SECTION LT
LIGHTING SYSTEM

CONTENTS

PRECAUTIONS

PFP:00011

Precautions for Supplemental Restraint System (SRS) “AIR BAG” and “SEAT BELT PRE-TENSIONER”

EKS008YG

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 SRS 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 SRS 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.**

General precautions for service operations

EKS008YH

- Never work with wet hands.
- Xenon headlamp includes high voltage generating part. Be sure to disconnect battery negative cable (negative terminal) or power fuse before removing, installing, or touching the xenon headlamp (including lamp bulb).
- Turn the lighting switch OFF before disconnecting and connecting the connector.
- When turning the xenon headlamp on and while it is illuminated, never touch the harness, bulb, and socket of the headlamp.
- When checking the headlamp on/off operation, check it on vehicle and with the power connected to the vehicle-side connector.

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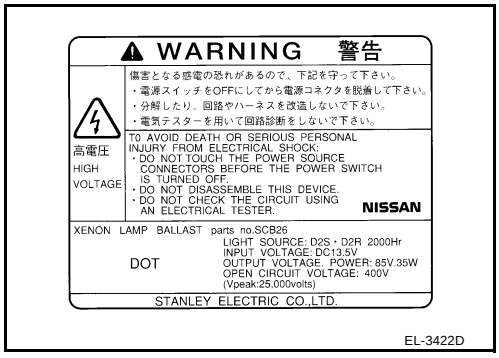
- Do not touch the headlamp bulb glass surface with bare hands or allow oil or grease to get on it. Do not touch the headlamp bulb just after the headlamp is turned off, because it is very hot.
- Install the xenon headlamp bulb socket correctly. If it is installed improperly, high-voltage leak or corona discharge may occur that can melt the bulb, connector, and housing. Do not illuminate the xenon headlamp bulb out of the headlamp housing. Doing so can cause fire and harm your eyes.
- When the bulb has burned out, wrap it in a thick vinyl bag and discard. Do not break the bulb.
- Leaving the bulb removed from the headlamp housing for a long period of time can deteriorate the performance of the lens and reflector (dirt, clouding). Always prepare a new bulb and have it on hand when replacing the bulb.
- Do not use organic solvent (paint thinner or gasoline) to clean lamps and to remove old sealant.



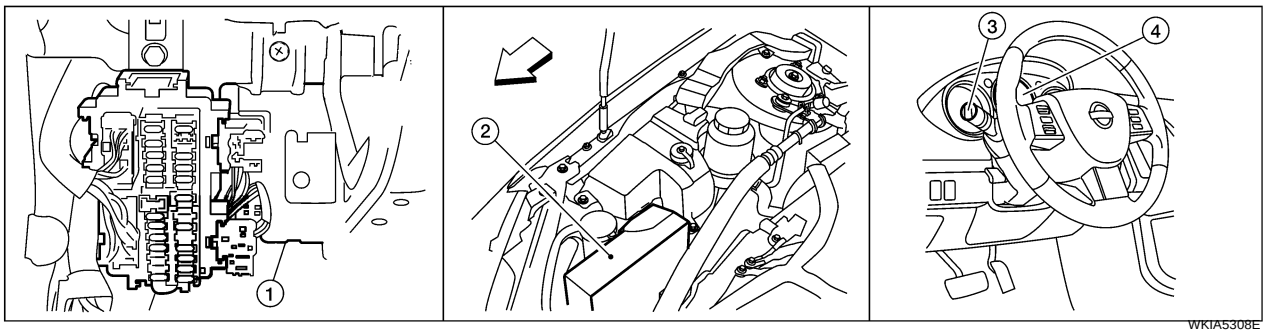
EL-3422D

HEADLAMP (FOR USA)

PFP:26010

Component Parts and Harness Connector Location

EKS008YJ



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1. BCM M18 and M20 (View with instrument panel removed)
2. IPDM E/R E121, E122, and E124
3. Combination switch (lighting switch) M28
4. Combination meter M24

System Description

EKS008YK

Control of the headlamp system operation is dependent upon the position of the combination switch (lighting switch). When the lighting switch is placed in the 2ND position, the BCM (body control module) receives input signal requesting the headlamps (and tail lamps) illuminate. This input signal is communicated to the IPDM E/R (intelligent power distribution module engine room) across the CAN communication lines. The CPU (central processing unit) of the IPDM E/R controls the headlamp high and headlamp low relay coils. These relays, when energized, direct power to the respective headlamps, which then illuminate.
If voltage is applied to a high beam solenoid, the bulb shade will move and a high beam and a low beam are changed.

OUTLINE

Power is supplied at all times

- to ignition relay, located in the IPDM E/R, and
- to headlamp high relay, located in the IPDM E/R, and
- to headlamp low relay, located in the IPDM E/R, and
- through 15A fuses (No. 34, and 41, located in the IPDM E/R)
- to CPU of the IPDM E/R, and
- through 50A fusible link (letter **f** , located in the fuse and fusible link box)
- to BCM terminal 70, and
- through 10A fuse [No. 21, located in the fuse block (J/B)]
- to BCM terminal 57, and
- through 10A fuse [No. 19, located in the fuse block (J/B)]
- to combination meter terminal 24.

With the ignition switch in the ON or START position, power is supplied

- to ignition relay, located in the IPDM E/R, and
- through 10A fuse [No. 1, located in the fuse block (J/B)]
- to BCM terminal 38, and
- through 10A fuse [No. 14, located in the fuse block (J/B)]
- to combination meter terminal 23.

With the ignition switch in the ACC or ON position, power is supplied

- through 10A fuse [No. 6, located in the fuse block (J/B)]
- to BCM terminal 11.

Ground is supplied

- to BCM terminal 67
- to combination meter terminals 10, 11 and 12
- through grounds M57, M61 and M79, and

- to IPDM E/R terminals 38 and 60
- through grounds E15 and E24.

Low Beam Operation

With the lighting switch in 2ND position, the BCM receives input signal requesting the headlamps to illuminate. This input signal is communicated to the IPDM E/R across the CAN communication lines. The CPU of the IPDM E/R controls the headlamp low relay coil, which when energized, directs power

- through 15A fuse (No. 36, located in the IPDM E/R)
- to IPDM E/R terminal 20
- to front combination lamp RH (headlamp) terminal 3, and
- through 15A fuse (No. 45, located in the IPDM E/R)
- to IPDM E/R terminal 30
- to front combination lamp LH (headlamp) terminal 3.

Ground is supplied

- to front combination lamp LH and RH (headlamp) terminal 4
- through grounds E15 and E24.

With power and ground supplied, low beam headlamps illuminate.

High Beam Operation/Flash-to-Pass Operation

With the lighting switch in 2ND position and placed in HIGH or PASS position, the BCM receives input signal requesting the headlamp high beams to illuminate. This input signal is communicated to the IPDM E/R across the CAN communication lines. The CPU of the IPDM E/R controls the headlamp high relay coil and low relay coil, which when energized, directs power

- through 15A fuse (No. 36, located in the IPDM E/R)
- to IPDM E/R terminal 20
- to front combination lamp RH (headlamp) terminal 3, and
- through 15A fuse (No. 45, located in the IPDM E/R)
- to IPDM E/R terminal 30
- to front combination lamp LH (headlamp) terminal 3, and
- through 10A fuse (No. 40, located in the IPDM E/R)
- to IPDM E/R terminal 27
- to front combination lamp RH (headlamp) terminal 7, and
- through 10A fuse (No. 38, located in the IPDM E/R)
- to IPDM E/R terminal 28
- to front combination lamp LH (headlamp) terminal 7.

Ground is supplied

- to front combination lamp LH and RH (headlamp) terminals 4 and 8
- through grounds E15 and E24.

With power and ground supplied, the high beam headlamps illuminate.
If voltage is applied to a high beam solenoid, the bulb shade will move and a high beam and a low beam are changed.
The unified meter and A/C amp that received the high beam request signal by BCM across the CAN communication makes the high beam indicator lamp turn on in combination meter.

COMBINATION SWITCH READING FUNCTION

Refer to BCS-3, "COMBINATION SWITCH READING FUNCTION" .

EXTERIOR LAMP BATTERY SAVER CONTROL

When the combination switch (lighting switch) is in the 2ND position (ON) and the ignition switch is turned from ON or ACC to OFF, the battery saver control function is activated.
Under this condition, the headlamps remain illuminated for 5 minutes, then the headlamps are turned off.
Exterior lamp battery saver control mode can be changed by the function setting of CONSULT-II.

AUTO LIGHT OPERATION

Refer to LT-50, "System Description" in AUTO LIGHT SYSTEM.

VEHICLE SECURITY SYSTEM

The vehicle security system will flash the high beams if the system is triggered. Refer to BL-131, "VEHICLE SECURITY (THEFT WARNING) SYSTEM" .

XENON HEADLAMP (IF EQUIPPED)

Xenon type headlamp is adopted to the low and high beam headlamps. Xenon bulbs do not use a filament. Instead, they produce light when a high voltage current is passed between two tungsten electrodes through a mixture of xenon (an inert gas) and certain other metal halides. In addition to added lighting power, electronic control of the power supply gives the headlamps stable quality and tone color.
Following are some of the many advantages of the xenon type headlamp.

- The light produced by the headlamps is a white color comparable to sunlight that is easy on the eyes.
- Light output is nearly double that of halogen headlamps, affording increased area of illumination.
- The light features a high relative spectral distribution at wavelengths to which the human eye is most sensitive. This means that even in the rain, more light is reflected back from the road surface toward the vehicle for added visibility.
- Power consumption is approximately 25 percent less than halogen headlamps, reducing battery load.

CAN Communication System Description

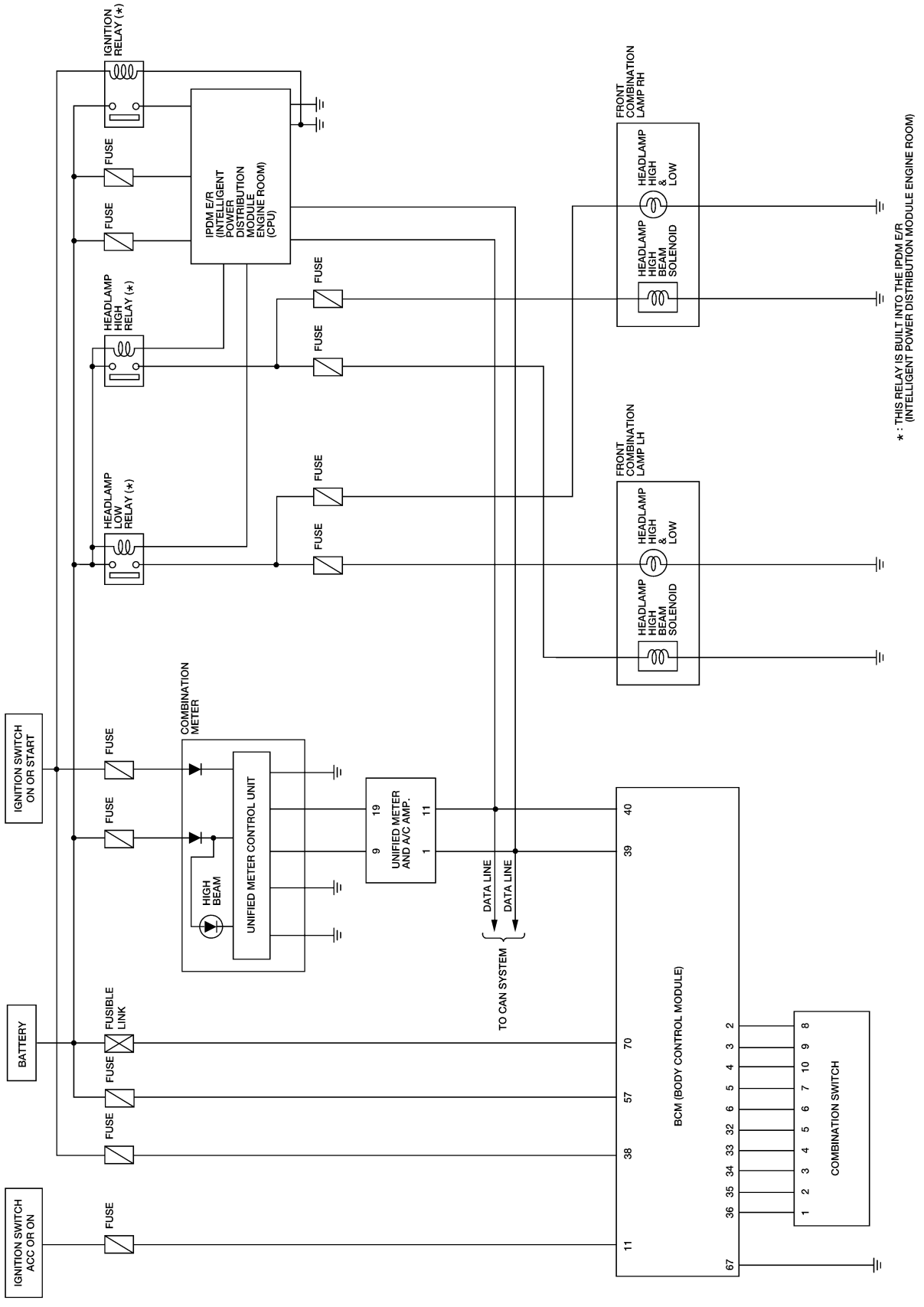
EKS008YL

Refer to LAN-4, "SYSTEM DESCRIPTION" .

Schematic

EKS008YM

HALOGEN TYPE



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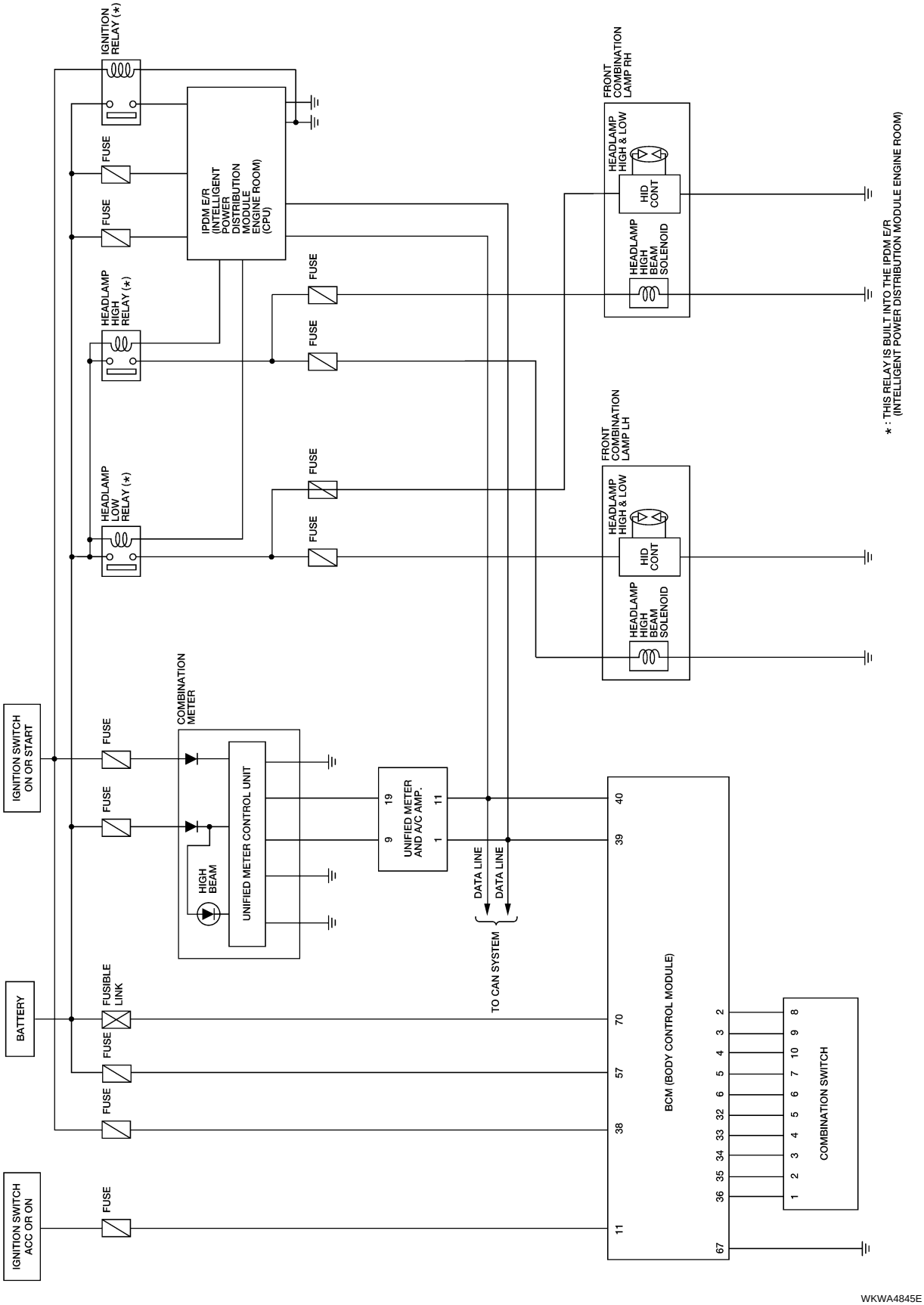
XENON TYPE



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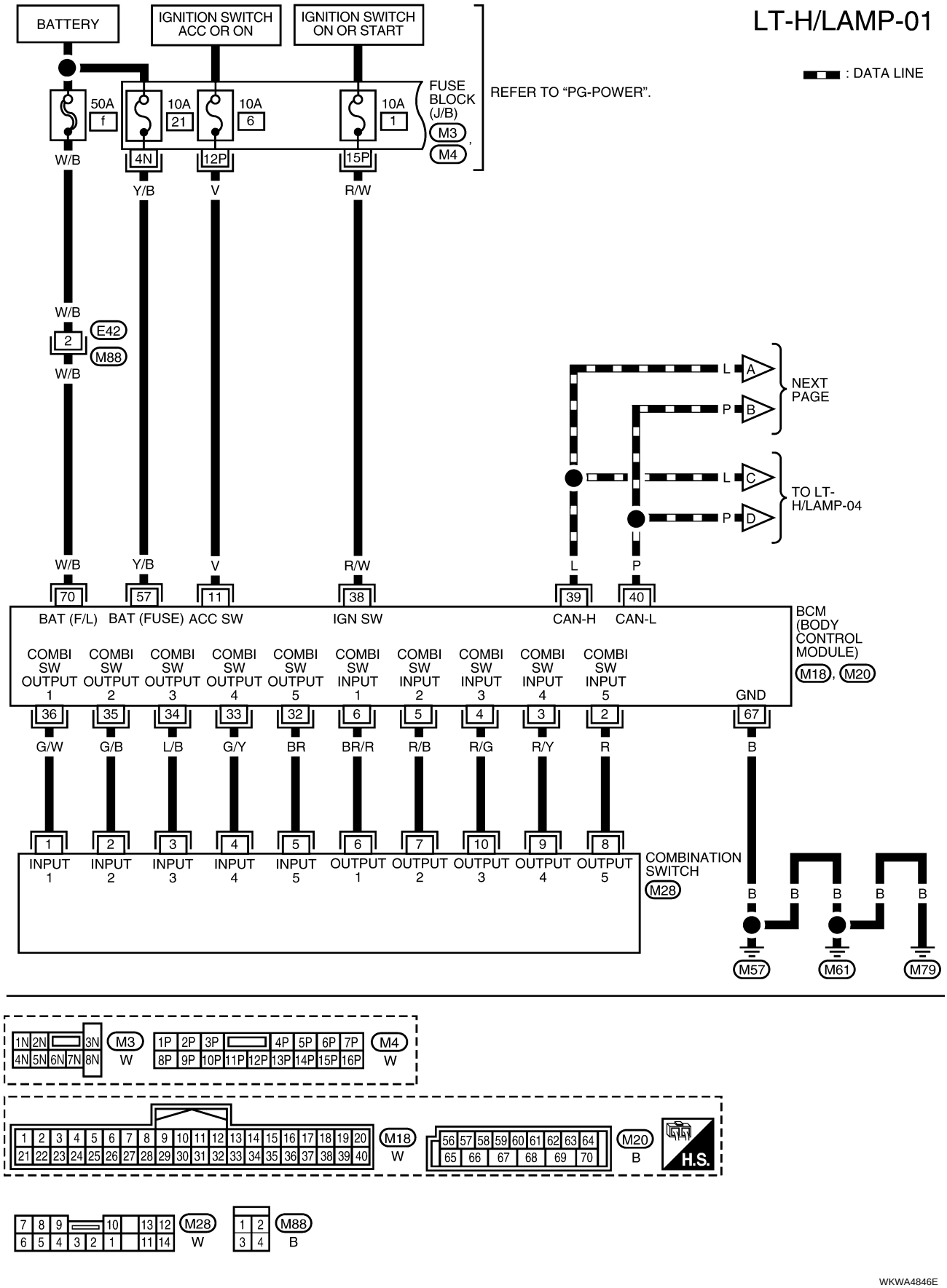
Wiring Diagram — H/LAMP —

EKS008YN

HALOGEN TYPE



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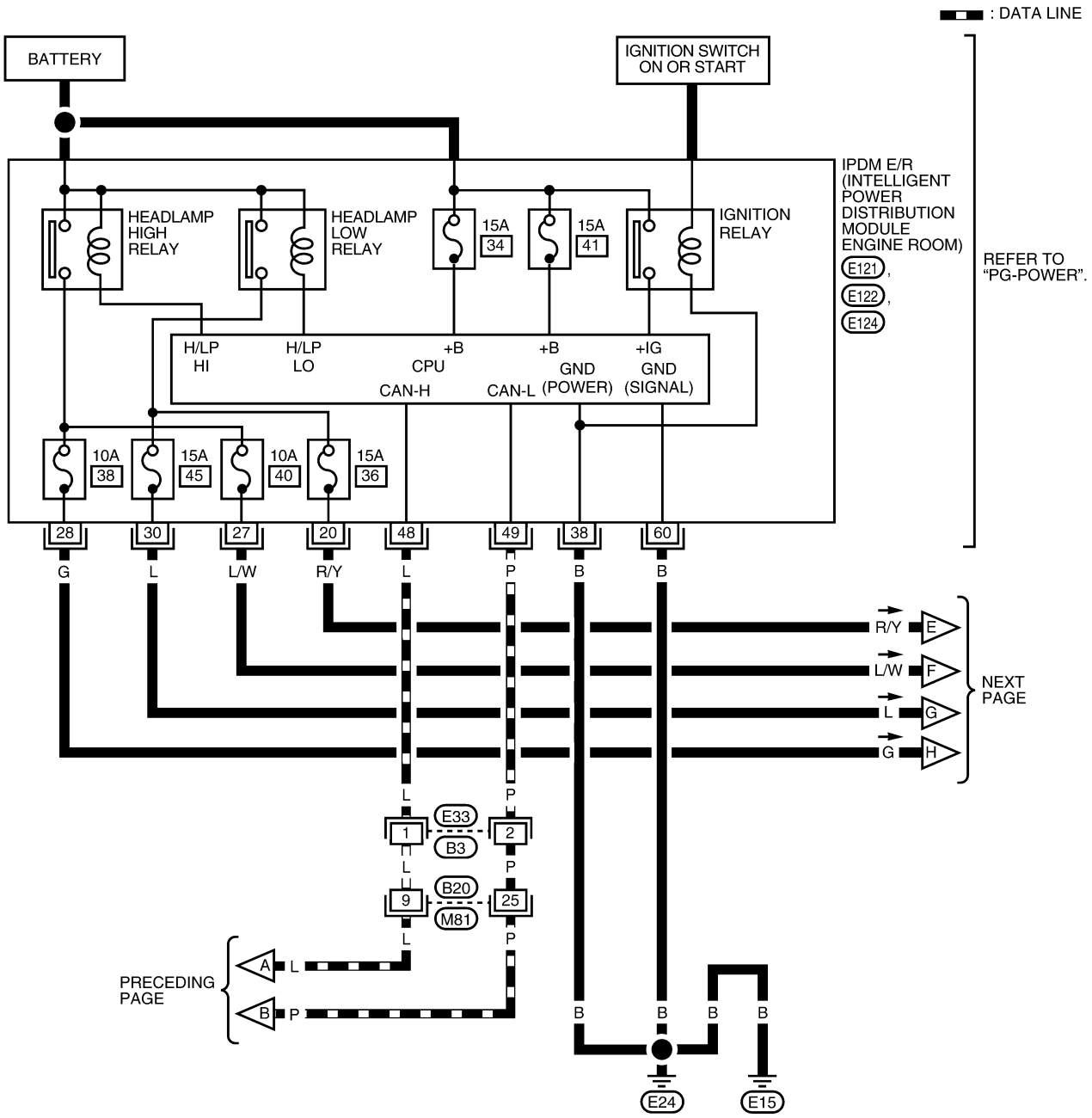
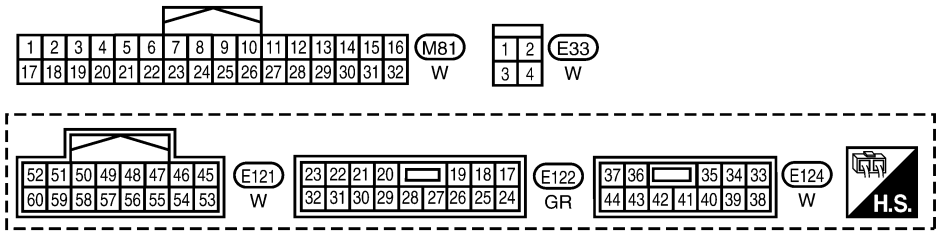
LT-H/LAMP-02





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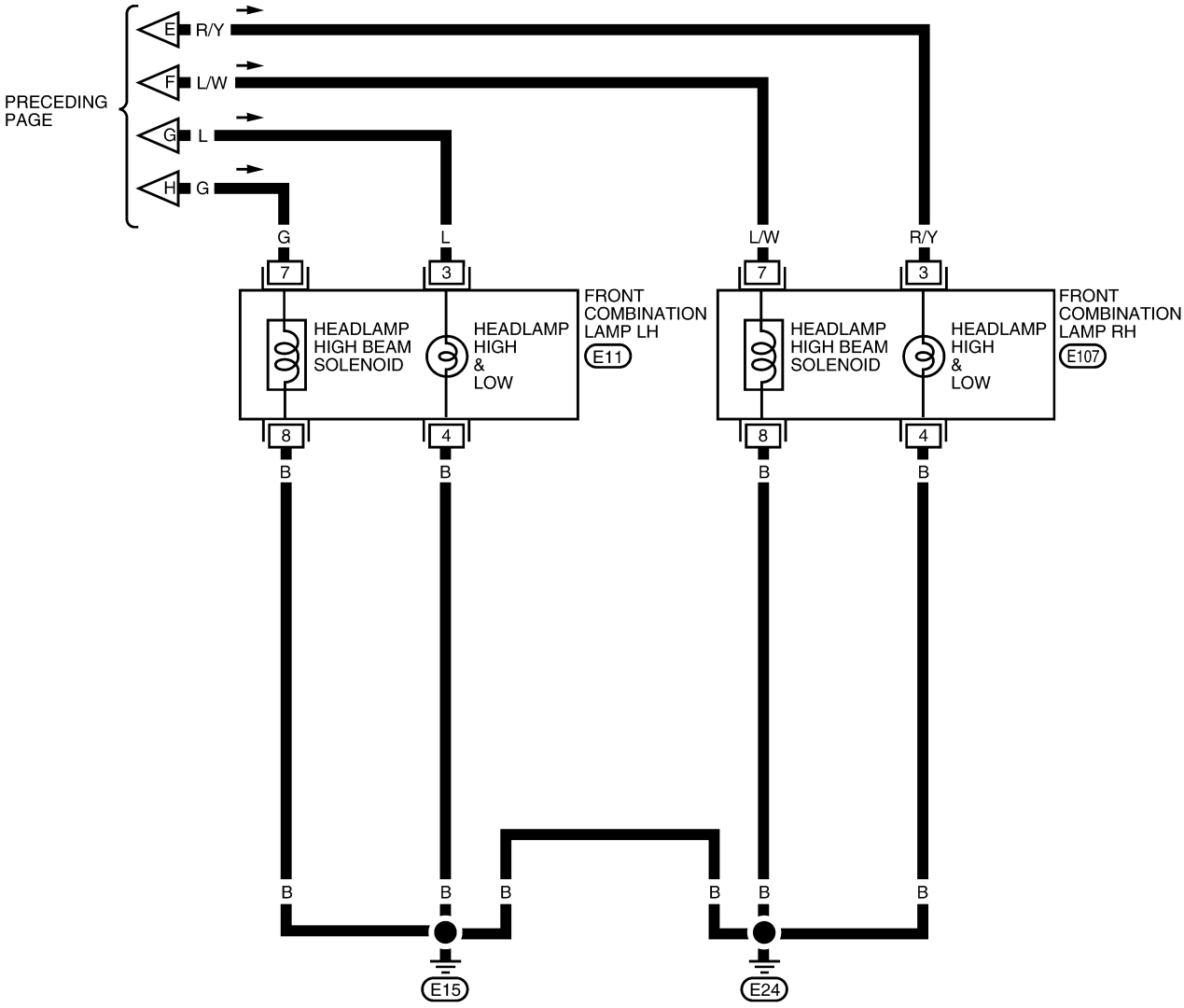
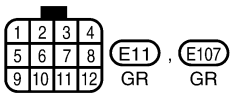
LT-H/LAMP-03





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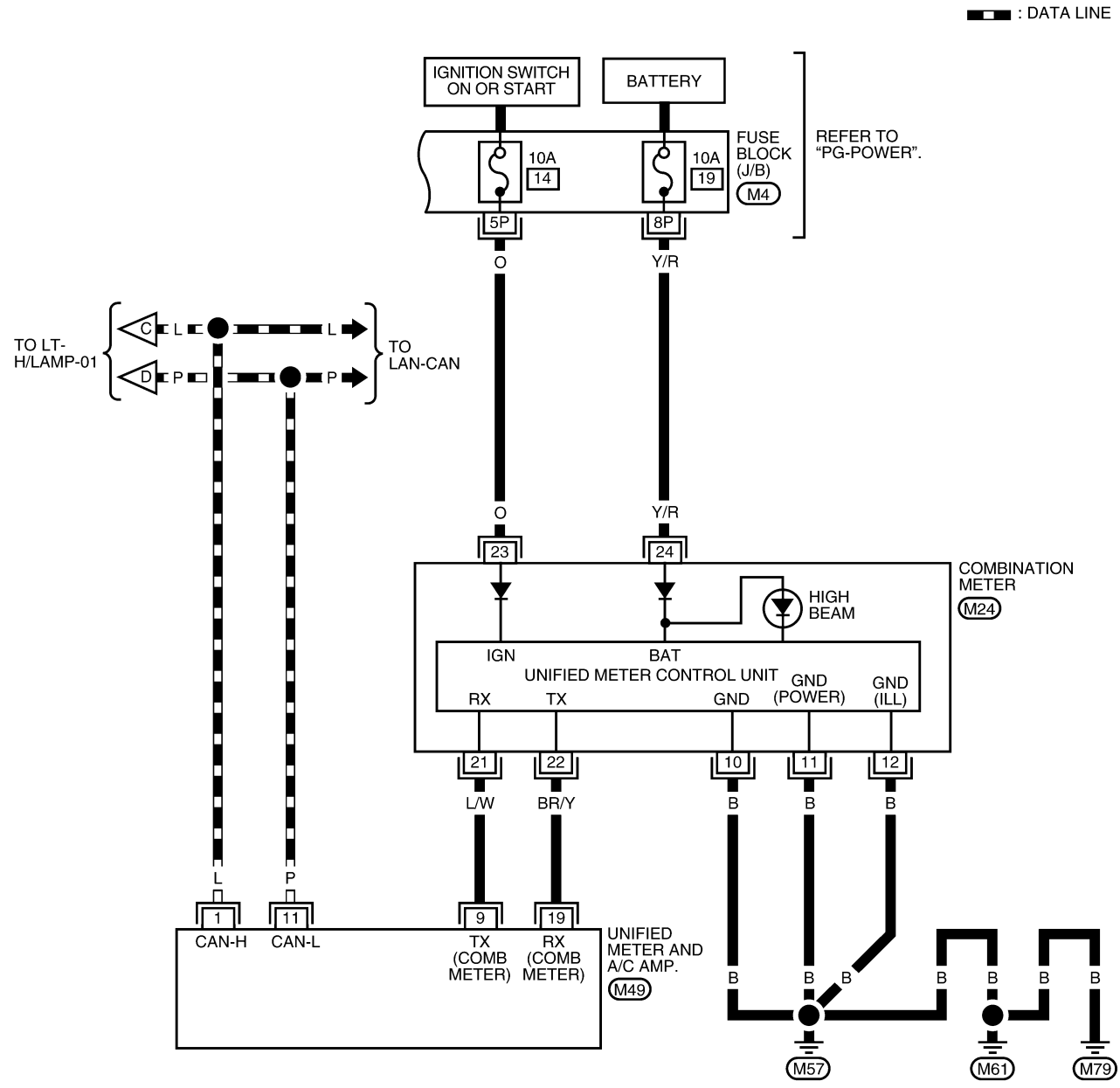
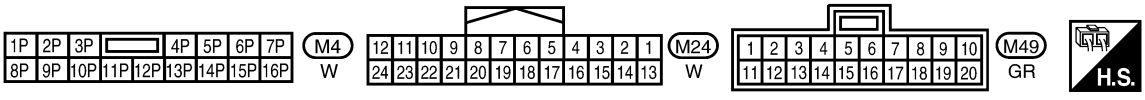
LT-H/LAMP-04





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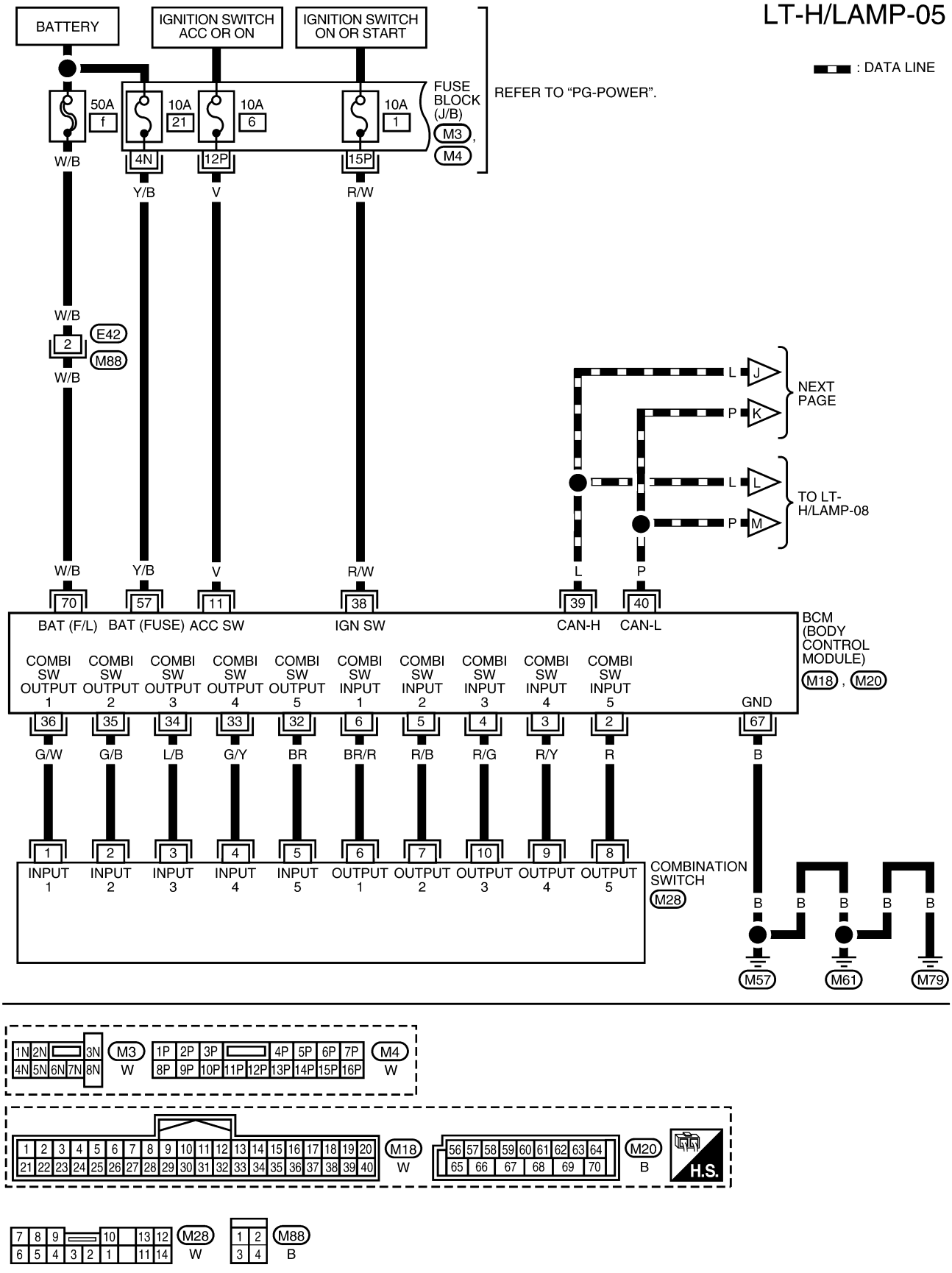
XENON TYPE



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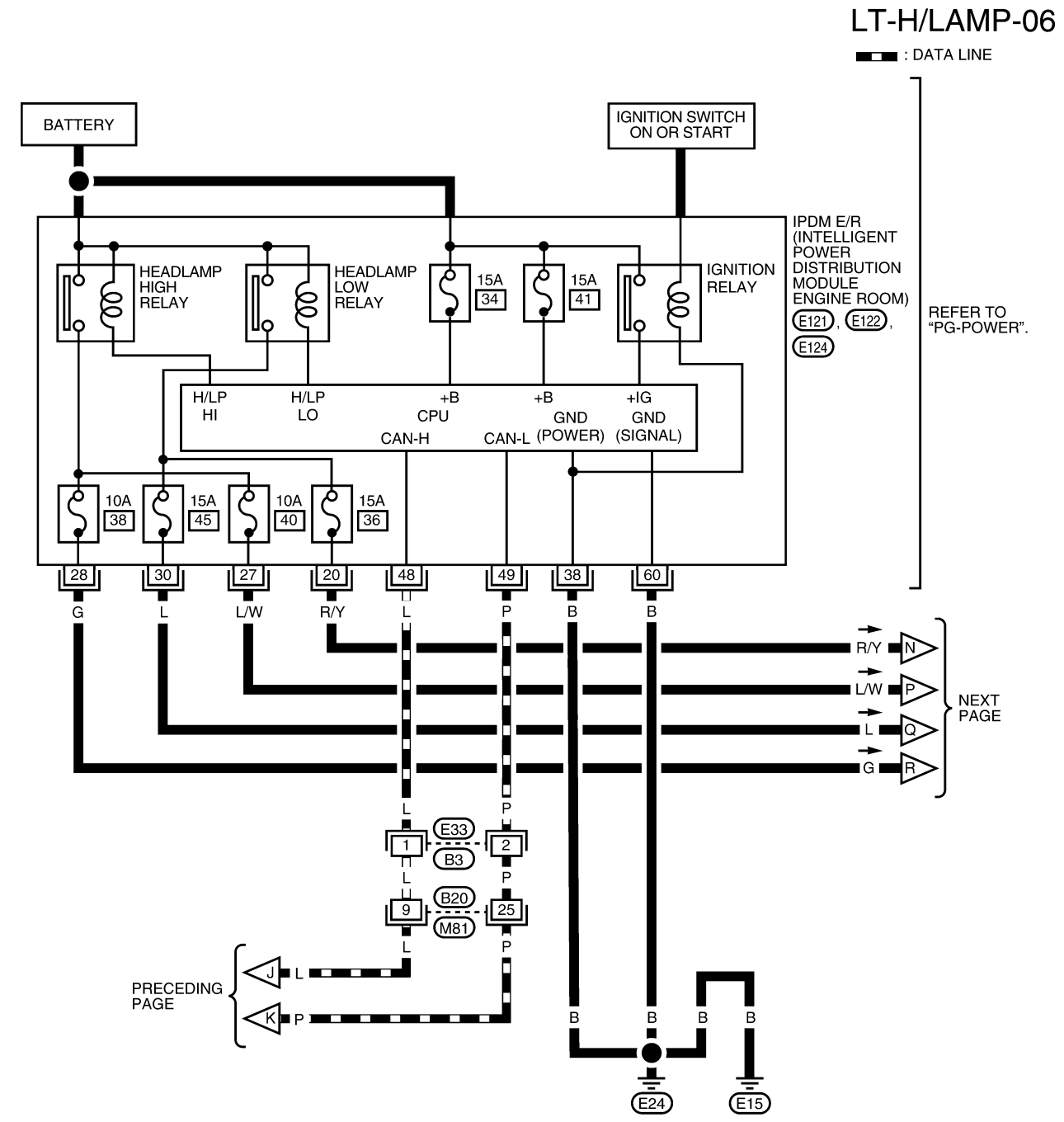
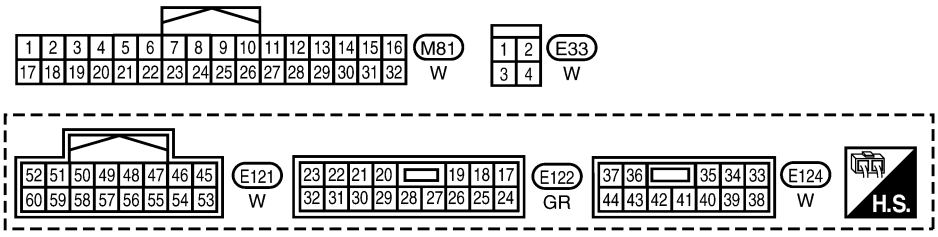

LT-H/LAMP-06
: DATA LINE
BATTERY
IGNITION SWITCH ON OR START
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
E121, E122, E124
REFER TO "PG-POWER".
HEADLAMP HIGH RELAY
HEADLAMP LOW RELAY
IGNITION RELAY
15A 34
15A 41
H/LP HI
H/LP LO
+B CPU
+B GND (POWER)
+IG GND (SIGNAL)
CAN-H
CAN-L
10A 38
15A 45
10A 40
15A 36
28 30 27 20 48 49 38 60
G L L/W R/Y L P B B
R/Y N
L/W P
L Q
G R
NEXT PAGE
E33 1 2
B3
B20 9 25
M81
PRECEDING PAGE
J L
K P
E24
E15


M81 W
E33 W
E121 W
E122 GR
E124 W
H.S.

