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2015 Titan NAM

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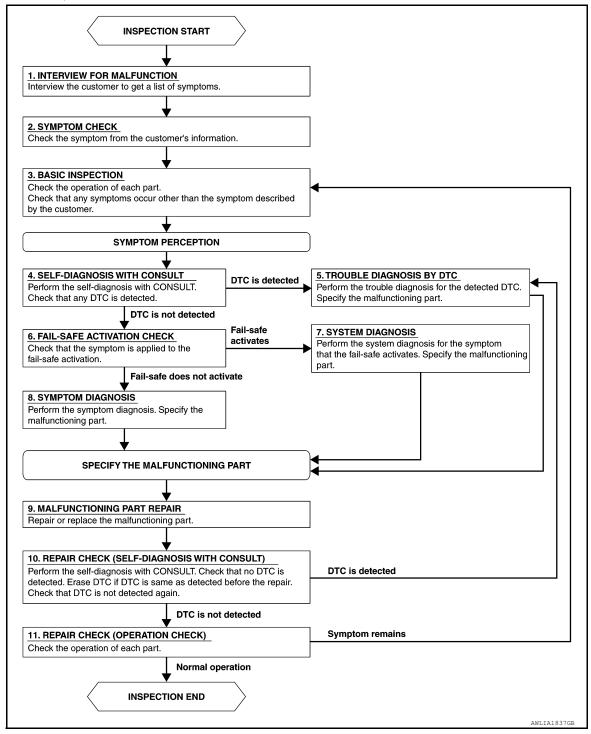
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BASIC INSPECTION

DIAGNOSIS AND REPAIR WORKFLOW

Work Flow

OVERALL SEQUENCE



DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >				
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				
Perform the self diagnosis with CONSULT. 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.				
ending the system diagnosis for the system in things, the fall outs abundance of the manufacturing parts				
00 70 0				
>> GO TO 9. 8.SYMPTOM DIAGNOSIS				
Perform the symptom diagnosis. Specify the malfunctioning part.				
>> GO TO 9.				
9. MALFUNCTION PART REPAIR				
Repair or replace the malfunctioning part.				
>> GO TO 10.				
10. REPAIR CHECK (SELF-DIAGNOSIS WITH CONSULT)				
Perform the self diagnosis with CONSULT. Verify that no DTCs are detected. Erase all DTCs detected prior to the repair. Verify that DTC is not detected again.				

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Is any DTC detected?

DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

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

11. REPAIR CHECK (OPERATION CHECK)

Check the operation of each part.

Does it operate normally?

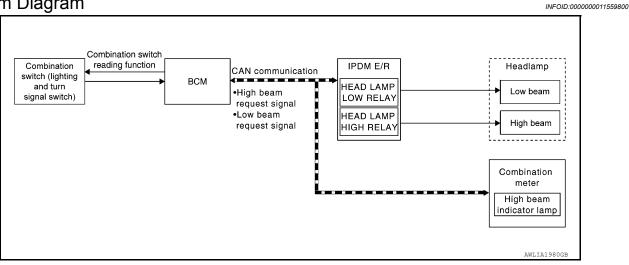
YES >> Inspection End.

NO >> GO TO 3.

SYSTEM DESCRIPTION

HEADLAMP

System Diagram



System Description

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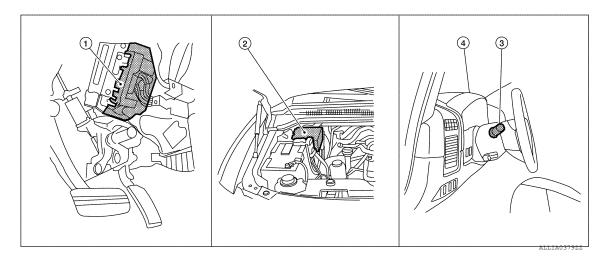
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Р

Control of the headlamp system operation is dependent upon the position of the combination switch (lighting and turn signal switch). When the combination switch (lighting and turn signal switch) is placed in the 2nd position, the BCM (body control module) receives input requesting the headlamps and park lamps to illuminate. This input is communicated to the IPDM E/R (intelligent power distribution module engine room) 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:0000000011559802



- BCM M18, M20 (view with instrument 2. IPDM E/R E122, E123, E124 panel removed)
- Combination meter M24

Combination switch (lighting and turnsignal switch) M28

Component Description

INFOID:0000000011559803

LOW BEAM OPERATION

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HEADLAMP

< SYSTEM DESCRIPTION >

When the combination switch (lighting and turn signal switch) is in 2ND position, the BCM receives input requesting the headlamps to illuminate. This input is communicated to the IPDM E/R 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 combination switch (lighting and turn signal switch) in the 2ND position and placed in HIGH position, the BCM receives input requesting the headlamp high beams to illuminate. The flash to pass feature can be used any time and also sends a signal to the BCM. This input is communicated to the IPDM E/R 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 supply 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.

EXTERIOR LAMP BATTERY SAVER CONTROL

With the combination switch (lighting and turn signal switch) in the 2ND position and the ignition switch is turned from ON or ACC to OFF, the battery saver feature is activated.

Under this condition, the headlamps remain illuminated for 45 seconds 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. Refer to <u>BCS-26</u>, "BATTERY SAVER : CONSULT Function (BCM - BATTERY SAVER)".

AUTO LIGHT SYSTEM

System Diagram

Combination switch (lighting and turn signal switch)

Optical sensor power supply Optical sensor ground
Optical sensor signal

Door switch (All)

Door open signal

Door open signal

System Description

INFOID:0000000011559805

• BCM (Body Control Module) controls auto light operation according to signals from optical sensor, combination switch (lighting and turn signal switch) and ignition switch.

• IPDM E/R (Intelligent Power Distribution Module Engine Room) operates parking, license plate, tail and headlamps according to CAN communication signals from BCM.

Optical sensor detects ambient brightness of 800 to 2,500 lux. And optical sensor converts light (lux) to voltage, then sends the optical sensor signal to BCM.

OUTLINE

The auto light control system has an optical sensor that detects outside brightness.

When the combination switch (lighting and turn signal switch) is in AUTO position, it automatically turns ON/ OFF the parking, license plate, tail and headlamps in accordance with the ambient light. Sensitivity can be adjusted in four steps. For the details of the setting, Refer to BCS-22, "HEADLAMP: CONSULT Function (BCM - HEAD LAMP)".

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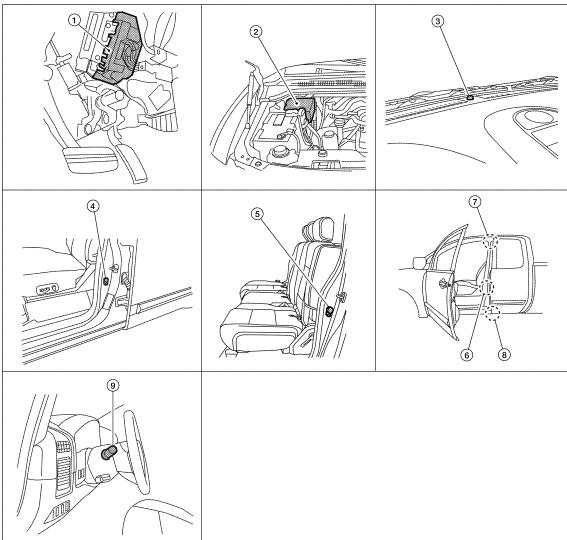
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Component Parts Location

INFOID:0000000011559806



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- 1. BCM M18, M19, M20 (view with instru- 2. ment panel removed)
- Front door switch (crew cab)
 LH B8
 RH B108
- Rear door switch upper (king cab) LH B73 RH B156
- IPDM E/R E122, E123, E124
- 5. Rear door switch (crew cab) LH B18 RH B116
- 8. Rear door switch lower (king cab) LH B74 RH B157
- 3. Optical sensor M302
- Front door switch (king cab) LH B8 RH B108
- Combination switch (lighting and turn signal switch) M28

Component Description

INFOID:0000000011559807

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 combination switch (lighting and turn signal switch) position as a part of the BCM combination switch reading function. When the combination switch (lighting and turn signal 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 CONSULT. Refer to <u>BCS-22</u>, "<u>HEADLAMP</u>: CONSULT Function (BCM - HEAD LAMP)".

DAYTIME RUNNING LIGHT SYSTEM

DAYTIME RUNNING LIGHT SYSTEM

System Diagram

INFOID:0000000011559808 Combination switch reading function Headlamp high Combination CAN communication line RH switch (lighting IPDM E/R Daytime light request signal and turn signal Headlamp high switch) LH Daytime CAN communication line **ECM** light Engine status signal всм relay Parking brake switch Combination Parking brake switch

System Description

The headlamp system for Canada vehicles is equipped with a daytime light relay 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

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DAYTIME RUNNING LIGHT SYSTEM

< SYSTEM DESCRIPTION >

- 1. IPDM E/R E119, E122, E123, E124
- Parking brake switch M11
- BCM M18, M20 (view with instrument panel removed)

- 4. Daytime running light relay E103
- Combination switch (lighting and turn 6. signal switch) M28
- Combination meter M24

Component Description

INFOID:0000000011559811

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

OPERATION

The BCM monitors inputs from the parking brake switch and the combination switch (lighting and turn signal switch) to determine when to activate the daytime light system. The BCM sends a daytime light request to the IPDM E/R via the CAN communication lines. The IPDM E/R grounds the daytime light relay which in turn, provides power to the ground side of the 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:0000000011559812 Combination switch IPDM E/R Combination reading function CAN communication Front FRONT FOG Front fog lamp request signal **BCM** fog lamp (lighting and turn LAMP RELAY signal switch)

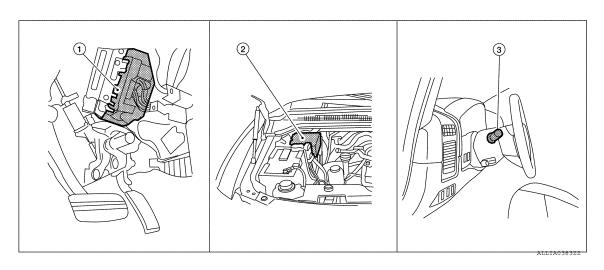
System Description

The front fog lamps are activated with the combination switch (lighting and turn signal switch). The combination switch (lighting and turn signal switch) signal to the BCM is monitored with the BCM combination switch reading function. When the fog lamps are turned ON with the combination switch (lighting and turn signal 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:0000000011559814

INFOID:0000000011559813



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

Combination switch (lighting and turn signal switch) M28

Component Description

FRONT FOG LAMP OPERATION

When the combination switch (lighting and turn signal 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.

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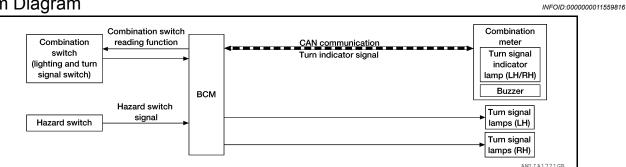
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TURN SIGNAL AND HAZARD WARNING LAMPS

TURN SIGNAL AND HAZARD WARNING LAMPS

System Diagram



System Description

INFOID:0000000011559817

TURN SIGNAL OPERATION

When the combination switch (lighting and turn signal switch) is in LH or RH position with the ignition switch in ON position, the BCM detects the TURN RH or TURN LH ON request. The BCM outputs the flasher 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.

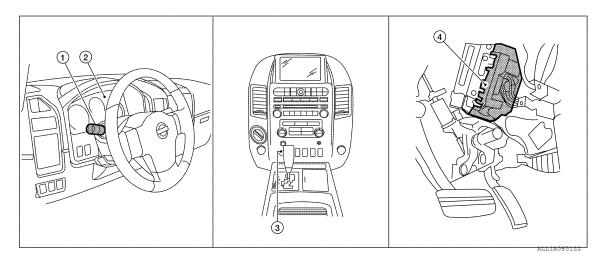
REMOTE KEYLESS ENTRY OPERATION

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

Refer to <u>DLK-13</u>, "<u>REMOTE KEYLESS ENTRY</u>: <u>System Diagram</u>".

Component Parts Location

INFOID:0000000011559818



- Combination switch (lighting and turn 2. signal switch) M28
- 2. Combination meter M24
- Hazard switch
 M55 (3 control dial system w/o auto A/C)
 M47 (2 control dial system or auto A/C)

 BCM M18, M20 (view with instrument panel removed)

TURN SIGNAL AND HAZARD WARNING LAMPS

< SYSTEM DESCRIPTION >

Component Description

INFOID:0000000011559819

Part name	Description
BCM	Controls turn signal and hazard flasher operation.
Combination switch (lighting and turn signal 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.

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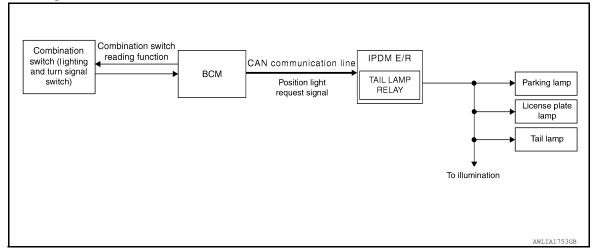
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PARKING, LICENSE PLATE AND TAIL LAMPS

System Diagram

INFOID:0000000011559820



System Description

INFOID:0000000011559821

PARKING, LICENCE PLATE AND TAIL LAMPS OPERATION

When the combination switch (lighting and turn signal 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

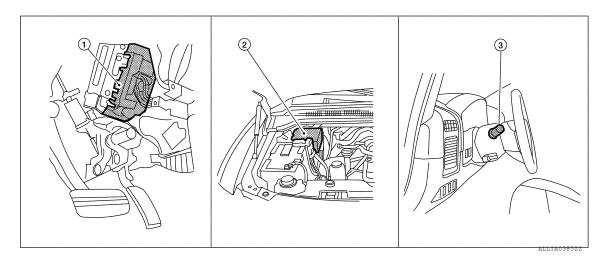
With the combination switch (lighting and turn signal switch) in the 2nd position and the ignition switch is turned from ON or ACC to OFF, the battery saver feature is activated.

Under this condition, the headlamps remain illuminated for 45 seconds unless the combination switch (lighting and turn signal switch) position is changed. If the combination switch (lighting and turn signal switch) position is changed, then the headlamps are turned off.

This setting can be changed by CONSULT. Refer to <u>BCS-26</u>, "<u>BATTERY SAVER</u>: <u>CONSULT Function</u> (<u>BCM - BATTERY SAVER</u>)".

Component Parts Location

INFOID:0000000011559822



BCM M18, M20 (view with instrument 2. IPDM E/R E122, E124 panel removed)

Combination switch (lighting and turn signal switch) M28

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PARKING, LICENSE PLATE AND TAIL LAMPS

< SYSTEM DESCRIPTION >

Component Description

INFOID:0000000011559823

Part name	Description	
BCM	 Receives 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 and turn signal switch)	Outputs lighting requests to the BCM.	

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Wiper & washer

INT VOLUME 3

FR WIPER HI

INT VOLUME 1

INT VOLUME 2

Input 4 signal Input 5 signal

Lighting switch

TŬRN LH

PASSING

HEADLAMP 2

FR FOG

TURN RH

HEADLAMP 1

HI BEAM

TAIL LAMP

*: Lighting switch 1ST position

COMBINATION SWITCH READING SYSTEM

FR WIPER LOW

-0-0-

FR WIPER INT

AUTO LIGHT

System Diagram

BCM
Output 1 signal
Output 2 signal
Output 3 signal
Output 4 signal
Input 1 signal
Input 2 signal
Input 2 signal
Input 3 signal
Input 3 signal

System Description

INFOID:0000000011880230

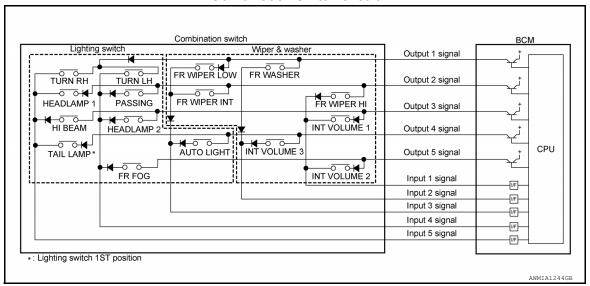
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OUTLINE

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

COMBINATION SWITCH MATRIX

Combination switch circuit



Combination switch INPUT-OUTPUT system list

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

< SYSTEM DESCRIPTION >

System	INPUT 1	INPUT 2	INPUT 3	INPUT 4	INPUT 5
OUTPUT 4	_	INT VOLUME 3	AUTO LIGHT	_	TAIL LAMP
OUTPUT 5	INT VOLUME 2	_	_	FR FOG	_

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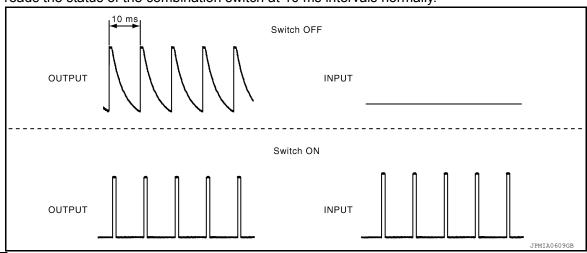
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COMBINATION SWITCH READING FUNCTION

Description

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



NOTE:

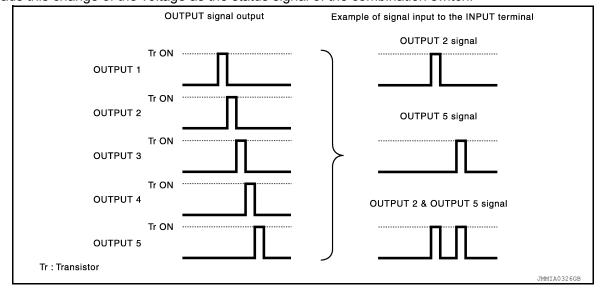
BCM reads the status of the combination switch at 60 ms intervals when BCM is controlled at low power consumption control mode.

• BCM operates as follows and judges the status of the combination switch.

- It operates the transistor on OUTPUT side in the following order: OUTPUT 1 \rightarrow 2 \rightarrow 3 \rightarrow 4 \rightarrow 5, and outputs voltage waveform.

- The voltage waveform of OUTPUT corresponding to the formed circuit is input into the interface on INPUT side if any (1 or more) switches are ON.

- It reads this change of the voltage as the status signal of the combination switch.



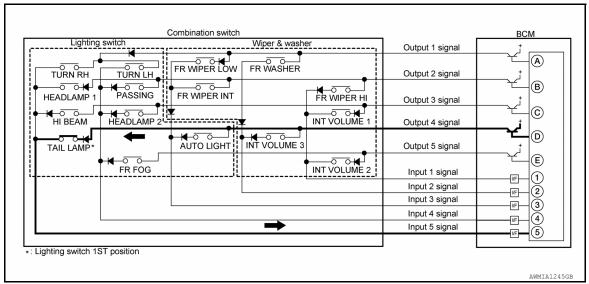
Operation Example

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

Example 1: When a switch (TAIL LAMP) is turned ON

< SYSTEM DESCRIPTION >

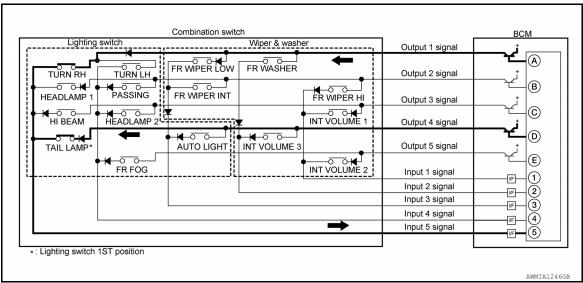
• The circuit between OUTPUT 4 and INPUT 5 is formed when the TAIL LAMP switch is turned ON.



- BCM detects the combination switch status signal "5D" when the signal of OUTPUT 4 is input to INPUT 5.
- BCM judges that the TAIL LAMP switch is ON when the signal "5D" is detected.

Example 2: When some switches (TURN RH, TAIL LAMP) are turned ON

 The circuits between OUTPUT 1 and INPUT 5 and between OUTPUT 4 and INPUT 5 are formed when the TURN RH switch and TAIL LAMP switch are turned ON.



- BCM detects the combination switch status signal "5AD" when the signals of OUTPUT 1 and OUTPUT 4 are input to INPUT 5.
- BCM judges that the TURN RH switch and TAIL LAMP switch are ON when the signal "5AD" is detected.

WIPER INTERMITTENT DIAL POSITION SETTING (FRONT WIPER INTERMITTENT OPERATION) BCM judges the wiper intermittent dial 1 - 7 by the status of INT VOLUME 1, 2, and 3 switches.

< SYSTEM DESCRIPTION >

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

Component Parts Location

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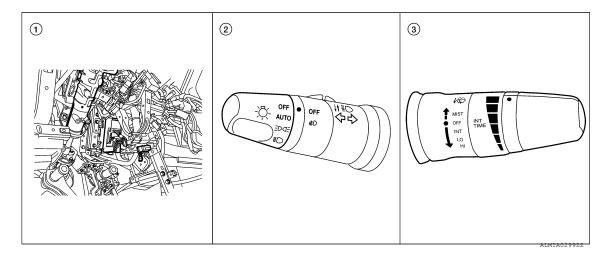
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- 1. BCM M18, M19, M20 (view with instrument panel removed)
- Combination switch (lighting and turn signal switch) M28
- 3. Combination switch (wiper and washer switch) M28

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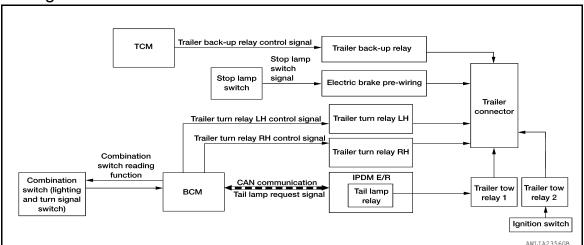
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TRAILER TOW

System Diagram



System Description

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TRAILER TAIL LAMP OPERATION

The trailer tail lamps are controlled by the trailer tow relay 1 located in the IPDM E/R. With the combination switch (lighting and turn signal switch) in the 1st position, the 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 activates the trailer tow relay 1 and sends power to the trailer connector.

TRAILER TURN SIGNAL LAMP OPERATION

The trailer turn signal lamps are controlled by the BCM. When the turn signal switch is in the LH or RH position with the ignition switch ON, the combination switch (lighting and turn signal switch) sends a signal to the BCM. The BCM detects the TURN RH or TURN LH ON request. The BCM sends a control signal to the respective trailer turn relay which sends power to the trailer connector.

TRAILER HAZARD LAMP OPERATION

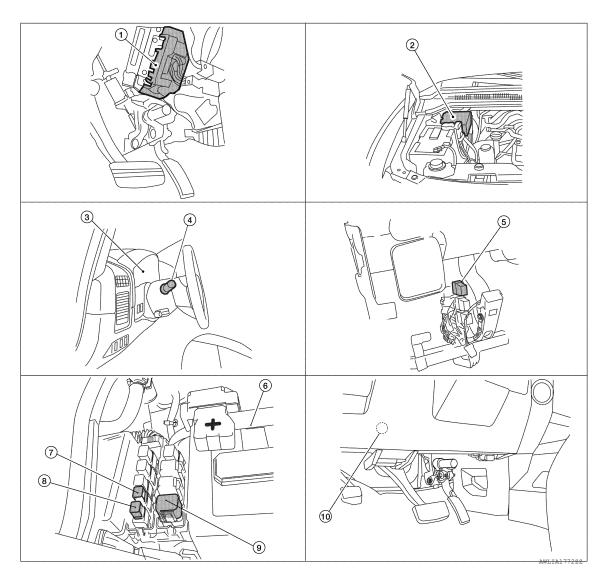
The trailer hazard lamps are controlled by the BCM. When the hazard switch is pressed, the BCM detects the the hazard ON request. The BCM then sends a control signal to both trailer turn relays which sends power to the trailer connector.

TRAILER BRAKE LAMP OPERATION

The trailer brake lamps are controlled by the BCM. When the brake pedal is depressed, the combination meter receives a stop lamp switch signal from the stop lamp switch. The combination meter then sends the brake signal to the BCM via the CAN communication lines. The BCM then sends a control signal to both trailer turn relays which sends power to the trailer connector.

Component Parts Location

INFOID:0000000011559829



- BCM M18, M19, M20 (view with instru- 2. ment panel removed)
- Combination switch (lighting and turn signal switch) M28
- Trailer turn relay LH E158
- 10. Stop lamp switch E38 (column shift), E42 (floor shift)
- IPDM E/R E119, E122, E123, E124
- Trailer tow relay 1 M51 (view with steering member removed)
- Trailer turn relay RH E159
- Combination meter M24 3.
- 6. Battery
- 9. Trailer tow relay 2 E140

Component Description

INFOID:0000000011559830

Part name	Description
ВСМ	 Receives lighting and turn signal requests from combination switch. Receives stop lamp signal requests from combination meter via CAN communication. Sends lighting signal request to the IPDM E/R to control the tail lamp relay via CAN communication. Sends turn/hazard/brake control signal to the trailer turn relays.
IPDM E/R	Activates the tail lamp relay upon request from the BCM via CAN communication.

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TRAILER TOW

< SYSTEM DESCRIPTION >

Combination meter	 Receives stop lamp switch signal from stop lamp switch. Sends stop lamp signal request to the BCM via CAN communication.
Combination switch (lighting and turn signal switch)	Outputs lighting and turn signal requests to the BCM.

