SECTION EXL
EXTERIOR LIGHTING SYSTEM

CONTENTS

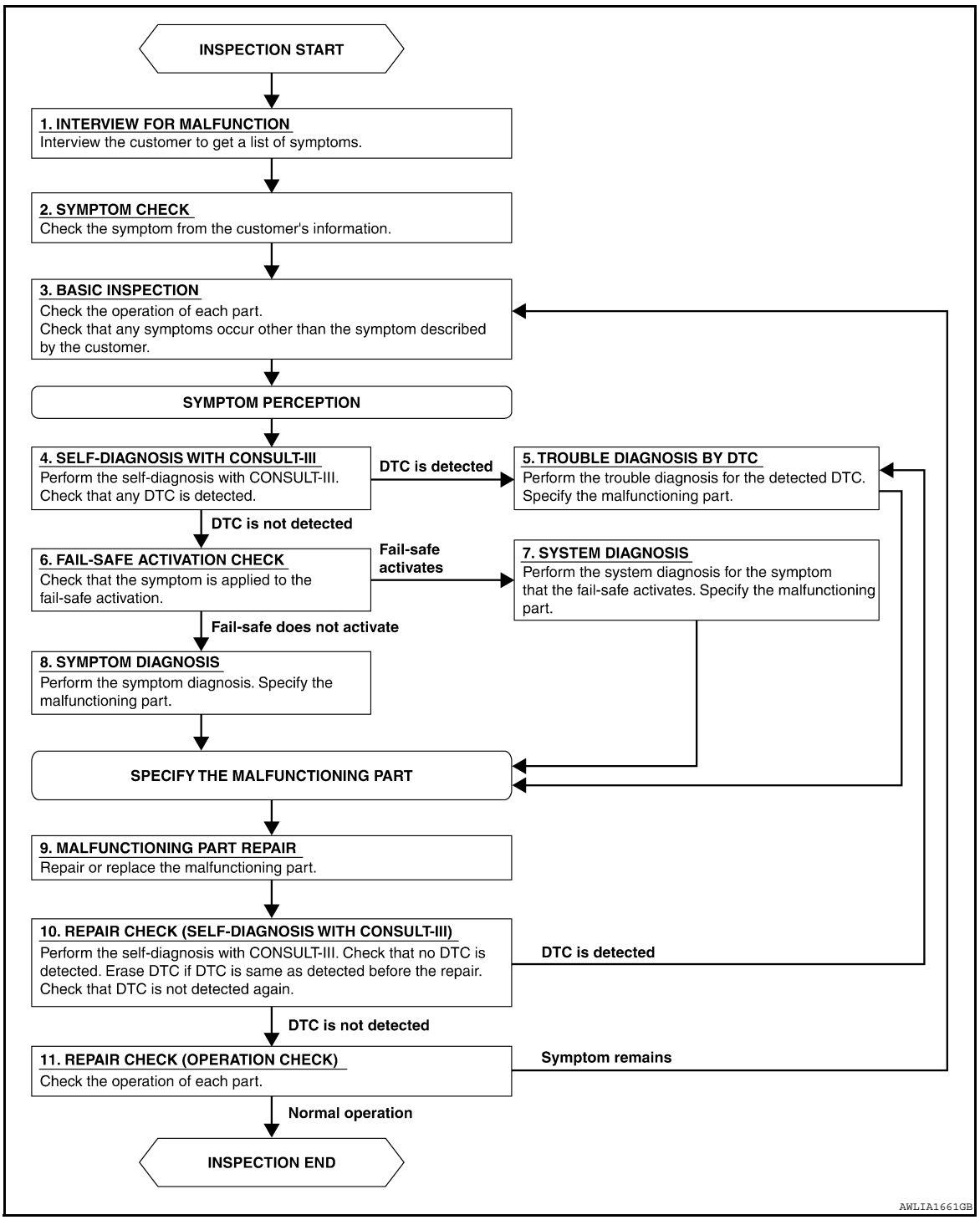
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORKFLOW

Work Flow

INFOID:0000000005439227

OVERALL SEQUENCE



DETAILED FLOW

1.INTERVIEW FOR MALFUNCTION

Find out what the customer's concerns are.

>> GO TO 2

2.SYMPTOM CHECK

Verify the symptom from the customer's information.

>> GO TO 3

3.BASIC INSPECTION

Check the operation of each part. Check that any concerns occur other than those mentioned in the customer interview.

>> GO TO 4

4.SELF-DIAGNOSIS WITH CONSULT-III

Perform the self diagnosis with CONSULT-III. Check that any DTC is detected.

Is any DTC detected?

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

5.TROUBLE DIAGNOSIS BY DTC

Perform the trouble diagnosis for the detected DTC. Specify the malfunctioning part.

>> GO TO 9

6.FAIL-SAFE ACTIVATION CHECK

Determine if the customer's concern is related to fail-safe activation.

Does the fail-safe activate?

YES >> GO TO 7
NO >> GO TO 8

7.SYSTEM DIAGNOSIS

Perform the system diagnosis for the system in which the fail-safe activates. Specify the malfunctioning part.

>> GO TO 9

8.SYMPTOM DIAGNOSIS

Perform the symptom diagnosis. Specify the malfunctioning part.

>> GO TO 9

9.MALFUNCTION PART REPAIR

Repair or replace the malfunctioning part.

>> GO TO 10

10.REPAIR CHECK (SELF-DIAGNOSIS WITH CONSULT-III)

Perform the self diagnosis with CONSULT-III. Verified that no DTCs are detected. Erase all DTCs detected prior to the repair. Verify that DTC is not detected again.

Is any DTC detected?

YES >> GO TO 5
NO >> GO TO 11

11. REPAIR CHECK (OPERATION CHECK)

Check the operation of each part.

Does it operate normally?

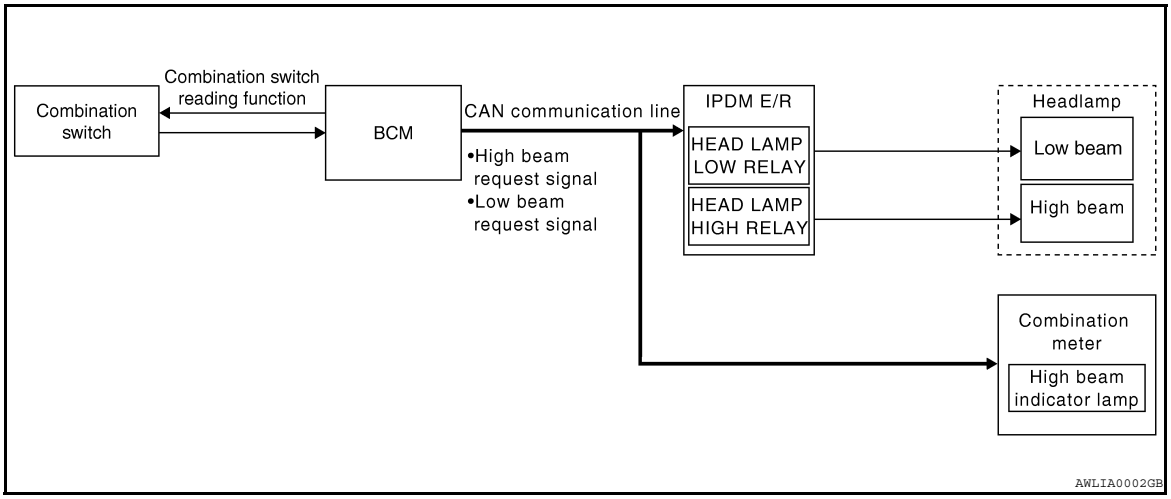
YES >> Inspection End.
NO >> GO TO 3

FUNCTION DIAGNOSIS

HEADLAMP (HALOGEN TYPE)

System Diagram

INFOID:0000000005439228



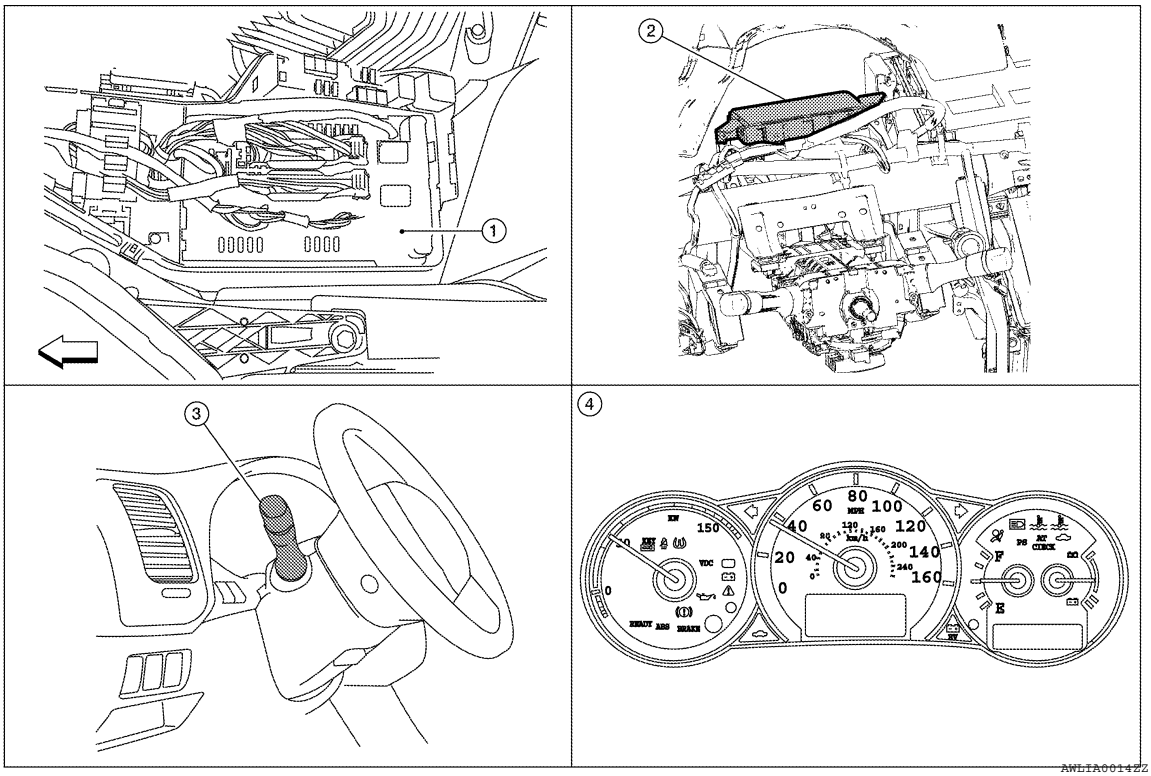
System Description

INFOID:0000000005439229

Control of the headlamp system operation is dependent upon the position of the combination switch (lighting and turn signal switch). When the combination switch (lighting and turn signal switch) is placed in the 2nd position, the BCM (body control module) receives input requesting the headlamps and park lamps to illuminate. This input is communicated to the IPDM E/R (intelligent power distribution module engine room) across the CAN communication lines. The CPU (central processing unit) of the IPDM E/R controls the headlamp high and headlamp low relay coils. When energized, these relays direct power to the respective headlamps, which then illuminate.

Component Parts Location

INFOID:0000000005439230



1. IPDM E/R E17, E18, E200
2. BCM M16, M17, M18, M19 (view with instrument panel removed)
3. Combination switch (lighting and turn signal switch) M28
4. Combination meter M24

Component Description

INFOID:0000000005439231

LOW BEAM OPERATION

When the combination switch (lighting and turn signal switch) is in 2ND position, the BCM receives input requesting the headlamps to illuminate. This input is communicated to the IPDM E/R across the CAN communication lines. The CPU of the IPDM E/R controls the headlamp low relay coil which supplies power to the low beam headlamps.

HIGH BEAM OPERATION/FLASH-TO-PASS OPERATION

With the combination switch (lighting and turn signal switch) in the 2ND position and placed in HIGH position, the BCM receives input requesting the headlamp high beams to illuminate. The flash to pass feature can be used any time and also sends a signal to the BCM. This input is communicated to the IPDM E/R across the CAN communication lines. The CPU of the combination meter controls the ON/OFF status off the HIGH BEAM indicator. The CPU of the IPDM E/R controls the headlamp high relay coil which supplies power to the high beam headlamps.

The combination meter receives a high beam request signal (ON) through the CAN communication lines and turns the high beam indicator lamp ON.

COMBINATION SWITCH READING FUNCTION

Refer to EXL-19, "System Description".

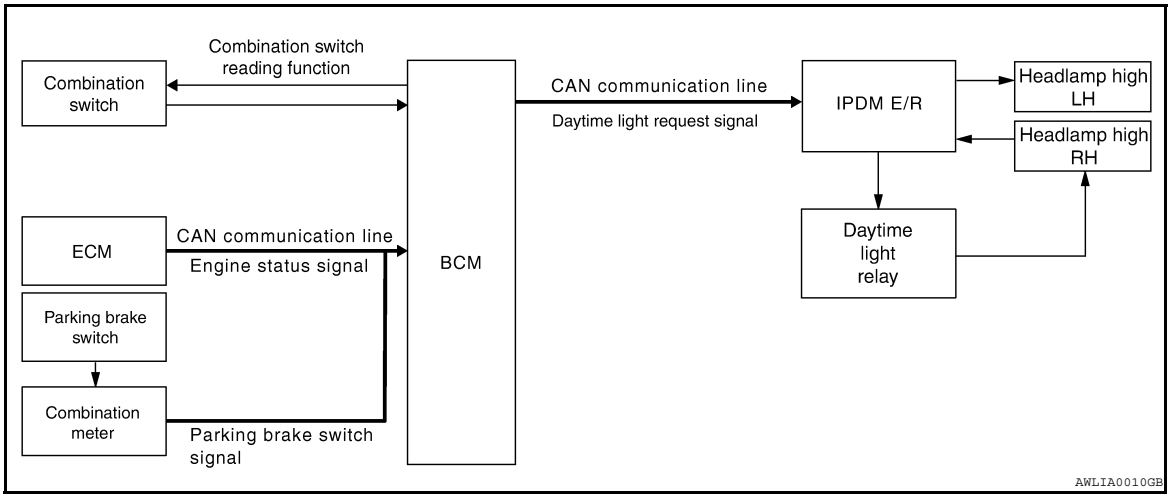
AUTO LIGHT OPERATION

Refer to EXL-12, "System Description".

DAYTIME RUNNING LIGHT SYSTEM

System Diagram

INFOID:0000000005439232



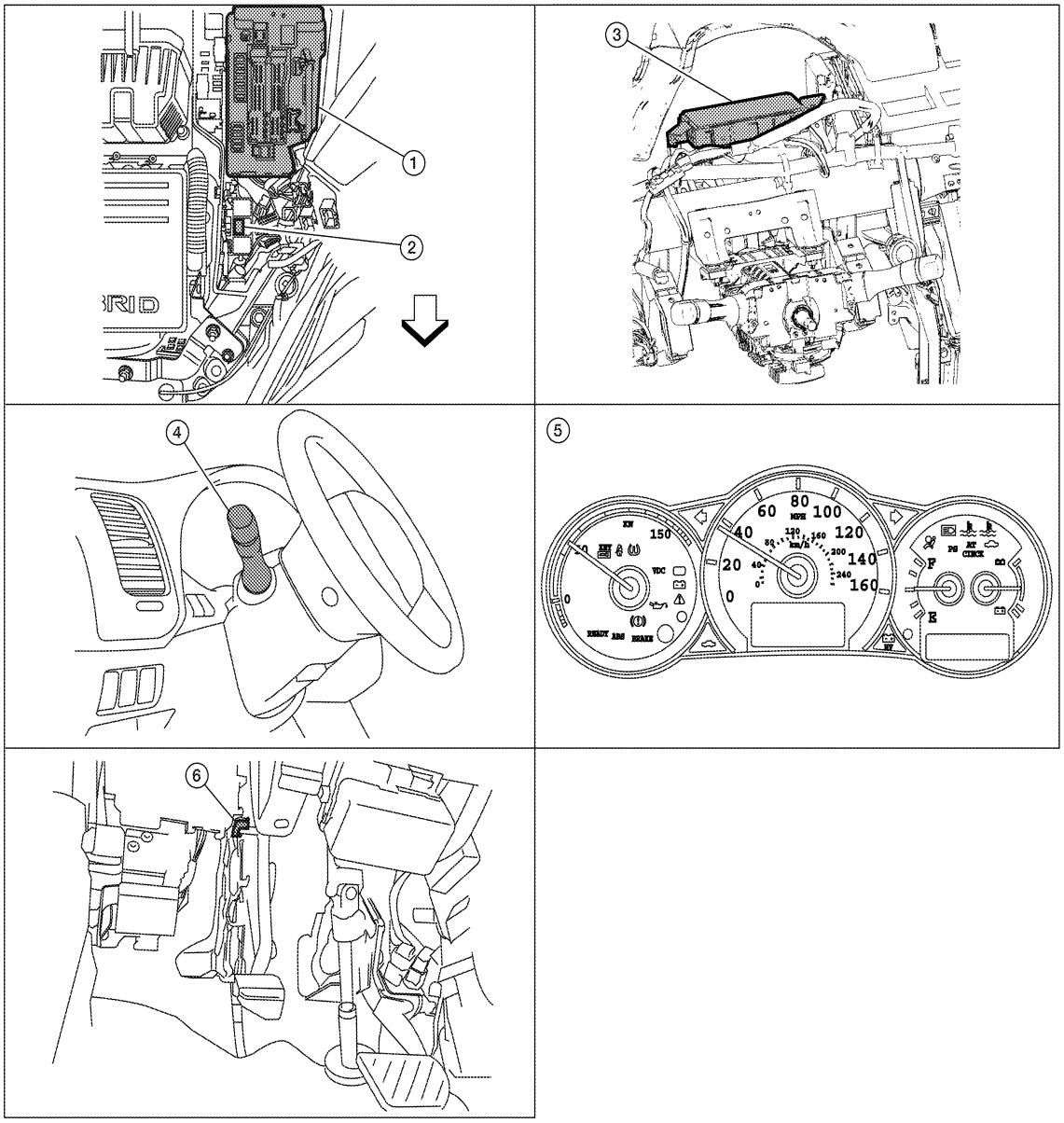
System Description

INFOID:0000000005439233

The headlamp system for Canada vehicles is equipped with a daytime light control unit that activates the high beam headlamps at approximately half illumination whenever the hybrid system is operating. If the parking brake is applied before the hybrid system is started the daytime lights will not be illuminated. The daytime lights will illuminate once the parking brake is released. Thereafter, the daytime lights will continue to operate when the parking brake is applied.

Component Parts Location

INFOID:0000000005439234



AWNIA0931ZZ

⇐: Front

1. IPDM E/R E17, E18, E200, E201
2. Daytime light relay E3 (view with engine room in-line connectors disconnected and positioned aside)
3. BCM M16, M17, M18, M19 (view with instrument panel removed)
4. Combination switch (lighting and turn signal switch) M28
5. Combination meter M24
6. Parking brake switch E35

Component Description

INFOID:0000000005439235

After starting the hybrid system with the parking brake released and the combination switch (lighting and turn signal switch) in the OFF or 1ST position, the headlamp high beam automatically turns on. With the combina-

tion switch (lighting and turn signal switch) in the 2nd position or with autolamps ON, the headlamps function the same as conventional light systems.

OPERATION

The BCM monitors inputs from the parking brake switch and the combination switch (lighting and turn signal switch) to determine when to activate the daytime light system. The BCM sends a daytime light request to the IPDM E/R via the CAN communication lines. The IPDM E/R grounds the daytime light relay which in turn, provides power to the ground side of the RH high beam lamp. Power flows backward through the RH high beam lamp to the IPDM E/R, through the high beam fuses, through the LH high beam lamp circuit to the LH high beam lamp and on to ground. The high beam lamps are wired in series which causes them to illuminate at a reduced intensity.

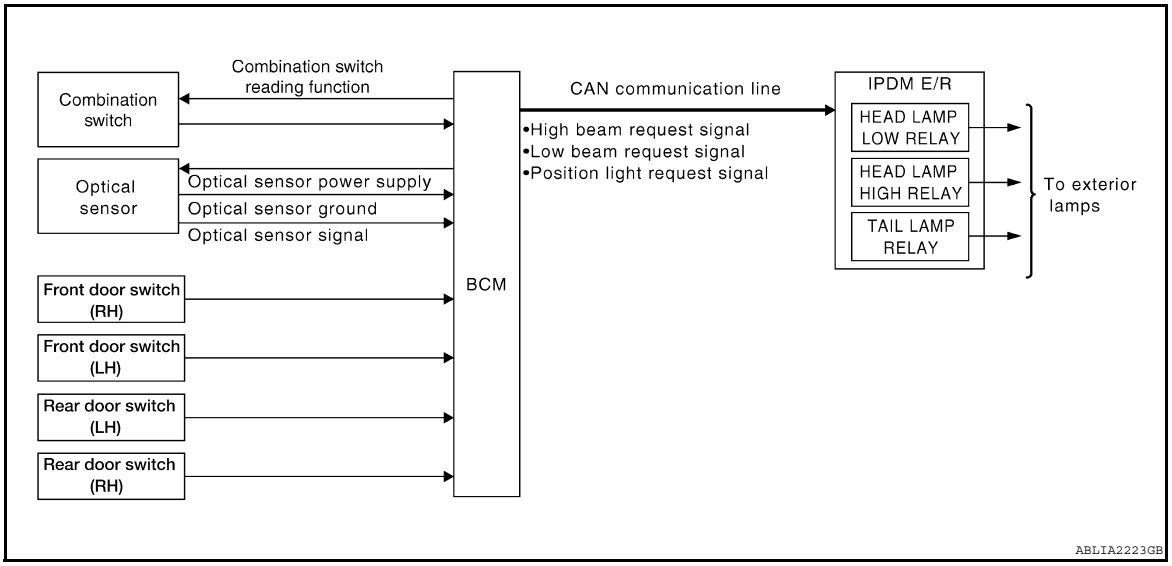
Engine		With engine stopped									With engine running								
Combination switch (lighting and turn signal switch)		OFF			1ST			2ND			OFF			1ST			2ND		
		Hi	Lo	P	Hi	Lo	P	Hi	Lo	P	Hi	Lo	P	Hi	Lo	P	Hi	Lo	P
Headlamp	High beam	–	–	–	–	–	×	×	–	×	●*	●*	×	●*	●*	×	×	–	×
	Low beam	–	–	–	–	–	×	×	×	×	–	–	×	–	–	×	×	×	×
Tail lamp		–	–	–	×	×	×	×	×	×	–	–	–	×	×	×	×	×	×
License and instrument illumination lamp		–	–	–	×	×	×	×	×	×	–	–	–	×	×	×	×	×	×

- Hi: "HIGH BEAM" position
- Lo: "LOW BEAM" position
- P: "FLASH TO PASS" position
- ×: Lamp "ON"
- –: Lamp "OFF"
- ●: Lamp dims. (Added functions)
- *: When starting the engine with the parking brake released, the daytime lights will operate.
  When starting the engine with the parking brake pulled, the daytime lights will not operate.

AUTO LIGHT SYSTEM

System Diagram

INFOID:0000000005439236



System Description

INFOID:0000000005439237

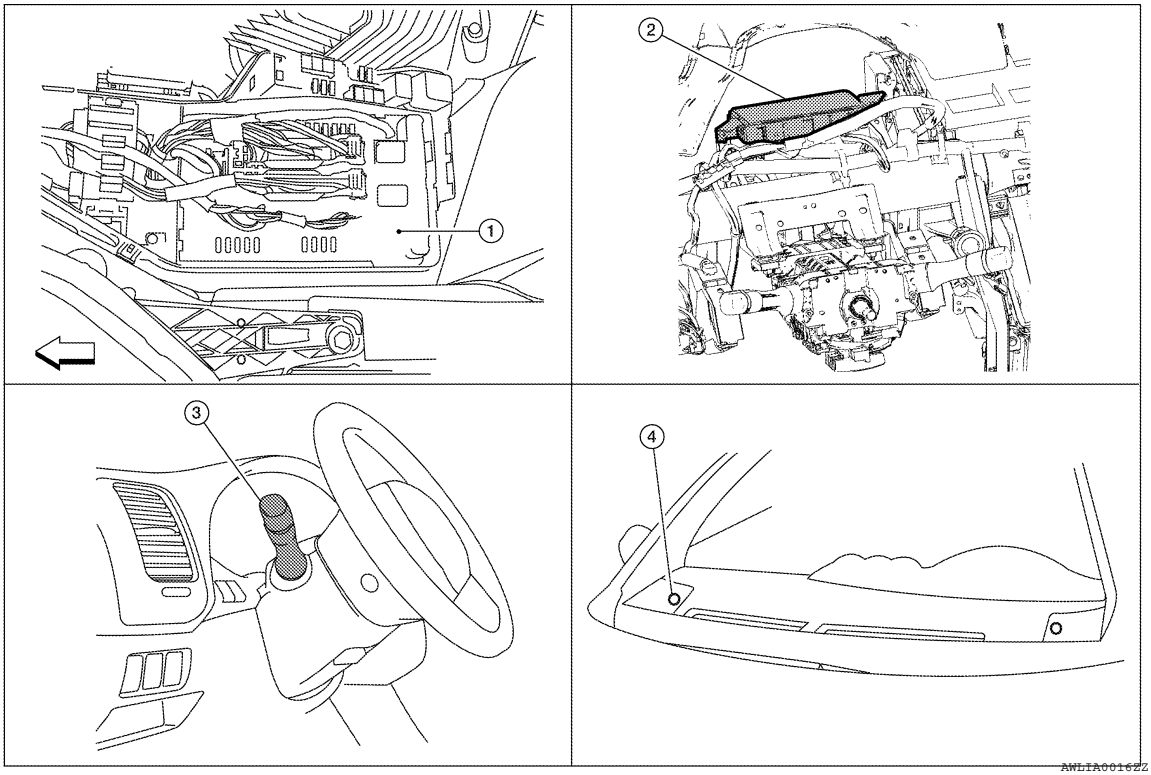
- BCM (Body Control Module) controls auto light operation according to signals from optical sensor, combination switch (lighting and turn signal switch) and ignition switch.
- IPDM E/R (Intelligent Power Distribution Module Engine Room) operates parking, side marker, license plate, tail and headlamps according to CAN communication signals from BCM.
- Optical sensor detects ambient brightness of 800 to 2,500 lux. And optical sensor converts light (lux) to voltage, then sends the optical sensor signal to BCM.

OUTLINE

The auto light control system has an optical sensor that detects outside brightness.
When the combination switch (lighting and turn signal switch) is in AUTO position, it automatically turns ON/OFF the parking, side marker, license plate, tail and headlamps in accordance with the ambient light. Sensitivity can be adjusted in four steps. For the details of the setting, Refer to BCS-22, "HEADLAMP : CONSULT-III Function (BCM - HEAD LAMP)".

Component Parts Location

INFOID:0000000005439238



1. IPDM E/R E17, E18, E200
2. BCM M16, M17, M18, M19, M21 (view with instrument panel removed)
3. Combination switch (lighting and turn signal switch) M28
4. Optical sensor M66

Component Description

INFOID:0000000005439239

AUTO LIGHT OPERATION

Applicable lamps
- Low beam headlamp
- Parking, license plate and tail lamps
- High beam headlamp (with the combination switch (lighting and turn signal switch) in HIGH BEAM position)

When the combination switch (lighting and turn signal switch) is in AUTO position with the ignition switch in ON position, BCM detects the AUTO LIGHT (ON) by BCM combination switch reading function. BCM turns automatically ON/OFF the applicable lamps according to ambient brightness depending on the following condition.
- It turns ON applicable lamps in 3 seconds when ambient brightness is less than 1250 lux.
- The lighted lamps are turned OFF in 5 seconds when ambient brightness becomes 2500 lux or higher.

Releasing Function:
- Turn ignition switch to the OFF position, or
- Change combination switch (lighting and turn signal switch) to the OFF, 1ST, 2ND position.

NOTE:
Timing for when lamps turn ON/OFF can be changed by the function setting of CONSULT-III. Refer to BCS-22, "HEADLAMP : CONSULT-III Function (BCM - HEAD LAMP)".

COMBINATION SWITCH READING FUNCTION

Refer to EXL-19, "System Description".

HEADLAMP LOW AND HIGH OPERATION

Refer to EXL-7, "System Description".

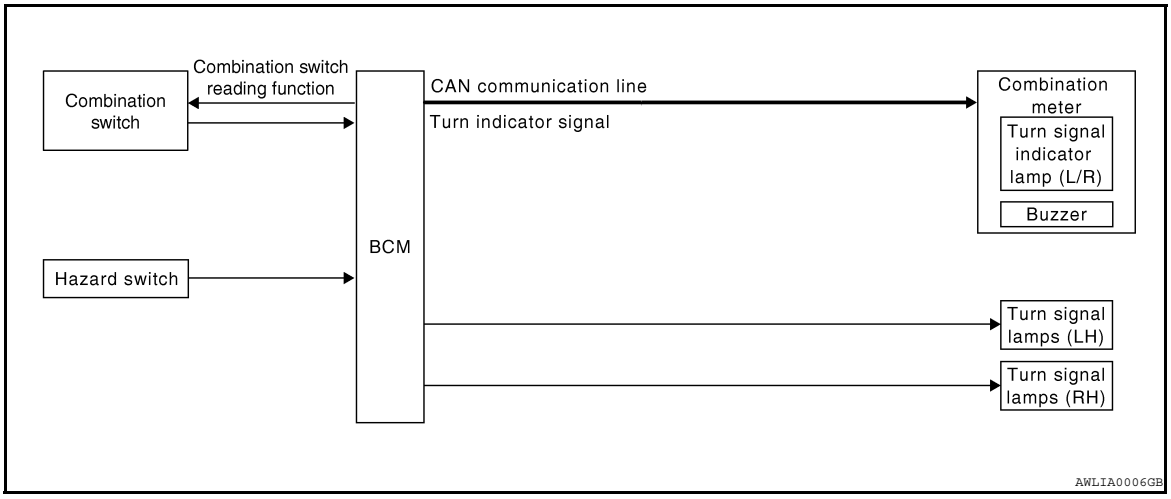
PARKING, LICENSE PLATE AND TAIL LAMPS OPERATION

Refer to EXL-17, "System Description".

TURN SIGNAL AND HAZARD WARNING LAMPS

System Diagram

INFOID:0000000005439244



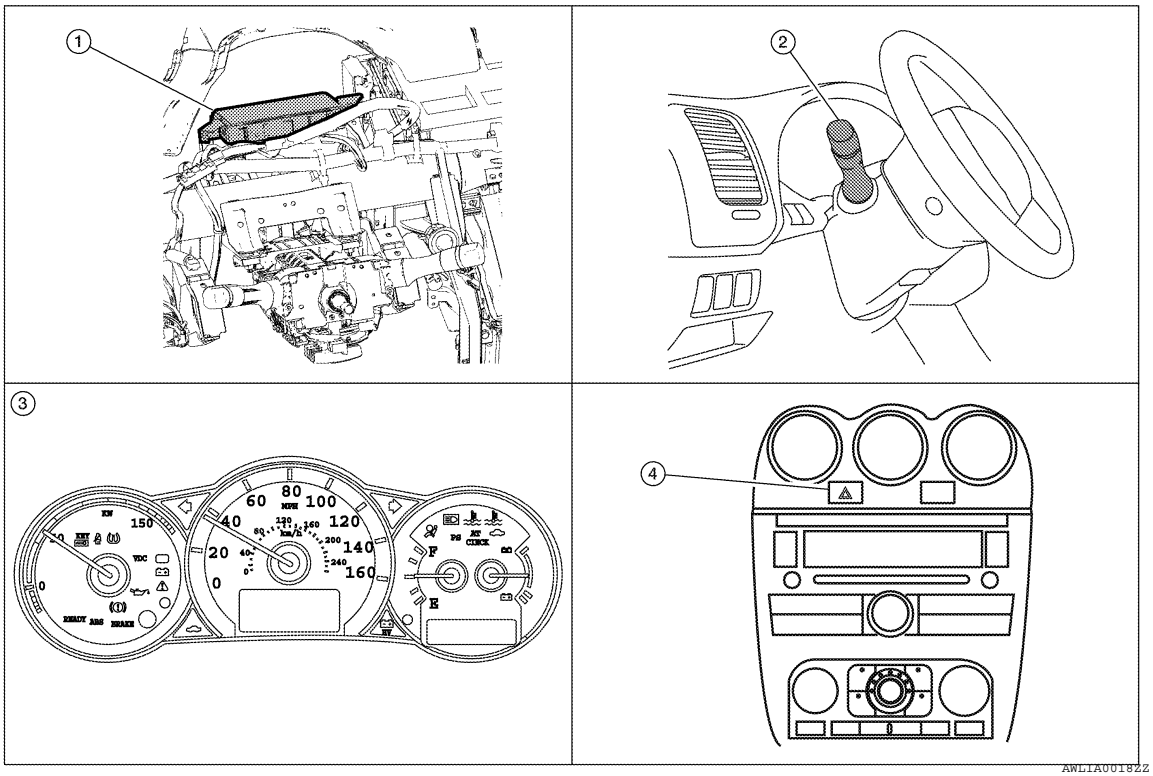
System Description

INFOID:0000000005439245

- BCM (Body Control Module) controls turn signal lamp (RH and LH) and hazard warning lamp operation.
- Combination meter operates turn (RH and LH) indicator according to CAN communication signals from BCM.

Component Parts Location

INFOID:0000000005439246



1. BCM M16, M17, M18, M19 (view with instrument panel removed)
2. Combination switch (lighting and turn signal switch) M28
3. Combination meter M24
4. Hazard switch M54

Component Description

INFOID:0000000005439247

TURN SIGNAL OPERATION

When the combination switch (lighting and turn signal switch) is in LH or RH position with the ignition switch in ON position, the BCM detects the TURN RH or TURN LH ON request. The BCM outputs the flasher output signal to the respective turn signal lamp. The BCM sends a turn indicator signal ON request through the CAN communication lines to the combination meter. The combination meter then activates the appropriate turn signal indicator and audible buzzer.

HAZARD LAMP OPERATION

When the hazard switch is in ON position, the BCM detects the hazard switch signal ON. The BCM outputs the flasher output signal (right and left). The BCM sends a hazard indicator signal ON request through the CAN communication lines to the combination meter. The combination meter then activates the hazard indicator and audible buzzer.

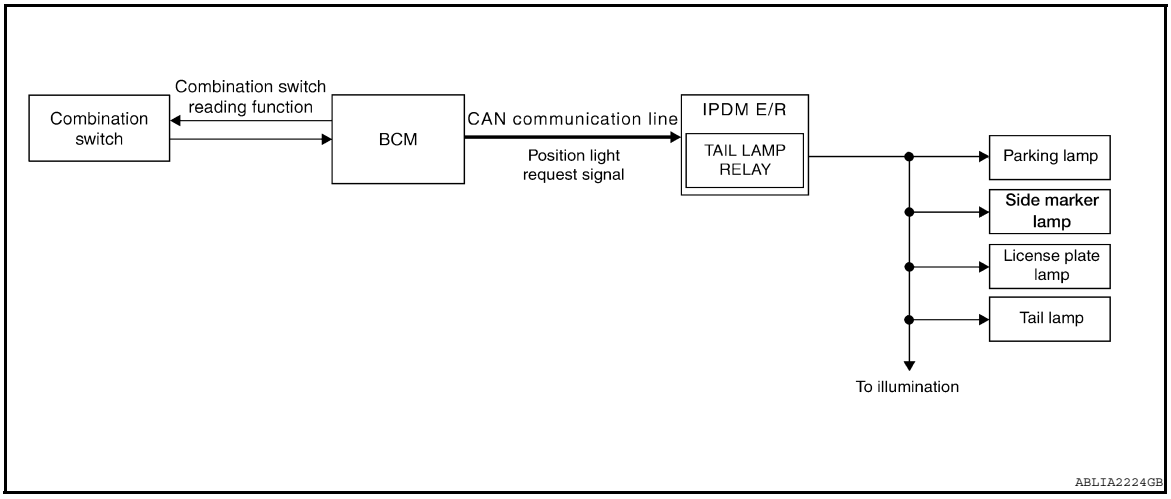
REMOTE KEYLSESS ENTRY OPERATION

The remote keyless entry receiver transmits Intelligent Key signal to BCM, then BCM controls hazard lamps. Refer to BCS-8, "System Description".

PARKING, LICENSE PLATE AND TAIL LAMPS

System Diagram

INFOID:0000000005439248



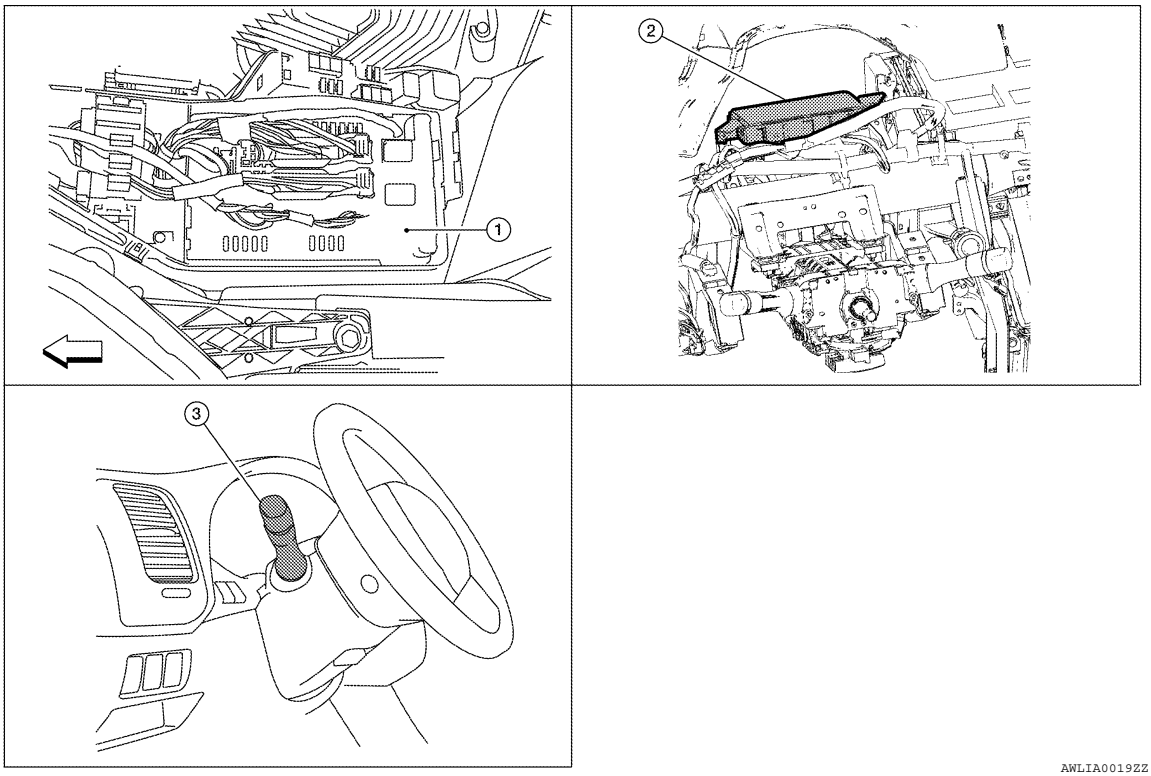
System Description

INFOID:0000000005439249

- BCM (Body Control Module) controls parking, side marker, license plate and tail lamps operation.
- IPDM E/R (Intelligent Power Distribution Module Engine Room) operates parking, side marker, license plate and tail lamps according to CAN communication signals from BCM.

Component Parts Location

INFOID:0000000005439250



1. IPDM E/R E17, E18, E201
2. BCM M16, M17, M18, M19 (view with instrument panel removed)
3. Combination switch (lighting and turn signal switch) M28

Component Description

INFOID:0000000005439251

PARKING, LICENCE PLATE AND TAIL LAMPS OPERATION

When the combination switch (lighting and turn signal switch) is in 1ST position, BCM detects the COMBINATION SWITCH (LIGHTING AND TURN SIGNAL SWITCH) 1ST POSITION ON. The BCM sends a parking light ON request through the CAN communication lines to the IPDM E/R. The IPDM E/R then activates the tail lamp relay which sends power to the parking and instrument illumination circuits.

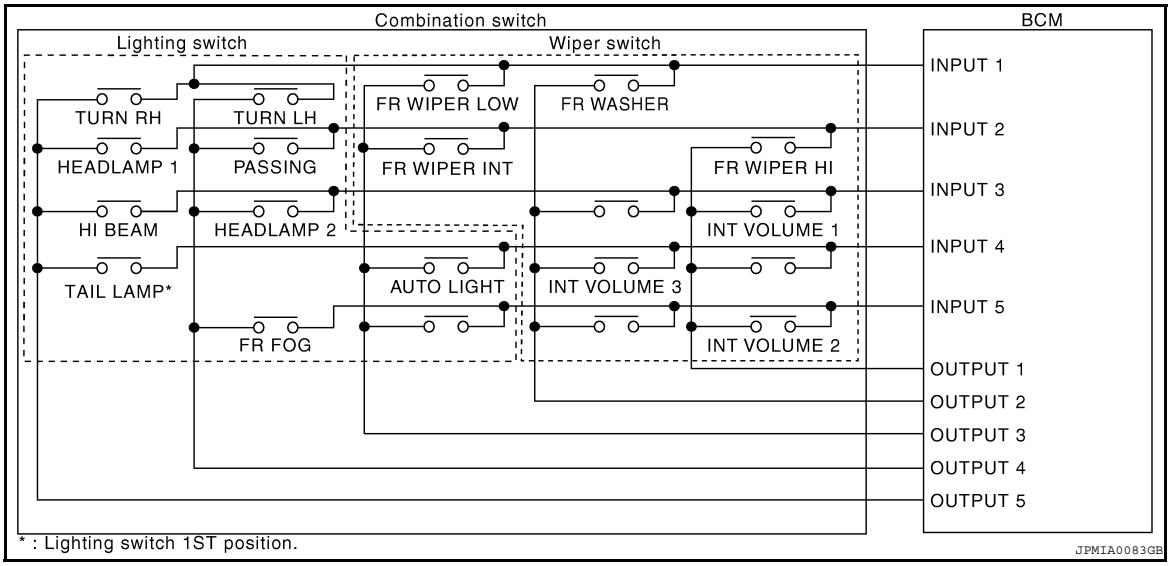
EXTERIOR LAMP BATTERY SAVER CONTROL

With the combination switch (lighting and turn signal switch) in the 2nd position and the ignition switch is turned from ON or ACC to OFF, the battery saver feature is activated.
Under this condition, the headlamps remain illuminated for 5 minutes unless the combination switch (lighting and turn signal switch) position is changed. If the lighting switch position is changed, then the headlamps are turned off.
This setting can be changed by CONSULT-III. Refer to EXL-27, "BATTERY SAVER : CONSULT-III Function (BCM - BATTERY SAVER)".