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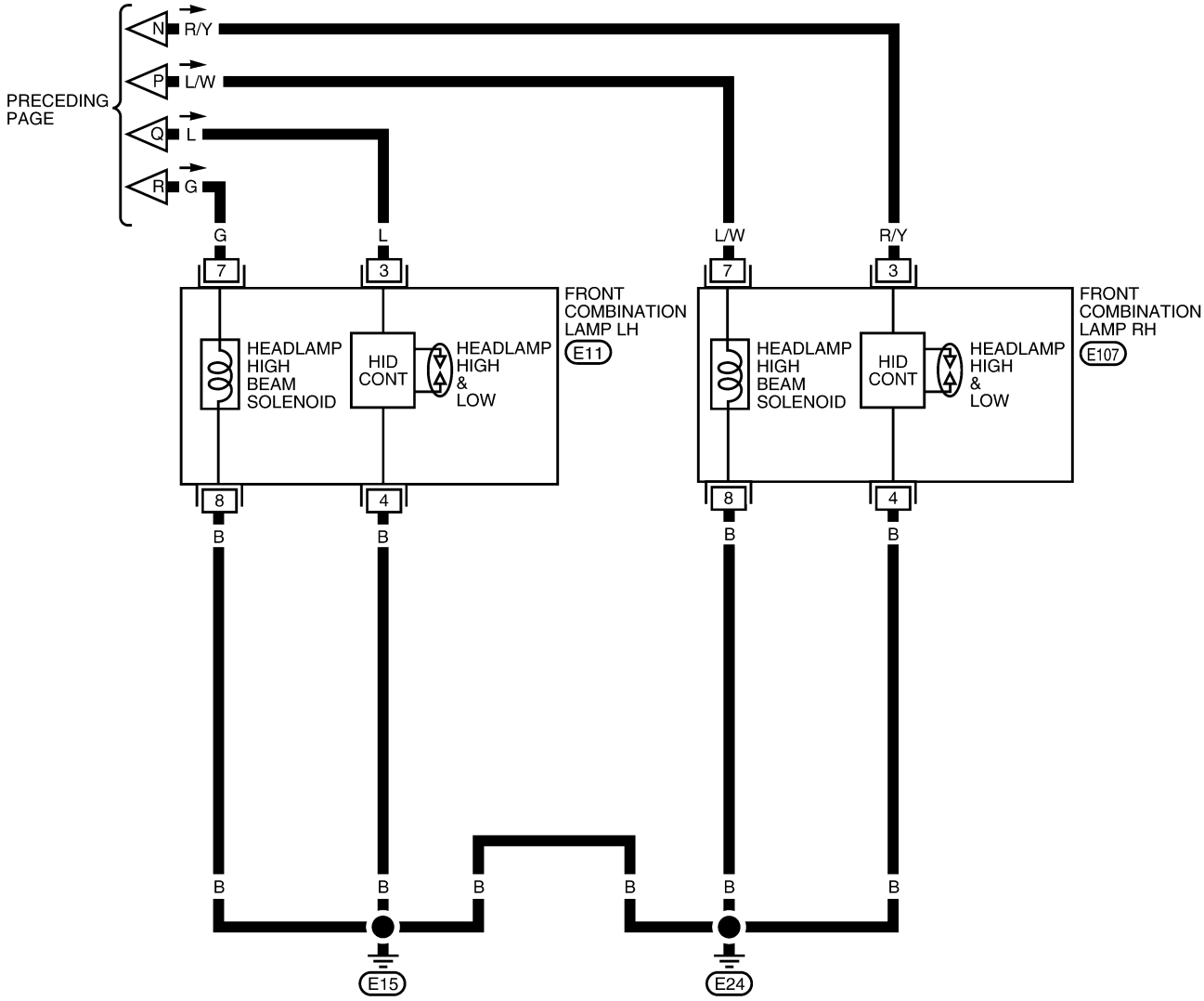
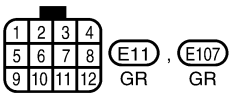
LT-H/LAMP-07





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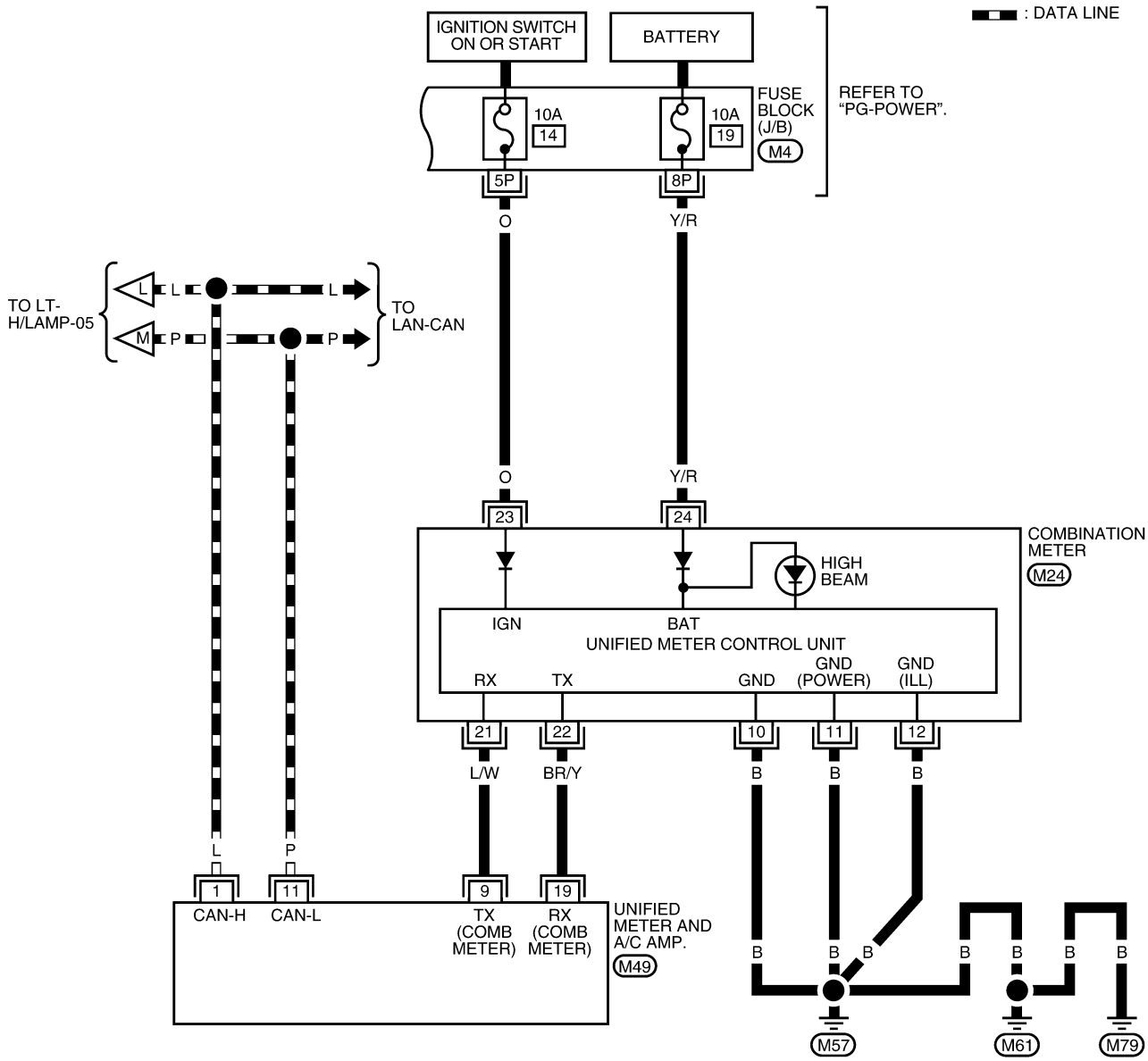
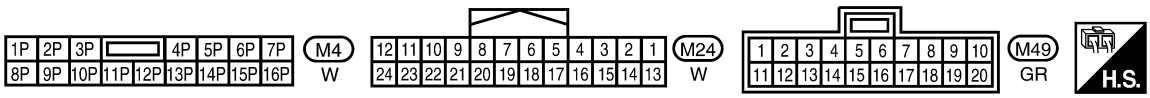
LT-H/LAMP-08





WKWA4853E

Terminals and Reference Values for BCM

EKS008YO

Refer to BCS-12, "Terminals and Reference Values for BCM" .

Terminals and Reference Values for IPDM E/R

EKS008YP

Refer to PG-26, "Terminals and Reference Values for IPDM E/R" .

How to Proceed With Trouble Diagnosis

EKS008YQ

1. Confirm the symptom or customer complaint.
2. Understand operation description and function description. Refer to LT-5, "System Description" .
3. Perform the Preliminary Check. Refer to LT-18, "Preliminary Check" .
4. Check symptom and repair or replace the cause of malfunction.
5. Does the headlamp operate normally? If YES: GO TO 6. If NO: GO TO 4.
6. Inspection End.

Preliminary Check

EKS008YR

CHECK POWER SUPPLY AND GROUND CIRCUIT

Refer to BCS-15, "BCM Power Supply and Ground Circuit Check" .

CONSULT-II Function (BCM)

EKS008YS

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

BCM diagnostic test item	Diagnostic mode	Description
Inspection by part	WORK SUPPORT	Supports inspections and adjustments. Commands are transmitted to the BCM for setting the status suitable for required operation, input/output signals are received from the BCM and received data is displayed.
	DATA MONITOR	Displays BCM input/output data in real time.
	ACTIVE TEST	Operation of electrical loads can be checked by sending drive signal to them.
	SELF-DIAG RESULTS	Displays BCM self-diagnosis results.
	CAN DIAG SUPPORT MNTR	The result of transmit/receive diagnosis of CAN communication can be read.
	ECU PART NUMBER	BCM part number can be read.
	CONFIGURATION	Performs BCM configuration read/write functions.

CONSULT-II START PROCEDURE

Refer to GI-37, "CONSULT-II Start Procedure" .

WORK SUPPORT

Operation Procedure

1. Touch "HEAD LAMP" on "SELECT TEST ITEM" screen.
2. Touch "WORK SUPPORT" on "SELECT DIAG MODE" screen.
3. Touch item on "SELECT WORK ITEM" screen.
4. Touch "START".
5. Touch "CHANGE SETT".
6. The setting will be changed and "CUSTOMIZING COMPLETED" will be displayed.
7. Touch "END".

Display Item List

Item	Description	CONSULT-II	Factory setting
BATTERY SAVER SET	Exterior lamp battery saver control mode can be changed in this mode. Selects exterior lamp battery saver control mode between ON/OFF.	ON	×
		OFF	—

DATA MONITOR

Operation Procedure

1. Touch "HEAD LAMP" on "SELECT TEST ITEM" screen.
2. Touch "DATA MONITOR" on "SELECT DIAG MODE" screen.
3. Touch either "ALL SIGNALS" or "SELECTION FROM MENU" on the "SELECT MONITOR ITEM" screen.

ALL SIGNALS	Monitors all the signals.
SELECTION FROM MENU	Selects and monitors individual signal.

4. Touch "START".
5. When "SELECTION FROM MENU" is selected, touch individual items to be monitored. When "ALL SIGNALS" is selected, all the items will be monitored.
6. Touch "RECORD" while monitoring, then the status of the monitored item can be recorded. To stop recording, touch "STOP".

Display Item List

Monitor item		Contents
IGN ON SW	"ON/OFF"	Displays "IGN position (ON)/OFF, ACC position (OFF)" judged from the ignition switch signal.
ACC ON SW	"ON/OFF"	Displays "ACC (ON)/OFF, Ignition OFF (OFF)" status judged from ignition switch signal.

Monitor item		Contents
HI BEAM SW	"ON/OFF"	Displays status (high beam switch: ON/Others: OFF) of high beam switch judged from lighting switch signal.
HEAD LAMP SW 1	"ON/OFF"	Displays status (headlamp switch 1: ON/Others: OFF) of headlamp switch 2 judged from lighting switch signal.
HEAD LAMP SW 2	"ON/OFF"	Displays status (headlamp switch 2: ON/Others: OFF) of headlamp switch 2 judged from lighting switch signal.
LIGHT SW 1ST	"ON/OFF"	Displays status (lighting switch 1st position: ON/Others: OFF) of lighting switch judged from lighting switch signal.
AUTO LIGHT SW	"ON/OFF"	Displays status of the lighting switch as judged from the lighting switch signal. (AUTO position: ON/Other than AUTO position: OFF)
PASSING SW	"ON/OFF"	Displays status (flash-to-pass switch: ON/Others: OFF) of flash-to-pass switch judged from lighting switch signal.
FR FOG SW	"ON/OFF"	Displays status (front fog lamp switch: ON/Others: OFF) of front fog lamp switch judged from lighting switch signal.
DOOR SW - DR	"ON/OFF"	Displays status of the front door LH as judged from the front door switch LH signal. (Door is open: ON/Door is closed: OFF)
DOOR SW - AS	"ON/OFF"	Displays status of the front door RH as judged from the front door switch RH signal. (Door is open: ON/Door is closed: OFF)
DOOR SW - RR	"ON/OFF"	Displays status of the rear door as judged from the rear door switch (RH) signal. (Door is open: ON/Door is closed: OFF)
DOOR SW - RL	"ON/OFF"	Displays status of the rear door as judged from the rear door switch (LH) signal. (Door is open: ON/Door is closed: OFF)
BACK DOOR SW	"ON/OFF"	Displays status of the back door as judged from the back door switch signal. (Door is open: ON/Door is closed: OFF)
TURN SIGNAL R	"ON/OFF"	Displays status (Turn right: ON/Others: OFF) as judged from lighting switch signal.
TURN SIGNAL L	"ON/OFF"	Displays status (Turn left: ON/Others: OFF) as judged from lighting switch signal.
ENGINE RUN[Note 1]	"ON/OFF"	Displays status (Engine running: ON/Others: OFF) as judged from engine status signal.
PKB SW[Note 1]	"ON/OFF"	Displays status (Parking brake switch: ON/Others: OFF) as judged from parking brake switch signal.
OPTICAL SENSOR	[0 - 5V]	Displays "ambient light (close to 5V when light/close to 0V when dark)" judged from optical sensor signal.

Note 1: Vehicles without daytime light system may display this item, but cannot monitor it.

ACTIVE TEST

Operation Procedure

1. Touch "HEAD LAMP" on "SELECT TEST ITEM" screen.
2. Touch "ACTIVE TEST" on "SELECT DIAG MODE" screen.
3. Touch item to be tested and check operation of the selected item.
4. During the operation check, touching "BACK" deactivates the operation.

Display Item List

Test item	Description
TAIL LAMP	Allows tail lamp relay to operate by switching ON-OFF.
HEAD LAMP	Allows headlamp relay (HI, LO) to operate by switching ON-OFF.
FR FOG LAMP	Allows fog lamp relay to operate by switching ON-OFF.
CORNERING LAMP	Allows cornering lamp relay (RH, LH) to operate by switching ON-OFF.

SELF-DIAGNOSTIC RESULTS

Operation Procedure

1. Touch "BCM" on "SELECT TEST ITEM" screen.
2. Touch "SELF-DIAG RESULTS" on "SELECT DIAG MODE" screen.
3. Self-diagnostic results are displayed.

Display Item List

Monitored item	CONSULT-II display	Description
CAN communication	CAN communication [U1000]	Malfunction is detected in CAN communication.
CAN communication system	CAN communication system 1 to 6 [U1000]	Malfunction is detected in CAN system.

CONSULT-II Function (IPDM E/R)

EKS008YT

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

IPDM E/R diagnostic Mode	Description
SELF-DIAG RESULTS	Displays IPDM E/R self-diagnosis results.
DATA MONITOR	Displays IPDM E/R input/output data in real time.
CAN DIAG SUPPORT MNTR	The result of transmit/receive diagnosis of CAN communication can be read.
ACTIVE TEST	Operation of electrical loads can be checked by sending drive signal to them.

CONSULT-II START PROCEDURE

Refer to GI-37, "CONSULT-II Start Procedure" .

DATA MONITOR

Operation Procedure

1. Touch "DATA MONITOR" on "SELECT DIAG MODE" screen.
2. Touch "ALL SIGNALS", "MAIN SIGNALS" or "SELECTION FROM MENU" on the "SELECT MONITOR ITEM" screen.

ALL SIGNALS	All items will be monitored.
MAIN SIGNALS	Monitor the predetermined item.
SELECTION FROM MENU	Select any item for monitoring.

3. Touch "START".
4. Touch the required monitoring item on "SELECTION FROM MENU". In "ALL SIGNALS", all items are monitored. In "MAIN SIGNALS", predetermined items are monitored.
5. Touch "RECORD" while monitoring to record the status of the item being monitored. To stop recording, touch "STOP".

All Items, Main Items, Select Item Menu

Item name	CONSULT-II screen display	Display or unit	Monitor item selection			Description
			ALL SIGNALS	MAIN SIGNALS	SELECTION FROM MENU	
Parking, license plate and tail lamps request	TAIL&CLR REQ	ON/OFF	×	×	×	Signal status input from BCM
Headlamp low beam request	HL LO REQ	ON/OFF	×	×	×	Signal status input from BCM
Headlamp high beam request	HL HI REQ	ON/OFF	×	×	×	Signal status input from BCM
Cornering lamp	CRNRNG LMP REQ	ON/OFF	×	–	×	Signal status input from BCM
Front fog lamps request	FR FOG REQ	ON/OFF	×	×	×	Signal status input from BCM

NOTE:
Perform monitoring of IPDM E/R data with the ignition switch ON. When the ignition switch is at ACC, the display may not be correct.

ACTIVE TEST

Operation Procedure

1. Touch "ACTIVE TEST" on "SELECT DIAG MODE" screen.
2. Touch item to be tested, and check operation.
3. Touch "START".

4. Touch "STOP" while testing to stop the operation.

Test item	CONSULT-II screen display	Description
Tail lamp relay output	TAIL LAMP	Allows tail lamp relay to operate by switching operation ON-OFF at your option.
Headlamp relay (HI, LO) output	LAMPS	Allows headlamp relay (HI, LO) to operate by switching operation (OFF, HI, LO) at your option (Head lamp high beam repeats ON-OFF every 1 second).
Front fog lamp relay (FOG) output		Allows fog lamp relay (FOG) to operate by switching operation ON-OFF at your option.
Cornering lamp relay (RH, LH) output	CORNERING LAMP	Allows cornering lamp relay (RH, LH) to operate by switching operation ON-OFF at your option.

Headlamp Does Not Change To High Beam (Both Sides)

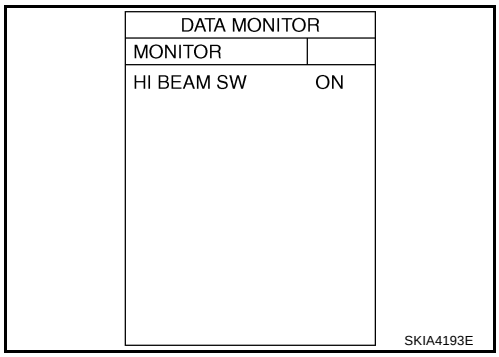
EKS008YU

1. CHECK COMBINATION SWITCH INPUT SIGNAL

With CONSULT-II

Select "BCM" on CONSULT-II. With "HEAD LAMP" data monitor, make sure "HI BEAM SW" turns ON-OFF linked with operation of lighting switch.

When lighting switch is in HIGH position : HI BEAM SW ON



Without CONSULT-II

Refer to LT-104, "Combination Switch Inspection" .

OK or NG

OK >> GO TO 2.

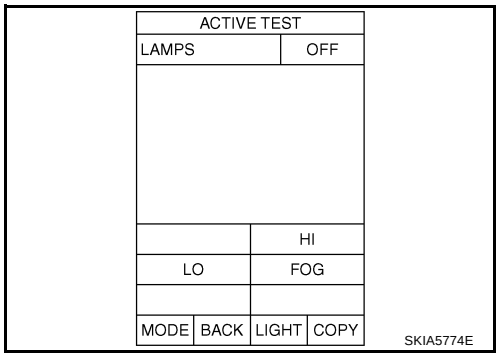
NG >> Check lighting switch. Refer to LT-104, "Combination Switch Inspection" .

2. HEADLAMP ACTIVE TEST

With CONSULT-II

1. Select "IPDM E/R" on CONSULT-II, and select "ACTIVE TEST" on "SELECT DIAG MODE" screen.
2. Select "LAMPS" on "SELECT TEST ITEM" screen.
3. Touch “HI” on "ACTIVE TEST" screen.
4. Make sure headlamp high beam operates.

Headlamp high beam should operate.



Without CONSULT-II

1. Start auto active test. Refer to PG-22, "Auto Active Test" .
2. Make sure headlamp high beam operates.

Headlamp high beam should operate.

OK or NG

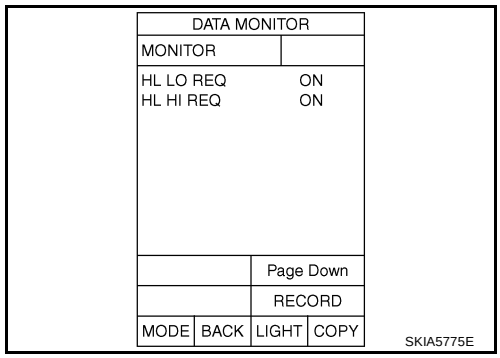
OK >> GO TO 3.

NG >> GO TO 4.

3. CHECK IPDM E/R

1. Select "IPDM E/R" on CONSULT-II, and select "DATA MONITOR" on "SELECT DIAG MODE" screen.
2. Make sure "HL LO REQ" and "HL HI REQ" turns ON when lighting switch is in HIGH position.

When lighting switch is in HIGH position : HL LO REQ ON
: HL HI REQ ON



OK or NG

OK >> Replace IPDM E/R. Refer to PG-31, "Removal and Installation of IPDM E/R" .

NG >> Replace BCM. Refer to BCS-25, "BCM" .

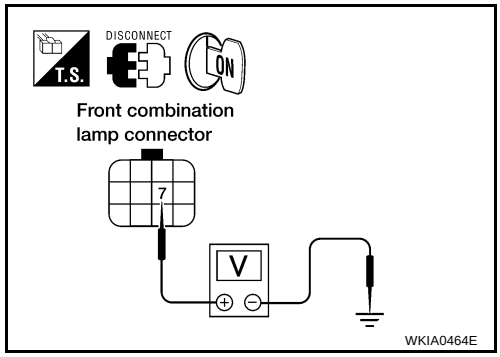
4. CHECK HEADLAMP INPUT SIGNAL

With CONSULT-II

1. Turn ignition switch OFF.
2. Disconnect front combination lamp RH and LH connectors.
3. Turn ignition switch ON.
4. Select "BCM" on CONSULT-II, and select "HEAD LAMP" on "SELECT TEST ITEM" screen.
5. Select "ACTIVE TEST" on "SELECT DIAG MODE" screen.
6. Select "HEAD LAMP" on "SELECT TEST ITEM" screen.
7. Touch “HI” on "ACTIVE TEST" screen.
8. When headlamp high beam is operating, check voltage between front combination lamp RH and LH harness connectors and ground (headlamp high beam stays ON steady).

Without CONSULT-II

1. Turn ignition switch OFF.
2. Disconnect front combination lamp RH and LH connectors.
3. Start auto active test. Refer to PG-22, "Auto Active Test" .
4. When headlamp high beam is operating, check voltage between front combination lamp RH and LH harness connectors and ground.



Front combination lamp		(–)	Voltage
(+)			
Connector	Terminal		
RH E107	7	Ground	Battery voltage
LH E11			

OK or NG

OK >> GO TO 6.

NG >> GO TO 5.

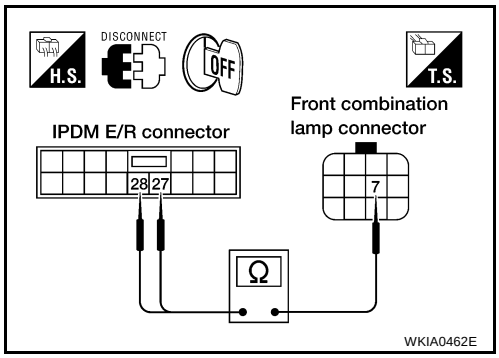
5. CHECK HEADLAMP CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connector.
3. Check continuity between IPDM E/R harness connector E122 terminal 27 and front combination lamp RH harness connector E107 terminal 7.

27 - 7 : Continuity should exist.

4. Check continuity between IPDM E/R harness connector E122 terminal 28 and front combination lamp LH harness connector E11 terminal 7.

28 - 7 : Continuity should exist.



OK or NG

OK >> Replace IPDM E/R. Refer to PG-31, "Removal and Installation of IPDM E/R" .
NG >> Repair harness or connector.

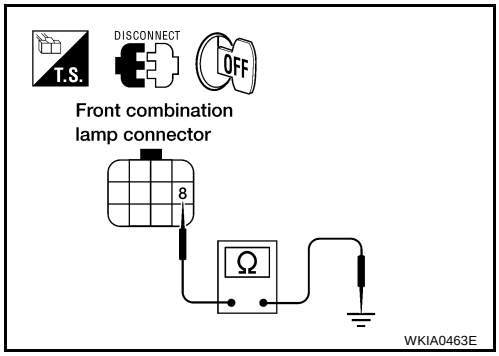
6. CHECK HEADLAMP GROUND

1. Turn ignition switch OFF.
2. Check continuity between front combination lamp RH harness connector E107 terminal 8 and ground.

8 - Ground : Continuity should exist.

3. Check continuity between front combination lamp LH harness connector E11 terminal 8 and ground.

8 - Ground : Continuity should exist.



OK or NG

OK >> Replace headlamp assembly. Refer to LT-36, "Removal and Installation" .
NG >> Repair harness or connector.

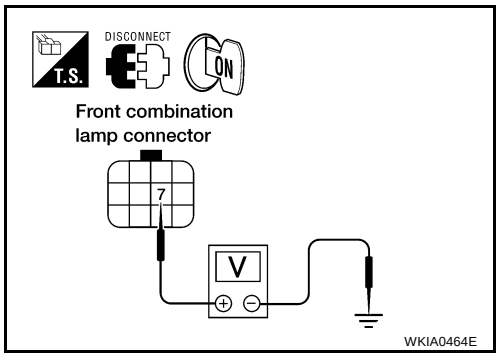
Headlamp Does Not Change To High Beam (One Side)

EKS008YV

1. CHECK HEADLAMP INPUT SIGNAL

1. Disconnect front combination lamp RH or LH connector.
2. Turn ignition switch ON.
3. Lighting switch is turned to HIGH position.
4. Check voltage between front combination lamp RH or LH harness connector and ground.

Front combination lamp			(–)	Voltage
(+)				
Connector		Terminal		
RH	E107	7	Ground	Battery voltage
LH	E11			



OK or NG

OK >> GO TO 3.
NG >> GO TO 2.

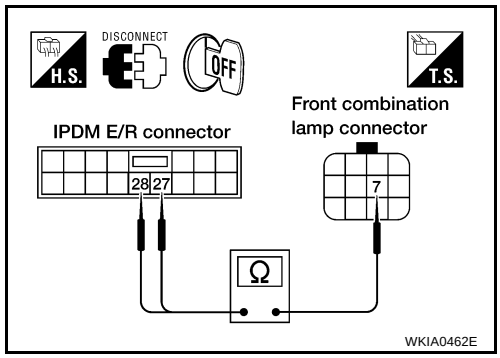
2. CHECK HEADLAMP CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connector.
3. Check continuity between IPDM E/R harness connector E122 terminal 27 and front combination lamp RH harness connector E107 terminal 7.

27 - 7 : Continuity should exist.

4. Check continuity between IPDM E/R harness connector E122 terminal 28 and front combination lamp LH harness connector E11 terminal 7.

28 - 7 : Continuity should exist.



OK or NG

OK >> Replace IPDM E/R. Refer to PG-31, "Removal and Installation of IPDM E/R" .
NG >> Repair harness or connector.

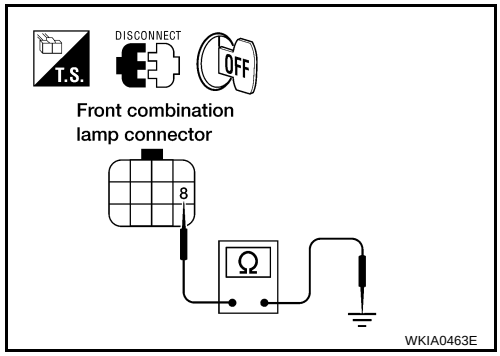
3. CHECK HEADLAMP GROUND

1. Turn ignition switch OFF.
2. Check continuity between front combination lamp RH harness connector E107 terminal 8 and ground.

8 - Ground : Continuity should exist.

3. Check continuity between front combination lamp LH harness connector E11 terminal 8 and ground.

8 - Ground : Continuity should exist.



OK or NG

OK >> Replace headlamp assembly. Refer to LT-36, "Removal and Installation" .
NG >> Repair harness or connector.

High Beam Indicator Lamp Does Not Illuminate

EKS008YW

1. CHECK BULB

Check bulb of high beam indicator lamp.

OK or NG

OK >> Replace combination meter. Refer to DI-26, "Combination Meter" .
NG >> Replace indicator bulb.

Headlamp Low Beam Does Not Illuminate (Both Sides)

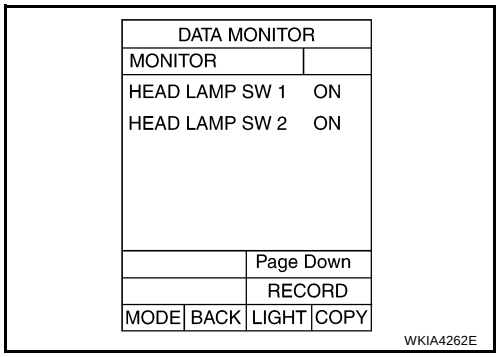
EKS008YX

1. CHECK COMBINATION SWITCH INPUT SIGNAL

With CONSULT-II

Select "BCM" on CONSULT-II. With "HEAD LAMP" data monitor, make sure "HEAD LAMP SW 1" and "HEAD LAMP SW 2" turns ON-OFF linked with operation of lighting switch.

When lighting switch is in 2ND position : HEAD LAMP SW 1 ON
: HEAD LAMP SW 2 ON



Without CONSULT-II

Refer to LT-104, "Combination Switch Inspection" .

OK or NG

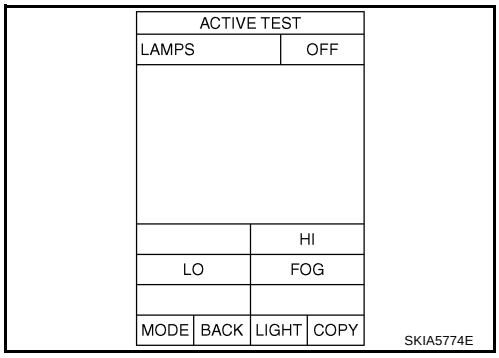
OK >> GO TO 2.
NG >> Check lighting switch. Refer to LT-104, "Combination Switch Inspection" .

2. HEADLAMP ACTIVE TEST

With CONSULT-II

1. Select "IPDM E/R" on CONSULT-II, and select "ACTIVE TEST" on "SELECT DIAG MODE" screen.
2. Select "LAMPS" on "SELECT TEST ITEM" screen.
3. Touch “LO” on "ACTIVE TEST" screen.
4. Make sure headlamp low beam operates.

Headlamp low beam should operate.



Without CONSULT-II

1. Start auto active test. Refer to PG-22, "Auto Active Test" .
2. Make sure headlamp low beam operates.

Headlamp low beam should operate.

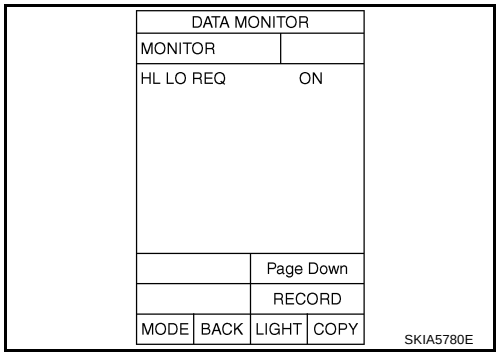
OK or NG

OK >> GO TO 3.
NG >> GO TO 4.

3. CHECK IPDM E/R

1. Select "IPDM E/R" on CONSULT-II, and select "DATA MONITOR" on "SELECT DIAG MODE" screen.
2. Make sure “HL LO REQ” turns ON when lighting switch is in 2ND position.

When lighting switch is in 2ND position : HL LO REQ ON



OK or NG

OK >> Replace IPDM E/R. Refer to PG-31, "Removal and Installation of IPDM E/R" .
NG >> Replace BCM. Refer to BCS-25, "BCM" .

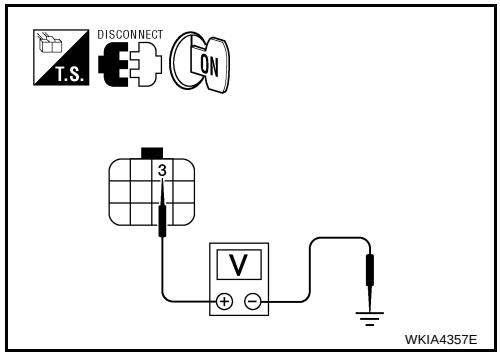
4. CHECK HEADLAMP INPUT SIGNAL

With CONSULT-II

1. Turn ignition switch OFF.
2. Disconnect front combination lamp RH and LH connectors.
3. Turn ignition switch ON.
4. Select "IPDM E/R" on CONSULT-II, and select "ACTIVE TEST" on "SELECT DIAG MODE" screen.
5. Select "LAMPS" on "SELECT TEST ITEM" screen.
6. Touch "LO" on "ACTIVE TEST" screen.
7. When headlamp low beam is operating, check voltage between front combination lamp RH and LH harness connectors and ground.

Without CONSULT-II

1. Turn ignition switch OFF.
2. Disconnect front combination lamp RH and LH connectors.
3. Start auto active test. Refer to PG-22, "Auto Active Test" .
4. When headlamp low beam is operating, check voltage between front combination lamp RH and LH harness connectors and ground.



Terminals				Voltage
(+)			(–)	
Front combination lamp connector		Terminal		
RH	E107	3	Ground	Battery voltage
LH	E11			

OK or NG

OK >> GO TO 6.
NG >> GO TO 5.

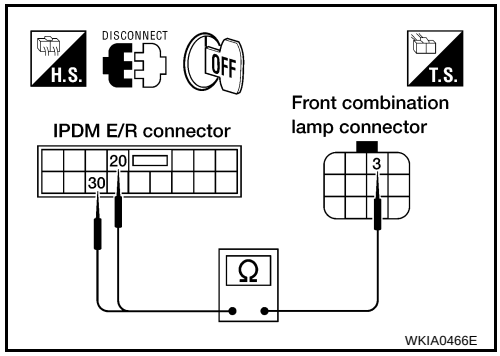
5. CHECK HEADLAMP CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connector.
3. Check continuity between IPDM E/R harness connector E122 terminal 20 and front combination lamp RH harness connector E107 terminal 3.

20 - 3 : Continuity should exist.

4. Check continuity between IPDM E/R harness connector E122 terminal 30 and front combination lamp LH harness connector E11 terminal 3.

30 - 3 : Continuity should exist.



OK or NG

OK >> Replace IPDM E/R. Refer to PG-31, "Removal and Installation of IPDM E/R" .
NG >> Repair harness or connector.

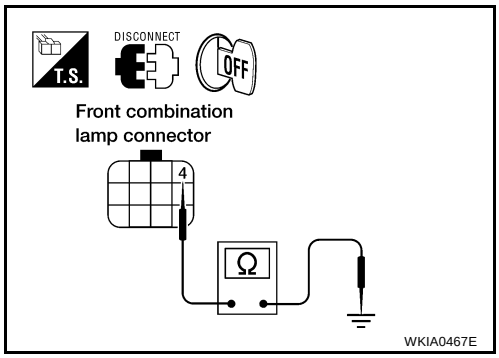
6. CHECK HEADLAMP GROUND

1. Turn ignition switch OFF.
2. Check continuity between front combination lamp RH harness connector E107 terminal 4 and ground.

4 - Ground : Continuity should exist.

3. Check continuity between front combination lamp LH harness connector E11 terminal 4 and ground.

4 - Ground : Continuity should exist.



OK or NG

OK >> Check headlamp harness and connectors, ballasts (HID control unit), and xenon bulbs. Refer to LT-32, "Xenon Headlamp Trouble Diagnosis" .

NG >> Repair harness or connector.

Headlamp Low Beam Does Not Illuminate (One Side)

EKS008YY

1. CHECK BULB

Check ballasts (HID control unit) and xenon bulb of lamp which does not illuminate. Refer to LT-32, "Xenon Headlamp Trouble Diagnosis" .

OK or NG

OK >> GO TO 2.

NG >> Repair malfunctioning part.

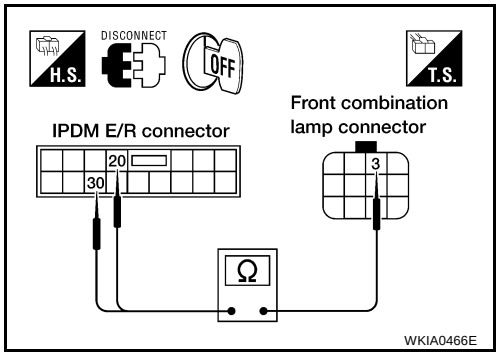
2. CHECK HEADLAMP CIRCUIT

1. Disconnect IPDM E/R connector and front combination lamp RH or LH connector.
2. Check continuity between IPDM E/R harness connector E122 terminal 20 and front combination lamp RH harness connector E107 terminal 3.

20 - 3 : Continuity should exist.

3. Check continuity between IPDM E/R harness connector E122 terminal 30 and front combination lamp LH harness connector E11 terminal 3.

30 - 3 : Continuity should exist.



OK or NG

OK >> GO TO 3.

NG >> Repair harness or connector.

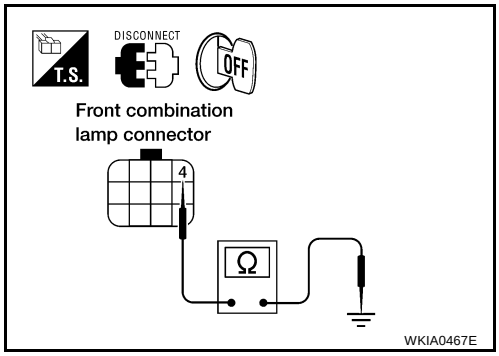
3. CHECK HEADLAMP GROUND

1. Check continuity between front combination lamp RH harness connector E107 terminal 4 and ground.

4 - Ground : Continuity should exist.

2. Check continuity between front combination lamp LH harness connector E11 terminal 4 and ground.

4 - Ground : Continuity should exist.



OK or NG

OK >> Replace IPDM E/R. Refer to PG-31, "Removal and Installation of IPDM E/R" .

NG >> Repair harness or connector.

Headlamp RH Low Beam and High Beam Does Not Illuminate

EKS008YZ

1. CHECK BULB

Inspect ballasts (HID control unit) and xenon bulb of lamp which does not illuminate. Refer to LT-32, "Xenon Headlamp Trouble Diagnosis" .

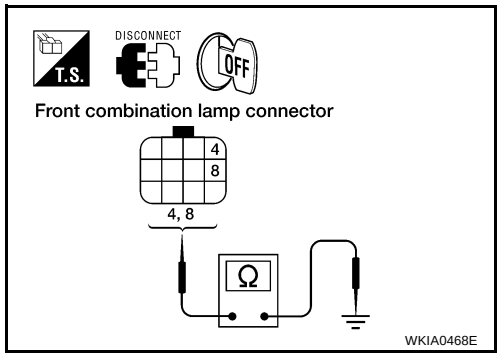
OK or NG

OK >> GO TO 2.
NG >> Repair malfunctioning part.

2. CHECK HEADLAMP GROUNDS

1. Disconnect front combination lamp RH connector.
2. Check continuity between front combination lamp RH harness connector E107 terminal 4, 8 and ground.

4, 8 - Ground : Continuity should exist.



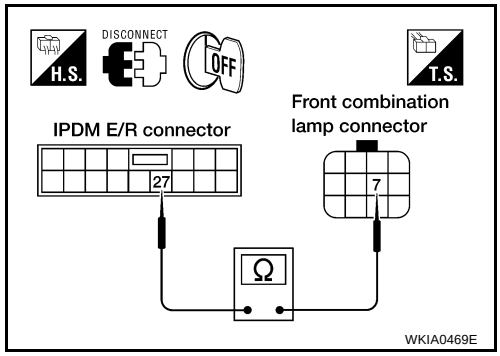
OK or NG

OK >> GO TO 3.
NG >> Repair harness or connector.

3. CHECK HEADLAMP CIRCUIT

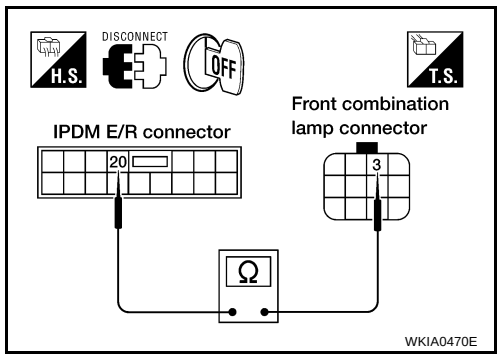
1. Disconnect IPDM E/R connector.
2. Check continuity between IPDM E/R harness connector E122 terminal 27 and front combination lamp RH harness connector E107 terminal 7.

27 - 7 : Continuity should exist.



3. Check continuity between IPDM E/R harness connector E122 terminal 20 and front combination lamp RH harness connector E107 terminal 3.

20 - 3 : Continuity should exist.



OK or NG

OK >> Replace IPDM E/R. Refer to PG-31, "Removal and Installation of IPDM E/R" .
NG >> Repair harness or connector.

Headlamp LH Low Beam and High Beam Does Not Illuminate

EKS008Z0

1. CHECK BULB

Inspect ballasts (HID control unit) and xenon bulb of lamp which does not illuminate. Refer to LT-32, "Xenon Headlamp Trouble Diagnosis" .

OK or NG

OK >> GO TO 2.
NG >> Repair malfunctioning part.

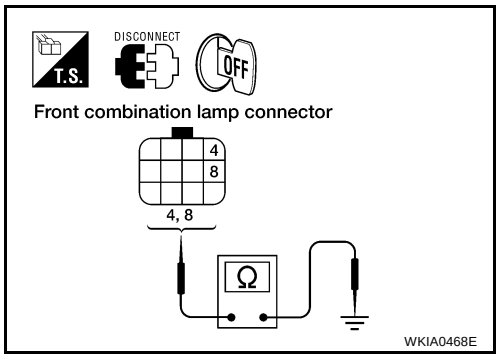
2. CHECK HEADLAMP GROUND

1. Disconnect front combination lamp LH connector.
2. Check continuity between front combination lamp LH harness connector E11 terminal 4, 8 and ground.

4, 8 - Ground : Continuity should exist.

OK or NG

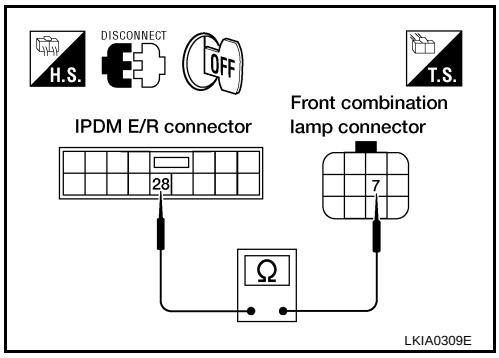
OK >> GO TO 3.
NG >> Repair harness or connector.



3. CHECK HEADLAMP CIRCUIT

1. Disconnect IPDM E/R connector.
2. Check continuity between IPDM E/R harness connector E122 terminal 28 and front combination lamp LH harness connector E11 terminal 7.

28 - 7 : Continuity should exist.

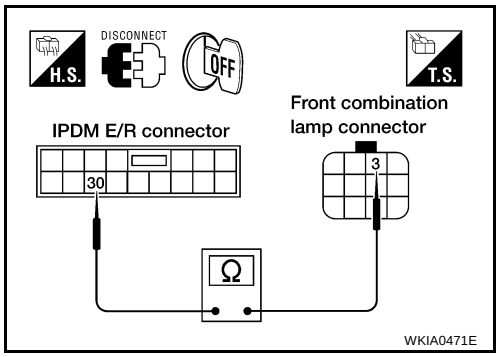


3. Check continuity between IPDM E/R harness connector E122 terminal 30 and front combination lamp LH harness connector E11 terminal 3.

30 - 3 : Continuity should exist.

OK or NG

OK >> Replace IPDM E/R. Refer to PG-31, "Removal and Installation of IPDM E/R" .
NG >> Repair harness or connector.



Headlamps Do Not Turn OFF

EKS008Z1

1. CHECK HEADLAMP TURN OFF

Make sure that lighting switch is OFF. And make sure that headlamp turns off when ignition switch is turned OFF.

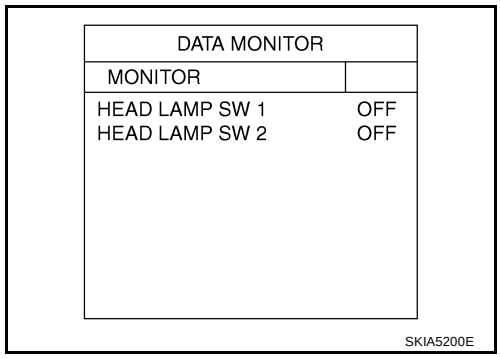
OK or NG

OK >> GO TO 3.
NG >> GO TO 2.

2. CHECK COMBINATION SWITCH INPUT SIGNAL

Select "BCM" on CONSULT-II. With "HEAD LAMP" data monitor, make sure "HEAD LAMP SW 1" and "HEAD LAMP SW 2" turns ON-OFF linked with operation of lighting switch.

When lighting switch is in : HEAD LAMP SW 1 OFF
OFF position : HEAD LAMP SW 2 OFF



OK or NG

OK >> Replace IPDM E/R. Refer to PG-31, "Removal and Installation of IPDM E/R" .

NG >> Check lighting switch. Refer to LT-104, "Combination Switch Inspection" .

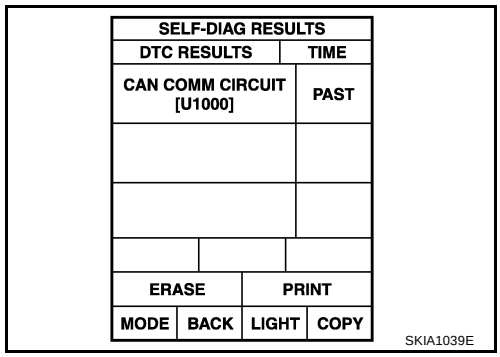
3. CHECKING CAN COMMUNICATIONS BETWEEN BCM AND IPDM E/R

Select "BCM" on CONSULT-II and perform self-diagnosis for BCM.

Display of self-diagnosis results

NO DTC>> Replace IPDM E/R. Refer to PG-31, "Removal and Installation of IPDM E/R" .

CAN COMM CIRCUIT>> Refer to BCS-18, "CAN Communication Inspection Using CONSULT-II (Self-Diagnosis)" .



CAUTION:

EKS008Z2

- Installation or removal of the connector must be done with the lighting switch OFF.
- When the lamp is illuminated (when the lighting switch is ON), do not touch the harness, HID control unit, inside of the lamp, or the lamp metal parts.
- To check illumination, temporarily install lamp in the vehicle. Be sure to connect power at the vehicle-side connector.
- If the error can be traced directly to the electrical system, first check for items such as blown fuses and fusible links, broken wires or loose connectors, pulled-out terminals, and improper connections.
- Do not work with wet hands.
- Using a tester for HID control unit circuit trouble diagnosis is prohibited.
- Disassembling the HID control unit or harnesses (bulb socket harness, ballast harness) is prohibited.
- Immediately after illumination, the light intensity and color will fluctuate, but there is nothing wrong.
- When the bulb has reached the end of its lifetime, the brightness may drop significantly, it may flash repeatedly, or the light may turn a reddish color.

Xenon Headlamp Trouble Diagnosis

EKS008Z3

1. CHECK 1: XENON HEADLAMP LIGHTING

Install normal xenon bulb to corresponding xenon bulb headlamp and check if lamp lights up.

OK or NG

OK >> Replace xenon bulb. Refer to LT-35, "HEADLAMP" .
NG >> GO TO 2.

2. CHECK 2: XENON HEADLAMP LIGHTING

Install normal HID control unit to corresponding xenon headlamp and check if lamp lights up.

OK or NG

OK >> Replace HID control unit.
NG >> GO TO 3.

