SECTION DEF
DEFOGGER

CONTENTS

BASIC INSPECTION

DIAGNOSIS AND REPAIR WORK FLOW

Work Flow

INFOID:0000000009945420

DETAILED FLOW

1.OBTAIN INFORMATION ABOUT SYMPTOM

Interview the customer to obtain the malfunction information (conditions and environment when the malfunction occurred) as much as possible when the customer brings the vehicle in.

>> GO TO 2.

2.CHECK FOR DTC

Perform self diagnosis with CONSULT.

Is any DTC detected?

YES-1 >> BCM: Refer to BCS-82, "DTC Index" (With Intelligent Key System), BCS-150, "DTC Index" (Without Intelligent Key System).
YES-2 >> IPDM E/R: Refer to PCS-32, "DTC Index" (With Intelligent Key System), PCS-62, "DTC Index" (Without Intelligent Key System).
NO >> GO TO 3.

3.REPRODUCE THE MALFUNCTION INFORMATION

Check the malfunction on the vehicle that the customer describes.
Inspect the relation of the symptoms and the condition when the symptoms occur.

>> GO TO 4.

4.IDENTIFY THE MALFUNCTIONING SYSTEM WITH “SYMPTOM DIAGNOSIS”

Use “Symptom diagnosis” from the symptom inspection result in step 3. Then identify where to start performing the diagnosis based on possible causes and symptoms.

>> GO TO 5.

5.IDENTIFY MALFUNCTIONING PARTS WITH “COMPONENT DIAGNOSIS”

Perform the diagnosis with “Component diagnosis” of the applicable system.

>> GO TO 6.

6.REPAIR OR REPLACE THE MALFUNCTIONING PARTS

Repair or replace the specified malfunctioning parts.

>> GO TO 7.

7.FINAL CHECK

Check that malfunctions are not reproduced when obtaining the malfunction information from the customer, referring to the symptom inspection result in step 3.

Are all malfunctions corrected?

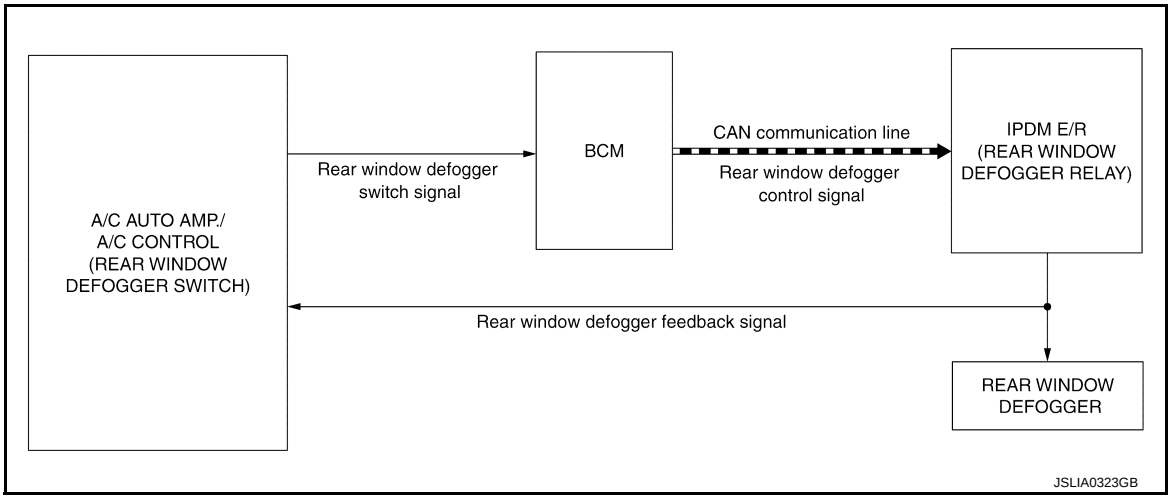
YES >> INSPECTION END
NO >> GO TO 4.

SYSTEM DESCRIPTION

REAR WINDOW DEFOGGER SYSTEM

System Diagram

INFOID:0000000009945421



System Description

INFOID:0000000009945422

OPERATION DESCRIPTION

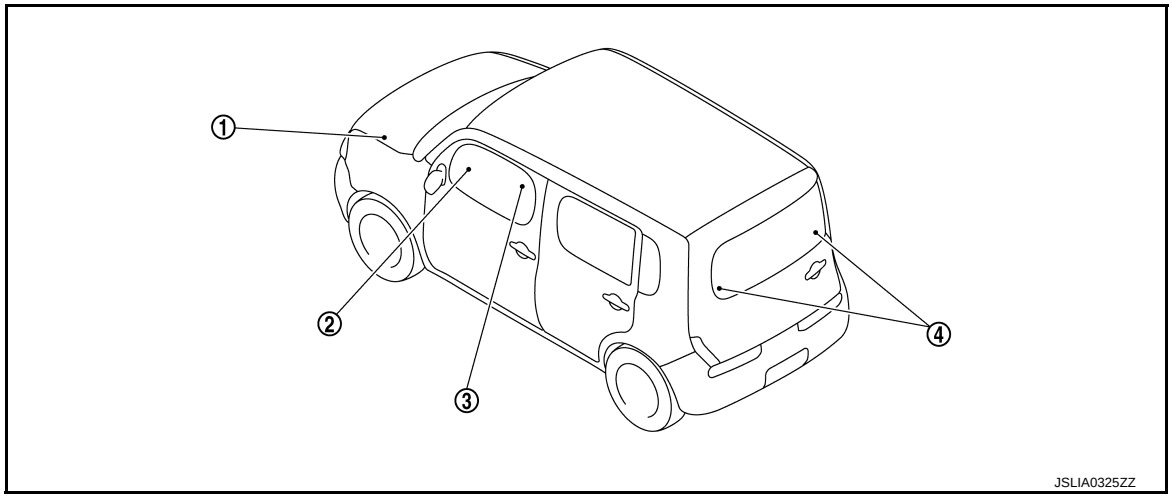
- BCM detects that the rear window defogger switch turns ON while the ignition switch is ON, and then transmits the rear window defogger control signal to IPDM E/R via CAN communication for approximately 15 minutes.
- IPDM E/R turns rear window defogger relay ON when it receives the rear window defogger control signal.
- The power is supplied to the rear window defogger when the rear window defogger relay turns ON.
- When rear window defogger is activated, indicator lamp on rear window defogger switch turns ON.

TIMER FUNCTION

- BCM transmits the rear window defogger control signal to IPDM E/R for approximately 15 minutes when the rear window defogger switch is turns ON while ignition switch is ON. Then, IPDM E/R activates rear window defogger.
- The timer is cancelled if the rear window defogger switch is pressed again during timer operation. BCM stops the output of rear window defogger control signal. The same action occurs during timer operation if the ignition switch is OFF.

Component Parts Location

INFOID:0000000009945423



1. IPDM E/R
Refer to PCS-5, "Component Parts Location" (with Intelligent Key System) or PCS-36, "Component Parts Location" (without Intelligent Key System)
2. BCM
Refer to BCS-10, "Component Parts Location" (with Intelligent Key System) or BCS-95, "Component Parts Location" (without Intelligent Key System)
3. • A/C auto amp.*1 (rear window defogger switch)
• A/C control*2 (rear window defogger switch)
4. Rear window defogger connector

*1: For models with auto A/C
*2: For models with manual A/C

Component Description

INFOID:0000000009945424

BCM	• Transmits rear window defogger control signal to IPDM E/R via CAN communication. • Performs the timer control of rear window defogger
Rear window defogger relay	Operates rear window defogger with IPDM E/R control
IPDM E/R	Turns rear window defogger relay ON when rear window defogger control signal is received
• A/C auto amp.*1 • A/C control*2	• The rear window defogger switch is installed • Turns the indicator lamp ON when detecting the operation of rear window defogger
Rear window defogger	Heats the heating wire with the power supply from the rear window defogger relay to prevent the rear window from fogging up

*1: For models with auto A/C
*2: For models with manual A/C

DIAGNOSIS SYSTEM (BCM) (WITH INTELLIGENT KEY SYSTEM)

COMMON ITEM

COMMON ITEM : CONSULT Function (BCM - COMMON ITEM)

INFOID:0000000010245769

APPLICATION ITEM

CONSULT performs the following functions via CAN communication with BCM.

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

SYSTEM APPLICATION

BCM can perform the following functions for each system.

NOTE:

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

×: Applicable item

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

FREEZE FRAME DATA (FFD)

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

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

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

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

REAR WINDOW DEFOGGER

REAR WINDOW DEFOGGER : CONSULT Function (BCM - REAR DEFOGGER)

INFOID:0000000009945426

DATA MONITOR
NOTE:

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

Monitor Item	Description
PUSH SW	Indicates [ON/OFF] condition of push switch.
REAR DEF SW	This is displayed even when it is not equipped.

ACTIVE TEST

Test Item	Description
REAR DEFOGGER	Rear window defogger operates when “ON” on CONSULT screen is touched.

DIAGNOSIS SYSTEM (BCM) (WITHOUT INTELLIGENT KEY SYSTEM) COMMON ITEM

COMMON ITEM : CONSULT Function (BCM - COMMON ITEM)

INFOID:0000000010245773

APPLICATION ITEM

CONSULT performs the following functions via CAN communication with BCM.

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

SYSTEM APPLICATION

BCM can perform the following functions for each system.

NOTE:

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

×: Applicable item

System	Sub system selection item	Diagnosis mode		
		Work Support	Data Monitor	Active Test
Door lock	DOOR LOCK	×	×	×
Rear window defogger	REAR DEFOGGER		×	×
Warning chime	BUZZER		×	×
Interior room lamp control	INT LAMP	×	×	×
Remote keyless entry system	MULTI REMOTE ENT	×	×	×
Exterior lamp	HEAD LAMP	×	×	×
Wiper and washer	WIPER	×	×	×
Turn signal and hazard warning lamps	FLASHER		×	×
Manual air conditioner	AIR CONDITONER		×	×
Combination switch	COMB SW		×	
Body control system	BCM	×		
NVIS - NATS	IMMU	×	×	×
Interior room lamp battery saver	BATTERY SAVER	×	×	×
Back door	TRUNK		×	
Vehicle security system	THEFT ALM	×	×	×
RAP system	RETAINED PWR		×	×
Signal buffer system	SIGNAL BUFFER		×	×
TPMS	TPMS (AIR PRESSURE MONITOR)	×	×	×
Panic alarm system	PANIC ALARM			×

REAR WINDOW DEFOGGER

REAR WINDOW DEFOGGER : CONSULT Function (BCM - REAR DEFOGGER)

INFOID:0000000009945428

DATA MONITOR

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

Monitor Item	Description
IGN ON SW	Indicates [ON/OFF] condition of ignition switch in ON position.
ACC ON SW	Indicates [ON/OFF] condition of ignition switch in ACC position.
REAR DEF SW	Displays “Press (ON)/other (OFF)” status determined with the rear window defogger switch.

ACTIVE TEST

Test Item	Description
REAR DEFOGGER	Rear window defogger operates when “ON” on CONSULT screen is touched.

DIAGNOSIS SYSTEM (IPDM E/R)
WITH INTELLIGENT KEY

WITH INTELLIGENT KEY : Diagnosis Description

INFOID:0000000010246423

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
- Rear window defogger
- Front wiper (LO, HI)
- Parking lamps
- Side marker lamp
- License plate lamps
- Tail lamps
- Front fog lamps
- Headlamps (LO, HI)
- A/C compressor (magnet clutch)
- Cooling fan

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 beforehand.
2. Turn the ignition switch OFF.
3. Turn the ignition switch ON, and within 20 seconds, press the driver door switch 10 times. Then turn the ignition switch OFF.
   CAUTION:
   Close passenger door.
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 the ignition switch OFF.

CAUTION:

- **If auto active test mode cannot be actuated, check door switch system. Refer to DLK-55, "Component Function Check".**
- **Do not start the engine.**

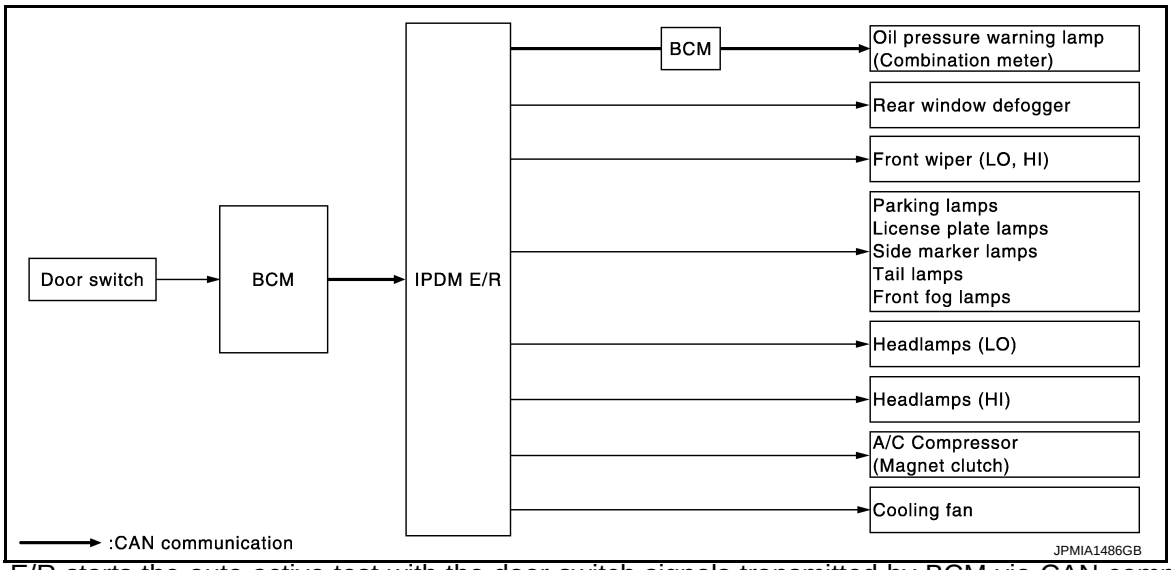
Inspection in Auto Active Test Mode

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

Operation sequence	Inspection location	Operation
A	Oil pressure warning lamp	Blinks continuously during operation of auto active test
1	Rear window defogger	10 seconds
2	Front wiper	LO for 5 seconds → HI for 5 seconds
3	• Parking lamps • Side marker lamps • License plate lamps • Tail lamps • Front fog lamps	10 seconds
4	Headlamps	LO for 10 seconds →HI ON ⇔ OFF 5 times

Operation sequence	Inspection location	Operation
5	A/C compressor (magnet clutch)	ON ⇔ OFF 5 times
6	Cooling fan	LO for 5 seconds → HI for 5 seconds

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
Rear window defogger does not operate	Perform auto active test. Does the rear window defogger operate?	YES	BCM signal input circuit
		NO	• Rear window defogger • Rear window defogger ground circuit • Harness or connector between IPDM E/R and rear window defogger • IPDM E/R
Any of the following components do not operate • Parking lamps • Side marker lamps • License plate lamps • Tail lamps • Front fog lamps • Headlamps (HI, LO) • Front wiper (HI, LO)	Perform auto active test. Does the applicable system operate?	YES	BCM signal input circuit
		NO	• Lamp or motor • Lamp or motor ground circuit • Harness or connector between IPDM E/R and applicable system • IPDM E/R
A/C compressor does not operate	Perform auto active test. Does the magnet clutch operate?	YES	• A/C amp. signal input circuit • CAN communication signal between A/C amp. and ECM • CAN communication signal between ECM and IPDM E/R
		NO	• Magnet clutch • Harness or connector between IPDM E/R and magnet clutch • IPDM E/R

Symptom	Inspection contents		Possible cause
Oil pressure warning lamp does not operate	Perform auto active test. Does the oil pressure warning lamp blink?	YES	• Harness or connector between IPDM E/R and oil pressure switch • Oil pressure switch • IPDM E/R
		NO	• CAN communication signal between IPDM E/R and BCM • CAN communication signal between BCM and combination meter • Combination meter
Cooling fan does not operate	Perform auto active test. Does the cooling fan operate?	YES	• ECM signal input circuit • CAN communication signal between ECM and IPDM E/R
		NO	• Cooling fan motor • Harness or connector between IPDM E/R and cooling fan motor • IPDM E/R

WITH INTELLIGENT KEY : CONSULT Function (IPDM E/R)

INFOID:0000000010246424

APPLICATION ITEM

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

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

SELF DIAGNOSTIC RESULT

Refer to PCS-32, "DTC Index".

DATA MONITOR

NOTE:

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

Monitor Item [Unit]	MAIN SIGNALS	Description
MOTOR FAN REQ [1/2/3/4]	×	Displays the value of the cooling fan speed request signal received from ECM via CAN communication.
AC COMP REQ [Off/On]	×	Displays the status of the A/C compressor request signal received from ECM via CAN communication.
TAIL&CLR REQ [Off/On]	×	Displays the status of the position light request signal received from BCM via CAN communication.
HL LO REQ [Off/On]	×	Displays the status of the low beam request signal received from BCM via CAN communication.
HL HI REQ [Off/On]	×	Displays the status of the high beam request signal received from BCM via CAN communication.
FR FOG REQ [Off/On]	×	Displays the status of the front fog light request signal received from BCM via CAN communication.

< SYSTEM DESCRIPTION >

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

ACTIVE TEST

Test item	Operation	Description
HORN	On	Operates horn relay for 20 ms.
FRONT WIPER	Off	OFF
	Lo	Operates the front wiper relay.
	Hi	Operates the front wiper relay and front wiper high relay.
MOTOR FAN	1	OFF
	2	Operates the cooling fan relay (LO operation).
	3	Operates the cooling fan relay (HI operation).
	4	

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

WITHOUT INTELLIGENT KEY

WITHOUT INTELLIGENT KEY : Diagnosis Description

INFOID:0000000010246426

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
- Rear window defogger
- Front wiper (LO, HI)
- Parking lamps
- Side marker lamp
- License plate lamps
- Tail lamps
- Front fog lamps
- Headlamps (LO, HI)
- A/C compressor (magnet clutch)
- Cooling fan

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 beforehand.
2. Turn the ignition switch OFF.
3. Turn the ignition switch ON, and within 20 seconds, press the driver door switch 10 times. Then turn the ignition switch OFF.
   CAUTION:
   Close passenger door.
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 the ignition switch OFF.

CAUTION:

- **If auto active test mode cannot be actuated, check door switch system. Refer to DLK-55, "Component Function Check".**
- **Do not start the engine.**

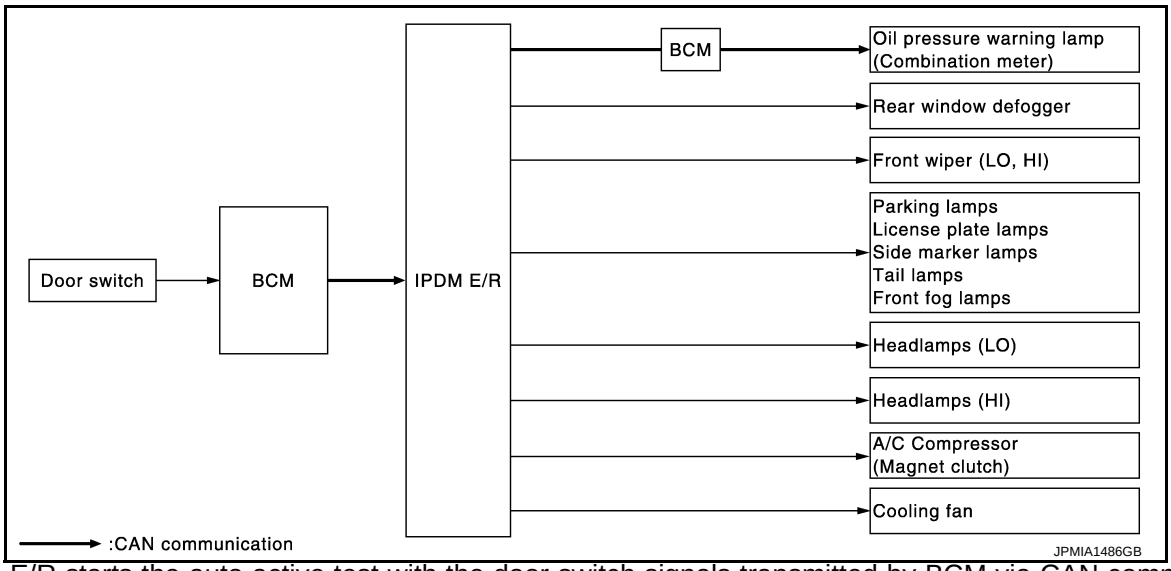
Inspection in Auto Active Test Mode

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

Operation sequence	Inspection location	Operation
A	Oil pressure warning lamp	Blinks continuously during operation of auto active test
1	Rear window defogger	10 seconds
2	Front wiper	LO for 5 seconds → HI for 5 seconds

Operation sequence	Inspection location	Operation
3	• Parking lamps • Side marker lamps • License plate lamps • Tail lamps • Front fog lamps	10 seconds
4	Headlamps	LO for 10 seconds →HI ON ⇔ OFF 5 times
5	A/C compressor (magnet clutch)	ON ⇔ OFF 5 times
6	Cooling fan	LO for 5 seconds → HI for 5 seconds

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
Rear window defogger does not operate	Perform auto active test. Does the rear window defogger operate?	YES	BCM signal input circuit
		NO	• Rear window defogger • Rear window defogger ground circuit • Harness or connector between IPDM E/R and rear window defogger • IPDM E/R
Any of the following components do not operate • Parking lamps • Side marker lamps • License plate lamps • Tail lamps • Front fog lamps • Headlamps (HI, LO) • Front wiper (HI, LO)	Perform auto active test. Does the applicable system operate?	YES	BCM signal input circuit
		NO	• Lamp or motor • Lamp or motor ground circuit • Harness or connector between IPDM E/R and applicable system • IPDM E/R

Symptom	Inspection contents		Possible cause
A/C compressor does not operate	Perform auto active test. Does the magnet clutch operate?	YES	• A/C amp. signal input circuit • CAN communication signal between A/C amp. and ECM • CAN communication signal between ECM and IPDM E/R
		NO	• Magnet clutch • Harness or connector between IPDM E/R and magnet clutch • IPDM E/R
Oil pressure warning lamp does not operate	Perform auto active test. Does the oil pressure warning lamp blink?	YES	• Harness or connector between IPDM E/R and oil pressure switch • Oil pressure switch • IPDM E/R
		NO	• CAN communication signal between IPDM E/R and BCM • CAN communication signal between BCM and combination meter • Combination meter
Cooling fan does not operate	Perform auto active test. Does the cooling fan operate?	YES	• ECM signal input circuit • CAN communication signal between ECM and IPDM E/R
		NO	• Cooling fan motor • Harness or connector between IPDM E/R and cooling fan motor • IPDM E/R

WITHOUT INTELLIGENT KEY : CONSULT Function (IPDM E/R)

INFOID:0000000010246427

APPLICATION ITEM

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

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

SELF DIAGNOSTIC RESULT

Refer to PCS-62, "DTC Index".

DATA MONITOR

NOTE:

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

Monitor Item [Unit]	MAIN SIGNALS	Description
MOTOR FAN REQ [1/2/3/4]	×	Displays the value of the cooling fan speed request signal received from ECM via CAN communication.
AC COMP REQ [Off/On]	×	Displays the status of the A/C compressor request signal received from ECM via CAN communication.
TAIL&CLR REQ [Off/On]	×	Displays the status of the position light request signal received from BCM via CAN communication.
HL LO REQ [Off/On]	×	Displays the status of the low beam request signal received from BCM via CAN communication.
HL HI REQ [Off/On]	×	Displays the status of the high beam request signal received from BCM via CAN communication.
FR FOG REQ [Off/On]	×	Displays the status of the front fog light request signal received from BCM via CAN communication.
FR WIP REQ [Stop/1LOW/Low/Hi]	×	Displays the status of the front wiper request signal received from BCM via CAN communication.
WIP AUTO STOP [STOP P/ACT P]	×	Displays the status of the front wiper 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 RLY [Off/On]	×	Displays the status of the ignition relay judged by IPDM E/R.
INTER/NP SW [Off/On]		Displays the status of the shift position (CVT models) judged by IPDM E/R.
ST RLY-REQ [Off/On]		Displays the status of the starter relay status signal received from BCM via CAN communication.
DTRL REQ [Off/On]		**NOTE:** The item is indicated, but not monitored.
OIL P SW [Open/Close]		Displays the status of the oil pressure switch judged by IPDM E/R.
HOOD SW [Off/On]		**NOTE:** The item is indicated, but not monitored.
THFT HRN REQ [Off/On]		Displays the status of the theft warning horn request signal received from BCM via CAN communication.
HORN CHIRP [Off/On]		Displays the status of the horn reminder signal received from BCM via CAN communication.

ACTIVE TEST

Test item	Operation	Description
HORN	On	Operates horn relay for 20 ms.
FRONT WIPER	Off	OFF
	Lo	Operates the front wiper relay.
	Hi	Operates the front wiper relay and front wiper high relay.
MOTOR FAN	1	OFF
	2	Operates the cooling fan relay (LO operation).
	3	Operates the cooling fan relay (HI operation).
	4	

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

DTC/CIRCUIT DIAGNOSIS

REAR WINDOW DEFOGGER SWITCH
WITH AUTO A/C

WITH AUTO A/C : Component Function Check

INFOID:0000000009945433

1.CHECK FUNCTION

1. Check (“REAR DEF SW”) in BCM - REAR DEFOGGER “DATA MONITOR” mode by using CONSULT.
2. Operate rear window defogger switch and check the status on CONSULT screen.

Monitor Item	Condition		status
REAR DEF SW	rear window defogger switch	Pressed	On
		Released	Off

Is the inspection result normal?

YES >> Rear window defogger switch function is OK.
NO >> Refer to DEF-20, "WITH AUTO A/C : Diagnosis Procedure".

WITH AUTO A/C : Diagnosis Procedure

INFOID:0000000009945434

1.CHECK AUTO A/C

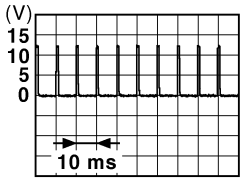
Check the operating condition of auto A/C

Does auto A/C operate normally?

YES >> GO TO 2.
NO >> Perform auto A/C diagnosis. Refer to HAC-114, "Diagnosis Chart By Symptom".

2.CHECK BCM OUTPUT SIGNAL

1. Turn ignition switch OFF.
2. Disconnect A/C auto amp. connector.
3. Check signal between A/C auto amp. harness connector and ground using oscilloscope.

(+)		(–)	Voltage (V) (Approx.)
A/C auto amp.			
Connector	Terminal		
M51	33	Ground	

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Is the inspection result normal?

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

3.CHECK REAR WINDOW DEFOGGER SWITCH CIRCUIT

1. Disconnect BCM connector.
2. Check continuity between BCM harness connector and A/C auto amp. harness connector.

BCM		A/C auto amp.		Continuity
Connector	Terminal	Connector	Terminal	
M68	15	M51	33	Existed

3. Check continuity between BCM harness connector and ground.

BCM		Ground	Continuity
Connector	Terminal		
M68	15		Not existed

Is the inspection result normal?

YES >> Replace BCM. Refer to BCS-88, "Removal and Installation".
NO >> Repair or replace harness.

4.CHECK REAR WINDOW DEFOGGER SWITCH

Refer to DEF-21, "WITH AUTO A/C : Component Inspection".

Is the inspection result normal?

YES >> GO TO 5.
NO >> Replace A/C auto amp. Refer to HAC-122, "Removal and Installation".

5.CHECK INTERMITTENT INCIDENT

Refer to GI-40, "Intermittent Incident".

Is the inspection result normal?

>> INSPECTION END

WITH AUTO A/C : Component Inspection

INFOID:0000000009945435

1.CHECK REAR WINDOW DEFOGGER SWITCH

1. Turn ignition switch OFF.
2. Disconnect A/C auto amp. connector.
3. Check continuity between A/C auto amp. terminals.

A/C auto amp.		Condition		Continuity
Terminal				
16	33	Rear window defogger switch	Pressed	Existed
			Released	Not existed

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace A/C auto amp. Refer to HAC-122, "Removal and Installation".

WITH MANUAL A/C

WITH MANUAL A/C : Component Function Check

INFOID:0000000009945436

1.CHECK FUNCTION

1. Check (“REAR DEF SW”) in BCM - REAR DEFOGGER “DATA MONITOR” mode by using CONSULT.
2. Operate rear window defogger switch and check the status on CONSULT screen.

Monitor Item	Condition		status
REAR DEF SW	rear window defogger switch	Pressed	On
		Released	Off

Is the inspection result normal?

YES >> Rear window defogger switch function is OK.
NO >> Refer to DEF-21, "WITH MANUAL A/C : Diagnosis Procedure".

WITH MANUAL A/C : Diagnosis Procedure

INFOID:0000000009945437

1.CHECK MANUAL A/C

Check the operating condition of manual A/C

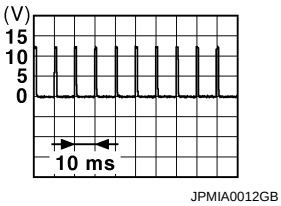
Does manual A/C operate normally?

YES >> GO TO 2.
NO >> Perform manual A/C diagnosis. Refer to HAC-196, "Diagnosis Chart By Symptom".

2. CHECK BCM OUTPUT SIGNAL

1. Turn ignition switch OFF.
2. Disconnect A/C control connector.
3. Check voltage between A/C control harness connector and ground.

With Intelligent Key System

(+)		(–)	Voltage (V) (Approx.)
A/C control			
Connector	Terminal		
M53	5	Ground	

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Without Intelligent Key System

(+)		(–)	Voltage (V) (Approx.)
A/C control			
Connector	Terminal		
M53	5	Ground	Battery voltage

Is the inspection result normal?

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

3. CHECK REAR WINDOW DEFOGGER SWITCH CIRCUIT

1. Disconnect BCM connector.
2. Check continuity between BCM harness connector and A/C control harness connector.

With Intelligent Key System

BCM		A/C control		Continuity
Connector	Terminal	Connector	Terminal	
M68	15	M53	5	Existed

Without Intelligent Key System

BCM		A/C control		Continuity
Connector	Terminal	Connector	Terminal	
M65	10	M53	5	Existed

3. Check continuity between BCM harness connector and ground.

With Intelligent Key System

BCM		Ground	Continuity
Connector	Terminal		
M68	15		Not existed

Without Intelligent Key System

BCM		Ground	Continuity
Connector	Terminal		
M65	10		Not existed

Is the inspection result normal?

YES >> Replace BCM. Refer to BCS-88, "Removal and Installation" (with Intelligent Key System) or BCS-155, "Removal and Installation" (without Intelligent Key System).
NO >> Repair or replace harness.

4.CHECK REAR WINDOW DEFOGGER SWITCH

Refer to DEF-23, "WITH MANUAL A/C : Component Inspection".

Is the inspection result normal?

YES >> GO TO 5.
NO >> Replace A/C control. Refer to HAC-203, "Removal and Installation".

5.CHECK INTERMITTENT INCIDENT

Refer to GI-40, "Intermittent Incident".

Is the inspection result normal?

>> INSPECTION END

WITH MANUAL A/C : Component Inspection

INFOID:0000000009945438

1.CHECK REAR WINDOW DEFOGGER SWITCH

1. Turn ignition switch OFF.
2. Disconnect A/C control connector.
3. Check continuity between A/C control terminals.

A/C control Terminal		Condition		Continuity
5	15	Rear window defogger switch	Pressed	Existed
			Released	Not existed

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace A/C control. Refer to HAC-203, "Removal and Installation".

REAR WINDOW DEFOGGER RELAY

Component Function Check

INFOID:0000000009945439

1.CHECK FUNCTION

1. Perform IPDM E/R Active Test (“REAR DEFOGGER”) using CONSULT.
2. Touch “ON”.
3. Check that the rear window heating wire is getting warmer.

Is the inspection result normal?

YES >> Rear window defogger relay function is OK.
NO >> Refer to DEF-24, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000009945440

1.CHECK FUSE

1. Turn ignition switch OFF.
2. Check the 15A fuse (No. 41 and No. 42 located in IPDM E/R).

Is the inspection result normal?

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

2.CHECK IPDM E/R OUTPUT SIGNAL

1. Perform IPDM E/R Active Test (“REAR DEFOGGER”) using CONSULT.
2. Touch “ON”.
3. Check voltage between IPDM E/R harness connector and ground.

(+)		(–)	CONSULT Active Test condition		Voltage (V) (Approx.)
IPDM E/R					
Connector	Terminal				
E11	13	Ground	REAR DEFOGGER	ON	Battery voltage
				OFF	0

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace IPDM E/R. Refer to PCS-34, "Removal and Installation" (with Intelligent Key System) or PCS-64, "Removal and Installation" (without Intelligent Key System).

REAR WINDOW DEFOGGER

Component Function Check

INFOID:0000000009945441

1.CHECK FUNCTION

1. Perform IPDM E/R Active Test (“REAR DEFOGGER”) using CONSULT.
2. Touch “ON”.
3. Check that the rear window heating wire is getting warmer.

Is the inspection result normal?

YES >> Rear window defogger relay function is OK.
NO >> Refer to DEF-24, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000009945442

1.CHECK REAR WINDOW DEFOGGER POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect rear window defogger connector.
3. Turn ignition switch ON.
4. Check voltage between rear window defogger harness connector and ground.

(+)		(–)	Condition		Voltage (V) (Approx.)
Rear window defogger					
Connector	Terminal				
D103	1	Ground	Rear window defogger switch	ON	Battery voltage
				OFF	0

Is the inspection result normal?

YES >> GO TO 2.
NO >> GO TO 4.

2.CHECK REAR WINDOW DEFOGGER GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Check continuity between rear window defogger harness connector and ground.

Rear window defogger		Ground	Continuity
Connector	Terminal		
D104	2		Existed

Is the inspection result normal?

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

3.CHECK FILAMENT

Refer to DEF-120, "Inspection and Repair".

Is the inspection result normal?

YES >> GO TO 5.
NO >> Repair filament.

4.CHECK REAR WINDOW DEFOGGER POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect following connector.

- IPDM E/R connector
- Door mirror (both sides) connector
- A/C auto amp. connector (for models with auto A/C)
- A/C control connector (for models with manual A/C)

3. Check continuity between IPDM E/R harness connector and rear window defogger harness connector.

IPDM E/R		Rear window defogger		Continuity
Connector	Terminal	Connector	Terminal	
E11	13	D103	1	Existed

4. Check continuity between IPDM E/R connector and ground.

IPDM E/R		Ground	Continuity
Connector	Terminal		
E11	13		Not existed

Is the inspection result normal?

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

5. CHECK INTERMITTENT INCIDENT

Refer to GI-40, "Intermittent Incident".

Is the inspection result normal?

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

REAR WINDOW DEFOGGER FEEDBACK SIGNAL

WITH AUTO A/C

WITH AUTO A/C : Component Function Check

INFOID:0000000009945449

1.CHECK REAR WINDOW DEFOGGER FEEDBACK SIGNAL

Check that the indicator lamps of rear window defogger switch are illuminated when turning the rear window defogger switch ON.

Is the inspection result normal?

OK >> Rear window defogger feedback signal is OK.
NG >> Refer to DEF-27, "WITH AUTO A/C : Diagnosis Procedure".

WITH AUTO A/C : Diagnosis Procedure

INFOID:0000000009945450

1.CHECK REAR WINDOW DEFOGGER FEEDBACK SIGNAL

1. Turn ignition switch OFF.
2. Disconnect A/C auto amp. connector.
3. Turn ignition switch ON.
4. Check voltage between A/C auto amp. harness connector and ground.

A/C auto amp.		Ground	Condition		Voltage (V) (Approx.)
Connector	Terminal				
M51	27		Rear window defogger switch	ON	Battery voltage
				OFF	0

Is the inspection result normal?

YES >> Replace A/C auto amp. Refer to HAC-122, "Removal and Installation".
NO >> Repair or replace harness.

