.

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

Is the inspection result normal?

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

5. CHECK ACCESSORY RELAY

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

YES or NO

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

6. CHECK INTERMITTENT INCIDENT

Refer to [GI-42, "Intermittent Incident"](#).

>> INSPECTION END

Component Inspection (Accessory Relay)

INFOID:000000001505351

1. CHECK ACCESSORY RELAY

B2614 ACC RELAY CIRCUIT

[POWER DISTRIBUTION SYSTEM]

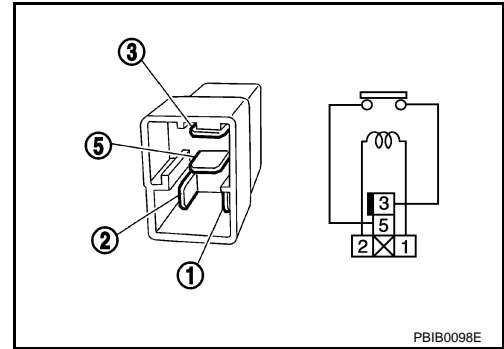
< COMPONENT DIAGNOSIS >

1. Turn ignition switch OFF.
2. Remove accessory relay.
3. Check the continuity between accessory relay terminals under the following conditions.

Terminals	Condition	Continuity
3 and 5	12V direct current supply between terminals 1 and 2	Yes
	No current supply	No

Is the inspection result normal?

- YES >> INSPECTION END
 NO >> Replace accessory relay.



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B2615 BLOWER RELAY CIRCUIT

< COMPONENT DIAGNOSIS >

[POWER DISTRIBUTION SYSTEM]

B2615 BLOWER RELAY CIRCUIT

Description

INFOID:000000001505352

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

DTC Logic

INFOID:000000001505353

DTC DETECTION LOGIC

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

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Turn ignition switch ON under the following conditions, and wait for at least 1 second.
 - CVT selector lever is in the P or N position.
 - Release brake pedal.
2. Check "SELF-DIAG RESULTS" with CONSULT-III.

Is DTC detected?

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

Diagnosis Procedure

INFOID:000000001505354

1. CHECK FRONT BLOWER MOTOR RELAY POWER SUPPLY

1. Turn ignition switch OFF.
2. Disconnect front blower motor relay.
3. Check voltage between front blower motor relay harness connector and ground under the following conditions.

Terminals		Condition	Voltage (V)
(+)	(-)		
Front blower motor relay	Ground	OFF or ACC	0
Terminal		ON	Battery voltage
1			

Is the inspection result normal?

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

2. CHECK FRONT BLOWER MOTOR RELAY POWER SUPPLY CIRCUIT

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

Front blower motor relay	BCM		Continuity
	Connector	Terminal	
Terminal			
1	M19	90	Yes

B2615 BLOWER RELAY CIRCUIT

< COMPONENT DIAGNOSIS >

[POWER DISTRIBUTION SYSTEM]

4. Check continuity between front blower motor relay harness connector and ground.

Front blower motor relay	Ground	Continuity
Terminal		
1		No

Is the inspection result normal?

YES >> GO TO 6

NO >> Repair or replace harness.

3. CHECK FRONT BLOWER MOTOR RELAY GROUND CIRCUIT

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

Front blower motor relay	Ground	Continuity
Terminal		
2		Yes

Is the inspection result normal?

YES >> GO TO 4

NO >> Repair or replace harness.

4. CHECK FRONT BLOWER MOTOR RELAY POWER SUPPLY CIRCUIT-2

Check voltage between front blower motor relay harness connector and ground.

Terminals		Voltage (V)
(+)	(-)	
Front blower motor relay	Ground	
Terminal		
5		Battery voltage

Is the inspection result normal?

YES >> GO TO 5

NO >> Repair or replace harness.

5. CHECK FRONT BLOWER MOTOR RELAY

Refer to [PCS-53. "Component Inspection \(Blower Relay\)"](#).

Is the inspection result normal?

YES >> GO TO 6

NO >> Replace front blower motor relay.

6. CHECK INTERMITTENT INCIDENT

Refer to [GI-42. "Intermittent Incident"](#).

>> INSPECTION END

Component Inspection (Blower Relay)

INFOID:000000001505355

1. CHECK FRONT BLOWER MOTOR RELAY

1. Turn ignition switch OFF.
2. Remove front blower motor relay.

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B2615 BLOWER RELAY CIRCUIT

< COMPONENT DIAGNOSIS >

[POWER DISTRIBUTION SYSTEM]

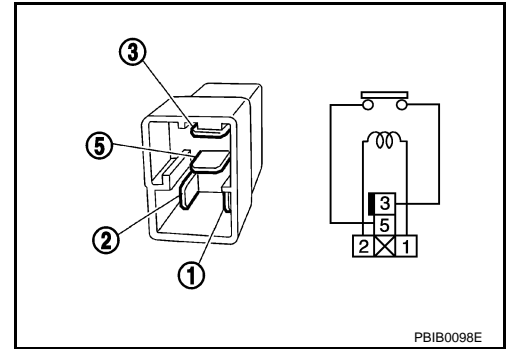
3. Check the continuity between front blower motor relay terminals under the following conditions.

Terminals	Condition	Continuity
3 and 5	12V direct current supply between terminals 1 and 2	Yes
	No current supply	No

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace front blower motor relay.



B2616 IGNITION RELAY CIRCUIT

< COMPONENT DIAGNOSIS >

[POWER DISTRIBUTION SYSTEM]

B2616 IGNITION RELAY CIRCUIT

Description

INFOID:000000001505356

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

DTC Logic

INFOID:000000001505357

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B2616	Ignition relay circuit	An immediate operation of ignition relay-2 [fuse block (J/B)] 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-2 circuit is open or shorted)• Ignition relay-2 [fuse block(J/B)]

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Turn ignition switch ON under the following conditions, and wait for at least 1 second.
 - CVT selector lever is in the P or N position
 - Release brake pedal
2. Check "SELF-DIAG RESULTS" with CONSULT-III.

Is DTC detected?

- YES >> Refer to [PCS-55, "Diagnosis Procedure"](#).
NO >> INSPECTION END

Diagnosis Procedure

INFOID:000000001505358

1. CHECK IGNITION RELAY-2 POWER SUPPLY

1. Turn ignition switch OFF.
2. Disconnect ignition relay-2.
3. Check voltage between ignition relay-2 harness connector and ground under the following conditions.

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

Is the inspection result normal?

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

2. CHECK IGNITION RELAY-2 POWER SUPPLY CIRCUIT

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

Ignition relay-2	BCM		Continuity
	Connector	Terminal	
Terminal	M19	70	Yes
1			

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

B2616 IGNITION RELAY CIRCUIT

< COMPONENT DIAGNOSIS >

[POWER DISTRIBUTION SYSTEM]

Ignition relay-2	Ground	Continuity
Terminal		
1		No

Is the inspection result normal?

- 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.

Ignition relay-2	Ground	Continuity
Terminal		
2		Yes

Is the inspection result normal?

