

SECTION **DEF**
DEFOGGER

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DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

BASIC INSPECTION

DIAGNOSIS AND REPAIR WORKFLOW

Repair Work Flow

INFOID:000000005281271

DETAILED FLOW

1. LISTEN TO CUSTOMER COMPLAINT

Listen to customer complaint. Get detailed information about the conditions and environment when the symptom occurs.

>> GO TO 2

2. VERIFY THE SYMPTOM WITH OPERATIONAL CHECK

Verify the symptom with operational check.

>> GO TO 3

3. GO TO APPROPRIATE TROUBLE DIAGNOSIS

Go to appropriate trouble diagnosis.

>> GO TO 4

4. REPAIR OR REPLACE

Repair or replace the specific parts.

>> GO TO 5

5. FINAL CHECK

Final check.

Is inspection result normal?

YES >> Inspection End

NO >> Check for intermittent incident. Refer to [GI-38, "Intermittent Incident"](#).

REAR WINDOW DEFOGGER SYSTEM

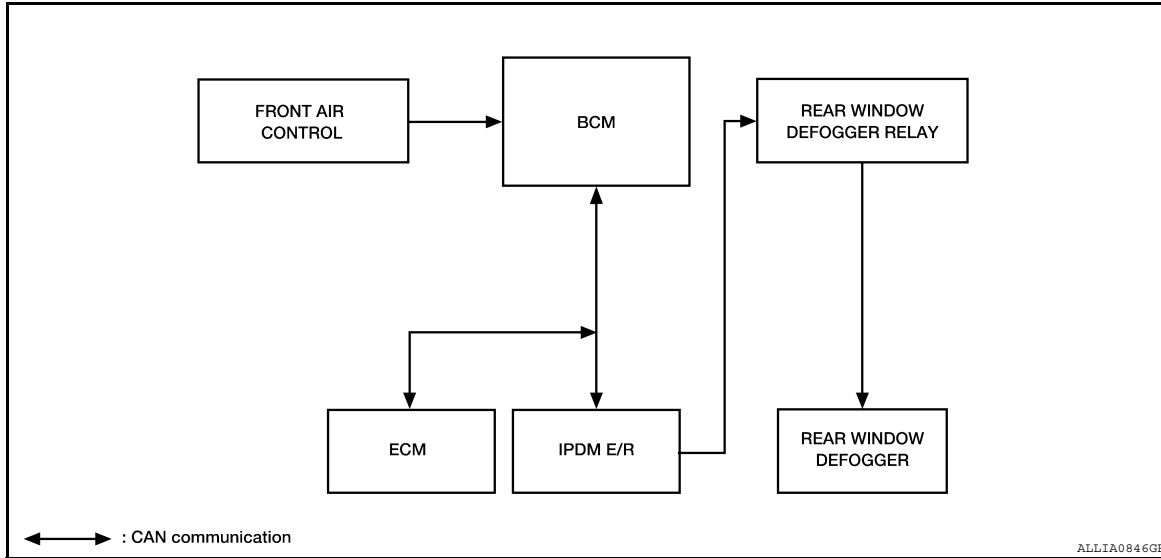
< FUNCTION DIAGNOSIS >

FUNCTION DIAGNOSIS

REAR WINDOW DEFOGGER SYSTEM

System Diagram

INFOID:000000005281272



System Description

INFOID:000000005281273

Operation Description

- When rear window defogger switch is turned ON while the ignition switch is turned ON, the front air control transmits rear window defogger switch signal to BCM.
- BCM transmits rear window defogger control signal to IPDM E/R via CAN communication when rear window defogger operates.
- IPDM E/R turns rear window defogger relay ON when rear window defogger switch signal is received.
- Rear window defogger is supplied with power and operates when rear window defogger relay turns ON.
- Rear window defogger ON is displayed when signal is received.

Timer function

- BCM turns rear window defogger relay ON for approximately 15 minutes when rear window defogger switch is turned ON while ignition switch is ON. It makes rear window defogger operate.
- Timer is canceled after pressing rear window defogger switch again during timer operation. Then BCM turns rear window defogger relay OFF. The same reaction also occurs during timer operation, if the ignition switch is turned OFF.

INPUT/OUTPUT SIGNAL CHART

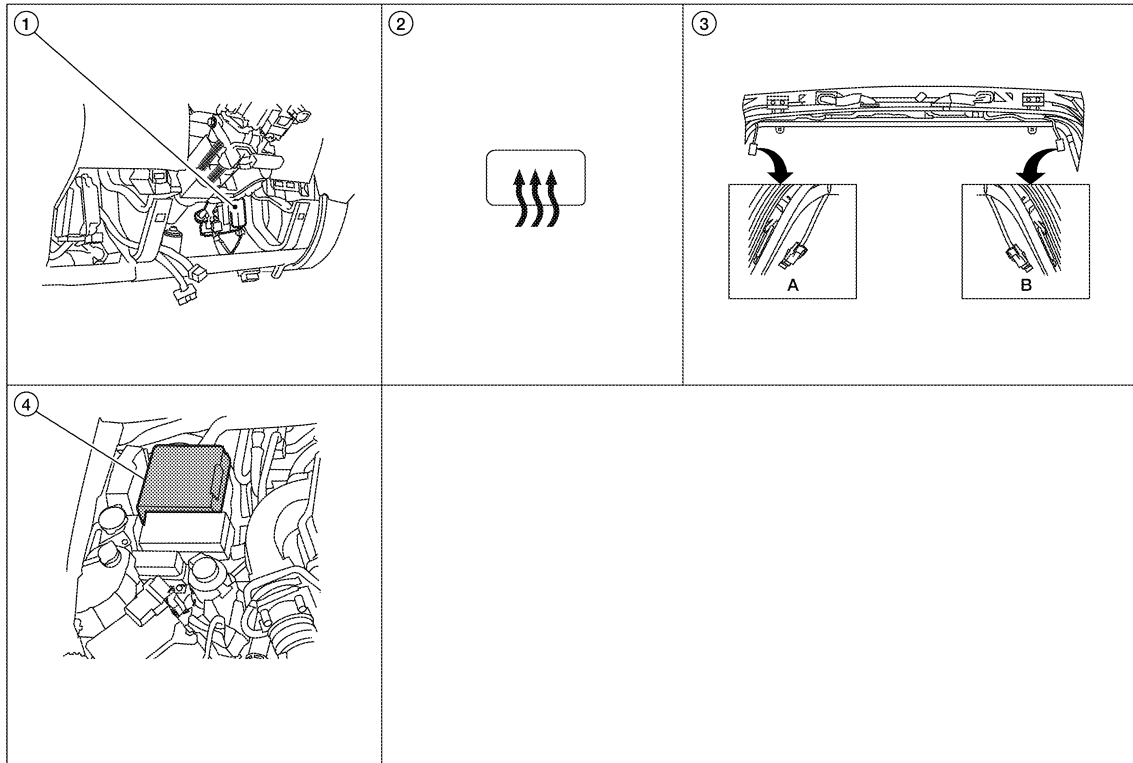
Switch	Input signal to BCM	BCM function	Actuator
Rear window defogger switch	Defogger switch signal	Rear window defogger control	Rear window defogger
Ignition switch	Ignition signal		