< SYSTEM DESCRIPTION >

DIAGNOSIS SYSTEM (BCM)

COMMON ITEM

COMMON ITEM: CONSULT Function (BCM - COMMON ITEM)

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APPLICATION ITEM

CONSULT performs the following functions via CAN communication with BCM:

Direct Diagnostic Mode	Description		
Ecu Identification	The BCM part number is displayed.		
Self Diagnostic Result	The BCM self diagnostic results are displayed.		
Data Monitor	The BCM input/output data is displayed in real time.		
Active Test	The BCM activates outputs to test components.		
Work support	The settings for BCM functions can be changed.		
Configuration	 The vehicle specification can be read and saved. The vehicle specification can be written when replacing BCM. 		
CAN Diag Support Mntr	The result of transmit/receive diagnosis of CAN communication is displayed.		

SYSTEM APPLICATION

BCM can perform the following functions:

		Direct Diagnostic Mode						
System	Sub System	Ecu Identification	Self Diagnostic Result	Data Monitor	Active Test	Work support	Configuration	CAN Diag Support Mntr
Door lock	DOOR LOCK			×	×	×		
Rear window defogger	REAR DEFOGGER			×	×			
Warning chime	BUZZER			×	×			
Interior room lamp timer	INT LAMP			×	×	×		
Remote keyless entry system	MULTI REMOTE ENT			×	×	×		
Exterior lamp	HEADLAMP			×	×	×		
Wiper and washer	WIPER			×	×	×		
Turn signal and hazard warning lamps	FLASHER			×	×			
Air conditioner	AIR CONDITIONER			×				
Combination switch	COMB SW			×				
BCM	BCM	×	×			×	×	×
Immobilizer	IMMU		×	×	×			
Interior room lamp battery saver	BATTERY SAVER			×	×	×		
Vehicle security system	THEFT ALM			×	×	×		
RAP system	RETAINED PWR			×	×	×		
Signal buffer system	SIGNAL BUFFER			×	×			
TPMS	AIR PRESSURE MONITOR		×	×	×	×		
Panic alarm system	PANIC ALARM				×			

HEADLAMP

< SYSTEM DESCRIPTION >

HEADLAMP : CONSULT Function (BCM - HEAD LAMP)

INFOID:0000000011880233

DATA MONITOR

Monitor Item [Unit]	Description			
IGN ON SW [On/Off]	Indicates condition of ignition switch ON position.			
ACC ON SW [On/Off]	Indicates condition of ignition switch ACC position.			
HI BEAM SW [On/Off]				
HEAD LAMP SW 1 [On/Off]				
HEAD LAMP SW 2 [On/Off]				
LIGHT SW 1ST [On/Off]	Indicates condition of combination switch.			
AUTO LIGHT SW [On/Off]				
PASSING SW [On/Off]				
FR FOG SW [On/Off]				
DOOR SW-DR [On/Off]	Indicates condition of front door switch LH.			
DOOR SW-AS [On/Off]	Indicates condition of front door switch RH.			
DOOR SW-RR [On/Off]	Indicates condition of rear door switch RH.			
DOOR SW-RL [On/Off]	Indicates condition of rear door switch LH.			
TURN SIGNAL R [On/Off]	Indicates condition of combination switch.			
TURN SIGNAL L [On/Off]	Indicates condition of combination switch.			
CARGO LAMP SW [On/Off]	Indicates condition of cargo lamp switch.			
OPTICAL SENSOR [V]	Indicates voltage signal from optical sensor.			

ACTIVE TEST

Test Item	Description
TAIL LAMP	This test is able to check tail lamp operation [Off/On].
HEAD LAMP	This test is able to check head lamp operation [Off/Lo/Hi].
FR FOG LAMP	This test is able to check front fog lamp operation [Off/On].
CARGO LAMP	This test is able to check cargo lamp operation [Off/On].

WORK SUPPORT

Support Item	Setting	Description
BATTERY SAVER SET	Off	Exterior lamp battery saver function OFF.
BATTERT SAVER SET	On*	Exterior lamp battery saver function ON.
	MODE4	Less sensitive setting than normal setting (Turns ON later than normal operation).
CUSTOM A/LIGHT SETTING	MODE3	More sensitive setting than MODE 2 (Turns ON earlier than MODE 2).
	MODE2	More sensitive setting than normal setting (Turns ON earlier than normal operation).
	MODE1*	Normal.

< SYSTEM DESCRIPTION >

Support Item	Setting		Description
	MODE8	180 sec	
	MODE7	150 sec	
	MODE6	120 sec	
ILL DELAY SET	MODE5	90 sec	Sets delay timer function operation time
ILL DELAT SET	MODE4	60 sec	(All doors closed).
	MODE3	30 sec	
	MODE2	OFF	
	MODE1*	45 sec	

^{*:} Initial setting

FLASHER

FLASHER: CONSULT Function (BCM - FLASHER)

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DATA MONITOR

Monitor Item [Unit]	Description	
IGN ON SW [On/Off]	Indicates condition of ignition switch ON position.	
HAZARD SW [On/Off] Indicates condition of hazard switch.		
TURN SIGNAL R [On/Off]	Indicates condition of turn signal function of combination quitab	
TURN SIGNAL L [On/Off]	Indicates condition of turn signal function of combination switch.	
BRAKE SW [On/Off]	Indicates condition of brake switch.	

ACTIVE TEST

Test Item	Description		
FLASHER	This test is able to check turn signal lamp operation [Off/LH/RH].		

COMB SW

COMB SW: CONSULT Function (BCM - COMB SW)

INFOID:0000000011880235

DATA MONITOR

		EXL
Monitor Item [Unit]	Description	
TURN SIGNAL R [On/Off]	Indicates condition of turn signal operation of combination switch.	D 4
TURN SIGNAL L [On/Off]	indicates condition of turn signal operation of combination switch.	M
HI BEAM SW [On/Off]	Indicates condition of hi beam operation of combination switch.	
HEAD LAMP SW 1 [On/Off]	Indicates condition of headlawn eneration of combination quitab	N
HEAD LAMP SW 2 [On/Off]	Indicates condition of headlamp operation of combination switch.	
LIGHT SW 1ST [On/Off]	Indicates condition of lighting operation of combination switch.	
PASSING SW [On/Off]	Indicates condition of passing switch operation of combination switch.	0
AUTO LIGHT SW [On/Off]	Indicates condition of auto light operation of combination switch.	
FR FOG SW [On/Off]	Indicates condition of front fog light operation of combination switch.	P
FR WIPER HI [On/Off]		
FR WIPER LOW [On/Off]	Indicates condition of front wiper operation of combination switch.	
FR WIPER INT [On/Off]		
FR WASHER SW [On/Off]	Indicates condition of front washer operation of combination switch.	
INT VOLUME [1 - 7]	Indicates condition of intermittent wiper operation of combination switch.	

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< SYSTEM DESCRIPTION >

BATTERY SAVER

BATTERY SAVER : CONSULT Function (BCM - BATTERY SAVER)

INFOID:0000000011880236

DATA MONITOR

Monitor Item [Unit]	Description
IGN ON SW [On/Off]	Indicates condition of ignition switch ON position.
KEY ON SW [On/Off]	Indicates condition of key switch.
DOOR SW-DR [On/Off]	Indicates condition of front door switch LH.
DOOR SW-AS [On/Off]	Indicates condition of front door switch RH.
DOOR SW-RR [On/Off]	Indicates condition of rear door switch RH.
DOOR SW-RL [On/Off]	Indicates condition of rear door switch LH.
KEY CYL LK SW [On/Off]	Indicates condition of lock signal from door key cylinder switch.
KEY CYL UN SW [On/Off]	Indicates condition of unlock signal from door key cylinder switch.
CDL LOCK SW [On/Off]	Indicates condition of lock signal from door lock and unlock switch.
CDL UNLOCK SW [On/Off]	Indicates condition of unlock signal from door lock and unlock switch.
KEYLESS LOCK [On/Off]	Indicates condition of lock signal from keyfob.
KEYLESS UNLOCK [On/Off]	Indicates condition of unlock signal from keyfob.

ACTIVE TEST

Test item	Description
BATTERY SAVER	This test is able to check battery saver operation [Off/On].

WORK SUPPORT

Support Item	Setting		Description
ROOM LAMP TIMER SET	MODE2	60 min	Sets the interior room lamp battery saver timer operating time.
NOOW LAWF THEEL SET	MODE1	15 min	Sets the interior room ramp battery saver timer operating time.

< SYSTEM DESCRIPTION >

DIAGNOSIS SYSTEM (IPDM E/R)

Diagnosis Description

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AUTO ACTIVE TEST

Description

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

- Oil pressure low/coolant pressure high warning indicator
- Oil pressure gauge
- Rear window defogger (if equipped)
- Front wipers (HI, LO)
- Tail, license and parking lamps
- Front fog lamps (if equipped)
- Headlamps (HI, LO)
- A/C compressor (magnetic clutch)

Operation Procedure

1. Close the hood and front door RH, and lift the wiper arms from the windshield (to prevent windshield damage due to wiper operation).

NOTE:

When auto active test is performed with hood opened, sprinkle water on windshield before hand.

- 2. Turn ignition switch OFF.
- 3. Turn the ignition switch ON and, within 20 seconds, press the front door switch LH 10 times. Then turn the ignition switch OFF.
- Turn the ignition switch ON within 10 seconds. After that the horn sounds once and the auto active test starts.
- After a series of the following operations is repeated 3 times, auto active test is completed.

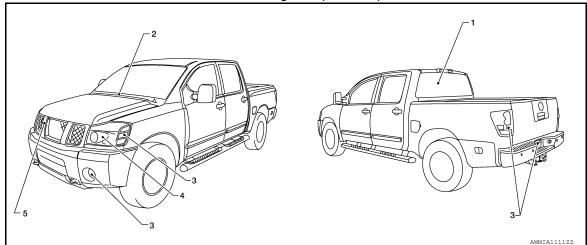
NOTE:

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

- If auto active test mode cannot be actuated, check door switch system. Refer to <u>DLK-26</u>, "<u>KING CAB</u>
 <u>Description</u>" (King Cab) or <u>DLK-27</u>, "<u>CREW CAB</u>: <u>Description</u>" (Crew Cab).
- Do not start the engine.

Inspection in Auto Active Test Mode

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



Operation sequence	Inspection Location	Operation	
1	Rear window defogger (Crew Cab only)	10 seconds	
2	Front wipers	LO for 5 seconds → HI for 5 seconds	

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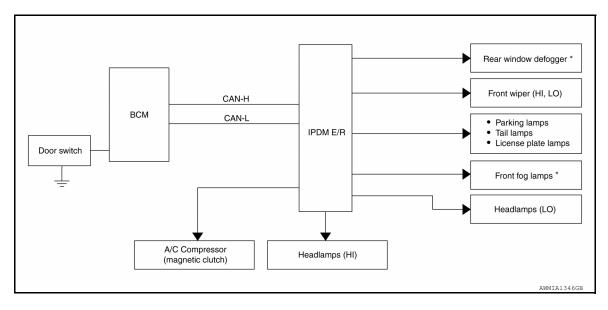
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< SYSTEM DESCRIPTION >

Operation sequence	Inspection Location	Operation	
3	Tail, license, parking lamps and front fog lamps (if equipped)	10 seconds	
4	Headlamps	LO for 10 seconds → HI on-off for 5 seconds	
5	A/C compressor (magnetic clutch)	ON ⇔ OFF 5 times	

Concept of auto active test



*: If equipped

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

Diagnosis chart in auto active test mode

Symptom	Symptom Inspection contents		Possible cause
Oil pressure low/coolant temperature high warning indicator does not operate	Perform auto active test. Does the oil pressure low/ coolant temperature high	YES	IPDM E/R signal input circuit ECM signal input circuit CAN communication signal between ECM and combination meter
indicator does not operate	warning indicator operate?	NO	CAN communication signal between IPDM E/R, BCM and combination meter
	Perform auto active test.	YES	IPDM E/R signal input circuit
Oil pressure gauge does not operate	Does the oil pressure gauge operate?	NO	CAN communication signal between IPDM E/R, BCM and combination meter
Rear window defogger (if equipped) does not op-	Perform auto active test.	YES	BCM signal input circuit
erate	Does the rear window defogger (if equipped) operate?	NO	CAN communication signal between BCM and IPDM E/R

< SYSTEM DESCRIPTION >

Symptom	Inspection contents		Possible cause	
		YES	BCM signal input system	
Any of the following components do not operate: Front wipers (HI, LO) Tail lamps License plate lamps Parking lamps Front fog lamps (if equipped) Headlamps (HI, LO)	Perform auto active test. Does the applicable system operate?		Lamp or front wiper motor malfunction Lamp or front wiper motor ground circuit Harness or connector between IPDM E/R and applicable system IPDM E/R (integrated relay malfunction)	
A/C compressor does not energte	Perform auto active test.	YES	BCM signal input circuit CAN communication signal between BCM and ECM CAN communication signal between ECM and IPDM E/R	
A/C compressor does not operate	Does the A/C compressor operate?	NO	Magnetic clutch malfunction Harness or connector between IPDM E/R and magnetic clutch IPDM E/R (integrated relay malfunction)	

CONSULT Function (IPDM E/R)

INFOID:0000000011880238

APPLICATION ITEM

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

Direct Diagnostic Mode	Description
Self Diagnostic Result	The IPDM E/R self diagnostic results are displayed.
Data Monitor	The IPDM E/R input/output data is displayed in real time.
Active Test	The IPDM E/R activates outputs to test components.
CAN Diag Support Mntr	The result of transmit/receive diagnosis of CAN communication is displayed.

SELF DIAGNOSTIC RESULT

Refer to PCS-22, "DTC Index".

DATA MONITOR

Monitor Item [Unit] Ma Sign		Description	
AC COMP REQ [On/Off]	×	Indicates A/C compressor request signal received from ECM on CAN communication line	
TAIL&CLR REQ [On/Off]	×	Indicates position light request signal received from BCM on CAN communication line	
HL LO REQ [On/Off]	×	Indicates low beam request signal received from BCM on CAN communication line	
HL HI REQ [On/Off]	×	Indicates high beam request signal received from BCM on CAN communication line	
FR FOG REQ [On/Off]	×	Indicates front fog light request signal received from BCM on CAN communication line	
FR WIP REQ [Stop/1LOW/Low/Hi]	×	Indicates front wiper request signal received from BCM on CAN communication line	
WIP AUTO STOP [STOP P/ACT P]	×	Indicates condition of front wiper auto stop signal	
WIP PROT [Off/BLOCK]	×	Indicates condition of front wiper fail-safe operation	
ST RLY REQ [On/Off]		Indicates starter request signal received from ECM on CAN communication line	
IGN RLY [On/Off]	×	Indicates condition of ignition relay	

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< SYSTEM DESCRIPTION >

Monitor Item [Unit]	Main Signals	Description
RR DEF REQ [On/Off]	×	Indicates rear defogger request signal received from AV control unit on CAN communication line
OIL P SW [Open/Close]		Indicates condition of oil pressure switch
DTRL REQ [Off]		Indicates daytime light request signal received from BCM on CAN communication line
THFT HRN REQ [On/Off]		Indicates theft warning horn request signal received from BCM on CAN communication line
HORN CHIRP [On/Off]		Indicates horn reminder signal received from BCM on CAN communication line

ACTIVE TEST

Test item	Description
REAR DEFOGGER	This test is able to check rear defogger operation [On/Off].
FRONT WIPER	This test is able to check wiper motor operation [Hi/Lo/Off].
EXTERNAL LAMPS	This test is able to check external lamp operation [Fog/Hi/Lo/TAIL/Off].
HORN	This test is able to check horn operation [On].

POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

DTC/CIRCUIT DIAGNOSIS

POWER SUPPLY AND GROUND CIRCUIT BCM (BODY CONTROL MODULE)

BCM (BODY CONTROL MODULE): Diagnosis Procedure

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Regarding Wiring Diagram information, refer to BCS-47, "Wiring Diagram".

1. CHECK FUSES AND FUSIBLE LINK

Check that the following fuses and fusible link are not blown:

Terminal No.	Signal name	Fuses and fusible link No.
57	Pottony newer supply	22 (15A)
70	Battery power supply	F (50A)
11	Ignition ACC or ON	4 (10A)
38	Ignition ON or START	59 (10A)

Is the fuse blown?

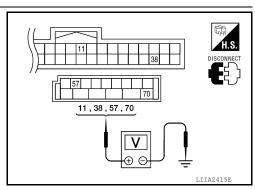
YES >> Replace the blown fuse or fusible link after repairing the affected circuit.

NO >> GO TO 2.

2. CHECK POWER SUPPLY CIRCUIT

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

Connector	Terminals		Power	Condition	Voltage (V) (Ap-
Connector	(+)	(-)	source	Condition	prox.)
M18	11	Ground	ACC power supply	Ignition switch ACC or ON	Battery voltage
	38	Ground	Ignition power supply	Ignition switch ON or START	Battery voltage
M20	57	Ground	Battery power supply	Ignition switch OFF	Battery voltage
WZO	70	Ground	Battery power supply	Ignition switch OFF	Battery voltage
Is the measurement value normal?					



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3. CHECK GROUND CIRCUIT

>> Repair or replace harness.

>> GO TO 3.

YES

NO

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POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

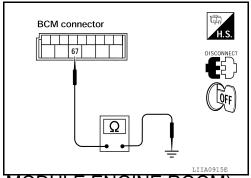
Check continuity between BCM harness connector and ground.

В	CM		Continuity	
Connector	Terminal	Ground	Continuity	
M20	67		Yes	

Does continuity exist?

YES >> Inspection End.

NO >> Repair or replace harness.



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

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

Regarding Wiring Diagram information, refer to PCS-23, "Wiring Diagram".

1. CHECK FUSES AND FUSIBLE LINK

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

Terminal No.	Signal name	Fuses and fusible link No.	
1	Battery	A (140A), D (80A)	
2	Battery	C (80A)	
12	Ignition switch ON or START	59 (10A)	

Is the fuse blown?

YES >> Replace the blown fuse or fusible link after repairing the affected circuit.

NO >> GO TO 2.

2. CHECK BATTERY POWER SUPPLY CIRCUIT

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

Terminals			Ignition switch position		
(+)		(-)	OFF	ON	START
Connector	Terminal	(-)	OH	011	STAIRT
E118	1	Ground	Battery voltage	Battery voltage	Battery voltage
	2		Battery voltage	Battery voltage	Battery voltage
E119	12		0V	Battery voltage	Battery voltage

Is the measurement value normal?

YES >> GO TO 3.

NO >> Repair or replace harness.

3. CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.

POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

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

IPDM	E/R	Ground	Continuity	
Connector	Terminal		Continuity	
E122 (A)	38	Giodila	Yes	
E124 (B)	59		165	

A DISCONNECT OFF

Does continuity exist?

YES >> Inspection End.

NO >> Repair or replace harness.

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HEADLAMP (HI) CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

HEADLAMP (HI) CIRCUIT

Description INFOID:000000011559840

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

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1. CHECK HEADLAMP (HI) OPERATION

NWITHOUT CONSULT

- 1. Start IPDM E/R auto active test. Refer to PCS-11, "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.

(P)WITH CONSULT

- Select "EXTERNAL LAMPS" of IPDM E/R active test item.
- 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 <u>EXL-36</u>, "<u>Diagnosis Procedure - Without Daytime Light System</u>", <u>EXL-37</u>, "<u>Diagnosis Procedure - With Daytime Light System</u>".

Diagnosis Procedure - Without Daytime Light System

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Regarding Wiring Diagram information, refer to EXL-77, "Wiring Diagram".

1. CHECK HEADLAMP (HI) FUSES

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

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

Is the fuse open?

YES >> Repair the harness and replace the fuse.

NO >> GO TO 2.

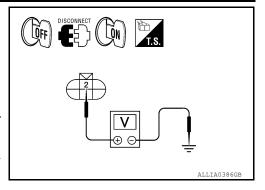
2.CHECK HEADLAMP (HI) OUTPUT VOLTAGE

HEADLAMP (HI) CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

- 1. Turn the ignition switch OFF.
- 2. Disconnect the front combination lamp connector E11 or E107.
- 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	
Co	nnector	Terminal	(-)	voltage	
LH	E11	2	Ground	Battery voltage	
RH	E107	2	Sibulia	Dattery Voltage	



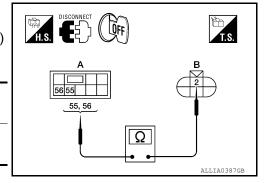
Are the voltage readings as specified?

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

3.CHECK HEADLAMP (HI) CIRCUIT FOR OPEN

- Turn the ignition switch OFF.
- 2. Disconnect IPDM E/R connector E123.
- Check continuity between the IPDM E/R harness connector (A) and the front combination lamp harness connector (B).

	АВ		Continuity		
Co	onnector	Terminal	Connector	Terminal	Continuity
LH	E123	55	E11	2	Yes
RH	L 125	56	E107	2	165



Does continuity exist?

YES >> Replace IPDM E/R. Refer to PCS-28, "Removal and Installation of IPDM E/R"

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.

Conr	nector	Terminal	_	Continuity
LH	E11	3	Ground	Yes
RH	E107	3	Ground	103

Does continuity exist?

YES >> Inspect the headlamp bulb.

NO >> Repair the harness.

Diagnosis Procedure - With Daytime Light System

Regarding Wiring Diagram information, refer to EXL-89, "Wiring Diagram".

1. CHECK HEADLAMP (HI) FUSES

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

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< DTC/CIRCUIT DIAGNOSIS >

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

Is the fuse open?

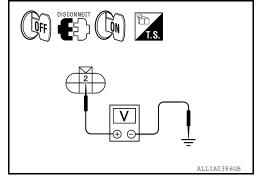
YES >> Repair the harness and replace the fuse.

NO >> GO TO 2.

2.CHECK HEADLAMP (HI) OUTPUT VOLTAGE

- 1. Turn the ignition switch OFF.
- 2. Disconnect the front combination lamp connector E6 or E108.
- 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	
Со	nnector	Terminal	(-)	voltage	
LH	E6	2	Ground	Pottory voltage	
RH	E108	2	Giouna	Battery voltage	



Are the voltage readings as specified?

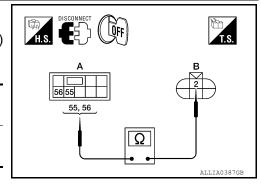
YES >> GO TO 4.

NO >> GO TO 3.

3.CHECK HEADLAMP (HI) CIRCUIT FOR OPEN

- 1. Turn the ignition switch OFF.
- 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		В		Continuity	
Conr	nector	Terminal	Connector	Terminal	Continuity
LH	E123	55	E6	2	Yes
RH	L123	56	E108	2	165



Does continuity exist?

YES >> Replace IPDM E/R. Refer to PCS-28, "Removal and Installation of IPDM E/R"

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.

Con	nector	Terminal	_	Continuity
LH	E6	3	Ground	Yes
RH	E108	3	Giodila	163

DISCONNECT OFF

Does continuity exist?

YES >> Inspect the headlamp bulb.

NO (Except LH with DTRL)>>Repair the harness.

NO (LH with DTRL)>>GO TO 5.

5. CHECK CONTINUITY BETWEEN FRONT COMBINATION LAMP LH (HI) AND DAYTIME LIGHT RELAY

Disconnect daytime light relay connector.

HEADLAMP (HI) CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

Check continuity between front combination lamp LH harness connector and daytime light relay harness connector.

Front combin	ation lamp LH	Daytime light relay		Continuity
Connector	Terminal	Connector Terminal		Continuity
E6	3	E103	3	Yes

Does continuity exist?

YES >> GO TO 6.

NO >> Repair the harness or connector.

O.CHECK DAYTIME LIGHT RELAY GROUND CIRCUIT

Check continuity between daytime light relay harness connector and ground.

Daytime	light relay		Continuity
Connector	Terminal	Ground	Continuity
E103	4		Yes

Does continuity exist?

YES >> GO TO 7.

NO >> Repair the harness or connector.

.CHECK DAYTIME LIGHT RELAY FUSE

Check that the following fuses are not open.

Unit	Location	Fuse No.	Capacity
Daytime light relay	IPDM E/R	45	10A

Is the fuse open?

YES >> Replace the fuse after repairing the affected circuit.

NO >> GO TO 8.

8.CHECK DAYTIME LIGHT CIRCUIT FOR OPEN

- Disconnect IPDM E/R connector E119 and E122.
- Check continuity between the IPDM E/R harness connector and the daytime light relay harness connector.

IPDM E/R		Daytime lig	Continuity	
Connector	Terminal	Connector	Terminal	Continuity
E119	10		2	
L119	10	E103	5	Yes
E122	44	_	1	

Does continuity exist?

YES >> GO TO 9

NO >> Repair the harnesses or connectors.

9. CHECK DAYTIME LIGHT RELAY

Check daytime light relay. Refer to EXL-39, "Component Inspection"

Is the inspection result normal?

>> Replace IPDM E/R. Refer to PCS-28, "Removal and Installation of IPDM E/R" YES

>> Replace daytime light relay. NO

Component Inspection

CHECK DAYTIME LIGHT RELAY

Turn ignition switch OFF.

EXL-39 Revision: November 2014 2015 Titan NAM **EXL**

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HEADLAMP (HI) CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

- 2. Remove daytime light relay.
- 3. Check the continuity between daytime light relay terminals under the following conditions.

Terminals	Condition	Continuity
3 and 5	12V direct current supply between terminals 1 and 2	Yes
J and J	No current supply	No
3 and 4	12V direct current supply between terminals 1 and 2	
3 and 4	No current supply	Yes

Is the inspection result normal?

YES >> Inspection End.

NO >> Replace daytime light relay

HEADLAMP (LO) CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

HEADLAMP (LO) CIRCUIT

Description INFOID:0000000011559845

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:0000000011559846

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1. CHECK HEADLAMP (LO) OPERATION

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MWITHOUT CONSULT

Start IPDM E/R auto active test. Refer to <u>PCS-11, "Diagnosis Description"</u>.