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

4. CHECK IGNITION RELAY-2 POWER SUPPLY CIRCUIT-2

Check voltage between ignition relay-2 harness connector and ground.

Terminals		Voltage (V)
(+)	(-)	
Ignition relay-2	Ground	
Terminal		
5		Battery voltage

Is the inspection result normal?

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

5. CHECK IGNITION RELAY-2

Refer to [PCS-56, "Component Inspection \(Ignition Relay\)"](#).

Is the inspection result normal?

- YES >> GO TO 6
NO >> Replace ignition relay-2.

6. CHECK INTERMITTENT INCIDENT

Refer to [GI-42, "Intermittent Incident"](#).

>> INSPECTION END

Component Inspection (Ignition Relay)

INFOID:000000001505359

1. CHECK IGNITION RELAY-2

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

B2616 IGNITION RELAY CIRCUIT

[POWER DISTRIBUTION SYSTEM]

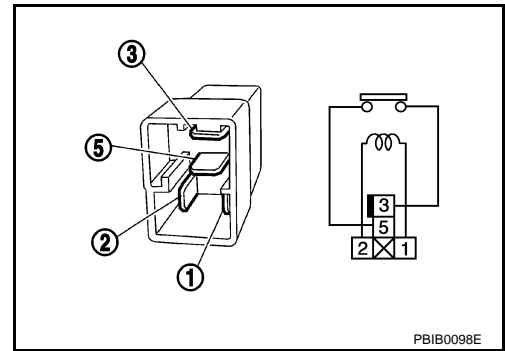
< COMPONENT DIAGNOSIS >

3. Check the continuity between ignition relay-2 terminals under the following conditions.

Terminals	Condition	Continuity
3 and 5	12V direct current supply between terminals 1 and 2	Yes
	No current supply	No

Is the inspection result normal?

- YES >> INSPECTION END
- NO >> Replace ignition relay-2.



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B2618 BCM

Description

INFOID:000000001505360

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

DTC Logic

INFOID:000000001505361

DTC DETECTION LOGIC

NOTE:

- If DTC B2618 is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to [PCS-42, "DTC Logic"](#).
- If DTC B2618 is displayed with DTC U1010, first perform the trouble diagnosis for DTC U1010. Refer to [PCS-43, "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	<ul style="list-style-type: none"> • BCM

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Turn ignition switch ON under the following conditions, and wait for at least 1 second.
 - CVT selector lever is in the P or N position
 - Release brake pedal
2. Check "SELF-DIAG RESULTS" with CONSULT-III.

Is DTC detected?

- YES >> Refer to [PCS-58, "Diagnosis Procedure"](#).
 NO >> INSPECTION END

Diagnosis Procedure

INFOID:000000001505362

1. INSPECTION START

1. Turn ignition switch ON.
2. Select "SELF-DIAG RESULTS" mode with CONSULT-III.
3. Touch "ERASE".
4. **Perform DTC Confirmation Procedure.**
 See [PCS-58, "DTC Logic"](#).

Is the 1st trip DTC B2618 displayed again?

- YES >> Replace BCM. Refer to [BCS-78, "Removal and Installation"](#).
 NO >> INSPECTION END

B261A PUSH-BUTTON IGNITION SWITCH

< COMPONENT DIAGNOSIS >

[POWER DISTRIBUTION SYSTEM]

B261A PUSH-BUTTON IGNITION SWITCH

Description

INFOID:000000001505363

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

DTC Logic

INFOID:000000001505364

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B261A	PUSH-BUTTON IGNITION SWITCH	BCM detects a difference of signal for 1 second or more between the following information. <ul style="list-style-type: none"> Power supply position by push-button ignition switch Power supply position from IPDM E/R (CAN) 	<ul style="list-style-type: none"> Harness or connectors (Push-button ignition switch circuit is open or shorted.)

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

- Press the push-button ignition switch under the following conditions, and wait for at least 1 second.
 - CVT selector lever is in the P or N position.
 - Release the brake pedal.
- Check "SELF-DIAG RESULTS" with CONSULT-III.

Is DTC detected?

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

Diagnosis Procedure

INFOID:000000001505365

1. CHECK PUSH-BUTTON IGNITION SWITCH OPERATION

Press push-button ignition switch and check if it turns to ON.

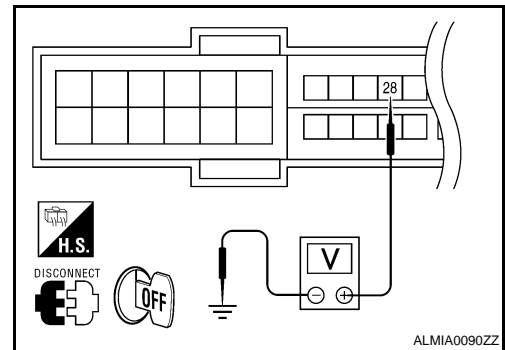
Does ignition switch turn to ON?

- YES >> GO TO 2
NO >> GO TO 4

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

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

Terminals		Voltage (V)
(+)	(-)	
IPDM E/R		Ground
Connector	Terminal	
E18	28	
		Battery voltage



Is the inspection result normal?

- YES >> GO TO 3
NO >> Replace IPDM E/R. Refer to [PCS-34, "Removal and Installation"](#).

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

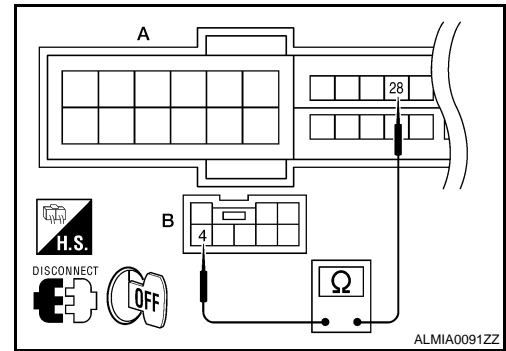
B261A PUSH-BUTTON IGNITION SWITCH

[POWER DISTRIBUTION SYSTEM]

< COMPONENT DIAGNOSIS >

1. Disconnect IPDM E/R and BCM.
2. Check continuity between IPDM E/R harness connector (A) and push-button ignition switch harness connector (B).

IPDM E/R		Push-button ignition switch		Continuity
Connector	Terminal	Connector	Terminal	
E18 (A)	28	M38 (B)	4	Yes

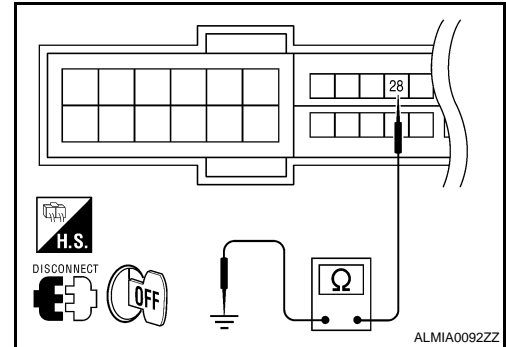


3. Check continuity between IPDM E/R harness connector and ground.

IPDM E/R		Ground	Continuity
Connector	Terminal		
E18	28		No

Is the inspection result normal?

