SECTION DEF
DEFOGGER

CONTENTS

BASIC INSPECTION

DIAGNOSIS AND REPAIR WORKFLOW

Work Flow

INFOID:0000000001279544

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 DTC

Perform self diagnosis with CONSULT-III

Is any DTC detected?

YES >> Refer to BCS-65, "DTC Index".
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.

IAre all malfunctions corrected?

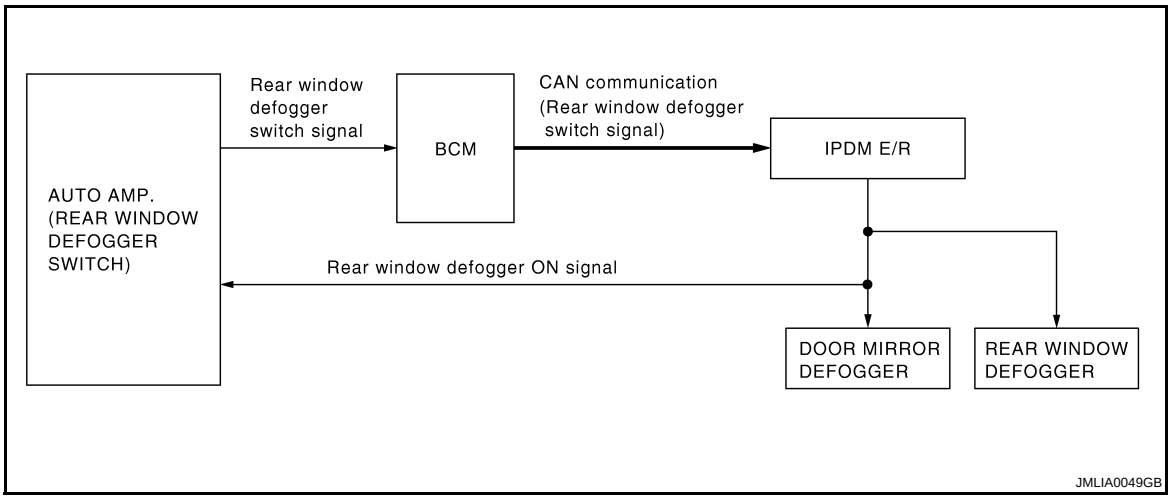
YES >> INSPECTION END.
NO >> GO TO4.

FUNCTION DIAGNOSIS

REAR WINDOW DEFOGGER SYSTEM

System Diagram

INFOID:0000000001279545



System Description

INFOID:0000000001279546

OPERATION DESCRIPTION

- BCM detects that the rear window defogger switch is turned ON when the ignition switch is ON, and then transmits the rear window defogger switch 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 switch signal. Then, it transmits the rear window defogger ON signal to ECM via CAN communication.
- The power is supplied to the rear window defogger and door mirror defogger (with mirror defogger) when the rear window defogger relay is turned ON.

TIMER FUNCTION

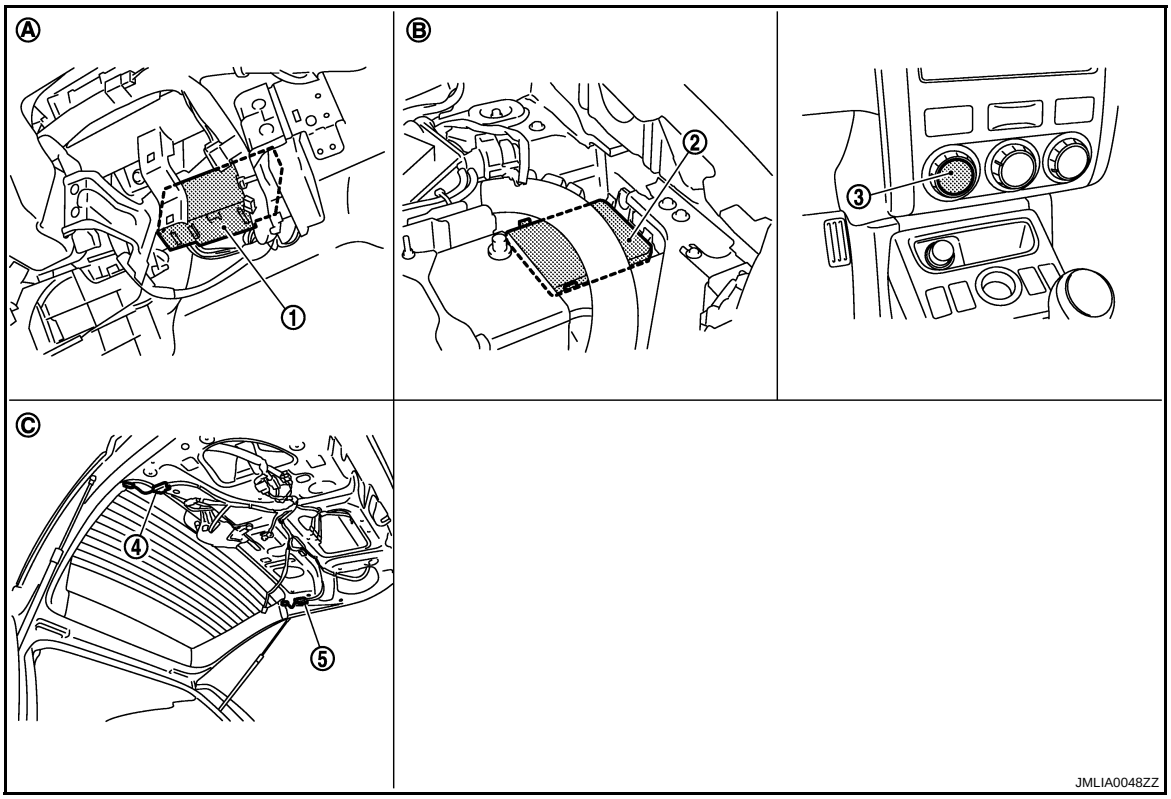
- BCM transmits the rear window defogger switch signal to IPDM E/R for approximately 15 minutes when the rear window defogger switch is turned ON with the ignition switch ON. Then, IPDM E/R operates the rear window defogger and door mirror defogger (with mirror defogger).
- The timer is cancelled if the rear window defogger switch is pressed again during timer operation. BCM stops the output of rear window defogger switch signal. The same reaction also occurs during timer operation if the ignition switch is turned OFF.

INPUT/OUTPUT SIGNAL CHART

Switch	Input signal to BCM	BCM function	Acutuator
Rear window defogger switch	Defogger switch signal	Rear window defogger & Door mirror defogger control	Rear window defogger Door mirror defogger
Ignition switch	Ignition switch ON signal		

Component Parts Location

INFOID:0000000001279547



1.	BCM M65,M66,M67	2.	IPDM E/R E11, E13	3.	Rear window defogger switch (built in AUTO AMP.) Gasoline engine models: M50, M51 Diesel engine models: M53
4.	Rear window defogger D184	5.	Rear window defogger D185		
A.	Behind glove box	B.	Engine room dash panel (LH)	C.	Behind back door trim finisher

Component Description

INFOID:0000000001279548

BCM	• Rear window defogger switch operation is transmitted to IPDM E/R via CAN communication. • Performs the timer control of rear window defogger.
Rear window defogger relay	• Operates the rear window defogger and the door mirror defogger with the control signal from IPDM E/R.
IPDM E/R	• BCM controls rear window defogger relay via CAN communication, and then operates rear window defogger or door mirror defogger.
Auto amp. (Rear window defogger switch)	• 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.
Door mirror defogger	• Heats the heating wire with the power supply from the rear window defogger relay to prevent the door mirror from fogging up.

DIAGNOSIS SYSTEM (BCM)

COMMON ITEM

COMMON ITEM : CONSULT-III Function (BCM - COMMON ITEM)

INFOID:0000000001366485

APPLICATION ITEM

CONSULT-III can display each diagnostic item using the diagnostic test modes shown following.

Diagnosis mode	Function description
ECU Identification	BCM part number is displayed.
Self-Diagnostic Results	Displays the diagnosis results judged by BCM. Refer to BCS-65, "DTC Index".
Data Monitor	BCM input/output signals are displayed.
Active Test	The signals used to activate each device are forcibly supplied from BCM.
Work Support	Changes the setting for each system function.
Configuration	• Read and save the vehicle specification. • Write the vehicle specification when replacing BCM.
CAN Diag Support Monitor	Monitors the reception status of CAN communication viewed from 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	CONSULT-III sub system selection item	Diagnosis mode		
		WORK SUPPORT	DATA MONITOR	ACTIVE TEST
—	BCM	×		
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		×	×
Air conditioner	AIR CONDITONER		×	
Intelligent Key system	INTELLIGENT KEY		×	
Combination switch	COMB SW		×	
Immobilizer	IMMU		×	×
Interior room lamp battery saver	BATTERY SAVER	×	×	×
Back door open	TRUNK		×	×
Vehicle security system	THEFT ALM	×	×	×
Signal buffer system	SIGNAL BUFFER		×	×
—	PTC HEATER*			

*: This item is displayed, but is not function.

REAR WINDOW DEFOGGER

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

INFOID:0000000001279550

Data monitor

Monitor Item	Description
REAR DEF SW	Displays “Press (ON)/other (OFF)” status determined with the rear window defogger switch.
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.

ACTIVE TEST

Test Item	Description
REAR DEFOGGER	Give a drive signal to the rear window defogger relay to activate it.

DIAGNOSIS SYSTEM (IPDM E/R)

Diagnosis Description

INFOID:0000000001366483

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
- License plate lamps
- Tail lamps
- Front fog lamps
- Headlamps (LO, HI)
- A/C compressor (magnet clutch)
- Cooling fan (LO, MID, HI)

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 ignition switch OFF.
3. Turn the ignition switch ON, and within 20 seconds, press the driver door switch 20 times. Then turn the ignition switch OFF.
   CAUTION:
   Close passenger door.
4. Turn the ignition switch ON within 10 seconds. Then the horn sounds once and the auto active test starts.
   NOTE:
   Only a vehicle with the vehicle security system, the horn sounds.
5. The oil pressure warning lamp starts blinking when the auto active test starts.
6. After a series of the following operations is repeated 3 times, auto active test is completed.

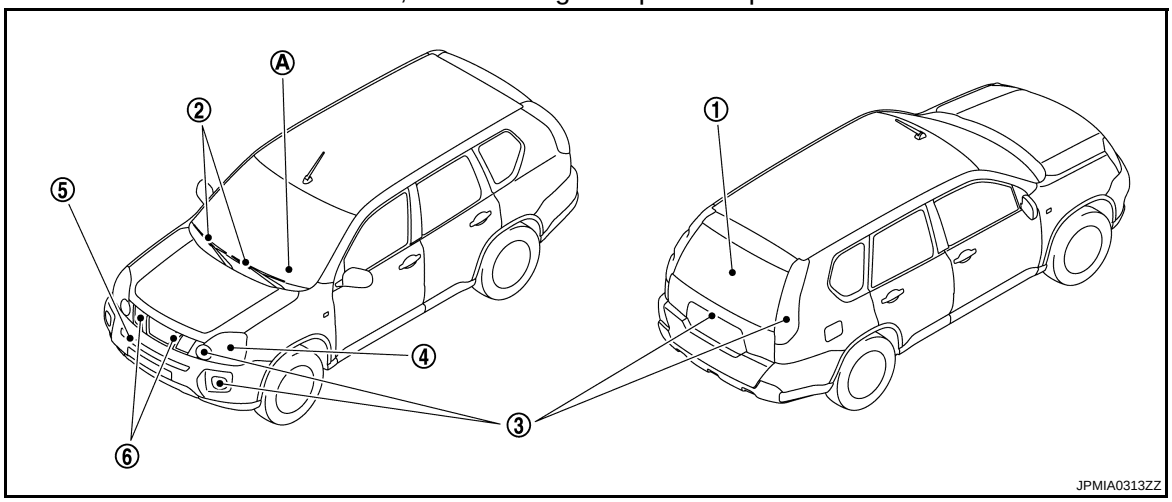
NOTE:
When auto active test mode has to be cancelled halfway through test, turn ignition switch OFF.

CAUTION:

- **If auto active test mode cannot be actuated, check door switch system.**
- **Never start the engine.**

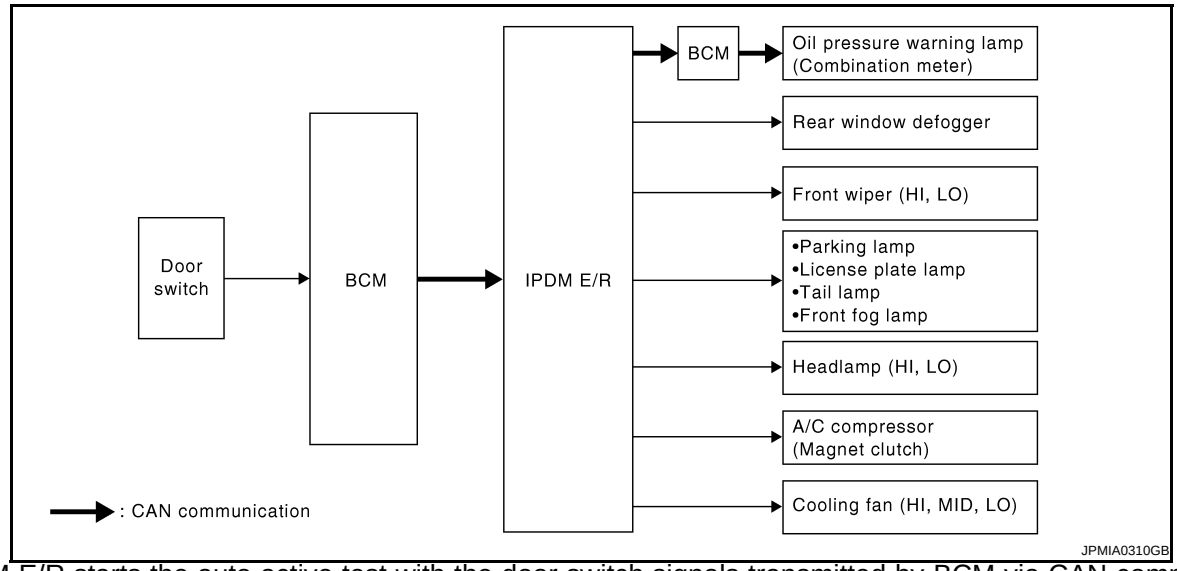
Inspection in auto active test mode

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 • License plate lamps • Tail lamps • Front fog lamps	10 seconds
4	Headlamps	LO ⇔ HI 5 times
5	A/C compressor (magnet clutch)	ON ⇔ OFF 5 times
6	Cooling fan	LO for 5 seconds → MID for 3 seconds → HI for 2 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 • 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	• Communication signal between BCM and auto amp. • BCM • CAN communication signal between BCM 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-2 power supply circuit • Cooling fan motor-1 ground circuit • Cooling fan relay-4 or cooling fan relay-5 power supply circuit • Cooling fan relay-5 ground circuit • Harness or connector between IPDM E/R and cooling fan motor • Harness or connector between IPDM E/R, and cooling fan relay-4 or cooling fan relay-5 • Harness or connector between cooling fan motor-2, and cooling fan relay-4 or cooling fan relay-5 • Cooling fan relay-4 or cooling fan relay-5 • Cooling fan motor • IPDM E/R

CONSULT-III Function (IPDM E/R)

INFOID:0000000001366484

APPLICATION ITEM

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

Diagnosis mode	Description
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 MNTR	The results of transmit/receive diagnosis of CAN communication can be read.

SELF DIAGNOSTIC

Refer to PCS-26, "DTC Index".

DATA MONITOR

Monitor item

Monitor Item [Unit]	MAIN SIGNALS	Description
MOTOR FAN REQ [1 - 4]	×	Displays the value of the cooling fan speed 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. **NOTE:** This item is monitored only the vehicle with front fog lamp system.
HL WASHER REQ [Off/On]		Displays the status of the headlamp washer request signal received from BCM via CAN communication. **NOTE:** This item is monitored only the vehicle with headlamp washer system.
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.
ST RLY REQ [Off/On]		Displays the status of the ignition and starter request signal received from BCM via CAN communication.
IGN RLY [Off/On]	×	Displays the status of the ignition relay judged by IPDM E/R.
RR DEF REQ [Off/On]	×	Displays the status of the rear defogger request signal received from BCM via CAN communication.
OIL P SW [Open/Close]		Displays the status of the oil pressure switch judged by IPDM E/R.
REV SW [Off/On]		**NOTE:** This item is indicated, but not monitored.
DTRL REQ [Off/On]		Displays the status of the daytime running light request signal received from BCM via CAN communication. **NOTE:** This item is monitored only the vehicle with daytime running light system.
HOOD SW [Off/On]		Displays the status of the hood switch judged by IPDM E/R. **NOTE:** This item is monitored only the vehicle with the vehicle security system.
THFT HRN REQ [Off/On]		Displays the status of the theft warning horn request signal received from BCM via CAN communication. **NOTE:** This item is monitored only the vehicle with the vehicle security system.
HORN CHIRP [Off/On]		**NOTE:** This item is indicated, but not monitored.