REAR WINDOW DEFOGGER SYSTEM

< FUNCTION DIAGNOSIS >

Component Parts Location

INFOID:000000005281274



ALJIA0285ZZ

1. BCM M18, M20 (view with lower instrument panel LH removed)
2. Rear window defogger switch M49
3. A. Rear window defogger ground connector D604
B. Rear window defogger connector D651
4. IPDM E/R E122, E124

Component Description

INFOID:000000005281275

BCM	<ul style="list-style-type: none"> • Operates the rear window defogger with the operation of rear window defogger switch. • Performs the timer control of rear window defogger.
Rear window defogger relay	<ul style="list-style-type: none"> • Operates the rear window defogger with the control signal from BCM.
Rear window defogger switch	<ul style="list-style-type: none"> • The rear window defogger switch is turned ON. • Turns the indicator lamp ON when detecting the operation of rear window defogger.
Rear window defogger	<ul style="list-style-type: none"> • Heats the heating wire with the power supply from the rear window defogger relay to prevent the rear window from fogging up.

DIAGNOSIS SYSTEM (BCM)

< FUNCTION DIAGNOSIS >

DIAGNOSIS SYSTEM (BCM)

COMMON ITEM

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

INFOID:000000005716614

APPLICATION ITEM

CONSULT-III performs the following functions via CAN communication with BCM.

Diagnosis mode	Function Description
WORK SUPPORT	Changes the setting for each system function.
SELF DIAG RESULT	Displays the diagnosis results judged by BCM. Refer to BCS-52, "DTC Index" .
CAN DIAG SUPPORT MNTR	Monitors the reception status of CAN communication viewed from BCM.
DATA MONITOR	The BCM input/output signals are displayed.
ACTIVE TEST	The signals used to activate each device are forcibly supplied from BCM.
ECU IDENTIFICATION	The BCM part number is displayed.
CONFIGURATION	<ul style="list-style-type: none"> Enables to read and save the vehicle specification. Enables to write the vehicle specification when replacing BCM.

SYSTEM APPLICATION

BCM can perform the following functions for each system.

NOTE:

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

System	Sub system selection item	Diagnosis mode		
		WORK SUPPORT	DATA MONITOR	ACTIVE TEST
BCM	BCM	×		
Door lock	DOOR LOCK	×	×	×
Rear window defogger	REAR DEFOGGER		×	×
Warning chime	BUZZER		×	×
Interior room lamp timer	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		×	
Combination switch	COMB SW		×	
Immobilizer	IMMU		×	×
Interior room lamp battery saver	BATTERY SAVER	×	×	×
Back door open	TRUNK		×	×
RAP (retained accessory power)	RETAINED PWR	×	×	×
Signal buffer system	SIGNAL BUFFER		×	×
TPMS (tire pressure monitoring system)	AIR PRESSURE MONITOR	×	×	×
Vehicle security system	THEFT ALM	×	×	×
Panic alarm system	PANIC ALARM			×

REAR WINDOW DEFOGGER

DIAGNOSIS SYSTEM (BCM)

< FUNCTION DIAGNOSIS >

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

INFOID:000000005716615

DATA MONITOR

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

ACTIVE TEST

Test Item	Description
REAR DEFOGGER	This test is able to check rear window defogger operation. Rear window defogger operates when "ON" on CONSULT-III screen is touched.

REAR WINDOW DEFOGGER SWITCH

< COMPONENT DIAGNOSIS >

COMPONENT DIAGNOSIS

REAR WINDOW DEFOGGER SWITCH

Description

INFOID:000000005281279

- The rear window defogger is operated by turning the rear window defogger switch ON.
- Turns the indicator lamp in the rear window defogger switch ON when operating the rear window defogger.

Component Function Check

INFOID:000000005281280

1. CHECK REAR WINDOW DEFOGGER SWITCH FUNCTION

Check that the indicator lamp of rear window defogger illuminates with rear window defogger switch ON.

Is the inspection result normal?

- YES >> Rear window defogger switch function is OK.
 NO >> Refer to [DEF-7, "Diagnosis Procedure Front Air Control"](#).

Diagnosis Procedure Front Air Control

INFOID:000000005281281

Regarding Wiring Diagram information, refer to [DEF-20, "Wiring Diagram - Defogger Control System"](#).

1. CHECK FRONT AIR CONTROL (REAR WINDOW DEFOGGER SWITCH) CIRCUIT

Does rear window defogger switch operate normally?

Is the inspection result normal?

- YES >> Inspection End.
 NO >> GO TO 2

2. CHECK HARNESS CONTINUITY

1. Turn ignition switch OFF.
2. Disconnect BCM and front air control.
3. Check continuity between BCM harness connector M18 terminal 9 and front air control harness connector M49 terminal 16.

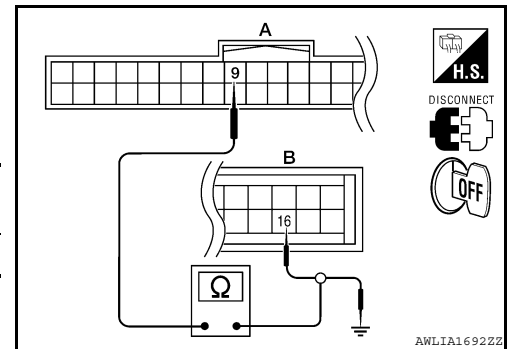
BCM connector	Terminal	Front air control connector	Terminal	Continuity
M18	9	M49	16	Yes

4. Check continuity between BCM harness connector M18 terminal 9 and ground.

BCM connector	Terminal	Ground	Continuity
M18	9	Ground	No

Is the inspection result normal?

- YES >> Replace front air control. Refer to [VTL-5, "Removal and Installation"](#).
 NO >> Repair or replace harness.



REAR WINDOW DEFOGGER RELAY

< COMPONENT DIAGNOSIS >

REAR WINDOW DEFOGGER RELAY

Description

INFOID:000000005281283

Power is supplied to the rear window defogger with BCM control.

Component Function Check

INFOID:000000005281284

1. CHECK REAR WINDOW DEFOGGER RELAY POWER SUPPLY CIRCUIT

Check that an operation noise of rear window defogger relay (located in IPDM E/R) can be heard when turning the rear window defogger switch ON.

Is the inspection result normal?