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



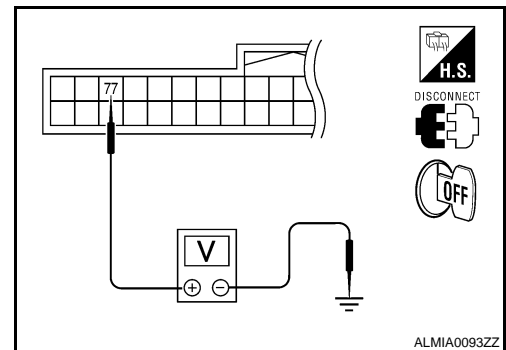
4. CHECK IGNITION SWITCH OUTPUT SIGNAL (BCM)

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

Terminals		Voltage (V)
(+)	(-)	
BCM		Ground
Connector	Terminal	
M19	77	Battery voltage

Is the inspection result normal?

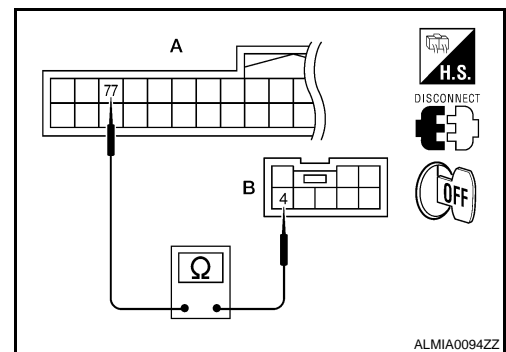
- YES >> GO TO 5
 NO >> Replace BCM. Refer to [PCS-83. "Removal and Installation"](#).



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

1. Disconnect BCM and IPDM E/R.
2. Check continuity between BCM harness connector (A) and push-button ignition switch harness connector (B).

BCM		Push-button ignition switch		Continuity
Connector	Terminal	Connector	Terminal	
M19 (A)	77	M38 (B)	4	Yes



B261A PUSH-BUTTON IGNITION SWITCH

< COMPONENT DIAGNOSIS >

[POWER DISTRIBUTION SYSTEM]

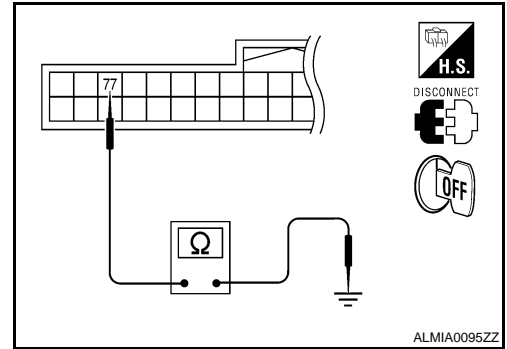
3. Check continuity between BCM harness connector and ground.

BCM		Ground	Continuity
Connector	Terminal		
M19	77		No

Is the inspection result normal?

YES >> GO TO 6

NO >> Repair or replace harness.



6. CHECK INTERMITTENT INCIDENT

Refer to [GI-42, "Intermittent Incident"](#).

>> INSPECTION END

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PCS

POWER SUPPLY AND GROUND CIRCUIT

< COMPONENT DIAGNOSIS >

[POWER DISTRIBUTION SYSTEM]

POWER SUPPLY AND GROUND CIRCUIT

BCM

BCM : Diagnosis Procedure

INFOID:000000001505366

Refer to [BCS-34, "Diagnosis Procedure"](#).

BCM : Special Repair Requirement

INFOID:000000001505367

1. REQUIRED WORK WHEN REPLACING BCM

Initialize control unit. Refer to CONSULT-III operation manual NATS-IVIS/NVIS.

>> Work end.

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

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

INFOID:000000001505368

Refer to [PCS-18, "Diagnosis Procedure"](#).

PUSH-BUTTON IGNITION SWITCH POSITION INDICATOR

< COMPONENT DIAGNOSIS >

[POWER DISTRIBUTION SYSTEM]

PUSH-BUTTON IGNITION SWITCH POSITION INDICATOR

Description

INFOID:000000001505369

The switch that 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:000000001505370

1. CHECK FUNCTION

With CONSULT-III

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

Test item		Description	
LOCK INDICATOR	ON	Position indicator	: Illuminate
ACC INDICATOR	OFF		: Not illuminate
IGNITION ON IND			

Is the inspection result normal?

YES >> INSPECTION END.

NO >> Refer to [PCS-63](#), "Diagnosis Procedure".

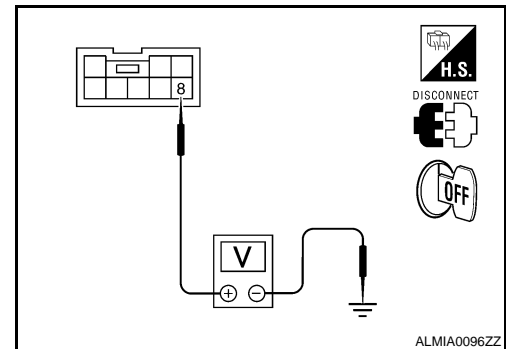
Diagnosis Procedure

INFOID:000000001505371

1. CHECK PUSH-BUTTON IGNITION SWITCH INPUT SIGNAL

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

Terminals		Voltage (V)
(+)	(-)	
Push-button ignition switch		Ground
Connector	Terminal	
E38	8	
		Battery voltage



Is the inspection normal?

YES >> GO TO 2

NO >> Check the following.

- 10A fuse [No. 9, located in fuse block (J/B)]
- Harness for open or short between push-button ignition switch and fuse.

2. CHECK PUSH-BUTTON IGNITION SWITCH CIRCUIT

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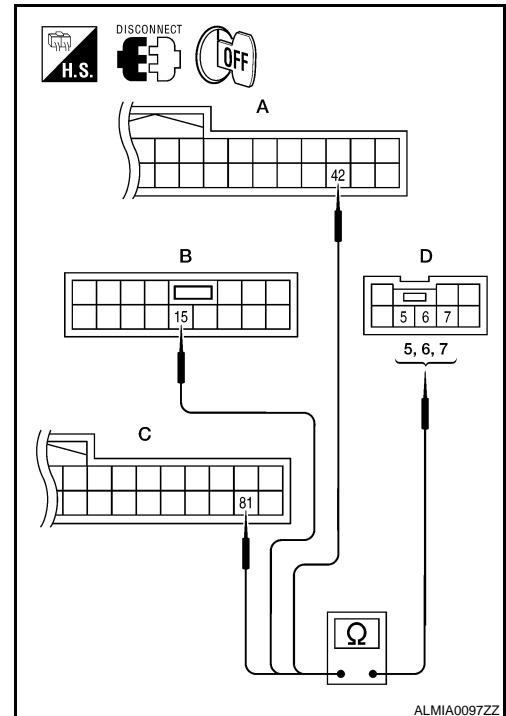
PUSH-BUTTON IGNITION SWITCH POSITION INDICATOR