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.

(II) WITH CONSULT

1. Select "EXTERNAL LAMPS" 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-41, "Diagnosis Procedure - Without Daytime Light System", EXL-42, "Diagnosis Procedure - With Daytime Light System".

Diagnosis Procedure - Without Daytime Light System

INFOID:0000000011559847

Regarding Wiring Diagram information, refer to EXL-77, "Wiring Diagram".

1. CHECK HEADLAMP (LO) FUSES

- 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

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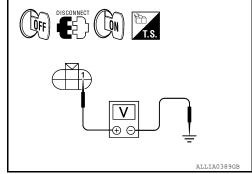
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HEADLAMP (LO) CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

- 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		(-)	voltage	
LH	E11	1	Ground	Battery voltage
RH	E107	1	Ground	Dattery voltage



Is voltage reading as specified?

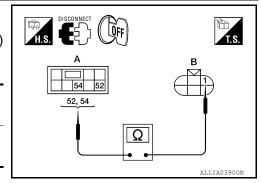
YES >> GO TO 4.

NO >> GO TO 3.

3.check headlamp (LO) circuit for open

- 1. Turn the ignition switch OFF.
- 2. Disconnect IPDM E/R connector E123.
- 3. Check continuity between the IPDM E/R harness connector (A) and the front combination lamp harness connector (B).

	A B			Continuity	
Conr	nector	Terminal	Connector	Terminal	Continuity
LH	E123	52	E11	1	Yes
RH	L123	54	E107	1	163



Does continuity exist?

YES >> Replace IPDM E/R. Refer to PCS-28, "Removal and Installation of IPDM E/R".

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.

Con	nector	Terminal	_	Continuity
LH	E11	4	Ground	Yes
RH	E107	4	Ground	103

DISCONNECT OFF

INFOID:0000000011559848

Does continuity exist?

YES >> Inspect the headlamp bulb.

NO >> Repair the harness.

Diagnosis Procedure - With Daytime Light System

Regarding Wiring Diagram information, refer to EXL-89, "Wiring Diagram".

1. CHECK HEADLAMP (LO) FUSES

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

Revision: November 2014 EXL-42 2015 Titan NAM

HEADLAMP (LO) CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

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?

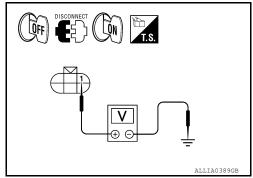
YES >> Repair the harness and replace the fuse.

NO >> GO TO 2.

2.CHECK HEADLAMP (LO) OUTPUT VOLTAGE

- 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		(-)	voltage		
LH	E6	1	Ground	Pottony voltage	
RH	E108	1	Ground	Battery voltage	



Is voltage reading as specified?

YES >> GO TO 4.

NO >> GO TO 3.

$3. {\sf CHECK}$ HEADLAMP (LO) CIRCUIT FOR OPEN

- Turn the ignition switch OFF.
- Disconnect IPDM E/R connector E123. 2.
- Check continuity between the IPDM E/R harness connector (A) and the front combination lamp harness connector (B).

,		4	В		Continuity
Cor	nnector	Terminal	Connector	Terminal	Continuity
LH	E123	52	E6	1	Yes
RH	E123	54	E108	1	165

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Does continuity exist?

YES >> Replace IPDM E/R. Refer to PCS-28, "Removal and Installation of IPDM E/R".

NO >> Repair the harnesses or connectors.

4. CHECK FRONT COMBINATION LAMP (LO) GROUND CIRCUIT

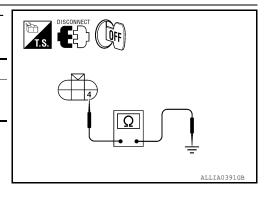
Check continuity between the front combination lamp harness connector terminal and ground.

Conr	nector	Terminal	_	Continuity
LH	E6	4	Ground	Yes
RH	E108	4	Ground	103

Does continuity exist?

YES >> Inspect the headlamp bulb.

NO >> Repair the harness.



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EXL-43 Revision: November 2014 2015 Titan NAM

FRONT FOG LAMP CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

FRONT FOG LAMP CIRCUIT

Description INFOID:0000000011559849

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:0000000011559850

1. CHECK FRONT FOG LAMP OPERATION

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- Activate IPDM E/R auto active test. Refer to PCS-11, "Diagnosis Description".
- 2. Check that the front fog lamp is turned ON.

(P)WITH CONSULT

- 1. Select "EXTERNAL LAMPS" 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-44, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000011559851

Regarding Wiring Diagram information, refer to EXL-95, "Wiring Diagram".

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	15A

Is the fuse open?

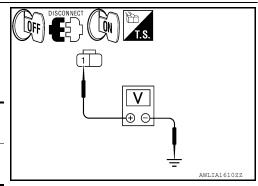
YES >> Repair the harness and replace the fuse.

NO >> GO TO 2.

2.CHECK FRONT FOG LAMP OUTPUT VOLTAGE

- 1. Turn the ignition switch OFF.
- 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		Terminal	(-)	voltage
LH	E101	1	Ground	Battery voltage
RH	E102	1	Glound	Dattery Voltage



Are the voltage readings as specified?

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

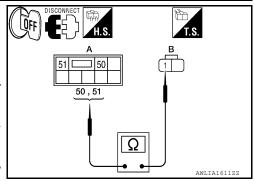
FRONT FOG LAMP CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

3.CHECK FRONT FOG LAMP OPEN CIRCUIT

- 1. Turn the ignition switch OFF.
- 2. Disconnect IPDM E/R connector E123.
- 3. Check continuity between the IPDM E/R harness connector and the front fog lamp harness connector.

	А		В		Continuity
Conr	nector	Terminal	Connector	Terminal	Continuity
LH	E123	50	E101	1	Yes
RH	E123	51	E102	1	165



Does continuity exist?

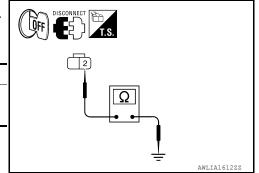
YES >> Replace IPDM E/R. Refer to PCS-28, "Removal and Installation of IPDM E/R".

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 and ground.

Coni	nector	Terminal	_	Continuity
LH	E101	2	Ground	Yes
RH	E102	2	Giodila	163



Does continuity exist?

YES >> Inspect the fog lamp bulb.

NO >> Repair the harness.

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< DTC/CIRCUIT DIAGNOSIS >

PARKING LAMP CIRCUIT

Description INFOID:000000011559852

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:0000000011559853

1. CHECK PARKING LAMP OPERATION

NWITHOUT CONSULT

- Activate IPDM E/R auto active test. Refer to PCS-11, "Diagnosis Description".
- Check that the parking lamp is turned ON.

(P)WITH CONSULT

- 1. Select "EXTERNAL LAMPS" 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 <u>EXL-46</u>, "<u>Diagnosis Procedure - Without Daytime Light System</u>", <u>EXL-49</u>, "<u>Diagnosis Procedure - With Daytime Light System</u>".

Diagnosis Procedure - Without Daytime Light System

INFOID:0000000011559854

Regarding Wiring Diagram information, refer to EXL-107, "Wiring Diagram".

1. CHECK PARKING LAMP FUSES

- 1. Turn the ignition switch OFF.
- 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.

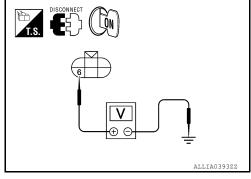
2.CHECK TAIL LAMP RELAY OUTPUT (VOLTAGE)

- 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.
- Turn the parking lamps ON.

< DTC/CIRCUIT DIAGNOSIS >

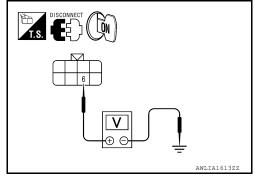
5. With the parking lamps ON, check voltage between the front combination lamp connectors and ground.

(+)		(-)	Voltage	
С	onnector	Terminal	(-)	voltage
LH	E11	6	Ground	Battery voltage
RH	E107	б	Giodila	Ballery Vollage



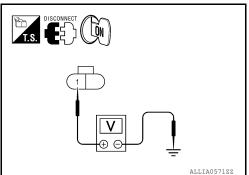
6. With the parking lamps ON, check voltage between the rear combination lamp connectors and ground.

(+)		()	Voltage	
С	onnector	Terminal	(-)	Voltage
LH	C13	6	Ground	Battery voltage
RH	C14	0	Ground	Ballery Vollage



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

(+)		(-)	Voltage
Connector	Terminal	()	voitage
C12	1	Ground	Battery voltage



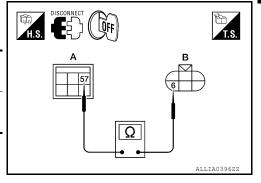
Are voltage readings as specified?

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

$\overline{\mathbf{3}}$.check parking, license plate and tail lamp circuit (open)

- Turn the ignition switch OFF.
- 2. Disconnect IPDM E/R connector E124.
- 3. Check continuity between the IPDM E/R harness connector (A) and the front combination lamp harness connector (B).

	,	A		В	Continuity
Co	nnector	Terminal	Connector	Terminal	Continuity
LH	E124	57	E11	6	Yes
RH	L124	37	E107	0	163



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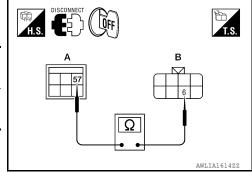
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< DTC/CIRCUIT DIAGNOSIS >

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

Α		В		Continuity	
Co	onnector	Terminal	Connector	Terminal	Continuity
LH	E124	57	C13	6	Yes
RH	E124	57	C14	O	165



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

Α			Continuity	
Connector	Terminal	Connector	Terminal	Continuity
E124	57	C12	1	Yes

Are continuity test results as specified?

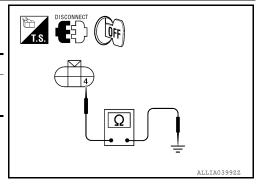
YES >> Replace IPDM E/R. Refer to <u>PCS-28, "Removal and Installation of IPDM E/R"</u>.

NO >> Repair the harnesses or connectors.



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

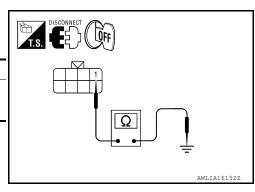
Connector		Terminal	_	Continuity
LH	E11	1	Ground	Yes
RH	E107	7	Glound	163



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

Cor	nector	Terminal	_	Continuity
LH	C13	1	Ground	Yes
RH	C14	'	Ground	103



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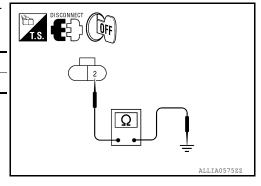
Check continuity between the license plate lamp harness connector and ground.

Connector	Terminal	_	Continuity
C12	2	Ground	Yes

Does continuity exist?

YES >> Inspect the parking lamp bulb.

NO >> Repair the harness.



INFOID:0000000011559855

Diagnosis Procedure - With Daytime Light System

Regarding Wiring Diagram information, refer to EXL-107, "Wiring Diagram".

1. CHECK PARKING LAMP FUSES

- 1. Turn the ignition switch OFF.
- 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)

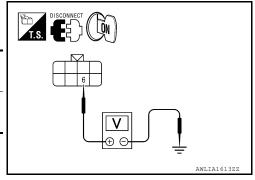
- Turn the ignition switch OFF.
- 2. Disconnect the front combination lamp connector, rear combination lamp connector and license plate lamp connector.
- 3. Turn the ignition switch ON.
- Turn the parking lamps ON.
- 5. With the parking lamps ON, check voltage between the front combination lamp connectors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

(+)		(-)	Voltage	
C	onnector	Terminal	(-)	voltage
LH	E6	6	Ground	Battery voltage
RH	E108	O	Gloulia	Dattery Voltage

DISCONNECT ON THE PROPERTY OF THE PROPERTY OF

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

	(-	+)	(-)	Voltage	
C	onnector	Terminal	(-)	voltage	
LH	C13	6	Ground	Rattery voltage	
RH	C14	0	Ground	Battery voltage	



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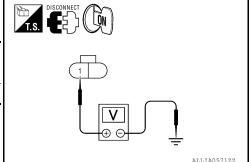
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< DTC/CIRCUIT DIAGNOSIS >

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

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



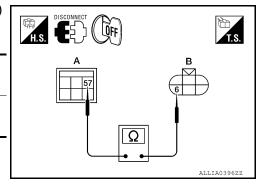
Are voltage readings as specified?

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

${\bf 3.}{\tt CHECK~PARKING,~LICENSE~PLATE~AND~TAIL~LAMP~CIRCUIT~(OPEN)}$

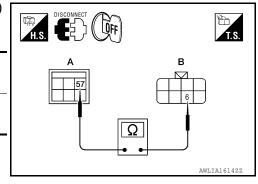
- 1. Turn the ignition switch OFF.
- 2. Disconnect IPDM E/R connector E124.
- 3. Check continuity between the IPDM E/R harness connector (A) and the front combination lamp harness connector (B).

	А			Continuity	
Co	nnector	Terminal	Connector	Terminal	Continuity
LH	E124	57	E6	6	Yes
RH	L124	37	E108		163



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

A			Continuity		
Co	nnector	Terminal	Connector	Terminal	Continuity
LH	E124	57	C13	6	Yes
RH	L124	37	C14		165



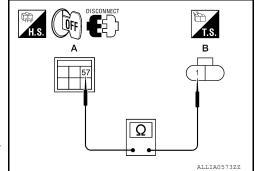
5. Check continuity between the IPDM E/R harness connector (A) and license plate lamp connector (B).

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

Are continuity test results as specified?

YES >> Replace IPDM E/R. Refer to <u>PCS-28, "Removal and Installation of IPDM E/R"</u>.

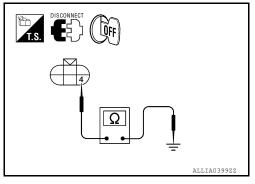
NO \Rightarrow Repair the harnesses or connectors. 4. CHECK PARKING, LICENSE AND TAIL LAMP GROUND CIRCUITS



< DTC/CIRCUIT DIAGNOSIS >

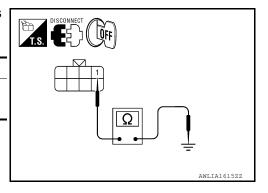
Check continuity between the front combination lamp harness connectors E6 and E108 terminal 4 and ground.

Connector		Terminal	_	Continuity
LH	E6	4	Ground	Yes
RH	E108	7	Ground	103



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

Cor	nector	Terminal	_	Continuity
LH	C13	1	Ground	Yes
RH	C14	"	Ground	165



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

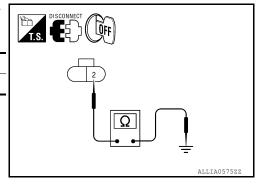
C12 2 Ground Yes	,	Connector	Terminal	_	Continuity
		C12	2	Ground	Yes

Does continuity exist?

>> Inspect the parking lamp bulb.

NO >> Repair the harness.

YES



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< DTC/CIRCUIT DIAGNOSIS >

TURN SIGNAL LAMP CIRCUIT

Description INFOID:0000000011559856

The BCM monitors inputs from the combination switch (lighting and turn signal 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:0000000011559857

1. CHECK TURN SIGNAL LAMP

(P)WITH CONSULT

- 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-52, "Diagnosis Procedure - Without Daytime Light System", EXL-55, "Diagnosis Procedure - With Daytime Light System".

Diagnosis Procedure - Without Daytime Light System

INFOID:0000000011559858

Regarding Wiring Diagram information, refer to EXL-99, "Wiring Diagram".

1. CHECK TURN SIGNAL LAMP BULB

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

Is the bulb OK?

YES >> GO TO 2.

NO >> Replace the bulb.

2.CHECK TURN SIGNAL LAMP OUTPUT VOLTAGE

- Turn the ignition switch OFF.
- 2. Disconnect the front combination lamp connector, door mirror connector (if equipped with turn signals in the mirrors) and the rear combination lamp connector.
- 3. Turn the ignition switch ON.
- 4. With turn signal switch operating, check the voltage between the front combination lamp harness connector and ground.

(+)		(_)	Voltage
Connector	Terminal	(-)	voltage

< DTC/CIRCUIT DIAGNOSIS >

E11	LH			
E107	RH	5	Ground	(V) 15 10 5 0 1 s PKID0926E

5. With turn signal switch operating, check the voltage between the rear combination lamp harness connector and ground.

	(+)		(-)	Voltage
Con	nector	Terminal	()	vollage
C13	LH			
C14	RH	8	Ground	(V) 15 10 5 0 1 s

6. With turn signal switch operating, check the voltage between the door mirror (if equipped with turn signals in the mirrors) harness connector and ground.

(+)		(-)	Voltage	
Con	nector	Terminal	()	Vollage
D4	LH			
D107	RH	15	Ground	(V) 15 10 5 0 1 s

Is voltage reading as specified?

YES >> GO TO 5.

NO >> GO TO 3.

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 and the front combination lamp connector.

Connector		Terminal Connector		Terminal	Continuity
Front LH	M20	60	E11	5	Yes
Front RH	IVIZU	61	E107	3	163

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

Conr	nector	Terminal	Connector	Terminal	Continuity
Rear LH	M20	60	C13	Q	Yes
Rear RH	IVIZO	61	C14	0	163

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< DTC/CIRCUIT DIAGNOSIS >

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

Connec	tor	Terminal	Connector	Terminal	Continuity
Door mirror LH	M20	60	D4	15	Yes
Door mirror RH		61	D107	13	163

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.

Co	onnector	Terminal	_	Continuity
LH	M20	60	Ground	No
RH	IVIZU	61	Ground	

Does continuity exist?

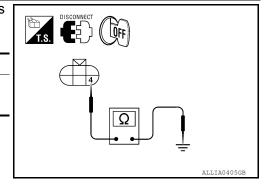
YES >> Repair the harnesses or connectors.

NO >> Replace BCM. Refer to BCS-56, "Removal and Installation".

5. CHECK TURN SIGNAL LAMP GROUND CIRCUIT

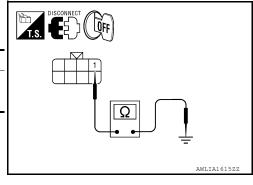
1. Check continuity between the front combination lamp harness connector and ground.

Connector		Terminal	_	Continuity
Front LH	E11	4	Ground	Yes
Front RH	E107	7	Ground	163



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

Connector		Terminal	_	Continuity
Rear LH	C13	1	Ground	Yes
Rear RH	C14	"	Ground	



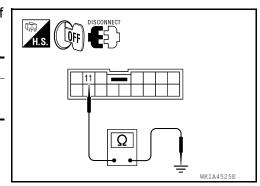
3. Check continuity between the door mirrors and ground (if equipped with turn signals in the mirrors).

Connector		Terminal	_	Continuity
Door mirror RH	D107	11	Ground	Yes
Door mirror LH	D4		Ground	163

Are continuity test results as specified?

YES >> Replace the malfunctioning lamp.

NO >> Repair the harnesses or connectors.



< DTC/CIRCUIT DIAGNOSIS >

Diagnosis Procedure - With Daytime Light System

INFOID:0000000011559859

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Regarding Wiring Diagram information, refer to EXL-99, "Wiring Diagram".

1. CHECK TURN SIGNAL LAMP BULB

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

YES >> GO TO 2.

NO >> Replace the bulb.

2.CHECK TURN SIGNAL LAMP OUTPUT VOLTAGE

- 1. Turn the ignition switch OFF.
- 2. Disconnect the front combination lamp connector, door mirror connector (if equipped with turn signals in the mirrors) and the rear combination lamp connector.
- 3. Turn the ignition switch ON.
- 4. With turn signal switch operating, check the voltage between the front combination lamp harness connector and ground.

(+) Connector Terminal		(-)	Voltage		
Con	Connector		()	voltage	
E6	LH				
E108	RH	5	Ground	(V) 15 10 5 0 PKID0926E	

5. With turn signal switch operating, check the voltage between the rear combination lamp harness connector and ground.

(+)		(-)	Voltage	
Con	nector	Terminal	()	Vollage
C13	LH			
C14	RH	8	Ground	(V) 15 10 5 0 1 s

6. With turn signal switch operating, check the voltage between the door mirror (if equipped with turn signals in the mirrors) harness connector and ground.

(+)		(_)	Voltage
Connector	Terminal	(-)	voltage

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< DTC/CIRCUIT DIAGNOSIS >

D4	LH			
D107	RH	15	Ground	(V) 15 10 5 0 1 s

Is voltage reading as specified?

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

$3.\mathsf{CHECK}$ 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 and the front combination lamp connector.

Con	Connector		Terminal Connector 1		Continuity
Front LH	M20	60	E6	Б	Yes
Front RH	IVIZU	61	E108	5	165

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

Conr	nector	Terminal	Connector	Terminal	Continuity
Rear LH	M20	60	C13	Q	Yes
Rear RH	IVIZU	61	C14	O	165

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

Connec	tor	Terminal	Connector	Terminal	Continuity
Door mirror LH	M20	60	D4	15	Yes
Door mirror RH		61	D107	13	165

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.

Co	onnector	Terminal	_	Continuity
LH	M20	60	Ground	No
RH	IVIZU	61	Glound	NO

Does continuity exist?

YES >> Repair the harnesses or connectors.

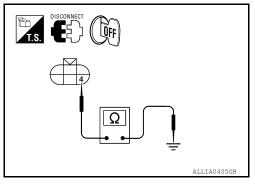
NO >> Replace BCM. Refer to <u>BCS-56</u>. "Removal and Installation".

5.CHECK TURN SIGNAL LAMP GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

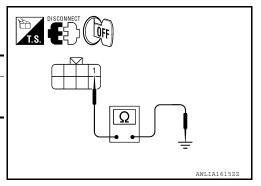
Check continuity between the front combination lamp harness connector and ground.

Coni	nector	Terminal	_	Continuity
Front LH	E6	4	Ground	Yes
Front RH	E108	7	Ground	103



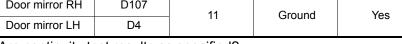
2. Check continuity between the rear combination lamp harness connector and ground.

Conr	nector	Terminal	_	Continuity
Rear LH	C13	1	Ground	Yes
Rear RH	C14		Ground	163



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

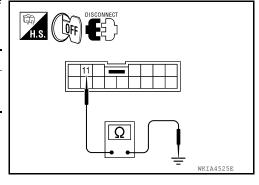
Conne	ctor	Terminal	_	Continuity
Door mirror RH	D107	11	Ground	Yes
Door mirror LH	D4		Giouna	165



Are continuity test results as specified?

YES >> Replace the malfunctioning lamp. NO

>> Repair the harnesses or connectors.



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OPTICAL SENSOR

Description INFOID:0000000011559860

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

Component Function Check

INFOID:0000000011559861

1. CHECK OPTICAL SENSOR SIGNAL BY CONSULT

®WITH CONSULT

- 1. Turn the ignition switch ON.
- Select OPTICAL SENSOR of BCM (HEAD LAMP) Data Monitor item.
- 3. Turn the lighting switch to AUTO.

Monitor item	Condition	Voltage
OPTICAL SENSOR -	When outside of vehicle is bright	3.1V or more *
	When outside of vehicle is dark	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-58. "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000011559862

Regarding Wiring Diagram information, refer to EXL-82, "Wiring Diagram".

1. CHECK OPTICAL SENSOR GROUND CIRCUIT

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

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

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

H.S. DISCONNECT OFF	a a
	AWLIA1620ZZ

	A		Continuity
Connector	Terminal		Continuity
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

OPTICAL SENSOR

< DTC/CIRCUIT DIAGNOSIS >

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

Α			Continuity	
Connector	Terminal	Connector	Terminal	Continuity
M20	58	M302	4	Yes

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

	H.S. DISCONNECT OFF	
•	A [58]	B 4
	Ω	
		AWLIA1621ZZ

	A	_	Continuity
Connector	Terminal		Continuity
M20	58	Ground	No

Are the continuity test results as specified?

YES >> Replace the optical sensor. Refer to EXL-141, "Removal and Installation".

NO >> Repair harness or connector.