3. CHECK 3: XENON HEADLAMP LIGHTING

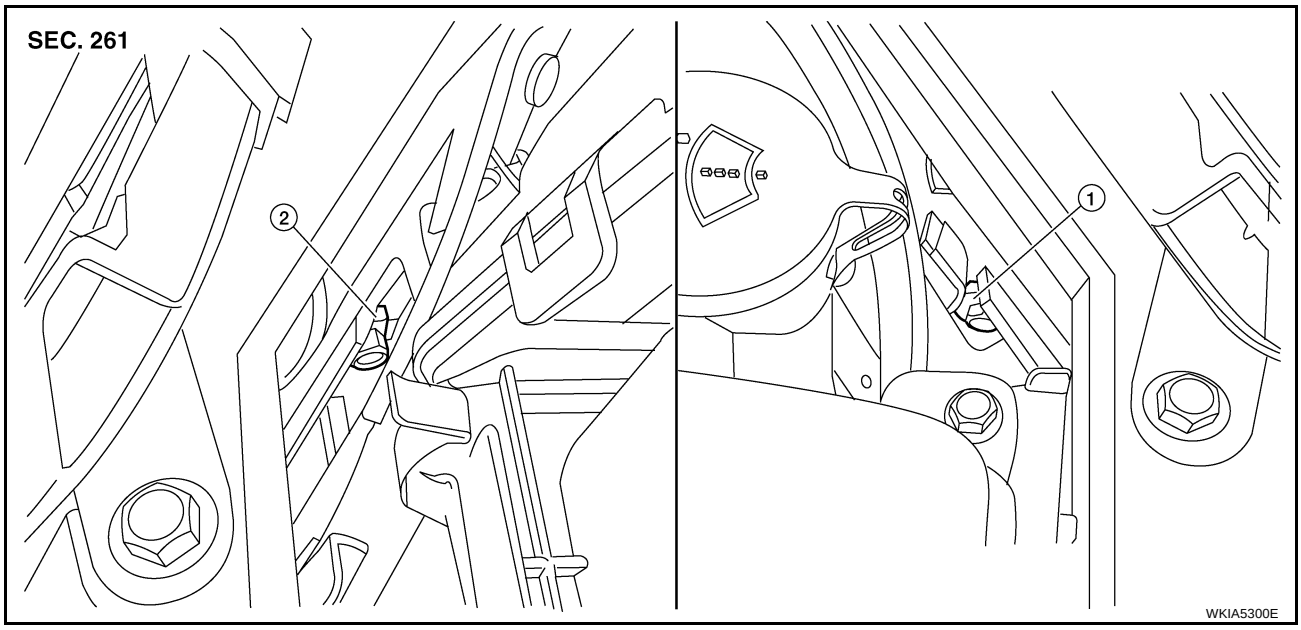
Install normal xenon lamp housing assembly to corresponding xenon headlamp and check if lamp lights up.

OK or NG

OK >> Malfunction in starter (boosting circuit) in xenon headlamp housing. (Replace xenon headlamp housing assembly.)
NG >> Inspection End.

Aiming Adjustment

EKS00G92



1. Passenger side adjustment screrw 2. Driver side adjustment screw

NOTE:

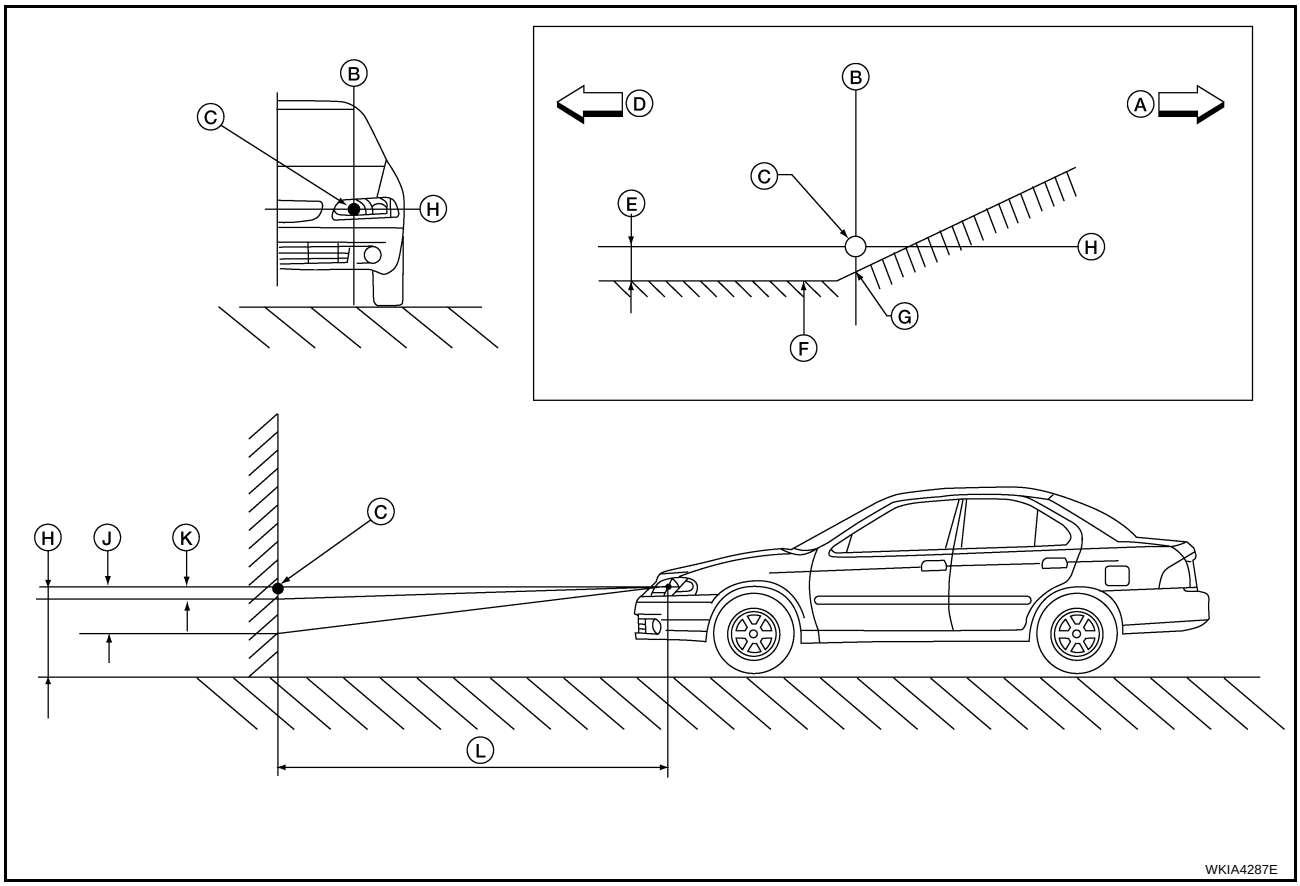
- For details, refer to the regulations in your area.
- If the vehicle front body has been repaired and/or the headlamp assembly has been replaced, check headlamp aiming.

Before performing headlamp aiming adjustment, check the following:

- Confirm which type of headlamp is in vehicle.
- Ensure all tires are inflated to correct pressure.
- Place vehicle and screen on level surface.
- Ensure there is no load in vehicle other than the driver (or equivalent weight placed in driver's position). Coolant and engine oil filled to correct level and fuel tank full.
- Confirm spare tire, jack and tools are properly stowed.

Headlamp Aiming

EKS00G93



A. Right	B. Vertical center line of headlamp	C. Horizontal aiming center line of headlamp
D. Left	E. Vertical aiming cutoff point	F. Cutoff line for vertical aiming evaluation
G. Acceptable vertical cutoff setting at horizontal aiming point	H. Horizontal center line of headlamp	J. Maximum acceptable vertical aiming point
K. Minimum acceptable vertical aiming point	L. Aiming distance from center of headlamp to aiming screen 7.62M (25 FT)	

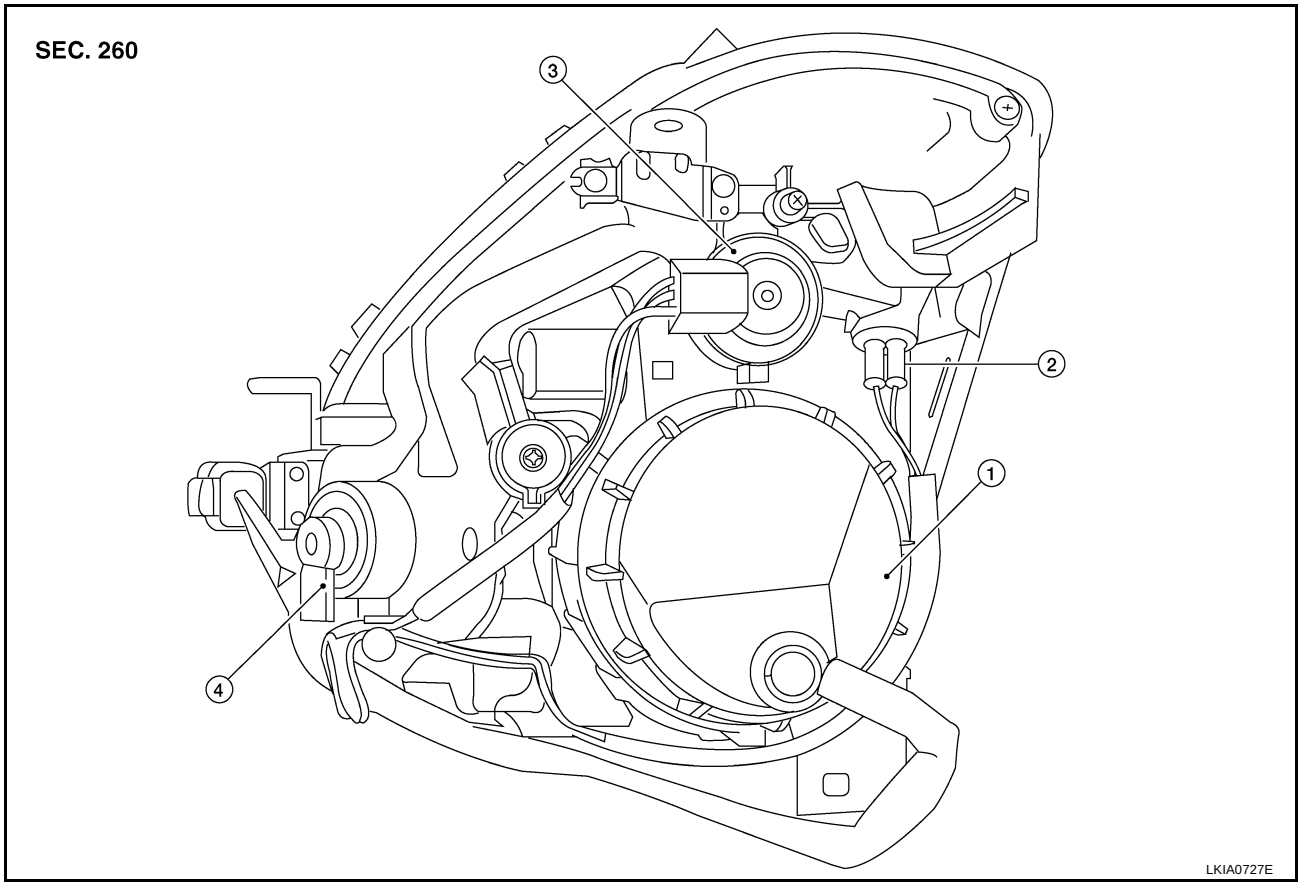
- Aim each headlamp individually and ensure other headlamp beam pattern is blocked from screen.
  - For vertical headlamp aiming, adjust headlamp until beam pattern is positioned per specified dimensions.

Description	Halogen Headlamp	Xenon Headlamp
Vertical aiming cutoff point (E)	53.2 mm (2.094 in.)	60 mm (2.362 in.)
Minimum acceptable vertical aiming point (K)	39.9 mm (1.571 in.)	53.2 mm (2.094 in.)
Maximum acceptable vertical aiming point (J)	66.5 mm (1.571 in.)	66.5 mm (1.571 in.)

Bulb Replacement

EKS008Z5

COMPONENTS



1	Headlamp bulb plastic cap	2	Front park lamp bulb	3	Turn signal lamp bulb
4	Cornering lamp bulb				

HEADLAMP

Removal

1. Disconnect negative battery cable.
2. Remove air cleaner assembly. Refer to EM-16, "AIR CLEANER AND AIR DUCT"
3. Turn headlamp bulb plastic cap counterclockwise and remove plastic cap.
4. Turn igniter counterclockwise and remove from bulb socket (xenon).
5. Disconnect electrical connectors from the bulb terminals (halogen).
6. Unlock retaining springs (xenon).
7. Turn cornering lamp socket counterclockwise and remove bulb.
8. Turn front park turn signal lamp bulb socket counterclockwise and remove bulb.

Installation

Installation is in the reverse order of removal.

CAUTION:

After installing the bulb, be sure to install the plastic cap securely to ensure watertightness.

FRONT TURN SIGNAL LAMP

Removal

1. Remove the combination lamp. Refer to LT-36, "COMBINATION LAMP" .
2. Turn the bulb socket counterclockwise to unlock socket.
3. Pull bulb out of socket.

Installation

Installation is in the reverse order of removal.

CAUTION:

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

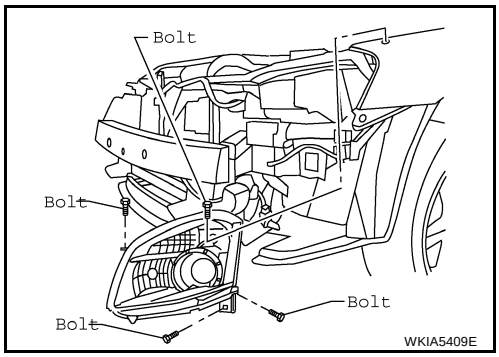
Removal and Installation

EKS008Z6

COMBINATION LAMP

Removal

1. Ensure lighting switch is OFF.
2. Disconnect negative battery cable.
3. Remove the front fascia. Refer to EI-14, "FRONT BUMPER" .
4. Remove the combination lamp bolts.
5. Pull combination lamp toward the front of the vehicle, disconnect connector and remove from vehicle.



Installation

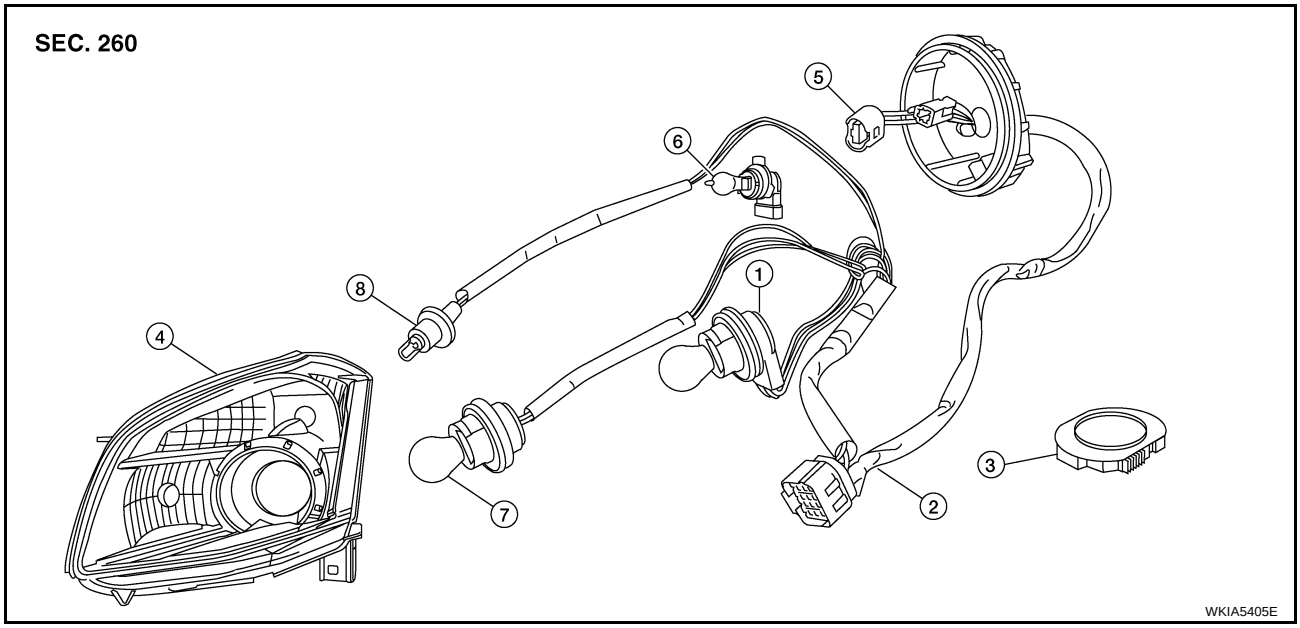
Installation is in the reverse order of removal.

- Check headlamp aiming adjustment. Refer to LT-33, "Aiming Adjustment"

Disassembly and Assembly

EKS008Z7

COMBINATION LAMP - XENON TYPE



1. Cornering lamp bulb
2. Wiring harness
3. HID Control Unit
4. Combination lamp
5. Ignitor
6. Xenon bulb
7. Turn signal bulb
8. Front park lamp bulb

Disassembly

1. Turn the headlamp bulb plastic cap counterclockwise and remove plastic cap.
2. Turn the xenon bulb socket counterclockwise and remove socket.
3. Turn the cornering lamp socket counterclockwise and remove bulb.
4. Turn the front park/turn signal lamp bulb socket counterclockwise and remove bulb.

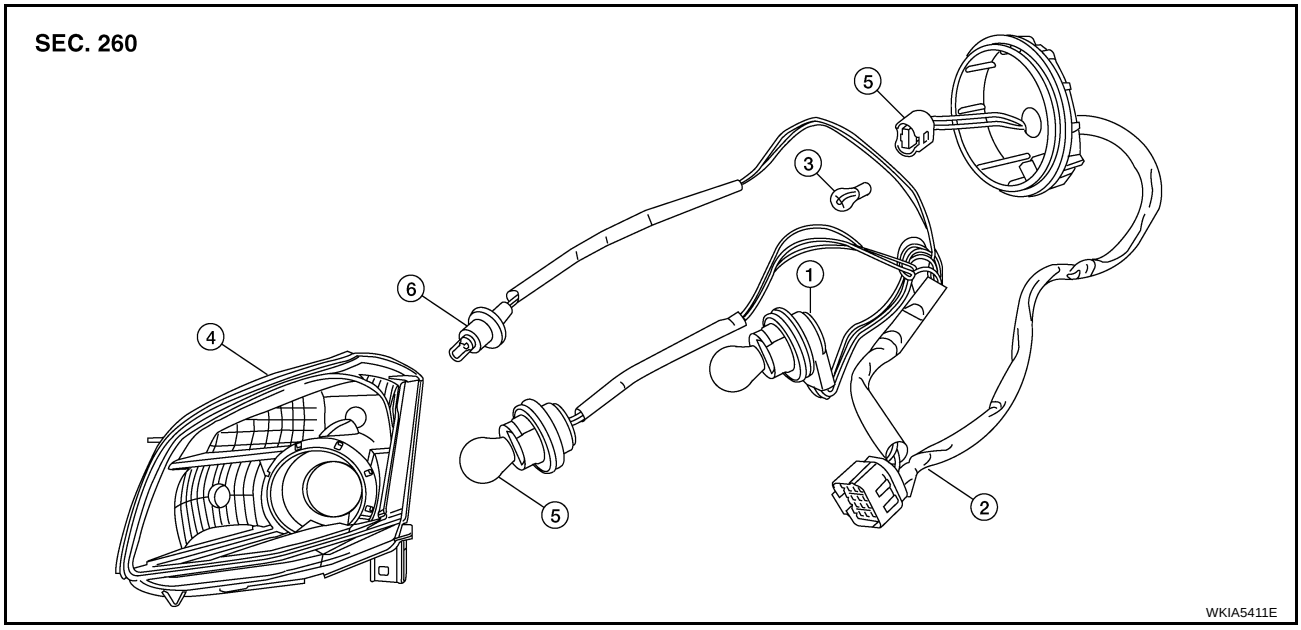
Assembly

Assembly is in the reverse order of disassembly.

CAUTION:

- **After installing the xenon bulb, be sure to install the bulb socket and plastic cap securely to ensure watertightness.**

COMBINATION LAMP - HALOGEN TYPE



1. Daytime light bulb (Canada only)
2. Wiring harness
3. Halogen bulb
4. Combination lamp
5. Turn signal bulb
6.
7. Front park lamp bulb

Disassembly

1. Turn the headlamp bulb plastic cap counterclockwise and remove plastic cap.
2. Disconnect the electrical connectors from the bulb terminals.
3. Turn the halogen lamp bulb socket counterclockwise and remove bulb.
4. Turn the high beam lamp socket counterclockwise and remove bulb.
5. Turn the front turn signal lamp bulb socket counterclockwise and remove bulb.

Assembly

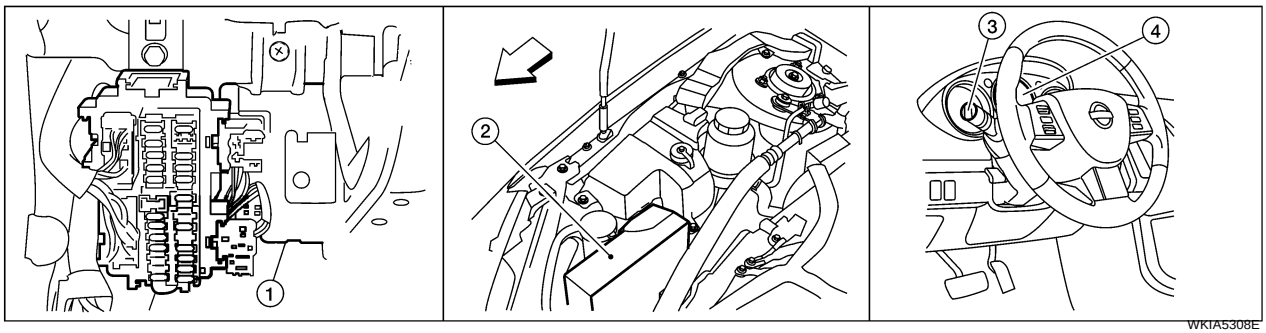
Assembly is in the reverse order of disassembly.

HEADLAMP (FOR CANADA) - DAYTIME LIGHT SYSTEM -

PFP:26010

Component Parts and Harness Connector Location

EKS008Z8



WKIA5308E

1. BCM M18, and M20 (View with instrument panel removed)
2. Combination switch (lighting switch) M28
3. IPDM E/R E121 and E124
4. Combination meter M24

System Description

EKS008Z9

Daytime light system turns on daytime light lamps while driving. Daytime light lamps are not turned on if engine is activated with parking brake on. Take off parking brake to turn on daytime light lamps. The lamps turn off when lighting switch is in the 2ND position or AUTO position (Headlamp is "ON") and when lighting switch is in the PASSING position. (Daytime light lamps are not turned off only by parking brake itself.)
A parking brake signal and engine run or stop signal are sent to BCM (body control module) by CAN communication line.

OUTLINE

Power is supplied at all times

- through 10A fuse [No. 19, located in the fuse block (J/B)]
- to combination meter terminal 24, and
- through 10A fuse [No. 21, located in the fuse block (J/B)]
- to BCM terminal 57, and
- through 50A fusible link (letter **f** , located in the fuse and fusible link box)
- to BCM terminal 70, and
- through 15A fuses (No. 34, and 41, located in the IPDM E/R)
- to CPU of the IPDM E/R, and
- through 15A fuse (No. 43, located in the IPDM E/R)
- to front fog lamp relay, located in the IPDM E/R.

When the ignition switch is in ON or START position, power is supplied

- through 10A fuse [No. 14, located in the fuse block (J/B)]
- to combination meter terminal 23, and
- through 10A fuse [No. 1, located in the fuse block (J/B)]
- to BCM terminal 38, and
- to ignition relay, located in the IPDM E/R.

With the ignition switch in the ACC or ON position, power is supplied

- through 10A fuse [No. 6, located in the fuse block (J/B)]
- to BCM terminal 11.

Ground is supplied

- to combination meter terminals 10, 11 and 12, and
- to BCM terminal 67
- through grounds M57, M61 and M79.
- to IPDM E/R terminals 38, and 60
- through grounds E15 and E24.

DAYTIME LIGHT OPERATION

With the engine running, the lighting switch in the OFF or 1ST position and parking brake released, power is supplied

- through front fog lamp relay
- to front fog lamp LH and RH terminal 1.

Ground is supplied

- to front fog lamp LH and RH terminal 2
- through grounds E15 and E24.

With power and ground supplied, the daytime lights illuminate.

COMBINATION SWITCH READING FUNCTION

Refer to BCS-3, "COMBINATION SWITCH READING FUNCTION" .

AUTO LIGHT OPERATION

For auto light operation, refer to LT-50, "System Description" in AUTO LIGHT SYSTEM.

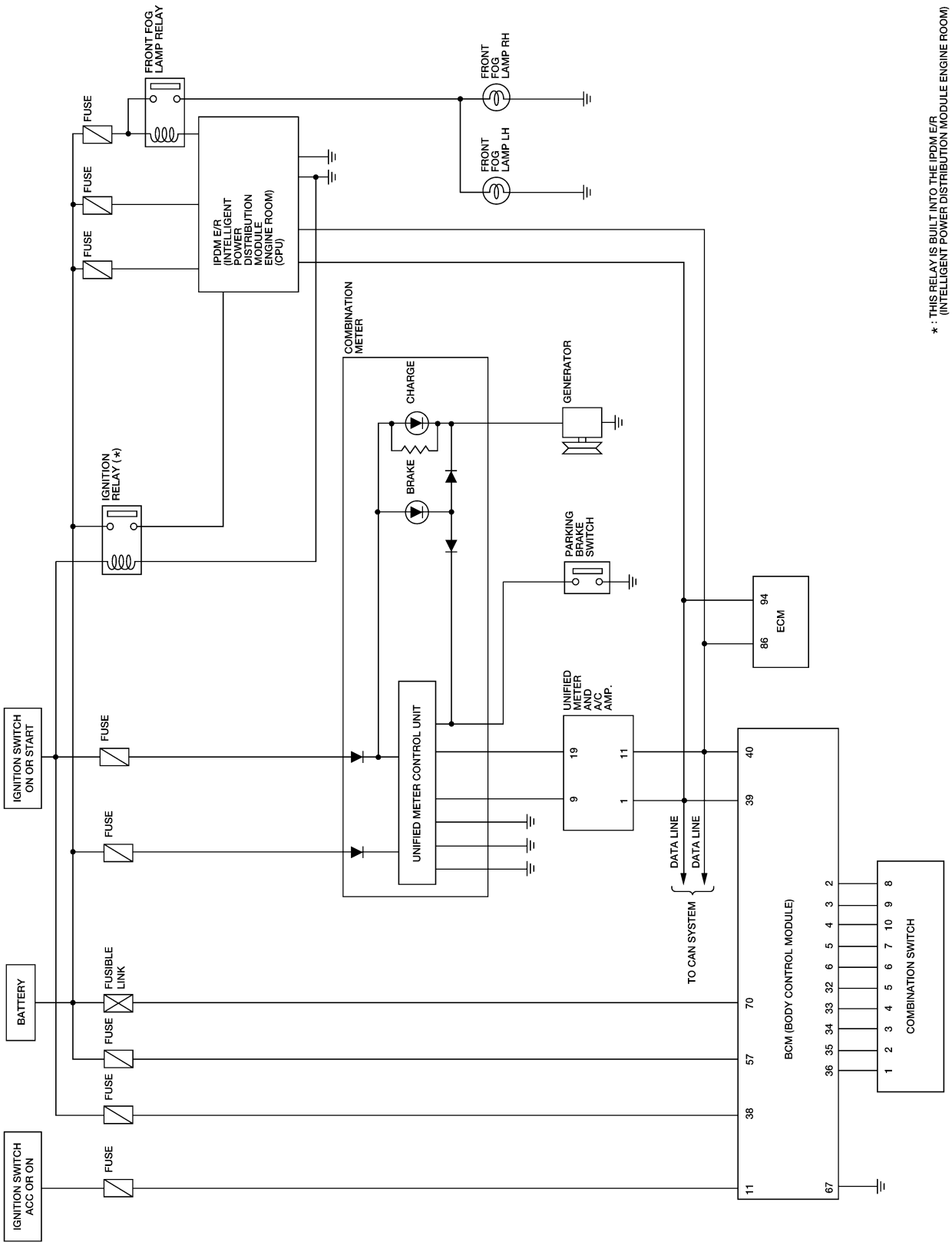
CAN Communication System Description

EKS008ZA

Refer to LAN-4, "SYSTEM DESCRIPTION" .

Schematic

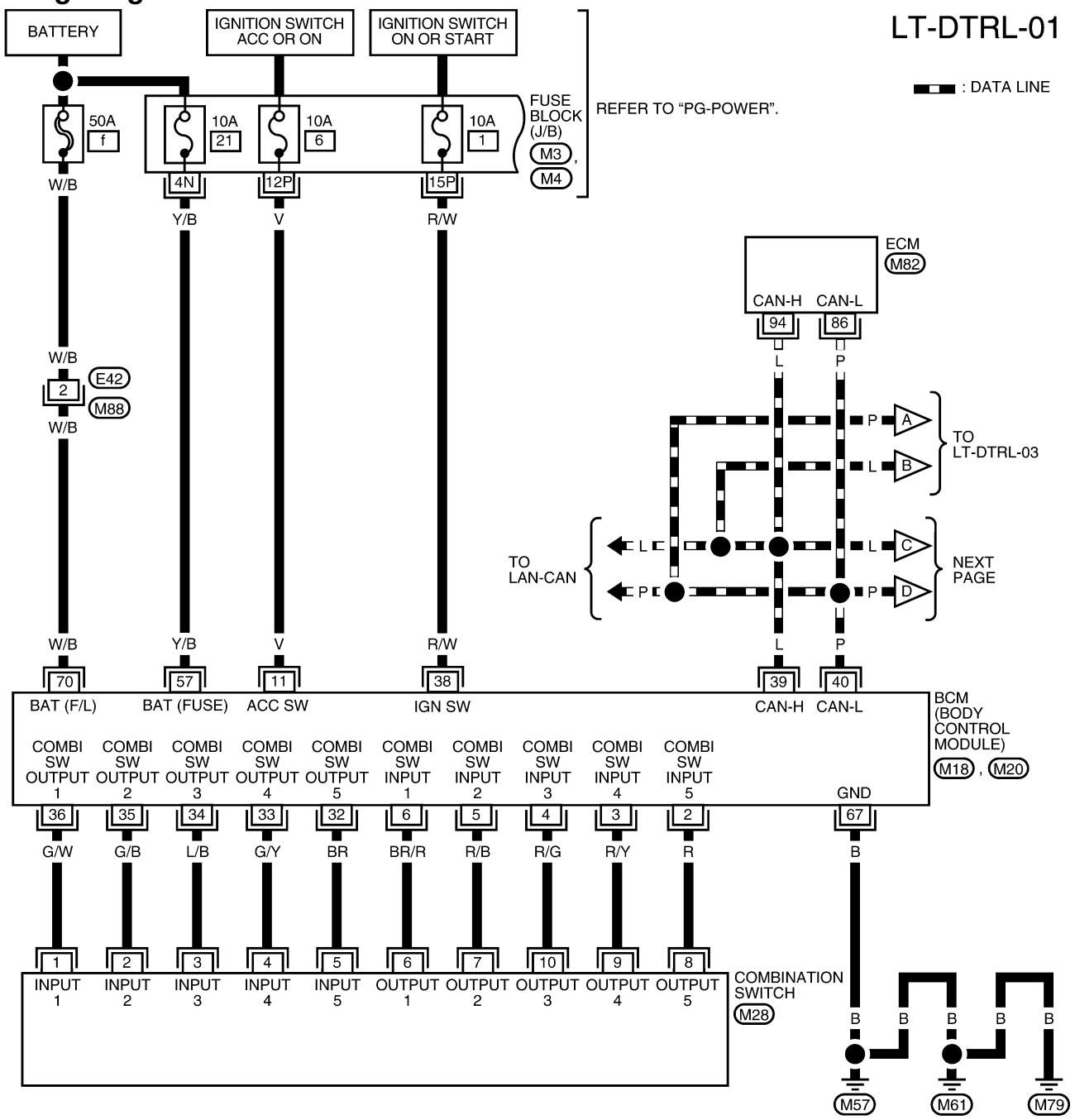
EKS008ZB



WKWA4854E

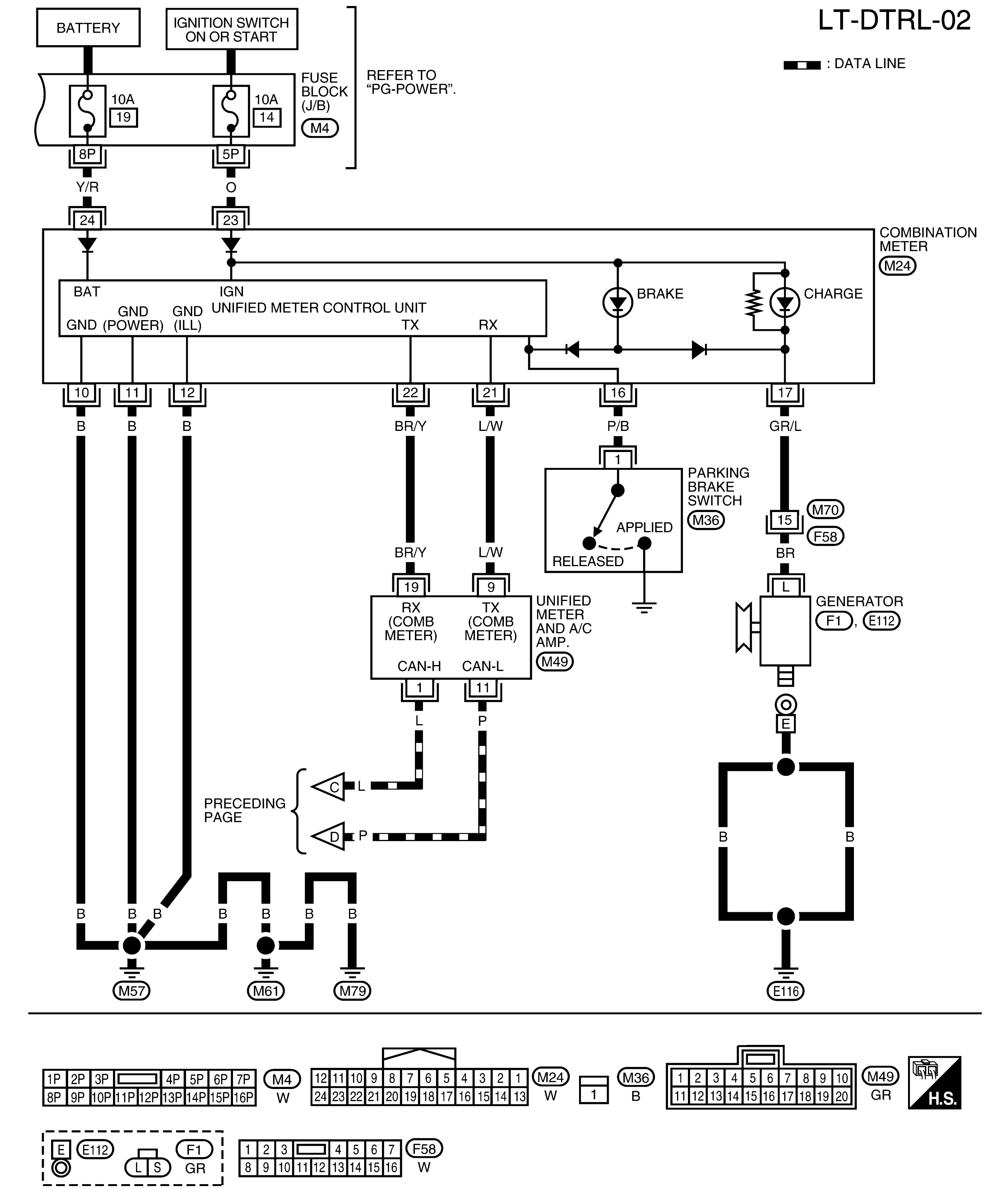
Wiring Diagram — DTRL —

EKS008ZC

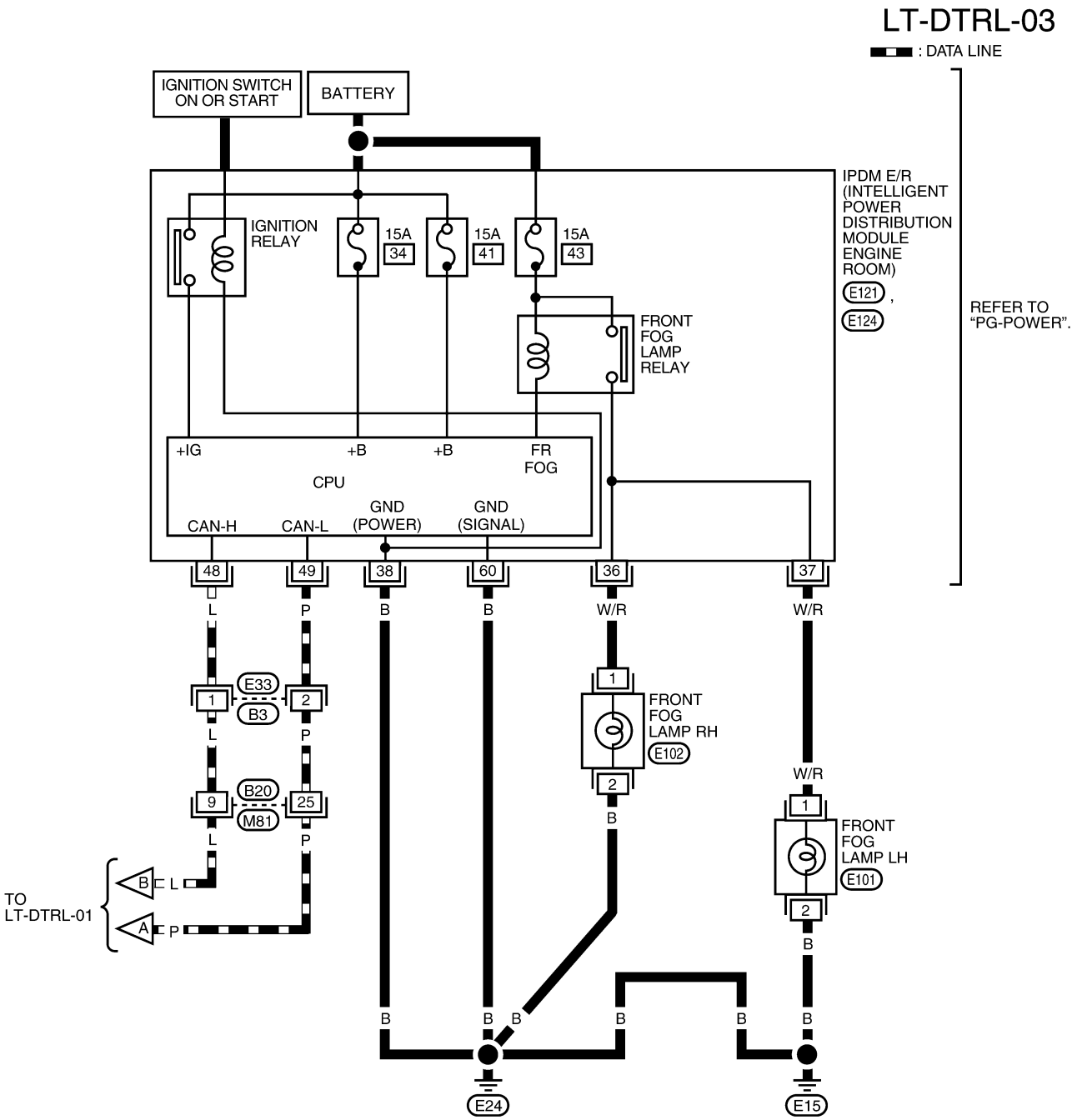


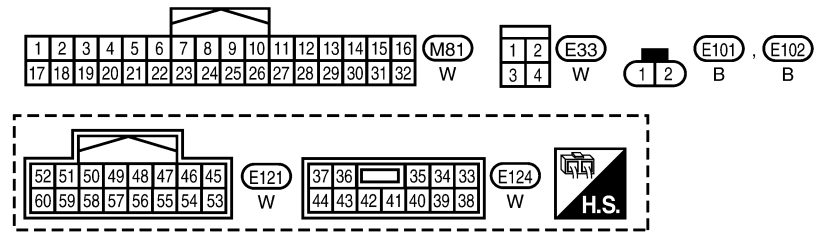
REFER TO THE FOLLOWING.
M82 - ELECTRICAL UNITS

WKWA4855E


LT-DTRL-02
: DATA LINE
BATTERY
IGNITION SWITCH
ON OR START
10A
19
10A
14
FUSE
BLOCK
(J/B)
M4
REFER TO
"PG-POWER".
8P
5P
Y/R
O
24
23
COMBINATION
METER
M24
BAT
IGN
UNIFIED METER CONTROL UNIT
GND
GND (POWER)
GND (ILL)
TX
RX
BRAKE
CHARGE
10
11
12
22
21
16
17
B
B
B
BR/Y
L/W
P/B
GR/L
1
PARKING
BRAKE
SWITCH
M36
APPLIED
RELEASED
15
M70
F58
BR
BR/Y
L/W
19
9
RX
(COMB
METER)
TX
(COMB
METER)
UNIFIED
METER
AND A/C
AMP.
M49
CAN-H
CAN-L
1
11
L
P
L
GENERATOR
F1 , E112
E
PRECEDING
PAGE
C
L
D
P
B
B
B
B
B
B
B
B
B
B
M57
M61
M79
E116
1P 2P 3P 4P 5P 6P 7P
8P 9P 10P 11P 12P 13P 14P 15P 16P
M4
W
12 11 10 9 8 7 6 5 4 3 2 1
24 23 22 21 20 19 18 17 16 15 14 13
M24
W
1
M36
B
1 2 3 4 5 6 7 8 9 10
11 12 13 14 15 16 17 18 19 20
M49
GR
H.S.
E
E112
L S
F1
GR
1 2 3 4 5 6 7
8 9 10 11 12 13 14 15 16
F58
W

WKWA4856E


LT-DTRL-03
: DATA LINE
IGNITION SWITCH ON OR START
BATTERY
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
E121 , E124
REFER TO "PG-POWER".
IGNITION RELAY
15A 34
15A 41
15A 43
FRONT FOG LAMP RELAY
+IG
+B
+B
FR FOG
CPU
GND (POWER)
GND (SIGNAL)
CAN-H
CAN-L
48
49
38
60
36
37
L
P
B
B
W/R
W/R
E33
B3
B20
M81
TO LT-DTRL-01
FRONT FOG LAMP RH
E102
FRONT FOG LAMP LH
E101
E24
E15


M81
W
E33
W
E101
B
E102
B
E121
W
E124
W
H.S.

WKWA4857E

Terminals and Reference Values for BCM

EKS008ZD

Refer to BCS-12, "Terminals and Reference Values for BCM" .

How to Proceed With Trouble Diagnosis

EKS008ZE

1. Confirm the symptom or customer complaint.
2. Understand operation description and function description. Refer to LT-38, "System Description" .
3. Perform the Preliminary Check. Refer to LT-44, "Preliminary Check" .
4. Check symptom and repair or replace the cause of malfunction.
5. Does the headlamp operate normally? If YES: GO TO 6. If NO: GO TO 4.
6. Inspection End.

Preliminary Check

EKS008ZF

CHECK BCM CONFIGURATION

1. CHECK BCM CONFIGURATION

Confirm BCM configuration for "DTRL" is set to "WITH". Refer to BCS-19, "READ CONFIGURATION PROCEDURE" .

OK or NG

OK >> Continue preliminary check. Refer to LT-44, "INSPECTION FOR POWER SUPPLY AND GROUND CIRCUIT" .

NG >> Change BCM configuration for "DTRL" to "WITH". Refer to BCS-21, "WRITE CONFIGURATION PROCEDURE" .

INSPECTION FOR POWER SUPPLY AND GROUND CIRCUIT

Refer to BCS-15, "BCM Power Supply and Ground Circuit Check" .

INSPECTION PARKING BRAKE SWITCH CIRCUIT

1. CHECK BRAKE INDICATOR

1. Turn ignition switch ON.
2. Apply parking brake.
3. Release parking brake.

Brake indicator in combination meter should illuminate when parking brake is applied and turn OFF when released.

OK or NG

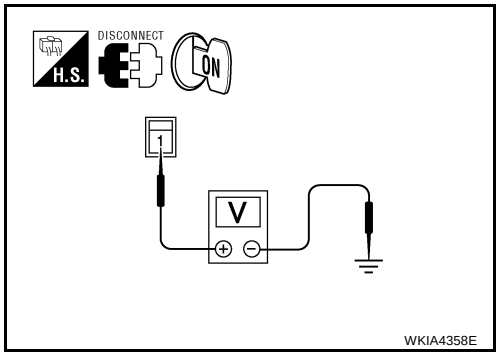
OK >> Inspection End.

NG >> GO TO 2.

2. CHECK PARKING BRAKE SWITCH SIGNAL

1. Turn ignition switch OFF.
2. Disconnect parking brake switch connector.
3. Turn ignition switch ON.
4. Check voltage between parking brake switch harness connector M36 terminal 1 and ground.

1 - Ground : Battery voltage should exist.



OK or NG

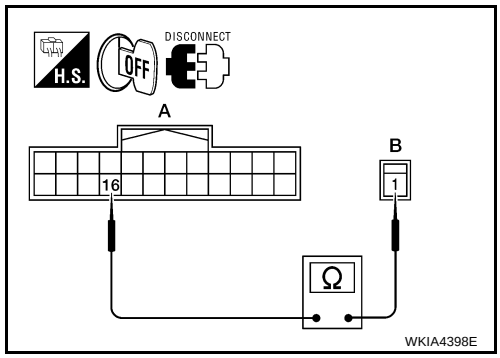
OK >> Replace parking brake switch.

NG >> GO TO 3.

3. CHECK PARKING BRAKE SWITCH CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect combination meter connector.
3. Check continuity between combination meter harness connector M24 (A) terminal 16 and parking brake switch harness connector M36 (B) terminal 1.

1 - 16 : Continuity should exist.



OK or NG

OK >> Replace combination meter. Refer to DI-26, "Combination Meter" .

NG >> Repair harness or connector.

CONSULT-II Function (BCM)

EKS008ZG

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

BCM diagnostic test item	Diagnostic mode	Description
Inspection by part	WORK SUPPORT	Supports inspections and adjustments. Commands are transmitted to the BCM for setting the status suitable for required operation, input/output signals are received from the BCM and received data is displayed.
	DATA MONITOR	Displays BCM input/output data in real time.
	ACTIVE TEST	Operation of electrical loads can be checked by sending drive signal to them.
	SELF-DIAG RESULTS	Displays BCM self-diagnosis results.
	CAN DIAG SUPPORT MNTR	The result of transmit/receive diagnosis of CAN communication can be read.
	ECU PART NUMBER	BCM part number can be read.
	CONFIGURATION	Performs BCM configuration read/write functions.