ACTIVE TEST

Test item

Test item	Operation	Description
REAR DEFOGGER	Off	OFF
	On	Operates the rear window defogger relay.
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 (MID operation).
	4	Operates the cooling fan relay (HI operation).
HEAD LAMP WASHER	On	Operates the headlamp washer relay for 1 second.
EXTERNAL LAMPS	Off	OFF
	TAIL	Operates the tail lamp relay and the daytime running light relay. **NOTE:** Daytime running light relay is with daytime running light system only.
	Lo	Operates the headlamp low relay.
	Hi	Operates the headlamp low relay and ON/OFF the headlamp high relay at 4 seconds intervals.
	Fog	Operates the front fog lamp relay. **NOTE:** This item can test only the vehicle with front fog lamp system.
HORN	On	Operates horn relay for 20 ms. **NOTE:** This item can test only the vehicle with vehicle security system.

COMPONENT DIAGNOSIS

REAR WINDOW DEFOGGER SWITCH

Description

INFOID:0000000001279553

The rear window defogger is operated by turning the rear window defogger switch ON.

Component Function Check

INFOID:0000000001279554

1.CHECK REAR WINDOW DEFOGGER SWITCH OPERATION

Check (“REAR DEF SW”, “IGN ON SW”) in DATA MONITOR mode with CONSULT-III. Refer to DEF-6, "REAR WINDOW DEFOGGER : CONSULT-III Function (BCM - REAR DEFOGGER)".

When rear defogger switch is turned to ON
REAR DEF SW :ON

OK or NG

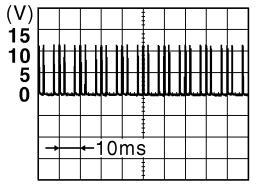
OK >> Rear window defogger switch is OK.
NG >> Refer to DEF-13, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000001279555

1.CHECK REAR WINDOW DEFOGGER SWITCH OPERATION

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

BCM		Ground	Condition	Voltage (V) (Approx.)
Connector	Terminal			
M65	20	Ground	Rear window defogger switch is pressing.	0
			Rear window defogger switch is not pressed.	

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Is the inspection result normal?

YES >> GO TO 6.
NO >> GO TO 2.

2.CHECK REAR WINDOW DEFOGGER SWITCH CIRCUIT

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

	BCM		Auto amp.		Continuity
	Connector	Terminal	Connector	Terminal	
Gasoline engine models	M65	20	M51	22	Yes
Diesel engine models			M53	25	

4. Check continuity between BCM harness connector and ground.

BCM		Ground	Continuity
Connector	Terminal		
M65	20	Ground	No

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair or replace harness between BCM and auto amp.

3.CHECK REAR WINDOW DEFOGGER SWITCH GROUND CIRCUIT

Check continuity between auto amp. harness connector and ground.

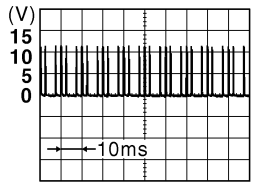
	Auto amp.		Ground	Continuity
	Connector	Terminal		
Gasoline engine models	M51	22	Ground	Existed
Diesel engine models	M53	25		

Is the inspection result normal?

YES >> GO TO 4.
NO >> Repair or replace harness between auto amp. and ground.

4.CHECK BCM OUTPUT SIGNAL

1. Connect BCM connector.
2. Turn ignition switch ON.
3. Check voltage between BCM harness connector and ground.

BCM		Ground	Voltage (V) (Approx.)
Connector	Terminal		
M65	20	Ground	

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Is the inspection result normal?

YES >> GO TO 5.
NO >> GO TO 6.

5.CHECK IINTERMITTENT INCDENT

Refer to GI-39, "Intermittent Incident"

Is the inspection result normal?

YES >> Replace auto amp. Refer to VTL-18, "Removal and Installation"
NO >> Repair or replace the malfunctioning parts.

6.CHECK IINTERMITTENT INCDENT

Refer to GI-39, "Intermittent Incident"

>> INSPECTION END

REAR WINDOW DEFOGGER RELAY

Description

INFOID:0000000001366466

The rear window defogger is operated by turning the rear window defogger switch ON.

Component Function Check

INFOID:0000000001366467

1.CHECK REAR WINDOW DEFOGGER SWITCH OPERATION

Check (“REAR DEF SW”, “IGN ON SW”) in DATA MONITOR mode with CONSULT-III. Refer to DEF-6, "REAR WINDOW DEFOGGER : CONSULT-III Function (BCM - REAR DEFOGGER)".

When rear window defogger switch is turned to ON

REAR DEF SW :ON

OK or NG

OK >> Rear window defogger switch is OK.
NG >> Refer to DEF-15, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000001366486

1.CHECK FUSE

1. Turn ignition switch OFF.
2. Check the following.

- 15A fuse (No. 55, located in IPDM E/R)
- 15A fuse (No. 56, 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. Turn ignition switch ON.
2. Check voltage between IPDM E/R harness connector and ground.

IPDM E/R		Ground	Condition of rear window defogger switch	Voltage (V) (Approx.)
Connector	Terminal			
E11	12	Ground	ON	Battery voltage
			OFF	0

Is the inspection result normal?

YES >> GO TO 3.
NO >> Replace IPDM E/R. Refer to PCS-28, "Removal and Installation".

3.CHECK INTERMITTENT INCIDENT

Refer toGI-39, "Intermittent Incident"

>> INSPECTION END

REAR WINDOW DEFOGGER

Description

INFOID:0000000001279560

Heats the heating wire with the power supply from the rear window defogger relay to prevent the rear window from fogging up.

Component Function Check

INFOID:0000000001279561

1.CHECK REAR WINDOW DEFOGGER

Check that the heating wire of rear window defogger is heated when turning the rear window defogger switch ON.

Is the inspection result normal?

YES >> Rear window defogger is OK.
NO >> Refer to DEF-16, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000001279562

1.CHECK REAR WINDOW DEFOGGER POWER SUPPLY CIRCUIT

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

Rear window defogger		Ground	Condition of rear window defogger switch	Voltage (V) (Approx.)
Connector	Terminal			
D184	1	Ground	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. Disconnect rear window defogger connector.
3. Check continuity between rear window defogger harness connector and ground.

Rear window defogger		Ground	Continuity
Connector	Terminal		
D185	3	Ground	Existed

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair or replace harness between rear window defogger and ground.

3.CHECK FILAMENT

Check filament.
Refer to DEF-17, "Component Inspection".

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

IPDM E/R		Rear window defogger		Continuity
Connector	Terminal	Connector	Terminal	
E11	12	D184	1	Existed

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

IPDM E/R		Ground	Continuity
Connector	Terminal		
E11	12	Ground	Not existed

Is the inspection result normal?

YES >> GO TO 5.
NO >> Repair or replace harness between IPDM E/R and rear window defogger.

5.CHECK INTERMITTENT INCIDENT

Refer to GI-39, "Intermittent Incident"

>> INSPECTION END

Component Inspection

INFOID:0000000001279563

1.CHECK FILAMENT

Check the filament for damage or blown.
Refer to DEF-74, "Inspection and Repair".

Is the inspection result normal?

YES >> INSPECTION END.
NO >> Repair filament.

DOOR MIRROR DEFOGGER
DRIVER SIDE

DRIVER SIDE : Description

INFOID:0000000001279564

Heats the heating wire with the power supply from the rear window defogger relay to prevent the door mirror from fogging up.

DRIVER SIDE : Component Function Check

INFOID:0000000001279565

1.CHECK DRIVER SIDE DOOR MIRROR DEFOGGER

Check that heating wire of driver side door mirror defogger is heated when turning the rear window defogger switch ON.

Is the inspection result normal?

YES >> Driver side door mirror defogger is OK.
NO >> Refer to DEF-18, "DRIVER SIDE : Diagnosis Procedure".

DRIVER SIDE : Diagnosis Procedure

INFOID:0000000001279566

1.CHECK FUSE

1. Turn ignition switch OFF.
2. Check 10A fuse (No. 6, located in fuse and fusible link box).

Is the inspection result normal?

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

2.CHECK DOOR MIRROR DEFOGGER POWER SUPPLY CIRCUIT

1. Turn ignition switch ON.
2. Check voltage between door mirror (driver side) harness connector and ground.

	Door mirror (driver side)		Ground	Condition of rear window defogger switch	Voltage (V) (Approx.)
	Connector	Terminal			
LHD	D3	2	Ground	ON	Battery voltage
RHD	D23	1		OFF	0

Is the inspection result normal?

YES >> GO TO 3.
NO >> GO TO 5.

3.CHECK DOOR MIRROR DEFOGGER GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect door mirror (driver side) connector.
3. Check continuity between door mirror (driver side) harness connector and ground.

	Door mirror (driver side)		Ground	Continuity
	Connector	Terminal		
LHD	D3	10	Ground	Existed
RHD	D23	5		

Is the inspection result normal?

YES >> GO TO 4.
NO >> Repair or replace harness between door mirror (driver side) and ground.

4.CHECK DRIVER SIDE DOOR MIRROR DEFOGGER

Check driver side door mirror defogger.
Refer to DEF-19, "DRIVER SIDE : Component Inspection".

Is the inspection result normal?

YES >> GO TO 6.
NO >> Replace door mirror glass (driver side). Refer to MIR-25, "DOOR MIRROR ASSEMBLY : Removal and Installation".

5.CHECK DOOR MIRROR CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connector and door mirror (driver side) connector.
3. Check continuity between door mirror (driver side) harness connector and IPDM E/R harness connector.

	Door mirror (driver side)		IPDM E/R		Continuity
	Connector	Terminal	Connector	Terminal	
LHD	D3	2	E11	12	Existed
RHD	D23	1			

4. Check continuity between door mirror (driver side) harness connector and ground.

	Door mirror (driver side)		Ground	Continuity
	Connector	Terminal		
LHD	D3	2	Ground	Not existed
RHD	D23	1		

Is the inspection result normal?

YES >> GO TO 6.
NO >> Repair or replace harness between door mirror (driver side) and IPDM E/R.

6.CHECK INTERMITTENT

Refer to GI-39, "Intermittent Incident"

>> INSPECTION END

DRIVER SIDE : Component Inspection

INFOID:0000000001279567

1.CHECK DRIVER SIDE DOOR MIRROR DEFOGGER

1. Turn ignition switch OFF.
2. Disconnect door mirror (driver side) connector.
3. Check continuity between door mirror terminals.

	Door mirror (diver side)			Continuity
	Connector	Terminal		
LHD	D3	2	10	Existed
RHD	D23	1	5	

Is the inspection result normal?

YES >> INSPECTION END.
NO >> Replace door mirror glass (driver side). Refer to MIR-25, "DOOR MIRROR ASSEMBLY : Removal and Installation".

PASSENGER SIDE

PASSENGER SIDE : Description

INFOID:0000000001316059

Heats the heating wire with the power supply from the rear window defogger relay to prevent the door mirror from fogging up.

PASSENGER SIDE : Component Function Check

INFOID:0000000001316060

1.CHECK PASSENGER SIDE DOOR MIRROR DEFOGGER

Check that heating wire of passenger side door mirror defogger is heated when turning the rear window defogger switch ON.

Is the inspection result normal?

YES >> Passenger side door mirror defogger is OK.
NO >> Refer to DEF-20, "PASSENGER SIDE : Diagnosis Procedure".

PASSENGER SIDE : Diagnosis Procedure

INFOID:0000000001316260

1.CHECK FUSE

1. Turn ignition switch OFF.
2. Check 10A fuse (No. 6, located in fuse and fusible link box).

Is the inspection result normal?

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

2.CHECK DOOR MIRROR DEFOGGER POWER SUPPLY CIRCUIT

1. Turn ignition switch ON.
2. Check voltage between door mirror (passenger side) harness connector and ground.

	Door mirror (passenger side)		Ground	Condition of rear window defogger switch	Voltage (V) (Approx.)
	Connector	Terminal			
LHD	D43	1	Ground	ON	Battery voltage
RHD	D63	2		OFF	0

Is the inspection result normal?

YES >> GO TO 3.
NO >> GO TO 5.

3.CHECK DOOR MIRROR DEFOGGER GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect door mirror (passenger side) connector.
3. Check continuity between door mirror (passenger side) harness connector and ground.

	Door mirror (passenger side)		Ground	Continuity
	Connector	Terminal		
LHD	D43	5	Ground	Existed
RHD	D63	10		

Is the inspection result normal?

YES >> GO TO 4.
NO >> Repair or replace harness between door mirror (passenger side) and ground.

4.CHECK PASSENGER SIDE DOOR MIRROR DEFOGGER

Check passenger side door mirror defogger.
Refer to DEF-21, "PASSENGER SIDE : Component Inspection".

Is the inspection result normal?

YES >> GO TO 6.
NO >> Replace door mirror glass (passenger side). Refer to MIR-25, "DOOR MIRROR ASSEMBLY : Removal and Installation".

5.CHECK DOOR MIRROR CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connector and door mirror (passenger side) connector.
3. Check continuity between door mirror (passenger side) harness connector and IPDM E/R harness connector.

	Door mirror (passenger side)		IPDM E/R		Continuity
	Connector	Terminal	Connector	Terminal	
LHD	D43	1	E11	12	Existed
RHD	D63	2			

4. Check continuity between door mirror (passenger side) harness connector and ground.

	Door mirror (passenger side)		Ground	Continuity
	Connector	Terminal		
LHD	D43	1	Ground	Not existed
RHD	D63	2		

Is the inspection result normal?

YES >> GO TO 6.
NO >> Repair or replace harness between door mirror (passenger side) and IPDM E/R.

6.CHECK INTERMITTENT

Refer to GI-39, "Intermittent Incident"

>> INSPECTION END

PASSENGER SIDE : Component Inspection

INFOID:0000000001316062

1.CHECK PASSENGER SIDE DOOR MIRROR DEFOGGER

1. Turn ignition switch OFF.
2. Disconnect door mirror (passenger side) connector.
3. Check continuity between door mirror terminals connector.

	Door mirror (passenger side)			Continuity
	Connector	Terminal		
LHD	D43	1	5	Existed
RHD	D63	2	10	

Is the inspection result normal?

YES >> INSPECTION END.
NO >> Replace door mirror glass (passenger side). Refer to MIR-25, "DOOR MIRROR ASSEMBLY : Removal and Installation".

REAR WINDOW DEFOGGER ON SIGNAL

Description

INFOID:0000000001279572

Turns the indicator lamp in the rear window defogger switch ON when operating the rear window defogger.

Component Function Check

INFOID:0000000001279573

1.CHECK REAR WINDOW DEFOGGER ON 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 ON signal is OK.
NG >> Refer to DEF-22, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000001279574

1.CHECK REAR WINDOW DEFOGGER INDICATOR LAMPS ON SIGNAL

1. Turn ignition switch ON.
2. Check voltage between auto amp. connector ground.

Auto amp.			Ground	Condition of rear window defogger switch	Voltage (V) (Approx.)
	Connector	Terminal			
Gasoline engine models	M51	23	Ground	ON	Battery voltage
Diesel engine models	M53	24		OFF	0

Is the inspection result normal?

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

2.CHECK REAR WINDOW DEFOGGER INDICATOR LAMPS CIRCUIT

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

IPDM E/R		Auto amp.		Continuity
Connector	Terminal	Connector	Terminal	
E11	12	M51 (Gasoline engine models)	23	Existed
		M53 (Diesel engine models)	24	

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

IPDM E/R		Ground	Continuity
Connector	Terminal		
E11	12	Ground	Not existed

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair or replace harness between IPDM E/R and auto amp.

3.CHECK IINTERMITTENT INCDENT

Refer to GI-39, "Intermittent Incident".