WITH MANUAL A/C

WITH MANUAL A/C : Component Function Check

INFOID:0000000009945451

1.CHECK REAR WINDOW DEFOGGER FEEDBACK SIGNAL

Check that the indicator lamps of rear window defogger switch are illuminated when turning the rear window defogger switch ON.

Is the inspection result normal?

OK >> Rear window defogger feedback signal is OK.
NG >> Refer to DEF-27, "WITH MANUAL A/C : Diagnosis Procedure".

WITH MANUAL A/C : Diagnosis Procedure

INFOID:0000000009945452

1.CHECK REAR WINDOW DEFOGGER FEEDBACK SIGANL

1. Turn ignition switch OFF.
2. Disconnect A/C control connector.
3. Turn ignition switch ON.
4. Check voltage between A/C control harness connector ground.

A/C control		Ground	Condition		Voltage (V) (Approx.)
Connector	Terminal				
M53	4		Rear window defogger switch	ON	Battery voltage
				OFF	0

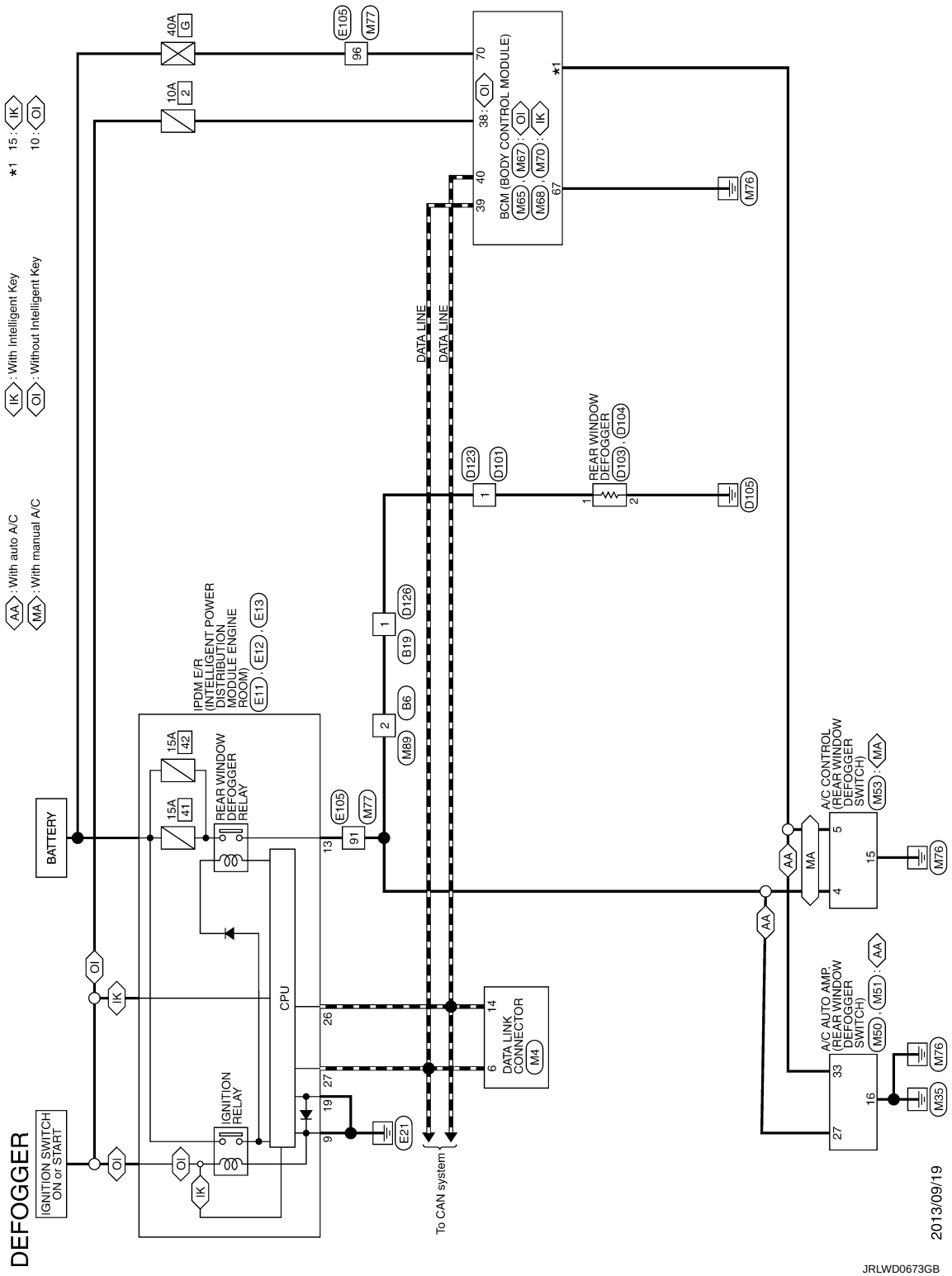
Is the inspection result normal?

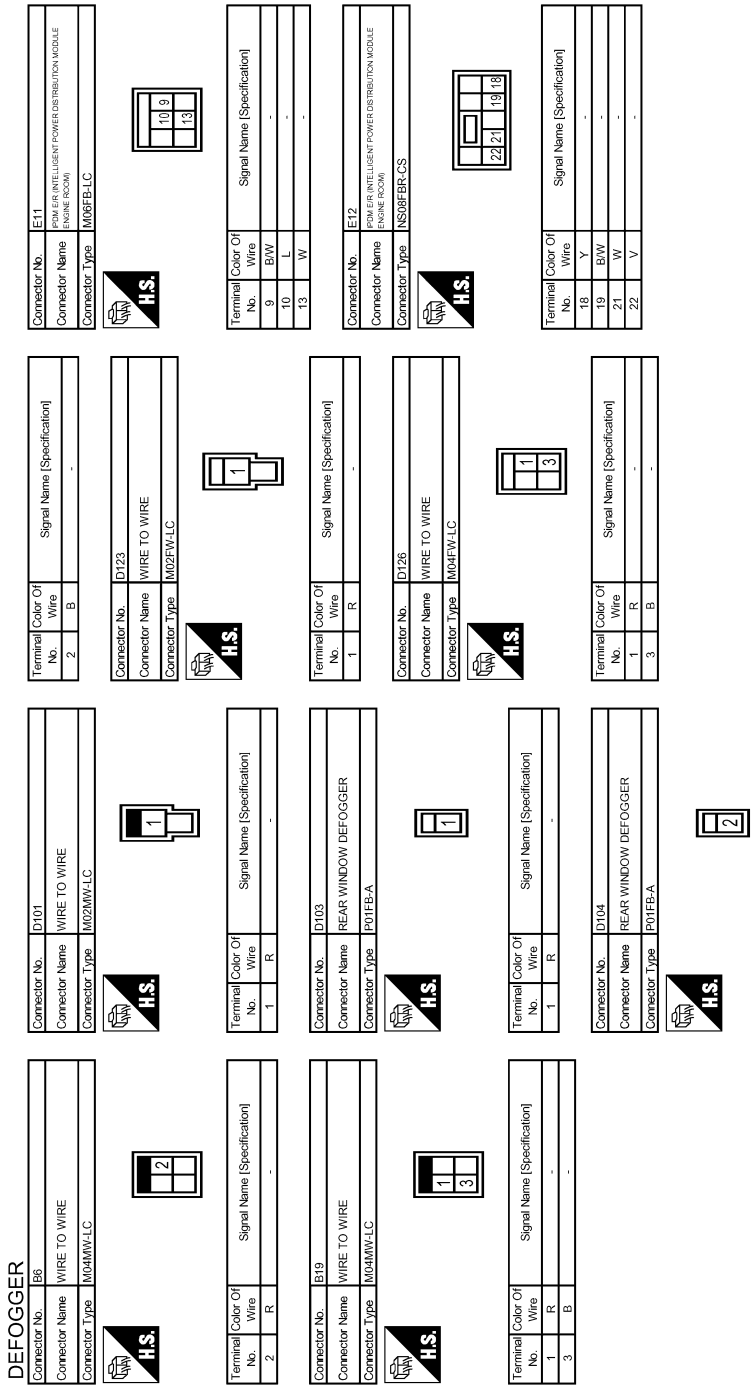
YES >> Replace A/C control. Refer to HAC-203, "Removal and Installation".
NO >> Repair or replace harness.

REAR WINDOW DEFOGGER SYSTEM

Wiring Diagram - DEFOGGER CONTROL SYSTEM -

INFOID:0000000009945453




DEFOGGER
Connector No. B6
Connector Name WIRE TO WIRE
Connector Type M04MW-LC
H.S.
Terminal No. Color Of Wire Signal Name [Specification]
2 R -
Connector No. B19
Connector Name WIRE TO WIRE
Connector Type M04MW-LC
H.S.
Terminal No. Color Of Wire Signal Name [Specification]
1 R -
3 B -
Connector No. D101
Connector Name WIRE TO WIRE
Connector Type M02MW-LC
H.S.
Terminal No. Color Of Wire Signal Name [Specification]
1 R -
Connector No. D103
Connector Name REAR WINDOW DEFOGGER
Connector Type P01FB-A
H.S.
Terminal No. Color Of Wire Signal Name [Specification]
1 R -
Connector No. D104
Connector Name REAR WINDOW DEFOGGER
Connector Type P01FB-A
H.S.
Terminal No. Color Of Wire Signal Name [Specification]
1 R -
3 B -
Connector No. D123
Connector Name WIRE TO WIRE
Connector Type M02FW-LC
H.S.
Terminal No. Color Of Wire Signal Name [Specification]
2 B -
Connector No. D126
Connector Name WIRE TO WIRE
Connector Type M04FW-LC
H.S.
Terminal No. Color Of Wire Signal Name [Specification]
1 R -
Connector No. E11
Connector Name PDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type M06FB-LC
H.S.
Terminal No. Color Of Wire Signal Name [Specification]
9 B/W -
10 L -
13 W -
Connector No. E12
Connector Name PDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type NS08FBR-CS
H.S.
Terminal No. Color Of Wire Signal Name [Specification]
18 Y -
19 B/W -
21 W -
22 V -
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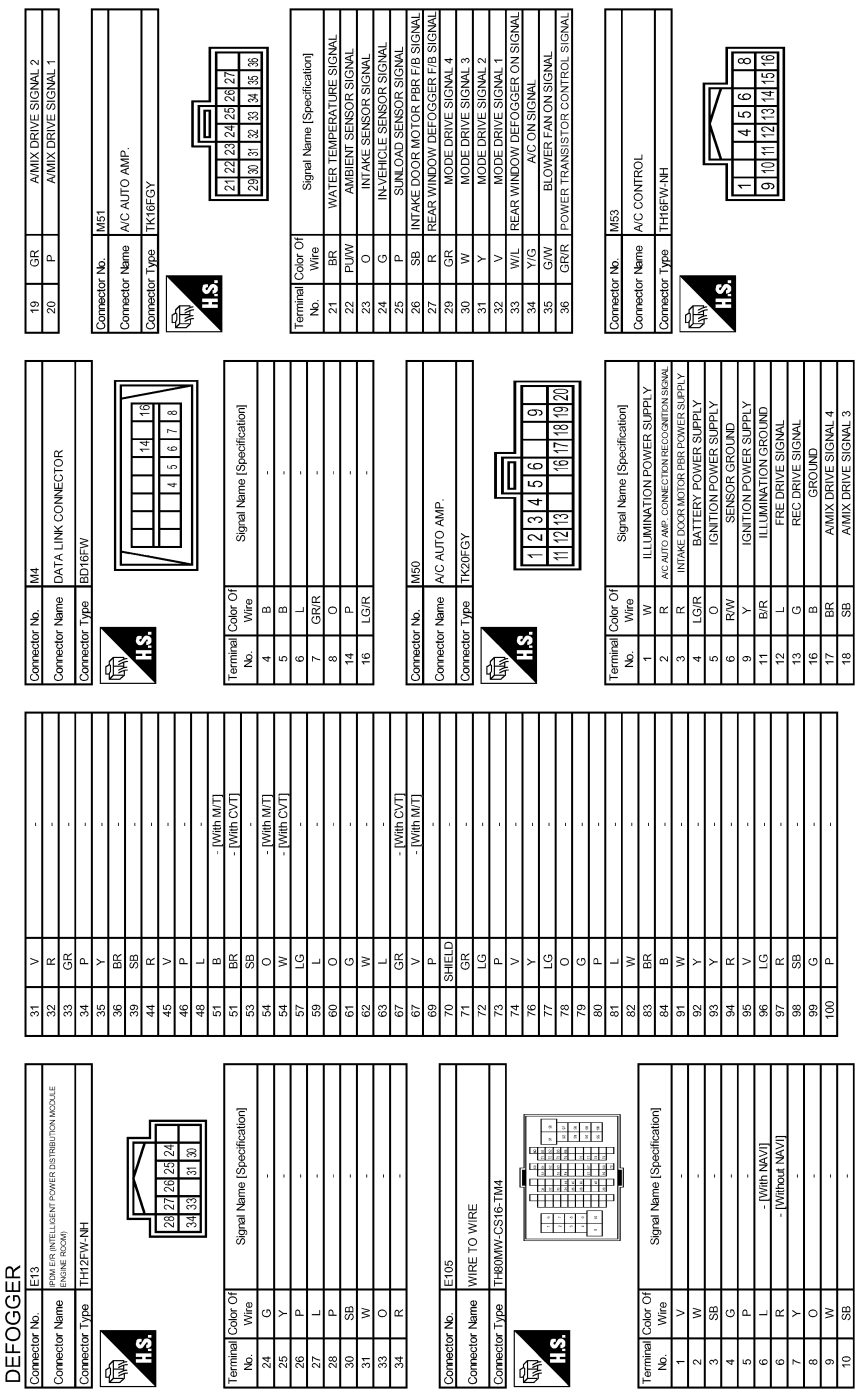

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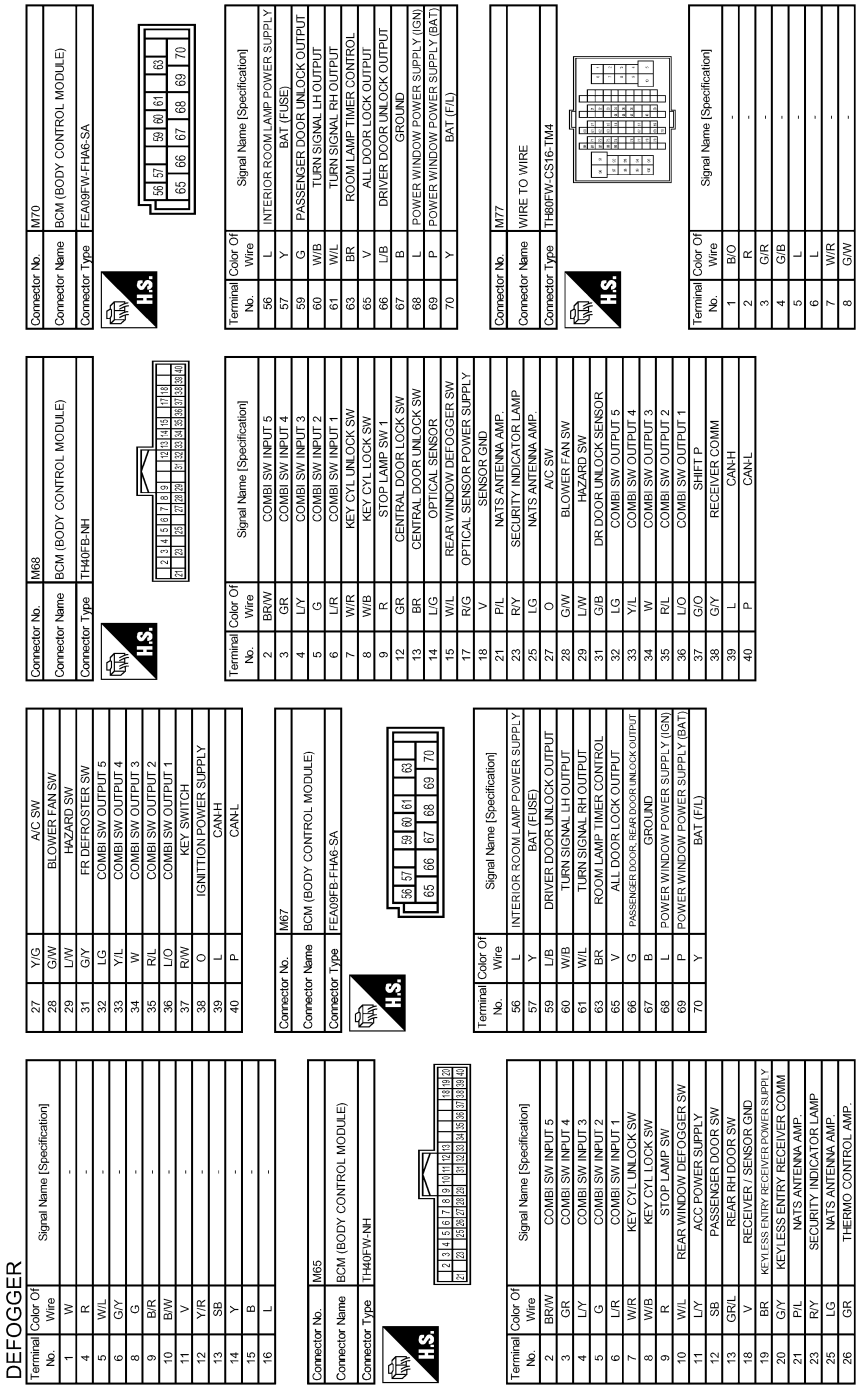

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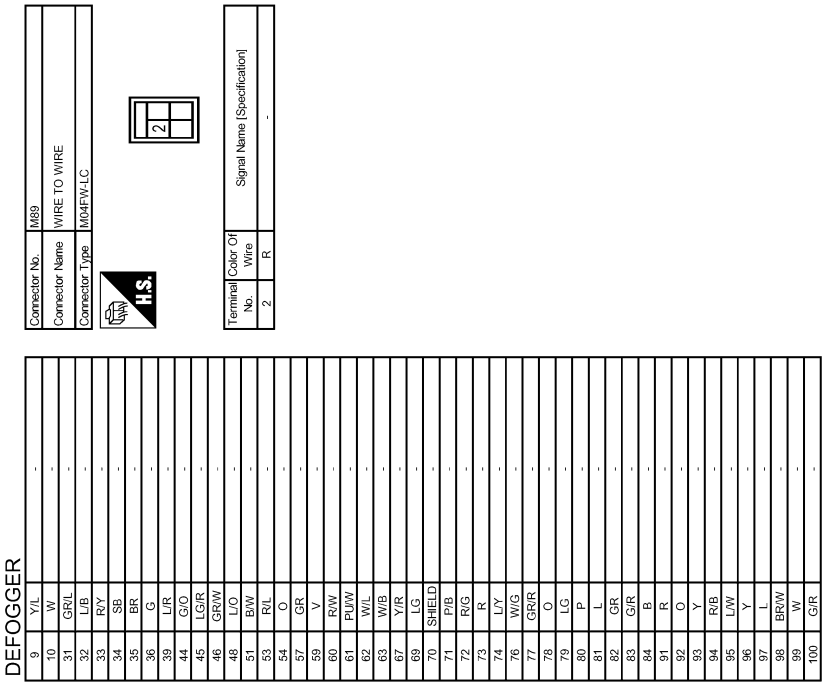


JRLWD0847GB

ECU DIAGNOSIS INFORMATION

BCM (BODY CONTROL MODULE)
WITH INTELLIGENT KEY

WITH INTELLIGENT KEY : Reference Value

INFOID:0000000010245783

VALUES ON THE DIAGNOSIS TOOL

NOTE:

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

CONSULT MONITOR ITEM

Monitor Item	Condition	Value/Status
FR WIPER HI	Other than front wiper switch HI	Off
	Front wiper switch HI	On
FR WIPER LOW	Other than front wiper switch LO	Off
	Front wiper switch LO	On
FR WASHER SW	Front washer switch OFF	Off
	Front washer switch ON	On
FR WIPER INT	Other than front wiper switch INT	Off
	Front wiper switch INT	On
FR WIPER STOP	Front wiper is not in STOP position	Off
	Front wiper is in STOP position	On
INT VOLUME	Wiper intermittent dial is in a dial position 1 - 7	Wiper intermittent dial position
RR WIPER ON	Other than rear wiper switch ON	Off
	Rear wiper switch ON	On
RR WIPER INT	Other than rear wiper switch INT	Off
	Rear wiper switch INT	On
RR WASHER SW	Rear washer switch OFF	Off
	Rear washer switch ON	On
RR WIPER STOP	Rear wiper is in STOP position	Off
	Rear wiper is not in STOP position	On
TURN SIGNAL R	Other than turn signal switch RH	Off
	Turn signal switch RH	On
TURN SIGNAL L	Other than turn signal switch LH	Off
	Turn signal switch LH	On
TAIL LAMP SW	Other than lighting switch 1ST and 2ND	Off
	Lighting switch 1ST or 2ND	On
HI BEAM SW	Other than lighting switch HI	Off
	Lighting switch HI	On
HEAD LAMP SW 1	Other than lighting switch 2ND	Off
	Lighting switch 2ND	On
HEAD LAMP SW 2	Other than lighting switch 2ND	Off
	Lighting switch 2ND	On
PASSING SW	Other than lighting switch PASS	Off
	Lighting switch PASS	On

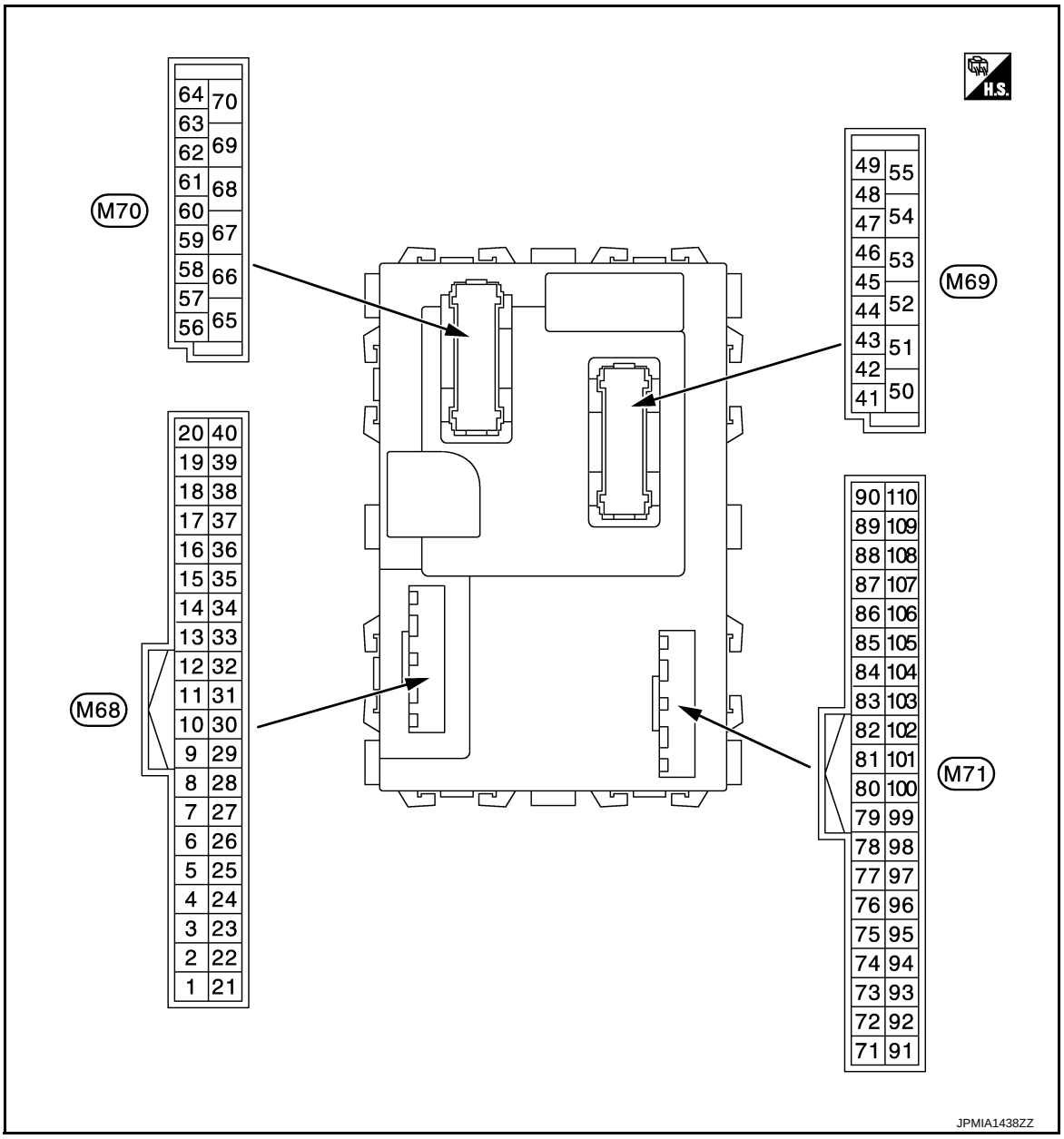
Monitor Item	Condition	Value/Status
AUTO LIGHT SW	Other than lighting switch AUTO	Off
	Lighting switch AUTO	On
FR FOG SW	Front fog lamp switch OFF	Off
	Front fog lamp switch ON	On
DOOR SW-DR	Driver door closed	Off
	Driver door opened	On
DOOR SW-AS	Passenger door closed	Off
	Passenger door opened	On
DOOR SW-RR	Rear RH door closed	Off
	Rear RH door opened	On
DOOR SW-RL	Rear LH door closed	Off
	Rear LH door opened	On
DOOR SW-BK	Back door closed	Off
	Back door opened	On
CDL LOCK SW	Other than power door lock switch LOCK	Off
	Power door lock switch LOCK	On
CDL UNLOCK SW	Other than power door lock switch UNLOCK	Off
	Power door lock switch UNLOCK	On
KEY CYL LK-SW	Other than driver door key cylinder LOCK position	Off
	Driver door key cylinder LOCK position	On
KEY CYL UN-SW	Other than driver door key cylinder UNLOCK position	Off
	Driver door key cylinder UNLOCK position	On
HAZARD SW	Hazard switch is OFF	Off
	Hazard switch is ON	On
REAR DEF SW	Rear window defogger switch OFF	Off
	Rear window defogger switch ON	On
TR/BD OPEN SW	**NOTE:** The item is indicated, but not monitored.	Off
TRNK/HAT MNTR	**NOTE:** The item is indicated, but not monitored.	Off
FAN ON SIG	Blower fan OFF	Off
	Blower fan ON	On
AIR COND SW	Air conditioner OFF (A/C switch indicator OFF)	Off
	Air conditioner ON (A/C switch indicator ON)	On
RKE-LOCK	LOCK button of the key is not pressed	Off
	LOCK button of the key is pressed	On
RKE-UNLOCK	UNLOCK button of the key is not pressed	Off
	UNLOCK button of the key is pressed	On
RKE-TR/BD	BACK DOOR OPEN button of the key is not pressed	Off
	BACK DOOR OPEN button of the key is pressed	On
RKE-PANIC	PANIC button of the key is not pressed	Off
	PANIC button of the key is pressed	On
RKE-MODE CHG	LOCK/UNLOCK button of the key is not pressed and held simultaneously	Off
	LOCK/UNLOCK button of the key is pressed and held simultaneously	On

Monitor Item	Condition	Value/Status
OPTI SEN (DTCT)	Bright outside of the vehicle	Close to 5 V
	Dark outside of the vehicle	Close to 0 V
OPTI SEN (FILT)	Bright outside of the vehicle (Lighting switch AUTO)	Close to 5 V
	Dark outside of the vehicle (Lighting switch AUTO)	Close to 1.50 V
OPTICAL SENSOR	**NOTE:** The item is indicated, but not monitored.	Off
RAIN SENSOR	**NOTE:** The item is indicated, but not monitored.	Off
REQ SW -DR	Driver door request switch is not pressed	Off
	Driver door request switch is pressed	On
REQ SW -AS	Passenger door request switch is not pressed	Off
	Passenger door request switch is pressed	On
REQ SW -RR	**NOTE:** The item is indicated, but not monitored.	Off
REQ SW -RL	**NOTE:** The item is indicated, but not monitored.	Off
REQ SW -BD/TR	Back door request switch is not pressed	Off
	Back door request switch is pressed	On
PUSH SW	Push-button ignition switch (push switch) is not pressed	Off
	Push-button ignition switch (push switch) is pressed	On
CLUCH SW	The clutch pedal is not depressed.	Off
	The clutch pedal is depressed	On
BRAKE SW 1	The brake pedal is not depressed	Off
	The brake pedal is depressed	On
BRAKE SW 2	The brake pedal is depressed when No. 9 fuse is blown	Off
	The brake pedal is not depressed when No. 9 fuse is blown, or No. 9 fuse is normal	On
DETE/CANCL SW	Selector lever in P position	Off
	Selector lever in any position other than P	On
SFT PN/N SW	Selector lever in any position other than P and N	Off
	Selector lever in P or N position	On
S/L -LOCK	**NOTE:** The item is indicated, but not monitored.	Off
S/L -UNLOCK	**NOTE:** The item is indicated, but not monitored.	Off
S/L RELAY-F/B	**NOTE:** The item is indicated, but not monitored.	Off
UNLK SEN -DR	Driver door is locked	Off
	Driver door is unlocked	On
PUSH SW -IPDM	Push-button ignition switch (push-switch) is not pressed	Off
	Push-button ignition switch (push-switch) is pressed	On
IGN RLY1 -F/B	Ignition switch in OFF or ACC position	Off
	Ignition switch in ON position	On
DETE SW -IPDM	Selector lever in any position other than P	Off
	Selector lever in P position	On
SFT PN -IPDM	Selector lever in any position other than P and N	Off
	Selector lever in P or N position	On

Monitor Item	Condition	Value/Status
SFT P -MET	Selector lever in any position other than P	Off
	Selector lever in P position	On
SFT N -MET	Selector lever in any position other than N	Off
	Selector lever in N position	On
ENGINE STATE	Engine stopped	Stop
	While the engine stalls	Stall
	At engine cranking	Crank
	Engine running	Run
S/L LOCK-IPDM	**NOTE:** The item is indicated, but not monitored.	Off
S/L UNLK-IPDM	**NOTE:** The item is indicated, but not monitored.	Off
S/L RELAY-REQ	**NOTE:** The item is indicated, but not monitored.	Off
VEH SPEED 1	While driving	Equivalent to speedometer reading
VEH SPEED 2	While driving	Equivalent to speedometer reading
DOOR STAT-DR	Driver door is locked	LOCK
	Wait with selective UNLOCK operation (5 seconds)	READY
	Driver door is unlocked	UNLOCK
DOOR STAT-AS	Passenger door is locked	LOCK
	Wait with selective UNLOCK operation (5 seconds)	READY
	Passenger door is unlocked	UNLOCK
ID OK FLAG	Driver side door is open after ignition switch is turned OFF (Selector lever is in the P position except for M/T models)	Reset
	Ignition switch ON	Set
PRMT ENG STRT	The engine start is prohibited	Reset
	The engine start is permitted	Set
PRMT RKE STRT	**NOTE:** The item is indicated, but not monitored.	Reset
RKE OPE COUN1	During the operation of the key	Operation frequency of the key
RKE OPE COUN2	**NOTE:** The item is indicated, but not monitored.	—
CONFRM ID ALL	The key ID that the key slot receives is not recognized by any key ID registered to BCM.	Yet
	The key ID that the key slot receives is recognized by any key ID registered to BCM.	Done
CONFIRM ID4	The key ID that the key slot receives is not recognized by the fourth key ID registered to BCM.	Yet
	The key ID that the key slot receives is recognized by the fourth key ID registered to BCM.	Done
CONFIRM ID3	The key ID that the key slot receives is not recognized by the third key ID registered to BCM.	Yet
	The key ID that the key slot receives is recognized by the third key ID registered to BCM.	Done

Monitor Item	Condition	Value/Status
CONFIRM ID2	The key ID that the key slot receives is not recognized by the second key ID registered to BCM.	Yet
	The key ID that the key slot receives is recognized by the second key ID registered to BCM.	Done
CONFIRM ID1	The key ID that the key slot receives is not recognized by the first key ID registered to BCM.	Yet
	The key ID that the key slot receives is recognized by the first key ID registered to BCM.	Done
NOT REGISTERED	BCM detects registered key ID, or BCM does not detect key ID.	ID OK
	BCM detects non-registration key ID.	ID NG
TP 4	The ID of fourth key is not registered to BCM	Yet
	The ID of fourth key is registered to BCM	Done
TP 3	The ID of third key is not registered to BCM	Yet
	The ID of third key is registered to BCM	Done
TP 2	The ID of second key is not registered to BCM	Yet
	The ID of second key is registered to BCM	Done
TP 1	The ID of first key is not registered to BCM	Yet
	The ID of first key is registered to BCM	Done
AIR PRESS FL	Ignition switch ON (Only when the signal from the transmitter is received)	Air pressure of front LH tire
AIR PRESS FR	Ignition switch ON (Only when the signal from the transmitter is received)	Air pressure of front RH tire
AIR PRESS RR	Ignition switch ON (Only when the signal from the transmitter is received)	Air pressure of rear RH tire
AIR PRESS RL	Ignition switch ON (Only when the signal from the transmitter is received)	Air pressure of rear LH tire
ID REGST FL1	ID of front LH tire transmitter is registered	Done
	ID of front LH tire transmitter is not registered	Yet
ID REGST FR1	ID of front RH tire transmitter is registered	Done
	ID of front RH tire transmitter is not registered	Yet
ID REGST RR1	ID of rear RH tire transmitter is registered	Done
	ID of rear RH tire transmitter is not registered	Yet
ID REGST RL1	ID of rear LH tire transmitter is registered	Done
	ID of rear LH tire transmitter is not registered	Yet
WARNING LAMP	Tire pressure indicator OFF	Off
	Tire pressure indicator ON	On
BUZZER	Tire pressure warning alarm is not sounding	Off
	Tire pressure warning alarm is sounding	On

TERMINAL LAYOUT

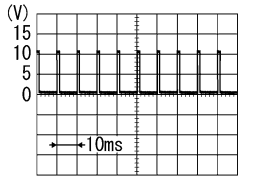
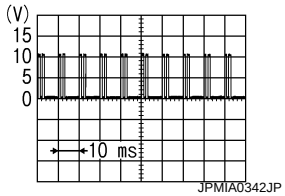
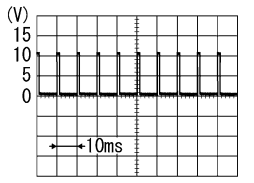
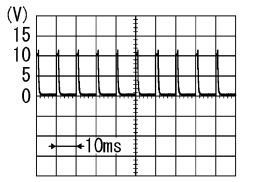
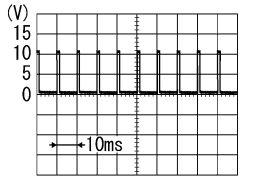


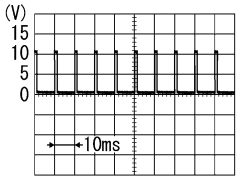
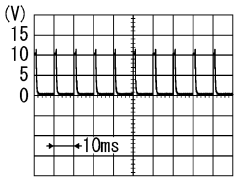
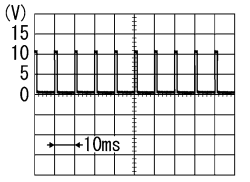
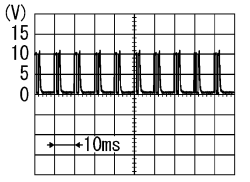
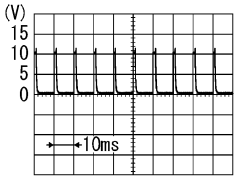
NOTE:

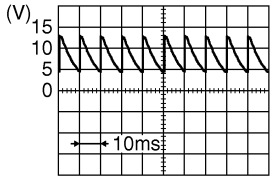
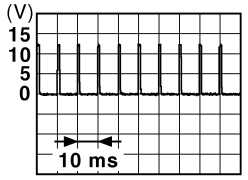
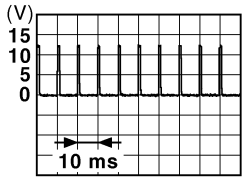
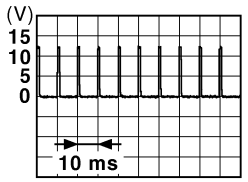
Connector color