COMBINATION SWITCH READING SYSTEM

System Diagram

INFOID:0000000005804794



System Description

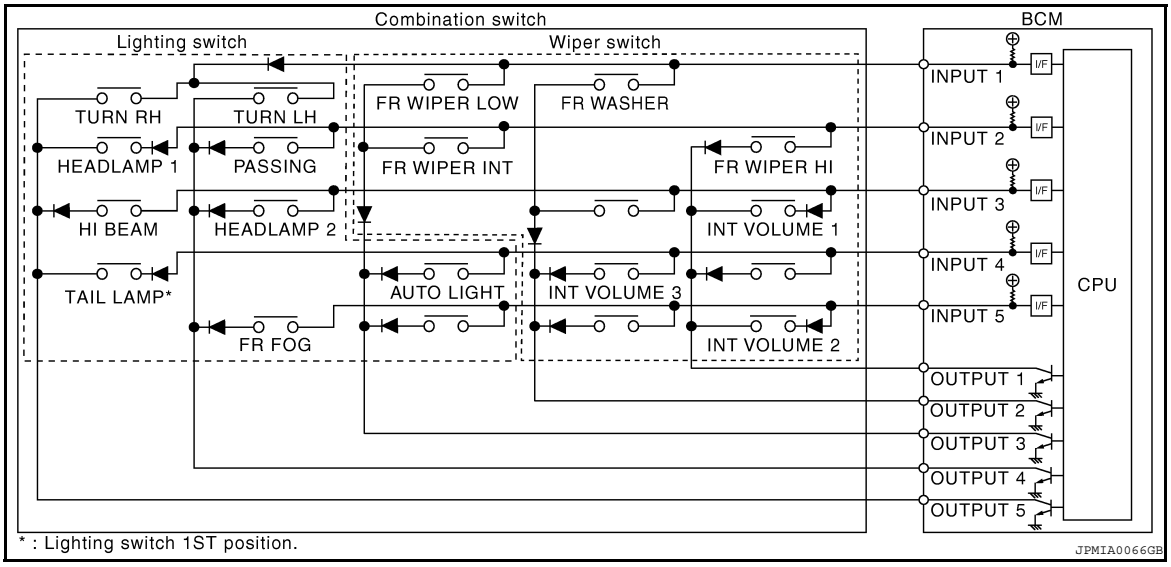
INFOID:0000000005804795

OUTLINE

- BCM reads the status of the combination switch (light, turn signal, wiper and washer) and recognizes the status of each switch.
- BCM is a combination of 5 output terminals (OUTPUT 1 - 5) and 5 input terminals (INPUT 1 - 5). It reads a maximum of 20 switch status.

COMBINATION SWITCH MATRIX

Combination switch circuit



Combination switch INPUT-OUTPUT system list

System	OUTPUT 1	OUTPUT 2	OUTPUT 3	OUTPUT 4	OUTPUT 5
INPUT 1	—	FR WASHER	FR WIPER LOW	TURN LH	TURN RH
INPUT 2	FR WIPER HI	—	FR WIPER INT	PASSING	HEADLAMP 1
INPUT 3	INT VOLUME 1	—	—	HEADLAMP 2	HI BEAM

System	OUTPUT 1	OUTPUT 2	OUTPUT 3	OUTPUT 4	OUTPUT 5
INPUT 4	—	INT VOLUME 3	AUTO LIGHT	—	TAIL LAMP
INPUT 5	INT VOLUME 2	—	—	—	—

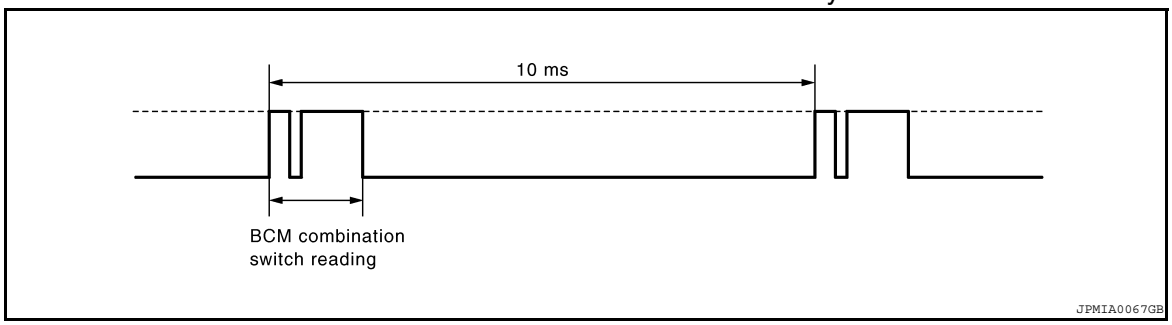
NOTE:

Headlamp has a dual system switch.

COMBINATION SWITCH READING FUNCTION

Description

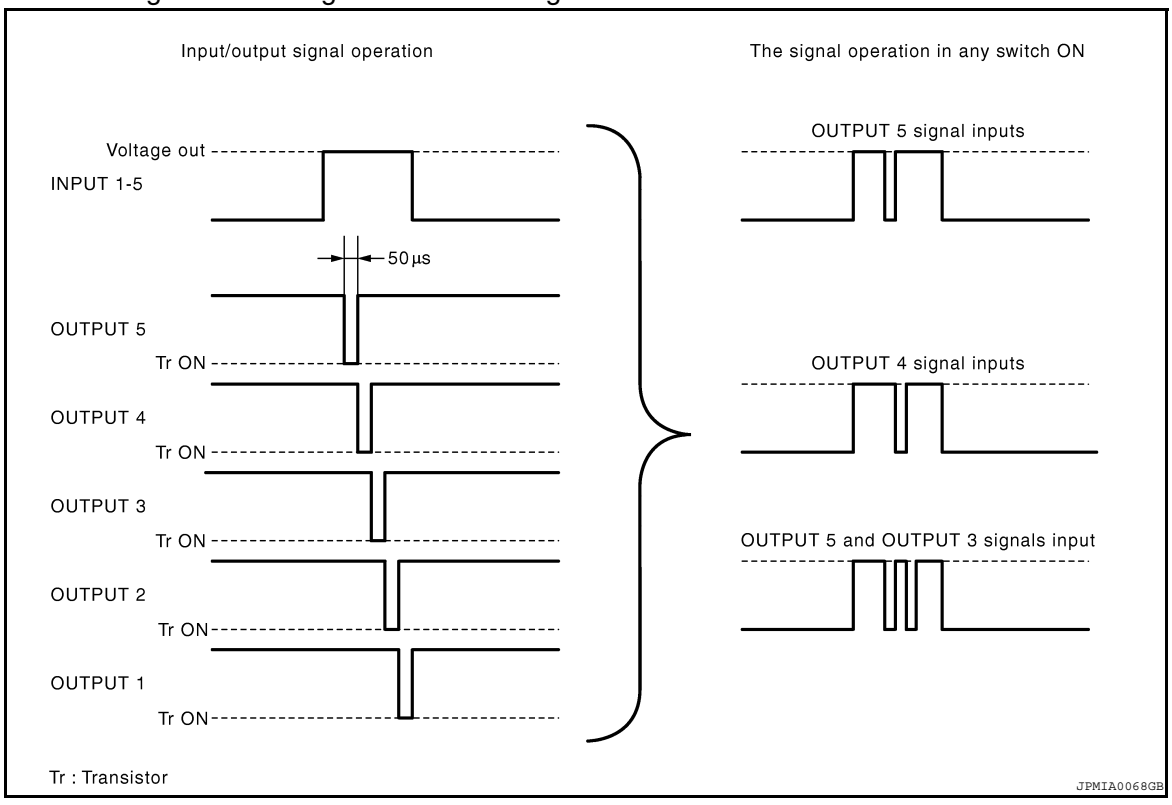
- BCM reads the status of the combination switch at 10ms interval normally.



NOTE:

BCM reads the status of the combination switch at 60ms interval when BCM is controlled at low power consumption mode.

- BCM operates as follows and judges the status of the combination switch.
- INPUT 1 - 5 outputs the voltage waveforms of 5 systems simultaneously.
- It operates the transistor on OUTPUT side in the following order: OUTPUT 5→4→3→2→1.
- The voltage waveform of INPUT corresponding to the formed circuit changes according to the operation of the transistor on OUTPUT side if any (1 or more) switches are ON.
- It reads this change of the voltage as the status signal of the combination switch.

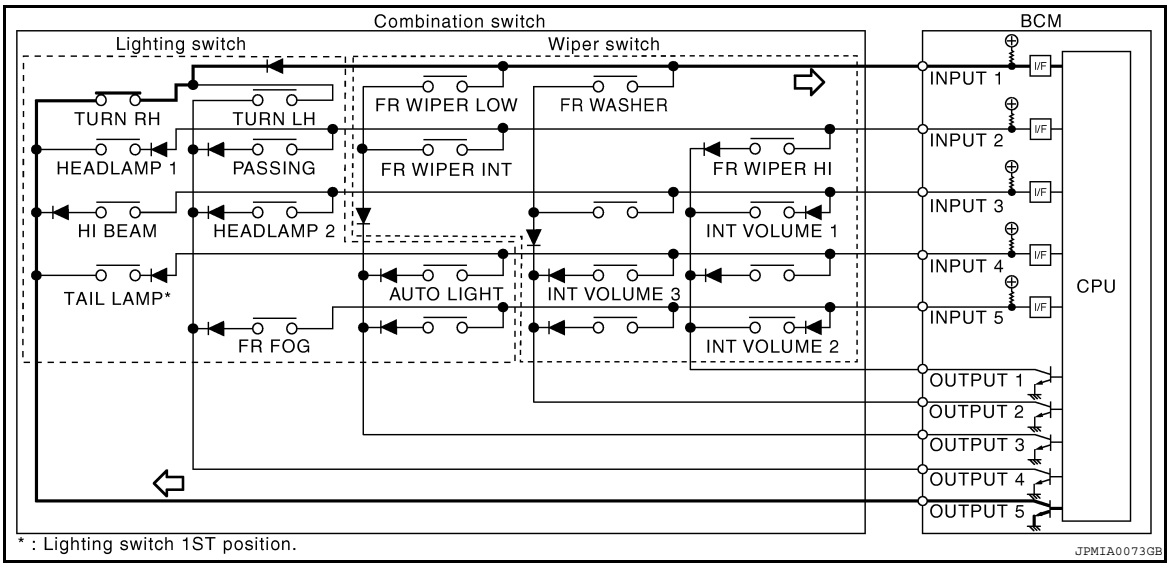


Operation Example

In the following operation example, the combination of the status signals of the combination switch is replaced as follows: INPUT 1 - 5 to “1 - 5” and OUTPUT 1 - 5 to “A - E”.

Example 1: When a switch (TURN RH switch) is turned ON

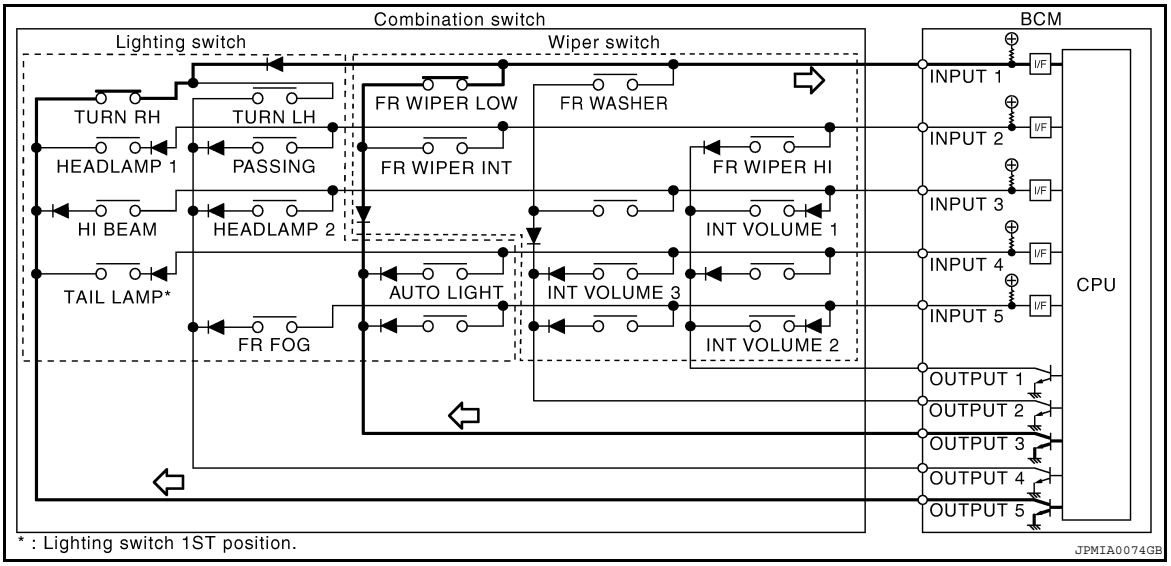
- The circuit between INPUT 1 and OUTPUT 5 is formed when the TURN RH switch is turned ON.



- BCM detects the combination switch status signal “1E” when the signal of OUTPUT 5 is input to INPUT 1.
- BCM judges that the TURN RH switch is ON when the signal “1E” is detected.

Example 2: When some switches (TURN RH switch, FR WIPER LOW switch) are turned ON

- The circuits between INPUT 1 and OUTPUT 5 and between INPUT 1 and OUTPUT 3 are formed when the TURN RH switch and FR WIPER LOW switch are turned ON.



- BCM detects the combination switch status signal “1CE” when the signals of OUTPUT 3 and OUTPUT 5 are input to INPUT 1.
- BCM judges that the TURN RH switch and FR WIPER LOW switch are ON when the signal “1CE” is detected.

WIPER INTERMITTENT DIAL POSITION SETTING (FRONT WIPER INTERMITTENT OPERATION)

BCM judges the wiper intermittent dial 1 - 7 by the status of INT VOLUME 1, 2, and 3 switches.

Wiper intermittent dial position	Intermittent operation delay interval	INT VOLUME switch ON/OFF status		
		INT VOLUME 1 switch	INT VOLUME 2 switch	INT VOLUME 3 switch
1	Short ↑ ↓ Long	ON	ON	ON
2		ON	ON	OFF
3		ON	OFF	OFF
4		OFF	OFF	OFF
5		OFF	OFF	ON
6		OFF	ON	ON
7		OFF	ON	OFF

DIAGNOSIS SYSTEM (BCM)
COMMON ITEM
COMMON ITEM : Diagnosis Description

INFOID:0000000005804799

BCM CONSULT-III FUNCTION

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-DIAGNOSTIC RESULT	Displays the diagnosis results judged by BCM.
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	• Read and save the vehicle specification. • Write the vehicle specification when replacing BCM.

SYSTEM APPLICATION

BCM can perform the following functions for each system.

NOTE:

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

System	Sub system selection item	Diagnosis mode		
		WORK SUPPORT	DATA MONITOR	ACTIVE TEST
Door lock	DOOR LOCK	×	×	×
Rear window defogger	REAR DEFOGGER		×	×
Warning chime	BUZZER		×	×
Interior room lamp timer	INT LAMP	×	×	×
Exterior lamp	HEAD LAMP	×	×	×
Wiper and washer	WIPER	×	×	×
Turn signal and hazard warning lamps	FLASHER	×	×	×
Air conditioner	AIR CONDITONER		×	
Intelligent Key system	INTELLIGENT KEY	×	×	×
Combination switch	COMB SW		×	
BCM	BCM	×		
Immobilizer	IMMU		×	×
Interior room lamp battery saver	BATTERY SAVER	×	×	×
Trunk open	TRUNK		×	×
Vehicle security system	THEFT ALM	×	×	×
RAP system	RETAINED PWR		×	
Signal buffer system	SIGNAL BUFFER		×	×
TPMS	AIR PRESSURE MONITOR	×	×	×

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

INFOID:0000000005804800

ECU IDENTIFICATION

Displays the BCM part No.

SELF-DIAG RESULT

Refer to BCS-68, "DTC Index".

HEADLAMP

HEADLAMP : CONSULT-III Function (BCM - HEAD LAMP)

INFOID:0000000005804801

WORK SUPPORT

Work item	Setting item	Setting	
CUSTOM A/LIGHT SETTING[2]	MODE1[1]	Normal	
	MODE2	More sensitive setting than normal setting (Turns ON earlier than normal operation.)	
	MODE3	More sensitive setting than MODE 2 (Turns ON earlier than MODE 2.)	
	MODE4	Less sensitive setting than normal setting (Turns ON later than normal operation.)	
BATTERY SAVER SET	ON[1]	With the exterior lamp battery saver function	
	OFF	Without the exterior lamp battery saver function	
ILL DELAY SET[2]	MODE1[1]	45 sec.	Sets delay timer function timer operation time (All doors closed)
	MODE2	Without the function	
	MODE3	30 sec.	
	MODE4	60 sec.	
	MODE5	90 sec.	
	MODE6	120 sec.	
	MODE7	150 sec.	
	MODE8	180 sec.	

1 : Initial setting

2 : With auto light system

DATA MONITOR

Monitor item [Unit]	Description
PUSH SW [ON/OFF]	The switch status input from push-button ignition switch
ENGINE STATE [STOP/STALL/CRANK/RUN]	The engine status received from ECM with CAN communication
VEH SPEED 1 [km/h]	The value of the vehicle speed received from combination meter with CAN communication
KEY SW-SLOT [ON/OFF]	Key switch status input from key slot

Monitor item [Unit]	Description
TURN SIGNAL R [ON/OFF]	Each switch status that BCM judges from the combination switch reading function
TURN SIGNAL L [ON/OFF]	
TAIL LAMP SW [ON/OFF]	
HI BEAM SW [ON/OFF]	
HEAD LAMP SW 1 [ON/OFF]	
HEAD LAMP SW 2 [ON/OFF]	
PASSING SW [ON/OFF]	
AUTO LIGHT SW[1] [ON/OFF]	
DOOR SW-DR [ON/OFF]	The switch status input from front door switch LH
DOOR SW-AS [ON/OFF]	The switch status input from front door switch RH
DOOR SW-RR [ON/OFF]	The switch status input from rear door switch RH
DOOR SW-RL [ON/OFF]	The switch status input from rear door switch LH
OPTICAL SENSOR [V][1]	The value of exterior brightness voltage input from the optical sensor

1: With auto light system

ACTIVE TEST

Test item	Operation	Description
TAIL LAMP	ON	Transmits the position light request signal to IPDM E/R with CAN communication to turn the tail lamp ON.
	OFF	Stops the tail lamp request signal transmission.
HEAD LAMP	HI	Transmits the high beam request signal with CAN communication to turn the headlamp (HI)
	LOW	Transmits the low beam request signal with CAN communication to turn the headlamp (LOW).
	OFF	Stops the high & low beam request signal transmission.
DAYTIME RUNNING LIGHT[1]	ON	Transmits the daytime running light system request signal to IPDM E/R
	OFF	Stops the daytime running light request signal transmission
ILL DIM SIGNAL	ON	Transmits the delay timer function timer operation time signal to IPDM E/R with CAN communication to turn the headlamps ON (All doors closed).
	OFF	Stops the delay timer function timer signal transmission.

1: With daytime running light system.

FLASHER

FLASHER : CONSULT-III Function (BCM - FLASHER)

INFOID:0000000005804804

WORK SUPPORT

Service item	Setting item	Setting	
HAZARD ANSWER BACK	LOCK ONLY	Activated when locking.	Sets the hazard warning lamp answer back activation when the door is lock/unlock with the request switch or the key fob.
	UNLOCK ONLY	Activated when unlocking.	
	LOCK/UNLOCK*	Activated when locking/unlocking	
	OFF	Not activated	

* : Initial setting

DATA MONITOR

Monitor item [Unit]	Description
REQ SW-DR [ON/OFF]	The switch status input from request switch (driver side)
REQ SW-AS [ON/OFF]	The switch status input from front request switch (passenger side)
PUSH SW [ON/OFF]	The switch status input from push-button ignition switch
TURN SIGNAL R [ON/OFF]	Each switch condition that BCM judges from the combination switch reading function
TURN SIGNAL L [ON/OFF]	
HAZARD SW [ON/OFF]	The switch status input from the hazard warning switch
RKE-LOCK [ON/OFF]	The lock signal status received from the keyless receiver
RKE-UNLOCK [ON/OFF]	The unlock signal status received from the keyless receiver
RKE-PANIC [ON/OFF]	The panic alarm signal status received from the keyless receiver

ACTIVE TEST

Test item	Operation	Description
FLASHER	OFF	Turns turn signal lamps (right and left) OFF.
	LH	Blinks left turn signal lamp.
	RH	Blinks right turn signal lamp.

COMB SW

COMB SW : CONSULT-III Function (BCM - COMB SW)

INFOID:0000000005804805

DATA MONITOR

Monitor item [UNIT]	Description
FR WIPER HI [OFF/ON]	Displays the status of the FR WIPER HI switch in combination switch judged by BCM with the combination switch reading function.
FR WIPER LOW [OFF/ON]	Displays the status of the FR WIPER LOW switch in combination switch judged by BCM with the combination switch reading function.
FR WASHER SW [OFF/ON]	Displays the status of the FR WASHER switch in combination switch judged by BCM with the combination switch reading function.
FR WIPER INT [OFF/ON]	Displays the status of the FR WIPER INT switch in combination switch judged by BCM with the combination switch reading function.

Monitor item [UNIT]	Description
FR WIPER STOP [OFF/ON]	Displays the status of the front wiper stop position signal received from IPDM E/R via CAN communication.
INT VOLUME [1 - 7]	Displays the status of wiper intermittent dial position judged by BCM with the combination switch reading function
TURN SIGNAL R [OFF/ON]	Displays the status of the TURN RH switch in combination switch judged by BCM with the combination switch reading function.
TURN SIGNAL L [OFF/ON]	Displays the status of the TURN LH switch in combination switch judged by BCM with the combination switch reading function.
TAIL LAMP SW [OFF/ON]	Displays the status of the TAIL LAMP switch in combination switch judged by BCM with the combination switch reading function.
HI BEAM SW [OFF/ON]	Displays the status of the HI BEAM switch in combination switch judged by BCM with the combination switch reading function.
HEAD LAMP SW 1 [OFF/ON]	Displays the status of the HEADLAMP 1 switch in combination switch judged by BCM with the combination switch reading function.
HEAD LAMP SW 2 [OFF/ON]	Displays the status of the HEADLAMP 2 switch in combination switch judged by BCM with the combination switch reading function.
PASSING SW [OFF/ON]	Displays the status of the PASSING switch in combination switch judged by BCM with the combination switch reading function.
AUTO LIGHT SW* [OFF/ON]	Displays the status of the AUTO LIGHT switch in combination switch judged by BCM with the combination switch reading function.

*: With auto light system

BATTERY SAVER

BATTERY SAVER : CONSULT-III Function (BCM - BATTERY SAVER)

INFOID:0000000005804806

WORK SUPPORT

Work item	Setting item	Setting	
ROOM LAMP BAT SAV SET	ON*	With the interior room lamp battery saver function	
	OFF	Without the interior room lamp battery saver function	
ROOM LAMP TIMER SET	MODE1*	30 min.	Sets the interior room lamp battery saver timer operating time.
	MODE2	60 min.	
BATTERY SAVER SET	ON*	With the exterior lamp battery saver function	
	OFF	Without the exterior lamp battery saver function	

* : Initial setting

DATA MONITOR

Monitor item [Unit]	Description
REQ SW-DR [ON/OFF]	The switch status input from request switch (front LH)
REQ SW-AS [ON/OFF]	The switch status input from front request switch (front RH)
PUSH SW [ON/OFF]	The switch status input from push-button ignition switch
ACC RLY-F/B [ON/OFF]	Indicates [ON/OFF] condition of accessory relay.
UNLK SEN-DR [ON/OFF]	Status of front door lock assembly LH (door unlock sensor)
KEY SW-SLOT [ON/OFF]	Key switch status input from key slot

Monitor item [Unit]	Description
DOOR SW-DR [ON/OFF]	The switch status input from front door switch LH
DOOR SW-AS [ON/OFF]	The switch status input from front door switch RH
DOOR SW-RR [ON/OFF]	The switch status input from rear door switch RH
DOOR SW-RL [ON/OFF]	The switch status input from rear door switch LH
CDL LOCK SW [ON/OFF]	Lock switch status received from door lock/unlock switch by power window serial link
CDL UNLOCK SW [ON/OFF]	Unlock switch status received from door lock/unlock switch by power window serial link
KEY CYL LK-SW [ON/OFF]	Lock switch status received from key cylinder switch by power window serial link
KEY CYL UN-SW [ON/OFF]	Unlock switch status received from key cylinder switch by power window serial link
TRNK/HAT MNTR [ON/OFF]	The switch status input from trunk room lamp switch
RKE-LOCK [ON/OFF]	Lock signal status received from remote keyless entry receiver
RKE-UNLOCK [ON/OFF]	Unlock signal status received from remote keyless entry receiver

ACTIVE TEST

Test item	Operation	Description
BATTERY SAVER	OFF	Cuts the interior room lamp power supply to turn interior room lamp OFF.
	ON	Outputs the interior room lamp power supply to turn interior room lamp ON.*

* : Each lamp switch is in ON position.

DIAGNOSIS SYSTEM (IPDM E/R)

Diagnosis Description

INFOID:0000000005804807

AUTO ACTIVE TEST

Description

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

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

Operation Procedure

1. Close the hood and lift the wiper arms from the windshield. (Prevent windshield damage due to wiper operation)
   NOTE:
   When auto active test is performed with hood opened, sprinkle water on windshield before hand.
2. Turn ignition switch OFF.
3. Turn the ignition switch ON, and within 20 seconds, press the front door switch LH 10 times. Then turn the ignition switch OFF.
   CAUTION:
   Close front door RH.
4. Turn the ignition switch ON within 10 seconds. After that the horn sounds once and the auto active test starts.
5. The oil pressure warning lamp starts blinking when the auto active test starts.
6. After a series of the following operations is repeated 3 times, auto active test is completed.

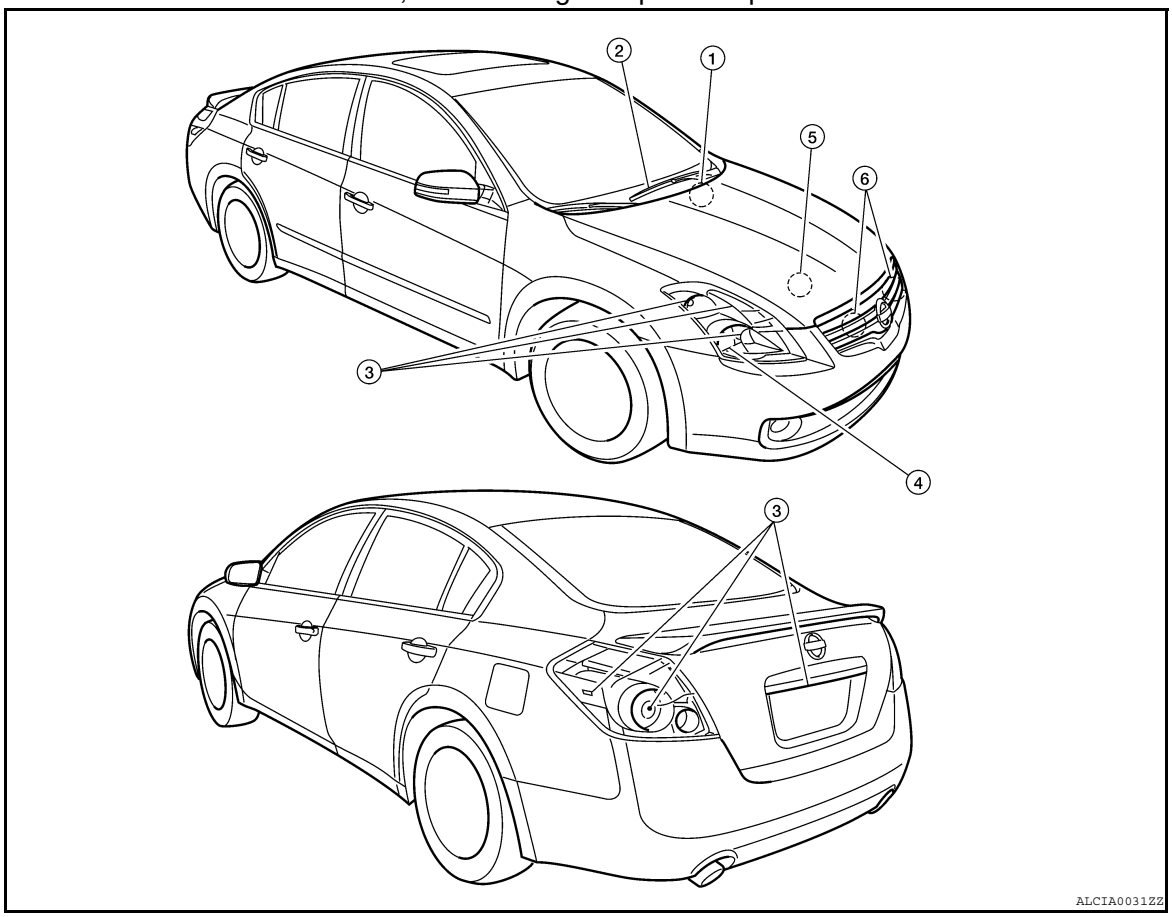
NOTE:
When auto active test mode has to be cancelled halfway through test, turn ignition switch OFF.

CAUTION:

- **If auto active test mode cannot be actuated, check door switch system. Refer to DLK-62, "Component Function Check".**
- **Do not start the engine.**

Inspection in Auto Active Test Mode

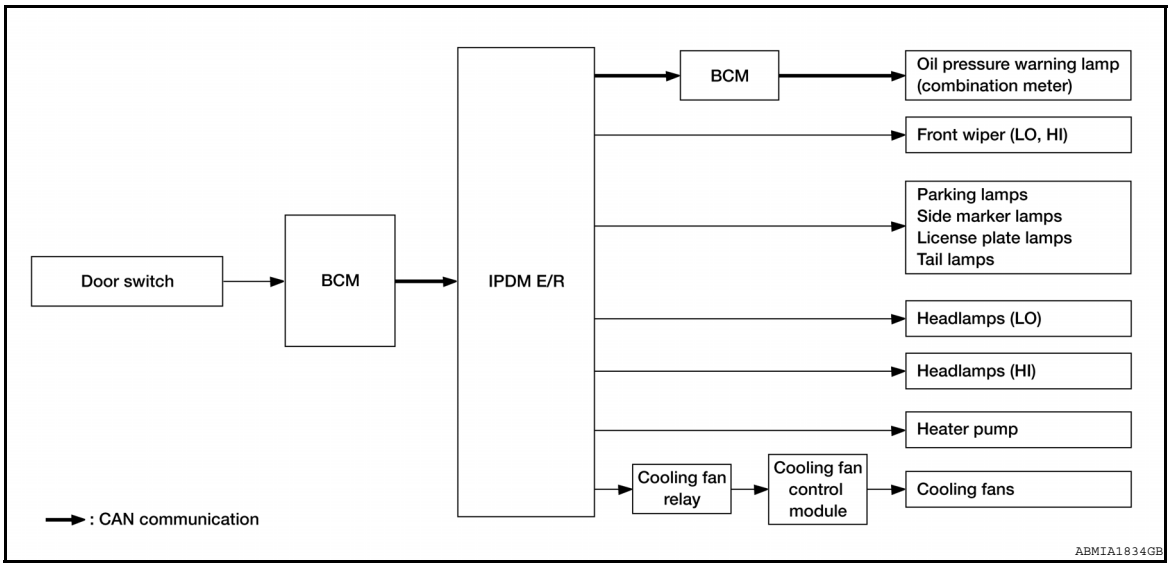
When auto active test mode is actuated, the following 6 steps are repeated 3 times.



Operation sequence	Inspection Location	Operation
1	Oil pressure warning lamp	Blinks continuously during operation of auto active test
2	Front wiper	LO for 5 seconds → HI for 5 seconds
3	• Parking lamps • Side marker lamps • License plate lamps • Tail lamps	10 seconds
4	Headlamps	LO ⇔ HI 5 times
5	Heater pump	ON ⇔ OFF 5 times
6*	Cooling fans	MID for 5 seconds → HI for 5 seconds

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

Concept of auto active test



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

Diagnosis chart in auto active test mode

Symptom	Inspection contents		Possible cause
Any of the following components do not operate • Parking lamps • Side marker lamps • License plate lamps • Tail lamps • Headlamp (HI, LO) • Front wiper	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
Heater pump does not operate	Perform auto active test. Does the heater pump operate?	YES	• Combination meter signal input circuit • CAN communication signal between combination meter and ECM • CAN communication signal between ECM and IPDM E/R
		NO	• Heater pump • Harness or connector between IPDM E/R and magnet clutch • IPDM E/R

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

CONSULT - III Function (IPDM E/R)

INFOID:0000000005804808

APPLICATION ITEM

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

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

SELF DIAGNOSTIC

Refer to PCS-28, "DTC Index".

DATA MONITOR

Monitor item

Monitor Item [Unit]	MAIN SIGNALS	Description
RADFAN REQ [%]	×	Displays the value of the cooling fan speed signal received from ECM via CAN communication.
TAIL&CLR REQ [OFF/ON]	×	Displays the status of the position light request signal received from BCM via CAN communication.
HL LO REQ [OFF/ON]	×	Displays the status of the low beam request signal received from BCM via CAN communication.
HL HI REQ [OFF/ON]	×	Displays the status of the high beam request signal received from BCM via CAN communication.
FR WIP REQ [STOP/1LOW/LOW/HI]	×	Displays the status of the front wiper request signal received from BCM via CAN communication.

Monitor Item [Unit]	MAIN SIGNALS	Description
WIP AUTO STOP [STOP P/ACT P]	×	Displays the status of the front wiper auto stop signal judged by IPDM E/R.
WIP PROT [OFF/BLOCK]	×	Displays the status of the front wiper fail-safe operation judged by IPDM E/R.
IGN RLY1 -REQ [OFF/ON]		Displays the status of the ignition switch ON signal received from BCM via CAN communication.
IGN RLY [OFF/ON]	×	Displays the status of the ignition relay judged by IPDM E/R.
PUSH SW [OFF/ON]		Displays the status of the push-button ignition switch judged by IPDM E/R.
DETENT SW [OFF/ON]		Displays the status of the CVT shift selector (detention switch) judged by IPDM E/R.
DTRL REQ [OFF]		Displays the status of the daytime light 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.
THFT HRN REQ [OFF/ON]		Displays the status of the theft warning horn request signal received from BCM via CAN communication.
HORN CHIRP [OFF/ON]		Displays the status of the horn reminder signal received from BCM via CAN communication.

ACTIVE TEST

Test item

Test item	Operation	Description
HORN	ON	Operates horn relay for 20 ms.
FRONT WIPER	OFF	OFF
	LO	Operates the front wiper relay.
	HI	Operates the front wiper relay and front wiper high relay.
MOTOR FAN	1	OFF
	2	Outputs 50% pulse duty signal (PWM signal) to the cooling fan control module.
	3	Outputs 80% pulse duty signal (PWM signal) to the cooling fan control module.
	4	Outputs 100% pulse duty signal (PWM signal) to the cooling fan control module.
EXTERNAL LAMPS	OFF	OFF
	TAIL	Operates the tail lamp relay.
	LO	Operates the headlamp low relay.
	HI	Operates the headlamp low relay and ON/OFF the headlamp high relay at 1 second intervals.

COMPONENT DIAGNOSIS

POWER SUPPLY AND GROUND CIRCUIT

BCM (BODY CONTROL MODULE)

BCM (BODY CONTROL MODULE) : Diagnosis Procedure

INFOID:0000000005804809

Regarding Wiring Diagram information, refer to BCS-71, "Wiring Diagram".

1. CHECK FUSE AND FUSIBLE LINK

Check if the following BCM fuse or fusible link are blown.

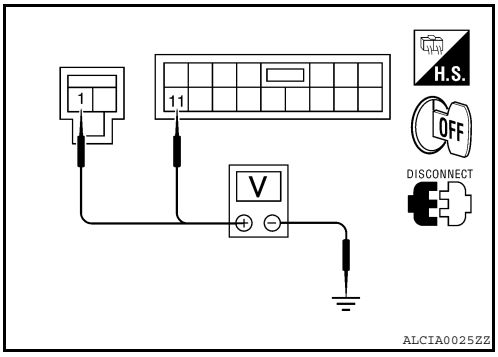
Terminal No.	Signal name	Fuse and fusible link No.
1	Battery power supply	J
11		10

Is the fuse or fusible link blown?

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

2. CHECK POWER SUPPLY CIRCUIT

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



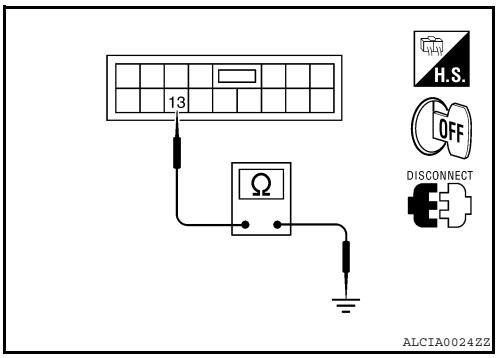
Terminals			Voltage (Approx.)
(+)		(–)	
BCM		Ground	
Connector	Terminal		
M16	1		Battery voltage
M17	11		

Is the measurement normal?

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

3. CHECK GROUND CIRCUIT

Check continuity between BCM harness connector and ground.



BCM		Ground	Continuity
Connector	Terminal		
M17	13		Yes

Does continuity exist?

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

BCM (BODY CONTROL MODULE) : Special Repair Requirement

INFOID:0000000005804810

1. REQUIRED WORK WHEN REPLACING BCM

Initialize control unit. Refer to CONSULT-III operation manual.

>> Work End.

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

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

INFOID:0000000005804811

Regarding Wiring Diagram information, refer to PCS-29, "Wiring Diagram".

1. CHECK FUSES AND FUSIBLE LINK

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

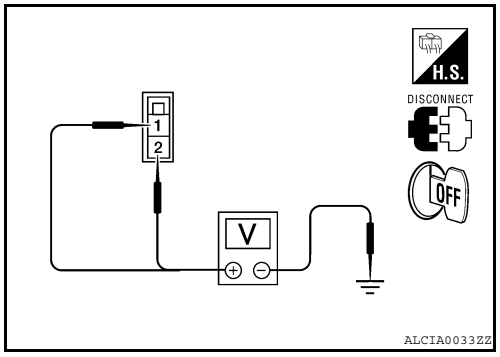
Terminal No.	Signal name	Fuses and fusible link No.
1, 2	Battery power supply	D, E, F
—		42
		43

Is the fuse blown?

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

2. CHECK POWER SUPPLY CIRCUIT

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



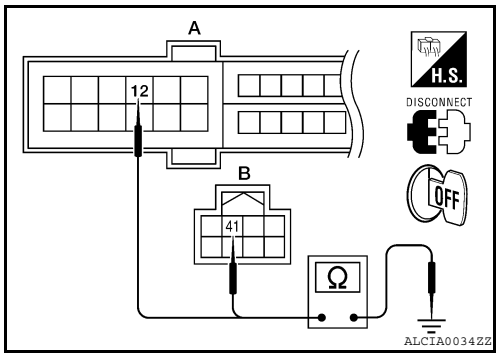
Terminals			Voltage (V) (Approx.)
(+)		(–)	
IPDM E/R			
Connector	Terminal	Ground	
E16	1		Battery voltage
	2		

Is the measurement value normal?

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

3. CHECK GROUND CIRCUIT

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



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

Does continuity exist?

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

HEADLAMP (HI) CIRCUIT

Description

INFOID:0000000005439265

The IPDM E/R (intelligent power distribution module engine room) controls the headlamp high relay based on inputs from the BCM over the CAN communication lines. When the headlamp high relay is energized, power flows through fuses 48 and 49, located in the IPDM E/R. Power then flows to the front combination lamps to the headlamp high beam.

Component Function Check

INFOID:0000000005439266

1.CHECK HEADLAMP (HI) OPERATION

WITHOUT CONSULT-III
1. Start IPDM E/R auto active test. Refer to PCS-13, "Diagnosis Description".
2. Check that the headlamp switches to the high beam.
   NOTE:
   HI/LO is repeated 1 second each when using the IPDM E/R auto active test.

CONSULT-III
1. Select "EXTERNAL LAMPS" of IPDM E/R active test item.
2. With operating the test items, check that the headlamp switches to the high beam.

HI : Headlamp switches to the high beam.
OFF : Headlamp OFF

Does the headlamp switch to the high beam?

YES >> Headlamp (HI) circuit is normal.
NO >> Refer to EXL-36, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000005439267

Regarding Wiring Diagram information, refer to EXL-115, "Wiring Diagram".

1.CHECK HEADLAMP (HI) FUSES

1. Turn the ignition switch OFF.
2. Check that the following fuses are not open.

Unit	Location	Fuse	Capacity
Headlamp HI (LH)	IPDM E/R	48	10A
Headlamp HI (RH)	IPDM E/R	49	10A

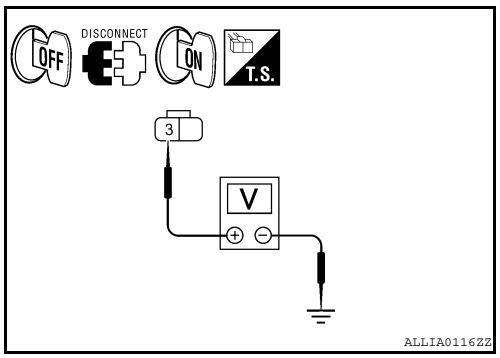
Is the fuse open?

YES >> Repair the harness and replace the fuse.
NO >> GO TO 2

2.CHECK HEADLAMP (HI) OUTPUT VOLTAGE

CONSULT-III ACTIVE TEST
1. Turn the ignition switch OFF.
2. Disconnect the front combination lamp connector.
3. Turn the ignition switch ON.
4. Select "EXTERNAL LAMPS" of IPDM E/R active test item.