>> INSOECTION END

ECU DIAGNOSIS

BCM (BODY CONTROL MODULE)

Reference Value

INFOID:0000000001551373

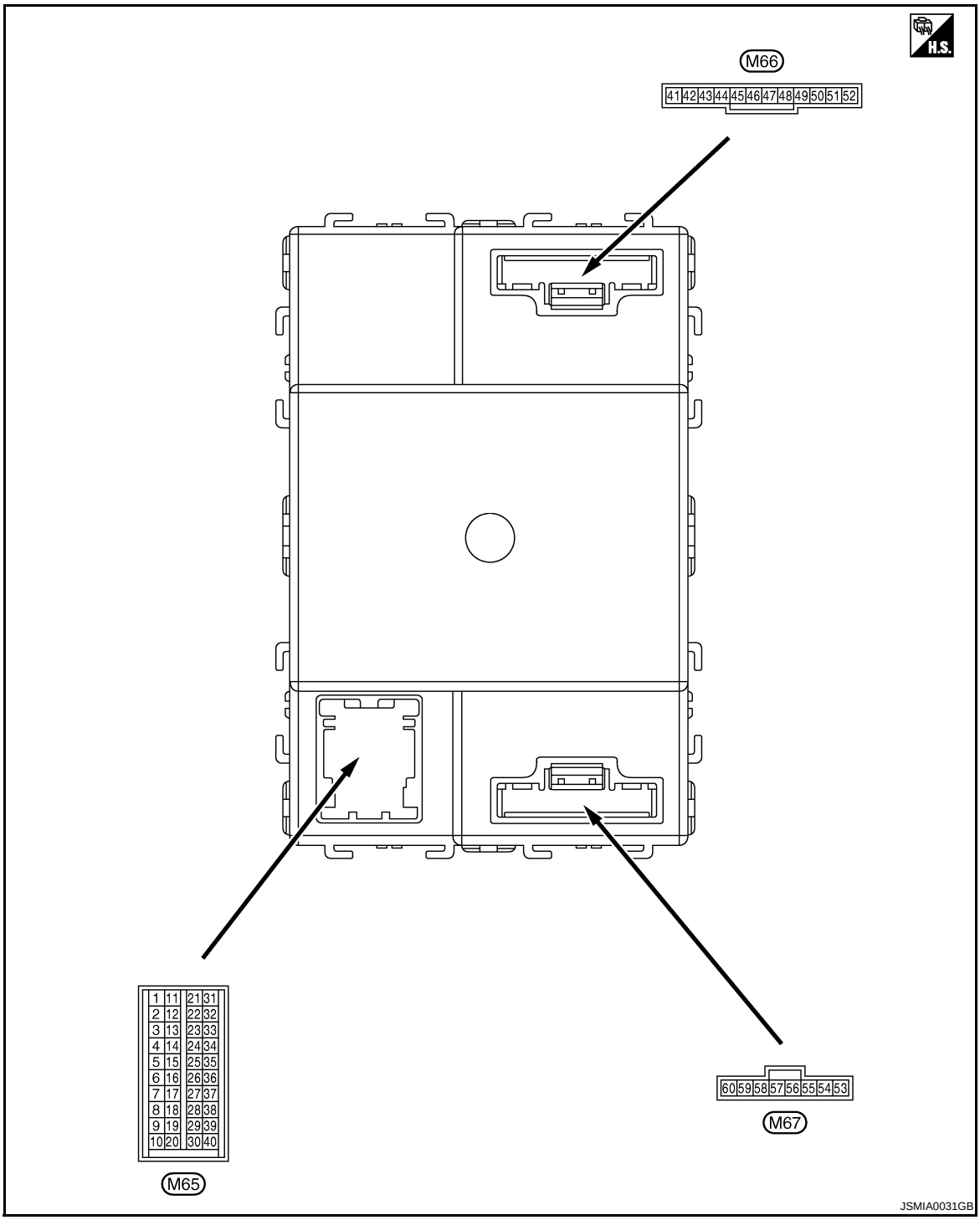
VALUES ON THE DIAGNOSIS TOOL

Monitor Item	Condition	Value/Status
VEHICLE SPEED	While driving	Equivalent to speedometer reading
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
I-KEY LOCK	“LOCK” button of Intelligent Key or door request switch are not pressed	Off
	“LOCK” button of Intelligent Key or door request switch are pressed	On
I-KEY UNLOCK	“UNLOCK” button of Intelligent Key or door request switch are not pressed	Off
	“UNLOCK” button of Intelligent Key or door request switch are pressed	On
PUSH SW	Return to ignition switch to “LOCK” position	Off
	Press ignition switch	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	Ignition switch ON	NOMAL
	After the reception of air bag deployment signal from air bag diagnosis sensor unit	Off
	During the reception of air bag deployment signal from air bag diagnosis sensor unit	On
UNLOCK SHOCK	Other than the following	Off
	During the unlock operation interlocked with air bag	On

Monitor Item	Condition	Value/Status
UNLOCK WITH DR	**NOTE:** The item is indicated, but not monitored	On
		Off
LOCK WITH SPEED	Vehicle speed sensing auto door lock function does not operate	Off
	Vehicle speed sensing auto door lock function is operating	On
ACC ON SW	Ignition switch OFF	Off
	Ignition switch ACC or ON	On
REAR DEF SW	Rear window defogger switch OFF	Off
	Rear window defogger switch ON	On
TAIL LAMP SW	Lighting switch OFF	Off
	Lighting switch 1ST	On
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
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
PASSING SW	Other than lighting switch PASS	Off
	Lighting switch PASS	On
AUTO LIGHT SW	Lighting switch OFF	Off
	Lighting switch AUTO	On
FR FOG SW	Front fog lamp switch OFF	Off
	Front fog lamp switch ON	On
RR FOG SW	Rear fog lamp switch OFF	Off
	Rear fog lamp switch ON	On
ENGINE RUN	Engine stopped	Off
	Engine running	On
LIT-SEN FAIL	Light & rain sensor is in normal condition	OK
	Light & rain sensor is with error	NOTOK
AUT LIGHT SYS	Outside of the room is dark	On
	Outside of the room is bright	Off
HD LIGHT TIME	—	Displays a setting time of the follow me home function set by the work support
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

Monitor Item	Condition	Value/Status
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 WIPER STOP	Rear wiper stop position	Off
	Other than rear wiper stop position	On
RR WASHER SW	Rear washer switch OFF	Off
	Rear washer switch ON	On
REVERSE SW CAN	**NOTE:** The item is indicated, but not monitored	Off
		On
H/L WASH SW	When headlamp washer switch is not pressed	Off
	When headlamp washer switch is pressed	On
FAN ON SIG	Blower fan motor switch OFF	Off
	Blower fan motor switch ON (other than OFF)	On
AIR COND SW	Compressor ON is not requested from auto amp. (A/C indicator OFF, blower fan motor switch OFF or etc.)	Off
	Compressor ON is requested from auto amp. (A/C indicator ON and blower fan motor switch ON).	On
HAZARD SW	Hazard switch OFF	Off
	Hazard switch ON	On
BRAKE SW	Brake pedal is not depressed	Off
	Brake pedal is depressed	On
TRNK OPNR SW	When back door opener switch is not pressed	Off
	When back door opener switch is pressed	On
HOOD SW	Close the hood **NOTE:** Vehicles without theft warning system are OFF-fixed	Off
	Open the hood	On
AUTO RELOCK	Auto lock function does not operate	Off
	Auto lock function is operating	On
GLS BREAK SEN	The vehicle without glass break sensor	Off
	The vehicle with glass break sensor	On
OIL PRESS SW	• Ignition switch OFF or ACC • Engine running	Off
	Ignition switch ON	On

TERMINAL LAYOUT

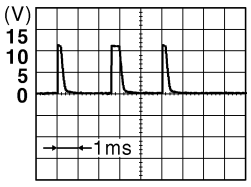
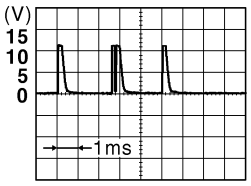
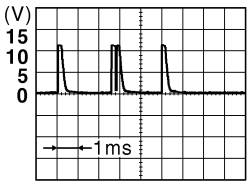
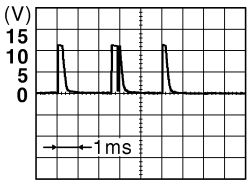
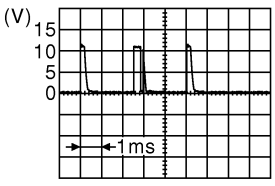


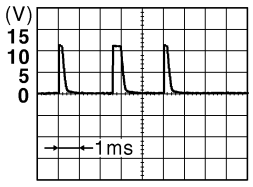
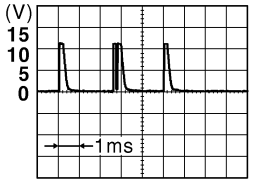
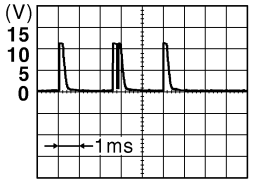
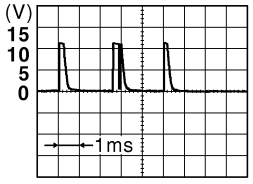
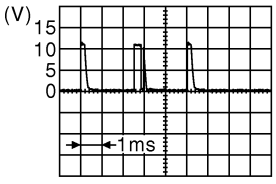
PHYSICAL VALUES

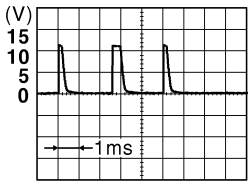
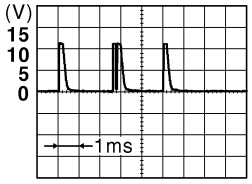
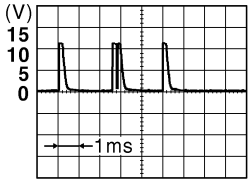
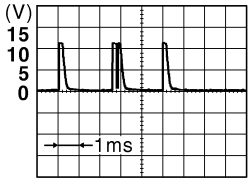
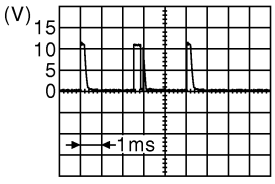
CAUTION:

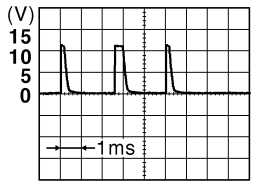
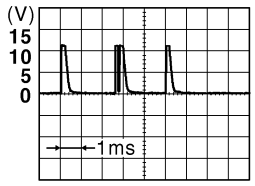
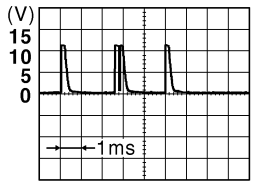
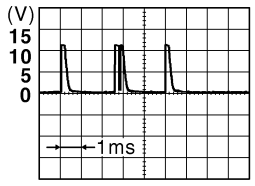
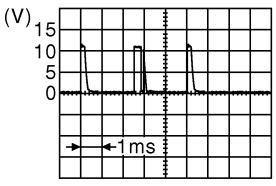
- **Check combination switch system terminal waveform under the loaded condition with lighting switch, turn signal switch and wiper switch OFF is not to be fluctuated by being overloaded.**
- **Turn wiper intermittent dial position to 4 except when checking waveform or voltage of wiper intermittent dial position. Wiper intermittent dial position can be confirmed on CONSULT-III. Refer to BCS-28, "COMB SW : CONSULT-III Function (BCM - COMB SW)".**
- **BCM reads the status of the combination switch at 10 ms internal normally. Refer to BCS-9, "System Description".**

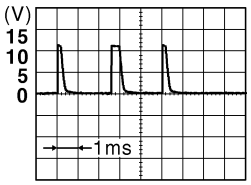
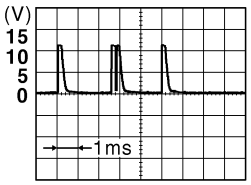
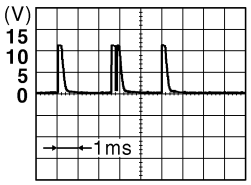
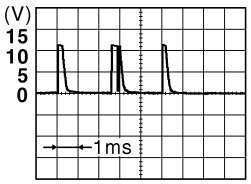
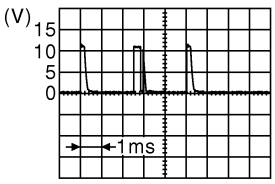
Terminal No. (Wire color)		Description		Condition	Value (Approx.)
		Signal name	Input/ Output		
+	–				
1 (W)	Ground	NATS antenna amp.	Input/ Output	Insert mechanical key into ignition key cylinder	Just after Insert mechanical key into ignition key cylinder. Pointer of tester should move
2 (G)	Ground	NATS antenna amp.	Input/ Output	Insert mechanical key into ignition key cylinder	Just after Insert mechanical key into ignition key cylinder. Pointer of tester should move
3 (W)	Ground	Ignition power supply	Input	Ignition switch OFF or ACC	0 V
				Ignition switch ON or START	Battery voltage
4 (SB)	Ground	ACC power supply	Input	Ignition switch OFF	0 V
				Ignition switch ON or ACC	Battery voltage
5 (LG)*1 (R)*2	Ground	Key switch	Input	Insert mechanical key into ignition key cylinder	Battery voltage
				Remove mechanical key from ignition key cylinder	0 V

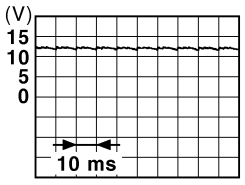
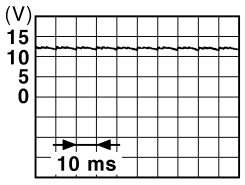
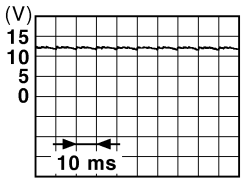
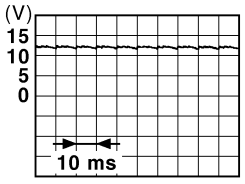
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
6 (L)	Ground	Combination switch INPUT 3	Input	Combination switch	All switch OFF (Wiper intermittent dial 4)	 JPMIA0165GB 1.4 V
					Lighting switch HI (Wiper intermittent dial 4)	 JPMIA0166GB 1.3 V
					Lighting switch 2ND (Wiper intermittent dial 4)	 JPMIA0167GB 1.3 V
					Rear washer switch ON	 JPMIA0169GB 1.3 V
					Any of the condition below with all switch OFF • Wiper intermittent dial 1 • Wiper intermittent dial 2 • Wiper intermittent dial 3	 JPMIA0196GB 1.3 V

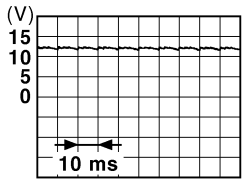
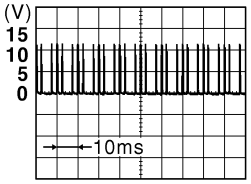
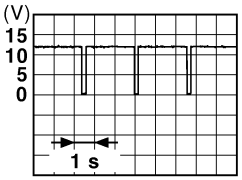
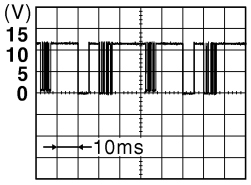
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
7 (GR)	Ground	Combination switch INPUT 4	Input	Combination switch	All switch OFF (Wiper intermittent dial 4)	 JPMIA0165GB 1.4 V
					Lighting switch 1ST (Wiper intermittent dial 4)	 JPMIA0166GB 1.3 V
					Lighting switch AUTO (Wiper intermittent dial 4)	 JPMIA0168GB 1.3 V
					Any of the condition below with all switch OFF • Wiper intermittent dial 1 • Wiper intermittent dial 6	 JPMIA0169GB 1.3 V
					Rear wiper INT (Wiper intermittent dial 4)	 JPMIA0196GB 1.3 V

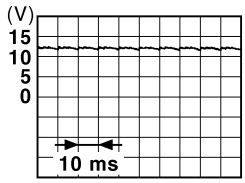
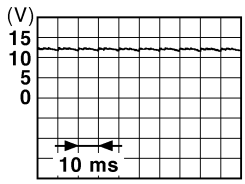
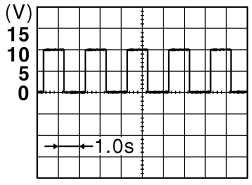
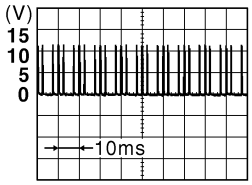
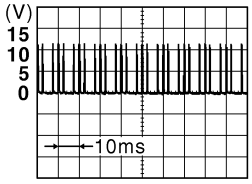
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
8 (V)	Ground	Combination switch INPUT 1	Input	Combination switch (Wiper intermittent dial 4)	All switch OFF	 JPMIA0165GB 1.4 V
					Turn signal switch RH	 JPMIA0166GB 1.3 V
					Turn signal switch LH	 JPMIA0167GB 1.3 V
					Front wiper switch LO	 JPMIA0168GB 1.3 V
					Front washer switch ON	 JPMIA0196GB 1.3 V

