SECTION EXL
EXTERIOR LIGHTING SYSTEM

CONTENTS

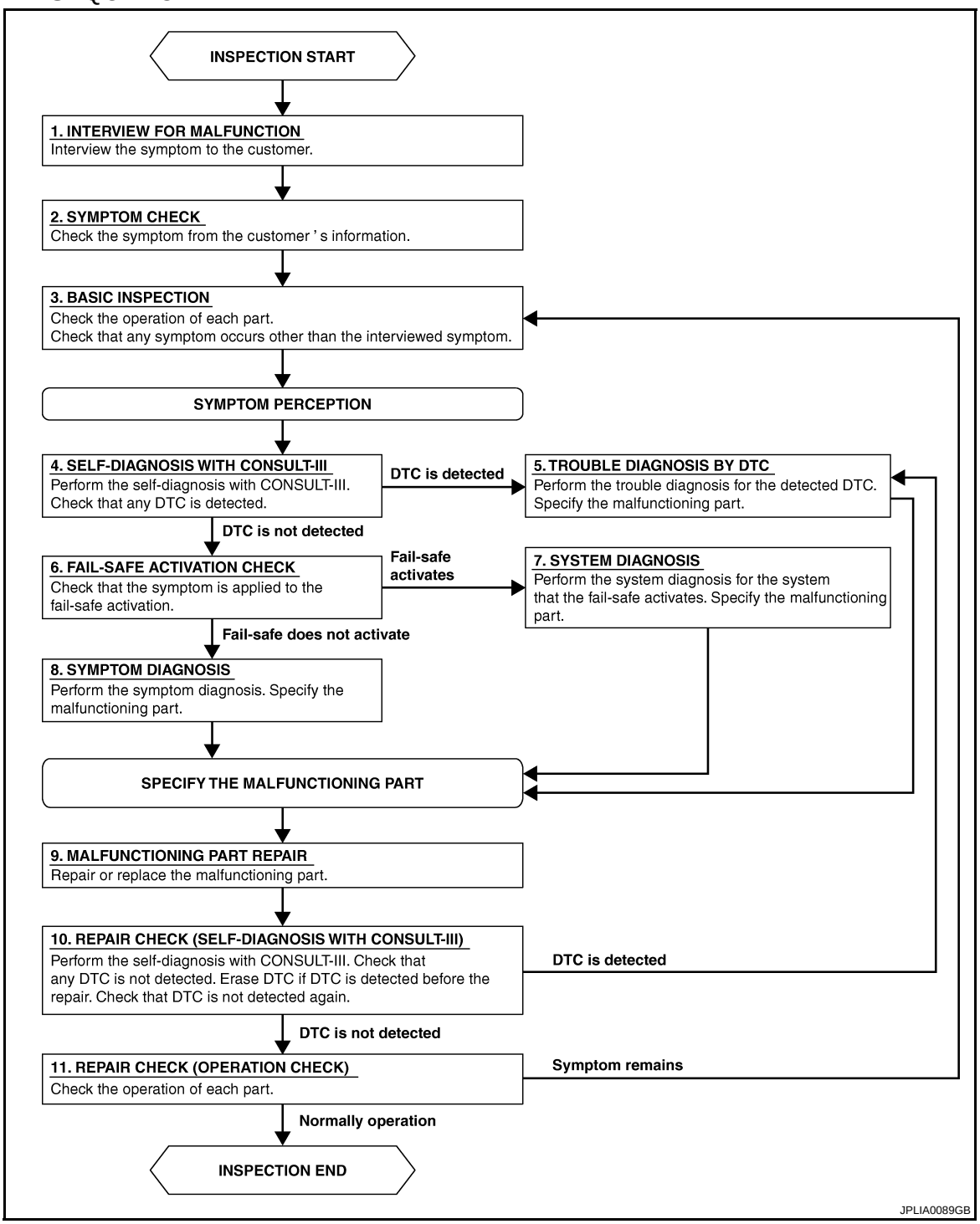
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORKFLOW

Work Flow

INFOID:0000000001621593

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 11

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

Perform the self diagnosis with CONSULT-III. Verfied 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?

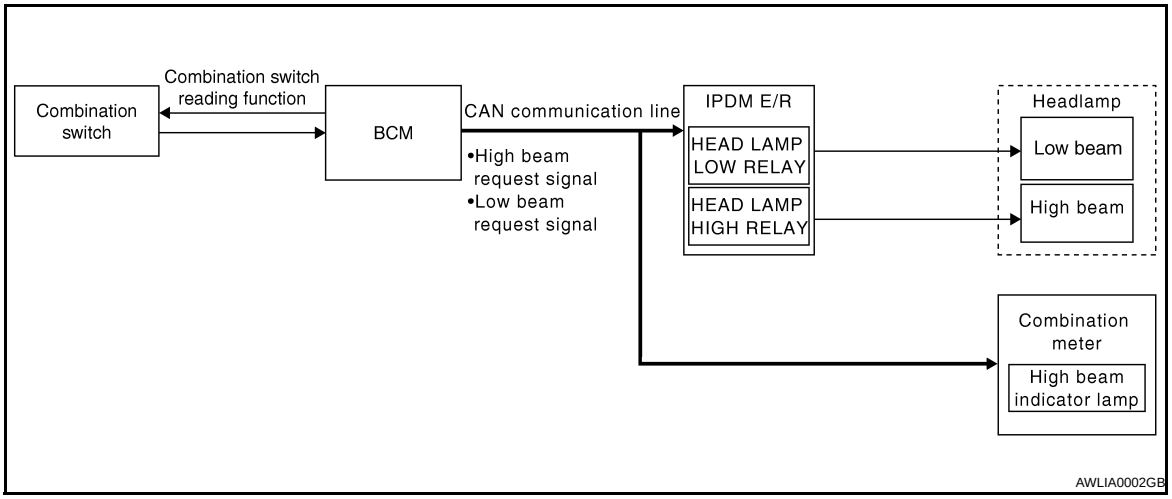
YES >> INSPECTION END
NO >> GO TO 3

FUNCTION DIAGNOSIS

HEADLAMP (HALOGEN TYPE)

System Diagram

INFOID:0000000001621594



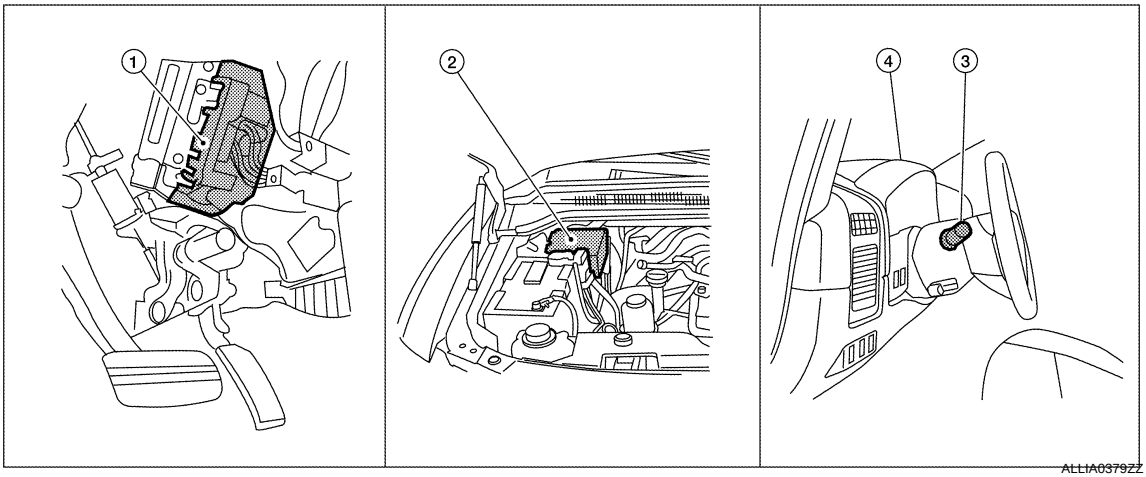
System Description

INFOID:0000000001621595

Control of the headlamp system operation is dependent upon the position of the lighting switch (combination switch). When the lighting 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) via 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:0000000001621596



1. BCM M18, M20 (view with instrument panel removed)
2. IPDM E/R E122, E123, E124
3. Combination switch M28
4. Combination meter M24, M25

Component Description

INFOID:0000000001621597

LOW BEAM OPERATION

When the lighting switch is in 2ND position, the BCM receives input requesting the headlamps to illuminate. This input is communicated to the IPDM E/R via 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 lighting 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 via 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) via the CAN communication lines and turns the high beam indicator lamp ON.

COMBINATION SWITCH READING FUNCTION

Refer to BCS-5, "System Description".

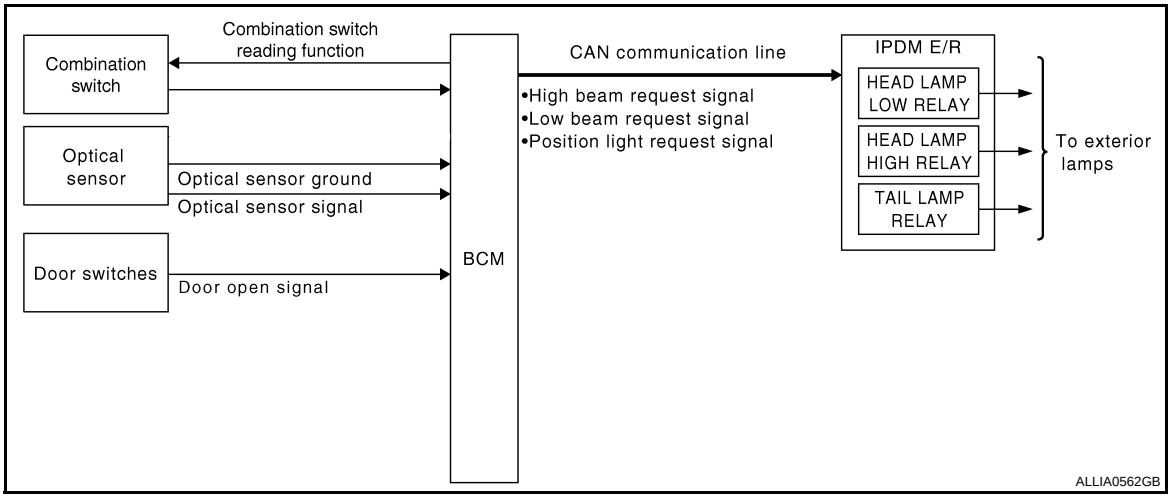
AUTO LIGHT OPERATION

Refer to EXL-8, "System Description".

AUTO LIGHT SYSTEM

System Diagram

INFOID:0000000001621602



System Description

INFOID:0000000001621603

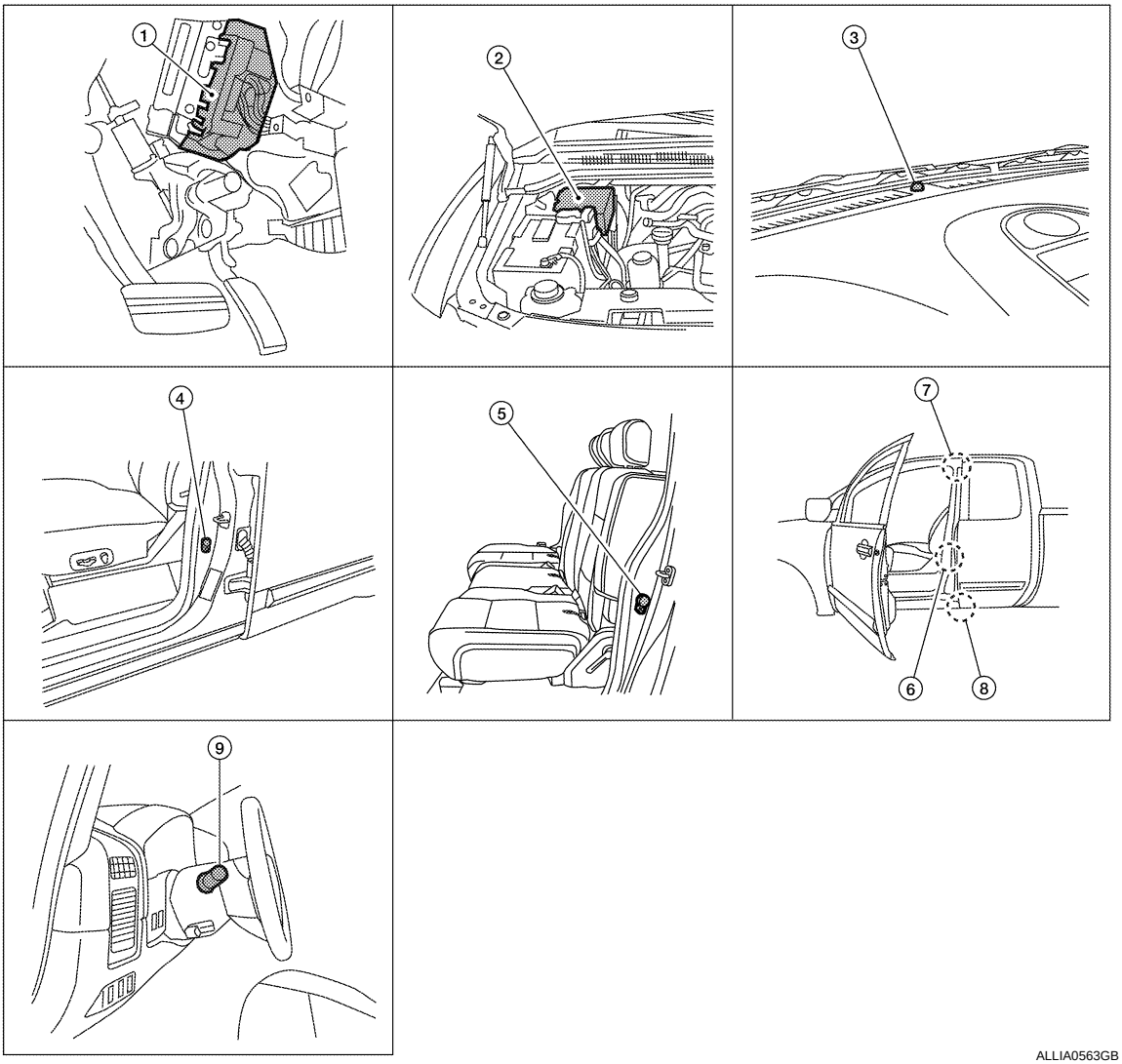
- BCM (Body Control Module) controls auto light operation according to signals from the optical sensor, lighting switch and ignition switch.
- IPDM E/R (Intelligent Power Distribution Module Engine Room) operates parking, license plate, tail and headlamps according to CAN communication signals from BCM.
- Optical sensor detects ambient light and converts light (lux) to voltage which is then sent to the BCM.

OUTLINE

The auto light control system has an optical sensor that detects outside brightness.
When the lighting switch is in AUTO position, it automatically turns ON/OFF the parking, 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 EXL-19, "EXTERNAL LAMP : CONSULT-III Function".

Component Parts Location

INFOID:0000000001621604



ALLIA0563GB

1. BCM M18, M19, M20 (view with instrument panel removed)
2. IPDM E/R E122, E123, E124
3. Optical sensor M302
4. Front door switch (crew cab)
   LH B8
   RH B108
5. Rear door switch (crew cab)
   LH B18
   RH B116
6. Front door switch (king cab)
   LH B8
   RH B108
7. Rear door switch upper (king cab)
   LH B73
   RH B156
8. Rear door switch upper (king cab)
   LH B74
   RH B157
9. Combination switch M28

Component Description

INFOID:0000000001621605

AUTO LIGHT OPERATION

The auto light system operates the low beam and high beam headlamps, parking lamps, tail lamps and license plate lamps. The BCM monitors the lighting switch (combination switch) position as a part of the BCM combination switch reading function. When the lighting switch is in the AUTO position, the BCM automatically turns the lamps ON/OFF according to ambient light brightness.

NOTE:

Timing for when lamps turn ON/OFF can be changed by the function setting of CONSULT-III. Refer to EXL-19, "EXTERNAL LAMP : CONSULT-III Function".

COMBINATION SWITCH READING FUNCTION

Refer to BCS-7, "System Description".

HEADLAMP LOW AND HIGH OPERATION

Refer to EXL-6, "System Description".

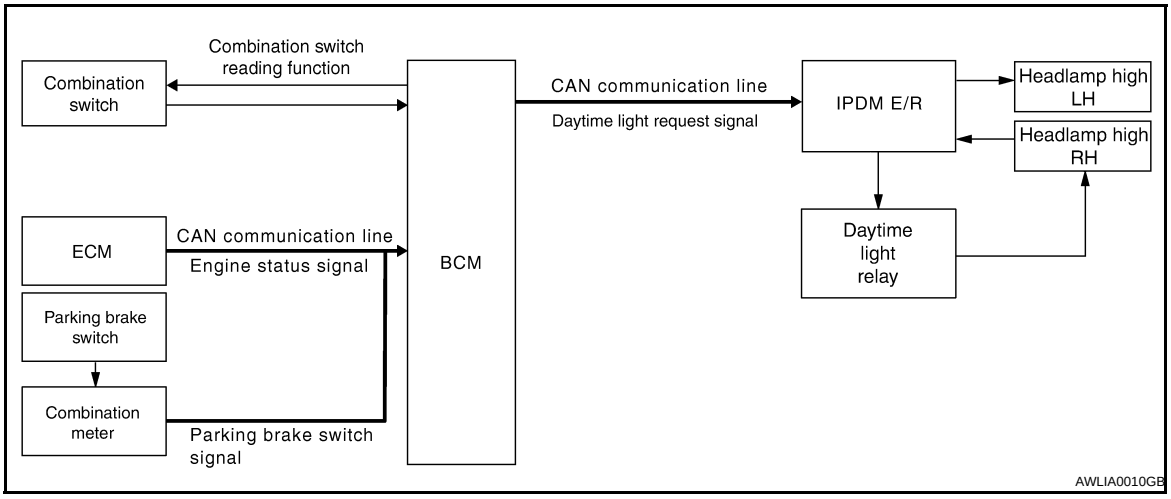
PARKING, LICENSE PLATE AND TAIL LAMPS OPERATION

Refer to EXL-16, "System Description".

DAYTIME RUNNING LIGHT SYSTEM

System Diagram

INFOID:0000000001621598



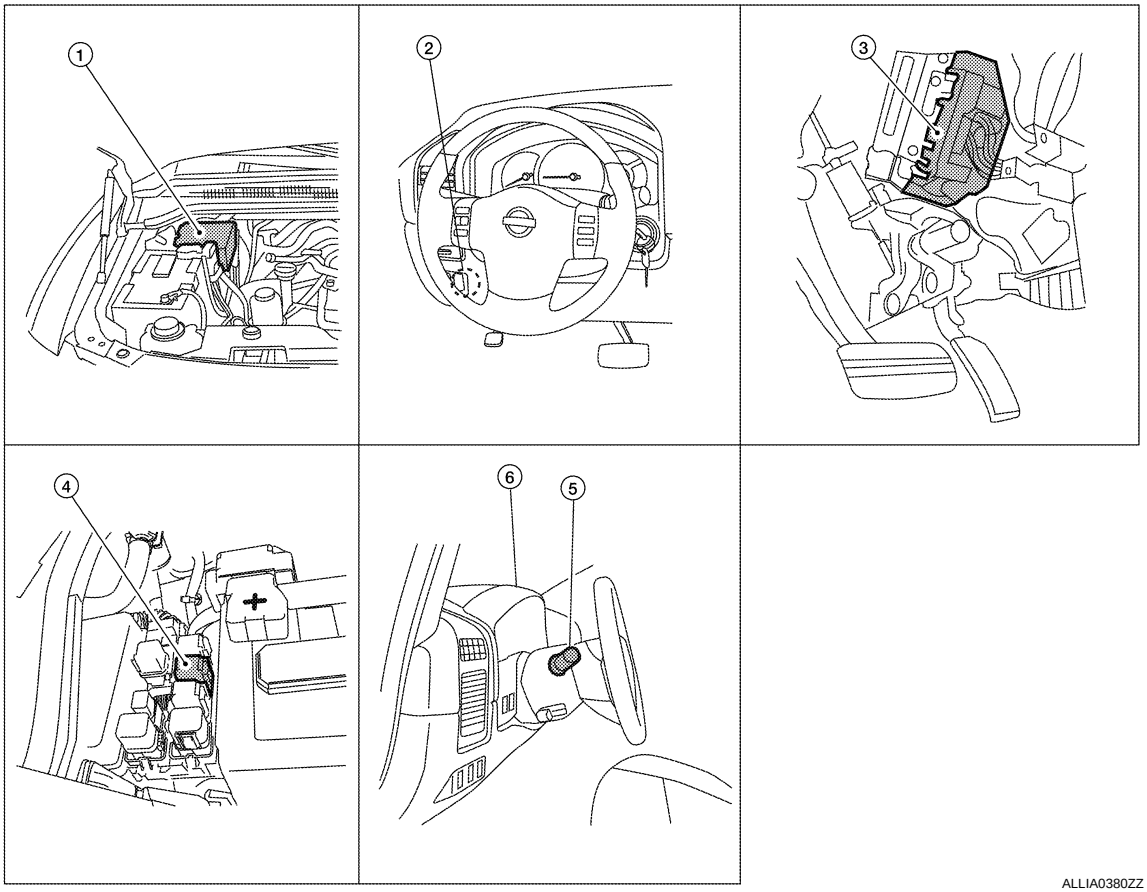
System Description

INFOID:0000000001621599

The headlamp system for Canada vehicles is equipped with a daytime light control that activates the high beam headlamps at approximately half illumination whenever the engine is operating. If the parking brake is applied before the engine 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:0000000001621600



1. IPDM E/R E119, E122, E123, E124
2. Parking brake switch M11
3. BCM M18, M20 (view with instrument panel removed)
4. Daytime running light relay E103
5. Combination switch M28
6. Combination meter M24, M25

Component Description

INFOID:0000000001621601

After starting the engine with the parking brake released and the lighting switch in the OFF or 1ST position, the headlamp high beam automatically turns on at a reduced intensity. With the lighting switch in the 2nd position or with autolamps ON, the headlamps function the same as conventional light systems.