- YES >> Rear window defogger relay power supply circuit is OK.
 NO >> Refer to [DEF-8, "Diagnosis Procedure"](#).

Diagnosis Procedure

INFOID:000000005281285

Regarding Wiring Diagram information, refer to [DEF-20, "Wiring Diagram - Defogger Control System"](#).

1. CHECK FUSES

Check if any of the following fuses in the IPDM E/R are blown.

COMPONENT PARTS	AMPERE	FUSE NO.
IPDM E/R	15A	46
IPDM E/R	15A	47

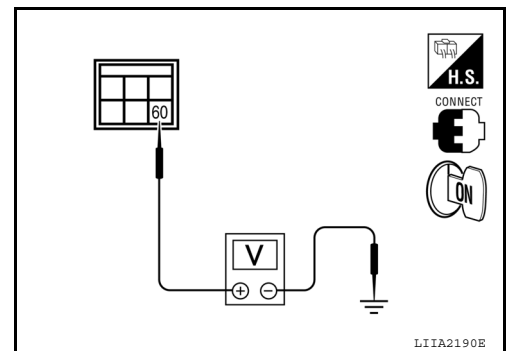
Is the inspection result normal?

- YES >> GO TO 2
 NO >> If fuse is blown, be sure to eliminate cause of malfunction before installing new fuse.

2. CHECK REAR WINDOW DEFOGGER RELAY POWER SUPPLY CIRCUIT

- Turn ignition switch ON.
- Check voltage between IPDM E/R harness connector E124 terminal 60 and ground.

Terminals		Condition of rear window defogger switch	Voltage (V) (Approx.)
(+)	(-)		
IPDM E/R connector	Terminal		
E124	60	ON	Battery voltage
		OFF	0



Is the inspection result normal?

- YES >> GO TO 3
 NO >> Replace IPDM E/R. Refer to [PCS-32, "Removal and Installation of IPDM E/R"](#).

3. CHECK INTERMITTENT INCIDENT

Check intermittent incident.
 Refer to [GI-38, "Intermittent Incident"](#).

Is the inspection result normal?

- YES >> Check the following.
- Battery power supply circuit
 - IPDM E/R
- NO >> Repair or replace the malfunctioning parts.

REAR WINDOW DEFOGGER POWER SUPPLY AND GROUND CIRCUIT

< COMPONENT DIAGNOSIS >

REAR WINDOW DEFOGGER POWER SUPPLY AND GROUND CIRCUIT

Description

INFOID:000000005281286

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:000000005281287

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-9, "Diagnosis Procedure"](#).

Diagnosis Procedure

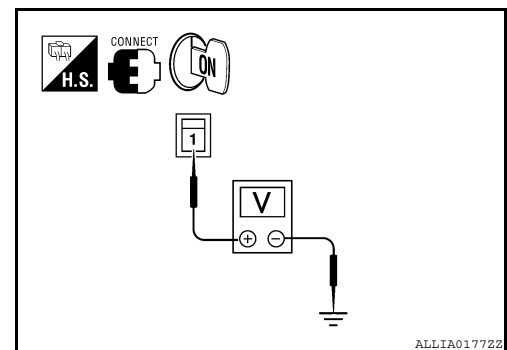
INFOID:000000005281288

Regarding Wiring Diagram information, refer to [DEF-20, "Wiring Diagram - Defogger Control System"](#).

1. CHECK POWER SUPPLY CIRCUIT

1. Turn ignition switch ON.
2. Check voltage between rear window defogger harness connector D651 terminal 1 and ground.

Terminals			Condition of rear window defogger switch	Voltage (V) (Approx.)
(+)		(-)		
Rear window defogger connector	Terminal			
D651	1	Ground	ON	Battery voltage
			OFF	0



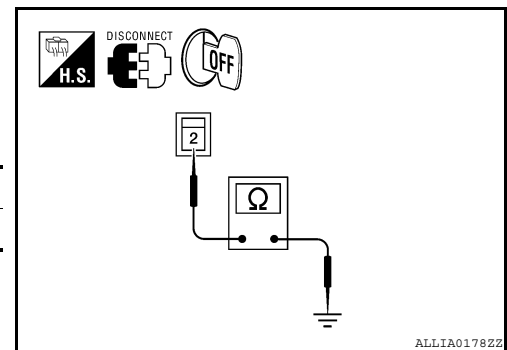
Is the inspection result normal?

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

2. CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect rear window defogger.
3. Check continuity between rear window defogger harness connector D604 terminal 2 and ground.

Rear window defogger connector	Terminal	Ground	Continuity
D604	2		



Is the inspection result normal?

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

3. CHECK HARNESS CONTINUITY

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REAR WINDOW DEFOGGER POWER SUPPLY AND GROUND CIRCUIT

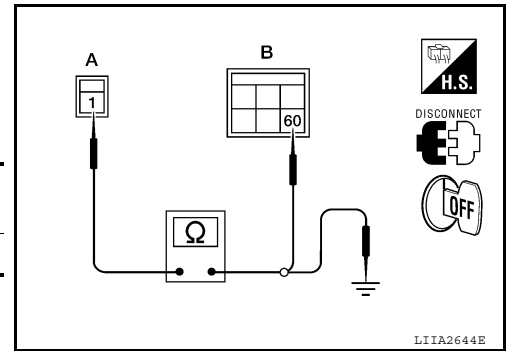
< COMPONENT DIAGNOSIS >

1. Disconnect IPDM E/R.
2. Check continuity between rear window defogger harness connector D651 (A) terminal 1 and IPDM E/R connector E124 (B) terminal 60.

Rear window defogger connector	Terminal	IPDM E/R connector	Terminal	Continuity
D651 (A)	1	E124 (B)	60	Yes

3. Check continuity between rear window defogger harness connector D651 (A) terminal 1 and ground.

Rear window defogger connector	Terminal	Ground	Continuity
D651 (A)	1		No



Is the inspection result normal?

- YES >> GO TO 5
 NO >> Replace or repair harness.

4. CHECK FILAMENT

Check filament.

Check for intermittent incident. Refer to [DEF-10, "Component Inspection"](#).

Is the inspection result normal?

- YES >> Refer to [GI-38, "Intermittent Incident"](#).
 NO >> Repair filament. Refer to [DEF-28, "Filament Repair"](#).

5. CHECK INTERMITTENT INCIDENT

Check intermittent incident.

Refer to [GI-38, "Intermittent Incident"](#).

Is the inspection result normal?

- YES >> Check the following.
- Battery power supply circuit
 - IPDM E/R
- NO >> Repair or replace the malfunctioning parts.

Component Inspection

INFOID:000000005281289

1. CHECK FILAMENT

Check the filament for damage or open circuits.

Refer to [DEF-28, "Filament Check"](#).