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< ECU DIAGNOSIS INFORMATION >

ECU DIAGNOSIS INFORMATION

BCM (BODY CONTROL MODULE)

Reference Value

NOTE:

The Signal Tech II Tool [– (J-50190)] can be used to perform the following functions. Refer to the Signal Tech II User Guide for additional information:

- Activate and display TPMS transmitter IDs
- Display tire pressure reported by the TPMS transmitter
- Read TPMS DTCs
- · Register TPMS transmitter IDs
- Test remote keyless entry keyfob relative signal strength

VALUES ON THE DIAGNOSIS TOOL

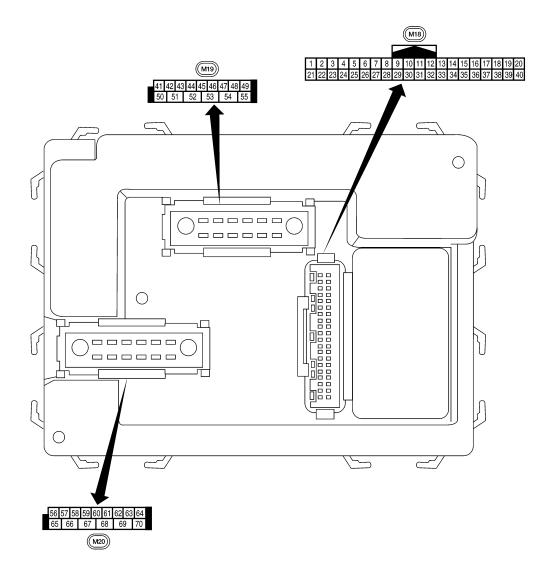
Monitor Item	Condition	Value/Status
ACC ON SW	Ignition switch OFF or ON	Off
ACC ON SW	Ignition switch ACC	On
AIR COND SW	A/C switch OFF	Off
AIR COIND 3W	A/C switch ON	On
AIR PRESS FL	Front left tire air pressure value	kPa, kg/cm ² , psi
AIR PRESS FR	Front right tire air pressure value	kPa, kg/cm ² , psi
AIR PRESS RL	Rear left tire air pressure value	kPa, kg/cm ² , psi
AIR PRESS RR	Rear right tire air pressure value	kPa, kg/cm ² , psi
AUTO LIGHT SW	Lighting switch OFF	Off
AUTO LIGHT SW	Lighting switch AUTO	On
BRAKE SW	Brake pedal released	Off
DRAKE SW	Brake pedal applied	On
BUCKLE SW	Seat belt buckle unfastened	Off
BUCKLE SW	Seat belt buckle fastened	On
BUZZER	Buzzer in combination meter OFF	Off
BUZZEK	Buzzer in combination meter ON	On
CARGO LAMP SW	Cargo lamp switch OFF	Off
CARGO LAIVIF 3VV	Cargo lamp switch ON	On
CDL LOCK SW	Door lock/unlock switch does not operate	Off
CDL LOCK 3W	Press door lock/unlock switch to the LOCK side	On
CDL UNLOCK SW	Door lock/unlock switch does not operate	Off
CDL UNLOCK 3W	Press door lock/unlock switch to the UNLOCK side	On
DOOR SW-AS	Front door RH closed	Off
DOOR SW-AS	Front door RH opened	On
DOOR SW-DR	Front door LH closed	Off
DOOK SW-DIX	Front door LH opened	On
DOOR SW-RL	Rear door LH closed	Off
DOOR SW-RL	Rear door LH opened	On
DOOR SW-RR	Rear door RH closed	Off
DOOK SW-KK	Rear door RH opened	On

Monitor Item	Condition	Value/Status
FAN ON SIG	Blower motor fan switch OFF	Off
FAN ON SIG	Blower motor fan switch ON	On
FR FOG SW	Front fog lamp switch OFF	Off
FR FOG SW	Front fog lamp switch ON	On
FR WASHER SW	Front washer switch OFF	Off
FR WASHER SW	Front washer switch ON	On
FR WIPER LOW	Front wiper switch OFF	Off
-R WIPER LOW	Front wiper switch LO	On
FR WIPER HI	Front wiper switch OFF	Off
-R WIPER HI	Front wiper switch HI	On
ED WIDED INT	Front wiper switch OFF	Off
R WIPER INT	Front wiper switch INT	On
	Any position other than front wiper stop position	Off
FR WIPER STOP	Front wiper stop position	On
IAZADD CIAI	When hazard switch is not pressed	Off
HAZARD SW	When hazard switch is pressed	On
JEAD LAMB CVA/4	Headlamp switch OFF	Off
HEAD LAMP SW1	Headlamp switch 1st	On
JEAD LAND OWG	Headlamp switch OFF	Off
HEAD LAMP SW2	Headlamp switch 1st	On
U DE 444 OV44	High beam switch OFF	Off
HI BEAM SW	High beam switch HI	On
D DECOT EL 1	ID registration of front left tire incomplete	YET
D REGST FL1	ID registration of front left tire complete	DONE
	ID registration of front right tire incomplete	YET
D REGST FR1	ID registration of front right tire complete	DONE
D DECOT DI 4	ID registration of rear left tire incomplete	YET
D REGST RL1	ID registration of rear left tire complete	DONE
	ID registration of rear right tire incomplete	YET
D REGST RR1	ID registration of rear right tire complete	DONE
CNI CNI C'A'	Ignition switch OFF or ACC	Off
GN ON SW	Ignition switch ON	On
ON OW OAS:	Ignition switch OFF or ACC	Off
GN SW CAN	Ignition switch ON	On
NT VOLUME	Wiper intermittent dial is in a dial position 1 - 7	1 - 7
(E) (O) (I	Door key cylinder LOCK position	Off
KEY CYL LK-SW	Door key cylinder other than LOCK position	On
(E) (O) (I + I) + C + C + C + C + C + C + C + C + C +	Door key cylinder UNLOCK position	Off
KEY CYL UN-SW	Door key cylinder other than UNLOCK position	On
	Mechanical key is removed from key cylinder	Off
KEY ON SW	Mechanical key is inserted to key cylinder	On
	LOCK button of key fob is not pressed	Off
KEYLESS LOCK	LOCK button of key fob is pressed	On

Monitor Item	Condition	Value/Status
KEYLESS PANIC	PANIC button of key fob is not pressed	Off
RETLESS PAINIC	PANIC button of key fob is pressed	On
KEYLESS UNLOCK	UNLOCK button of key fob is not pressed	Off
RETLESS UNLOCK	UNLOCK button of key fob is pressed	On
LIGHT SW 1ST	Lighting switch OFF	Off
LIGHT SW 131	Lighting switch 1st	On
OIL PRESS SW	Ignition switch OFF or ACC Engine running	Off
	Ignition switch ON	On
OPTICAL SENSOR	Bright outside of the vehicle	Close to 5V
OF HOAL SENSON	Dark outside of the vehicle	Close to 0V
PASSING SW	Other than lighting switch PASS	Off
FAGGING GW	Lighting switch PASS	On
REAR DEF SW	Rear window defogger switch OFF	Off
NEAN DEI 3W	Rear window defogger switch ON	On
TURN SIGNAL L	Turn signal switch OFF	Off
TORN SIGNAL L	Turn signal switch LH	On
TURN SIGNAL R	Turn signal switch OFF	Off
TOTAL IN	Turn signal switch RH	On
VEHICLE SPEED	While driving	Equivalent to speedometer reading
WARNING LAMP	Low tire pressure warning lamp in combination meter OFF	Off
WAINING LAWE	Low tire pressure warning lamp in combination meter ON	On

< ECU DIAGNOSIS INFORMATION >

Terminal Layout



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Physical Values

	Wire		Signal		Measuring condition	Reference value or waveform
Terminal	color	Signal name	input/ output	Ignition switch	Operation or condition	(Approx.)
1	BR/W	Key ring output	Output	OFF	ON (driver door open)	0V
	DIVVV	Ney fing output	Output	OFF	OFF (driver door closed)	Battery voltage
2	SB	Combination switch input 5	Input	ON	Lighting, turn, wiper OFF Wiper dial position 4	(V) 6 4 2 0 **5ms
3	G/Y	Combination switch input 4	Input	ON	Lighting, turn, wiper OFF Wiper dial position 4	(V) 6 4 2 0 **5ms skia5292e
4	Y	Combination switch input 3	Input	ON	Lighting, turn, wiper OFF Wiper dial position 4	(V) 6 4 2 0 + 5ms skta5291E
5	G/B V	Combination switch input 2 Combination switch input 1	Input	ON	Lighting, turn, wiper OFF Wiper dial position 4	(V) 6 4 2 0 +-5ms SKIA5292E
9	R/G	Brake switch	Input	ON	Brake pedal depressed	Battery voltage
<u> </u>	100	Diano Switch	put	OIN .	Brake pedal released	0V
11	0	Ignition switch (ACC or ON)	Input	ACC or ON	Ignition switch ACC or ON	Battery voltage
12	R/L	Front door switch RH (All) Rear door switch lower RH (King Cab)	Input	OFF	ON (open)	ov
		Rear door switch upper RH (King Cab)			OFF (closed)	Battery voltage
13	GR	Rear door switch RH (Crew Cab)	Input	OFF	ON (open)	0V
15	L/W	Tire pressure warning check connector	Input	OFF	OFF (closed)	Battery voltage 5V
18	P	Remote keyless entry receiver and optical sensor (ground)	Output	OFF	_	OV

	Wire		Signal		Measuring condition	Reference value or waveform
Terminal	color	Signal name	input/ output	Ignition switch	Operation or condition	(Approx.)
19	V/W	Remote keyless entry receiver (power sup- ply)	Output	OFF	Ignition switch OFF	(V) 6 4 2 0 +-50 ms
20	G/W	Remote keyless entry	Input	OFF	Stand-by (keyfob buttons re- leased)	(V) 6 4 2 0 *********************************
20	G/W	receiver (signal)	прис	OFF	When remote keyless entry receiver receives signal from keyfob (keyfob buttons pressed)	(V) 6 4 2 -1 0 +50 ms
21	G	NATS antenna amp.	Input	OFF → ON	Ignition switch (OFF \rightarrow ON)	Just after turning ignition switch ON: Pointer of tester should move for approx. 1 second, then return to battery voltage.
22	G	BUS	_	_	Ignition switch ON or power window timer operates	(V) 15 10 5 0 200 ms
23	G/O	Security indicator lamp	Output	OFF	Goes OFF → illuminates (Every 2.4 seconds)	Battery voltage → 0V
25	BR	NATS antenna amp.	Input	OFF → ON	Ignition switch (OFF \rightarrow ON)	Just after turning ignition switch ON: Pointer of tester should move for approx. 1 second, then return to battery voltage.
27	W/R	Compressor ON signal	Input	ON	A/C switch OFF	5V
		sample sees and sees and		J	A/C switch ON	0V
28	L/R	Front blower monitor	Input	ON	Front blower motor OFF	Battery voltage
					Front blower motor ON	0V 0V
29	W/B	Hazard switch	Input	OFF	ON OFF	5V
					Cargo lamp switch ON	0
l	P/L	Cargo lamp switch	Input	OFF	gop oo o	ı

	Wire		Signal		Measuring condition	Reference value or waveform
Terminal	color	Signal name	input/ output	Ignition switch	Operation or condition	(Approx.)
32	R/G	Combination switch output 5	Output	ON	Lighting, turn, wiper OFF Wiper dial position 4	(V) 6 4 2 0 **-5ms
33	R/Y	Combination switch output 4	Output	ON	Lighting, turn, wiper OFF Wiper dial position 4	(V) 6 4 2 0 5ms SKIA5292E
34	L	Combination switch output 3	Output	ON	Lighting, turn, wiper OFF Wiper dial position 4	(V) 6 4 2 0 *-5ms SKIA5291E
35	O/B	Combination switch output 2				0.0
36	R/W	Combination switch output 1	Output	ON	Lighting, turn, wiper OFF Wiper dial position 4	(V) 6 4 2 0 **-5ms
		Key switch and key			Key inserted	Battery voltage
37	B/R	lock solenoid	Input	OFF	Key removed	0V
38	W/L	Ignition switch (ON)	Input	ON	_	Battery voltage
39	L	CAN-H	_	_	_	_
40	Р	CAN-L	_	_	_	_
41	Y/B	Rear defogger switch	Input	ON	Rear defogger switch ON Rear defogger switch OFF	0V 5V
		Front door switch LH (All)			ON (oron)	07
47	SB	Rear door switch lower LH (King Cab)	Input	OFF	ON (open)	0V
		Rear door switch upper LH (King Cab)			OFF (closed)	Battery voltage
48	R/Y	Rear door switch LH	Input	OFF	ON (open)	0V
		(Crew Cab)	•		OFF (closed)	Battery voltage
50	R/Y	Cargo bed lamp con-	Output	OFF	Cargo lamp switch (ON)	0V
		trol	<u> </u>		Cargo lamp switch (OFF)	Battery voltage

	Wire		Signal		Measuring con-	dition	Reference value or waveform
Terminal	color	Signal name	input/ output	Ignition switch	Operation	or condition	(Approx.)
51	Y/B	Trailer turn signal (right)	Output	ON	Turn right ON		(V) 15 10 50 500 ms SKIA3009J
52	G/B	Trailer turn signal (left)	Output	ON	Turn left ON		(V) 15 10 5 500 ms
56	R/G	Battery saver output	Output	OFF	15 minutes after is turned OFF	er ignition switch	OV
				ON	-	_	Battery voltage
57	Y/R	Battery power supply	Input	OFF	-	_	Battery voltage
58	W/R	Optical sensor	Input	ON	nated	sensor is illumi-	3.1V or more
					When optical sensor is not illuminated		0.6V or less
59	G	Front door lock assembly LH actuator Output	Output	OFF	OFF (neutral)		0V
59	G	(unlock)	Output	OFF	ON (unlock)		Battery voltage
60	G/B	Turn signal (left)	Output	ON	Turn left ON		(V) 15 10 50 0 SKIA3009J
61	G/Y	Turn signal (right)	Output	ON	Turn right ON		(V) 15 10 500 ms 500 ms
63	L	Interior room/map	Output	OFF	Any door switch	ON (open) OFF (closed)	0V Battery voltage
65	V	All door lock actuators (lock)	Output	OFF	OFF (neutral) ON (lock)		0V Battery voltage
		Front door lock actua-			OFF (neutral)		0V
66	G/Y	tor RH and rear door lock actuators LH/RH (unlock)	Output	OFF	ON (unlock)		Battery voltage
		Ground	Input	ON	_		0V

< ECU DIAGNOSIS INFORMATION >

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

Fail Safe

Fail-safe index

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

Display contents of CONSULT	Fail-safe	Cancellation
U1000: CAN COMM CIRCUIT	Inhibit engine cranking	When the BCM re-establishes communication with the other modules.

DTC Inspection Priority Chart

INFOID:0000000011880245

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

Priority	DTC
1	U1000: CAN COMM CIRCUIT
2	B2190: NATS ANTENNA AMP B2191: DIFFERENCE OF KEY B2192: ID DISCORD BCM-ECM B2193: CHAIN OF BCM-ECM

< ECU DIAGNOSIS INFORMATION >

Priority	DTC	
3	C1729: VHCL SPEED SIG ERR C1735: IGNITION SIGNAL	
	C1704: LOW PRESSURE FL	
	C1705: LOW PRESSURE FR	
	C1706: LOW PRESSURE RR	
	C1707: LOW PRESSURE RL	
	• C1708: [NO DATA] FL	
	• C1709: [NO DATA] FR	
	• C1710: [NO DATA] RR	
	C1711: [NO DATA] RL C1712: [CHECKSUM ERR] FL	
	C1712: [CHECKSUM ERR] FE C1713: [CHECKSUM ERR] FR	
	C1713: [CHECKSUM ERR] FR C1714: [CHECKSUM ERR] RR	
	C1715: [CHECKSUM ERR] RL	
4	C1716: [PRESSDATA ERR] FL	
	C1717: [PRESSDATA ERR] FR	
	C1718: [PRESSDATA ERR] RR	
	C1719: [PRESSDATA ERR] RL	
	C1720: [CODE ERR] FL	
	C1721: [CODE ERR] FR	
	C1722: [CODE ERR] RR	
	C1723: [CODE ERR] RL	
	C1724: [BATT VOLT LOW] FL	
	C1725: [BATT VOLT LOW] FR	
	C1726: [BATT VOLT LOW] RR	
	C1727: [BATT VOLT LOW] RL	

DTC Index

NOTE:

Details of time display

CRNT: Displays when there is a malfunction now or after returning to the normal condition until turning ignition switch OFF → ON again.

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

CONSULT display	Fail-safe	Tire pressure monitor warning lamp ON	Reference page
No DTC is detected. further testing may be required.	_	_	_
U1000: CAN COMM CIRCUIT	_	_	BCS-30
B2190: NATS ANTTENA AMP	_	_	SEC-18
B2191: DIFFERENCE OF KEY	_	_	SEC-21
B2192: ID DISCORD BCM-ECM	_	_	<u>SEC-22</u>
B2193: CHAIN OF BCM-ECM	_	_	<u>SEC-24</u>
C1708: [NO DATA] FL	_	_	<u>WT-15</u>
C1709: [NO DATA] FR	_	_	<u>WT-15</u>
C1710: [NO DATA] RR	_	_	<u>WT-15</u>
C1711: [NO DATA] RL	_	_	<u>WT-15</u>
C1712: [CHECKSUM ERR] FL	_	_	<u>WT-17</u>
C1713: [CHECKSUM ERR] FR	_	_	<u>WT-17</u>
C1714: [CHECKSUM ERR] RR	_	_	<u>WT-17</u>
C1715: [CHECKSUM ERR] RL	_	_	<u>WT-17</u>

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CONSULT display	Fail-safe	Tire pressure monitor warning lamp ON	Reference page
C1716: [PRESSDATA ERR] FL	_	_	<u>WT-19</u>
C1717: [PRESSDATA ERR] FR	_	_	<u>WT-19</u>
C1718: [PRESSDATA ERR] RR	_	_	<u>WT-19</u>
C1719: [PRESSDATA ERR] RL	_	_	<u>WT-19</u>
C1720: [CODE ERR] FL	_	_	<u>WT-17</u>
C1721: [CODE ERR] FR	_	_	<u>WT-17</u>
C1722: [CODE ERR] RR	_	_	<u>WT-17</u>
C1723: [CODE ERR] RL	_	_	<u>WT-17</u>
C1724: [BATT VOLT LOW] FL	_	_	<u>WT-17</u>
C1725: [BATT VOLT LOW] FR	_	_	<u>WT-17</u>
C1726: [BATT VOLT LOW] RR	_	_	<u>WT-17</u>
C1727: [BATT VOLT LOW] RL	_	_	<u>WT-17</u>
C1729: VHCL SPEED SIG ERR	_	_	<u>WT-21</u>
C1735: IGNITION SIGNAL	_	_	<u>WT-23</u>

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

< ECU DIAGNOSIS INFORMATION >

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

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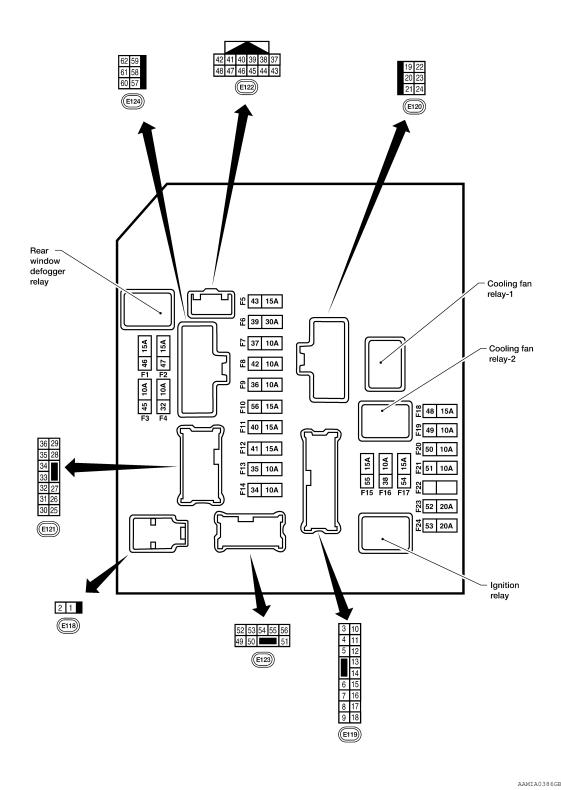
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Reference Value

VALUES ON THE DIAGNOSIS TOOL

Monitor Item	Con	Condition	
A/C COMP DEO	A/C switch OFF	A/C switch OFF	
A/C COMP REQ A/C switch ON			On
TAIL AGUD DEG	Lighting switch OFF	OFF	
IAIL&CLR REQ	TAIL&CLR REQ Lighting switch 1ST, 2ND, HI or AUTO (Light is illuminated)		On
111 1 0 DEO	Lighting switch OFF	Lighting switch OFF	
HL LO REQ	Lighting switch 2ND HI or AUTO (Light is illuminated)		On
Lighting switch OFF			Off
HL HI REQ	Lighting switch HI		On
FR FOG REQ		Front fog lamp switch OFF	Off
	Lighting switch 2ND or AUTO (Light is illuminated)	Front fog lamp switch ON Daytime light activated (Canada only)	On
ED WID DEO		Front wiper switch OFF	Stop
	Ignition switch ON	Front wiper switch INT	1LOW
FR WIP REQ	ignition switch on	Front wiper switch LO	Low
		Front wiper switch HI	Hi
		Front wiper stop position	STOP P
WIP AUTO STOP Ignition	Ignition switch ON	Any position other than front wiper stop position	ACT P
WIP PROT Ignition swit		Front wiper operates normally	Off
	Ignition switch ON	Front wiper stops at fail-safe operation	BLOCK
ST DI V DEO	Ignition switch OFF or ACC Ignition switch START		Off
31 KLI KEQ			On
ICN DI V	Ignition switch OFF or ACC		Off
IGN RLY Ignition switch ON			On
RR DEF REQ	Rear defogger switch OFF		Off
NI DEI NEG	Rear defogger switch ON		On
OIL P SW Ignition switch OFF, ACC or engine running Ignition switch ON		running	Open
		Close	
DTRI REO	TRL REQ Not operated Daytime Running Lights ON		Off
DINENEQ			On
	Not operated		Off
THFT HRN REQ • Panic alarm is activated • Horn is activated with VE TEM		SECURITY (THEFT WARNING) SYS-	On
HORN CHIRP Not operated		Off	
HUKIN CHIKP	Door locking with keyfob (horn chirp	Door locking with keyfob (horn chirp mode)	

Terminal Layout



NOTE

Numbers preceded by an "F" represent the fuse numbers imprinted on the IPDM E/R. The other numbers represent the fuse numbers as they appear in the wiring diagrams.

Physical Values

PHYSICAL VALUES

< ECU DIAGNOSIS INFORMATION >

			0:	Measuring condition				
Terminal	Wire color	Signal name	Signal input/ output	Igni- tion switch	Operation or condition		Reference value (Approx.)	
1	B/Y	Battery power supply	Input	OFF	-	_	Battery voltage	
2	R	Battery power supply	Input	OFF	_	_	Battery voltage	
					Ignition switch ON	l or START	Battery voltage	
3	BR	ECM relay	Output	_	Ignition switch OF	F or ACC	0V	
					Ignition switch ON	l or START	Battery voltage	
4	W/L	ECM relay	Output	_	Ignition switch OF	F or ACC	0V	
		Throttle control mo-	0		Ignition switch ON	l or START	Battery voltage	
6	L	tor relay	Output	_	Ignition switch OF	F or ACC	0V	
_	NAME:	5011			Ignition switch ON	l or START	0V	
7	W/B	ECM relay control	Input	_	Ignition switch OF	F or ACC	Battery voltage	
	D/D	E 54	0 1 1		Ignition switch ON	l or START	Battery voltage	
8	R/B	Fuse 54	Output	_	Ignition switch OF	F or ACC	0V	
40	0	Fuse 45	0 1 1	ON	Daytime light syst	em active	0V	
10	G	(Canada only)	Output	ON Daytime light s		em inactive	Battery voltage	
44	V/D	A/O	0	ON or	A/C switch ON or	defrost A/C switch	Battery voltage	
11	Y/B	A/C compressor	Output	START	A/C switch OFF or	defrost A/C switch	0V	
40		Ignition switch sup-			OFF or ACC		0V	
12	L/W	plied power	Input	_	ON or START		Battery voltage	
40	DAY	E	0 1 1		Ignition switch ON	l or START	Battery voltage	
13	B/Y	Fuel pump relay	Output	_	Ignition switch OF	F or ACC	0V	
4.4	V/D	F 40	0		Ignition switch ON	or START	Battery voltage	
14	Y/R	Fuse 49	Output	_	Ignition switch OF	F or ACC	0V	
45	LO/D	F	0		Ignition switch ON	or START	Battery voltage	
15	LG/B	Fuse 50	Output	_	Ignition switch OF	F or ACC	0V	
16	G	Fuse 51	Outout		Ignition switch ON	l or START	Battery voltage	
10	G	ruse 51	Output	_	Ignition switch OF	F or ACC	0V	
17	W	Fuse 55	Output		Ignition switch ON	l or START	Battery voltage	
17	VV	ruse 55	Output	_	Ignition switch OF	F or ACC	0V	
19	W/R	Starter motor	Output	START	-	_	Battery voltage	
21	BR	Ignition switch sup-	Input		OFF or ACC		0V	
21	ы	plied power	прис	_	START		Battery voltage	
22	G	Battery power supply	Output	OFF	_		Battery voltage	
	05.00	Door mirror defogger			When rear defogg	er switch is ON	Battery voltage	
23	GR/W	output signal (if equipped)	Output	_	When rear defogg	er switch is OFF	0V	
					Ignition switch ON	l or START	Battery voltage	
27	W/B	Fuse 38	Output	_	Ignition switch OF	F or ACC	0V	
					Ignition switch ON	l or START	Battery voltage	
30	W	Fuse 53	Output	_	Ignition switch OF	F or ACC	0V	
		Wiper low speed sig-		ON or		OFF	0V	
32	L	nal	Output	START	Wiper switch	LO or INT	Battery voltage	

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< ECU DIAGNOSIS INFORMATION >

			Signal		Measuring con	dition																		
Terminal			or condition	Reference value (Approx.)																				
35	L/B	Wiper high speed	Output	ON or	Wiper switch	OFF, LO, INT	0V																	
		signal	'	START		HI	Battery voltage																	
					Ignition switch ON	ı	(V) 6 4 2 0 1 2 1 2 2 2 3 3 4 2 1 3 5 6 4 2 7 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8																	
37	Y	Power generation command signal	Output	_	40% is set on "Ac NATOR DUTY" of	tive test," "ALTER- "ENGINE"	(V) 6 4 2 0 1 1 2 1 2 1 3.8 V																	
																						40% is set on "Ac NATOR DUTY" of	tive test," "ALTER- "ENGINE"	(V) 6 4 2 0 1 2 2 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3
							1.4 V																	
38	В	Ground	Input	_	-	_	0V																	
39	L	CAN-H	_	ON	-	_	_																	
40	Р	CAN-L	_	ON	Engine running	-	Battery voltage																	
42	GR	Oil pressure switch	Input	_	Engine running Engine stopped		0V																	
43	L/Y	Wiper auto stop sig-	Input	ON or START	Wiper switch	OFF, LO, INT	Battery voltage																	
		Daytime light relay			Daytime light syst	em active	0V																	
44	BR	control (Canada only)	Input	ON	Daytime light syst	em inactive	Battery voltage																	
		Llows voley, control	Input	ON	When door locks a keyfob (OFF → O	are operated using N)*	Battery voltage –																	
45	G/W	Horn relay control					0) /																	
45	G/W GR	Fuel pump relay con-	Input	_	Ignition switch ON		0V																	
		-	Input	_	Ignition switch OF Ignition switch ON	F or ACC or START	Battery voltage 0V																	
46	GR	Fuel pump relay control Throttle control mo-		— ON or START	Ignition switch OF	F or ACC I or START F or ACC P" or "N"	Battery voltage																	

< ECU DIAGNOSIS INFORMATION >

			0:	Measuring condition			
Terminal	Wire color	Signal name innut/		or condition	Reference value (Approx.)		
					Lighting switch	OFF	0V
50	W/R	Front fog lamp (LH) (if equipped)	Output	ON or START	must be in the 2nd position (LOW beam is ON) and the front fog lamp switch	ON	Battery voltage
					Lighting switch	OFF	0V
51	W/R	Front fog lamp (RH) (if equipped)	Output	ON or START	must be in the 2nd position (LOW beam is ON) and the front fog lamp switch	ON	Battery voltage
52	L	LH low beam head- lamp	Output	_	Lighting switch in 2nd position		Battery voltage
54	R/Y	RH low beam head- lamp	Output	_	Lighting switch in 2nd position		Battery voltage
55	G	LH high beam head- lamp	Output		Lighting switch in placed in HIGH or		Battery voltage
56	Y (With DTRL) L/W (Without DTRL)	RH high beam head- lamp	Output	_	Lighting switch in 2nd position and placed in HIGH or PASS position		Battery voltage
57	R/L	Parking, license and	Output	ON	Lighting switch	OFF	0V
31	IVL	tail lamp	Output	011	1st position	ON	Battery voltage
59	В	Ground	Input	_	-	_	0V
60	DAM	Rear window defog-	Outout.	ON or	Rear defogger sw	itch ON	Battery voltage
60	B/W	ger relay (if equipped)	Output	START	Rear defogger sw	itch OFF	0V
61	BR	Fuse 32	Output	OFF	-	_	Battery voltage

^{*:} When horn reminder is ON

Fail Safe INFOID:0000000011880250

CAN COMMUNICATION CONTROL

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

If No CAN Communication Is Available With BCM

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

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< ECU DIAGNOSIS INFORMATION >

Control part	Fail-safe in operation
A/C compressor	A/C relay OFF
Front fog lamps (if equipped)	Front fog lamp relay OFF

IGNITION RELAY MALFUNCTION DETECTION FUNCTION

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

Ignition switch	Ignition relay	Tail lamp relay
ON	ON	_
OFF	OFF	_

NOTE:

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

FRONT WIPER CONTROL

IPDM E/R detects front wiper stop position by a front wiper auto stop signal.