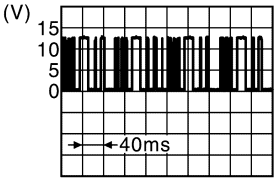
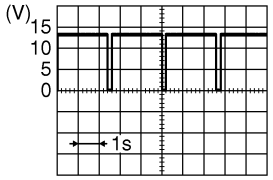
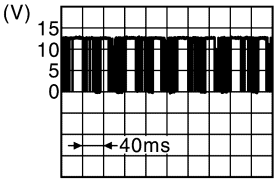
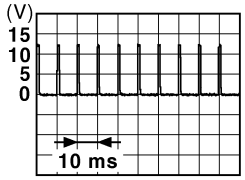
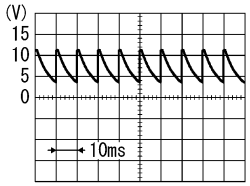
- M68, M70: Black
- M69, M71: White

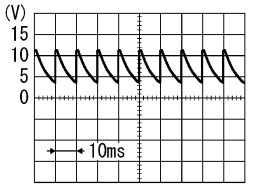
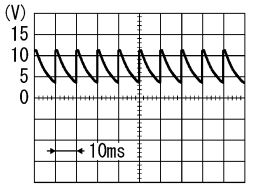
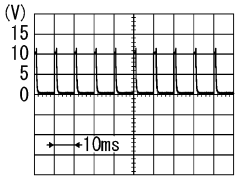
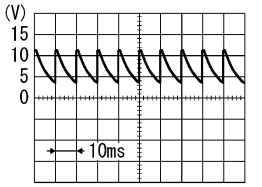
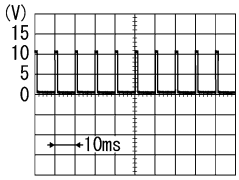
PHYSICAL VALUES

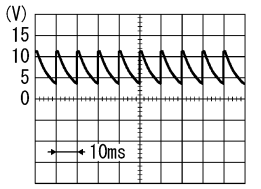
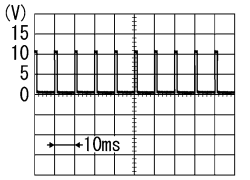
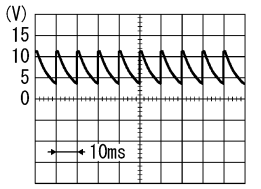
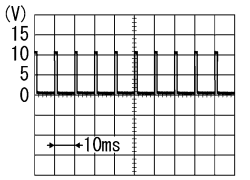
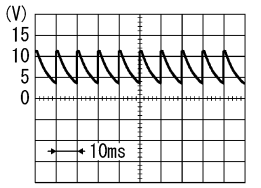
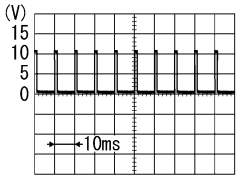
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
2 (BR/W)	Ground	Combination switch INPUT 5	Input	Combination switch (Wiper intermittent dial 4)	All switch OFF	0 V
					Turn signal switch RH Lighting switch HI Lighting switch 1ST	 PKIB4958J 1.0 V
					Lighting switch 2ND	 JPMIA0342JP 2.0 V
3 (GR)	Ground	Combination switch INPUT 4	Input	Combination switch (Wiper intermittent dial 4)	All switch OFF	0 V
					Turn signal switch LH Lighting switch PASS Lighting switch 2ND	 PKIB4958J 1.0 V
					Front fog lamp switch ON	 PKIB4956J 0.8 V
4 (L/Y)	Ground	Combination switch INPUT 3	Input	Combination switch (Wiper intermittent dial 4)	All switch OFF	0 V
					Front wiper switch LO Front wiper switch MIST Front wiper switch INT Lighting switch AUTO	 PKIB4958J 1.0 V

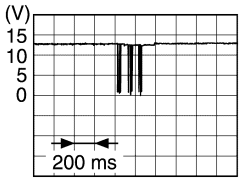
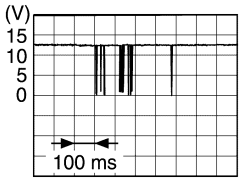
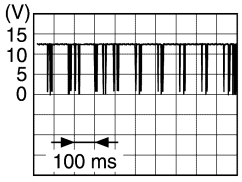
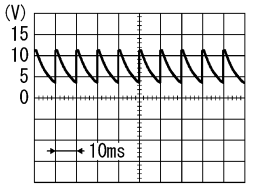
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
5 (G)	Ground	Combination switch INPUT 2	Input	Combination switch	All switch OFF (Wiper intermittent dial 4)	0 V
					Front washer switch (Wiper intermittent dial 4)	 PKIB4958J 1.0 V
					Rear washer ON (Wiper intermittent dial 4)	
					Any of the condition below with all switch OFF • Wiper intermittent dial 1 • Wiper intermittent dial 5 • Wiper intermittent dial 6	
					Rear wiper switch ON (Wiper intermittent dial 4)	 PKIB4956J 0.8 V
6 (L/R)	Ground	Combination switch INPUT 1	Input	Combination switch	All switch OFF (Wiper intermittent dial 4)	0 V
					Front wiper switch HI (Wiper intermittent dial 4)	 PKIB4958J 1.0 V
					Rear wiper switch INT (Wiper intermittent dial 4)	
					Wiper intermittent dial 3 (All switch OFF)	
					Any of the condition below with all switch OFF • Wiper intermittent dial 1 • Wiper intermittent dial 2	 PKIB4952J 1.9 V
					Any of the condition below with all switch OFF • Wiper intermittent dial 6 • Wiper intermittent dial 7	 PKIB4956J 0.8 V

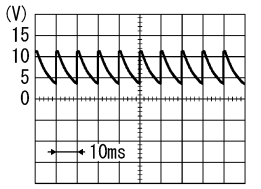
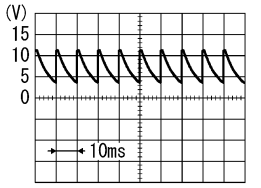
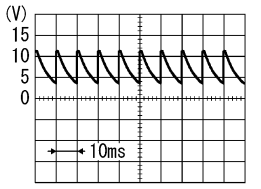
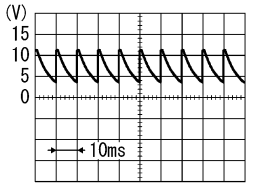
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
7 (W/R)	Ground	Door key cylinder switch UNLOCK	Input	Door key cylinder switch	NEUTRAL position	 JPMIA0587GB 8.0 - 8.5 V
					UNLOCK position	0 V
8 (W/B)	Ground	Door key cylinder switch LOCK	Input	Door key cylinder switch	NEUTRAL position	12 V
					LOCK position	0 V
9 (R)	Ground	Stop lamp switch 1	Input	Stop lamp switch	OFF (Brake pedal is not depressed)	0 V
					ON (Brake pedal is depressed)	Battery voltage
12 (GR)	Ground	Door lock and unlock switch LOCK	Input	Door lock and unlock switch	NEUTRAL position	 JPMIA0012GB 1.0 - 1.5 V
					LOCK position	0 V
13 (BR)	Ground	Door lock and unlock switch UNLOCK	Input	Door lock and unlock switch	NEUTRAL position	 JPMIA0012GB 1.0 - 1.5 V
					UNLOCK position	0 V
14 (L/G)	Ground	Optical sensor	Input	Ignition switch ON	When bright outside of the vehicle	Close to 5 V
					When dark outside of the vehicle	Close to 0 V
15 (W/L)	Ground	Rear window defogger switch	Input	Rear window defogger switch	Not pressed	 JPMIA0012GB 1.0 - 1.5 V
					Pressed	0 V
17 (R/G)	Ground	Optical sensor power supply	Output	Ignition switch	OFF, ACC	0 V
					ON	5 V

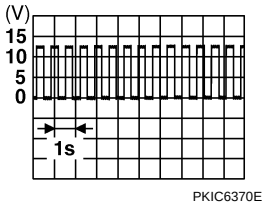
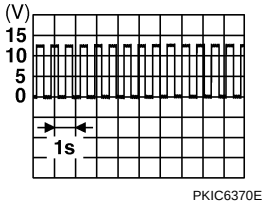
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
18 (V)	Ground	Sensor ground	Input	Ignition switch ON		0 V
21 (P/L)	Ground	NATS antenna amp.	Input/ Output	Intelligent Key: Intelligent Key battery is removed	Brake pedal: Depressed **NOTE:** Waveform varies each time when brake pedal is depressed	 JMKIA6232JP
					Brake pedal: Not depressed	12 V
23 (R/Y)	Ground	Security indicator lamp	Output	Security indicator	ON	0 V
					Blinking (Ignition switch OFF)	 JPMIA0590GB 12.0 V
					OFF	Battery voltage
25 (LG)	Ground	NATS antenna amp.	Input/ Output	During waiting	Brake pedal: Depressed **NOTE:** Waveform varies each time when brake pedal is depressed	 JMKIA6233JP
					Brake pedal: Not depressed	12 V
27 (O)	Ground	A/C ON	Input	A/C	OFF (A/C switch indicator: OFF)	 JPMIA0012GB 1.0 - 1.5 V
					ON (A/C switch indicator: ON)	0 V
28 (G/W)	Ground	Blower fan switch	Input	Fan switch	Blower fan switch OFF	0 V
					Blower fan switch ON	 PKIB4960J 7.0 - 8.0 V

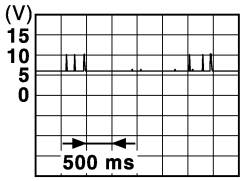
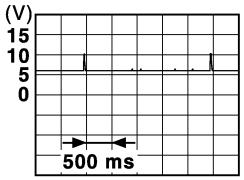
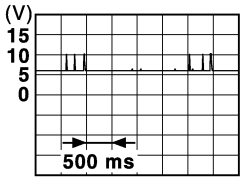
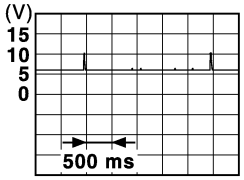
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
29 (L/W)	Ground	Hazard switch	Input	Hazard switch	OFF	12 V
					ON	0 V
31 (G/B)	Ground	Front door lock assembly driver side (Unlock sensor)	Input	Driver door	LOCK status (Unlock sensor switch OFF)	 PKIB4960J 7.0 - 8.0 V
					UNLOCK status (Unlock sensor switch ON)	0 V
32 (LG)	Ground	Combination switch OUTPUT 5	Output	Combination switch	All switch OFF (Wiper intermittent dial 4)	 PKIB4960J 7.0 - 8.0 V
					Front fog lamp switch ON (Wiper intermittent dial 4)	 PKIB4956J 1.0 V
					Rear wiper switch ON (Wiper intermittent dial 4)	
					Any of the condition below with all switch OFF • Wiper intermittent dial 1 • Wiper intermittent dial 2 • Wiper intermittent dial 6 • Wiper intermittent dial 7	
33 (Y/L)	Ground	Combination switch OUTPUT 4	Output	Combination switch	All switch OFF (Wiper intermittent dial 4)	 PKIB4960J 7.0 - 8.0 V
					Lighting switch 1ST (Wiper intermittent dial 4)	 PKIB4958J 1.2 V
					Lighting switch AUTO (Wiper intermittent dial 4)	
					Rear wiper switch INT (Wiper intermittent dial 4)	
					Any of the condition below with all switch OFF • Wiper intermittent dial 1 • Wiper intermittent dial 5 • Wiper intermittent dial 6	

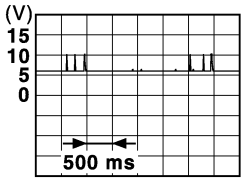
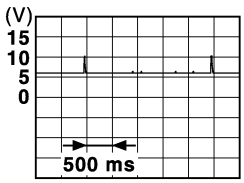
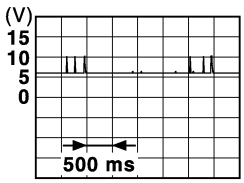
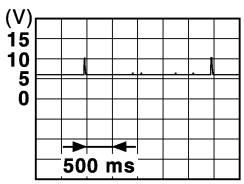
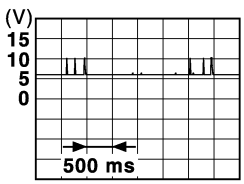
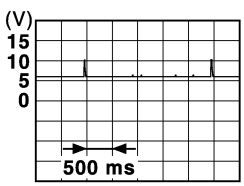
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
		Signal name	Input/ Output			
+	–					
34 (W)	Ground	Combination switch OUTPUT 3	Output	Combination switch	All switch OFF (Wiper intermittent dial 4)	 PKIB4960J 7.0 - 8.0 V
					Lighting switch 2ND (Wiper intermittent dial 4)	 PKIB4958J 1.2 V
					Lighting switch HI (Wiper intermittent dial 4)	
					Rear washer switch ON (Wiper intermittent dial 4)	
					Any of the condition below with all switch OFF • Wiper intermittent dial 1 • Wiper intermittent dial 2 • Wiper intermittent dial 3	
35 (R/L)	Ground	Combination switch OUTPUT 2	Output	Combination switch (Wiper intermittent dial 4)	All switch OFF	 PKIB4960J 7.0 - 8.0 V
					Lighting switch 2ND	 PKIB4958J 1.2 V
					Lighting switch PASS	
					Front wiper switch INT	
					Front wiper switch HI	
36 (L/O)	Ground	Combination switch OUTPUT 1	Output	Combination switch (Wiper intermittent dial 4)	All switch OFF	 PKIB4960J 7.0 - 8.0 V
					Turn signal switch RH	 PKIB4958J 1.2 V
					Turn signal switch LH	
					Front wiper switch LO (Front wiper switch MIST)	
					Front washer switch ON	

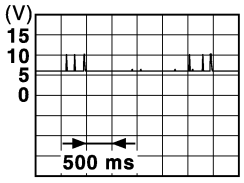
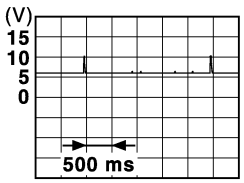
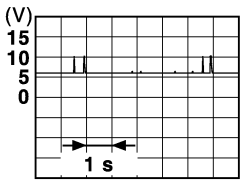
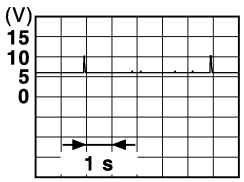
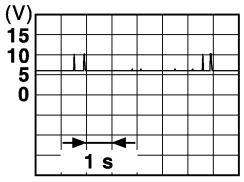
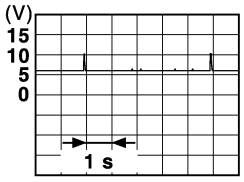
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
37 (G/O)	Ground	Selector lever P position switch	Input	Selector lever	P position	0 V
					Any position other than P	12 V
38 (G/Y)	Ground	Receiver communication	Input/ Output	Ignition switch OFF (Remote keyless entry communication)	Waiting	12 V
					When operating either button on Intelligent Key	 JMMIA0572GB
				Ignition switch ON (TPMS communication)	Waiting	 JMMIA0573GB
					When receiving signal from tire pressure sensor	 JMMIA0574GB
39 (L)	Ground	CAN-H	Input/ Output	—		—
40 (P)	Ground	CAN-L	Input/ Output	—		—
43 (W)	Ground	Back door switch	Input	Back door switch	OFF (When back door closed)	 PKIB4960J 9.5 - 10.0 V
					ON (When back door opened)	0 V
44 (LG)	Ground	Rear wiper stop position	Input	Ignition switch ON	Rear wiper stop position	12 V
					Any position other than rear wiper stop position	0 V

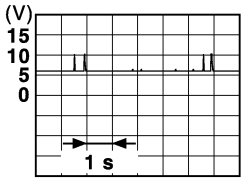
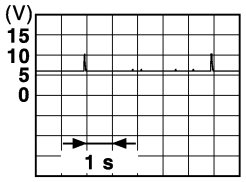
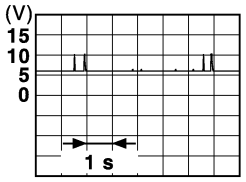
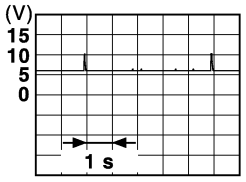
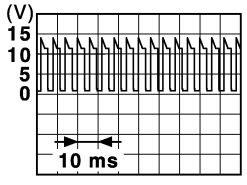
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
45 (SB)	Ground	Passenger door switch	Input	Passenger door switch	OFF (When passenger door closed)	 PKIB4960J 7.0 - 8.0 V
					ON (When passenger door opened)	0 V
46 (GR/L)	Ground	Rear RH door switch	Input	Rear RH door switch	OFF (When rear RH door closed)	 PKIB4960J 7.0 - 8.0 V
					ON (When rear RH door opened)	0 V
47 (BR/Y)	Ground	Driver door switch	Input	Driver door switch	OFF (When driver door closed)	 PKIB4960J 7.0 - 8.0 V
					ON (When driver door opened)	0 V
48 (W/G)	Ground	Rear LH door switch	Input	Rear LH door switch	OFF (When rear LH door closed)	 PKIB4960J 7.0 - 8.0 V
					ON (When rear door LH opened)	0 V
50 (R/W)	Ground	Back door lock actuator relay control	Output	Back door	LOCK (Actuator is activated)	0 V
					Other than LOCK (Actuator is not activated)	Battery voltage
51 (W)	Ground	Back door request switch	Input	Back door request switch	ON (Pressed)	0 V
					OFF (Not pressed)	12 V
54 (LG)	Ground	Rear wiper	Output	Rear wiper	OFF (Stopped)	0 V
					ON (Activated)	12 V

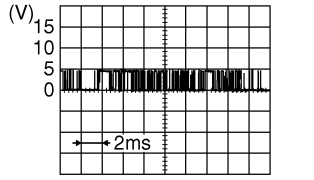
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
55 (G)	Ground	Rear door UNLOCK	Output	Rear door	UNLOCK (Actuator is activated)	12 V
					Other than UNLOCK (Actuator is not activated)	0 V
56 (L)	Ground	Interior room lamp power supply	Output	Interior room lamp battery saver is activated. (Cuts the interior room lamp power supply)		0 V
				Interior room lamp battery saver is not activated. (Outputs the interior room lamp power supply)		12 V
57 (Y)	Ground	Battery power supply	Input	Ignition switch OFF		Battery voltage
59 (G)	Ground	Passenger door UNLOCK	Output	Passenger door	UNLOCK (Actuator is activated)	12 V
					Other than UNLOCK (Actuator is not activated)	0 V
60 (W/B)	Ground	Turn signal LH	Output	Ignition switch ON	Turn signal switch OFF	0 V
					Turn signal switch LH	 PKIC6370E 6.0 V
61 (W/L)	Ground	Turn signal RH	Output	Ignition switch ON	Turn signal switch OFF	0 V
					Turn signal switch RH	 PKIC6370E 6.0 V
63 (BR)	Ground	Interior room lamp control signal	Output	Interior room lamp	OFF	12 V
					ON	0 V
65 (V)	Ground	All doors LOCK	Output	All doors	LOCK (Actuator is activated)	12 V
					Other than LOCK (Actuator is not activated)	0 V
66 (L/B)	Ground	Driver door UNLOCK	Output	Driver door	UNLOCK (Actuator is activated)	12 V
					Other than UNLOCK (Actuator is not activated)	0 V
67 (B)	Ground	Ground	Output	Ignition switch ON		0 V
68 (L)	Ground	P/W power supply (IGN)	Output	Ignition switch ON		12 V
69 (P)	Ground	P/W power supply (BAT)	Output	Ignition switch OFF		12 V

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
70 (Y)	Ground	Battery power supply	Input	Ignition switch OFF		Battery voltage
72 (SB)	Ground	A/C indicator	Output	A/C indicator	OFF	12 V
					ON	0 V
75 (SB)	Ground	Driver door request switch	Input	Driver door request switch	ON (Pressed)	0 V
					OFF (Not pressed)	12 V
76 (L/O)	Ground	Push-button ignition switch (push switch)	Input	Push-button ignition switch (push switch)	Pressed	0 V
					Not pressed	12 V
78 (LG)	Ground	Driver door antenna (+)	Output	When the driver door request switch is operated with ignition switch ON	When Intelligent Key is not in the antenna detection area (The distance between Intelligent Key and antenna: Approx. 2 m)	 JMKIA5954GB
					When Intelligent Key is in the antenna detection area (The distance between Intelligent Key and antenna: 80 cm or less)	 JMKIA5955GB
79 (V)	Ground	Driver door antenna (-)	Output	When the driver door request switch is operated with ignition switch ON	When Intelligent Key is not in the antenna detection area (The distance between Intelligent Key and antenna: Approx. 2 m)	 JMKIA5954GB
					When Intelligent Key is in the antenna detection area (The distance between Intelligent Key and antenna: 80 cm or less)	 JMKIA5955GB

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
80 (BR/Y)	Ground	Passenger door antenna (+)	Output	When the passenger door request switch is operated with ignition switch ON	When Intelligent Key is not in the antenna detection area (The distance between Intelligent Key and antenna: Approx. 2 m)	 JMKIA5954GB
					When Intelligent Key is in the antenna detection area (The distance between Intelligent Key and antenna: 80 cm or less)	 JMKIA5955GB
81 (L/Y)	Ground	Passenger door antenna (-)	Output	When the passenger door request switch is operated with ignition switch ON	When Intelligent Key is not in the antenna detection area (The distance between Intelligent Key and antenna: Approx. 2 m)	 JMKIA5954GB
					When Intelligent Key is in the antenna detection area (The distance between Intelligent Key and antenna: 80 cm or less)	 JMKIA5955GB
82 (W/B)	Ground	Back door antenna (+)	Output	When the back door request switch is operated with ignition switch ON	When Intelligent Key is not in the antenna detection area (The distance between Intelligent Key and antenna: Approx. 2 m)	 JMKIA5954GB
					When Intelligent Key is in the antenna detection area (The distance between Intelligent Key and antenna: 80 cm or less)	 JMKIA5955GB

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
83 (B/W)	Ground	Back door antenna (-)	Output	When the back door request switch is operated with ignition switch ON	When Intelligent Key is not in the antenna detection area (The distance between Intelligent Key and antenna: Approx. 2 m)	 JMKIA5954GB
					When Intelligent Key is in the antenna detection area (The distance between Intelligent Key and antenna: 80 cm or less)	 JMKIA5955GB
84 (Y/G)	Ground	Room antenna (+) (Instrument center)	Output	Ignition switch ON	When Intelligent Key is not in the antenna detection area	 JMKIA5951GB
					When Intelligent Key is in the antenna detection area	 JMKIA3839GB
85 (Y/L)	Ground	Room antenna (-) (Instrument center)	Output	Ignition switch ON	When Intelligent Key is not in the antenna detection area	 JMKIA5951GB
					When Intelligent Key is in the antenna detection area	 JMKIA3839GB

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
86 (P)	Ground	Luggage room antenna (+)	Output	Ignition switch ON	When Intelligent Key is not in the antenna detection area	 JMKIA5951GB
					When Intelligent Key is in the antenna detection area	 JMKIA3839GB
87 (L)	Ground	Luggage room antenna (-)	Output	Ignition switch ON	When Intelligent Key is not in the antenna detection area	 JMKIA5951GB
					When Intelligent Key is in the antenna detection area	 JMKIA3839GB
90 (W/L)	Ground	Push-button ignition switch illumination	Output	Push-button ignition switch illumination	ON	12 V
					OFF	0 V
91 (Y)	Ground	ACC/ON indicator lamp	Output	Ignition switch	OFF	Battery voltage
					ACC or ON	0.5 V
92 (BR/R)	Ground	Push-button ignition switch illumination ground	Output	Tail lamp	OFF	0 V
					ON	**NOTE:** When the illumination brightening/dimming level is in the neutral position  JPMIA1554GB 6.0 - 7.0 V

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
93 (GR/W)	Ground	Intelligent Key warning buzzer	Output	Intelligent Key warning buzzer	Sounding	0 V
					Not sounding	12 V
96 (BR/W)	Ground	ACC relay control	Output	Ignition switch	OFF	0 V
					ACC or ON	12 V
97 (L/R)	Ground	Starter relay control	Output	Ignition switch ON	When selector lever is in P or N position	Battery voltage
					When selector lever is not in P or N position	0 V
98 (BR)	Ground	Ignition relay (IPDM E/R) control	Output	Ignition switch	OFF or ACC	12 V
					ON	0 V
99 (W/R)	Ground	Ignition relay control	Output	Ignition switch	OFF or ACC	0 V
					ON	12 V
100 (G)	Ground	Passenger door request switch	Input	Passenger door request switch	ON (Pressed)	0 V
					OFF (Not pressed)	12 V
102 (G)	Ground	Selector lever P/N position	Input	Selector lever	P or N position	Battery voltage
					Except P and N positions	0 V
103 (G/Y)	Ground	Front defroster switch	Input	Ignition switch ON	A/C mode defroster ON position	0 V
					Other than A/C mode defroster ON position	 JPMIA0589GB 8.0 - 9.0 V
104 (Y/R)	Ground	CVT shift selector (detention switch) power supply	Output	Ignition switch ON		12 V
105 (B/O)	Ground	Stop lamp switch 2	Input	Ignition switch OFF		Battery voltage
106 (Y/B)	Ground	Blower fan motor relay control	Output	Ignition switch	OFF or ACC	0 V
					ON	12 V

WITH INTELLIGENT KEY : Wiring Diagram - BCM -

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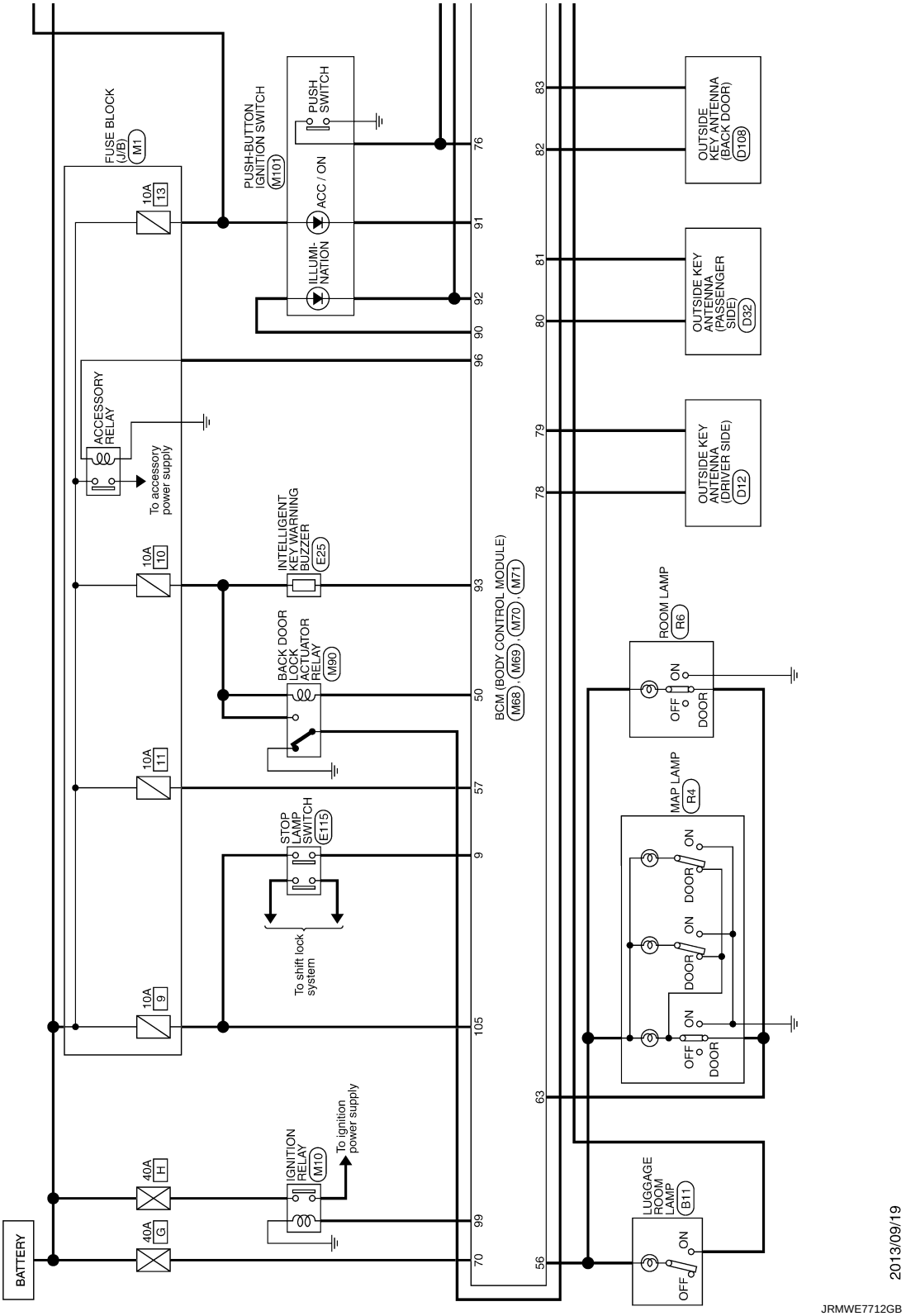
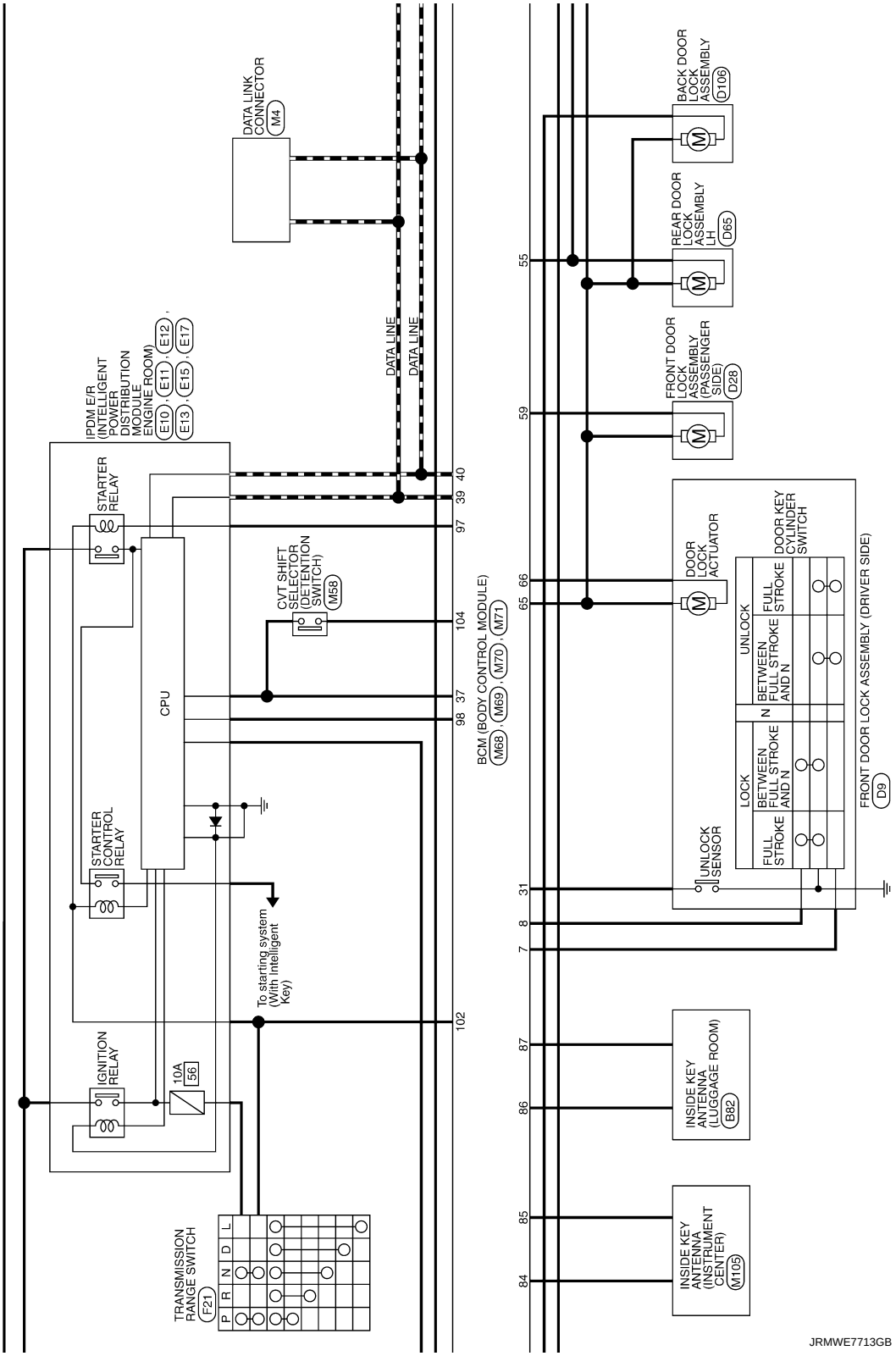
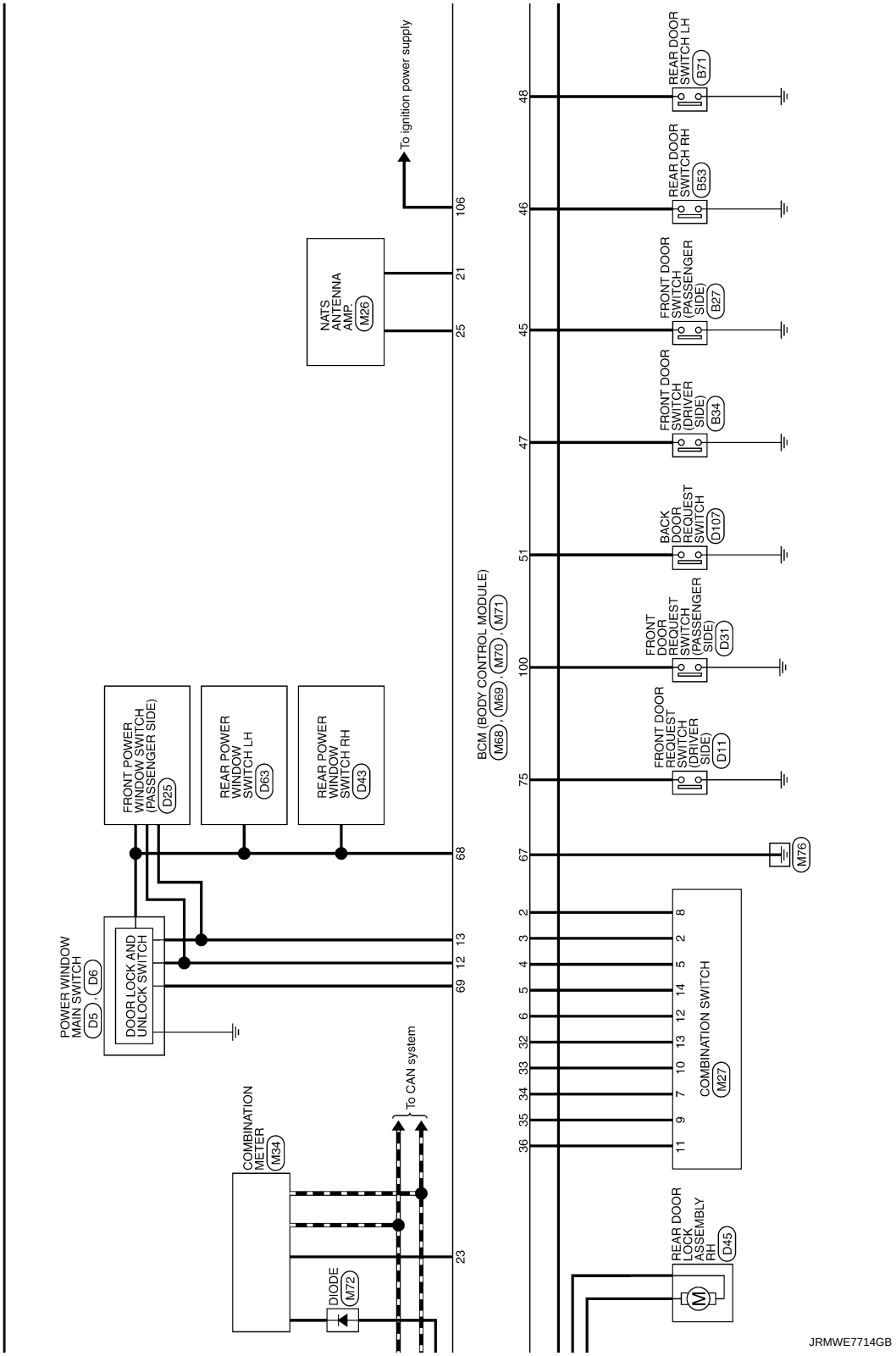
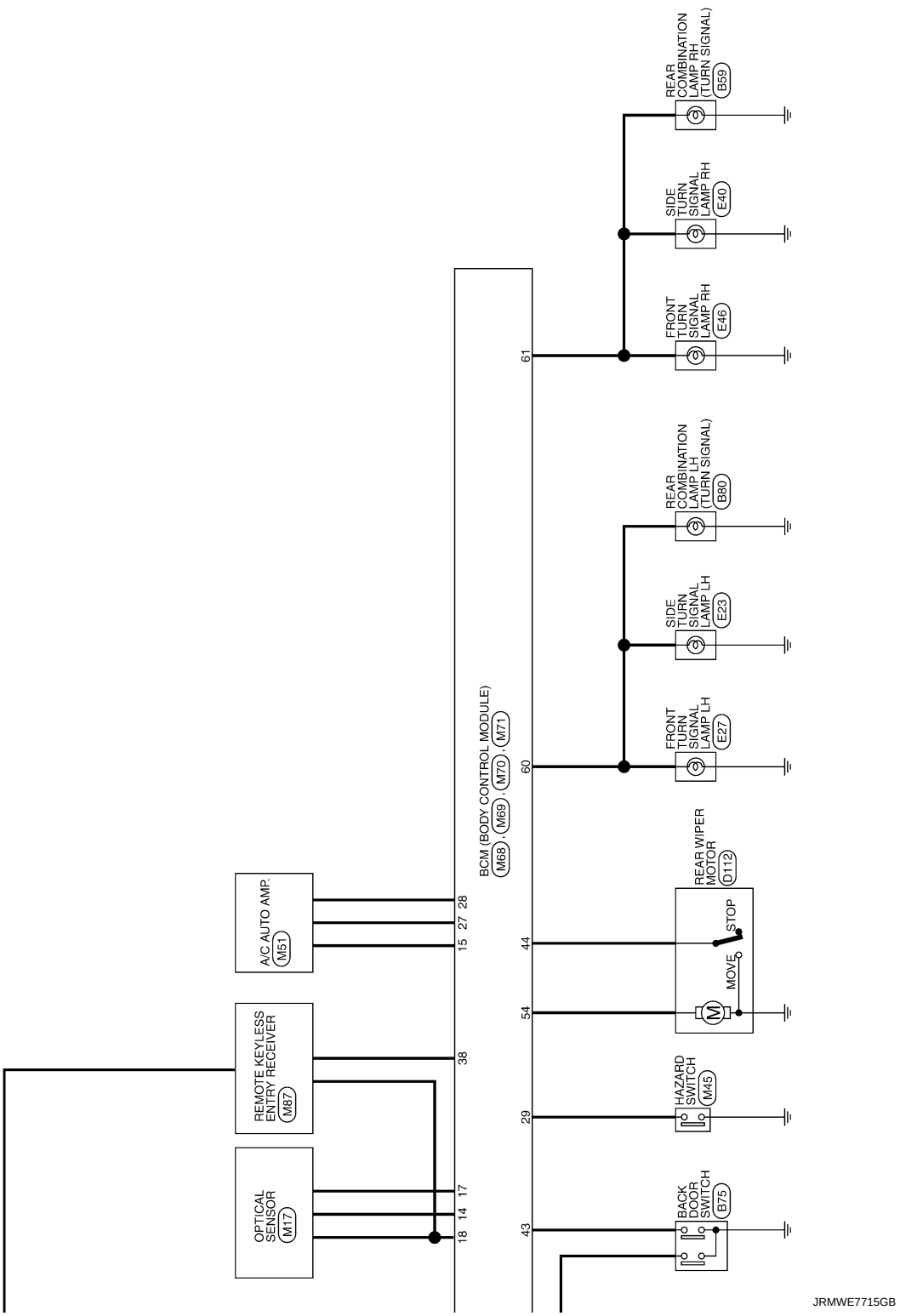
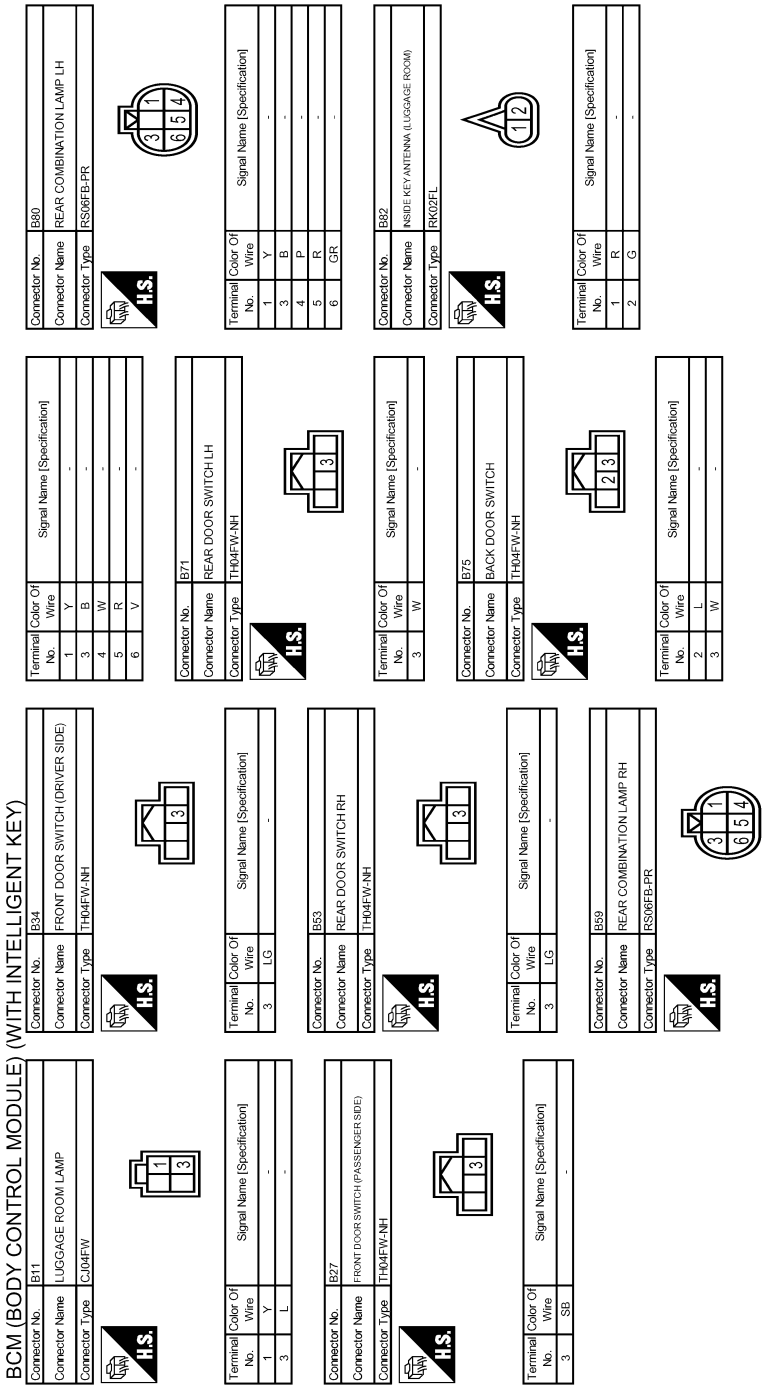
BCM (BODY CONTROL MODULE) (WITH INTELLIGENT KEY)