5. With EXTERNAL LAMPS ON, check the voltage between the combination lamp connector and ground.



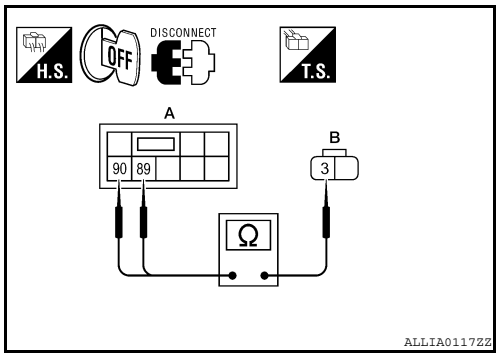
Terminals				Condition	Voltage
(+)			(–)		
Combination lamp			Ground	External lamps	
Connector		Terminal			
RH	E242	3		HI	Battery voltage
LH	E213	3		OFF	0V

Is the measurement value normal?

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

3.CHECK HEADLAMP (HI) CIRCUIT FOR OPEN

1. Turn the ignition switch OFF.
2. Disconnect IPDM E/R connector.
3. Check continuity between the IPDM E/R harness connector and the front combination lamp harness connector.



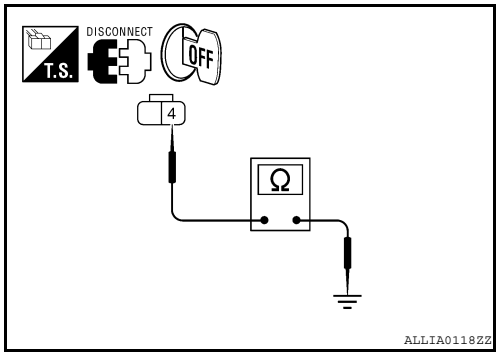
A			B		Continuity
Connector		Terminal	Connector	Terminal	
RH	E200	89	E242	3	Yes
LH		90	E213	3	

Does continuity exist?

YES >> GO TO 4
NO >> Repair the harnesses or connectors.

4.CHECK FRONT COMBINATION LAMP (HI) GROUND CIRCUIT

1. Disconnect the front combination lamp connector.
2. Check continuity between the front combination lamp harness connector terminal and ground.



Front combination lamp			Ground	Continuity
Connector		Terminal		
RH	E242	4		Yes
LH	E213	4		

Does continuity exist?

YES >> Inspect the headlamp bulb.
NO >> Repair the harness.

HEADLAMP (LO) CIRCUIT

Description

INFOID:0000000005439268

The IPDM E/R (intelligent power distribution module engine room) controls the headlamp low relay based on inputs from the BCM over the CAN communication lines. When the headlamp low relay is energized, power flows through fuses 51 and 52, located in the IPDM E/R. Power then flows to the front combination lamps to the headlamp low beam.

Component Function Check

INFOID:0000000005439269

1.CHECK HEADLAMP (LO) OPERATION

WITHOUT CONSULT-III
1. Start IPDM E/R auto active test. Refer to PCS-13, "Diagnosis Description".
2. Check that the headlamp is turned ON.
   NOTE:
   HI/LO is repeated 1 second each when using the IPDM E/R auto active test.

CONSULT-III
1. Select "EXTERNAL LAMPS" of IPDM E/R active test item.
2. With operating the test items, check that the headlamp is turned ON.

LO : Headlamp ON
OFF : Headlamp OFF

Is the headlamp turned ON?

YES >> Headlamp (LO) is normal.
NO >> Refer to EXL-38, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000005439270

Regarding Wiring Diagram information, refer to EXL-115, "Wiring Diagram".

1.CHECK HEADLAMP (LO) FUSES

1. Turn the ignition switch OFF.
2. Check that the following fuses are not open.

Unit	Location	Fuse	Capacity
Headlamp LO (LH)	IPDM E/R	51	15A
Headlamp LO (RH)	IPDM E/R	52	15A

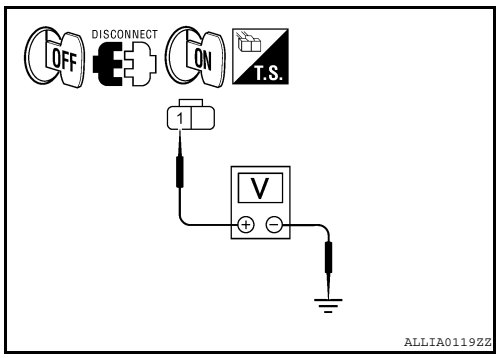
Is the fuse open?

YES >> Repair the harness and replace the fuse.
NO >> GO TO 2

2.CHECK HEADLAMP (LO) OUTPUT VOLTAGE

CONSULT-III
1. Turn the ignition switch OFF.
2. Disconnect the front combination lamp connector.
3. Turn the ignition switch ON.
4. Select "EXTERNAL LAMPS" of IPDM E/R active test item.

5. With EXTERNAL LAMPS ON, check the voltage between the combination lamp connector and ground.



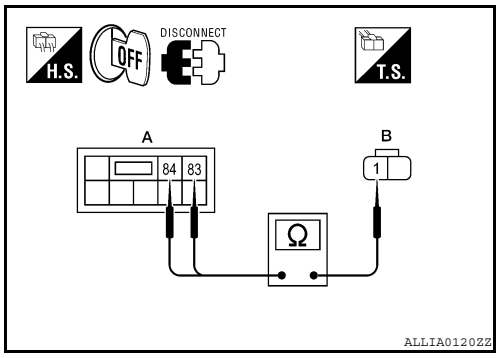
Terminals				Condition	Voltage
(+)			(–)		
Combination lamp			Ground	External lamps	
Connector		Terminal			
RH	E223	1		LO	Battery voltage
LH	E212	1		OFF	0V

Is the measurement value normal?

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

3.CHECK HEADLAMP (LO) CIRCUIT FOR OPEN

1. Turn the ignition switch OFF.
2. Disconnect IPDM E/R connector.
3. Check continuity between the IPDM E/R harness connector and the front combination lamp harness connector.



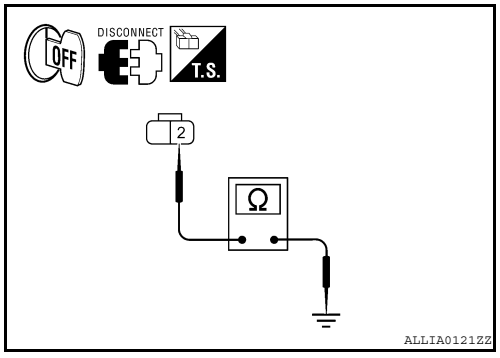
A			B		Continuity
Connector		Terminal	Connector	Terminal	
RH	E200	83	E223	1	Yes
LH		84	E212	1	

Does continuity exist?

YES >> GO TO 4
NO >> Repair the harnesses or connectors.

4.CHECK FRONT COMBINATION LAMP (LO) GROUND CIRCUIT

1. Disconnect the front combination lamp connector.
2. Check continuity between the front combination lamp harness connector terminal and ground.



Front combination lamp			Ground	Continuity
Connector		Terminal		
RH	E223	2		Yes
LH	E212	2		

Does continuity exist?

YES >> Inspect the headlamp bulb.
NO >> Repair the harness.

PARKING LAMP CIRCUIT

Description

INFOID:0000000005439274

The IPDM E/R (intelligent power distribution module engine room) controls the tail lamp relay based on inputs from the BCM over the CAN communication lines. When the tail lamp relay is energized, power flows through fuses 46 and 47, located in the IPDM E/R. Power then flows to the front and rear combination lamps.

Component Function Check

INFOID:0000000005439275

1.CHECK PARKING LAMP OPERATION

WITHOUT CONSULT-III
1. Activate IPDM E/R auto active test. Refer to PCS-13, "Diagnosis Description".
2. Check that the parking lamp is turned ON.

CONSULT-III
1. Select "EXTERNAL LAMPS" of IPDM E/R active test item.
2. With operating the test items, check that the parking lamp is turned ON.

TAIL : Parking lamp ON
OFF : Parking lamp OFF

Is the parking lamp turned ON?

YES >> Parking lamp circuit is normal.
NO >> Refer to EXL-40, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000005439276

Regarding Wiring Diagram information, refer to EXL-121, "Wiring Diagram".

1.CHECK PARKING LAMP FUSES

1. Turn the ignition switch OFF.
2. Check that the following fuses are not open.

Unit	Location	Fuse	Capacity
Parking lamps (front)	IPDM E/R	46	10A
Parking lamps (rear)	IPDM E/R	47	10A

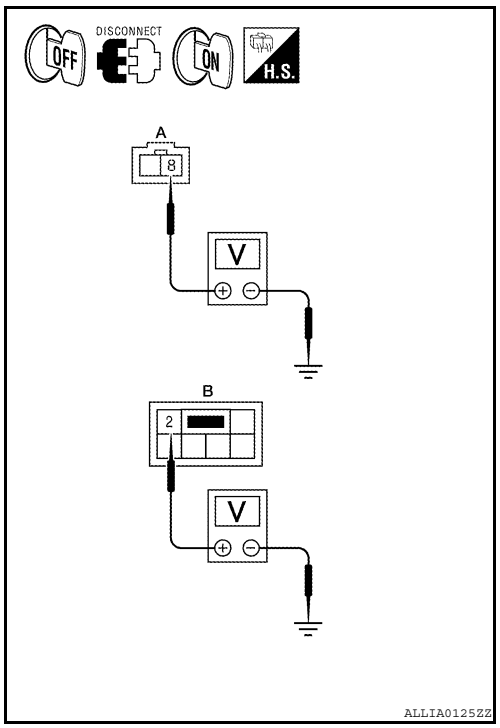
Is the fuse open?

YES >> Repair the harness and replace the fuse.
NO >> GO TO 2

2.CHECK TAIL LAMP RELAY OUTPUT (VOLTAGE)

CONSULT-III

1. Turn the ignition switch OFF.
2. Disconnect the front combination lamp connector.
3. Turn the ignition switch ON.
4. Select "EXTERNAL LAMPS" of IPDM E/R active test item.
5. With EXTERNAL LAMPS ON, check the voltage between the combination lamp connector and ground.



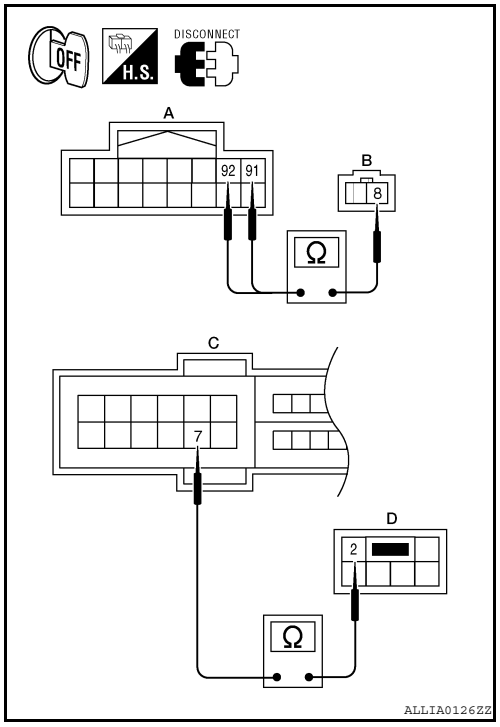
Terminals				Condition	Voltage
(+)			(–)		
Combination lamp			Ground	External lamps	
Connector		Terminal			
Front	A: E218, E225	8		LO	Battery voltage
Rear	B: B30, B45	2		OFF	0V

Is the measurement value normal?

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

3. CHECK PARKING LAMP CIRCUIT (OPEN)

1. Turn the ignition switch OFF.
2. Disconnect IPDM E/R connector.
3. Check continuity between the IPDM E/R harness connector and the combination lamp harness connector.



IPDM E/R			Combination lamp		Continuity
Connector		Terminal	Connector	Terminal	
Front	A: E201	91, 92	B: E218, E225	8	Yes
Rear	C: E18	7	D: B30, B45	2	

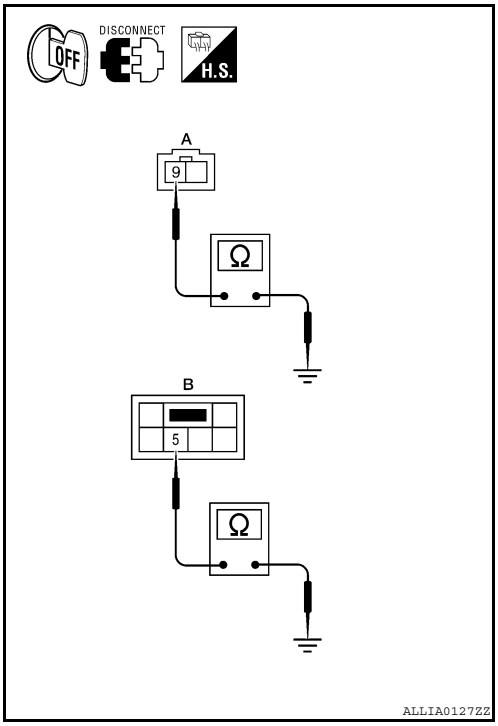
Does continuity exist?

YES >> GO TO 4
NO >> Repair the harnesses or connectors.

4. CHECK PARKING LAMP GROUND CIRCUIT

1. Disconnect the combination lamp connector.
2. Check continuity between the combination lamp harness connector terminal and ground.

Combination lamp			Ground	Continuity
Connector		Terminal		
Front	A: E218, E225	9		Yes
Rear	B: B30, B45	5		



Does continuity exist?

YES >> Inspect the parking lamp bulb.
NO >> Repair the harness.

TURN SIGNAL LAMP CIRCUIT

Description

INFOID:0000000005439277

The BCM monitors inputs from the combination switch to determine when to activate the turn signals. The BCM outputs voltage direction to the left and right turn signals during turn signal operation or both during hazard warning operation. The BCM sends a turn signal indicator request to the combination meter via the CAN communication lines.
The BCM performs the fast flasher operation (fail-safe) if any bulb or harness of the turn signal lamp circuit is open.
NOTE:
Turn signal lamp blinks at normal speed when using the hazard warning lamp.

Component Function Check

INFOID:0000000005439278

1.CHECK TURN SIGNAL LAMP

CONSULT-III
1. Select "FLASHER" of BCM (FLASHER) active test item.
2. With operating the test items, check that the turn signal lamp blinks.

LH	**: Turn signal lamp LH blinking**
RH	**: Turn signal lamp RH blinking**
OFF	**: The turn signal lamp OFF**

Does the turn signal lamp blink?

YES >> Turn signal lamp circuit is normal.
NO >> Refer to EXL-43, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000005439279

Regarding Wiring Diagram information, refer to EXL-132, "Wiring Diagram".

1.CHECK TURN SIGNAL LAMP BULB

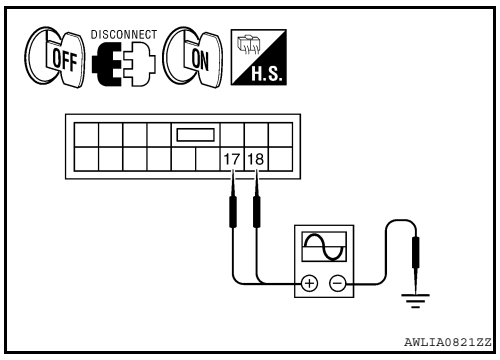
Check the applicable lamp bulb to be sure the proper bulb standard is in use and the bulb is not open.

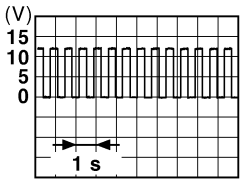
Is the bulb OK?

YES >> GO TO 2
NO >> Replace the bulb.

2.CHECK TURN SIGNAL LAMP OUTPUT VOLTAGE

1. Turn the ignition switch OFF.
2. Disconnect the front combination lamp connector or the rear combination lamp connector.
3. Turn the ignition switch ON.
4. With operating the turn signal switch, check the voltage between the BCM harness connector and the ground.



Terminals				Test item	Voltage
(+)			(–)		
BCM				FLASHER	
Connector		Terminal			
RH	M17	17	Ground	LH or RH	 PKID0926E
LH	M17	18		OFF	0V

Is the measurement value normal?

YES >> GO TO 3
NO >> Replace BCM.

3.CHECK TURN SIGNAL LAMP CIRCUIT FOR OPEN

1. Turn the ignition switch OFF.
2. Disconnect BCM connector.
3. Check the continuity between the BCM harness connector and the front combination lamp, the rear combination lamp harness connector or the door mirror connector (if equipped with turn signals in mirrors).

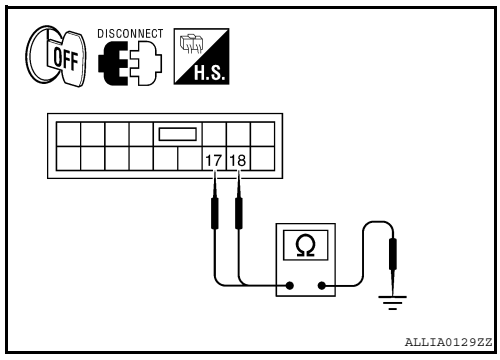
BCM			Front combination lamp Rear combination lamp Door mirror		Continuity
Connector		Terminal	Connector	Terminal	
Rear LH	M17	18	B30	3	Yes
Front LH			E217	5	
Door mirror LH			D4	7	
Rear RH	M17	17	B45	3	
Front RH			E224	5	
Door mirror RH			D107	7	

Does continuity exist?

YES >> GO TO 4
NO >> Repair the harnesses or connectors.

4.CHECK TURN SIGNAL LAMP SHORT CIRCUIT

Check continuity between the BCM harness connector and the ground.



ALLIA0129ZZ

BCM			Ground	Continuity
Connector		Terminal		
LH	M17	18		No
RH		17		

Does continuity exist?

YES >> Repair the harnesses or connectors.
NO >> GO TO 5

5.CHECK TURN SIGNAL LAMP GROUND CIRCUIT

Check continuity between the front combination lamp, the rear combination lamp or the door mirror and ground (if equipped with turn signals in mirrors).

Front combination lamp Rear combination lamp Door mirror				Continuity
Connector		Terminal		
Front RH	E224	7	Ground	Yes
Front LH	E217	7		
Rear RH	B45	5		
Rear LH	B30	5		
Door mirror RH	D107	8		
Door mirror LH	D4	8		

Does continuity exist?

YES >> Replace the front combination lamp or the rear combination lamp.
NO >> Repair the harnesses or connectors.

OPTICAL SENSOR

Description

INFOID:0000000005439280

The optical sensor converts the outside brightness (lux) to voltage and transmits the optical sensor signal to the BCM.

Component Function Check

INFOID:0000000005439281

1.CHECK OPTICAL SENSOR SIGNAL BY CONSULT-III

CONSULT-III
1. Turn the ignition switch ON.
2. Select "OPTICAL SENSOR" of BCM (HEAD LAMP) DATA MONITOR item.
3. Turn the lighting switch to AUTO.
4. With the optical sensor illuminating, check the monitor status.

Monitor item	Condition	Voltage
OPTICAL SENSOR	When illuminating	3.1 V or more *
	When shutting off light	0.6 V or less

*: Illuminates the optical sensor. The value may be less than the standard value if brightness is weak.

Is the item status normal?

YES >> Optical sensor is normal.
NO >> Refer to EXL-46, "Diagnosis Procedure".

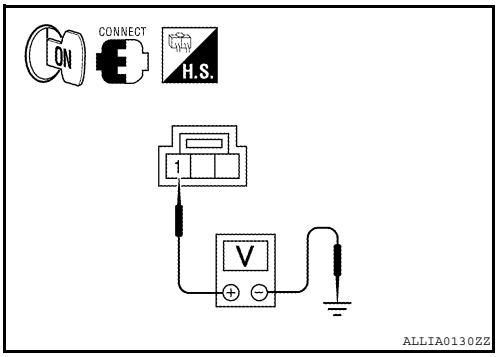
Diagnosis Procedure

INFOID:0000000005439282

Regarding Wiring Diagram information, refer to EXL-96, "Wiring Diagram".

1.CHECK OPTICAL SENSOR POWER SUPPLY INPUT

1. Turn the ignition switch ON.
2. Turn the lighting switch to AUTO.
3. Check the voltage between the optical sensor harness connector and ground.



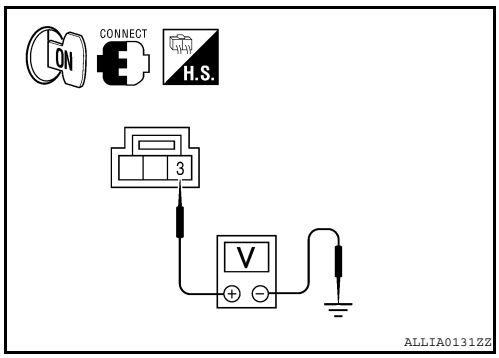
Terminals			Voltage
(+)		(–)	
Optical sensor		Ground	
Connector	Terminal		
M66	1		5V

Is the measurement value normal?

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

2.CHECK OPTICAL SENSOR GROUND INPUT

Check the voltage between the optical sensor harness connector and ground.



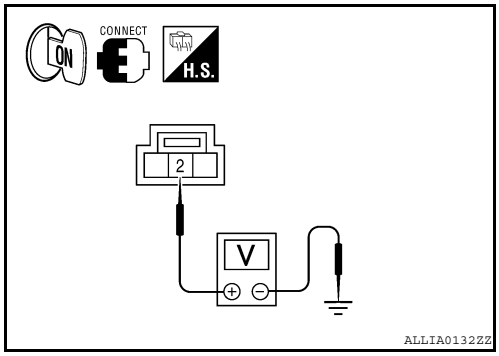
Terminals			Voltage
(+)		(−)	
Optical sensor		Ground	
Connector	Terminal		
M66	3		Less than 0.2V

Is the measurement value normal?

YES >> GO TO 3
NO >> GO TO 6

3. CHECK OPTICAL SENSOR SIGNAL OUTPUT

With the optical sensor illuminating, check voltage between the optical sensor harness connector and ground.



Terminals			Condition	Voltage
(+)		(−)		
Optical sensor		Ground	Optical sensor	
Connector	Terminal			
M66	2		When illuminating	3.1V or more *
			When shutting off light	0.6V or less

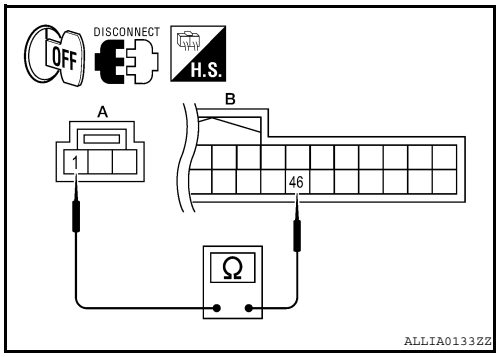
*: Illuminate the optical sensor. The value may be less than the standard if brightness is weak.

Is the measurement value normal?

YES >> GO TO 7
NO >> Replace the optical sensor.

4. CHECK OPTICAL SENSOR POWER SUPPLY FOR OPEN CIRCUIT

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



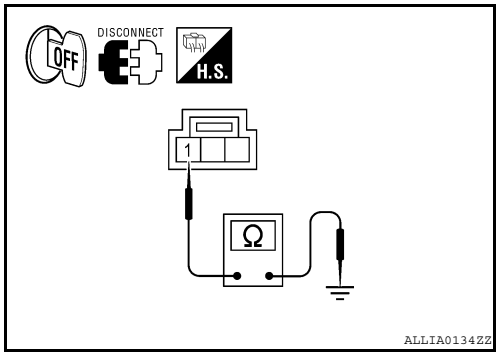
A		B		Continuity
Connector	Terminal	Connector	Terminal	
M66	1	M18	46	Yes

Does continuity exist?

YES >> GO TO 5
NO >> Repair the harnesses or connectors.

5. CHECK OPTICAL SENSOR POWER SUPPLY FOR SHORT CIRCUIT

Check the continuity between the optical sensor harness connector and the ground.



Optical sensor		Ground	Continuity
Connector	Terminal		
M66	1		No

Does continuity exist?

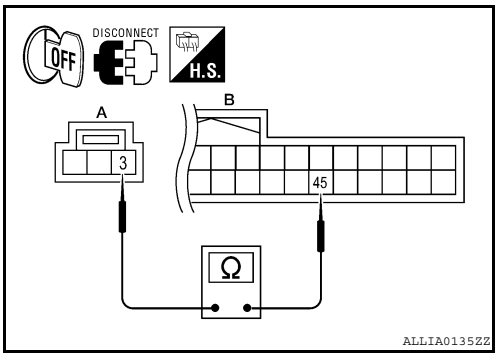
YES >> Repair the harnesses or connectors.

NO >> Replace BCM. Refer to BCS-83, "Removal and Installation" .

6.CHECK OPTICAL SENSOR GROUND FOR OPEN CIRCUIT

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

A		B		Continuity
Connector	Terminal	Connector	Terminal	
M66	3	M18	45	Yes



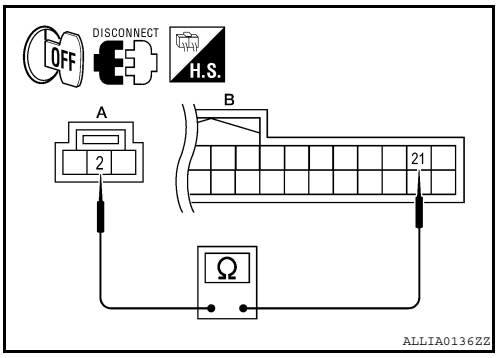
Does continuity exist?

YES >> Replace BCM. Refer to BCS-83, "Removal and Installation" .
NO >> Repair the harnesses or connectors.

7.CHECK OPTICAL SENSOR SIGNAL FOR OPEN CIRCUIT

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

Optical sensor		BCM		Continuity
Connector	Terminal	Connector	Terminal	
M66	2	M18	21	Yes



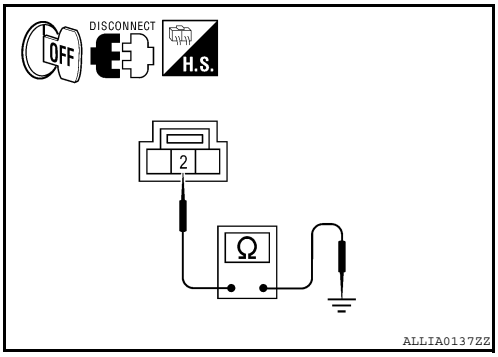
Does continuity exist?

YES >> GO TO 8
NO >> Repair the harnesses or connectors.

8.CHECK OPTICAL SENSOR SIGNAL FOR SHORT CIRCUIT

Check the continuity between the optical sensor harness connector and the ground.

Optical sensor		Ground	Continuity
Connector	Terminal		
M66	2		No



Does continuity exist?

YES >> Repair the harnesses or connectors.
NO >> Replace BCM. Refer to BCS-83, "Removal and Installation" .

ECU DIAGNOSIS

BCM (BODY CONTROL MODULE)

Reference Value

INFOID:0000000005804751

VALUES ON THE DIAGNOSIS TOOL

Monitor Item	Condition	Value/Status
FR WIPER HI	Other than front wiper switch HI	OFF
	Front wiper switch HI	ON
FR WIPER LOW	Other than front wiper switch LO	OFF
	Front wiper switch LO	ON
FR WASHER SW	Front washer switch OFF	OFF
	Front washer switch ON	ON
FR WIPER INT	Other than front wiper switch INT	OFF
	Front wiper switch INT	ON
FR WIPER STOP	Front wiper is not in STOP position	OFF
	Front wiper is in STOP position	ON
INT VOLUME	Wiper intermittent dial is in a dial position 1 - 7	Wiper intermittent dial position
TURN SIGNAL R	Other than turn signal switch RH	OFF
	Turn signal switch RH	ON
TURN SIGNAL L	Other than turn signal switch LH	OFF
	Turn signal switch LH	ON
TAIL LAMP SW	Other than lighting switch 1ST and 2ND	OFF
	Lighting switch 1ST or 2ND	ON
HI BEAM SW	Other than lighting switch HI	OFF
	Lighting switch HI	ON
HEAD LAMP SW 1	Other than lighting switch 2ND	OFF
	Lighting switch 2ND	ON
HEAD LAMP SW 2	Other than lighting switch 2ND	OFF
	Lighting switch 2ND	ON
PASSING SW	Other than lighting switch PASS	OFF
	Lighting switch PASS	ON
AUTO LIGHT SW	Other than lighting switch AUTO	OFF
	Lighting switch AUTO	ON
DOOR SW-DR	Front door LH closed	OFF
	Front door LH opened	ON
DOOR SW-AS	Front door RH closed	OFF
	Front door RH opened	ON
DOOR SW-RR	Rear door RH closed	OFF
	Rear door RH opened	ON
DOOR SW-RL	Rear door LH closed	OFF
	Rear door LH opened	ON
CDL LOCK SW	Other than power door lock switch LOCK	OFF
	Door lock/unlock switch LOCK	ON

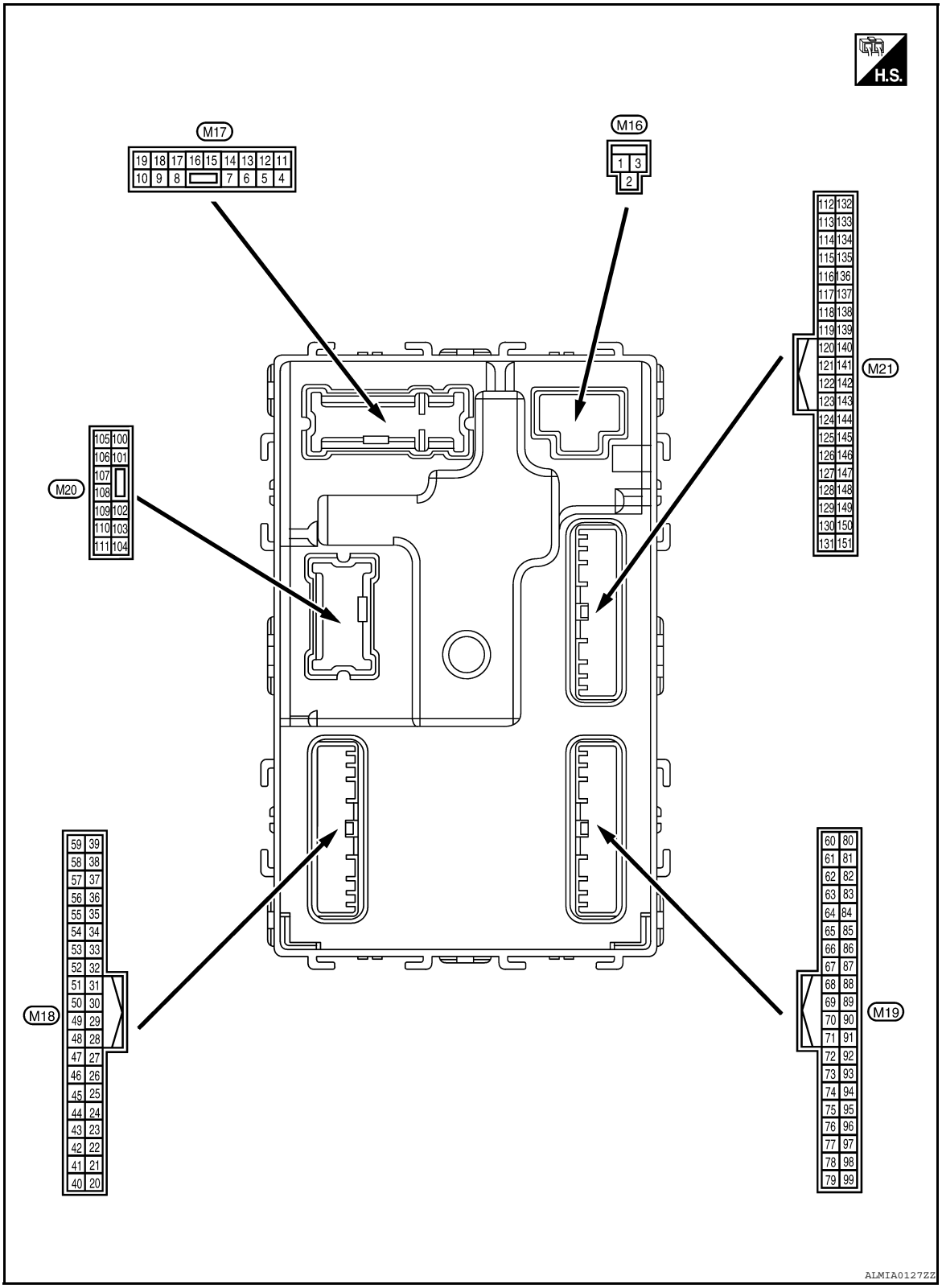
Monitor Item	Condition	Value/Status
CDL UNLOCK SW	Other than door lock/unlock switch UNLOCK	OFF
	Door lock/unlock switch UNLOCK	ON
KEY CYL LK-SW	Other than front door LH key cylinder LOCK position	OFF
	Front door LH key cylinder LOCK position	ON
KEY CYL UN-SW	Other than front door LH key cylinder UNLOCK position	OFF
	Front door LH key cylinder UNLOCK position	ON
HAZARD SW	When hazard switch is not pressed	OFF
	When hazard switch is pressed	ON
REAR DEF SW	When rear window defogger switch is pressed	ON
FAN ON SIG	When AUTO switch or fan switch is pressed	ON
AIR COND SW	When A/C switch is pressed	ON
TR CANCEL SW	Trunk lid opener cancel switch OFF	OFF
	Trunk lid opener cancel switch ON	ON
TR/BD OPEN SW	Trunk lid opener switch OFF	OFF
	While the trunk lid opener switch is turned ON	ON
TRNK/HAT MNTR	Trunk lid closed	OFF
	Trunk lid opened	ON
RKE-LOCK	When LOCK button of Intelligent Key is not pressed	OFF
	When LOCK button of Intelligent Key is pressed	ON
RKE-UNLOCK	When UNLOCK button of Intelligent Key is not pressed	OFF
	When UNLOCK button of Intelligent Key is pressed	ON
RKE-TR/BD	When TRUNK OPEN button of Intelligent Key is not pressed	OFF
	When TRUNK OPEN button of Intelligent Key is pressed	ON
RKE-PANIC	When PANIC button of Intelligent Key is not pressed	OFF
	When PANIC button of Intelligent Key is pressed	ON
RKE-P/W OPEN	When UNLOCK button of Intelligent Key is not pressed and held	OFF
	When UNLOCK button of Intelligent Key is pressed and held	ON
RKE-MODE CHG	When LOCK/UNLOCK button of Intelligent Key is not pressed and held simultaneously	OFF
	When LOCK/UNLOCK button of Intelligent Key is pressed and held simultaneously	ON
OPTICAL SENSOR	When outside of the vehicle is bright	Close to 5 V
	When outside of the vehicle is dark	Close to 0 V
REQ SW-DR	When front door LH request switch is not pressed	OFF
	When front door LH request switch is pressed	ON
REQ SW-AS	When front door RH request switch is not pressed	OFF
	When front door RH request switch is pressed	ON
REQ SW-BD/TR	When trunk request switch is not pressed	OFF
	When trunk request switch is pressed	ON
PUSH SW	When push-button ignition switch is not pressed	OFF
	When push-button ignition switch is pressed	ON
IGN RLY -F/B	Ignition switch OFF or ACC	OFF
	Ignition switch ON	ON
ACC RLY -F/B	Ignition switch OFF	OFF
	Ignition switch ACC or ON	ON

Monitor Item	Condition	Value/Status
BRAKE SW 1	When the brake pedal is not depressed	ON
	When the brake pedal is depressed	OFF
DETE/CANCL SW	When selector lever is in P position	OFF
	When selector lever is in any position other than P	ON
SFT PN/N SW	When selector lever is in any position other than P or N	OFF
	When selector lever is in P or N position	ON
UNLK SEN-DR	Front door LH UNLOCK status	OFF
	Front door LH LOCK status	ON
PUSH SW -IPDM	When push-button ignition switch is not pressed (IPDM E/R sends via CAN)	OFF
	When push-button ignition switch is pressed (IPDM E/R sends via CAN)	ON
IGN RLY1 F/B	Ignition switch OFF or ACC	OFF
	Ignition switch ON	ON
DETE SW -IPDM	When selector lever is in P position (IPDM E/R sends via CAN)	OFF
	When selector lever is in any position other than P (IPDM E/R sends via CAN)	ON
SFT PN -IPDM	When selector lever is in any position other than P or N (IPDM E/R sends via CAN)	OFF
	When selector lever is in P or N position (IPDM E/R sends via CAN)	ON
SFT P -MET	When selector lever is in any position other than P (combination meter sends via CAN)	OFF
	When selector lever is in P position (combination meter sends via CAN)	ON
SFT N -MET	When selector lever is in any position other than N (combination meter sends via CAN)	OFF
	When selector lever is in N position (combination meter sends via CAN)	ON
ENGINE STATE	Engine stopped	STOP
	While the engine stalls	STALL
	At engine cranking	CRANK
	Engine running	RUN
VEH SPEED 1	While driving	Equivalent to speedometer reading
VEH SPEED 2	While driving	Equivalent to speedometer reading
DR DOOR STATE	Front door LH LOCK status	LOCK
	Wait with selective UNLOCK operation (5 seconds)	READY
	Front door LH UNLOCK status	UNLK
AS DOOR STATE	Front door RH LOCK status	LOCK
	Wait with selective UNLOCK operation (5 seconds)	READY
	Front door RH UNLOCK status	UNLK
ID OK FLAG	Ignition switch ACC or ON	RESET
	Ignition switch OFF	SET
PRMT ENG STAT	When the hybrid system start is prohibited	RESET
	When the hybrid system start is permitted	SET
KEY SW -SLOT	When Intelligent Key is not inserted into key slot	OFF
	When Intelligent Key is inserted into key slot	ON
RKE OPE COUN1	During the operation of Intelligent Key	Operation frequency of Intelligent Key

Monitor Item	Condition	Value/Status
AIR PRESS FL	Ignition switch ON (only when the signal from the transmitter is received)	Air pressure of front LH tire
AIR PRESS FR	Ignition switch ON (only when the signal from the transmitter is received)	Air pressure of front RH tire
AIR PRESS RR	Ignition switch ON (only when the signal from the transmitter is received)	Air pressure of rear RH tire
AIR PRESS RL	Ignition switch ON (only when the signal from the transmitter is received)	Air pressure of rear LH tire
ID REGST FL1	When ID of front LH tire transmitter is registered (refer to WT-6, "ID Registration Procedure")	DONE
	When ID of front LH tire transmitter is not registered (refer to WT-6, "ID Registration Procedure")	YET
ID REGST FR1	When ID of front RH tire transmitter is registered (refer to WT-6, "ID Registration Procedure")	DONE
	When ID of front RH tire transmitter is not registered (refer to WT-6, "ID Registration Procedure")	YET
ID REGST RR1	When ID of rear RH tire transmitter is registered (refer to WT-6, "ID Registration Procedure")	DONE
	When ID of rear RH tire transmitter is not registered (refer to WT-6, "ID Registration Procedure")	YET
ID REGST RL1	When ID of rear LH tire transmitter is registered (refer to WT-6, "ID Registration Procedure")	DONE
	When ID of rear LH tire transmitter is not registered (refer to WT-6, "ID Registration Procedure")	YET
WARNING LAMP	Tire pressure indicator OFF	OFF
	Tire pressure indicator ON	ON
BUZZER	Tire pressure warning alarm is not sounding	OFF
	Tire pressure warning alarm is sounding	ON

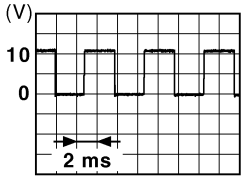
Terminal Layout

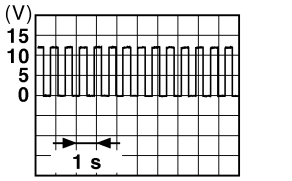
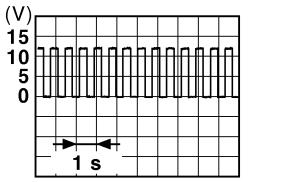
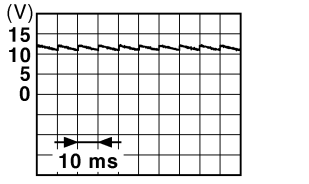
INFOID:0000000005804752

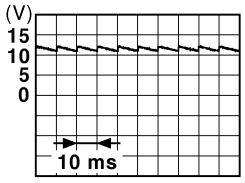
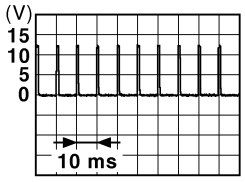
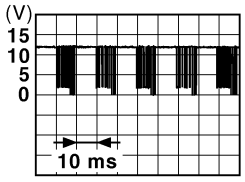


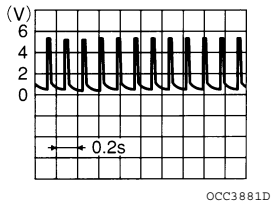
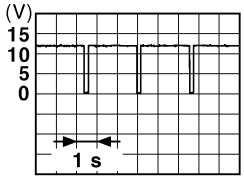
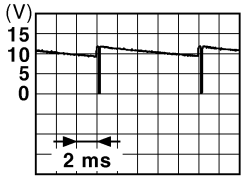
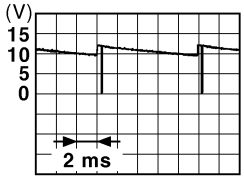
Physical Values

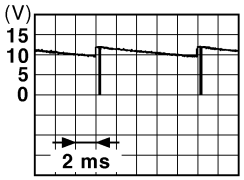
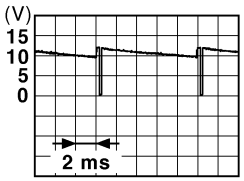
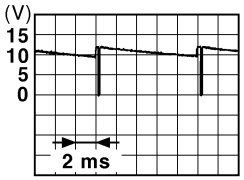
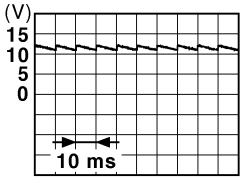
INFOID:0000000005804753