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

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

NOTE:

This operation status can be confirmed on the IPDM E/R "DATA MONITOR" that displays "Block" for the item "WIP PROT" while the wiper is stopped.

STARTER MOTOR PROTECTION FUNCTION

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

DTC Index

CONSULT display	Fail-safe	TIME	NOTE	Refer to
No DTC is detected. further testing may be required.	_	_	_	_
U1000: CAN COMM CIRCUIT	×	CRNT	1 – 39	PCS-15

NOTE:

The details of TIME display are as follows.

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

WIRING DIAGRAM Α **HEADLAMP** Wiring Diagram INFOID:0000000011559874 В C IGNITION RELAY D M31 Е CPU F 20A 20A 52 ¥ 62 ⊕ LOW BEAM Н 15A 41 HEADLAMP LOW RELAY HIGH (15A 40 40A 34 FRONT COMBI-NATION LAMP LH J O LOW BEAM HEADLAMP HIGH RELAY K HIGH 10A EXL COMBI-NATION METER M24 EUSE (J/B) (M60) (M60) BCM (BODY CONTROL MODULE) (M18), (M20) HIGH BEAM UNIFIED METER CONTROL UNIT (WITH INFORMATION DISPLAY) M IGNITION SWITCH ON OR START ON OR START 10A 14 2 3 4 5 6 7 10 9 8 COMBINATION SWITCH (LIGHTING AND TURN SIGNAL SWITCH) (M28) Ν **4** 4 0 10A HEADLAMP Р (M31) 50A BATTERY

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Connector Name (LIGHTING AND TURN SIGNAL SWITCH)

M28

Connector No.

WHITE

Connector Color

Signal Name

HEADLAMP CONNECTORS

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



	Signal Name	ı
15/14/13/	Color of Wire	O/L
H.S.	Terminal No.	5P

Connector No.	M18	Terminal No	Color of
Connector Name	Connector Name BCM (BODY CONTROL		wire
	MODÚLE)	2	SB
Connector Color WHITE	WHITE	က	G/Υ
		4	\
管		5	G/B
H.S.		9	>
		32	R/G
1 2 3 4 5 6 7	8 9 10 11 12 13 14 15 16 17 18 19 20	33	R/Y
21 22 23 24 25 26 27	21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40	34	٦
		32	O/B
		36	R/W
		38	W/L
		39	L
		40	Ь

OUTPUT 5

OUTPUT 4 OUTPUT 3

INPUT 2

INPUT 1

INPUT 3

INPUT 4

OUTPUT 2

OUTPUT 1

IGN SW CAN-H CAN-L

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

Connector Name | COMBINATION METER

M24

Connector No.

Connector Color WHITE





10 <u> </u>	Signal Name	-	_	_	_	-	_	_	_	-	-
12 13	Color of Wire	B/W	O/B	┙	R/Υ	R/G	^	G/B	SB	G/Y	\
叫机 H.S.	Terminal No.	-	2	8	4	2	9	7	8	6	10

Signal Name	ACCESSORY	GND	CAN-H	CAN-L	RUN/START
Color of Wire	0	В	٦	Ь	O/L
Ferminal No.	-	6	11	12	24

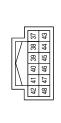
Signal Name	GND (POWER)	BAT (F/L)	
Color of Wire	В	M/B	
Terminal No.	29	02	

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Connector No. M60 Connector Name FUSE BLOCK (J/B) Connector Color WHITE Terminal No. Wire Signal Name 6T O -	Connector No. M192	A B C D
Signal Name	2TOR-M07	F G
Color of Signa W/re P W//L W//L	M179 JOINT CONNEC WHITE Or of Signal N L L L L P P P P P P P P P	Н
Terminal No. Co 31G 96G 96G 99G 1	Connector No. Connector Name Connector Color Terminal No. 10 11 13 16 16 17	J
196 196		K
90 0 10 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	11TE 11TE 11TE Signal Name	EXL
nector No.	Minal No. Wire 10 P	Ν
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Connector No.	E122
Connector Name	Sonnector Name POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Color WHITE	WHITE









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Signal Na	-	ı	I	-
Color of Wire	Т	5	В	В
Terminal No.	ŀ	2	3	4



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

E123

Connector No.

BROWN

Connector Color Connector Name





Signal Name	GND (POWER)	
Color of Wire	В	
Terminal No.	29	

Signal Name	H/LAMP LO L	H/LAMP LO R	
Color of Wire	7	R/Y	
I No.			

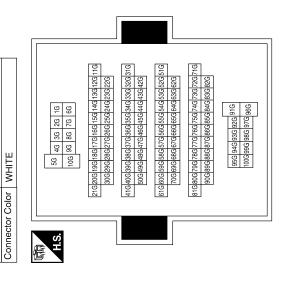


Signal Name	H/LAMP LO I	H/LAMP LO F	H/LAMP HI L	H/LAMP HI R (WITHOUT DAY LIGHT SYSTE
Color of Wire	_	R/Υ	Э	Γ/W
erminal No.	52	54	22	56

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Signal Name	I	ı	1	ı
Color of Wire	7	Д	M/B	L/W
Terminal No.	31G	32G	996	966

Connector Name WIRE TO WIRE



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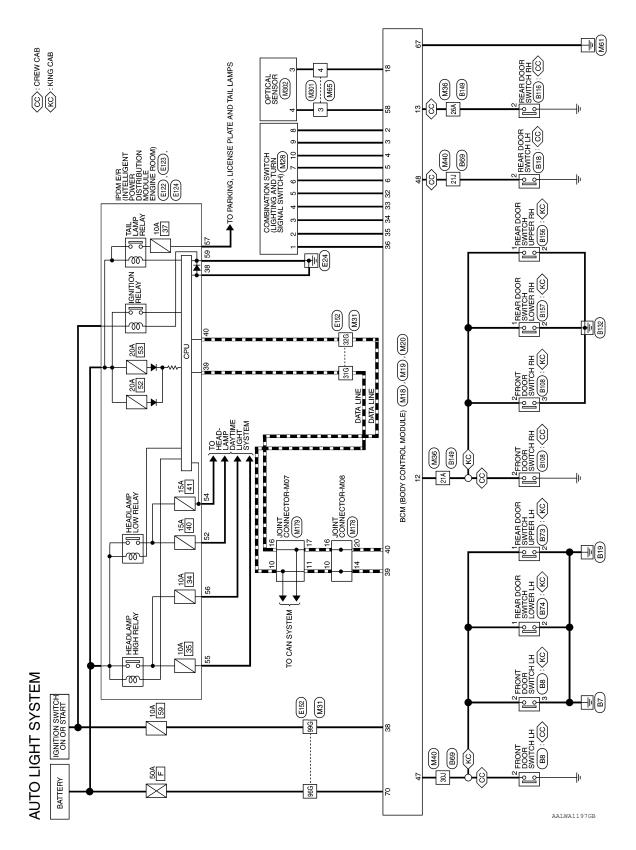
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AUTO LIGHT SYSTEM

Wiring Diagram



AUTO LIGHT SYSTEM CONNECTORS

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

Signal Name INPUT 5 INPUT 4

Terminal No. Color of Wire 2 SB 3

Connector Name BCM (BODY CONTROL MODULE)	BCM (BOI MODULE)	$\tilde{\leq}$	<u>8</u>	200	>	8	Ξ	ĕ	\					
Connector Color WHITE	ΗМ	I≣I	ш											
原 用.S.H												1		
	Ħ	$\ \cdot \ $	IŃ.	IV	۱г	$_{\perp}$								
1 2 3 4 5 6 7	7 8	6	9 10 11 12 13 14 15 16 17 18 19 20	Ξ	12	13	4	15	16	17	18	19	20	
21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38	7 28	53	30	31	32	33	34	35	36	37	38	39	40	
		ı	ı	ı	ı	ı	ı	ı	ı	ı	l	ı	ı	_

7	BCM (BODY CONTROL MODULE)	ITE	41 42 43 44 45 46 47 48 49 50 51 52 53 54 55	Signal Name	DOOR SW (DR)	DOOR SW (RL)
6 W .		lor WHITE	41 42 43	Color of Wire	SB	R/Υ
Connector No.	Connector Name	Connector Color	赋 H.S.	Terminal No.	47	48

Signal Name	DOOR SW (DR)	DOOR SW (RL)	
Color of Wire	SB	Ρ/Υ	
Terminal No.	47	48	
			•

INPUT 3	INPUT 2	INPUT 1	DOOR SW (AS)	DOOR SW (RR)	KEYLESS AND AUTO LIGHT SENSOR GND	OUTPUT 5	OUTPUT 4	OUTPUT 3	OUTPUT 2	OUTPUT 1	IGN SW	CAN-H	CAN-L
Y	G/B	>	R/L	GR	Ь	B/G	R/Υ	7	O/B	B/W	M/L	_	Ь
4	5	9	12	13	18	32	33	34	35	36	38	39	40

M28	COMBINATION SWITCH (LIGHTING AND TURN SIGNAL SWITCH)	WHITE	
Connector No.	Connector Name	Connector Color WHITE	

Signal Name

Color of Wire

Terminal No.

B/W O/B

R/G

2 9

₽Y

G/B

>

G/Y SB

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Connector No.	Σ	M28
Connector Name		COMBINATIO (LIGHTING AN SIGNAL SWIT
Connector Color		WHITE

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Connector No.	M20
Connector Name	Connector Name BCM (BODY CONTROL MODULE)
Connector Color BLACK	BLACK
199 199 199 199 199 199 199 199 199 199	56 57 58 59 60 61 62 63 64 65 66 67 68 69 70

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Signal Name	AUTO LIGHT SENSOR INPUT 2	GND (POWER)	BAT (F/L)
Color of Wire	W/R	В	M/B
Terminal No. Wire	58	29	20

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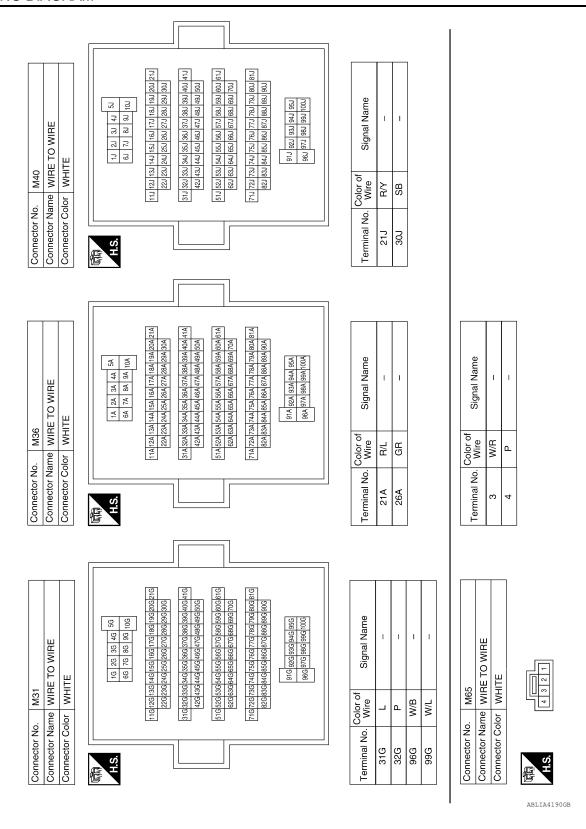
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AUTO LIGHT SYSTEM

Connector No. M179 Connector Name WIRE TO WIRE ALS ALS Terminal No. Valie Signal Name 10 L - 11 L - 16 P - 17 P - 17 P -				1						
9 NT CONNECTOR-M07 TE 6 4 3 2 1 10	_	E TO WIRE	TE .			Signal Name	1	1		
9 NT CONNECTOR-MO7 TE TE 16 15 14 13 12 11 10 7 16 15 14 13 12 11 10 8 Signal Name	M30	e WIR	or WHI			Solor of Wire	W/R	<u>_</u>		
ctor No. M179 ctor Name JOINT CONNECTOR-M07 ctor Color WHITE	Connector No.	Connector Nan	Connector Colc	E	H.S.	Terminal No.	3	4		
ctor No. M179 ctor Name JOINT CONN ctor Color WHITE		ECTOR-M07			2 1	ıl Name	1	1	1	ı
octor N octor		ame JOINT CONN	olor WHITE		9 8 7 6 5 4 19 18 17 16 15 14		7	T	Ь	۵
Conne Conne H.S. H.S.	Connector No.	Connector N	Connector C		H.S.	Terminal No.	10	11	16	17
	82	NT CONNECTOR-M08	IITE	F	7 6 5 4 3 2 1 17 16 15 14 13 12 11 10	Signal Name	ı	ı	ı	ı
78 NT CONNECTOR-N ITE 16 5 4 3 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	M M	Ime JOI	lor WH		9 8 7	Color of Wire	_	٦	Ь	Ь
78 NT CONNECTOR-N ITE 16 5 4 3 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Connector No.	ector Na	nector Co		H.S.	Terminal No. Wire	10	14	16	20

53	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)	BROWN	55 54 55 22	Signal Name	H/LAMP LO LH	H/LAMP LO RH	H/LAMP HI LH	H/LAMP HI RH (WITHOUT DAYTIME LIGHT SYSTEM)	H/LAMP HI RH (WITH DAYTIME I IGHT SYSTEM)
E123		_	28	Color of Wire	_	₽⁄	တ	N/	>
Connector No.	Connector Name	Connector Color	喃 H.S.	Terminal No.	52	54	22	56	99

Connector No.	. E122	2
Connector Name		PDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Color WHITE	lor WH	TE
呵荷 H.S.	488	41 40 39 38 37 47 46 45 44 43
Terminal No.	Color of Wire	Signal Name
38	В	GND (SIGNAL)
39	_	CAN-H
40	۵	CAN-L

02	Connector Name OPTICAL SENSOR	ITE	4	Signal Name	_	ı
). M302	ıme OP	olor WF		Color of Wire	۵	W/R
Connector No.	Connector Na	Connector Color WHITE	H.S.	Terminal No.	3	4

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Signal Name	
Color of Wire L L L L L L L L L L L L L L L L L L L	
31G 32G 99G 99G	
Connector No. E152	Connector No. B18 Connector Name REAR DOOR SWITCH LH Connector Color WHITE Terminal No. Wire Signal Name 2 R/Y -
Connector No. E124 Connector Name POWER DISTRIBUTION MODULE ENGINE ROOM) Connector Color of E124 Terminal No. Wire Signal Name 57 R/L TAIL LAMP 59 B GND (POWER)	Connector No. B8 Connector Name FRONT DOOR SWITCH LH Connector Color WHITE A.S. Terminal No. Wire Signal Name 2 SB - 2 SB - 3 B - -

	Connector Name REAR DOOR SWITCH UPPER LH	Connector Color BLACK	Terminal No. Color of 3 Signal Name 1 SB - 2 2 B - 2	Connector Name REAR DOOR SWITCH RH Connector Color WHITE H.S. Terminal No. Color of Signal Name 2 GR -	A B C D
lame		1		SWITCH RH	F G
Signal Name		'		Signal	Н
Color of Wire	R√	SB			ı
Terminal No.	21)	301		Connector No. Connector Color H.S. Terminal No. W 2 R	J
					K
	TO WIRE	1	5.1 4.1 3.1 2.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1	BLACK Cower LH BLACK rof Signal Name 3	EXL M
. B69	ime WIRE T	_	21.1 20.1 15.1 15.1 15.1 15.1 15.1 15.1 15.1 1	Oolor of Wire SB	N
Connector No.	Connector Name WIRE TO WIRE Connector Color WHITE		H.S.	Connector No. Connector Color H.S. Terminal No. Will Si 1 Si 2	0
				ABLIA4193GB	Р

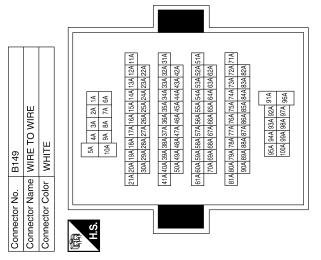
Connector No.). B157	25
Connector Name		REAR DOOR SWITCH LOWER RH
Connector Color		BLACK
H.S.		(E)
Terminal No.	Color of Wire	Signal Name
-	R/L	ı
5	а	ı

Connector No.	B156
Connector Name	Connector Name REAR DOOR SWITCH UPPER RH
Connector Color BLACK	BLACK
	2 1



Terminal No. Wire 1 R/L 2 B			
Terminal No.	Color of Wire	H/L	Я
	Terminal No.	1	5

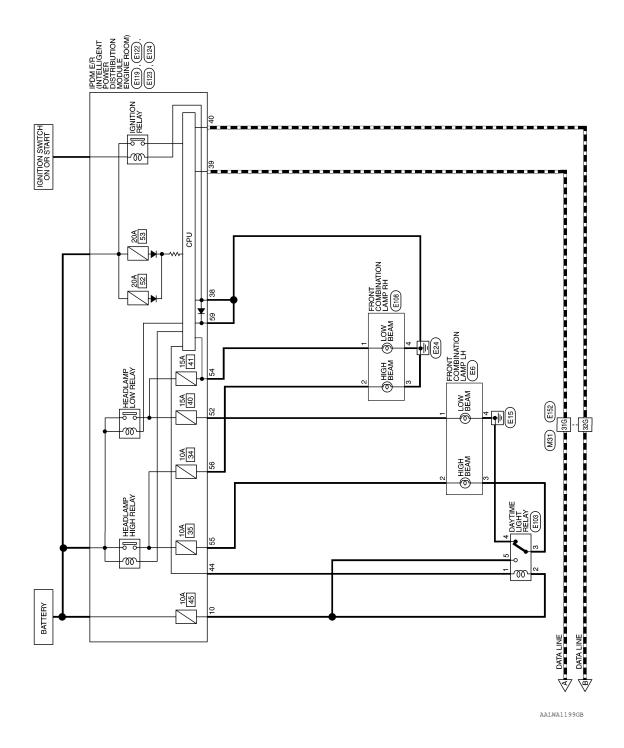
Signal Name



Signal Name	ı	ı
Color of Wire	R/L	GR
Terminal No.	21A	26A

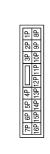
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DAYTIME LIGHT SYSTEM Α Wiring Diagram INFOID:0000000011559876 В C D BRAKE (N) Е SWITCH (M11) HIGH F UNIFIED METER CONTROL UNIT (WITH INFORMATION DISPLAY) JOINT CONNECTOR-M02 M192 FUSE BLOCK (J/B) (M4), (M60) G TO CAN SYSTEM Н 10A JOINT CONNECTOR-M07 (M179) IGNITION SWITCH ACC OR ON **₹**4 J Κ BCM (BODY CONTROL MODULE) (M18), (M20) EXL E152 M31 IGNITION SWITCH ON OR START : 3 4 5 6 7 10 6 COMBINATION SWITCH (LIGHTING AND TURN SIGNAL SWITCH) (M28) 10A 59 M DAYTIME LIGHT SYSTEM Ν BATTERY 32 0 Р AALWA1198GB



DAYTIME LIGHT SYSTEM CONNECTORS

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



7F OF 3F 4F (18P15P14P13P13P13P13P13P13P13P13P13P13P13P13P13P	Signal Name	I
6P 15P 14P 13P	Color of Wire	O/L
H.S.	erminal No.	5P

1	Connector Name PARKING BRAKE SWITCH	4CK		Signal Name	I
. M11	me PA	lor BL		Color of Wire	ŋ
Connector No.	Connector Na	Connector Color BLACK	H.S.	Terminal No. Wire	-
	FUSE BLOCK (J/B)	12	5P 4P 3P 2P 1P 4P 13P 12P 11P 14P 13P 12P 11P 10P 9P 8P	Signal Name	1
M4	FUSE	WHITE	5P 4P [14P 13P 1	or of ire	7

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

BLAC	Connector Color
BCM MODU	Connector Name
M20	Connector No.