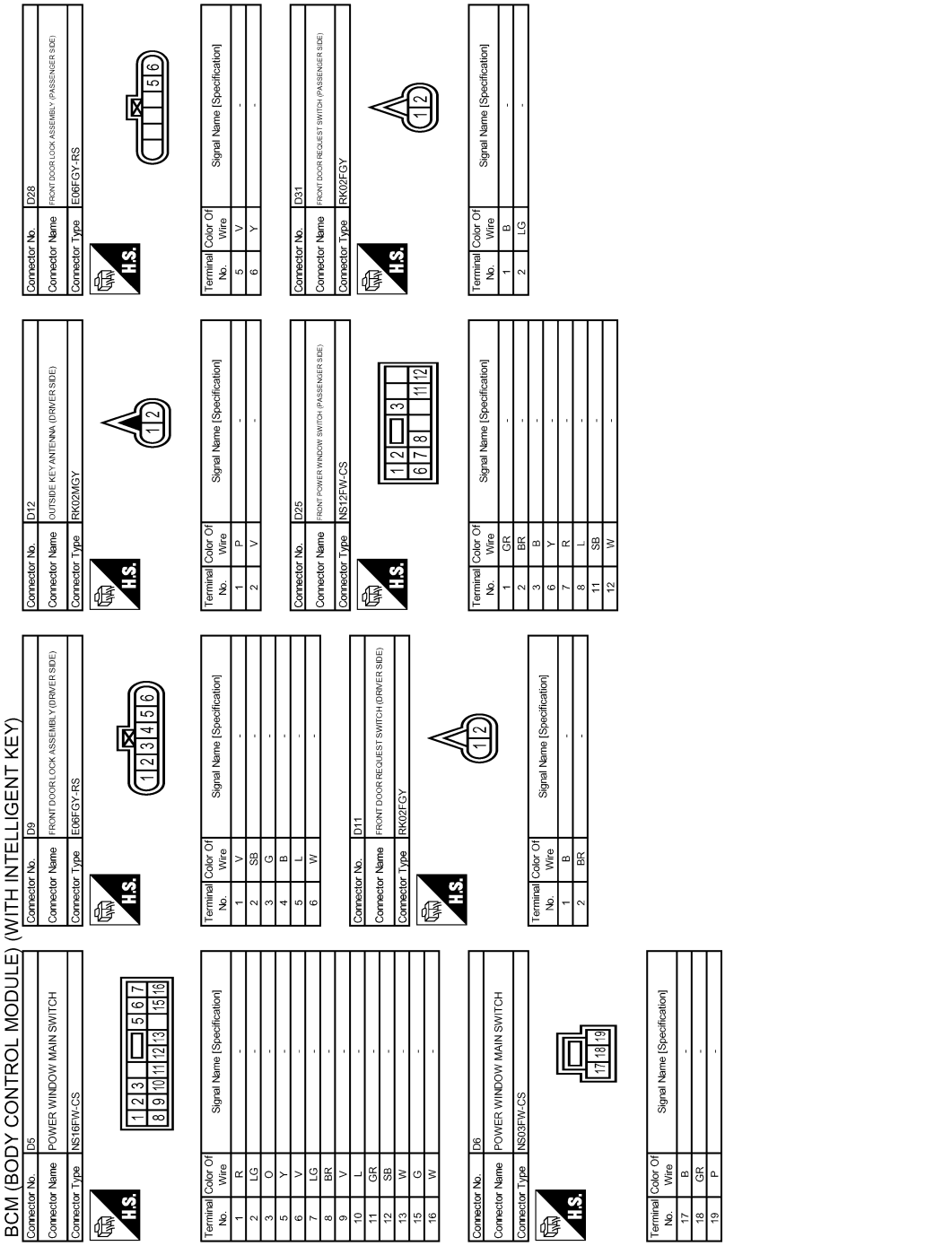

DATA LINK CONNECTOR M4
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) E10, E11, E12, E13, E15, E17
DATA LINE
DATA LINE
STARTER RELAY
CPU
CVT SHIFT SELECTOR (DETENTION SWITCH) M58
BCM (BODY CONTROL MODULE) M68, M69, M70, M71
STARTER CONTROL RELAY
To starting system (With intelligent Key)
IGNITION RELAY
10A 56
TRANSMISSION RANGE SWITCH F21
P R N D L
BACK DOOR LOCK ASSEMBLY D106
REAR DOOR LOCK ASSEMBLY LH D65
FRONT DOOR LOCK ASSEMBLY (PASSENGER SIDE) D28
DOOR LOCK ACTUATOR
UNLOCK SENSOR
DOOR KEY CYLINDER SWITCH
LOCK
UNLOCK
FULL STROKE
BETWEEN FULL STROKE AND N
N
FRONT DOOR LOCK ASSEMBLY (DRIVER SIDE) D9
INSIDE KEY ANTENNA (LUGGAGE ROOM) B82
INSIDE KEY ANTENNA (INSTRUMENT CENTER) M105
JRMWE7713GB


To ignition power supply
NATS ANTENNA AMP. (M26)
106
21
25
BCM (BODY CONTROL MODULE) (M68), (M69), (M70), (M71)
48
46
45
47
51
100
75
67
2
3
4
5
6
32
33
34
35
36
REAR DOOR SWITCH LH (B71)
REAR DOOR SWITCH RH (B53)
FRONT DOOR SWITCH (PASSENGER SIDE) (B27)
FRONT DOOR SWITCH (DRIVER SIDE) (B34)
BACK DOOR REQUEST SWITCH (D107)
FRONT DOOR REQUEST SWITCH (PASSENGER SIDE) (D31)
FRONT DOOR REQUEST SWITCH (DRIVER SIDE) (D11)
M76
COMBINATION SWITCH (M27)
8
2
5
14
12
13
10
7
9
11
REAR DOOR LOCK ASSEMBLY RH (D45)
FRONT POWER WINDOW SWITCH (PASSENGER SIDE) (D25)
REAR POWER WINDOW SWITCH LH (D63)
REAR POWER WINDOW SWITCH RH (D43)
68
13
12
69
POWER WINDOW MAIN SWITCH (D5), (D6)
DOOR LOCK AND UNLOCK SWITCH
COMBINATION METER (M34)
DIODE (M72)
23
To CAN system
JRMWE7714GB


REAR COMBINATION LAMP RH (TURN SIGNAL) B59
SIDE TURN SIGNAL LAMP RH E40
FRONT TURN SIGNAL LAMP RH E46
REAR COMBINATION LAMP LH (TURN SIGNAL) B80
SIDE TURN SIGNAL LAMP LH E23
FRONT TURN SIGNAL LAMP LH E27
REAR WIPER MOTOR D112
STOP
MOVE
HAZARD SWITCH M45
BACK DOOR SWITCH B75
BCM (BODY CONTROL MODULE) (M68), (M69), (M70), (M71)
61
60
44
54
29
43
A/C AUTO AMP. M51
28
27
15
REMOTE KEYLESS ENTRY RECEIVER M87
38
OPTICAL SENSOR M17
17
14
18
JRMWE7715GB



JRMWE7818GB



JRMWE7819GB

BCM (BODY CONTROL MODULE) (WITH INTELLIGENT KEY)

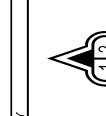
Connector No.	D32
Connector Name	OUTSIDE KEY ANTENNA (PASSENGER SIDE)
Connector Type	RK02MGY

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	P	-
2	V	-

Connector No.	D43
Connector Name	REAR POWER WINDOW SWITCH RH
Connector Type	NS08FW-CS

H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	-
2	BR	-
3	O	-
4	G	-
5	R	-

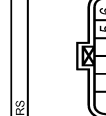
Connector No.	D45
Connector Name	REAR DOOR LOCK ASSEMBLY RH
Connector Type	E06FGY-RS

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
5	W	-
6	P	-

Connector No.	D63
Connector Name	REAR POWER WINDOW SWITCH LH
Connector Type	NS08FW-CS

H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	-
2	BR	-
3	O	-
4	G	-
5	R	-

Connector No.	D65
Connector Name	REAR DOOR LOCK ASSEMBLY LH
Connector Type	E06FGY-RS

H.S.

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

Connector No.	D106
Connector Name	BACK DOOR LOCK ASSEMBLY
Connector Type	FEA04FB-FHA2-LC

H.S.

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

Connector No.	D107
Connector Name	BACK DOOR REQUEST SWITCH
Connector Type	RK02FGY

H.S.

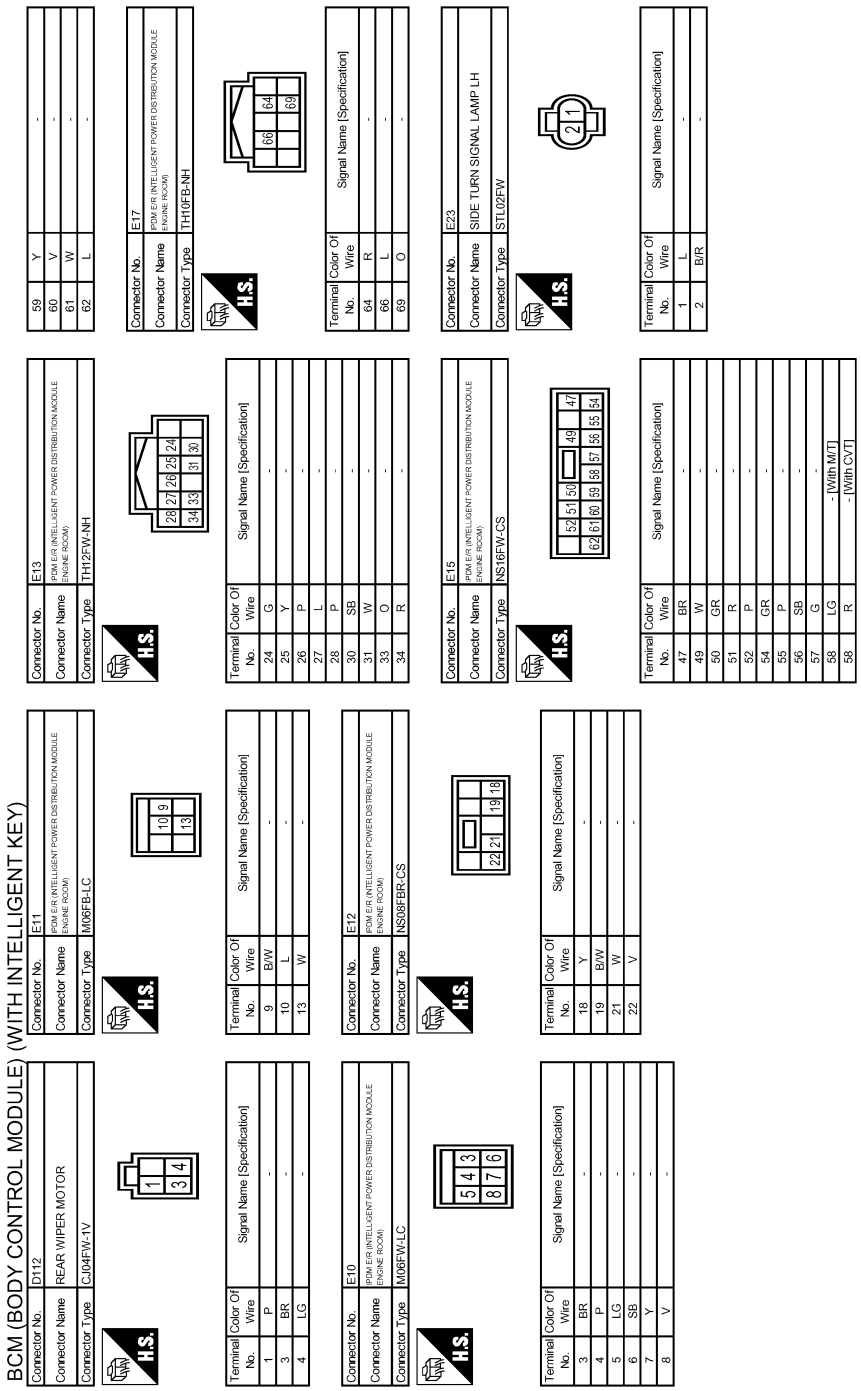
Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	-
2	B	-

Connector No.	D108
Connector Name	OUTSIDE KEY ANTENNA (BACK DOOR)
Connector Type	RK02MGY

H.S.

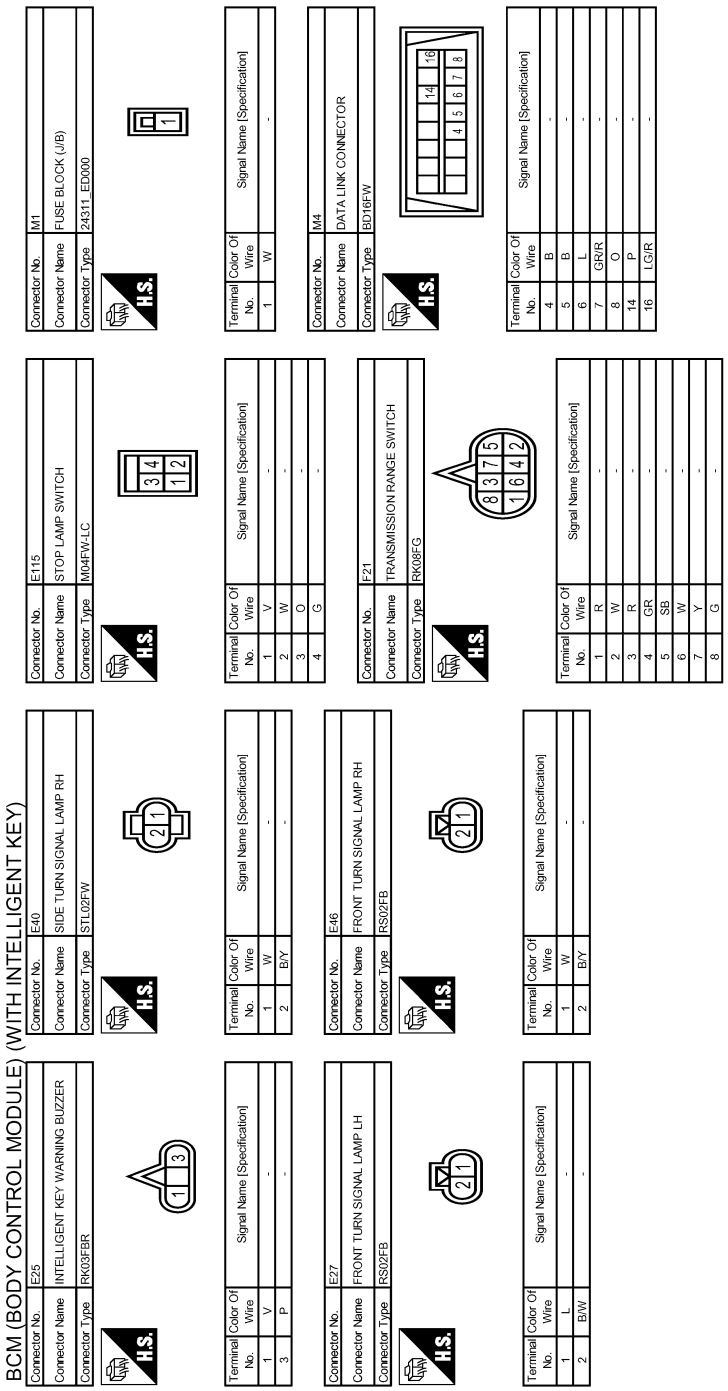
Terminal No.	Color Of Wire	Signal Name [Specification]
1	BR	-
2	R	-

JRMWE7820GB



JRMWE7821GB

BCM (BODY CONTROL MODULE) (WITH INTELLIGENT KEY)



JRMWE7822GB

BCM (BODY CONTROL MODULE) (WITH INTELLIGENT KEY)

Connector No.	M10
Connector Name	IGNITION RELAY
Connector Type	MS02FL-M2-LC

Terminal No.	Color Of Wire	Signal Name [Specification]
1	B	-
2	W/R	-
3	W/B	-
5	L	-

Connector No.	M17
Connector Name	OPTICAL SENSOR
Connector Type	TK03FW

Terminal No.	Color Of Wire	Signal Name [Specification]
1	R/G	POWER
2	L/B	OUTPUT
3	V	GROUND

Connector No.	M26
Connector Name	NATS ANTENNA AMP.
Connector Type	TH04FW-NH

Terminal No.	Color Of Wire	Signal Name [Specification]
1	Y	BAT
2	P/L	CLK
3	B	GND [Without Intelligent Key]
3	LG	DATA [With Intelligent Key]
4	B	GND [With Intelligent Key]
4	LG	DATA [Without Intelligent Key]

Connector No.	M27
Connector Name	COMBINATION SWITCH
Connector Type	TH16FW-NH

Terminal No.	Color Of Wire	Signal Name [Specification]
1	O/B	WASHER (RR)
2	GR	OUTPUT 4
3	R/G	WASHER (FR)
4	W	IGN
5	L/Y	OUTPUT 3
6	B	GROUND
7	W	INPUT 3
8	BR/W	OUTPUT 5
9	R/L	INPUT 2
10	Y/L	INPUT 4
11	L/O	INPUT 1
12	L/R	OUTPUT 1
13	LG	INPUT 5
14	G	OUTPUT 2

Connector No.	M34
Connector Name	COMBINATION METER
Connector Type	TH40FW-NH

Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	CAN-H
2	P	CAN-L
3	V	VEHICLE SPEED SIGNAL (2-PULSE)
4	L	VEHICLE SPEED SIGNAL (8-PULSE) [Without NAVI]
4	V/R	VEHICLE SPEED SIGNAL (8-PULSE) [With NAVI]
6	BR/Y	FUEL LEVEL SENSOR SIGNAL
7	R/G	AIR BAG SIGNAL
8	P	OVERDRIVE CONTROL SWITCH SIGNAL
9	O	SEAT BELT BUCKLE SWITCH SIGNAL [DRIVER SIDE]
10	SB	PARKING BRAKE SWITCH SIGNAL
11	G/R	BRAKE FLUID LEVEL SWITCH SIGNAL
13	B/R	ILLUMINATION CONTROL SIGNAL
15	L/Y	ACC POWER SUPPLY
18	R/Y	SECURITY SIGNAL
19	PU/W	AMBIENT SENSOR SIGNAL
20	R/W	AMBIENT SENSOR GROUND
21	B	GROUND
22	B	GROUND
23	B	GROUND
24	PU	FUEL LEVEL SENSOR GROUND
25	B	VDC GROUND
27	LG/R	BATTERY POWER SUPPLY
28	GR	IGNITION SIGNAL
29	BR	PASSENGER SEAT BELT WARNING SIGNAL
31	R	A/C AUTO AMP. CONNECTION RECOGNITION SIGNAL
35	BR	ENGINE COOLANT TEMPERATURE SIGNAL
38	GR	ALTERNATOR SIGNAL

Connector No.	M45
Connector Name	HAZARD SWITCH
Connector Type	TK04FW

Terminal No.	Color Of Wire	Signal Name [Specification]
1	B	-
2	L/W	-
3	W	-
4	B/R	-

Connector No.	M51
Connector Name	A/C AUTO AMP.
Connector Type	TK16FGY

Terminal No.	Color Of Wire	Signal Name [Specification]
21	BR	WATER TEMPERATURE SIGNAL
22	PU/W	AMBIENT SENSOR SIGNAL
23	O	INTAKE SENSOR SIGNAL
24	G	IN-VEHICLE SENSOR SIGNAL
25	P	SUNLOAD SENSOR SIGNAL
26	SB	INTAKE DOOR MOTOR PBR F/B SIGNAL
27	R	REAR WINDOW DEFOGGER F/B SIGNAL
29	GR	MODE DRIVE SIGNAL 4
30	W	MODE DRIVE SIGNAL 3
31	Y	MODE DRIVE SIGNAL 2
32	V	MODE DRIVE SIGNAL 1
33	W/L	REAR WINDOW DEFOGGER ON SIGNAL
34	Y/G	A/C ON SIGNAL
35	G/W	BLOWER FAN ON SIGNAL
36	GR/R	POWER TRANSISTOR CONTROL SIGNAL

JRMWE7823GB

BCM (BODY CONTROL MODULE) (WITH INTELLIGENT KEY)

Connector No.	M58
Connector Name	CVT SHIFT SELECTOR
Connector Type	TH08FW-NH

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	P	-
2	B	-
3	W	-
4	B/R	-
5	LG	-
6	B	-
7	Y/R	-
8	G/Y	-

Connector No.	M68
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FB-NH

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
2	BR/W	COMBI SW INPUT 5
3	GR	COMBI SW INPUT 4
4	L/Y	COMBI SW INPUT 3
5	G	COMBI SW INPUT 2
6	L/R	COMBI SW INPUT 1
7	W/R	KEY CYL UNLOCK SW
8	W/B	KEY CYL LOCK SW
9	R	STOP LAMP SW 1
12	GR	CENTRAL DOOR LOCK SW
13	BR	CENTRAL DOOR UNLOCK SW
14	L/G	OPTICAL SENSOR
15	W/L	REAR WINDOW DEFOGGER SW
17	R/G	OPTICAL SENSOR POWER SUPPLY
18	V	SENSOR GND
21	P/L	NATS ANTENNA AMP.
23	R/Y	SECURITY INDICATOR LAMP
25	LG	NATS ANTENNA AMP.
27	O	A/C SW
28	G/W	BLOWER FAN SW
29	L/W	HAZARD SW
31	G/B	DR DOOR UNLOCK SENSOR
32	LG	COMBI SW OUTPUT 5
33	Y/L	COMBI SW OUTPUT 4
34	W	COMBI SW OUTPUT 3
35	R/L	COMBI SW OUTPUT 2
36	L/O	COMBI SW OUTPUT 1
37	G/O	SHIFT P
38	G/Y	RECEIVER COMM
39	L	CAN-H
40	P	CAN-L

Connector No.	M69
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	FEA09FB-FHA6-SA

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
43	W	BACK DOOR SW
44	LG	REAR WIPER STOP POSITION
45	SB	PASSENGER DOOR SW
46	GR/L	REAR RH DOOR SW
47	BR/Y	DRIVER DOOR SW
48	W/G	REAR LH DOOR SW
50	R/W	BK DR LOCK ACT RELAY CONT
51	W	BACK DOOR REQUEST SW
54	LG	REAR WIPER OUTPUT
55	G	REAR DOOR UNLOCK OUTPUT

Connector No.	M70
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	FEA09FW-FHA6-SA

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
56	L	INTERIOR ROOM LAMP POWER SUPPLY
57	Y	BAT (FUSE)
59	G	PASSENGER DOOR UNLOCK OUTPUT
60	W/B	TURN SIGNAL LH OUTPUT
61	W/L	TURN SIGNAL RH OUTPUT
63	BR	ROOM LAMP TIMER CONTROL
65	V	ALL DOOR LOCK OUTPUT
66	L/B	DRIVER DOOR UNLOCK OUTPUT
67	B	GROUND
68	L	POWER WINDOW POWER SUPPLY (IGN)
69	P	POWER WINDOW POWER SUPPLY (BAT)
70	Y	BAT (F/L)

Connector No.	M71
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FW-NH

H.S.

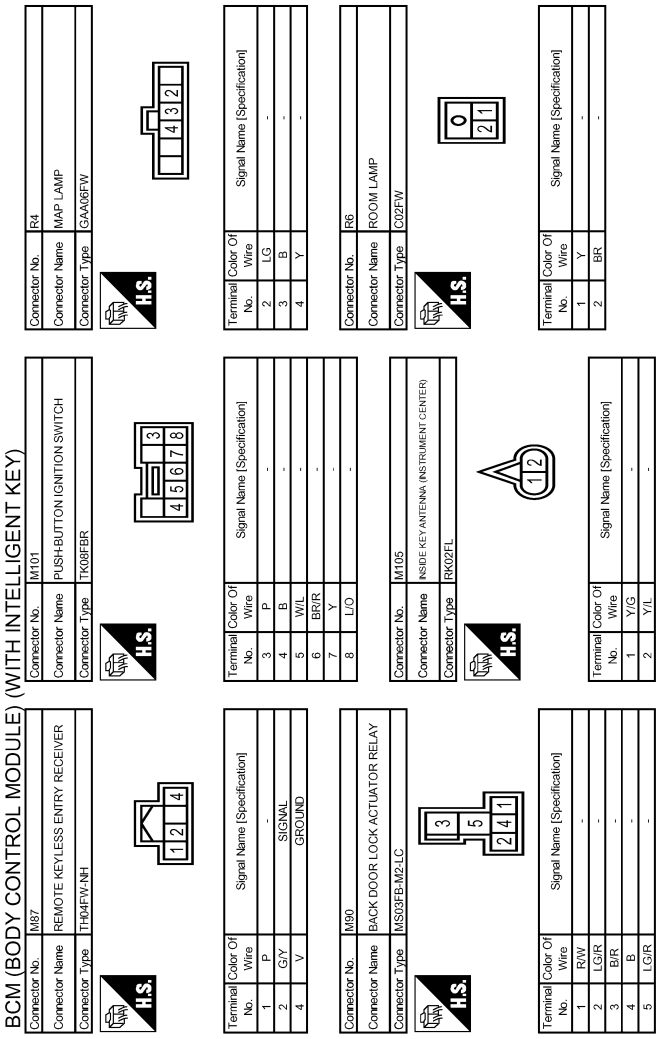
Terminal No.	Color Of Wire	Signal Name [Specification]
72	SB	A/C INDICATOR OUTPUT
75	SB	DRIVER DOOR REQUEST SW
76	L/O	PUSH SW
78	LG	DRIVER DOOR ANT+
79	V	DRIVER DOOR ANT-
80	BR/Y	PASSENGER DOOR ANT+
81	L/Y	PASSENGER DOOR ANT-
82	W/B	BACK DOOR ANT+
83	B/W	BACK DOOR ANT-
84	Y/G	ROOM ANT+
85	Y/L	ROOM ANT-
86	P	LUGGAGE ROOM ANT+
87	L	LUGGAGE ROOM ANT-
90	W/L	PUSH-BUTTON IGNITION SW ILL POWER
91	Y	ACC/ON IND
92	BR/R	PUSH-BUTTON IGNITION SW ILL GND
93	GR/W	I-KEY WARN BUZZER
96	BR/W	ACC RELAY CONT
97	L/R	STARTER RELAY CONT
98	BR	IGN RELAY (IPDM E/R) CONT
99	W/R	IGN RELAY CONT
100	G	PASSENGER DOOR REQUEST SW
102	G	SHIFT N/P
103	G/Y	FR DEFROSTER SW
104	Y/R	CVT SHIFT SELECTOR POWER SUPPLY
105	B/O	STOP LAMP SW 2
106	Y/B	BLOWER FAN MOTOR RELAY CONT

Connector No.	M72
Connector Name	DIODE
Connector Type	24335_C9900

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	B/R	-
2	BR/R	-

JRMWE7824GB



JRMWE7825GB

WITH INTELLIGENT KEY : Fail-safe

INFOID:0000000010245785

FAIL-SAFE CONTROL BY DTC

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

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

REAR WIPER MOTOR PROTECTION

BCM detects the rear wiper stopping position according to the rear wiper stop position signal.
When the rear wiper stop position signal does not change for more than 5 seconds while driving the rear wiper, BCM stops power supply to protect the rear wiper motor.

Condition of cancellation
1. More than 1 minute is passed after the rear wiper stop.
2. Turn rear wiper switch OFF.
3. Operate the rear wiper switch or rear washer switch.

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

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

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

WITH INTELLIGENT KEY : DTC Inspection Priority Chart

INFOID:0000000010245786

If some DTCs are displayed at the same time, perform inspections one by one based on the following priority chart.