CONSULT-II START PROCEDURE

Refer to GI-37, "CONSULT-II Start Procedure" .

DATA MONITOR

Operation Procedure

1. Touch "HEAD LAMP" on "SELECT TEST ITEM" screen.
2. Touch "DATA MONITOR" on "SELECT DIAG MODE" screen.
3. Touch either "ALL SIGNALS" or "SELECTION FROM MENU" on the "SELECT MONITOR ITEM" screen.

ALL SIGNALS	Monitors all the signals.
SELECTION FROM MENU	Selects and monitors individual signal.

4. Touch "START".
5. When "SELECTION FROM MENU" is selected, touch individual items to be monitored. When "ALL SIGNALS" is selected, all the items will be monitored.
6. Touch "RECORD" while monitoring, then the status of the monitored item can be recorded. To stop recording, touch "STOP".

Display Item List

Monitor item		Contents
IGN ON SW	"ON/OFF"	Displays "IGN position (ON)/OFF, ACC position (OFF)" judged from the ignition switch signal.
ACC ON SW	"ON/OFF"	Displays "ACC (ON)/OFF, Ignition OFF (OFF)" status judged from ignition switch signal.
HI BEAM SW	"ON/OFF"	Displays status (high beam switch: ON/Others: OFF) of high beam switch judged from lighting switch signal.
HEAD LAMP SW 1	"ON/OFF"	Displays status (headlamp switch 1: ON/Others: OFF) of headlamp switch 2 judged from lighting switch signal.
HEAD LAMP SW 2	"ON/OFF"	Displays status (headlamp switch 2: ON/Others: OFF) of headlamp switch 2 judged from lighting switch signal.
LIGHT SW 1ST	"ON/OFF"	Displays status (lighting switch 1st position: ON/Others: OFF) of lighting switch judged from lighting switch signal.
AUTO LIGHT SW	"ON/OFF"	Displays status of the lighting switch as judged from the lighting switch signal. (AUTO position: ON/Other than AUTO position: OFF)
PASSING SW	"ON/OFF"	Displays status (flash-to-pass switch: ON/Others: OFF) of flash-to-pass switch judged from lighting switch signal.
FR FOG SW	"ON/OFF"	Displays status (front fog lamp switch: ON/Others: OFF) of front fog lamp switch judged from lighting switch signal.
DOOR SW-DR	"ON/OFF"	Displays status of the front door LH as judged from the front door switch LH signal. (Door is open: ON/Door is closed: OFF)

Monitor item		Contents
DOOR SW-AS	"ON/OFF"	Displays status of the front door RH as judged from the front door switch RH signal. (Door is open: ON/Door is closed: OFF)
DOOR SW-RR	"ON/OFF"	Displays status of the rear door as judged from the rear door switch (RH) signal. (Door is open: ON/Door is closed: OFF)
DOOR SW-RL	"ON/OFF"	Displays status of the rear door as judged from the rear door switch (LH) signal. (Door is open: ON/Door is closed: OFF)
BACK DOOR SW	"ON/OFF"	Displays status of the back door as judged from the back door switch signal. (Door is open: ON/Door is closed: OFF)
TURN SIGNAL R	"ON/OFF"	Displays status (Turn right: ON/Others: OFF) as judged from lighting switch signal.
TURN SIGNAL L	"ON/OFF"	Displays status (Turn left: ON/Others: OFF) as judged from lighting switch signal.
ENGINE RUN	"ON/OFF"	Displays status (Engine running: ON/Others: OFF) as judged from engine status signal.
PKB SW	"ON/OFF"	Displays status (Parking brake switch: ON/Others: OFF) as judged from parking brake switch signal.
OPTICAL SENSOR	[0 - 5V]	Displays “ambient light (close to 5V when light/close to 0V when dark)” judged from optical sensor signal.

ACTIVE TEST

Operation Procedure

1. Touch "HEAD LAMP" on "SELECT TEST ITEM" screen.
2. Touch "ACTIVE TEST" on "SELECT DIAG MODE" screen.
3. Touch item to be tested and check operation of the selected item.
4. During the operation check, touching "BACK" deactivates the operation.

Display Item List

Test item	Description
TAIL LAMP	Allows tail lamp relay to operate by switching ON-OFF.
HEAD LAMP	Allows headlamp relay (HI, LO) to operate by switching ON-OFF.
FR FOG LAMP	Allows fog lamp relay to operate by switching ON-OFF.
DTRL	Allow day time light lamp operate by switching ON-OFF.
CORNERING LAMP	Allows cornering lamp relay (RH, LH) to operate by switching ON-OFF.

SELF-DIAGNOSTIC RESULTS

Operation Procedure

1. Touch "BCM" on "SELECT TEST ITEM" screen.
2. Touch "SELF-DIAG RESULTS" on "SELECT DIAG MODE" screen.
3. Self-diagnostic results are displayed.

Display Item List

Monitored item	CONSULT-II display	Description
CAN communication	CAN communication [U1000]	Malfunction is detected in CAN communication.
CAN communication system	CAN communication system 1 to 6 [U1000]	Malfunction is detected in CAN system.
Combination switch	Diagnosis 1 - 5 systems open circuit	Malfunction is detected in combination switch system.

Daytime Light Control Does Not Operate Properly

EKS00ILW

1. CHECK FRONT FOG LAMP OPERATION

Activate front fog lamps from front fog lamp switch.

Do the front fog lamps operate normally?

OK >> GO TO 2.

NG >> Refer to LT-64, "FRONT FOG LAMP" .

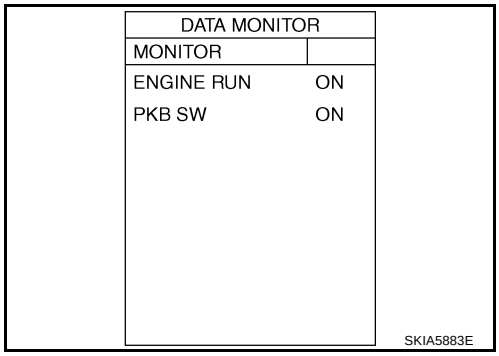
2. CHECK INPUT SIGNALS

1. Start engine.
2. Select "BCM" on CONSULT-II. With "HEAD LAMP" data monitor, make sure that "ENGINE RUN" turns ON-OFF linked with the operation of the engine running or stopped.

Engine running	**: ENGINE RUN ON**
Engine stop	**: ENGINE RUN OFF**

3. Select "BCM" on CONSULT-II. With "HEAD LAMP" data monitor, make sure that "PKB SW" turns ON-OFF linked with the operation of the parking brake switch.

Parking brake ON	**: PKB SW ON**
Parking brake OFF	**: PKB SW OFF**



OK or NG

OK >> Replace IPDM E/R. Refer to PG-31, "Removal and Installation of IPDM E/R" .

NG >> GO TO 3.

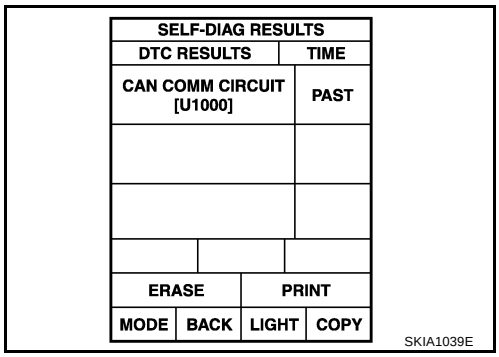
3. CHECKING CAN COMMUNICATIONS

Select "BCM" on CONSULT-II and perform self-diagnosis for BCM.

Displayed self-diagnosis results

NO DTC>> Replace BCM. Refer to BCS-25, "BCM" .

CAN COMM CIRCUIT>> Check BCM CAN communication system. Refer to BCS-18, "CAN Communication Inspection Using CONSULT-II (Self-Diagnosis)" .



Aiming Adjustment
EKS008ZI

HEADLAMP

Refer to LT-33, "Aiming Adjustment" .

Bulb Replacement
EKS008ZJ

HEADLAMP

Refer to LT-35, "HEADLAMP" .

Removal and Installation
EKS008ZK

COMBINATION LAMP

Refer to LT-36, "Removal and Installation" .

Disassembly and Assembly
EKS008ZL

COMBINATION LAMP

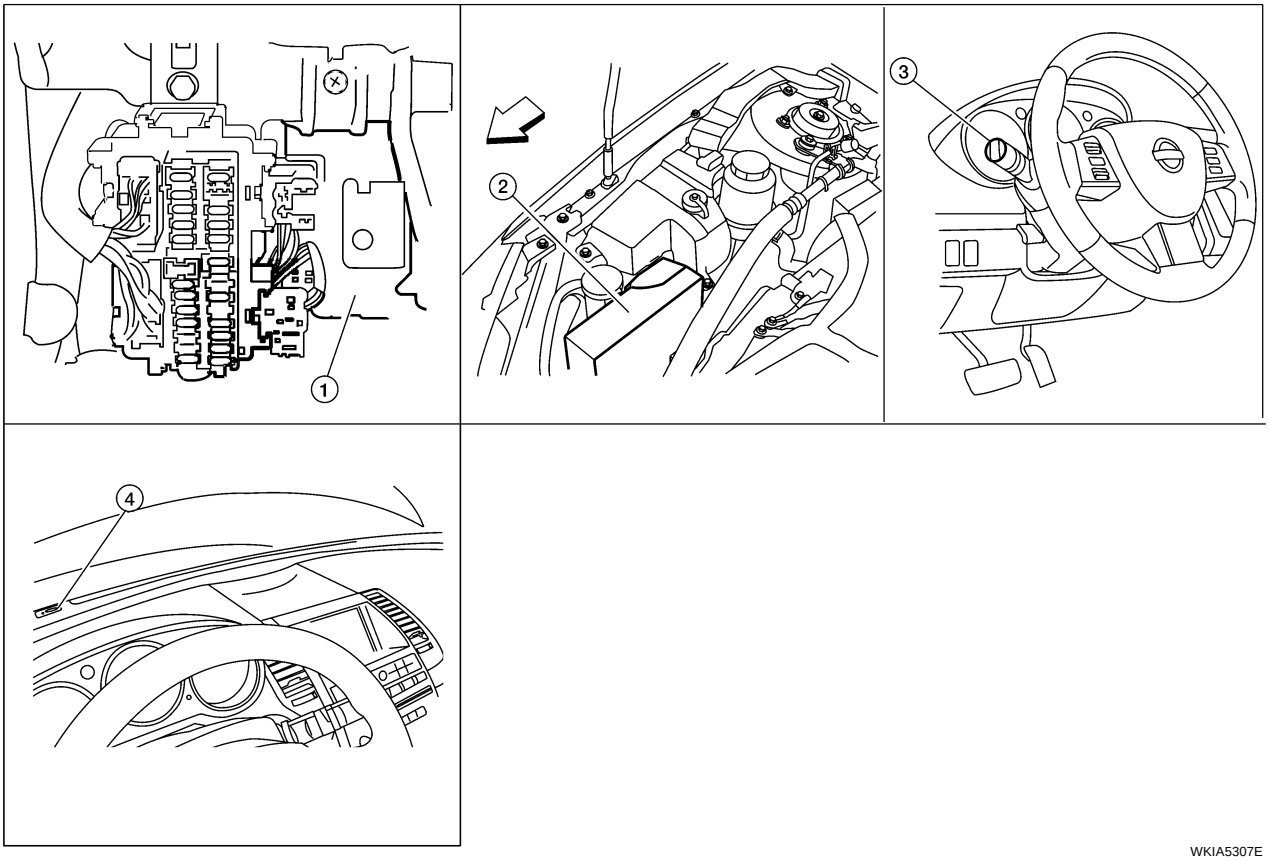
Refer to LT-36, "Disassembly and Assembly" .

AUTO LIGHT SYSTEM

PFP:28491

Component Parts and Harness Connector Location

EKS008ZM



WKIA5307E

1. BCM M18, and M20 (View with instrument panel removed)
2. IPDM E/R E121, E122, and E124
3. Combination switch (lighting switch) M28
4. Optical sensor M15

System Description

EKS008ZN

Automatically turns on/off the parking lamps and the headlamps in accordance with ambient light.
Timing for when the lamps turn on/off can be selected using four modes.

OUTLINE

The auto light control system uses an optical sensor that detects outside brightness.
When the lighting switch is in "AUTO" position, it automatically turns on/off the parking lamps and the headlamps in accordance with the ambient light. Sensitivity can be adjusted in four steps. For the details of the setting, refer to LT-56, "SETTING CHANGE FUNCTIONS" .
Optical sensor, power is supplied

- through BCM (body control module) terminal 17
- to optical sensor terminal 1.

Optical sensor, ground is supplied

- through BCM terminal 18
- to optical sensor terminal 3.

When ignition switch is turned to "ON" position and when outside brightness is darker than prescribed level, input is supplied

- to BCM terminal 14
- through optical sensor terminal 2.

The headlamps will then illuminate. For a description of headlamp operation, refer to LT-5, "System Description" .

COMBINATION SWITCH READING FUNCTION

Refer to BCS-3, "COMBINATION SWITCH READING FUNCTION" .

EXTERIOR LAMP BATTERY SAVER CONTROL

When the combination switch (lighting switch) is in the AUTO position, the ignition switch is turned from ON or ACC to OFF, and one of the front doors is opened, the battery saver control feature is activated.
Under this condition, the headlamps remain illuminated for 5 minutes, then the headlamps are turned off.
Exterior lamp battery saver control mode can be changed by the function setting of CONSULT-II.

DELAY TIMER FUNCTION

When the ignition switch is ON and auto light switch is ON, the BCM turns on/off the headlamps. In delay timer function, ignition is OFF, auto light sensor power source is OFF and the headlamps are not turned on/off by the BCM. On condition that:

- when the state of ignition switch ON or ACC is ON and output judgment by auto light function is headlamp ON changes to ignition switch and ACC are OFF and any door switch is ON, output judgment by BCM should be headlamp ON for 5 minutes by timer. After time out, output judgment by BCM should be headlamp OFF.
- when the state of any door switch is turned to ON from OFF while 45 second or 5 minute timer is counting, timer stops, and restarts counting for 5 minutes, then BCM judges output as headlamp ON. After time out, BCM judges output as headlamp OFF.
- when the state of front door switch LH, front door switch RH, rear door switch LH, rear door switch RH or back door latch (door ajar switch) is ON turns to all door switches are OFF while 45 second or 5 minute timer is counting, timer stops, and restarts counting for 45 seconds, then BCM judges output as headlamp ON. After timer out, BCM judges output as headlamp OFF.
- when the state is ignition switch ON or ACC is ON or auto light switch OFF while timer is counting, timer stops counting and BCM turns on/off lamps according to headlamp function, front fog lamp function, auto light function and headlamp battery save function.

Delay timer control mode can be changed by the function setting of CONSULT-II.

CAN Communication System Description

EKS008ZO

Refer to LAN-4, "SYSTEM DESCRIPTION" .

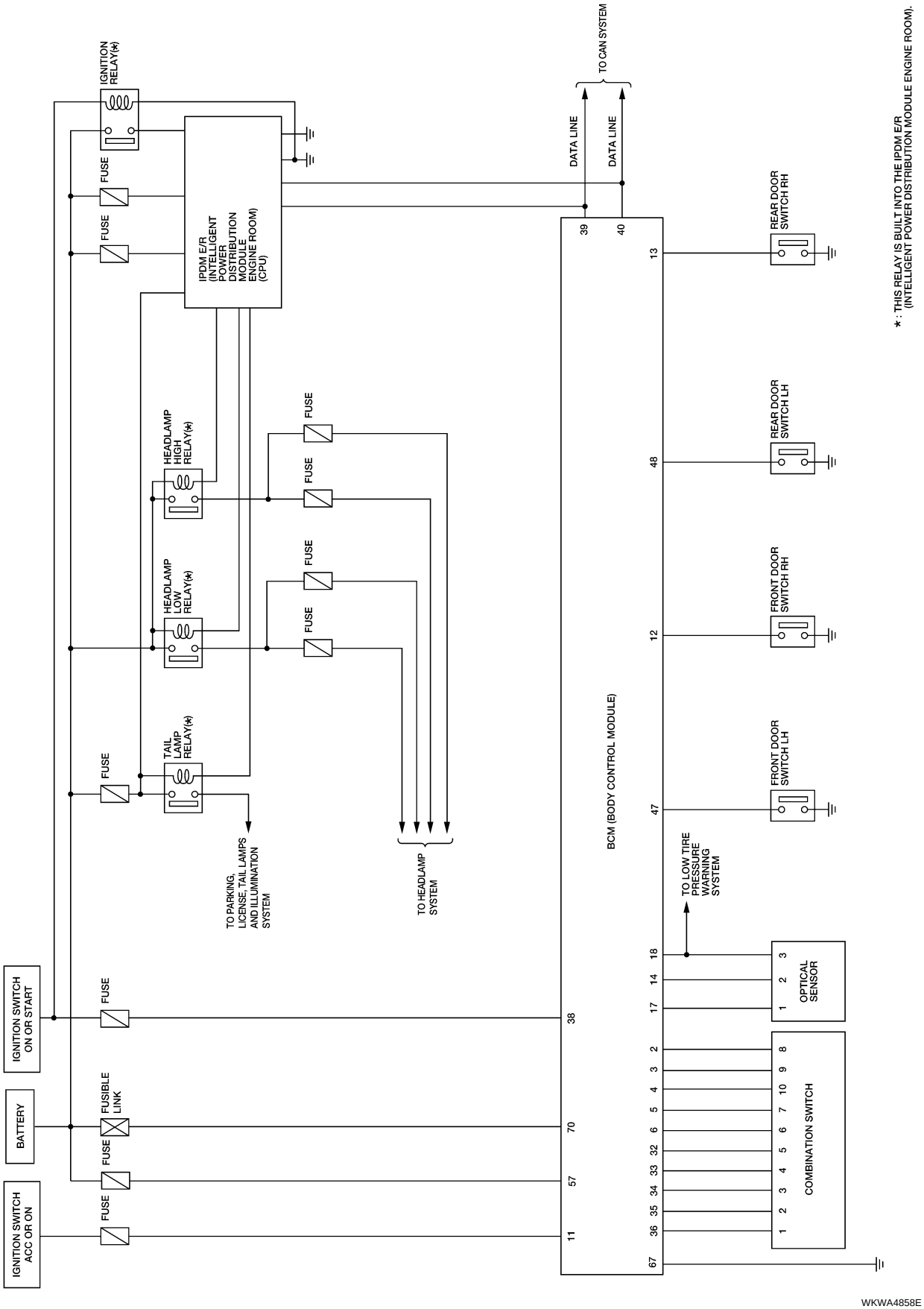
Major Components and Functions

EKS008ZP

Components	Functions
BCM	● Turns on/off circuits of tail light and headlamp according to signals from light sensor, lighting switch (AUTO), front door switch LH, front door switch RH, rear door switch, and ignition switch (ON, OFF).
Optical sensor	● Converts ambient light (lux) to voltage and sends it to BCM. (Detects lightness of 50 to 1,300 lux)

Schematic

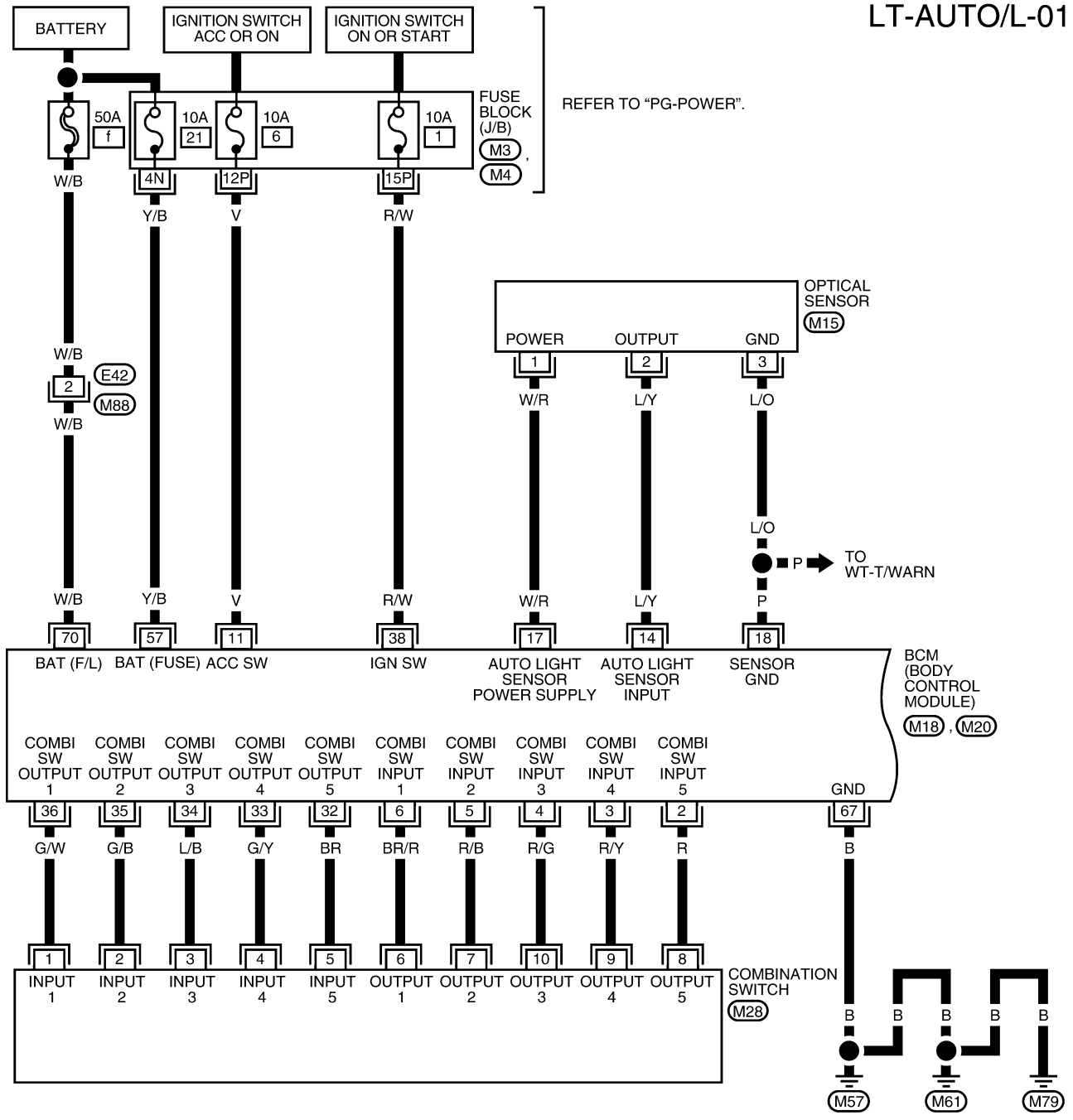
EKS008ZQ

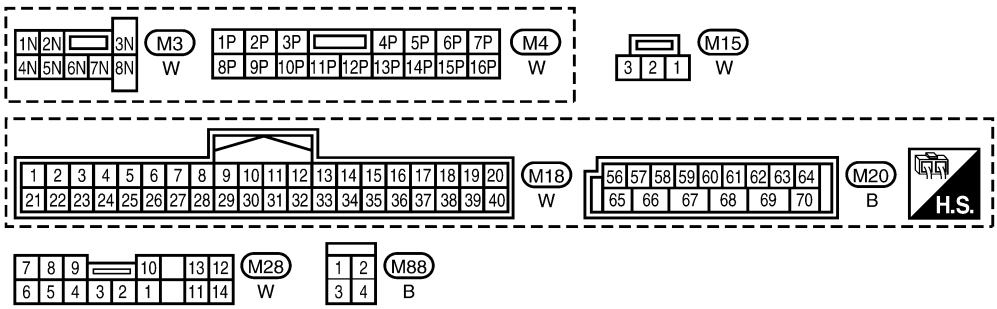


WKWA4858E

Wiring Diagram — AUTO/L —

EKS008ZR

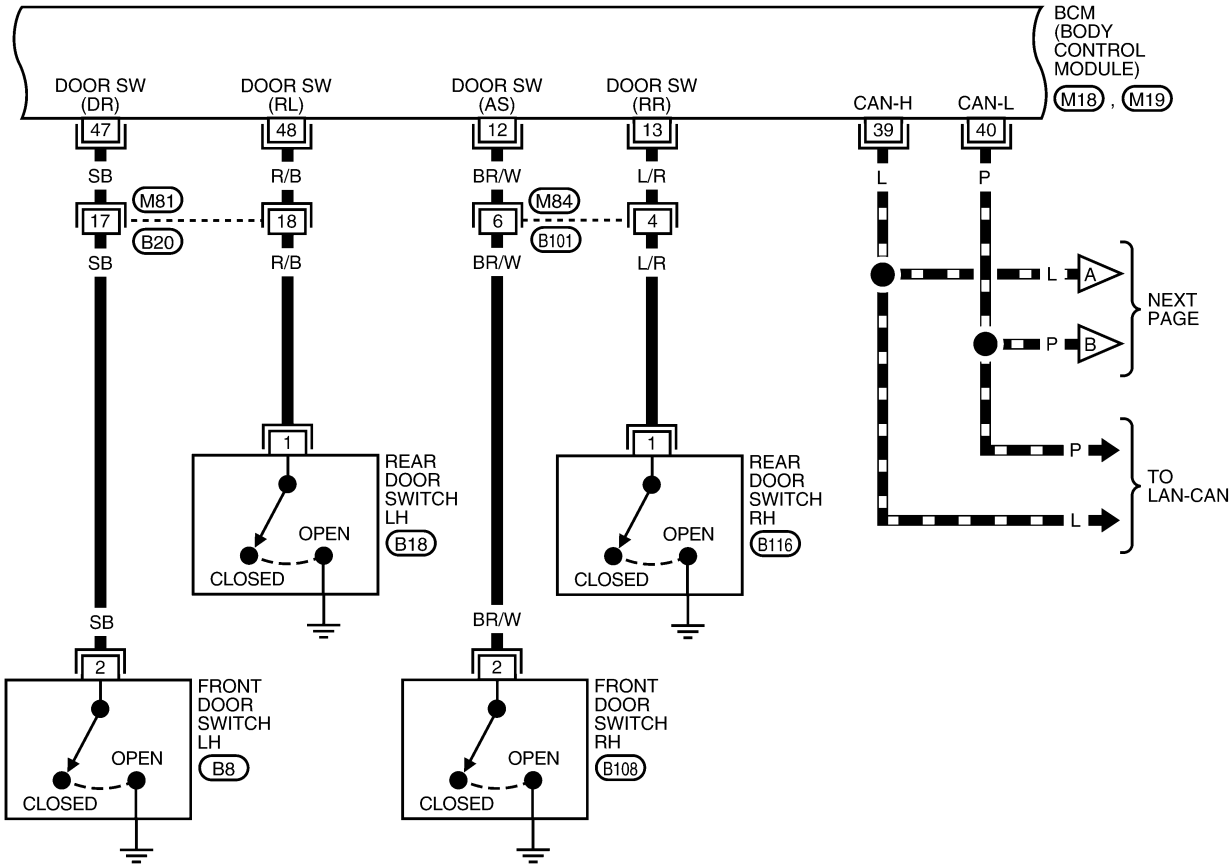


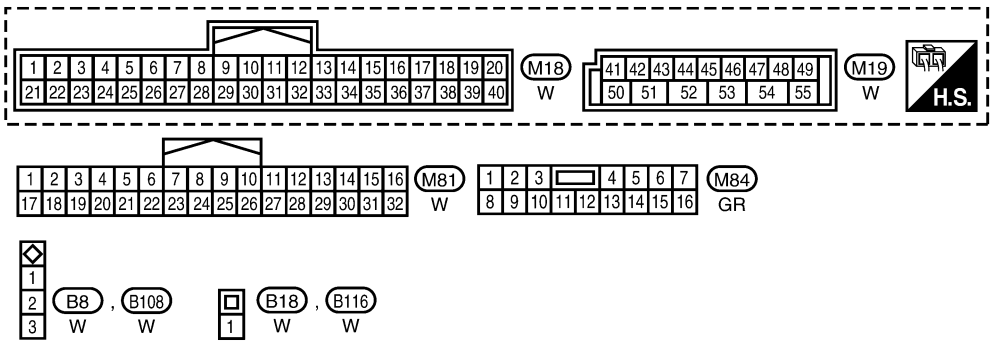


WKWA4859E

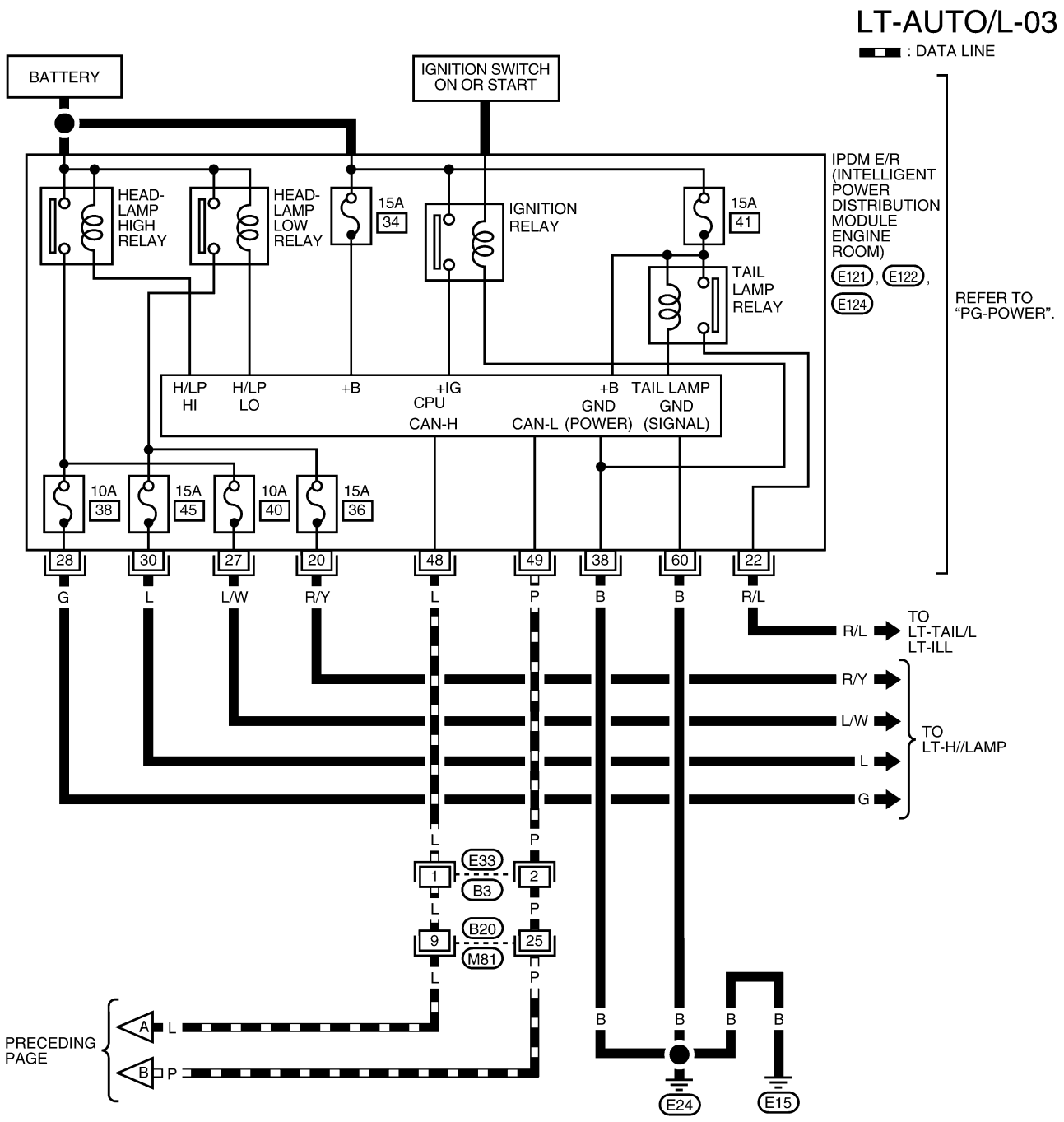
LT-AUTO/L-02

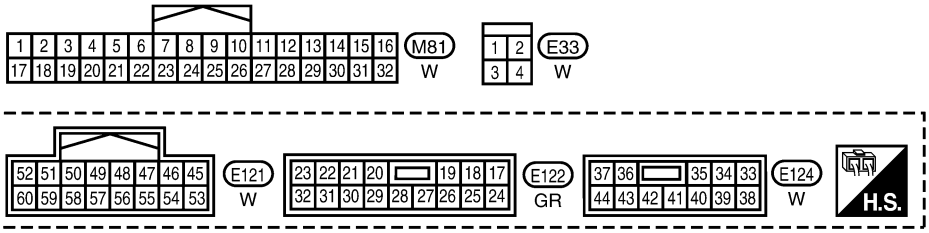
: DATA LINE





WKWA4860E


LT-AUTO/L-03
: DATA LINE
BATTERY
IGNITION SWITCH ON OR START
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
E121, E122, E124
REFER TO "PG-POWER".
HEAD-LAMP HIGH RELAY
HEAD-LAMP LOW RELAY
15A 34
IGNITION RELAY
15A 41
TAIL LAMP RELAY
H/LP HI
H/LP LO
+B
+IG
CPU
CAN-H
CAN-L
+B
GND (POWER)
TAIL LAMP GND (SIGNAL)
10A 38
15A 45
10A 40
15A 36
28 30 27 20 48 49 38 60 22
G L L/W R/Y L P B B R/L
R/L
TO LT-TAIL/L LT-ILL
R/Y
L/W
L
G
TO LT-H//LAMP
E33
B3
B20
M81
1 2 9 25
PRECEDING PAGE
A L
B P
E24
E15


M81
W
E33
W
E121
W
E122
GR
E124
W
H.S.

WKWA4861E

Terminals and Reference Values for BCM

EKS008ZS

Refer to BCS-12, "Terminals and Reference Values for BCM" .

Terminals and Reference Values for IPDM E/R

EKS008ZT

Refer to PG-26, "Terminals and Reference Values for IPDM E/R" .

How to Proceed With Trouble Diagnosis

EKS008ZU

1. Confirm the symptom or customer complaint.
2. Understand operation description and function description. Refer to LT-50, "System Description" .
3. Carry out the Preliminary Check. Refer to LT-56, "Preliminary Check" .
4. Check symptom and repair or replace the cause of malfunction. Refer to LT-60, "Trouble Diagnosis Chart by Symptom" .
5. Does the auto light system operate normally? If YES: GO TO 6. If NO: GO TO 4.
6. Inspection End.

Preliminary Check

EKS008ZV

SETTING CHANGE FUNCTIONS

- Sensitivity of auto light system can be adjusted using CONSULT-II. Refer to LT-57, "WORK SUPPORT" .

CHECK POWER SUPPLY AND GROUND CIRCUIT

Refer to BCS-15, "BCM Power Supply and Ground Circuit Check" .

CONSULT-II Function (BCM)

EKS008ZW

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

BCM diagnostic test item	Diagnostic mode	Description
Inspection by part	WORK SUPPORT	Supports inspections and adjustments. Commands are transmitted to the BCM for setting the status suitable for required operation, input/output signals are received from the BCM and received data is displayed.
	DATA MONITOR	Displays BCM input/output data in real time.
	ACTIVE TEST	Operation of electrical loads can be checked by sending drive signal to them.
	SELF-DIAG RESULTS	Displays BCM self-diagnosis results.
	CAN DIAG SUPPORT MNTR	The result of transmit/receive diagnosis of CAN communication can be read.
	ECU PART NUMBER	BCM part number can be read.
	CONFIGURATION	Performs BCM configuration read/write functions.

CONSULT-II START PROCEDURE

Refer to GI-37, "CONSULT-II Start Procedure" .

WORK SUPPORT

Operation Procedure

1. Touch "HEAD LAMP" on "SELECT TEST ITEM" screen.
2. Touch "WORK SUPPORT" on "SELECT DIAG MODE" screen.
3. Touch "CUSTOM A/LIGHT SETTING" or "ILL DELAY SET" on "SELECT WORK ITEM" screen.
4. Touch "START".
5. Touch "MODE 1-4" of setting to be changed (CUSTOM A/LIGHT SETTING). Touch "MODE1-8" of setting to be changed (ILL DELAY SET).
6. Touch "CHANGE SETT".
7. The setting will be changed and "CUSTOMIZING COMPLETED" will be displayed.
8. Touch "END".

Work Support Setting Item

Sensitivity of auto light can be selected and set from four modes.

Work item	Description
CUSTOM A/LIGHT SETTING	Auto light sensitivity can be changed in this mode. Sensitivity can be adjusted in four modes. ● MODE 1 (Normal)/ MODE 2 (Sensitive)/MODE 3 (Desensitized)/MODE4 (Insensitive)
ILL DELAY SET	Auto light delay off timer period can be changed in this mode. Selects auto light delay off timer period among eight modes. ● MODE 1 (45 sec.)/MODE 2 (OFF)/MODE 3 (30 sec.)/MODE 4 (60 sec.)/MODE 5 (90 sec.)/MODE 6 (120 sec.)/MODE 7 (150 sec.)/MODE 8 (180 sec.)

DATA MONITOR

Operation Procedure

1. Touch "HEAD LAMP" on "SELECT TEST ITEM" screen.
2. Touch "DATA MONITOR" on "SELECT DIAG MODE" screen.
3. Touch either "ALL SIGNALS" or "SELECTION FROM MENU" on the "SELECT MONITOR ITEM" screen.

ALL SIGNALS	Monitors all the signals.
SELECTION FROM MENU	Selects and monitors individual signal.

4. Touch "START".
5. When "SELECTION FROM MENU" is selected, touch individual items to be monitored. When "ALL SIGNALS" is selected, all the items will be monitored.
6. Touch "RECORD" while monitoring, then the status of the monitored item can be recorded. To stop recording, touch "STOP".

Display Item List

Monitor item		Contents
IGN ON SW	"ON/OFF"	Displays "IGN position (ON)/OFF, ACC position (OFF)" judged from the ignition switch signal.
ACC ON SW	"ON/OFF"	Displays "ACC (ON)/OFF, Ignition OFF (OFF)" status judged from ignition switch signal.
HI BEAM SW	"ON/OFF"	Displays status (high beam switch: ON/Others: OFF) of high beam switch judged from lighting switch signal.
HEAD LAMP SW 1	"ON/OFF"	Displays status (headlamp switch 1: ON/Others: OFF) of headlamp switch 2 judged from lighting switch signal.
HEAD LAMP SW 2	"ON/OFF"	Displays status (headlamp switch 2: ON/Others: OFF) of headlamp switch 2 judged from lighting switch signal.
LIGHT SW 1ST	"ON/OFF"	Displays status (lighting switch 1st position: ON/Others: OFF) of lighting switch judged from lighting switch signal.
AUTO LIGHT SW	"ON/OFF"	Displays status of the lighting switch as judged from the lighting switch signal. (AUTO position: ON/Other than AUTO position: OFF)
PASSING SW	"ON/OFF"	Displays status (flash-to-pass switch: ON/Others: OFF) of flash-to-pass switch judged from lighting switch signal.
FR FOG SW	"ON/OFF"	Displays status (front fog lamp switch: ON/Others: OFF) of front fog lamp switch judged from lighting switch signal.
DOOR SW-DR	"ON/OFF"	Displays status of the front door LH as judged from the front door switch LH signal. (Door is open: ON/Door is closed: OFF)
DOOR SW-AS	"ON/OFF"	Displays status of the front door RH as judged from the front door switch RH signal. (Door is open: ON/Door is closed: OFF)
DOOR SW-RR	"ON/OFF"	Displays status of the rear door as judged from the rear door switch (RH) signal. (Door is open: ON/Door is closed: OFF)
DOOR SW-RL	"ON/OFF"	Displays status of the rear door as judged from the rear door switch (LH) signal. (Door is open: ON/Door is closed: OFF)
BACK DOOR SW	"ON/OFF"	Displays status of the back door as judged from the back door switch signal. (Door is open: ON/Door is closed: OFF)
TURN SIGNAL R	"ON/OFF"	Displays status (Turn right: ON/Others: OFF) as judged from lighting switch signal.
TURN SIGNAL L	"ON/OFF"	Displays status (Turn left: ON/Others: OFF) as judged from lighting switch signal.
ENGINE RUN[Note 1]	"ON/OFF"	Displays status (Engine running: ON/Others: OFF) as judged from engine status signal.
PKB SW[Note 1]	"ON/OFF"	Displays status (Parking brake switch: ON/Others: OFF) as judged from parking brake switch signal.
OPTICAL SENSOR	[0 - 5V]	Displays “ambient light (close to 5V when light/close to 0V when dark)” judged from optical sensor signal.

NOTE 1: Vehicles without daytime light system may display this item, but cannot monitor it.

ACTIVE TEST

Operation Procedure

1. Touch "HEAD LAMP" on "SELECT TEST ITEM" screen.
2. Touch "ACTIVE TEST" on "SELECT DIAG MODE" screen.
3. Touch item to be tested and check operation of the selected item.
4. During the operation check, touching "BACK" deactivates the operation.

Display Item List

Test item	Description
TAIL LAMP	Allows tail lamp relay to operate by switching ON-OFF.
HEAD LAMP	Allows headlamp relay (HI, LO) to operate by switching ON-OFF.
FR FOG LAMP	Allows fog lamp relay to operate by switching ON-OFF.
DTRL[Note 1]	Allow daytime light lamp operate by switching ON-OFF.
CORNERING LAMP	Allows cornering lamp relay (RH, LH) to operate by switching ON-OFF.

NOTE 1: Vehicles without daytime light system may display this item, but cannot monitor it.

SELF-DIAGNOSTIC RESULTS

Operation Procedure

1. Touch "BCM" on "SELECT TEST ITEM" screen.
2. Touch "SELF-DIAG RESULTS" on "SELECT DIAG MODE" screen.
3. Self-diagnostic results are displayed.

Display Item List

Monitored item	CONSULT-II display	Description
CAN communication	CAN communication [U1000]	Malfunction is detected in CAN communication.
CAN communication system	CAN communication system 1 to 6 [U1000]	Malfunction is detected in CAN system.

CONSULT-II Function (IPDM E/R)

EKS008ZX

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

IPDM E/R diagnostic Mode	Description
SELF-DIAG RESULTS	Displays IPDM E/R self-diagnosis results.
DATA MONITOR	Displays IPDM E/R input/output data in real time.
CAN DIAG SUPPORT MNTR	The result of transmit/receive diagnosis of CAN communication can be read.
ACTIVE TEST	Operation of electrical loads can be checked by sending drive signal to them.

CONSULT-II START PROCEDURE

Refer to GI-37, "CONSULT-II Start Procedure" .

DATA MONITOR

Operation Procedure

1. Touch "DATA MONITOR" on "SELECT DIAG MODE" screen.
2. Touch "ALL SIGNALS", "MAIN SIGNALS" or "SELECTION FROM MENU" on the "SELECT MONITOR ITEM" screen.

ALL SIGNALS	All items will be monitored.
MAIN SIGNALS	Monitor the predetermined item.
SELECTION FROM MENU	Select any item for monitoring.

3. Touch "START".
4. Touch the required monitoring item on "SELECTION FROM MENU". In "ALL SIGNALS", all items are monitored. In "MAIN SIGNALS", predetermined items are monitored.
5. Touch "RECORD" while monitoring to record the status of the item being monitored. To stop recording, touch "STOP".

All Signals, Main Signals, Selection From Menu

Item name	CONSULT-II screen display	Display or unit	Monitor item selection			Description
			ALL SIGNALS	MAIN SIGNALS	SELECTION FROM MENU	
Parking, license plate and tail lamps request	TAIL&CLR REQ	ON/OFF	×	×	×	Signal status input from BCM
Headlamp low beam request	HL LO REQ	ON/OFF	×	×	×	Signal status input from BCM
Headlamp high beam request	HL HI REQ	ON/OFF	×	×	×	Signal status input from BCM
Cornering lamp	CRNRNG LMP REQ	ON/OFF	×	–	×	Signal status input from BCM
Front fog lamps request	FR FOG REQ	ON/OFF	×	×	×	Signal status input from BCM

NOTE:
Perform monitoring of IPDM E/R data with the ignition switch ON. When the ignition switch is at ACC, the display may not be correct.

ACTIVE TEST

Operation Procedure

1. Touch "ACTIVE TEST" on "SELECT DIAG MODE" screen.
2. Touch item to be tested, and check operation.
3. Touch "START".
4. Touch "STOP" while testing to stop the operation.

Test item	CONSULT-II screen display	Description
Tail lamp relay output	TAIL LAMP	Allows tail lamp relay to operate by switching operation ON-OFF at your option.
Headlamp relay (HI, LO) output	LAMPS	Allows headlamp relay (HI, LO) to operate by switching operation (OFF, HI, LO) at your option (Headlamp high beam repeats ON-OFF every 1 second).
Front fog lamp relay output		Allows fog lamp relay to operate by switching operation ON-OFF at your option.
Cornering lamp relay (RH, LH) output	CORNERING LAMP	Allows cornering lamp relay (RH, LH) to operate by switching operation ON-OFF at your option.