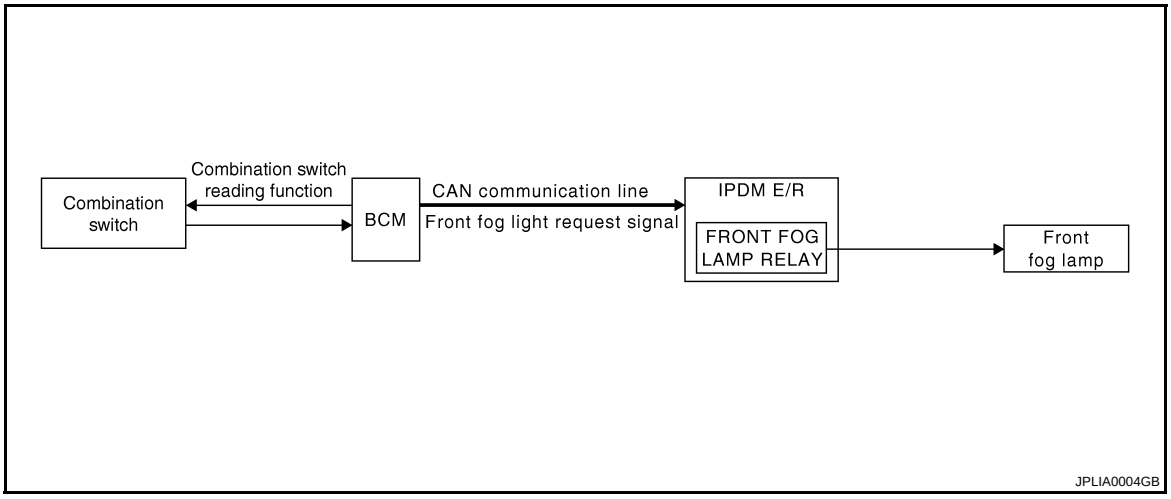
OPERATION

The BCM monitors inputs from the parking brake switch and the combination switch 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 LH high beam lamp. Power flows backward through the LH high beam lamp to the IPDM E/R, through the high beam fuses, through the RH high beam lamp circuit to the RH high beam lamp and on to ground. The high beam lamps are wired in series which causes them to illuminate at a reduced intensity.

FRONT FOG LAMP

System Diagram

INFOID:0000000001621606



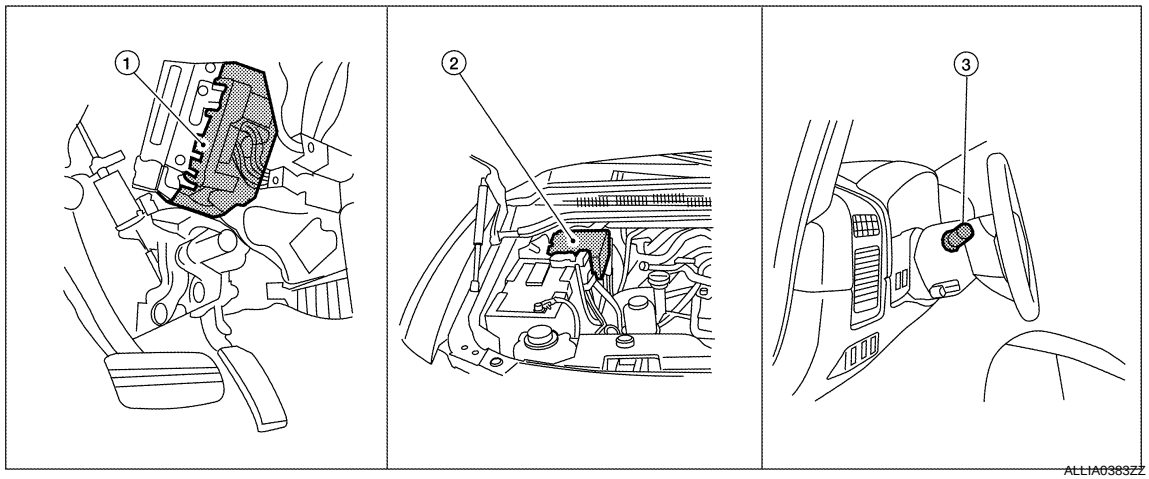
System Description

INFOID:0000000001621607

The front fog lamps are activated with the lighting switch (combination switch). The lighting switch signal to the BCM is monitored with the BCM combination switch reading function. When the fog lamps are turned ON with the lighting switch, the BCM sends a front fog lamp request signal via CAN communication lines to the IPDM E/R. The IPDM E/R grounds the front fog lamp relay coil to activate the front fog lamps.

Component Parts Location

INFOID:0000000001621608



1. BCM M18, M20 (view with instrument panel removed)
2. IPDM E/R E122, E123, E124
3. Combination switch M28

Component Description

INFOID:0000000001621609

FRONT FOG LAMP OPERATION

When the lighting switch is in front fog lamp ON position and also in 1ST or 2ND position or AUTO position (headlamp is ON), the BCM detects FR FOG ON and the HEAD LAMP1, 2 ON or the AUTO LIGHT ON. The BCM sends a front fog lamp request ON signal via the CAN communication lines to the IPDM E/R. The IPDM E/R then turns ON the front fog lamp relay sending power to the front fog lamps.

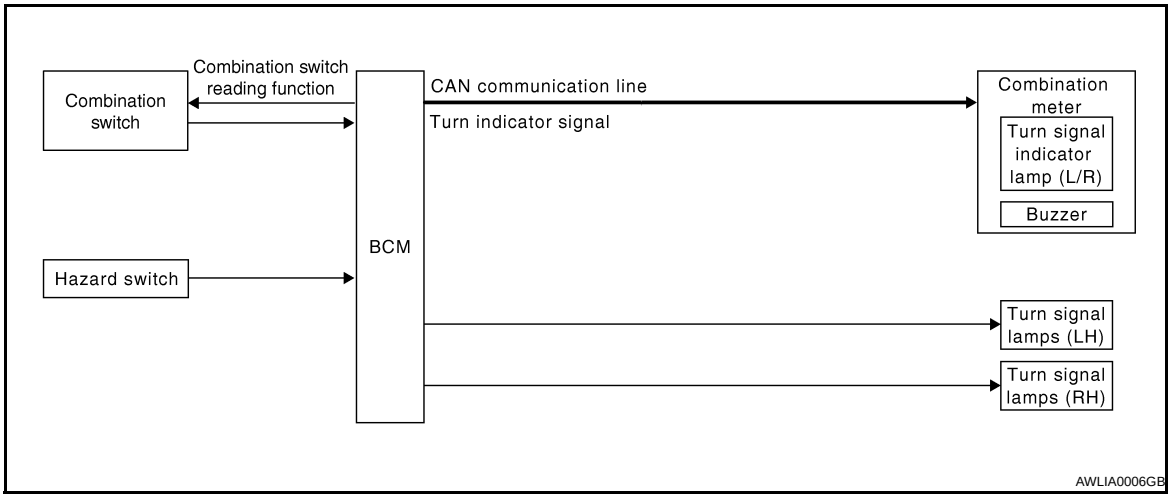
COMBINATION SWITCH READING FUNCTION

Refer to BCS-7, "System Description".

TURN SIGNAL AND HAZARD WARNING LAMPS

System Diagram

INFOID:0000000001621610



System Description

INFOID:0000000001621611

TURN SIGNAL OPERATION

When the 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 signal to the respective turn signal lamp. The BCM also sends a turn indicator signal ON request via 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 signal (right and left). The BCM sends a hazard indicator signal ON request via the CAN communication lines to the combination meter. The combination meter then activates the hazard indicator and audible buzzer.

REMOTE KEYLESS ENTRY OPERATION

The remote keyless entry receiver transmits a hazard request signal to the BCM, then BCM controls hazard lamps.

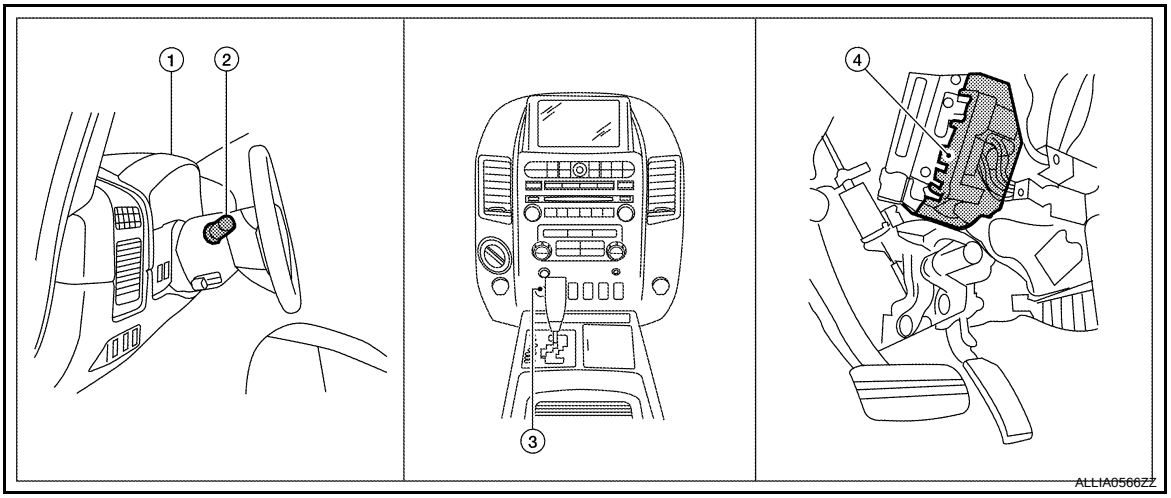
Refer to DLK-10, "REMOTE KEYLESS ENTRY : System Description".

COMBINATION SWITCH READING FUNCTION

Refer to BCS-7, "System Description".

Component Parts Location

INFOID:0000000001621612



1. Combination meter M24, M25
2. Combination switch M28
3. Hazard switch M55
4. BCM M18, M20 (view with instrument panel removed)

Component Description

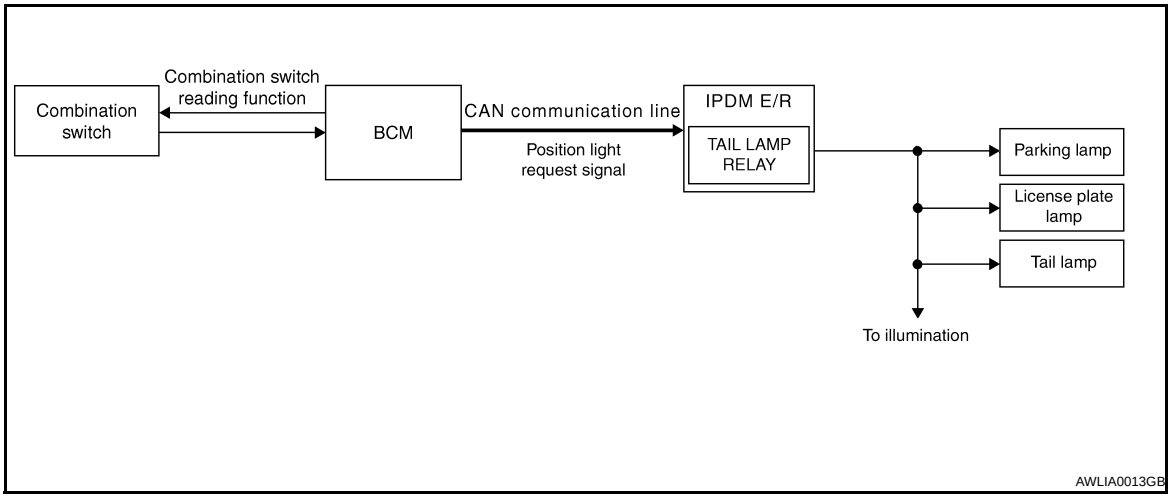
INFOID:0000000001621613

Part name	Description
BCM	Controls turn signal and hazard flasher operation.
Combination switch	Lighting and turn signal switch requests are output to the BCM.
Hazard switch	Hazard flasher request signal is output to the BCM.
Combination meter	Outputs turn and hazard indicator as requested by the BCM.

PARKING, LICENSE PLATE AND TAIL LAMPS

System Diagram

INFOID:0000000001621614



System Description

INFOID:0000000001621615

PARKING, LICENCE PLATE AND TAIL LAMPS OPERATION

When the lighting switch is in 1ST position, BCM detects the LIGHTING SWITCH 1ST POSITION ON. The BCM sends a parking light ON request via 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

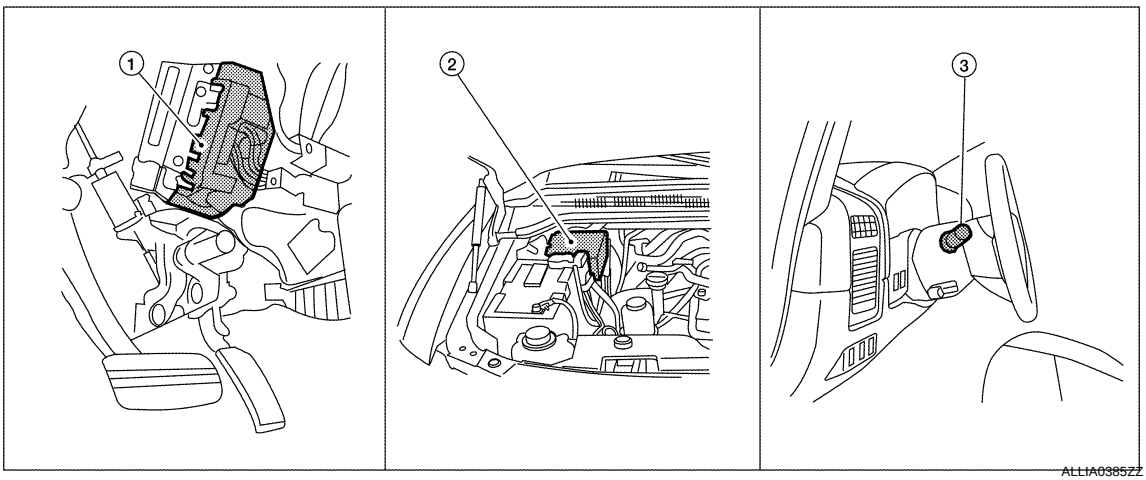
With the lighting switch (combination switch) in the 2nd position and the ignition switch is turned from ON or ACC to OFF, the battery saver feature is activated.
Under this condition, the headlamps remain illuminated for 5 minutes unless the lighting switch position is changed. If the lighting switch position is changed, then the headlamps are turned off.
This setting can be changed by CONSULT-III. Refer to EXL-19, "EXTERNAL LAMP : CONSULT-III Function".

COMBINATION SWITCH READING FUNCTION

Refer to BCS-7, "System Description".

Component Parts Location

INFOID:0000000001621616



1. BCM M18, M20 (view with instrument panel removed)
2. IPDM E/R E122, E124
3. Combination switch M28

Component Description

INFOID:0000000001621617

Part name	Description
BCM	• Recieves lighting switch requests via BCM combination switch reading function. • Sends parking light request signal to the IPDM E/R.
IPDM E/R	Activates the tail lamp relay upon request of the BCM.
Combination switch (lighting switch)	Outputs lighting requests to the BCM.

COMBINATION SWITCH

System Description

INFOID:0000000001621618

For information regarding the combination switch, refer to EXL-18, "System Description"

DIAGNOSIS SYSTEM (BCM)

COMMON ITEM

COMMON ITEM : Diagnosis Description

INFOID:0000000001621619

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-DIAG RESULTS	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	This function is not used even though it is displayed.

COMMON ITEM : CONSULT-III Function

INFOID:0000000001621620

ECU IDENTIFICATION

Displays the BCM part No.

SELF-DIAG RESULT

Refer to BCS-15, "COMMON ITEM : CONSULT-III Function (BCM - COMMON ITEM)".

EXTERNAL LAMP

EXTERNAL LAMP : CONSULT-III Function

INFOID:0000000001621621

WORK SUPPORT

Service item	Setting item	Setting	
BATTERY SAVER SET	ON[1]	With the exterior lamp battery saver function	
	OFF	Without the exterior lamp battery saver function	
ILL DELAY SET[2]	MODE 1[1]	45 sec.	Sets delay timer function timer operation time (All doors closed)
	MODE 2	Without the function	
	MODE 3	30 sec.	
	MODE 4	60 sec.	
	MODE 5	90 sec.	
	MODE 6	120 sec.	
	MODE 7	150 sec.	
	MODE 8	180 sec.	
CUSTOM A/LIGHT SETTING[2]	MODE 1[1]	Normal	
	MODE 2	More sensitive setting than normal setting (Turns ON earlier than normal operation.)	
	MODE 3	More sensitive setting than MODE 2 (Turns ON earlier than MODE 2.)	
	MODE 4	Less sensitive setting than normal setting (Turns ON later than normal operation.)	

1 : Initial setting

2 : With auto light system

DATA MONITOR

Monitor item [Unit]	Description
IGN ON SW [ON/OFF]	The switch status input from ignition switch
ACC ON SW [ON/OFF]	The switch status input from ignition switch
TURN SIGNAL R [ON/OFF]	Each switch status that BCM judges from the combination switch reading function
TURN SIGNAL L [ON/OFF]	
HI BEAM SW [ON/OFF]	
HEAD LAMP SW1 [ON/OFF]	
HEAD LAMP SW2 [ON/OFF]	
LIGHT SW 1ST [ON/OFF]	
AUTO LIGHT SW [ON/OFF]	
PASSING SW [ON/OFF]	
FR FOG SW [ON/OFF]	
CARGO LAMP SW [ON/OFF]	
RR FOG 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
BACK DOOR SW[1] [ON/OFF]	—
OPTICAL SENSOR [V][2]	The value of exterior brightness voltage input from the optical sensor

1: The item is indicated, not monitored

2: With auto light system

ACTIVE TEST

Test item	Operation	Description
TAIL LAMP	ON	Transmits the position light request signal to IPDM E/R via CAN communication to turn the tail lamp ON.
	OFF	Stops the tail lamp request signal transmission.

Test item	Operation	Description
HEAD LAMP	HI	Transmits the high beam request signal via CAN communication to turn the headlamp (HI)
	LO	Transmits the low beam request signal via CAN communication to turn the headlamp (LO).
	OFF	Stops the high & low beam request signal transmission.
FR FOG LAMP	ON	Transmits the front fog lamp light request signal to IPDM E/R via CAN communication to turn the front fog lamp ON.
	OFF	Stops the front fog lamp request signal transmission.
CORNERING LAMP[1]	RH	—
	LH	
	OFF	
CARGO LAMP	ON	Tramsmits the cargo lamp request signal to the IPDM E/R via CAN communication to turn on the cargo lamp.
	OFF	Stops the cargo lamp request signal transmission.

1: The item is indicated, not monitored.

FLASHER

FLASHER : CONSULT-III Function (BCM - FLASHER)

INFOID:0000000001621622

DATA MONITOR

Monitor item [Unit]	Description
IGN ON SW [ON/OFF]	The switch status input from the ignition switch
HAZARD SW [ON/OFF]	The switch status input from the hazard warning switch
TURN SIGNAL R [ON/OFF]	Each switch condition that BCM judges from the combination switch reading function
TURN SIGNAL L [ON/OFF]	
BRAKE SW [ON/OFF]	The switch status input from the brake switch

ACTIVE TEST

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

DIAGNOSIS SYSTEM (IPDM E/R)

CONSULT - III Function (IPDM E/R)

INFOID:0000000001621623

APPLICATION ITEM

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

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

DATA MONITOR

Monitor item

Monitor Item [Unit]	MAIN SIGNALS	Description
TAIL & CLR REQ [Off/On]	×	Displays the status of the tail and clearance lamp request signal received from BCM via CAN communication.
HL LO REQ [Off/On]	×	Displays the status of the low beam request signal received from BCM via CAN communication.
HL HI REQ [Off/On]	×	Displays the status of the high beam request signal received from BCM via CAN communication.
FR FOG REQ [Off/On]	×	Displays the status of the front fog light request signal received from BCM via CAN communication.
IGN RLY [Off/On]	×	Displays the status of the ignition relay judged by the IPDM E/R-.
DTRL REQ [Off]	×	Displays the status of the daytime light request signal received from the BCM via CAN communication.

ACTIVE TEST

Test item

Test item	Operation	Description
EXTERNAL LAMPS	OFF	OFF
	TAIL	Operates the tail lamp relay.
	LO	Operates the headlamp low relay.
	HI	Operates the headlamp low relay and ON/OFF the headlamp high relay at 1 second intervals.
	FOG	Operates the front fog lamp relay.

COMPONENT DIAGNOSIS

POWER SUPPLY AND GROUND CIRCUIT

BCM (BODY CONTROL MODULE)

BCM (BODY CONTROL MODULE) : Diagnosis Procedure

INFOID:0000000001621624

For BCM power supply and ground circuit information, refer to PCS-37, "BCM : Diagnosis Procedure".

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

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

INFOID:0000000001621625

For IPDM E/R power supply and ground circuit information, refer to PCS-37, "IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) : Diagnosis Procedure" .

HEADLAMP (HI) CIRCUIT

Description

INFOID:0000000001621626

The IPDM E/R (intelligent power distribution module engine room) controls the headlamp high relay based on inputs from the BCM via the CAN communication lines. When the headlamp high relay is energized, power flows through fuses 34 and 35, located in the IPDM E/R. Power then flows to the front combination lamps to the headlamp high beam.

Component Function Check

INFOID:0000000001621627

1.CHECK HEADLAMP (HI) OPERATION

WITHOUT CONTULT-III
1. Start IPDM E/R auto active test. Refer to PCS-10, "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 LAMP" of IPDM E/R active test item.
2. With the test item operating, check that the headlamp switches to high beam.

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

Does the headlamp switch to high beam?

YES >> Headlamp (HI) circuit is normal.
NO >> Refer to EXL-24, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000001621628

1.CHECK HEADLAMP (HI) FUSES

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

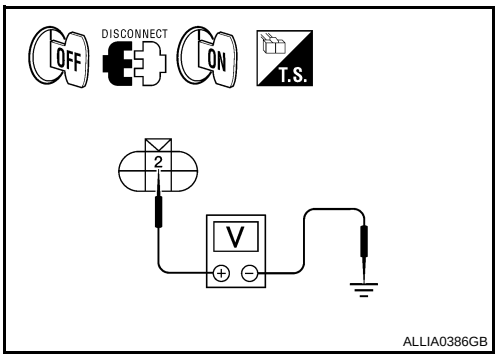
Unit	Location	Fuse No.	Capacity
Headlamp HI (LH)	IPDM E/R	34	10A
Headlamp HI (RH)	IPDM E/R	35	10A

Is the fuse open?

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

2.CHECK HEADLAMP (HI) OUTPUT VOLTAGE

1. Turn the ignition switch OFF.
2. Disconnect the front combination lamp connector E11 or E107.
3. Turn the ignition switch ON.
4. Turn the high beam headlamps ON.
5. With the high beam headlamps ON, check the voltage between the combination lamp connector and ground.



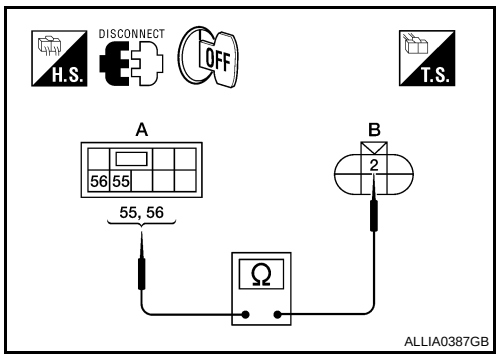
(+)			(–)	Voltage
Connector		Terminal		
LH	E11	2	Ground	Battery voltage
RH	E107	2		

Are the voltage readings as specified?

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 E123.
3. Check continuity between the IPDM E/R harness connector (A) and the front combination lamp harness connector (B).



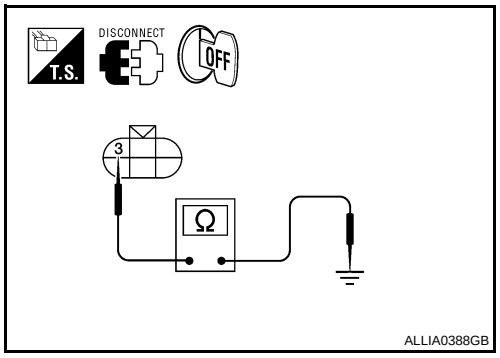
A			B		Continuity
Connector		Terminal	Connector	Terminal	
LH	E123	55	E11	2	Yes
RH		56	E107	2	

Does continuity exist?