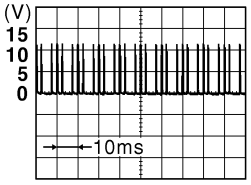
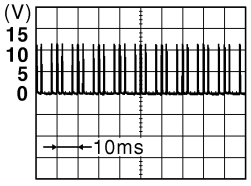
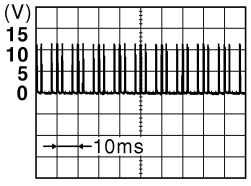
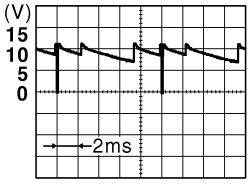
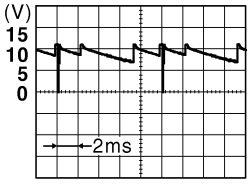
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
9 (G)*3 (B)*4	Ground	Combination switch INPUT 2	Input	Combination switch (Wiper intermittent dial 4)	All switch OFF	 JPMIA0165GB 1.4 V
					Lighting switch 2ND	 JPMIA0166GB 1.3 V
					Lighting switch PASS	 JPMIA0167GB 1.3 V
					Front wiper switch INT	 JPMIA0168GB 1.3 V
					Front wiper switch HI	 JPMIA0196GB 1.3 V

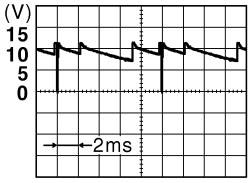
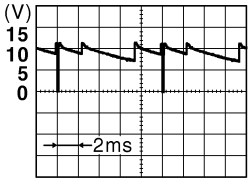
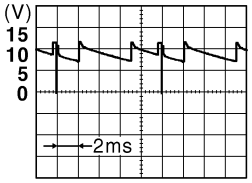
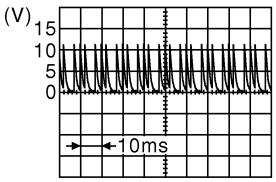
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
10 (BR)	Ground	Combination switch INPUT 5	Input	Combination switch	All switch OFF (Wiper intermittent dial 4)	 JPMIA0165GB 1.3 V
					Front fog lamp switch ON (Wiper intermittent dial 4)	 JPMIA0167GB 1.3 V
					Rear fog lamp switch ON (Wiper intermittent dial 4)	 JPMIA0168GB 1.3 V
					Rear wiper switch ON (Wiper intermittent dial 4)	 JPMIA0169GB 1.3 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	 JPMIA0196GB 1.3 V
11 (B)	Ground	Audio link	Input/ Output	—	—	—

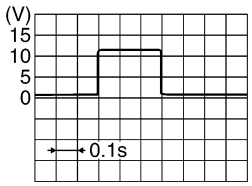
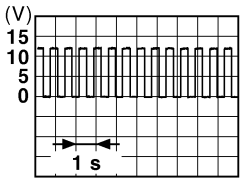
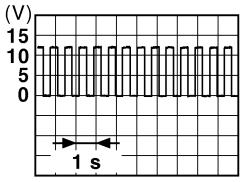
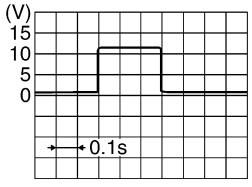
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
12 (LG)	Ground	Rear door switch RH	Input	Rear door switch RH	OFF (When rear door RH closed)	 PKID0924E 11.2 V
					ON (When rear door RH opened)	0 V
13 (V)	Ground	Back door switch	Input	Back door switch	OFF (When back door closed)	 PKID0924E 11.2 V
					ON (When back door opened)	0 V
14 (P)*3 (BR)*4	Ground	Passenger door switch	Input	Passenger door switch	OFF (When passenger door closed)	 PKID0924E 11.2 V
					ON (When passenger door opened)	0 V
15 (BR)*3 (P)*4	Ground	Driver door switch	Input	Driver door switch	OFF (When driver door closed)	 PKID0924E 11.2 V
					ON (When driver door opened)	0 V

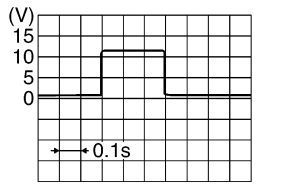
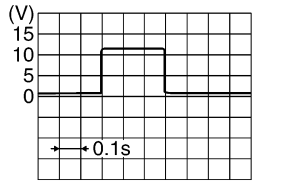
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
16 (GR)	Ground	Rear door switch LH	Input	Rear door switch LH	OFF (When rear door LH closed)	 PKID0924E 11.2 V
					ON (When rear door LH opened)	0 V
17 (L)	Ground	Door lock status indicator	Output	Door lock status indicator	ON	12 V
					OFF	0 V
20 (SB)	Ground	Rear window defogger switch	Input	Rear window defogger switch	Not pressed	 JPMIA0154GB 1.1 V
					While pressing	0 V
21 (P)	—	CAN-L	Input/ Output	—		—
22 (L)	—	CAN-H	Input/ Output	—		—
23 (V)	Ground	Security indicator	Output	Security indicator	ON	0 V
					Blinking	 JPMIA0014GB 10.3 V
					OFF	12 V
24 (GR)	Ground	Light & rain sensor serial link	Input/ Output	Ignition switch OFF or ACC		12 V
				Ignition switch ON		 JPMIA0156GB 8.7 V
25 (G)	Ground	Alarm link	Output	—		—

Terminal No. (Wire color) +	Terminal No. (Wire color) –	Description Signal name	Description Input/ Output	Condition		Value (Approx.)
26 (GR)*5 (LG)*6	Ground	Blower fan motor switch	Input	Blower fan motor switch	OFF	 PKID0924E 11.2 V
					ON (other than OFF)	0 V
27 (P)*5 (Y)*6	Ground	A/C switch	Input	Ignition switch ON	Compressor ON is not requested from auto amp. (A/C indicator OFF, blower fan motor switch OFF or etc.)	 PKID0924E 11.2 V
					Compressor ON is requested from auto amp. (A/C indicator ON and blower fan motor switch ON).	0 V
28 (LG)*7 (R)*8	Ground	Shock detect sensor	Input	Ignition switch OFF or ACC		0 V
				Ignition switch ON		 JPMIA0155GB 6.0 V
29 (LG)*3 (O)*4	Ground	Back door opener switch	Input	Back door opener switch	Not pressed	 JPMIA0154GB 1.2 V
					Pressed	0 V
32 (BR)	Ground	Door lock/unlock switch (Unlock)	Input	Door lock/unlock switch	Not pressed	 JPMIA0154GB 1.2 V
					Pressed to the unlock side	0 V

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
33 (W)*9 (Y)*10	Ground	Hazard switch	Input	Hazard switch	OFF	 JPMIA0154GB 1.3 V
					ON	0 V
34 (SB)*3 (P)*4	Ground	Door lock/unlock switch (Lock)	Input	Door lock/un-lock switch	Not pressed	 JPMIA0154GB 1.2 V
					Pressed to the lock side	0 V
35 (G)	Ground	Headlamp washer switch	Input	Headlamp washer switch	Not pressed	 JPMIA0154GB 1.2 V
					Pressed to the lock side	0 V
36 (G)	Ground	Combination switch OUTPUT 5	Output	Combination switch (Wiper intermit-tent dial 4)	All switch OFF	0 V
					Turn signal switch RH	 JPMIA0164GB 9.1 V
					Lighting switch 2ND	
					Lighting switch HI	
					Lighting switch 1ST	
37 (R)	Ground	Combination switch OUTPUT 2	Output	Combination switch	All switch OFF (Wiper intermittent dial 4)	0 V
					Front washer switch ON (Wiper intermittent dial 4)	 JPMIA0161GB 9.1 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)	

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
38 (W)	Ground	Combination switch OUTPUT 3	Output	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 Rear fog lamp switch ON	 JPMIA0162GB 9.3 V
39 (Y)	Ground	Combination switch OUTPUT 4	Output	Combination switch (Wiper intermittent dial 4)	All switch OFF	0 V
					Turn signal switch LH Lighting switch PASS Lighting switch 2ND Front fog lamp switch ON	 JPMIA0163GB 9.3 V
40 (P)	Ground	Combination switch OUTPUT 1	Output	Combination switch	All switch OFF (Wiper intermittent dial 4)	0 V
					Front wiper switch HI (Wiper intermittent dial 4)	 JPMIA0160GB 9.1 V
					Any of the condition below with all switch OFF • Wiper intermittent dial 1 • Wiper intermittent dial 2 • Wiper intermittent dial 3 • Wiper intermittent dial 6 • Wiper intermittent dial 7	
					Rear wiper switch INT (Wiper intermittent dial 4)	
41 (LG)	Ground	Battery power supply	Input	Ignition switch OFF		Battery voltage
42 (V)	Ground	Interior room lamp power supply	Output	Interior room lamp battery saver activation		0 V
				Interior room lamp battery saver no activation		12 V
43 (SB)	Ground	Rear wiper motor	Output	Rear wiper switch OFF		0 V
				Rear wiper switch ON		12 V
44 (B)	Ground	Rear wiper auto stop	Input	Ignition switch ON	Rear wiper stop position	 JPMIA0197GB
					Any position other than rear wiper stop position	0 V

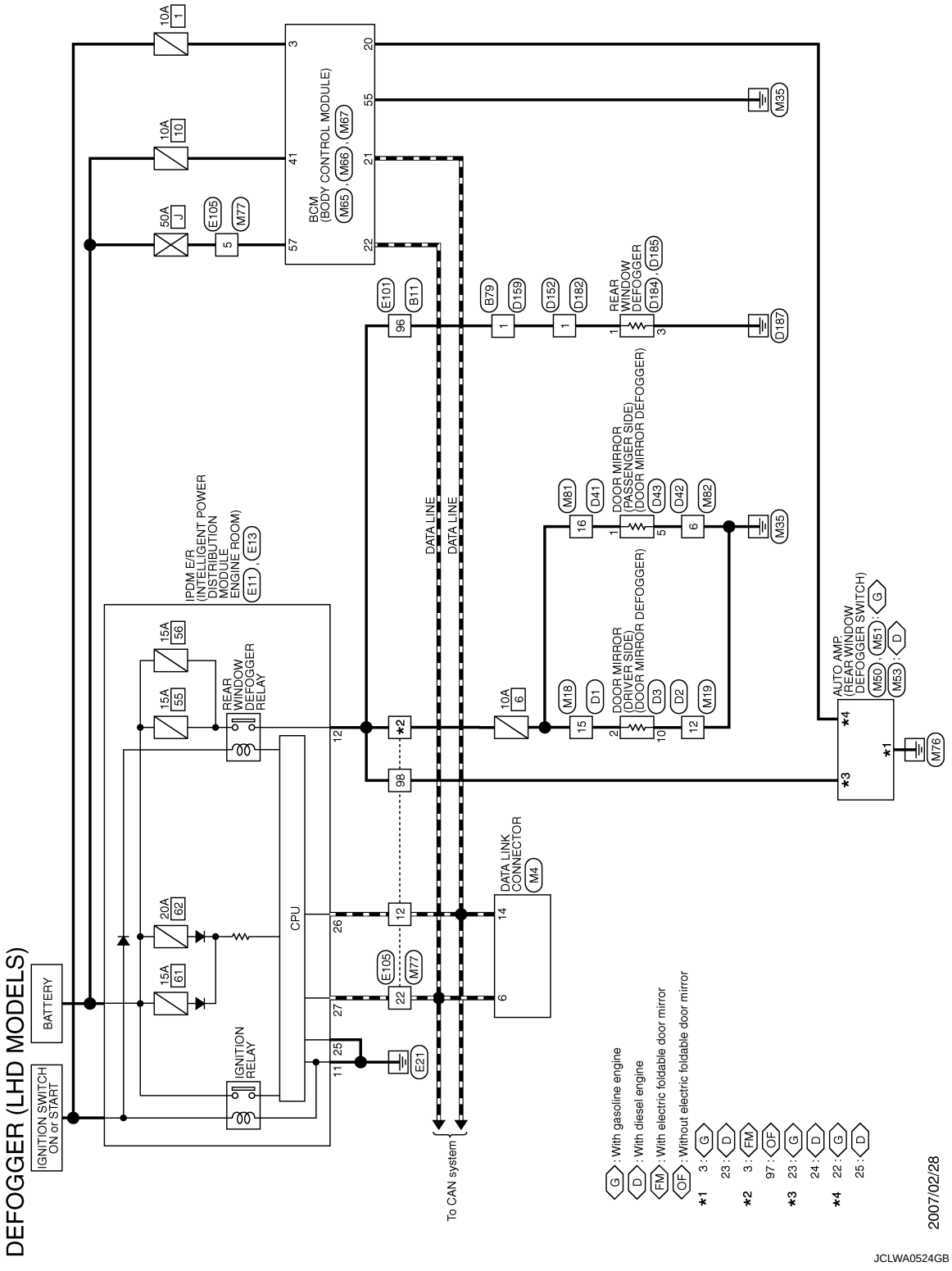
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
45 (V)	Ground	Back door lock actuator	Output	Back door opener switch	Pressed	 SKIA9232E
					Not pressed	0 V
47 (BR)	Ground	Turn signal LH	Output	Ignition switch ON	Turn signal switch OFF	0 V
					Turn signal switch LH	 PKID0926E 6.5 V
48 (GR)	Ground	Turn signal RH	Output	Ignition switch ON	Turn signal switch OFF	0 V
					Turn signal switch RH	 PKID0926E 6.5 V
49 (Y)	Ground	Rear fog lamp	Output	Rear fog lamp	OFF	0 V
					ON	12 V
50 (G)	Ground	Unlock sensor	Input	Driver's door	Unlock	5 V
					lock	0 V
51 (R)	Ground	Stop lamp switch	Input	Depress the brake pedal		Battery voltage
				Release the brake pedal		0 V
52 (R)	Ground	Room lamp timer control	Output	Interior room lamp	OFF	12 V
					ON	0 V
53 (L)	Ground	Power window power supply (IGN)	Output	Ignition switch	OFF or ACC	0 V
					ON	12 V
54 (O)	Ground	Door unlock (All other than driver's door)	Output	Door lock/unlock switch	Pressed to the unlock side	 SKIA9232E
					Not pressed	0 V
55 (B)	Ground	Ground	—	Ignition switch ON		0 V

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
56 (V)	Ground	Door lock (All) and fuel lid lock	Output	Door lock/unlock switch	Not pressed	0 V
					Pressed to the lock side	 SKIA9232E
57 (Y)	Ground	Battery power supply	Input	Ignition switch OFF		Battery voltage
58 (P)	Ground	Power window power supply (BAT)	Output	Ignition switch OFF		12 V
59 (R)	Ground	Super lock	Output	When lock button of key fob or Intelligent Key is not pressed		0 V
				When lock button of key fob or Intelligent Key is pressed		12 V
60 (G)	Ground	Driver's door unlock and fuel lid unlock	Output	Door lock/unlock switch	Pressed to the unlock side	 SKIA9232E
					Not pressed	0 V

*1: With Intelligent Key
*2: Without Intelligent Key
*3: RHD models
*4: LHD models
*5: With gasoline engine
*6: With diesel engine
*7: RHD models with side air bag
*8: LHD models with side air bag
*9: With xenon headlamp and daytime light system
*10: Except with xenon headlamp and daytime light system

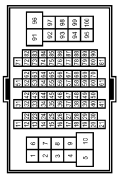
Wiring Diagram - DEFOGGER CONTROL SYSTEM (LHD MODELS) -

INFOID:0000000001279896



DEFOGGER (LHD MODELS)

Connector No.	B11
Connector Name	WIRE TO WIRE
Connector Type	TH80MW-CS16-TM4

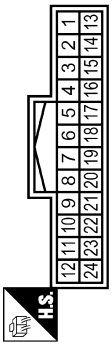


Terminal No.	Color of Wire	Signal Name [Specification]
96	G	–

Connector No.	B79
Connector Name	WIRE TO WIRE
Connector Type	M02MW-LC

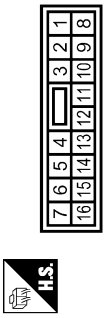
Terminal No.	Color of Wire	Signal Name [Specification]
1	G	–