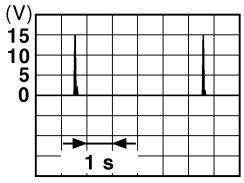
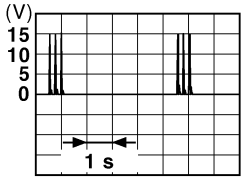
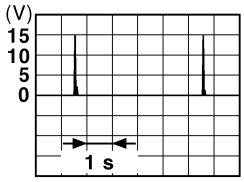
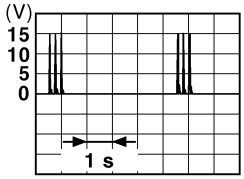
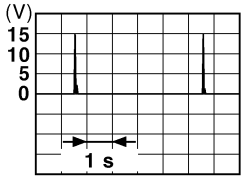
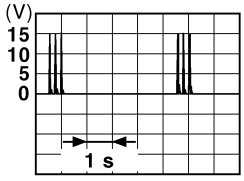
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
(+)	(-)	Signal name	Input/ Output			
1 (W/B)	Ground	Battery power supply	Input	Ignition switch OFF		Battery voltage
2 (R/Y)	Ground	Battery power supply output	Output	Ignition switch OFF		Battery voltage
3 (L/W)	Ground	Ignition power supply output	Output	Ignition switch ON		Battery voltage
4 (P/W)	Ground	Interior room lamp power supply	Output	After passing the interior room lamp battery saver operation time		0V
				Any other time after passing the interior room lamp battery saver operation time		Battery voltage
5 (G/Y)	Ground	Front door RH UNLOCK	Output	Front door RH	UNLOCK (actuator is activated)	Battery voltage
					Other than UNLOCK (actuator is not activated)	0V
7 (R/W)	Ground	Step lamp	Output	Room lamp timer	ON	Battery voltage
					OFF	0V
8 (V)	Ground	All doors LOCK	Output	All doors	LOCK (actuator is activated)	Battery voltage
					Other than LOCK (actuator is not activated)	0V
9 (G)	Ground	Front door LH UNLOCK	Output	Front door LH	UNLOCK (actuator is activated)	Battery voltage
					Other than UNLOCK (actuator is not activated)	0V
10 (G/Y)	Ground	Rear door RH and rear door LH UNLOCK	Output	Rear door RH and rear door LH	UNLOCK (actuator is activated)	Battery voltage
					Other than UNLOCK (actuator is not activated)	0V
11 (Y/R)	Ground	Battery power supply	Input	Ignition switch OFF		Battery voltage
13 (B)	Ground	Ground	—	Ignition switch ON		0V
14 (R/Y)	Ground	Push-button ignition switch illumination ground	Input	Tail lamp	OFF	0V
					ON	**NOTE:** When the illumination brightening/dimming level is in the neutral position  JSNIA0010GB
15 (Y/L)	Ground	ACC indicator lamp	Output	Ignition switch	OFF	Battery voltage
					ACC	0V

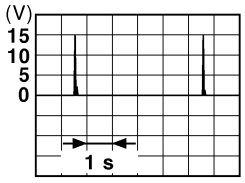
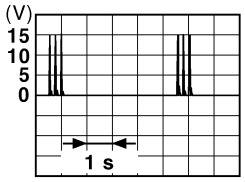
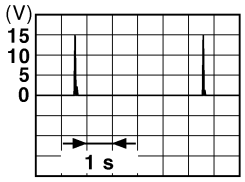
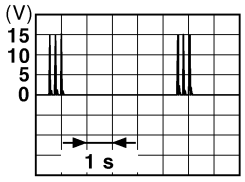
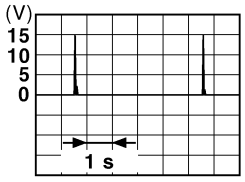
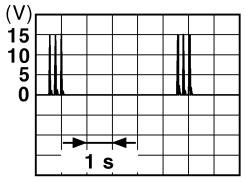
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
(+)	(-)	Signal name	Input/ Output			
17 (G/B)	Ground	Turn signal (RH)	Output	Ignition switch ON	Turn signal switch OFF	0V
					Turn signal switch RH	 6.5V
18 (G/Y)	Ground	Turn signal (LH)	Output	Ignition switch ON	Turn signal switch OFF	0V
					Turn signal switch LH	 6.5V
19 (Y)	Ground	Room lamp timer control	Output	Interior room lamp	Lamps fully OFF	Battery voltage
					Lamps fully ON	0V
21 (P/B)	Ground	Optical sensor signal	Input	Ignition switch ON	When outside of the vehicle is bright	Close to 5V
					When outside of the vehicle is dark	Close to 0V
24 (R/W)	Ground	Stop lamp switch 1	Input	—		Battery voltage
26 (O/L)	Ground	Stop lamp switch 2	Input	Stop lamp switch	OFF (brake pedal is not depressed)	0V
					ON (brake pedal is depressed)	Battery voltage
27 (G/W)	Ground	Front door lock assembly LH (unlock sensor)	Input	Front door LH	LOCK status	 11.8V
					UNLOCK status	0V
29 (Y)	Ground	Key slot switch	Input	When Intelligent Key is inserted into key slot		Battery voltage
				When Intelligent Key is not inserted into key slot		0V
30 (V/Y)	Ground	ACC feedback signal	Input	Ignition switch	OFF	0
					ACC or ON	Battery voltage
31 (G)	Ground	Ignition relay-2 feedback signal	Input	Ignition switch	OFF	0V
					ON	Battery voltage

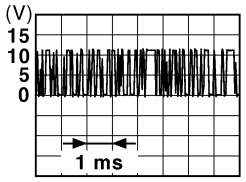
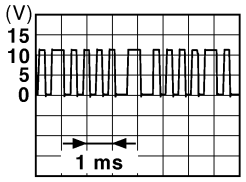
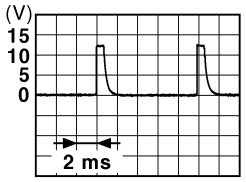
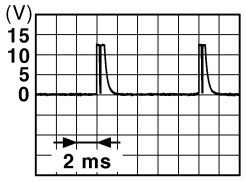
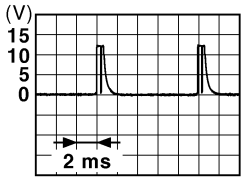
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
(+)	(-)	Signal name	Input/ Output			
32 (R/B)	Ground	Front door RH switch	Input	Front door RH switch	OFF (when front door RH closes)	 JPMIA0011GB 11.8V
					ON (when front door RH opens)	0V
33 (SB)	Ground	Compressor ON signal	Input	A/C switch	OFF	Battery voltage
					ON	0V
34* (L/R)	Ground	Front door lock assembly LH (key cylinder switch) (unlock)	Input	Front door lock assembly LH (key cylinder switch)	OFF (neutral)	Battery voltage
					ON (unlock)	0V
36* (GR)	Ground	Lock switch signal	Input	Door lock/unlock switch	Lock	Battery Voltage
					Unlock	0V
37 (O)	Ground	Trunk lid opener cancel switch	Input	Trunk lid opener cancel switch	CANCEL	 JPMIA0012GB 1.1V
					ON	0V
38 (GR/ W)	Ground	Rear window defogger ON signal	Input	Rear window defogger switch	OFF	Battery Voltage V
					ON	0V
39* (GR/ R)	Ground	Unlock switch signal	Input	Door lock/unlock switch	Unlock	Battery Voltage
					Lock	0V
40* (Y/G)	Ground	Power window serial link	Input/ Output	Ignition switch ON		 JPMIA0013GB 10.2V
				Ignition switch OFF or ACC		0V
41 (W)	Ground	Push-button ignition switch illumination	Output	Engine switch (push switch) illumination	ON	5.5V
					OFF	0V
42 (R)	Ground	LOCK indicator lamp	Output	LOCK indicator lamp	ON	0V
					OFF	Battery voltage
45 (P)	Ground	Receiver & sensor ground	Input	Ignition switch ON		0V

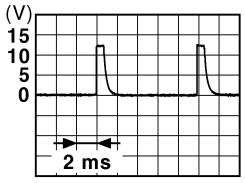
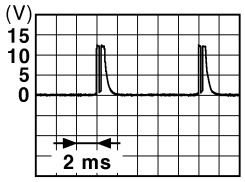
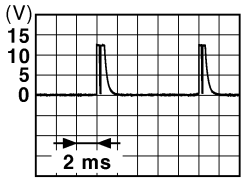
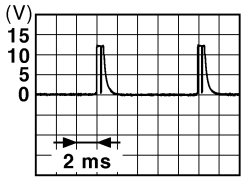
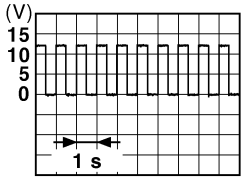
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
(+)	(-)	Signal name	Input/ Output			
46 (V/W)	Ground	Receiver & sensor power supply output	Output	Ignition switch	OFF	0V
					ACC or ON	5.0V
47 (G/O)	Ground	Tire pressure receiver signal	Input/ Output	Ignition switch ON	Standby state	 OCC3881D
					When receiving the signal from the transmitter	 OCC3880D
48 (R/B)	Ground	Selector lever P/N position signal	Input	Selector lever	P or N position	12.0V
					Except P and N positions	0V
49 (L/O)	Ground	Security indicator signal	Output	Security indicator	ON	0V
					Blinking	 JPMIA0014GB 11.3V
					OFF	Battery voltage
50 (LG/ B)	Ground	Combination switch OUTPUT 5	Output	Combination switch (Wiper intermittent dial 4)	All switch OFF	0V
					Lighting switch 1ST	 JPMIA0031GB 10.7V
					Lighting switch high-beam	
					Lighting switch 2ND	
					Turn signal switch RH	
51 (L/W)	Ground	Combination switch OUTPUT 1	Output	Combination switch	All switch OFF (Wiper intermittent dial 4)	0V
					Front wiper switch HI (Wiper intermittent dial 4)	 JPMIA0032GB 10.7V
					Any of the conditions 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	

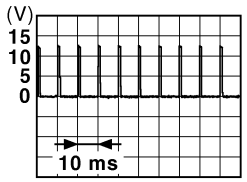
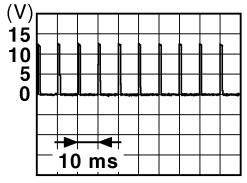
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
(+)	(-)	Signal name	Input/ Output			
52 (G/B)	Ground	Combination switch OUTPUT 2	Output	Combination switch	All switch OFF (Wiper intermittent dial 4)	0V
					Front washer switch ON (Wiper intermittent dial 4)	 JPMIA0033GB 10.7V
					Any of the conditions below with all switch OFF • Wiper intermittent dial 1 • WIper intermittent dial 5 • Wiper intermittent dial 6	
53 (LG/ R)	Ground	Combination switch OUTPUT 3	Output	Combination switch (Wiper intermittent dial 4)	All switch OFF	0V
					Front wiper switch INT	 JPMIA0034GB 10.7V
					Front wiper switch LO	
					Lighting switch AUTO	
54 (G/Y)	Ground	Combination switch OUTPUT 4	Output	Combination switch (Wiper intermittent dial 4)	All switch OFF	0V
					Lighting switch flash-to-pass	 JPMIA0035GB 10.7V
					Turn signal switch LH	
55 (BR/ W)	Ground	Front blower monitor	Input	Front blower motor switch	ON	Battery voltage
					OFF	0V
56 (L/B)	Ground	Front door lock assembly LH (key cylinder switch) (lock)	Input	Front door lock assembly LH (key cylinder switch)	OFF (neutral)	Battery voltage
					ON (lock)	0V
57 (W)	Ground	Tire pressure warning check switch	Input	—		Battery voltage
58 (SB)	Ground	Front door LH switch	Input	Front door LH switch	OFF (front door LH CLOSE)	 JPMIA0011GB 11.8V
					ON (front door LH OPEN)	0V
59 (G/R)	Ground	Rear window defogger relay	Output	Rear window defogger	Active	Battery voltage
					Not activated	0V

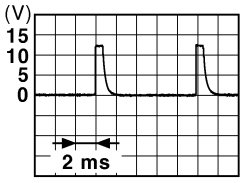
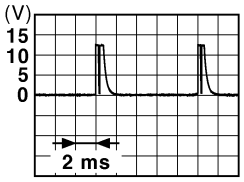
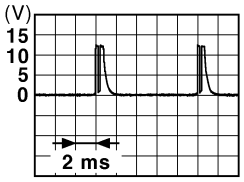
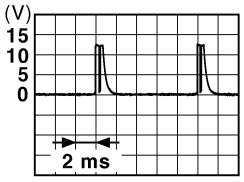
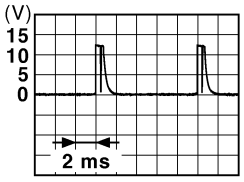
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
(+)	(-)	Signal name	Input/ Output			
60 (B/R)	Ground	Front console antenna 2 (-)	Output	Ignition switch OFF	When Intelligent Key is in the passenger compartment	 JMKIA0062GB
					When Intelligent Key is not in the passenger compartment	 JMKIA0063GB
61 (W/R)	Ground	Center console antenna 2 (+)	Output	Ignition switch OFF	When Intelligent Key is in the passenger compartment	 JMKIA0062GB
					When Intelligent Key is not in the passenger compartment	 JMKIA0063GB
62 (B/Y)	Ground	Front outside handle RH antenna (-)	Output	When the front door RH request switch is operated with ignition switch OFF	When Intelligent Key is in the antenna detection area	 JMKIA0062GB
					When Intelligent Key is not in the antenna detection area	 JMKIA0063GB

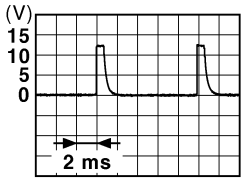
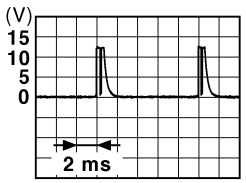
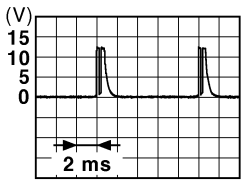
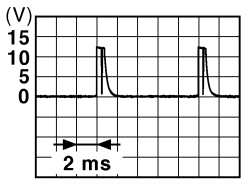
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
(+)	(-)	Signal name	Input/ Output			
63 (LG)	Ground	Front outside handle RH antenna (+)	Output	When the front door RH request switch is operated with ignition switch OFF	When Intelligent Key is in the antenna detection area	 JMKIA0062GB
					When Intelligent Key is not in the antenna detection area	 JMKIA0063GB
64 (V)	Ground	Front outside handle LH antenna (-)	Output	When the front door LH request switch is operated with ignition switch OFF	When Intelligent Key is in the antenna detection area	 JMKIA0062GB
					When Intelligent Key is not in the antenna detection area	 JMKIA0063GB
65 (P)	Ground	Front outside handle LH antenna (+)	Output	When the front door LH request switch is operated with ignition switch OFF	When Intelligent Key is in the antenna detection area	 JMKIA0062GB
					When Intelligent Key is not in the antenna detection area	 JMKIA0063GB

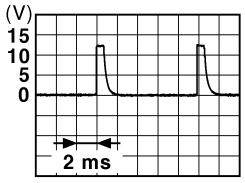
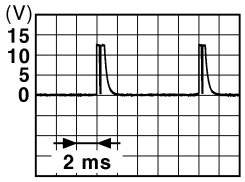
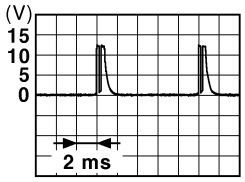
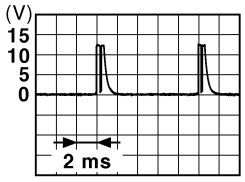
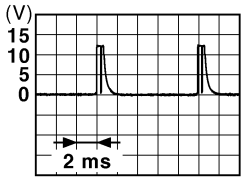
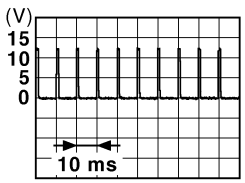
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
(+)	(-)	Signal name	Input/ Output			
68 (G/O)	Ground	NATS antenna amp (built in key slot)	Input/ Output	During waiting	Ignition switch is pressed while inserting the Intelligent Key into the key slot.	Just after pressing ignition switch. Pointer of tester should move.
69 (O)	Ground	NATS antenna amp (built in key slot)	Input/ Output	During waiting	Ignition switch is pressed while inserting the Intelligent Key into the key slot.	Just after pressing ignition switch. Pointer of tester should move.
70 (R/B)	Ground	Ignition relay-2 control	Output	Ignition switch	OFF or ACC	0V
					ON	Battery voltage
71 (L/O)	Ground	Remote keyless entry receiver signal	Input/ Output	During waiting		 JMKIA0064GB
				When operating either button on Intelligent Key		 JMKIA0065GB
75 (R/Y)	Ground	Combination switch INPUT 5	Input	Combination switch	All switch OFF (Wiper intermittent dial 4)	 JPMIA0041GB 1.4V
					Wiper intermittent dial 4	 JPMIA0037GB 1.3V
					Any of the conditions below with all switch OFF • Wiper intermittent dial 1 • Wiper intermittent dial 2 • Wiper intermittent dial 6 • Wiper intermittent dial 7	 JPMIA0040GB 1.3V

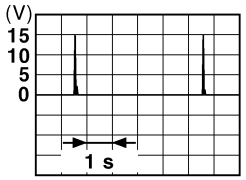
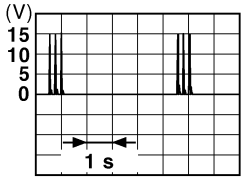
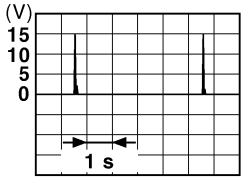
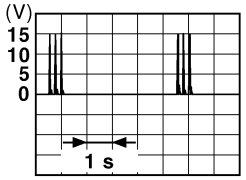
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
(+)	(-)	Signal name	Input/ Output			
76 (R/G)	Ground	Combination switch INPUT 3	Input	Combination switch	All switch OFF (Wiper intermittent dial 4)	 JPMIA0041GB 1.4V
					Lighting switch high-beam (Wiper intermittent dial 4)	 JPMIA0036GB 1.3V
					Lighting switch 2ND (Wiper intermittent dial 4)	 JPMIA0037GB 1.3V
					Any of the conditions below with all switch OFF • Wiper intermittent dial 1 • Wiper intermittent dial 2 • Wiper intermittent dial 3	 JPMIA0040GB 1.3V
78 (P)	Ground	CAN-L	Input/ Output	—		—
79 (L)	Ground	CAN-H	Input/ Output	—		—
80 (R/L)	Ground	Key slot illumination	Output	Key slot illumination	OFF	0V
					Blinking	 JPMIA0015GB 6.5V
					ON	Battery voltage
81 (LG)	Ground	ON indicator lamp	Output	Ignition switch	OFF or ACC	Battery voltage
					ON	0V

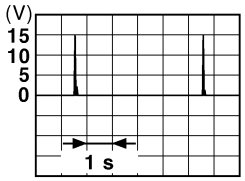
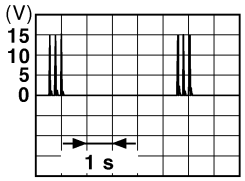
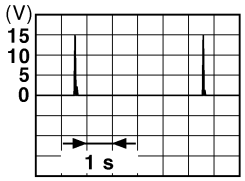
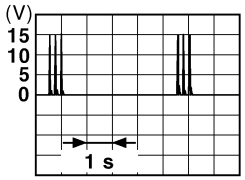
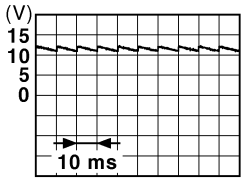
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
(+)	(-)	Signal name	Input/ Output			
83 (L)	Ground	ACC relay control	Output	Ignition switch	OFF	0V
					ACC or ON	Battery voltage
84 (Y/R)	Ground	CTV shift selector (detent switch)	Output	—		Battery voltage
87 (G/B)	Ground	CTV shift selector (detent switch)	Input	Selector lever	P position	0V
					Any position other than P	Battery voltage
88 (P/L)	Ground	Front door RH request switch	Input	Front door RH request switch	ON (pressed)	0V
					OFF (not pressed)	 JPMIA0016GB 1.0V
89 (B/W)	Ground	Front door LH request switch	Input	Front door LH request switch	ON (pressed)	0V
					OFF (not pressed)	 JPMIA0016GB 1.0V
90 (Y)	Ground	Front blower motor relay control	Output	Ignition switch	OFF or ACC	0V
					ON	Battery voltage
91 (L/R)	Ground	Remote keyless entry receiver power supply	Output	Ignition switch OFF		Battery voltage

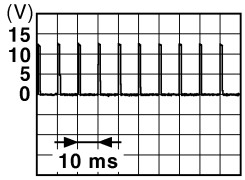
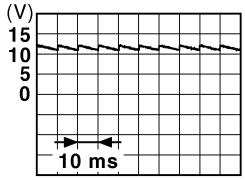
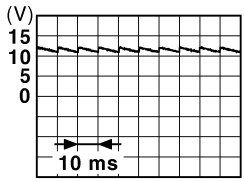
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
(+)	(-)	Signal name	Input/ Output			
95 (R/W)	Ground	Combination switch INPUT 1	Input	Combination switch (Wiper intermittent dial 4)	All switch OFF	 JPMIA0041GB 1.4V
					Turn signal switch LH	 JPMIA0037GB 1.3V
					Turn signal switch RH	 JPMIA0036GB 1.3V
					Front wiper switch LO	 JPMIA0038GB 1.3V
					Front washer switch ON	 JPMIA0039GB 1.3V

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
(+)	(-)	Signal name	Input/ Output			
96 (P/B)	Ground	Combination switch INPUT 4	Input	Combination switch	All switch OFF (Wiper intermittent dial 4)	 JPMIA0041GB 1.4V
					Lighting switch AUTO (Wiper intermittent dial 4)	 JPMIA0038GB 1.3V
					Lighting switch 1ST (Wiper intermittent dial 4)	 JPMIA0036GB 1.3V
					Any of the conditions below with all switch OFF • Wiper intermittent dial 1 • Wiper intermittent dial 5 • Wiper intermittent dial 6	 JPMIA0039GB 1.3V

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
(+)	(-)	Signal name	Input/ Output			
97 (R/B)	Ground	Combination switch INPUT 2	Input	Combination switch (Wiper intermittent dial 4)	All switch OFF	 JPMIA0041GB 1.4V
					Lighting switch flash-to-pass	 JPMIA0037GB 1.3V
					Lighting switch 2ND	 JPMIA0036GB 1.3V
					Front wiper switch INT	 JPMIA0038GB 1.3V
					Front wiper switch HI	 JPMIA0040GB 1.3V
98 (G/O)	Ground	Hazard switch	Input	Hazard switch	Pressed	0 V
					Not pressed	 JPMIA0012GB 1.1V

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
(+)	(-)	Signal name	Input/ Output			
103 (V)	Ground	Trunk lid opening	Output	Trunk lid	Open (trunk lid opener actuator is activated)	Battery voltage
					Close (trunk lid opener actuator is not activated)	0V
110 (V/W)	Ground	Trunk room lamp	Output	Trunk room lamp	ON	0V
					OFF	Battery voltage
114 (B)	Ground	Trunk room antenna 1 (-)	Output	Ignition switch OFF	When Intelligent Key is in the passenger compartment	 JMKIA0062GB
					When Intelligent Key is not in the passenger compartment	 JMKIA0063GB
115 (W)	Ground	Trunk room antenna 1 (+)	Output	Ignition switch OFF	When Intelligent Key is in the passenger compartment	 JMKIA0062GB
					When Intelligent Key is not in the passenger compartment	 JMKIA0063GB

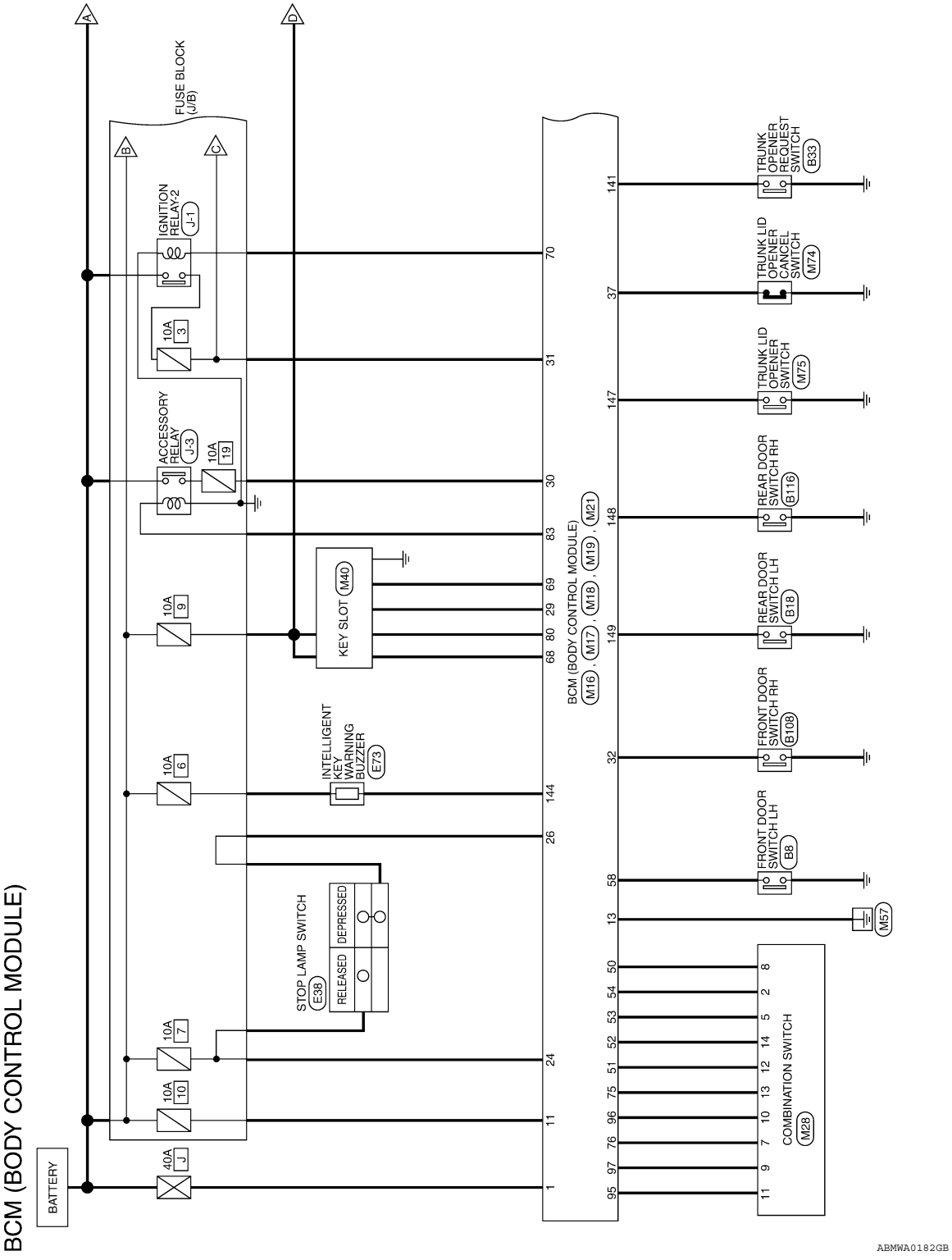
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
(+)	(-)	Signal name	Input/ Output			
118 (L/O)	Ground	Rear bumper antenna (-)	Output	When the trunk lid request switch is operated with ignition switch OFF	When Intelligent Key is in the antenna detection area	 JMKIA0062GB
					When Intelligent Key is not in the antenna detection area	 JMKIA0063GB
119 (BR/ W)	Ground	Rear bumper antenna (+)	Output	When the trunk lid request switch is operated with ignition switch OFF	When Intelligent Key is in the antenna detection area	 JMKIA0062GB
					When Intelligent Key is not in the antenna detection area	 JMKIA0063GB
127 (BR/ W)	Ground	Ignition relay (IPDM E/R) control	Output	Ignition switch	OFF or ACC	Battery voltage
					ON	0V
130 (Y/G)	Ground	Trunk room lamp switch	Input	Trunk room lamp switch	OFF (trunk is closed)	 JPMIA0011GB 11.8V
					ON (trunk is open)	0V
132 (R)	Ground	Start signal	Output	Ignition switch ON	When selector lever is in P or N position and the brake peddle is not depressed	0V
					When selector lever is in P or N position and the brake peddle is depressed	Battery voltage

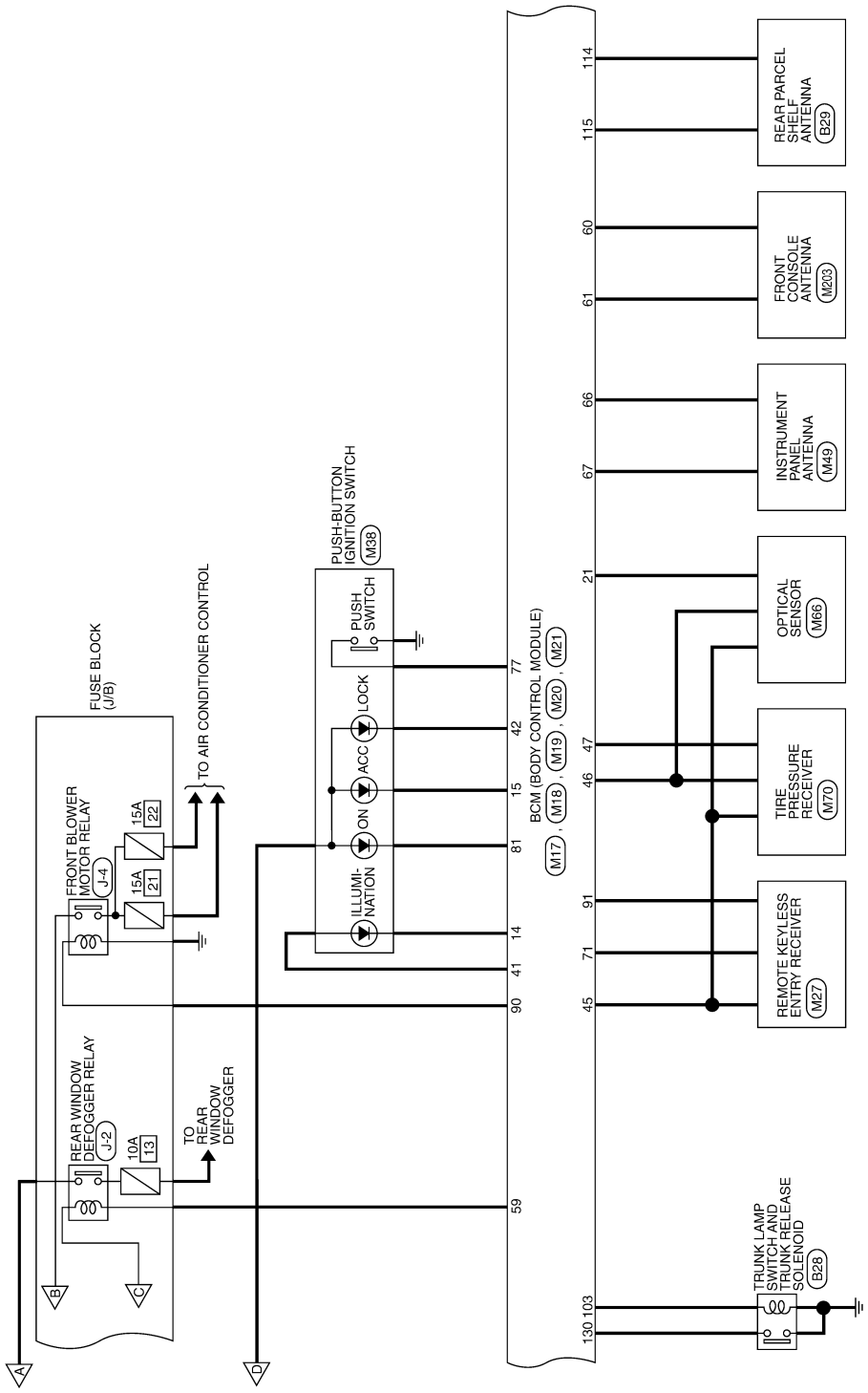
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
(+)	(-)	Signal name	Input/ Output			
140 (BR)	Ground	Push-button ignition switch	Input	Engine switch (push switch)	Pressed	0V
					Not pressed	Battery voltage
141 (G/R)	Ground	Trunk request switch	Input	Trunk request switch	ON (pressed)	0V
					OFF (not pressed)	 JPMIA0016GB 1.0V
144 (GR)	Ground	Request switch buzzer	Output	Request switch buzzer	Sounding	0V
					Not sounding	Battery voltage
147 (L/R)	Ground	Trunk lid opener switch	Input	Trunk lid opener switch	Pressed	0V
					Not pressed	Battery voltage
148 (R/W)	Ground	Rear door RH switch	Input	Rear door RH switch	OFF (when rear door RH closes)	 JPMIA0011GB 11.8V
					ON (when rear door RH opens)	0V
149 (R/B)	Ground	Rear door LH switch	Input	Rear door LH switch	OFF (when rear door LH closes)	 JPMIA0011GB 11.8V
					ON (when rear door LH opens)	0V

*: With LH and RH front window anti-pinch system

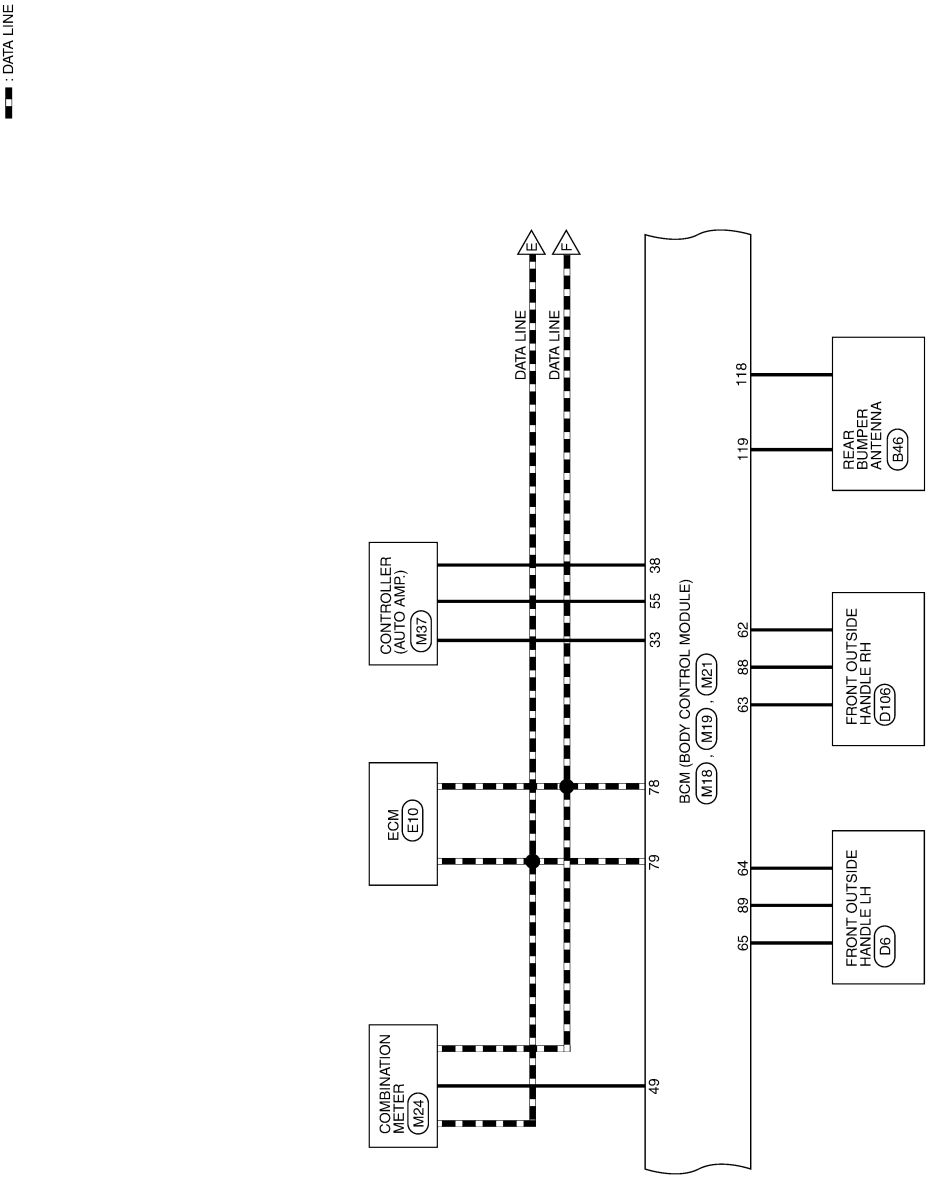
Wiring Diagram

INFOID:0000000005804754

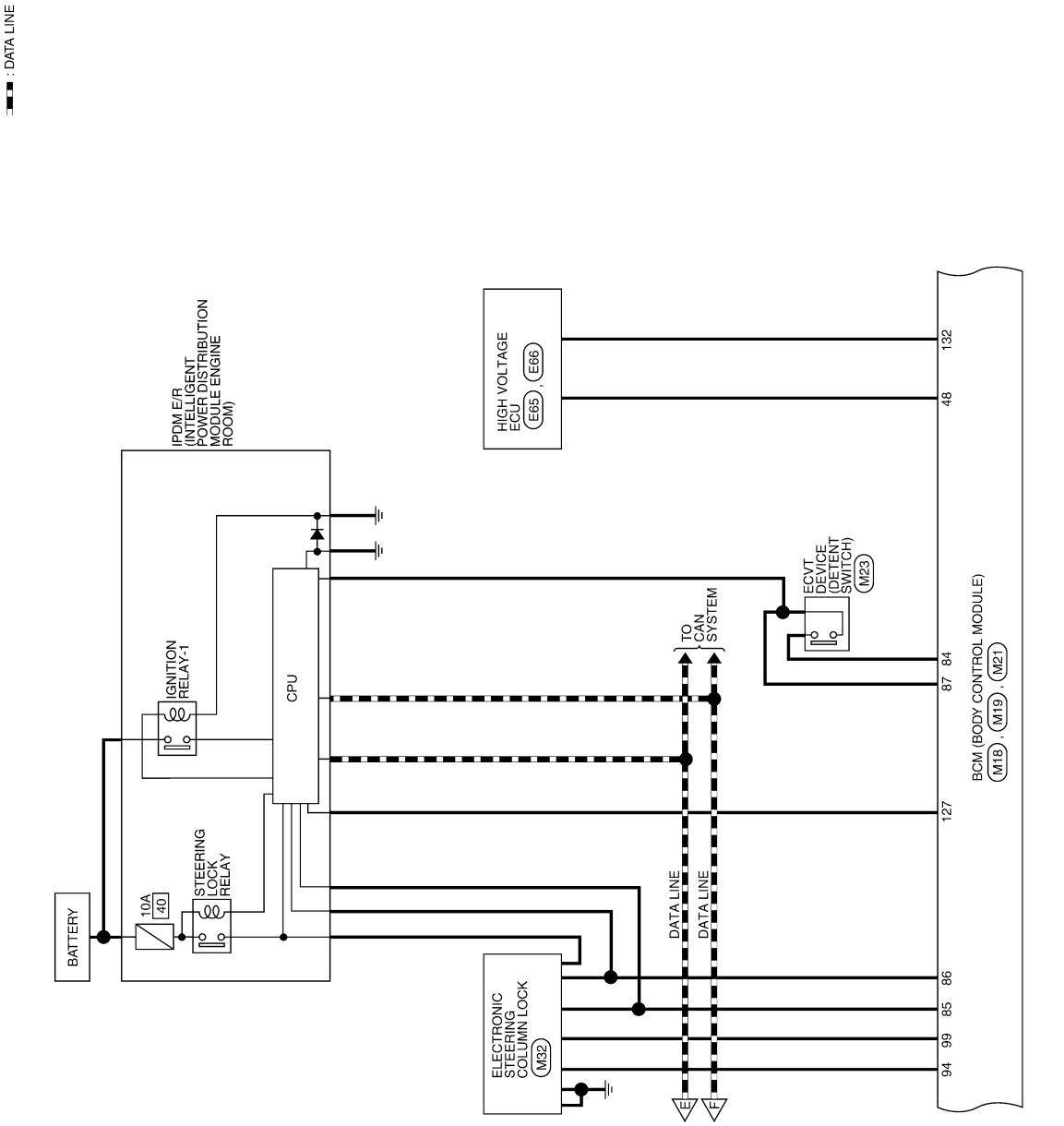


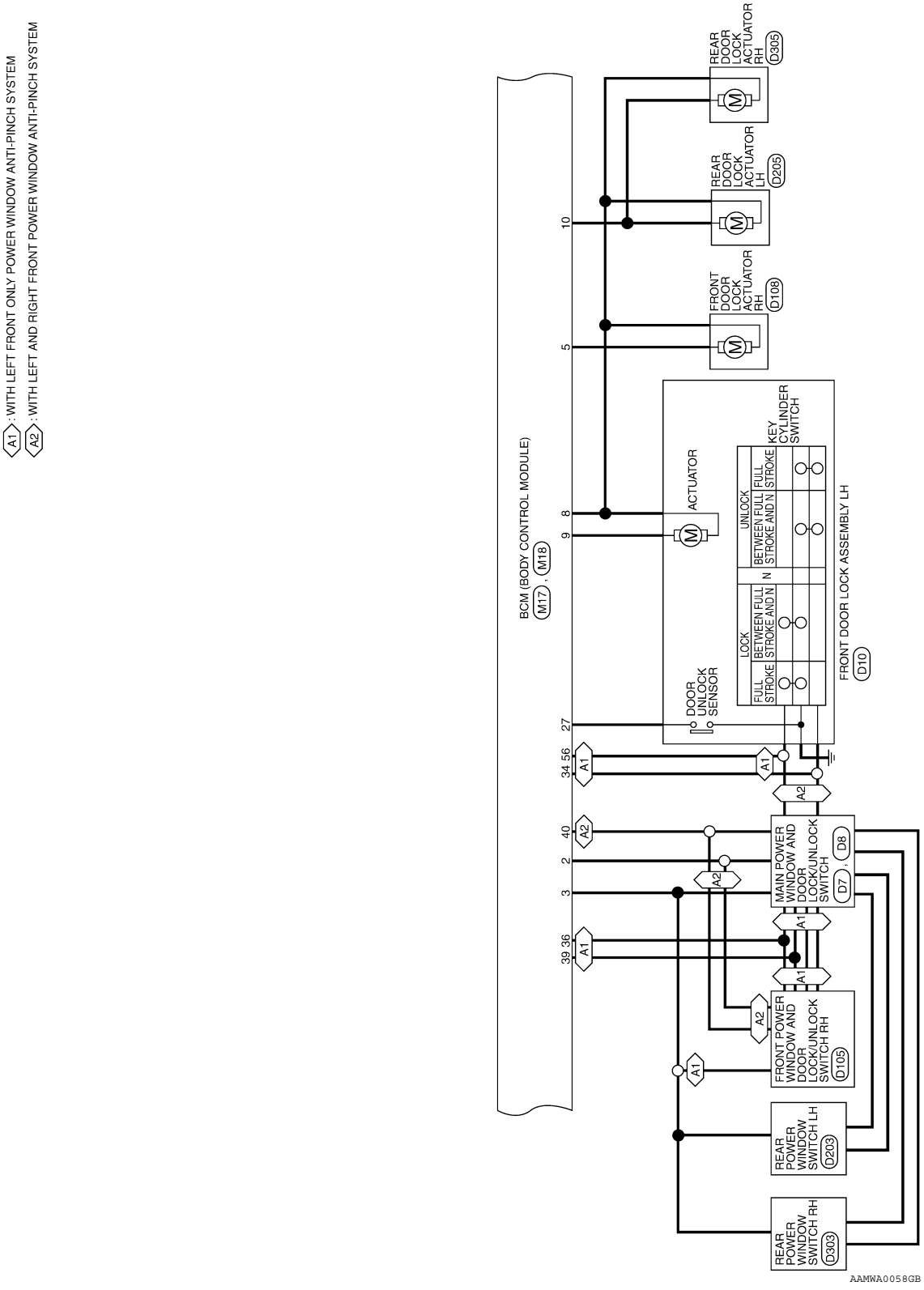


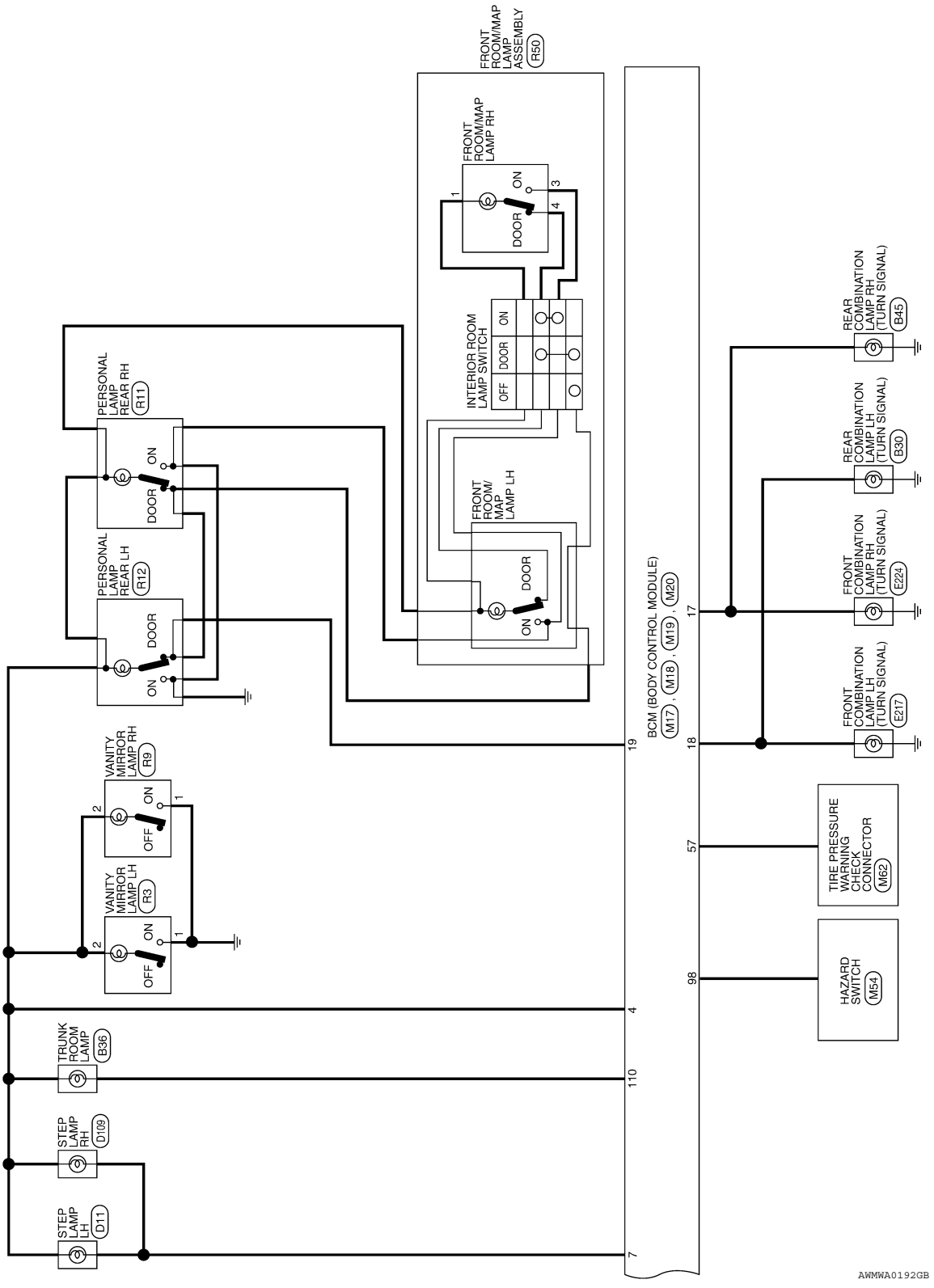
ABMWA0183GB



ALMWA0039GB


: DATA LINE
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
IGNITION RELAY-1
CPU
STEERING LOCK RELAY
10A 40
BATTERY
HIGH VOLTAGE ECU E65, E66
ECVT DEVICE (DETENT SWITCH) M23
TO CAN SYSTEM
DATA LINE
DATA LINE
ELECTRONIC STEERING COLUMN LOCK M32
BCM (BODY CONTROL MODULE) M18, M19, M21
132
48
84
87
127
86
85
99
94
E
F
ALMWA0040GB