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

4. CHECK FRONT COMBINATION LAMP (HI) GROUND CIRCUIT

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



Connector		Terminal	—	Continuity
LH	E11	3	Ground	Yes
RH	E107	3		

Does continuity exist?

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

HEADLAMP (LO) CIRCUIT

Description

INFOID:0000000001621629

The IPDM E/R (intelligent power distribution module engine room) controls the headlamp low relay based on inputs from the BCM via the CAN communication lines. When the headlamp low relay is energized, power flows through fuses 40 and 41, located in the IPDM E/R. Power then flows to the front combination lamps to the headlamp low beam.

Component Function Check

INFOID:0000000001621630

1.CHECK HEADLAMP (LO) OPERATION

WITHOUT CONSULT-III
1. Start IPDM E/R auto active test. Refer to PCS-10, "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 LAMP" of IPDM E/R active test item.
2. With the test items operating, 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-26, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000001621631

1.CHECK HEADLAMP (LO) FUSES

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

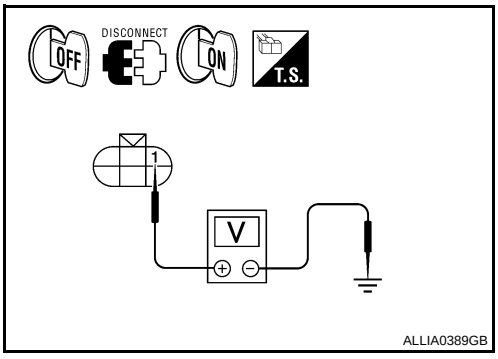
Unit	Location	Fuse No.	Capacity
Headlamp LO (LH)	IPDM E/R	40	15A
Headlamp LO (RH)	IPDM E/R	41	15A

Is the fuse open?

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

2.CHECK HEADLAMP (LO) OUTPUT VOLTAGE

1. Turn the ignition switch OFF.
2. Disconnect the front combination lamp connector.
3. Turn the ignition switch ON.
4. Turn the low beam headlamps ON.
5. With the low beam headlamps ON, check the voltage between the combination lamp connector and ground.



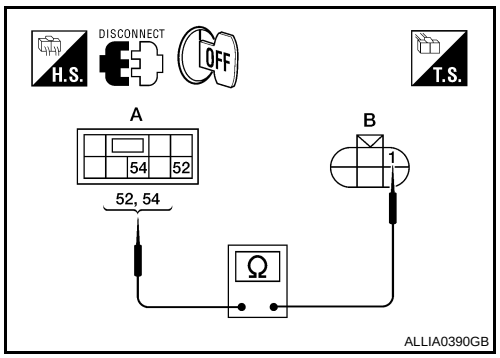
(+)			(–)	Voltage
Connector		Terminal		
LH	E11	1	Ground	Battery voltage
RH	E107	1		

Is voltage reading as specified?

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.



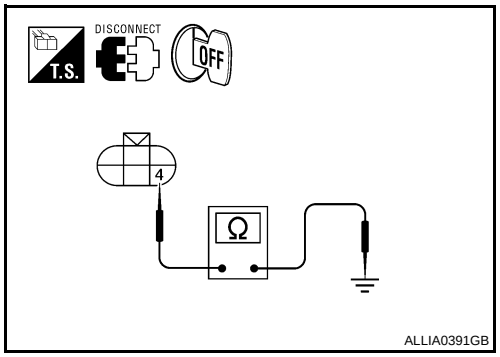
A			B		Continuity
Connector		Terminal	Connector	Terminal	
LH	E123	52	E11	1	Yes
RH		54	E107	1	

Does continuity exist?

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

4. CHECK FRONT COMBINATION LAMP (LO) GROUND CIRCUIT

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



Connector		Terminal	—	Continuity
LH	E11	4	Ground	Yes
RH	E107	4		

Does continuity exist?

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

FRONT FOG LAMP CIRCUIT

Description

INFOID:0000000001621632

The IPDM E/R (intelligent power distribution module engine room) controls the front fog lamp relay based on inputs from the BCM via the CAN communication lines. When the front fog lamp relay is energized, power flows from the front fog lamp relay in the IPDM E/R to the front fog lamps.

Component Function Check

INFOID:0000000001621633

1.CHECK FRONT FOG LAMP OPERATION

WITHOUT CONSULT-III
1. Activate IPDM E/R auto active test. Refer to PCS-10, "Diagnosis Description".
2. Check that the front fog lamp is turned ON.

CONSULT-III
1. Select "EXTERNAL LAMP" of IPDM E/R active test item.
2. With operating the test items, Check that the front fog lamp is turned ON.

FOG : Front fog lamp ON
OFF : Front fog lamp OFF

Is the front fog lamp turned ON?

YES >> Front fog lamp circuit is normal.
NO >> Refer to EXL-28, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000001621634

1.CHECK FRONT FOG LAMP FUSE

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

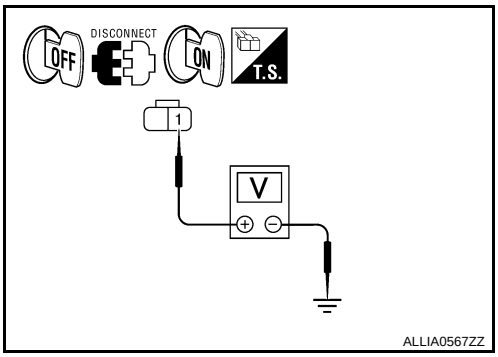
Unit	Location	Fuse No.	Capacity
Front fog lamp	IPDM E/R	56	20A

Is the fuse open?

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

2.CHECK FRONT FOG LAMP OUTPUT VOLTAGE

1. Turn the ignition switch OFF.
2. Disconnect the front fog lamp connector.
3. Turn the ignition switch ON.
4. Turn the front fog lamps ON.
5. Check the voltage between the fog lamp connector and ground.



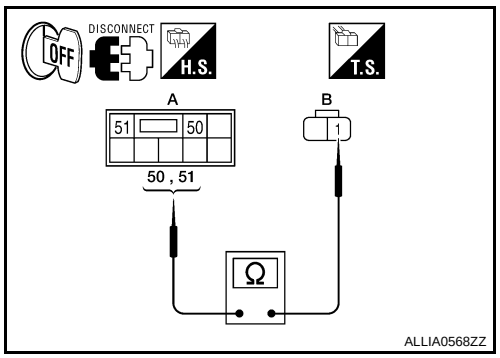
(+)			(–)	Voltage
Connector		Terminal		
LH	E101	1	Ground	Battery voltage
RH	E102	1		

Are the voltage readings as specified?

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

3.CHECK FRONT FOG LAMP OPEN CIRCUIT

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 fog lamp harness connector.



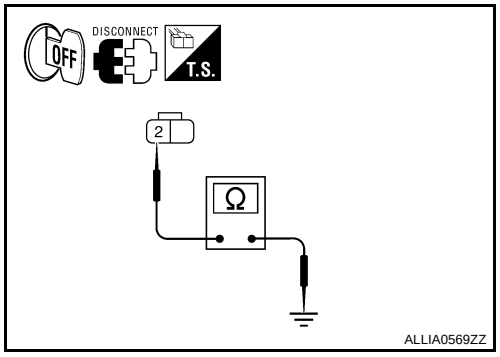
A			B		Continuity
Connector		Terminal	Connector	Terminal	
LH	E123	50	E101	1	Yes
RH		51	E102	1	

Does continuity exist?

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

4. CHECK FRONT FOG LAMP GROUND CIRCUIT

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



Connector		Terminal	—	Continuity
LH	E101	2	Ground	Yes
RH	E102	2		

Does continuity exist?

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

PARKING LAMP CIRCUIT

Description

INFOID:0000000001621635

The IPDM E/R (intelligent power distribution module engine room) controls the tail lamp relay based on inputs from the BCM via the CAN communication lines. When the tail lamp relay is energized, power flows through fuse 37, located in the IPDM E/R. Power then flows to the front and rear combination lamps.

Component Function Check

INFOID:0000000001621636

1.CHECK PARKING LAMP OPERATION

WITHOUT CONSULT-III
1. Activate IPDM E/R auto active test. Refer to PCS-10, "Diagnosis Description".
2. Check that the parking lamp is turned ON.

CONSULT-III
1. Select "EXTERNAL LAMP" of IPDM E/R active test item.
2. While operating the test item, 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-30, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000001621637

1.CHECK PARKING LAMP FUSES

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

Unit	Location	Fuse No.	Capacity
Parking lamps	IPDM E/R	37	10A

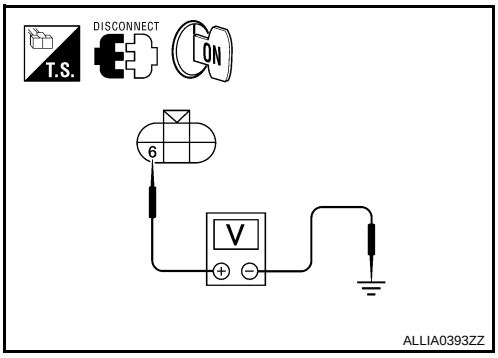
Is the fuse open?

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

2.CHECK TAIL LAMP RELAY OUTPUT (VOLTAGE)

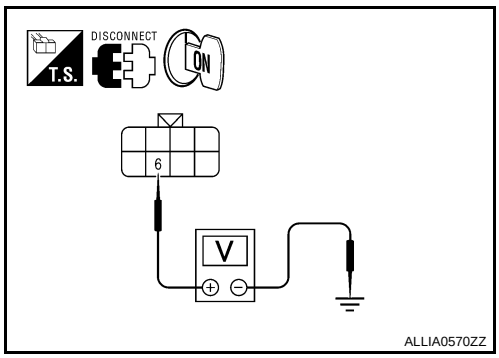
1. Turn the ignition switch OFF.
2. Disconnect the front combination lamp connector, rear combination lamp connector and license plate lamp connector.
3. Turn the ignition switch ON.
4. Turn the parking lamps ON.
5. With the parking lamps ON, check voltage between the front combination lamp connectors and ground.

(+)			(–)	Voltage
Connector		Terminal		
LH	E11	6	Ground	Battery voltage
RH	E107			



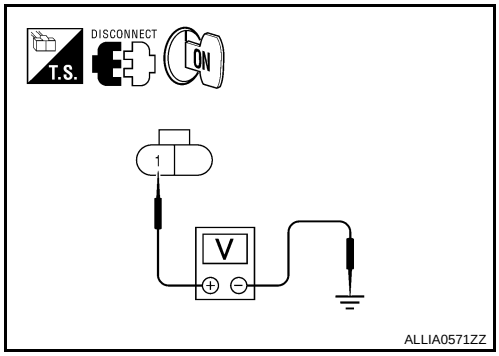
6. With the parking lamps ON, check voltage between the rear combination lamp connectors and ground.

(+)			(–)	Voltage
Connector		Terminal		
LH	C13	6	Ground	Battery voltage
RH	C14			



7. With the parking lamps ON, check voltage between the license plate lamp connector and ground

(+)		(–)	Voltage
Connector	Terminal		
C12	1	Ground	Battery voltage



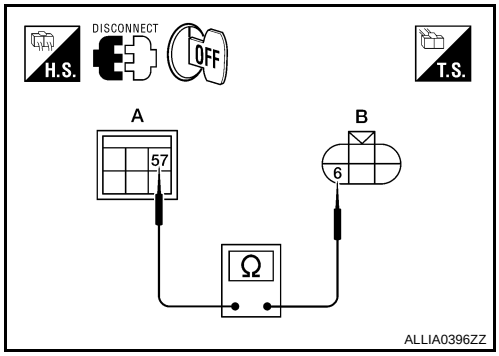
Are voltage readings as specified?

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

3. CHECK PARKING, LICENSE PLATE AND TAIL LAMP CIRCUIT (OPEN)

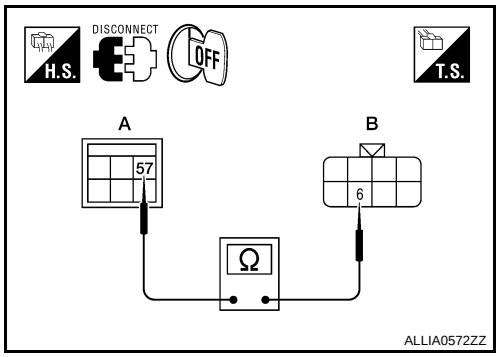
1. Turn the ignition switch OFF.
2. Disconnect IPDM E/R connector.
3. Check continuity between the IPDM E/R harness connector (A) and the front combination lamp harness connector (B).

A			B		Continuity
Connector		Terminal	Connector	Terminal	
LH	E124	57	E11	6	Yes
RH			E107		



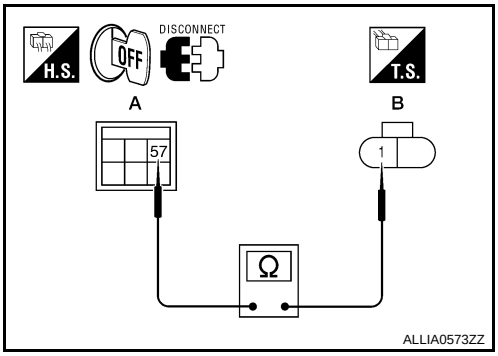
4. Check continuity between the IPDM E/R harness connector (A) and the rear combination lamp harness connector (B).

A			B		Continuity
Connector		Terminal	Connector	Terminal	
LH	E124	57	C13	6	Yes
RH			C14		



5. Check continuity between the IPDM E/R harness connector (A) and license plate lamp connector (B).

A		B		Continuity
Connector	Terminal	Connector	Terminal	
E124	57	C12	1	Yes



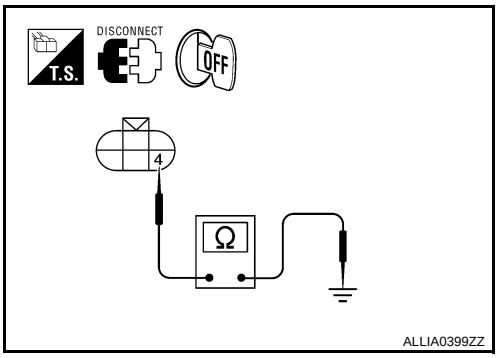
Are continuity test results as specified?

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

4. CHECK PARKING, LICENSE AND TAIL LAMP GROUND CIRCUITS

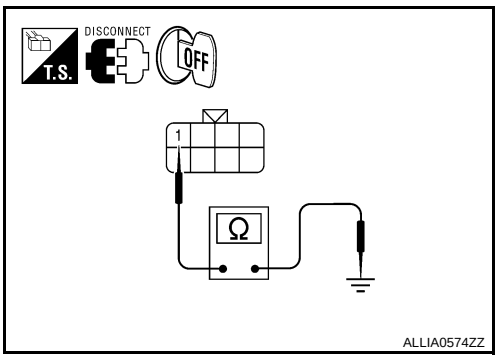
1. Check continuity between the front combination lamp harness connectors E11 and E107 terminal 4 and ground.

Connector		Terminal	—	Continuity
LH	E11	4	Ground	Yes
RH	E107			



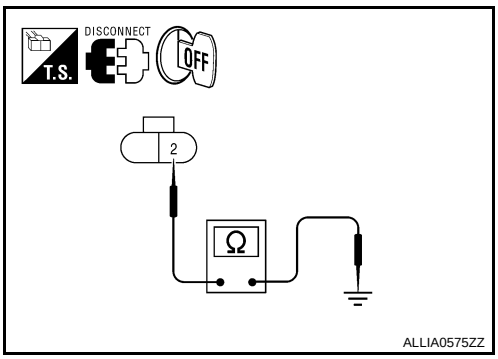
2. Check continuity between the rear combination lamp harness connectors and ground.

Connector		Terminal	—	Continuity
LH	C13	1	Ground	Yes
RH	C14			



3. Check continuity between the license plate lamp harness connector and ground.

Connector	Terminal	—	Continuity
C12	2	Ground	Yes



Does continuity exist?

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

TURN SIGNAL LAMP CIRCUIT

Description

INFOID:0000000001621638

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:0000000001621639

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-33, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000001621640

1.CHECK TURN SIGNAL LAMP BULB

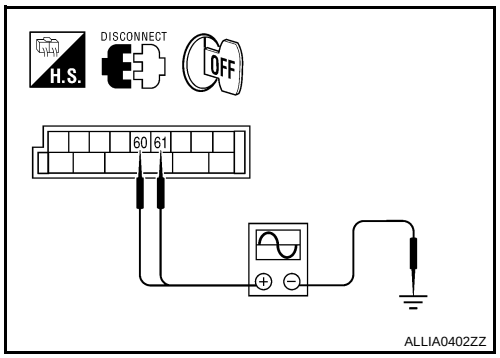
Check the applicable lamp bulb to be sure the proper bulb standard is in use and the bulb is not open.

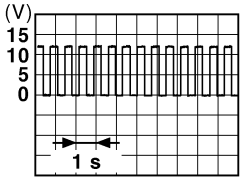
Is the bulb OK?

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 turn signal switch operating, check the voltage between the BCM harness connector M20 and ground.



(+)			(–)	Voltage
Connector		Terminal		
M20	LH	60	Ground	
	RH	61		

PKID0926E

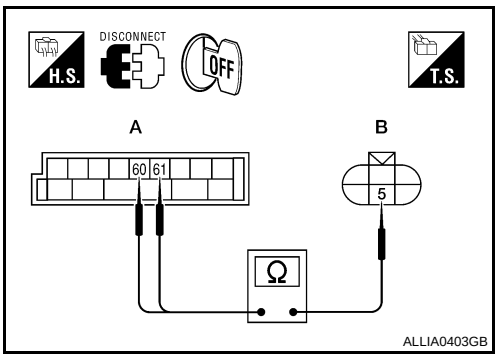
Is voltage reading as specified?

YES >> GO TO 3
NO >> Replace BCM. Refer to BCS-50, "Removal and Installation"

3.CHECK TURN SIGNAL LAMP CIRCUIT FOR OPEN

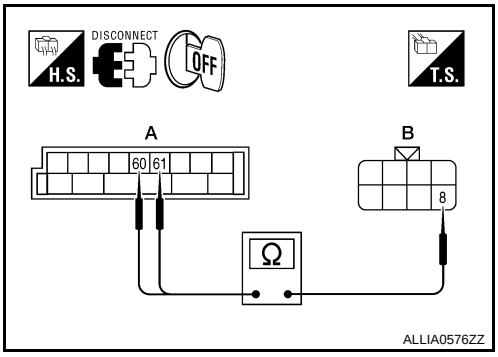
1. Turn the ignition switch OFF.
2. Disconnect BCM connector M20.
3. Check continuity between the BCM harness connector M20 and the front combination lamps.

A			B		Continuity
Connector		Terminal	Connector	Terminal	
Front LH	M20	60	E11	5	Yes
Front RH		61	E107		



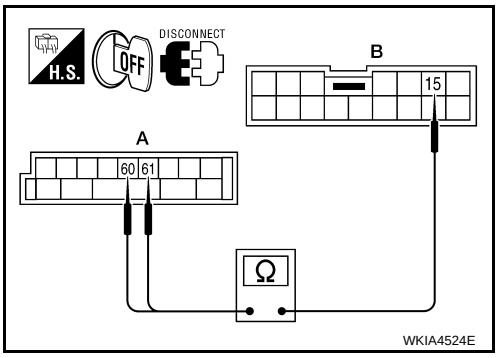
4. Check continuity between the BCM harness connector M20 and the rear combination lamp connectors.

A			B		Continuity
Connector		Terminal	Connector	Terminal	
Rear LH	M20	60	C13	8	Yes
Rear RH		61	C14		



5. Check continuity between the BCM harness connector M20 and the door mirror connectors (if equipped with turn signals in the mirrors).

A			B		Continuity
Connector		Terminal	Connector	Terminal	
Door mirror LH	M20	60	D4	15	Yes
Door mirror RH		61	D107		



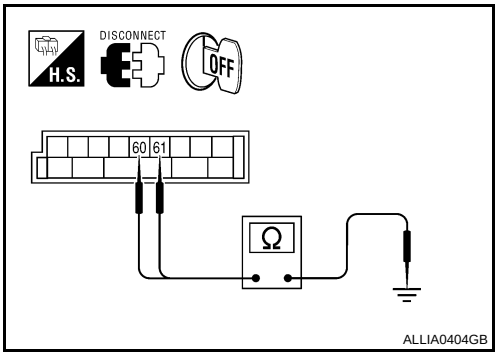
Are continuity test results as specified?

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

4.CHECK TURN SIGNAL LAMP SHORT CIRCUIT

Check continuity between the BCM harness connector M20 and ground.

Connector		Terminal	—	Continuity
LH	M20	60	Ground	No
RH		61		



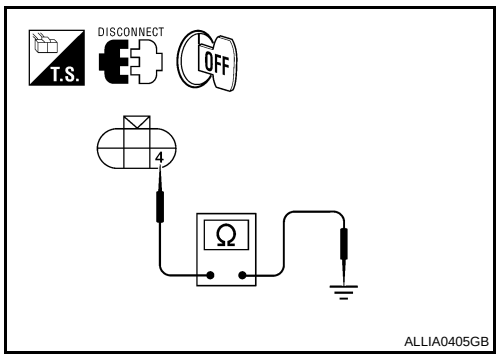
Does continuity exist?

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

5.CHECK TURN SIGNAL LAMP GROUND CIRCUIT

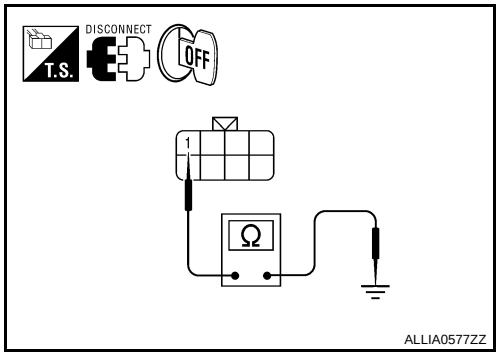
1. Check continuity between the front combination lamp harness connectors and ground.

Connector		Terminal	—	Continuity
Front LH	E11	4	Ground	Yes
Front RH	E107			



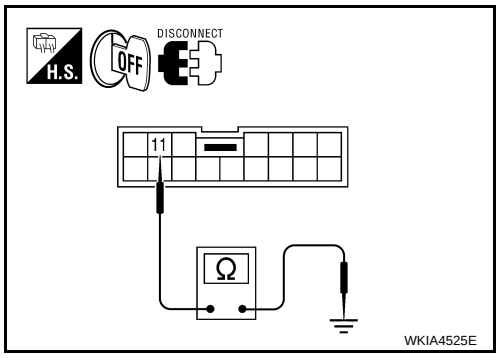
2. Check continuity between the rear combination lamp harnness connectors and ground.