[POWER DISTRIBUTION SYSTEM]

< COMPONENT DIAGNOSIS >

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

Indicator	BCM Connector	Terminal	Push-button ignition switch connector	Terminal	Continuity
LOCK	M18 (A)	42	E38 (D)	5	Yes
ACC	M17 (B)	15		6	
ON	M19 (C)	81		7	

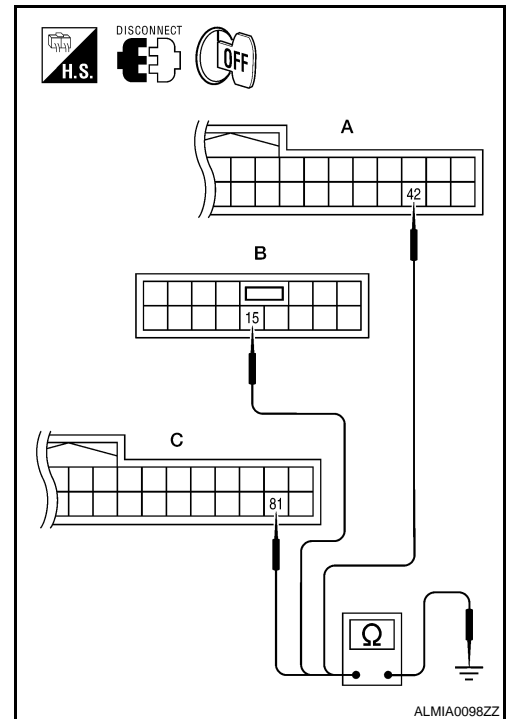


3. Check continuity between BCM harness connector and ground.

Indicator	BCM connector	Terminal	Ground	Continuity
LOCK	M18 (A)	42	Ground	No
ACC	M17 (B)	15		
ON	M19 (C)	81		

Is the inspection normal?

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



3. CHECK PUSH-BUTTON IGNITION SWITCH

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

Is the inspection normal?

- YES >> GO TO 4
 NO >> Replace push-button ignition switch. Refer to [SEC-154, "Removal and Installation"](#).

4. CHECK INTERMITTENT INCIDENT

Refer to [GI-42, "Intermittent Incident"](#).

>> INSPECTION END

PUSH-BUTTON IGNITION SWITCH POSITION INDICATOR

< COMPONENT DIAGNOSIS >

[POWER DISTRIBUTION SYSTEM]

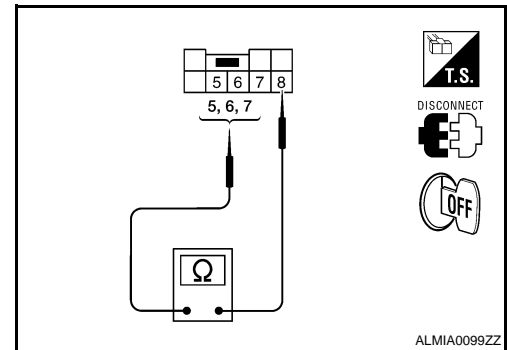
Component Inspection

INFOID:000000001505372

1. CHECK PUSH-BUTTON IGNITION SWITCH

Check push-button ignition switch.

Terminal		Push-button ignition switch position	Continuity
Push-button ignition switch			
8	5	LOCK	Yes
	6	ACC	
	7	ON	



Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace push-button ignition switch. Refer to [SEC-154](#), "[Removal and Installation](#)".

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ECU DIAGNOSIS

BCM (BODY CONTROL MODULE)

Reference Value

INFOID:000000001505373

Refer to [BCS-39, "Reference Value"](#).

Terminal Layout

INFOID:000000001505374

Refer to [BCS-43, "Terminal Layout"](#).

Physical Values

INFOID:000000001505375

Refer to [BCS-44, "Physical Values"](#).

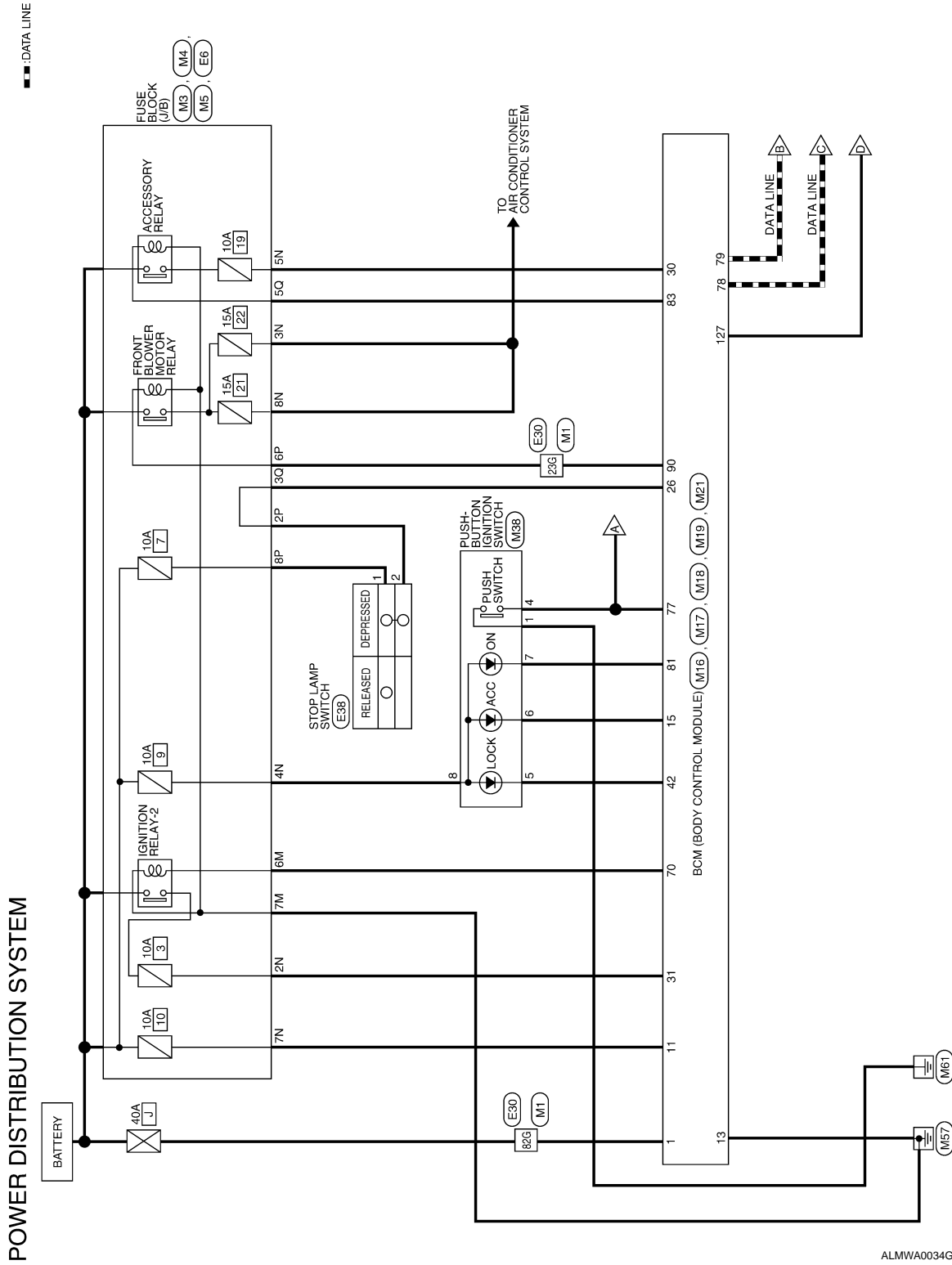
BCM (BODY CONTROL MODULE)