A1 : WITH LEFT FRONT ONLY POWER WINDOW ANTI-PINCH SYSTEM
A2 : WITH LEFT AND RIGHT FRONT POWER WINDOW ANTI-PINCH SYSTEM
BCM (BODY CONTROL MODULE)
(M17) , (M18)
REAR DOOR LOCK ACTUATOR RH (D305)
REAR DOOR LOCK ACTUATOR LH (D205)
FRONT DOOR LOCK ACTUATOR RH (D108)
ACTUATOR
KEY CYLINDER SWITCH
UNLOCK
BETWEEN FULL STROKE AND N
FULL STROKE
LOCK
N
DOOR UNLOCK SENSOR
FRONT DOOR LOCK ASSEMBLY LH (D10)
MAIN POWER WINDOW AND DOOR LOCK/UNLOCK SWITCH (D7) , (D8)
FRONT POWER WINDOW AND DOOR LOCK/UNLOCK SWITCH RH (D105)
REAR POWER WINDOW SWITCH LH (D203)
REAR POWER WINDOW SWITCH RH (D303)
10
5
8
9
27
34
56
40
2
3
39
36
AAMWA0058GB

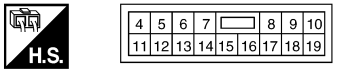

FRONT ROOM/MAP LAMP ASSEMBLY R50
FRONT ROOM/MAP LAMP RH
INTERIOR ROOM LAMP SWITCH
OFF
DOOR
ON
FRONT ROOM/ MAP LAMP LH
PERSONAL LAMP REAR RH R11
PERSONAL LAMP REAR LH R12
VANITY MIRROR LAMP RH R9
VANITY MIRROR LAMP LH R3
TRUNK ROOM LAMP B36
STEP LAMP RH D109
STEP LAMP LH D11
BCM (BODY CONTROL MODULE) M17 , M18 , M19 , M20
REAR COMBINATION LAMP RH (TURN SIGNAL) B45
REAR COMBINATION LAMP LH (TURN SIGNAL) B30
FRONT COMBINATION LAMP RH (TURN SIGNAL) E224
FRONT COMBINATION LAMP LH (TURN SIGNAL) E217
TIRE PRESSURE WARNING CHECK CONNECTOR M62
HAZARD SWITCH M54
AWMWA0192GB

BCM (BODY CONTROL MODULE) CONNECTORS

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

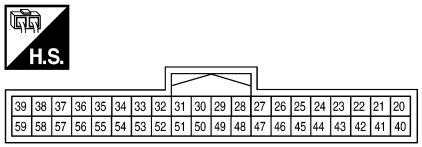
Terminal No.	Color of Wire	Signal Name
1	W/B	BAT_POWER_F/L
2	R/Y	P/W_POWER_SUPPLY_PERM
3	L/W	POWER_ WINDOW_ POWER_ SUPPLY (RAP)

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



Terminal No.	Color of Wire	Signal Name
4	P/W	ROOM_LAMP_BAT_SAVER
5	G/Y	CDL_AS
6	–	–
7	R/W	STEP_LAMP_OUTPUT
8	V	CDL_COMMON
9	G	CDL_DR/FL
10	G/Y	CDL_RR_RL_BACK
11	Y/R	BAT_BCM_FUSE
12	–	–
13	B	GND1
14	R/Y	LOW_SIDE_PUSH_LED_OUTPUT
15	Y/L	ACC_LED
16	–	–
17	G/B	FR_FLASHER
18	G/O	FL_FLASHER
19	Y	ROOM_LAMP_OUTPUT

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



Terminal No.	Color of Wire	Signal Name
20	–	–
21	P/B	AUTO_LIGHT_SENSOR_INPUT1
22	–	–
23	–	–
24	R/W	STOP_LAMP_LOW_SW
25	–	–
26	O/L	STOP_LAMP_HIGH_SW
27	G/W	DOOR_LOCK_STATUS
28	–	–
29	Y	FOB_IN_SW_1
30	V/Y	ACC_F/B
31	G	IGN_F/B
32	R/B	AS_DOOR_SW
33	SB	AIRCON_SW
34	L/R	DOOR_KEY/C_UNLOCK_SW
35	–	–
36	GR	CENTRAL_LOCK_SW
37	O	TRUNK_CANCEL_SW
38	GR/W	REAR_DEFOGGER_SW
39	GR/R	CENTRAL_UNLOCK_SW
40	Y/G	PW_K-LINE
41	W	PUSH_LED
42	R	S/L_LOCK_LED
43	–	–
44	–	–
45	P	GND_RF2_A/L
46	V/W	A/L_SENS_KEYLESS_TUNER_POWER_SUPPLY
47	G/O	KEYLESS_TUNER_SI
48	R/B	SHIFT_N/P
49	L/O	IMMO_LED
50	LG/B	INPUT_5
51	L/W	INPUT_1
52	G/B	INPUT_2
53	LG/R	INPUT_3
54	G/Y	INPUT_4
55	BR/W	BLOWER_FAN_SW
56	L/B	DOOR_KEY/C_LOCK_SW
57	W	TPMS_MODE_TRIGGER_SW
58	SB	DR_DOOR_SW
59	G/R	REAR_DEFOGGER_RLY

AWMIA0392GB

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

H.S.

79	78	77	76	75	74	73	72	71	70	69	68	67	66	65	64	63	62	61	60
99	98	97	96	95	94	93	92	91	90	89	88	87	86	85	84	83	82	81	80

Terminal No.	Color of Wire	Signal Name
60	B/R	ROOM_ANT_2_B
61	W/R	ROOM_ANT_2_A
62	B/Y	AS_DOOR_ANT_B
63	LG	AS_DOOR_ANT_A
64	V	DR_DOOR_ANT_B
65	P	DR_DOOR_ANT_A
66	R	ROOM_ANT_1_B
67	G	ROOM_ANT_1_A
68	G/O	FOB_READER_CLOCK
69	O	FOB_READER_DATA
70	R/B	IGN_ELEC_CONT
71	L/O	RF1_TUNER_SIGNAL
72	–	–
73	–	–
75	R/Y	OUTPUT_5
76	R/G	OUTPUT_3
77	BR	ENG_START_SW
78	P	CAN-L
79	L	CAN-H
80	R/L	FOB_SLOT_ILLUMINATION
81	LG	IGN_ON_LED
82	–	–
83	L	ACC_CONT
84	Y/R	AT_DEVICE_OUT
85	L/O	S/L_CONDITION_1
86	G/R	S/L_CONDITION_2
87	G/B	SHIFT_P
88	P/L	AS_REQUEST SWITCH
89	B/W	DR_REQUEST SWITCH
90	Y	IGN2_CONT
91	L/R	RF1_POWER_SUPPLY
92	–	–
93	–	–
94	G/Y	S/L_POWER_SUPPLY_12V
95	R/W	OUTPUT_1
96	P/B	OUTPUT_4
97	R/B	OUTPUT_2
98	G/R	HAZARD_SW
99	L/Y	S/L_K-LINE

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

H.S.

100	101		102	103	104
105	106	107	108	109	110	111

Terminal No.	Color of Wire	Signal Name
100	–	–
101	–	–
102	–	–
103	V	CDL_BACK_TRUNK
104	–	–
105	–	–
106	–	–
107	–	–
108	–	–
109	–	–
110	V/W	TRUNK_LAMP_OUTPUT
111	–	–

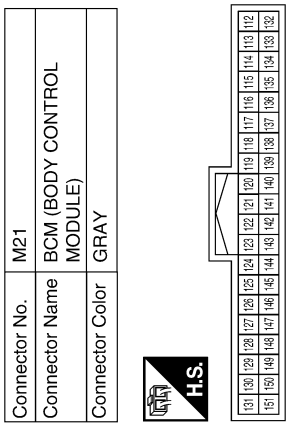
ALMIA0084GB

Terminal No.	Color of Wire	Signal Name
138	–	–
139	–	–
140	–	–
141	G/R	TRUNK_REQUEST_SW
142	–	–
143	–	–
144	GR	BUZZER
145	–	–
146	–	–
147	L/R	BACK_TRUNK_OPENER
148	R/W	RR_DOOR_SW
149	R/B	RL_DOOR_SW
150	–	–
151	–	–

Terminal No.	Color of Wire	Signal Name
119	BR/W	BACK_DOOR_ANT_A
120	–	–
121	–	–
122	–	–
123	–	–
124	–	–
125	–	–
126	–	–
127	BR/W	IGN_USM_CONT1
128	–	–
129	–	–
130	Y/G	TRUNK_SW
131	–	–
132	R	ST_CONT_USM
133	–	–
134	–	–
135	–	–
136	–	–
137	–	–

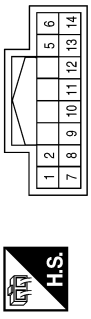
Terminal No.	Color of Wire	Signal Name
8	LG/B	OUTPUT_5
9	R/B	INPUT_2
10	P/B	INPUT_4
11	R/W	INPUT_1
12	L/W	OUTPUT_1
13	R/Y	INPUT_5
14	G/B	OUTPUT_2
15	–	–
16	–	–

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



Terminal No.	Color of Wire	Signal Name
112	–	–
113	–	–
114	B	TRUNK_ANT_1_B
115	W	TRUNK_ANT_1_A
116	–	–
117	–	–
118	L/O	BACK_DOOR_ANT_B

Connector No.	M28
Connector Name	COMBINATION SWITCH
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
1	R/L	WASH_MTR
2	G/Y	OUTPUT_4
3	–	–
4	–	–
5	LG/R	OUTPUT_3
6	B	GND
7	R/G	INPUT_3

AWMIA0393GB

Fail Safe

INFOID:0000000005804755

Display contents of CONSULT	Fail-safe	Cancellation
B2190: NATS ANTENNA AMP	Inhibit hybrid system cranking	Erase DTC
B2191: DIFFERENCE OF KEY	Inhibit hybrid system cranking	Erase DTC

Display contents of CONSULT	Fail-safe	Cancellation
B2192: ID DISCORD BCM-ECM	Inhibit hybrid system cranking	Erase DTC
B2193: CHAIN OF BCM-ECM	Inhibit hybrid system cranking	Erase DTC
B2195: ANTI-SCANNING	Inhibit hybrid system cranking	Erase DTC
B2562: LOW VOLTAGE	Inhibit hybrid system cranking	100 ms after the power supply voltage increases to more than 8.8 V
B2563: HI VOLTAGE	Inhibit hybrid system cranking	500 ms after the power supply voltage decreases to less than 18 V
B260A: IGNITION RELAY	Inhibit hybrid system cranking	500 ms after the following conditions are fulfilled • IGN relay (IPDM E/R) control signal: OFF (Battery voltage) • Ignition ON signal (CAN to IPDM E/R): OFF (Request signal) • Ignition ON signal (CAN from IPDM E/R): OFF (Condition signal)
B260F: ENG STATE SIG LOST	Maintains the power supply position attained at the time of DTC detection	When any of the following conditions is fulfilled • Power position changes to ACC • Receives hybrid system status signal (CAN)
B2617: STARTER RELAY CIRC	Inhibit hybrid system cranking	1 second after the starter motor relay control inside BCM becomes normal
B2618: BCM	Inhibit hybrid system cranking	1 second after the ignition relay (IPDM E/R) control inside BCM becomes normal
B261E: VEHICLE TYPE	Inhibit hybrid system cranking	BCM initialization
B26E1: ENG STATE NO RECIV	Inhibit hybrid system cranking	When any of the following conditions is fulfilled • Power position changes to ACC • Receives hybrid system status signal (CAN)

DTC Inspection Priority Chart

INFOID:0000000005804756

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

Priority	DTC
1	• B2562: LOW VOLTAGE • B2563: HI VOLTAGE • B261E: VEHICLE TYPE
2	• U1000: CAN COMM CIRCUIT • U1010: CONTROL UNIT (CAN)
3	• B2190: NATS ANTENNA AMP • B2191: DIFFERENCE OF KEY • B2192: ID DISCORD BCM-ECM • B2193: CHAIN OF BCM-ECM • B2195: ANTI SCANNING

Priority	DTC
4	• B2553: IGNITION RELAY • B2555: STOP LAMP • B2556: PUSH-BTN IGN SW • B2557: VEHICLE SPEED • B2601: SHIFT POSITION • B2602: SHIFT POSITION • B2603: SHIFT POSI STATUS • B2604: TRANSMISSION RANGE SWITCH • B260A: IGNITION RELAY • B260F: ENG STATE SIG LOST • B2611: ACC RELAY • B2614: ACC RELAY CIRC • B2615: BLOWER RELAY CIRC • B2616: IGN RELAY CIRC • B2617: STARTER RELAY CIRC • B2618: BCM • B261A: PUSH-BTN IGN SW • B261E: VEHICLE TYPE • B26E1: ENG STATE NO RECIV • B26EA: KEY REGISTRATION • C1729: VHCL SPEED SIG ERR • U0415: VEHICLE SPEED SIG
5	• C1704: LOW PRESSURE FL • C1705: LOW PRESSURE FR • C1706: LOW PRESSURE RR • C1707: LOW PRESSURE RL • C1708: [NO DATA] FL • C1709: [NO DATA] FR • C1710: [NO DATA] RR • C1711: [NO DATA] RL • C1712: [CHECKSUM ERR] FL • C1713: [CHECKSUM ERR] FR • C1714: [CHECKSUM ERR] RR • C1715: [CHECKSUM ERR] RL • C1716: [PRESSDATA ERR] FL • C1717: [PRESSDATA ERR] FR • C1718: [PRESSDATA ERR] RR • C1719: [PRESSDATA ERR] RL • C1720: [CODE ERR] FL • C1721: [CODE ERR] FR • C1722: [CODE ERR] RR • C1723: [CODE ERR] RL • C1724: [BATT VOLT LOW] FL • C1725: [BATT VOLT LOW] FR • C1726: [BATT VOLT LOW] RR • C1727: [BATT VOLT LOW] RL • C1734: CONTROL UNIT
6	• B2622: INSIDE ANTENNA • B2623: INSIDE ANTENNA

DTC Index

INFOID:0000000005804757

NOTE:

Details of time display

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

CONSULT display	Fail-safe	Intelligent Key warning lamp ON	Tire pressure monitor warning lamp ON	Reference page
No DTC is detected. further testing may be required.	—	—	—	—
U1000: CAN COMM CIRCUIT	—	—	—	BCS-36
U1010: CONTROL UNIT (CAN)	—	—	—	BCS-37
U0415: VEHICLE SPEED SIG	—	—	—	BCS-38
B2190: NATS ANTENNA AMP	×	—	—	SEC-30
B2191: DIFFERENCE OF KEY	×	—	—	SEC-33
B2192: ID DISCORD BCM-ECM	×	—	—	SEC-34
B2193: CHAIN OF BCM-ECM	×	—	—	SEC-35
B2195: ANTI SCANNING	×	—	—	SEC-36
B2553: IGNITION RELAY	—	—	—	PCS-50
B2555: STOP LAMP	—	—	—	SEC-37
B2556: PUSH-BTN IGN SW	—	×	—	SEC-40
B2557: VEHICLE SPEED	×	×	—	SEC-42
B2562: LOW VOLTAGE	—	—	—	BCS-39
B2563: HI VOLTAGE	×	×	—	BCS-40
B2601: SHIFT POSITION	×	×	—	SEC-43
B2602: SHIFT POSITION	×	×	—	SEC-46
B2603: SHIFT POSI STATUS	×	×	—	SEC-49
B2604: TRANSMISSION RANGE SWITCH	×	×	—	SEC-52
B260A: IGNITION RELAY	×	×	—	PCS-52
B260F: ENG STATE SIG LOST	×	×	—	SEC-54
B2611: ACC RELAY	—	—	—	PCS-53
B2614: ACC RELAY CIRC	—	×	—	PCS-55
B2615: BLOWER RELAY CIRC	—	×	—	PCS-58
B2616: IGN RELAY CIRC	—	×	—	PCS-61
B2617: STARTER RELAY CIRC	×	×	—	SEC-56
B2618: BCM	×	×	—	PCS-64
B261A: PUSH-BTN IGN SW	—	×	—	SEC-58
B261E: VEHICLE TYPE	×	× (Turn ON for 15 seconds)	—	SEC-60
B2622: INSIDE ANTENNA	—	—	—	DLK-55
B2623: INSIDE ANTENNA	—	—	—	DLK-58
B26EA: KEY REGISTRATION	×	× (Turn ON for 15 seconds)	—	SEC-55, "Description"
C1704: LOW PRESSURE FL	—	—	×	WT-8
C1705: LOW PRESSURE FR	—	—	×	WT-8
C1706: LOW PRESSURE RR	—	—	×	WT-8
C1707: LOW PRESSURE RL	—	—	×	WT-8
C1708: [NO DATA] FL	—	—	×	WT-14
C1709: [NO DATA] FR	—	—	×	WT-14
C1710: [NO DATA] RR	—	—	×	WT-14
C1711: [NO DATA] RL	—	—	×	WT-14

CONSULT display	Fail-safe	Intelligent Key warning lamp ON	Tire pressure monitor warning lamp ON	Reference page
C1712: [CHECKSUM ERR] FL	—	—	×	WT-16
C1713: [CHECKSUM ERR] FR	—	—	×	WT-16
C1714: [CHECKSUM ERR] RR	—	—	×	WT-16
C1715: [CHECKSUM ERR] RL	—	—	×	WT-16
C1716: [PRESSDATA ERR] FL	—	—	×	WT-18
C1717: [PRESSDATA ERR] FR	—	—	×	WT-18
C1718: [PRESSDATA ERR] RR	—	—	×	WT-18
C1719: [PRESSDATA ERR] RL	—	—	×	WT-18
C1720: [CODE ERR] FL	—	—	×	WT-16
C1721: [CODE ERR] FR	—	—	×	WT-16
C1722: [CODE ERR] RR	—	—	×	WT-16
C1723: [CODE ERR] RL	—	—	×	WT-16
C1724: [BATT VOLT LOW] FL	—	—	×	WT-16
C1725: [BATT VOLT LOW] FR	—	—	×	WT-16
C1726: [BATT VOLT LOW] RR	—	—	×	WT-16
C1727: [BATT VOLT LOW] RL	—	—	×	WT-16
C1729: VHCL SPEED SIG ERR	—	—	×	WT-19
C1734: CONTROL UNIT	—	—	×	WT-20

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

Reference Value

INFOID:0000000005804762

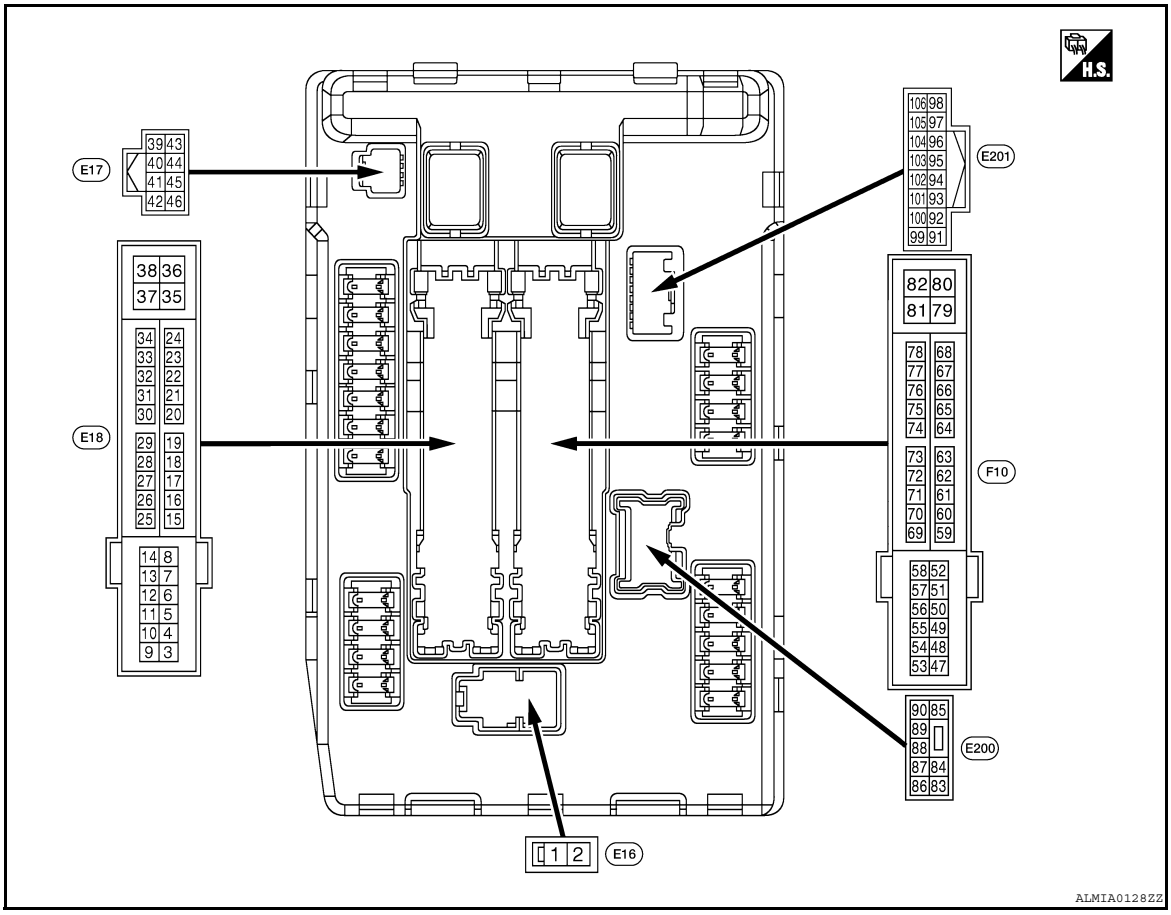
VALUES ON THE DIAGNOSIS TOOL

Monitor Item	Condition		Value/Status
RADFAN REQ	Engine idle speed	Changes depending on engine coolant temperature, air conditioner operation status, vehicle speed, etc.	0 - 100 %
TAIL&CLR REQ	Lighting switch OFF		OFF
	Lighting switch 1ST, 2ND, HI or AUTO (Light is illuminated)		ON
HL LO REQ	Lighting switch OFF		OFF
	Lighting switch 2ND HI or AUTO (Light is illuminated)		ON
HL HI REQ	Lighting switch OFF		OFF
	Lighting switch HI		ON
FR WIP REQ	Ignition switch ON	Front wiper switch OFF	STOP
		Front wiper switch INT	1LOW
		Front wiper switch LO	LOW
		Front wiper switch HI	HI
WIP AUTO STOP	Ignition switch ON	Front wiper stop position	STOP P
		Any position other than front wiper stop position	ACT P
WIP PROT	Ignition switch ON	Front wiper operates normally	OFF
		Front wiper stops at fail-safe operation	BLOCK
IGN RLY1 -REQ	Ignition switch OFF or ACC		OFF
	Ignition switch ON		ON
IGN RLY	Ignition switch OFF or ACC		OFF
	Ignition switch ON		ON
PUSH SW	Release the push-button ignition switch		OFF
	Press the push-button ignition switch		ON
DETENT SW	Ignition switch ON	• Press the selector button with CVT selector lever in P position • CVT selector lever in any position other than P	OFF
	Release the CVT selector button with CVT selector lever in P position		ON
DTRL REQ	DTRL OFF		Off
	DTRL ON		On
OIL P SW	Ignition switch OFF, ACC or engine running		OPEN
	Ignition switch ON		CLOSE
THFT HRN REQ	Not operated		OFF
	• Panic alarm is activated • Horn is activated with VEHICLE SECURITY (THEFT WARNING) SYSTEM		ON
HORN CHIRP	Not operated		OFF
	Door locking with Intelligent Key (horn chirp mode)		ON

Terminal Layout

INFOID:0000000005804763

TERMINAL LAYOUT



Physical Values

INFOID:0000000005804764

PHYSICAL VALUES

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
		Signal name	Input/ Output			
+	–					
1 (R)	Ground	Battery power supply	Input	Ignition switch OFF		Battery voltage
2 (L)	Ground	Battery power supply	Input	Ignition switch OFF		Battery voltage
4 (LG)	Ground	Front wiper LO	Output	Ignition switch ON	Front wiper switch OFF	0V
					Front wiper switch LO	Battery voltage
5 (Y)	Ground	Front wiper HI	Output	Ignition switch ON	Front wiper switch OFF	0V
					Front wiper switch HI	Battery voltage
6 (SB)	Ground	Daytime light relay power supply (Canada models only)	Output	Ignition switch OFF		Battery voltage
7 (GR)	Ground	Tail, license plate lamps & interior lamps	Output	Ignition switch ON	Lighting switch OFF	0V
					Lighting switch 1ST	Battery voltage

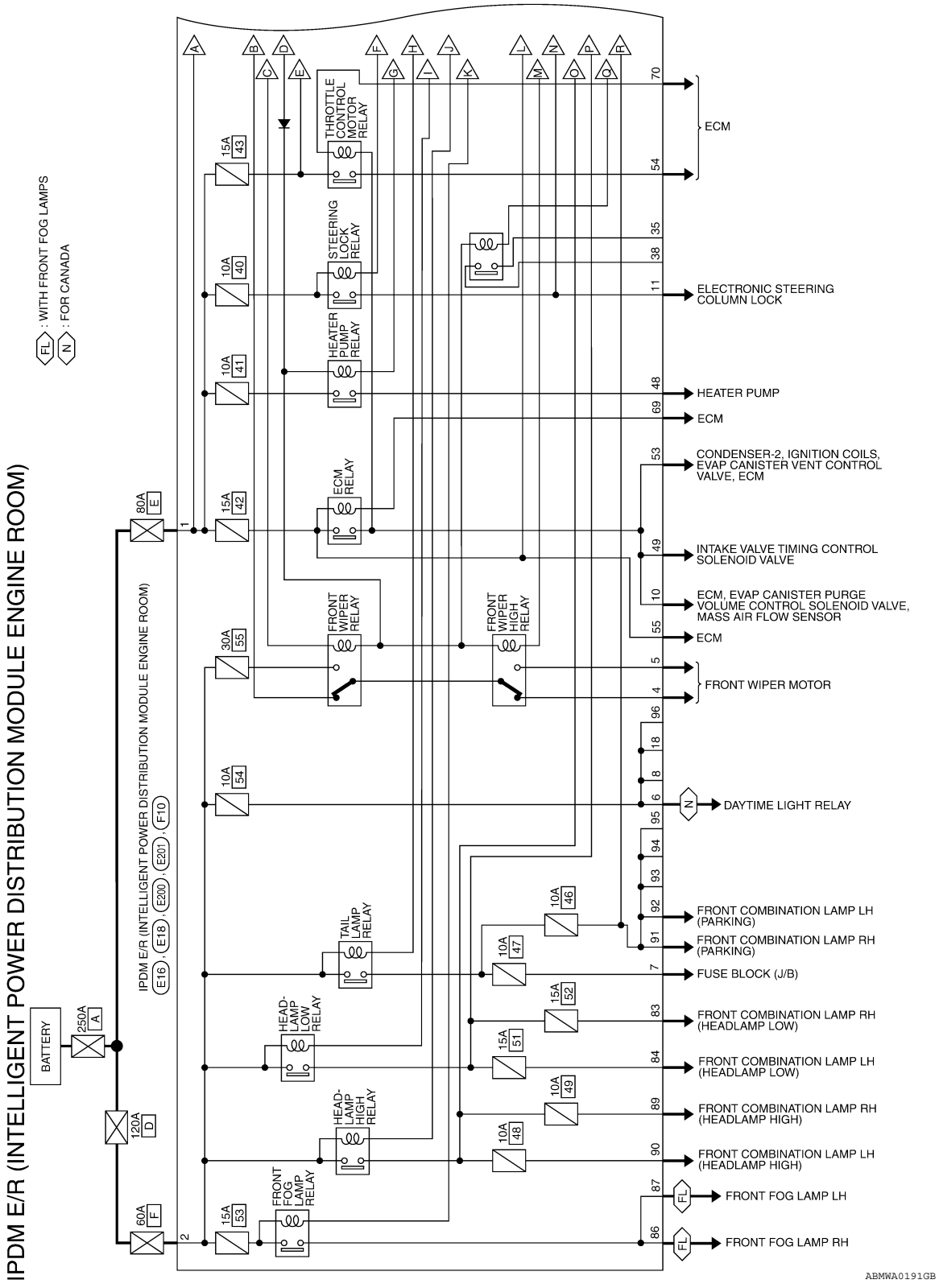
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
10 (BR)	Ground	ECM relay power supply	Output	Ignition switch OFF (For a few seconds after turning ignition switch OFF)		0V
				• Ignition switch ON • Ignition switch OFF (More than a few seconds after turning ignition switch OFF)		Battery voltage
12 (B)	Ground	Ground	—	Ignition switch ON		0V
13 (SB)	Ground	Fuel pump power supply	Output	Approximately 1 second or more after turning the ignition switch ON		0V
				• Approximately 1 second after turning the ignition switch ON • Engine running		Battery voltage
15 (V)	Ground	Ignition relay-1 power supply	Output	Ignition switch OFF		0V
				Ignition switch ON		Battery voltage
16 (L/Y)	Ground	Front wiper auto stop	Input	Ignition switch ON	Front wiper stop position	0V
					Any position other than front wiper stop position	Battery voltage
19 (Y)	Ground	Ignition relay-1 power supply	Output	Ignition switch OFF		0V
				Ignition switch ON		Battery voltage
20 (L)	Ground	Ambient sensor ground	—	Ignition switch ON		0V
21 (LG)	Ground	Ambient sensor	—	Ignition switch ON		5V
22 (W/R)	Ground	Refrigerant pressure sensor ground	—	Ignition switch ON		0V
23 (B/R)	Ground	Refrigerant pressure sensor	—	• Ignition switch ON (READY) • Both A/C switch and blower motor switch ON (electric compressor operates)		1.0 - 4.0V
24 (BR/W)	Ground	Refrigerant pressure sensor power supply	—	Ignition switch ON		5V
25 (R)	Ground	Ignition relay-1 power supply	Output	Ignition switch OFF		0V
				Ignition switch ON		Battery voltage
27 (W)	Ground	Ignition relay monitor	Input	Ignition switch OFF or ACC		Battery voltage
				Ignition switch ON		0V
28 (SB)	Ground	Push-button ignition switch	Input	Press the push-button ignition switch		0V
				Release the push-button ignition switch		Battery voltage
31 (B)	Ground	Ignition relay power supply	Output	Ignition switch OFF		0V
				Ignition switch ON		Battery voltage
39 (P)	—	CAN-L	Input/ Output	—		—
40 (L)	—	CAN-H	Input/ Output	—		—
41 (B)	Ground	Ground	—	Ignition switch ON		0V
42 (SB)	Ground	Cooling fan relay-1 control	Input	Ignition switch OFF or ACC		0V
				Ignition switch ON		0.7V

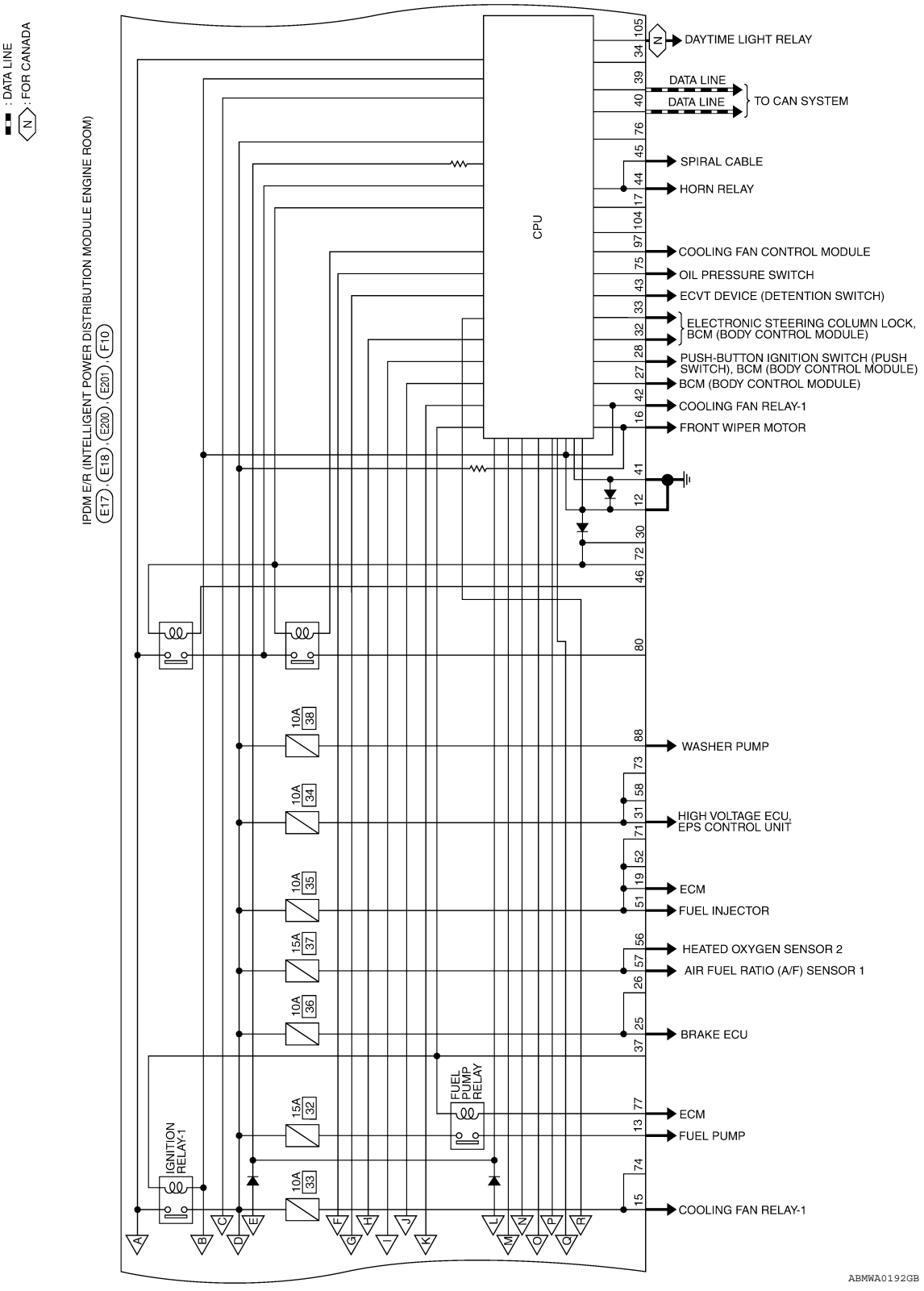
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
43 (G/B)	Ground	CVT shift selector (Detention switch)	Input	Ignition switch ON	Press the CVT selector button (CVT selector lever P)	Battery voltage
					• CVT selector lever in any position other than P • Release the CVT selector button (CVT selector lever P)	0V
44 (G/W)	Ground	Horn relay control	Input	The horn is deactivated		Battery voltage
				The horn is activated		0V
45 (L/O)	Ground	Anti theft horn relay control	Input	The horn is deactivated		Battery voltage
				The horn is activated		0V
48 (R)	Ground	Heater pump relay power supply	Output	Engine running	Heater pump OFF	0V
					Heater pump ON (Heater pump is operating)	Battery voltage
49 (v)	Ground	ECM relay power supply	Output	Ignition switch OFF (For a few seconds after turning ignition switch OFF)		0V
				• Ignition switch ON • Ignition switch OFF (More than a few seconds after turning ignition switch OFF)		Battery voltage
51 (SB)	Ground	Ignition relay power supply	Output	Ignition switch OFF		0V
				Ignition switch ON		Battery voltage
53 (V)	Ground	ECM relay power supply	Output	Ignition switch OFF (For a few seconds after turning ignition switch OFF)		0V
				• Ignition switch ON • Ignition switch OFF (More than a few seconds after turning ignition switch OFF)		Battery voltage
54 (GR)	Ground	Throttle control motor relay power supply	Output	Ignition switch OFF (For a few seconds after turning ignition switch OFF)		0V
				• Ignition switch ON • Ignition switch OFF (More than a few seconds after turning ignition switch OFF)		Battery voltage
55 (LG)	Ground	ECM power supply	Output	Ignition switch OFF		Battery voltage
56 (R)	Ground	Ignition relay power supply	Output	Ignition switch OFF		0V
				Ignition switch ON		Battery voltage
57 (O)	Ground	Ignition relay power supply	Output	Ignition switch OFF		0V
				Ignition switch ON		Battery voltage
69 (SB)	Ground	ECM relay control	Output	Ignition switch OFF (For a few seconds after turning ignition switch OFF)		Battery voltage
				• Ignition switch ON • Ignition switch OFF (More than a few seconds after turning ignition switch OFF)		0 - 1.5V

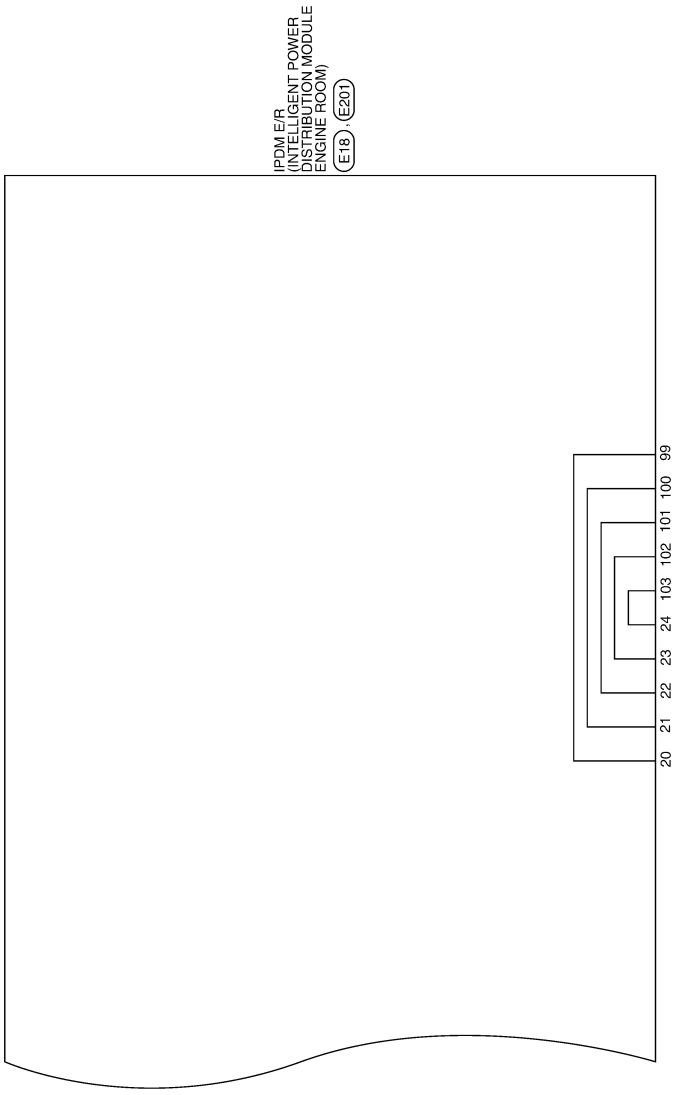
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
70 (G)	Ground	Throttle control motor relay control	Output	Ignition switch ON → OFF		0 -1.0V ↓ Battery voltage ↓ 0V
				Ignition switch ON		0 - 1.0V
75 (LG)	Ground	Oil pressure switch	Input	Ignition switch ON	Engine stopped	0V
					Engine running	Battery voltage
77 (GR)	Ground	Fuel pump relay control	Output	• Approximately 1 second after turning the ignition switch ON • Engine running		0 - 1.0V
				Approximately 1 second or more after turning the ignition switch ON		Battery voltage
83 (R/Y)	Ground	Headlamp LO (RH)	Output	Ignition switch ON	Lighting switch OFF	0V
					Lighting switch 2ND	Battery voltage
84 (L)	Ground	Headlamp LO (LH)	Output	Ignition switch ON	Lighting switch OFF	0V
					Lighting switch 2ND	Battery voltage
88 (R/W)	Ground	Washer pump power supply	Output	Ignition switch ON		Battery voltage
89 (L/W)	Ground	Headlamp HI (RH)	Output	Ignition switch ON	• Lighting switch HI • Lighting switch PASS	Battery voltage
					Lighting switch OFF	0V
90 (G)	Ground	Headlamp HI (LH)	Output	Ignition switch ON	• Lighting switch HI • Lighting switch PASS	Battery voltage
					Lighting switch OFF	0V
91 (LG/R)	Ground	Parking lamp (RH)	Output	Ignition switch ON	Lighting switch 1ST	Battery voltage
					Lighting switch OFF	0V
92 (LG/B)	Ground	Parking lamp (LH)	Output	Ignition switch ON	Lighting switch 1ST	Battery voltage
					Lighting switch OFF	0V
97 (V)	Ground	Cooling fan control	Output	Engine idling		0-5V
99 (BR/W)	Ground	Ambient sensor ground	—	Ignition switch ON		0V
100 (SB)	Ground	Ambient sensor	—	Ignition switch ON		5V
101 (W)	Ground	Refrigerant pressure sensor ground	—	Ignition switch ON		0V
102 (R)	Ground	Refrigerant pressure sensor	—	• Ignition switch ON (READY) • Both A/C switch and blower motor switch ON (electric compressor operates)		1.0 - 4.0V
103 (P)	Ground	Refrigerant pressure sensor power supply	—	Ignition switch ON		5V
105 (V)	Ground	Daytime light relay control (Canada only)	Output	Ignition switch ON	Daytime light system active	Battery voltage
				Ignition switch ON	Daytime light system inactive	0V

Wiring Diagram

INFOID:0000000005804765




: DATA LINE
N : FOR CANADA
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
E17, E18, E200, E201, F10
CPU
DAYTIME LIGHT RELAY
DATA LINE
DATA LINE
TO CAN SYSTEM
SPIRAL CABLE
HORN RELAY
COOLING FAN CONTROL MODULE
OIL PRESSURE SWITCH
ECVT DEVICE (DETENTION SWITCH)
ELECTRONIC STEERING COLUMN LOCK, BCM (BODY CONTROL MODULE)
PUSH-BUTTON IGNITION SWITCH (PUSH SWITCH), BCM (BODY CONTROL MODULE)
BCM (BODY CONTROL MODULE)
COOLING FAN RELAY-1
FRONT WIPER MOTOR
WASHER PUMP
HIGH VOLTAGE ECU, EPS CONTROL UNIT
ECM
FUEL INJECTOR
HEATED OXYGEN SENSOR 2
AIR FUEL RATIO (A/F) SENSOR 1
BRAKE ECU
ECM
FUEL PUMP
COOLING FAN RELAY-1
IGNITION RELAY-1
FUEL PUMP RELAY
10A 38
10A 34
10A 35
15A 37
10A 36
15A 32
10A 33
ABMWA0192GB



ALMWA0033GB

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

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

H.S.