Connector		Terminal	—	Continuity
Rear LH	C13	1	Ground	Yes
Rear RH	C14			



3. Check continuity between the door mirrors and ground (if equipped with turn signals in the mirrors).

Connector		Terminal	—	Continuity
Door mirror RH	D107	11	Ground	Yes
Door mirror LH	D4			



Are continuity test results as specified?

YES >> Replace the malfunctioning lamp.
NO >> Repair the harnesses or connectors.

OPTICAL SENSOR

Description

INFOID:0000000001621641

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

Component Function Check

INFOID:0000000001621642

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	3.1V or more *
	When shutting off light	0.6V or less

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

Is the item status normal?

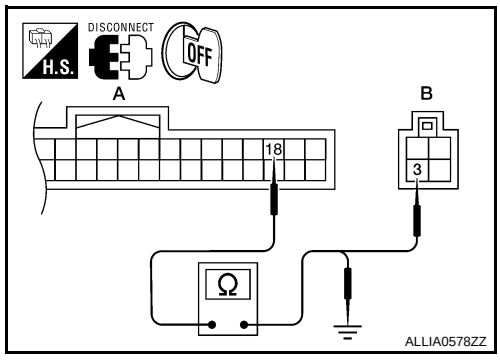
YES >> Optical sensor is normal.
NO >> Refer to EXL-36, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000001621643

1.CHECK OPTICAL SENSOR GROUND CIRCUIT

1. Turn the ignition switch OFF.
2. Disconnect BCM connector M18 and optical sensor connector M302.
3. Check continuity between BCM harness connector M18 (A) terminal 18 and optical sensor harness connector M302 (B) terminal 3.



A		B		
Connector	Terminal	Connector	Terminal	Continuity
M18	18	M302	3	Yes

4. Check continuity between BCM harness connector M18 (A) terminal 18 and ground.

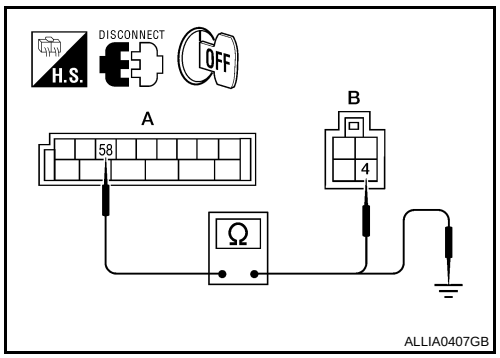
A		—	Continuity
Connector	Terminal		
M18	18	Ground	No

Are continuity test results as specified?

YES >> GO TO 2
NO >> Repair harness or connector.

2.CHECK OPTICAL SENSOR SIGNAL CIRCUIT

1. Check continuity between BCM harness connector M20 (A) terminal 58 and optical sensor harness connector M302 (B) terminal 4.



A		B		
Connector	Terminal	Connector	Terminal	Continuity
M20	58	M302	4	Yes

2. Check continuity between BCM harness connector M20 (A) terminal 58 and ground.

A		—	Continuity
Connector	Terminal		
M20	58	Ground	No

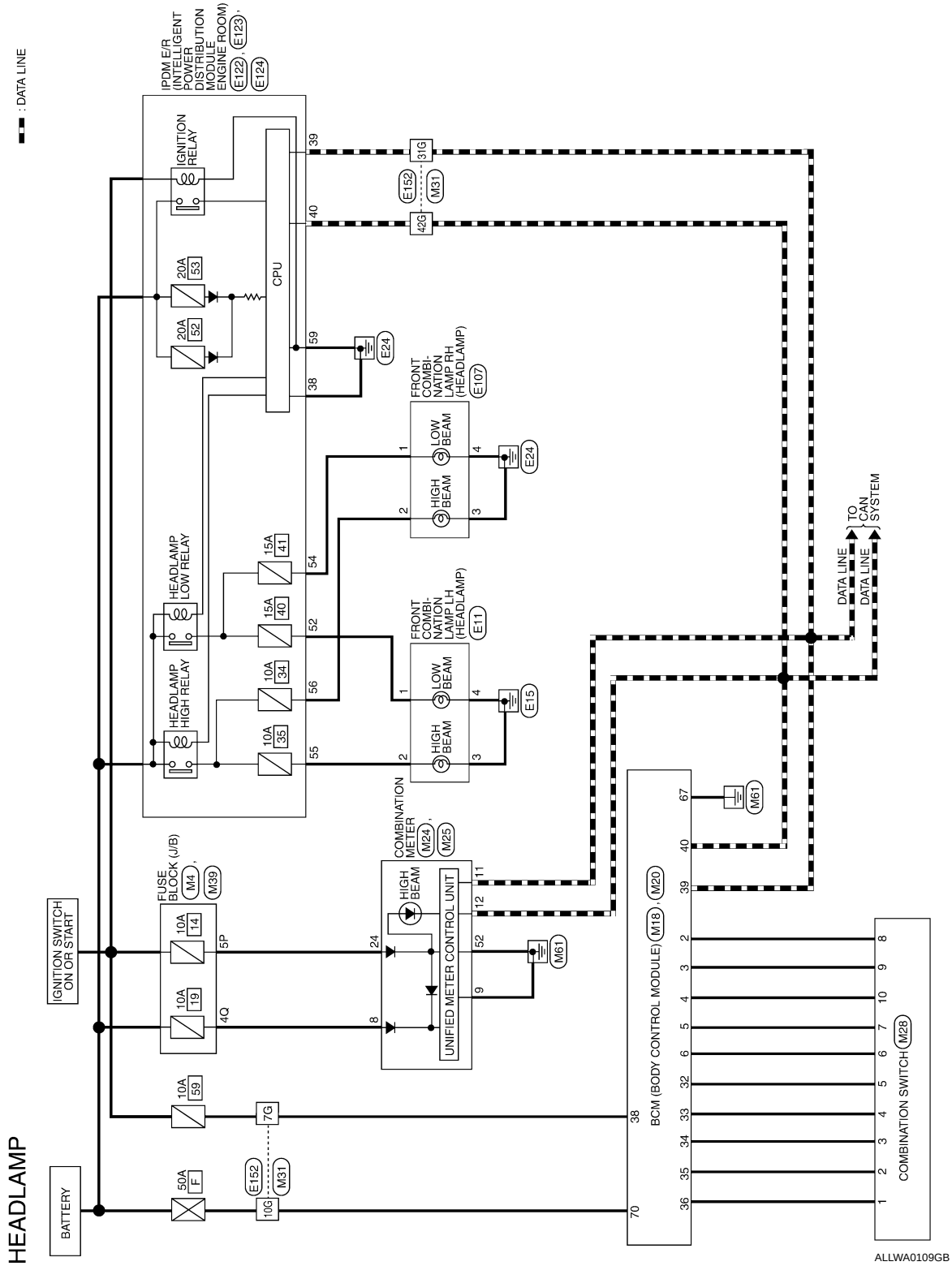
Are the continuity test results as specified?

YES >> Replace the optical sensor. Refer to EXL-96, "Removal and Installation"
NO >> Repair harness or connector.

HEADLAMP

Wiring Diagram

INFOID:0000000001621644



HEADLAMP CONNECTORS

Connector No.	M4
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
5P	O/L	–

Connector No.	M18
Connector Name	BCM (BODY CONTROL MODULE)
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
2	SB	INPUT-5
3	G/Y	INPUT-4
4	Y	INPUT-3
5	G/B	INPUT-2
6	V	INPUT-1
32	R/G	OUTPUT-5
33	R/Y	OUTPUT-4
34	L	OUTPUT-3
35	O/B	OUTPUT-2
36	R/W	OUTPUT-1
38	W/L	IGN SW
39	L	CAN-H
40	P	CAN-L

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

H.S.

56	57	58	59	60	61	62	63	64
65	66	67	68	69	70			

Terminal No.	Color of Wire	Signal Name
67	B	GND (POWER)
70	W/B	BATT (FL)

Connector No.	M24
Connector Name	COMBINATION METER
Connector Color	WHITE

H.S.

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

Terminal No.	Color of Wire	Signal Name
8	Y/R	–
9	B	–
11	L	CAN-H
12	P	CAN-L
24	O/L	–

Connector No.	M25
Connector Name	COMBINATION METER
Connector Color	WHITE

H.S.

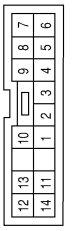
46	45	44	43	42	41
52	51	50	49	48	47

Terminal No.	Color of Wire	Signal Name
52	B	–

AWLIA0051GB

Connector No.	M28
Connector Name	COMBINATION SWITCH
Connector Color	WHITE

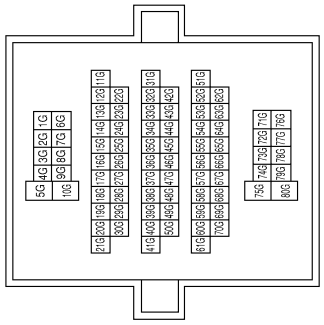
H.S.



Terminal No.	Color of Wire	Signal Name
1	R/W	–
2	O/B	–
3	L	–
4	R/Y	–
5	R/G	–
6	V	–
7	G/B	–
8	SB	–
9	G/Y	–
10	Y	–

Connector No.	M31
Connector Name	WIRE TO WIRE
Connector Color	WHITE

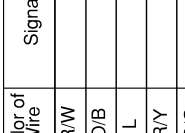
H.S.



Terminal No.	Color of Wire	Signal Name
7G	W/L	–
10G	W/B	–
31G	L	–
42G	P	–

Connector No.	M39
Connector Name	FUSE BLOCK (J/B)
Connector Color	WHITE

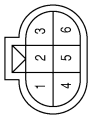
H.S.



Terminal No.	Color of Wire	Signal Name
4Q	Y/R	–

Connector No.	E11
Connector Name	FRONT COMBINATION LAMP LH
Connector Color	BLACK

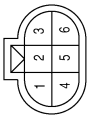
H.S.



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

Connector No.	E107
Connector Name	FRONT COMBINATION LAMP RH
Connector Color	BLACK

H.S.



Terminal No.	Color of Wire	Signal Name
1	R/Y	–
2	L/W	–
3	B	–
4	B	–

AWLIA0052GB

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

H.S.

42 41 40 39 38 37
48 47 46 45 44 43

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

Connector No.	E123
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Color	BROWN

H.S.

51 50 49
56 55 54 53 52

Terminal No.	Color of Wire	Signal Name
52	L	H/LAMP LO LH
54	R/Y	H/LAMP LO RH
55	G	H/LAMP HI LH
56	L/W	H/LAMP HI RH

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

H.S.

59 58 57
62 61 60

Terminal No.	Color of Wire	Signal Name
59	B	GND (PWR)

Terminal No.	Color of Wire	Signal Name
7G	L/W	–
10G	W/B	–
31G	L	–
42G	P	–

Connector No.	E152
Connector Name	WIRE TO WIRE
Connector Color	WHITE

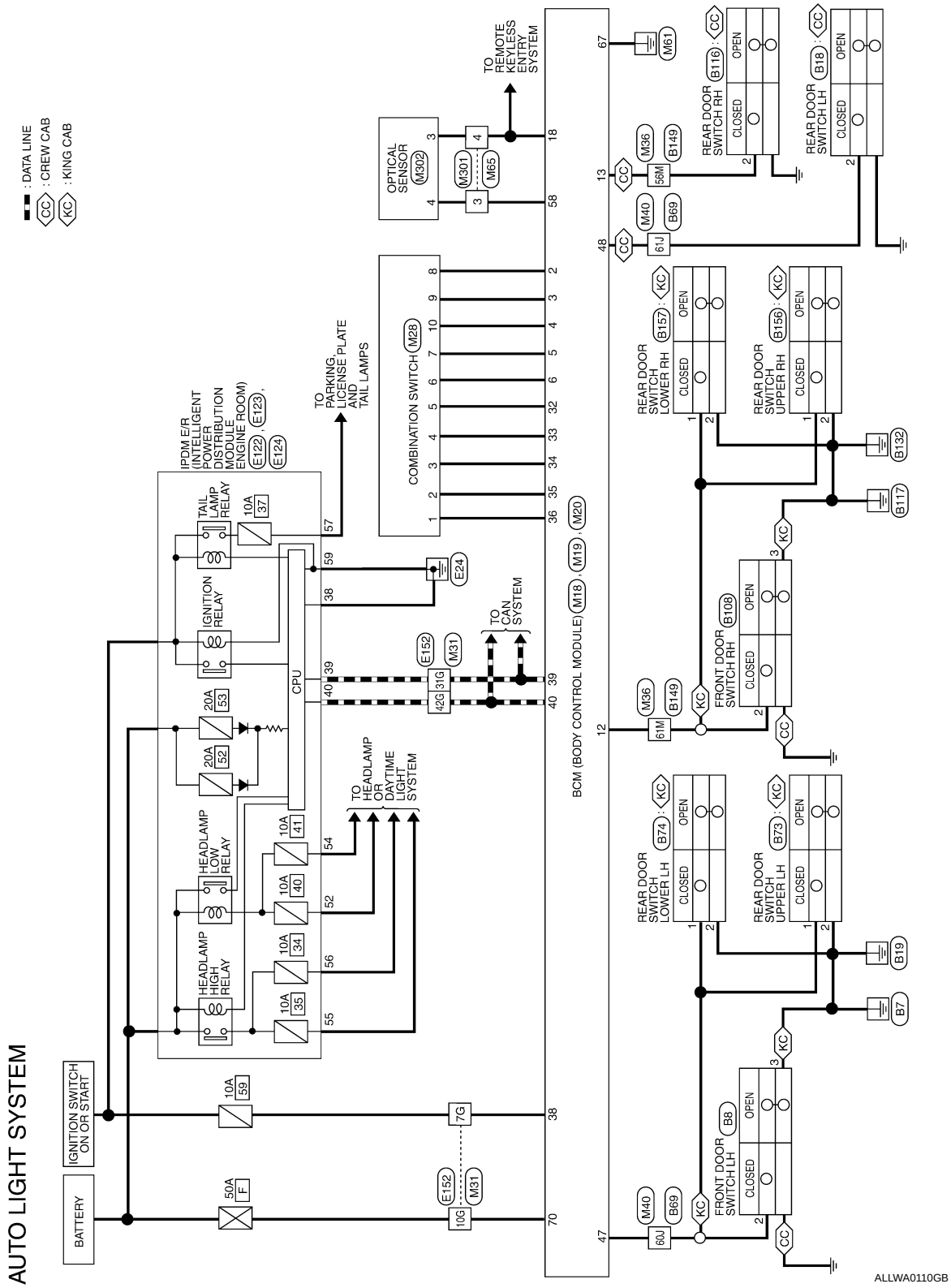
H.S.

AWLIA0053GB

AUTO LIGHT SYSTEM

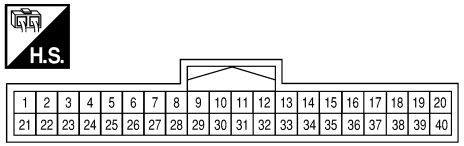
Wiring Diagram

INFOID:0000000001621646



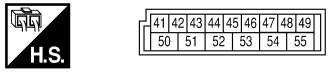
AUTO LIGHT SYSTEM CONNECTORS

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



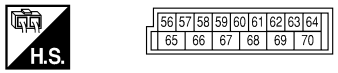
Terminal No.	Color of Wire	Signal Name
2	SB	INPUT-5
3	G/Y	INPUT-4
4	Y	INPUT-3
5	G/B	INPUT-2
6	V	INPUT-1
12	R/L	DOOR SW (AS)
13	GR	DOOR SW (RR)
18	P	SIG GND
32	R/G	OUTPUT-5
33	R/Y	OUTPUT-4
34	L	OUTPUT-3
35	O/B	OUTPUT-2
36	R/W	OUTPUT-1
38	W/L	IGN SW
39	L	CAN-H
40	P	CAN-L

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



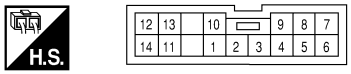
Terminal No.	Color of Wire	Signal Name
47	SB	DOOR SW (DR)
48	R/Y	DOOR SW (RL)

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



Terminal No.	Color of Wire	Signal Name
58	W/R	AUTO_L_INPUT
67	B	GND (POWER)
70	W/B	BATT (FL)

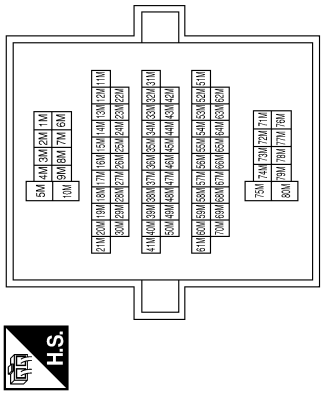
Connector No.	M28
Connector Name	COMBINATION SWITCH
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
1	R/W	–
2	O/B	–
3	L	–
4	R/Y	–
5	R/G	–
6	V	–
7	G/B	–
8	SB	–
9	G/Y	–
10	Y	–

AWLIA0054GB

Connector No.	M36
Connector Name	WIRE TO WIRE
Connector Color	WHITE



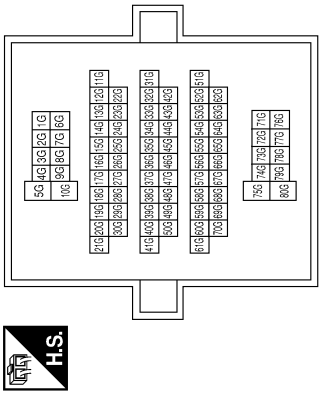
Terminal No.	Color of Wire	Signal Name
56M	GR	–
61M	R/L	–

Connector No.	M65
Connector Name	WIRE TO WIRE
Connector Color	WHITE

Terminal No.	Color of Wire	Signal Name
3	W/R	–
4	P	–

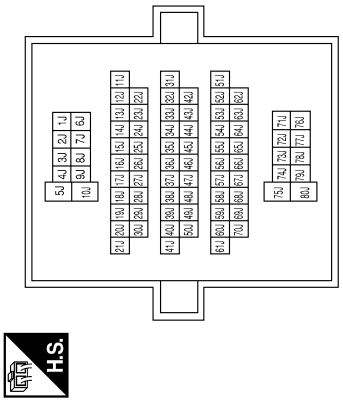
Terminal No.	Color of Wire	Signal Name
7G	W/L	–
10G	W/B	–
31G	L	–
42G	P	–

Connector No.	M31
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
60J	SB	–
61J	R/Y	–

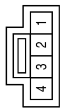
Connector No.	M40
Connector Name	WIRE TO WIRE
Connector Color	WHITE



AWLIA0055GB

Connector No.	M301
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.



Terminal No.	Color of Wire	Signal Name
3	W/R	–
4	P	–

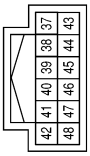
Connector No.	M302
Connector Name	OPTICAL SENSOR
Connector Color	BLACK

H.S.

Terminal No.	Color of Wire	Signal Name
3	P	–
4	W/R	–

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

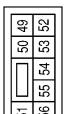
H.S.



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

Connector No.	E123
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Color	BROWN

H.S.



Terminal No.	Color of Wire	Signal Name
52	L	HEAD_LAMP_LH_LO
54	R/Y	HEAD_LAMP_RH_LO
55	G	HEAD_LAMP_LH_HI
56	L/W	HEAD_LAMP_RH_HI

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

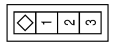
H.S.

Terminal No.	Color of Wire	Signal Name
57	R/L	TAIL_LAMP
59	B	GND (PWR)

AWLIA0056GB

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

H.S.



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

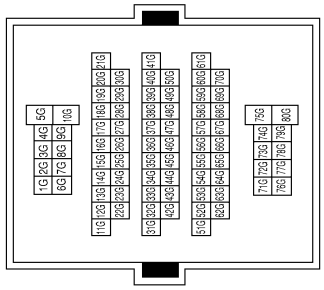
Connector No.	B73
Connector Name	REAR DOOR SWITCH UPPER LH
Connector Color	BLACK

H.S.

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

Connector No.	E152
Connector Name	WIRE TO WIRE
Connector Color	WHITE

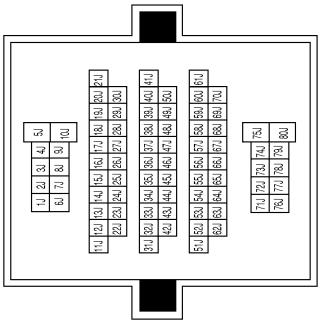
H.S.



Terminal No.	Color of Wire	Signal Name
7G	L/W	–
10G	W/B	–
31G	L	–
42G	P	–

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

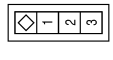
H.S.



Terminal No.	Color of Wire	Signal Name
60J	SB	–
61J	R/Y	–

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

H.S.



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

AWLIA0057GB

Connector No.	B74
Connector Name	REAR DOOR SWITCH LOWER LH
Connector Color	BLACK

H.S.

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

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

H.S.

Terminal No.	Color of Wire	Signal Name
2	R/L	–
3	B	–

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

H.S.

Terminal No.	Color of Wire	Signal Name
2	GR	–

Connector No.	B149
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
56M	GR	–
61M	R/L	–

Connector No.	B156
Connector Name	REAR DOOR SWITCH UPPER RH
Connector Color	BLACK

H.S.

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

Connector No.	B157
Connector Name	REAR DOOR SWITCH LOWER RH
Connector Color	BLACK

H.S.