Is the inspection result normal?

- YES >> Inspection End.
 NO >> Repair filament. Refer to [DEF-28, "Filament Repair"](#).

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

ECU DIAGNOSIS

BCM (BODY CONTROL MODULE)

Reference Value

INFOID:000000005716611

VALUES ON THE DIAGNOSIS TOOL

Monitor Item	Condition	Value/Status
IGN ON SW	Ignition switch OFF or ACC	OFF
	Ignition switch ON	ON
KEY ON SW	Mechanical key is removed from key cylinder	OFF
	Mechanical key is inserted to key cylinder	ON
CDL LOCK SW	Door lock/unlock switch does not operate	OFF
	Press door lock/unlock switch to the lock side	ON
CDL UNLOCK SW	Door lock/unlock switch does not operate	OFF
	Press door lock/unlock switch to the unlock side	ON
DOOR SW-DR	Driver's door closed	OFF
	Driver's door opened	ON
DOOR SW-AS	Passenger door closed	OFF
	Passenger door opened	ON
DOOR SW-RR	Rear RH door closed	OFF
	Rear RH door opened	ON
DOOR SW-RL	Rear LH door closed	OFF
	Rear LH door opened	ON
BACK DOOR SW	Back door closed	OFF
	Back door opened	ON
KEY CYL LK-SW	Other than driver door key cylinder LOCK position	OFF
	Driver door key cylinder LOCK position	ON
KEY CYL UN-SW	Other than driver door key cylinder UNLOCK position	OFF
	Driver door key cylinder UNLOCK position	ON
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
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
LIGHT SW 1ST	Lighting switch OFF	OFF
	Lighting switch 1ST	ON
BUCKLE SW	The seat belt (driver side) is unfastened. [Seat belt switch (driver side) OFF]	OFF
	The seat belt (driver side) is fastened. [Seat belt switch (driver side) ON]	ON
KEYLESS PANIC	PANIC button of key fob is not pressed	OFF
	PANIC button of key fob is pressed	ON

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

Monitor Item	Condition	Value/Status
RKE LCK-UNLCK	LOCK/UNLOCK button of key fob is not pressed and held simultaneously	OFF
	LOCK/UNLOCK button of key fob is pressed and held simultaneously	ON
RKE KEEP UNLK	UNLOCK button of key fob is not pressed	OFF
	UNLOCK button of key fob is pressed and held	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
FR FOG SW	Front fog lamp switch OFF	OFF
	Front fog lamp switch ON	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
CARGO LAMP SW	Cargo lamp switch OFF	OFF
	Cargo lamp switch ON	ON
IGN SW CAN	Ignition switch OFF or ACC	OFF
	Ignition switch ON	ON
FR WIPER HI	Front wiper switch OFF	OFF
	Front wiper switch HI	ON
FR WIPER LOW	Front wiper switch OFF	OFF
	Front wiper switch LO	ON
FR WIPER INT	Front wiper switch OFF	OFF
	Front wiper switch INT	ON
FR WASHER SW	Front washer switch OFF	OFF
	Front washer switch ON	ON
INT VOLUME	Wiper intermittent dial is in a dial position 1 - 7	1 - 7
FR WIPER STOP	Any position other than front wiper stop position	OFF
	Front wiper stop position	ON
VEHICLE SPEED	While driving	Equivalent to speedometer reading
RR WIPER ON	Rear wiper switch OFF	OFF
	Rear wiper switch ON	ON
RR WIPER INT	Rear wiper switch OFF	OFF
	Rear wiper switch INT	ON
RR WASHER SW	Rear washer switch OFF	OFF
	Rear washer switch ON	ON
RR WIPER STOP	Any position other than rear wiper stop position	OFF
	Rear wiper stop position	ON

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

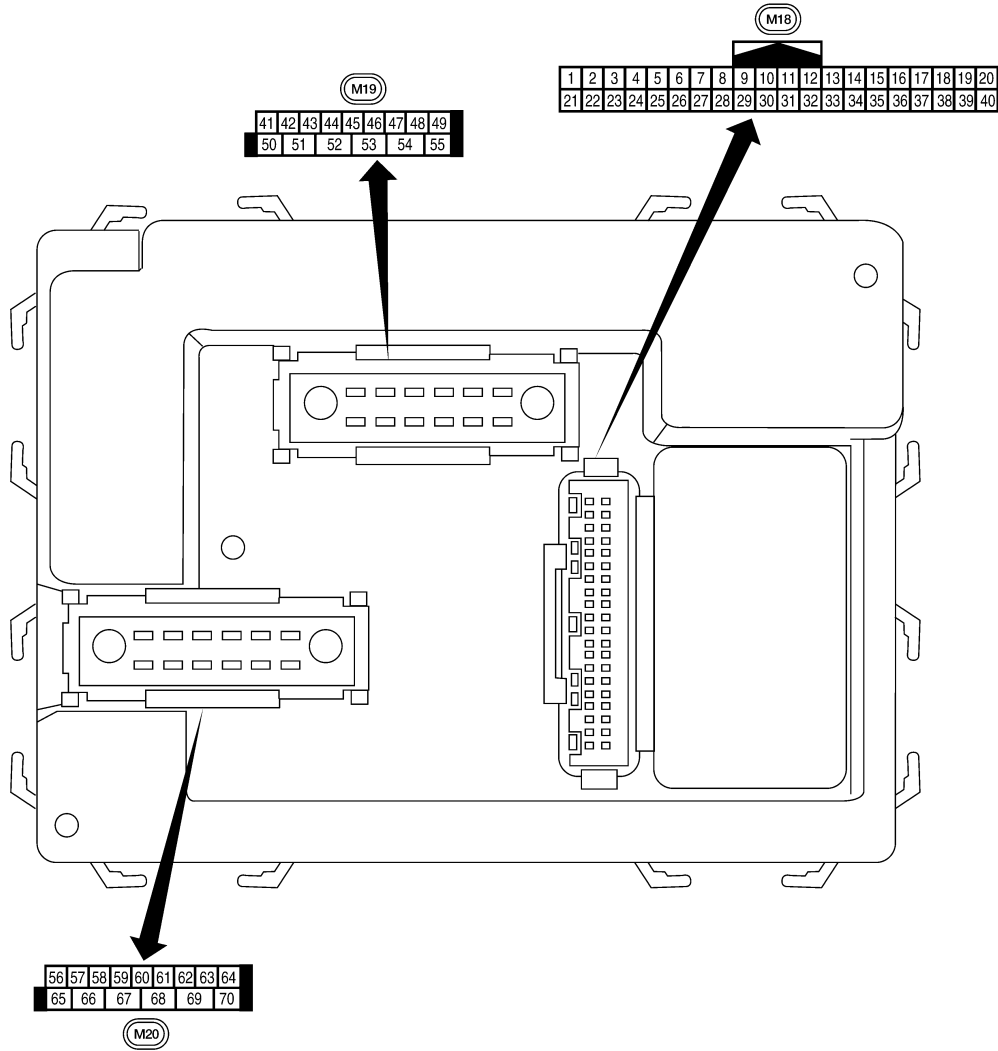
Monitor Item	Condition	Value/Status	
HAZARD SW	Hazard switch OFF	OFF	A
	Hazard switch ON	ON	
BRAKE SW	Brake pedal is not depressed	OFF	B
	Brake pedal is depressed	ON	
FAN ON SIG	Blower fan motor switch OFF	OFF	C
	Blower fan motor switch ON (other than OFF)	ON	
AIR COND SW	Compressor ON is not requested from auto amp. (A/C indicator OFF, blower fan motor switch OFF or etc.)	OFF	D
	Compressor ON is requested from auto amp. (A/C indicator ON and blower fan motor switch ON).	ON	
OIL PRESS SW	<ul style="list-style-type: none"> • Ignition switch OFF or ACC • Engine running 	OFF	E
	Ignition switch ON	ON	
AIR PRESS FL	Ignition switch ON (Only when the signal from the transmitter is received)	Air pressure of front LH tire	F
AIR PRESS FR	Ignition switch ON (Only when the signal from the transmitter is received)	Air pressure of front RH tire	G
AIR PRESS RR	Ignition switch ON (Only when the signal from the transmitter is received)	Air pressure of rear RH tire	H
AIR PRESS RL	Ignition switch ON (Only when the signal from the transmitter is received)	Air pressure of rear LH tire	
ID REGST FL1	ID of front LH tire transmitter is registered	DONE	I
	ID of front LH tire transmitter is not registered	YET	
ID REGST FR1	ID of front RH tire transmitter is registered	DONE	J
	ID of front RH tire transmitter is not registered	YET	
ID REGST RR1	ID of rear RH tire transmitter is registered	DONE	K
	ID of rear RH tire transmitter is not registered	YET	
ID REGST RL1	ID of rear LH tire transmitter is registered	DONE	
	ID of rear LH tire transmitter is not registered	YET	
WARNING LAMP	Tire pressure indicator OFF	OFF	DEF
	Tire pressure indicator ON	ON	
BUZZER	Tire pressure warning alarm is not sounding	OFF	M
	Tire pressure warning alarm is sounding	ON	