[POWER DISTRIBUTION SYSTEM]

< ECU DIAGNOSIS >

Wiring Diagram

INFOID:000000001505376



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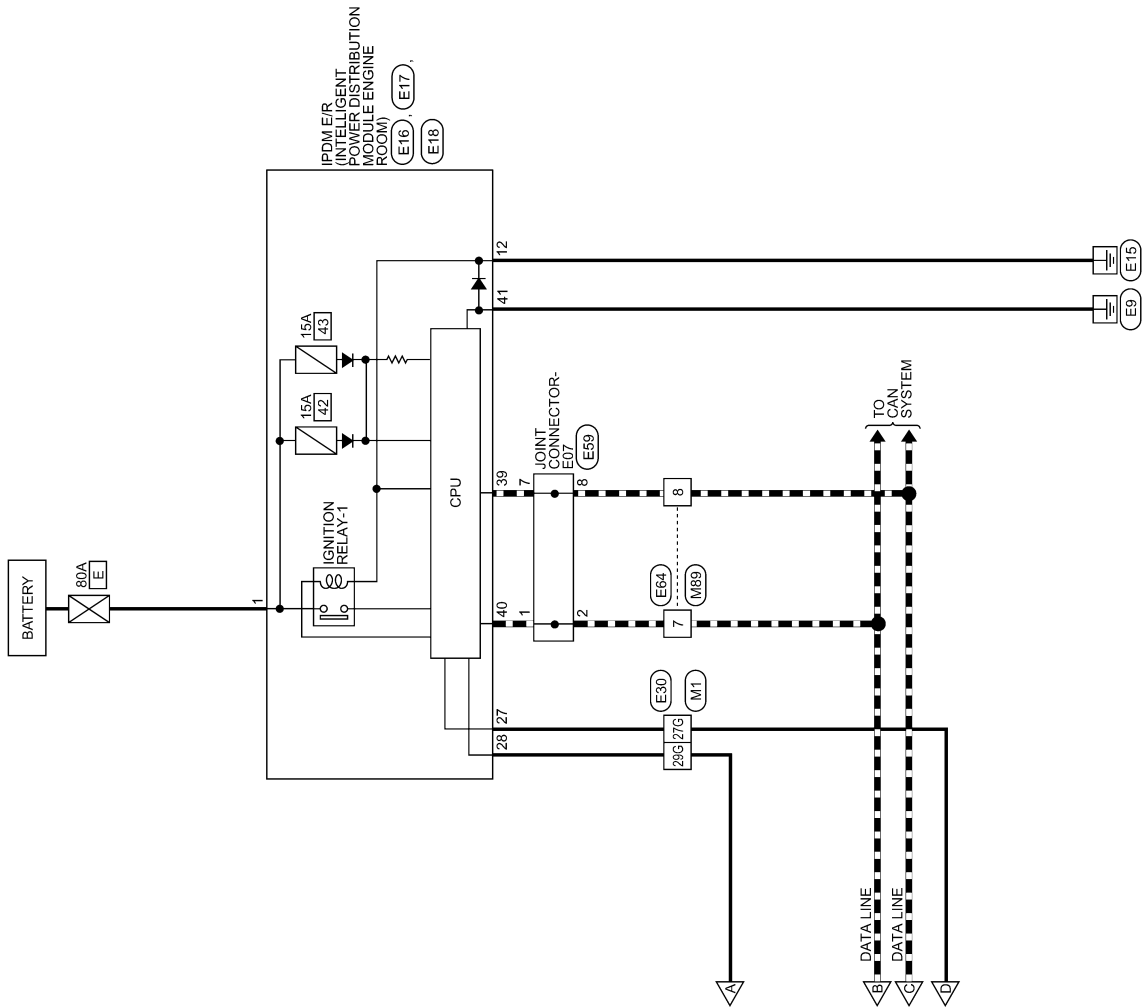
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BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

[POWER DISTRIBUTION SYSTEM]

■ DATA LINE



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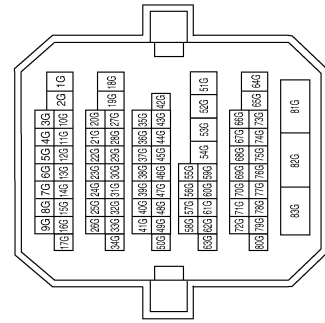
BCM (BODY CONTROL MODULE)

[POWER DISTRIBUTION SYSTEM]

< ECU DIAGNOSIS >

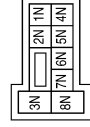
POWER DISTRIBUTION SYSTEM CONNECTORS

Connector No.	M1
Connector Name	WIRE TO WIRE
Connector Color	WHITE



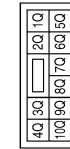
Terminal No.	Color of Wire	Signal Name
23G	Y	-
27G	BR/W	-
29G	BR	-
82G	W/B	-

Connector No.	M3
Connector Name	FUSE BLOCK (J/B)
Connector Color	WHITE



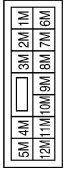
Terminal No.	Color of Wire	Signal Name
2N	G	-
3N	W/L	-
4N	G/Y	-
5N	V/Y	-
7N	Y/R	-
8N	W/L	-

Connector No.	M4
Connector Name	FUSE BLOCK (J/B)
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
3Q	O/L	-
5Q	L	-

Connector No.	M5
Connector Name	FUSE BLOCK (J/B)
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
6M	R/B	-
7M	B	-

Connector No.	M16
Connector Name	BCM (BODY CONTROL MODULE)
Connector Color	BLACK



Terminal No.	Color of Wire	Signal Name
1	W/B	BAT_POWER_F/L

ALMIA0079GB

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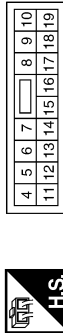
PCS

BCM (BODY CONTROL MODULE)

[POWER DISTRIBUTION SYSTEM]

< ECU DIAGNOSIS >

Connector No.	M17
Connector Name	BCM (BODY CONTROL MODULE)
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
11	Y/R	BAT_BCM_FUSE
13	B	GND1
15	Y/L	ACC_LED