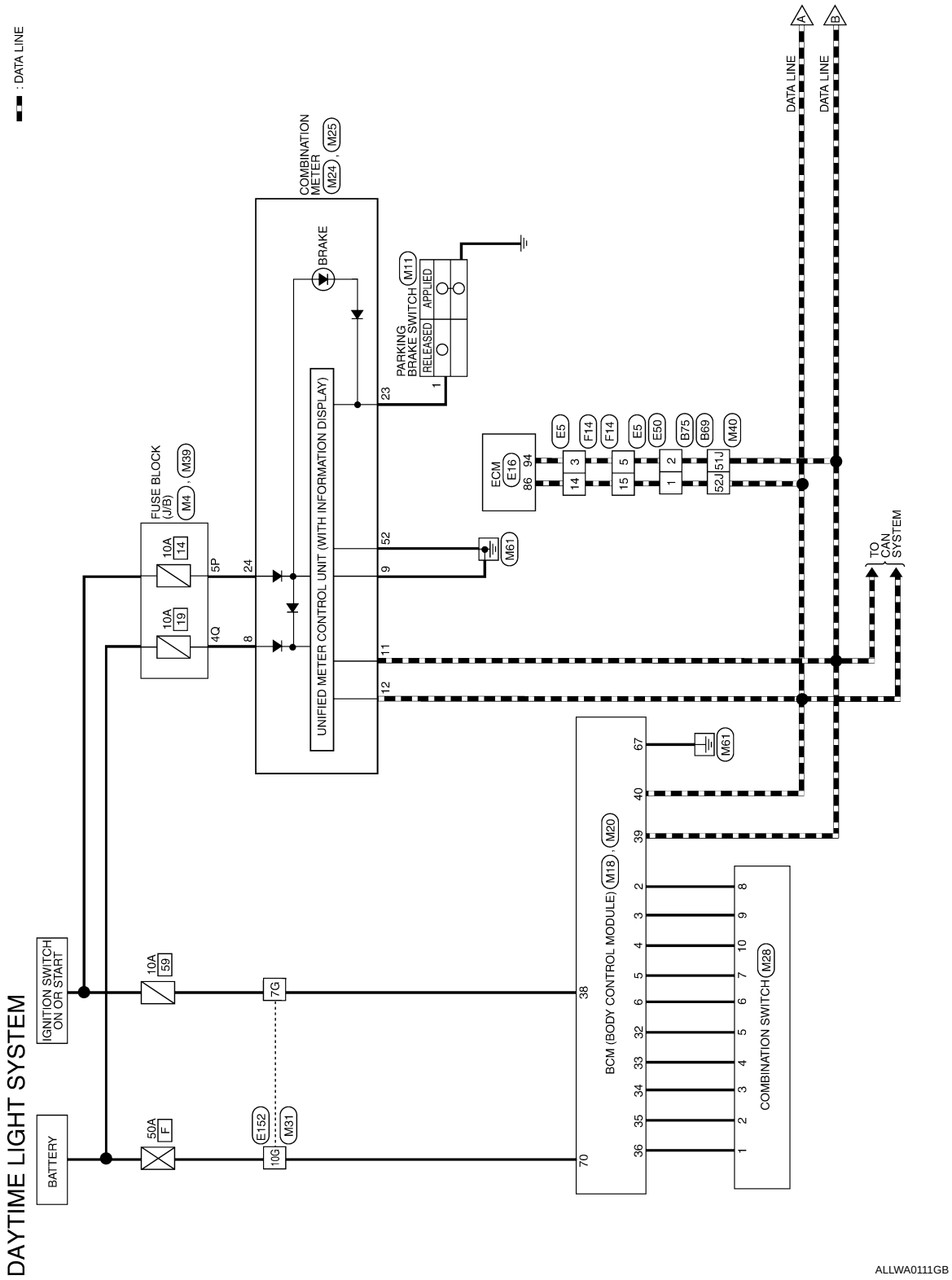
Terminal No.	Color of Wire	Signal Name
1	R/L	–
2	B	–

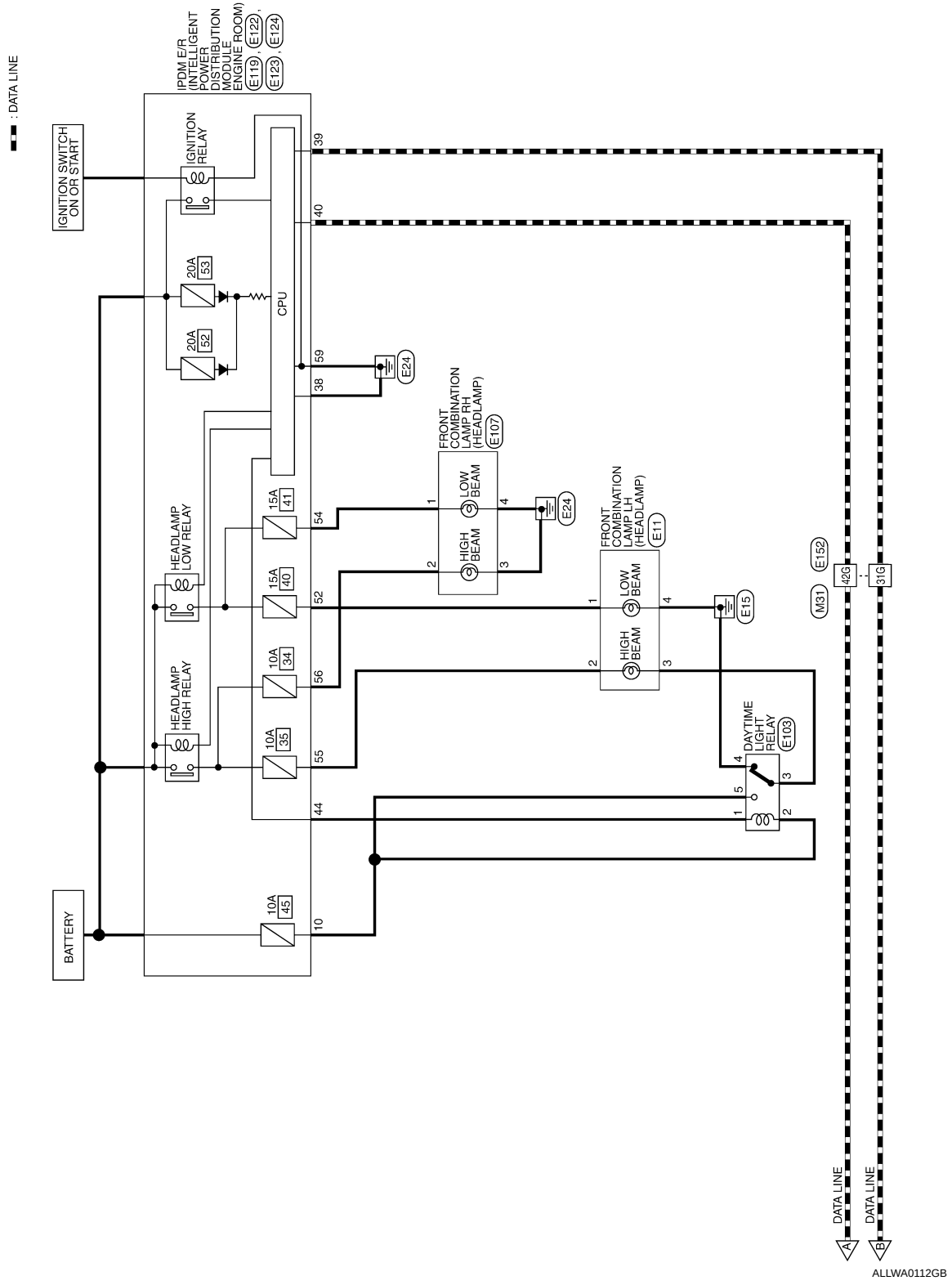
AWLIA0058GB

DAYTIME LIGHT SYSTEM

Wiring Diagram

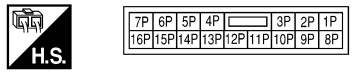
INFOID:0000000001621645




: DATA LINE
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) (E119), (E122), (E123), (E124)
IGNITION SWITCH ON OR START
IGNITION RELAY
20A 53
20A 52
CPU
39
40
59
38
E24
FRONT COMBINATION LAMP RH (HEADLAMP) (E107)
LOW BEAM
HIGH BEAM
HEADLAMP LOW RELAY
15A 41
15A 40
54
52
FRONT COMBINATION LAMP LH (HEADLAMP) (E11)
E15
E152
M31
42G
31G
HEADLAMP HIGH RELAY
10A 34
10A 35
56
55
DAYTIME LIGHT RELAY (E103)
44
BATTERY
10A 45
10
DATA LINE
A
B
ALLWA0112GB

DAYTIME LIGHT SYSTEM CONNECTORS

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

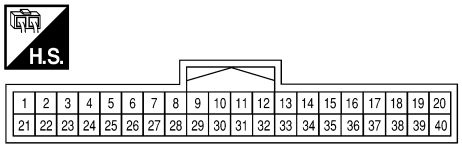


Terminal No.	Color of Wire	Signal Name
5P	O/L	–

Connector No.	M11
Connector Name	PARKING BRAKE SWITCH
Connector Color	BLACK

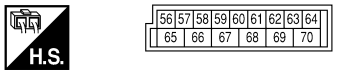
Terminal No.	Color of Wire	Signal Name
1	G	–

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



Terminal No.	Color of Wire	Signal Name
2	SB	INPUT-5
3	G/Y	INPUT-4
4	Y	INPUT-3
5	G/B	INPUT-2
6	V	INPUT-1
32	R/G	OUTPUT-5
33	R/Y	OUTPUT-4
34	L	OUTPUT-3
35	O/B	OUTPUT-2
36	R/W	OUTPUT-1
38	W/L	IGN SW
39	L	CAN-H
40	P	CAN-L

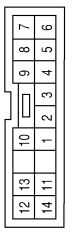
Connector No.	M20
Connector Name	BCM (BODY CONTROL MODULE)
Connector Color	BLACK



Terminal No.	Color of Wire	Signal Name
67	B	GND (POWER)
70	W/B	BATT (FL)

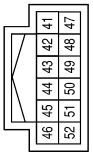
AWLIA0060GB

Connector No.	M28
Connector Name	COMBINATION SWITCH
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
1	R/W	–
2	O/B	–
3	L	–
4	R/Y	–
5	R/G	–
6	V	–
7	G/B	–
8	SB	–
9	G/Y	–
10	Y	–

Connector No.	M25
Connector Name	COMBINATION METER
Connector Color	WHITE

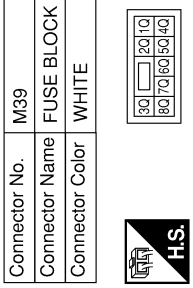


Terminal No.	Color of Wire	Signal Name
52	B	–

Connector No.	M24
Connector Name	COMBINATION METER
Connector Color	WHITE

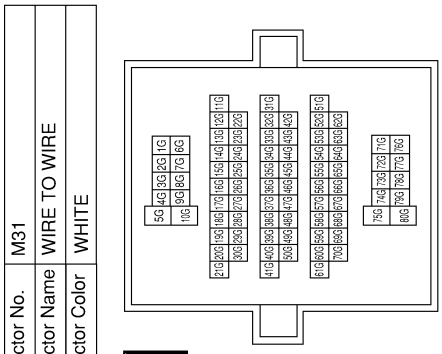
Terminal No.	Color of Wire	Signal Name
8	Y/R	–
9	B	–
11	L	CAN-H
12	P	CAN-L
23	G	–
24	O/L	–

Connector No.	M39
Connector Name	FUSE BLOCK (J/B)
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
4Q	Y/R	–

Connector No.	M31
Connector Name	WIRE TO WIRE
Connector Color	WHITE

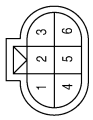


Terminal No.	Color of Wire	Signal Name
7G	W/L	–
10G	W/B	–
31G	L	–
42G	P	–

AWLIA0061GB

Connector No.	E11
Connector Name	FRONT COMBINATION LAMP LH
Connector Color	BLACK

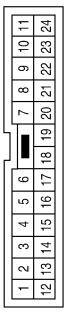
H.S.



Terminal No.	Color of Wire	Signal Name
1	L	–
2	G	–
3	Y/G	–
4	B	–

Connector No.	E5
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.



Terminal No.	Color of Wire	Signal Name
3	L	–
5	L	–
14	P	–
15	P	–

Connector No.	E103
Connector Name	DAYTIME LIGHT RELAY
Connector Color	BLACK

H.S.

Terminal No.	Color of Wire	Signal Name
1	BR	–
2	G	–
3	Y/G	–
4	B	–
5	G	–

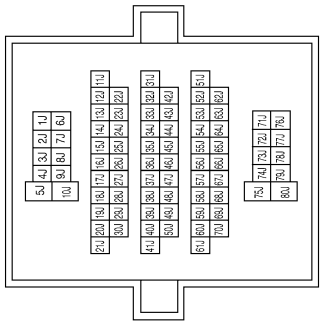
Connector No.	E50
Connector Name	WIRE TO WIRE
Connector Color	BROWN

H.S.

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

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

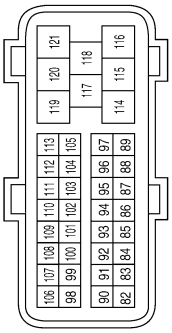
H.S.



Terminal No.	Color of Wire	Signal Name
51J	L	–
52J	P	–

Connector No.	E16
Connector Name	ECM
Connector Color	BLACK

H.S.



Terminal No.	Color of Wire	Signal Name
86	P	CAN-L
94	L	CAN-H

AWLIA0062GB

Connector No.	E107
Connector Name	FRONT COMBINATION LAMP RH
Connector Color	BLACK

H.S.

Terminal No.	Color of Wire	Signal Name
1	R/Y	–
2	Y	–
3	B	–
4	B	–

Connector No.	E119
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
10	G	DTRL

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

H.S.

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

Connector No.	E123
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Color	BROWN

H.S.

Terminal No.	Color of Wire	Signal Name
52	L	HEAD_LAMP_LH_LO
54	R/Y	HEAD_LAMP_RH_LO
55	G	HEAD_LAMP_LH_HI
56	L/W	HEAD_LAMP_RH_HI

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

H.S.

Terminal No.	Color of Wire	Signal Name
59	B	GND (PWR)

AWLIA0063GB

Connector No.	F14
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

11	10	9	8	7		6	5	4	3	2	1
24	23	22	21	20	19	18	17	16	15	14	13	12

Terminal No.	Color of Wire	Signal Name
3	L	–
5	L	–
14	P	–
15	P	–

Connector No.	B75
Connector Name	WIRE TO WIRE
Connector Color	BROWN

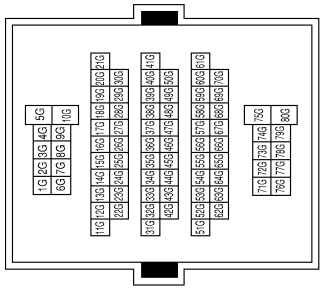
H.S.

1	2

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

Connector No.	E152
Connector Name	WIRE TO WIRE
Connector Color	WHITE

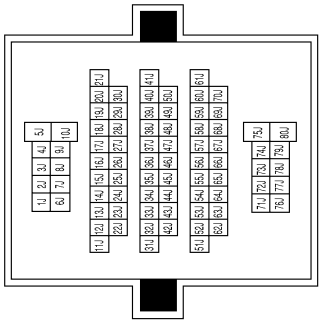
H.S.



Terminal No.	Color of Wire	Signal Name
7G	L/W	–
10G	W/B	–
31G	L	–
42G	P	–

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

H.S.



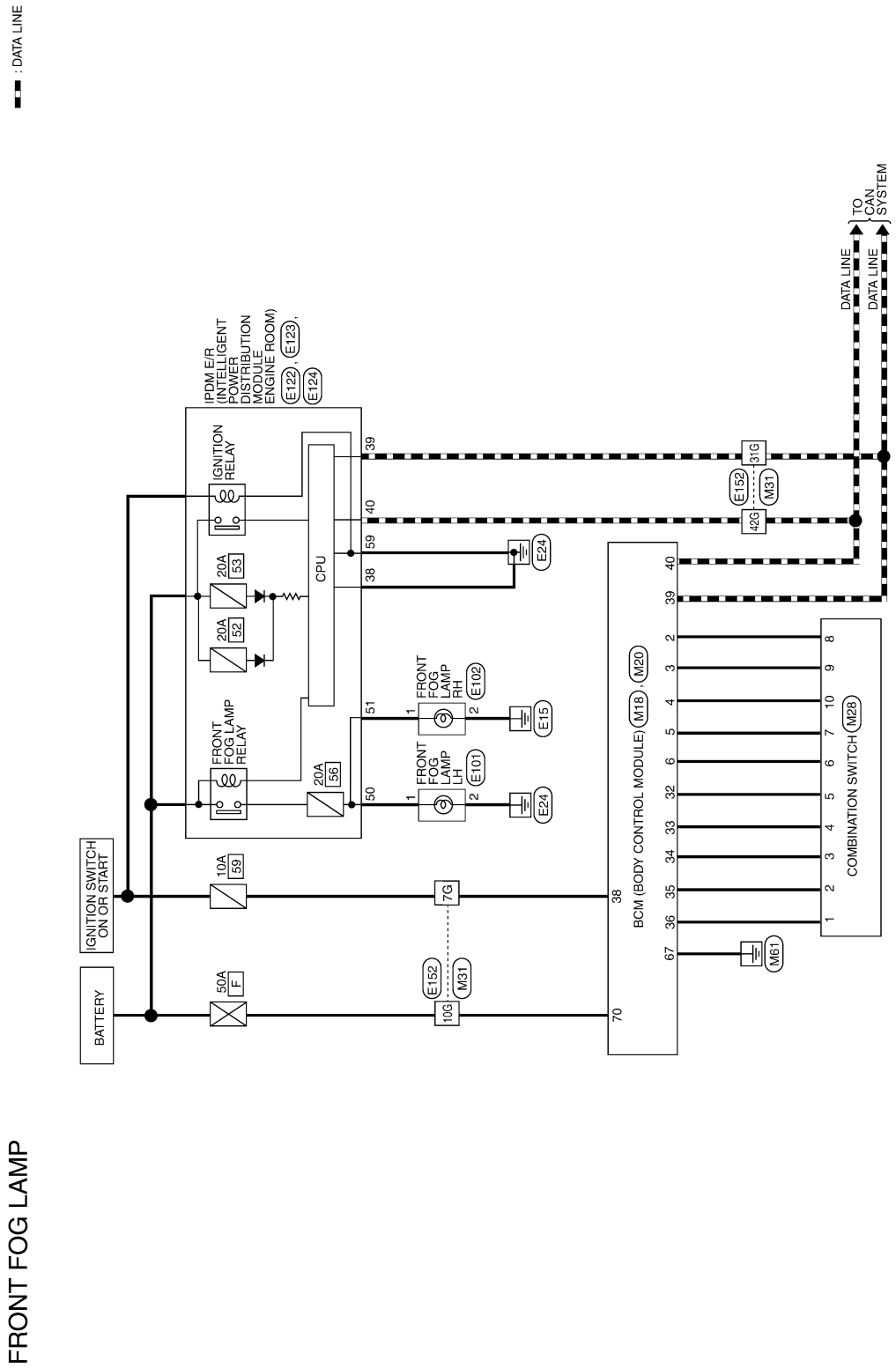
Terminal No.	Color of Wire	Signal Name
51J	L	–
52J	P	–

AWLIA0064GB

FRONT FOG LAMP SYSTEM

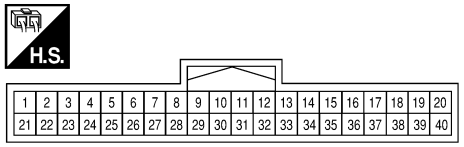
Wiring Diagram

INFOID:0000000001621647



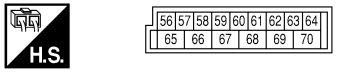
FRONT FOG LAMP CONNECTORS

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



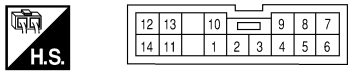
Terminal No.	Color of Wire	Signal Name
2	SB	INPUT-5
3	G/Y	INPUT-4
4	Y	INPUT-3
5	G/B	INPUT-2
6	V	INPUT-1
32	R/G	OUTPUT-5
33	R/Y	OUTPUT-4
34	L	OUTPUT-3
35	O/B	OUTPUT-2
36	R/W	OUTPUT-1
38	W/L	IGN SW
39	L	CAN-H
40	P	CAN-L

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



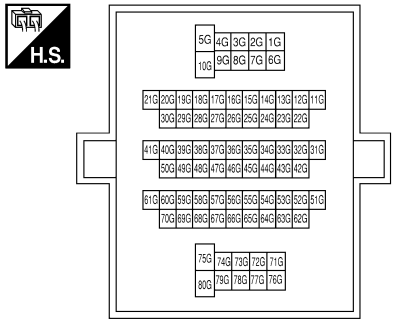
Terminal No.	Color of Wire	Signal Name
67	B	GND (POWER)
70	W/B	BATT (FL)

Connector No.	M28
Connector Name	COMBINATION SWITCH
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
1	R/W	–
2	O/B	–
3	L	–
4	R/Y	–
5	R/G	–
6	V	–
7	G/B	–
8	SB	–
9	G/Y	–
10	Y	–

Connector No.	M31
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
7G	W/L	–
10G	W/B	–
31G	L	–
42G	P	–

AWLIA0065GB

Connector No.	E101
Connector Name	FRONT FOG LAMP LH
Connector Color	BLACK

H.S.

Terminal No.	Color of Wire	Signal Name
1	W/R	–
2	B	–

Connector No.	E102
Connector Name	FRONT FOG LAMP RH
Connector Color	BLACK

H.S.

Terminal No.	Color of Wire	Signal Name
1	W/R	–
2	B	–

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

H.S.

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

Connector No.	E123
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Color	BROWN

H.S.

Terminal No.	Color of Wire	Signal Name
50	W/R	FR FOG LAMP LH
51	W/R	FR FOG LAMP RH

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

H.S.

Terminal No.	Color of Wire	Signal Name
59	B	GND (PWR)

Connector No.	E152
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

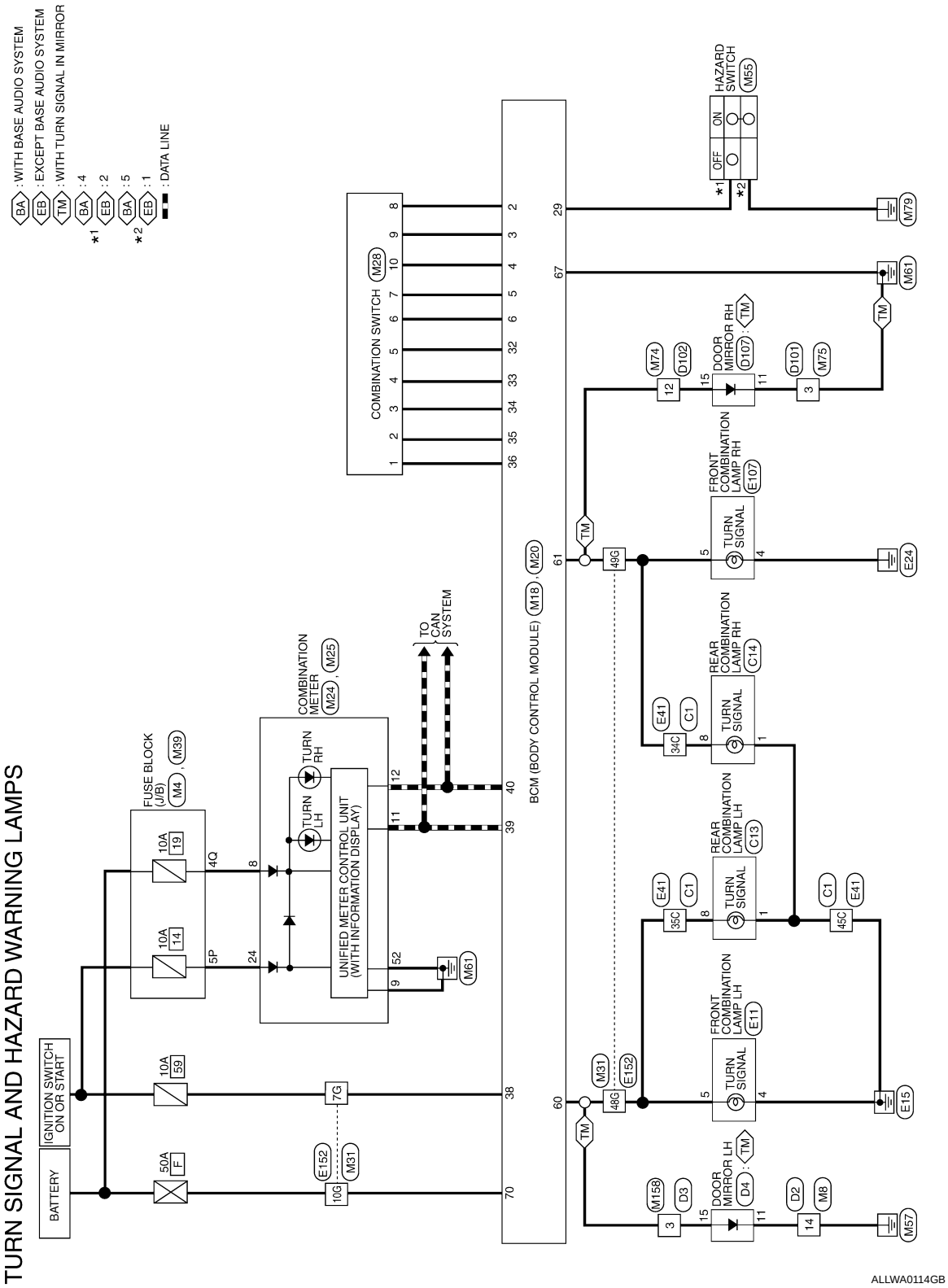
Terminal No.	Color of Wire	Signal Name
7G	L/W	–
10G	W/B	–
31G	L	–
42G	P	–

AWLIA0066GB

TURN SIGNAL AND HAZARD WARNING LAMP SYSTEM

Wiring Diagram

INFOID:0000000001621648



TURN SIGNAL AND HAZARD WARNING LAMP CONNECTORS

Connector No.	M4
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
5P	O/L	–

Connector No.	M8
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
14	B	–

Connector No.	M18
Connector Name	BCM (BODY CONTROL MODULE)
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
2	SB	INPUT-5
3	G/Y	INPUT-4
4	Y	INPUT-3
5	G/B	INPUT-2
6	V	INPUT-1
29	W/B	HAZARD_SW
32	R/G	OUTPUT-5
33	R/Y	OUTPUT-4
34	L	OUTPUT-3
35	O/B	OUTPUT-2
36	R/W	OUTPUT-1
38	W/L	IGN SW
39	L	CAN-H
40	P	CAN-L

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

H.S.