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

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

H.S.

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

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

H.S.

Terminal No.	Color of Wire	Signal Name
3	–	–
4	L/R	FR_WIPER_LO
5	L/B	FR_WIPER_HI
6	SB	DTRL
7	R/L	TAIL/ILLUMI
8	–	–
9	–	–
10	R/B	ECM_VB
11	P/L	ESCL
12	B	GND (POWER)
13	W	FUEL_PUMP
14	–	–
15	BR	START_IG-E/R
16	L/Y	WIPER_AUTOSTOP
17	–	–
18	–	–
19	L/Y	BCM_IGNSW
20	B/Y	AMB_SENS_GND-E/R
21	O/B	AMB_SENS_SIG-E/R
22	W/R	PD_SENS_GND-E/R
23	B/R	PD_SENS_SIG-E/R
24	BR/W	PD_SENS PWR-E/R
25	G/R	ABS_ECU
26	–	–
27	BR/W	IGN_SIGNAL
28	BR	PUSH_START_SW
29	–	–
30	–	–
31	G/W	REV_RLY
32	LG	SL_CONDITION_1
33	W	SL_CONDITION_2
34	–	–
35	–	–
36	–	–
37	–	–
38	–	–

ABMIA0566GB

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

H.S.

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

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

H.S.

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

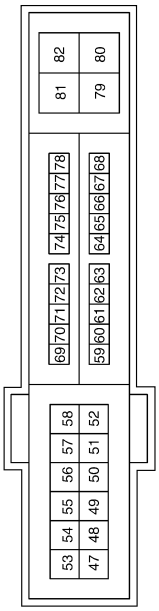
ALMIA0077GB

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

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

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

H.S.



ALMIA0078GB

Fail Safe

INFOID:0000000005804766

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	• Signals cooling fans ON when the ignition switch is turned ON • Signals cooling fans OFF when the ignition switch is turned OFF
Heater pump	Heater pump relay OFF

If No CAN Communication Is Available With BCM

Control part	Fail-safe in operation
Headlamp	• Turns ON the headlamp low relay when the ignition switch is turned ON • Turns OFF the headlamp low relay when the ignition switch is turned OFF • Headlamp high relay OFF
• Parking lamps • Side marker lamps • License plate lamps • Illuminations • Tail lamps	• Turns ON the tail lamp relay when the ignition switch is turned ON • Turns OFF the tail lamp relay when the ignition switch is turned OFF
Front wiper	• The status just before activation of fail-safe control is maintained until the ignition switch is turned OFF while the front wiper is operating at LO or HI speed. • The wiper is operated at LO speed until the ignition switch is turned OFF if the fail-safe control is activated while the front wiper is set in the INT mode and the front wiper motor is operating.
Horn	Horn OFF
Ignition relay	The status just before activation of fail-safe is maintained.

IGNITION RELAY MALFUNCTION DETECTION FUNCTION

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

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

NOTE:

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

FRONT WIPER CONTROL

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

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

NOTE:

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

STARTER MOTOR PROTECTION FUNCTION

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

DTC Index

INFOID:0000000005804767

CONSULT-III display	Fail-safe	TIME[NOTE]		Refer to
No DTC is detected. further testing may be required.	—	—	—	—
U1000: CAN COMM CIRCUIT	×	CRNT	1 – 39	PCS-18
B2098: IGN RELAY ON	×	CRNT	1 – 39	PCS-19
B2099: IGN RELAY OFF	—	CRNT	1 – 39	PCS-20

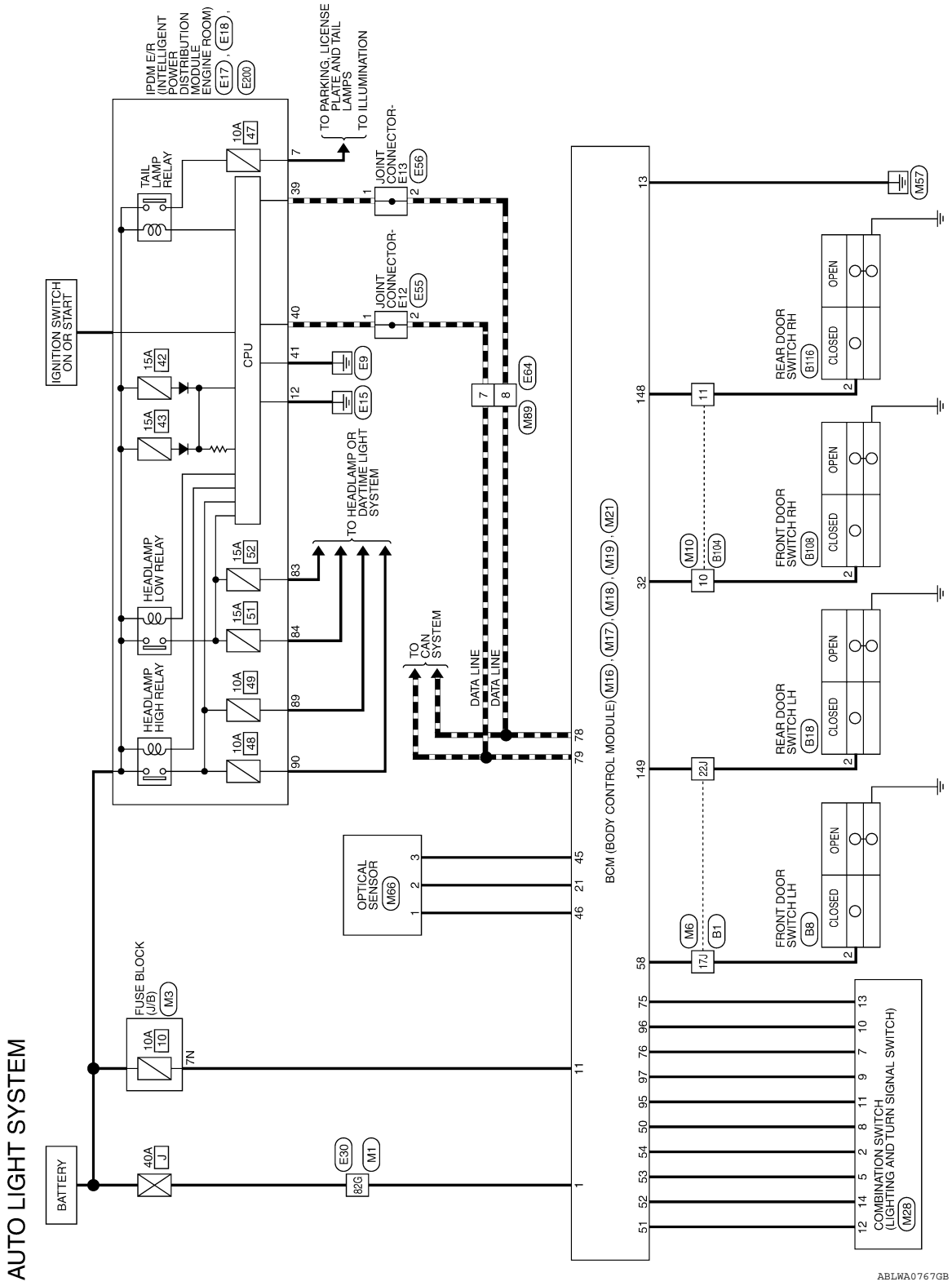
NOTE:
The details of TIME display are as follows.
- CRNT: The malfunctions that are detected now
- 1 - 39: The number is indicated when it is normal at present and a malfunction was detected in the past. It increases like 0 → 1 → 2 ··· 38 → 39 after returning to the normal condition whenever IGN OFF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

WIRING DIAGRAM

AUTO LIGHT SYSTEM

Wiring Diagram

INFOID:0000000005806047



AUTO LIGHT SYSTEM CONNECTORS

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

H.S.

9G	8G	7G	6G	5G	4G	3G		1G
17G	16G	15G	14G	13G	12G	11G	10G	2G
26G	25G	24G	23G	22G	21G	20G		
34G	33G	32G	31G	30G	29G	28G	27G	19G	18G
	41G	40G	39G	38G	37G	36G	35G		
	50G	49G	48G	47G	46G	45G	44G	43G	42G
	58G	57G	56G	55G		54G	53G	52G	51G
	63G	62G	61G	60G	59G				
	72G	71G	70G	69G	68G	67G	66G		
	80G	79G	78G	77G	76G	75G	74G	73G	65G	64G
		83G		82G		81G			

Terminal No.	Color of Wire	Signal Name
82G	W/B	–

Connector No.	M10
Connector Name	WIRE TO WIRE
Connector Color	BROWN

H.S.

5	4		3	2	1
12	11	10	9	8	7	6

Terminal No.	Color of Wire	Signal Name
10	R/B	–
11	R/W	–

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

H.S.

3N		2N	1N
8N	7N	6N	5N	4N

Terminal No.	Color of Wire	Signal Name
7N	Y/R	–

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

H.S.

9J	8J	7J	6J	5J	4J	3J		1J
17J	16J	15J	14J	13J	12J	11J	10J	2J
25J	24J	23J	22J		21J	20J	19J	18J
30J	29J	28J	27J	26J				
	37J	36J	35J	34J	33J	32J	31J		
	46J	45J	44J	43J	42J	41J	40J	39J	38J
	55J	54J	53J	52J	51J	50J	49J		47J
	63J	62J	61J	60J	59J	58J	57J	56J	48J
	70J	69J	68J	67J	66J	65J	64J		
	79J	78J	77J	76J	75J	74J	73J	72J	71J
	87J	86J	85J	84J		83J	82J	81J	80J
	92J	91J	90J	89J	88J				
		99J	98J	97J	96J	95J	94J	93J	

Terminal No.	Color of Wire	Signal Name
17J	SB	–
22J	R/B	–

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

H.S.

1	3
2	

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

ABLIA2161GB

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

H.S.

4	5	6	7		8	9	10
11	12	13	14	15	16	17	18	19

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

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

H.S.

39	38	37	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20
59	58	57	56	55	54	53	52	51	50	49	48	47	46	45	44	43	42	41	40

Terminal No.	Color of Wire	Signal Name
21	P/B	AUTO LIGHT SENSOR INPUT1
32	R/B	AS DOOR SW

Terminal No.	Color of Wire	Signal Name
45	P	GND RF2 A/L
46	V/W	A/L SENS KEYLESS TUNER POWER SUPPLY
50	LG/B	INPUT 5
51	L/W	INPUT 1
52	G/B	INPUT 2
53	LG/R	INPUT 3
54	G/Y	INPUT 4
58	SB	DR DOOR SW

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

H.S.

79	78	77	76	75	74	73	72	71	70	69	68	67	66	65	64	63	62	61	60
99	98	97	96	95	94	93	92	91	90	89	88	87	86	85	84	83	82	81	80

Terminal No.	Color of Wire	Signal Name
75	R/Y	OUTPUT_5
76	R/G	OUTPUT_3
78	P	CAN-L
79	L	CAN-H
95	R/W	OUTPUT_1
96	P/B	OUTPUT_4
97	R/B	OUTPUT_2

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

H.S.

131	130	129	128	127	126	125	124	123	122	121	120	119	118	117	116	115	114	113	112
151	150	149	148	147	146	145	144	143	142	141	140	139	138	137	136	135	134	133	132

Terminal No.	Color of Wire	Signal Name
148	R/W	RR_DOOR_SW
149	R/B	RL_DOOR_SW

Connector No.	M28
Connector Name	COMBINATION SWITCH
Connector Color	WHITE

H.S.

1	2				5	6
7	8	9	10	11	12	13	14

Terminal No.	Color of Wire	Signal Name
2	G/Y	OUTPUT_4
5	LG/R	OUTPUT_3
7	R/G	INPUT_3
8	LG/B	OUTPUT_5
9	R/B	INPUT_2
10	P/B	INPUT_4
11	R/W	INPUT_1
12	L/W	OUTPUT_1
13	R/Y	INPUT_5
14	G/B	OUTPUT_2

ABLIA2162GB

Connector No.	M66
Connector Name	OPTICAL SENSOR
Connector Color	WHITE

H.S.

1 2 3

Terminal No.	Color of Wire	Signal Name
1	V/W	POWER
2	P/B	OUTPUT
3	P	GND

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

H.S.

5 4 3 2 1
12 11 10 9 8 7 6

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

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

H.S.

42 41 40 39
46 45 44 43

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

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

H.S.

1G 2G
3G 4G 5G 6G 7G 8G 9G
10G 11G 12G 13G 14G 15G 16G 17G
18G 19G
20G 21G 22G 23G 24G 25G 26G
27G 28G 29G 30G 31G 32G 33G 34G
35G 36G 37G 38G 39G 40G 41G
42G 43G 44G 45G 46G 47G 48G 49G 50G
51G 52G 53G 54G
55G 56G 57G 58G
59G 60G 61G 62G 63G
64G 65G
66G 67G 68G 69G 70G 71G 72G
73G 74G 75G 76G 77G 78G 79G 80G
81G 82G 83G

Terminal No.	Color of Wire	Signal Name
82G	LG	–

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

H.S.

9 10 11 12 13 14
3 4 5 6 7 8
25 26 27 28 29 30 31 32 33 34
15 16 17 18 19 20 21 22 23 24
37 38
35 36

Terminal No.	Color of Wire	Signal Name
7	GR	TAIL/ILLUMI
12	B	GND (POWER)

ABLIA2163GB

Connector No.	E55
Connector Name	JOINT CONNECTOR-E12
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
1	L	–
2	L	–

Connector No.	E56
Connector Name	JOINT CONNECTOR-E13
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
1	P	–
2	P	–

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

H.S.

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

Connector No.	B1
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
17J	SB	–
22J	BR	–

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

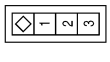
H.S.

Terminal No.	Color of Wire	Signal Name
83	R/Y	HEADLAMP_LO_RH
84	L	HEADLAMP_LO_LH
89	L/W	HEADLAMP_HI_RH
90	G	HEADLAMP_HI_LH

ABLIA2164GB

Connector No.	B8
Connector Name	FRONT DOOR SWITCH LH
Connector Color	WHITE

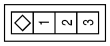
H.S.



Terminal No.	Color of Wire	Signal Name
2	SB	DOOR SW (DR)

Connector No.	B18
Connector Name	REAR DOOR SWITCH LH
Connector Color	WHITE

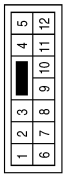
H.S.



Terminal No.	Color of Wire	Signal Name
2	BR	DOOR SW (RL)

Connector No.	B104
Connector Name	WIRE TO WIRE
Connector Color	BROWN

H.S.



Terminal No.	Color of Wire	Signal Name
10	GR	–
11	B	–

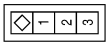
Connector No.	B108
Connector Name	FRONT DOOR SWITCH RH
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
2	GR	DOOR SW (AS)

Connector No.	B116
Connector Name	REAR DOOR SWITCH RH
Connector Color	WHITE

H.S.



Terminal No.	Color of Wire	Signal Name
2	B	DOOR SW (RR)

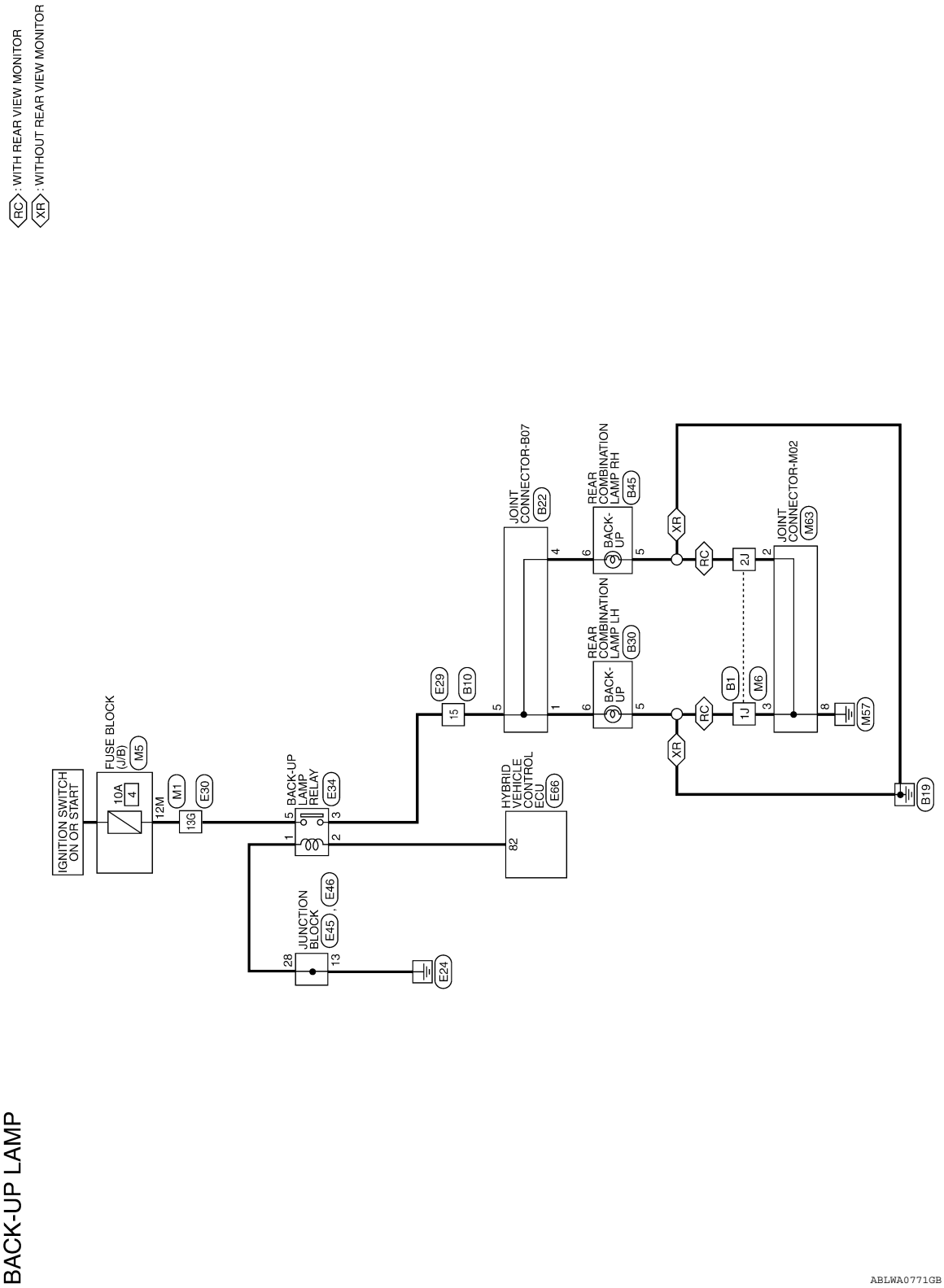
ABLIA2165GB

< WIRING DIAGRAM >

BACK-UP LAMP

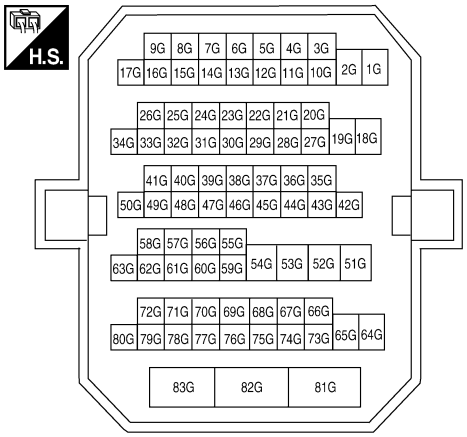
Wiring Diagram

INFOID:0000000005806048



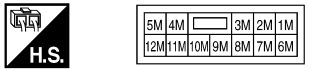
BACK-UP LAMP CONNECTORS

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



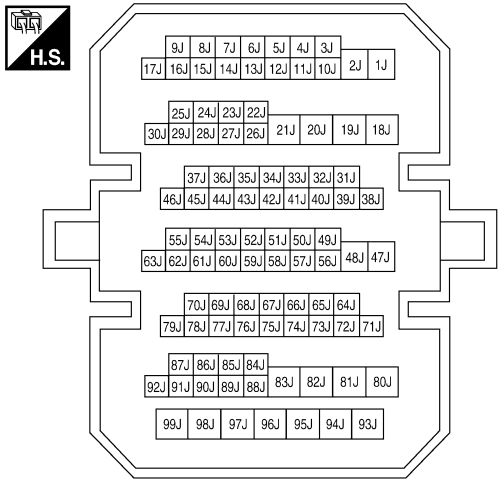
Terminal No.	Color of Wire	Signal Name
13G	O	–

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



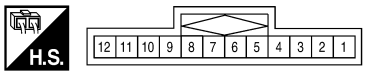
Terminal No.	Color of Wire	Signal Name
12M	O	–

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



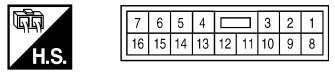
Terminal No.	Color of Wire	Signal Name
1J	B	–
2J	B	–

Connector No.	M63
Connector Name	JOINT CONNECTOR-M02
Connector Color	BLUE



Terminal No.	Color of Wire	Signal Name
2	B	–
3	B	–
8	B	–

Connector No.	E29
Connector Name	WIRE TO WIRE
Connector Color	WHITE

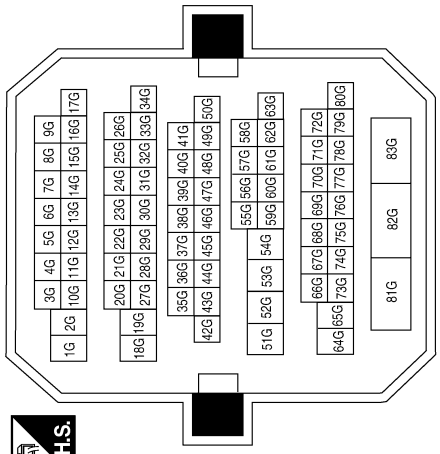


Terminal No.	Color of Wire	Signal Name
15	V	–

ABLIA2182GB

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

H.S.



Terminal No.	Color of Wire	Signal Name
13G	LG	–

Connector No.	E34
Connector Name	BACK-UP LAMP RELAY
Connector Color	BLUE

H.S.

Terminal No.	Color of Wire	Signal Name
1	O	–
2	R	–
3	V	–
5	LG	–

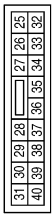
Connector No.	E45
Connector Name	JUNCTION BLOCK
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
13	B/W	–

Connector No.	E46
Connector Name	JUNCTION BLOCK
Connector Color	WHITE

H.S.



Terminal No.	Color of Wire	Signal Name
28	O/B	–

ABLIA2183GB

Connector No.	E66
Connector Name	HYBRID VEHICLE CONTROL ECU
Connector Color	BLACK

H.S.

168	167	166	165	164	163	77	76	75	74	73	72	71	70	69	68	67	66	65	64	63	62	61
						94	93	92	91	90	89	88	87	86	85	84	83	82	81	80	79	78
174	173	172	171	170	169	111	110	109	108	107	106	105	104	103	102	101	100	99	98	97	96	95
180	179	178	177	176	175	128	127	126	125	124	123	122	121	120	119	118	117	116	115	114	113	112
						145	144	143	142	141	140	139	138	137	136	135	134	133	132	131	130	129
186	185	184	183	182	181	162	161	160	159	158	157	156	155	154	153	152	151	150	149	148	147	146

Terminal No.	Color of Wire	Signal Name
82	G/B	BL

Connector No.	B1
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

1J	2J	3J	4J	5J	6J	7J	8J	9J
		10J	11J	12J	13J	14J	15J	16J	17J
18J	19J	20J	21J	22J	23J	24J	25J	
				26J	27J	28J	29J	30J
	31J	32J	33J	34J	35J	36J	37J	
38J	39J	40J	41J	42J	43J	44J	45J	46J
47J	48J	49J	50J	51J	52J	53J	54J	55J
		56J	57J	58J	59J	60J	61J	62J	63J
64J	65J	66J	67J	68J	69J	70J		
71J	72J	73J	74J	75J	76J	77J	78J	79J
80J	81J	82J	83J	84J	85J	86J	87J	
				88J	89J	90J	91J	92J
93J	94J	95J	96J	97J	98J	99J		

Terminal No.	Color of Wire	Signal Name
1J	B	–
2J	B	–

Connector No.	B10
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

1	2	3		4	5	6	7
8	9	10	11	12	13	14	15	16

Terminal No.	Color of Wire	Signal Name
15	V	–

ABLIA2184GB

Connector No.	B22
Connector Name	JOINT CONNECTOR-B07
Connector Color	GRAY

Terminal No.	Color of Wire	Signal Name
1	V	–
4	V	–
5	V	–

Connector No.	B30
Connector Name	REAR COMBINATION LAMP LH
Connector Color	WHITE

Terminal No.	Color of Wire	Signal Name
5	B	GND
6	V	REV LAMP

Connector No.	B45
Connector Name	REAR COMBINATION LAMP RH
Connector Color	WHITE

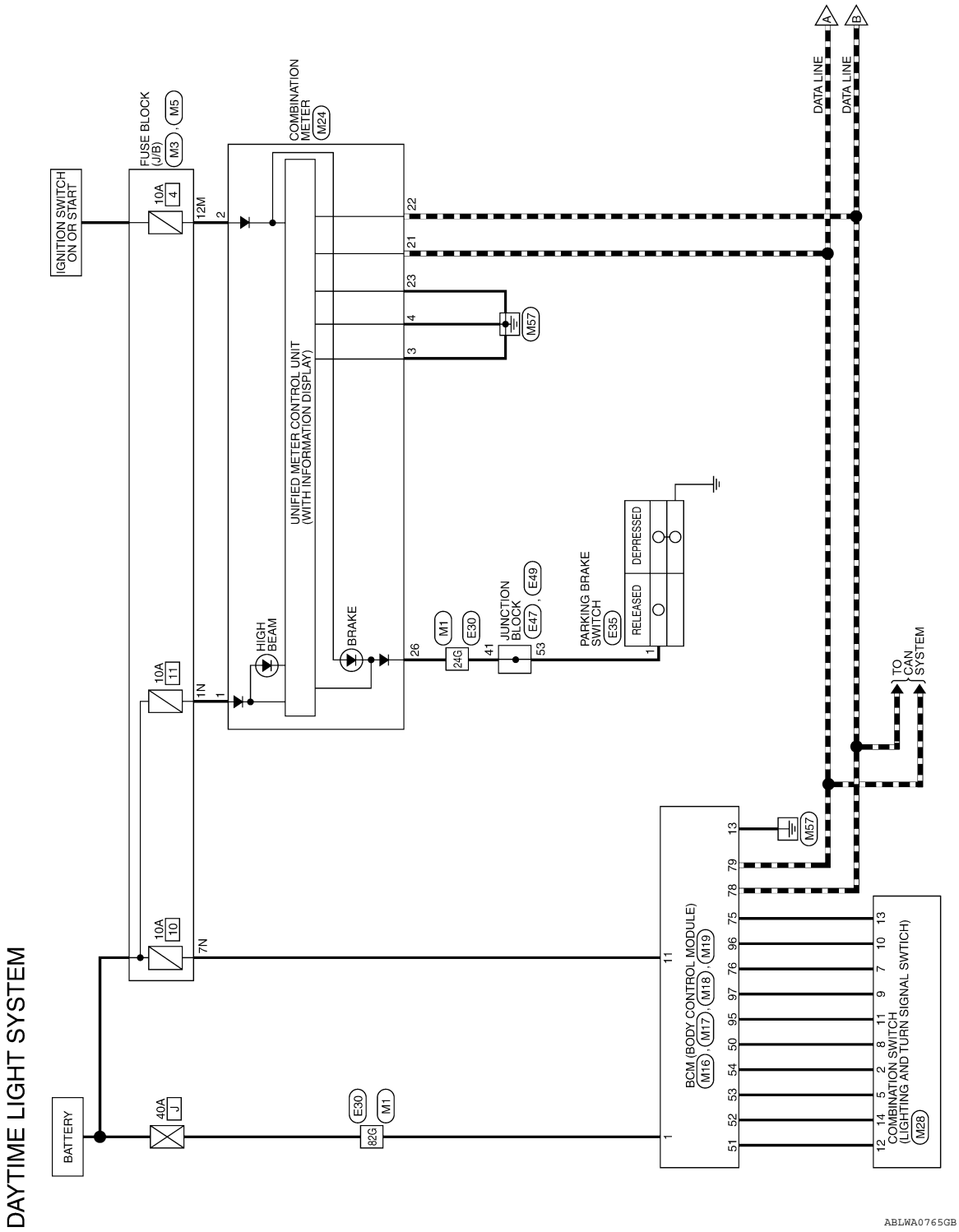
Terminal No.	Color of Wire	Signal Name
5	B	GND
6	V	REV LAMP

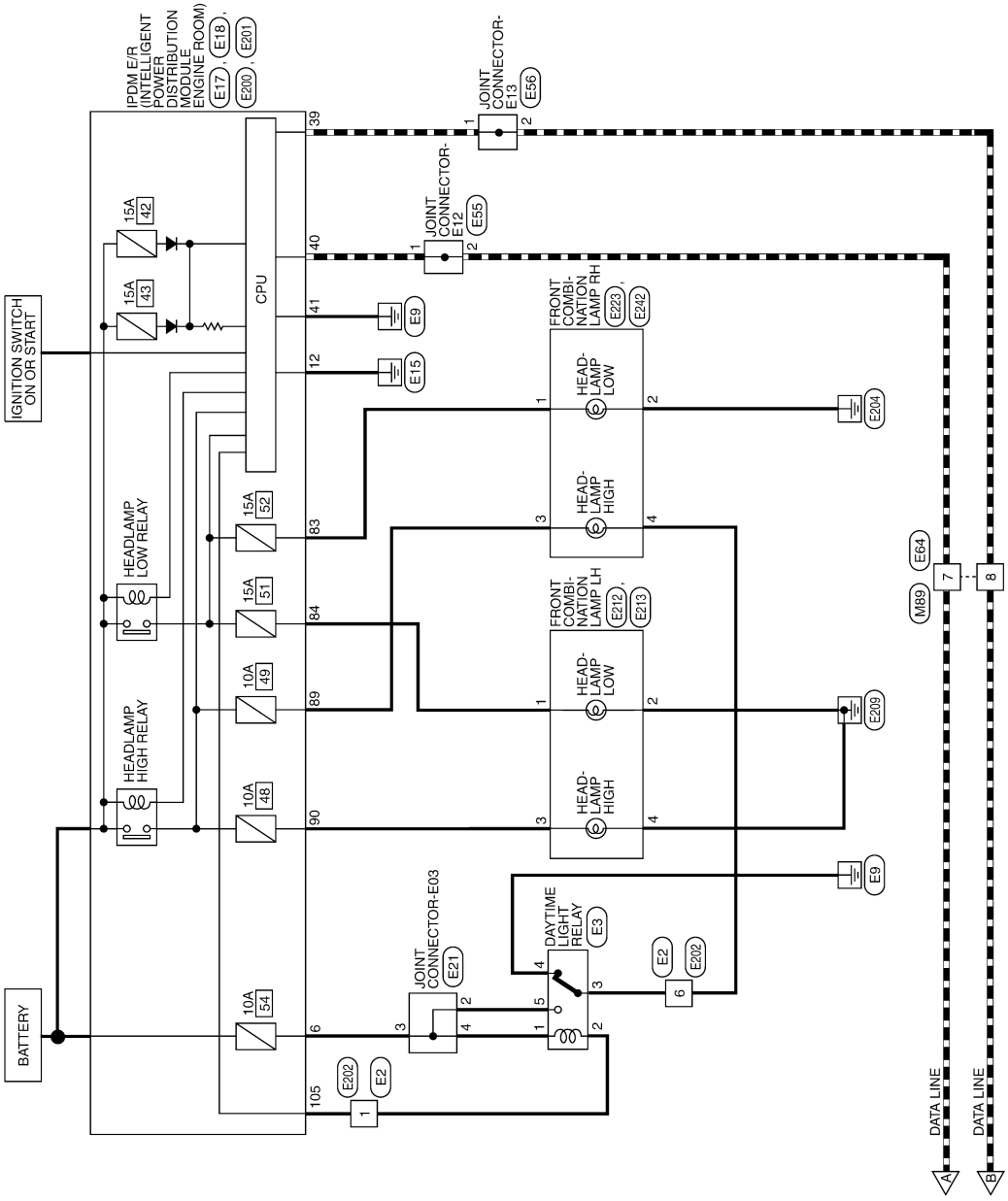
ABLIA2185GB

DAYTIME LIGHT SYSTEM

Wiring Diagram

INFOID:0000000005806042

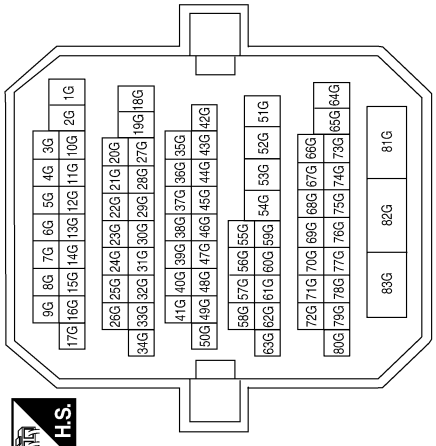



IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) E17, E18, E201, E200
CPU
IGNITION SWITCH ON OR START
BATTERY
HEADLAMP LOW RELAY
HEADLAMP HIGH RELAY
15A 42
15A 43
15A 52
15A 51
10A 49
10A 48
10A 54
JOINT CONNECTOR-E13 E56
JOINT CONNECTOR-E12 E55
JOINT CONNECTOR-E03 E21
DAYTIME LIGHT RELAY E3
FRONT COMBINATION LAMP RH E223, E242
FRONT COMBINATION LAMP LH E212, E213
HEAD-LAMP LOW
HEAD-LAMP HIGH
E9
E15
E204
E209
E202
E2
E64
M89
DATA LINE
ABLWA0766GB

DAYTIME LIGHT SYSTEM CONNECTORS

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

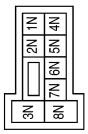
H.S.



Terminal No.	Color of Wire	Signal Name
24G	G/R	–
82G	W/B	–

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

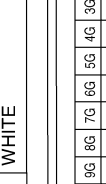
H.S.



Terminal No.	Color of Wire	Signal Name
1N	W/L	–
7N	Y/R	–

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

H.S.



Terminal No.	Color of Wire	Signal Name
12M	O	–

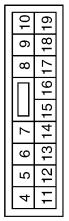
Connector No.	M16
Connector Name	BCM (BODY CONTROL MODULE)
Connector Color	BLACK

H.S.

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

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

H.S.



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

ABLIA2155GB

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

H.S.

39	38	37	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20
59	58	57	56	55	54	53	52	51	50	49	48	47	46	45	44	43	42	41	40

Terminal No.	Color of Wire	Signal Name
50	LG/B	INPUT_5
51	L/W	INPUT_1
52	G/B	INPUT_2
53	LG/R	INPUT_3
54	G/Y	INPUT_4

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

H.S.

79	78	77	76	75	74	73	72	71	70	69	68	67	66	65	64	63	62	61	60
99	98	97	96	95	94	93	92	91	90	89	88	87	86	85	84	83	82	81	80

Terminal No.	Color of Wire	Signal Name
75	R/Y	OUTPUT_5
76	R/G	OUTPUT_3
78	P	CAN-L
79	L	CAN-H
95	R/W	OUTPUT_1
96	P/B	OUTPUT_4
97	R/B	OUTPUT_2

Connector No.	M24
Connector Name	COMBINATION METER
Connector Color	WHITE

H.S.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40

Terminal No.	Color of Wire	Signal Name
1	W/L	BAT
2	O	IGN
3	B	GND (POWER)
4	B	GND (ILL)
21	L	CAN-H
22	P	CAN-L
23	B	GND (CIRCUIT)
26	G/R	PKB

Connector No.	M28
Connector Name	COMBINATION SWITCH
Connector Color	WHITE

H.S.

1	2					5	6	
7	8	9	10	11	12	13	14	

Terminal No.	Color of Wire	Signal Name
2	G/Y	OUTPUT_4
5	LG/R	OUTPUT_3
7	R/G	INPUT_3
8	LG/B	OUTPUT_5
9	R/B	INPUT_2
10	P/B	INPUT_4
11	R/W	INPUT_1
12	L/W	OUTPUT_1
13	R/Y	INPUT_5
14	G/B	OUTPUT_2

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

H.S.