MODULE)	\CK	56 57 58 59 60 61 62 63 64 70 8 1 8 1 70 1 30 64 64 64 64 64 64 64 64 64 64 64 64 64	Signal Name	GND (POWER)	BAT (F/L)
28 28	lor BLACK	56 57 58 55 65 66 6	Color of Wire	В	M/B
	Connector Color	H.S.	Terminal No.	29	20

Signal Name	INPUT 5	INPUT 4	INPUT 3	INPUT 2	INPUT 1	OUTPUT 5	OUTPUT 4	OUTPUT 3	OUTPUT 2	OUTPUT 1	IGN SW	CAN-H	CAN-L
Color of Wire	SB	G/Y	>	G/B	>	R/G	R/Υ	7	O/B	B/W	M/L	L	۵
Terminal No.	2	8	4	5	9	32	33	34	35	36	38	39	40

Connector No. Connector Color Connector Name Connec	Connector No. M18 Connector Name BCM (BODY CONTROL MODILI F)	WHITE		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
Connector No. M18 Connector Name BCM (B MODUL) Connector Color WHITE H.S. 1 2 3 4 5 6 7 8 9 9 10	18 CM (BC	HITE		9 10 1	29 30 3
Sonnector No. Sonnector Color Sonnector Color H.S. 12 3 4 5 6 7 7 12 23 24 55 25 27 25 28 24 55 25 27 27 27 27 27 27 27 27 27 27 27 27 27	M M	>		ω	28 2
Sonnector N Sonnector N Sonnector C Sonnector C H.S.	lo. lame	olor		9	26 2
Sonnec So	D D	tor C		5	24 25
	nec	neci	\ \o	က	23
	lo Son	Soni	E T	2	1 22

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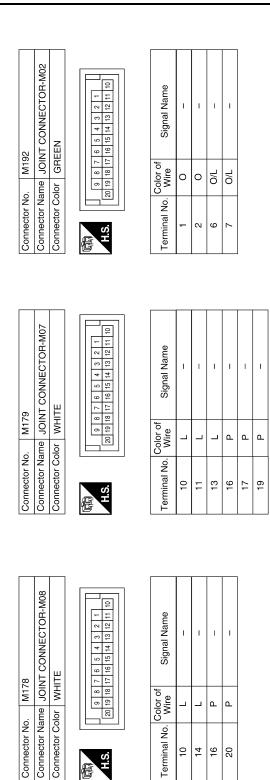
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Terminal No.	1	2 0/B –	3 L	4 R/Y –	5 R/G –	- A 9	7 G/B –	- 8 SB	- \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	10 4				Connector No. M60	Connector Name FUSE BLOCK (J/B)				67 57 47	ń.		Color of	Terminal No. Wire Signal Name	- О 19					
Connector No. M28 COMBINATION S	Connector Name (LIGHTING AND TURN	\neg	Connector Color WHITE	4 3 2 1	[2] (12 13 10	H.S. 14 11 1 2 3 4 5 6								Toring Color of Color of	_	31G L –	32G P _	- 86G W/B	– N/L 966										_
Connector No. M24 Connector Name COMBINATION METER	WHITE	-		20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5	39 38 37 36 35 34 33 32 31 30 29 28 27 26 25	Color of	Terminal No. Wire Signal Name	1 O ACCESSORY	9 B GND	11 L CAN-H	12 P CAN-L	23 G PARK BRAKE	24 O/L RUN/START	Connector No. M31	Connector Name WIRE TO WIRE	Connector Color WHITE	_		16 26 36 46 56	92 99	11G12G13G14G15G16G17G18G19G20G21G	22G23G24G25G26G27G28G29G30G	31G 32G 33G 34G 35G 36G 37G 38G 39G 40G 41G	42G 43G 44G 45G 46G 47G 48G 49G 50G	51 929 539 54 959 669 579 589 699 60 619	62G 63G 64G 65G 66G 67G 68G 69G 70G	71G72G73G74G73G76G77G78G79G80G81G	82G83G84G85G86G87G88G89G90G	016 000 000

DAYTIME LIGHT SYSTEM



	E108	,
Connector Name		FRONT COMBINATION LAMP RH (WITH DAYTIME LIGHT SYSTEM)
Connector Color	or BLACK	CK
原 H.S.		() () () () () () () () () ()
Terminal No.	Color of Wire	Signal Name
-	Ρ/Υ	ı
2	>	ı
က	В	1
4	В	1

3	DAYTIME LIGHT RELAY	BLACK	2 4 1	Signal Name	_	_	1	_	-
E103				Color of Wire	BR	В	Y/G	В	9
Connector No.	Connector Name	Connector Color	·····································	Terminal No.	1	2	က	4	5

	FRONT COMBINATION LAMP LH (WITH DAYTIME LIGHT SYSTEM)	BLACK	(1 4 1	Signal Name	ı	-	ı	1
. E6				Color of Wire	_	g	Y/G	В
Connector No.	Connector Name	Connector Color	崎 H.S.	Terminal No.	-	2	က	4

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PDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)	55 54 53 52	Signal Name	H/LAMP LO LH	H/LAMP LO RH H/LAMP HI LH	H/LAMP HI RH (WITH DAYTIME LIGHT SYSTEM)		olgnal Name	1	ı	I	ı	
	56 5	Color of Wire	L.	<u></u> ~	>	Color of	Wire	_	۵	M/B	×.	
Connector No. Connector Name Connector Color	所.S.	Terminal No.	52	55	56	_	j Z	31G	32G	596	566	566
										Г		
Connector No. E122 Connector Name POWER DISTRIBUTION MODULE ENGINE ROOM) Connector Color WHITE	(中) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1	Color of Wire	ÜÜ	SS L CAN-H 40 P CAN-L	44 BR DTRL RLY CONT	Connector No. E152	Connector Name WIRE TO WIRE	Connector Color WHITE			56 46 36 36	16.5 16 16 16 16 16 16 16 1
Connector No. E119 Connector Name POWER DISTRIBUTION MODULE ENGINE ROOM Connector Color WHITE	H.S. 18 17 16 15 14 13 12 11 10	Terminal No. Wire Signal Name	10 G DTRL RLY SUPPLY			Connector No. E124	IPDM E/R (INTELLIGENT	Connector Name POWER DISTRIBUTION MODILI F ENGINE BOOM)	7000	Connector Color BLACK		Terminal No. Color of Signal Name 59 B GND (POWER)

FRONT FOG LAMP

Wiring Diagram

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JOINT CONNECTOR-M07 (M179) JOINT CONNECTOR-M08 (M178) E152 M31 TO CAN SYSTEM ← CPU ¥ 65 20A 20A , M20 COMBINATION SWITCH (LIGHTING AND TURN SIGNAL SWITCH) (M28) BCM (BODY CONTROL MODULE) (M18) 15A 56 E152) M31 IGNITION SWITCH ON OR START 10A 59 98 50A BATTERY 20

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FRONT FOG LAMP

FRONT FOG LAMP CONNECTORS

M20	Connector Name BCM (BODY CONTROL	MODÙLE)	BLACK		56 57 58 59 60 61 62 63 64	65 66 67 68 69 70				re Signal Name	GND (POWER)	BAT (F/L)			
Connector No.	Connector Name		Connector Color BLACK		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	H.S.			Color of	lettiiilai No. Wii	67 B	70 W/B			
		I	ı	I											
Signal Mamo	olgilal Maille	INPUT 5	INPUT 4	INPUT 3	INPUT 2	INPUT 1	OUTPUT 5	OUTPUT 4	OUTPUT 3	OUTPUT 2	OUTPUT 1	IGN SW	CAN-H	CAN-L	
Color of	Wire	SB	Ğ∕	>	G/B	>	B/G	Ρ/Υ	7	O/B	B/W	W/L	Г	Ь	
Color of	מוווווו	2	က	4	5	9	32	33	34	35	36	38	39	40	
				,				19 20	38 39 40						
Connector No. M18	Connector Name BCM (BODY CONTEOL	MODULE)	Connector Color WHITE		E	S		2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17	21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38						

	_		I]											
Signal Name		1	1	-												
Color of Wire		۵	M/B	M/L												
Terminal No.	31G	32G	96G	966												
Connector No. M31	Connector Name WIRE TO WIRE	Connector Color WHI E		95 V V V V V V V V V V V V V V V V V V V	76 86 96 1	11G12G13G14G15G16G17G18G19G20G21G 22G2G2G24G25G26G26G27G28G20G0G	19-10-00-00-00-00-00-00-00-00-00-00-00-00-	4264364464864464866666		[51/Q52Q53Q54Q55Q56Q56Q59Q60Q61G]		71G72G73G74G73G76G77G78G79G80G81G	82GR3G 84G 85G 86G 89G 90G	916	9001 D06	
8;	COMBINATION SWITCH	SIGNAL SWITCH)	WHITE	Ş	1 2 3 4 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	Signal Name	ı	ı	ı	-	ı	ı	ı	ı	ı	1
lo. M28				ç	14 11 13	Color of Wire	W/A	O/B	_	R∕	R/G	>	g/B	SB	G/Y	Υ
Connector No.	Connector Name		Connector Color		山 H.S.	Terminal No.	-	2	ဇ	4	5	9	7	8	6	10

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FRONT FOG LAMP

62	Connector No.	o. E101	_	
NT CONNECTOR-M07	Connector Na	ame FRC	Connector Name FRONT FOG LAMP LH	
HTE	Connector Color BLACK	olor B∟⊿	ÇK	•
8 7 6 5 4 3 2 1 8 17 16 15 14 13 12 11 10	国 H.S.			1
Signal Name	Color of Terminal No. Wire	Color of Wire	Signal Name	
ı	-	W/R	ı	
-	2	В	1	

Onnector Color WHITE	Connector Name JOINTC Connector Color WHITE M.S. H.S.	Connector Name JOINT	Connector Name JOINT CONNECTOR-M07 Connector Color WHITE 9 8 7 6 5 4 3 2 1 1 1 1 1 1 1 1 1	Connector Name Connector Color	ame FRONT olor BLACK	Connector No. E101 Connector Name FRONT FOG LAMP LH Connector Color BLACK
Signal Name	Terminal No. Wire	Color of Wire	Signal Name	Terminal No.	Color of Wire	Signal Name
1	10	7	1	-	M/R	1
1	-	_	1	2	В	1
1	16	۵	1			
1	17	۵	ı			

78	JOINT CONNECTOR-M08	WHITE			7 6 5 4 3 2 1 17 16 15 14 13 12 11 10	Signal Name	ı	I	I	I
. M178				1 1 ⊢	20 19 18	Color of Wire	_	_	Ф	۵
Connector No.	Connector Name	Connector Color		僵	H.S.	Terminal No.	10	14	16	20
	•		-					•	•	

27	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)	BROWN	50 49 54 53 52	Signal Name	FR FOG LAMP LH	FR FOG LAMP RH	
. E123			51 55 55	Color of Wire	W/R	W/R	
Connector No.	Connector Name	Connector Color	H.S.	Terminal No.	20	51	

Connector No. Connector Color Connector Color Connector Color Connector Color Connector Color Connector No.		POWER DISTRIBUTION MODULE ENGINE ROOM) WHITE 12 11 40 38 37 48 41 43 48 44 43 48 48 44 43 48 48
38	В	GND (SIGNAL)
39	_	CAN-H
40	۵	CAN-I

2	FRONT FOG LAMP RH	CK		Signal Name	1	1
. E102		lor BLACK	[4]	Color of Wire	W/R	В
Connector No.	Connector Name	Connector Color	H.S.	Terminal No.	-	2

Siç			
Color of Wire	W/R	В	
Terminal No.	-	2	

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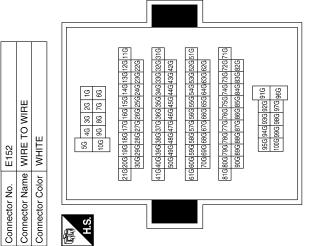
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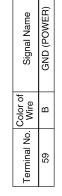
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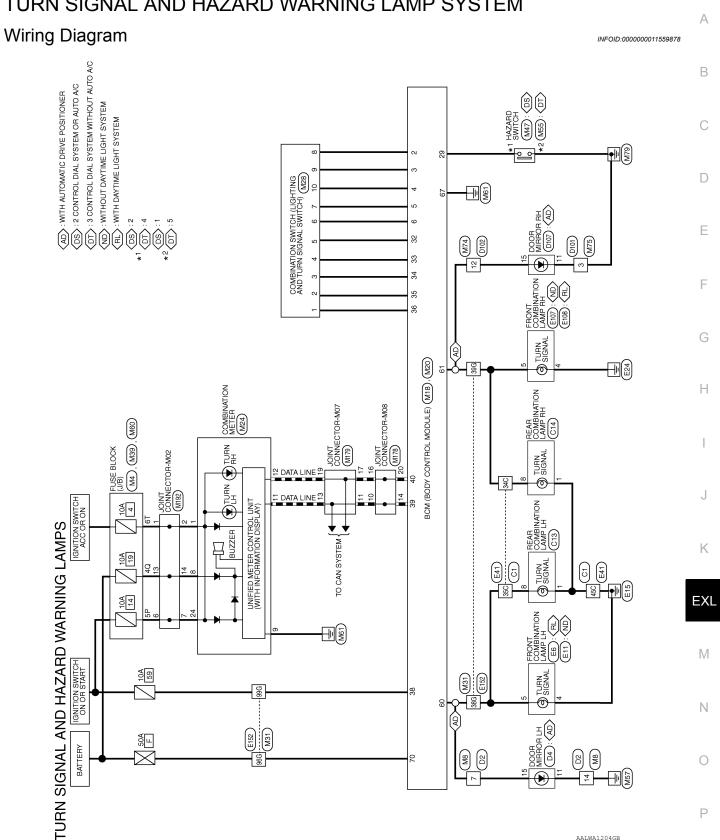
Terminal No.	Color of Wire	Signal Name
31G	7	ı
32G	Ь	_
996	M/B	-
966	MΠ	_

E124	Connector Name POWER DISTRIBUTION MODULE ENGINE ROOM)	BLACK	
Connector No.	Connector Name	Connector Color BLACK	





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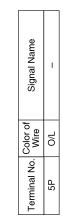


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TURN SIGNAL AND HAZARD WARNING LAMPS CONNECTORS

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

or No.	M4
or Name	or Name FUSE BLOCK (J/B)
or Color	WHITE
7P 6	7P 6P 5P 4P 3P 2P 1P
16P 1	16P 15P 14P 13P 12P 11P 10P 9P 8P



Connector No.	M8	
Connector Name WIRE TO WIRE	WIRE TO WIRE	
Connector Color WHITE	WHITE	
		ſ
2	5 4 3 2	-
16	16 15 14 13 12 11 10 9	8

Signal Name	ı	_
Color of Wire	GB	В
erminal No.	7	14

Signal Name	ı	I	
Color of Wire	GB	В	
Terminal No.	7	14	

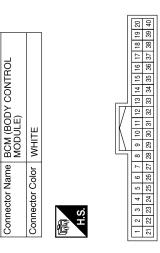
M20	Connector Name BCM (BODY CONTROL MODULE)	BLACK	
Connector No.	Connector Name	Connector Color BLACK	

Connector Name
Connector No.

Connector Name BCM (BC MODULE	BCM (BC MODULE
Connector Color BLACK	BLACK
VE.	

Signal Name	FLASHER OUTPU [.] (LEFT)	FLASHER OUTPU [.] (RIGHT)	GND (POWER)	BAT (F/L)
Color of Wire	G/B	G/Y	В	M/B
Terminal No.	09	61	29	70

Signal Name	INPUT 5	INPUT 4	INPUT 3	INPUT 2	INPUT 1	HAZARD SW	OUTPUT 5	OUTPUT 4	OUTPUT 3	OUTPUT 2	OUTPUT 1	MS NDI	CAN-H	CAN-L
Color of Wire	SB	G/Y	>	G/B	>	W/B	R/G	R/Υ	٦	O/B	R/W	M/L	Т	۵
Terminal No.	5	က	4	5	9	29	32	33	34	35	36	38	39	40

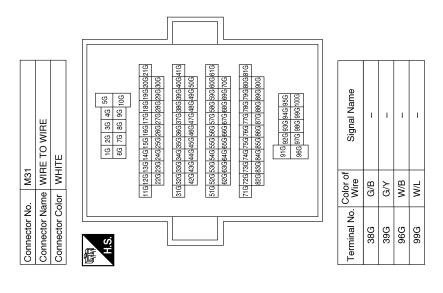


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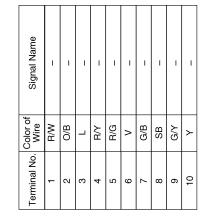
M18

Connector No.

< WIRING DIAGRAM >



Connector No.	M28
Connector Name	COMBINATION SWITCH (LIGHTING AND TURN SIGNAL SWITCH)
Connector Color WHITE	WHITE



Connector No.	M24
Connector Name	Connector Name COMBINATION METER
Connector Color WHITE	WHITE

	4	H.S.	ιĠ						$\parallel \parallel \setminus$	11	W	117							
_	20	19	18	17	16	20 19 18 17 16 15 14 13 12 11 10	14	13	12	Ξ	10	6	8	7	9	5	4	3	
_	40	40 39	38 37	37	36	35 34 33 32 31 30 29	34	33	32	31	30	53	28 27	27	26	25	24 23	23	
'_]]]											11

Signal Name	ACCESSORY	BATTERY	GND	CAN-H	CAN-L	RUN/START
Color of Wire	0	Y/R	В	٦	Ъ	O/L
Terminal No.	-	80	6	11	12	24

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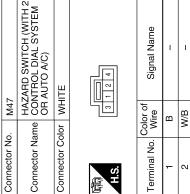
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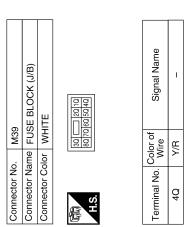
Ν

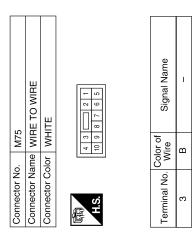
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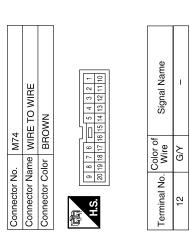
AALIA3497GB

Signal Name	Î	-
Color of Wire	M/B	В
Terminal No.	4	5

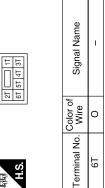








Connector No.	M60
Connector Name	Connector Name FUSE BLOCK (J/B)
Connector Color WHITE	WHITE



ABLIA4221GB

< WIRING DIAGRAM >

Connector Name JOINT (Connector Color WHITE	Vo. M178 Vame JOINT	Connector No. M178 Connector Name JOINT CONNECTOR-M08 Connector Color WHITE	Connector No. Connector Color	o. M179 ame JOINT olor WHITE	Connector No. M179 Connector Name JOINT CONNECTOR-M07 Connector Color WHITE	Connector No. Connector Name Connector Color	No. M192 Name JOINT	Connector No. M192 Connector Name JOINT CONNECTOR-M02 Connector Color GREEN
Ε. Ε. Α. Ε.	9 8 7	7 6 5 4 3 2 1 1 10	是 H.S.	20 19 18 17	6 5 4 3 2 1 16 15 14 13 12 11 10	是 H.S.	20 19 18 17	7 6 5 4 3 2 1
Terminal No. Wire	Color of Wire	Signal Name	Terminal No. Wire	Color of Wire	Signal Name	Terminal No. Wire	Color	Signal Name
10	_	ı	11	_	ı	-	0	1
14	_	1	13	_	1	2	0	ı
16	۵	ı	17	۵	1	9	O/C	ı
20	۵	1	19	۵	ı	7	O/L	ı
						13	Y/R	ı
						14	Y/R	ı

FRONT COMBINATIC LAMP LH (WITHOUT DAYTIME LIGHT SYS	CK	0 0 0	Signal Name	
FRC	BLACK	4	Color of Wire	ا ا
me	lor		Col	
or Name	or Color		No.	

딥

Connector No.

E6

Connector No.

LAMP LH (Ϋ́	N N N N N N N N N N N N N N N N N N N	S		
PAN	BLACK	4	Solor of Wire	В	l
me	ট্		Co		
Connector Name	Connector Color	H.S.	Ferminal No.	4	

FRONT COMBINATION LAMP LH (WITH DAYTIME LIGHT SYSTEM)	BLACK	- 4 \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	Signal Name	1	
			Color of Wire	В	Ç
Connector Name	Connector Color	H.S.	Terminal No.	4	ı

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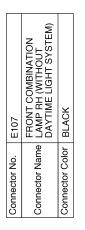
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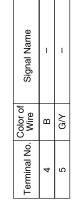
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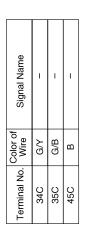
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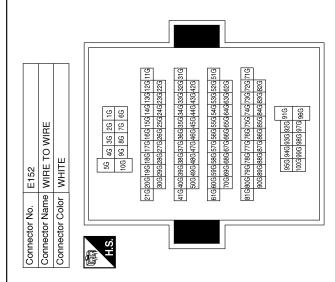




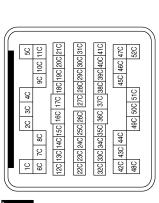


Signal Name	I		I	I
Color of Wire	G/B	G/Y	M/B	N/
Terminal No.	38G	39G	96G	966





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









-	G/Y	5
ı	В	4
Signal Name	Color of Wire	Terminal No.

AALIA3499GB

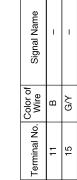
< WIRING DIAGRAM >

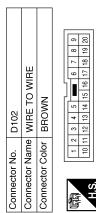
Connector Name REAR COMBINATION LAMP RH Connector Color GRAY	H.S. (5 7 8 4 7 8 8 7 8 8 7 8 8 9 1 8 1 8 1 8 1 8 1 8 1 8 1 8 1 8 1	Terminal No. Color of Wire Signal Name 1 B - 8 G/Y -		Connector No. D101 Connector Name WIRE TO WIRE Connector Color WHITE T 2 mm 3 4 H.S. T 8 9 10	Terminal No. Wire Signal Name 3 B -
Con		Ten		S S S S S S S S S S S S S S S S S S S	Пеп
REAR COMBINATION LAMP LH GRAY	2 3 4 4 8 4 8 4 8 9 8 9 8 9 8 9 8 9 8 9 8 9	Signal Name -		DOOR MIRROR LH (WITH POSITIONER) IN WHITE 10 11 12	Signal Name -
Connector Name REAR LAMP I	H.S.	Terminal No. Wire Wire 8 G/B		Connector No. D4 Connector Name AUTON Connector Color WHITE	Terminal No. Wire 11 B 15 G/B
TO WIRE	SC	31C 30C 23C 23C 23C 23C 23C 23C 23	Signal Name	ame WIRE TO WIRE lor WHITE 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16	Signal Name – – – – – – – – – – – – – – – – – – –
Connector Name WIRE TO WIRE Connector Color GRAY	5C 44 11C 10C 9C 21C 20C 19C 18C	31C 30C 29C 28C 41C 40C 38C 52C 51	Color of Wire 34C G/Y 35C G/B 45C B	Connector No. D2 Connector Name WIRE TO WIRE Connector Color WHITE 2 3	Terminal No. Wire 7 GB 14 B
Z O	<u></u>		34C 35C 45C		<u> </u>

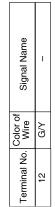
Revision: November 2014 **EXL-105** 2015 Titan NAM

D107	Connector Name AUTOMATIC DRIVE POSITIONER)	WHITE	
Connector No.	Connector Name	Connector Color WHITE	









AALIA3501GB

PARKING, LICENSE PLATE AND TAIL LAMPS SYSTEM

< WIRING DIAGRAM > PARKING, LICENSE PLATE AND TAIL LAMPS SYSTEM Α Wiring Diagram INFOID:0000000011559879 (ND): WITHOUT DAYTIME LIGHT SYSTEM (RL): WITH DAYTIME LIGHT SYSTEM В IPDM E/R (INTELLIGENT OWER DISTRIBUTION MODULE ENGINE ROOM) (E122) . (E124) JOINT CONNECTOR-M07 (M179) CONNECTOR-M08 C D E152 M31) REAR COMBINATION LAMP RH C14 Е IGNITION RELAY TO CAN SYSTEM TAIL F CPU **O** REAR COMBINATION LAMP LH C13 20A ¥ g Q TAIL LAMP Н A TAIL LAMP 7 37 37 фифин 466 61 61 45C C1 J FRONT COMBINATION LAMP LH E6: (RL) PARKING, LICENSE PLATE AND TAIL LAMPS Κ EXL BCM (BODY CONTROL MODULE) (M18) (M20) FRONT COMBINATION LAMP RH E107 : (ND) M PARKING COMBINATION SWITCH (LIGHTING AND TURN SIGNAL SWITCH) (M28) Ν IGNITION SWITCH ON OR START 10A 960 0 (M31) 50A

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AALWA1205GB

BATTERY

PAF	PARKING, LICENSE PI	ICEN	SE PLATE AND TAIL LAMPS CONNECTORS	LAMPS CC	ONNECT	rors					Γ
	Connector No.		18 COTINGO VIGOS MA	Terminal No.	Color of Wire	Signal Name	Conn	Connector No. Connector Name		(BODY CONTROL	
	COINTECTOI NAME		MODULE)	2	SB	INPUT 5			_	MODÚLE)	
	Connector Color	+	WHITE	ო	G/Y	INPUT 4	Conn	Connector Color	or BLACK	~	
		-		4	>	INPUT 3		r			
	E			2	g/B	INPUT 2	僵		56157158159	60 61 62 63 64	
	S			9	>	INPUT 1	H.S.	(Ġ	65 66 67	65 66 67 68 69 70	
		L		32	R/G	OUTPUT 5					
	ŀ			33	R/Y	OUTPUT 4					
	1 2 3 4 5	5 6 7 8	9 10 11 12 13 14 15 16 17 18 19 20	34	_	OUTPUT 3	Tarm	ON legiment	Color of	Signal Name	
	+ 7 C7 77	اات	10 00 67	35	O/B	OUTPUT 2			Wire	Olginal Ivaline	
				36	B/W	OUTPUT 1		29	n	GND (POWER)	
				38	M/L	IGN SW		70	M/B	BAT (F/L)	
				39	Г	CAN-H					
				40	Ь	CAN-L					
	Connector No.	O. M28	, and	Connector No.	No. M31		F		Color of		
		T	MOLLON SWITCH	Connector Name		WIBE TO WIBE	l erm	erminal No.	Wire	Signal Name	
	Connector Name		(LIGHTING AND TURN	Connector Color	_	10 W	က	31G	_	1	Г
		_	GNAL SWITCH)		-		၉	32G	Ъ	1	
	Connector Color	_	WHITE	E			6	96G	W/B	1	
						16 26 36 46 56	6	996	M/L	1	
	H.S.	12 13	1 2 3 4 5 6	i i		98 98					
		30,00	4		11010013	116196136136136136136196906916					
	Terminal No.	. Wire	Signal Name		22623	226 236 246 256 266 276 286 296 306					
	-	B/W	1		31632633	3161326133613461356135613761386139614061416					
	5	O/B	1		42643	426 436 446 456 466 476 486 496 506					
	3	7	ı		000	000000000000000000000000000000000000000					
	4	R/Y	1		50 02000	51 d 52 d 53 d 54 d 55 d 55 d 56 d 57 d 58 d 59 d 50	71				
	2	R/G	1								
	9	۸	1		71G72G73	71G72G73G74G75G76G77G78G79G80G81G					
	7	G/B	ı		20078	84 83 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8					
AALI	8	SB	1			916 926 936 946 956					
A350	6	G/Y	-			96G 97G 98G 99G100G					
02GB	10	\	1								

PARKING, LICENSE PLATE AND TAIL LAMPS SYSTEM

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< WIRING DIAGRAM >

20 19 18 17 16 15 14 13 12 11 10		WHITE	Connector Name LAMP	LAMP LH (WITH DAYTIME LIGHT SYSTEM)
	H.S. 20 19 18	8 7 6 5 4 3 2 1 18 17 16 15 14 13 12 11 10	Connector Color BLACK	× 2
Terminal No. Wire Signal Name	Terminal No. Wire	of Signal Name		
	10 L	1	Terminal No. Wire	Signal Name
-	11 L	1	4 B	1
I	16 P	ı		1
1	17 P	1		
Connector No. E11	Connector No.	E41	Connector No. E107	
FRONT COMBINATION	Connector Name	WIRE TO WIRE	FROM	IT COMBINATION
	Connector Color	GRAY	Connector Name LAMP DAYT	LAMP RH (WITHOUT DAYTIME LIGHT SYSTEM)
Connector Color BLACK			Connector Color BLACK	*
\(\begin{array}{c} - 4 \\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	H.S. 10 8C 7C 8C 8C 12C 13C 14C 15C	2C 3C 4C 50 10C 11C 11C 11C 11C 11C 11C 11C 11C 11	H.S.	2 2 3
	220 230	220 230 240 250 260 270 280 290 300 310	Color of Terminal No William	Signal Name
Color of Signal Name Wire	320 330	320 330 340 350 360 370 380 390 400 410	4	
B R/L	42C 43C	44C 45C 46C 47C 49C 50C 51C 52C	6 R/L	1
			√ [
	Terminal No. Wire	of Signal Name		
	45C B	ı		
	46C R/L	1		