56	57	58	59	60	61	62	63	64
65	66	67	68	69	70			

Terminal No.	Color of Wire	Signal Name
60	G/B	FLASHER OUTPUT (LEFT)
61	G/Y	FLASHER OUTPUT (RIGHT)
67	B	GND (POWER)
70	W/B	BATT (FL)

AWLIA0067GB

Connector No.	M24
Connector Name	COMBINATION METER
Connector Color	WHITE

H.S.

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

Terminal No.	Color of Wire	Signal Name
8	Y/R	–
9	B	–
11	L	–
12	P	–
24	O/L	–

Connector No.	M25
Connector Name	COMBINATION METER
Connector Color	WHITE

H.S.

46	45	44	43	42	41
52	51	50	49	48	47

Terminal No.	Color of Wire	Signal Name
52	B	–

Connector No.	M28
Connector Name	COMBINATION SWITCH
Connector Color	WHITE

H.S.

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

Terminal No.	Color of Wire	Signal Name
1	R/W	–
2	O/B	–
3	L	–
4	R/Y	–
5	R/G	–
6	V	–
7	G/B	–
8	SB	–
9	G/Y	–
10	Y	–

Connector No.	M31
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

Connector No.	M39
Connector Name	FUSE BLOCK (J/B)
Connector Color	WHITE

H.S.

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

Terminal No.	Color of Wire	Signal Name
4Q	Y/R	–

Terminal No.	Color of Wire	Signal Name
7G	W/L	–
10G	W/B	–
48G	G/B	–
49G	G/Y	–

AWLIA0068GB

Connector No.	M55
Connector Name	HAZARD SWITCH (WITH 2 CONTROL DIAL SYSTEM)
Connector Color	WHITE

H.S.

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

Connector No.	M55
Connector Name	HAZARD SWITCH (WITH 3 CONTROL DIAL SYSTEM)
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
4	W/B	–
5	B	–
7	R/L	–
8	BR	–

Connector No.	M74
Connector Name	WIRE TO WIRE
Connector Color	BROWN

H.S.

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

Connector No.	M75
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
3	B	–

Connector No.	M158
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

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

Connector No.	E11
Connector Name	FRONT COMBINATION LAMP LH
Connector Color	BLACK

H.S.

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

AWLIA0069GB

Connector No.	E152
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
7G	L/W	–
10G	W/B	–
48G	G/B	–
49G	G/Y	–

Connector No.	E107
Connector Name	FRONT COMBINATION LAMP RH
Connector Color	BLACK

H.S.

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

Connector No.	C13
Connector Name	REAR COMBINATION LAMP L H
Connector Color	GRAY

H.S.

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

Connector No.	E41
Connector Name	WIRE TO WIRE
Connector Color	GRAY

H.S.

Terminal No.	Color of Wire	Signal Name
34C	G/Y	–
35C	G/B	–
45C	B	–

Connector No.	C1
Connector Name	WIRE TO WIRE
Connector Color	GRAY

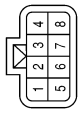
H.S.

Terminal No.	Color of Wire	Signal Name
34C	G/Y	–
35C	G/B	–
45C	B	–

AWLIA0070GB

Connector No.	C14
Connector Name	REAR COMBINATION LAMP RH
Connector Color	GRAY

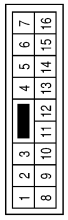
H.S.



Terminal No.	Color of Wire	Signal Name
1	B	–
8	G/Y	–

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

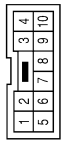
H.S.



Terminal No.	Color of Wire	Signal Name
14	B	–

Connector No.	D3
Connector Name	WIRE TO WIRE
Connector Color	WHITE

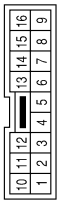
H.S.



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

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

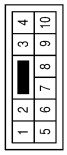
H.S.



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

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

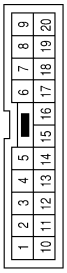
H.S.



Terminal No.	Color of Wire	Signal Name
3	B	–

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

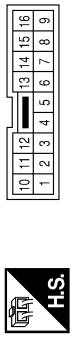
H.S.



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

AWLIA0071GB

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



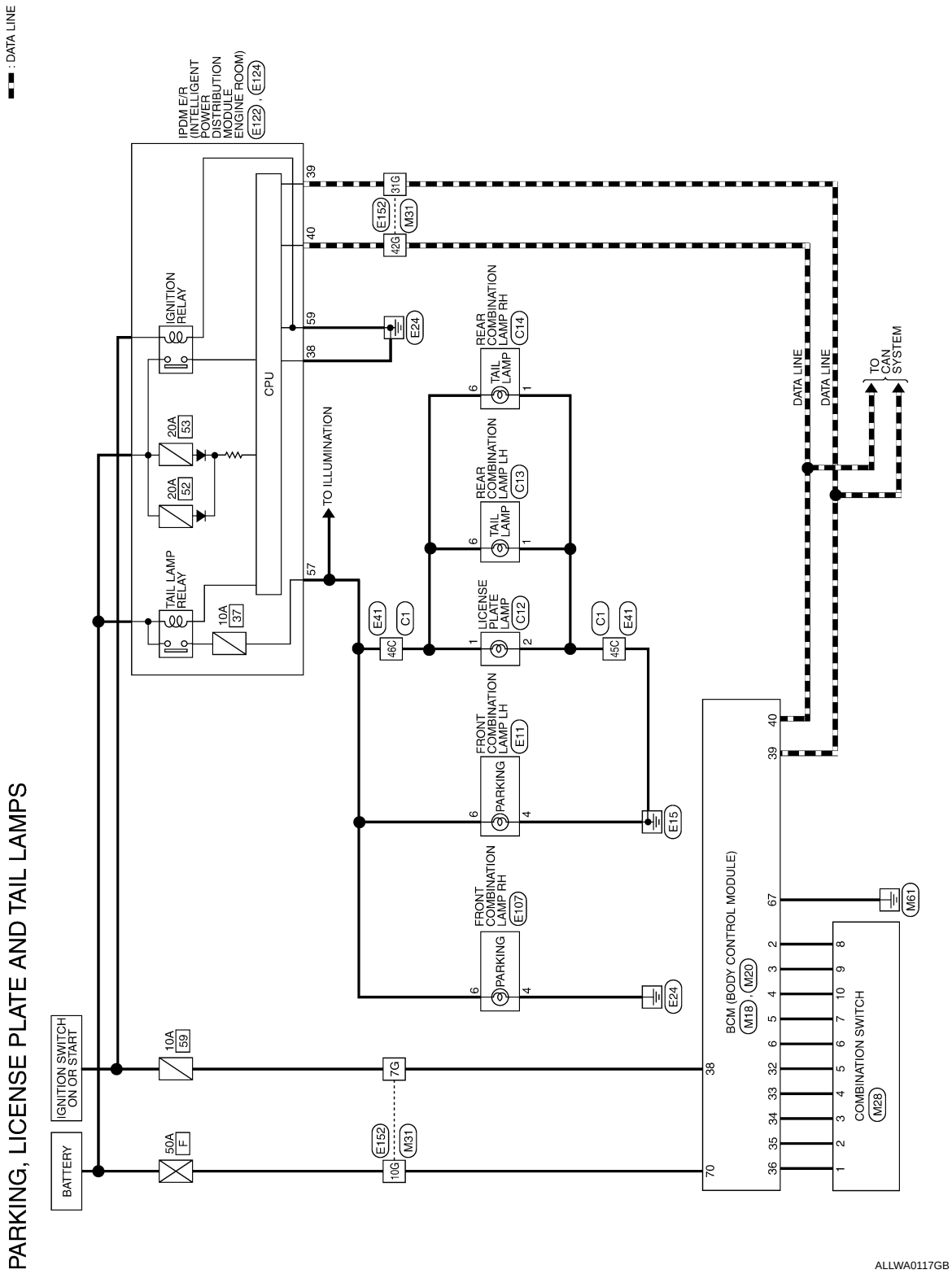
Terminal No.	Color of Wire	Signal Name
11	B	–
15	G/Y	–

AWLIA0072GB

PARKING, LICENSE PLATE AND TAIL LAMPS SYSTEM

Wiring Diagram

INFOID:0000000001621649



PARKING, LICENSE PLATE AND TAIL LAMP CONNECTORS

Connector No.	M18
Connector Name	BCM (BODY CONTROL MODULE)
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
2	SB	INPUT-5
3	G/Y	INPUT-4
4	Y	INPUT-3
5	G/B	INPUT-2
6	V	INPUT-1
32	R/G	OUTPUT-5
33	R/Y	OUTPUT-4
34	L	OUTPUT-3
35	O/B	OUTPUT-2
36	R/W	OUTPUT-1
38	W/L	IGN SW
39	L	CAN-H
40	P	CAN-L

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

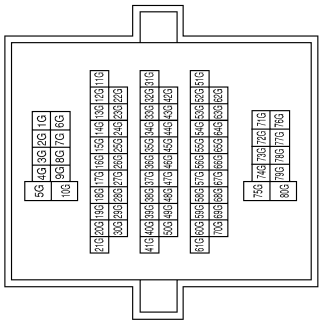
H.S.

56	57	58	59	60	61	62	63	64
65	66	67	68	69	70			

Terminal No.	Color of Wire	Signal Name
67	B	GND (POWER)
70	W/B	BATT (FL)

Connector No.	M31
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.



Connector No.	M28
Connector Name	COMBINATION SWITCH
Connector Color	WHITE

H.S.

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

Terminal No.	Color of Wire	Signal Name
1	R/W	–
2	O/B	–
3	L	–
4	R/Y	–
5	R/G	–
6	V	–
7	G/B	–
8	SB	–
9	G/Y	–
10	Y	–

Terminal No.	Color of Wire	Signal Name
7G	W/L	–
10G	W/B	–
31G	L	–
42G	P	–

AWLIA0048GB

Connector No.	E11
Connector Name	FRONT COMBINATION LAMP LH
Connector Color	BLACK

H.S.

Terminal No.	Color of Wire	Signal Name
4	B	–
6	R/L	–

Connector No.	E41
Connector Name	WIRE TO WIRE
Connector Color	GRAY

H.S.

Terminal No.	Color of Wire	Signal Name
45C	B	–
46C	R/L	–

Connector No.	E107
Connector Name	FRONT COMBINATION LAMP RH
Connector Color	BLACK

H.S.

Terminal No.	Color of Wire	Signal Name
4	B	–
6	R/L	–

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

H.S.

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

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

H.S.

Terminal No.	Color of Wire	Signal Name
57	R/L	TAIL LAMP
59	B	GND (PWR)

AWLIA0049GB

Connector No.	E152
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
7G	L/W	–
10G	W/B	–
31G	L	–
42G	P	–

Connector No.	C1
Connector Name	WIRE TO WIRE
Connector Color	GRAY

H.S.

Terminal No.	Color of Wire	Signal Name
45C	B	–
46C	R/L	–

Connector No.	C12
Connector Name	LICENSE PLATE LAMP
Connector Color	WHITE

H.S.

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

Connector No.	C13
Connector Name	REAR COMBINATION LAMP LH
Connector Color	GRAY

H.S.

Terminal No.	Color of Wire	Signal Name
1	B	–
6	R/L	–

Connector No.	C14
Connector Name	REAR COMBINATION LAMP RH
Connector Color	GRAY

H.S.

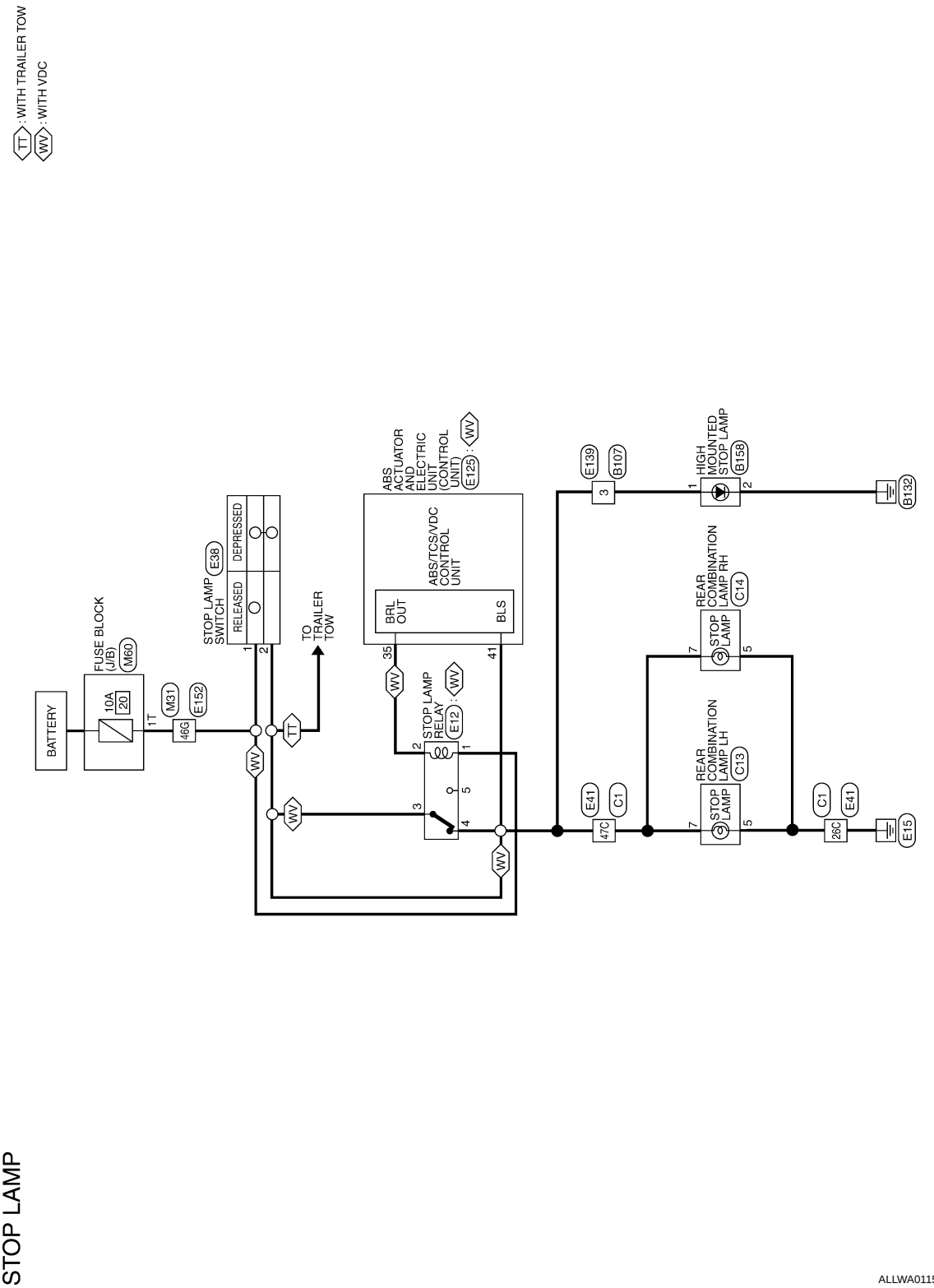
Terminal No.	Color of Wire	Signal Name
1	B	–
6	R/L	–

AWLIA0050GB

STOP LAMP

Wiring Diagram

INFOID:0000000001621650

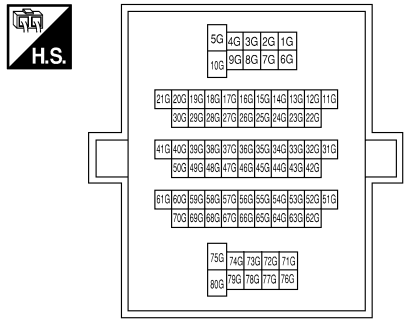


STOP LAMP

ALLWA0115GB

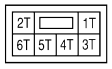
STOP LAMP CONNECTORS

Connector No.	M31
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
46G	R/Y	–

Connector No.	M60
Connector Name	FUSE BLOCK (J/B)
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
1T	R/Y	–

Connector No.	E12
Connector Name	STOP LAMP RELAY
Connector Color	BLACK

Terminal No.	Color of Wire	Signal Name
1	R/Y	–
2	L/W	–
3	R/G	–
4	R/B	–
5	–	–

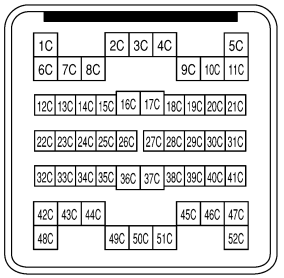
Connector No.	E38
Connector Name	STOP LAMP SWITCH (FLOOR SFIFT)
Connector Color	BLACK

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

Connector No.	E38
Connector Name	STOP LAMP SWITCH (COLUMN SFIFT)
Connector Color	WHITE

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

Connector No.	E41
Connector Name	WIRE TO WIRE
Connector Color	GRAY



Terminal No.	Color of Wire	Signal Name
26C	B	–
47C	R/B	–

AWLIA0073GB

Connector No.	E125
Connector Name	ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)
Connector Color	BLACK

H.S.

Terminal No.	Color of Wire	Signal Name
35	L/W	BRL_OUT
41	R/B	BLS

Connector No.	E139
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
3	R/B	–

Connector No.	E152
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
46G	R/Y	–

Connector No.	C1
Connector Name	WIRE TO WIRE
Connector Color	GRAY

H.S.

Terminal No.	Color of Wire	Signal Name
26C	B	–
47C	R/B	–

Connector No.	C13
Connector Name	REAR COMBINATION LAMP LH
Connector Color	GRAY

H.S.

Terminal No.	Color of Wire	Signal Name
5	B	–
7	R/B	–

Connector No.	C14
Connector Name	REAR COMBINATION LAMP RH
Connector Color	GRAY

H.S.

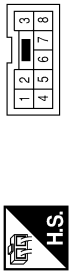
Terminal No.	Color of Wire	Signal Name
5	B	–
7	R/B	–

AWLIA0074GB

Connector No.	B158
Connector Name	HIGH MOUNTED STOP LAMP
Connector Color	WHITE

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

Connector No.	B107
Connector Name	WIRE TO WIRE
Connector Color	WHITE



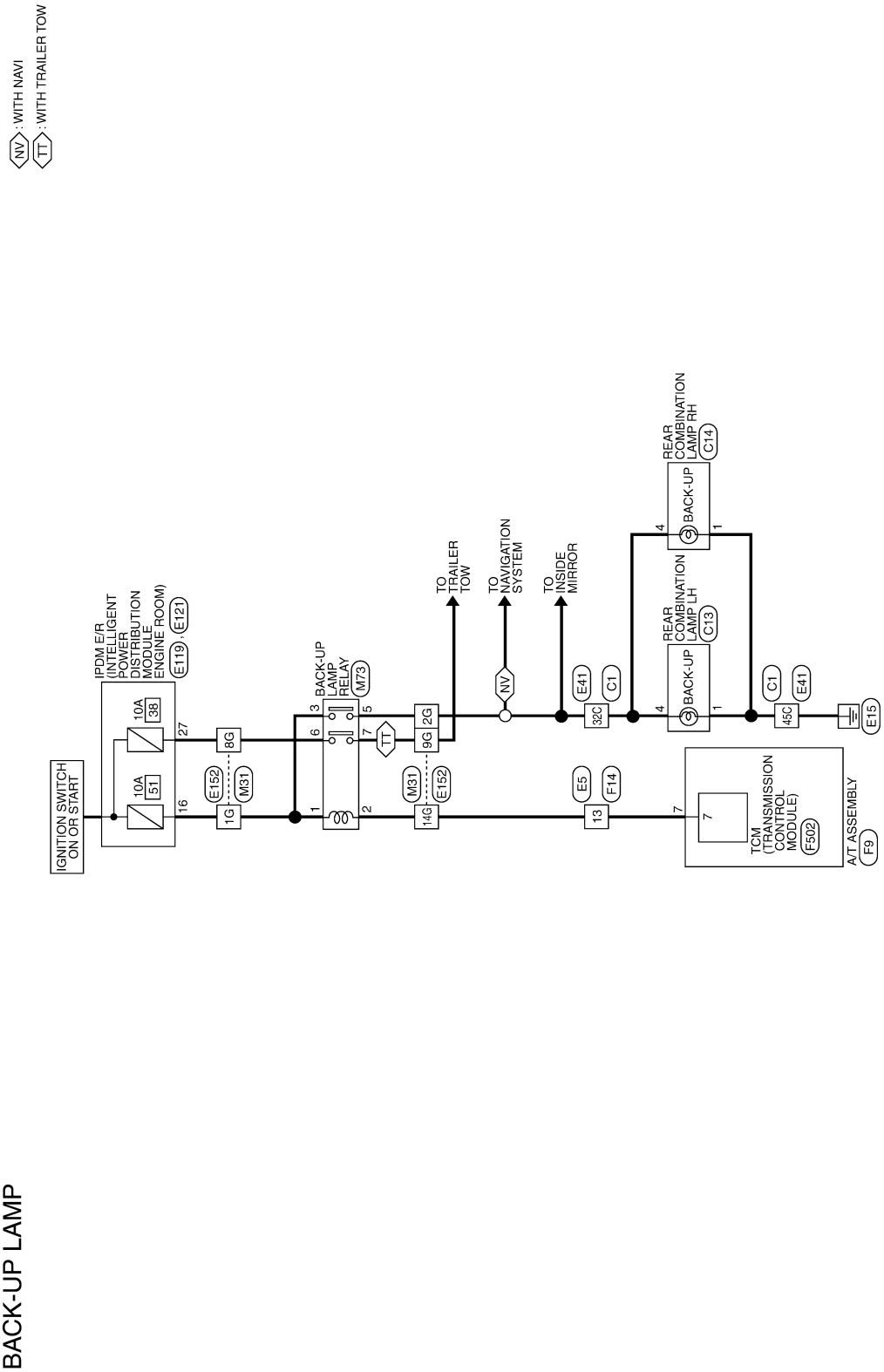
Terminal No.	Color of Wire	Signal Name
3	R/B	–

AWLIA0075GB

BACK-UP LAMP

Wiring Diagram

INFOID:0000000001621651



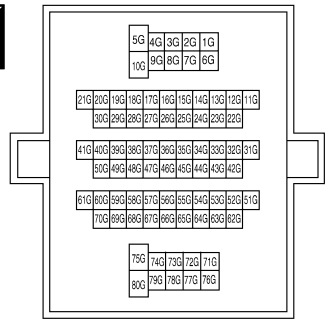
BACK-UP LAMP

ALLWA0116GB

BACK-UP LAMP CONNECTORS

Connector No.	M31
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.