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

Terminal Layout

INFOID:000000005716612



Physical Values

L1IA2443E

INFOID:000000005716613

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

Terminal	Wire color	Signal name	Signal input/output	Measuring condition		Reference value or waveform (Approx.)
				Ignition switch	Operation or condition	
1	BR	Ignition keyhole illumination	Output	OFF	Door is locked (SW OFF)	Battery voltage
					Door is unlocked (SW ON)	0V
2	P	Combination switch input 5	Input	ON	Lighting, turn, wiper OFF Wiper dial position 4	<p style="text-align: right; font-size: small;">SKIA5291E</p>
3	SB	Combination switch input 4	Input	ON	Lighting, turn, wiper OFF Wiper dial position 4	<p style="text-align: right; font-size: small;">SKIA5292E</p>
4	V	Combination switch input 3	Input	ON	Lighting, turn, wiper OFF Wiper dial position 4	<p style="text-align: right; font-size: small;">SKIA5291E</p>
5	L	Combination switch input 2	Input	ON	Lighting, turn, wiper OFF Wiper dial position 4	<p style="text-align: right; font-size: small;">SKIA5292E</p>
6	R	Combination switch input 1				
7	GR	Front door lock assembly LH (key cylinder switch) and back door key cylinder switch (unlock)	Input	OFF	ON (open, 2nd turn)	Momentary 1.5V
				OFF	OFF (closed)	0V
					8	SB
				OFF	OFF (closed)	0V
					9	Y
				ON	Rear window defogger switch OFF	5V
					11	G/B
12	LG	Front door switch RH	Input	OFF	ON (open)	0V
					OFF (closed)	Battery voltage

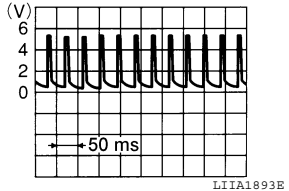
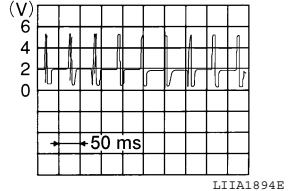
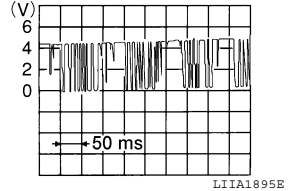
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BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

Terminal	Wire color	Signal name	Signal input/output	Measuring condition		Reference value or waveform (Approx.)
				Ignition switch	Operation or condition	
13	L	Rear door switch RH	Input	OFF	ON (open)	0V
					OFF (closed)	Battery voltage
15	W	Tire pressure warning check connector	Input	OFF	—	5V
18	BR	Remote keyless entry receiver and optical sensor (ground)	Output	OFF	—	0V
19	V	Remote keyless entry receiver (power supply)	Output	OFF	Ignition switch OFF	
20	G	Remote keyless entry receiver (signal)	Input	OFF	Stand-by (keyfob buttons released)	
					When remote keyless entry receiver receives signal from keyfob (keyfob buttons pressed)	
21	GR	Immobilizer antenna signal (clock)	Input	OFF → ON	Ignition switch (OFF → ON)	Just after turning ignition switch ON: Pointer of tester should move for approx. 1 second, then return to battery voltage.
23	G	Security indicator lamp	Output	OFF	Goes OFF → illuminates (Every 2.4 seconds)	Battery voltage → 0V
25	BR	NATS antenna amp.	Input	OFF → ON	Ignition switch (OFF → ON)	Just after turning ignition switch ON: Pointer of tester should move for approx. 1 second, then return to battery voltage.
27	W	Compressor ON signal	Input	ON	A/C switch OFF	5V
					A/C switch ON	0V
28	R	Front blower monitor	Input	ON	Front blower motor OFF	Battery voltage
					Front blower motor ON	0V
29	G	Hazard switch	Input	OFF	ON	0V
					OFF	5V