Revision: November 2014 EXL-109 2015 Titan NAM

PARKING, LICENSE PLATE AND TAIL LAMPS SYSTEM

Connector Name POWER DISTRIBUTION MODULE ENGINE ROOM)	Connector Color BLACK	559 58 57 H.S.	Terminal No. Wire Signal Name	57 R/L TAIL LAMP	59 B GND (POWER)			Connector Name WIRE TO WIRE		-			100 90 80 70	21C 20C 19C 18C 17C 16C 15C 13C 12C	31C 30C 29C 27C 26C 25C 24C 23C 22C	410 400 390 380 370 380 340 330 320	47C 46C 45C 42C 43C 42C	S2C 51C 50C 49C 48C		Terminal No. Wire Signal Name	45C B –	46C R/L –
E122 IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)	ш	145 38 44 43 44 43 44 45	Signal Name	GND (SIGNAL)	CAN-H	CAN-L		Signal Name	1	1	ı	1										
Connector No. E122 IPDM Connector Name POW MOD	Connector Color WHITE	H.S. 48 47 46	Terminal No. Wire	38 B	39 F	40 P		Terminal No. Wire	31G L	32G P	96G W/B	M/I 566										
Connector No. E108 Connector Name LAMP RH (WITH DAYTIME LIGHT SYSTEM)	Connector Color BLACK	H.S. 4 5 6 6 6 6 7 6 7 6 7 6 7 6 7 6 7 6 7 6 7	Terminal No. Wire Signal Name	4 B	6 R/L –		lŀ	Connector No. E152		*		56 00 00 00	100 96 86 76	21G20G19G18G17G16G15G14G13G12G111G	300 290 280 270 260 250 240 230 220	41G 40G 39G 38G 37G 38G 38G 38G 38G 31G	074000000000000000000000000000000000000	61G60G59G58G57G56G55G54G52G52G57G57G57G56G55G54G52G52G52G57G58G57G66G655G644G632G82G	816 806 796 776 776 756 746 736 716	୨୦୦ର ୫୫୦ର ୫୫୦ର ୫୫୦ର ୫୫୦ର ୫୫୦ର ୫୫୦ର ୫୫୦ର	95G 94G 93G 92G 91G	1005 996 976 966

PARKING, LICENSE PLATE AND TAIL LAMPS SYSTEM

< WIRING DIAGRAM >

Connector No.		C14	1
Connector Name	ame	F.E.	REAR COMBINATION LAMP RH
Connector Color	olor	GRAY	AY
H.S.		- 5	0 2 3 4 8 4
Terminal No.	0	color of Wire	Signal Name
-		<u>а</u>	1
9	8	R/L	-

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



5 1 8 4	Sign		
	Color of Wire	В	1/0
H.S.	Terminal No.	-	9

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



	Sign	
2	Color of Wire	R/L
H.S.	Terminal No.	1

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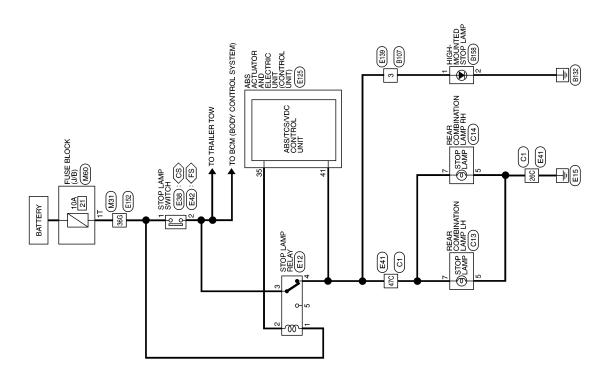
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ABLIA3258GB

STOP LAMP

Wiring Diagram

⟨CS⟩: COLUMN SHIFT
⟨FS⟩: FLOOR SHIFT

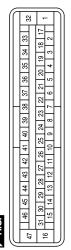


STOP LAMP

ABLWA2654GB

				Α
		9		В
	BLOCK (J/B)	Signal Name		С
	Connector No. M60 Connector Name FUSE BLOCK (J/B) Connector Color WHITE	S S S S S S S S S S		D
	Connector No. Connector Name	H.S. Terminal No. 1T		Е
				F
	Signal Name -		MP SWITCH I SHIFT) Signal Name	G
			TIE MWN	Н
	Color of Wire R/Y			I
	Terminal No.		Connector Name Connector Color Terminal No. Wy 1 R 2 R	J
				K
CTORS	O WIRE	11G 2G 3G 4G 5G 10G 10G 10G 10G 10G 10G 10G 10G 10G 10	Connector No. E12 Connector Name STOP LAMP RELAY Connector Color BLACK H.S. \$\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	EXL
CONNE	M31 ame WIRE T	1116 126 136 136 136 136 136 136 136 136 136 13	E12 STOP L STOP	N
STOP LAMP CONNECTORS	Connector No. M31 Connector Name WIRE TO WIRE Connector Color WHITE	S. T.	Connector No. E12	0
STO		- 	ABLIA4210GB	

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

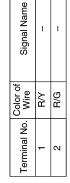


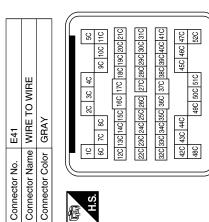
Signal Name	BRL OUT	BLS
Color of Wire	M	R/B
Terminal No.	32	41





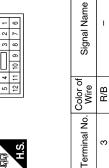
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	Signal Name	-	_	
	Color of Wire	В	B/B	
<i>!</i>	Terminal No.	26C	47C	

Connector No.	E139
Connector Name WIRE TO WIRE	WIRE TO WIRE
Connector Color BROWN	BROWN
暫	5 4 3 2 1
	0 0



LF

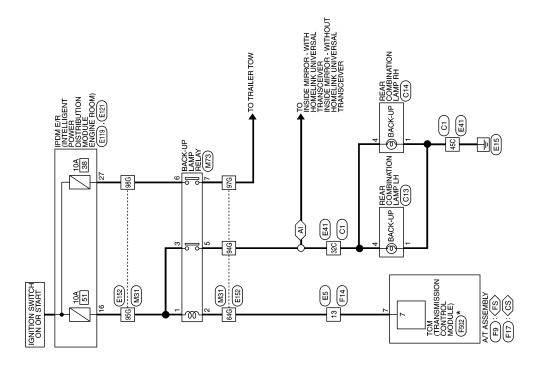
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		А
	30 B	В
Connector No. C13 Connector Name REAR COMBINATION LAMP LH Connector Color GRAY Terminal No. Wire Signal Name 5 B 7 7 R/B	B158 HIGH-MOUNTED STOP LAMP WHITE or of Signal Name V/B B	С
lame REAR LAMP Color GRAY Wire B B B B B B B B B B B B B B B B B B B	loo B158 lame HIGH-M LAMP color Wire B/B	D
Connector Name Connector Color Terminal No. W V 5 7 F F	Connector No. Connector Color Terminal No. 1 R 2	Е
		F
C1 C C C C C C C C C	WIRE 10 11 12 Signal Name	G
Connector No. C1	A STATE OF THE TOP OF	Н
10 No. C1	r No. B10 r Name WIF r Color BR Color of 6 7 2 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	I
Connector No. Connector Name Connector Color H.S. H.S. A.S.	Connector No. Connector Color Connector Color H.S. Terminal No. W	J
		K
E152 WHIRE TO WIRE 106 46 36 16 16 106	C14 REAR COMBINATION GRAY GRAY or of Signal Name B	EXL
Color of Write WHITE WHITE WHITE		N
Connector No. E152	Connector No. Connector Color Connector Color Terminal No. 5 B 7 R	0
	ABLIA6481GB	P

BACK-UP LAMP

Wiring Diagram

(AI): WITH AUTO ANTI-DAZZLING
(IS): COLUMN SHIFT
(FS): FLOOR SHIFT

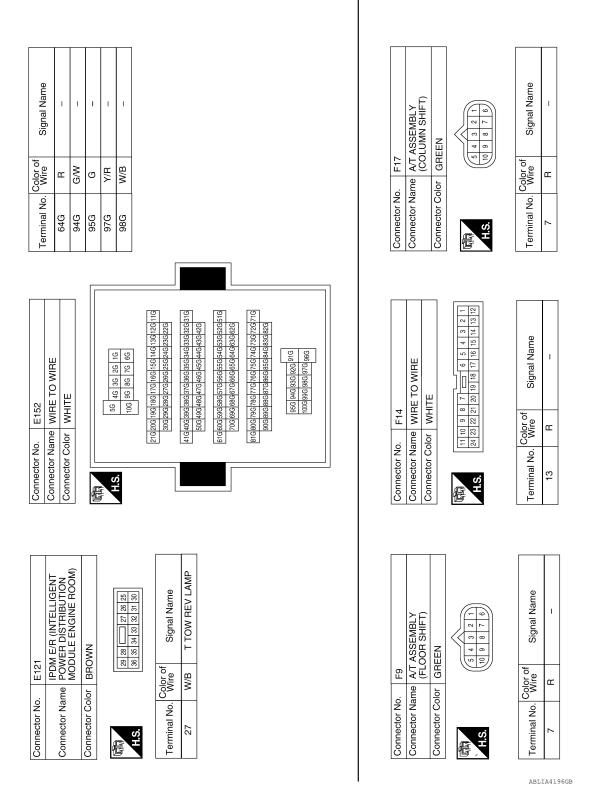


BACK-UP LAMP

W. HIE CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT" OF PG SECTION.

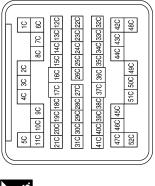
INFOID:0000000011559881

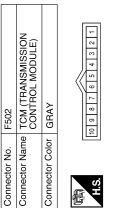
																														А
		- LAY						ЭС									GENT	MOOM)		F			<u>e</u>	-AMP						В
		BACK-UP LAIMP RELAY	_) e)]	Signal Name	, 1	ı	1	I					/R (INTELLI	MODULE ENGINE ROOM)			14 13 12 11 10 14 15 12 11 10		Signal Name	REVERSE LAMP						С
			_			9		Color of Wire	g g	æ	5	G/W	W/B			E119			lor WHITE		9 8 7 6 <u> </u>	Color of	Wire	<u> </u>						D
	Connector No.	Connector Name		Œ		Ę.		Terminal No.		2	က	5	9 /			Connector No.	- National Control	Connector Name	Connector Color	•	山山 H.S.		No	16						Е
																													_	F
	ame																			9C 10C 11C	19C 20C 21C	29C 30C 31C	39C 40C 41C	45C 46C 47C	25C	ame				G
	Signal Name	I	1	1	I	ı											WIRE TO WIRE			20 30 40	120 130 140 150 160 170 180 190 200 210	220 230 240 250 260 270 280 290 310	32C 33C 34C 35C 38C 38C 39C 40C 41C		49C 50C 51C	Signal Name	1	1		Н
	Color of Wire	œ	G/W	ŋ	Y/R	M/B												color GRAY		10 00 00 00 00 00 00 00 00 00 00 00 00 0	120 130 140 150	22C 23C 24C 25	32C 33C 34C 35	43C 44C	48C	Color of Wire	2 W	<u> </u>	1	I
	Terminal No.	64G	94G	95G	97G	986										Connector No.	Connector Name	Connector Color		S I	<u> </u>					Terminal No.	32C	45C	2	J
			_[K
rors					56	10G	G19G20G21G	G29G30G	G39G40G41G	d49d20d	G59G 60G 61G		G79G80G81G G89G90G	956						8 9 10 11 21 22 23 24			ame							EXL
NNEC-		IO WIRE	ш		1G 2G 3G 4G ^{5G}	6G 7G 8G 9G 10G	116126136146156166176186196206216	22G23G24G25G26G27G28G	316 326 336 346 356 366 376 386 396 406 416	+a45a46a47a48	51G52G53G54G55G56G57G58G50			91G 92G 93G 94G 95G	200 200 200 200 200 200 200 200 200 200		WIRE TO WIRE		\ [[5 6 ••• 7 8 16 17 18 19 20 21			Signal Nam	1						M
AMP CC	o. M31	ame WIRE I	I I I I I I I I I I I I I I I I I I I				11G12G13G14	22623624	31G32G33G34	4201430143	51G52G53G54	2000	71G72G73G74 82G83G84			lo. E5		olor	- IF	12 13 14 15 1	-	Color of	>	r						N
BACK-UP LAMP CONNECTORS	Connector No.	Connector Name WIRE 10 WIRE	Cormector Color			ίς V										Connector No.	Connector Name	Connector Color		ď	_		Terminal No.	13						0
BAC	<u> </u>	<u> </u>	-	۳	•															<u>, , , , , , , , , , , , , , , , , , , </u>	3		· L			AALI	A350:	3GB		
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Signal Name	1	ı
Color of Wire	G/W	В
Terminal No.	32C	45C







	Signal Name	REV LAMP RLY
2	Color of Wire	0
H.S.	Terminal No.	



REAR COMBINATION LANGRAY GRAY 1 2 3 4 5 6 7 8	of Signal Name		/
	Color of Wire	М	G/W
Connector Name	Terminal No.	-	4

	REAR COMBINATION LAN	٩٧	5 6 7 8	Signal Name	_	=
<u>}</u>		lor GRAY		Color of Wire	В	G/W
	connector Name	Connector Color	H.S.	Ferminal No.	-	4

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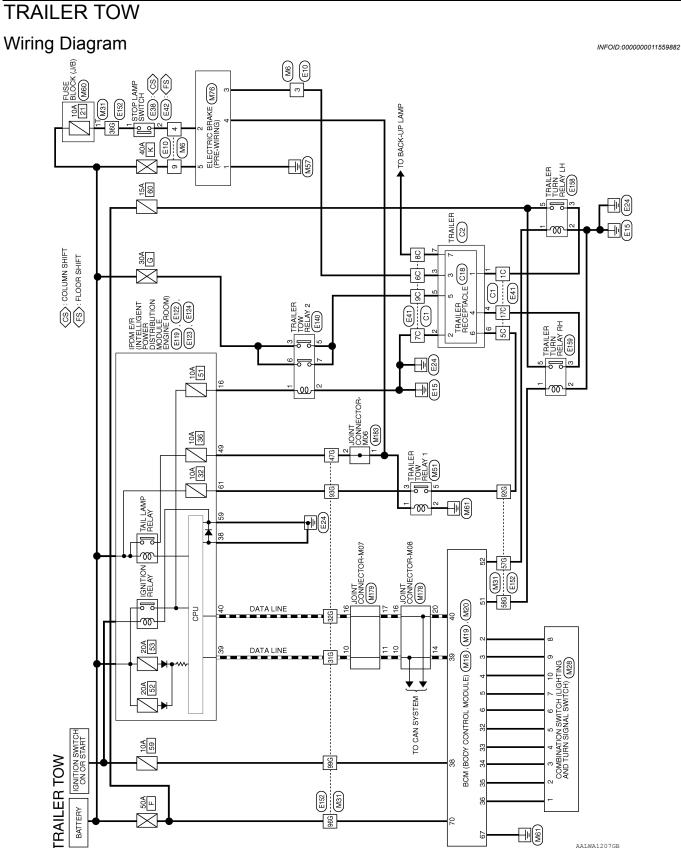
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Signal Name

Color of Wire

Terminal No.

INPUT 5

SB

INPUT 4

G/Y

က 4 OUTPUT 5 OUTPUT 4 OUTPUT 3 **OUTPUT 2** OUTPUT 1

R/G

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INPUT 1

INPUT 3 INPUT 2

G/B

2 9 32 8 8

TRAILER TOW CONNECTORS

M18	BCM (BODY CONTROL	MODULE)	WHITE
Connector No.	Connector Name		Connector Color WHITE
M6	WIRE TO WIRE	WHITE	
Connector No.	Connector Name	Connector Color	
	Connector No. M6 Connector No. M18	Connector No. M6 Connector Name M18 Connector Name WIRE TO WIRE Connector Name BCM (BODY CONTROL	





Signal Name	1	I	I
Color of Wire	BR/W	R/G	Ж
Terminal No.	3	4	6

CAN-H	CAN-L		
/O	/O		
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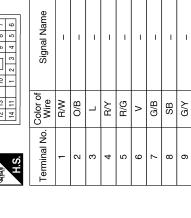
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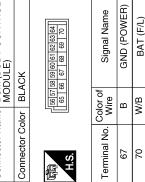
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M28	COMBINATION SWITCH (LIGHTING AND TURN SIGNAL SWITCH)	WHITE	
Connector No.	Connector Name	Connector Color WHITE	



Connector No.	M20
Connector Name	Connector Name BCM (BODY CONTRO MODULE)
Connector Color BLACK	BLACK
	56 57 58 59 60 61 62 63 64



Connector Name		BCM (BODY COM MODULE)
Connector Color		BLACK
offi H.S.	5657	56 57 58 59 60 61 62 6 65 66 67 68 69
Terminal No.	Color of Wire	Signal
29	В	GND (F
70	W/B	BAT

Connector No.). M19	9	
Connector Na	ame BCI	Connector Name BCM (BODY CONTROL MODULE)	
Connector Color	olor WHITE	ITE	
H.S.	41 42 43 44 4	41 42 43 44 45 46 47 48 49	
Terminal No.	Color of Wire	Signal Name	
51	A//B	TRAILER FLASHER OUTPUT (RIGHT)	
52	G/B	TRAILER FLASHER	

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Connector No. M31	Terminal No.	Color of Wire	Signal Name	Connector No.	9	M51 TRAIL ER TOW RELAY 1
	31G	_	ı	Connector Color	_	
_	32G	<u>a</u>	ı		-	
	36G	₽V	1	E	Ŀ	[~
16 26 36 46 56	47G	R/L	I	S FI	<u>-</u> -7) s
97 99	57G	G/B	ı		2	
	58G	Y/B	ı			
	92G	œ	I			
22G23G24G25G26G27G28G29G30G	93G	BR	-	Terminal No	Color of	Signal Name
	96G	M/B	ı		_	Ogliai Mailio
42G 43G 44G 45G 46G 47G 48G 49G 50G	966	M/L	ı	- 0	7 -	1
\$10\$20\$20\$20\$40\$50\$660\$70\$20\$60\$00\$01\$ 				N E	BB	1 1
				5	н	ı
82G 83G 84G 86G 86G 87G 88G 86G 96G						
916 729 (200) (200) (200)						
96G BYG BY						
Connector No. M60	Connector No.). M76		Connector No.	lo. M178	
Connector Name FUSE BLOCK (J/B)	Connector Name	le le	ELECTRIC BRAKE	Connector	lame JOIN	Connector Name JOINT CONNECTOR-M08
Connector Color WHITE	Connector Color	_	WIRING)	Connector Color	olor WHITE	Е
						F
H.S. 67 57 47 37	是 H.S.	1 2 -	0 S	H.S.	20 19 18 17	16 15 14 13 12 11 10
Terminal No. Color of Signal Name	Terminal No.	Color of Wire	Signal Name	Terminal No.	Color of Wire	Signal Name
1T R/Y –	1	В	1	10	_	ı
	2	B/G	1	14	7	1
	င	BR/W	1	16	۵	ı
	4	R/L	1	50	<u> </u>	ı
	5	œ	1			

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						,	
E TO WIRE	7 8 8 7 0 10 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	Signal Name	I	I	ı		
me WIRE	2 9 2	Color of Wire	BR/W	B/G	<u>«</u>		
Connector No. E10 Connector Name WIRE TO WIRE Connector Color WHITE	H.S.	Terminal No. Wire	င	4	6		
					ı		
Connector No. M183 Connector Name JOINT CONNECTOR-M06 Connector Color BLUE	16 15 14 13 12 11 10	Signal Name	_	I			
M183 ne JOINT or BLUE	9 8 7 20 19 18 17	Solor of Wire	B/L	B/L			
Connector No. M183 Connector Name JOINT Connector Color BLUE	H.S.	Terminal No. Wire	-	2			
							1
Connector No. M179 Connector Name JOINT CONNECTOR-M07 Connector Color WHITE	6 5 4 3 2 1 16 15 14 13 12 11 10	Signal Name	-	1	ı	I	
. M179 me JOINT lor WHIT	9 8 7 7 19 18 17	Color of Wire	Γ	Τ	۵	۵	
Connector No. M179 Connector Name JOINT C	H.S.	Terminal No. Color of Wire	10	11	16	17	

Signal Name	1	1	1	ı	1	1	ı
105	G/B	Я	BR/W	В	Y/R	M/L	Y/B
Terminal No.	51	2C	29	70	9C	26	17C

E41	WIRE TO WIRE	GRAY		1C 2C 3C 4C 5C	6C 7C 8C 9C 10C 11C	120 130 140 150 160 170 180 190 200 210	220 230 240 250 260 270 280 290 300 310	320 330 340 350 360 370 380 390 400 410	42C 43C 44C 45C 46C 47C	48C 49C 50C 51C 52C	
E41	WIRE	GRAY		5	\vdash	2C 13C 14	2C 23C 24	2C 33C 34	43C	18C	
or No.	or Name	or Color									J

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

Signal Name	I	I	
Color of Wire	R/Υ	R/G	
Terminal No.	1	2	

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

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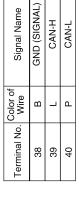
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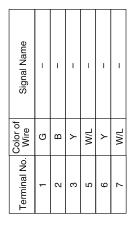
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	Connector No. E122	E122
ELLIGENT RIBUTION INE ROOM)	Connector Name	Connector Name POWER DISTRIBUTION MODULE ENGINE ROOM)
	Connector Color WHITE	WHITE

	42 41 40 39 38 37	48 47 46 45 44 43	Signal Name	GND (SIGNAL)	CAN-H
	42 41	48 47	Color of Wire	В	
_	ď	ā	minal No.	38	39



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



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

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

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

POWER DISTRIBUTION MODULE ENGINE ROOM)	4CK	08 19 29 25 29 25 29 25 29 25 25 25 25 25 25 25 25 25 25 25 25 25	Signal Name	GND (POWER)	TRAIL RLY SUPPLY
	lor BLACK		Color of Wire	В	BR
Connector Name	Connector Color	in H.S.	Terminal No.	69	61

	STOP LAMP SWITCH FLOOR SHIFT)	4CK	
Connector No. E42	Connector Name STOP LAMP SWITCH (FLOOR SHIFT)	Connector Color BLACK	



Connector No.	E123
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROON
Connector Color	BROWN
,	
管	51 50 49 56 55 54 53 52

Connector Name Connector Color H.S.	MOI NOI NOI NOI NOI NOI NOI NOI NOI NOI N	Connector Name POWEH UIS I HIBUTION MODULE ENGINE ROOM Connector Color BROWN 56 56 54 53 52 H.S. Color of
Terminal No.	Wire	Signal Name
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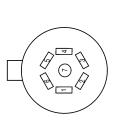
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Connector Name TRAILER TURN RELAY LH	_		<u></u>	2 📉 1			-	Color of Signal Name Signal Name Color of Signal Name Color of Color of	G/B	2 B -	3 G/B –	5 L –		Terminal No Color of Signal Name	wire		ר מ	6C BR/W -	7/K		17C Y/B –					
Signal Name -	1	ı	I	1	I	ı	ı	1	ı						WIRE TO WIRE	47			4C 3C 2C	78 7/ 78	210 200 190 180 170 160 150 140 130 120	310 300 230 230 210 250 230 230 230	36 376 38	44C 43C	51C 50C 49C	
31G L	32G P	36G R/Y	47G R/L	57G G/B	58G Y/B	92G R	93G BR	96G W/B	99G L/W					Connector No. C1		Connector Color GRAY			H.S.	201	210 200 19	210300123	410 400 39	47C 46C 45C	esc	
Connector Name WIRE TO WIRE	_		20 00 00 00 00 00 00 00 00 00 00 00 00 0	106 96 86 76	-	21G20G19G18G17G16G15G14G13G12G11G	30G29G28G27G26G25G24G23G22G	416 406 396 376 386 356 346 336 316	50G 49G 48G 47G 46G 45G 44G 43G 42G	61G60G59G58G57G56G55G54G53G52G51G	700/69G/68G/67G/66G/65G/64G/63G/62G	81 G 80 G 79 G 77 G 77 G 77 G 77 G 77 G 77 G 7	95G 94G 93G 92G 92G 91G	Connector No. E159	-	Connector Color BLUE			H.S.		Color of Signal Name	Y/B	2 B	3 Y/B –	2	





Signal Name	STOP/TURN LH	GROUND	ELECTRIC BRAKE	STOP/TURN RH	BATTERY	RUNNING LAMPS	BACK-UP LAMPS
Color of Wire	ı	ı	-	ı	ı	1	1
Terminal No. Wire	-	2	8	4	2	9	7







Signal Name	_	_	-	_	_	_	_
Color of Wire	G/B	В	BR/W	Y/B	T/M	ш	Y/R
Terminal No. Wire	1	2	3	4	5	9	7

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EXTERIOR LIGHTING SYSTEM SYMPTOMS

< SYMPTOM DIAGNOSIS >

SYMPTOM DIAGNOSIS

EXTERIOR LIGHTING SYSTEM SYMPTOMS

Symptom Table

CAUTION:

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

Sym	otom	Possible cause	Inspection item			
Headlamp does not	One side	Fuse Harness between IPDM E/R and the front combination lamp IPDM E/R	Headlamp (HI) circuit Refer to <u>EXL-36</u> .			
switch to the high beam.	Both sides	Symptom diagnosis "BOTH SIDE HEADLAMPS DO NOT SWITCH TO HIGH BEAM" Refer to EXL-130.				
High beam indicator lamp (Headlamp switches to the		Combination meter BCM	Combination meter. Data monitor "HI-BEAM IND". BCM (HEAD LAMP) Active test "HEADLAMP".			
Headlamp does not switch to the low beam.	Both sides	Combination switch (lighting and turn signal switch) Harness between the combination switch (lighting and turn signal switch) and BCM BCM	Combination switch (lighting and turn signal switch) Refer to BCS-53.			
		High beam request signal BCM IPDM E/R	IPDM E/R Data monitor "HL HI REQ".			
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 <u>EXL-41</u> .			
	Both sides	Symptom diagnosis "BOTH SIDE HEADLAMPS (LO) ARE NOT TURNED ON" Refer to EXL-131.				
Headlamp does not turn OFF.	When the ignition switch is turned ON	BCM Combination switch (lighting and turn signal switch)	Combination switch (lighting and turn signal switch). Refer to BCS-53.			
Headlamp is not turned O switch AUTO.	N/OFF with the lighting	Combination switch (lighting and turn signal switch) Harness between the combination switch (lighting and turn signal switch) and BCM BCM	Combination switch (lighting and turn signal switch). Refer to EXL-58.			
		Optical sensor Harness between the optical sensor and BCM BCM	Optical sensor. Refer to EXL-58.			