Trouble Diagnosis Chart by Symptom

EKS008ZY

Trouble phenomenon	Malfunction system and reference
● Parking lamps and headlamps will not illuminate when outside of the vehicle becomes dark. (Lighting switch 1st position and 2nd position operate normally.) ● Parking lamps and headlamp will not go out when outside of the vehicle becomes light. (Lighting switch 1st position and 2nd position operate normally.) ● Headlamps go out when outside of the vehicle becomes light, but parking lamps stay on.	● Refer to LT-57, "WORK SUPPORT" . ● Refer to LT-61, "Lighting Switch Inspection" . ● Refer to LT-61, "Optical Sensor System Inspection" . If above systems are normal, replace BCM. Refer to BCS-25, "BCM" .
Parking lamps illuminate when outside of the vehicle becomes dark, but headlamps stay off. (Lighting switch 1st position and 2nd position operate normally.)	● Refer to LT-57, "WORK SUPPORT" . ● Refer to LT-61, "Optical Sensor System Inspection" . If above systems are normal, replace BCM. Refer to BCS-25, "BCM" .
Auto light adjustment system will not operate. (Lighting switch AUTO, 1st position and 2nd position operate normally.)	● Refer to LT-61, "Optical Sensor System Inspection" . If above system is normal, replace BCM. Refer to BCS-25, "BCM" .
Auto light adjustment system of combination meter will not operate.	● CAN communication line inspection between BCM and combination meter. Refer to BCS-18, "CAN Communication Inspection Using CONSULT-II (Self-Diagnosis)" .
Shut off delay feature will not operate.	● CAN communication line inspection between BCM and combination meter. Refer to BCS-18, "CAN Communication Inspection Using CONSULT-II (Self-Diagnosis)" . ● Refer to BL-29, "Door Switch Check" . If above system is normal, replace BCM. Refer to BCS-25, "BCM" .

Lighting Switch Inspection

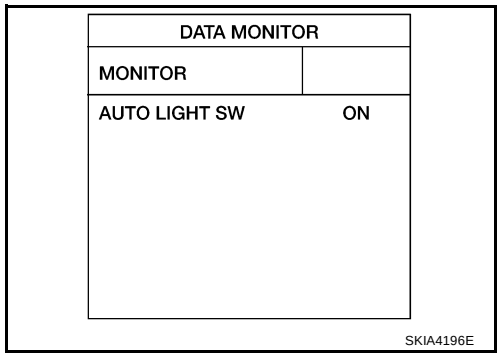
EKS008ZZ

1. CHECK LIGHTING SWITCH INPUT SIGNAL

With CONSULT-II

Select "BCM" on CONSULT-II. With "HEAD LAMP" data monitor, make sure "AUTO LIGHT SW" turns ON-OFF linked with operation of lighting switch.

When lighting switch is in AUTO position : AUTO LIGHT SW ON



Without CONSULT-II

Refer to LT-104, "Combination Switch Inspection" .

OK or NG

OK >> Inspection End.
NG >> Check lighting switch. Refer to LT-104, "Combination Switch Inspection" .

Optical Sensor System Inspection

EKS00900

1. CHECK OPTICAL SENSOR INPUT SIGNAL

With CONSULT-II

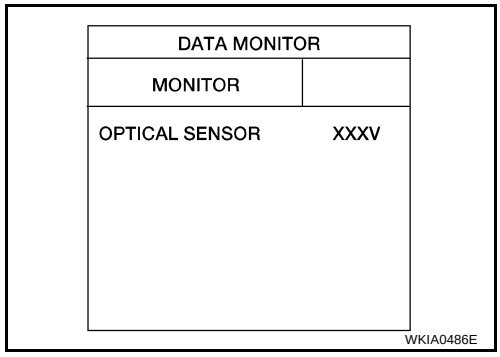
Select "BCM" on CONSULT-II. With "OPTICAL SENSOR" data monitor, make sure "OPTICAL SENSOR", check difference in the voltage when the optical sensor is illuminated and not illuminated.

Illuminated

OPTICAL SENSOR : 3.1V or more

Not illuminated

OPTICAL SENSOR : 0.6V or less



NOTE:

Optical sensor must be completely subjected to work lamp light. If the optical sensor is insufficiently illuminated, the measured value may not satisfy the standard.

Without CONSULT-II

OK or NG

OK >> Inspection End.
NG >> GO TO 2.

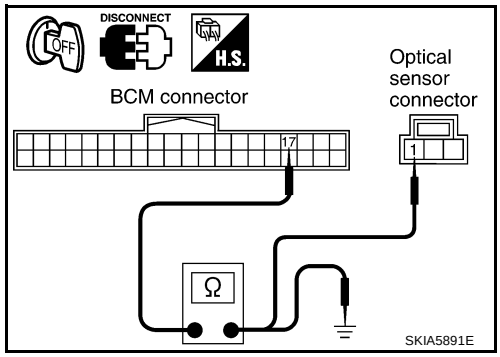
2. CHECK OPTICAL SENSOR POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect BCM connector and optical sensor connector.
3. Check continuity (open circuit) between BCM harness connector M18 terminal 17 and optical sensor harness connector M15 terminal 1.

17 - 1 : Continuity should exist.

4. Check continuity (short circuit) between BCM harness connector M18 terminal 17 and ground.

17 - Ground : Continuity should not exist.



OK or NG

OK >> GO TO 3.
NG >> Repair harness or connector.

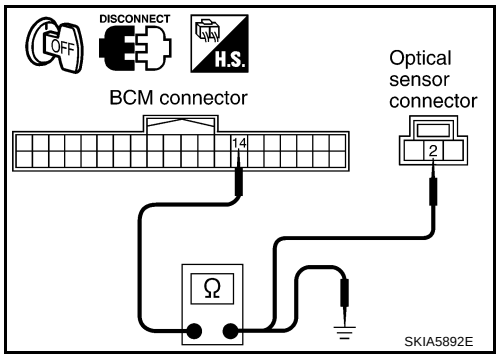
3. CHECK OPTICAL SENSOR POWER SUPPLY CIRCUIT

1. Check continuity (open circuit) between BCM harness connector M18 terminal 14 and optical sensor harness connector M15 terminal 2.

14 - 2 : Continuity should exist.

2. Check continuity (short circuit) between BCM harness connector M18 terminal 14 and ground.

14 - Ground : Continuity should not exist.



OK or NG

OK >> GO TO 4.
NG >> Repair harness or connector.

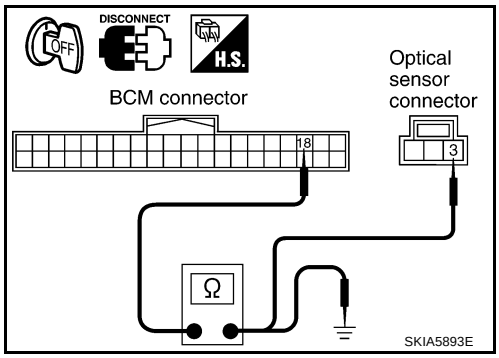
4. CHECK OPTICAL SENSOR POWER SUPPLY CIRCUIT

1. Check continuity (open circuit) between BCM harness connector M18 terminal 18 and optical sensor harness connector M15 terminal 3.

18 - 3 : Continuity should exist.

2. Check continuity (short circuit) between BCM harness connector M18 terminal 18 and ground.

18 - Ground : Continuity should not exist.



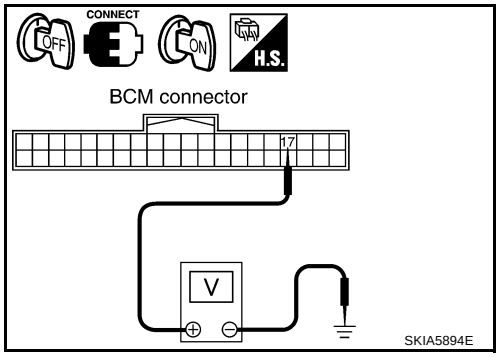
OK or NG

OK >> GO TO 5.
NG >> Repair harness or connector.

5. CHECK OPTICAL SENSOR VOLTAGE

1. Connect BCM connector.
2. Turn ignition switch ON.
3. Check voltage between BCM harness connector M18 terminal 17 and ground.

17 - Ground : Approx. 5V should exist.



OK or NG

OK >> Replace the optical sensor. Refer to LT-63, "Removal and Installation" .
NG >> Replace BCM. Refer to BCS-25, "BCM" .

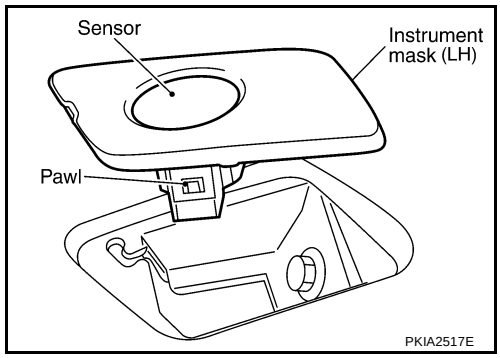
Removal and Installation

EKS00901

OPTICAL SENSOR

Removal

1. Remove instrument mask LH. Refer to IP-10, "Instrument Panel" .
2. While pressing pawl, remove the sensor unit from instrument mask.



Installation

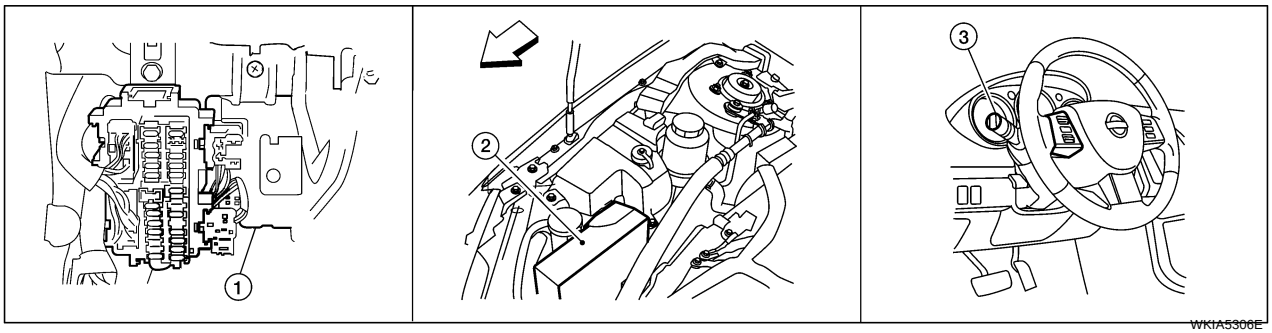
Installation is in the reverse order of removal.

FRONT FOG LAMP

PFP:26150

Component Parts and Harness Connector Location

EKS00902



1. BCM M18 (View with instrument panel removed)
2. IPDM E/R E121, E124
3. Combination switch (lighting switch) M28

System Description

EKS00903

Control of the fog lamps is dependent upon the position of the combination switch (lighting switch). The lighting switch must be in the 2ND position or AUTO position (LOW beam is ON) for front fog lamp operation. When the lighting switch is placed in the fog lamp position, the BCM (body control module) receives input signal requesting the fog lamps to illuminate. When the headlamps are illuminated, this input signal is communicated to the IPDM E/R (intelligent power distribution module engine room) across the CAN communication lines. The CPU (central processing unit) of the IPDM E/R controls the front fog lamp relay coil. When activated, this relay directs power to the front fog lamps.

OUTLINE

Power is supplied at all times

- to ignition relay, located in the IPDM E/R, and
- through 15A fuse (No. 43, located in the IPDM E/R)
- to front fog lamp relay, located in the IPDM E/R, and
- through 15A fuses (No. 34, and 41, located in the IPDM E/R)
- to CPU of the IPDM E/R, and
- through 50A fusible link (letter **f** , located in the fuse and fusible link box)
- to BCM terminal 70, and
- through 10A fuse [No. 21, located in the fuse block (J/B)]
- to BCM terminal 57.

When the ignition switch is in ON or START position, power is supplied

- to ignition relay, located in the IPDM E/R, and
- through 10A fuse [No. 1, located in the fuse block (J/B)]
- to BCM terminal 38.

When the ignition switch is in ACC or ON position, power is supplied

- through 10A fuse [No. 6, located in the fuse block (J/B)]
- to BCM terminal 11.

Ground is supplied

- to BCM terminal 67
- through grounds M57, M61 and M79, and
- to IPDM E/R terminals 38 and 60
- through grounds E15 and E24.

FOG LAMP OPERATION

The fog lamp switch is built into the combination switch. The lighting switch must be in the 2ND position or AUTO position (LOW beam is ON) and the fog lamp switch must be ON for fog lamp operation.

With the fog lamp switch in the ON position, the CPU of the IPDM E/R grounds the coil side of the fog lamp relay. The fog lamp relay then directs power

- through IPDM E/R terminal 37
- to front fog lamp LH terminal 1, and
- through IPDM E/R terminal 36
- to front fog lamp RH terminal 1.

Ground is supplied

- to front fog lamp LH and RH terminal 2
- through grounds E15 and E24.

With power and ground supplied, the front fog lamps illuminate.

COMBINATION SWITCH READING FUNCTION

Refer to BCS-3, "COMBINATION SWITCH READING FUNCTION" .

EXTERIOR LAMP BATTERY SAVER CONTROL

When the combination switch (lighting switch) is in the 2ND position (ON), the fog lamp switch is ON, and the ignition switch is turned from ON or ACC to OFF, the battery saver control feature is activated.
Under this condition, the fog lamps (and headlamps) remain illuminated for 5 minutes, then the fog lamps (and headlamps) are turned off.
Exterior lamp battery saver control mode can be changed by the function setting of CONSULT-II.

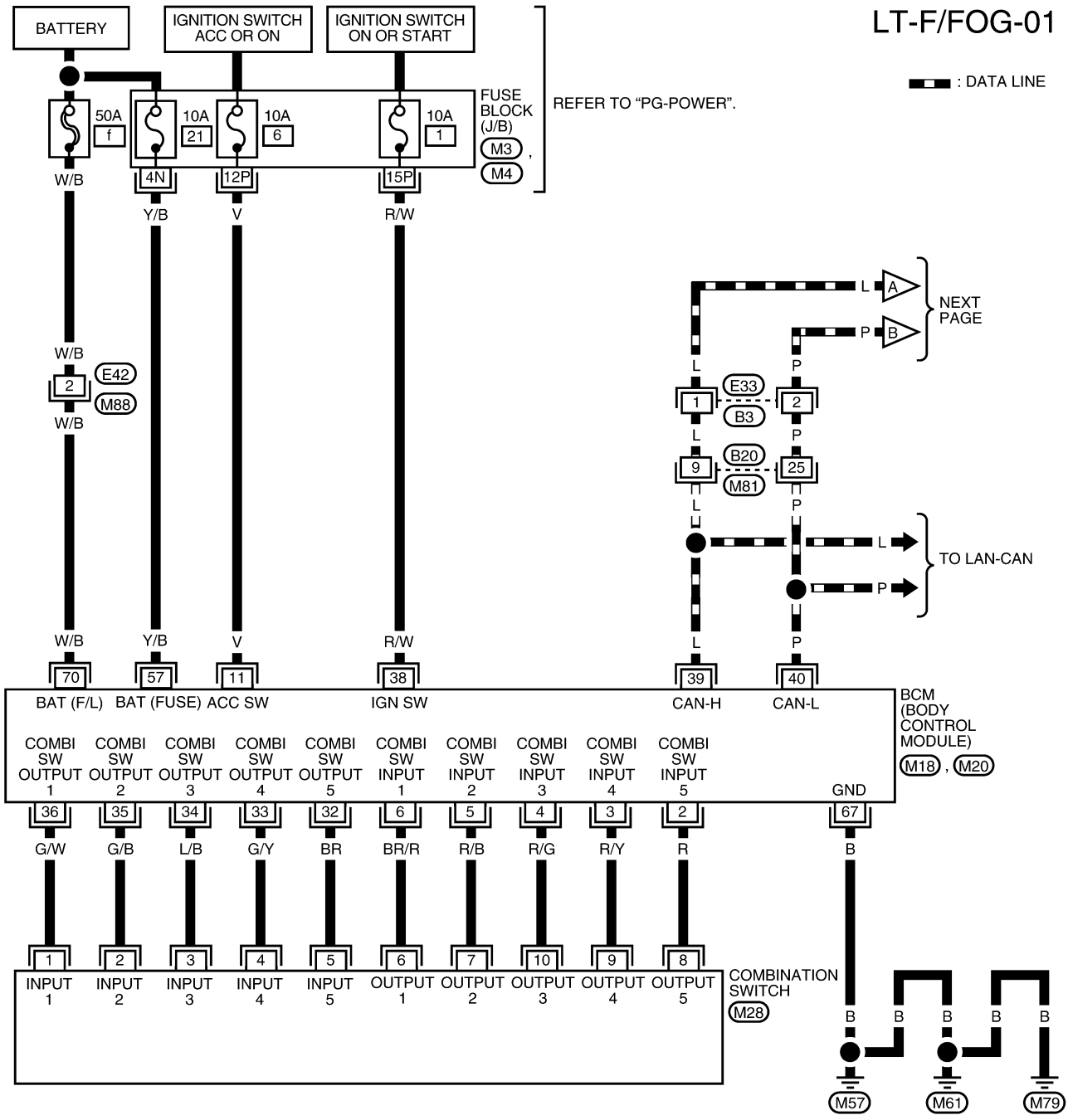
CAN Communication System Description

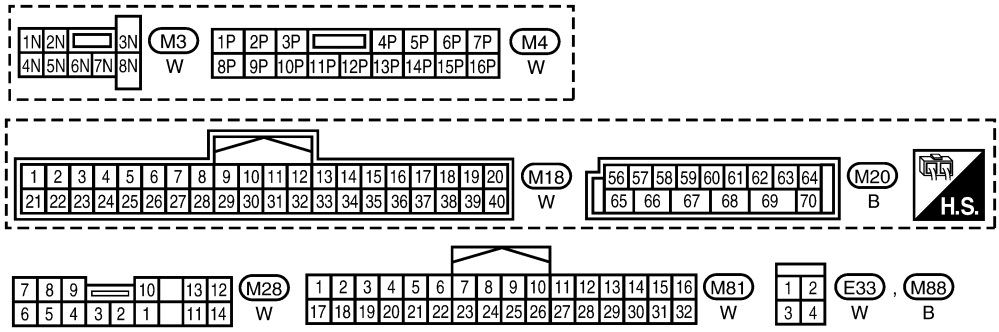
EKS00904

Refer to LAN-4, "SYSTEM DESCRIPTION" .

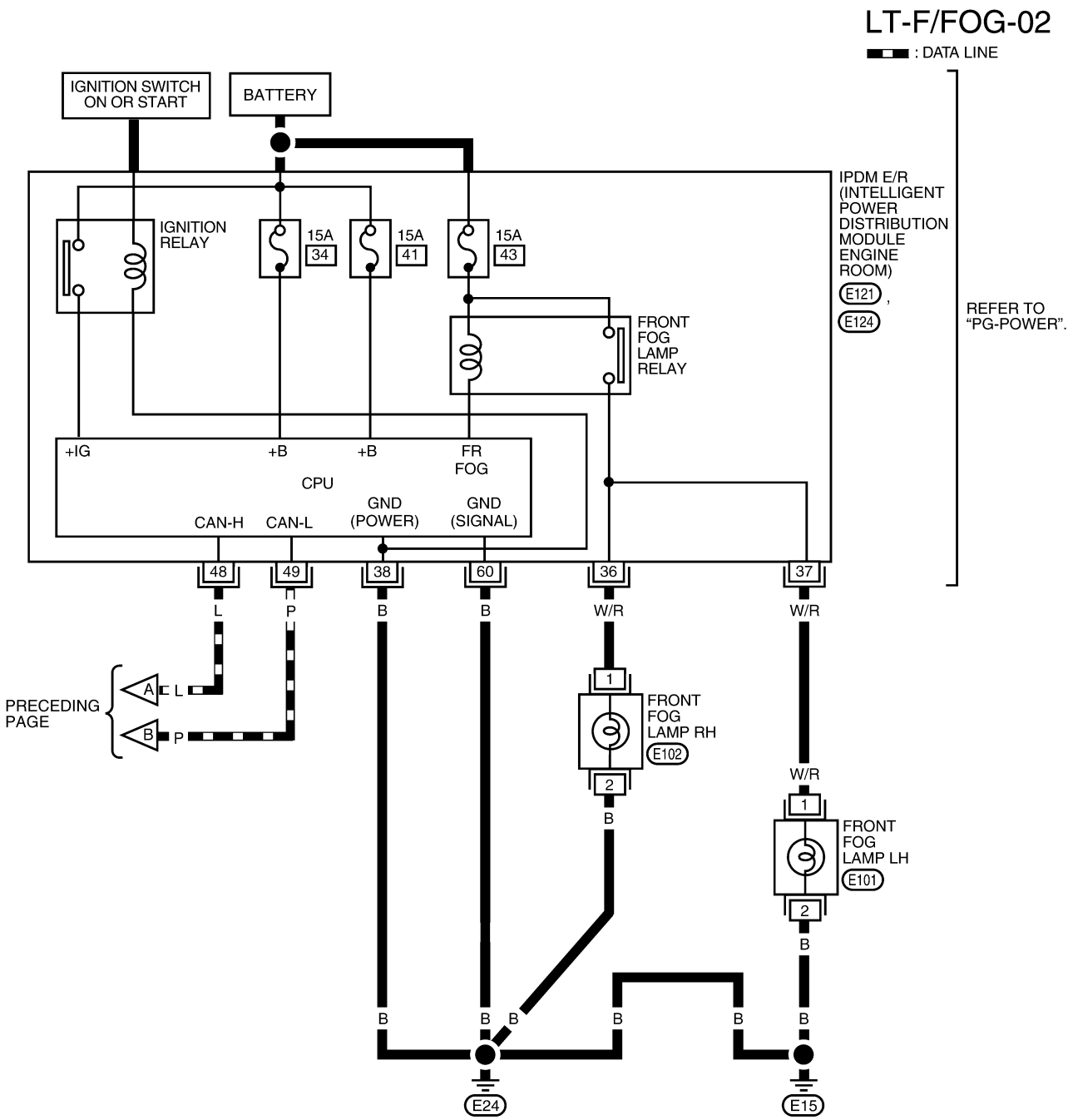
Wiring Diagram — F/FOG —

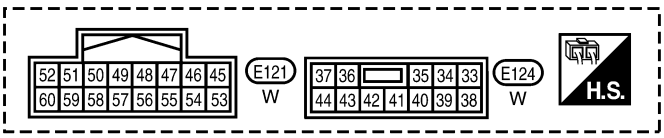
EKS00905





WKWA4862E


LT-F/FOG-02
: DATA LINE
IGNITION SWITCH ON OR START
BATTERY
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
E121 , E124
REFER TO "PG-POWER".
IGNITION RELAY
15A 34
15A 41
15A 43
FRONT FOG LAMP RELAY
+IG
+B
+B
FR FOG
CPU
CAN-H
CAN-L
GND (POWER)
GND (SIGNAL)
48
49
38
60
36
37
L
P
B
B
W/R
W/R
PRECEDING PAGE
A L
B P
1
FRONT FOG LAMP RH
E102
2
B
W/R
1
FRONT FOG LAMP LH
E101
2
B
B
B
B
B
B
B
E24
E15


52 51 50 49 48 47 46 45
60 59 58 57 56 55 54 53
E121
W
37 36 35 34 33
44 43 42 41 40 39 38
E124
W
H.S.
1 2
E101 , E102
B B

WKWA4863E

Terminals and Reference Values for BCM

EKS00906

Refer to BCS-12, "Terminals and Reference Values for BCM" .

Terminals and Reference Values for IPDM E/R

EKS00907

Refer to PG-26, "Terminals and Reference Values for IPDM E/R" .

How to Proceed With Trouble Diagnosis

EKS00908

1. Confirm the symptom or customer complaint.
2. Understand operation description and function description. Refer to LT-64, "System Description" .
3. Perform the Preliminary Check. Refer to LT-68, "Preliminary Check" .
4. Check symptom and repair or replace the cause of malfunction.
5. Does the front fog lamp operate normally? If YES: GO TO 6. If NO: GO TO 4.
6. Inspection End.

Preliminary Check

EKS00909

CHECK POWER SUPPLY AND GROUND CIRCUIT

Refer to BCS-15, "BCM Power Supply and Ground Circuit Check" .

CONSULT-II Functions

EKS0090A

Refer to LT-19, "CONSULT-II Function (BCM)" in HEADLAMP (FOR USA).
Refer to LT-21, "CONSULT-II Function (IPDM E/R)" in HEADLAMP (FOR USA).

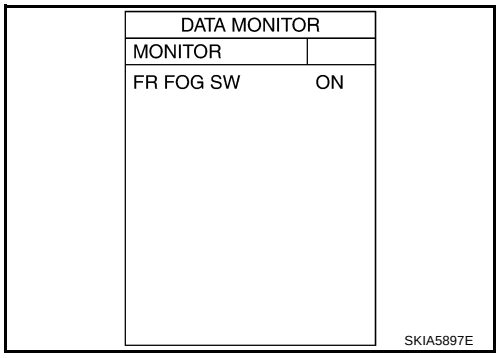
Front Fog Lamps Do Not Illuminate (Both Sides)

EKS0090B

1. CHECK COMBINATION SWITCH INPUT SIGNAL

With CONSULT-II
Select "BCM" on CONSULT-II. With "HEAD LAMP" data monitor, make sure "FR FOG SW" turns ON-OFF linked with operation of lighting switch.

When lighting switch is in FOG position : FR FOG SW ON



Without CONSULT-II
Refer to LT-104, "Combination Switch Inspection" .

OK or NG

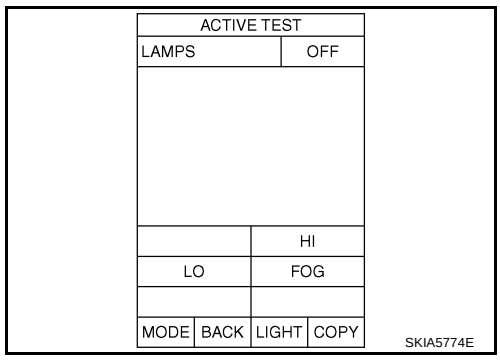
OK >> GO TO 2.
NG >> Check lighting switch. Refer to LT-104, "Combination Switch Inspection" .

2. FOG LAMP ACTIVE TEST

With CONSULT-II

1. Select "IPDM E/R" on CONSULT-II, and select "ACTIVE TEST" on "SELECT DIAG MODE" screen.
2. Select "LAMPS" on "SELECT TEST ITEM" screen.
3. Touch "FOG" on "ACTIVE TEST" screen.
4. Make sure fog lamps operate.

Fog lamp should operate.



Without CONSULT-II

1. Start auto active test. Refer to PG-22, "Auto Active Test" .
2. Make sure fog lamps operate.

Fog lamp should operate.

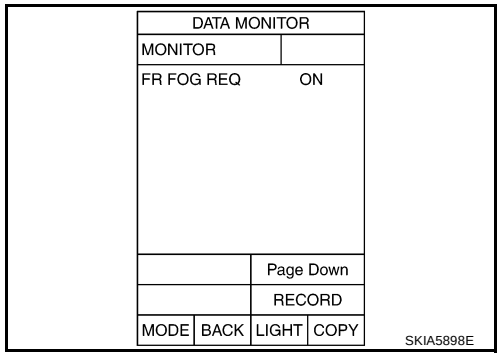
OK or NG

OK >> GO TO 3.
NG >> GO TO 4.

3. CHECK IPDM E/R

1. Select "IPDM E/R" on CONSULT-II, and select "DATA MONITOR" on "SELECT DIAG MODE" screen.
2. Make sure "FR FOG REQ" turns ON when lighting switch is in FOG position.

When lighting switch is in FOG position : FR FOG REQ ON



OK or NG

OK >> Replace IPDM E/R. Refer to PG-31, "Removal and Installation of IPDM E/R" .
NG >> Replace BCM. Refer to BCS-25, "BCM" .

4. CHECK FOG LAMP INPUT SIGNAL

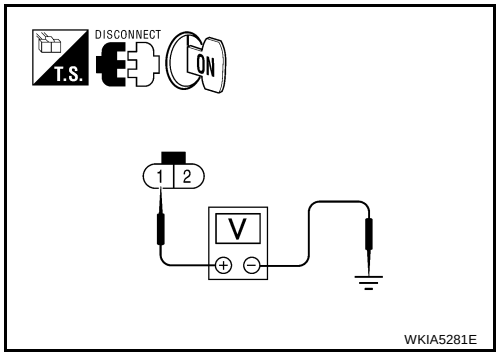
With CONSULT-II

1. Turn ignition switch OFF.
2. Disconnect front fog lamp RH and LH connectors.
3. Turn ignition switch ON.
4. Select "IPDM E/R" on CONSULT-II, and select "ACTIVE TEST" on "SELECT DIAG MODE" screen.
5. Select "LAMPS" on "SELECT TEST ITEM" screen.
6. Touch "FOG" on "ACTIVE TEST" screen.
7. When fog lamp is operating, check voltage between front fog lamp RH and LH harness connectors and ground.

Without CONSULT-II

1. Turn ignition switch OFF.
2. Disconnect front fog lamp RH and LH connectors.
3. Start auto active test. Refer to PG-22, "Auto Active Test" .
4. When fog lamp is operating, check voltage between front fog lamp RH and LH harness connectors and ground.

Terminals				Voltage
(+)			(–)	
Front fog lamp connector		Terminal		
RH	E102	1	Ground	Battery voltage
LH	E101			



OK or NG

OK >> GO TO 6.
NG >> GO TO 5.

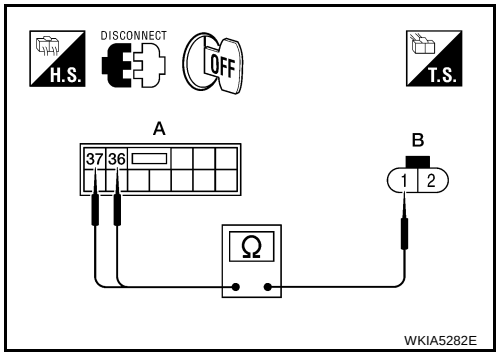
5. CHECK FOG LAMP CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connector.
3. Check continuity between IPDM E/R connector E124 (A) terminal 36 and front fog lamp RH connector E102 (B) terminal 1.

36 - 1 : Continuity should exist.

4. Check continuity between IPDM E/R connector E124 (A) terminal 37 and front fog lamp LH connector E101 (B) terminal 1.

37 - 1 : Continuity should exist.



OK or NG

OK >> Replace IPDM E/R. Refer to PG-31, "Removal and Installation of IPDM E/R" .
NG >> Repair harness or connector.

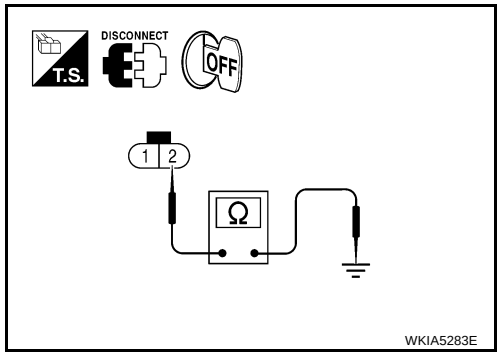
6. CHECK FOG LAMP GROUND

1. Turn ignition switch OFF.
2. Check continuity between front fog lamp RH harness connector E102 terminal 2 and ground.

2 - Ground : Continuity should exist.

3. Check continuity between front fog lamp LH harness connector E101 terminal 2 and ground.

2 - Ground : Continuity should exist.



OK or NG

OK >> Check front fog lamp bulbs.
NG >> Repair harness or connector.

Front Fog Lamp Does Not Illuminate (One Side)

EKS0090C

1. CHECK BULB

Check bulb of lamp which does not illuminate.

OK or NG

OK >> GO TO 2.
NG >> Replace front fog lamp bulb. Refer to LT-73, "Bulb Replacement" .

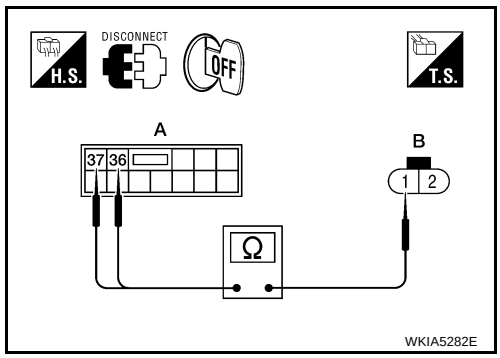
2. CHECK FOG LAMP CIRCUIT

1. Disconnect IPDM E/R connector and front fog lamp RH or LH connector.
2. Check continuity between IPDM E/R connector E124 (A) terminal 36 and front fog lamp RH connector E102 (B) terminal 1.

36 - 1 : Continuity should exist.

3. Check continuity between IPDM E/R connector E124 (A) terminal 37 and front fog lamp LH connector E101 (B) terminal 1.

37 - 1 : Continuity should exist.



OK or NG

OK >> GOTO 3.
NG >> Repair harness or connector.

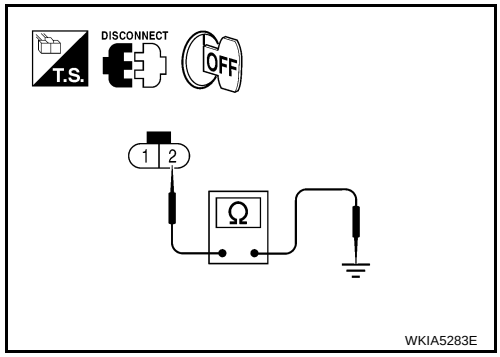
3. CHECK FOG LAMP GROUND

1. Check continuity between front fog lamp RH harness connector E102 terminal 2 and ground.

2 - Ground : Continuity should exist.

2. Check continuity between front fog lamp LH harness connector E101 terminal 2 and ground.

2 - Ground : Continuity should exist.

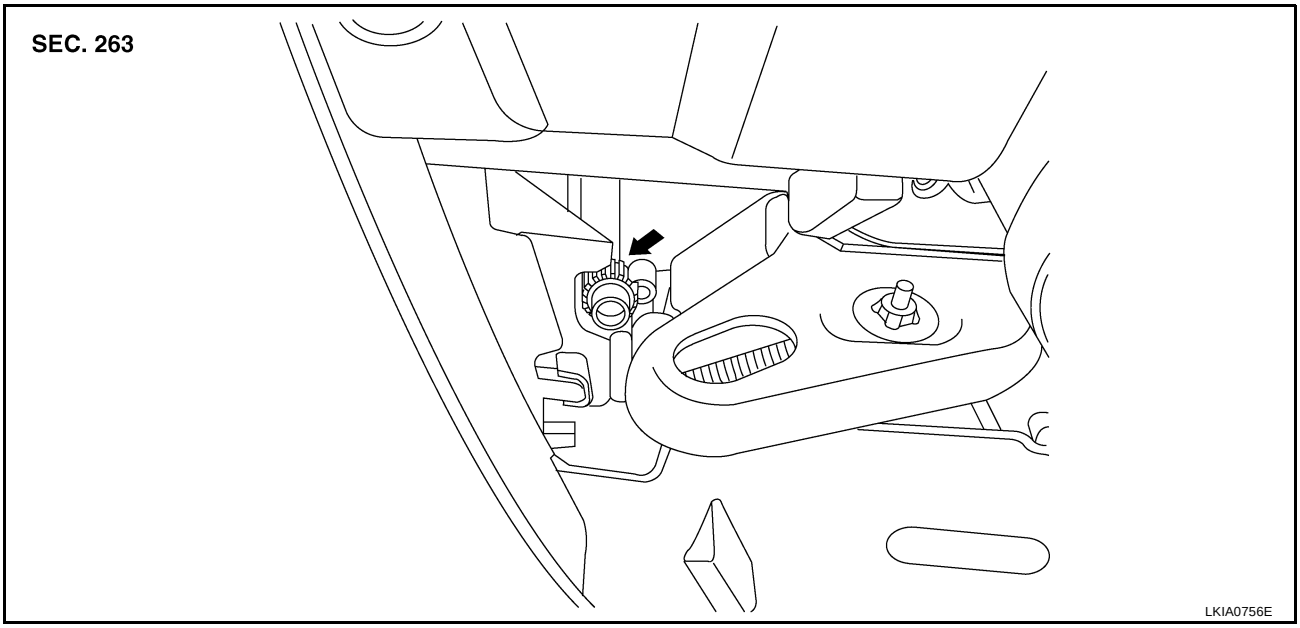


OK or NG

OK >> Replace IPDM E/R. Refer to PG-31, "Removal and Installation of IPDM E/R" .
NG >> Repair harness or connector.

Aiming Adjustment

EKS0090D



For details, refer to the regulations in your area.

NOTICE:

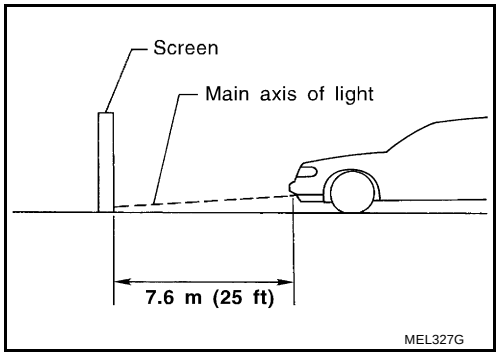
If the vehicle front body has been repaired and/or the front fog lamp assembly has been replaced, check front fog lamp aiming.

FRONT FOG LAMP AIMING

NOTE:

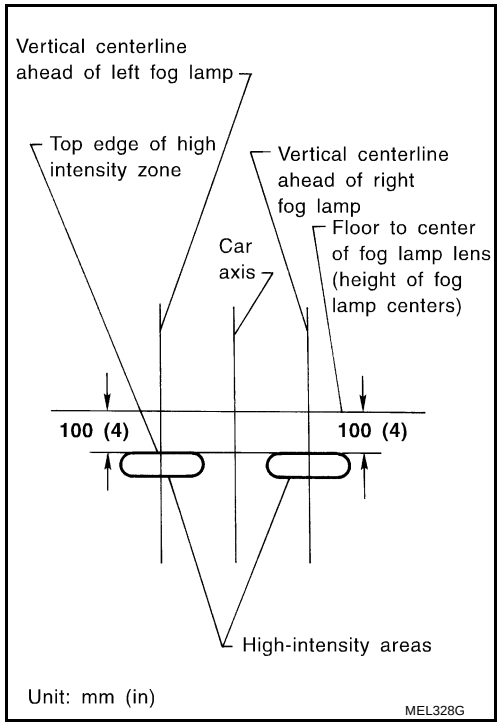
- Before performing front fog lamp aiming adjustment, check the following:
  - Ensure all tires are inflated to correct pressure.
  - Place vehicle and screen on level surface.
  - Ensure there is no load in vehicle other than the driver (or equivalent weight placed in driver's position). Coolant and engine oil filled to correct level and fuel tank full.
  - Confirm spare tire, jack and tools are properly stowed.
  - Aim each front fog lamp individually and ensure other front fog lamp beam pattern is blocked from screen.
  - Adjust front fog lamp aiming in the vertical direction by turning the adjusting screw.

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.



Bulb Replacement

EKS0090E

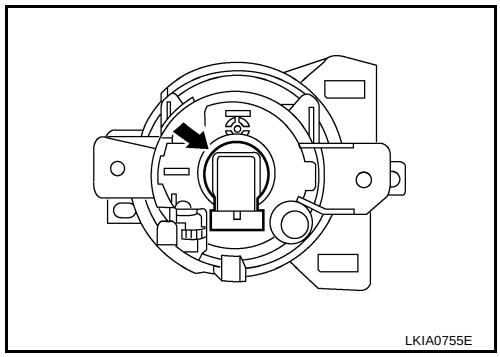
FRONT FOG LAMP

Removal

CAUTION:

Do not leave bulb out of fog lamp reflector for a long time because dust, moisture smoke, etc., may affect the performance of fog lamp. When replacing bulb, be sure to replace it with new one.

1. Disconnect fog lamp bulb connector
2. Turn the fog lamp bulb counterclockwise to unlock it from the fog lamp housing.
3. Remove the fog lamp bulb.



Installation

CAUTION:

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

Installation is in the reverse order of removal.

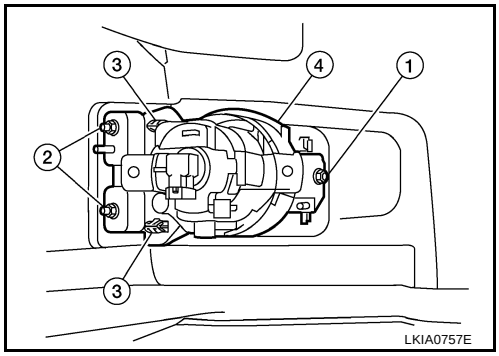
Removal and Installation

EKS0090F

FRONT FOG LAMP

1. Remove the front facia cover. Refer to EI-14, "FRONT BUMPER" .

2. Remove the bolt (1), remove the nuts (2), remove the retaining clips (3) and the front fog lamp assembly (4).



INSTALLATION

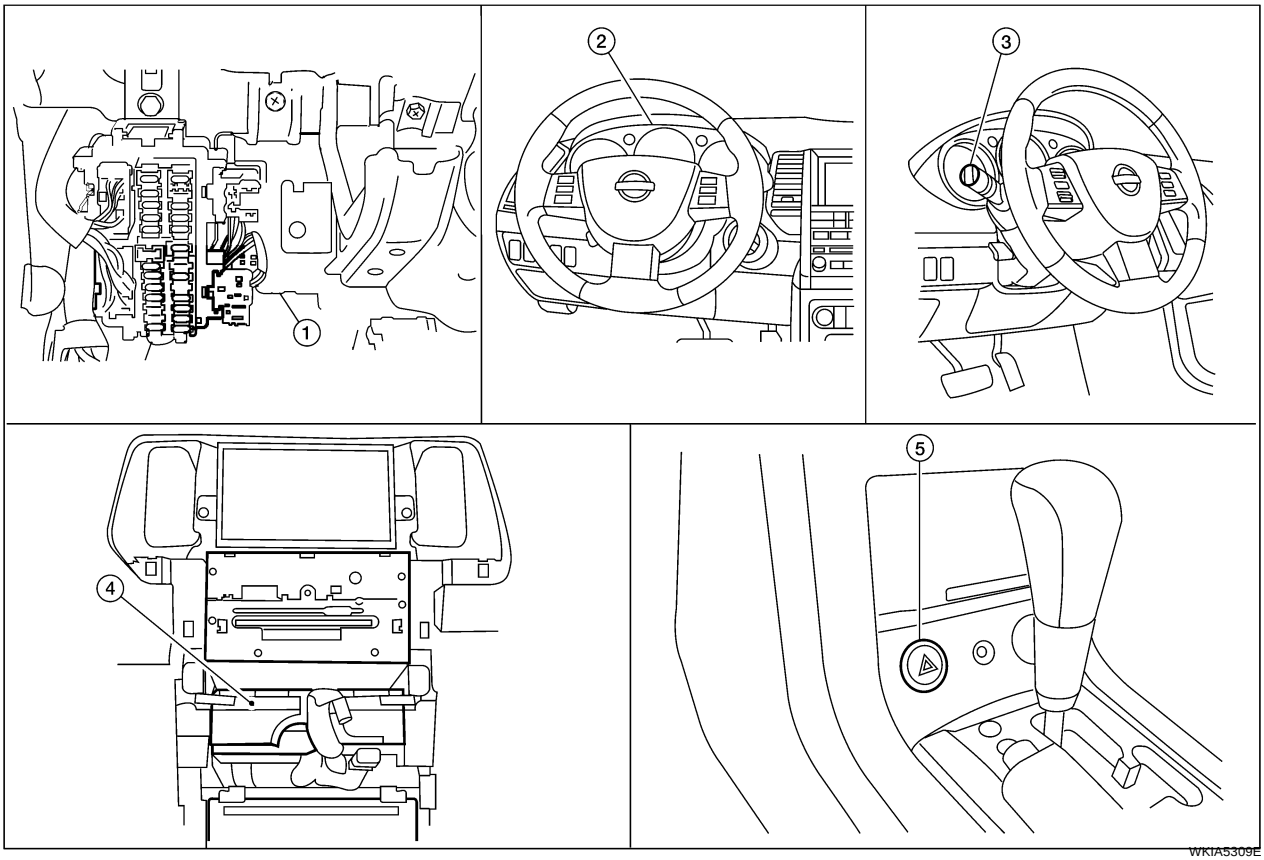
Installation is in the reverse order of removal.

TURN SIGNAL AND HAZARD WARNING LAMPS

PFP:26120

Component Parts and Harness Connector Location

EKS0090G



1. BCM M18 and M20 (View with instrument panel removed)
2. Combination meter M24
3. Combination switch (lighting switch) M28
4. Unified meter and A/C amp. M49 (View with center console and cluster lids removed)
5. Hazard switch M202

System Description

EKS0090H

OUTLINE

Power is supplied at all times

- through 50A fusible link (letter **f** , located in the fuse and fusible link box)
- to BCM (body control module) terminal 70, and
- through 10A fuse [No. 21, located in the fuse block (J/B)]
- to BCM terminal 57, and
- through 10A fuse [No. 19, located in the fuse block (J/B)]
- to combination meter terminal 24.

TURN SIGNAL OPERATION

When the ignition switch is in the ON or START position, power is supplied

- through 10A fuse [No. 1, located in the fuse block (J/B)]
- to BCM terminal 38, and
- through 10A fuse [No. 14, located in the fuse block (J/B)]
- to combination meter terminal 23.

Ground is supplied

- to BCM terminal 67, and
- to combination meter terminals 10, 11 and 12
- through grounds M57, M61 and M79.

LH Turn

When the turn signal switch is moved to the left position, the BCM, interpreting it as turn signal is ON, outputs turn signal from BCM terminal 60.
The BCM supplies power

- through BCM terminal 60
- to front combination lamp LH terminal 5
- through front combination lamp LH terminal 10
- to grounds E15 and E24, and
- to rear combination lamp LH terminal 3
- through rear combination lamp LH terminal 5
- to grounds B7 and B19.

BCM sends signal to unified meter and A/C amp through CAN communication lines and turns on turn signal indicator lamp within combination meter.

RH Turn

When the turn signal switch is moved to the right position, the BCM, interpreting it as turn signal is ON, outputs turn signal from BCM terminal 61.
The BCM supplies power

- through BCM terminal 61
- to front combination lamp RH terminal 5
- through front combination lamp RH terminal 10
- to grounds E15 and E24, and
- to rear combination lamp RH terminal 3
- through rear combination lamp RH terminal 5
- to grounds B7 and B19.

BCM sends signal to unified meter and A/C amp through CAN communication lines and turns on turn signal indicator lamp within combination meter.