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

Terminal	Wire color	Signal name	Signal input/output	Measuring condition		Reference value or waveform (Approx.)
				Ignition switch	Operation or condition	
32	O	Combination switch output 5	Output	ON	Lighting, turn, wiper OFF Wiper dial position 4	<p style="text-align: right; font-size: small;">SKIA5291E</p>
33	GR	Combination switch output 4	Output	ON	Lighting, turn, wiper OFF Wiper dial position 4	<p style="text-align: right; font-size: small;">SKIA5292E</p>
34	G	Combination switch output 3	Output	ON	Lighting, turn, wiper OFF Wiper dial position 4	<p style="text-align: right; font-size: small;">SKIA5291E</p>
35	BR	Combination switch output 2	Output	ON	Lighting, turn, wiper OFF Wiper dial position 4	<p style="text-align: right; font-size: small;">SKIA5292E</p>
36	LG	Combination switch output 1				
37	B	Key switch and key lock solenoid	Input	OFF	Key inserted	Battery voltage
					Key inserted	0V
38	W/R	Ignition switch (ON)	Input	ON	—	Battery voltage
39	L	CAN-H	—	—	—	—
40	P	CAN-L	—	—	—	—
43	Y	Back door switch	Input	OFF	ON (open)	0V
					OFF (closed)	Battery voltage
44	O	Rear wiper auto stop switch	Input	ON	Rise up position (rear wiper arm on stopper)	0V
					A Position (full clockwise stop position)	Battery voltage
					Forward sweep (counterclockwise direction)	Fluctuating
					B Position (full counterclockwise stop position)	0V
					Reverse sweep (clockwise direction)	Fluctuating
45	V	Lock switch	Input	OFF	ON (lock)	0V
					OFF	Battery voltage

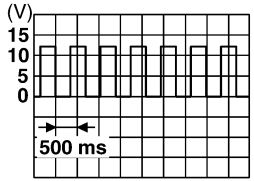
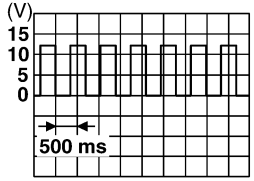
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BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

Terminal	Wire color	Signal name	Signal input/output	Measuring condition		Reference value or waveform (Approx.)	
				Ignition switch	Operation or condition		
46	LG	Unlock switch	Input	OFF	ON (unlock)	0V	
					OFF	Battery voltage	
47	GR	Front door switch LH	Input	OFF	ON (open)	0V	
					OFF (closed)	Battery voltage	
48	P	Rear door switch LH	Input	OFF	ON (open)	0V	
					OFF (closed)	Battery voltage	
49	L	Cargo lamp	Output	OFF	Any door open (ON)	0V	
					All doors closed (OFF)	Battery voltage	
55	W	Rear wiper output circuit 1	Output	ON	OFF	0	
					ON	Battery voltage	
56	R/Y	Battery saver output	Output	OFF	30 minutes after ignition switch is turned OFF	0V	
				ON	—	Battery voltage	
57	R/Y	Battery power supply	Input	OFF	—	Battery voltage	
59	GR	Front door lock assembly LH actuator (unlock)	Output	OFF	OFF (neutral)	0V	
					ON (unlock)	Battery voltage	
60	LG	Turn signal (left)	Output	ON	Turn left ON		
61	G	Turn signal (right)	Output	ON	Turn right ON		
63	BR	Interior room/map lamp	Output	OFF	Any door switch	ON (open)	0V
					OFF (closed)	Battery voltage	
65	V	All door lock actuators (lock)	Output	OFF	OFF (neutral)	0V	
					ON (lock)	Battery voltage	
66	L	Front door lock actuator RH, rear door lock actuators LH/RH and back door lock actuator (unlock)	Output	OFF	OFF (neutral)	0V	
					ON (unlock)	Battery voltage	
67	B	Ground	Input	ON	—	0V	

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

Terminal	Wire color	Signal name	Signal input/output	Measuring condition		Reference value or waveform (Approx.)
				Ignition switch	Operation or condition	
68	O	Power window power supply (RAP)	Output	—	Ignition switch ON	Battery voltage
					Within 45 seconds after ignition switch OFF	Battery voltage
					More than 45 seconds after ignition switch OFF	0V
					When front door LH or RH is open or power window timer operates	0V
70	W	Battery power supply	Input	OFF	—	Battery voltage

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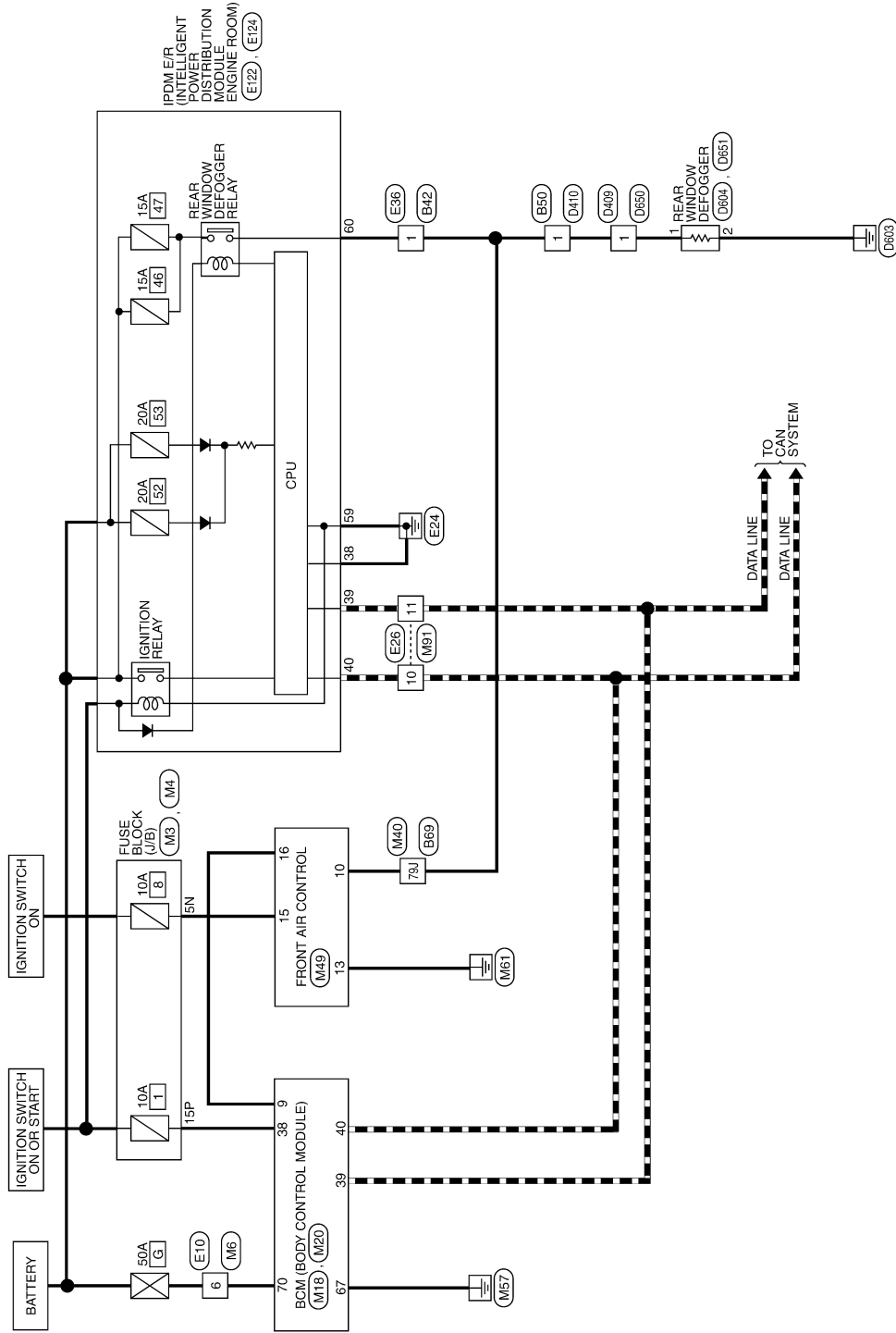
BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