Connector No.	D1
Connector Name	WIRE TO WIRE
Connector Type	TH24FW-NH



Terminal No.	Color of Wire	Signal Name [Specification]
15	GR	–

Connector No.	D2
Connector Name	WIRE TO WIRE
Connector Type	NS16FW-CS



Terminal No.	Color of Wire	Signal Name [Specification]
12	B	–

Connector No.	D3
Connector Name	DOOR MIRROR (DRIVER SIDE)
Connector Type	TH16MW-NH

Terminal No.	Color of Wire	Signal Name [Specification]
2	GR	–
10	B	–

Connector No.	D41
Connector Name	WIRE TO WIRE
Connector Type	TH24FW-NH

Terminal No.	Color of Wire	Signal Name [Specification]
16	GR	–

Connector No.	D42
Connector Name	WIRE TO WIRE
Connector Type	NS16FW-CS

Terminal No.	Color of Wire	Signal Name [Specification]
6	B	–

Connector No.	D43
Connector Name	DOOR MIRROR (PASSENGER SIDE)
Connector Type	TH08MW-NH

Terminal No.	Color of Wire	Signal Name [Specification]
1	GR	–
5	B	–

JCLWA0525GB

DEFOGGER (LHD MODELS)

Connector No.	D152
Connector Name	WIRE TO WIRE
Connector Type	M02FW-GY-LC

Terminal No.	Color of Wire	Signal Name [Specification]
1	G	–

Connector No.	D159
Connector Name	WIRE TO WIRE
Connector Type	M02FW-LC

Terminal No.	Color of Wire	Signal Name [Specification]
1	G	–

Connector No.	D182
Connector Name	WIRE TO WIRE
Connector Type	M02MW-GY-LC

Terminal No.	Color of Wire	Signal Name [Specification]
1	G	–

Connector No.	D184
Connector Name	REAR WINDOW DEFOGGER
Connector Type	M02MW-LC

Terminal No.	Color of Wire	Signal Name [Specification]
1	G	–

Connector No.	D185
Connector Name	REAR WINDOW DEFOGGER
Connector Type	M02MW-LC

Terminal No.	Color of Wire	Signal Name [Specification]
3	B	–

Connector No.	E11
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	M06FB-LC

Terminal No.	Color of Wire	Signal Name [Specification]
11	B	–
12	O	–

Connector No.	E13
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	TH12FW-NH

Terminal No.	Color of Wire	Signal Name [Specification]
25	B	–
26	P	–
27	L	–

Connector No.	E101
Connector Name	WIRE TO WIRE
Connector Type	TH80FW-CS16-TM4

Terminal No.	Color of Wire	Signal Name [Specification]
96	O	–

JCLWA0526GB

DEFOGGER (LHD MODELS)

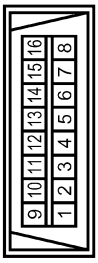
Connector No.	E105
Connector Name	WIRE TO WIRE
Connector Type	TH80FW-CS16-TM4

Terminal No.	Color of Wire	Signal Name [Specification]
3	LG	–
5	Y	–
12	P	–
22	L	–
97	G	–
98	G	–

Connector No.	M50
Connector Name	AUTO AMP.
Connector Type	TK20FGY

Terminal No.	Color of Wire	Signal Name [Specification]
3	B	GND(POWER)

Connector No.	M4
Connector Name	DATA LINK CONNECTOR
Connector Type	BD16FW



Terminal No.	Color of Wire	Signal Name [Specification]
6	L	–
14	P	–

Connector No.	M51
Connector Name	AUTO AMP.
Connector Type	TK16FGY

Terminal No.	Color of Wire	Signal Name [Specification]
22	SB	RR/DEF SW
23	G	RR/DEF F/B

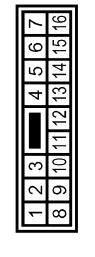
Connector No.	M18
Connector Name	WIRE TO WIRE
Connector Type	TH24MW-NH

Terminal No.	Color of Wire	Signal Name [Specification]
15	GR	–

Connector No.	M53
Connector Name	AUTO AMP.
Connector Type	SAB40FW

Terminal No.	Color of Wire	Signal Name [Specification]
23	B	GND(POWER)
24	G	RR/DEF F/B
25	SB	RR/DEF SW

Connector No.	M19
Connector Name	WIRE TO WIRE
Connector Type	NS16MW-CS



Terminal No.	Color of Wire	Signal Name [Specification]
12	B	–

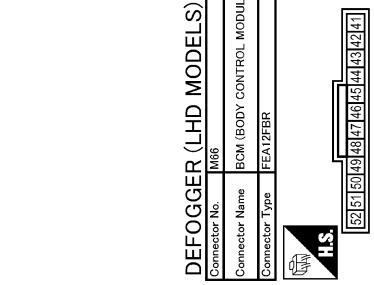
Connector No.	M65
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	AAB40FB

Terminal No.	Color of Wire	Signal Name [Specification]
3	W	IGN SW
20	SB	RR DEF SW
21	P	CAN-L
22	L	CAN-H

JCLWA0527GB

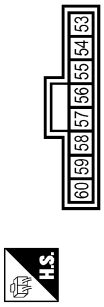
DEFOGGER (LHD MODELS)

Connector No.	M66
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	FEA12FBR



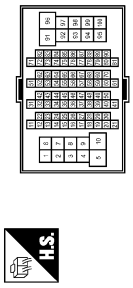
Terminal No.	Color of Wire	Signal Name [Specification]
41	LG	BAT(FUSE)

Connector No.	M67
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	FHA08FB



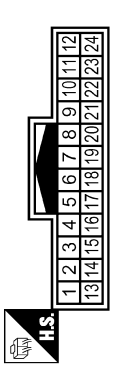
Terminal No.	Color of Wire	Signal Name [Specification]
55	B	GND
57	Y	BAT(F/L)

Connector No.	M77
Connector Name	WIRE TO WIRE
Connector Type	TH80MW-CS16-TM4



Terminal No.	Color of Wire	Signal Name [Specification]
3	LG	–
5	Y	–
12	P	–
22	L	–
97	G	–
98	G	–

Connector No.	M81
Connector Name	WIRE TO WIRE
Connector Type	TH24MW-NH



Terminal No.	Color of Wire	Signal Name [Specification]
16	GR	–

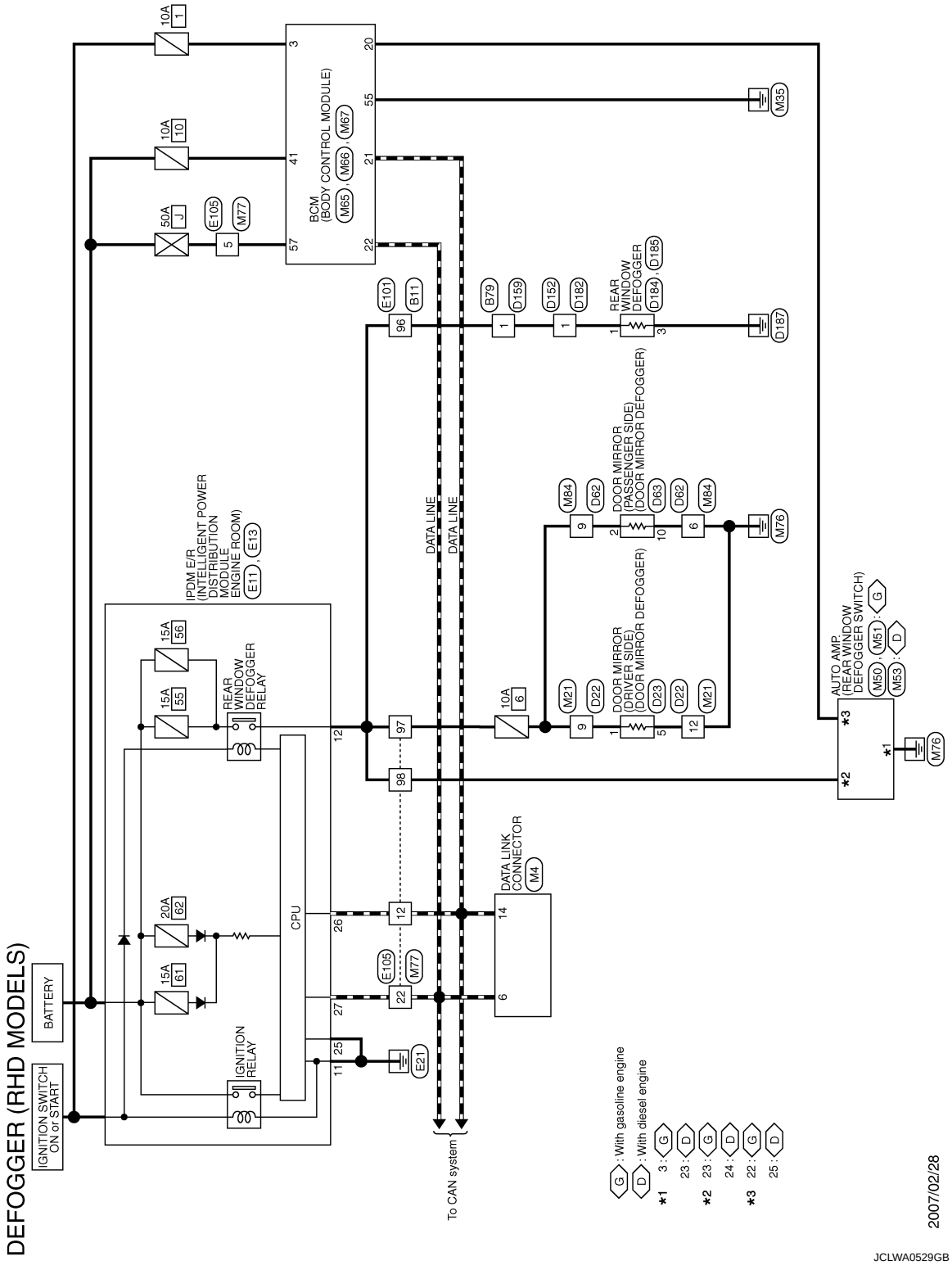
Connector No.	M82
Connector Name	WIRE TO WIRE
Connector Type	NS16MW-CS

Terminal No.	Color of Wire	Signal Name [Specification]
6	B	–

JCLWA0528GB

Wiring Diagram - DEFOGGER CONTROL SYSTEM (RHD MODELS) -

INFOID:0000000001279897



DEFOGGER (RHD MODELS)

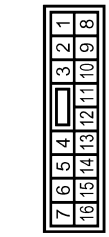
Connector No.	B11
Connector Name	WIRE TO WIRE
Connector Type	TH80MW-CS16-TM4

Terminal No.	Color of Wire	Signal Name [Specification]
96	G	–

Connector No.	B79
Connector Name	WIRE TO WIRE
Connector Type	M02MW-LC

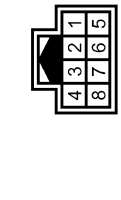
Terminal No.	Color of Wire	Signal Name [Specification]
1	G	–

Connector No.	D22
Connector Name	WIRE TO WIRE
Connector Type	NS16FW-CS



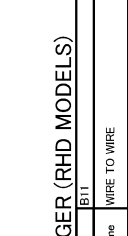
Terminal No.	Color of Wire	Signal Name [Specification]
9	GR	–
12	B	–

Connector No.	D23
Connector Name	DOOR MIRROR (DRIVER SIDE)
Connector Type	TH08MW-NH



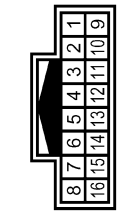
Terminal No.	Color of Wire	Signal Name [Specification]
1	GR	–
5	B	–

Connector No.	D62
Connector Name	WIRE TO WIRE
Connector Type	NS16FW-CS



Terminal No.	Color of Wire	Signal Name [Specification]
6	B	–
9	GR	–

Connector No.	D63
Connector Name	DOOR MIRROR (PASSENGER SIDE)
Connector Type	TH16MW-NH



Terminal No.	Color of Wire	Signal Name [Specification]
2	GR	–
10	B	–

Connector No.	D152
Connector Name	WIRE TO WIRE
Connector Type	M02FW-GY-LC

Terminal No.	Color of Wire	Signal Name [Specification]
1	G	–

Connector No.	D159
Connector Name	WIRE TO WIRE
Connector Type	M02FW-LC

Terminal No.	Color of Wire	Signal Name [Specification]
1	G	–

JCLWA0530GB

DEFOGGER (RHD MODELS)

Connector No.	D182
Connector Name	WIRE TO WIRE
Connector Type	M02MW-GY-LC

H.S.

Terminal No.	Color of Wire	Signal Name [Specification]
1	G	–
2		

Connector No.	D184
Connector Name	REAR WINDOW DEFOGGER
Connector Type	M02MW-LC

H.S.

Terminal No.	Color of Wire	Signal Name [Specification]
1	G	–
2		

Connector No.	D185
Connector Name	REAR WINDOW DEFOGGER
Connector Type	M02MW-LC

H.S.

Terminal No.	Color of Wire	Signal Name [Specification]
3	B	–
4		

Connector No.	E11
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	M06FB-LC

H.S.

Terminal No.	Color of Wire	Signal Name [Specification]
11	B	–
12	O	–

Connector No.	E13
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	TH12FW-NH

H.S.

Terminal No.	Color of Wire	Signal Name [Specification]
25	B	–
26	P	–
27	L	–

Connector No.	E101
Connector Name	WIRE TO WIRE
Connector Type	TH80FW-CS16-TM4

H.S.

Terminal No.	Color of Wire	Signal Name [Specification]
96	O	–

Connector No.	E105
Connector Name	WIRE TO WIRE
Connector Type	TH80FW-CS16-TM4

H.S.

Terminal No.	Color of Wire	Signal Name [Specification]
5	Y	–
12	P	–
22	L	–
97	G	–
98	G	–

Connector No.	M4
Connector Name	DATA LINK CONNECTOR
Connector Type	BD16FW

H.S.

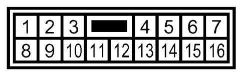
Terminal No.	Color of Wire	Signal Name [Specification]
6	L	–
14	P	–

JCLWA0531GB

DEFOGGER (RHD MODELS)

Connector No.	M21
Connector Name	WIRE TO WIRE
Connector Type	NS16MW-CS

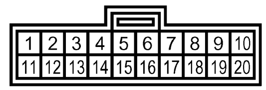
H.S.



Terminal No.	Color of Wire	Signal Name [Specification]
9	GR	–
12	B	–

Connector No.	M50
Connector Name	AUTO AMP.
Connector Type	TK20FGY

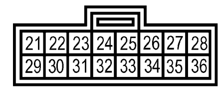
H.S.



Terminal No.	Color of Wire	Signal Name [Specification]
3	B	GND(POWER)

Connector No.	M51
Connector Name	AUTO AMP.
Connector Type	TK16FGY

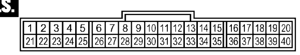
H.S.



Terminal No.	Color of Wire	Signal Name [Specification]
22	SB	RR/DEF SW
23	G	RR/DEF F/B

Connector No.	M53
Connector Name	AUTO AMP.
Connector Type	SAB40FW

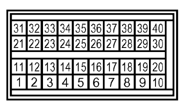
H.S.



Terminal No.	Color of Wire	Signal Name [Specification]
23	B	GND(POWER)
24	G	RR/DEF F/B
25	SB	RR/DEF SW

Connector No.	M65
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	AAB40FB

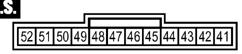
H.S.



Terminal No.	Color of Wire	Signal Name [Specification]
3	W	IGN SW
20	SB	RR DEF SW
21	P	CAN–L
22	L	CAN–H

Connector No.	M66
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	FEA12FBR

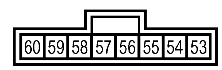
H.S.



Terminal No.	Color of Wire	Signal Name [Specification]
41	LG	BAT(FUSE)

Connector No.	M67
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	FHA08FB

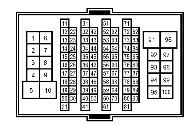
H.S.



Terminal No.	Color of Wire	Signal Name [Specification]
55	B	GND
57	Y	BAT(F/L)

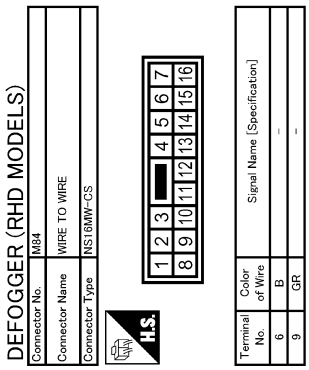
Connector No.	M77
Connector Name	WIRE TO WIRE
Connector Type	TH80MW-CS16-TM4

H.S.