Priority	DTC
1	B2562: LOW VOLTAGE
2	• U1000: CAN COMM CIRCUIT • U1010: CONTROL UNIT (CAN)

Priority	DTC
3	• B2192: ID DISCORD BCM-ECM • B2193: CHAIN OF BCM-ECM • B2195: ANTI-SCANNING • B2198: NATS ANTENNA AMP
4	• B2555: STOP LAMP • B2556: PUSH-BTN IGN SW • B2557: VEHICLE SPEED • B2601: SHIFT POSITION • B2602: SHIFT POSITION • B2603: SHIFT POSI STATUS • B2604: PNP/CLUTCH SW • B2605: PNP/CLUTCH SW • B2608: STARTER RELAY • B260F: ENG STATE SIG LOST • B2614: BCM • B2615: BCM • B2616: BCM • B2618: BCM • B261A: PUSH-BTN IGN SW • B26F1: IGN RELAY OFF • B26F2: IGN RELAY ON • B26F3: START CONT RLY ON • B26F4: START CONT RLY OFF • B26F6: BCM • B26F7: BCM • B26F8: BCM • B26FC: KEY REGISTRATION • C1729: VHCL SPEED SIG ERR • U0415: VEHICLE SPEED
5	• C1704: LOW PRESSURE FL • C1705: LOW PRESSURE FR • C1706: LOW PRESSURE RR • C1707: LOW PRESSURE RL • C1708: [NO DATA] FL • C1709: [NO DATA] FR • C1710: [NO DATA] RR • C1711: [NO DATA] RL • C1716: [PRESSDATA ERR] FL • C1717: [PRESSDATA ERR] FR • C1718: [PRESSDATA ERR] RR • C1719: [PRESSDATA ERR] RL
6	• B2621: INSIDE ANTENNA • B2622: INSIDE ANTENNA
7	• B2626: OUTSIDE ANTENNA • B2627: OUTSIDE ANTENNA • B2628: OUTSIDE ANTENNA

WITH INTELLIGENT KEY : DTC Index

INFOID:0000000010245787

NOTE:
The details of time display are as follows.
- CRNT: A malfunction is detected now.
- PAST: A malfunction was detected in the past.

IGN counter is displayed on Freeze Frame Data. For details of Freeze Frame Data, refer to BCS-20, "COMMON ITEM : CONSULT Function (BCM - COMMON ITEM)".

CONSULT display	Fail-safe	Freeze Frame Data •Vehicle Speed •Odo/Trip Meter •Vehicle Condition	Intelligent Key warning lamp ON	Tire pressure monitor warning lamp ON	Reference page
No DTC is detected. further testing may be required.	—	—	—	—	—
U1000: CAN COMM	—	—	—	—	BCS-40
U1010: CONTROL UNIT (CAN)	—	—	—	—	BCS-41
U0415: VEHICLE SPEED	—	—	×	—	BCS-42
B2192: ID DISCORD BCM-ECM	×	—	—	—	SEC-38
B2193: CHAIN OF BCM-ECM	×	—	—	—	SEC-40
B2195: ANTI-SCANNING	×	—	—	—	SEC-41
B2198: NATS ANTENNA AMP	×	—	—	—	SEC-42
B2555: STOP LAMP	—	×	×	—	SEC-46
B2556: PUSH-BTN IGN SW	—	×	×	—	SEC-48
B2557: VEHICLE SPEED	—	×	×	—	SEC-50
B2562: LOW VOLTAGE	—	×	—	—	BCS-43
B2601: SHIFT POSITION	—	×	×	—	SEC-51
B2602: SHIFT POSITION	—	×	×	—	SEC-54
B2603: SHIFT POSI STATUS	—	×	×	—	SEC-57
B2604: PNP/CLUTCH SW	—	×	×	—	SEC-62
B2605: PNP/CLUTCH SW	—	×	×	—	SEC-65
B2608: STARTER RELAY	×	×	×	—	SEC-67
B260F: ENG STATE SIG LOST	×	×	×	—	SEC-69
B2614: BCM	—	×	×	—	PCS-77
B2615: BCM	—	×	×	—	PCS-80
B2616: BCM	—	×	×	—	PCS-83
B2618: BCM	—	×	×	—	PCS-86
B261A: PUSH-BTN IGN SW	—	×	×	—	PCS-87
B2621: INSIDE ANTENNA	—	×	—	—	DLK-44
B2622: INSIDE ANTENNA	—	×	—	—	DLK-46
B2626: OUTSIDE ANTENNA	—	×	—	—	DLK-50
B2627: OUTSIDE ANTENNA	—	×	—	—	DLK-48
B2628: OUTSIDE ANTENNA	—	×	—	—	DLK-52
B26F1: IGN RELAY OFF	×	×	×	—	PCS-89
B26F2: IGN RELAY ON	×	×	×	—	PCS-91
B26F3: START CONT RLY ON	×	×	×	—	SEC-70
B26F4: START CONT RLY OFF	×	×	×	—	SEC-71
B26F6: BCM	—	×	×	—	PCS-93
B26F7: BCM	×	×	×	—	SEC-73
B26F8: BCM	—	×	×	—	SEC-74
B26FC: KEY REGISTRATION	—	×	×	—	SEC-75

CONSULT display	Fail-safe	Freeze Frame Data •Vehicle Speed •Odo/Trip Meter •Vehicle Condition	Intelligent Key warning lamp ON	Tire pressure monitor warning lamp ON	Reference page
C1704: LOW PRESSURE FL	—	—	—	×	WT-26
C1705: LOW PRESSURE FR	—	—	—	×	
C1706: LOW PRESSURE RR	—	—	—	×	
C1707: LOW PRESSURE RL	—	—	—	×	
C1708: [NO DATA] FL	—	—	—	×	WT-28
C1709: [NO DATA] FR	—	—	—	×	
C1710: [NO DATA] RR	—	—	—	×	
C1711: [NO DATA] RL	—	—	—	×	
C1716: [PRESSDATA ERR] FL	—	—	—	×	WT-31
C1717: [PRESSDATA ERR] FR	—	—	—	×	
C1718: [PRESSDATA ERR] RR	—	—	—	×	
C1719: [PRESSDATA ERR] RL	—	—	—	×	
C1729: VHCL SPEED SIG ERR	—	—	—	×	WT-33

WITHOUT INTELLIGENT KEY

WITHOUT INTELLIGENT KEY : Reference Value

INFOID:0000000010245797

VALUES ON THE DIAGNOSIS TOOL

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

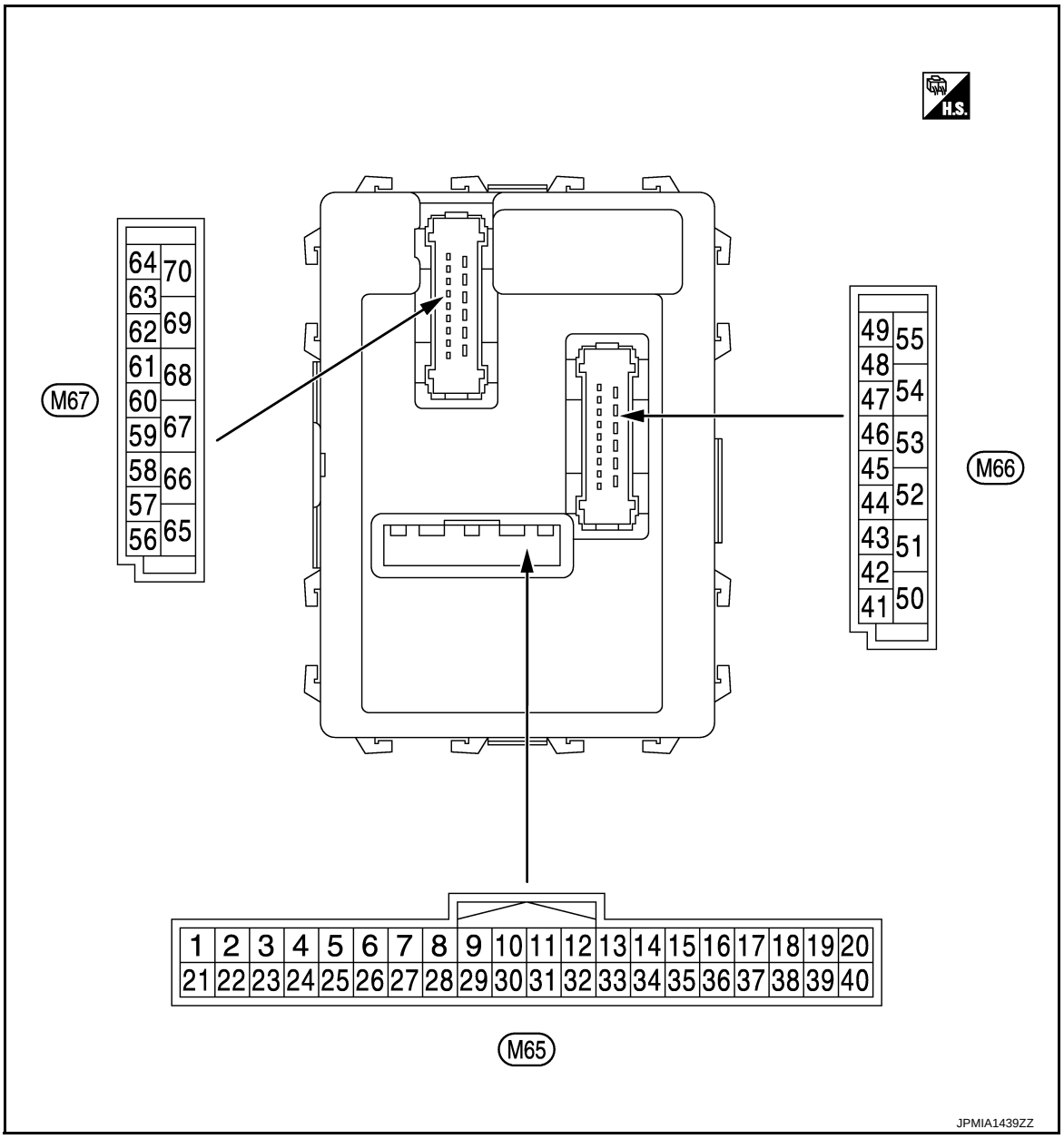
Monitor Item	Condition	Value/Status
IGN ON SW	Ignition switch OFF or ACC	Off
	Ignition switch ON	On
KEY ON SW	Mechanical key is removed from key cylinder	Off
	Mechanical key is inserted to key cylinder	On
CDL LOCK SW	Door lock/unlock switch does not operate	Off
	Press door lock/unlock switch to the lock side	On
CDL UNLOCK SW	Door lock/unlock switch does not operate	Off
	Press door lock/unlock switch to the unlock side	On
DOOR SW-DR	Driver's door closed	Off
	Driver's door opened	On
DOOR SW-AS	Passenger door closed	Off
	Passenger door opened	On
DOOR SW-RR	Rear RH door closed	Off
	Rear RH door opened	On
DOOR SW-RL	Rear LH door closed	Off
	Rear LH door opened	On
BACK DOOR SW	Back door closed	Off
	Back door opened	On
LOCK STATUS	**NOTE:** The item is indicated, but not monitored.	Off

Monitor Item	Condition	Value/Status
ACC ON SW	Ignition switch OFF	Off
	Ignition switch ACC or ON	On
KEYLESS LOCK	“LOCK” button of key fob is not pressed	Off
	“LOCK” button of key fob is pressed	On
KEYLESS UNLOCK	“UNLOCK” button of key fob is not pressed	Off
	“UNLOCK” button of key fob is pressed	On
SHOCK SENSOR	**NOTE:** The item is indicated, but not monitored.	NORMAL
KEY CYL LK-SW	Other than driver door key cylinder LOCK position	Off
	Driver door key cylinder LOCK position	On
KEY CYL UN-SW	Other than driver door key cylinder UNLOCK position	Off
	Driver door key cylinder UNLOCK position	On
VEHICLE SPEED	While driving	Equivalent to speed-ometer reading
REAR DEF SW	Rear window defogger switch OFF	Off
	Rear window defogger switch ON	On
REVERSE SW CAN	**NOTE:** The item is indicated, but not used.	Off
		On
TAIL LAMP SW	Lighting switch OFF	Off
	Lighting switch 1ST	On
FR FOG SW	**NOTE:** The item is indicated, but not monitored.	Off
BUCKLE SW	The seat belt (driver side) is fastened. [Seat belt switch (driver side) OFF]	Off
	The seat belt (driver side) is unfastened. [Seat belt switch (driver side) ON]	On
TRNK/HAT MNTR	**NOTE:** The item is indicated, but not monitored.	Off
KYLS TRNK/HAT	**NOTE:** The item is indicated, but not monitored.	Off
KEYLESS PANIC	PANIC button of key fob is not pressed	Off
	PANIC button of key fob is pressed	On
HI BEAM SW	Lighting switch OFF	Off
	Lighting switch HI	On
HEAD LAMP SW 1	Lighting switch OFF	Off
	Lighting switch 2ND	On
HEAD LAMP SW 2	Lighting switch OFF	Off
	Lighting switch 2ND	On
AUTO LIGHT SW	**NOTE:** The item is indicated, but not monitored.	Off
PASSING SW	Other than lighting switch PASS	Off
	Lighting switch PASS	On
RR FOG SW	**NOTE:** The item is indicated, but not monitored.	Off
TURN SIGNAL R	Turn signal switch OFF	Off
	Turn signal switch RH	On
TURN SIGNAL L	Turn signal switch OFF	Off
	Turn signal switch LH	On

Monitor Item	Condition	Value/Status
PKB SW	Parking brake switch is OFF	Off
	Parking brake switch is ON	On
ENGINE RUN	Engine stopped	Off
	Engine running	On
OPTI SEN (DTCT)	**NOTE:** The item is indicated, but not monitored.	Close to 5 V
OPTI SEN (FILT)	**NOTE:** The item is indicated, but not monitored.	Close to 5 V
LIG SEN COND	**NOTE:** The item is indicated, but not monitored.	OFF
IGN SW CAN	Ignition switch OFF or ACC	Off
	Ignition switch ON	On
FR WIPER HI	Front wiper switch OFF	Off
	Front wiper switch HI	On
FR WIPER LOW	Front wiper switch OFF	Off
	Front wiper switch LO	On
FR WIPER INT	Front wiper switch OFF	Off
	Front wiper switch INT	On
FR WASHER SW	Front washer switch OFF	Off
	Front washer switch ON	On
INT VOLUME	Wiper intermittent dial is in a dial position 1 - 7	1 - 7
FR WIPER STOP	Any position other than front wiper stop position	Off
	Front wiper stop position	On
RR WIPER ON	Rear wiper switch OFF	Off
	Rear wiper switch ON	On
RR WIPER INT	Rear wiper switch OFF	Off
	Rear wiper switch INT	On
RR WASHER SW	Rear washer switch OFF	Off
	Rear washer switch ON	On
RR WIPER STOP	Rear wiper stop position	Off
	Other than rear wiper stop position	On
RAIN SENSOR	**NOTE:** The item is indicated, but not monitored.	Off
HAZARD SW	Hazard switch OFF	Off
	Hazard switch ON	On
FAN ON SIG	Blower control dial OFF	Off
	Other than blower control dial OFF	On
AIR COND SW	A/C switch OFF	Off
	A/C switch ON	On
THERMO AMP	Ignition switch ON	Off
	Evaporator is extremely low temperature	On
FR DEF SW	Other than A/C mode defroster ON position	Off
	A/C mode defroster ON position	On
KEYLESS TRUNK	**NOTE:** The item is indicated, but not monitored.	Off

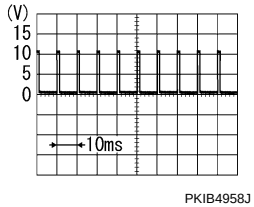
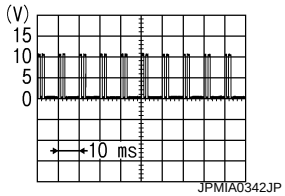
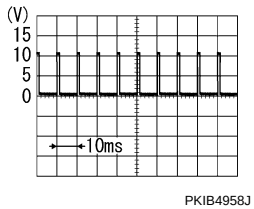
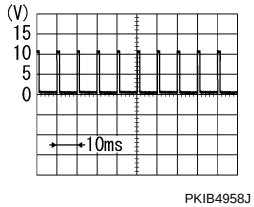
Monitor Item	Condition	Value/Status
TRNK OPNR SW	**NOTE:** The item is indicated, but not monitored.	Off
TRNK OPN MNTR	**NOTE:** The item is indicated, but not monitored.	Off
HOOD SW	Close the hood	Off
	Open the hood	On
TRANSPONDER	Other than the ignition switch is ON by key registered to BCM.	Off
	The ignition switch is ON by key registered to BCM.	On
INTELLI KEY	**NOTE:** The item is indicated, but not used.	Off
AUTO RELOCK	**NOTE:** The item is indicated, but not monitored.	Off
OIL PRESS SW	• Ignition switch OFF or ACC • Engine running	Off
	Ignition switch ON	On
BRAKE SW	Brake pedal is not depressed	Off
	Brake pedal is depressed	On

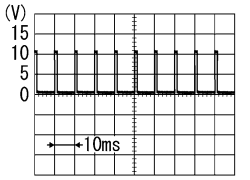
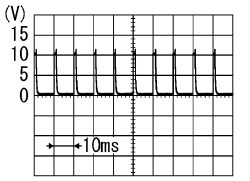
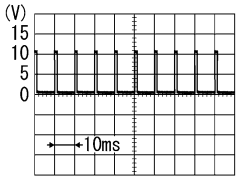
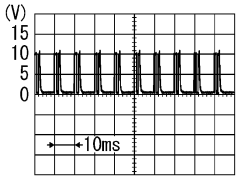
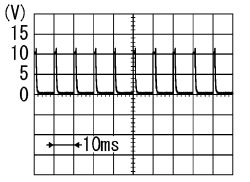
TERMINAL LAYOUT

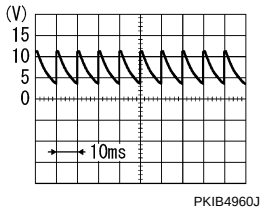
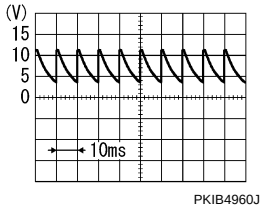
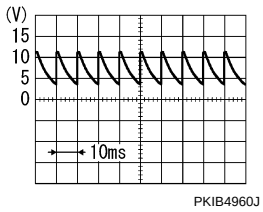


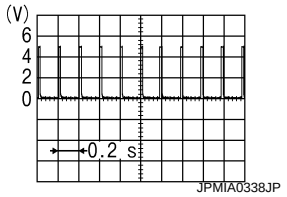
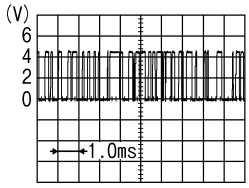
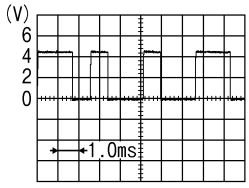
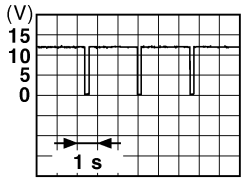
NOTE:
- M65, M66: White
- M67: Black

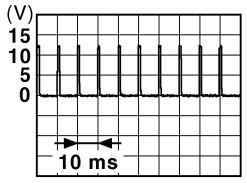
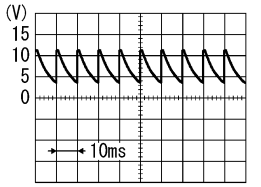
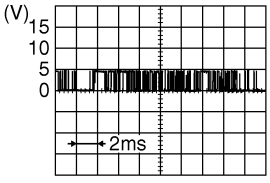
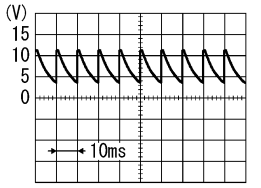
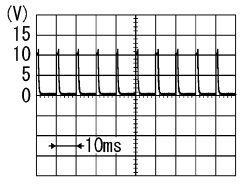
PHYSICAL VALUES

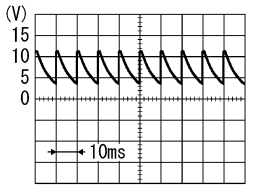
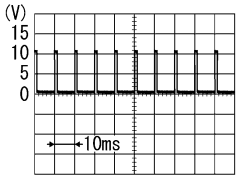
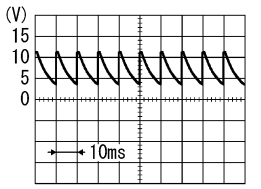
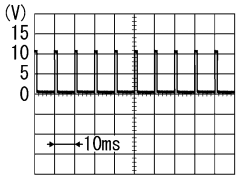
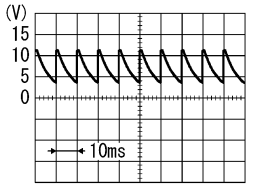
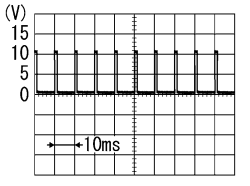
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
		Signal name	Input/ Output			
+	–					
2 (BR/W)	Ground	Combination switch INPUT 5	Input	Combination switch (Wiper intermittent dial 4)	All switch OFF	0 V
					Turn signal switch RH Lighting switch HI Lighting switch 1ST	 PKIB4958J 1.0 V
					Lighting switch 2ND	 JPMIA0342JP 2.0 V
3 (GR)	Ground	Combination switch INPUT 4	Input	Combination switch (Wiper intermittent dial 4)	All switch OFF	0 V
					Turn signal switch LH Lighting switch PASS Lighting switch 2ND	 PKIB4958J 1.0 V
4 (L/Y)	Ground	Combination switch INPUT 3	Input	Combination switch (Wiper intermittent dial 4)	All switch OFF	0 V
					Front wiper switch LO Front wiper switch MIST Front wiper switch INT	 PKIB4958J 1.0 V

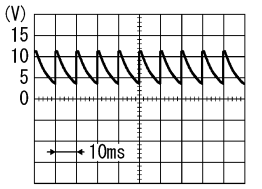
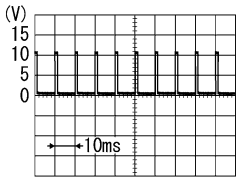
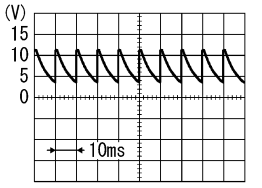
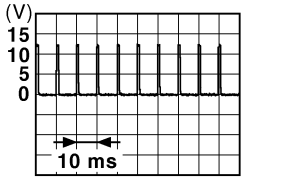
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
5 (G)	Ground	Combination switch INPUT 2	Input	Combination switch	All switch OFF (Wiper intermittent dial 4)	0 V
					Front washer switch (Wiper intermittent dial 4)	 PKIB4958J 1.0 V
					Rear washer switch ON (Wiper intermittent dial 4)	
					Any of the condition below with all switch OFF • Wiper intermittent dial 1 • Wiper intermittent dial 5 • Wiper intermittent dial 6	
					Rear wiper switch ON (Wiper intermittent dial 4)	 PKIB4956J 0.8 V
6 (L/R)	Ground	Combination switch INPUT 1	Input	Combination switch	All switch OFF (Wiper intermittent dial 4)	0 V
					Front wiper switch HI (Wiper intermittent dial 4)	 PKIB4958J 1.0 V
					Rear wiper switch INT (Wiper intermittent dial 4)	
					Wiper intermittent dial 3 (All switch OFF)	
					Any of the condition below with all switch OFF • Wiper intermittent dial 1 • Wiper intermittent dial 2	 PKIB4952J 1.9 V
					Any of the condition below with all switch OFF • Wiper intermittent dial 6 • Wiper intermittent dial 7	 PKIB4956J 0.8 V

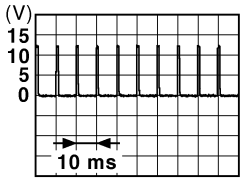
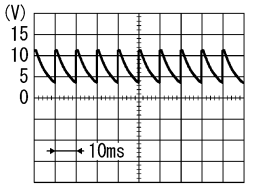
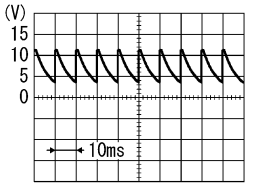
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
7 (W/R)	Ground	Door key cylinder switch UNLOCK	Input	Door key cylinder switch	NEUTRAL position	 7.0 - 8.0 V
					UNLOCK position	0 V
8 (W/B)	Ground	Door key cylinder switch LOCK	Input	Door key cylinder switch	NEUTRAL position	12 V
					LOCK position	0 V
9 (R)	Ground	Stop lamp switch	Input	Stop lamp switch	OFF (Brake pedal is not depressed)	0 V
					ON (Brake pedal is depressed)	Battery voltage
10 (W/L)	Ground	Rear window defogger switch	Input	Rear window defogger switch	OFF (Not pressed)	12 V
					ON (Pressed)	0 V
11 (L/Y)	Ground	Ignition switch ACC	Input	Ignition switch OFF		0 V
				Ignition switch ACC or ON		Battery voltage
12 (SB)	Ground	Passenger door switch	Input	Passenger door switch	OFF (When passenger door closed)	 7.0 - 8.0 V
					ON (When passenger door opened)	0 V
13 (GR/L)	Ground	Rear RH door switch	Input	Rear RH door switch	OFF (When rear RH door closed)	 7.0 - 8.0 V
					ON (When rear RH door opened)	0 V
18 (V)	Ground	Receiver ground	Input	Ignition switch ON		0 V

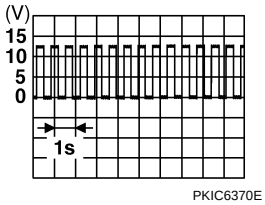
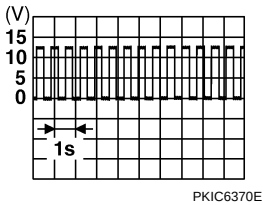
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
19 (BR)	Ground	Remote keyless entry receiver power supply	Input	Ignition switch OFF	Insert mechanical key into ignition key cylinder	0 V
					Remove mechanical key from ignition key cylinder (Any door opened)	5 V
					Remove mechanical key from ignition key cylinder (Any door closed)	 JPMIA0338JP
20 (G/Y)	Ground	Remote keyless entry receiver communication	Input	Ignition switch OFF	Insert mechanical key into ignition key cylinder	0 V
					Waiting	 PIIB7728J
					Signal receiving	 PIIB7729J
21 (P/L)	Ground	NATS antenna amp.	Input/ Output	Just after inserting ignition key in key cylinder		Pointer of tester should move
				Other than above		0 V
23 (R/Y)	Ground	Security indicator	Input	Security indicator	ON	0 V
					Blinking (Ignition switch OFF)	 JPMIA0014GB 11.3 V
					OFF	12 V
25 (LG)	Ground	NATS antenna amp.	Input/ Output	Just after inserting ignition key in key cylinder		Pointer of tester should move
				Other than above		0 V
26 (GR)	Ground	Thermo control amp.	Input	Ignition switch ON		0 V
				Evaporator is extremely low temperature		12 V

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
27 (Y/G)	Ground	A/C switch	Input	A/C switch	OFF	 JPMIA0012GB 1.0 - 1.5 V
					ON	0 V
28 (G/W)	Ground	Blower fan switch	Input	Fan switch	Blower fan switch OFF	 PKIB4960J 7.0 - 8.0 V
					Blower fan switch ON	0 V
29 (L/W)	Ground	Hazard switch	Input	Hazard switch	OFF	Battery voltage
					ON	0 V
31 (G/Y)	Ground	Front defroster switch	Input	Ignition switch ON	A/C mode defroster ON position	0 V
					Other than A/C mode defroster ON position	 JPMIA0589GB 8.0 - 9.0 V
32 (LG)	Ground	Combination switch OUTPUT 5	Output	Combination switch	All switch OFF (Wiper intermittent dial 4)	 PKIB4960J 7.0 - 8.0 V
					Rear wiper switch ON (Wiper intermittent dial 4)	 PKIB4956J 1.0 V
					Any of the condition below with all switch OFF • Wiper intermittent dial 1 • Wiper intermittent dial 2 • Wiper intermittent dial 6 • Wiper intermittent dial 7	

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
33 (Y/L)	Ground	Combination switch OUTPUT 4	Output	Combination switch	All switch OFF (Wiper intermittent dial 4)	 PKIB4960J 7.0 - 8.0 V
					Lighting switch 1ST (Wiper intermittent dial 4)	 PKIB4958J 1.2 V
					Rear wiper switch INT (Wiper intermittent dial 4)	
					Any of the condition below with all switch OFF • Wiper intermittent dial 1 • Wiper intermittent dial 5 • Wiper intermittent dial 6	
34 (W)	Ground	Combination switch OUTPUT 3	Output	Combination switch	All switch OFF (Wiper intermittent dial 4)	 PKIB4960J 7.0 - 8.0 V
					Lighting switch 2ND (Wiper intermittent dial 4)	 PKIB4958J 1.2 V
					Lighting switch HI (Wiper intermittent dial 4)	
					Rear washer switch ON (Wiper intermittent dial 4)	
					Any of the condition below with all switch OFF • Wiper intermittent dial 1 • Wiper intermittent dial 2 • Wiper intermittent dial 3	
35 (R/L)	Ground	Combination switch OUTPUT 2	Output	Combination switch (Wiper intermittent dial 4)	All switch OFF	 PKIB4960J 7.0 - 8.0 V
					Lighting switch 2ND	 PKIB4958J 1.2 V
					Lighting switch PASS	
					Front wiper switch INT	
					Front wiper switch HI	

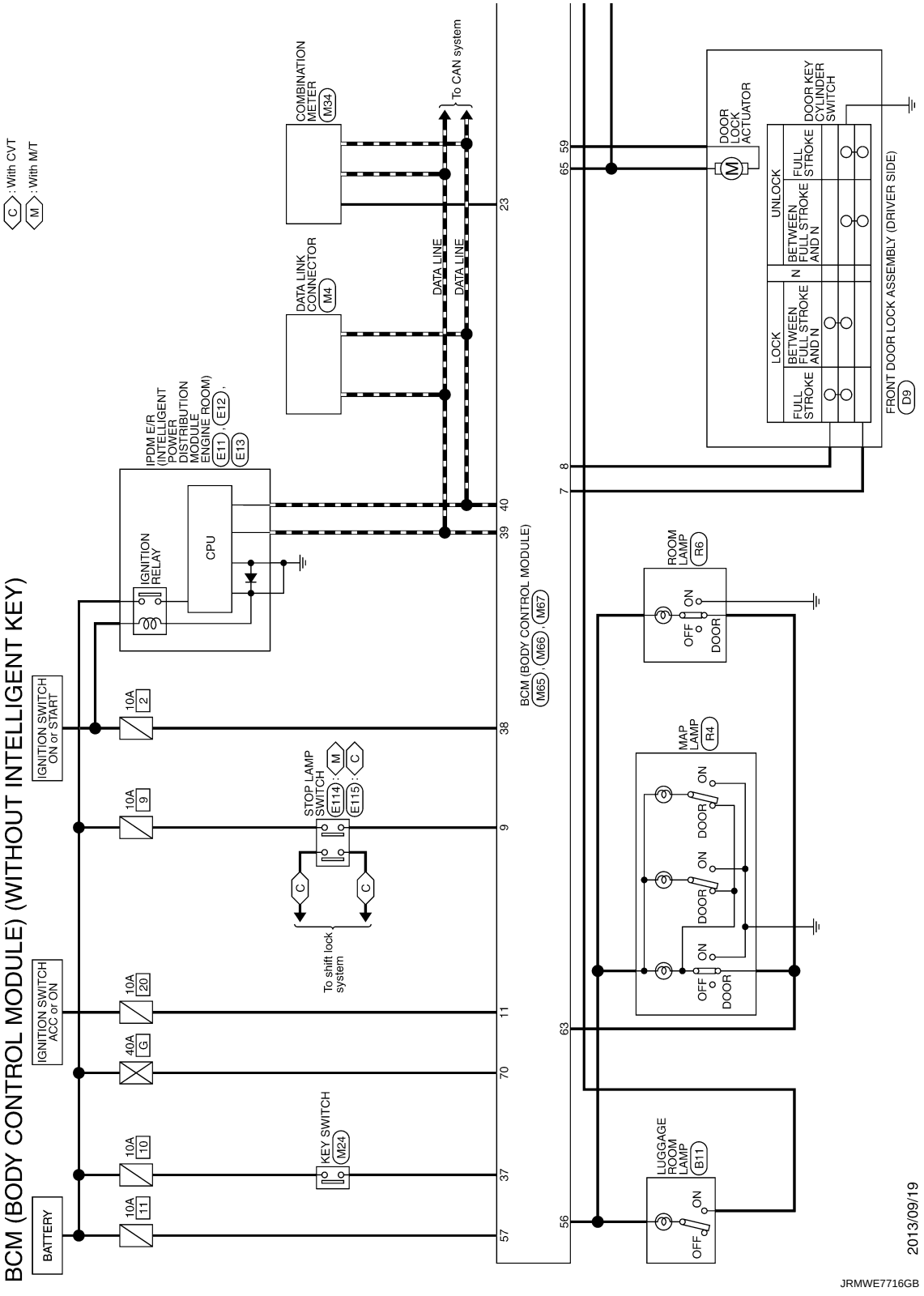
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
36 (L/O)	Ground	Combination switch OUTPUT 1	Output	Combination switch (Wiper intermittent dial 4)	All switch OFF	 PKIB4960J 7.0 - 8.0 V
					Turn signal switch RH	 PKIB4958J 1.2 V
					Turn signal switch LH	
					Front wiper switch LO (Front wiper switch MIST)	
					Front washer switch ON	
37 (R/W)	Ground	Key switch	Input	Insert mechanical key into ignition key cylinder		Battery voltage
				Remove mechanical key from ignition key cylinder		0 V
38 (O)	Ground	Ignition switch ON	Input	Ignition switch OFF or ACC		0 V
				Ignition switch ON		Battery voltage
39 (L)	Ground	CAN-H	Input/ Output	—		—
40 (P)	Ground	CAN-L	Input/ Output	—		—
43 (W)	Ground	Back door switch	Input	Back door switch	OFF (When back door closed)	 PKIB4960J 7.0 - 8.0 V
					ON (When back door opened)	0 V
44 (LG)	Ground	Rear wiper stop position	Input	Ignition switch ON	Rear wiper stop position	12 V
					Any position other than rear wiper stop position	0 V
45 (GR)	Ground	Door lock and unlock switch LOCK	Input	Door lock and unlock switch	NEUTRAL position	 JPMIA0012GB 1.0 - 1.5 V
					LOCK position	0 V