5	4			3	2	1
12	11	10	9	8	7	6

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

ABLIA2156GB

Connector No.	E2
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

1	2	3
4	5	6	7	8

Terminal No.	Color of Wire	Signal Name
1	V	–
6	GR	–

Connector No.	E3
Connector Name	DAYTIME LIGHT RELAY
Connector Color	BLACK

H.S.

3	5
2	4	1

Terminal No.	Color of Wire	Signal Name
1	L	–
2	V	–
3	GR	–
4	B	–
5	L	–

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

H.S.

42	41	40	39
46	45	44	43

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

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

H.S.

9	10	11	12	13	14
3	4	5	6	7	8

25	26	27	28	29	30	31	32	33	34
15	16	17	18	19	20	21	22	23	24

37	38
35	36

Terminal No.	Color of Wire	Signal Name
6	SB	DTRL
12	B	GND (POWER)

Connector No.	E21
Connector Name	JOINT CONNECTOR-E03
Connector Color	BLACK

H.S.

0	4	3	2	1	0

Terminal No.	Color of Wire	Signal Name
2	L	–
3	L	–
4	L	–

ABLIA2157GB

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

H.S.

Terminal No.	Color of Wire	Signal Name
24G	BR	–
82G	LG	–

Connector No.	E35
Connector Name	PARKING BRAKE SWITCH
Connector Color	BLACK

H.S.

Terminal No.	Color of Wire	Signal Name
1	P	–

Connector No.	E47
Connector Name	JUNCTION BLOCK
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
41	BR	–

Connector No.	E49
Connector Name	JUNCTION BLOCK
Connector Color	BROWN

H.S.

Terminal No.	Color of Wire	Signal Name
53	P	–

Connector No.	E55
Connector Name	JOINT CONNECTOR-E12
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
1	L	–
2	L	–

ABLIA2158GB

Connector No.	E56
Connector Name	JOINT CONNECTOR-E13
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
1	P	–
2	P	–

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

H.S.

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

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

H.S.

Terminal No.	Color of Wire	Signal Name
83	R/Y	HEADLAMP_LO_RH
84	L	HEADLAMP_LO_LH
89	L/W	HEADLAMP_HI_RH
90	G	HEADLAMP_HI_LH

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

H.S.

Terminal No.	Color of Wire	Signal Name
105	V	DTRL_RLY

Connector No.	E202
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
1	V	–
6	GR/R	–

Connector No.	E212
Connector Name	FRONT COMBINATION LAMP LH
Connector Color	BLACK

H.S.

Terminal No.	Color of Wire	Signal Name
1	L	H/L LH LO
2	B	GND

ABLIA2159GB

Connector No.	E213
Connector Name	FRONT COMBINATION LAMP LH
Connector Color	BLACK

H.S.

Terminal No.	Color of Wire	Signal Name
3	G	H/L LH HI
4	B	GND

Connector No.	E223
Connector Name	FRONT COMBINATION LAMP RH
Connector Color	BLACK

H.S.

Terminal No.	Color of Wire	Signal Name
1	R/Y	H/L RH LO
2	B	GND

Connector No.	E242
Connector Name	FRONT COMBINATION LAMP RH (WITH DAYTIME LIGHT SYSTEM)
Connector Color	BLACK

H.S.

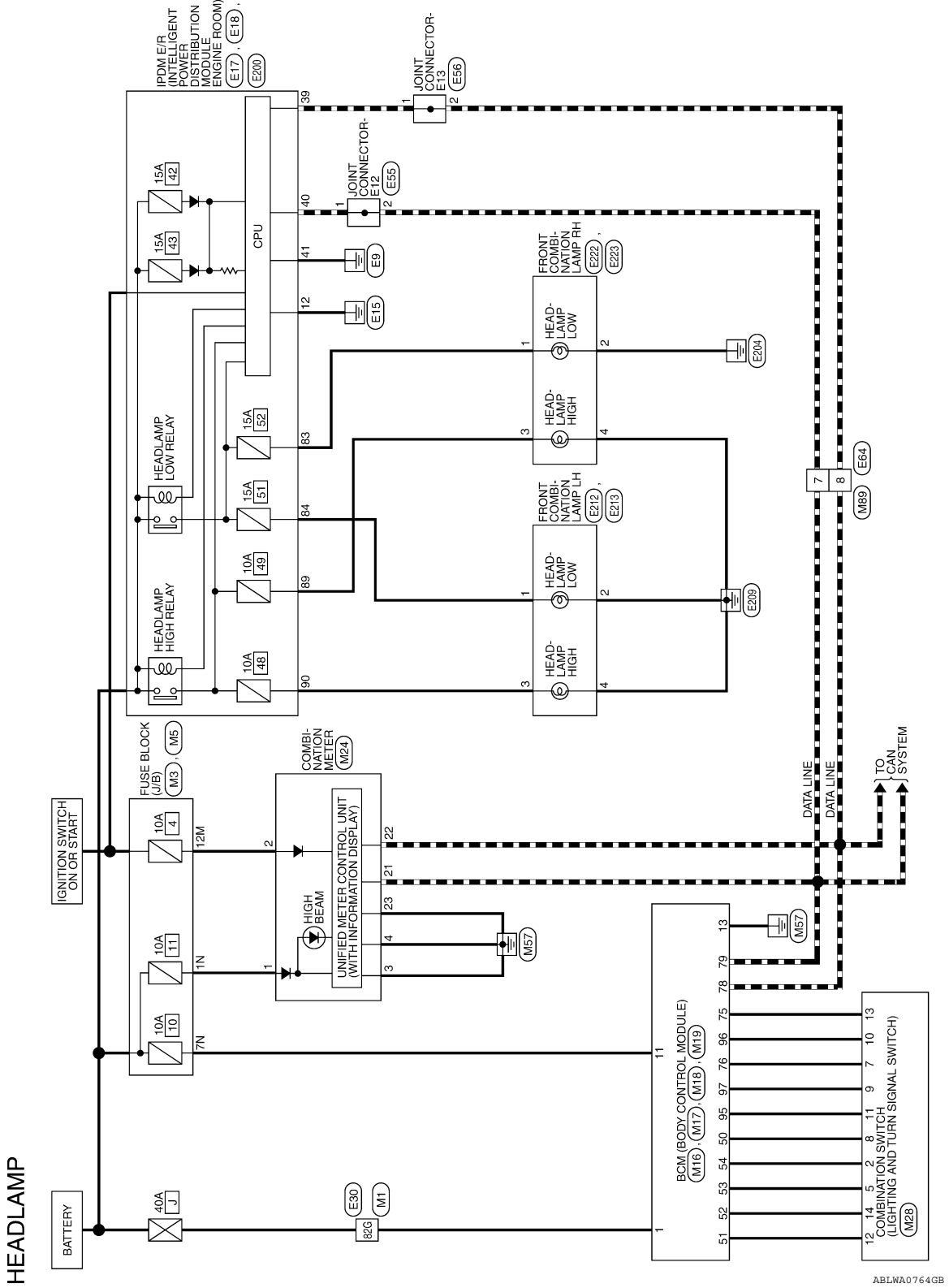
Terminal No.	Color of Wire	Signal Name
3	L/W	H/L RH HI
4	GR/R	GND

ABLIA2160GB

HEADLAMP

Wiring Diagram

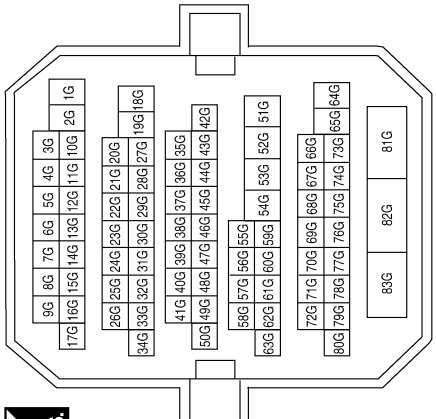
INFOID:0000000005806043



HEADLAMP CONNECTORS

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

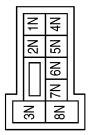
H.S.



Terminal No.	Color of Wire	Signal Name
82G	W/B	–

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

H.S.



Terminal No.	Color of Wire	Signal Name
1N	W/L	–
7N	Y/R	–

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

H.S.

Terminal No.	Color of Wire	Signal Name
12M	O	–

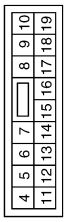
Connector No.	M16
Connector Name	BCM (BODY CONTROL MODULE)
Connector Color	BLACK

H.S.

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

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

H.S.



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

ABLIA2150GB

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

H.S.

39	38	37	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20
59	58	57	56	55	54	53	52	51	50	49	48	47	46	45	44	43	42	41	40

Terminal No.	Color of Wire	Signal Name
50	LG/B	INPUT_5
51	L/W	INPUT_1
52	G/B	INPUT_2
53	LG/R	INPUT_3
54	G/Y	INPUT_4

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

H.S.

79	78	77	76	75	74	73	72	71	70	69	68	67	66	65	64	63	62	61	60
99	98	97	96	95	94	93	92	91	90	89	88	87	86	85	84	83	82	81	80

Terminal No.	Color of Wire	Signal Name
75	R/Y	OUTPUT_5
76	R/G	OUTPUT_3
78	P	CAN-L
79	L	CAN-H
95	R/W	OUTPUT_1
96	P/B	OUTPUT_4
97	R/B	OUTPUT_2

Connector No.	M24
Connector Name	COMBINATION METER
Connector Color	WHITE

H.S.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40

Terminal No.	Color of Wire	Signal Name
1	W/L	BAT
2	O	IGN
3	B	GND (POWER)
4	B	GND (ILL)
21	L	CAN-H
22	P	CAN-L
23	B	GND (CIRCUIT)

Connector No.	M28
Connector Name	COMBINATION SWITCH
Connector Color	WHITE

H.S.

1	2					5	6
7	8	9	10	11	12	13	14

Terminal No.	Color of Wire	Signal Name
2	G/Y	OUTPUT_4
5	LG/R	OUTPUT_3
7	R/G	INPUT_3
8	LG/B	OUTPUT_5
9	R/B	INPUT_2
10	P/B	INPUT_4
11	R/W	INPUT_1
12	L/W	OUTPUT_1
13	R/Y	INPUT_5
14	G/B	OUTPUT_2

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

H.S.

5	4			3	2	1
12	11	10	9	8	7	6

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

ABLIA2151GB

Terminal No.	Color of Wire	Signal Name
12	B	GND (POWER)

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

H.S.

9	10	11	12	13	14
3	4	5	6	7	8

25	26	27	28	29	30	31	32	33	34
15	16	17	18	19	20	21	22	23	24

37	38
35	36

Connector No.	E55
Connector Name	JOINT CONNECTOR-E12
Connector Color	WHITE

H.S.

4	3	2	1

Terminal No.	Color of Wire	Signal Name
1	L	–
2	L	–

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

H.S.

42	41	40	39
46	45	44	43

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

Terminal No.	Color of Wire	Signal Name
82G	LG	–

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

H.S.

1G	2G	3G	4G	5G	6G	7G	8G	9G
	10G	11G	12G	13G	14G	15G	16G	17G

18G	19G	20G	21G	22G	23G	24G	25G	26G
	27G	28G	29G	30G	31G	32G	33G	34G

35G	36G	37G	38G	39G	40G	41G
42G	43G	44G	45G	46G	47G	48G	49G	50G

51G	52G	53G	54G	55G	56G	57G	58G
			59G	60G	61G	62G	63G

64G	65G	66G	67G	68G	69G	70G	71G	72G
	73G	74G	75G	76G	77G	78G	79G	80G

81G	82G	83G

ABLIA2152GB

Connector No.	E56
Connector Name	JOINT CONNECTOR-E13
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
1	P	–
2	P	–

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

H.S.

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

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

H.S.

Terminal No.	Color of Wire	Signal Name
83	R/Y	HEADLAMP_LO_RH
84	L	HEADLAMP_LO_LH
89	L/W	HEADLAMP_HI_RH
90	G	HEADLAMP_HI_LH

Connector No.	E212
Connector Name	FRONT COMBINATION LAMP LH
Connector Color	BLACK

H.S.

Terminal No.	Color of Wire	Signal Name
1	L	H/L LH LO
2	B	GND

Connector No.	E213
Connector Name	FRONT COMBINATION LAMP LH
Connector Color	BLACK

H.S.

Terminal No.	Color of Wire	Signal Name
3	G	H/L LH HI
4	B	GND

Connector No.	E222
Connector Name	FRONT COMBINATION LAMP RH (WITHOUT DAYTIME LIGHT SYSTEM)
Connector Color	BLACK

H.S.

Terminal No.	Color of Wire	Signal Name
3	L/W	H/L RH HI
4	B	GND

ABLIA2153GB

Connector No.	E223
Connector Name	FRONT COMBINATION LAMP RH
Connector Color	BLACK

H.S.

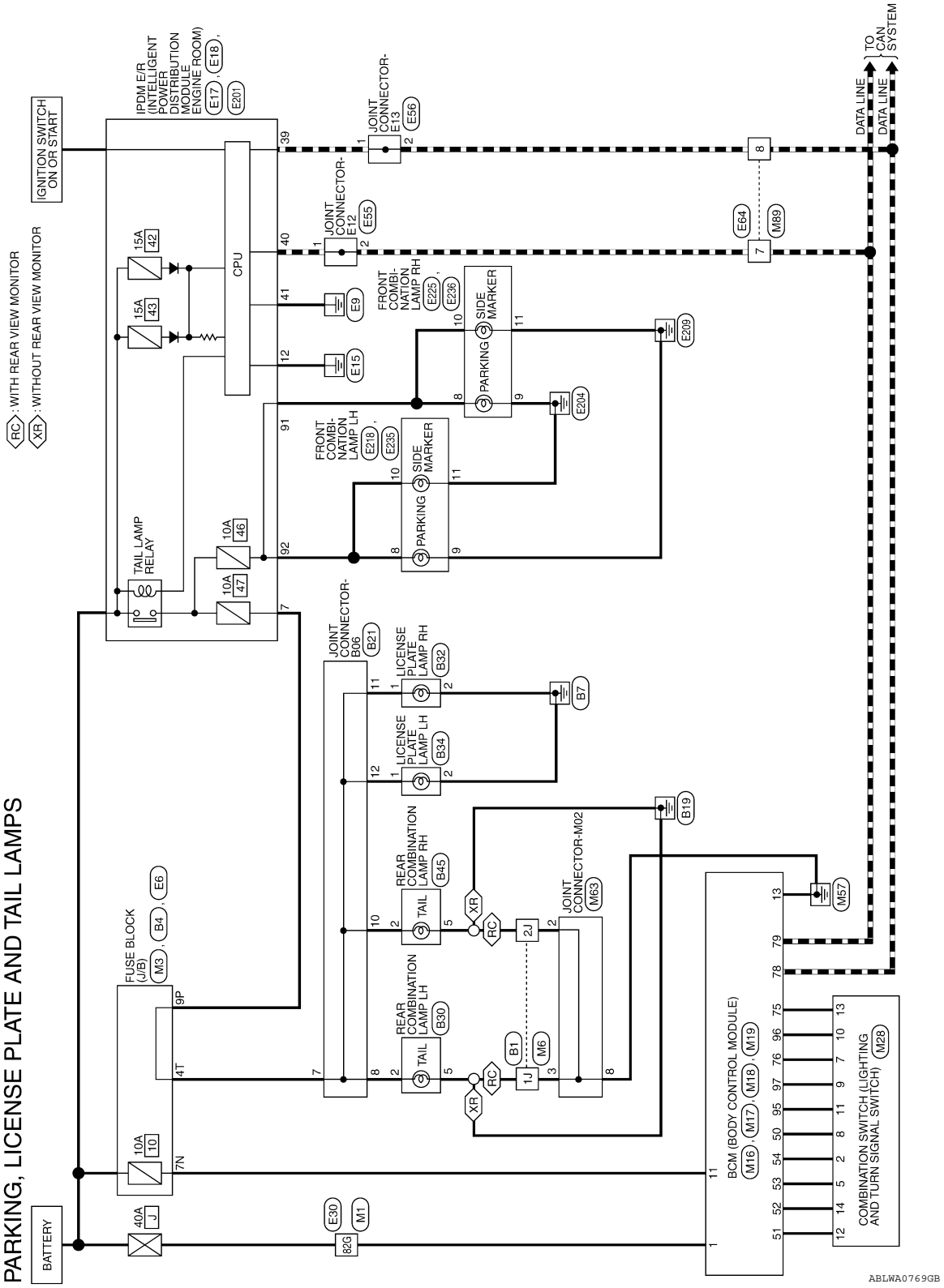
Terminal No.	Color of Wire	Signal Name
1	R/Y	H/L RH LO
2	B	GND

ABLIA2154GB

PARKING, LICENSE PLATE AND TAIL LAMPS

Wiring Diagram

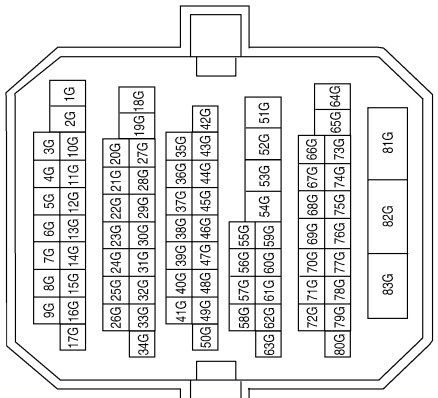
INFOID:0000000005806044



PARKING, LICENSE PLATE AND TAIL LAMP CONNECTORS

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

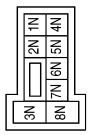
H.S.



Terminal No.	Color of Wire	Signal Name
82G	W/B	–

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

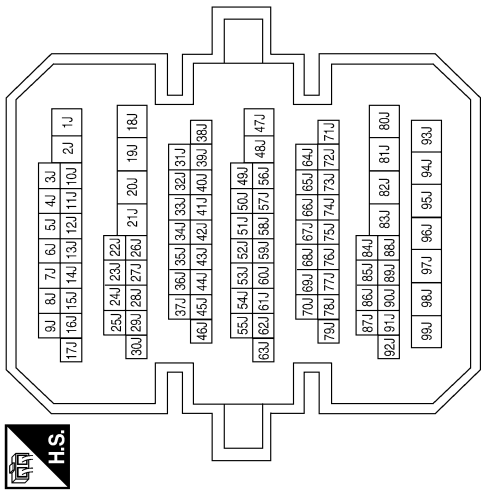
H.S.



Terminal No.	Color of Wire	Signal Name
7N	Y/R	–

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

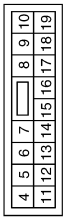
H.S.



Terminal No.	Color of Wire	Signal Name
1J	B	–
2J	B	–

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

H.S.



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

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

H.S.

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

ABLIA2173GB

Connector No.	M28
Connector Name	COMBINATION SWITCH
Connector Color	WHITE

H.S.

1	2				5	6
7	8	9	10	11	12	13	14

Terminal No.	Color of Wire	Signal Name
2	G/Y	OUTPUT_4
5	LG/R	OUTPUT_3
7	R/G	INPUT_3
8	LG/B	OUTPUT_5
9	R/B	INPUT_2
10	P/B	INPUT_4
11	R/W	INPUT_1
12	L/W	OUTPUT_1
13	R/Y	INPUT_5
14	G/B	OUTPUT_2

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

H.S.

79	78	77	76	75	74	73	72	71	70	69	68	67	66	65	64	63	62	61	60
99	98	97	96	95	94	93	92	91	90	89	88	87	86	85	84	83	82	81	80

Terminal No.	Color of Wire	Signal Name
75	R/Y	OUTPUT_5
76	R/G	OUTPUT_3
78	P	CAN-L
79	L	CAN-H
95	R/W	OUTPUT_1
96	P/B	OUTPUT_4
97	R/B	OUTPUT_2

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

H.S.

39	38	37	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20
59	58	57	56	55	54	53	52	51	50	49	48	47	46	45	44	43	42	41	40

Terminal No.	Color of Wire	Signal Name
50	LG/B	INPUT_5
51	L/W	INPUT_1
52	G/B	INPUT_2
53	LG/R	INPUT_3
54	G/Y	INPUT_4

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

H.S.

7P	6P	5P	4P		3P	2P	1P
16P	15P	14P	13P	12P	11P	10P	9P	8P

Terminal No.	Color of Wire	Signal Name
9P	GR	–

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

H.S.

5	4		3	2	1
12	11	10	9	8	7	6

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

Connector No.	M63
Connector Name	JOINT CONNECTOR-M02
Connector Color	BLUE

H.S.

12	11	10	9	8	7	6	5	4	3	2	1

Terminal No.	Color of Wire	Signal Name
2	B	–
3	B	–
8	B	–

ABLIA2174GB

Terminal No.	Color of Wire	Signal Name
7	GR	TAIL/ILLUMI
12	B	GND (POWER)

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

H.S.

9	10	11	12	13	14	25	26	27	28	29	30	31	32	33	34	37	38
3	4	5	6	7	8	15	16	17	18	19	20	21	22	23	24	35	36

Connector No.	E56
Connector Name	JOINT CONNECTOR-E13
Connector Color	WHITE

H.S.

4	3	2	1

Terminal No.	Color of Wire	Signal Name
1	P	–
2	P	–

Connector No.	E55
Connector Name	JOINT CONNECTOR-E12
Connector Color	WHITE

H.S.

4	3	2	1

Terminal No.	Color of Wire	Signal Name
1	L	–
2	L	–

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

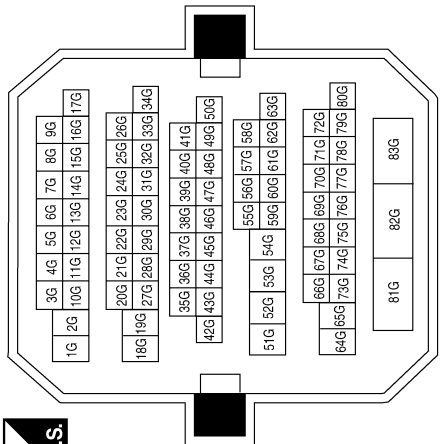
H.S.

42	41	40	39
46	45	44	43

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

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

H.S.



Terminal No.	Color of Wire	Signal Name
82G	LG	–

ABLIA2175GB

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

H.S.

1	2	3		4	5
6	7	8	9	10	11	12

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

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

H.S.

98	97	96	95	94	93	92	91
106	105	104	103	102	101	100	99

Terminal No.	Color of Wire	Signal Name
91	LG/R	CLEARANCE_RH
92	LG/B	CLEARANCE_LH

Connector No.	E218
Connector Name	FRONT COMBINATION LAMP LH
Connector Color	BLACK

H.S.

9 8

Terminal No.	Color of Wire	Signal Name
8	LG/B	CLEARANCE
9	B	GND

Connector No.	E225
Connector Name	FRONT COMBINATION LAMP RH
Connector Color	BLACK

H.S.

9 8

Terminal No.	Color of Wire	Signal Name
8	LG/R	CLEARANCE
9	B	GND

Connector No.	E235
Connector Name	FRONT COMBINATION LAMP LH
Connector Color	BLACK

H.S.

11 10

Terminal No.	Color of Wire	Signal Name
10	Y	–
11	B	–

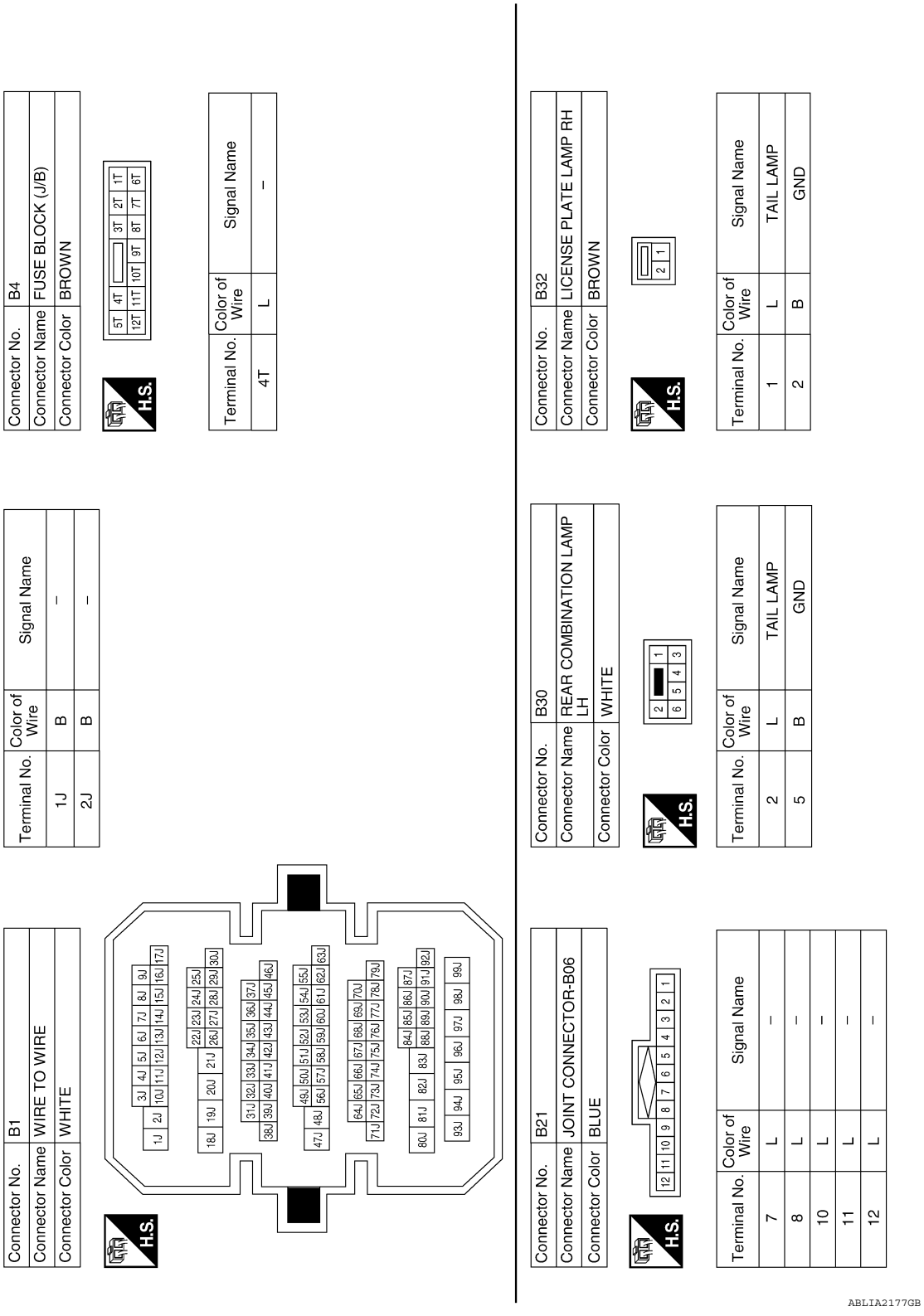
Connector No.	E236
Connector Name	FRONT COMBINATION LAMP RH
Connector Color	BLACK

H.S.

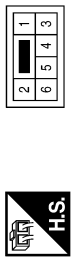
11 10

Terminal No.	Color of Wire	Signal Name
10	G/B	–
11	B	–

ABLIA2176GB


Connector No. B4
Connector Name FUSE BLOCK (J/B)
Connector Color BROWN
H.S.
5T 4T 3T 2T 1T
12T 11T 10T 9T 8T 7T 6T
Terminal No. Color of Wire Signal Name
4T L –
Connector No. B32
Connector Name LICENSE PLATE LAMP RH
Connector Color BROWN
H.S.
2 1
Terminal No. Color of Wire Signal Name
1 L TAIL LAMP
2 B GND
Terminal No. Color of Wire Signal Name
1J B –
2J B –
Connector No. B1
Connector Name WIRE TO WIRE
Connector Color WHITE
H.S.
1J 2J 3J 4J 5J 6J 7J 8J 9J
10J 11J 12J 13J 14J 15J 16J 17J
18J 19J 20J 21J 22J 23J 24J 25J
26J 27J 28J 29J 30J
31J 32J 33J 34J 35J 36J 37J
38J 39J 40J 41J 42J 43J 44J 45J 46J
47J 48J 49J 50J 51J 52J 53J 54J 55J
56J 57J 58J 59J 60J 61J 62J 63J
64J 65J 66J 67J 68J 69J 70J
71J 72J 73J 74J 75J 76J 77J 78J 79J
80J 81J 82J 83J 84J 85J 86J 87J
88J 89J 90J 91J 92J
93J 94J 95J 96J 97J 98J 99J
Connector No. B30
Connector Name REAR COMBINATION LAMP LH
Connector Color WHITE
H.S.
2 1
6 5 4 3
Terminal No. Color of Wire Signal Name
2 L TAIL LAMP
5 B GND
Connector No. B21
Connector Name JOINT CONNECTOR-B06
Connector Color BLUE
H.S.
12 11 10 9 8 7 6 5 4 3 2 1
Terminal No. Color of Wire Signal Name
7 L –
8 L –
10 L –
11 L –
12 L –
ABLIA2177GB

Connector No.	B45
Connector Name	REAR COMBINATION LAMP RH
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
2	L	TAIL LAMP
5	B	GND

Connector No.	B34
Connector Name	LICENSE PLATE LAMP LH
Connector Color	BROWN

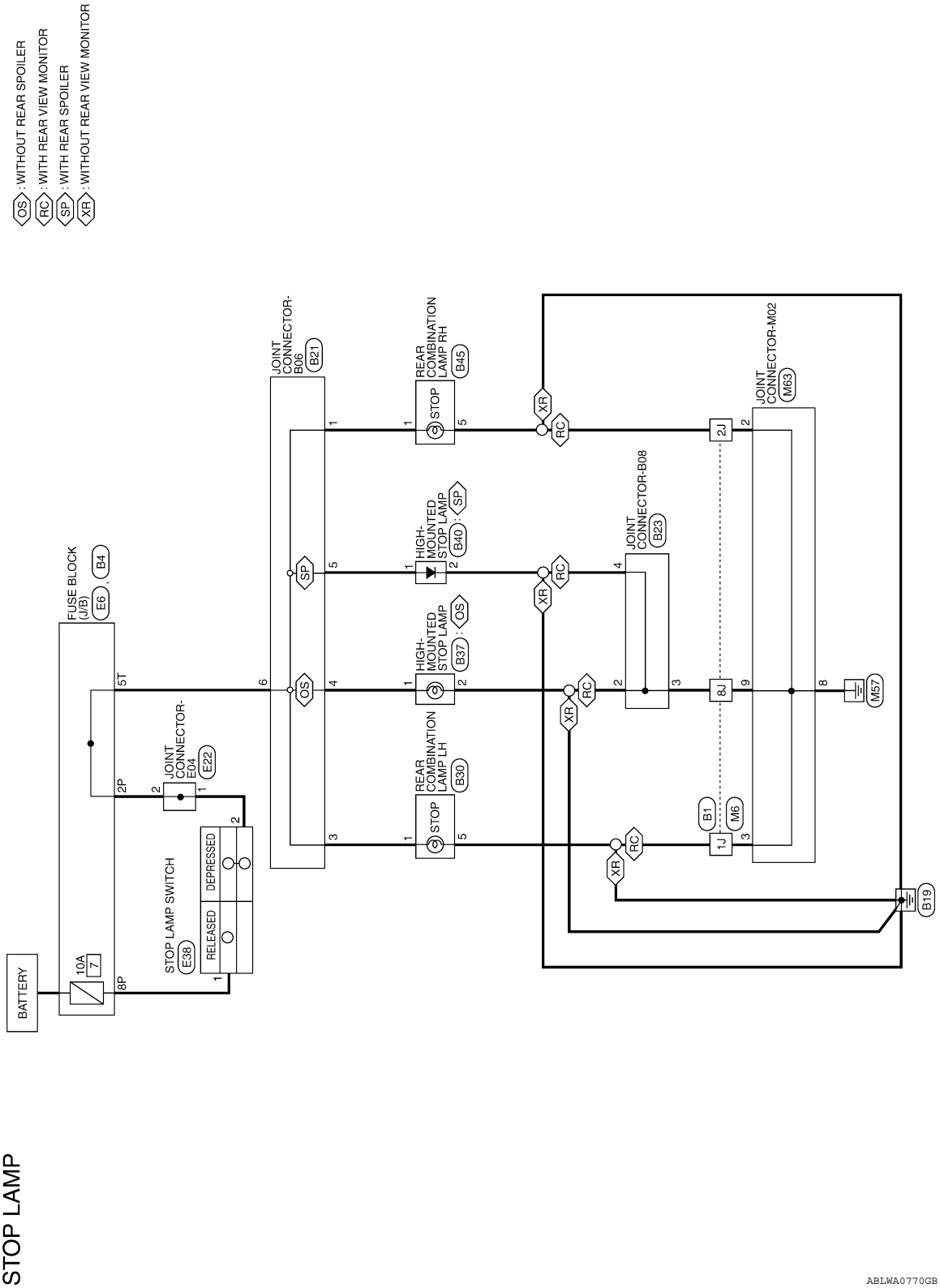
Terminal No.	Color of Wire	Signal Name
1	L	TAIL LAMP
2	B	GND

ABLIA2178GB

STOP LAMP

Wiring Diagram

INFOID:0000000005806045



STOP LAMP CONNECTORS

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

H.S.

Terminal No.	Color of Wire	Signal Name
1J	B	–
2J	B	–
8J	B	–

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

H.S.

Terminal No.	Color of Wire	Signal Name
2P	P	–
8P	R	–

Connector No.	M63
Connector Name	JOINT CONNECTOR-M02
Connector Color	BLUE

H.S.

Terminal No.	Color of Wire	Signal Name
2	B	–
3	B	–
8	B	–
9	B	–

Connector No.	E22
Connector Name	JOINT CONNECTOR-E04
Connector Color	BLACK

H.S.

Terminal No.	Color of Wire	Signal Name
1	P	–
2	P	–

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

H.S.

Terminal No.	Color of Wire	Signal Name
1	R	–
2	P	–

ABLIA2179GB

Connector No.	B1
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

1J	2J	10J	11J	12J	13J	14J	15J	16J	17J
3J	4J	5J	6J	7J	8J	9J			
18J	19J	20J	21J	22J	23J	24J	25J		
				26J	27J	28J	29J	30J	
31J	32J	33J	34J	35J	36J	37J			
38J	39J	40J	41J	42J	43J	44J	45J	46J	
47J	48J	49J	50J	51J	52J	53J	54J	55J	
		56J	57J	58J	59J	60J	61J	62J	63J
64J	65J	66J	67J	68J	69J	70J			
71J	72J	73J	74J	75J	76J	77J	78J	79J	
				80J	81J	82J	83J	84J	85J
86J	87J								
88J	89J	90J	91J	92J					
93J	94J	95J	96J	97J	98J	99J			

Terminal No.	Color of Wire	Signal Name
1J	B	–
2J	B	–
8J	B	–

Connector No.	B4
Connector Name	FUSE BLOCK (J/B)
Connector Color	BROWN

H.S.

5T	4T		3T	2T	1T
12T	11T	10T	9T	8T	7T	6T

Terminal No.	Color of Wire	Signal Name
5T	O	–

Connector No.	B21
Connector Name	JOINT CONNECTOR-B06
Connector Color	BLUE

H.S.

12	11	10	9	8	7	6	5	4	3	2	1

Terminal No.	Color of Wire	Signal Name
1	O	–
3	O	–
4	O	–
5	O	–
6	O	–

Connector No.	B23
Connector Name	JOINT CONNECTOR-B08
Connector Color	WHITE

H.S.

4	3	2	1

Terminal No.	Color of Wire	Signal Name
2	B	–
3	B	–
4	B	–

Connector No.	B30
Connector Name	REAR COMBINATION LAMP LH
Connector Color	WHITE

H.S.

2		1
6	5	4	3

Terminal No.	Color of Wire	Signal Name
1	O	STOP LAMP
5	B	GND

ABLIA2180GB

Connector No.	B37
Connector Name	HIGH-MOUNTED STOP LAMP (WITHOUT REAR SPOILER)
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
1	O	STOP_LAMP
2	B	GND

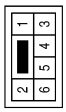
Connector No.	B40
Connector Name	HIGH-MOUNTED STOP LAMP (WITH REAR SPOILER)
Connector Color	BROWN

H.S.

Terminal No.	Color of Wire	Signal Name
1	O	STOP_LAMP
2	B	GND

Connector No.	B45
Connector Name	REAR COMBINATION LAMP RH
Connector Color	WHITE

H.S.



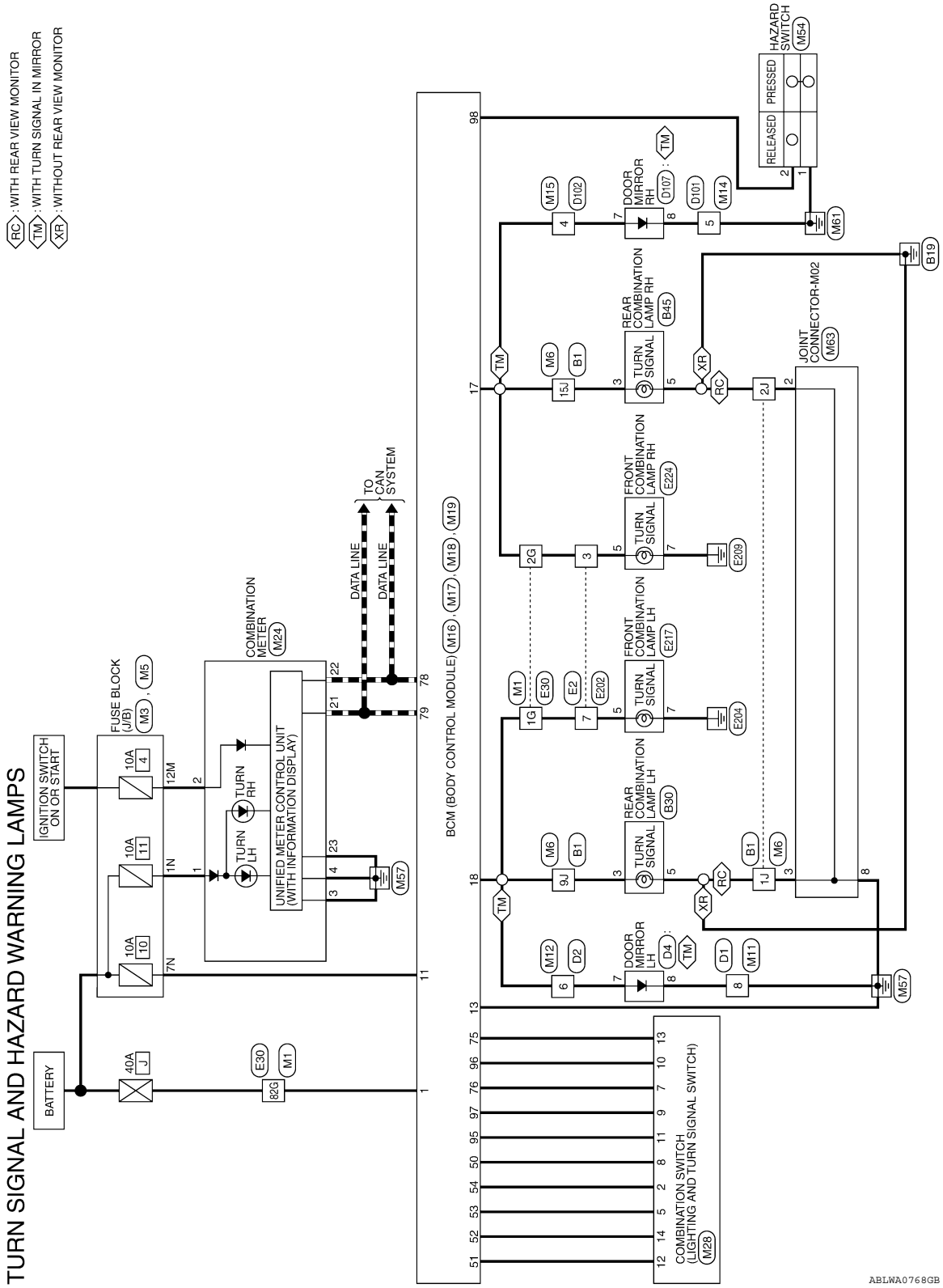
Terminal No.	Color of Wire	Signal Name
1	O	STOP LAMP
5	B	GND

ABLIA2181GB

TURN SIGNAL AND HAZARD WARNING LAMPS

Wiring Diagram

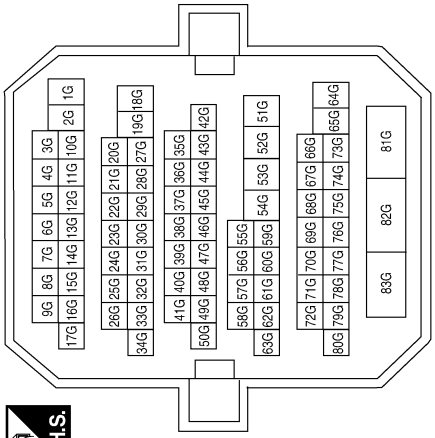
INFOID:0000000005806046



TURN SIGNAL AND HAZARD WARNING LAMPS CONNECTORS

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

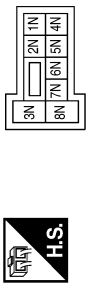
H.S.



Terminal No.	Color of Wire	Signal Name
1G	G/Y	–
2G	G/B	–
82G	W/B	–

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

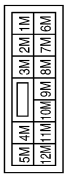
H.S.



Terminal No.	Color of Wire	Signal Name
1N	W/L	–
7N	Y/R	–

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

H.S.

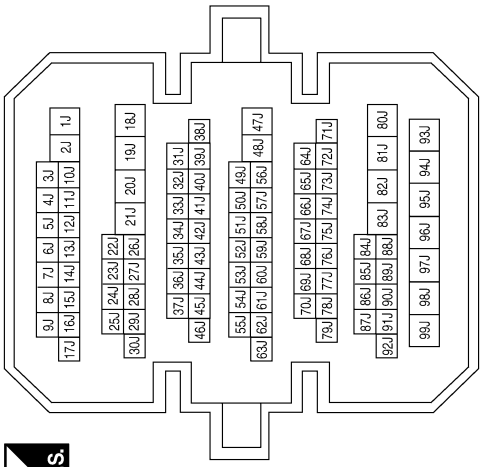


Terminal No.	Color of Wire	Signal Name
12M	O	–

ABLIA2166GB

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

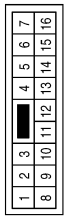
H.S.