Connector No.	M18
Connector Name	BCM (BODY CONTROL MODULE)
Connector Color	GREEN



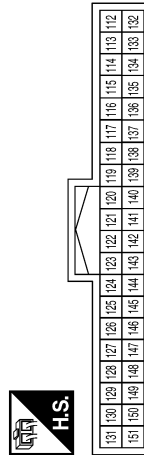
Terminal No.	Color of Wire	Signal Name
26	O/L	STOP_L_HIGH_SW
30	V/Y	ACC_F/B
31	G	IGN_F/B
42	R	S/L_LOCK_LED

Connector No.	M19
Connector Name	BCM (BODY CONTROL MODULE)
Connector Color	BLACK



Terminal No.	Color of Wire	Signal Name
70	R/B	IGN_ELEC_CONT
77	BR	ENG_START_SW
78	P	CAN_L
79	L	CAN_H
81	LG	IGN_ON_LED
83	L	ACC_CONT
90	Y	IGN2_CONT

Connector No.	M21
Connector Name	BCM (BODY CONTROL MODULE)
Connector Color	GRAY



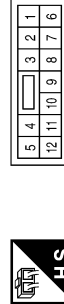
Terminal No.	Color of Wire	Signal Name
127	BR/W	IGN_USM_CONT1

Connector No.	M38
Connector Name	PUSH-BUTTON IGNITION SWITCH
Connector Color	BROWN



Terminal No.	Color of Wire	Signal Name
1	B	GND
4	BR	START_SW
5	R	LOCK
6	Y/L	ACC
7	LG	ON
8	G/Y	B+

Connector No.	M89
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
7	L	-
8	P	-

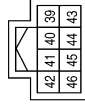
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BCM (BODY CONTROL MODULE)

[POWER DISTRIBUTION SYSTEM]

< ECU DIAGNOSIS >

Connector No.	E17
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
39	P	CAN-L
40	L	CAN-H
41	B/Y	S-GND

Connector No.	E16
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Color	BLACK



Terminal No.	Color of Wire	Signal Name
1	R	F/L MAIN

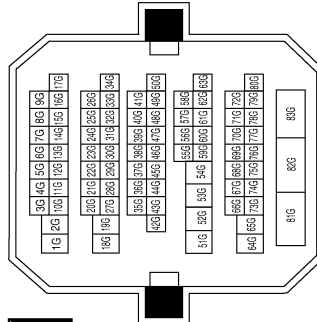
Connector No.	E6
Connector Name	FUSE BLOCK (J/B)
Connector Color	WHITE



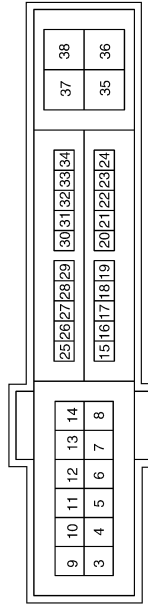
Terminal No.	Color of Wire	Signal Name
2P	R/G	-
6P	Y	-
8P	Y/R	-

Terminal No.	Color of Wire	Signal Name
23G	Y	-
27G	BR/W	-
29G	BR	-
82G	W/B	-

Connector No.	E30
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Connector No.	E18
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
12	B	P_GND
27	BR/W	IGN_SIGNAL
28	BR	PUSH_START_SW

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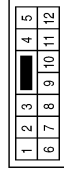
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BCM (BODY CONTROL MODULE)

[POWER DISTRIBUTION SYSTEM]

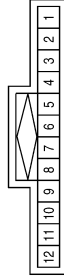
< ECU DIAGNOSIS >

Connector No.	E64
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
7	L	-
8	P	-

Connector No.	E59
Connector Name	JOINT CONNECTOR-E07
Connector Color	BLUE



Terminal No.	Color of Wire	Signal Name
1	L	-
2	L	-
7	P	-
8	P	-

Connector No.	E38
Connector Name	STOP LAMP SWITCH
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
1	Y/R	-
2	R/G	-

Fail Safe

Refer to [BCS-70, "Fail Safe"](#).

DTC Inspection Priority Chart

Refer to [BCS-72, "DTC Inspection Priority Chart"](#).

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INFOID:000000001505377

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DTC Index

INFOID:000000001505379

Refer to [BCS-74, "DTC Index"](#).

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

< ECU DIAGNOSIS >

[POWER DISTRIBUTION SYSTEM]

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

Reference Value

INFOID:000000001505380

Refer to [PCS-19, "Reference Value"](#).

Terminal Layout

INFOID:000000001505381

Refer to [PCS-20, "Terminal Layout"](#).

Physical Values

INFOID:000000001505382

Refer to [PCS-20, "Physical Values"](#).

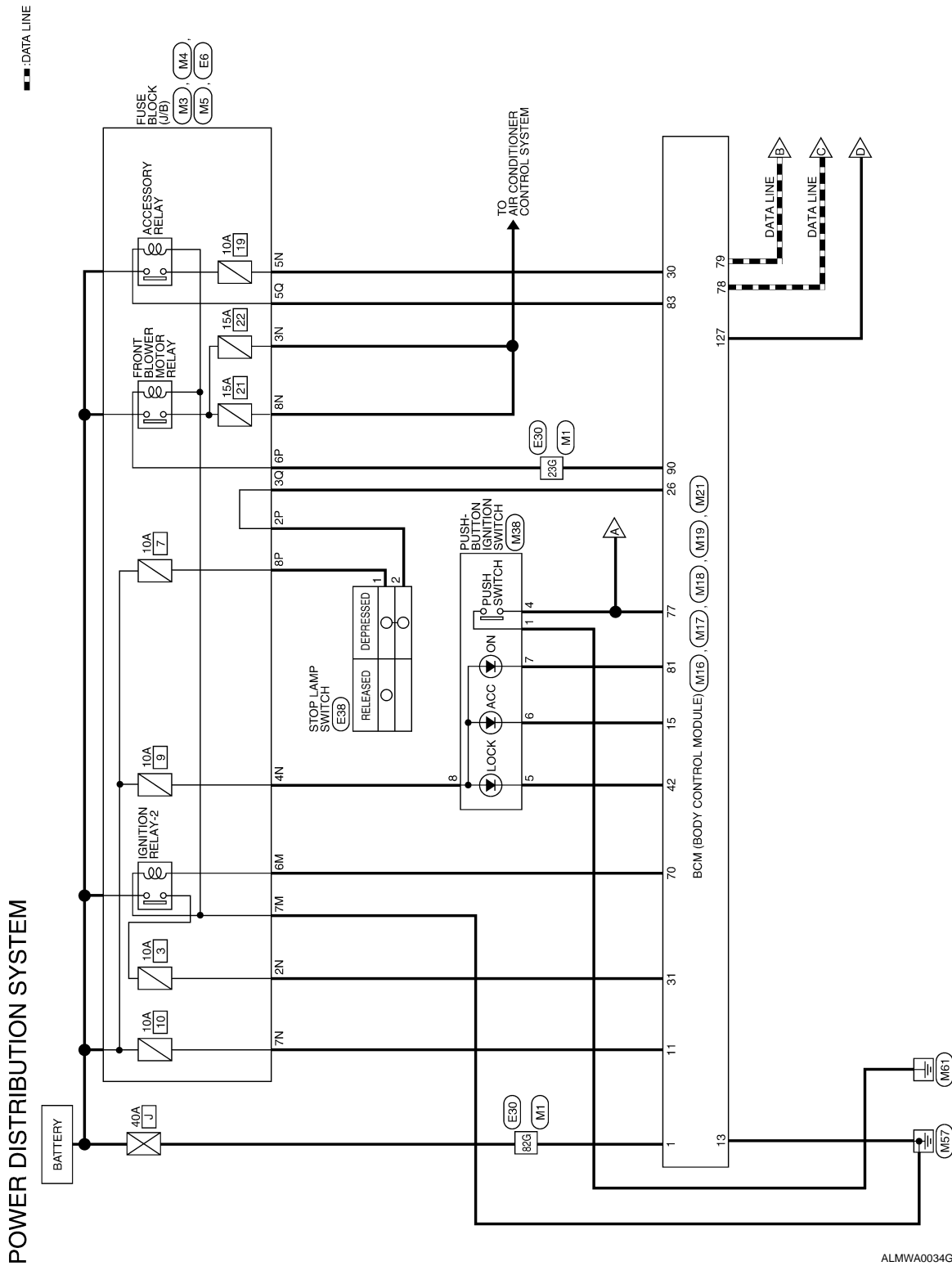
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)