HAZARD LAMP OPERATION

Power is supplied at all times

- through 50A fusible link (letter **f** , located in the fuse and fusible link box)
- to BCM terminal 70, and
- through 10A fuse [No. 19, located in the fuse block (J/B)]
- to combination meter terminal 24

Ground is supplied

- to BCM terminal 67, and
- to combination meter terminals 10, 11 and 12
- through grounds M57, M61 and M79.

When the hazard switch is depressed, ground is supplied

- to BCM terminal 29
- through hazard switch terminal 2
- through hazard switch terminal 1
- through grounds M57, M61 and M79.

When the hazard switch is depressed, the BCM, interpreting it as hazard warning lamps are ON, outputs turn signal from BCM terminals 60 and 61.
The BCM supplies power

- through BCM terminals 60 and 61
- to front combination lamp LH and RH terminal 5
- through front combination lamp LH and RH terminal 10
- to grounds E15 and E24, and
- to rear combination lamp LH and RH terminal 3
- through rear combination lamp LH and RH terminal 5

- to grounds B7 and B19.

BCM sends signal to unified meter and A/C amp through CAN communication lines and turns on turn signal indicator lamps within combination meter.

REMOTE KEYLESS ENTRY SYSTEM OPERATION

Power is supplied at all times

- through 50A fusible link (letter **f** , located in the fuse and fusible link box)
- to BCM terminal 70, and
- through 10A fuse [No. 21, located in the fuse block (J/B)]
- to BCM terminal 57, and
- through 10A fuse [No. 19, located in the fuse block (J/B)]
- to combination meter terminal 24.

Ground is supplied

- to BCM terminal 67, and
- to combination meter terminals 10, 11 and 12
- through grounds M57, M61 and M79.

When the remote keyless entry system is triggered by input from the keyfob, the BCM, interpreting it as turn signal is ON, outputs turn signal from BCM terminals 60 and 61.
The BCM supplies power

- through BCM terminals 60 and 61
- to front combination lamp LH and RH terminal 5
- through front combination lamp LH and RH terminal 10
- to grounds E15 and E24, and
- to rear combination lamp LH and RH terminal 3
- through rear combination lamp LH and RH terminal 5
- to grounds B7 and B19.

BCM sends signal to unified meter and A/C amp. through CAN communication lines and turns on turn signal indicator lamps within combination meter.
With power and input supplied, the BCM controls the flashing of the hazard warning lamps when keyfob is used to activate the remote keyless entry system.

COMBINATION SWITCH READING FUNCTION

Refer to BCS-3, "COMBINATION SWITCH READING FUNCTION" .

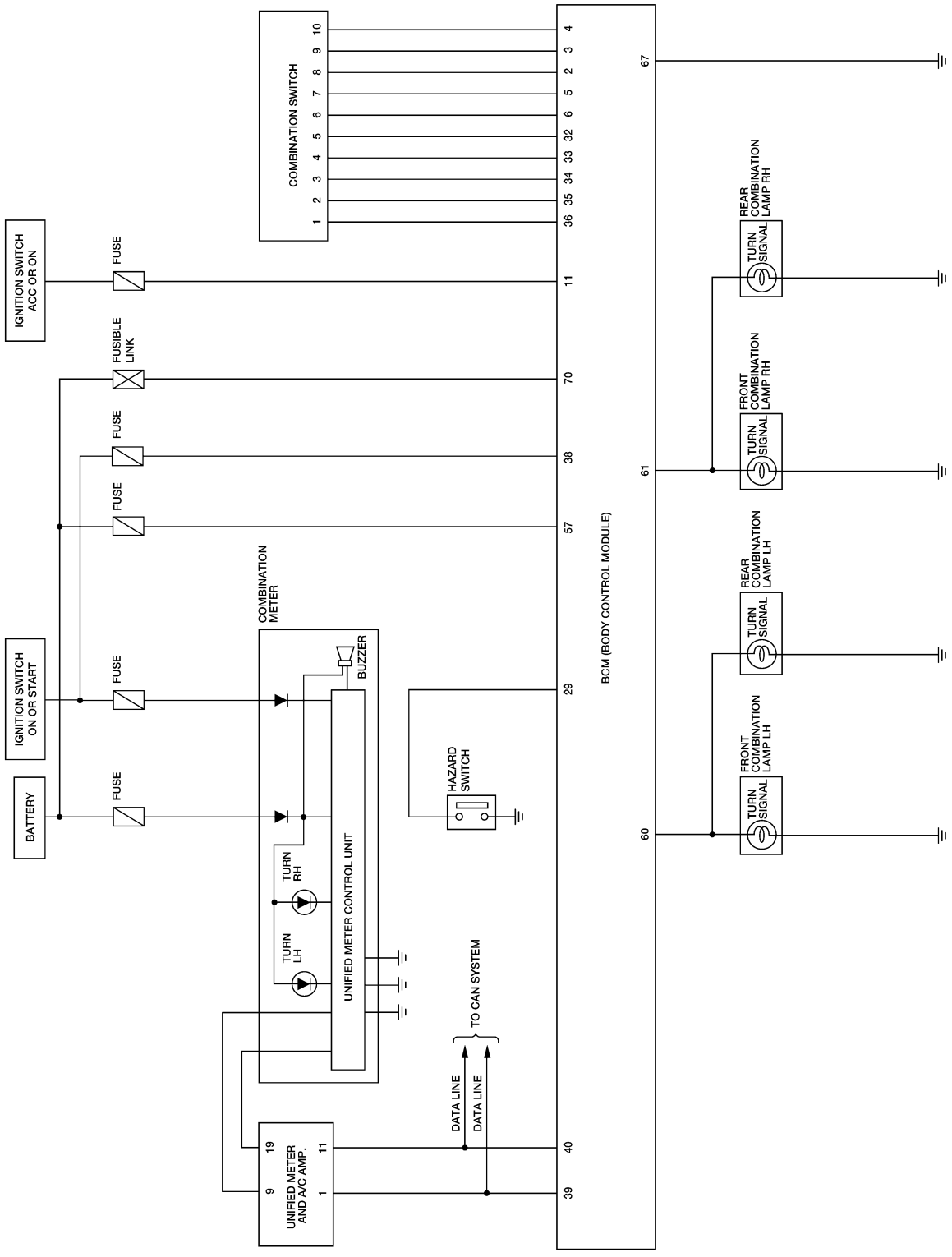
CAN Communication System Description

EKS0090I

Refer to LAN-4, "SYSTEM DESCRIPTION" .

Schematic

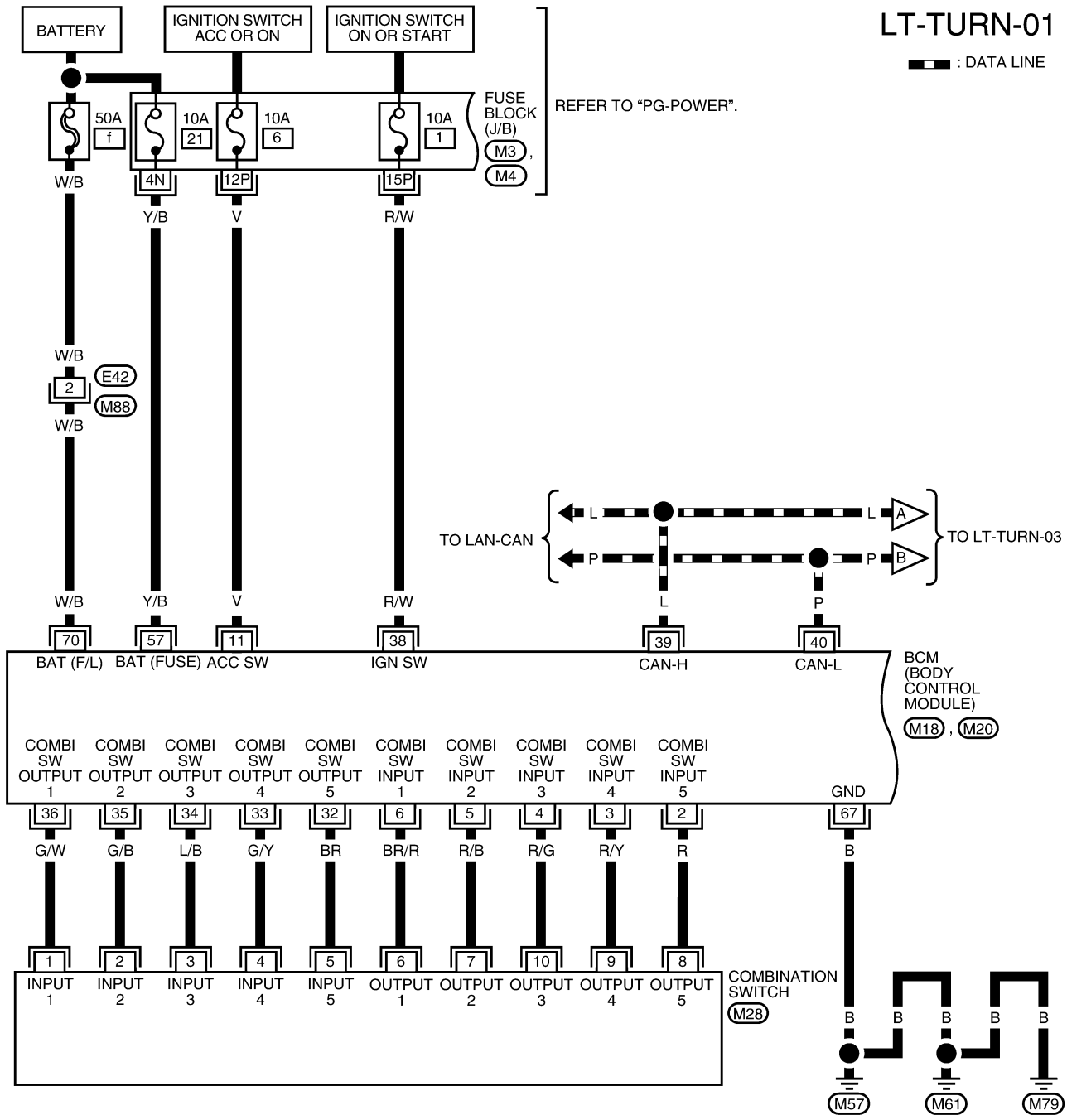
EKS0090J

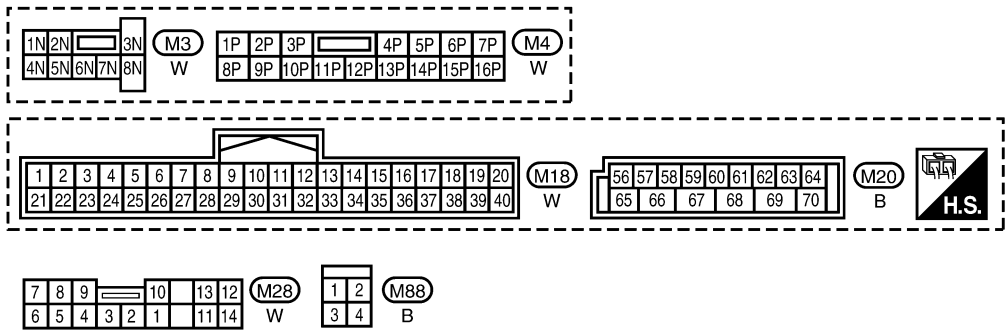


WKWA4864E

Wiring Diagram — TURN —

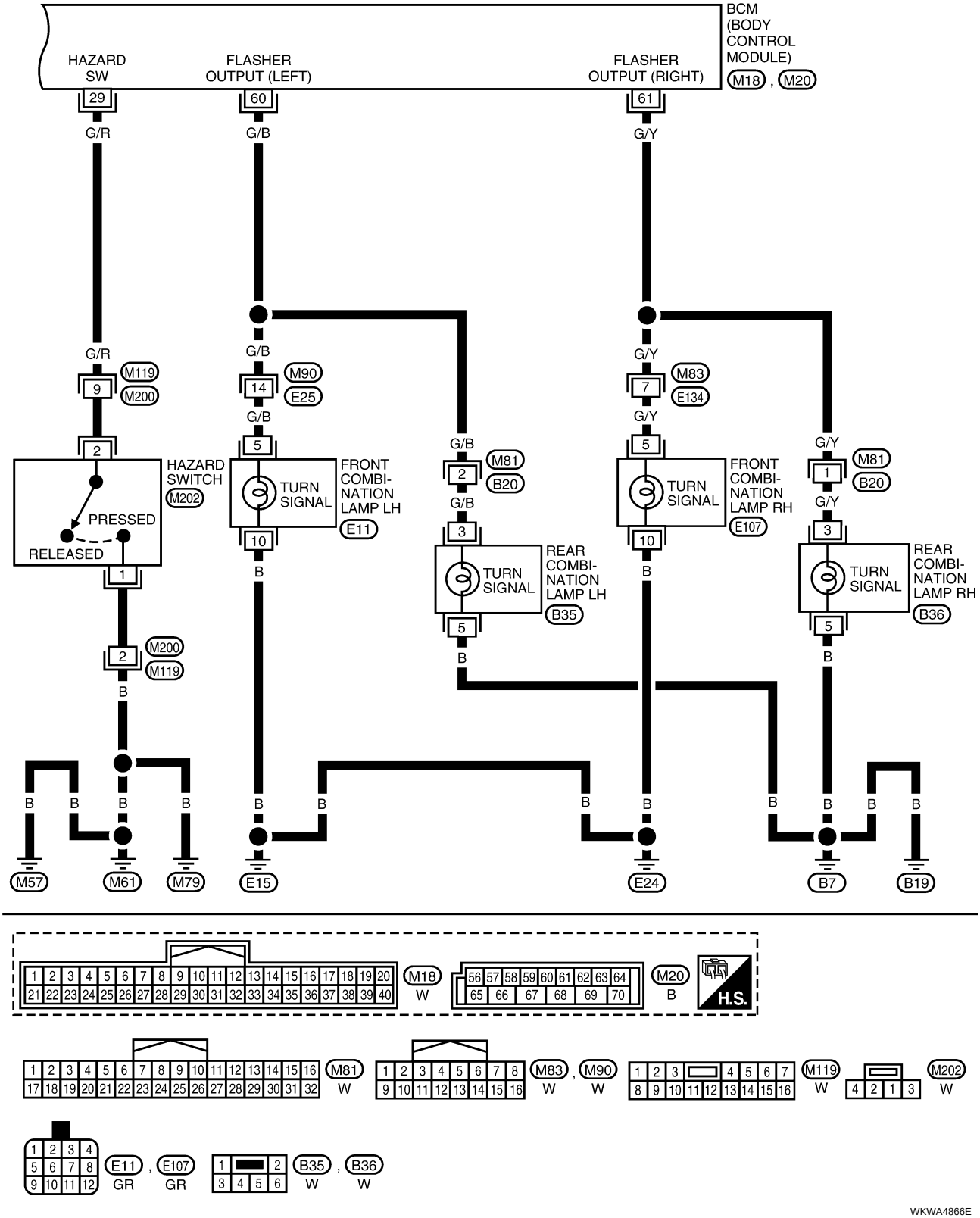
EKS0090K





WKWA4865E

LT-TURN-02



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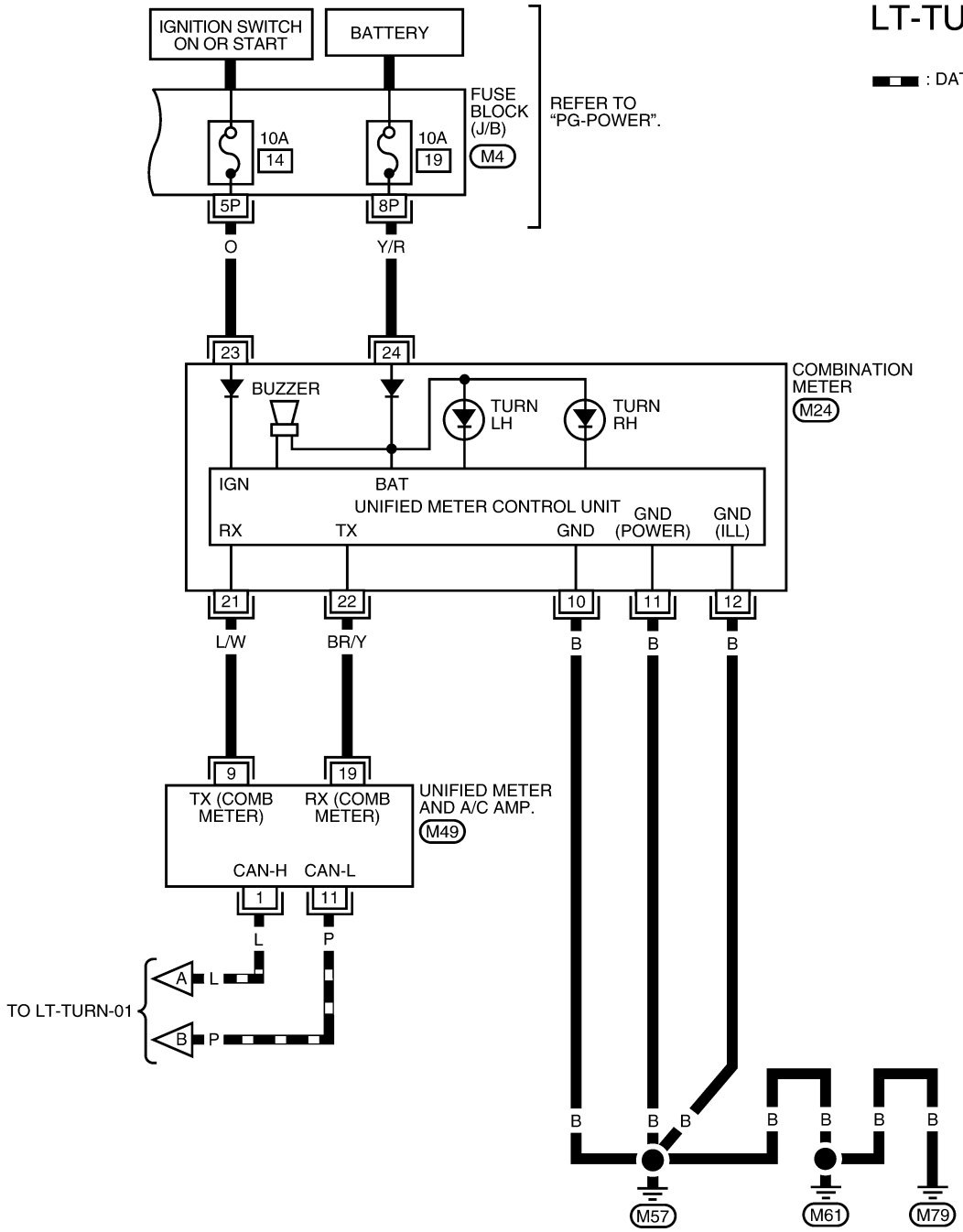
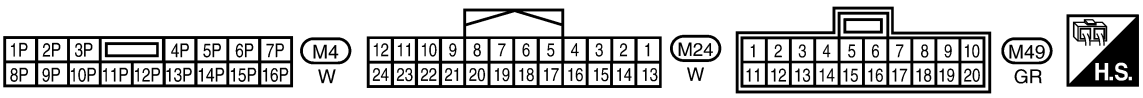

LT-TURN-03
: DATA LINE
IGNITION SWITCH ON OR START
BATTERY
FUSE BLOCK (J/B)
M4
REFER TO "PG-POWER".
10A 14
10A 19
5P
8P
O
Y/R
23
24
BUZZER
TURN LH
TURN RH
COMBINATION METER
M24
IGN
BAT
UNIFIED METER CONTROL UNIT
RX
TX
GND
GND (POWER)
GND (ILL)
21
22
10
11
12
L/W
BR/Y
B
9
19
TX (COMB METER)
RX (COMB METER)
UNIFIED METER AND A/C AMP.
M49
CAN-H
CAN-L
1
11
L
P
TO LT-TURN-01
A
B
M57
M61
M79


1P 2P 3P 4P 5P 6P 7P
8P 9P 10P 11P 12P 13P 14P 15P 16P
M4
W
12 11 10 9 8 7 6 5 4 3 2 1
24 23 22 21 20 19 18 17 16 15 14 13
M24
W
1 2 3 4 5 6 7 8 9 10
11 12 13 14 15 16 17 18 19 20
M49
GR
H.S.

WKWA4867E

Terminals and Reference Values for BCM

EKS0090L

Refer to BCS-12, "Terminals and Reference Values for BCM" .

How to Proceed With Trouble Diagnosis

EKS0090M

1. Confirm the symptom or customer complaint.
2. Understand operation description and function description. Refer to LT-75, "System Description" .
3. Perform preliminary check. Refer to LT-82, "Preliminary Check" .
4. Check symptom and repair or replace the cause of malfunction.
5. Do turn signal and hazard warning lamps operate normally? If YES: GO TO 6. If NO: GO TO 4.
6. Inspection End.

Preliminary Check

EKS0090N

CHECK POWER SUPPLY AND GROUND CIRCUIT

Refer to BCS-15, "BCM Power Supply and Ground Circuit Check" .

CONSULT-II Function (BCM)

EKS0090O

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

BCM diagnostic test item	Diagnostic mode	Description
Inspection by part	WORK SUPPORT	Supports inspections and adjustments. Commands are transmitted to the BCM for setting the status suitable for required operation, input/output signals are received from the BCM and received data is displayed.
	DATA MONITOR	Displays BCM input/output data in real time.
	ACTIVE TEST	Operation of electrical loads can be checked by sending drive signal to them.
	SELF-DIAG RESULTS	Displays BCM self-diagnosis results.
	CAN DIAG SUPPORT MNTR	The result of transmit/receive diagnosis of CAN communication can be read.
	ECU PART NUMBER	BCM part number can be read.
	CONFIGURATION	Performs BCM configuration read/write functions.

CONSULT-II START PROCEDURE

Refer to GI-37, "CONSULT-II Start Procedure" .

DATA MONITOR

Operation Procedure

1. Touch "FLASHER" on "SELECT TEST ITEM" screen.
2. Touch "DATA MONITOR" on "SELECT DIAG MODE" screen.
3. Touch either "ALL SIGNALS" or "SELECTION FROM MENU" on the "SELECT MONITOR ITEM" screen.

ALL SIGNALS	Monitors all the signals.
SELECTION FROM MENU	Selects and monitors the individual signal.

4. Touch "START".
5. When "SELECTION FROM MENU" is selected, touch items to be monitored. When "ALL SIGNALS" is selected, all the items will be monitored.
6. Touch "RECORD" while monitoring, then the status of the monitored item can be recorded. To stop recording, touch "STOP".

Display Item List

Monitor item		Contents
IGN ON SW	"ON/OFF"	Displays "IGN position (ON)/OFF, ACC position (OFF)" judged from the ignition switch signal.
HAZARD SW	"ON/OFF"	Displays "Hazard ON (ON)/Hazard OFF (OFF)" status, determined from hazard switch signal.
TURN SIGNAL R	"ON/OFF"	Displays "Turn right (ON)/Other (OFF)" status, determined from lighting switch signal.
TURN SIGNAL L	"ON/OFF"	Displays "Turn left (ON)/Other (OFF)" status, determined from lighting switch signal.
BRAKE SW[Note]	"OFF"	—

NOTE 1: This item is displayed, but cannot monitor it.

ACTIVE TEST

Operation Procedure

1. Touch "FLASHER" on "SELECT TEST ITEM" screen.
2. Touch "ACTIVE TEST" on "SELECT DIAG MODE" screen.
3. Touch item to be tested and check operation of the selected item.
4. During the operation check, touching "BACK" deactivates the operation.

Display Item List

Test item	Description
FLASHER (RH)	Turn signal lamp (RH) can be operated by any ON-OFF operations.
FLASHER (LH)	Turn signal lamp (LH) can be operated by any ON-OFF operations.

Turn Signal Lamp Does Not Operate

EKS0090P

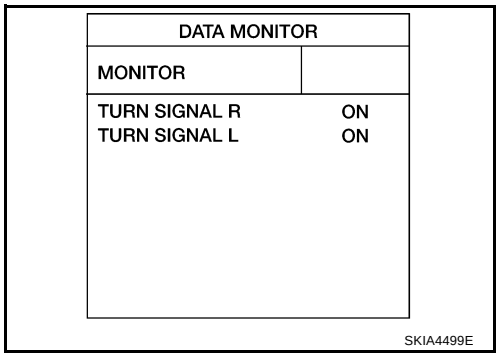
1. CHECK COMBINATION SWITCH INPUT SIGNAL

With CONSULT-II

Select "BCM" on CONSULT-II. With "FLASHER" data monitor, make sure "TURN SIGNAL R" and "TURN SIGNAL L" turns ON-OFF linked with operation of lighting switch.

When lighting switch is in TURN RH position : TURN SIGNAL R ON

When lighting switch is in TURN LH position : TURN SIGNAL L ON



Without CONSULT-II

Refer to LT-104, "Combination Switch Inspection" .

OK or NG

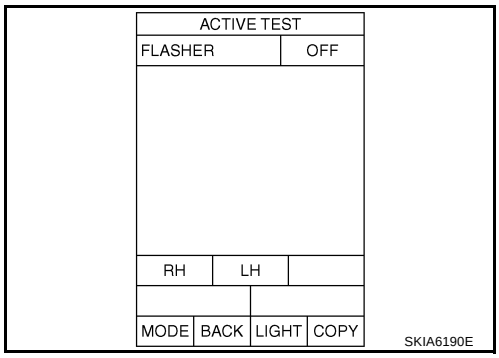
OK >> GO TO 2.

NG >> Check lighting switch. Refer to LT-104, "Combination Switch Inspection" .

2. ACTIVE TEST

With CONSULT-II

1. Select "FLASHER" during active test. Refer to LT-83, "ACTIVE TEST" .
2. Make sure "FLASHER RH" and "FLASHER LH" operate.



Without CONSULT-II

GO TO 3.

OK or NG

OK >> Replace BCM. Refer to BCS-25, "BCM" .

NG >> GO TO 3.

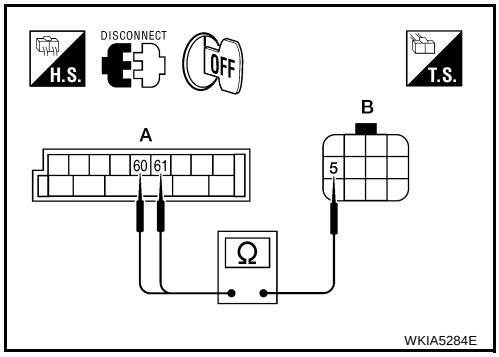
3. CHECK TURN SIGNAL LAMPS CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect BCM connector and front combination lamp LH and RH connectors.
3. Check continuity between BCM connector M19 (A) terminal 60 and front combination lamp LH connector E11 (B) terminal 5.

60 - 5 : Continuity should exist.

4. Check continuity between BCM connector M19 (A) terminal 61 and front combination lamp RH connector E107 (B) terminal 5.

61 - 5 : Continuity should exist.



OK or NG

OK >> GO TO 4.

NG >> Repair harness or connector.

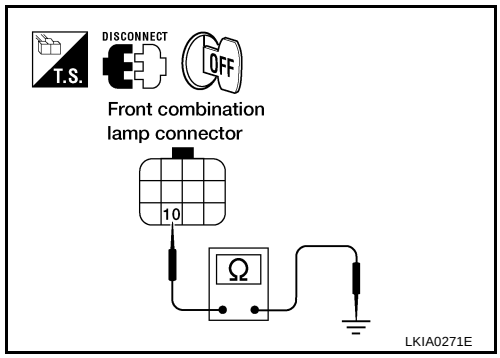
4. CHECK GROUND

1. Check continuity between front combination lamp LH harness connector E11 terminal 10 and ground.

10 - Ground : Continuity should exist.

2. Check continuity between front combination lamp RH harness connector E107 terminal 10 and ground.

10 - Ground : Continuity should exist.



OK or NG

OK >> GO TO 5.
NG >> Repair harness or connector.

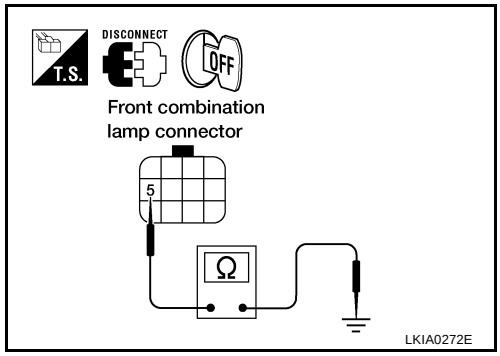
5. CHECK TURN SIGNAL LAMPS SHORT CIRCUIT

1. Disconnect rear combination lamp connectors.
2. Check continuity (short circuit) between front combination lamp LH harness connector E11 terminal 5 and ground.

5 - Ground : Continuity should not exist.

3. Check continuity (short circuit) between front combination lamp RH harness connector E107 terminal 5 and ground.

5 - Ground : Continuity should not exist.



OK or NG

OK >> GO TO 6.
NG >> Repair harness or connector.

6. CHECK BULB

Check bulb standard of each turn signal lamp is correct. Refer to LT-162, "Exterior Lamp" .

OK or NG

OK >> Replace BCM if turn signal lamp does not work after setting the connector again. Refer to BCS-25, "BCM" .
NG >> Replace turn signal lamp bulb. Refer to LT-35, "FRONT TURN SIGNAL LAMP" .

Rear Turn Signal Lamp Does Not Operate

EKS0090Q

1. CHECK TAIL LAMPS AND STOP LAMPS

Check bulb standard of each turn signal lamp is correct. Refer to LT-162, "Exterior Lamp" .

OK or NG

OK >> GO TO 2.
NG >> Replace turn signal lamp bulb. Refer to LT-125, "Bulb Replacement" .

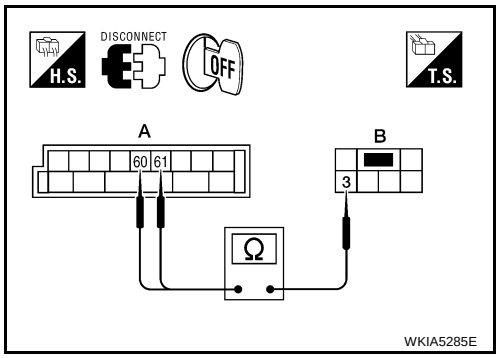
2. CHECK TURN SIGNAL LAMPS CIRCUIT

1. Disconnect BCM connector and rear combination lamp connector.
2. Check continuity between BCM connector M19 (A) terminal 61 and rear combination lamp RH connector B36 (B) terminal 3.

61 - 3 : Continuity should exist.

3. Check continuity between BCM connector M19 (A) terminal 60 and rear combination lamp LH connector B35 (B) terminal 3.

60 - 3 : Continuity should exist.



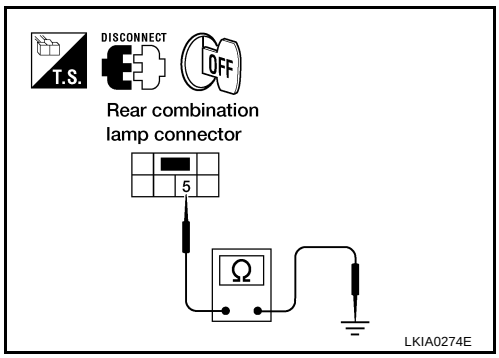
OK or NG

OK >> GO TO 3.
NG >> Repair harness or connector.

3. CHECK GROUND CIRCUIT

Check continuity between rear combination lamp harness connector B35 LH and B36 RH terminal 5 and ground.

5 - Ground : Continuity should exist.



OK or NG

OK >> Check rear combination lamp connector for proper connection. Repair as necessary.
NG >> Repair harness or connector.

Hazard Warning Lamp Does Not Operate But Turn Signal Lamps Operate

EKS0090R

1. CHECK BULB

Make sure bulb standard of each turn signal lamp is correct. Refer to LT-162, "Exterior Lamp" .

OK or NG

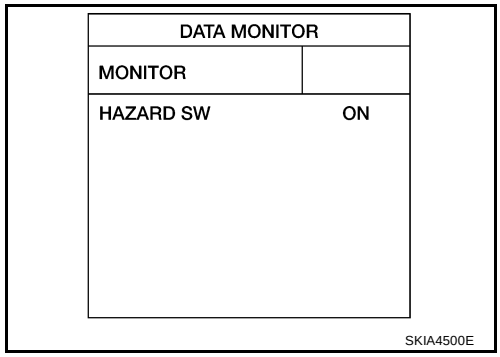
OK >> GO TO 2.
NG >> Replace turn signal lamp bulb. Refer to LT-35, "FRONT TURN SIGNAL LAMP" for front turn signal bulb. Refer to LT-125, "Bulb Replacement" for rear turn signal bulb.

2. CHECK HAZARD SWITCH INPUT SIGNAL

With CONSULT-II

Select "BCM" on CONSULT-II. With "FLASHER" data monitor, make sure "HAZARD SW" turns ON-OFF linked with operation of hazard switch.

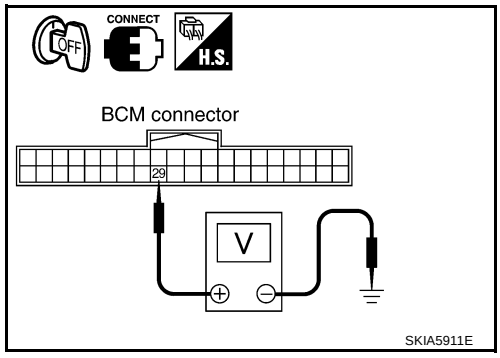
When hazard switch is in ON position : HAZARD SW ON



Without CONSULT-II

Check voltage between BCM harness connector M18 terminal 29 and ground.

BCM (+) Connector	BCM (+) Terminal	(–)	Condition	Voltage (Approx.)
M18	29	Ground	Hazard switch is ON	0V
			Hazard switch is OFF	5V



OK or NG

OK >> Replace BCM. Refer to BCS-25, "BCM" .
NG >> GO TO 3.

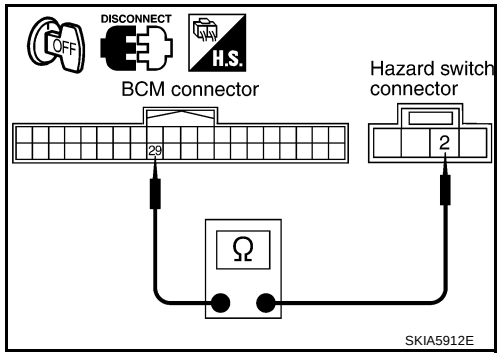
3. CHECK HAZARD SWITCH CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect BCM connector and hazard switch connector.
3. Check continuity between BCM harness connector M18 terminal 29 and hazard switch harness connector M202 terminal 2.

29 - 2 : Continuity should exist.

OK or NG

OK >> GO TO 4.
NG >> Repair harness or connector.



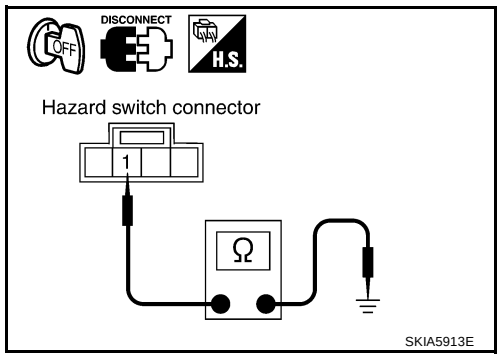
4. CHECK GROUND

Check continuity between hazard switch harness connector M202 terminal 1 and ground.

1 - Ground : Continuity should exist.

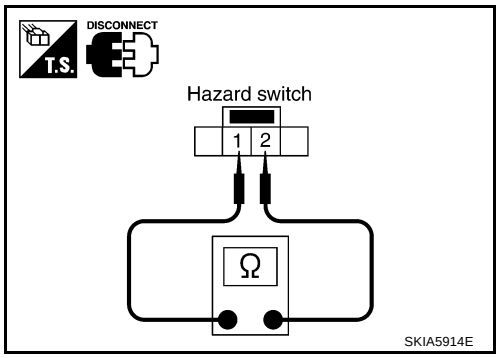
OK or NG

OK >> GO TO 5.
NG >> Repair harness or connector.



5. CHECK HAZARD SWITCH

1. Disconnect hazard switch connector.
2. Check continuity of hazard switch.



Hazard switch		Condition	Continuity
Terminal			
1	2	Hazard switch is pressed	Yes
		Hazard switch is released	No

OK or NG

OK >> Replace BCM if hazard warning lamps do not work after setting the connector again. Refer to BCS-25, "BCM" .

NG >> Replace hazard switch. Refer to LT-100, "Removal and Installation" .

Turn Signal Indicator Lamp Does Not Operate

EKS0090S

1. CHECK BULB

Check CAN communication. Refer to LAN-44, "TROUBLE DIAGNOSIS" .

OK or NG

OK >> Replace combination meter. Refer to DI-26, "Combination Meter" .

NG >> Repair as necessary.

Bulb Replacement
FRONT TURN SIGNAL LAMP

EKS0090T

Refer to LT-35, "Bulb Replacement" .

Bulb Replacement
REAR TURN SIGNAL LAMP

EKS0090U

Refer to LT-125, "Bulb Replacement" .

Removal and Installation
FRONT TURN SIGNAL LAMP

EKS0090V

Refer to LT-36, "Removal and Installation" .

Removal and Installation
REAR TURN SIGNAL LAMP

EKS0090W

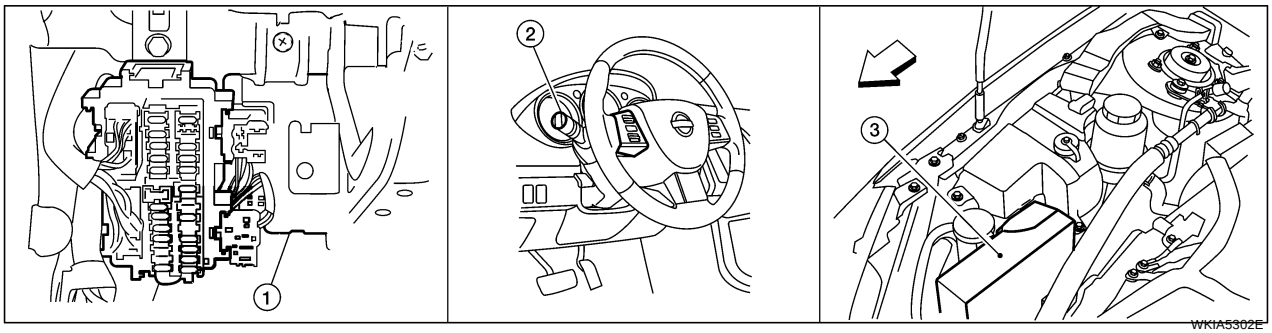
Refer to LT-125, "Removal and Installation" .

CORNERING LAMP

PFP:26100

Component Parts and Harness Connector Location

EKS0090X



1. BCM M18 and M20 (View with instrument panel removed)
2. Combination switch (lighting switch) M28
3. IPDM E/R E121, E122, and E124 (⇐: Front)

System Description

EKS0090Y

OUTLINE

Power is supplied at all times

- to ignition relay, located in the IPDM E/R (intelligent power distribution module engine room), and
- through 50A fusible link (letter **f** , located in the fuse and fusible link box)
- to BCM (body control module) terminal 70, and
- through 10A fuse [No. 21, located in the fuse block (J/B)]
- to BCM terminal 57, and
- through 15A fuse (No. 34, located in the IPDM E/R)
- to CPU (central processing unit) of the IPDM E/R, and
- through 15A fuse (No. 41, located in the IPDM E/R)
- to CPU (central processing unit) of the IPDM E/R, and
- to cornering lamp relay LH and RH.

CORNERING LAMP OPERATION

When the ignition switch is in the ON or START position, power is supplied

- to ignition relay, located in the IPDM E/R, and
- through 10A fuse [No. 1, located in the fuse block (J/B)]
- to BCM terminal 38.

Ground is supplied

- to BCM terminal 67
- through grounds M57, M61 and M79, and
- to IPDM E/R terminals 38 and 60
- through grounds E15 and E24.

LH Turn

When the lighting switch is in the 2nd position or in the AUTO position (headlamp ON) and turn signal switch is moved to the left position, BCM sends signal through CAN communication lines to IPDM E/R. IPDM E/R then operates cornering lamp relay LH. It sends power from IPDM E/R terminal 34 to front combination lamp LH terminal 11.

Ground is supplied

- to front combination lamp terminal 10
- through grounds E15 and E24.

RH Turn

When the lighting switch is in the 2nd position or in the AUTO position (headlamp ON) and turn signal switch is moved to the right position, BCM sends signal through CAN communication lines to IPDM E/R. IPDM E/R then

operates cornering lamp relay RH. It sends power from IPDM E/R terminal 23 to front combination lamp RH terminal 11.
Ground is supplied

- to front combination lamp terminal 10
- through grounds E15 and E24.

COMBINATION SWITCH READING FUNCTION

Refer to BCS-3, "COMBINATION SWITCH READING FUNCTION" .

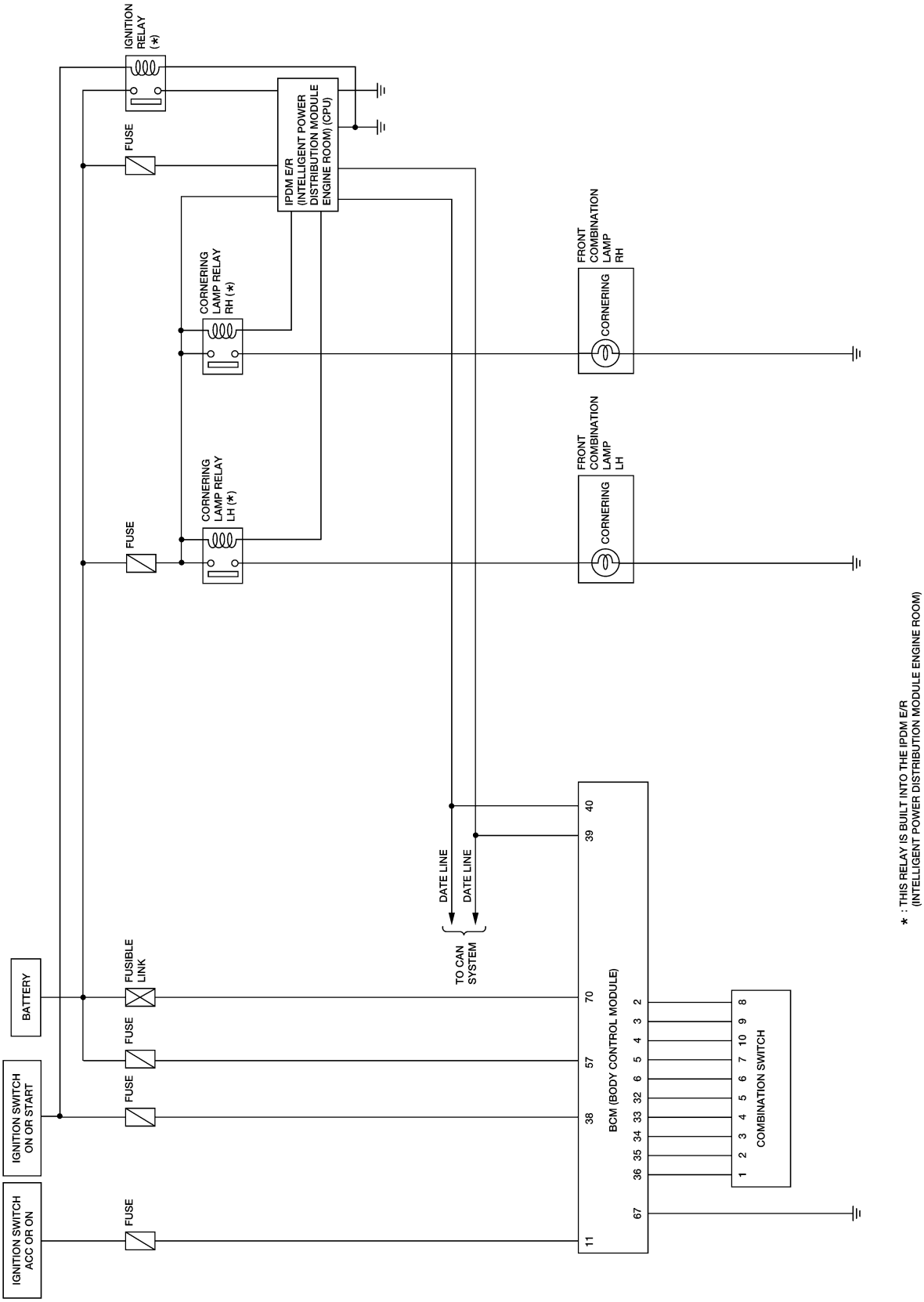
CAN Communication System Description

EKS0090Z

Refer to LAN-4, "SYSTEM DESCRIPTION" .