Terminal No.	Color of Wire	Signal Name
1J	B	–
2J	B	–
9J	G/Y	–
15J	G/B	–

Connector No.	M11
Connector Name	WIRE TO WIRE
Connector Color	WHITE

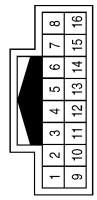
H.S.



Terminal No.	Color of Wire	Signal Name
8	B	–

Connector No.	M12
Connector Name	WIRE TO WIRE
Connector Color	WHITE

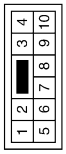
H.S.



Terminal No.	Color of Wire	Signal Name
6	G/Y	–

Connector No.	M14
Connector Name	WIRE TO WIRE
Connector Color	WHITE

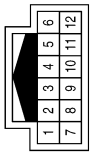
H.S.



Terminal No.	Color of Wire	Signal Name
5	B	–

Connector No.	M15
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.



Terminal No.	Color of Wire	Signal Name
4	G/B	–

ABLIA2167GB

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

H.S.

1	3
2	

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

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

H.S.

4	5	6	7		8	9	10
11	12	13	14	15	16	17	18	19

Terminal No.	Color of Wire	Signal Name
11	Y/R	BAT_BCM_FUSE
13	B	GND1
17	G/B	FR_FLASHER
18	G/Y	FL_FLASHER

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

H.S.

39	38	37	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20
59	58	57	56	55	54	53	52	51	50	49	48	47	46	45	44	43	42	41	40

Terminal No.	Color of Wire	Signal Name
50	LG/B	INPUT_5
51	L/W	INPUT_1
52	G/B	INPUT_2
53	LG/R	INPUT_3
54	G/Y	INPUT_4

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

H.S.

79	78	77	76	75	74	73	72	71	70	69	68	67	66	65	64	63	62	61	60
99	98	97	96	95	94	93	92	91	90	89	88	87	86	85	84	83	82	81	80

Terminal No.	Color of Wire	Signal Name
75	R/Y	OUTPUT_5
76	R/G	OUTPUT_3
78	P	CAN-L
79	L	CAN-H
95	R/W	OUTPUT_1
96	P/B	OUTPUT_4
97	R/B	OUTPUT_2
98	G/O	HAZARD_SW

Connector No.	M24
Connector Name	COMBINATION METER
Connector Color	WHITE

H.S.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40

Terminal No.	Color of Wire	Signal Name
1	W/L	BAT
2	O	IGN
3	B	GND (POWER)
4	B	GND (ILL)
21	L	CAN-H
22	P	CAN-L
23	B	GND (CIRCUIT)

Connector No.	M28
Connector Name	COMBINATION SWITCH
Connector Color	WHITE

H.S.

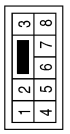
1	2				5	6
7	8	9	10	11	12	13	14

Terminal No.	Color of Wire	Signal Name
2	G/Y	OUTPUT_4
5	LG/R	OUTPUT_3
7	R/G	INPUT_3
8	LG/B	OUTPUT_5
9	R/B	INPUT_2
10	P/B	INPUT_4
11	R/W	INPUT_1
12	L/W	OUTPUT_1
13	R/Y	INPUT_5
14	G/B	OUTPUT_2

ABLIA2168GB

Connector No.	E2
Connector Name	WIRE TO WIRE
Connector Color	WHITE

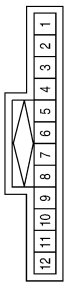
H.S.



Terminal No.	Color of Wire	Signal Name
3	SB	–
7	Y	–

Connector No.	M63
Connector Name	JOINT CONNECTOR-M02
Connector Color	BLUE

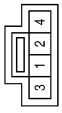
H.S.



Terminal No.	Color of Wire	Signal Name
2	B	–
3	B	–
8	B	–

Connector No.	M54
Connector Name	HAZARD SWITCH
Connector Color	WHITE

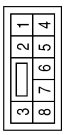
H.S.



Terminal No.	Color of Wire	Signal Name
1	B	GND
2	G/O	HAZARD_SW

Connector No.	E202
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

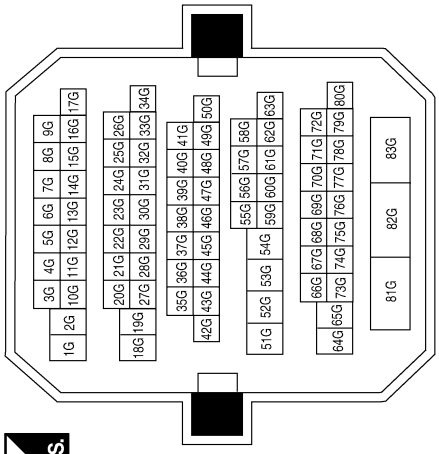


Terminal No.	Color of Wire	Signal Name
3	G/B	–
7	G/Y	–

Terminal No.	Color of Wire	Signal Name
1G	Y	–
2G	SB	–
82G	LG	–

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

H.S.



ABLIA2169GB

Connector No.	E217
Connector Name	FRONT COMBINATION LAMP LH
Connector Color	GRAY

H.S.

Terminal No.	Color of Wire	Signal Name
5	G/Y	FLASHER OUT PUT (LEFT)
7	B	GND

Connector No.	E224
Connector Name	FRONT COMBINATION LAMP RH
Connector Color	GRAY

H.S.

Terminal No.	Color of Wire	Signal Name
5	G/B	FLASHER_OUT_PUT (RIGHT)
7	B	GND

Connector No.	B1
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
1J	B	–
2J	B	–
9J	G	–
15J	BR	–

Connector No.	B30
Connector Name	REAR COMBINATION LAMP LH
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
3	G	FLASHER OUT PUT (LEFT)
5	B	GND

ABLIA2170GB

Connector No.	B45
Connector Name	REAR COMBINATION LAMP RH
Connector Color	WHITE

H.S.

2		1
6	5	4	3

Terminal No.	Color of Wire	Signal Name
3	BR	FLASHER OUT PUT (RIGHT)
5	B	GND

Connector No.	D4
Connector Name	DOOR MIRROR LH
Connector Color	WHITE

H.S.

4	3	2	1
8	7	6	5

Terminal No.	Color of Wire	Signal Name
7	GR	TURN(+)
8	B	TURN(-)

Connector No.	D1
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

7	6	5	4		3	2	1
16	15	14	13	12	11	10	9	8

Terminal No.	Color of Wire	Signal Name
8	B	–

Connector No.	D101
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

4	3		2	1
10	9	8	7	6	5

Terminal No.	Color of Wire	Signal Name
5	B	–

Connector No.	D2
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

8	7	6	5	4	3	2	1
16	15	14	13	12	11	10	9

Terminal No.	Color of Wire	Signal Name
6	GR	–

Connector No.	D102
Connector Name	WIRE TO WIRE
Connector Color	WHITE

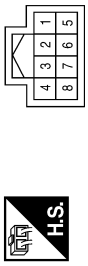
H.S.

6	5	4	3	2	1
12	11	10	9	8	7

Terminal No.	Color of Wire	Signal Name
4	W	–

ABLIA2171GB

Connector No.	D107
Connector Name	DOOR MIRROR RH
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
7	W	TURN(+)
8	B	TURN(-)

ABLIA2172GB

SYMPTOM DIAGNOSIS

EXTERIOR LIGHTING SYSTEM SYMPTOMS

Symptom Table

INFOID:0000000005439304

CAUTION:
Perform the self-diagnosis with CONSULT-III before the symptom diagnosis. Perform the trouble diagnosis if any DTC is detected.

Symptom		Possible cause	Inspection item
Headlamp does not switch to the high beam.	One side	• Fuse • Harness between IPDM E/R and the front combination lamp • Front combination lamp (High beam relay) • IPDM E/R	Headlamp (HI) circuit Refer to EXL-36.
	Both sides	**Symptom diagnosis** "BOTH SIDE HEADLAMPS DO NOT SWITCH TO HIGH BEAM" Refer to EXL-142.	
High beam indicator lamp is not turned ON. (Headlamp switches to the high beam.)		• Combination meter • BCM	• Combination meter. Data monitor "HI-BEAM IND" • BCM (HEAD LAMP) Active test "HEADLAMP"
Headlamp does not switch to the low beam.	One side	Front combination lamp (Low beam relay)	—
	Both sides	• Combination switch (lighting and turn signal switch) • Harness between the combination switch (lighting and turn signal switch) and BCM • BCM	Combination switch (lighting and turn signal switch) Refer to EXL-19.
		High beam request signal • BCM • IPDM E/R	IPDM E/R Data monitor "HL HI REQ"
		IPDM E/R	—
Headlamp does not turn ON.	One side	• Fuse • Bulb • Harness between IPDM E/R and the front combination lamp • Front combination lamp • IPDM E/R	Headlamp (LO) circuit Refer to EXL-38.
	Both sides	**Symptom diagnosis** "BOTH SIDE HEADLAMPS (LO) ARE NOT TURNED ON" Refer to EXL-143.	
Headlamp does not turn OFF.	When the ignition switch is turned ON	• BCM • Combination switch (lighting and turn signal switch)	Combination switch (lighting and turn signal switch) Refer to EXL-19.
	The ignition switch is turned OFF (After activating the battery saver).	IPDM E/R	—

Symptom		Possible cause	Inspection item
Headlamp is not turned ON/OFF with the lighting switch AUTO.		• Combination switch (lighting and turn signal switch) • Harness between the combination switch (lighting and turn signal switch) and BCM • BCM	Combination switch (lighting and turn signal switch) Refer to EXL-19.
		• Optical sensor • Harness between the optical sensor and BCM • BCM	Optical sensor Refer to EXL-46.
Daytime light system does not activate.		• Either high beam bulb • Parking brake switch • Combination switch (lighting and turn signal switch) • BCM • IPDM E/R • Daytime light relay • Harness between IPDM E/R and daytime light relay.	Daytime light system description. Refer to EXL-9.
Parking lamp is not turned ON.	One side	• Fuse • Parking lamp bulb • Harness between IPDM E/R and the front/rear combination lamp • Front/rear combination lamp • IPDM E/R	Parking lamp circuit Refer to EXL-40.
	Both sides	**Symptom diagnosis** "PARKING, LICENSE PLATE AND TAIL LAMPS ARE NOT TURNED ON" Refer to EXL-144.	
Turn signal lamp does not blink.	Indicator lamp is normal. (The applicable side performs the high flasher activation).	• Harness between BCM and each turn signal lamp • Turn signal lamp bulb • Door mirror (if equipped with turn signals in the door mirrors)	Turn signal lamp circuit Refer to EXL-43.
Turn signal indicator lamp does not blink.	One side	Combination meter	—
	Both sides (Always)	• Turn signal indicator lamp signal • Combination meter • BCM	• Combination meter. Data monitor "TURN IND" • BCM (FLASHER) Active test "FLASHER"
	Both sides (Does blink when activating the hazard warning lamp with the ignition switch OFF)	• The combination meter power supply and the ground circuit • Combination meter	Combination meter Power supply and the ground circuit Refer to MWI-40.

BOTH SIDE HEADLAMPS DO NOT SWITCH TO HIGH BEAM

Description

INFOID:0000000005804840

The headlamps (both sides) do not switch to high beam when the combination switch (lighting and turn signal switch) is in the HI or PASS setting.

Diagnosis Procedure

INFOID:0000000005804841

1.COMBINATION SWITCH (LIGHTING AND TURN SIGNAL SWITCH) INSPECTION

Check the combination switch (lighting and turn signal switch). Refer to EXL-19, "System Description".

Is the combination switch (lighting and turn signal switch) normal?

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

2.CHECK HEADLAMP (HI) REQUEST SIGNAL INPUT

CONSULT-III DATA MONITOR

1. Select "HL HI REQ" of IPDM E/R DATA MONITOR item.
2. With operation of the combination switch (lighting and turn signal switch) lighting switch, check the monitor status.

Monitor item	Condition		Monitor status
HL HI REQ	combination switch (lighting and turn signal switch) (2ND)	HI or PASS	ON
		Except for HI or PASS	OFF

Is the monitor item status normal?

YES >> GO TO 3
NO >> Replace BCM. Refer to BCS-83, "Removal and Installation" .

3.HEADLAMP (HI) CIRCUIT INSPECTION

Check the headlamp (HI) circuit. Refer to EXL-36, "Diagnosis Procedure".

Is the headlamp (HI) circuit normal?

YES >> Replace IPDM E/R. Refer to PCS-36, "Removal and Installation" .
NO >> Repair or replace the malfunctioning part.

BOTH SIDE HEADLAMPS (LO) ARE NOT TURNED ON

Description

INFOID:0000000005804842

The headlamps (both sides) do not turn ON in any combination switch (lighting and turn signal switch) setting.

Diagnosis Procedure

INFOID:0000000005804843

1.CHECK COMBINATION SWITCH (LIGHTING AND TURN SIGNAL SWITCH)

Check the combination switch (lighting and turn signal switch). Refer to EXL-19, "System Description".

Is the combination switch (lighting and turn signal switch) normal?

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

2.CHECK HEADLAMP (LO) REQUEST SIGNAL INPUT

CONSULT-III DATA MONITOR

1. Select "HL LO REQ" of IPDM E/R DATA MONITOR item.
2. With operation of the combination switch (lighting and turn signal switch), check the monitor status.

Monitor item	Condition		Monitor status
HL LO REQ	combination switch (lighting and turn signal switch)	2ND	ON
		OFF	OFF

Is the monitor item status normal?

YES >> GO TO 3
NO >> Replace BCM. Refer to BCS-83, "Removal and Installation".

3.HEADLAMP (LO) CIRCUIT INSPECTION

Check the headlamp (LO) circuit. Refer to EXL-38, "Diagnosis Procedure".

Is the headlamp (LO) circuit normal?

YES >> Replace IPDM E/R. Refer to PCS-36, "Removal and Installation".
NO >> Repair or replace the malfunctioning part.

PARKING, LICENSE PLATE AND TAIL LAMPS ARE NOT TURNED ON

Description

INFOID:0000000005804844

The parking, license plate and tail lamps do not turn ON in with any combination switch (lighting and turn signal switch) setting.

Diagnosis Procedure

INFOID:0000000005804845

1.COMBINATION SWITCH (LIGHTING AND TURN SIGNAL SWITCH) INSPECTION

Check the combination switch (lighting and turn signal switch). Refer to EXL-19, "System Description".

Is the combination switch (lighting and turn signal switch) normal?

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

2.CHECK TAIL LAMP RELAY REQUEST SIGNAL INPUT

CONSULT-III DATA MONITOR

1. Select "TAIL & CLR REQ" of IPDM E/R DATA MONITOR item.
2. With operation of the combination switch (lighting and turn signal switch), check the monitor status.

Monitor item	Condition		Monitor status
TAIL & CLR REQ	combination switch (lighting and turn signal switch)	1ST	ON
		OFF	OFF

Is the monitor item status normal?

YES >> GO TO 3
NO >> Replace BCM. Refer to BCS-83, "Removal and Installation".

3.PARK LAMP CIRCUIT INSPECTION

Check the parking lamp circuit. Refer to EXL-40, "Diagnosis Procedure".

Is the tail lamp circuit normal?

YES >> Replace IPDM E/R. Refer to PCS-36, "Removal and Installation".
NO >> Repair or replace the malfunctioning part.

NORMAL OPERATING CONDITION

Description

INFOID:0000000005439305

AUTO LIGHT SYSTEM

The auto light system may not turn the headlamp ON/OFF immediately after passing a dark area or a bright area (short tunnel, sky bridge, shadowed area etc.). This is normal.

PRECAUTION

PRECAUTIONS

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

INFOID:0000000005806164

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.**

Precautions For High-Voltage System

INFOID:0000000005439315

Refer to HBB-114, "Precautions For High-Voltage System".

General precautions for service operations

INFOID:0000000005439316

- Never work with wet hands.
- Turn the lighting switch OFF before disconnecting and connecting the connector.
- When checking the headlamp on/off operation, check it on vehicle and with the power connected to the vehicle-side connector.
- Do not touch the headlamp bulb glass surface with bare hands or allow oil or grease to get on it. Do not touch the headlamp bulb just after the headlamp is turned off, because it is very hot.
- When the bulb has burned out, wrap it in a thick vinyl bag and discard. Do not break the bulb.
- Leaving the bulb removed from the headlamp housing for a long period of time can deteriorate the performance of the lens and reflector (dirt, clouding). Always prepare a new bulb and have it on hand when replacing the bulb.
- When adjusting the headlamp aiming, turn the aiming adjustment screw only in the tightening direction. (If it is necessary to loosen the screw, first fully loosen the screw, and then turn it in the tightening direction.)
- Do not use organic solvent (paint thinner or gasoline) to clean lamps and to remove old sealant.

ON-VEHICLE MAINTENANCE

HEADLAMP

Aiming Adjustment

INFOID:0000000005806165

PREPARATION BEFORE ADJUSTING

NOTE:

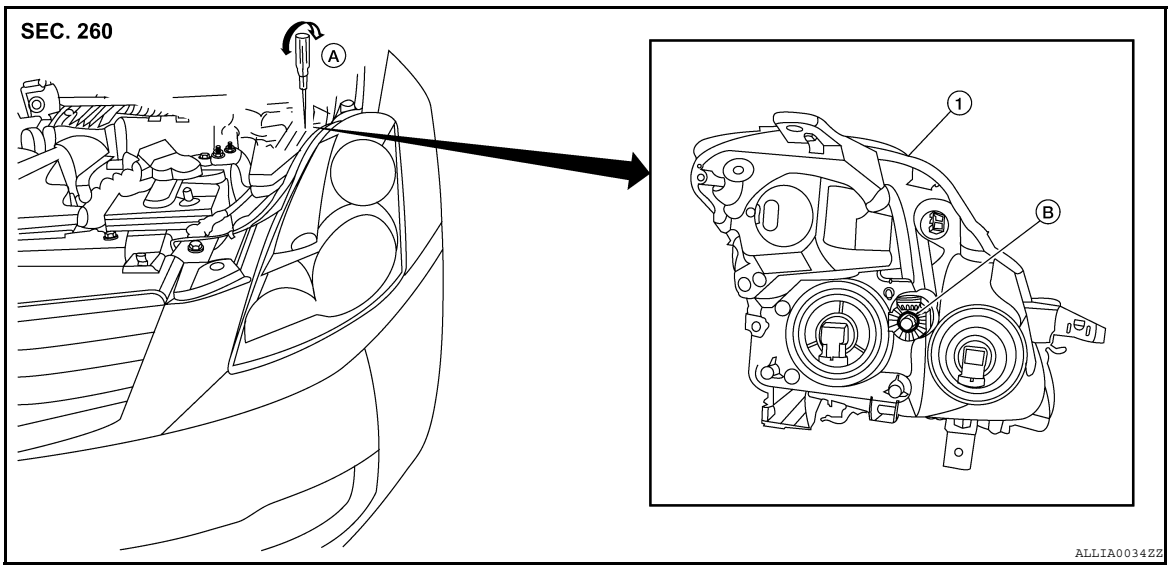
- For details, refer to the regulations in your area.
- Perform aiming adjustment if the vehicle front body has been repaired and/or the front combination lamp assembly has been replaced.

Before performing aiming adjustment, check the following.

- Adjust the tire pressure to specification.
- Position vehicle and screen on level surface.
- Ensure there is no load in vehicle other than the driver (or equivalent weight placed in driver's position).
- Ensure engine coolant and engine oil are filled to correct levels and fuel tank is full.
- Confirm spare tire, jack and tools are properly stowed.
- Wipe off dirt on the headlamp.

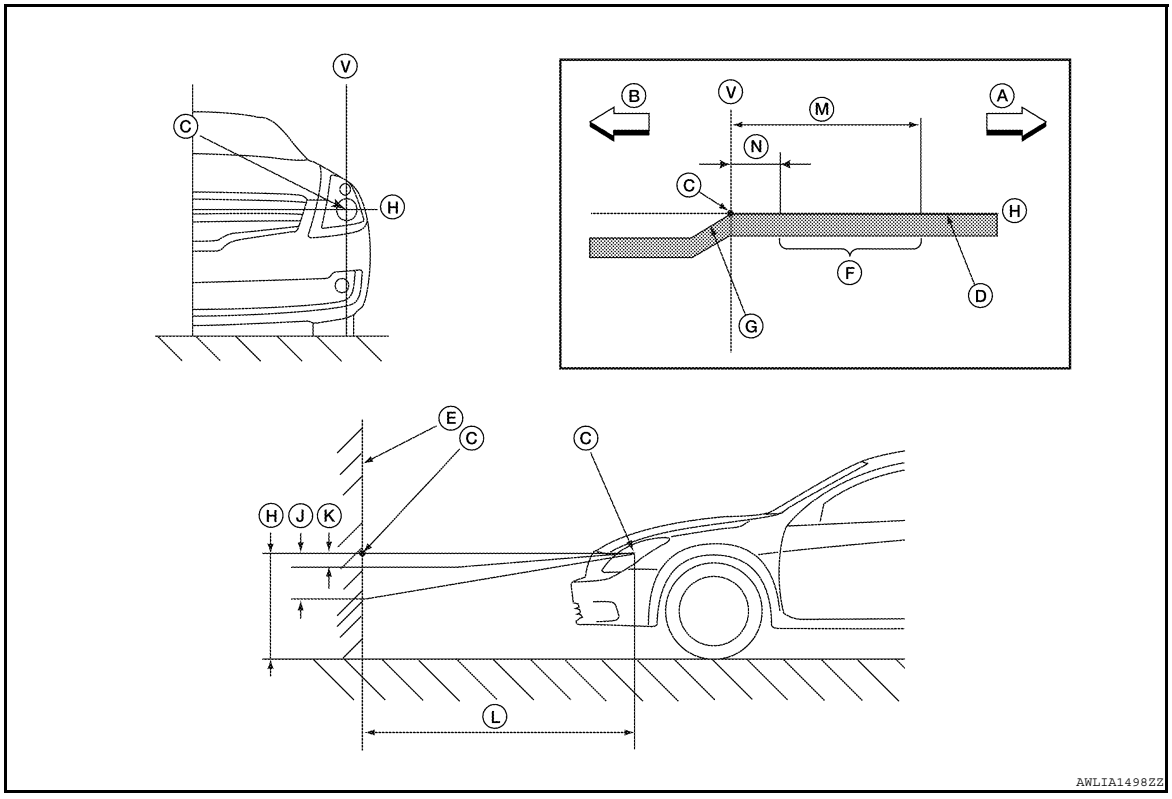
CAUTION:

Never use organic solvent (thinner, gasoline etc.).



Aiming Adjustment procedure

1. Position the screen.
   NOTE:
   - Stop the vehicle facing the screen.
   - Place the screen on a plain road vertically.
2. Face the screen with the vehicle. Maintain 7.62 m (25 ft) between the headlamp bulb center and the screen.
3. Start the engine. Turn the headlamp (LO) ON.
   CAUTION:
   Never cover the lens surface with tape, etc. The lens is made of resin.
   NOTE:
   - Aim each headlamp individually and ensure other headlamp beam pattern is blocked from screen.
   - For horizontal aiming, adjust headlamp until beam pattern is at horizontal center point.



A. Right	B. Left	C. Center of headlamp bulb-(HV point)
D. Cutoff line	E. Screen	F. Aim evaluation segment
G. Step	H. Horizontal center line of head lamp	J. 53.2 mm (2.09 in)
K. -13.3 mm (-0.52 in)	L. 7.62 m (25 ft)	M. 399 mm (15.71 in)
N. 133 mm (5.24 in)	V. Vertical center line of headlamp	

- Basic illuminating area for adjustment should be within the range shown on the aiming chart. Adjust headlamps accordingly.

ON-VEHICLE REPAIR

HEADLAMP

Bulb Replacement

INFOID:0000000005439319

HEADLAMP

CAUTION:

Do not touch the glass of bulb directly by hand. Keep grease and other oily substances away from bulb. Do not touch bulb by hand while it is lit or right after being turned off, burning may result.

Removal

1. Position the fender protector aside. Refer to EXT-19, "Removal and Installation".
2. Turn the headlamp bulb sockets counterclockwise to unlock and remove them.
3. Turn the high beam lamp bulb socket counterclockwise to unlock and remove it.

Installation

Installation is in the reverse order of removal.

CAUTION:

After installing a headlamp bulb, be sure to install the bulb socket securely to ensure watertightness.

SIDE MARKER LAMP

Removal

1. Position the fender protector aside. Refer to EXT-19, "Removal and Installation".
2. Turn side marker bulb socket counterclockwise to unlock it.
3. Pull bulb to remove it.

Installation

Installation is in the reverse order of removal.

FRONT PARK/TURN SIGNAL LAMP

Removal

1. Position the fender protector aside. Refer to EXT-19, "Removal and Installation".
2. Turn the park/turn bulb socket counterclockwise to unlock it.
3. Pull the bulb to remove it.

Installation

Installation is in the reverse order of removal.

CAUTION:

After installing a headlamp bulb, be sure to install the bulb socket securely to ensure watertightness.

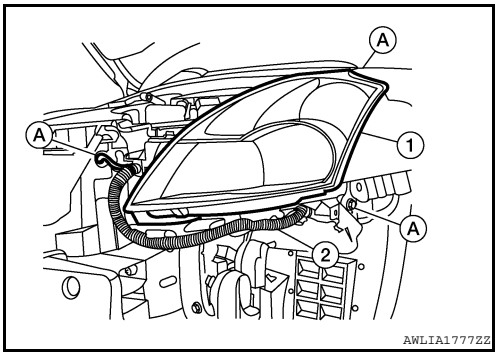
Removal and Installation

INFOID:0000000005439320

COMBINATION LAMP

Removal

1. Remove the front bumper fascia. Refer to EXT-13, "Removal and Installation".
2. Ensure lighting switch is OFF.
3. Remove the headlamp bolts (A).
4. Pull the headlamp assembly (1) toward the front of the vehicle, detach the headlamp harness (2) from the headlamp assembly (1), disconnect the bulb connectors and remove.

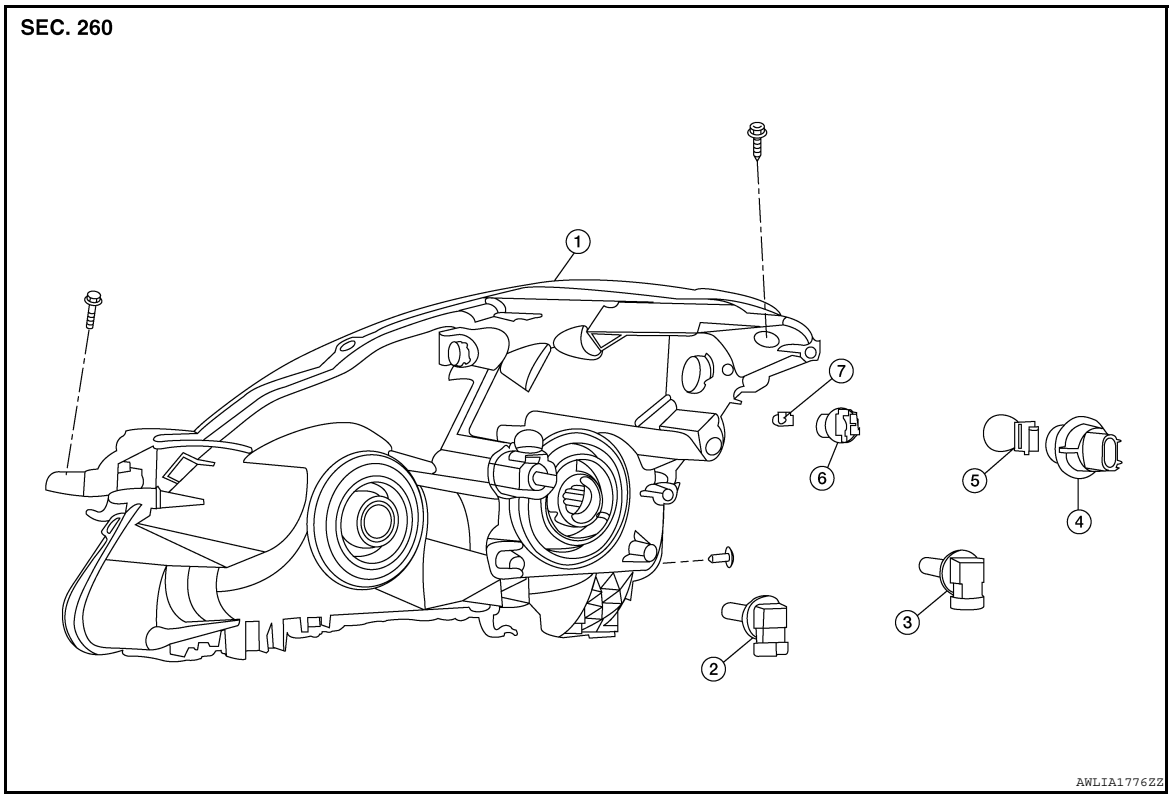


Installation
Installation is in the reverse order of removal.
NOTE:
Confirm headlamp aiming adjustment. Refer to EXL-147, "Aiming Adjustment".

Disassembly and Assembly

INFOID:0000000005439321

Combination Lamp



1. Headlamp assembly
2. Halogen lamp bulb (high beam)
3. Halogen lamp bulb (low beam)
4. Front park/turn signal lamp bulb socket
5. Front park/turn signal lamp bulb
6. Side marker lamp bulb socket
7. Side marker lamp bulb

Disassembly
CAUTION:
- **Do not touch the glass of the bulb directly by hand. Keep grease and other oily substances away from bulb. Do not touch bulb while it is lit or right after being turned off, burning may result.**

1. Turn the halogen lamp bulb (low beam) counterclockwise to unlock and remove it.
2. Turn the halogen lamp bulb (high beam) socket counterclockwise to unlock and remove it.
3. Turn the front park/turn signal lamp bulb socket counterclockwise to unlock and remove it.
4. Pull the front park/turn signal lamp bulb from its socket.
5. Turn the side marker lamp bulb socket counterclockwise to unlock and remove it.
6. Pull the side marker lamp bulb from its socket.

Assembly
Assembly is in the reverse order of disassembly.

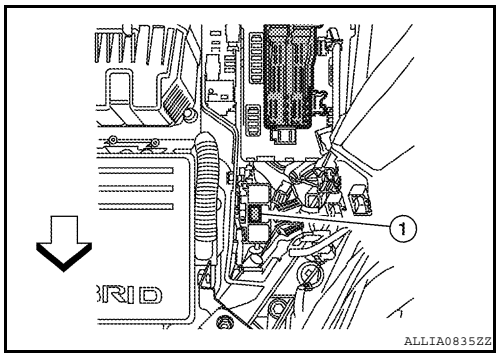
DAYTIME RUNNING LIGHT SYSTEM

Removal and Installation

INFOID:0000000005439324

REMOVAL

1. Disconnect the IPDM E/R. Refer to PCS-36, "Removal and Installation".
2. Disconnect the harness junction block to position it aside.
3. Remove the DTRL relay (1).
   - ⇦: Front



INSTALLATION

Installation is in the reverse order of removal.

STOP LAMP

Removal and Installation

INFOID:0000000005439326

HIGH-MOUNTED STOP LAMP - WITH REAR SPOILER

Removal

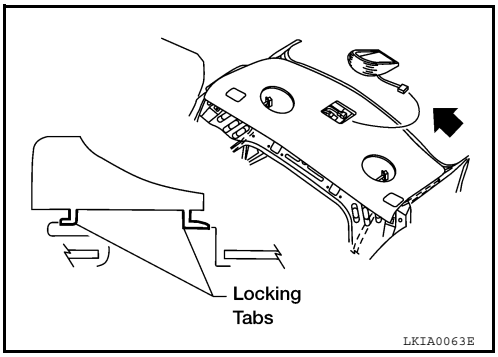
1. Remove the rear spoiler. Refer to EXT-26, "Removal and Installation".
2. Remove the two screws and remove the LED stop lamp from the rear spoiler.

Installation
Installation is in the reverse order of removal.

HIGH-MOUNTED STOP LAMP - WITH PARCEL SHELF

Removal

1. Slide high-mounted stop lamp assembly rearward on parcel shelf to give clearance to front tabs.
2. Lift front of lamp assembly up and bring forward to give clearance to rear tabs.
3. Disconnect the high-mounted connector and remove.



Installation
Installation is in the reverse order of removal.

Bulb Replacement

INFOID:0000000005439325

HIGH-MOUNTED STOP LAMP - WITH REAR SPOILER

Removal
The high-mounted stop lamp uses an LED circuit board instead of a bulb. The LED circuit board is not serviceable and the high-mounted stop lamp must be replaced as an assembly.

HIGH MOUNTED STOP LAMP - WITH PARCEL SHELF

Removal

1. Remove high mounted stop lamp assembly from parcel shelf.
2. Turn bulb socket counterclockwise to unlock it.
3. Pull bulb to remove it from the socket.

Installation
Installation is in the reverse order of removal.

LICENSE PLATE LAMP

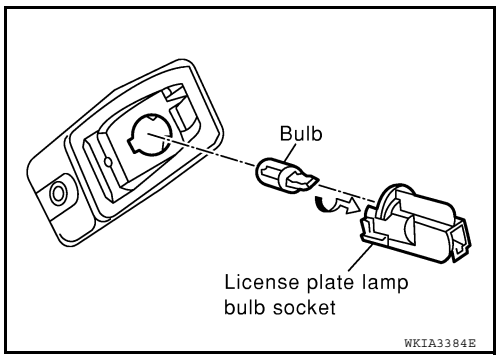
Bulb Replacement

INFOID:0000000005439327

LICENSE PLATE LAMP

Removal

1. Position trunk lid finisher aside.
2. Turn license plate lamp bulb socket counterclockwise to unlock and remove.
3. Pull license plate lamp bulb to remove from socket.



Installation

Installation is in the reverse order of removal.

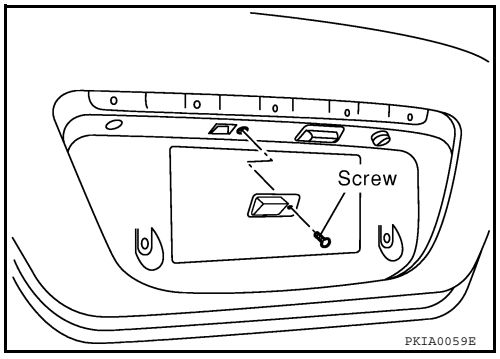
Removal and Installation

INFOID:0000000005439328

LICENSE PLATE LAMP

Removal

1. Remove the license plate finisher. Refer to EXL-153, "Removal and Installation".
2. Disconnect the license plate lamp connector.
3. Remove the license plate lamp screw and remove the license plate lamp.



Installation

Installation is in the reverse order of removal.

REAR COMBINATION LAMP

Bulb Replacement

INFOID:0000000005439329

REAR TURN SIGNAL LAMP

Removal

1. Remove the rear combination lamp. Refer to EXL-154, "Removal and Installation".
2. Turn the rear turn signal lamp bulb socket counterclockwise and remove it.
3. Remove the rear turn signal lamp bulb.

Installation
Installation is in the reverse order of removal.

STOP/TAIL LAMP

Removal

1. Remove the rear combination lamp. Refer to EXL-154, "Removal and Installation".
2. Turn the stop/tail lamp bulb socket counterclockwise and remove it.
3. Remove the stop/tail lamp bulb.

Installation
Installation is in the reverse order of removal.

BACK-UP LAMP

Removal

1. Remove the rear combination lamp. Refer to EXL-154, "Removal and Installation".
2. Turn the back-up lamp bulb socket counterclockwise and remove it.
3. Remove the back-up lamp bulb.

Installation
Installation is in the reverse order of removal.

SIDE MARKER LAMP

Removal

1. Remove the rear combination lamp. Refer to EXL-154, "Removal and Installation".
2. Turn the side marker lamp bulb socket counterclockwise and remove it.
3. Remove the side marker lamp bulb.

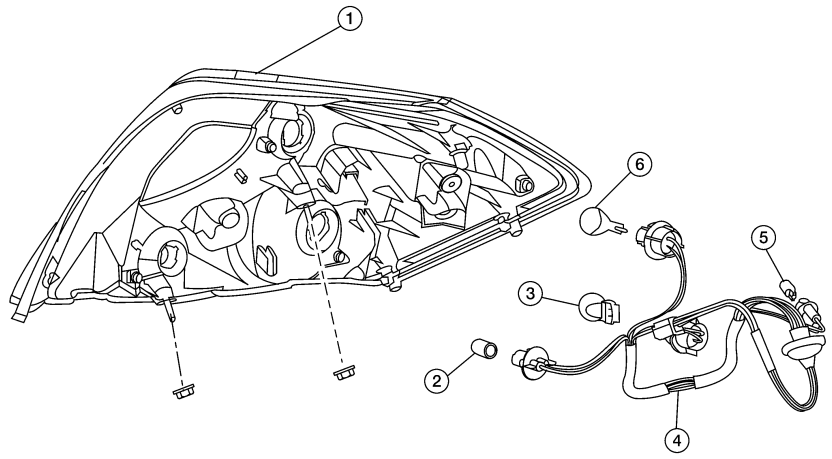
Installation
Installation is in the reverse order of removal.

Removal and Installation

INFOID:0000000005809543

COMPONENTS

SEC. 260



1. Rear combination lamp assembly
2. Back-up lamp bulb
3. Stop/Tail lamp bulb
4. Rear combination lamp harness
5. Side marker lamp bulb
6. Rear turn signal lamp bulb

REMOVAL

1. Partially remove trunk side finisher. Refer to INT-30, "Removal and Installation".
2. Remove trunk rear finisher. Refer to INT-30, "Removal and Installation".
3. Remove the rear combination lamp nuts.
4. Pull the rear combination lamp assembly toward rear of the vehicle and remove.

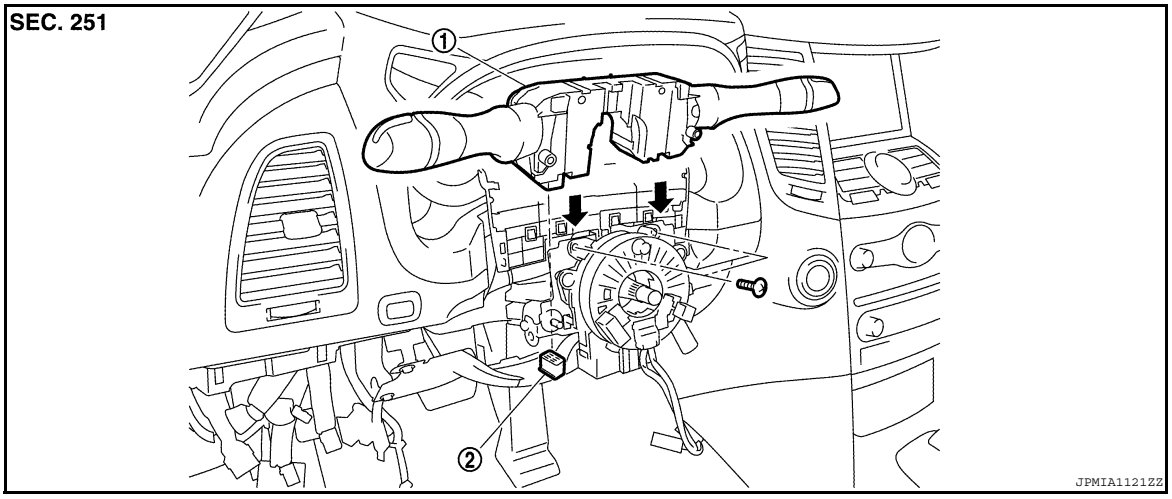
INSTALLATION

Installation is the reverse order of removal.

LIGHTING AND TURN SIGNAL SWITCH

Removal and Installation

INFOID:0000000005818915



1. Combination switch
2. Combination switch connector

NOTE:
- Shown with steering wheel removed for clarity only.
- The lighting and turn signal switch are part of the combination switch assembly.

REMOVAL

1. Unlock steering wheel.
2. Disconnect battery.
   CAUTION:
   - **Before servicing, disconnect both battery terminals and wait at least three minutes.**
   - **Do not use air tools or electric tools for servicing.**
   - **After the work is completed, make sure no system malfunction is detected by air bag warning lamp.**
   - **In case a malfunction is detected by the air bag warning lamp, reset with the self-diagnosis function and delete the memory with CONSULT-III.**
   - **If a malfunction is still detected after the above operation, perform self-diagnosis to repair malfunctions. Refer to SRC-12, "SRS Operation Check".**
3. Remove steering column covers. Refer to IP-10, "Exploded View".
4. Rotate steering wheel clockwise to access first combination switch bolt and remove the bolt.
5. Rotate steering wheel counter-clockwise to access second combination switch bolt and remove the bolt.
6. Disconnect electrical connectors and remove the combination switch.

INSTALLATION

Installation is in the reverse order of removal.

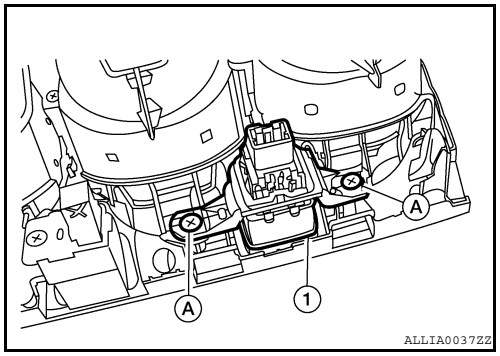
HAZARD SWITCH

Removal and Installation

INFOID:0000000005439332

Removal

1. Remove the center ventilator grilles. Refer to VTL-24, "CENTER VENTILATOR GRILLES : Removal and Installation".
2. Disconnect passenger air bag and hazard switch connectors.
3. Remove the hazard switch screws (A) and remove the hazard switch (1).



Installation

Installation is in the reverse order of removal.

SERVICE DATA AND SPECIFICATIONS (SDS)

SERVICE DATA AND SPECIFICATIONS (SDS)

Headlamp

INFOID:0000000005439333

Item	Wattage (W)*
Low	55
High	60

*: Always check with the Parts Department for the latest parts information.

Exterior Lamp

INFOID:0000000005439334

Item		Wattage (W)*
Front combination lamp	Park/turn signal lamp	27/8
	Side marker lamp	5
Rear combination lamp	Stop/Tail lamp	27/8
	Turn signal lamp	27
	Back-up lamp	13
	Side marker lamp	5
License plate lamp		5
High-mounted stop lamp (parcel shelf mount)		18
High-mounted stop lamp (rear air spoiler mount)		LED

*: Always check with the Parts Department for the latest parts information.