Terminal No.	Color of Wire	Signal Name
1G	G	–
2G	G/W	–
8G	W/B	–
9G	Y/R	–
14G	R	–

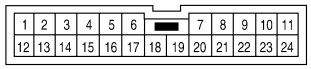
Connector No.	M73
Connector Name	BACK-UP LAMP RELAY
Connector Color	BROWN

H.S.

Terminal No.	Color of Wire	Signal Name
1	G	–
2	R	–
3	G	–
5	G/W	–
6	W/B	–
7	Y/R	–

Connector No.	E5
Connector Name	WIRE TO WIRE
Connector Color	WHITE

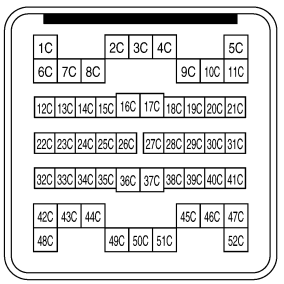
H.S.



Terminal No.	Color of Wire	Signal Name
13	R	–

Connector No.	E41
Connector Name	WIRE TO WIRE
Connector Color	GRAY

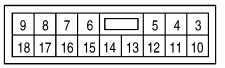
H.S.



Terminal No.	Color of Wire	Signal Name
32C	G/W	–
45C	B	–

Connector No.	E119
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Color	WHITE

H.S.



Terminal No.	Color of Wire	Signal Name
16	G	REV_LAMP

AWLIA0076GB

Terminal No.	Color of Wire	Signal Name
1G	G	–
2G	G/W	–
8G	W/B	–
9G	Y/R	–
14G	R	–

Connector No.	E152
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

Connector No.	F502
Connector Name	TCM (TRANSMISSION CONTROL MODULE)
Connector Color	GRAY

H.S.

Terminal No.	Color of Wire	Signal Name
7	O	REV LAMP RLY

Connector No.	F14
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
13	R	–

Connector No.	E121
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Color	BROWN

H.S.

Terminal No.	Color of Wire	Signal Name
27	W/B	T TOW REV LAMP

Connector No.	F9
Connector Name	A/T ASSEMBLY
Connector Color	GREEN

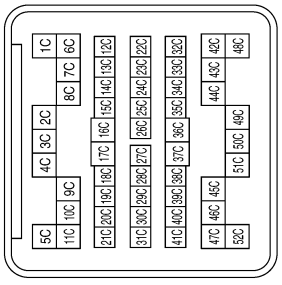
H.S.

Terminal No.	Color of Wire	Signal Name
7	R	–

AWLIA0077GB

Connector No.	C1
Connector Name	WIRE TO WIRE
Connector Color	GRAY

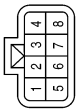
H.S.



Terminal No.	Color of Wire	Signal Name
32C	G/W	–
45C	B	–

Connector No.	C13
Connector Name	REAR COMBINATION LAMP LH
Connector Color	GRAY

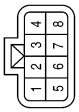
H.S.



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

Connector No.	C14
Connector Name	REAR COMBINATION LAMP RH
Connector Color	GRAY

H.S.



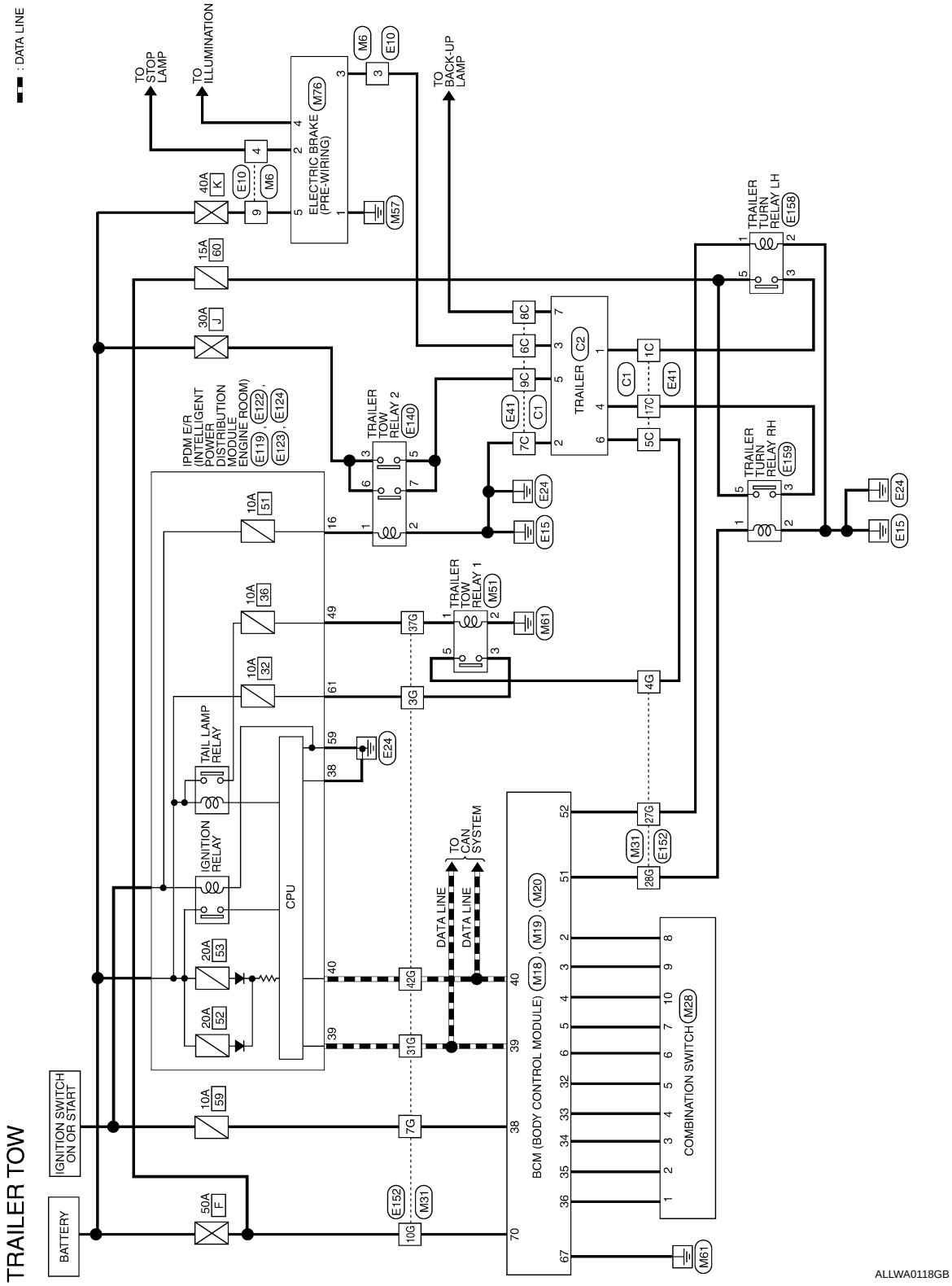
Terminal No.	Color of Wire	Signal Name
1	B	–
4	G/W	–

AWLIA0078GB

TRAILER TOW

Wiring Diagram

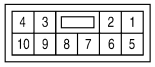
INFOID:0000000001621652



TRAILER TOW CONNECTORS

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

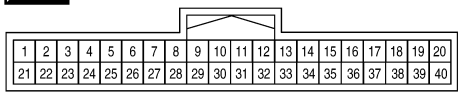
H.S.



Terminal No.	Color of Wire	Signal Name
3	BR/W	–
4	R/G	–
9	R	–

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

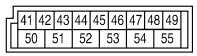
H.S.



Terminal No.	Color of Wire	Signal Name
2	SB	INPUT-5
3	G/Y	INPUT-4
4	Y	INPUT-3
5	G/B	INPUT-2
6	V	INPUT-1
32	R/G	OUTPUT-5
33	R/Y	OUTPUT-4
34	L	OUTPUT-3
35	O/B	OUTPUT-2
36	R/W	OUTPUT-1
38	W/L	IGN SW
39	L	CAN-H
40	P	CAN-L

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

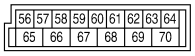
H.S.



Terminal No.	Color of Wire	Signal Name
51	G/Y	TRAILER_RH_FLASH
52	G/B	TRAILER_LH_FLASH

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

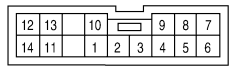
H.S.



Terminal No.	Color of Wire	Signal Name
67	B	GND (POWER)
70	W/B	BATT (FL)

Connector No.	M28
Connector Name	COMBINATION SWITCH
Connector Color	WHITE

H.S.



Terminal No.	Color of Wire	Signal Name
1	R/W	–
2	O/B	–
3	L	–
4	R/Y	–
5	R/G	–
6	V	–
7	G/B	–
8	SB	–
9	G/Y	–
10	Y	–

AWLIA0079GB

Connector No.	M51
Connector Name	TRAILER TOW RELAY 1
Connector Color	BLUE

H.S.

Terminal No.	Color of Wire	Signal Name
1	R/L	–
2	B	–
3	BR	–
5	R	–

Connector No.	M31
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
3G	BR	–
4G	R	–
7G	W/L	–
10G	W/B	–
27G	G/B	–
28G	Y/B	–
31G	L	–
37G	R/L	–
42G	P	–

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

H.S.

Terminal No.	Color of Wire	Signal Name
3	BR/W	–
4	R/G	–
9	R	–

Connector No.	M76
Connector Name	ELECTRIC BRAKE (PRE-WIRING)
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
1	B	GND
2	R/G	STOP
3	BR/W	–
4	R/L	ILL (TAIL)
5	R	B+

AWLIA0080GB

Connector No.	E41
Connector Name	WIRE TO WIRE
Connector Color	GRAY

H.S.

1C	2C	3C	4C		5C
6C	7C	8C		9C	10C	11C
12C	13C	14C	15C	16C	17C	18C	19C	20C	21C
22C	23C	24C	25C	26C	27C	28C	29C	30C	31C
32C	33C	34C	35C	36C	37C	38C	39C	40C	41C
42C	43C	44C			45C	46C	47C
48C			49C	50C	51C		52C

Terminal No.	Color of Wire	Signal Name
1C	G/B	–
5C	R	–
6C	BR/W	–
7C	B	–
8C	Y/R	–
9C	W/L	–
17C	Y/B	–

Connector No.	E119
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Color	WHITE

H.S.

9	8	7	6		5	4	3
18	17	16	15	14	13	12	11	10

Terminal No.	Color of Wire	Signal Name
16	G	REVERSE LAMP

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

H.S.

42	41	40	39	38	37
48	47	46	45	44	43

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

Connector No.	E123
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Color	BROWN

H.S.

51		50	49
56	55	54	53	52

Terminal No.	Color of Wire	Signal Name
49	R/L	ILLUMINATION

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

H.S.

59	58	57
62	61	60

Terminal No.	Color of Wire	Signal Name
59	B	GND (PWR)
61	BR	TRAIL RLY SUPPLY

AWLIA0081GB

Connector No.	E140
Connector Name	TRAILER TOW RELAY-2
Connector Color	BROWN

H.S.

Terminal No.	Color of Wire	Signal Name
1	G	–
2	B	–
3	Y	–
5	W/L	–
6	Y	–
7	W/L	–

Connector No.	E152
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
3G	BR	–
4G	R	–
7G	L/W	–
10G	W/B	–
27G	G/B	–
28G	Y/B	–
31G	L	–
37G	R/L	–
42G	P	–

Connector No.	E158
Connector Name	TRAILER TURN RELAY LH
Connector Color	BLUE

H.S.

Terminal No.	Color of Wire	Signal Name
1	G/B	–
2	B	–
3	G/B	–
5	L	–

Connector No.	E159
Connector Name	TRAILER TURN RELAY RH
Connector Color	BLUE

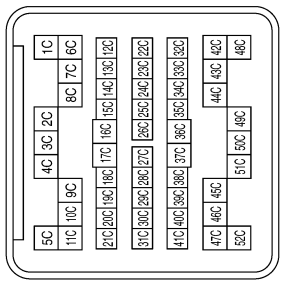
H.S.

Terminal No.	Color of Wire	Signal Name
1	Y/B	–
2	B	–
3	Y/B	–
5	L	–

AWLIA0082GB

Connector No.	C1
Connector Name	WIRE TO WIRE
Connector Color	GRAY

H.S.



Terminal No.	Color of Wire	Signal Name
1C	G/B	–
5C	R	–
6C	BR/W	–
7C	B	–
8C	Y/R	–
9C	W/L	–
17C	Y/B	–

Connector No.	C2
Connector Name	TRAILER
Connector Color	BLACK

H.S.

Terminal No.	Color of Wire	Signal Name
1	G/B	–
2	B	–
3	BR/W	–
4	Y/B	–
5	W/L	–
6	R	–
7	Y/R	–

AWLIA0083GB

ECU DIAGNOSIS

BCM (BODY CONTROL MODULE)

Description

INFOID:0000000001621653

REFERENCE VALUES FOR BCM
For BCM reference values, refer to BCS-35, "Reference Value".

TERMINAL LAYOUT FOR BCM
For the terminal layout for the BCM, refer to BCS-37, "Terminal Layout".

PHYSICAL VALUES FOR BCM
For physical values for the BCM, refer to BCS-37, "Physical Values".

WIRING DIAGRAM - BCM
For the BCM wiring diagram, refer to BCS-43, "Wiring Diagram".

DTC INSPECTION PRIORITY CHART - BCM
For the BCM DTC inspection priority chart, refer to BCS-46, "DTC Inspection Priority Chart".

DTC INDEX - BCM
For the BCM DTC index, refer to BCS-47, "DTC Index".

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

Description

INFOID:0000000001621654

REFERENCE VALUES FOR IPDM E/R

For IPDM E/R reference values, refer to PCS-17, "Reference Value".

TERMINAL LAYOUT FOR IPDM E/R

For the terminal layout for the IPDM E/R, refer to PCS-19, "Terminal Layout".

PHYSICAL VALUES FOR IPDM E/R

For physical values for the IPDM E/R, refer to PCS-19, "Physical Values".

WIRING DIAGRAM - IPDM E/R

For the IPDM E/R wiring diagram, refer to PCS-23, "Wiring Diagram".

FAIL SAFE - IPDM E/R

For IPDM E/R fail safe information, refer to PCS-26, "Fail Safe".

DTC INDEX - IPDM E/R

For the IPDM E/R DTC index, refer to PCS-28, "DTC Index".

SYMPTOM DIAGNOSIS

EXTERIOR LIGHTING SYSTEM SYMPTOMS

Symptom Table

INFOID:0000000001621655

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-24.
	Both sides	**Symptom diagnosis** "BOTH SIDE HEADLAMPS DO NOT SWITCH TO HIGH BEAM" Refer to EXL-88.	
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 • Harness between the combination switch and BCM • BCM	Combination switch Refer to BCS-33.
		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-26.
	Both sides	**Symptom diagnosis** "BOTH SIDE HEADLAMPS (LO) ARE NOT TURNED ON" Refer to EXL-89, "Description".	
Headlamp does not turn OFF.	When the ignition switch is turned ON	• BCM • Combination switch	Combination switch Refer to BCS-33.
	The ignition switch is turned OFF (After activating the battery saver).	IPDM E/R	—
Headlamp is not turned ON/OFF with the lighting switch AUTO.		• Combination switch • Harness between the combination switch and BCM • BCM	Combination switch Refer to BCS-33.
		• Optical sensor • Harness between the optical sensor and BCM • BCM	Optical sensor Refer to EXL-36.

Symptom		Possible cause	Inspection item
Daytime light system does not activate.		• Either high beam bulb • Parking brake switch • Combination switch • BCM • IPDM E/R • Daytime light relay • Harness between IPDM E/R and daytime light relay.	Daytime light system description. Refer to EXL-11, "System Description".
Front fog lamp is not turned ON.	One side	• Front fog lamp bulb • Harness between IPDM E/R and the front combination lamp • Front combination lamp • IPDM E/R	Front fog lamp circuit Refer to EXL-28.
	Both side	**Symptom diagnosis** "BOTH SIDE FRONT FOG LAMPS ARE NOT TURNED ON" Refer to EXL-91.	
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-30.
	Both sides	**Symptom diagnosis** "PARKING, LICENSE PLATE AND TAIL LAMPS ARE NOT TURNED ON" Refer to EXL-90.	
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-33.
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-32.

NORMAL OPERATING CONDITION

Description

INFOID:0000000001621656

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.

BOTH SIDE HEADLAMPS DO NOT SWITCH TO HIGH BEAM

Description

INFOID:0000000001621657

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

Diagnosis Procedure

INFOID:0000000001621658

1.COMBINATION SWITCH INSPECTION

Check the combination switch. Refer to BCS-33, "Diagnosis Procedure".

Is the combination 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 operating the lighting switch, check the monitor status.

Monitor item	Condition		Monitor status
HL HI REQ	Lighting switch (2ND)	HI or PASS	ON
		Except for HI or PASS	OFF

Is the item status normal?

YES >> GO TO 3
NO >> Replace BCM. Refer to BCS-50, "Removal and Installation" .

3.HEADLAMP (HI) CIRCUIT INSPECTION

Check the headlamp (HI) circuit. Refer to EXL-24, "Description".

Is the headlamp (HI) circuit normal?

YES >> Replace IPDM E/R. Refer to PCS-30, "Removal and Installation of IPDM E/R" .
NO >> Repair or replace the malfunctioning part.

BOTH SIDE HEADLAMPS (LO) ARE NOT TURNED ON

Description

INFOID:0000000001621659

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

Diagnosis Procedure

INFOID:0000000001621660

1.CHECK COMBINATION SWITCH

Check the combination switch. Refer to BCS-33, "Diagnosis Procedure".

Is the combination 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 operating the lighting switch, check the monitor status.

Monitor item	Condition		Monitor status
HL LO REQ	Lighting switch	2ND	ON
		OFF	OFF

Is the item status normal?

YES >> GO TO 3
NO >> Replace BCM. Refer to BCS-50, "Removal and Installation" .

3.HEADLAMP (LO) CIRCUIT INSPECTION

Check the headlamp (LO) circuit. Refer to EXL-26, "Description".

Is the headlamp (LO) circuit normal?

YES >> Replace IPDM E/R. Refer to PCS-30, "Removal and Installation of IPDM E/R" .
NO >> Repair or replace the malfunctioning part.

PARKING, LICENSE PLATE AND TAIL LAMPS ARE NOT TURNED ON

Description

INFOID:0000000001621661

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

Diagnosis Procedure

INFOID:0000000001621662

1.COMBINATION SWITCH INSPECTION

Check the combination switch. Refer to BCS-33, "Diagnosis Procedure".

Is the combination 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 operating the lighting switch, check the monitor status.

Monitor item	Condition		Monitor status
TAIL & CLR REQ	Lighting switch	1ST	ON
		OFF	OFF

Is the item status normal?

YES >> GO TO 3
NO >> Replace BCM. Refer to BCS-50, "Removal and Installation".

3.PARK LAMP CIRCUIT INSPECTION

Check the parking lamp circuit. Refer to EXL-30, "Description".

Is the tail lamp circuit normal?

YES >> Replace IPDM E/R. Refer to PCS-30, "Removal and Installation of IPDM E/R".
NO >> Repair or replace the malfunctioning part.

BOTH SIDE FRONT FOG LAMPS ARE NOT TURNED ON

Description

INFOID:0000000001621663

The front fog lamps do not turn ON in any setting.

Diagnosis Procedure

INFOID:0000000001621664

1.COMBINATION SWITCH INSPECTION

Check the combination switch. Refer to BCS-33, "Diagnosis Procedure".

Is the combination switch normal?

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

2.CHECK FRONT FOG LAMP REQUEST SIGNAL INPUT

CONSULT-III DATA MONITOR

1. Select "FR FOG REQ" of IPDM E/R DATA MONITOR item.
2. With operating the front fog lamp switch, check the monitor status.

Monitor item	Condition		Monitor status
FR FOG REQ	Front fog lamp switch (Lighting switch 2ND)	ON	ON
		OFF	OFF

Is the item status normal?

YES >> GO TO 3
NO >> Replace BCM. Refer to BCS-50, "Removal and Installation".

3.FRONT FOG LAMP CIRCUIT INSPECTION

Check the front fog lamp circuit. Refer to EXL-28, "Description".

Is the front fog lamp circuit normal?

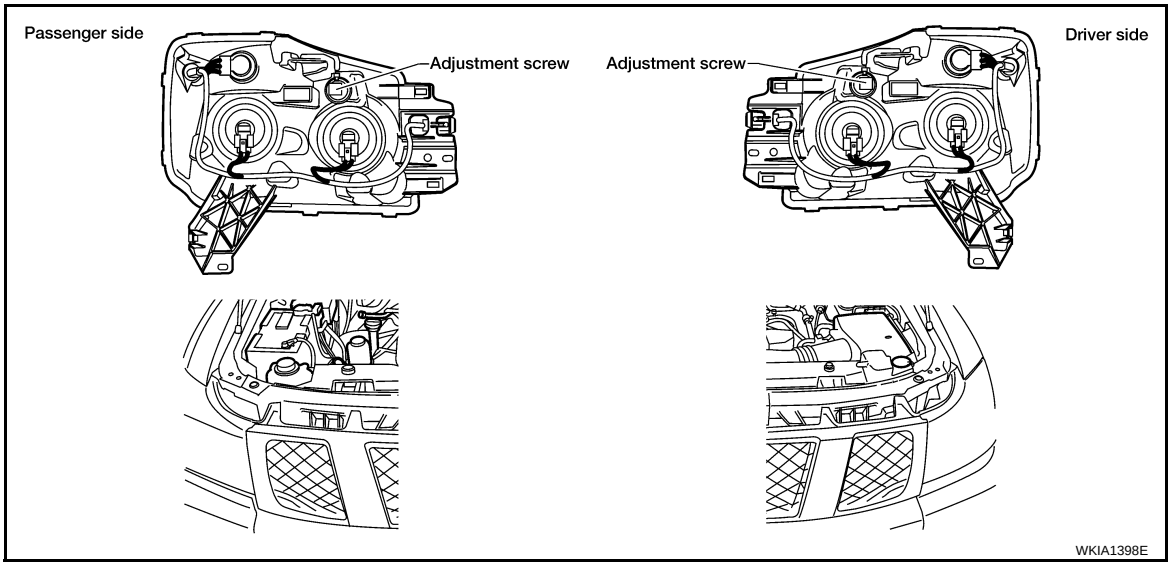
YES >> Replace IPDM E/R. Refer to PCS-30, "Removal and Installation of IPDM E/R".
NO >> Repair or replace the malfunctioning part.