Wiring Diagram - Defogger Control System

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REAR WINDOW DEFOGGER



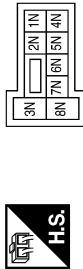
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BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

REAR WINDOW DEFOGGER CONNECTORS

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



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



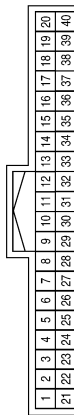
Connector No.	M6
Connector Name	WIRE TO WIRE
Connector Color	WHITE

Terminal No.	5N	Color of Wire	W/G	Signal Name	-
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Terminal No.	15P	Color of Wire	W/R	Signal Name	-
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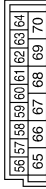
Terminal No.	6	Color of Wire	W	Signal Name	-
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Connector No.	M18
Connector Name	BCM (BODY CONTROL MODULE)
Connector Color	WHITE



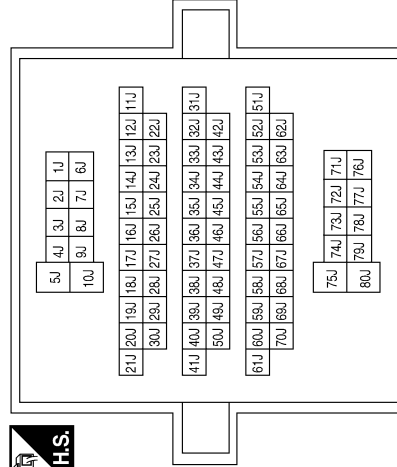
Terminal No.	Color of Wire	Signal Name
9	Y	REAR DEFOGGER SW
38	W/R	IGN SW
39	L	CAN-H
40	P	CAN-L

Connector No.	M20
Connector Name	BCM (BODY CONTROL MODULE)
Connector Color	BLACK



Terminal No.	Color of Wire	Signal Name
67	B	GND (POWER)
70	W	BAT (F/L)

Connector No.	M40
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	79J	Color of Wire	R	Signal Name	-
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BCM (BODY CONTROL MODULE)

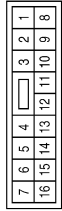
< ECU DIAGNOSIS >

Connector No.	E10
Connector Name	WIRE TO WIRE
Connector Color	WHITE



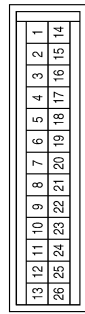
Terminal No.	Color of Wire	Signal Name
6	W	-

Connector No.	M91
Connector Name	WIRE TO WIRE
Connector Color	WHITE



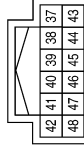
Terminal No.	Color of Wire	Signal Name
10	P	-
11	L	-

Connector No.	M49
Connector Name	FRONT AIR CONTROL
Connector Color	BLACK



Terminal No.	Color of Wire	Signal Name
10	R	RR DEF STATUS
13	B	GND
15	W/G	IGN
16	Y	REAR DEFOGGER REQUEST

Connector No.	E122
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
38	B	GND (SIGNAL)
39	L	CAN-H
40	P	CAN-L

Connector No.	E36
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
1	GR	-

Connector No.	E26
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
10	P	-
11	L	-

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BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

Connector No.	B50
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
1	GR	-

Connector No.	B42
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
1	GR	-

Connector No.	E124
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Color	BLACK



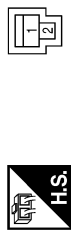
Terminal No.	Color of Wire	Signal Name
59	B	GND (POWER)
60	GR	RR DEF

Connector No.	D410
Connector Name	WIRE TO WIRE
Connector Color	WHITE



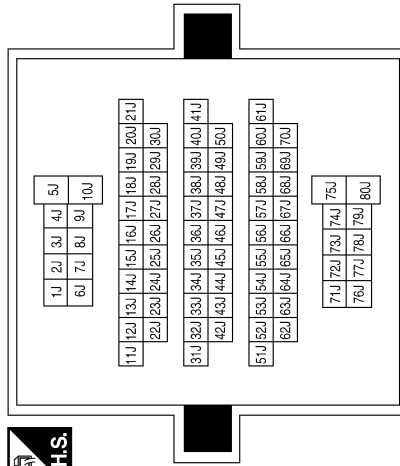
Terminal No.	Color of Wire	Signal Name
1	GR	-

Connector No.	D409
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
1	GR	-

Connector No.	B69
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
79J	R	-

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BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

Connector No.	D651
Connector Name	REAR WINDOW DEFOGGER
Connector Color	BLACK



Terminal No.	1	Color of Wire	GR	Signal Name	-
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Connector No.	D650
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	1	Color of Wire	GR	Signal Name	-
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Connector No.	D604
Connector Name	REAR WINDOW DEFOGGER
Connector Color	BLACK



Terminal No.	2	Color of Wire	B	Signal Name	-
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REAR WINDOW DEFOGGER DOES NOT OPERATE

< SYMPTOM DIAGNOSIS >

SYMPTOM DIAGNOSIS

REAR WINDOW DEFOGGER DOES NOT OPERATE

Diagnosis Procedure

INFOID:000000005281294

1. CHECK REAR WINDOW DEFOGGER SWITCH

Check rear window defogger switch.

Refer to [DEF-9. "Component Function Check"](#).

Is the inspection result normal?

YES >> GO TO 2

NO >> Repair or replace the malfunctioning parts.

2. CHECK REAR WINDOW DEFOGGER RELAY

Check rear window defogger relay.

Refer to [DEF-8. "Component Function Check"](#).

Is the inspection result normal?

YES >> Check for intermittent incident. Refer to [GI-38. "Intermittent Incident"](#).

NO >> Repair or replace the malfunctioning parts.

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

< SYMPTOM DIAGNOSIS >

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

Diagnosis Procedure

INFOID:000000005281295

1. CHECK REAR WINDOW DEFOGGER SWITCH

Check that the rear window defogger switch is operating normally.

Is the inspection result normal?