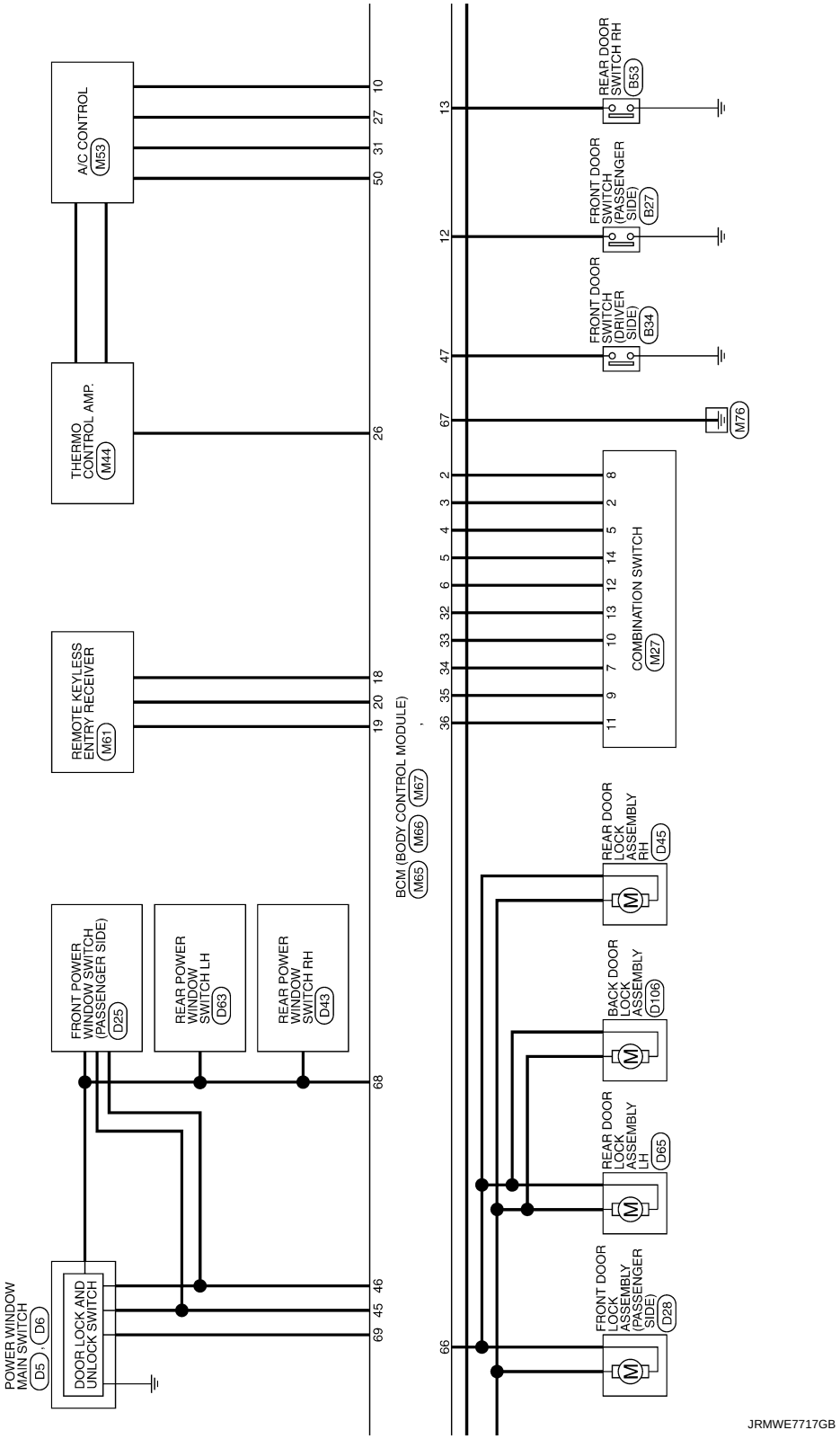
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
46 (BR)	Ground	Door lock and unlock switch UNLOCK	Input	Door lock and unlock switch	NEUTRAL position	 JPMIA0012GB 1.0 - 1.5 V
					UNLOCK position	0 V
47 (BR/Y)	Ground	Driver door switch	Input	Driver door switch	OFF (When driver door closed)	 PKIB4960J 7.0 - 8.0 V
					ON (When driver door opened)	0 V
48 (W/G)	Ground	Rear LH door switch	Input	Rear LH door switch	OFF (When rear LH door closed)	 PKIB4960J 7.0 - 8.0 V
					ON (When rear LH door opened)	0 V
50 (SB)	Ground	A/C indicator	Output	A/C indicator	OFF	12 V
					ON	0 V
54 (LG)	Ground	Rear wiper	Output	Ignition switch ON	Rear wiper switch OFF	0 V
					Rear wiper switch ON	12 V
56 (L)	Ground	Interior room lamp power supply	Output	Interior room lamp battery saver is activated. (Cuts the interior room lamp power supply)		0 V
				Interior room lamp battery saver is not activated. (Outputs the interior room lamp power supply)		12 V
57 (Y)	Ground	Battery power supply	Input	Ignition switch OFF		Battery voltage
59 (L/B)	Ground	Driver door UNLOCK	Output	Driver door	UNLOCK (Actuator is activated)	12 V
					Other than UNLOCK (Actuator is not activated)	0 V

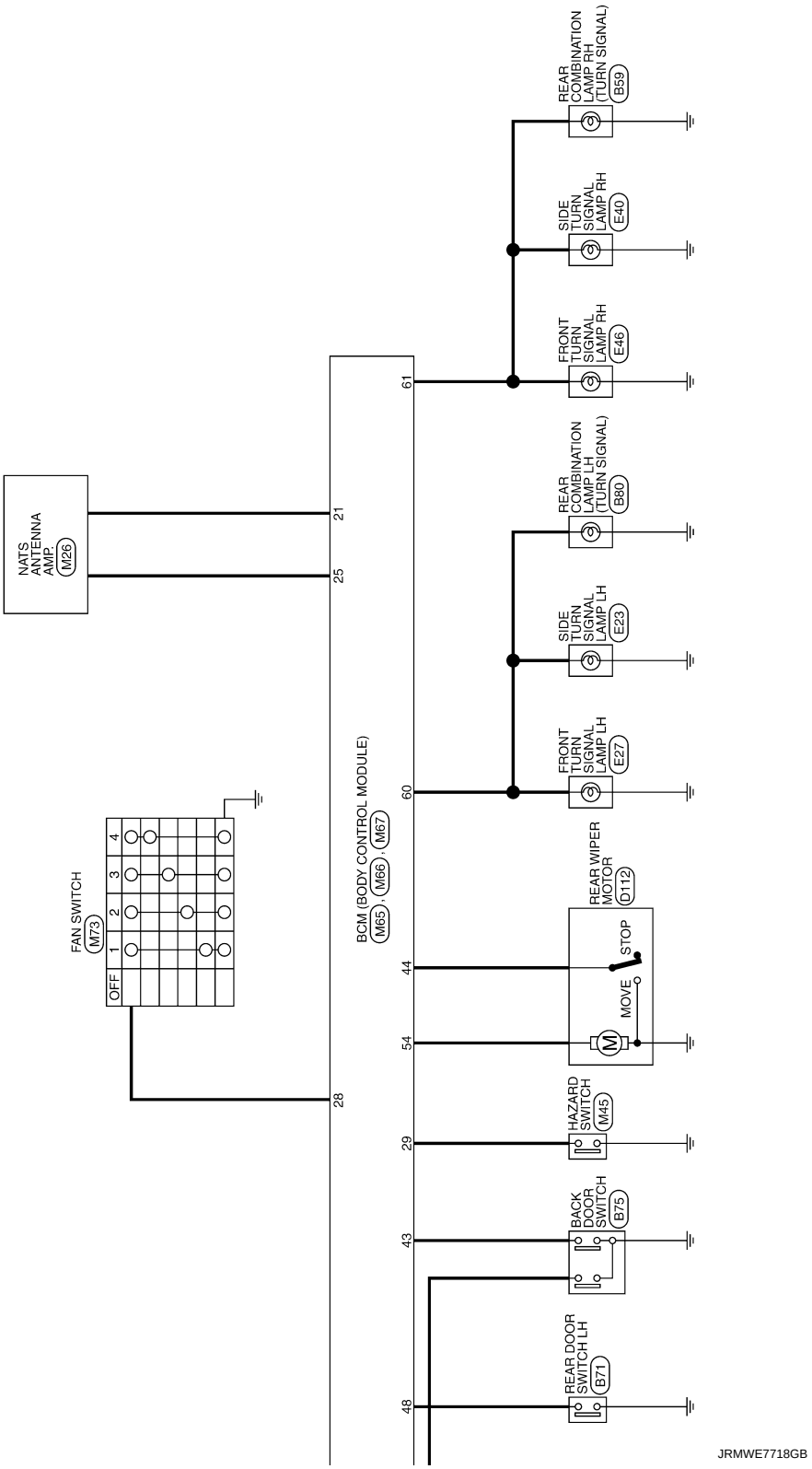
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
60 (W/B)	Ground	Turn signal LH	Output	Ignition switch ON	Turn signal switch OFF	0 V
					Turn signal switch LH	 PKIC6370E 6.0 V
61 (W/L)	Ground	Turn signal RH	Output	Ignition switch ON	Turn signal switch OFF	0 V
					Turn signal switch RH	 PKIC6370E 6.0 V
63 (BR)	Ground	Interior room lamp control signal	Output	Interior room lamp	OFF	12 V
					ON	0 V
65 (V)	Ground	All doors LOCK	Output	All doors	LOCK (Actuator is activated)	12 V
					Other than LOCK (Actuator is not activated)	0 V
66 (G)	Ground	Passenger door and rear door UNLOCK	Output	Passenger door and rear door	UNLOCK (Actuator is activated)	12 V
					Other than UNLOCK (Actuator is not activated)	0 V
67 (B)	Ground	Ground	Output	Ignition switch ON		0 V
68 (L)	Ground	P/W power supply (IGN)	Output	Ignition switch ON		12 V
69 (P)	Ground	P/W power supply (BAT)	Output	Ignition switch OFF		12 V
70 (Y)	Ground	Battery power supply	Input	Ignition switch OFF		Battery voltage

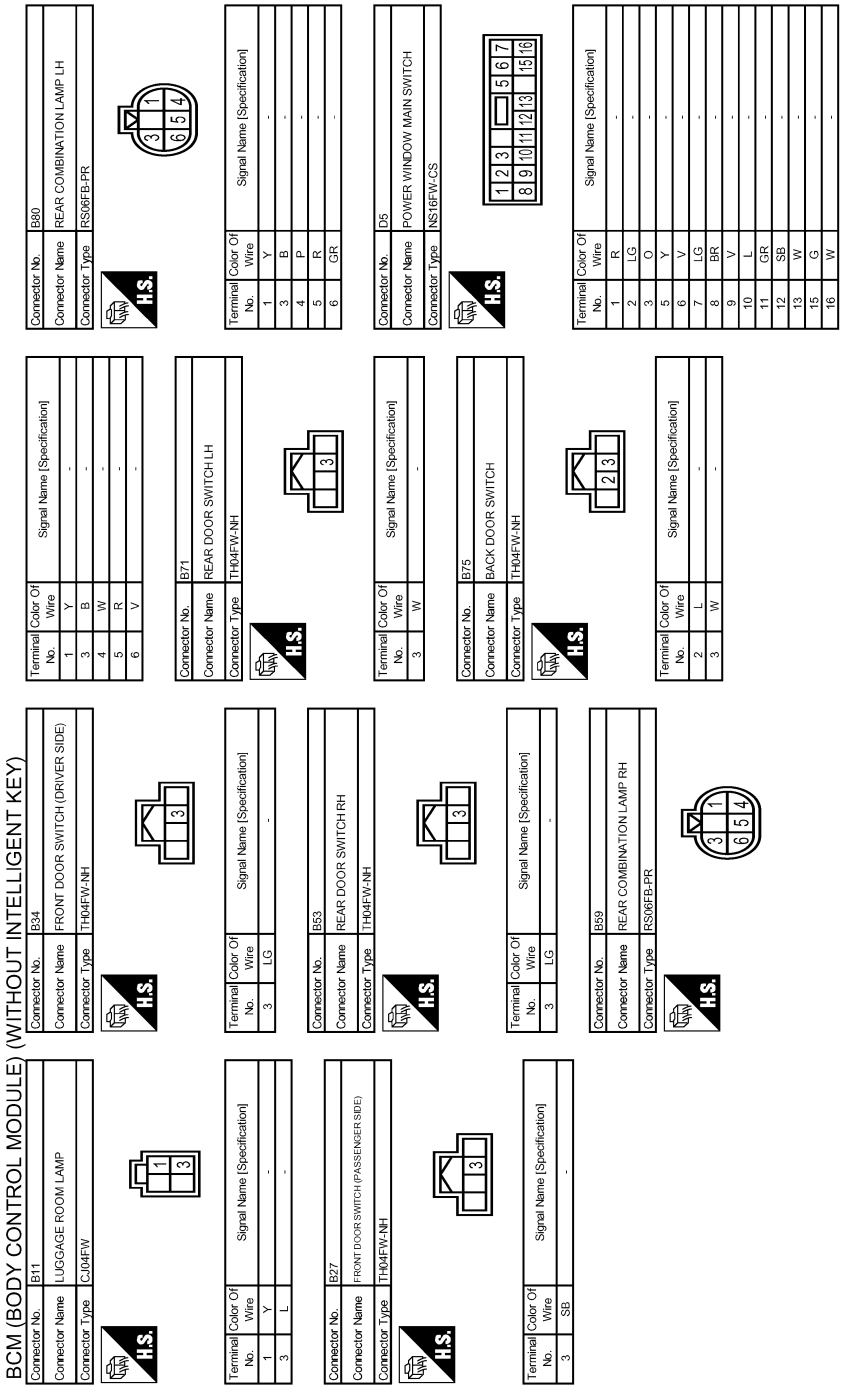
WITHOUT INTELLIGENT KEY : Wiring Diagram - BCM -

INFOID:0000000010245798




A/C CONTROL M53
THERMO CONTROL AMP. M44
REMOTE KEYLESS ENTRY RECEIVER M61
FRONT POWER WINDOW SWITCH (PASSENGER SIDE) D25
REAR POWER WINDOW SWITCH LH D63
REAR POWER WINDOW SWITCH RH D43
POWER WINDOW MAIN SWITCH D5 D6
DOOR LOCK AND UNLOCK SWITCH
BCM (BODY CONTROL MODULE) M65 M66 M67
REAR DOOR SWITCH RH B53
FRONT DOOR SWITCH (PASSENGER SIDE) B27
FRONT DOOR SWITCH (DRIVER SIDE) B34
M76
COMBINATION SWITCH M27
REAR DOOR LOCK ASSEMBLY RH D45
BACK DOOR LOCK ASSEMBLY D106
REAR DOOR LOCK ASSEMBLY LH D65
FRONT DOOR LOCK ASSEMBLY (PASSENGER SIDE) D28
JRMWE7717GB


REAR COMBINATION LAMP RH (TURN SIGNAL) B59
SIDE TURN SIGNAL LAMP RH E40
FRONT TURN SIGNAL LAMP RH E46
REAR COMBINATION LAMP LH (TURN SIGNAL) B80
SIDE TURN SIGNAL LAMP LH E23
FRONT TURN SIGNAL LAMP LH E27
REAR WIPER MOTOR D112
STOP
MOVE
HAZARD SWITCH M45
BACK DOOR SWITCH B75
REAR DOOR SWITCH LH B71
NATS ANTENNA AMP M26
FAN SWITCH M73
OFF
1
2
3
4
BCM (BODY CONTROL MODULE) M65, M66, M67
61
60
44
54
29
43
48
21
25
28
JRMWE7718GB



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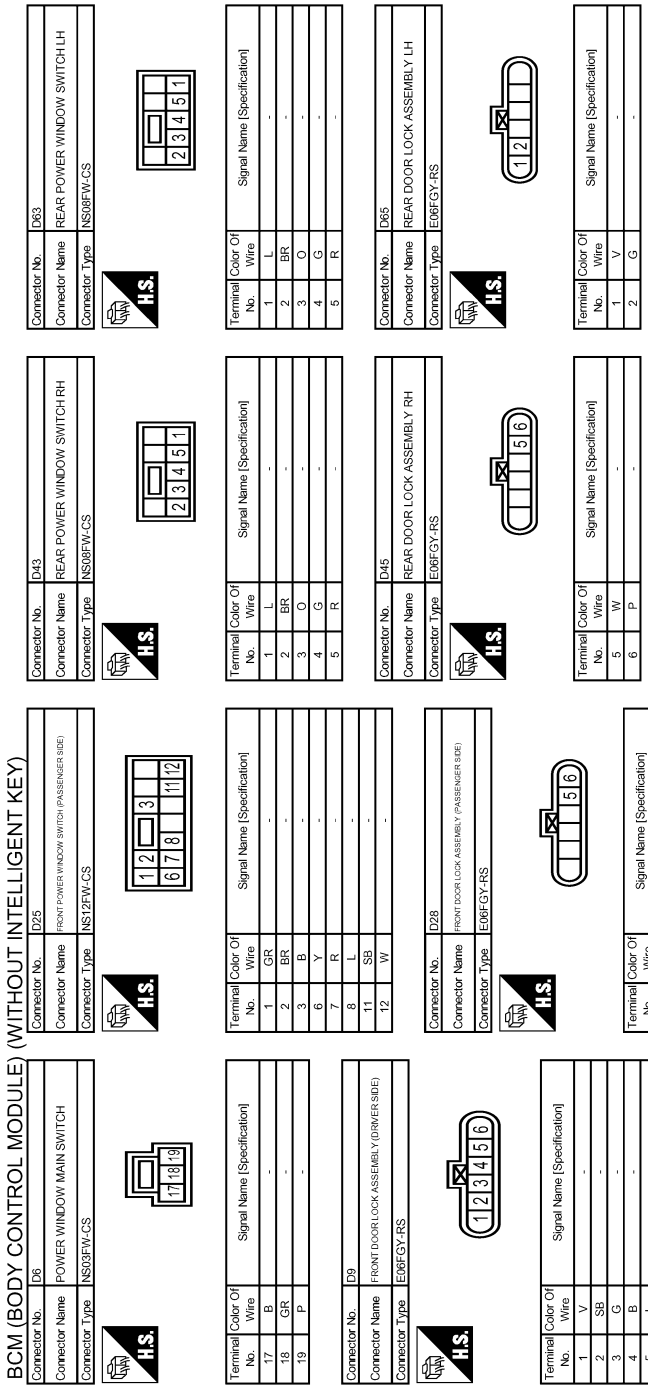

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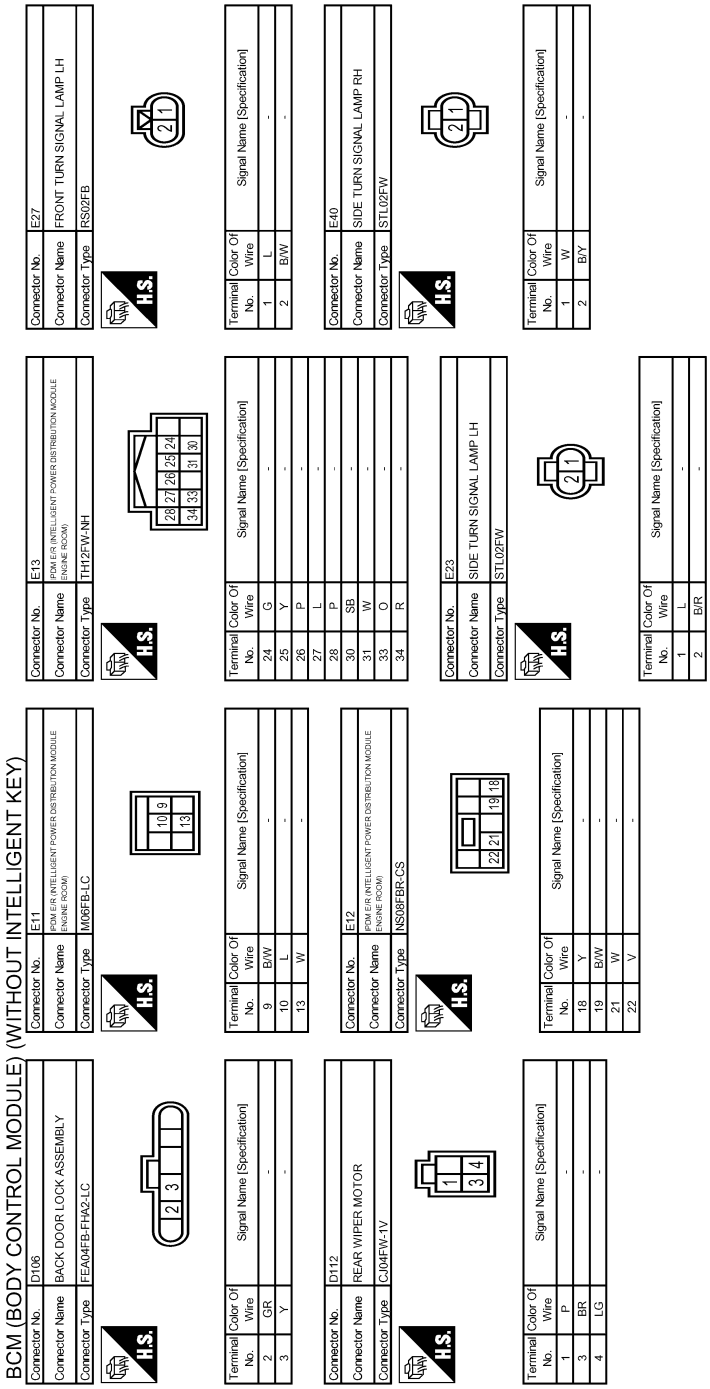

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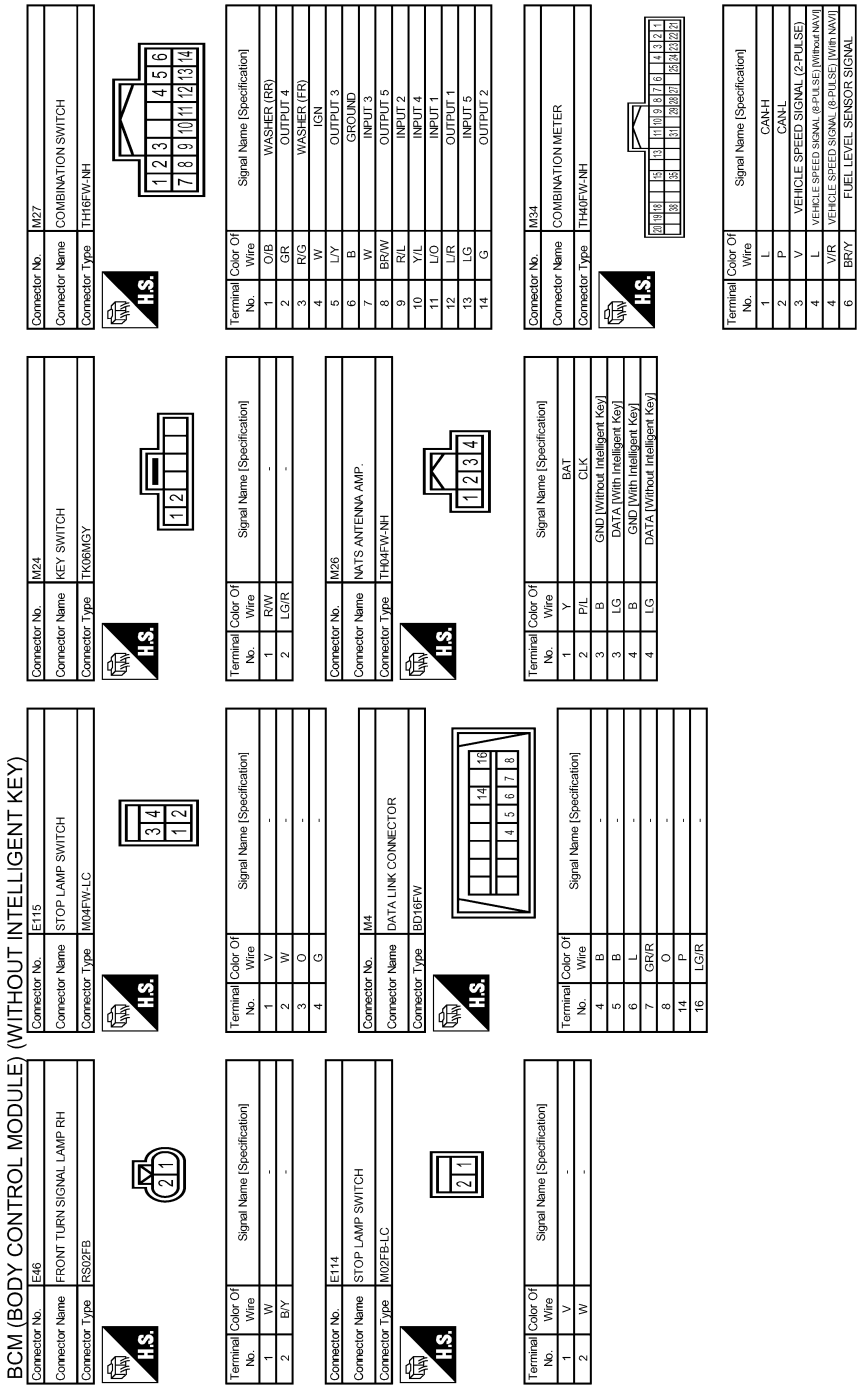


JRMWE7829GB

BCM (BODY CONTROL MODULE) (WITHOUT INTELLIGENT KEY)

7	R/G	AIR BAG SIGNAL
8	P	OVERDRIVE CONTROL SWITCH SIGNAL
9	O	SEAT BELT BUCKLE SWITCH SIGNAL (DRIVER SIDE)
10	SB	PARKING BRAKE SWITCH SIGNAL
11	G/R	BRAKE FLUID LEVEL SWITCH SIGNAL
13	B/R	ILLUMINATION CONTROL SIGNAL
15	L/Y	ACC POWER SUPPLY
18	R/Y	SECURITY SIGNAL
19	PU/W	AMBIENT SENSOR SIGNAL
20	R/W	AMBIENT SENSOR GROUND
21	B	GROUND
22	B	GROUND
23	B	GROUND
24	PU	FUEL LEVEL SENSOR GROUND
25	B	VDC GROUND
27	L/G/R	BATTERY POWER SUPPLY
28	GR	IGNITION SIGNAL
29	BR	PASSENGER SEAT BELT WARNING SIGNAL
31	R	A/C AUTO AMP. CONNECTION RECOGNITION SIGNAL
35	BR	ENGINE COOLANT TEMPERATURE SIGNAL
38	GR	ALTERNATOR SIGNAL

Connector No.	M44
Connector Name	THERMO CONTROL AMP.
Connector Type	S06FW

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	Y	-
2	GR	-
3	B	-
4	V	-
5	B/W	-

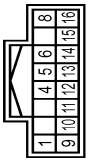
Connector No.	M45
Connector Name	HAZARD SWITCH
Connector Type	TK04FW

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	B	-
2	L/W	-
3	W	-
4	B/R	-

Connector No.	M53
Connector Name	A/C CONTROL
Connector Type	TH16FW-NH

H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	-
4	R	-
5	W/L	-
6	G/Y	-
8	G	-
9	B/R	-
10	B/W	-
11	V	-
12	Y/R	-
13	SB	-
14	Y	-
15	B	-
16	L	-

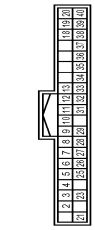
Connector No.	M61
Connector Name	REMOTE KEYLESS ENTRY RECEIVER
Connector Type	TK04FW

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	V	-
2	G/Y	-
4	BR	-

Connector No.	M65
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FW-NH

H.S.

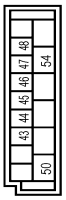


Terminal No.	Color Of Wire	Signal Name [Specification]
2	BR/W	COMBI SW INPUT 5
3	GR	COMBI SW INPUT 4
4	L/Y	COMBI SW INPUT 3
5	G	COMBI SW INPUT 2
6	L/R	COMBI SW INPUT 1
7	W/R	KEY CYL UNLOCK SW
8	W/B	KEY CYL LOCK SW
9	R	STOP LAMP SW
10	W/L	REAR WINDOW DEFOGGER SW
11	L/Y	ACC POWER SUPPLY
12	SB	PASSENGER DOOR SW
13	GR/L	REAR RH DOOR SW
18	V	RECEIVER / SENSOR GND
19	BR	KEYLESS ENTRY RECEIVER POWER SUPPLY
20	G/Y	KEYLESS ENTRY RECEIVER COMM
21	P/L	NATS ANTENNA AMP.
23	R/Y	SECURITY INDICATOR LAMP

25	LG	NATS ANTENNA AMP.
26	GR	THERMO CONTROL AMP.
27	Y/G	A/C SW
28	G/W	BLOWER FAN SW
29	L/W	HAZARD SW
31	G/Y	FR DEFROSTER SW
32	LG	COMBI SW OUTPUT 5
33	Y/L	COMBI SW OUTPUT 4
34	W	COMBI SW OUTPUT 3
35	R/L	COMBI SW OUTPUT 2
36	L/O	COMBI SW OUTPUT 1
37	R/W	KEY SWITCH
38	O	IGNITION POWER SUPPLY
39	L	CAN-H
40	P	CAN-L

Connector No.	M66
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	FEA09FW-FHA6-SA

H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
43	W	BACK DOOR SW
44	LG	REAR WIPER STOP POSITION
45	GR	CENTRAL DOOR LOCK SW
46	BR	CENTRAL DOOR UNLOCK SW
47	BR/Y	DRIVER DOOR SW
48	W/G	REAR LH DOOR SW
50	SB	A/C INDICATOR OUTPUT
54	LG	REAR WIPER OUTPUT

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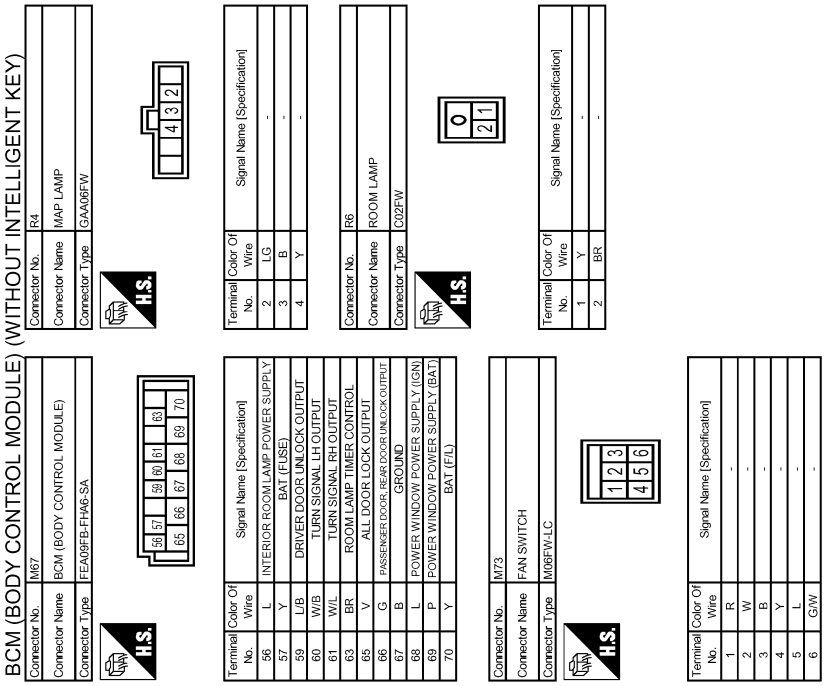


JRMWE7831GB

WITHOUT INTELLIGENT KEY : Fail-safe

INFOID:0000000010245799

FAIL-SAFE CONTROL BY DTC

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

Display contents of CONSULT	Fail-safe	Cancellation
B2190: NATS ANTENNA AMP	Inhibit engine cranking	Erase DTC
B2191: DIFFERENCE OF KEY	Inhibit engine cranking	Erase DTC
B2192: ID DISCORD BCM-ECM	Inhibit engine cranking	Erase DTC
B2193: CHAIN OF BCM-ECM	Inhibit engine cranking	Erase DTC
B2195: ANTI SCANNING	Inhibit engine cranking	Ignition switch ON → OFF

REAR WIPER MOTOR PROTECTION

BCM detects the rear wiper stopping position according to the rear wiper auto stop signal.
When the rear wiper auto stop signal does not change more than 5 seconds while driving the rear wiper, BCM stops power supply to protect the rear wiper motor.

Condition of cancellation
1. Pass more than 1 minute after the rear wiper stop.
2. Turn rear wiper switch OFF.
3. Operate the rear wiper switch or rear washer switch.

WITHOUT INTELLIGENT KEY : DTC Inspection Priority Chart

INFOID:0000000010245800

If some DTCs are displayed at the same time, perform inspections one by one based on the following priority chart.

Priority	DTC
1	• U1000: CAN COMM • U1010: CONTROL UNIT (CAN)
2	• B2190: NATS ANTENNA AMP • B2191: DIFFERENCE OF KEY • B2192: ID DISCORD BCM-ECM • B2193: CHAIN OF BCM-ECM • B2195: ANTI SCANNING
3	C1735: IGN CIRCUIT OPEN
4	• C1704: LOW PRESSURE FL • C1705: LOW PRESSURE FR • C1706: LOW PRESSURE RR • C1707: LOW PRESSURE RL • C1708: [NO DATA] FL • C1709: [NO DATA] FR • C1710: [NO DATA] RR • C1711: [NO DATA] RL • C1716: [PRESSDATA ERR] FL • C1717: [PRESSDATA ERR] FR • C1718: [PRESSDATA ERR] RR • C1719: [PRESSDATA ERR] RL • C1729: VHCL SPEED SIG ERR

WITHOUT INTELLIGENT KEY : DTC Index

INFOID:0000000010245801

NOTE:
Details of time display
- CRNT: Displays when there is a malfunction now or after returning to the normal condition until turning ignition switch OFF → ON again.
- 1 - 39: Displayed if any previous malfunction is present when current condition is normal. It increases like 1 → 2 → 3...38 → 39 after returning to the normal condition whenever ignition switch OFF → ON. The counter remains at 39 even if the number of cycles exceeds it. It is counted from 1 again when turning ignition switch OFF → ON after returning to the normal condition if the malfunction is detected again.