ON-VEHICLE REPAIR

HEADLAMP

Aiming Adjustment

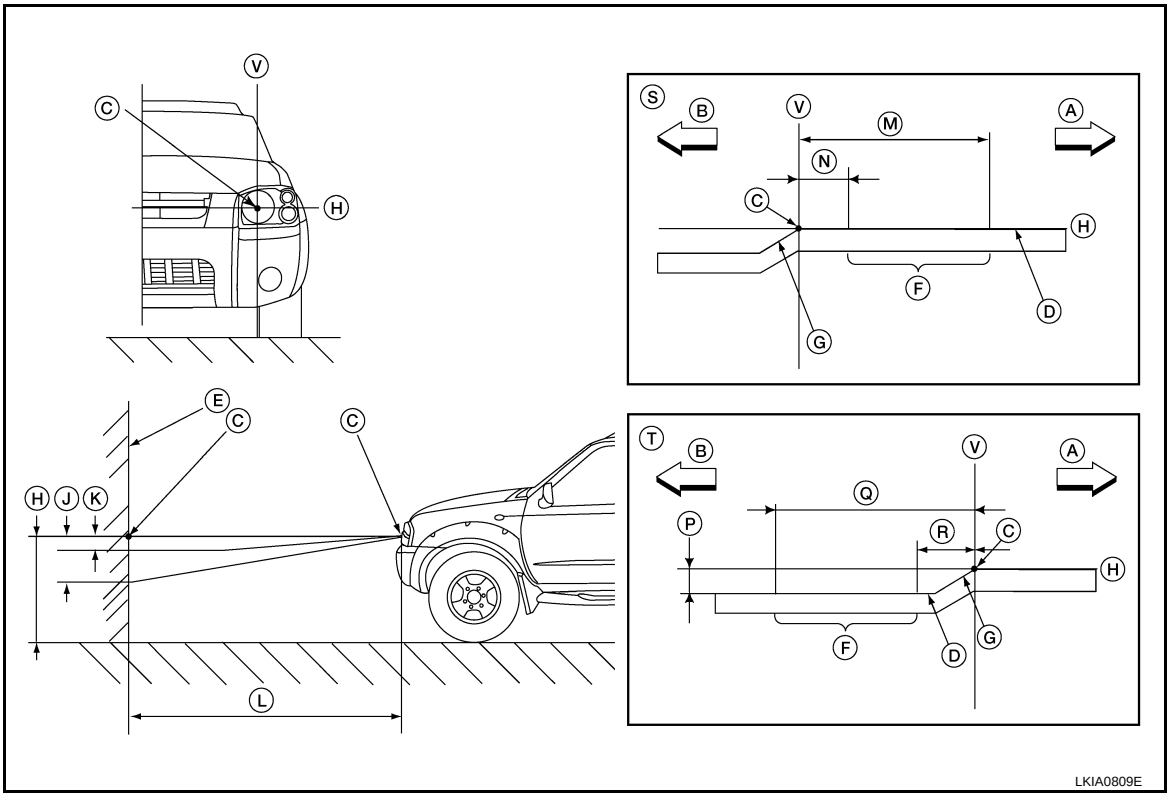
INFOID:0000000001396317



NOTE:
- For details, refer to the regulations in your area.
- If vehicle front body has been repaired and /or the headlamp assembly has been replaced, check headlamp aiming.

HEADLAMP AIMING

NOTE:
- Before performing aiming adjustment, check the following:
- Confirm headlamp aiming switch is set to "0" (zero) position (if equipped).
- Ensure all tires are inflated to correct pressure.
- Place 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). Coolant and engine oil filled to correct level, and fuel tank full.
- Confirm spare tire, jack and tools are properly stowed.
- Aim each headlamp individually and ensure other headlamp beam pattern is blocked from screen.
- Use adjusting screw to perform aiming adjustment.



A.	Right	B.	Left	C.	Center of headlamp bulb (H-V point)
D.	Cutoff line	E.	Screen	F.	Aim evaluation segment
G.	Step	H.	Horizontal center line of headlamp	J.	103 mm (4.06 in.)
K.	37 mm (1.46 in.)	L.	7.62 m (25 ft.)	M.	399 mm (15.71 in.)
N.	133 mm (5.24 in.)	P.	53.2 mm (2.09 in.)	Q.	466 mm (18.35 in.)
R.	200 mm (7.87 in.)	S.	RH headlamp aiming screen	T.	LH headlamp aiming screen

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

LOW BEAM AND HIGH BEAM

1. Turn headlamp low beam on.
2. Use adjusting screw to perform aiming adjustment.

Bulb Replacement

INFOID:0000000001396316

CAUTION:
- **Turn headlamp switch OFF before disconnecting headlamp harness connector.**
- **Do not touch bulb by hand right after being turned off. Burning may result.**
- **Do not touch the glass of bulb directly by hand. Keep grease and other oily substances away from it.**
- **Do not leave bulb out of front combination lamp assembly for a long time because dust, moisture, smoke, etc. may affect the performance of the lamp. When replacing headlamp bulb, be sure to replace it with a new one.**

HEADLAMP (OUTER SIDE), FOR LOW BEAM

Removal

1. Position fender protector aside.
2. Turn headlamp switch OFF.
3. Disconnect headlamp electrical connector.
4. Turn the bulb socket counterclockwise and remove bulb .

Installation
Installation is in the reverse order of removal.

HEADLAMP (INNER SIDE), FOR HIGH BEAM

Removal

1. Turn headlamp switch OFF.
2. Disconnect headlamp electrical connector.
3. Turn the bulb socket counterclockwise and remove bulb.

Installation
Installation is in the reverse order of removal.

TURN SIGNAL/PARKING LAMP (FRONT)

NOTE:
Reach through wheel opening for access.

Removal

1. Turn the bulb socket counterclockwise to unlock.
2. Pull the bulb to remove from the socket.

Installation
Installation is in the reverse order of removal.

SIDE MARKER LAMP (FRONT)

Removal
NOTE:
Reach through wheel opening for access.

1. Turn the side marker lamp (front) bulb socket counterclockwise and remove side marker lamp (front) bulb socket.
2. Pull to remove side marker lamp (front) from the side marker lamp (front) bulb socket.

Installation
Installation is in the reverse order of removal.

Removal and Installation

INFOID:0000000001396315

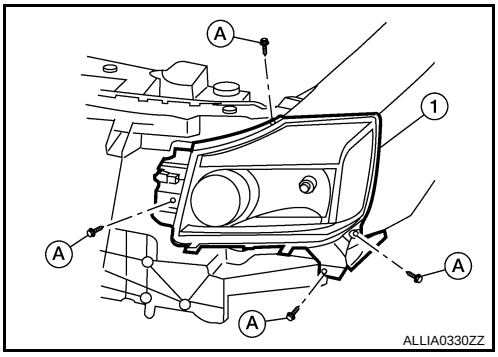
COMBINATION LAMP ASSEMBLY (FRONT)

CAUTION:

- **Turn headlamp switch OFF before disconnecting headlamp harness connector.**
- **Do not touch bulb by hand right after being turned off. Burning may result.**
- **Do not touch the glass of bulb directly by hand. Keep grease and other oily substances away from it.**
- **Do not leave bulb out of combination lamp assembly (front) for a long time because dust, moisture, smoke, etc. may affect the performance of the lamp. When replacing bulb, be sure to replace it with a new one.**

Removal

1. Disconnect combination lamp assembly (front).
2. Remove the front bumper. Refer to EXT-16, "Removal and Installation".
3. Remove the bolts (A), disconnect the electrical connectors, and remove the front combination lamp assembly (front) (1).



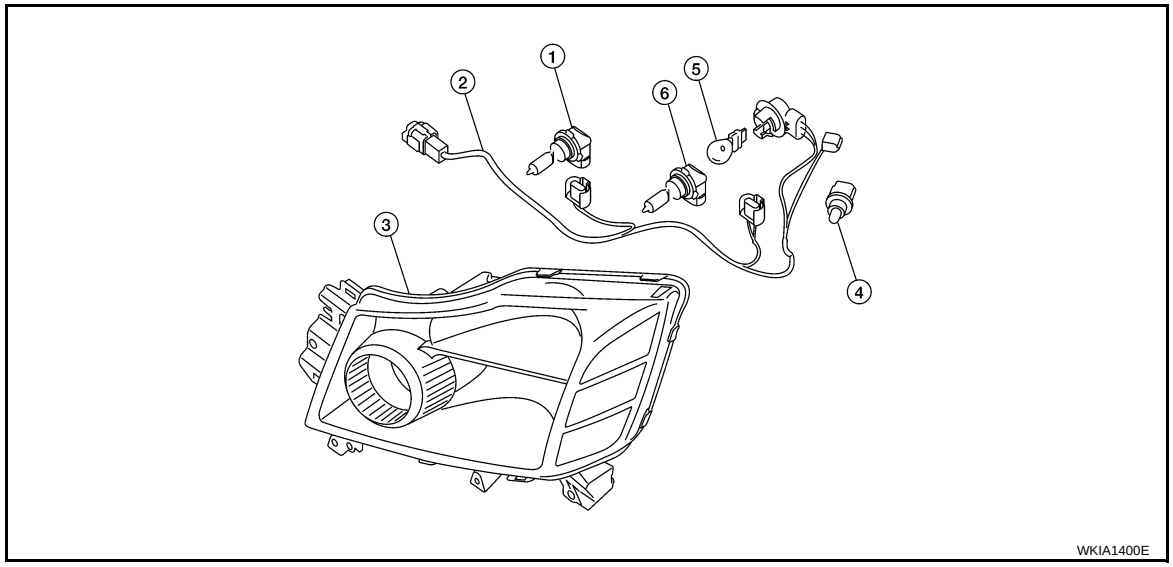
Installation

Installation is in the reverse order of removal.

Disassembly and Assembly

INFOID:0000000001396318

FRONT COMBINATION LAMP ASSEMBLY



1. Headlamp bulb (high)
2. Wiring harness assembly (inner)
3. Headlamp assembly
4. Side marker lamp (front) bulb
5. Turn signal/parking lamp (front) bulb
6. Headlamp bulb (low beam)

Disassembly

1. Turn high beam bulb counterclockwise to unlock and remove high beam bulb.
2. Turn low beam bulb counterclockwise to unlock and remove low beam bulb.
3. Turn turn signal/parking lamp (front) bulb socket counterclockwise to unlock and remove turn signal/parking lamp (front) bulb.
4. Turn side marker lamp (front) bulb socket counterclockwise to unlock and remove side marker lamp (front) bulb.

Assembly

Assembly is in the reverse order of disassembly.

AUTO LIGHT SYSTEM

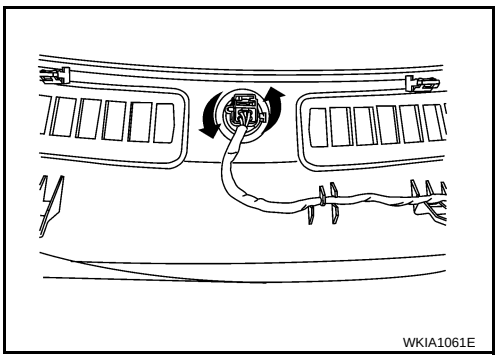
Removal and Installation

INFOID:0000000001396319

OPTICAL SENSOR

Removal

1. Remove defroster grille. Refer to VTL-24, "Component".
2. Disconnect the optical sensor connector.
3. Turn the optical sensor counterclockwise to remove it from defroster grille.



Installation

Installation is in the reverse order of removal.

FRONT FOG LAMP

Aiming Adjustment

INFOID:0000000001396320

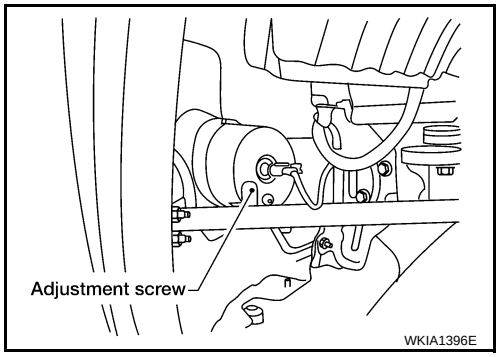
The fog lamp is a semi-sealed beam type which uses a replaceable halogen bulb. Before performing aiming adjustment, make sure of the following.

- Keep all tires inflated to correct pressure.
- Place vehicle on level ground.
- See that vehicle is unloaded (except for full levels of coolant, engine oil and fuel, and spare tire, jack, and tools). Have the driver or equivalent weight placed in driver seat.

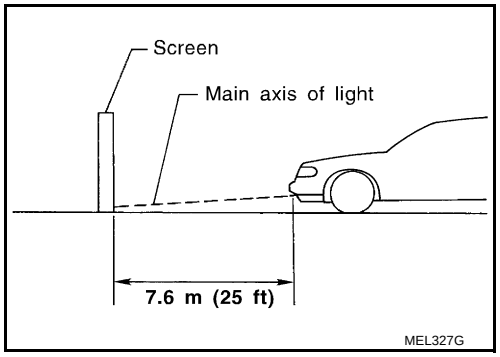
Adjust aiming in the vertical direction by turning the adjustment screw.

NOTE:

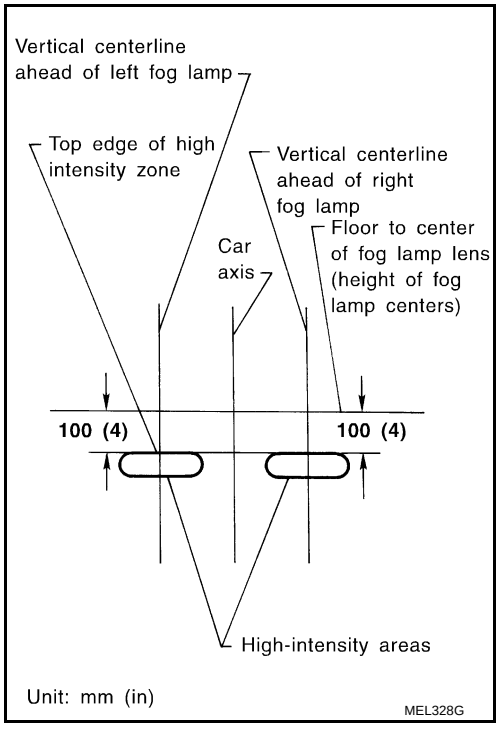
Access adjustment screw from underneath front bumper. Use a T-3 (3 mm) Torx® bit or a 3 mm allen wrench to adjust. Turn screw clockwise to raise pattern and counterclockwise to lower pattern.



1. Set the distance between the screen and the center of the fog lamp lens as shown.
2. Turn front fog lamps ON.



3. Adjust front fog lamps using adjusting screw so that the top edge of the high intensity zone is 100 mm (4 in) below the height of the fog lamp centers as shown.
   - When performing adjustment, if necessary, cover the headlamps and opposite fog lamp.



Bulb Replacement

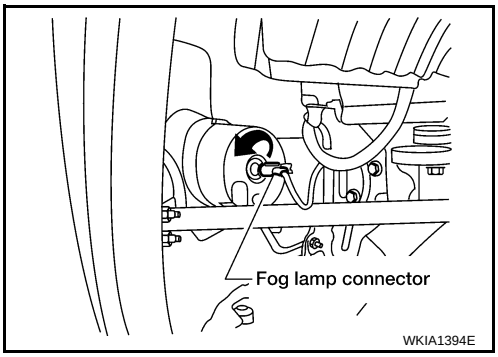
INFOID:0000000001396321

Removal

1. Disconnect electrical connector.
2. Turn the bulb counterclockwise to remove it.

CAUTION:

- **Do not touch the glass of bulb directly by hand. Keep grease and other oily substances away from it. Do not touch bulb by hand while it is lit or right after being turned off. Burning may result.**
- **Do not leave bulb out of fog lamp reflector for a long time because dust, moisture smoke, etc. may affect the performance of fog lamp. When replacing bulb, be sure to replace it with new one.**



Installation

Installation is in the reverse order of removal.

Removal and Installation

INFOID:0000000001396322

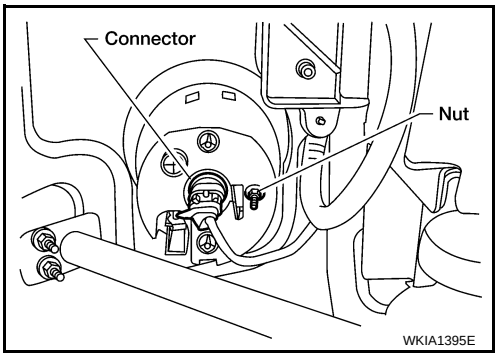
The fog lamp is a semi-sealed beam type which uses a replaceable halogen bulb.

CAUTION:

- **Do not leave fog lamp assembly without bulb for a long period of time. Dust, moisture, smoke, etc. entering the fog lamp body may affect the performance. Remove the bulb from the headlamp assembly just before replacement bulb is installed.**
- **Grasp only the plastic base when handling the bulb. Never touch the glass envelope. Touching the glass could significantly affect the bulb life and/or fog lamp performance.**

Removal

1. Position the fender protector aside.
2. Disconnect electrical connector.
3. Remove nut and pull fog lamp out of front fascia.



Installation

Installation is in the reverse order of removal.

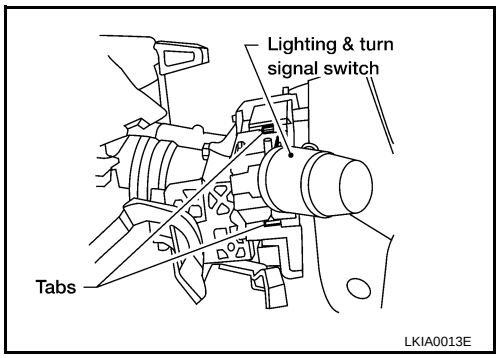
LIGHTING & TURN SIGNAL SWITCH

Removal and Installation

INFOID:0000000001396325

REMOVAL

1. Remove steering column cover. Refer to IP-10, "Exploded View".
2. While pressing tabs, pull lighting and turn signal switch toward driver door and disconnect from the base.



INSTALLATION

Installation is in the reverse order of removal.

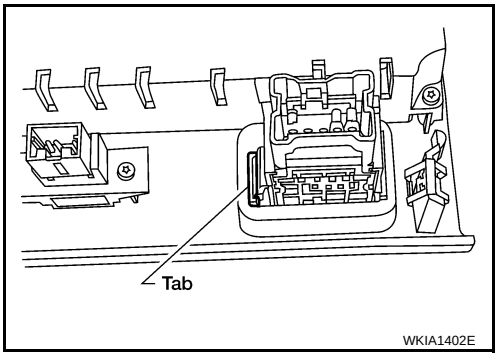
HAZARD SWITCH

Removal and Installation

INFOID:0000000001396326

Removal

1. Remove cluster lid C. Refer to IP-13, "Removal and Installation".
2. While pressing the tab, push out the hazard switch.



Installation

Installation is in the reverse order of removal.

STOP LAMP

Bulb Replacement

INFOID:0000000001396328

HIGH-MOUNTED STOP LAMP

Removal

1. Remove the high-mounted stop lamp. Refer to EXL-101, "Removal and Installation".
2. Turn bulb socket counter clockwise to remove it from lamp housing.
3. Pull bulb from socket.

Installation

Installation is in the reverse order of removal.

STOP LAMP

Refer to EXL-101, "Bulb Replacement".

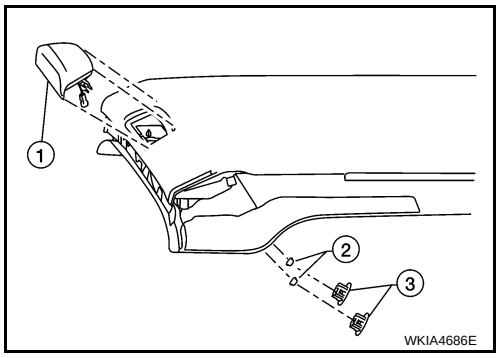
Removal and Installation

INFOID:0000000001396329

HIGH-MOUNTED STOP LAMP

Removal

1. Remove high-mounted stop lamp access covers(3).
2. Disconnect high-mounted stop lamp electrical connector.
3. Remove high-mounted stop lamp nuts(2).
4. Remove high-mounted stop lamp(1).



Installation

Installation is in the reverse order of removal.

STOP LAMP

Refer to EXL-101, "Bulb Replacement".

REAR COMBINATION LAMP

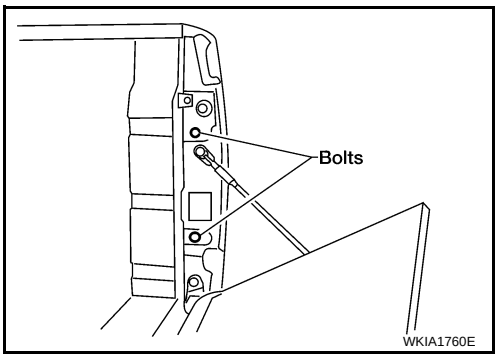
Bulb Replacement

INFOID:0000000001532093

SIDE MARKER LAMP (REAR)

Removal

1. Remove rear combination lamp bolts.
2. Pull rear combination lamp to remove from the vehicle.
3. Turn side marker lamp (rear) bulb socket counterclockwise and remove bulb.



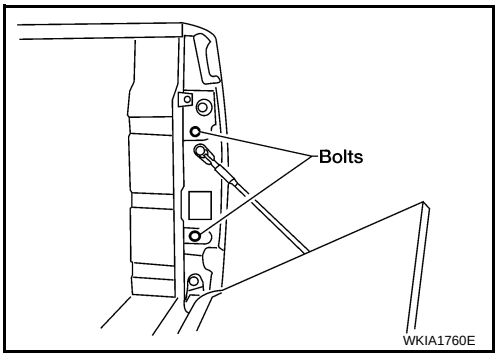
Installation
Installation is in the reverse order of removal.

Removal and Installation

INFOID:0000000001532094

Removal

1. Remove rear combination lamp bolts.
2. Pull rear combination lamp to remove from the vehicle.
3. Disconnect rear combination lamp connector.



Installation

Installation is in the reverse order of removal.

SERVICE DATA AND SPECIFICATIONS (SDS)

Headlamp

INFOID:0000000001396334

Item	Wattage (W)*
Low	51/55
High	60/65

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

Exterior Lamp

INFOID:0000000001396335

Item		Wattage (W)*
Front combination lamp	Turn signal/parking lamp (front)	27/8
	Side marker (front)	3.8
Rear combination lamp	Stop/tail lamp	27/7
	Turn signal lamp	27
	Back-up lamp	16
	Cargo lamp (tailgate)	16
Fog lamp		37.5
License plate lamp		5
High-mounted stop lamp		12.8
Side turn signal		LED
Puddle lamp		8

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