< ECU DIAGNOSIS >

[POWER DISTRIBUTION SYSTEM]

Wiring Diagram

INFOID:000000001505383

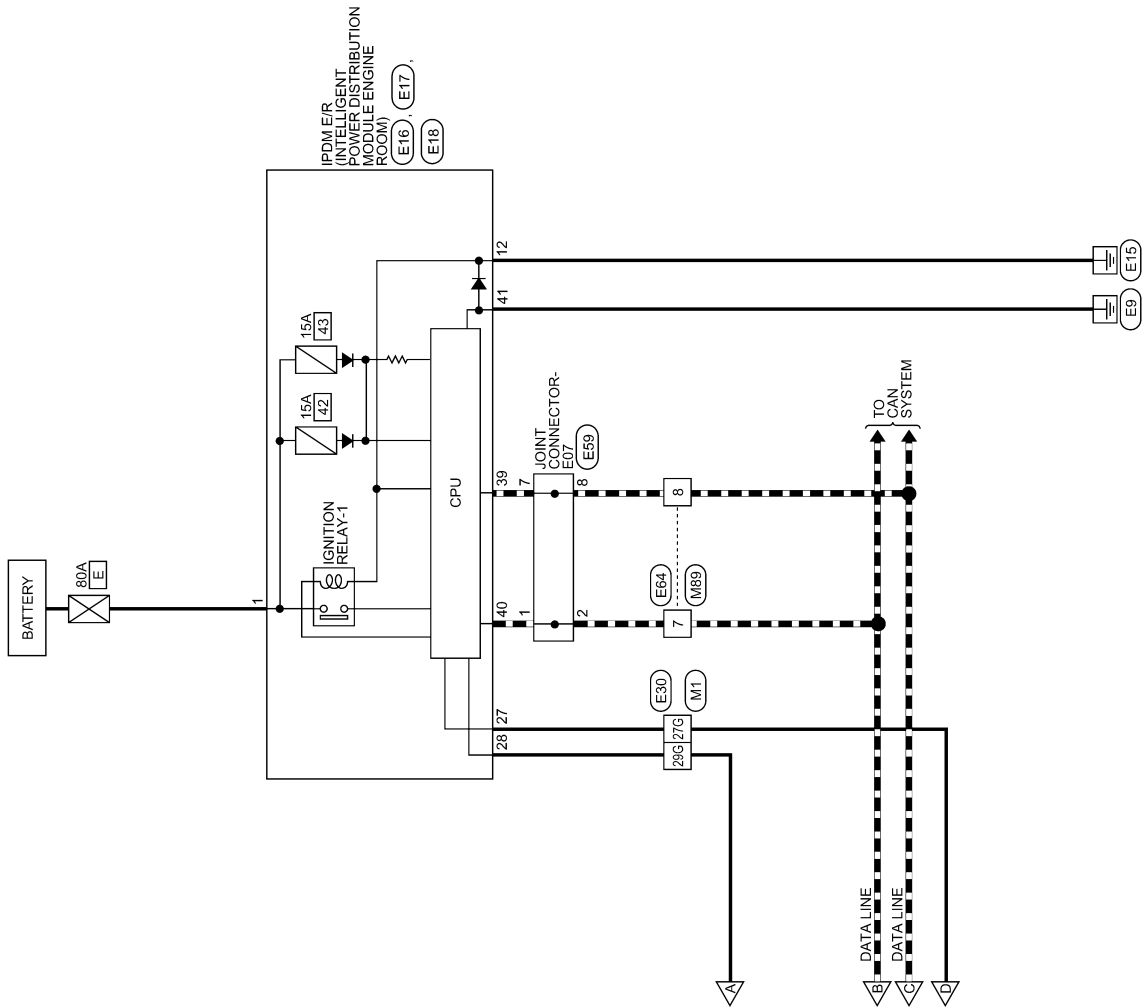


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IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) < ECU DIAGNOSIS > [POWER DISTRIBUTION SYSTEM]

■ DATA LINE



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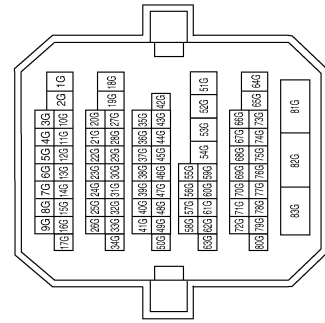
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)

< ECU DIAGNOSIS >

[POWER DISTRIBUTION SYSTEM]

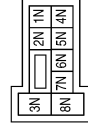
POWER DISTRIBUTION SYSTEM CONNECTORS

Connector No.	M1
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
23G	Y	-
27G	BR/W	-
29G	BR	-
82G	W/B	-

Connector No.	M3
Connector Name	FUSE BLOCK (J/B)
Connector Color	WHITE



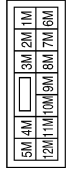
Terminal No.	Color of Wire	Signal Name
2N	G	-
3N	W/L	-
4N	G/Y	-
5N	V/Y	-
7N	Y/R	-
8N	W/L	-

Connector No.	M4
Connector Name	FUSE BLOCK (J/B)
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
3Q	O/L	-
5Q	L	-

Connector No.	M5
Connector Name	FUSE BLOCK (J/B)
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
6M	R/B	-
7M	B	-

Connector No.	M16
Connector Name	BCM (BODY CONTROL MODULE)
Connector Color	BLACK



Terminal No.	Color of Wire	Signal Name
1	W/B	BAT_POWER_F/L

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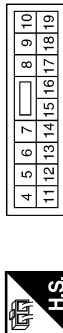
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IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)