CONSULT display	Fail-safe	Tire pressure monitor warning lamp ON	Reference
U1000: CAN COMM	—	—	BCS-120
U1010: CONTROL UNIT (CAN)	—	—	BCS-121
B2190: NATS ANTENNA AMP	×	—	SEC-197
B2191: DIFFERENCE OF KEY	×	—	SEC-200
B2192: ID DISCORD BCM-ECM	×	—	SEC-201
B2193: CHAIN OF BCM-ECM	×	—	SEC-202
B2195: ANTI SCANNING	×	—	SEC-203
C1704: LOW PRESSURE FL	—	×	WT-26
C1705: LOW PRESSURE FR	—	×	
C1706: LOW PRESSURE RR	—	×	
C1707: LOW PRESSURE RL	—	×	
C1708: [NO DATA] FL	—	×	WT-28
C1709: [NO DATA] FR	—	×	
C1710: [NO DATA] RR	—	×	
C1711: [NO DATA] RL	—	×	
C1716: [PRESS DATA ERR] FL	—	×	WT-31
C1717: [PRESS DATA ERR] FR	—	×	
C1718: [PRESS DATA ERR] RR	—	×	
C1719: [PRESS DATA ERR] RL	—	×	
C1729: VHCL SPEED SIG ERR	—	×	WT-33
C1735: IGN CIRCUIT OPEN	—	—	BCS-122

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

WITH INTELLIGENT KEY

WITH INTELLIGENT KEY : Reference Value

INFOID:0000000010246439

VALUES ON THE DIAGNOSIS TOOL

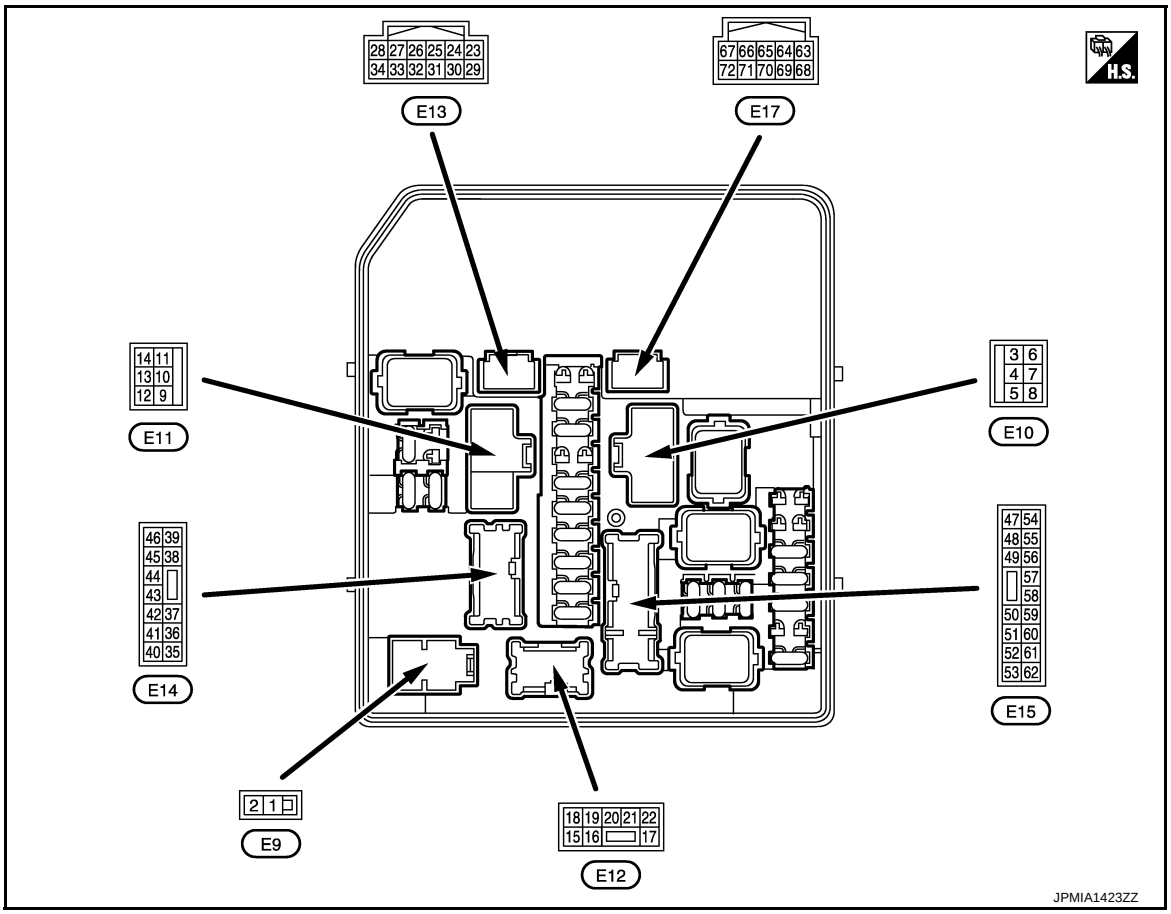
NOTE:

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

Monitor Item	Condition		Value/Status
MOTOR FAN REQ	Engine idle speed	Changes depending on engine coolant temperature, air conditioner operation status, vehicle speed, etc.	1/2/3/4
AC COMP REQ	Engine running	A/C switch OFF	Off
		A/C switch ON (Compressor is operating)	On
TAIL&CLR REQ	Lighting switch OFF		Off
	Lighting switch 1ST, 2ND, 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
		Front fog lamp switch ON	On
FR WIP REQ	Ignition switch ON	Front wiper switch OFF	Stop
		Front wiper switch INT	1LOW
		Front wiper switch LO	Low
		Front wiper switch HI	Hi
WIP AUTO STOP	Ignition switch ON	Front wiper stop position	STOP P
		Any position other than front wiper stop position	ACT P
WIP PROT	Ignition switch ON	Front wiper operates normally	Off
		Front wiper stops at fail-safe operation	BLOCK
IGN RLY1 -REQ	Ignition switch OFF or ACC		Off
	Ignition switch ON		On
IGN RLY	Ignition switch OFF or ACC		Off
	Ignition switch ON		On
PUSH SW	Release the push-button ignition switch		Off
	Press the push-button ignition switch		On
INTER/NP SW	Ignition switch ON	• Selector lever in any position other than P or N (CVT models) • Release clutch pedal (M/T models)	Off
		• Selector lever in P or N position (CVT models) • Depress clutch pedal (M/T models)	On

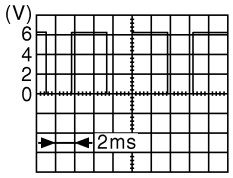
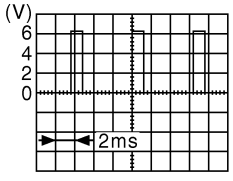
Monitor Item	Condition		Value/Status
ST RLY CONT	Ignition switch ON		Off
	At engine cranking		On
IHBT RLY -REQ	Ignition switch ON		Off
	At engine cranking		On
ST/INHI RLY	Ignition switch ON		Off
	At engine cranking		INHI ON → ST ON
	The status of starter relay or starter control relay cannot be recognized by the battery voltage malfunction, etc. when the starter relay is ON and the starter control relay is OFF		UNKWN
DETENT SW	Ignition switch ON	• Pull the selector lever with selector lever in P position • Selector lever in any position other than P	Off
	Release the selector lever with selector lever in P position **NOTE:** Fixed On for M/T models		On
S/L RLY -REQ	**NOTE:** The item is indicated, but not monitored.		Off
S/L STATE	**NOTE:** The item is indicated, but not monitored.		UNLOCK
DTRL REQ	**NOTE:** The item is indicated, but not monitored.		Off
OIL P SW	Ignition switch OFF, ACC or engine running		Open
	Ignition switch ON		Close
HOOD SW	**NOTE:** The item is indicated, but not monitored.		Off
THFT HRN REQ	Not operation		Off
	• Panic alarm is activated • Horn is activated with VEHICLE SECURITY (THEFT WARNING) SYSTEM		On
HORN CHIRP	Not operating		Off
	Door locking with Intelligent Key (horn chirp mode)		On

TERMINAL LAYOUT



PHYSICAL VALUES

Terminal NO. (Wire color)		Description		Condition	Value (Approx.)
+	–	Signal name	Input/ Output		
1 (R)	Ground	Battery power supply	Input	Ignition switch OFF	Battery voltage
2 (G)	Ground	Battery power supply	Input	Ignition switch OFF	Battery voltage
3 (BR)	Ground	Starter motor	Output	Ignition switch ON	0 V
				At engine cranking	Battery voltage
4 (P)	Ground	Battery power supply	Input	Ignition switch OFF	Battery voltage
5 (LG)	Ground	Cooling fan relay-1 power supply	Output	Cooling fan OFF	0 V
				Cooling fan operated	Battery voltage
7 (Y)	Ground	Cooling fan relay-2 power supply	Output	Cooling fan OFF	0 V
				Cooling fan LO operated	9.0 V
				Cooling fan HI operated	Battery voltage
8 (V)	Ground	Battery power supply	Input	Ignition switch OFF	Battery voltage
9 (B/W)	Ground	Ground	—	Ignition switch ON	0 V
10 (L)	Ground	Cooling fan motor ground	Output	Cooling fan OFF	0 V
				Cooling fan LO operated	5.0 V
				Cooling fan HI operated	0 V

Terminal NO. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
13 (W)	Ground	Rear window defogger	Output	Ignition switch ON	Rear window defogger switch OFF	0 V
					Rear window defogger switch ON	Battery voltage
19 (B/W)	Ground	Ground	—	Ignition switch ON		0 V
21 (W)	Ground	Front fog lamp (RH)	Output	Lighting switch 2ND	Front fog lamp switch OFF	0 V
					Front fog lamp switch ON	Battery voltage
22 (V)	Ground	Front fog lamp (LH)	Output	Lighting switch 2ND	Front fog lamp switch OFF	0 V
					Front fog lamp switch ON	Battery voltage
24 (G)	Ground	Oil pressure switch	Input	Ignition switch ON	Engine stopped	0 V
					Engine running	Battery voltage
25 (Y)	Ground	Front wiper auto stop	Input	Ignition switch ON	Front wiper stop position	0 V
					Any position other than front wiper stop position	Battery voltage
26 (P)	Ground	CAN-L	Input/ Output	—		—
27 (L)	Ground	CAN-H	Input/ Output	—		—
30 (SB)	Ground	Starter relay control	Output	At engine cranking		0 V
				Ignition switch ON		Battery voltage
31 (W)	Ground	Fuel pump relay control	Output	• Approximately 1 second after turning the ignition switch ON • Engine running		0 - 1.5 V
				Approximately 1 second or more after turning the ignition switch ON		Battery voltage
33 (O)	Ground	Power generation command signal	Output	Ignition switch ON		Battery voltage
				40 % is set on “ACTIVE TEST”, “ALTERNATOR DUTY” of “ENGINE”		 JPMIA0002GB 3.8 V
				80 % is set on “ACTIVE TEST”, “ALTERNATOR DUTY” of “ENGINE”		 JPMIA0003GB 1.4 V
34 (R)	Ground	Horn relay control	Output	The horn is deactivated		Battery voltage
				The horn is activated		0 V

Terminal NO. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
36 (O)	Ground	Parking lamp (LH)	Output	Ignition switch ON	Lighting switch OFF	0 V
					Lighting switch 1ST	Battery voltage
37 (V)	Ground	Parking lamp (RH)	Output	Ignition switch ON	Lighting switch OFF	0 V
					Lighting switch 1ST	Battery voltage
38 (G)	Ground	Tail lamp (RH) & illuminations	Output	Ignition switch ON	Lighting switch OFF	0 V
					Lighting switch 1ST	Battery voltage
39 (V)	Ground	Front wiper HI	Output	Ignition switch ON	Front wiper switch OFF	0 V
					Front wiper switch HI	Battery voltage
40 (R)	Ground	ECM relay control	Output	Ignition switch OFF (More than a few seconds after turning ignition switch OFF)		Battery voltage
				• Ignition switch ON • Ignition switch OFF (For a few seconds after turning ignition switch OFF)		0 - 1.5 V
41 (SB)	Ground	Tail lamp (LH) & license plate lamps	Output	Ignition switch ON	Lighting switch OFF	0 V
					Lighting switch 1ST	Battery voltage
43 (G)	Ground	ECM relay power supply	Output	Ignition switch OFF (More than a few seconds after turning ignition switch OFF)		0 V
				• Ignition switch ON • Ignition switch OFF (For a few seconds after turning ignition switch OFF)		Battery voltage
44 (P)	Ground	ECM relay power supply	Output	Ignition switch OFF (More than a few seconds after turning ignition switch OFF)		0 V
				• Ignition switch ON • Ignition switch OFF (For a few seconds after turning ignition switch OFF)		Battery voltage
45 (Y)	Ground	TCM power supply	Output	Ignition switch OFF		Battery voltage
46 (O)	Ground	Front wiper LO	Output	Ignition switch ON	Front wiper switch OFF	0 V
					Front wiper switch LO	Battery voltage
47 (BR)	Ground	Transmission range switch[*1]	Input	Select lever in any position other than P or N (Ignition switch ON)		0 V
				Select lever P or N (Ignition switch ON)		Battery voltage
		Clutch interlock switch[*2]		Release the clutch pedal		0 V
				Depress the clutch pedal		Battery voltage
49 (W)	Ground	Headlamp HI (RH)	Output	Ignition switch ON	Lighting switch OFF	0 V
					• Lighting switch HI • Lighting switch PASS	Battery voltage
50 (GR)	Ground	Headlamp HI (LH)	Output	Ignition switch ON	Lighting switch OFF	0 V
					• Lighting switch HI • Lighting switch PASS	Battery voltage

Terminal NO. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
51 (R)	Ground	Headlamp LO (LH)	Output	Ignition switch ON	Lighting switch OFF	0 V
					Lighting switch 2ND	Battery voltage
52 (P)	Ground	Headlamp LO (RH)	Output	Ignition switch ON	Lighting switch OFF	0 V
					Lighting switch 2ND	Battery voltage
54 (GR)	Ground	Throttle control motor relay power supply	Output	Ignition switch OFF (More than a few seconds after turning ignition switch OFF)		0 V
				• Ignition switch ON • Ignition switch OFF (For a few seconds after turning ignition switch OFF)		Battery voltage
55 (P)	Ground	Fuel pump power supply	Output	Approximately 1 second or more than after turning the ignition switch ON		0 V
				• Approximately 1 second after turning the ignition switch ON • Engine running		Battery voltage
56 (SB)	Ground	A/C relay power supply	Output	Engine running	A/C switch OFF	0 V
					A/C switch ON (A/C compressor is operating)	Battery voltage
57 (G)	Ground	Throttle control motor relay control	Output	Ignition switch ON → OFF		0 - 1.0 V ↓ Battery voltage ↓ 0 V
				Ignition switch ON		0 - 1.0 V
58 (R)	Ground	Ignition relay power supply	Output	Ignition switch OFF		0 V
				Ignition switch ON		Battery voltage
59 (Y)	Ground	Ignition relay power supply	Output	Ignition switch OFF		0 V
				Ignition switch ON		Battery voltage
60 (V)	Ground	Ignition relay power supply	Output	Ignition switch OFF		0 V
				Ignition switch ON		Battery voltage
61 (W)	Ground	Ignition relay power supply	Output	Ignition switch OFF		0 V
				Ignition switch ON		Battery voltage
62 (L)	Ground	Ignition relay power supply	Output	Ignition switch OFF		0 V
				Ignition switch ON		Battery voltage
64*1 (R)	Ground	CVT shift selector (Detention switch)	Input	Ignition switch ON	Select lever P	0 V
					Select lever in any position other than P	Battery voltage
66 (L)	Ground	Push-button ignition switch	Input	Press the push-button ignition switch		0 V
				Release the push-button ignition switch		Battery voltage
69 (O)	Ground	Ignition relay monitor	Input	Ignition switch OFF or ACC		Battery voltage
				Ignition switch ON		0 V

*1: CVT models
*2: M/T models

WITH INTELLIGENT KEY : Wiring Diagram — IPDM E/R —

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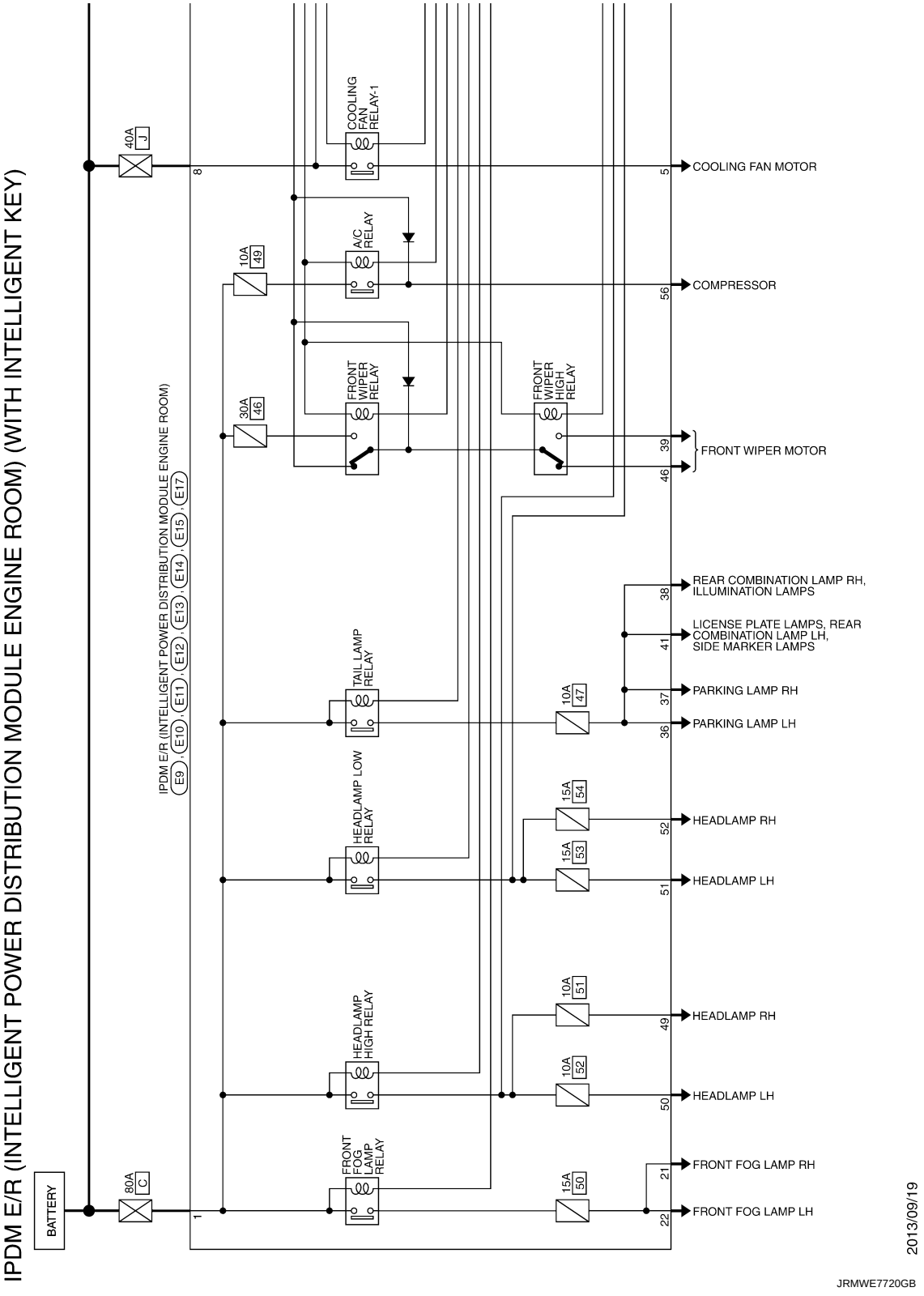

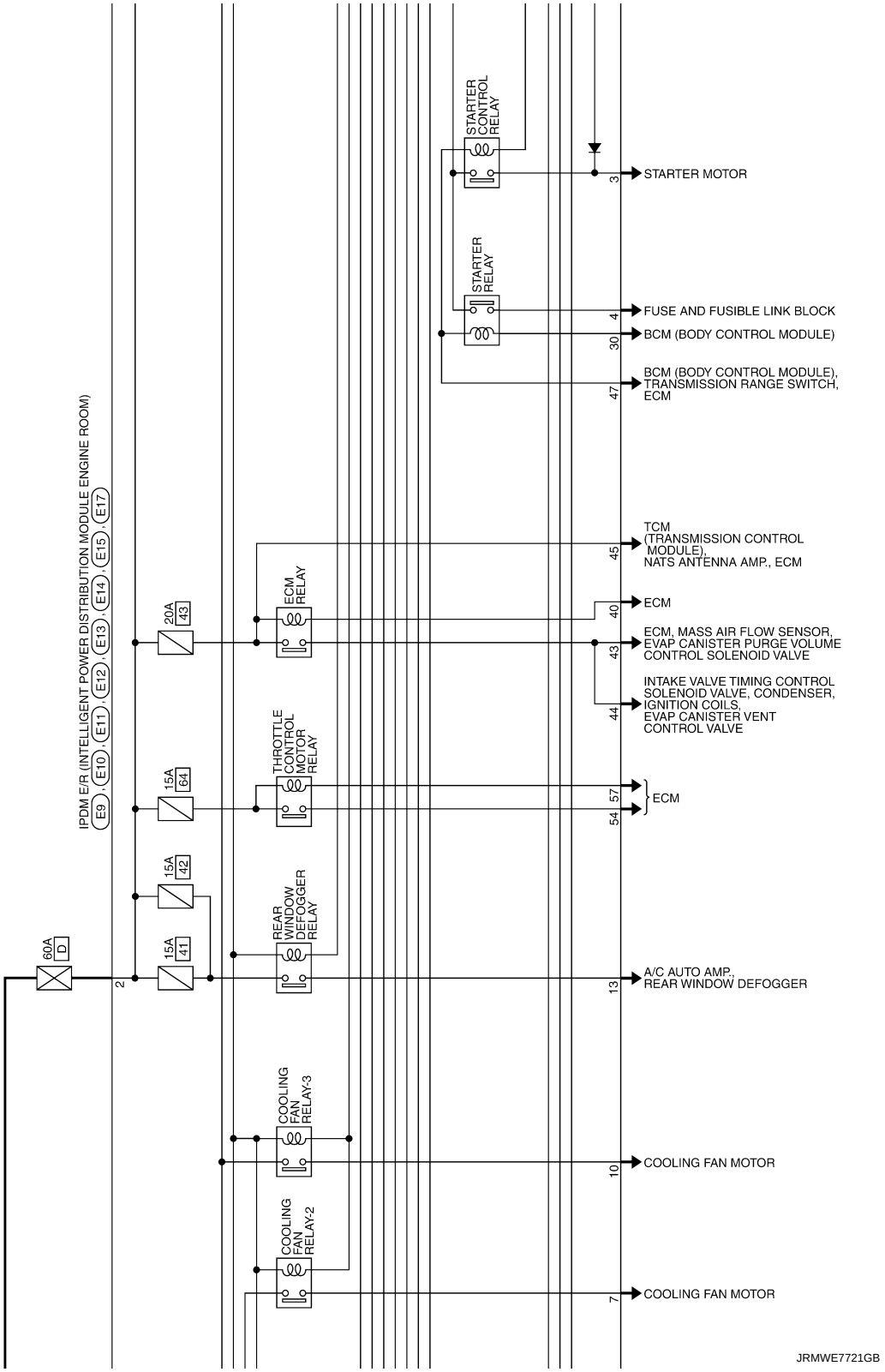
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
E9, E10, E11, E12, E13, E14, E15, E17
60A D
2
20A 43
15A 64
15A 42
15A 41
ECM RELAY
THROTTLE CONTROL MOTOR RELAY
REAR WINDOW DEFOGGER RELAY
COOLING FAN RELAY-3
COOLING FAN RELAY-2
STARTER CONTROL RELAY
STARTER RELAY
3 STARTER MOTOR
4 FUSE AND FUSIBLE LINK BLOCK
30 BCM (BODY CONTROL MODULE)
47 BCM (BODY CONTROL MODULE), TRANSMISSION RANGE SWITCH, ECM
45 TCM (TRANSMISSION CONTROL MODULE), NATS ANTENNA AMP., ECM
40 ECM
43 ECM, MASS AIR FLOW SENSOR, EVAP CANISTER PURGE VOLUME CONTROL SOLENOID VALVE
44 INTAKE VALVE TIMING CONTROL SOLENOID VALVE, CONDENSER, IGNITION COILS, EVAP CANISTER VENT CONTROL VALVE
57, 54 ECM
13 A/C AUTO AMP., REAR WINDOW DEFOGGER
10 COOLING FAN MOTOR
7 COOLING FAN MOTOR
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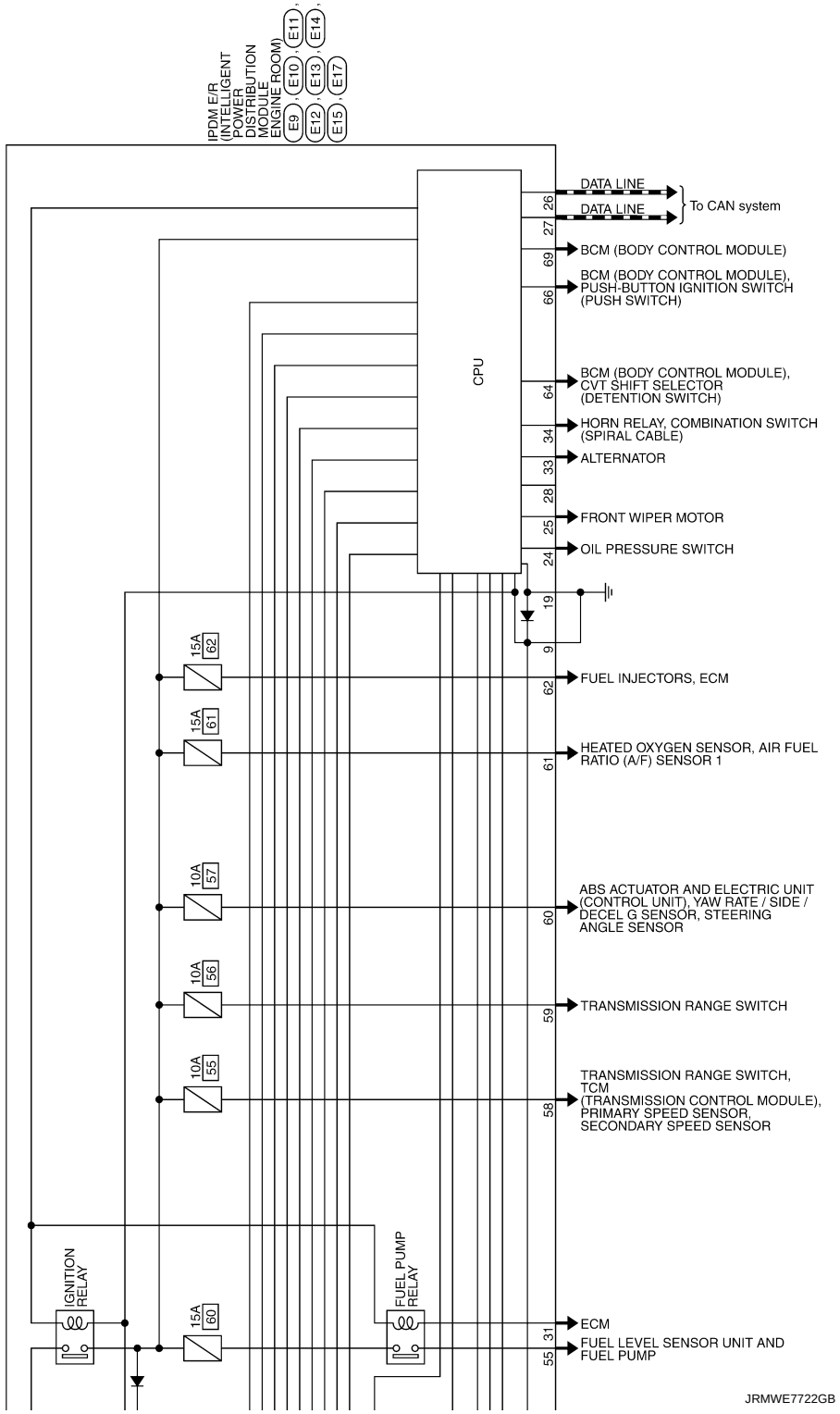
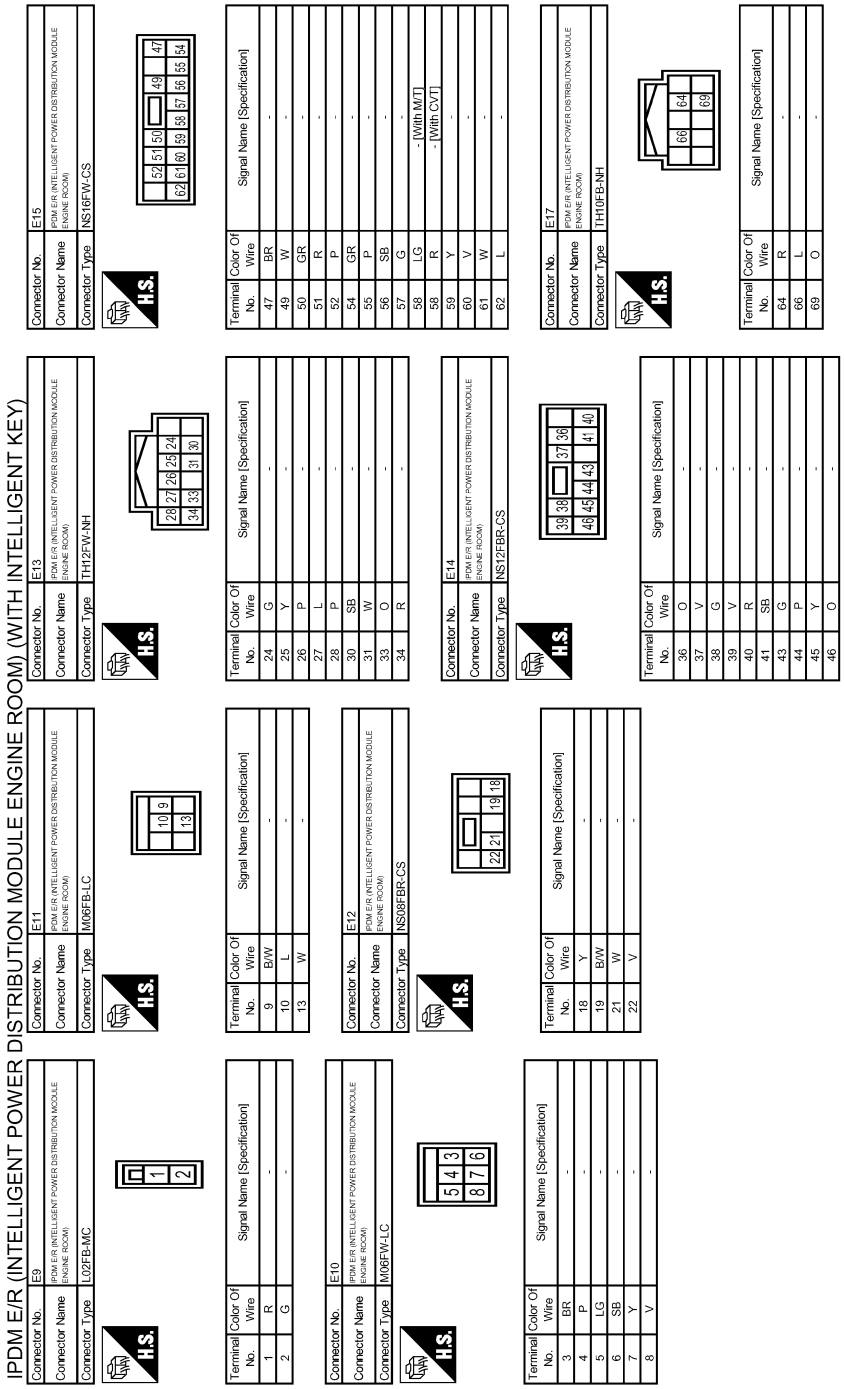

IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
E9, E10, E11, E12, E13, E14, E15, E17
CPU
DATA LINE
DATA LINE
To CAN system
BCM (BODY CONTROL MODULE)
BCM (BODY CONTROL MODULE), PUSH-BUTTON IGNITION SWITCH (PUSH SWITCH)
BCM (BODY CONTROL MODULE), CVT SHIFT SELECTOR (DETENTION SWITCH)
HORN RELAY, COMBINATION SWITCH (SPIRAL CABLE)
ALTERNATOR
FRONT WIPER MOTOR
OIL PRESSURE SWITCH
FUEL INJECTORS, ECM
HEATED OXYGEN SENSOR, AIR FUEL RATIO (A/F) SENSOR 1
ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT), YAW RATE / SIDE / DECEL G SENSOR, STEERING ANGLE SENSOR
TRANSMISSION RANGE SWITCH
TRANSMISSION RANGE SWITCH, TCM (TRANSMISSION CONTROL MODULE), PRIMARY SPEED SENSOR, SECONDARY SPEED SENSOR
ECM
FUEL LEVEL SENSOR UNIT AND FUEL PUMP
IGNITION RELAY
FUEL PUMP RELAY
15A 62
15A 61
10A 57
10A 56
10A 55
15A 60
JRMWE7722GB



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WITH INTELLIGENT KEY : 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

Control part	Fail-safe operation
Cooling fan	• The cooling fan relay-1, the cooling fan relay-2 and the cooling fan relay-3 turn ON when the ignition switch is turned ON (Cooling fan HI operation) • The cooling fan relay-1, the cooling fan relay-2 and the cooling fan relay-3 turn OFF when the ignition switch is turned OFF
A/C compressor	A/C relay OFF
Alternator	Outputs the power generation command signal (PWM signal) 0%

If No CAN Communication Is Available With BCM

Control part	Fail-safe operation
Headlamp	• Turns ON the headlamp low relay when the ignition switch is turned ON • Turns OFF the headlamp low relay when the ignition switch is turned OFF • Headlamp high relay OFF
• Parking lamps • Side marker lamps • License plate lamps • Illuminations • Tail lamps	• 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	• 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	Front fog lamp relay OFF
Horn	Horn OFF
Ignition relay	The status just before activation of fail-safe is maintained.
Starter motor	Starter control relay OFF

IGNITION RELAY MALFUNCTION DETECTION FUNCTION

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

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

FRONT WIPER CONTROL

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

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

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

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.