Terminal No.	Color of Wire	Signal Name [Specification]
5	Y	–
12	P	–
22	L	–
97	G	–
98	G	–

JCLWA0532GB



JCLWA0533GB

Fail Safe

INFOID:0000000001551375

FAIL-SAFE CONTROL BY DTC

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

DTC	Fail-safe	Cancellation
B2190: NATS ANTENNA AMP	• Inhibits engine cranking • Inhibits steering lock unlocking (Intelligent Key unit) • Fuel cut (ECM)	Erase DTC
B2191: DIFFERENCE OF KEY	• Inhibits engine cranking • Inhibits steering lock unlocking (Intelligent Key unit) • Fuel cut (ECM)	Erase DTC
B2192: ID DISCORD BCM-ECM	Fuel cut (ECM)	Erase DTC
B2193: CHAIN OF BCM-ECM	Fuel cut (ECM)	Erase DTC
B2194: DISCORD BCM-I-KEY	• Inhibits engine cranking • Inhibits steering lock unlocking (Intelligent Key unit) • Fuel cut (ECM)	Erase DTC
B2195: ANTI SCANNING	• Inhibits engine cranking • Inhibits steering lock unlocking (Intelligent Key unit) • Fuel cut (ECM)	Erase DTC
B2196: DONGLE NG	• Inhibits engine cranking • Inhibits steering lock unlocking (Intelligent Key unit) • Fuel cut (ECM)	Erase DTC

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. Turn ignition switch OFF.
2. Pass more than 1 minute after the rear wiper stop.
3. Turn ignition switch ON.
4. Operate the rear wiper switch.

HIGH FLASHER OPERATION

BCM detects the turn signal lamp circuit status from the terminal voltage.
BCM increases the turn signal lamp blinking speed if the bulb or harness open is detected with the turn signal lamp operating.
NOTE:
The blinking speed is normal while activating the hazard warning lamp.

FAIL-SAFE CONTROL BY LIGHT & RAIN SENSOR MALFUNCTION

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

Fail-safe Control
- Auto light control: Headlamp is turned ON.
- Front wiper control: The condition just before the activation of fail-safe is maintained until the front wiper switch is turned OFF.

DTC Inspection Priority Chart

INFOID:0000000001551376

Priority	DTC
1	• U1000: CAN COMM CIRCUIT • U1010: CONTROL UNIT (CAN)
2	• B2190: NATS ANTENNA AMP • B2191: DIFFERNCE OF KEY • B2192: ID DISCORD BCM-ECM • B2193: CHAIN OF BCM-ECM • B2194: DISCORD BCM-I-KEY • B2195: ANTI SCANNING • B2196: DONGLE NG

DTC Index

INFOID:0000000001551377

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.
- PAST: Displays when there is a malfunction that is detected in the past and stored.
- 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.

DTC	TIME		Fail-safe	Reference
U1000: CAN COMM CIRCUIT	0	1 - 39	—	BCS-33
U1010: CONTROL UNIT (CAN)	0	1 - 39	—	BCS-34
B2190: NATS ANTENNA AMP	CRNT	PAST	×	• With Intelligent Key system: SEC-41 • Without Intelligent Key system: SEC-254
B2191: DIFFERENCE OF KEY	CRNT	PAST	×	• With Intelligent Key system: SEC-43 • Without Intelligent Key system: SEC-256
B2192: ID DISCORD BCM-ECM	CRNT	PAST	×	• With Intelligent Key system: SEC-38 • Without Intelligent Key system: SEC-251
B2193: CHAIN OF BCM-ECM	CRNT	PAST	×	• With Intelligent Key system: SEC-40 • Without Intelligent Key system: SEC-253
B2194: DISCORD BCM-I-KEY	CRNT	PAST	×	SEC-53
B2195: ANTI SCANNING	CRNT	PAST	×	• With Intelligent Key system: SEC-54 • Without Intelligent Key system: SEC-264
B2196: DONGLE NG	CRNT	PAST	×	• With Intelligent Key system: SEC-55 • Without Intelligent Key system: SEC-265

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

Reference Value

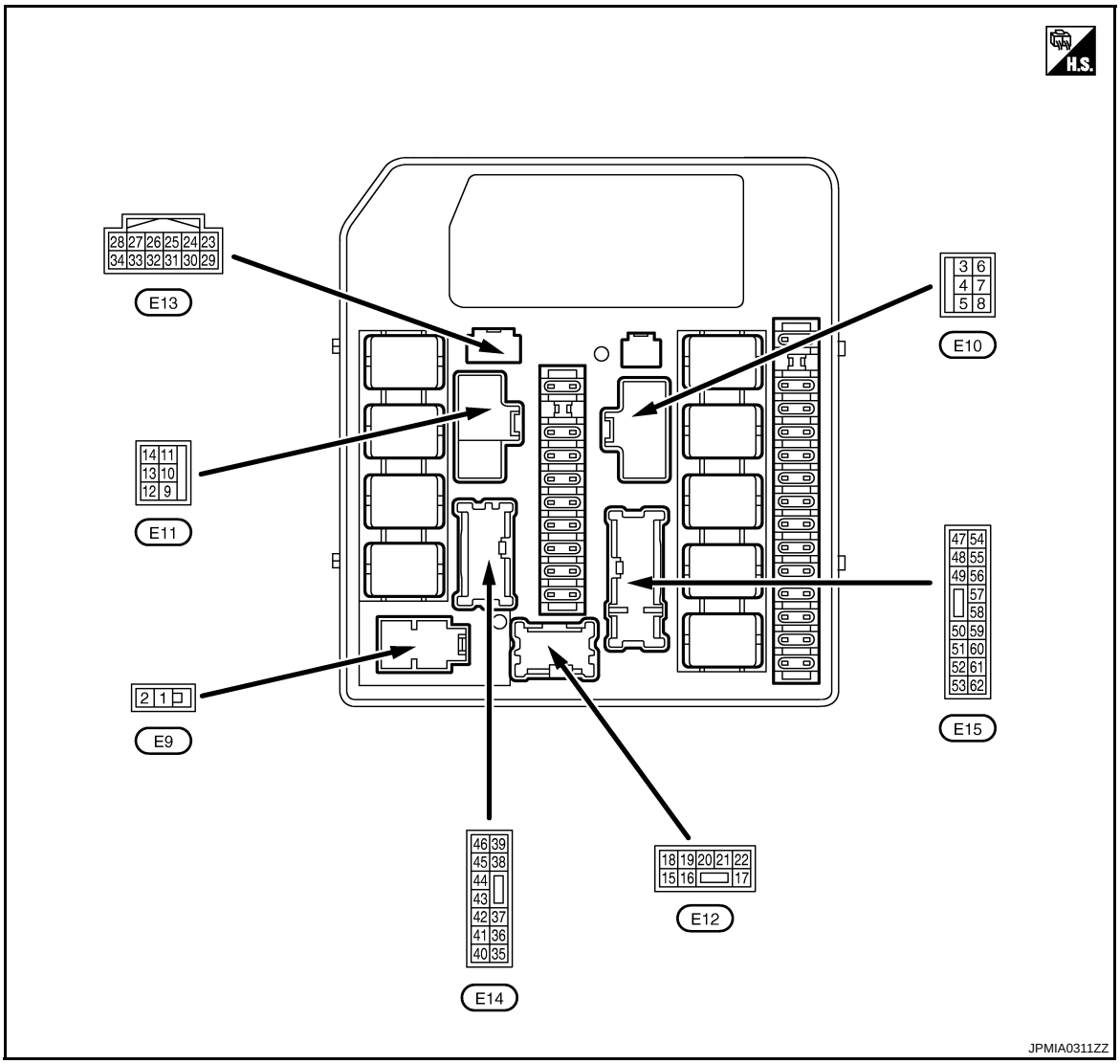
INFOID:0000000001551380

VALUES ON THE DIAGNOSIS TOOL

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 - 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 or AUTO (Light is illuminated)		On
HL LO REQ	Lighting switch OFF		Off
	Lighting switch 2ND or AUTO (Light is illuminated)		On
HL HI REQ	Lighting switch OFF		Off
	Lighting switch HI (Light is illuminated)		On
FR FOG REQ	Lighting switch 2ND or AUTO (Light is illuminated)	Front fog lamp switch OFF	Off
		Front fog lamp switch ON	On
HL WASHER REQ **NOTE:** This item is monitored only on the vehicle with headlamp washer.	Ignition switch ON, and low beam headlamp is ON	Front washer switch OFF	Off
		Front washer switch ON (When headlamp washer is operating)	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
ST RLY REQ **NOTE:** Vehicle without Intelligent Key system indicates only “ON”, and it does not change.	When Intelligent Key is outside the vehicle, and the push switch is pushed		Off
	When Intelligent Key is inside the vehicle, and the push switch is pushed		On
IGN RLY	Ignition switch OFF or ACC		Off
	Ignition switch ON		On
RR DEF REQ	Ignition switch ON	Rear window defogger switch OFF	Off
		Rear window defogger switch ON (Rear window defogger is operating)	On
OIL P SW	Ignition switch OFF, ACC or engine running		Open
	Ignition switch ON		Close

Monitor Item	Condition	Value/Status
REV SW	**NOTE:** This item is indicated, but not monitored.	Off
DTRL REQ **NOTE:** This item is monitored only on the vehicle with the daytime running light system.	Daytime running light system is not operated with lighting switch OFF.	Off
	Any of the condition below • Daytime running light system is operated. • Lighting switch 1ST, 2ND or AUTO (Light is illuminated)	On
HOOD SW **NOTE:** This item is monitored only on the vehicle with the vehicle security system.	Close the hood	Off
	Open the hood	On
THFT HRN REQ **NOTE:** This item is monitored only on the vehicle with the vehicle security system.	Not operation	Off
	Horn is activated with vehicle security system.	On
HORN CHIRP	**NOTE:** This item is indicated, but not monitored.	Off

TERMINAL LAYOUT



PHYSICAL VALUES

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
		Signal name	Input/ Output			
+	–					
1 (G)	Ground	Battery power supply	Input	Ignition switch OFF		Battery voltage
2 (R)	Ground	Battery power supply	Input	Ignition switch OFF		Battery voltage
3 (O)*1 (BR)*2	Ground	Starter relay power supply	Output	When engine is clanking		Battery voltage
				When engine is not clanking		0 V
4 (W)	Ground	Cooling fan relay-1 power supply	Output	Cooling fan operation	OFF	0 V
					MID or HI	Battery voltage
5 (R)	Ground	Ignition switch START	Input	Ignition switch OFF, ACC or ON		0 V
				Ignition switch START		Battery voltage
6 (BR)	Ground	Battery power supply (Cooling fan relay)	Input	Ignition switch OFF		Battery voltage
7 (P)	Ground	Cooling fan motor-2 (HI) ground	—	Cooling fan operation	OFF	Battery voltage
					HI	0 V
8 (G)	Ground	Cooling fan relay-2 power supply	Output	Cooling fan operation	OFF	0 V
					HI	Battery voltage
11 (B)	Ground	Ground	—	Ignition switch ON		0 V
12 (O)*3 (G)*4	Ground	Rear window defogger relay power supply	Output	Ignition switch ON	Rear window defogger switch OFF	0 V
					Rear window defogger switch ON	Battery voltage
15*5 (SB)	Ground	Daytime running light relay control	Output	• Parking lamp • License plate lamp • Tail lamp	Turn off	Battery voltage
					Turn on	0 V
16*6 (Y)	Ground	Front fog lamp (LH)	Output	Lighting switch 1ST	Front fog lamp switch OFF	0 V
					Front fog lamp switch ON	Battery voltage
17*6 (W)	Ground	Front fog lamp (RH)	Output	Lighting switch 1ST	Front fog lamp switch OFF	0 V
					Front fog lamp switch ON	Battery voltage
18 (L)	Ground	Headlamp LO (LH)	Output	Lighting switch OFF		0 V
				Lighting switch 2ND		Battery voltage
19*7 (R)	Ground	Headlamp aiming motor power supply	Output	Lighting switch OFF		0 V
				Lighting switch 2ND		Battery voltage
20 (SB)	Ground	Headlamp LO (RH)	Output	Lighting switch OFF		0 V
				Lighting switch 2ND		Battery voltage
21 (G)	Ground	Headlamp HI (LH)	Output	Lighting switch OFF		0 V
				• Lighting switch 2ND and HI • lighting switch PASS		Battery voltage
22 (LG)	Ground	Headlamp HI (RH)	Output	Lighting switch OFF		0 V
				• Lighting switch 2ND and HI • lighting switch PASS		Battery voltage
23 (W)	Ground	Oil pressure switch	Input	Ignition switch ON	Engine stopped	0 V
					Engine running	Battery voltage

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
24 (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
25 (B)	Ground	Ground	—	Ignition switch ON		0 V
26 (P)	—	CAN-L	Input/ Output	—		—
27 (L)	—	CAN-H	Input/ Output	—		—
31 (V)	Ground	Cooling fan relay-4 control	Output	Cooling fan operation	OFF	Battery voltage
					LO	0 V
32*1 (LG)	Ground	ETC relay control	Input	After passing approximately 2 seconds or more after turning the ignition switch from ON to OFF		Battery voltage
				• Ignition switch ON • For approximately 2 seconds after turning ignition switch from ON to OFF		0 V
33*1 (GR)	Ground	Fuel pump relay control	Input	Ignition switch OFF		0 V
				Ignition switch ON	Engine stopped	Battery voltage
					Engine running	0.8 V
34*8 (Y)	Ground	Hood switch	Input	Close the hood		Battery voltage
				Open the hood		0 V
35*9 (W)	Ground	Headlamp washer relay control	Output	Ignition switch ON	When headlamp washer is not operating	Battery voltage
					When headlamp washer is operating	0 V
37 (R)	Ground	Tail, license plate lamps and illuminations	Output	Lighting switch OFF		0 V
				Lighting switch 1ST		Battery voltage
38*10 (O)*1 (GR)*2	Ground	Parking lamp (LH)	Output	Lighting switch OFF		0 V
				Lighting switch 1ST		Battery voltage
39*10 (GR)	Ground	Parking lamp (RH)	Output	Lighting switch OFF		0 V
				Lighting switch 1ST		Battery voltage
40 (V)	Ground	Ignition relay power supply	Output	Ignition switch OFF or ACC		0 V
				Ignition switch ON		Battery voltage
41 (O)*1 (L)*2	Ground	Ignition relay power supply	Output	Ignition switch OFF or ACC		0 V
				Ignition switch ON		Battery voltage
42 (L)	Ground	Front wiper HI	Output	Ignition switch ON	Front wiper switch OFF	0 V
					Front wiper switch HI	Battery voltage
43 (G)	Ground	Front wiper LO	Output	Ignition switch ON	Front wiper switch OFF	0 V
					Front wiper switch LO	Battery voltage
45 (Y)	Ground	Starter relay power supply	Input	Ignition switch ON (Except M/T models)	Selector lever “P” or “N”	Battery voltage
					Selector lever in any position other than “P” or “N”	0 V
				Ignition switch ON (M/T models)		Battery voltage