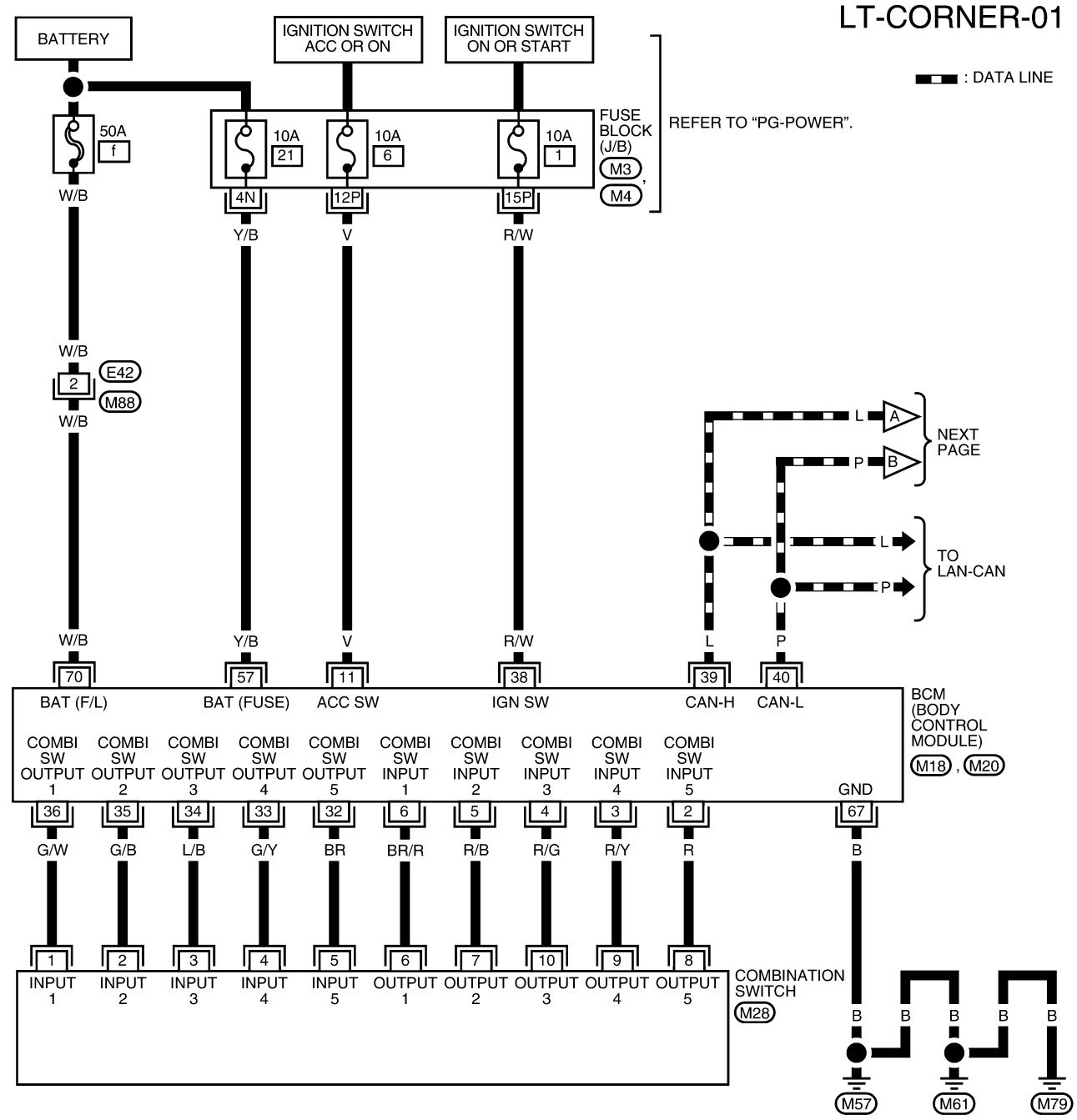
Schematic

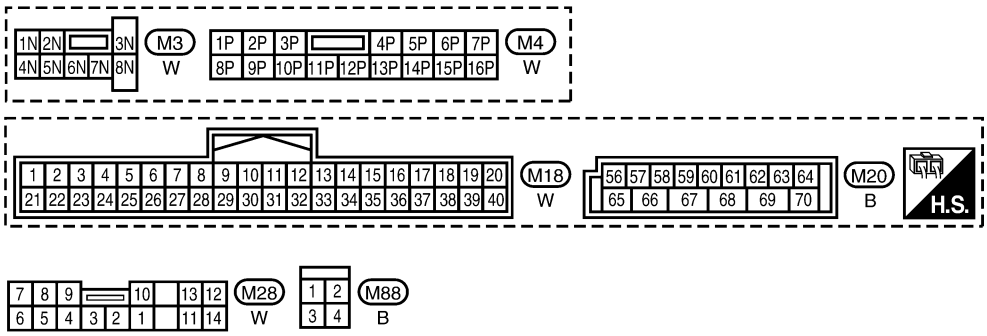
EKS00910



Wiring Diagram — CORNER —

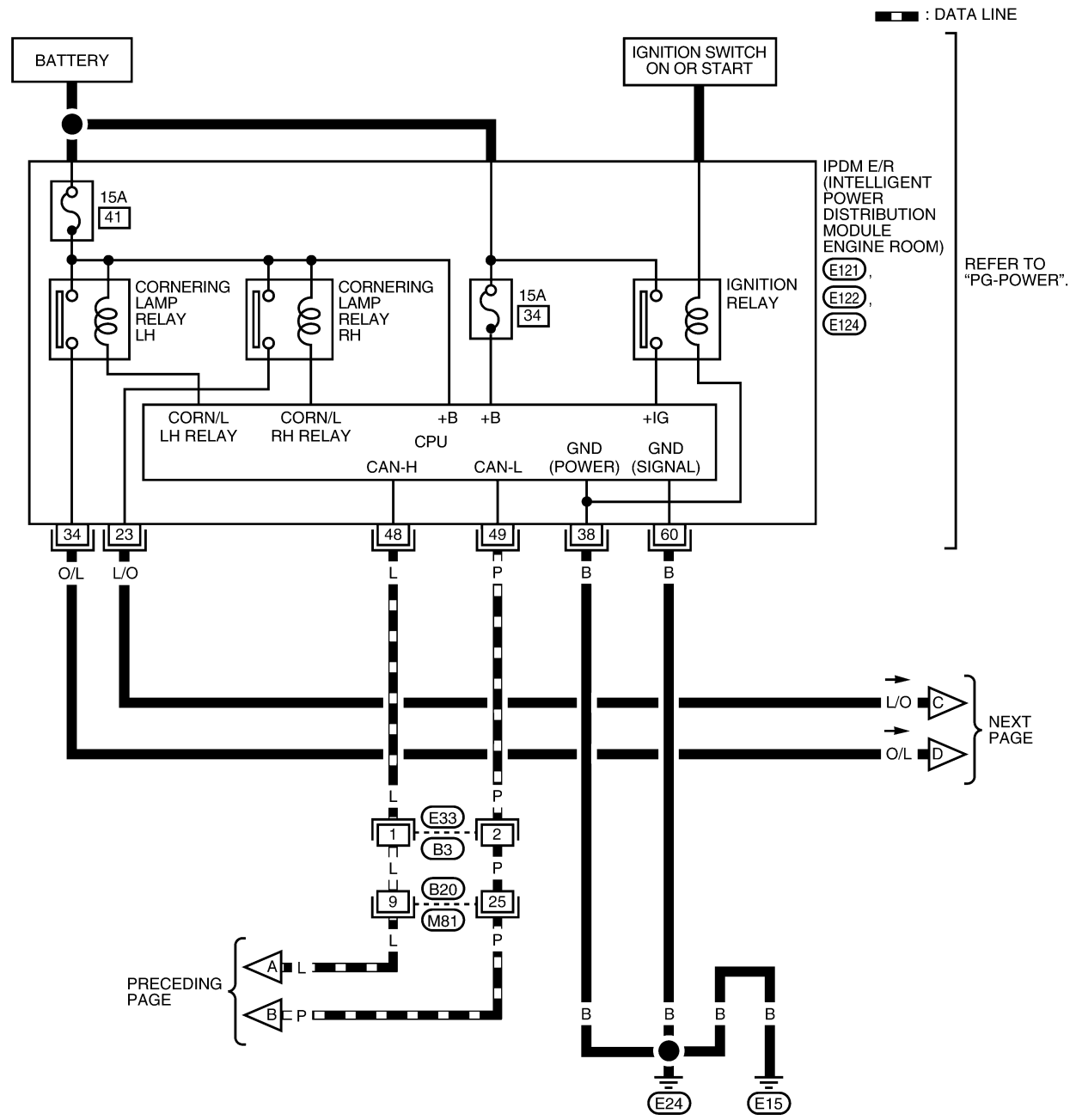
EKS00911

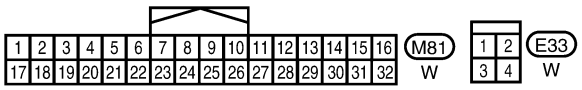


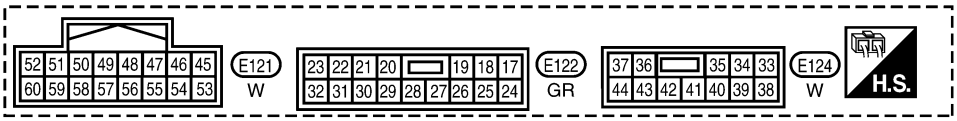


WKWA4869E

LT-CORNER-02

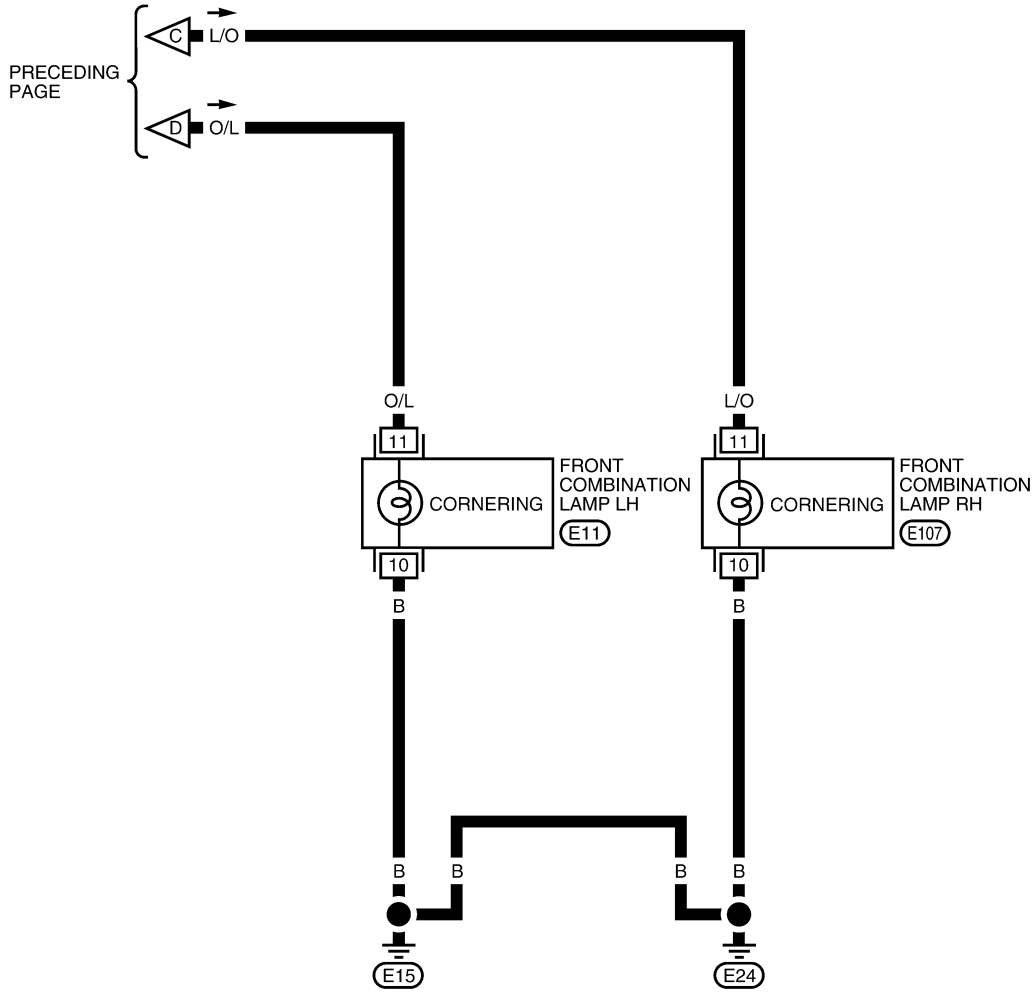


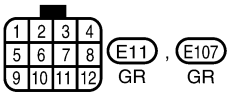




WKWA4870E

LT-CORNER-03





WKWA4871E

Terminals and Reference Values for BCM

EKS00912

Refer to BCS-12, "Terminals and Reference Values for BCM" .

Terminals and Reference Values for IPDM E/R

EKS00913

Refer to PG-26, "Terminals and Reference Values for IPDM E/R" .

How to Proceed With Trouble Diagnosis

EKS00914

1. Confirm the symptom or customer complaint.
2. Understand operation description and function description. Refer to LT-89, "System Description" .
3. Perform preliminary check. Refer to LT-95, "Preliminary Check" .
4. Check symptom and repair or replace the cause of malfunction.
5. Do cornering lamps operate normally? If YES: GO TO 6. If NO: GO TO 4.
6. Inspection End.

Preliminary Check

EKS00915

CHECK POWER SUPPLY AND GROUND CIRCUIT

Refer to BCS-15, "BCM Power Supply and Ground Circuit Check" .

CONSULT-II Function (IPDM E/R)

EKS00916

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

IPDM E/R diagnostic Mode	Description
SELF-DIAG RESULTS	Displays IPDM E/R self-diagnosis results.
DATA MONITOR	Displays IPDM E/R input/output data in real time.
CAN DIAG SUPPORT MNTR	The result of transmit/receive diagnosis of CAN communication can be read.
ACTIVE TEST	Operation of electrical loads can be checked by sending drive signal to them.

CONSULT-II START PROCEDURE

Refer to GI-37, "CONSULT-II Start Procedure" .

DATA MONITOR

Operation Procedure

1. Touch "DATA MONITOR" on "SELECT DIAG MODE" screen.
2. Touch either "ALL SIGNALS" or "SELECTION FROM MENU" on the "SELECT MONITOR ITEM" screen.

ALL SIGNALS	Monitors all the signals.
SELECTION FROM MENU	Selects and monitors the individual signal.

3. Touch "START".
4. When "SELECTION FROM MENU" is selected, touch items to be monitored. When "ALL SIGNALS" is selected, all the items will be monitored.
5. Touch "RECORD" while monitoring, then the status of the monitored item can be recorded. To stop recording, touch "STOP".

All Signals, Selection From Menu

Item name	CONSULT-II screen display	Display or unit	Monitor item selection		Description
			ALL SIGNALS	SELECTION FROM MENU	
Cornering lamp	CRNRNG LMP REQ	ON/OFF	×	×	Signal status input from BCM

NOTE:
Perform monitoring of IPDM E/R data with the ignition switch ON. When the ignition switch is at ACC, the display may not be correct.

ACTIVE TEST

Operation Procedure

1. Touch "ACTIVE TEST" on "SELECT DIAG MODE" screen.
2. Touch "CORNERING LAMP" on "SELECT TEST ITEM" screen.
3. Touch "RH" or "LH" item to be tested and check operation of the selected item.
4. During the operation check, touching "BACK" deactivates the operation.

Display Item List

Test item	Description
CORNERING LAMP (RH)	Cornering lamp (RH) can be operated by any ON-OFF operations.
CORNERING LAMP (LH)	Cornering lamp (LH) can be operated by any ON-OFF operations.

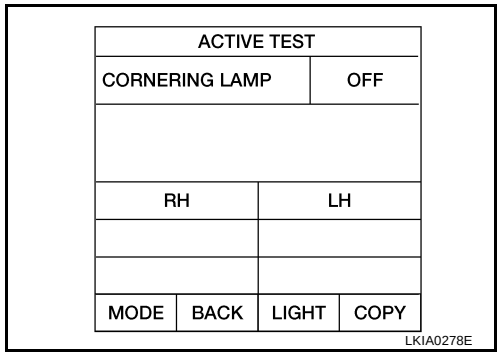
Cornering Lamp Does Not Operate

EKS00917

1. ACTIVE TEST

With CONSULT-II

1. Select "IPDM E/R" on CONSULT-II, and select "ACTIVE TEST" on "SELECT DIAG MODE" screen.
2. Select "CORNERING LAMP" on "SELECT TEST ITEM" screen.
3. Select "RH", then "LH" on "ACTIVE TEST" screen.
4. Make sure cornering lamp RH and cornering lamp LH operate.



Without CONSULT-II

GO TO 3.

OK or NG

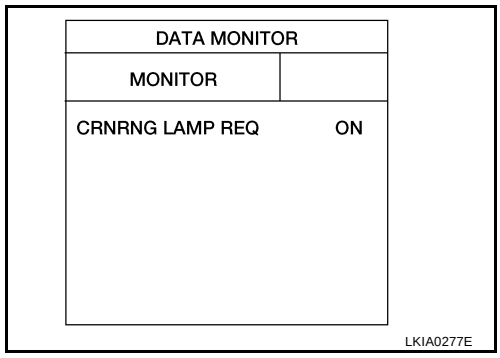
OK >> GO TO 2.
NG >> GO TO 3.

2. CHECK COMBINATION SWITCH INPUT SIGNAL

Select "IPDM E/R" on CONSULT-II, and select "DATA MONITOR" on "SELECT DIAG MODE" screen. Make sure "CRNRNG LMP REQ" turns ON-OFF linked with operation of lighting switch.

When lighting switch is in TURN RH position : CRNRNG LMP REQ ON

When lighting switch is in TURN LH position : CRNRNG LMP REQ ON



OK or NG

OK >> Replace IPDM E/R. Refer to PG-31, "Removal and Installation of IPDM E/R" .
NG >> Replace BCM. Refer to BCS-25, "BCM" .

3. CHECK BULB

Check bulb standard of each cornering lamp is correct. Refer to LT-162, "Exterior Lamp" .

OK or NG

OK >> GO TO 4.
NG >> Replace cornering lamp bulb.

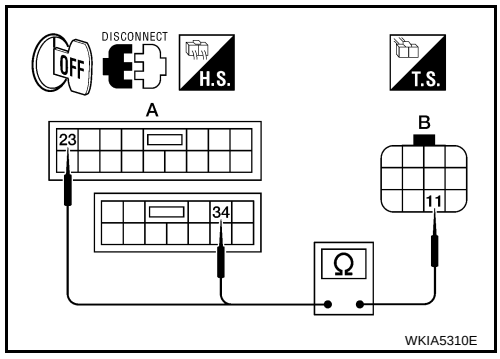
4. CHECK CORNERING LAMPS CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connectors and front combination lamp LH and RH connectors.
3. Check continuity between IPDM E/R connector E122 (A) terminal 23 and front combination lamp RH connector E107 (B) terminal 11.

11 - 23 : Continuity should exist.

4. Check continuity between IPDM E/R connector E124 (A) terminal 34 and front combination lamp LH connector E11 (B) terminal 11.

11 - 34 : Continuity should exist.



OK or NG

OK >> GO TO 5.
NG >> Repair harness or connector.

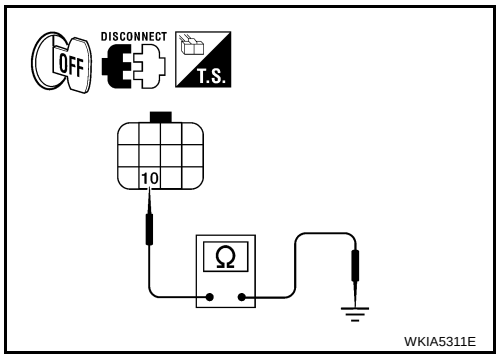
5. CHECK GROUND

1. Check continuity between front combination lamp LH harness connector E11 terminal 10 and ground.

10 - Ground : Continuity should exist.

2. Check continuity between front combination lamp RH harness connector E107 terminal 10 and ground.

10 - Ground : Continuity should exist.



OK or NG

OK >> GO TO 6.
NG >> Repair harness or connector.

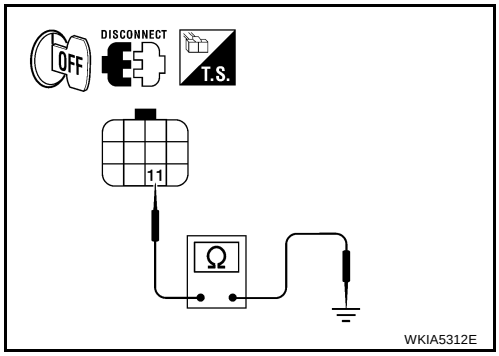
6. CHECK CORNERING LAMPS SHORT CIRCUIT

1. Check continuity (short circuit) between front combination lamp LH harness connector E11 terminal 11 and ground.

11 - Ground : Continuity should not exist.

2. Check continuity (short circuit) between front combination lamp RH harness connector E107 terminal 11 and ground.

11 - Ground : Continuity should not exist.



OK or NG

OK >> Replace IPDM E/R. Refer to PG-31, "Removal and Installation of IPDM E/R" .
NG >> Repair harness or connector.

Removal and Installation

EKS00918

CORNERING LAMP

Refer to LT-36, "Removal and Installation" .

LIGHTING AND TURN SIGNAL SWITCH

PFP:25540

Removal and Installation

EKS00919

Refer to LT-99, "Removal and Installation" .

HAZARD SWITCH

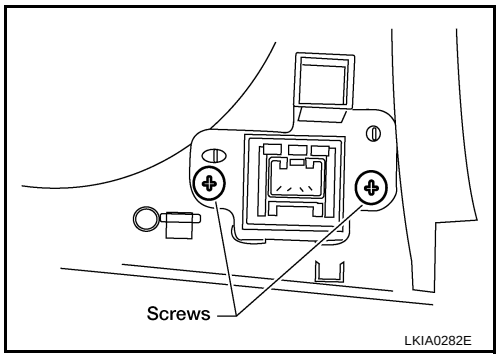
PFP:25290

Removal and Installation

EKS0091A

REMOVAL

1. Remove cluster lid C. Refer to IP-12, "Cluster Lid C" .
2. Remove screws from console finisher and remove the hazard switch.



Installation

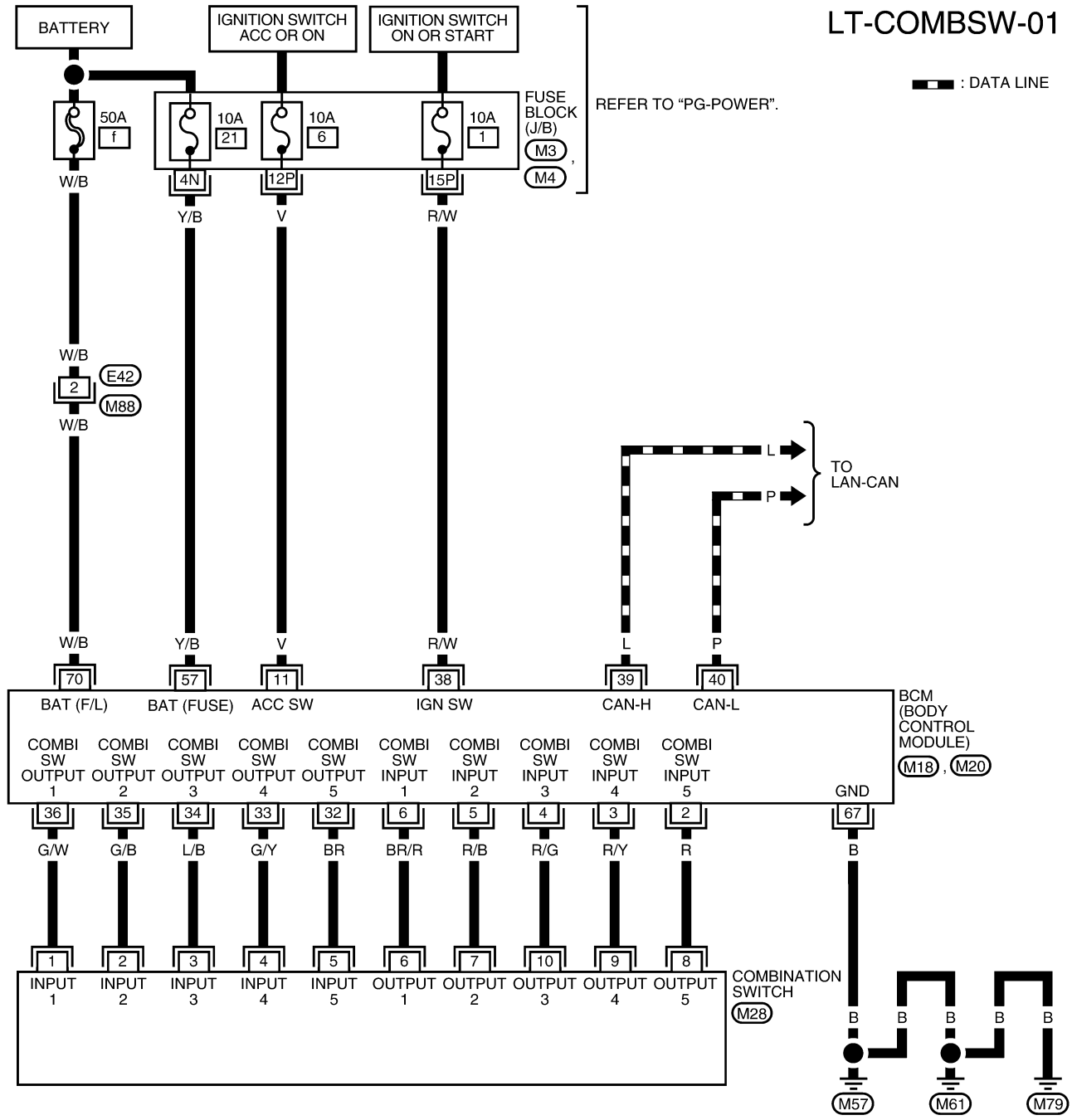
Installation is in the reverse order of removal.

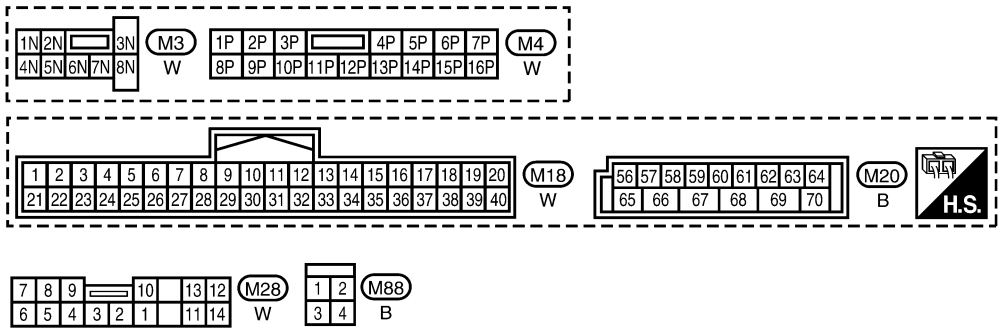
COMBINATION SWITCH

PFP:25567

Wiring Diagram — COMBSW —

EKS0091B





WKWA4872E

Combination Switch Reading Function

EKS0091C

For details, refer to BCS-3, "COMBINATION SWITCH READING FUNCTION" .

CONSULT-II Function (BCM)

EKS0091D

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

BCM diagnostic test item	Diagnostic mode	Description
Inspection by part	WORK SUPPORT	Supports inspections and adjustments. Commands are transmitted to the BCM for setting the status suitable for required operation, input/output signals are received from the BCM and received data is displayed.
	DATA MONITOR	Displays BCM input/output data in real time.
	ACTIVE TEST	Operation of electrical loads can be checked by sending drive signal to them.
	SELF-DIAG RESULTS	Displays BCM self-diagnosis results.
	CAN DIAG SUPPORT MNTR	The result of transmit/receive diagnosis of CAN communication can be read.
	ECU PART NUMBER	BCM part number can be read.
	CONFIGURATION	Performs BCM configuration read/write functions.

CONSULT-II START PROCEDURE

Refer to GI-37, "CONSULT-II Start Procedure" .

DATA MONITOR

Operation Procedure

1. Touch "COMB SW" on "SELECT TEST ITEM" screen.
2. Touch "DATA MONITOR" on "SELECT DIAG MODE" screen.
3. Touch either "ALL SIGNALS" or "SELECTION FROM MENU" on "SELECT MONITOR ITEM" screen.

ALL SIGNALS	Monitors all the signals.
SELECTION FROM MENU	Selects and monitors individual signal.

4. Touch "START".
5. When "SELECTION FROM MENU" is selected, touch items to be monitored. When "ALL SIGNALS" is selected, all the signals will be monitored.
6. Touch "RECORD" while monitoring, then the status of the monitored item can be recorded. To stop recording, touch "STOP".

Display Item List

Monitor item name “OPERATION OR UNIT”		Contents
TURN SIGNAL R	"ON/OFF"	Displays "Turn Right (ON)/Other (OFF)" status, determined from lighting switch signal.
TURN SIGNAL L	"ON/OFF"	Displays "Turn Left (ON)/Other (OFF)" status, determined from lighting switch signal.
HI BEAM SW	"ON/OFF"	Displays status (high beam switch: ON/Others: OFF) of high beam switch judged from lighting switch signal.
HEAD LAMP SW 1	"ON/OFF"	Displays “Headlamp switch 1 (ON)/Other (OFF)” status, determined from lighting switch signal.
HEAD LAMP SW 2	"ON/OFF"	Displays status (headlamp switch 2: ON/Others: OFF) of headlamp switch 2 judged from lighting switch signal.
LIGHT SW 1ST	"ON/OFF"	Displays status (lighting switch 1st position: ON/Others: OFF) of lighting switch judged from lighting switch signal.
PASSING SW	"ON/OFF"	Displays status (flash-to-pass switch: ON/Others: OFF) of flash-to-pass switch judged from lighting switch signal.
AUTO LIGHT SW	"ON/OFF"	Displays "Auto light switch (ON)/Other (OFF)" status, determined from lighting switch signal.
FR FOG SW	"ON/OFF"	Displays "Front fog lamp switch (ON)/Other (OFF)" status, determined from lighting switch signal.
FR WIPER HI	"ON/OFF"	Displays "Front Wiper HI (ON)/Other (OFF)" status, determined from wiper switch signal.
FR WIPER LOW	"ON/OFF"	Displays "Front Wiper LOW (ON)/Other (OFF)" status, determined from wiper switch signal.

Monitor item name “OPERATION OR UNIT”		Contents
FR WIPER INT	"ON/OFF"	Displays "Front Wiper INT (ON)/Other (OFF)" status, determined from wiper switch signal.
FR WASHER SW	"ON/OFF"	Displays "Front Washer Switch (ON)/Other (OFF)" status, determined from wiper switch signal.
INT VOLUME	[1 - 7]	Displays intermittent operation knob setting (1 - 7), determined from wiper switch signal.

Combination Switch Inspection

EKS0091E

1. SYSTEM CHECK

Referring to table below, check to which system the malfunctioning switch belongs.

System 1	System 2	System 3	System 4	System 5
—	FR WASHER	FR WIPER LO	TURN LH	TURN RH
FR WIPER HI	—	FR WIPER INT	PASSING	HEAD LAMP1
INT VOLUME 1	—	—	HEAD LAMP2	HI BEAM
—	INT VOLUME 3	AUTO LIGHT	—	TAIL LAMP
INT VOLUME 2	—	—	FR FOG	—

>> GO TO 2.

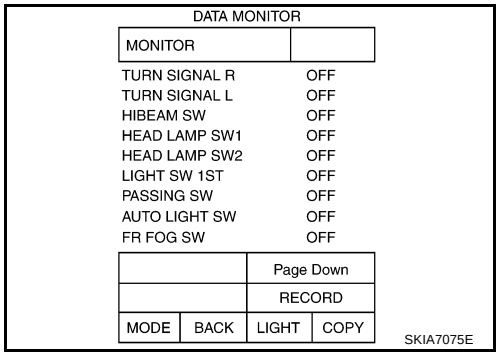
2. SYSTEM CHECK

With CONSULT-II

CAUTION:

If CONSULT-II is used with no connection of CONSULT-II CONVERTER, malfunctions might be detected in self-diagnosis depending on control unit which carries out CAN communication.

1. Connect CONSULT-II and select "COMB SW" on "SELECT TEST ITEM" screen.
2. Select "DATA MONITOR".
3. Select "START" and confirm that other switches in malfunctioning system operate normally.
   Example: When auto light switch is malfunctioning, confirm that "FRONT WIPER LOW" and "FRONT WIPER INT" in System 3, to which the auto light switch belongs, turn ON-OFF normally.



Without CONSULT-II

Operate combination switch and confirm that other switches in malfunctioning system operate normally.
Example: When auto light switch is malfunctioning, confirm that "FRONT WIPER LOW" and "FRONT WIPER INT" in System 3, to which the auto light switch belongs, operate normally.

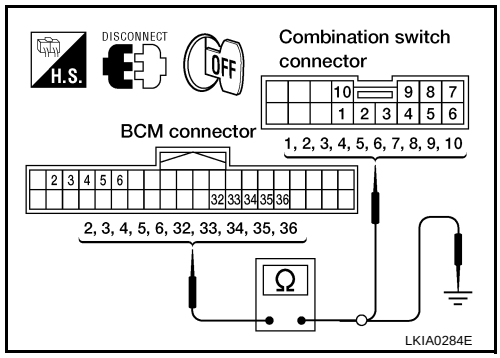
Check results

Other switches in malfunctioning system operate normally.>> Replace lighting switch or wiper switch.
Other switches in malfunctioning system do not operate normally.>> GO TO 3.

3. HARNESS INSPECTION

1. Turn ignition switch OFF.
2. Disconnect BCM and combination switch connectors.
3. Check for continuity between BCM harness connector of the suspect system and the corresponding combination switch connector terminals.

Suspect system	BCM			Combination switch		Continuity
	Connector	Terminal		Connector	Terminal	
1	M18	Input 1	6	M28	6	Yes
		Output 1	36		1	
2		Input 2	5		7	
		Output 2	35		2	
3		Input 3	4		10	
		Output 3	34		3	
4		Input 4	3		9	
		Output 4	33		4	
5		Input 5	2		8	
		Output 5	32		5	



4. Check for continuity between each terminal of BCM harness connector in suspect malfunctioning system and ground.

Suspect system	BCM				Continuity
	Connector	Terminal			
1	M18	Input 1	6	Ground	No
		Output 1	36		
2		Input 2	5		
		Output 2	35		
3		Input 3	4		
		Output 3	34		
4		Input 4	3		
		Output 4	33		
5		Input 5	2		
		Output 5	32		

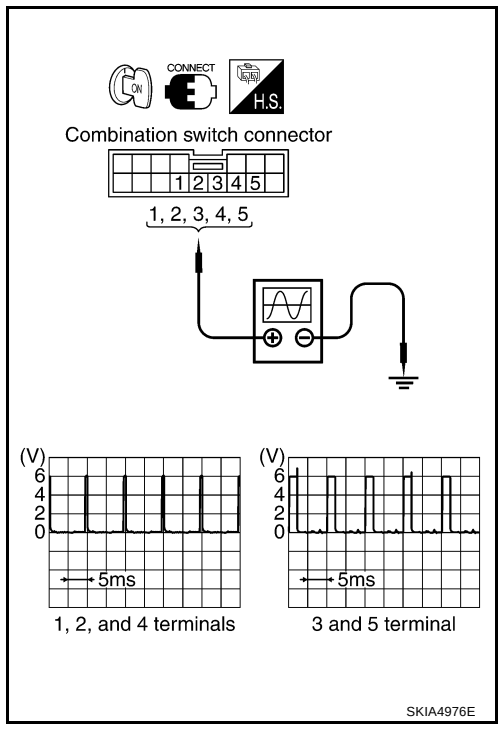
OK or NG

OK >> GO TO 4.
NG >> Check harness between BCM and combination switch for open or short circuit.

4. BCM OUTPUT TERMINAL INSPECTION

1. Turn lighting switch and wiper switch to OFF.
2. Set wiper dial to position 4.
3. Connect BCM and combination switch connectors.
4. Turn ignition switch ON, and check combination switch input (BCM output) terminal voltage waveform of suspect malfunctioning system.

Suspect system	Combination switch		
	(+)		
	Connector	Terminal	
1	M28	Input 1	1
2		Input 2	2
3		Input 3	3
4		Input 4	4
5		Input 5	5



OK or NG

OK >> Open circuit in combination switch, GO TO 5.
NG >> Replace BCM. Refer to BCS-25, "BCM" .

5. COMBINATION SWITCH INSPECTION

Referring to table below, perform combination switch inspection.

Procedure									
1	2		3	4		5	6		7
Replace lighting switch.	Confirm check results.	OK	INSPECTION END	Confirm check results.	OK	INSPECTION END	Confirm check results.	OK	INSPECTION END
		NG	Replace wiper switch.		NG	Replace switch base.		NG	Confirm symptom again.

>> Inspection End.

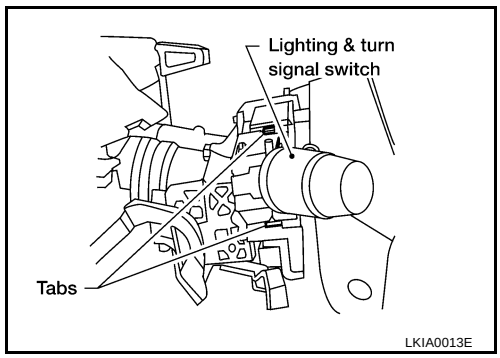
Removal and Installation

EKS0091F

COMBINATION SWITCH

Removal

1. Remove steering column cover.
2. While pressing tabs, pull lighting and turn signal switch towards driver door.
3. Remove combination switch.



Installation

Installation is in the reverse order of removal.

Switch Circuit Inspection

EKS0091G

Refer to LT-104, "Combination Switch Inspection" .

STOP LAMP

PFP:26550

System Description

EKS0091H

Power is supplied at all times

- through 10A fuse [No. 20, located in fuse block (J/B)]
- to stop lamp switch terminal 1.

When the brake pedal is pressed, the stop lamp switch is closed and power is supplied

- through stop lamp switch terminal 2
- to rear combination lamp LH and RH terminal 1 and
- to high-mounted stop lamp terminal 1.

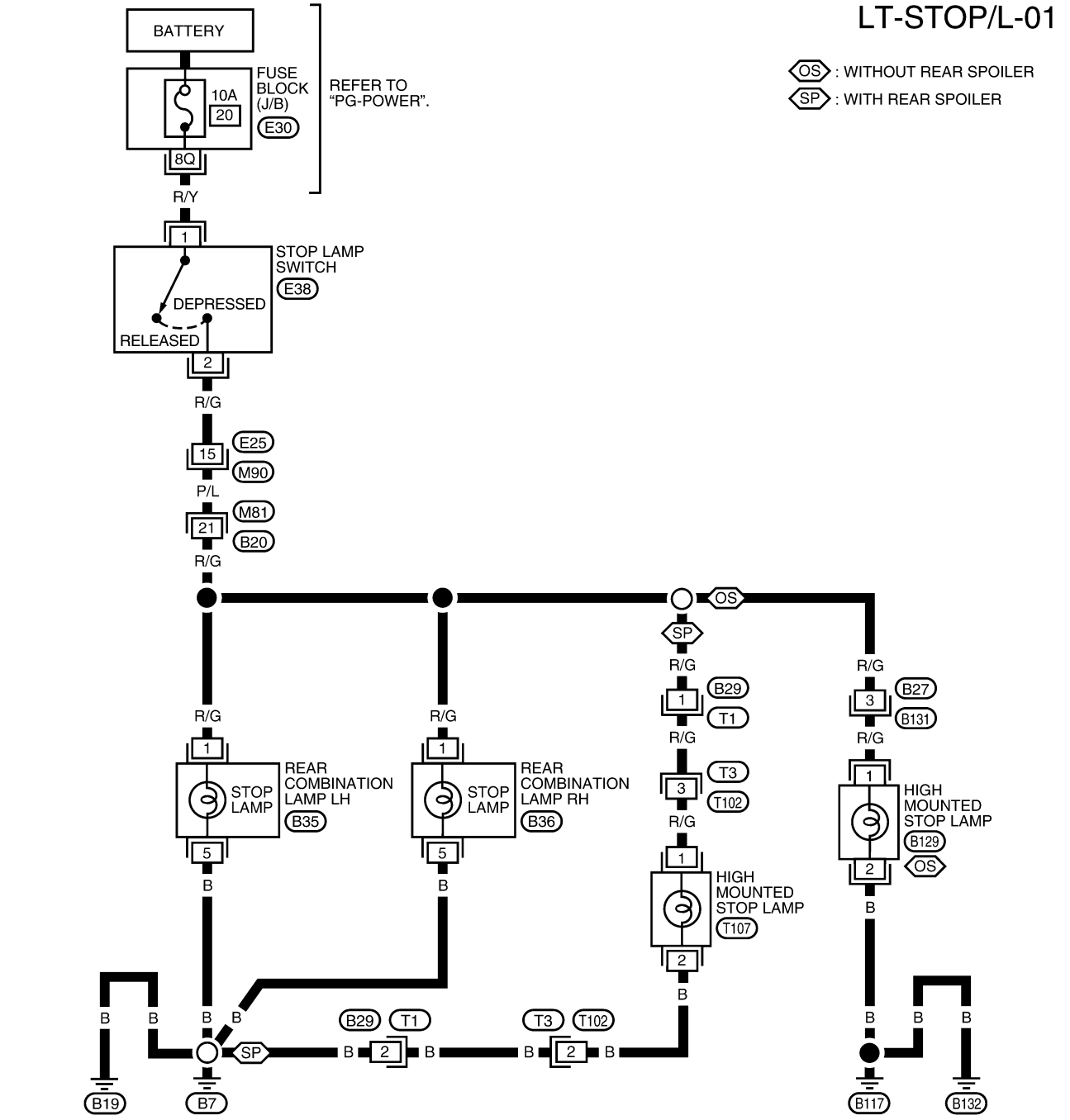
Ground is supplied

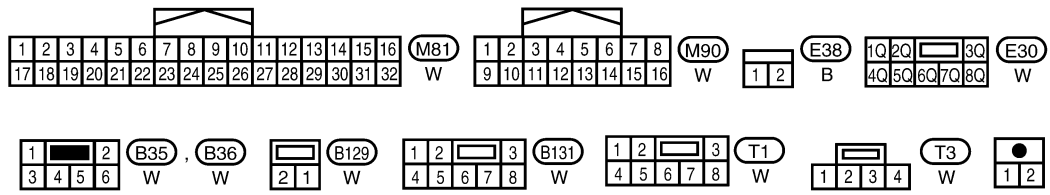
- to rear combination lamp LH and RH terminal 5
- through grounds B7 and B19, and
- to high-mounted stop lamp terminal 2
- through grounds B117 and B132 (without rear spoiler).
- through grounds B7 and B19 (with rear spoiler).

With power and ground supplied, the stop lamps illuminate.

Wiring Diagram — STOP/L —

EKS0091I





WKWA4873E

Bulb Replacement

EKS0091J

HIGH MOUNTED STOP LAMP

Refer to EI-36, "Removal and Installation" .

STOP LAMP

Refer to LT-125, "Bulb Replacement" .

Removal and Installation

EKS00GA0

STOP LAMP

Refer to LT-125, "Removal and Installation"

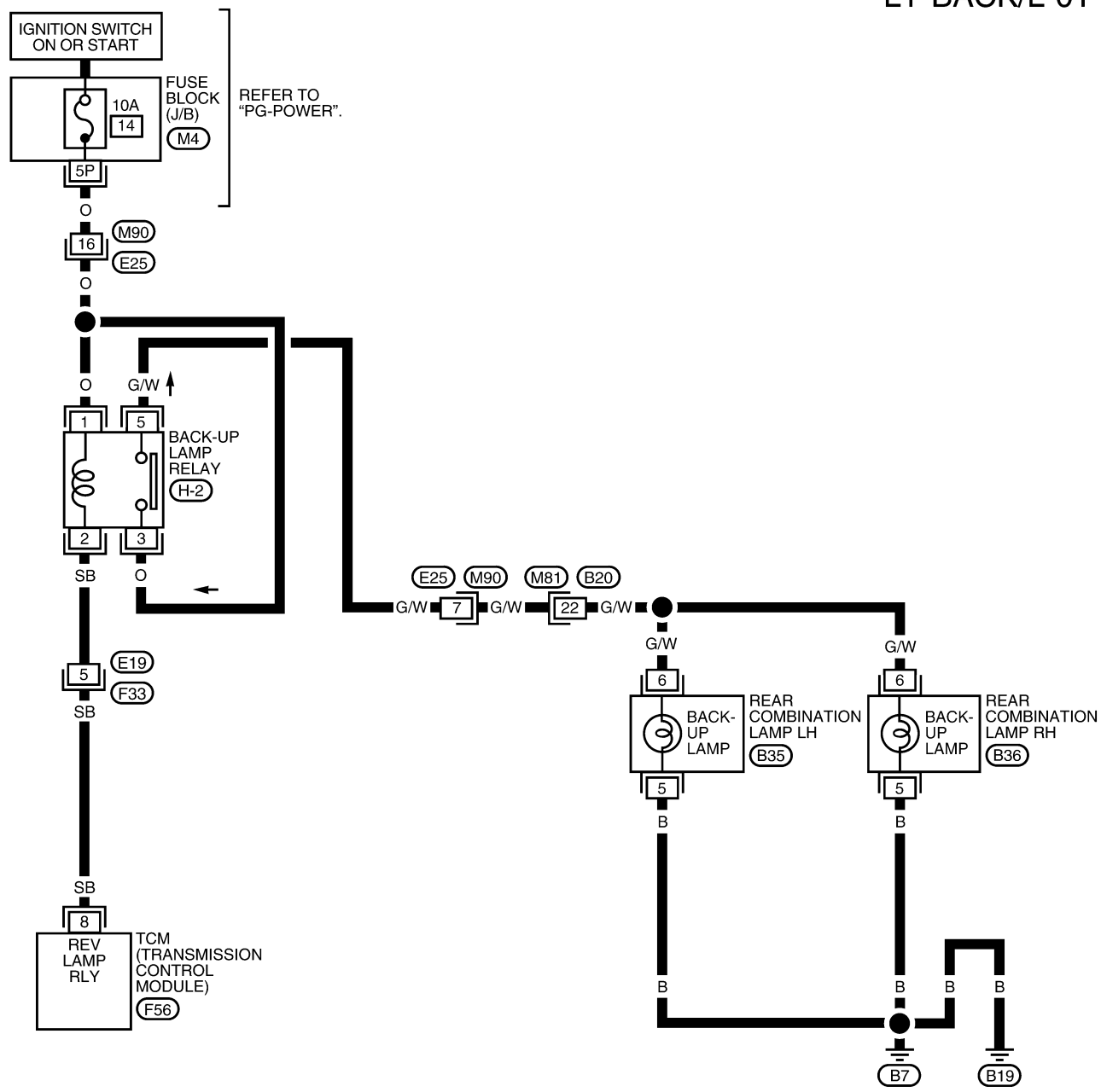
BACK-UP LAMP

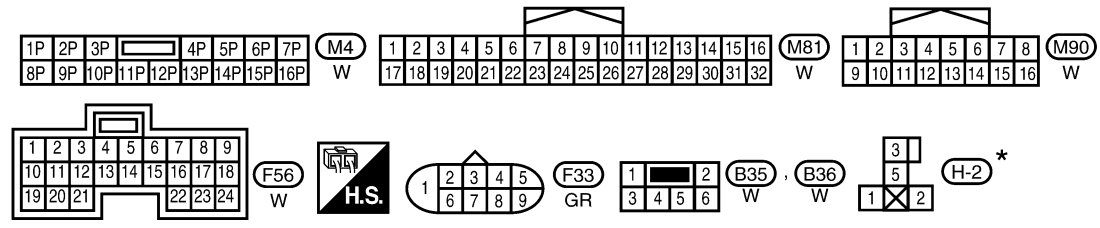
PFP:26550

Wiring Diagram — BACK/L —

EKS0091L

LT-BACK/L-01





*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT" OF PG SECTION.