WITH INTELLIGENT KEY : DTC Index

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

×: Applicable

CONSULT display	Fail-safe	Refer to
No DTC is detected. further testing may be required.	—	—
U1000: CAN COMM CIRCUIT	×	PCS-15
B2098: IGN RELAY ON CIRC	×	PCS-16
B2099: IGN RELAY OFF CIRC	—	PCS-18
B210B: STR CONT RLY ON CIRC	—	SEC-76
B210C: STR CONT RLY OFF CIRC	—	SEC-77
B210D: STARTER RLY ON CIRC	—	SEC-78
B210E: STARTER RLY OFF CIRC	—	SEC-79
B210F: INTRLCK/PNP SW ON	—	SEC-81
B2110: INTRLCK/PNP SW OFF	—	SEC-83

WITHOUT INTELLIGENT KEY

WITHOUT INTELLIGENT KEY : Reference Value

INFOID:0000000010246444

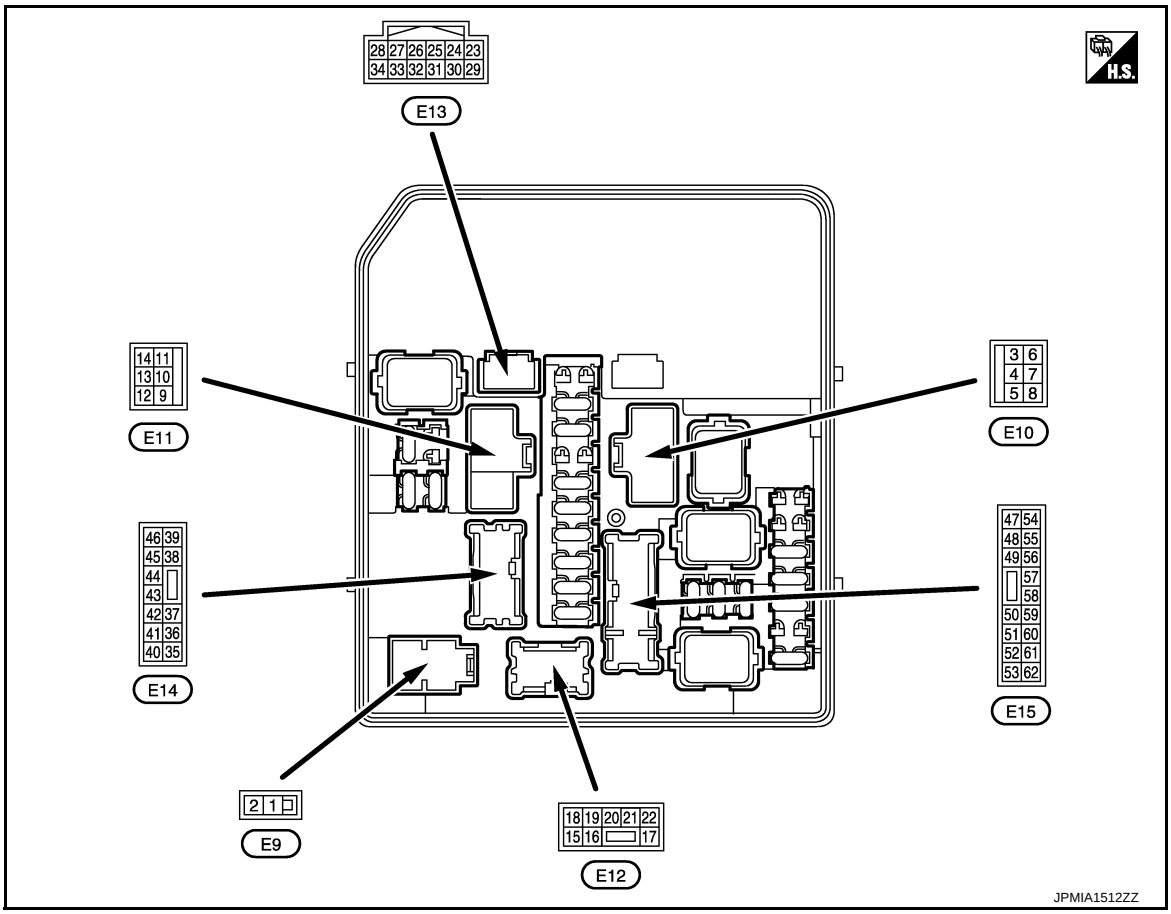
VALUES ON THE DIAGNOSIS TOOL

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

Monitor Item	Condition		Value/Status
MOTOR FAN REQ	Engine idle speed	Changes depending on engine coolant temperature, air conditioner operation status, vehicle speed, etc.	1/2/3/4
AC COMP REQ	Engine running	A/C switch OFF	Off
		A/C switch ON (Compressor is operating)	On
TAIL&CLR REQ	Lighting switch OFF		Off
	Lighting switch 1ST, 2ND, HI or AUTO (Light is illuminated)		On
HL LO REQ	Lighting switch OFF		Off
	Lighting switch 2ND, HI or AUTO (Light is illuminated)		On

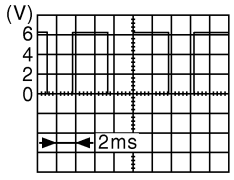
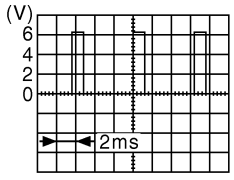
Monitor Item	Condition		Value/Status
HL HI REQ	Lighting switch OFF		Off
	Lighting switch HI		On
FR FOG REQ	Lighting switch 2ND or AUTO (Light is illuminated)	Front fog lamp switch OFF	Off
		Front fog lamp switch ON	On
FR WIP REQ	Ignition switch ON	Front wiper switch OFF	Stop
		Front wiper switch INT	1LOW
		Front wiper switch LO	Low
		Front wiper switch HI	Hi
WIP AUTO STOP	Ignition switch ON	Front wiper stop position	STOP P
		Any position other than front wiper stop position	ACT P
WIP PROT	Ignition switch ON	Front wiper operates normally	Off
		Front wiper stops at fail-safe operation	BLOCK
IGN RLY	Ignition switch OFF or ACC		Off
	Ignition switch ON		On
INTER/NP SW	Ignition switch ON	Selector lever in any position other than P or N (CVT models)	Off
		Selector lever in P or N position (CVT models)	On
ST RLY -REQ	Ignition switch OFF or ACC		Off
	Ignition switch ON		On
DTRL REQ	**NOTE:** The item is indicated, but not monitored.		Off
OIL P SW	Ignition switch OFF, ACC or engine running		Open
	Ignition switch ON		Close
HOOD SW	**NOTE:** The item is indicated, but not monitored.		Off
THFT HRN REQ	Not operation		Off
	• Panic alarm is activated • Horn is activated with VEHICLE SECURITY (THEFT WARNING) SYSTEM		On
HORN CHIRP	Not operating		Off
	Door locking with key fob (horn chirp mode)		On

TERMINAL LAYOUT



PHYSICAL VALUES

Terminal NO. (Wire color)		Description		Condition	Value (Approx.)
		Signal name	Input/ Output		
+	–				
1 (R)	Ground	Battery power supply	Input	Ignition switch OFF	Battery voltage
2 (G)	Ground	Battery power supply	Input	Ignition switch OFF	Battery voltage
3 (BR)	Ground	Starter motor	Output	Ignition switch ON	0 V
				At engine cranking	Battery voltage
5 (LG)	Ground	Cooling fan relay-1 power supply	Output	Cooling fan OFF	0 V
				Cooling fan operated	Battery voltage
6 (SB)	Ground	Ignition switch START	Output	Any position other ignition switch START	0 V
				Ignition switch START	Battery voltage
7 (Y)	Ground	Cooling fan relay-2 power supply	Output	Cooling fan OFF	0 V
				Cooling fan LO operated	9.0 V
				Cooling fan HI operated	Battery voltage
8 (V)	Ground	Battery power supply	Input	Ignition switch OFF	Battery voltage
9 (B/W)	Ground	Ground	—	Ignition switch ON	0 V

Terminal NO. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
10 (L)	Ground	Cooling fan motor ground	Output	Cooling fan OFF		0 V
				Cooling fan LO operated		5.0 V
				Cooling fan HI operated		0 V
13 (W)	Ground	Rear window defogger	Output	Ignition switch ON	Rear window defogger switch OFF	0 V
					Rear window defogger switch ON	Battery voltage
18 (Y)	Ground	Ignition switch	Output	Ignition switch OFF		0 V
				Ignition switch ON		Battery voltage
19 (B/W)	Ground	Ground	—	Ignition switch ON		0 V
21 (W)	Ground	Front fog lamp (RH)	Output	Lighting switch 2ND	Front fog lamp switch OFF	0 V
					Front fog lamp switch ON	Battery voltage
22 (V)	Ground	Front fog lamp (LH)	Output	Lighting switch 2ND	Front fog lamp switch OFF	0 V
					Front fog lamp switch ON	Battery voltage
24 (G)	Ground	Oil pressure switch	Input	Ignition switch ON	Engine stopped	0 V
					Engine running	Battery voltage
25 (Y)	Ground	Front wiper auto stop	Input	Ignition switch ON	Front wiper stop position	0 V
					Any position other than front wiper stop position	Battery voltage
26 (P)	Ground	CAN-L	Input/ Output	—		—
27 (L)	Ground	CAN-H	Input/ Output	—		—
31 (W)	Ground	Fuel pump relay control	Output	• Approximately 1 second after turning the ignition switch ON • Engine running		0 - 1.5 V
				Approximately 1 second or more after turning the ignition switch ON		Battery voltage
33 (O)	Ground	Power generation command signal	Output	Ignition switch ON		Battery voltage
				40 % is set on “ACTIVE TEST”, “ALTERNATOR DUTY” of “ENGINE”		 JPMIA0002GB 3.8 V
				80 % is set on “ACTIVE TEST”, “ALTERNATOR DUTY” of “ENGINE”		 JPMIA0003GB 1.4 V

Terminal NO. (Wire color)		Description		Condition		Value (Approx.)
		Signal name	Input/ Output			
+	–					
34 (R)	Ground	Horn relay control	Output	The horn is deactivated		Battery voltage
				The horn is activated		0 V
36 (O)	Ground	Parking lamp (LH)	Output	Ignition switch ON	Lighting switch OFF	0 V
					Lighting switch 1ST	Battery voltage
37 (V)	Ground	Parking lamp (RH)	Output	Ignition switch ON	Lighting switch OFF	0 V
					Lighting switch 1ST	Battery voltage
38 (G)	Ground	Tail lamp (RH) & illuminations	Output	Ignition switch ON	Lighting switch OFF	0 V
					Lighting switch 1ST	Battery voltage
39 (V)	Ground	Front wiper HI	Output	Ignition switch ON	Front wiper switch OFF	0 V
					Front wiper switch HI	Battery voltage
40 (R)	Ground	ECM relay control	Output	Ignition switch OFF (More than a few seconds after turning ignition switch OFF)		Battery voltage
				• Ignition switch ON • Ignition switch OFF (For a few seconds after turning ignition switch OFF)		0 - 1.5 V
41 (SB)	Ground	Tail lamp (LH) & license plate lamps	Output	Ignition switch ON	Lighting switch OFF	0 V
					Lighting switch 1ST	Battery voltage
43 (G)	Ground	ECM relay power supply	Output	Ignition switch OFF (More than a few seconds after turning ignition switch OFF)		0 V
				• Ignition switch ON • Ignition switch OFF (For a few seconds after turning ignition switch OFF)		Battery voltage
44 (P)	Ground	ECM relay power supply	Output	Ignition switch OFF (More than a few seconds after turning ignition switch OFF)		0 V
				• Ignition switch ON • Ignition switch OFF (For a few seconds after turning ignition switch OFF)		Battery voltage
45 (Y)	Ground	TCM power supply	Output	Ignition switch OFF		Battery voltage
46 (O)	Ground	Front wiper LO	Output	Ignition switch ON	Front wiper switch OFF	0 V
					Front wiper switch LO	Battery voltage
47 (BR)	Ground	Transmission range switch[*1]	Input	Select lever in any position other than P or N (Ignition switch ON)		0 V
				Select lever P or N (Ignition switch ON)		Battery voltage
		Clutch interlock switch[*2]	Input	Release the clutch pedal		0 V
				Depress the clutch pedal		Battery voltage
49 (W)	Ground	Headlamp HI (RH)	Output	Ignition switch ON	Lighting switch OFF	0 V
					• Lighting switch HI • Lighting switch PASS	Battery voltage

Terminal NO. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
50 (GR)	Ground	Headlamp HI (LH)	Output	Ignition switch ON	Lighting switch OFF	0 V
					• Lighting switch HI • Lighting switch PASS	Battery voltage
51 (R)	Ground	Headlamp LO (LH)	Output	Ignition switch ON	Lighting switch OFF	0 V
					Lighting switch 2ND	Battery voltage
52 (P)	Ground	Headlamp LO (RH)	Output	Ignition switch ON	Lighting switch OFF	0 V
					Lighting switch 2ND	Battery voltage
54 (GR)	Ground	Throttle control motor relay power supply	Output	Ignition switch OFF (More than a few seconds after turning ignition switch OFF)		0 V
				• Ignition switch ON • Ignition switch OFF (For a few seconds after turning ignition switch OFF)		Battery voltage
55 (P)	Ground	Fuel pump power supply	Output	Approximately 1 second or more than after turning the ignition switch ON		0 V
				• Approximately 1 second after turning the ignition switch ON • Engine running		Battery voltage
56 (SB)	Ground	A/C relay power supply	Output	Engine running	A/C switch OFF	0 V
					A/C switch ON (A/C compressor is operating)	Battery voltage
57 (G)	Ground	Throttle control motor relay control	Output	Ignition switch ON → OFF		0 V ↓ Battery voltage ↓ 0 V
				Ignition switch ON		0 - 1.0 V
58 (R)	Ground	Ignition relay power supply	Output	Ignition switch OFF		0 V
				Ignition switch ON		Battery voltage
59 (Y)	Ground	Ignition relay power supply	Output	Ignition switch OFF		0 V
				Ignition switch ON		Battery voltage
60 (V)	Ground	Ignition relay power supply	Output	Ignition switch OFF		0 V
				Ignition switch ON		Battery voltage
61 (W)	Ground	Ignition relay power supply	Output	Ignition switch OFF		0 V
				Ignition switch ON		Battery voltage
62 (L)	Ground	Ignition relay power supply	Output	Ignition switch OFF		0 V
				Ignition switch ON		Battery voltage

*2: CVT models
*3: M/T models

WITHOUT INTELLIGENT KEY : Wiring Diagram — IPDM E/R —

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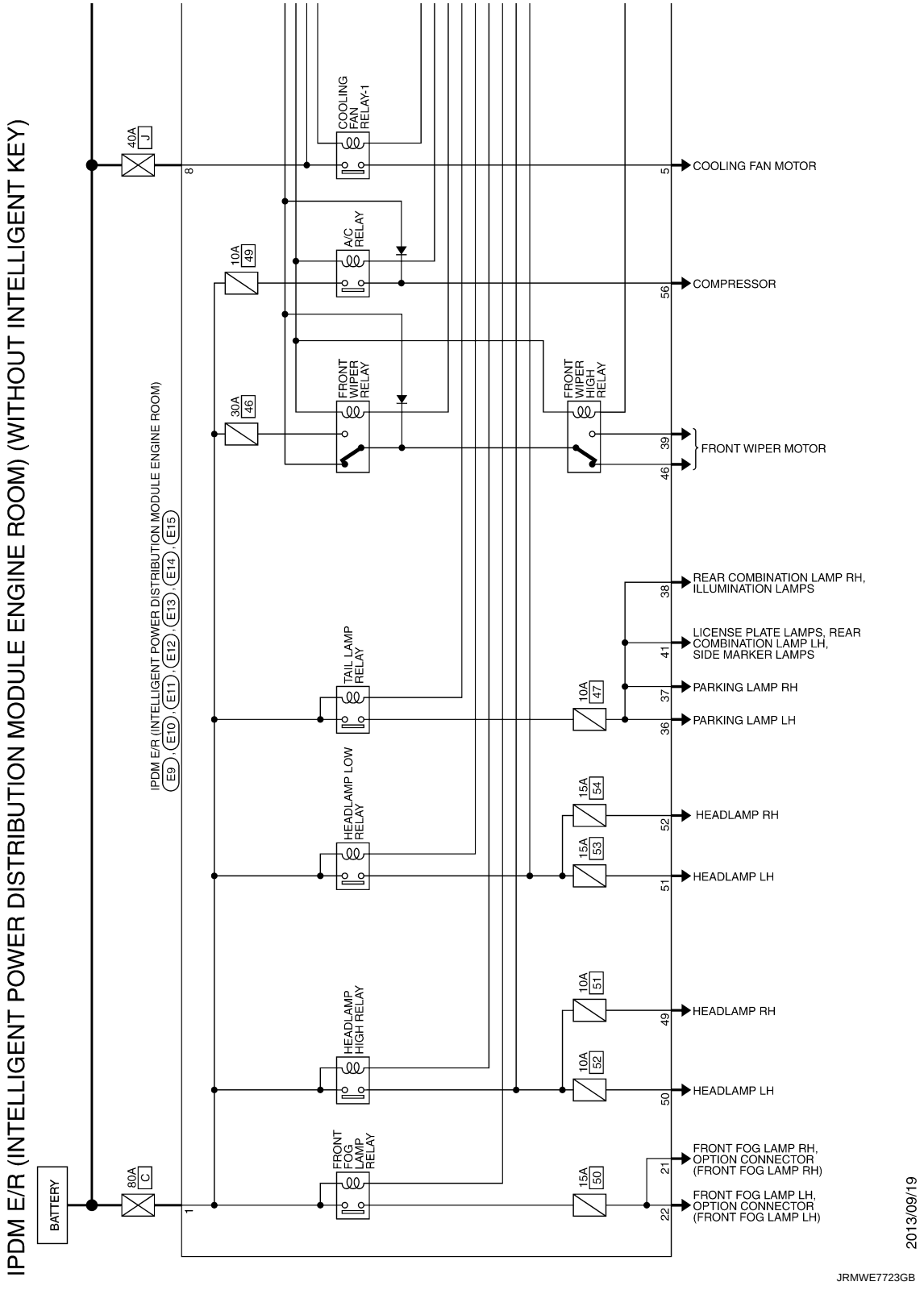
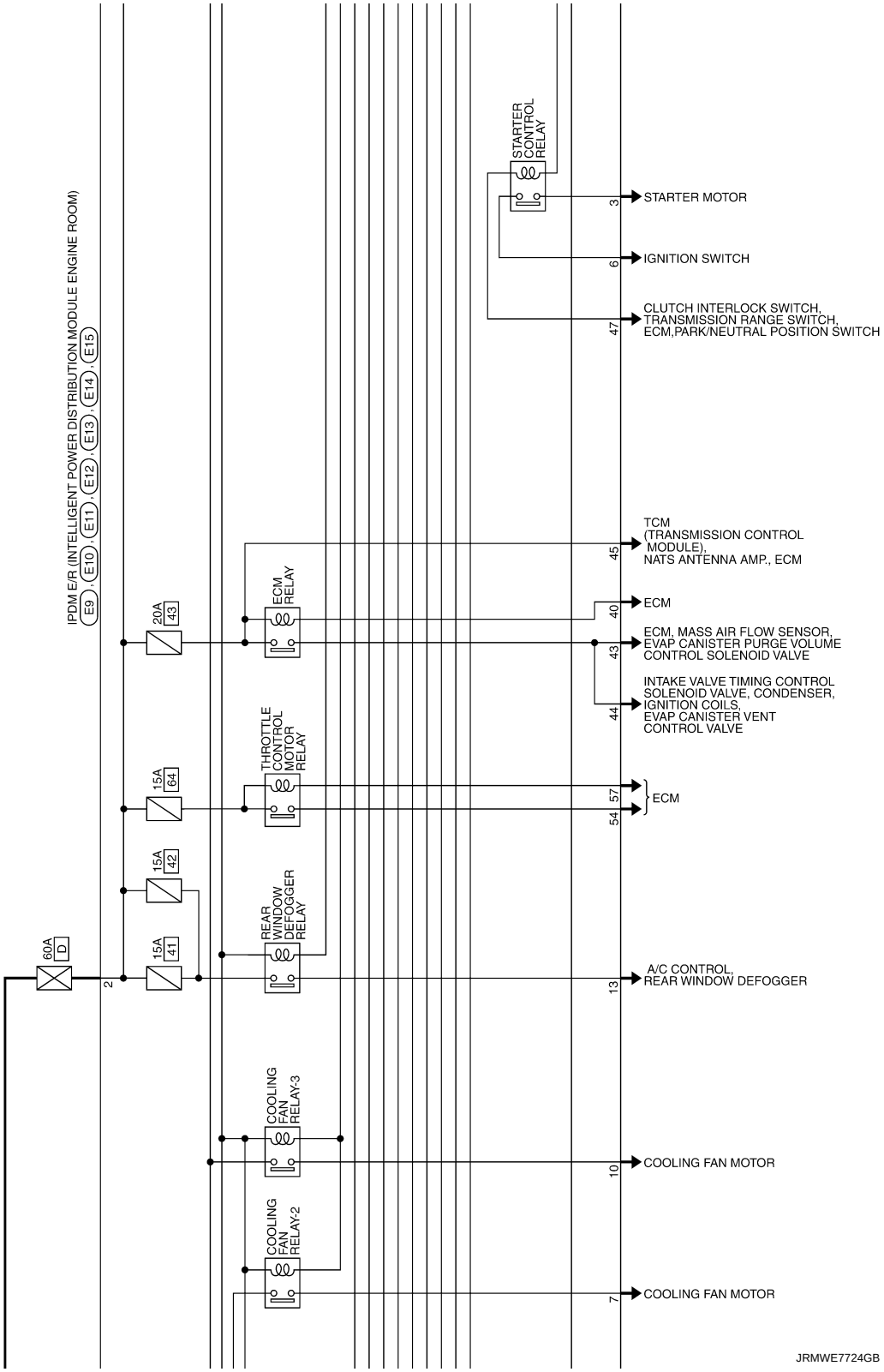
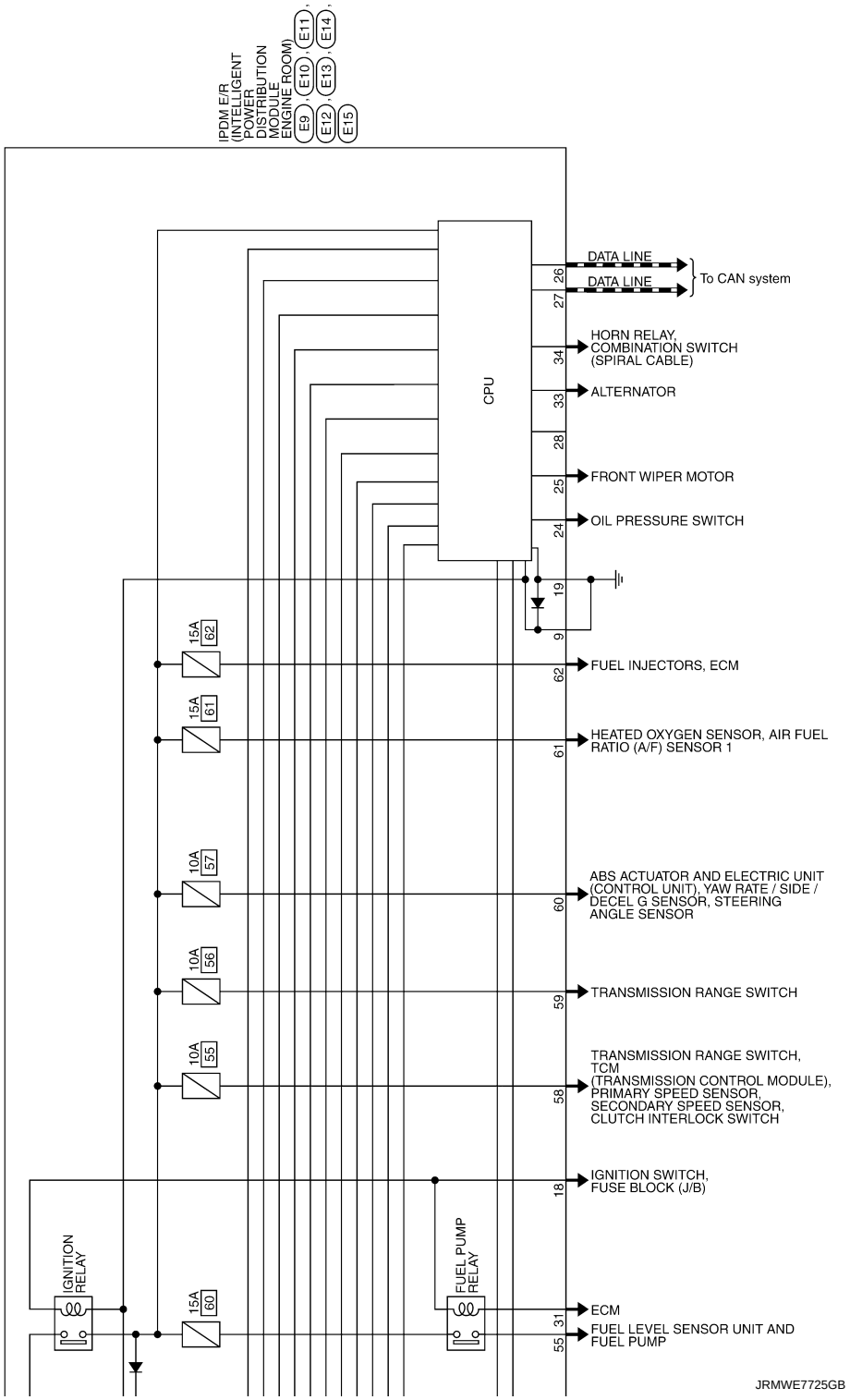



IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
E9, E10, E11, E12, E13, E14, E15
60A D
20A 43
15A 64
15A 42
15A 41
ECM RELAY
THROTTLE CONTROL MOTOR RELAY
REAR WINDOW DEFOGGER RELAY
COOLING FAN RELAY-3
COOLING FAN RELAY-2
STARTER CONTROL RELAY
2
3
6
47
45
40
43
44
57
54
13
10
7
STARTER MOTOR
IGNITION SWITCH
CLUTCH INTERLOCK SWITCH, TRANSMISSION RANGE SWITCH, ECM,PARK/NEUTRAL POSITION SWITCH
TCM (TRANSMISSION CONTROL MODULE), NATS ANTENNA AMP., ECM
ECM
ECM, MASS AIR FLOW SENSOR, EVAP CANISTER PURGE VOLUME CONTROL SOLENOID VALVE
INTAKE VALVE TIMING CONTROL SOLENOID VALVE, CONDENSER, IGNITION COILS, EVAP CANISTER VENT CONTROL VALVE
ECM
A/C CONTROL, REAR WINDOW DEFOGGER
COOLING FAN MOTOR
COOLING FAN MOTOR
JRMWE7724GB


IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
E9, E10, E11, E12, E13, E14, E15
CPU
DATA LINE
DATA LINE
To CAN system
26
27
HORN RELAY, COMBINATION SWITCH (SPIRAL CABLE)
34
ALTERNATOR
33
28
FRONT WIPER MOTOR
25
OIL PRESSURE SWITCH
24
19
9
15A 62
FUEL INJECTORS, ECM
62
15A 61
HEATED OXYGEN SENSOR, AIR FUEL RATIO (A/F) SENSOR 1
61
10A 57
ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT), YAW RATE / SIDE / DECEL G SENSOR, STEERING ANGLE SENSOR
60
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TRANSMISSION RANGE SWITCH
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58
IGNITION SWITCH, FUSE BLOCK (J/B)
18
IGNITION RELAY
FUEL PUMP RELAY
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31
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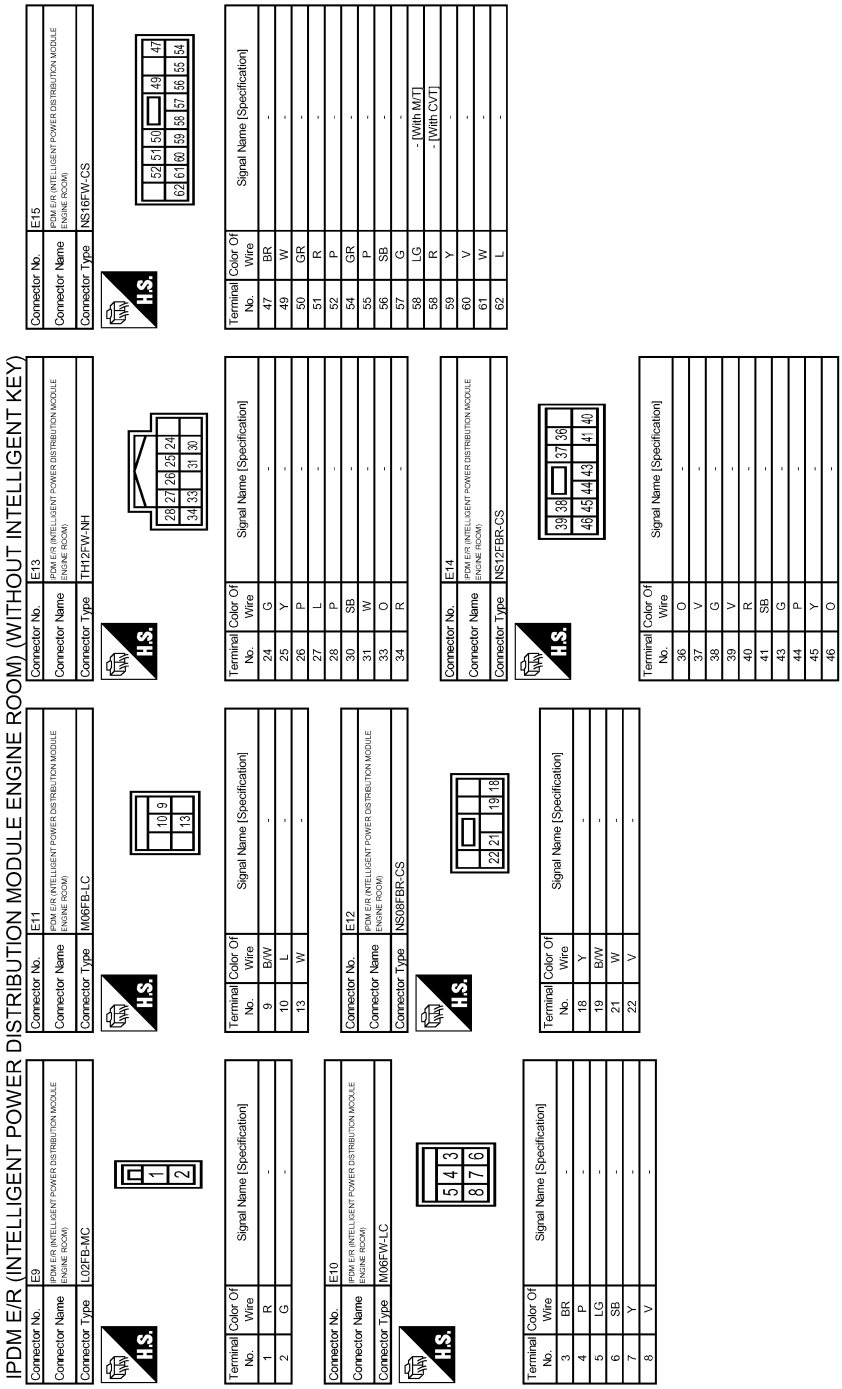
55
JRMWE7725GB



JRMWE7836GB

WITHOUT INTELLIGENT KEY : Fail-Safe

INFOID:0000000010246446

CAN COMMUNICATION CONTROL

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

If No CAN Communication Is Available With ECM

Control part	Fail-safe operation
Cooling fan	• The cooling fan relay-1, the cooling fan relay-2 and the cooling fan relay-3 turn ON when the ignition switch is turned ON (Cooling fan HI operation) • The cooling fan relay-1, the cooling fan relay-2 and the cooling fan relay-3 turn OFF when the ignition switch is turned OFF
A/C compressor	A/C relay OFF
Alternator	Outputs the power generation command signal (PWM signal) 0%

If No CAN Communication Is Available With BCM

Control part	Fail-safe operation
Headlamp	• Turns ON the headlamp low relay when the ignition switch is turned ON • Turns OFF the headlamp low relay when the ignition switch is turned OFF • Headlamp high relay OFF
• Parking lamps • Side marker lamps • License plate lamps • Illuminations • Tail lamps	• 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	• 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	Front fog lamp relay OFF
Rear window defogger relay	Rear window defogger relay OFF
Horn	Horn OFF

IGNITION RELAY MALFUNCTION DETECTION FUNCTION

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

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

FRONT WIPER CONTROL

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

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

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

WITHOUT INTELLIGENT KEY : DTC Index

INFOID:0000000010246447

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

×: Applicable

CONSULT display	Fail-safe	Refer to
No DTC is detected. further testing may be required.	—	—
U1000: CAN COMM CIRCUIT	×	PCS-15
B2098: IGN RELAY ON CIRC	×	PCS-16
B2099: IGN RELAY OFF CIRC	—	PCS-47

SYMPTOM DIAGNOSIS

REAR WINDOW DEFOGGER DOES NOT OPERATE

Description

INFOID:0000000009945472

For models without door mirror defogger.

Diagnosis Procedure

INFOID:0000000009945473

1.CHECK REAR WINDOW DEFOGGER SWITCH

Check rear window defogger switch.
- With auto A/C: Refer to DEF-20, "WITH AUTO A/C : Component Function Check".
- Without manual A/C: Refer to DEF-21, "WITH MANUAL A/C : Component Function Check".

Is the inspection result normal?

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

2.CHECK REAR WINDOW DEFOGGER RELAY

Check rear window defogger relay.
Refer to DEF-24, "Component Function Check".

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair or replace the malfunctioning parts.

3.CHECK REAR WINDOW DEFOGGER

Check rear window defogger.
Refer to DEF-25, "Component Function Check".

Is the inspection result normal?

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

4.CONFIRM THE OPERATION

Confirm the operation again.

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-40, "Intermittent Incident".
NO >> GO TO 1.

REAR WINDOW DEFOGGER INDICATOR DOES NOT ILLUMINATE

Diagnosis Procedure

INFOID:0000000009945484

1.CHECK REAR WINDOW DEFOGGER FEEDBACK SIGNAL

Check rear window defogger feedback signal.
- With auto A/C: Refer to DEF-27, "WITH AUTO A/C : Component Function Check".
- With manual A/C: Refer to DEF-27, "WITH MANUAL A/C : Component Function Check".

Is the inspection result normal?

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

2.CONFIRM THE OPERATION

Confirm the operation again.

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-40, "Intermittent Incident".
NO >> GO TO 1.

PRECAUTION

PRECAUTIONS

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

INFOID:0000000009945485

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

WARNING:

Always observe the following items for preventing accidental activation.

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

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

WARNING:

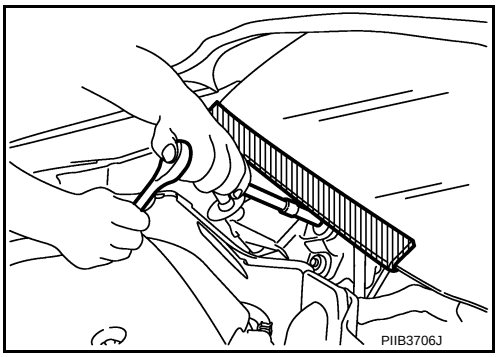
Always observe the following items for preventing accidental activation.

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

Precaution for Procedure without Cowl Top Cover

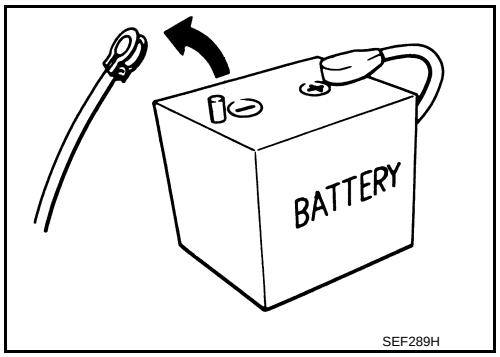
INFOID:0000000010193898

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



Precautions for Removing of Battery Terminal

INFOID:0000000010246468



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

REMOVAL AND INSTALLATION

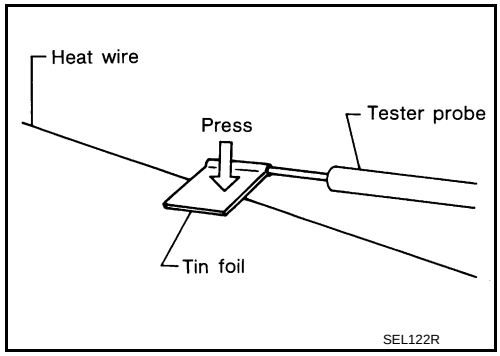
FILAMENT

Inspection and Repair

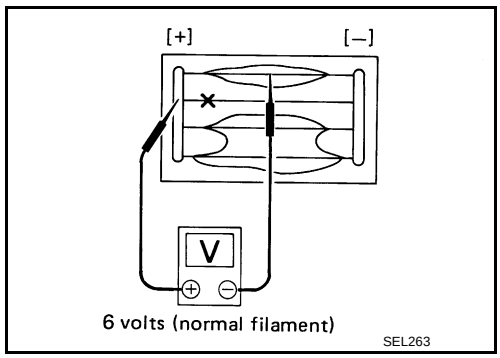
INFOID:0000000009945486

INSPECTION

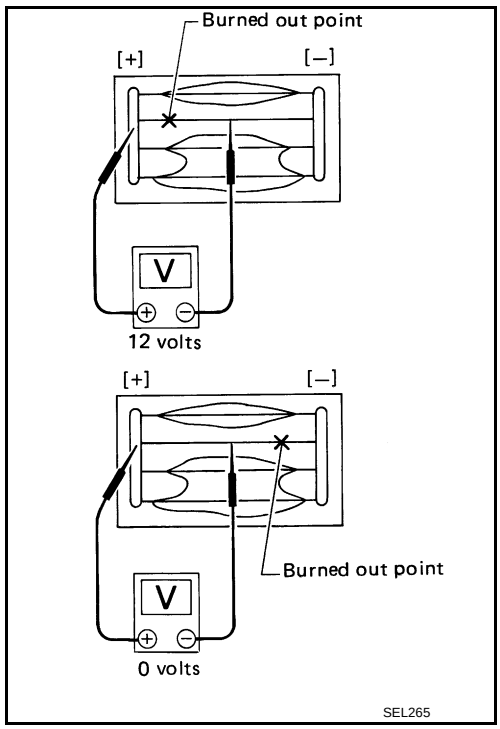
1. When measuring voltage, wrap tin foil around the top of the negative probe. Then press the foil against the wire with your finger.



2. Attach probe circuit tester (in Volt range) to middle portion of each filament.



3. If a filament is burned out, circuit tester registers 0 or battery voltage.
4. To locate burned out point, move probe to left and right along filament. Test needle will swing abruptly when probe passes the point.



REPAIR

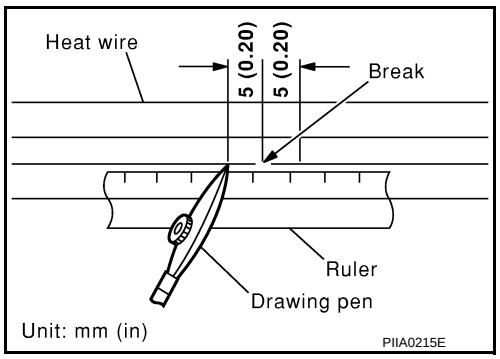
REPAIR EQUIPMENT

- Conductive silver composition (Dupont No. 4817 or equivalent)

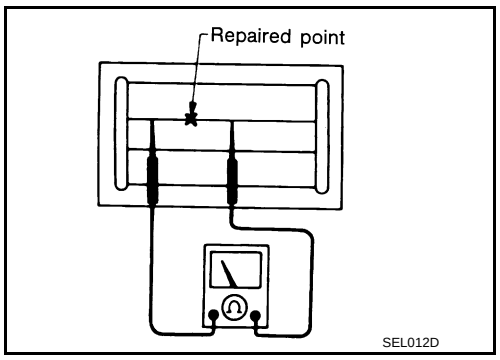
- Ruler 30 cm (11.8 in) long
- Drawing pen
- Heat gun
- Alcohol
- Cloth

REPAIRING PROCEDURE

1. Wipe broken heat wire and its surrounding area clean with a cloth dampened in alcohol.
2. Apply a small amount of conductive silver composition to tip of drawing pen.
   Shake silver composition container before use.
3. Place ruler on glass along broken line. Deposit conductive silver composition on break with drawing pen. Slightly overlap existing heat wire on both sides [preferably 5 mm (0.20 in)] of the break.



4. After repair has been completed, check repaired wire for continuity. This check should be conducted 10 minutes after silver composition is deposited.
   Do not touch repaired area while test is being conducted.



5. Apply a constant stream of hot air directly to the repaired area for approximately 20 minutes with a heat gun. A minimum distance of 3 cm (1.2 in) should be kept between repaired area and hot air outlet.
   If a heat gun is not available, let the repaired area dry for 24 hours.