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
46*1 (W)	Ground	Fuel pump relay power supply	Output	• Ignition switch OFF or ACC • After passing approximately 1 second or more after turning the ignition switch ON		0 V
				• For approximately 1 second after turning the ignition switch ON • Engine running		Battery voltage
47 (BR)*1 (G)*2	Ground	ECM relay power supply	Output	After passing approximately 20 seconds or more after turning the ignition switch from ON to OFF		0 V
				• Ignition switch ON • For approximately 20 seconds after turning ignition switch from ON to OFF		Battery voltage
48 (R)*1 (V)*2	Ground	ECM relay power supply	Output	After passing approximately 20 seconds or more after turning the ignition switch from ON to OFF		0 V
				• Ignition switch ON • For approximately 20 seconds after turning ignition switch from ON to OFF		Battery voltage
50 (G)	Ground	Cooling fan relay-5 control	Output	Cooling fan operation	OFF	Battery voltage
					MID or HI	0 V
51 (W)	Ground	ECM relay control	Output	After passing approximately 20 seconds or more after turning the ignition switch from ON to OFF		Battery voltage
				• Ignition switch ON • For approximately 20 seconds after turning ignition switch from ON to OFF		0 V
52*1 (P)	Ground	ETC relay power supply	Output	After passing approximately 2 seconds or more after turning the ignition switch from ON to OFF		0 V
				• Ignition switch ON • For approximately 2 seconds after turning ignition switch from ON to OFF		Battery voltage
55 (O)	Ground	A/C relay power supply	Output	Engine stopped		0 V
				Engine running	A/C switch OFF	0 V
					A/C switch ON (A/C compressor is operating)	Battery voltage
56 (L)	Ground	Ignition switch ON	Input	Ignition switch OFF or ACC		0 V
				Ignition switch ON		Battery voltage
57*8 (V)	Ground	Horn relay control	Output	The horn is not activated		Battery voltage
				The horn is activated		0 V
58 (Y)	Ground	Ignition relay power supply	Output	Ignition switch OFF or ACC		0 V
				Ignition switch ON		Battery voltage
59 (GR)	Ground	Ignition relay power supply	Output	Ignition switch OFF or ACC		0 V
				Ignition switch ON		Battery voltage
60 (SB)	Ground	Ignition relay power supply	Output	Ignition switch OFF or ACC		0 V
				Ignition switch ON		Battery voltage
61 (O)	Ground	ECM power supply	Output	Ignition switch OFF		Battery voltage

*1: MR engine and QR engine models

*2: M9R engine models

*3: MR engine models

*4: QR engine and M9R engine models

*5: With daytime running light system

*6: With front fog lamp system

*7: Halogen type headlamp

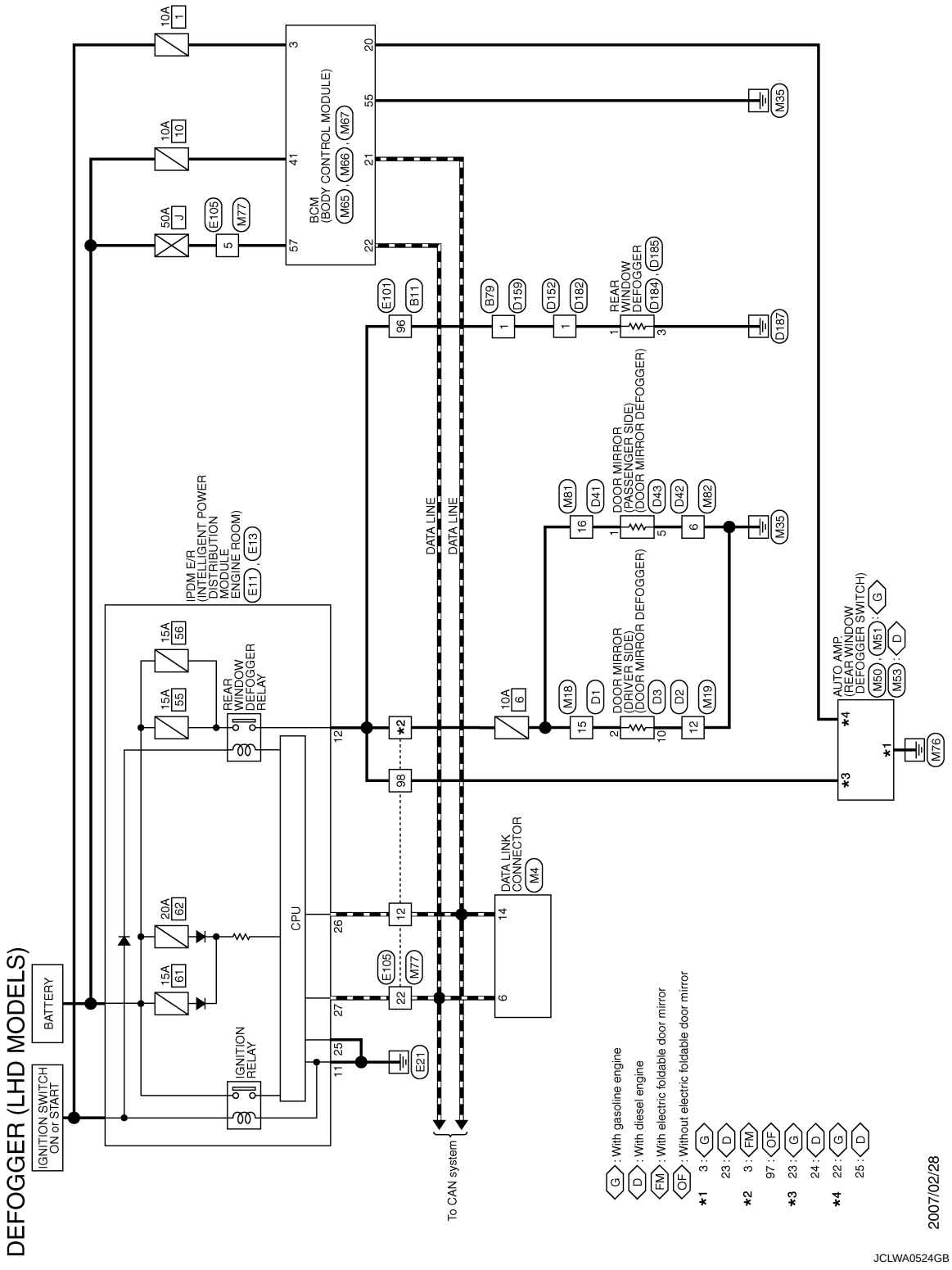
*8: With vehicle security system

*9: With headlamp washer system

*10: Without daytime running light system

Wiring Diagram - DEFOGGER CONTROL SYSTEM (LHD MODELS) -

INFOID:0000000001279902



DEFOGGER (LHD MODELS)

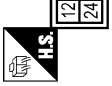
Connector No.	B11
Connector Name	WIRE TO WIRE
Connector Type	TH80MW-CS16-TM4

Terminal No.	Color of Wire	Signal Name [Specification]
96	G	–

Connector No.	B79
Connector Name	WIRE TO WIRE
Connector Type	M02MW-LC

Terminal No.	Color of Wire	Signal Name [Specification]
1	G	–

Connector No.	D1
Connector Name	WIRE TO WIRE
Connector Type	TH24FW-NH



Terminal No.	Color of Wire	Signal Name [Specification]
15	GR	–

Connector No.	D2
Connector Name	WIRE TO WIRE
Connector Type	NS16FW-CS

Terminal No.	Color of Wire	Signal Name [Specification]
12	B	–

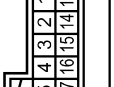
Connector No.	D3
Connector Name	DOOR MIRROR (DRIVER SIDE)
Connector Type	TH16MW-NH

Terminal No.	Color of Wire	Signal Name [Specification]
2	GR	–
10	B	–

Connector No.	D41
Connector Name	WIRE TO WIRE
Connector Type	TH24FW-NH

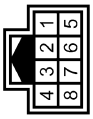
Terminal No.	Color of Wire	Signal Name [Specification]
16	GR	–

Connector No.	D42
Connector Name	WIRE TO WIRE
Connector Type	NS16FW-CS



Terminal No.	Color of Wire	Signal Name [Specification]
6	B	–

Connector No.	D43
Connector Name	DOOR MIRROR (PASSENGER SIDE)
Connector Type	TH08MW-NH



Terminal No.	Color of Wire	Signal Name [Specification]
1	GR	–
5	B	–

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DEFOGGER (LHD MODELS)

Connector No.	D152
Connector Name	WIRE TO WIRE
Connector Type	M02FW-GY-LC

Terminal No.	Color of Wire	Signal Name [Specification]
1	G	–

Connector No.	D159
Connector Name	WIRE TO WIRE
Connector Type	M02FW-LC

Terminal No.	Color of Wire	Signal Name [Specification]
1	G	–

Connector No.	D182
Connector Name	WIRE TO WIRE
Connector Type	M02MW-GY-LC

Terminal No.	Color of Wire	Signal Name [Specification]
1	G	–

Connector No.	D184
Connector Name	REAR WINDOW DEFOGGER
Connector Type	M02MW-LC

Terminal No.	Color of Wire	Signal Name [Specification]
1	G	–

Connector No.	D185
Connector Name	REAR WINDOW DEFOGGER
Connector Type	M02MW-LC

Terminal No.	Color of Wire	Signal Name [Specification]
3	B	–

Connector No.	E11
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	M06FB-LC

Terminal No.	Color of Wire	Signal Name [Specification]
11	B	–
12	O	–

Connector No.	E13
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	TH12FW-NH

Terminal No.	Color of Wire	Signal Name [Specification]
25	B	–
26	P	–
27	L	–

Connector No.	E101
Connector Name	WIRE TO WIRE
Connector Type	TH80FW-CS16-TM4

Terminal No.	Color of Wire	Signal Name [Specification]
96	O	–

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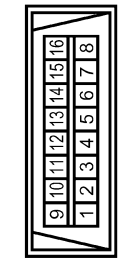
DEFOGGER (LHD MODELS)

Connector No.	E105
Connector Name	WIRE TO WIRE
Connector Type	TH80FW-CS16-TM4

Terminal No.	Color of Wire	Signal Name [Specification]
3	LG	–
5	Y	–
12	P	–
22	L	–
97	G	–
98	G	–

Connector No.	M4
Connector Name	DATA LINK CONNECTOR
Connector Type	BD16FW



Terminal No.	Color of Wire	Signal Name [Specification]
6	L	–
14	P	–

Connector No.	M50
Connector Name	AUTO AMP.
Connector Type	TK20FGY

Terminal No.	Color of Wire	Signal Name [Specification]
3	B	GND(POWER)

Connector No.	M51
Connector Name	AUTO AMP.
Connector Type	TK16FGY

Terminal No.	Color of Wire	Signal Name [Specification]
22	SB	RR DEF SW
23	G	RR DEF F/B

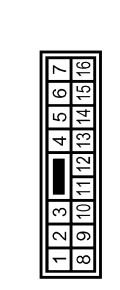
Connector No.	M18
Connector Name	WIRE TO WIRE
Connector Type	TH24MW-NH

Terminal No.	Color of Wire	Signal Name [Specification]
15	GR	–

Connector No.	M53
Connector Name	AUTO AMP.
Connector Type	SAB40FW

Terminal No.	Color of Wire	Signal Name [Specification]
23	B	GND(POWER)
24	G	RR DEF F/B
25	SB	RR DEF SW

Connector No.	M19
Connector Name	WIRE TO WIRE
Connector Type	NS16MW-CS



Terminal No.	Color of Wire	Signal Name [Specification]
12	B	–

Connector No.	M65
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	AAB40FB

Terminal No.	Color of Wire	Signal Name [Specification]
3	W	IGN SW
20	SB	RR DEF SW
21	P	CAN-L
22	L	CAN-H

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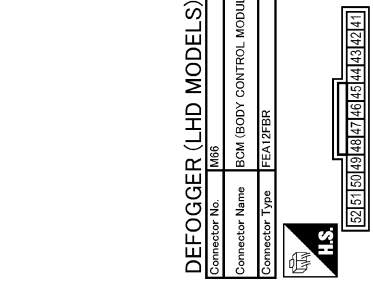
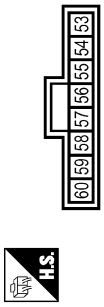
DEFOGGER (LHD MODELS)

Connector No.	M66
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	FEA12FBR



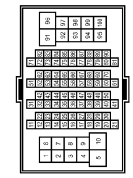
Terminal No.	Color of Wire	Signal Name [Specification]
41	LG	BAT(FUSE)

Connector No.	M67
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	FHA08FB



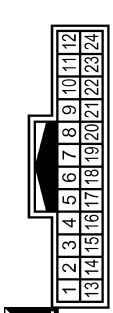
Terminal No.	Color of Wire	Signal Name [Specification]
55	B	GND
57	Y	BAT(F/L)

Connector No.	M77
Connector Name	WIRE TO WIRE
Connector Type	TH80MW-CS16-TM4



Terminal No.	Color of Wire	Signal Name [Specification]
3	LG	–
5	Y	–
12	P	–
22	L	–
97	G	–
98	G	–

Connector No.	M81
Connector Name	WIRE TO WIRE
Connector Type	TH24MW-NH



Terminal No.	Color of Wire	Signal Name [Specification]
16	GR	–

Connector No.	M82
Connector Name	WIRE TO WIRE
Connector Type	NS16MW-CS

Terminal No.	Color of Wire	Signal Name [Specification]
6	B	–

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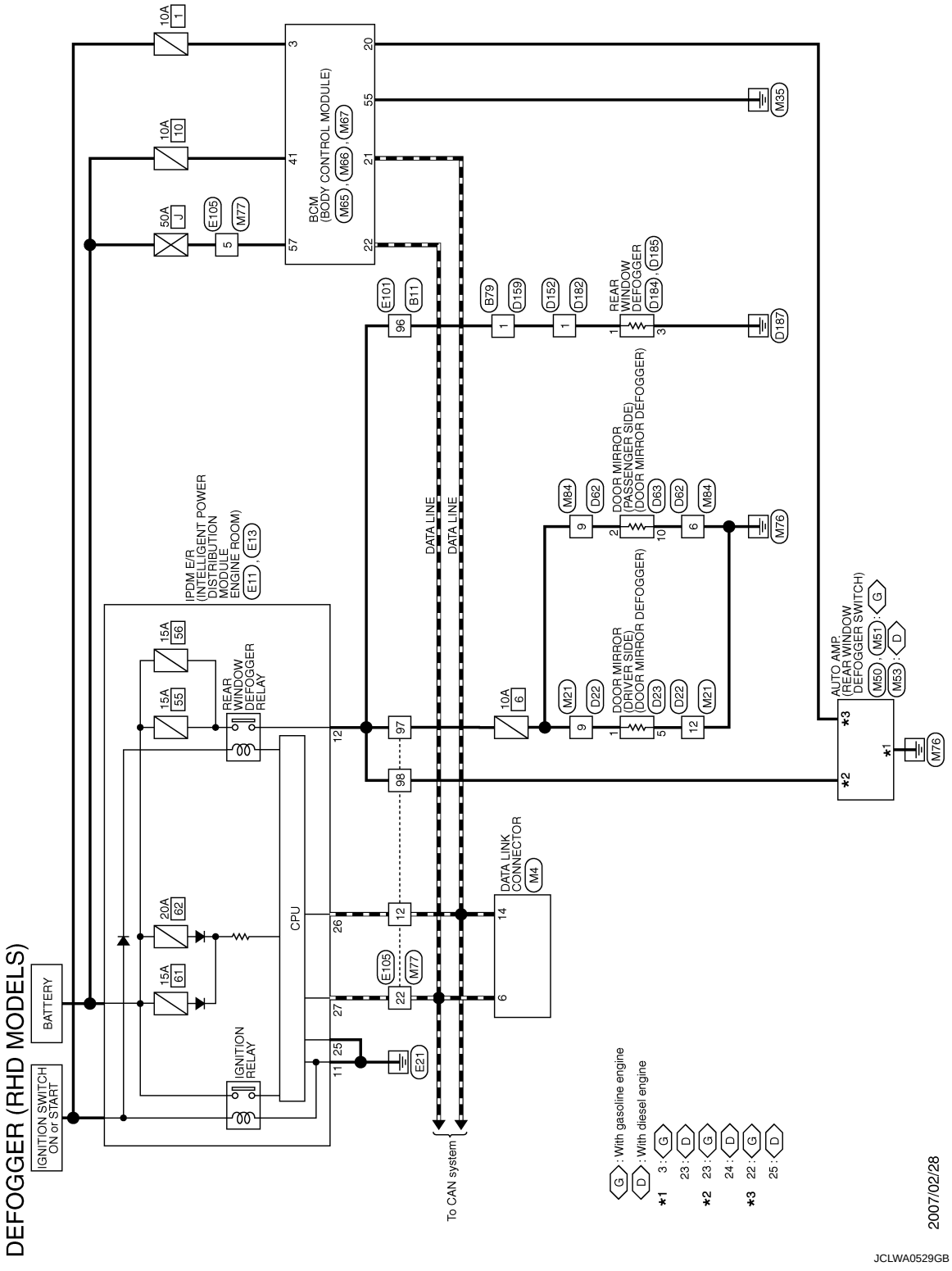
Wiring Diagram - DEFOGGER CONTROL SYSTEM (RHD MODELS) -

INFOID:0000000001279903



DEFOGGER (RHD MODELS)

Connector No.	B11
Connector Name	WIRE TO WIRE
Connector Type	TH80MW-CS16-TM4

H.S.