- YES >> Check for intermittent incident. Refer to [GI-38, "Intermittent Incident"](#).
- NO >> Check rear window defogger switch. Refer to [DEF-7, "Diagnosis Procedure Front Air Control"](#).

PRECAUTIONS

< PRECAUTION >

PRECAUTION

PRECAUTIONS

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

INFOID:000000005716610

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

WARNING:

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

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

WARNING:

- When working near the Airbag Diagnosis Sensor Unit or other Airbag System sensors with the Ignition ON or engine running, DO NOT use air or electric power tools or strike near the sensor(s) with a hammer. Heavy vibration could activate the sensor(s) and deploy the air bag(s), possibly causing serious injury.
- When using air or electric power tools or hammers, always switch the Ignition OFF, disconnect the battery, and wait at least 3 minutes before performing any service.

Handling for Adhesive and Primer

INFOID:000000005281297

- Do not use an adhesive which is past its usable date. Shelf life of this product is limited to six months after the date of manufacture. Carefully adhere to the expiration or manufacture date printed on the box.
- Keep primers and adhesive in a cool, dry place. Ideally, they should be stored in a refrigerator.
- Open the seal of the primer and adhesive just before application. Discard the remainder.
- Before application, be sure to shake the primer container to stir the contents. If any floating material is found, do not use it.
- If any primer or adhesive contacts the skin, wipe it off with gasoline or equivalent and wash the skin with soap.
- When using primer and adhesive, always observe the precautions in the instruction manual.

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REAR WINDOW DEFOGGER

< ON-VEHICLE REPAIR >

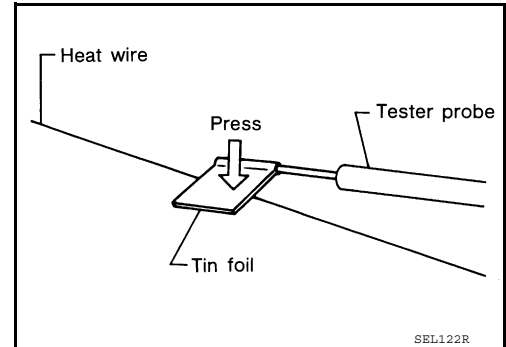
ON-VEHICLE REPAIR

REAR WINDOW DEFOGGER

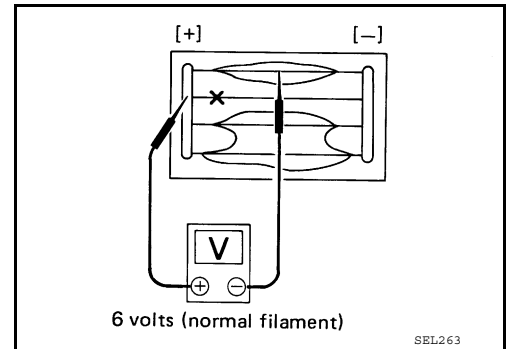
Filament Check

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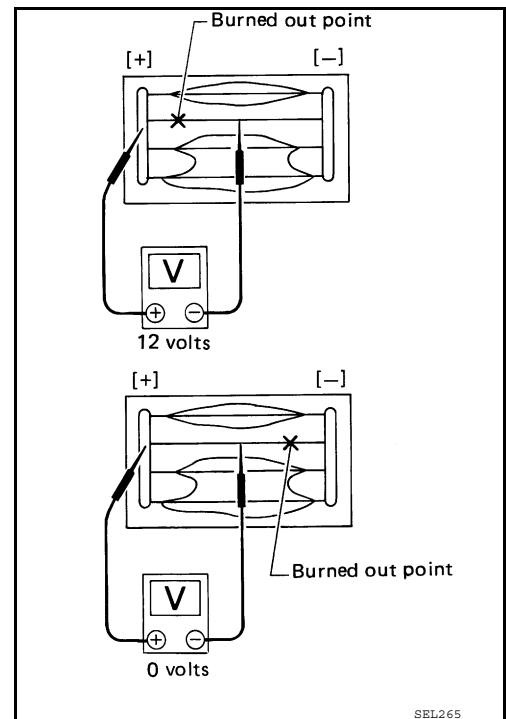
1. When measuring voltage, wrap tin foil around the top of the negative probe. Then press the foil against the wire with your finger.



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.



Filament Repair

INFOID:000000005281299

REPAIR EQUIPMENT

- Conductive silver composition (DuPont No. 4817 or equivalent)
- Ruler 30 cm (11.8 in) long

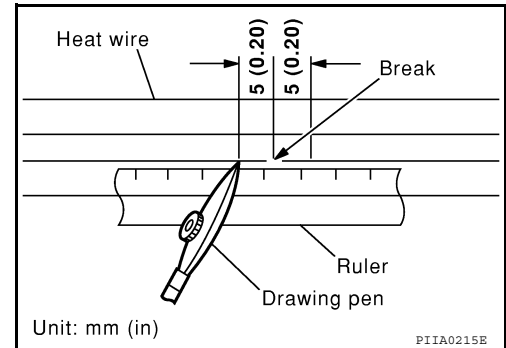
REAR WINDOW DEFOGGER

< ON-VEHICLE REPAIR >

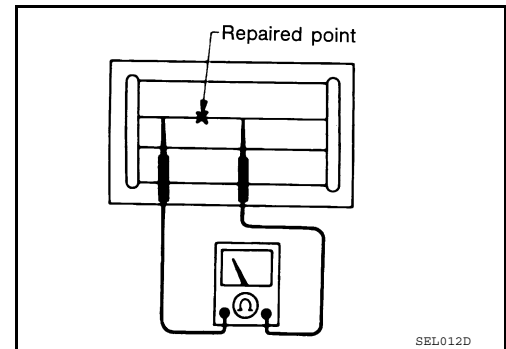
- Drawing pen
- Heat gun
- Alcohol
- Cloth

REPAIRING PROCEDURE

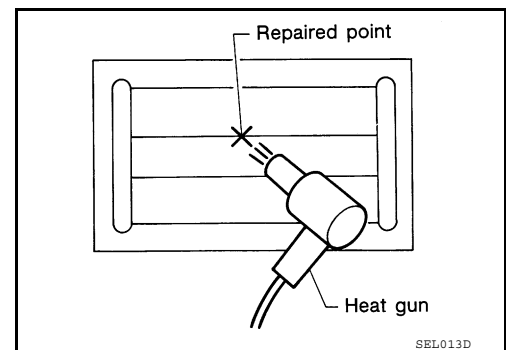
1. Wipe broken heat wire and its surrounding area clean with a cloth dampened in alcohol.
2. Apply a small amount of conductive silver composition to tip of drawing pen. Shake silver composition container before use.
3. Place ruler on glass along broken line. Deposit conductive silver composition on 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.



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