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EXTERIOR LIGHTING SYSTEM SYMPTOMS

< SYMPTOM DIAGNOSIS >

Symp	otom	Possible cause	Inspection item				
Daytime light system does	not activate.	 Either high beam bulb Parking brake switch Combination switch (lighting and turn signal switch) BCM IPDM E/R Daytime light relay Harness between IPDM E/R and daytime light relay. 	Daytime light system description. Refer to EXL-11.				
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 <u>EXL-44</u> .				
	Both side	Symptom diagnosis "BOTH SIDE FRONT FOG LAMPS ARE NOT TURNED ON" Refer to EXL-133.					
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-46.				
	Both sides	Symptom diagnosis "PARKING, LICENSE PLATE AND ON" Refer to EXL-132.	TAIL LAMPS ARE NOT TURNED				
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 <u>EXL-52</u> .				
	One side	Combination meter	_				
Turn signal indicator lamp	Both sides (Always)	Turn signal indicator lamp signal Combination meter BCM	Combination meter. Data monitor "TURN IND". BCM (FLASHER) Active test "FLASHER".				
does not blink.	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-33.				

NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

NORMAL OPERATING CONDITION

Description A

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.

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BOTH SIDE HEADLAMPS DO NOT SWITCH TO HIGH BEAM

< SYMPTOM DIAGNOSIS >

BOTH SIDE HEADLAMPS DO NOT SWITCH TO HIGH BEAM

Description INFOID:000000011559885

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

Diagnosis Procedure

INFOID:0000000011559886

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

Check the combination switch (lighting and turn signal switch). Refer to BCS-53, "Symptom Table".

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

YES >> GO TO 2.

NO >> Repair or replace the malfunctioning part.

2. CHECK HEADLAMP (HI) REQUEST SIGNAL INPUT

(B)WITH CONSULT DATA MONITOR

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

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

Is the item status normal?

YES >> GO TO 3.

NO >> Replace BCM. Refer to BCS-56, "Removal and Installation".

3. HEADLAMP (HI) CIRCUIT INSPECTION

Check the headlamp (HI) circuit. Refer to <u>EXL-36</u>, "<u>Diagnosis Procedure - Without Daytime Light System</u>" or <u>EXL-37</u>, "<u>Diagnosis Procedure - With Daytime Light System</u>".

Is the headlamp (HI) circuit normal?

YES >> Replace IPDM E/R. Refer to PCS-28, "Removal and Installation of IPDM E/R".

NO >> Repair or replace the malfunctioning part.

BOTH SIDE HEADLAMPS (LO) ARE NOT TURNED ON

< SYMPTOM DIAGNOSIS >

BOTH SIDE HEADLAMPS (LO) ARE NOT TURNED ON

Description INFOID:0000000011559887

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

Diagnosis Procedure

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

Check the combination switch (lighting and turn signal switch). Refer to BCS-53, "Symptom Table".

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

YES >> GO TO 2.

NO >> Repair or replace the malfunctioning part.

2.CHECK HEADLAMP (LO) REQUEST SIGNAL INPUT

WITH CONSULT DATA MONITOR

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

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

Is the item status normal?

YES >> GO TO 3.

NO >> Replace BCM. Refer to <u>BCS-56</u>, "Removal and Installation".

3.HEADLAMP (LO) CIRCUIT INSPECTION

Check the headlamp (LO) circuit. Refer to EXL-41, "Description".

Is the headlamp (LO) circuit normal?

YES >> Replace IPDM E/R. Refer to PCS-28, "Removal and Installation of IPDM E/R".

NO >> Repair or replace the malfunctioning part.

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Revision: November 2014 EXL-131 2015 Titan NAM

PARKING, LICENSE PLATE AND TAIL LAMPS ARE NOT TURNED ON

< SYMPTOM DIAGNOSIS >

PARKING, LICENSE PLATE AND TAIL LAMPS ARE NOT TURNED ON

Description

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

Diagnosis Procedure

INFOID:0000000011559890

1.combination switch (lighting and turn signal switch) inspection

Check the combination switch (lighting and turn signal switch). Refer to <u>BCS-53</u>, "Symptom Table". <u>Is the combination switch (lighting and turn signal switch) normal?</u>

YES >> GO TO 2.

NO >> Repair or replace the malfunctioning part.

2.CHECK TAIL LAMP RELAY REQUEST SIGNAL INPUT

(P)WITH CONSULT DATA MONITOR

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

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

Is the item status normal?

YES >> GO TO 3.

NO >> Replace BCM. Refer to <u>BCS-56, "Removal and Installation"</u>.

${f 3.}$ PARK LAMP CIRCUIT INSPECTION

Check the parking lamp circuit. Refer to EXL-46, "Description".

Is the tail lamp circuit normal?

YES >> Replace IPDM E/R. Refer to PCS-28, "Removal and Installation of IPDM E/R".

NO >> Repair or replace the malfunctioning part.

BOTH SIDE FRONT FOG LAMPS ARE NOT TURNED ON

< SYMPTOM DIAGNOSIS >

BOTH SIDE FRONT FOG LAMPS ARE NOT TURNED ON

Description INFOID:0000000011559891

The front fog lamps do not turn ON in any combination switch (lighting and turn signal switch) setting.

Diagnosis Procedure

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

Check the combination switch (lighting and turn signal switch). Refer to BCS-53, "Symptom Table".

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

YES >> GO TO 2.

NO >> Repair or replace the malfunctioning part.

2.CHECK FRONT FOG LAMP REQUEST SIGNAL INPUT

(P)WITH CONSULT DATA MONITOR

1. Select "FR FOG REQ" of IPDM E/R DATA MONITOR item.

2. With operating the combination switch (lighting and turn signal switch), check the monitor status.

Monitor item	Condition		Monitor status
ED 500 D50	Combination switch (lighting	ON	ON
FR FOG REQ and turn signal switch) (2ND)	OFF	OFF	

Is the item status normal?

YES >> GO TO 3.

NO >> Replace BCM. Refer to BCS-56, "Removal and Installation".

3.FRONT FOG LAMP CIRCUIT INSPECTION

Check the front fog lamp circuit. Refer to EXL-44, "Description".

Is the front fog lamp circuit normal?

YES >> Replace IPDM E/R. Refer to PCS-28, "Removal and Installation of IPDM E/R".

NO >> Repair or replace the malfunctioning part.

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PRECAUTIONS

< PRECAUTION >

PRECAUTION

PRECAUTIONS

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

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

WARNING:

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

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

WARNING:

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

Precaution for Work

- When removing or disassembling each component, be careful not to damage or deform it. If a component may be subject to interference, be sure to protect it with a shop cloth.
- When removing (disengaging) components with a screwdriver or similar tool, be sure to wrap the component with a shop cloth or vinyl tape to protect it.
- Protect the removed parts with a shop cloth and prevent them from being dropped.
- Replace a deformed or damaged clip.
- If a part is specified as a non-reusable part, always replace it with a new one.
- Be sure to tighten bolts and nuts securely to the specified torque.
- After installation is complete, be sure to check that each part works properly.
- Follow the steps below to clean components:
- Water soluble dirt:
- Dip a soft cloth into lukewarm water, wring the water out of the cloth and wipe the dirty area.
- Then rub with a soft, dry cloth.
- Oily dirt:
- Dip a soft cloth into lukewarm water with mild detergent (concentration: within 2 to 3%) and wipe the dirty area.
- Then dip a cloth into fresh water, wring the water out of the cloth and wipe the detergent off.
- Then rub with a soft, dry cloth.
- Do not use organic solvent such as thinner, benzene, alcohol or gasoline.
- For genuine leather seats, use a genuine leather seat cleaner.

PREPARATION

< PREPARATION >

PREPARATION PREPARATION

Special Service Tool INFOID:0000000011559895

i ne actual snape of the tools may differ from those illustrated here.		
Tool number	Description	
(ToohMata No.)		

Tool number (TechMate No.) Tool name	Description	
 (J-46534) Trim Tool Set	Removing trim components	

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PERIODIC MAINTENANCE

ADJUSTMENT AND INSPECTION HEADLAMP

HEADLAMP: Aiming Adjustment

INFOID:0000000011559896

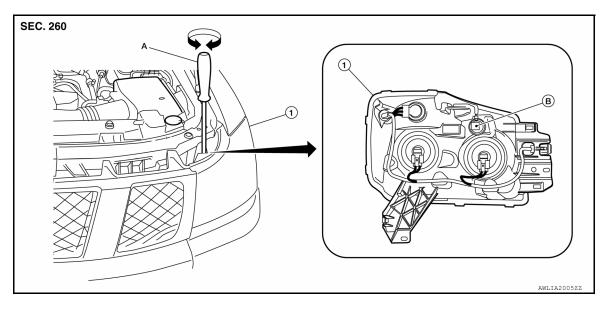
CAUTION:

Do not use organic solvent (thinner, gasoline etc.)

- For details, refer to the regulations in your own country.
- Perform aiming if the vehicle front body has been repaired and/or the headlamp assembly has been replaced.

Before performing aiming adjustment, check the following:

- Keep all tires inflated to correct pressure.
- · Place vehicle on level ground.
- See that the 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 drivers seat.
- Adjust aiming in the vertical direction by turning the adjustment screw.
- When performing adjustment, if necessary, cover the opposite headlamp.



1. Front combination lamp

A. Suitable tool (for aiming adjustment) B. Adjusting screw

HEADLAMP: Headlamp Aiming

INFOID:0000000011559897

NOTE:

Set the screen so that it is perpendicular to the road.

- 1. Position the screen.
- 2. Make the distance between the headlamp center and the screen 7.62 m (25 ft).
- Start the engine and illuminate the headlamp (LO).

CAUTION:

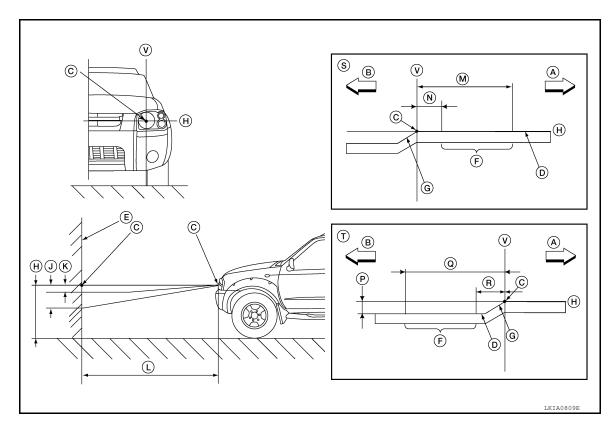
Do not cover the lens surface with tape, etc. because it is made of plastic.

Block the light from the headlamp that is not being adjusted with a thick fabric or similar object, so that it does not reach the screen.

ADJUSTMENT AND INSPECTION

< PERIODIC MAINTENANCE >

4. Use the adjustment screw to adjust the low beams on the screen, so that it is within the aiming adjustment area



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

FRONT FOG LAMP

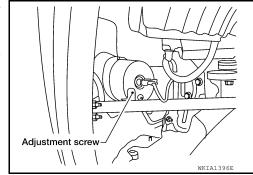
FRONT FOG LAMP: Aiming Adjustment

The fog lamp is a semi-sealed beam type which uses a replaceable halogen bulb. Before performing aiming adjustment, check 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.
- When performing adjustment, if necessary, cover the headlamps and opposite fog lamp.

NOTE:

Access adjustment screw from underneath front bumper. Using a suitable tool to adjust. Turn screw clockwise to raise pattern and counterclockwise to lower pattern.



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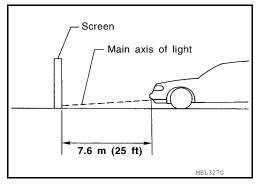
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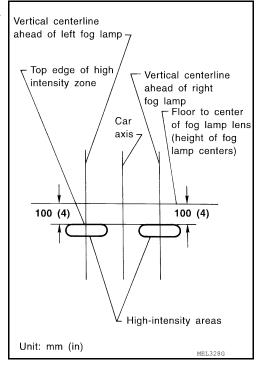
ADJUSTMENT AND INSPECTION

< PERIODIC MAINTENANCE >

- 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.



HEADLAMP

< REMOVAL AND INSTALLATION >

REMOVAL AND INSTALLATION

HEADLAMP

Bulb Replacement

INFOID:0000000011559899

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CAUTION:

- Disconnect the battery negative terminal or remove the fuse.
- Do not touch the glass surface of the bulb with bare hands or allow oil or grease to get on it to prevent damage to the bulb.
- Do not leave the bulb out of the lamp reflector for a long time because dust, moisture, smoke, etc. may affect the performance of the lamp.

HEADLAMP - LOW/HIGH BEAM

Removal

WARNING:

Do not touch bulb by hand while it is lit or right after being turned off. Burning may result.

- Remove front combination lamp. Refer to <u>EXL-139</u>. "Removal and Installation".
- Turn headlamp bulb counterclockwise and remove bulb.

Installation

Installation is in the reverse order of removal.

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FRONT TURN SIGNAL/PARKING LAMP

Removal

- 1. Remove the front combination lamp. Refer to EXL-139, "Removal and Installation".
- 2. Turn the bulb socket counterclockwise.
- 3. Pull the bulb to remove it from the socket.

Installation

Installation is in the reverse order of removal.

FRONT SIDE MARKER LAMP

Removal

- Remove the front combination lamp. Refer to <u>EXL-139</u>, "Removal and Installation".
- Turn the bulb socket counterclockwise.
- Pull to remove side marker bulb from the side marker bulb socket.

Installation

Installation is in the reverse order of removal.

Removal and Installation

INFOID:0000000011559900

FRONT COMBINATION LAMP

Removal

- Partially remove fender protector (front edge), refer to EXT-24, "Removal and Installation".
- Remove front grille, refer to <u>EXT-20</u>, "Removal and Installation".

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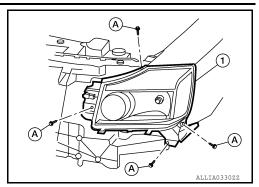
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Revision: November 2014 EXL-139 2015 Titan NAM

HEADLAMP

< REMOVAL AND INSTALLATION >

3. Remove the bolts (A), disconnect the harness connector from the front combination lamp (1) and remove.



Installation

Installation is in the reverse order of removal.

NOTE:

After installation perform headlamp aiming adjustment. Refer to EXL-136, "HEADLAMP: Aiming Adjustment".

AUTO LIGHT SYSTEM

< REMOVAL AND INSTALLATION >

AUTO LIGHT SYSTEM

Removal and Installation

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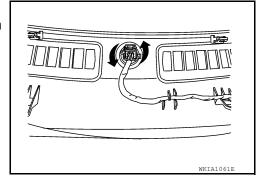
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OPTICAL SENSOR

Removal

- 1. Remove defroster grille. Refer to VTL-25, "Removal and Installation".
- 2. Disconnect the harness connector from the optical sensor.
- 3. Rotate the optical sensor counterclockwise and remove from defroster grille.



Installation

Installation is in the reverse order of removal.

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FRONT FOG LAMP

Bulb Replacement

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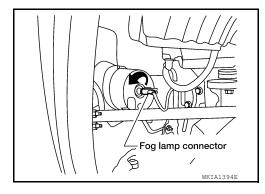
FRONT FOG LAMP

Removal

WARNING:

Do not touch bulb by hand while it is lit or right after being turned off. Burning may result. CAUTION:

- Do not touch the glass surface of the bulb with bare hands or allow oil or grease to get on it to prevent damage to the bulb.
- Do not leave the bulb out of the lamp reflector for a long time because dust, moisture, smoke, etc. may affect the performance of the lamp.
- 1. Disconnect the harness connector from the front fog lamp.
- 2. Rotate front fog lamp socket counterclockwise and remove.



Installation

Installation is in the reverse order of removal.

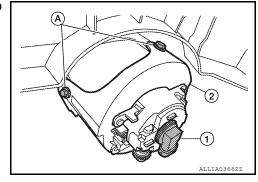
Removal and Installation

INFOID:0000000011559904

FRONT FOG LAMP

Removal

- Disconnect the harness connector from the front fog lamp bulb (1).
- 2. Remove the bolts (A) and the front fog lamp (2).



Installation

Installation is in the reverse order of removal.

NOTE:

After installation perform front fog lamp aiming adjustment. Refer to <u>EXL-137</u>, "<u>FRONT FOG LAMP</u>: <u>Aiming Adjustment</u>".

LIGHTING & TURN SIGNAL SWITCH

< REMOVAL AND INSTALLATION >

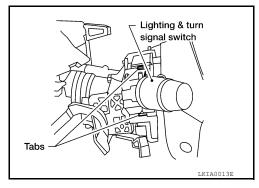
LIGHTING & TURN SIGNAL SWITCH

Removal and Installation

INFOID:0000000011559905

REMOVAL

- 1. Remove steering column cover. Refer to IP-14, "Removal and Installation".
- 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.

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HAZARD SWITCH

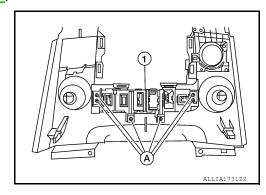
< REMOVAL AND INSTALLATION >

HAZARD SWITCH

Removal and Installation

REMOVAL

- 1. Remove cluster lid C. Refer to IP-15, "Removal and Installation".
- 2. Release the nuts (A) and remove switch carry (2).
- 3. Remove the hazard switch.



INFOID:0000000011559906

INSTALLATION

Installation is in the reverse order of removal.

LICENSE PLATE LAMP < REMOVAL AND INSTALLATION > LICENSE PLATE LAMP Α **Bulb Replacement** INFOID:0000000011559907 LICENSE PLATE LAMP В Removal **WARNING:** Do not touch bulb by hand while it is lit or right after being turned off. Burning may result. **CAUTION:** · Do not touch glass surface of the bulb with bare hands or allow oil or grease to get on it to prevent damage to bulb. D Do not leave the bulb out of the lamp reflector for a long time because dust, moisture, smoke, etc. may affect the performance of the lamp. 1. Remove license plate lamp. Refer to EXL-145, "Removal and Installation". Е 2. Rotate bulb socket counterclockwise and remove. Pull bulb from socket. F Installation Installation is in the reverse order of removal. Removal and Installation INFOID:0000000011559908 LICENSE PLATE LAMP Н Removal 1. Using a suitable tool, first release the tab which is forward in vehicle, then pry outward to release the second tab. Disconnect the harness connector and remove the license plate lamp from the rear bumper. Installation Installation is in the reverse order of removal. K

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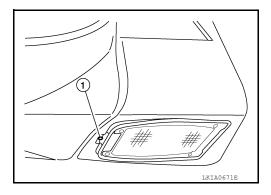
PUDDLE LAMP

Removal and Installation

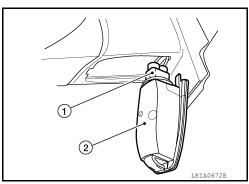
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REMOVAL

1. Depress tab (1) on outer edge of puddle lamp housing.



- 2. Lower outer edge and slide puddle lamp housing out of door mirror.
- 3. Twist puddle lamp socket (1) counterclockwise to remove from puddle lamp housing (2).



INSTALLATION

Installation is in the reverse order of removal.

Bulb Replacement

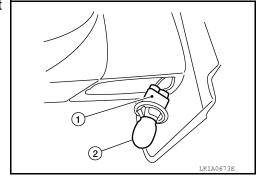
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REMOVAL

WARNING:

Do not touch bulb by hand while it is lit or right after being turned off. Burning may result. **CAUTION**:

- Do not touch the glass surface of the bulb with bare hands or allow oil or grease to get on it to prevent damage to the bulb.
- Do not leave the bulb out of the lamp reflector for a long time because dust, moisture, smoke, etc. may affect the performance of the lamp.
- 1. Remove puddle lamp housing. Refer to EXL-146, "Removal and Installation".
- 2. Pull puddle lamp bulb (2) straight out from puddle lamp socket (1) to remove.



INSTALLATION

PUDDLE LAMP

< REMOVAL AND INSTALLATION >
Installation is in the reverse order of removal.

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HIGH-MOUNTED STOP LAMP

< REMOVAL AND INSTALLATION >

HIGH-MOUNTED STOP LAMP

Bulb Replacement

INFOID:0000000011559911

HIGH-MOUNTED STOP LAMP

Removal

- 1. Remove the high-mounted stop lamp. Refer to EXL-148, "Removal and Installation".
- 2. Rotate bulb socket counterclockwise and remove.
- 3. Pull bulb from socket.

Installation

Installation is in the reverse order of removal.

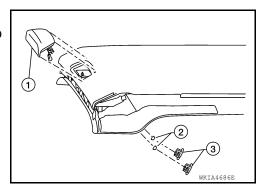
Removal and Installation

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HIGH-MOUNTED STOP LAMP

Removal

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



Installation

Installation is in the reverse order of removal.

REAR COMBINATION LAMP

< REMOVAL AND INSTALLATION >

REAR COMBINATION LAMP

Bulb Replacement

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REMOVAL

WARNING:

Do not touch bulb by hand while it is lit or right after being turned off. Burning may result. CAUTION:

- Do not touch the glass surface of the bulb with bare hands or allow oil or grease to get on it to prevent damage to the bulb.
- Do not leave the bulb out of the lamp reflector for a long time because dust, moisture, smoke, etc. may affect the performance of the lamp.
- Remove the rear combination lamp. Refer to EXL-149, "Removal and Installation".
- 2. Rotate the bulb socket counterclockwise and remove.

INSTALLATION

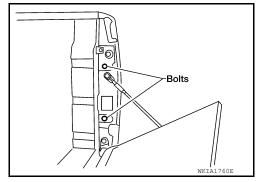
Installation is in the reverse order of removal.

Removal and Installation

INFOID:0000000011559914

REMOVAL

- 1. Open the tail gate.
- 2. Remove rear combination lamp bolts.
- 3. Pull rear combination lamp to remove.
- 4. Disconnect the harness connector from the rear combination lamp.



INSTALLATION

Installation is in the reverse order of removal.

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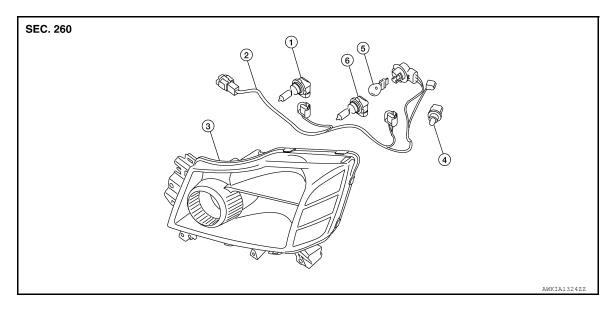
UNIT DISASSEMBLY AND ASSEMBLY

HEADLAMP

Disassembly and Assembly

INFOID:0000000011874613

FRONT COMBINATION LAMP



- 1. Headlamp bulb (high beam)
- 4. Side marker lamp bulb
- 2. Front combination lamp harness
- 5. Turn signal/parking lamp bulb
- 3. Front combination lamp
- 6. Headlamp bulb (low beam)

Disassembly

- 1. Rotate high beam bulb counterclockwise and remove.
- Rotate low beam bulb counterclockwise and remove.
- 3. Rotate turn signal/parking lamp bulb socket counterclockwise and remove.
- 4. Rotate side marker lamp bulb socket counterclockwise and remove.

Assembly

Assembly is in the reverse order of disassembly.

SERVICE DATA AND SPECIFICATIONS (SDS)

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SERVICE DATA AND SPECIFICATIONS (SDS)

SERVICE DATA AND SPECIFICATIONS (SDS)

Bulb Specifications

Item		Wattage (W)*	
	Headlamp (HI/LO)	65/55	
Front combination lamp	Parking lamp/Turn signal	28/8	
	Side marker lamp	3.8	
Front fog lamp (if equipped)	,	27.5	
	Tail lamp/Stop lamp	27/8	
Rear combination lamp	Turn signal lamp	27	
	Backup lamp	18	
License plate lamp		5	
High-mounted stop lamp/Cargo lamp		12.8	
Puddle lamp (if equipped)		9	

 ^{*}Always check with the parts department for the latest information.

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Revision: November 2014 EXL-151 2015 Titan NAM