< ECU DIAGNOSIS >

[POWER DISTRIBUTION SYSTEM]

Connector No.	M17
Connector Name	BCM (BODY CONTROL MODULE)
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
11	Y/R	BAT_BCM_FUSE
13	B	GND1
15	Y/L	ACC_LED

Connector No.	M18
Connector Name	BCM (BODY CONTROL MODULE)
Connector Color	GREEN



Terminal No.	Color of Wire	Signal Name
26	O/L	STOP_L_HIGH_SW
30	V/Y	ACC_F/B
31	G	IGN_F/B
42	R	S/L_LOCK_LED

Connector No.	M19
Connector Name	BCM (BODY CONTROL MODULE)
Connector Color	BLACK



Terminal No.	Color of Wire	Signal Name
70	R/B	IGN_ELEC_CONT
77	BR	ENG_START_SW
78	P	CAN_L
79	L	CAN_H
81	LG	IGN_ON_LED
83	L	ACC_CONT
90	Y	IGN2_CONT

Connector No.	M21
Connector Name	BCM (BODY CONTROL MODULE)
Connector Color	GRAY



Terminal No.	Color of Wire	Signal Name
127	BR/W	IGN_USM_CONT1

Connector No.	M38
Connector Name	PUSH-BUTTON IGNITION SWITCH
Connector Color	BROWN



Terminal No.	Color of Wire	Signal Name
1	B	GND
4	BR	START_SW
5	R	LOCK
6	Y/L	ACC
7	LG	ON
8	G/Y	B+

Connector No.	M89
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
7	L	-
8	P	-

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

< ECU DIAGNOSIS >

[POWER DISTRIBUTION SYSTEM]

Connector No.	E6
Connector Name	FUSE BLOCK (J/B)
Connector Color	WHITE



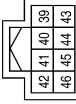
Terminal No.	Color of Wire	Signal Name
2P	R/G	-
6P	Y	-
8P	Y/R	-

Connector No.	E16
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Color	BLACK



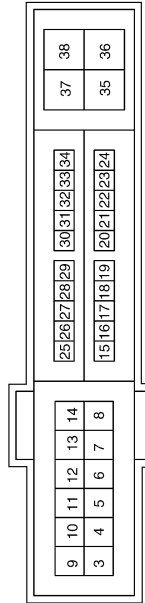
Terminal No.	Color of Wire	Signal Name
1	R	F/L MAIN

Connector No.	E17
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Color	WHITE



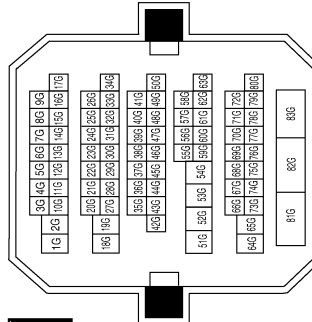
Terminal No.	Color of Wire	Signal Name
39	P	CAN-L
40	L	CAN-H
41	B/Y	S-GND

Connector No.	E18
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
12	B	P_GND
27	BR/W	IGN_SIGNAL
28	BR	PUSH_START_SW

Connector No.	E30
Connector Name	WIRE TO WIRE
Connector Color	WHITE



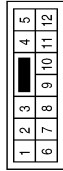
Terminal No.	Color of Wire	Signal Name
23G	Y	-
27G	BR/W	-
29G	BR	-
82G	W/B	-

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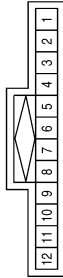
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Connector No.	E64
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
7	L	-
8	P	-

Connector No.	E59
Connector Name	JOINT CONNECTOR-E07
Connector Color	BLUE



Terminal No.	Color of Wire	Signal Name
1	L	-
2	L	-
7	P	-
8	P	-

Connector No.	E38
Connector Name	STOP LAMP SWITCH
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
1	Y/R	-
2	R/G	-

Fail Safe

Refer to [PCS-30, "Fail Safe"](#).

DTC Index

Refer to [PCS-32, "DTC Index"](#).

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INFOID:000000001505384

INFOID:000000001505385

SYMPTOM DIAGNOSIS

POWER DISTRIBUTION SYSTEM SYMPTOMS

Symptom Table

INFOID:000000001505386

Before performing the diagnosis in the following table, check the contents of [PCS-35, "Work Flow"](#).

Symptom	Suspect Systems	Refer to
The power supply changing operation is normal. But the push-button ignition switch position indicator does not turn on.	1. Check push-button ignition switch position indicator.	PCS-63
	2. Check Intermittent Incident.	GI-42

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ON-VEHICLE MAINTENANCE**PRE-INSPECTION FOR DIAGNOSTIC****Basic Inspection**

INFOID:000000001505387

The engine start function, door lock function, power distribution system and NATS-NVIS in the Intelligent Key system are closely related to each other regarding control. Narrow down the functional area in question by performing basic inspection to identify which function is malfunctioning. The vehicle security function can operate only when the door lock and power distribution system are operating normally. Therefore, it is easy to identify any factor unique to the vehicle security system by performing the vehicle security operation check after basic inspection.

1. CHECK DOOR LOCK OPERATION

1. Check the door lock for normal operation with the Intelligent Key controller and door request switch. Successful door lock operation with the Intelligent Key and request SW indicates that the remote keyless entry receiver and inside key antenna required for engine start are functioning normally. Identify the malfunctioning point by referring to the DLK section if the door cannot be unlocked.

Can the door be locked with the Intelligent Key and door request switch?

- YES >> GO TO 2
NO >> Refer to [DLK-162, "Symptom Table"](#).

2. CHECK ENGINE STARTING

1. Checks that the engine starts when operating the Intelligent Key inserted into the key slot.

Does the engine start?

- YES >> GO TO 3
NO >> Refer to [SEC-148, "Symptom Table"](#).

3. CHECK STEERING LOCKING

1. Does the steering lock when operating door switch after switching the power supply from ON position (or ACC position) to LOCK position?
If door switch is malfunctioning, BCM cannot lock the steering. If BCM does not detect DTC, steering lock unit is normal.

Does steering lock?

- YES >> GO TO 4
NO >> Refer to [DLK-52, "Component Function Check"](#).

4. CHECK POWER SUPPLY INDICATOR SWITCHING

1. Press push-button ignition switch and position indicator will switch from LOCK, ACC to ON gradually when steering is locked. Checks that the position indicator is illuminated at different positions of the circuit.

Is each position indicator illuminating?

- YES >> GO TO 5
NO >> Refer to [PCS-63, "Component Function Check"](#).

5. CHECK VEHICLE SECURITY SYSTEM

1. Check the vehicle security system for normal operation.
The vehicle security function can operate only when the door lock and power distribution functions are operating normally.
Therefore, it is easy to identify any factor unique to the vehicle security by performing the vehicle security operation check after this basic inspection.

>> Refer to [SEC-151, "Vehicle Security Operation Check"](#).

ON-VEHICLE REPAIR

BCM (BODY CONTROL MODULE)

Removal and Installation

INFOID:000000001505388

Refer to [BCS-78](#).

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