Terminal No.	Color of Wire	Signal Name [Specification]
96	G	–

Connector No.	B79
Connector Name	WIRE TO WIRE
Connector Type	M02MW-LC

H.S.

Terminal No.	Color of Wire	Signal Name [Specification]
1	G	–

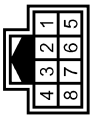
Connector No.	D22
Connector Name	WIRE TO WIRE
Connector Type	NS16FW-CS

H.S.

Terminal No.	Color of Wire	Signal Name [Specification]
9	GR	–
12	B	–

Connector No.	D23
Connector Name	DOOR MIRROR (DRIVER SIDE)
Connector Type	TH08MW-NH

H.S.



Terminal No.	Color of Wire	Signal Name [Specification]
1	GR	–
5	B	–

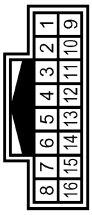
Connector No.	D62
Connector Name	WIRE TO WIRE
Connector Type	NS16FW-CS

H.S.

Terminal No.	Color of Wire	Signal Name [Specification]
6	B	–
9	GR	–

Connector No.	D63
Connector Name	DOOR MIRROR (PASSENGER SIDE)
Connector Type	TH16MW-NH

H.S.



Terminal No.	Color of Wire	Signal Name [Specification]
2	GR	–
10	B	–

Connector No.	D152
Connector Name	WIRE TO WIRE
Connector Type	M02FW-GY-LC

H.S.

Terminal No.	Color of Wire	Signal Name [Specification]
1	G	–

Connector No.	D159
Connector Name	WIRE TO WIRE
Connector Type	M02FW-LC

H.S.

Terminal No.	Color of Wire	Signal Name [Specification]
1	G	–

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DEFOGGER (RHD MODELS)

Connector No.	D182
Connector Name	WIRE TO WIRE
Connector Type	M02MW-GY-LC

Terminal No.	Color of Wire	Signal Name [Specification]
1	G	–

Connector No.	D184
Connector Name	REAR WINDOW DEFOGGER
Connector Type	M02MW-LC

Terminal No.	Color of Wire	Signal Name [Specification]
1	G	–

Connector No.	D185
Connector Name	REAR WINDOW DEFOGGER
Connector Type	M02MW-LC

Terminal No.	Color of Wire	Signal Name [Specification]
3	B	–

Connector No.	E11
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	M06FB-LC

Terminal No.	Color of Wire	Signal Name [Specification]
11	B	–
12	O	–

Connector No.	E13
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	TH12FW-NH

Terminal No.	Color of Wire	Signal Name [Specification]
25	B	–
26	P	–
27	L	–

Connector No.	E101
Connector Name	WIRE TO WIRE
Connector Type	TH80FW-CS16-TM4

Terminal No.	Color of Wire	Signal Name [Specification]
96	O	–

Connector No.	E105
Connector Name	WIRE TO WIRE
Connector Type	TH80FW-CS16-TM4

Terminal No.	Color of Wire	Signal Name [Specification]
5	Y	–
12	P	–
22	L	–
97	G	–
98	G	–

Connector No.	M4
Connector Name	DATA LINK CONNECTOR
Connector Type	BD16FW

Terminal No.	Color of Wire	Signal Name [Specification]
6	L	–
14	P	–

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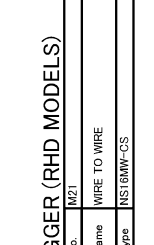
DEFOGGER (RHD MODELS)

Connector No.	M21
Connector Name	WIRE TO WIRE
Connector Type	NS16MW-CS



Terminal No.	Color of Wire	Signal Name [Specification]
9	GR	–
12	B	–

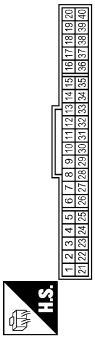
Connector No.	M50
Connector Name	AUTO AMP.
Connector Type	TK20FGY

Terminal No.	Color of Wire	Signal Name [Specification]
3	B	GND(POWER)

Connector No.	M51
Connector Name	AUTO AMP.
Connector Type	TK16FGY

Terminal No.	Color of Wire	Signal Name [Specification]
22	SB	RR DEF SW
23	G	RR/DEF F/B

Connector No.	M53
Connector Name	AUTO AMP.
Connector Type	SAB40FW



Terminal No.	Color of Wire	Signal Name [Specification]
23	B	GND(POWER)
24	G	RR/DEF F/B
25	SB	RR/DEF SW

Connector No.	M65
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	AAB40FB

Terminal No.	Color of Wire	Signal Name [Specification]
3	W	IGN SW
20	SB	RR DEF SW
21	P	CAN-L
22	L	CAN-H

Connector No.	M66
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	FEA12FBR

Terminal No.	Color of Wire	Signal Name [Specification]
41	LG	BAT(FUSE)

Connector No.	M67
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	FHA08FB

Terminal No.	Color of Wire	Signal Name [Specification]
55	B	GND
57	Y	BAT(F/L)

Connector No.	M77
Connector Name	WIRE TO WIRE
Connector Type	TH80MW-CS16-TM4

Terminal No.	Color of Wire	Signal Name [Specification]
5	Y	–
12	P	–
22	L	–
97	G	–
98	G	–

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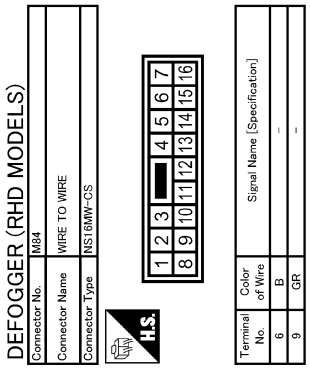

JCLWA0533GB

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 in operation
Cooling fan	• The cooling fan relay-1, the cooling fan relay-2, the cooling fan relay-3 and the cooling fan relay-5 turn ON when the ignition switch is turned ON • The cooling fan relay-1, the cooling fan relay-2, the cooling fan relay-3 and the cooling fan relay-5 turn OFF when the ignition switch is turned OFF • Cooling fan relay-4 OFF
A/C compressor	A/C relay OFF

If no CAN communication is available with BCM

Control part	Fail-safe in operation
Headlamp	• The headlamp low relay turns ON when the ignition switch is turned ON • The headlamp low relay turns OFF when the ignition switch is turned OFF • Headlamp high relay OFF
• Parking lamps • License plate lamps • Tail lamps • Illuminations	• The tail lamp relay and the daytime running light relay*1 turn ON when the ignition switch is turned ON • The tail lamp relay and the daytime running light relay*1 turn OFF 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 front 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
Starter motor	Starter relay OFF
Rear window defogger	Rear window defogger relay OFF
Headlamp washer*2	Headlamp washer relay OFF
Horn*3	Horn relay OFF

NOTE:

- *1: With daytime running light system
- *2: With headlamp washer system
- *3: With vehicle security system

Ignition relay malfunction detection function

- IPDM E/R monitors status of ignition relay by the voltage at ignition relay contact circuit inside it.
- IPDM E/R judges that the ignition relay is error, if status of the ignition relay and ignition switch ON signal (CAN) *.
- If the ignition relay cannot turn OFF due to contact seizure, it activates the tail lamp relay and daytime running light relay* for 10 minutes to alert the user to the ignition relay malfunction when the ignition switch is turned OFF.

DTC	Ignition switch	Ignition relay	Tail lamp relay and daytime running light relay*
—	ON	ON	—
—	OFF	OFF	—
—	OFF	ON	ON (10 minutes)
B2099: IGN RLY OFF	ON	OFF	—

NOTE:

- The tail lamp relay and the daytime running light relay* are turned OFF when the ignition switch is turned ON.
- *: With daytime running light system

Front wiper control

IPDM E/R detects the front wiper stop position with the front wiper auto stop signal.
When the front wiper auto stop signal is in the conditions listed below, IPDM E/R repeats a front wiper 10 seconds operation and 20 seconds stop five times.

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

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

DTC Index

INFOID:0000000001551383

CONSULT display	Fail-safe	Timing[NOTE]		Reference page
No DTC is detected. further testing may be required.	—	—	—	—
U1000: CAN COMM CIRCUIT	×	CRNT	PAST	PCS-13
B2099: IGN RELAY OFF	—	CRNT	PAST	PCS-14

NOTE:
The details of time display are as follows.

- CRNT: The malfunctions that are detected now.
- PAST: The number is indicated when it is normal at present and a malfunction was detected in the past.

SYMPTOM DIAGNOSIS

REAR WINDOW DEFOGGER AND DOOR MIRROR DEFOGGER DO NOT OPERATE.

Diagnosis Procedure

INFOID:0000000001279907

1. IPDM E/R AUTO ACTIVE TEST

Check IPDM E/R active test.
Refer to DEF-8, "Diagnosis Description".

Is the inspection result normal?

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

2. CHECK REAR WINDOW DEFOGGER SWITCH

Check rear window defogger switch.
Refer to DEF-13, "Component Function Check".

Is the inspection result normal?

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

3. CHECK REAR WINDOW DEFOGGER RELAY

Check rear window defogger relay.
Refer to DEF-15, "Component Function Check"

Is the inspection result normal?

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

4. CHECK REAR WINDOW DEFOGGER

Check rear window defogger.
Refer to DEF-16, "Component Function Check"

Is the inspection result normal?

YES >> GO TO 5.
NO >> Repair or replace the malfunctioning parts.

5. CONFIRM THE OPERATION

Confirm the operation again.

Is the result normal?

YES >> Check intermittent incident. Refer to GI-39, "Intermittent Incident"
NO >> GO TO 1.

REAR WINDOW DEFOGGER DOES NOT OPERATE BUT BOTH OF DOOR MIRROR DEFOGGER OPERATE.

Diagnosis Procedure

INFOID:0000000001279906

1.CHECK REAR WINDOW DEFOGGER

Check rear window defogger.
Refer to DEF-16, "Component Function Check".

Is the inspection result normal?

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

2.CONFIRM THE OPERATION

Confirm the operation again.

Is the result normal?

YES >> Check intermittent incident. Refer to GI-39, "Intermittent Incident"
NO >> GO TO 1.

DOOR MIRROR DEFOGGER DOES NOT OPERATE

BOTH SIDE

BOTH SIDE : Diagnosis Procedure

INFOID:0000000001505786

1. CHECK DOOR MIRROR DEFOGGER CIRCUIT

Check door mirror defogger circuit.
Refer to DEF-18, "DRIVER SIDE : Component Function Check"

Is the inspection result normal?

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

2. CONFIRM THE OPERATION

Confirm the operation again.

Is the result normal?

YES >> Check intermittent incident. Refer to GI-39, "Intermittent Incident"
NO >> GO TO 1.

DRIVER SIDE

DRIVER SIDE : Diagnosis Procedure

INFOID:0000000001279909

1. CHECK DRIVER SIDE DOOR MIRROR DEFOGGER

Check driver side door mirror defogger.
Refer to DEF-19, "DRIVER SIDE : Component Inspection".

Is the inspection result normal?

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

2. CONFIRM THE OPERATION

Confirm the operation again.

Is the result normal?

YES >> Check intermittent incident. Refer to GI-39, "Intermittent Incident"
NO >> GO TO 1.

PASSENGER SIDE

PASSENGER SIDE : Diagnosis Procedure

INFOID:0000000001505787

1. CHECK PASSENGER SIDE DOOR MIRROR DEFOGGER.

Check passenger side door mirror defogger.
Refer to DEF-21, "PASSENGER SIDE : Component Inspection"

Is the inspection result normal?

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

2. CONFIRM THE OPERATION

Confirm the operation again.

Is the result normal?

YES >> Check intermittent incident. Refer to GI-39, "Intermittent Incident"
NO >> GO TO 1.

REAR WINDOW DEFOGGER SWITCH DOES NOT LIGHT, BUT REAR WINDOW DEFOGGER OPERATES

Diagnosis Procedure

INFOID:0000000001279911

1. CHECK REAR WINDOW DEFOGGER INDICATOR

Check rear window defogger ON signal.
Refer to DEF-22, "Component Function Check".

Is the inspection result normal?

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

2. CONFIRM THE OPERATION

Confirm the operation again.

Is the result normal?

YES >> Check intermittent incident. Refer to GI-39, "Intermittent Incident"
NO >> GO TO 1.

PRECAUTION

PRECAUTIONS

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

INFOID:0000000001558758

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. Information necessary to service the system safely is included in the “SRS AIRBAG” and “SEAT BELT” of this Service Manual.

WARNING:

- **To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision which would result in air bag inflation, all maintenance must be performed by an authorized NISSAN/INFINITI dealer.**
- **Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system. For removal of Spiral Cable and Air Bag Module, see the “SRS AIRBAG”.**
- **Do not use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.**

ON-VEHICLE REPAIR

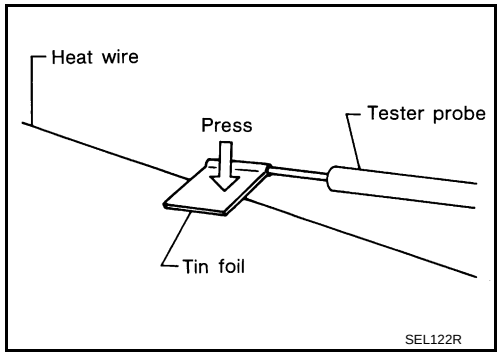
FILAMENT

Inspection and Repair

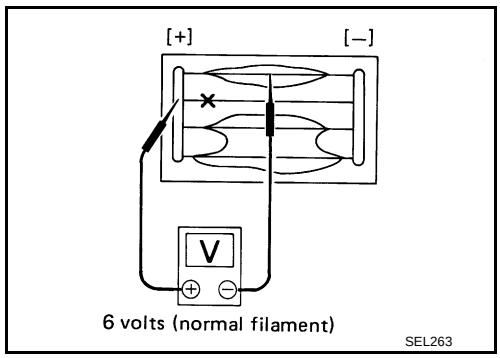
INFOID:0000000001279914

INSPECTION

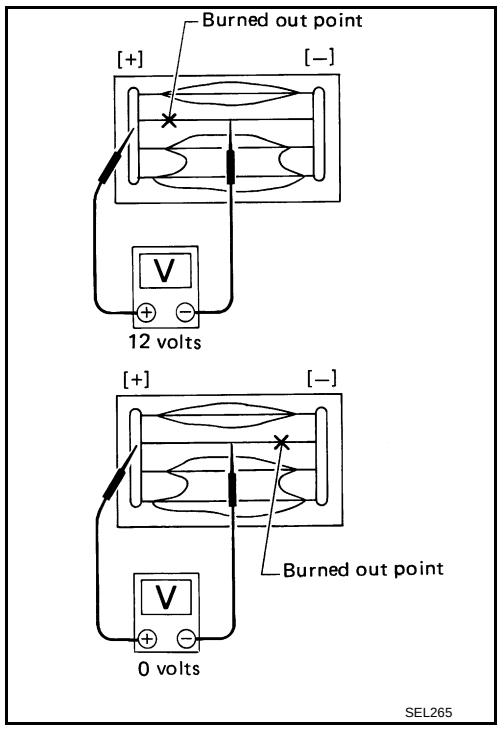
1. When measuring voltage, wrap tin foil around the top of the negative probe. Then press the foil against the wire with your finger.



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

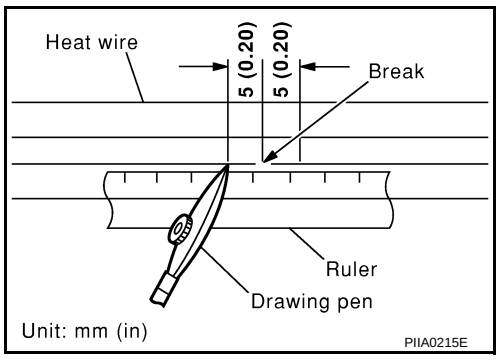
REPAIR EQUIPMENT

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

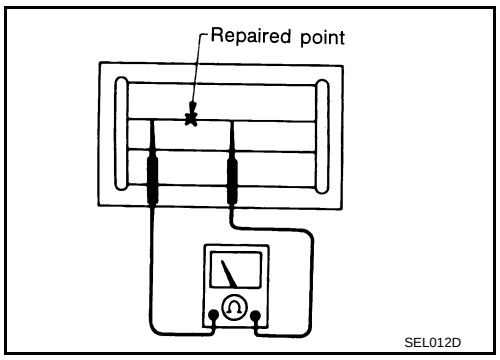
- Ruler 30 cm (11.8 in) long
- Drawing pen
- Heat gun
- Alcohol
- Cloth

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.