WKWA4874E

Bulb Replacement

EKS0091M

BACK-UP LAMP

Refer to LT-125, "Bulb Replacement" .

Removal and Installation

EKS0091N

BACK-UP LAMP

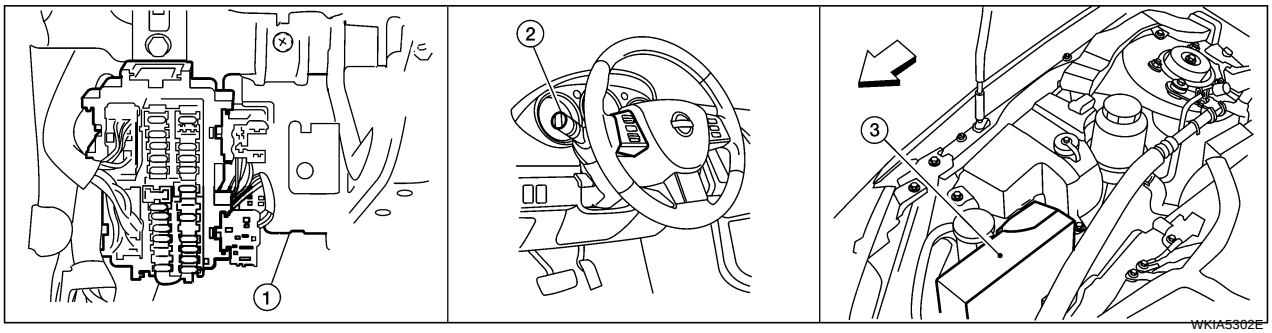
Refer to LT-125, "Removal and Installation" .

PARKING, LICENSE PLATE AND TAIL LAMPS

PFP:26550

Component Parts and Harness Connector Location

EKS0091O



1. BCM M18 and M20 (View with instrument panel removed)
2. Combination switch (lighting switch) M28
3. IPDM E/R E121, E122 and E124

System Description

EKS0091P

Control of the parking, license plate, and tail lamp operation is dependent upon the position of the lighting switch (combination switch). When the lighting switch is placed in the 1ST position, the BCM (body control module) receives input signal requesting the parking, license plate, side marker and tail lamps to illuminate. This input signal is communicated to the IPDM E/R (intelligent power distribution module engine room) across the CAN communication lines. The CPU (central processing unit) of the IPDM E/R controls the tail lamp relay. This relay, when energized, directs power to the parking, license plate, rear side marker and tail lamps, which then illuminate.

Power is supplied at all times

- to ignition relay, located in the IPDM E/R, and
- through 15A fuse (No. 41, located in the IPDM E/R)
- to tail lamp relay, located in the IPDM E/R, and
- to CPU of the IPDM E/R, and
- through 15A fuse (No. 34 located in the IPDM E/R)
- to CPU of the IPDM E/R, and
- through 50A fusible link (letter **f** , located in the fuse and fusible link box)
- to BCM terminal 70, and
- through 10A fuse [No. 21, located in the fuse block (J/B)]
- to BCM terminal 57.

With the ignition switch in the ON or START position, power is supplied

- to ignition relay, located in the IPDM E/R, and
- through 10A fuse [No. 1, located in the fuse block (J/B)]
- to BCM terminal 38.

With the ignition switch in the ACC or ON position, power is supplied

- through 10A fuse [No. 6, located in the fuse block (J/B)]
- to BCM terminal 11.

Ground is supplied

- to BCM terminal 67
- through grounds M57, M61 and M79, and
- to IPDM E/R terminals 38 and 60
- through grounds E15 and E24.

OPERATION BY LIGHTING SWITCH

With the lighting switch in the 1ST or 2ND position (or if the auto light system is activated), the BCM receives input signal requesting the parking, license plate, side marker and tail lamps to illuminate. This input signal is communicated to the IPDM E/R across the CAN communication lines. The CPU of the IPDM E/R controls the tail lamp relay coil, which when energized, directs power

- through IPDM E/R terminal 22
- to front combination lamp LH terminal 9
- to front combination lamp RH terminal 6
- to license plate lamp LH and RH terminal 1, and
- to rear combination lamp LH and RH terminal 2.

Ground is supplied

- to front combination lamp LH and RH terminal 10
- through grounds E15 and E24, and
- to license plate lamp LH and RH terminal 2
- to rear combination lamp LH and RH terminal 5
- through grounds B7 and B19

With power and ground supplied, the parking, license plate, rear side marker and tail lamps illuminate.

COMBINATION SWITCH READING FUNCTION

Refer to BCS-3, "COMBINATION SWITCH READING FUNCTION" .

EXTERIOR LAMP BATTERY SAVER CONTROL

When the combination switch (lighting switch) is in the 1ST (or 2ND) position and the ignition switch is turned from ON or ACC to OFF, the battery saver control feature is activated.
Under this condition, the parking, license, side marker and tail lamps remain illuminated for 5 minutes, then the parking, license plate, side marker and tail lamps are turned off.
Exterior lamp battery saver control mode can be changed by the function setting of CONSULT-II.

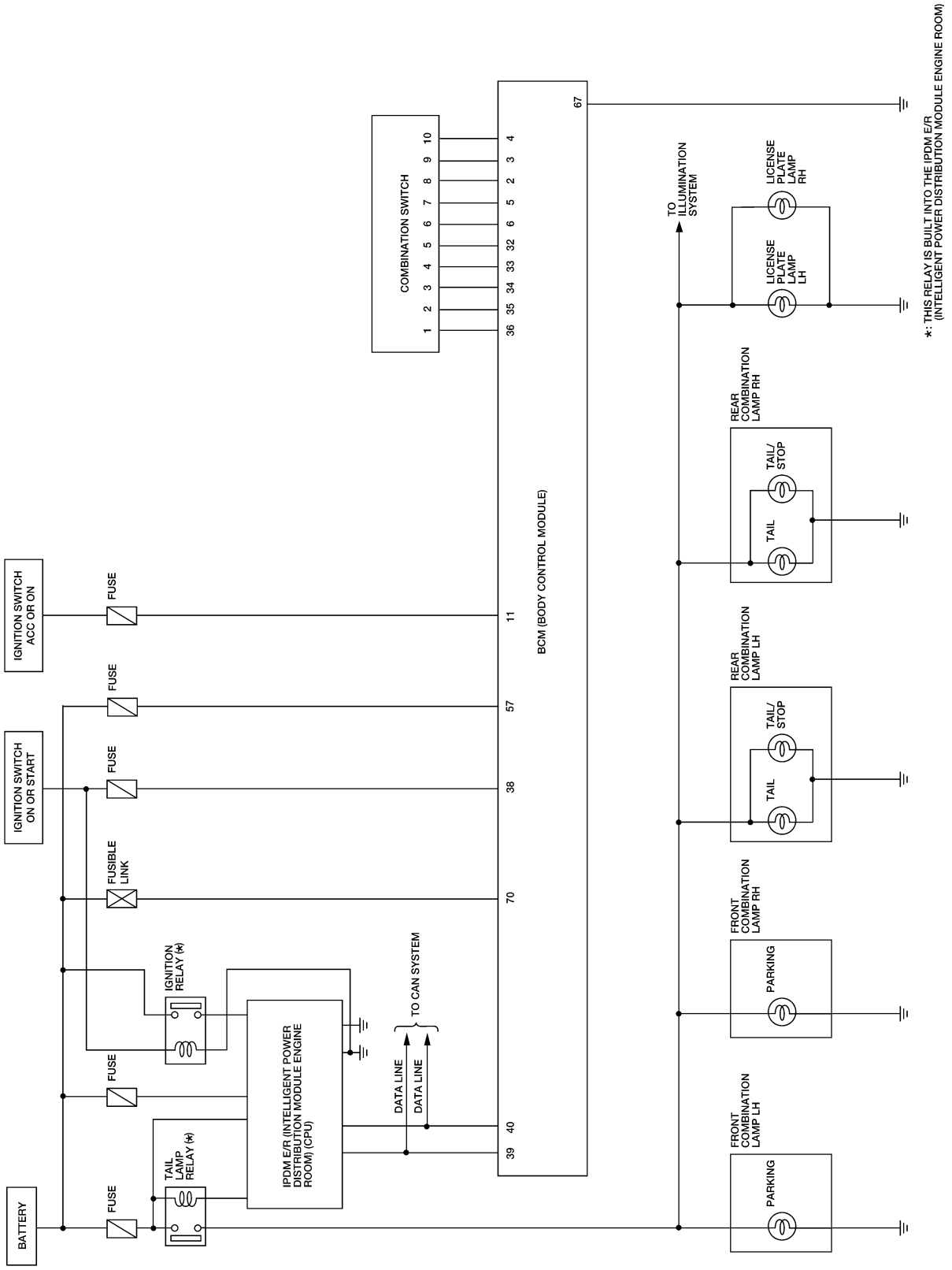
CAN Communication System Description

EKS0091Q

Refer to LAN-4, "SYSTEM DESCRIPTION" .

Schematic

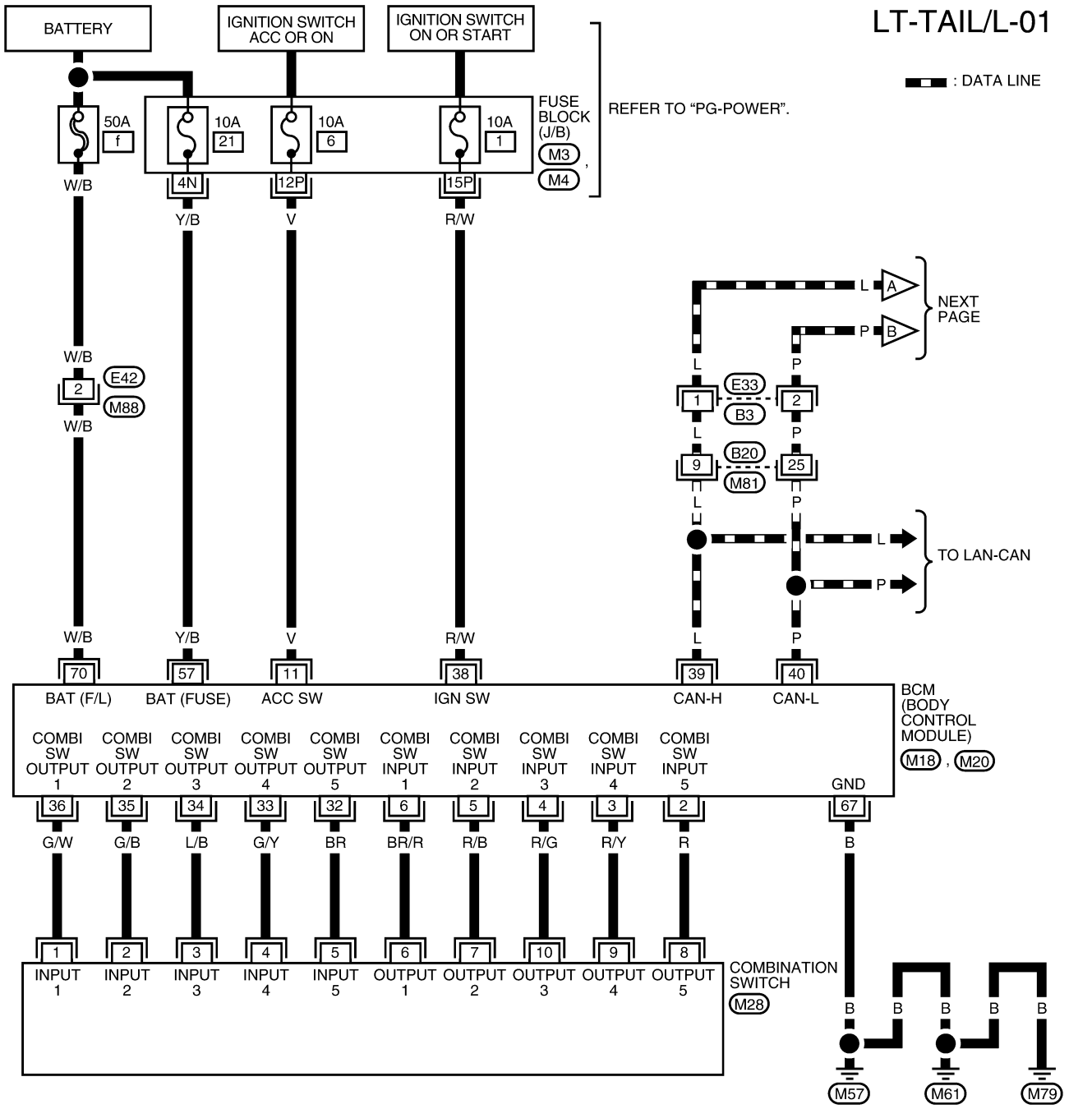
EKS0091R

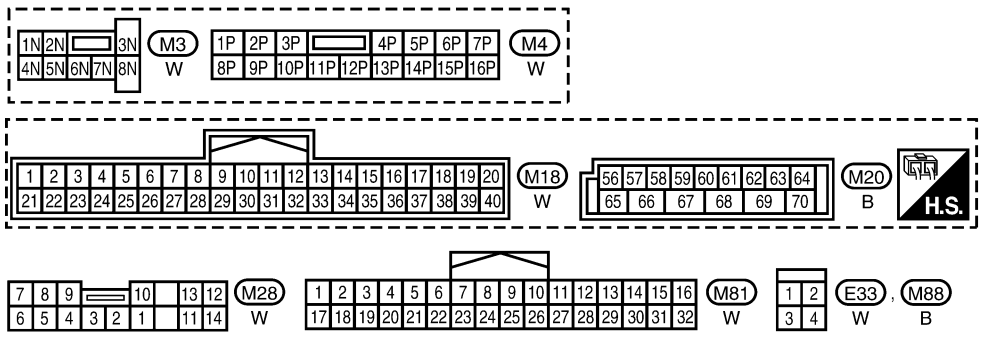


WKWA4875E

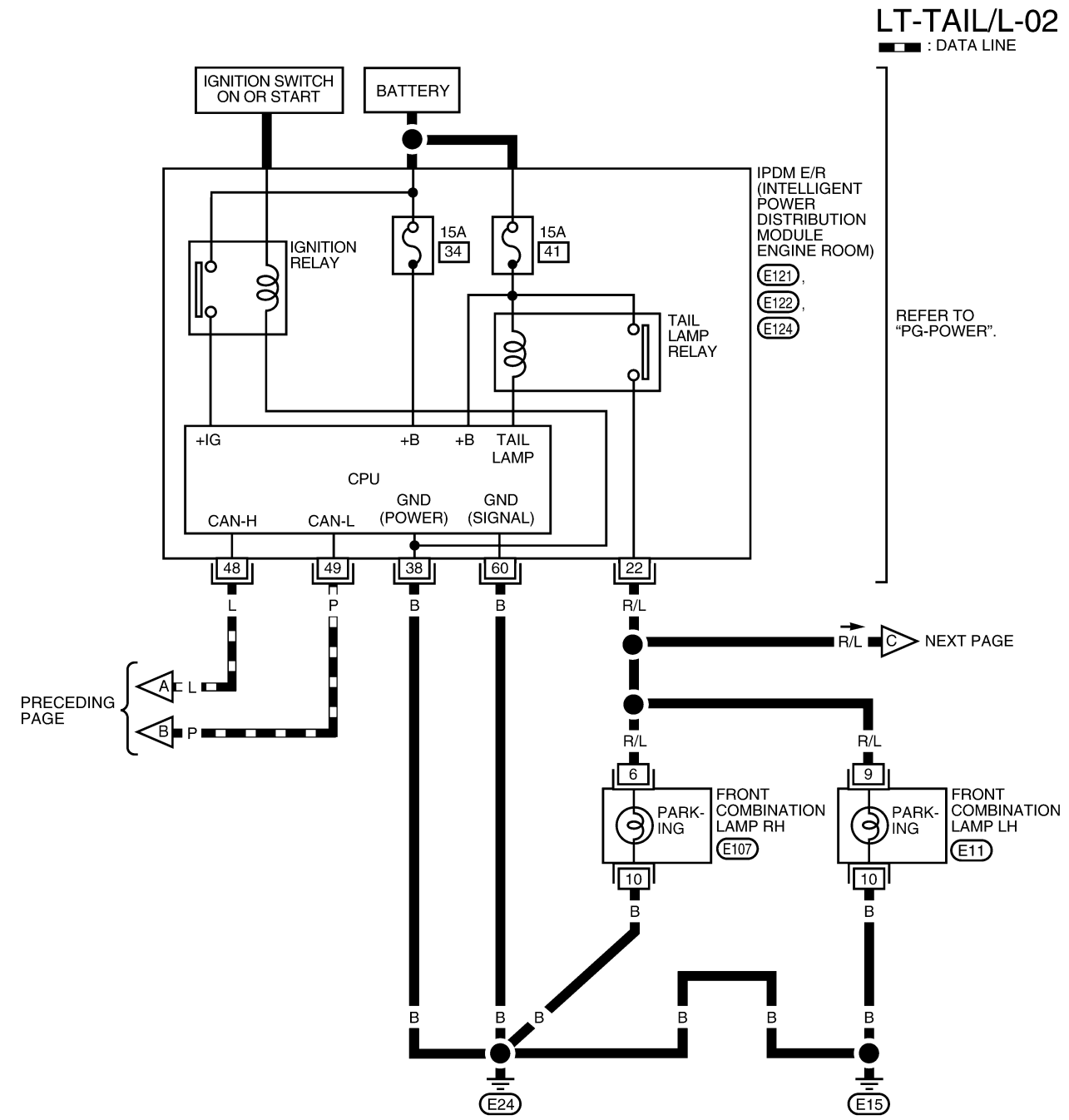
Wiring Diagram — TAIL/L —

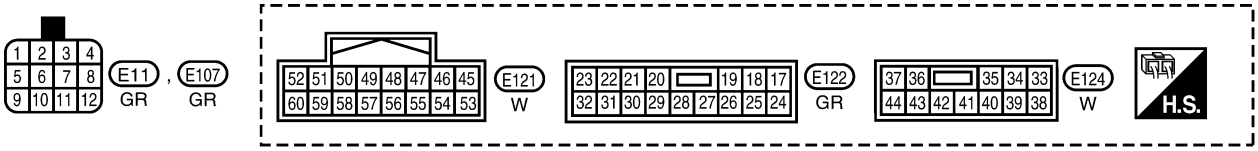
EKS0091S



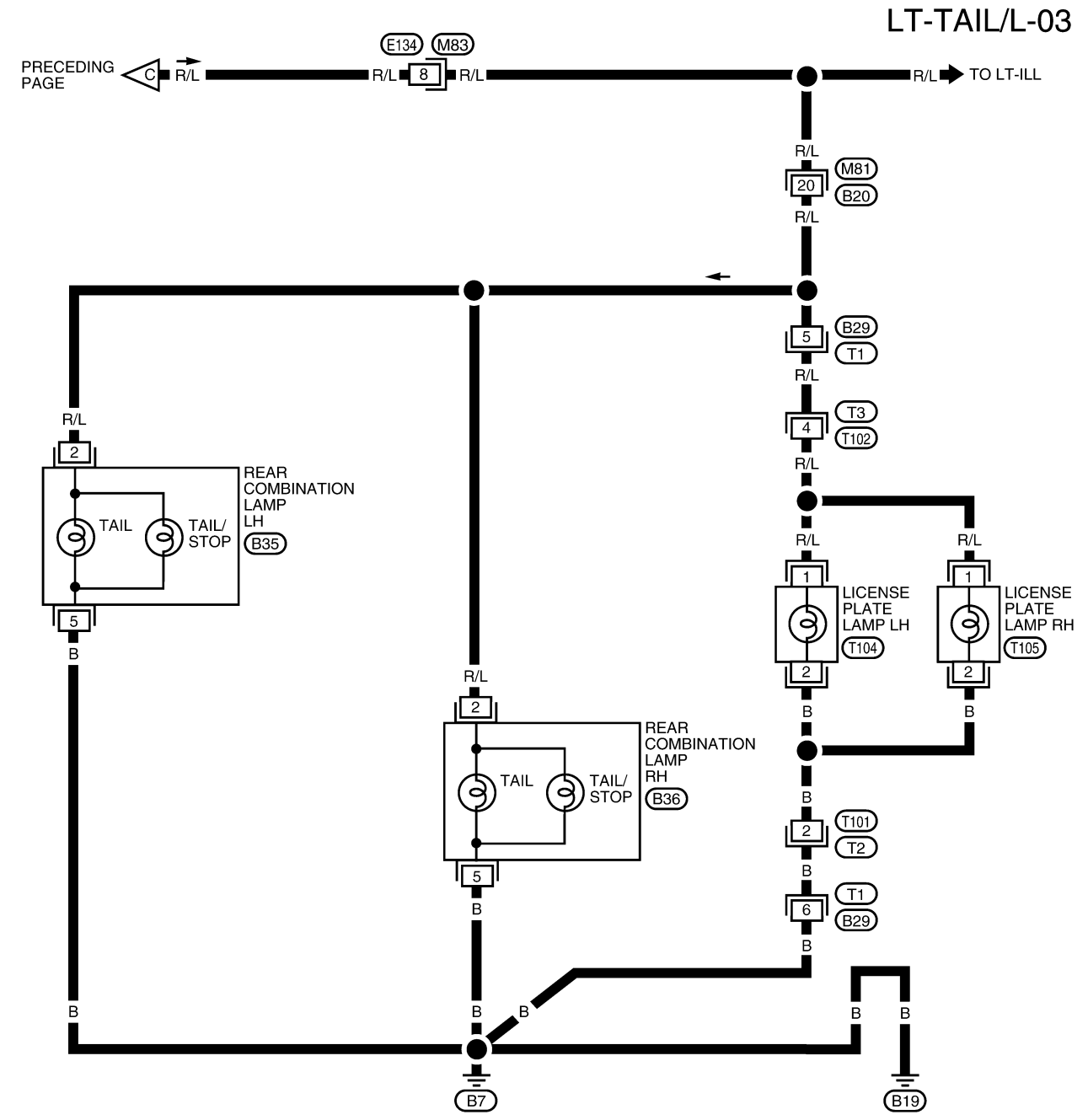


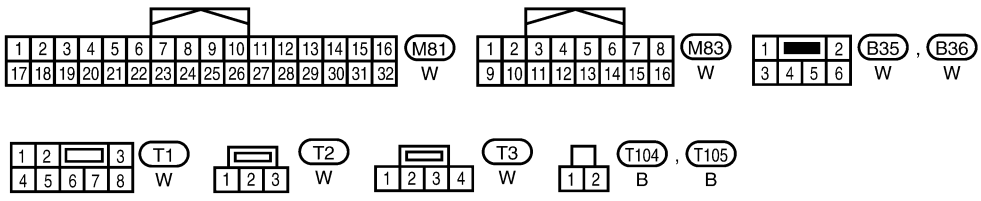
WKWA4876E


LT-TAIL/L-02
: DATA LINE
IGNITION SWITCH ON OR START
BATTERY
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
E121, E122, E124
REFER TO "PG-POWER".
IGNITION RELAY
15A 34
15A 41
TAIL LAMP RELAY
+IG
+B
+B
TAIL LAMP
CPU
GND (POWER)
GND (SIGNAL)
CAN-H
CAN-L
48
49
38
60
22
L
P
B
B
R/L
R/L C NEXT PAGE
PRECEDING PAGE
A L
B P
R/L
R/L
6
9
PARK-ING
FRONT COMBINATION LAMP RH
E107
PARK-ING
FRONT COMBINATION LAMP LH
E11
10
10
B
B
B B B B B B
E24
E15


1 2 3 4
5 6 7 8
9 10 11 12
E11 GR , E107 GR
52 51 50 49 48 47 46 45
60 59 58 57 56 55 54 53
E121 W
23 22 21 20 19 18 17
32 31 30 29 28 27 26 25 24
E122 GR
37 36 35 34 33
44 43 42 41 40 39 38
E124 W
H.S.

WKWA4877E


LT-TAIL/L-03
PRECEDING PAGE
C
R/L
E134
M83
8
TO LT-ILL
M81
20
B20
B29
5
T1
T3
4
T102
REAR COMBINATION LAMP LH
TAIL
TAIL/ STOP
B35
REAR COMBINATION LAMP RH
B36
LICENSE PLATE LAMP LH
T104
LICENSE PLATE LAMP RH
T105
T101
T2
6
B7
B19


M81 W
M83 W
B35 , B36 W W
T1 W
T2 W
T3 W
T104 , T105 B B

WKWA4878E

Terminals and Reference Values for BCM

EKS0091T

Refer to BCS-12, "Terminals and Reference Values for BCM" .

Terminals and Reference Values for IPDM E/R

EKS0091U

Refer to PG-26, "Terminals and Reference Values for IPDM E/R" .

How to Proceed With Trouble Diagnosis

EKS0091V

1. Confirm the symptom or customer complaint.
2. Understand operation description and function description. Refer to LT-113, "System Description" .
3. Carry out the Preliminary Check. Refer to LT-119, "Preliminary Check" .
4. Check symptom and repair or replace the cause of malfunction.
5. Do the parking, license plate, rear marker and tail lamps operate normally? If YES: GO TO 6. If NO: GO TO 4.
6. Inspection End.

Preliminary Check

EKS0091W

CHECK POWER SUPPLY AND GROUND CIRCUIT

Refer to BCS-15, "BCM Power Supply and Ground Circuit Check" .

CONSULT-II Functions

EKS0091X

Refer to LT-19, "CONSULT-II Function (BCM)" in HEADLAMP (FOR USA).
Refer to LT-21, "CONSULT-II Function (IPDM E/R)" in HEADLAMP (FOR USA).

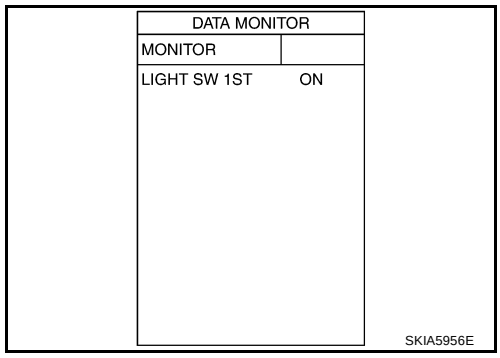
Parking, License Plate and/or Tail Lamps Do Not Illuminate

EKS0091Y

1. CHECK COMBINATION SWITCH INPUT SIGNAL

With CONSULT-II
Select "BCM" on CONSULT-II. With "HEAD LAMP" data monitor, make sure "LIGHT SW 1ST" turns ON-OFF linked with operation of lighting switch.

When lighting switch is in 1ST position : LIGHT SW 1ST ON



Without CONSULT-II
Refer to LT-104, "Combination Switch Inspection" .

OK or NG

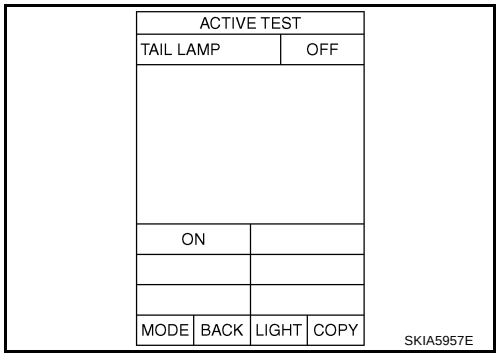
OK >> GO TO 2.
NG >> Check lighting switch. Refer to LT-104, "Combination Switch Inspection" .

2. ACTIVE TEST

With CONSULT-II

1. Select "IPDM E/R" on CONSULT-II, and select "ACTIVE TEST" on "SELECT DIAG MODE" screen.
2. Select "TAIL LAMP" on "SELECT TEST ITEM" screen.
3. Touch "ON" on "ACTIVE TEST" screen.
4. Verify parking, license plate, side marker and tail lamp operation.

Parking, license plate, side marker and tail lamp should operate



Without CONSULT-II

1. Start auto active test. Refer to PG-22, "Auto Active Test" .
2. Verify parking, license plate, side marker and tail lamp operation.

Parking, license plate, side marker and tail lamp should operate

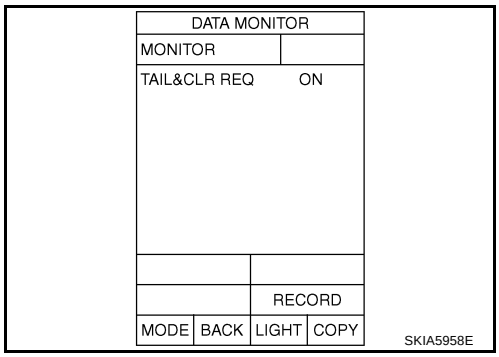
OK or NG

OK >> GO TO 3.
NG >> GO TO 4.

3. CHECK IPDM E/R

1. Select "IPDM E/R" on CONSULT-II, and select "DATA MONITOR" on "SELECT DIAG MODE" screen.
2. Verify "TAIL&CLR REQ" turns ON when lighting switch is in 1ST position.

When lighting switch is in 1ST position : TAIL&CLR REQ ON



OK or NG

OK >> Replace IPDM E/R. Refer to PG-31, "Removal and Installation of IPDM E/R" .
NG >> Replace BCM. Refer to BCS-25, "BCM" .

4. CHECK INPUT SIGNAL

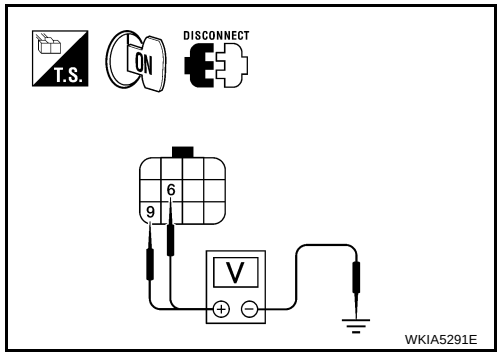
With CONSULT-II

1. Turn ignition switch OFF.
2. Disconnect front combination lamp, license plate lamp and rear combination lamp connectors.
3. Turn ignition switch ON.
4. Select "IPDM E/R" on CONSULT-II, and select "ACTIVE TEST" on "SELECT DIAG MODE" screen.
5. Select "TAIL LAMP" on "SELECT TEST ITEM" screen.
6. Touch "ON" on "ACTIVE TEST" screen.
7. When tail lamp is operating, check voltage between front combination lamp, license plate lamp, rear combination lamp harness connectors and ground.

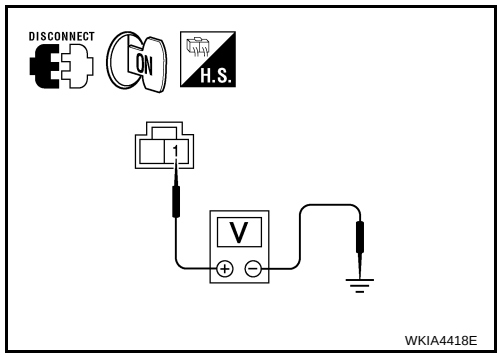
Without CONSULT-II

1. Turn ignition switch OFF.
2. Disconnect front combination lamp, license plate lamp and rear combination lamp connectors.
3. Start auto active test. Refer to PG-22, "Auto Active Test" .
4. When tail lamp is operating, check voltage between front combination lamp, license plate lamp, rear combination lamp harness connectors and ground.

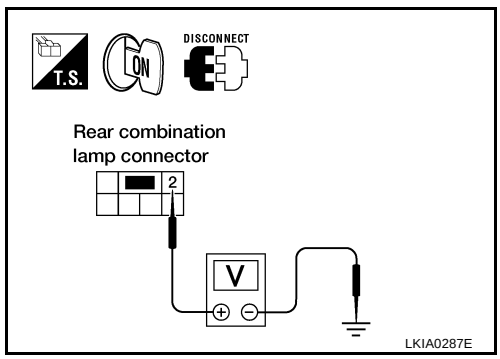
Front combination lamp			(–)	Voltage
(+)				
Connector		Terminal		
RH	E107	6	Ground	Battery voltage
LH	E11	9		



License plate lamp			(–)	Voltage
(+)				
Connector		Terminal		
RH	T105	1	Ground	Battery voltage
LH	T104			



Rear combination lamp (tail and side marker)			(–)	Voltage
(+)				
Connector		Terminal		
RH	B36	2	Ground	Battery voltage
LH	B35			



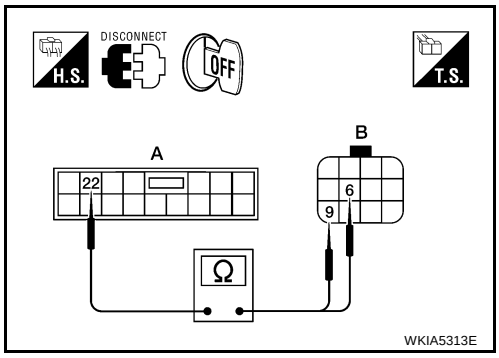
OK or NG

OK >> GO TO 6.
NG >> GO TO 5.

5. CHECK PARKING, LICENSE PLATE, SIDE MARKER AND TAIL LAMP CIRCUIT

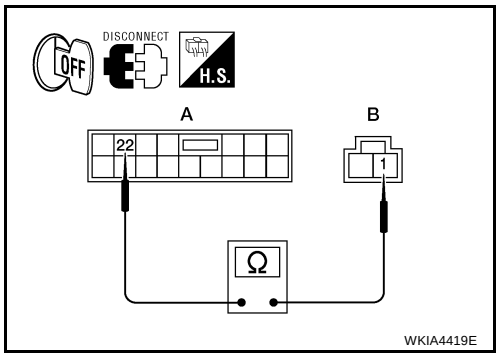
1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connector.
3. Check continuity between IPDM E/R (A) connector and front combination lamp (B) connector.

A		B			Continuity
Connector	Terminal	Connector		Terminal	
E122	22	RH	E107	6	Yes
		LH	E11	9	



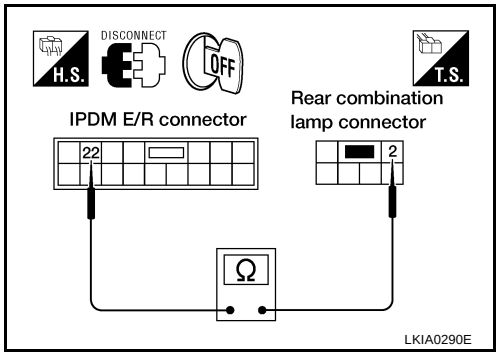
4. Check continuity between IPDM E/R harness connector and license plate lamp harness connector.

A		B			Continuity
IPDM E/R connector	Terminal	License plate lamp connector		Terminal	
E122	22	RH	T105	1	Yes
		LH	T104		



5. Check continuity between IPDM E/R harness connector and rear combination lamp harness connector.

IPDM E/R		Rear combination lamp			Continuity
Connector	Terminal	Connector		Terminal	
E122	22	RH	B36	2	Yes
		LH	B35		



OK or NG

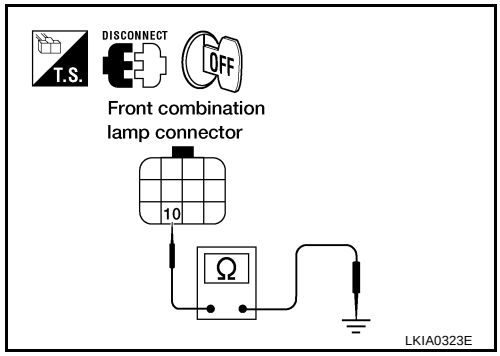
OK >> Replace IPDM E/R. Refer to PG-31, "Removal and Installation of IPDM E/R" .

NG >> Repair harness or connector.

6. CHECK GROUND

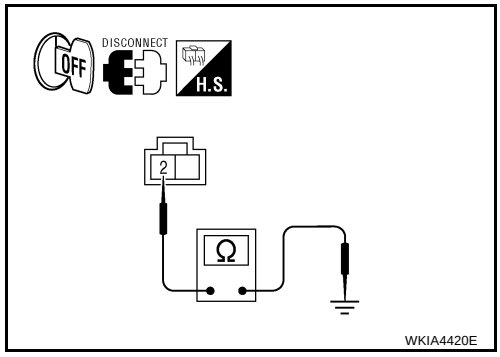
1. Turn ignition switch OFF.
2. Check continuity between front combination lamp harness connector and ground.

Front combination lamp				Continuity
Connector		Terminal		
RH	E107	10	Ground	Yes
LH	E11			



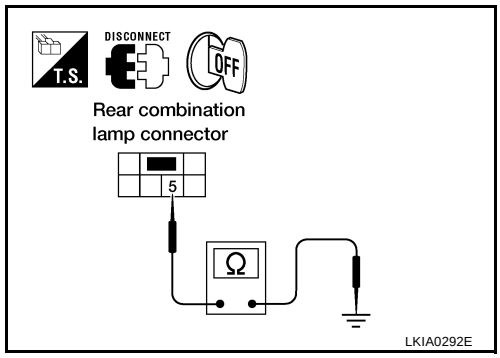
3. Check continuity between license lamp plate harness connector and ground.

License plate lamp				Continuity
Connector		Terminal		
RH	T105	2	Ground	Yes
LH	T104			



4. Check continuity between rear combination lamp harness connector and ground.

Rear combination lamp (tail and side marker)				Continuity
Connector		Terminal		
RH	B36	5	Ground	Yes
LH	B35			



OK or NG

OK >> Check bulbs.
NG >> Repair harness or connector.

Parking, License Plate and Tail Lamps Do Not Turn OFF (After Approx. 10 Minutes)

EKS0091Z

1. CHECK IPDM E/R

1. Turn ignition switch ON. Turn the combination switch (lighting switch) to the OFF position. Turn ignition switch OFF.
2. Verify that the parking, license plate, and tail lamps turn on and off after approximately 10 minutes.

OK or NG

OK >> Ignition relay malfunction. Refer to PG-19, "Function of Detecting Ignition Relay Malfunction" .
NG >> Inspection End.

Bulb Replacement

EKS00920

FRONT PARKING LAMP

Refer to LT-35, "Bulb Replacement" .

TAIL LAMP

Refer to LT-125, "Bulb Replacement" .

Bulb Replacement

EKS00922

REAR SIDE MARKER LAMP

Refer to LT-125, "Bulb Replacement" .

REAR COMBINATION LAMP

PFP:26554

Bulb Replacement

EKS00923

REMOVAL

1. Remove rear combination lamp. Refer to LT-125, "Removal and Installation" .
2. Turn bulb socket counterclockwise and unlock it.
3. Remove bulb.

INSTALLATION

Installation is in the reverse order of removal.

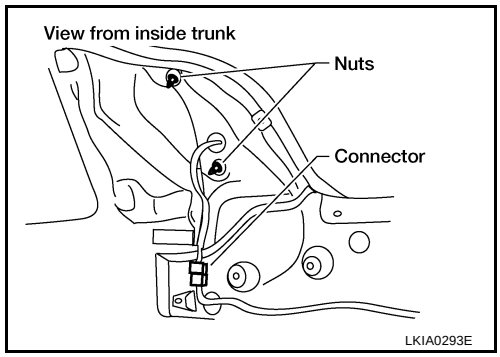
Removal and Installation

EKS00924

REAR COMBINATION LAMP

Removal

1. Position trunk room trim aside. Refer to EI-44, "Removal and Installation" .
2. Disconnect rear combination lamp connector.
3. Remove rear combination lamp mounting nuts.
4. Pull rear combination lamp to remove from the vehicle.



Installation

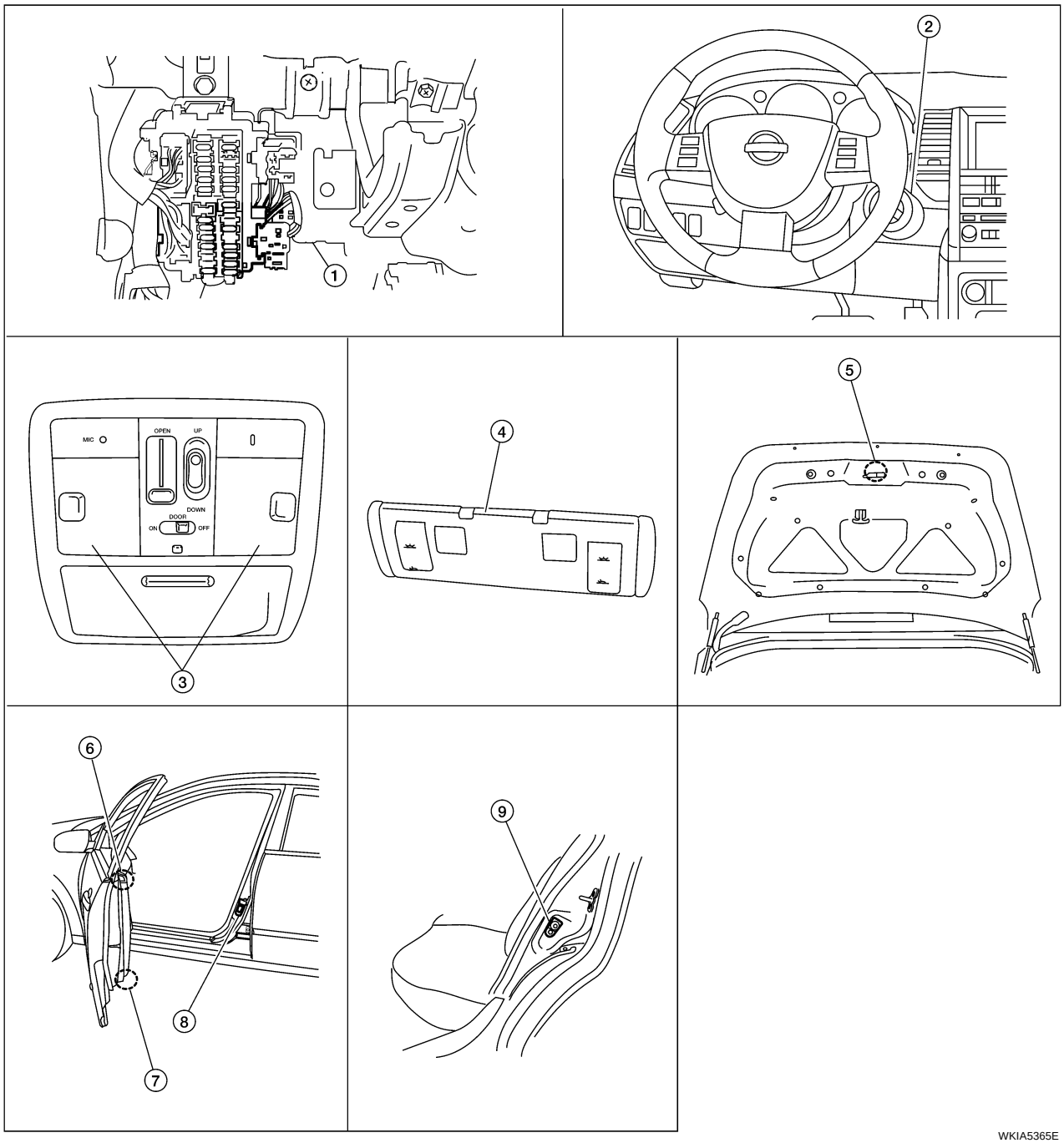
Installation is in the reverse order of removal.

INTERIOR ROOM LAMP

PFP:26410

Component Parts and Harness Connector Location

EKS00925



WKIA5365E

1. BCM M18, M19, and M20 (View with instrument panel removed)
2. Key switch and ignition knob switch M73, and ignition keyhole illumination M25
3. Interior room lamp (room/map lamp) switch R14
4. Personal lamp R13
5. Trunk lamp switch and trunk release solenoid T103
6. Foot lamp LH M99, RH M100
7. Front step lamp LH D11, RH D109
8. Front door switch LH B8, RH B108
9. Rear door switch LH B18, RH B116

System Description

EKS00926

When room lamp and personal lamp switch is in AUTO position, room lamp and personal lamp ON/OFF is controlled by timer according to signals from switches including key switch, front door switch LH, unlock signal from keyfob, door lock and unlock switch, key cylinder lock and unlock switch, ignition switch.
When room lamp and personal lamp turns ON, there is a gradual brightening over 1 second. When room lamp and personal lamp turns OFF, there is a gradual dimming over 1 second.
The room lamp and personal lamp timer is controlled by the BCM (body control module).
Room lamp and personal lamp timer control settings can be changed with CONSULT-II.
Ignition keyhole illumination turns ON when front door LH is opened (door switch ON) or key is removed from key cylinder. Illumination turns OFF when front door LH is closed (door switch OFF).
Step and foot lamps turn ON when a front or rear door is opened (door switch ON). Lamps turn OFF when front and rear doors are closed (all door switches OFF).

POWER SUPPLY AND GROUND

Power is supplied at all times

- through 10A fuse [No. 2, located in the fuse block (J/B)]
- to key switch and ignition knob switch terminal 3, and
- through 50A fusible link (letter **f** , located in the fuse and fusible link box)
- to BCM terminal 70.

When the key is inserted in key switch and ignition knob switch, power is supplied

- through the key switch and ignition knob switch terminal 4
- to BCM terminal 37.

With the ignition switch in the ON or START position, power is supplied

- through 10A fuse [No. 1, located in the fuse block (J/B)]
- to BCM terminal 38.

When the BCM receives input to supply power to terminal 56, power is supplied

- to front and rear step lamp LH and RH terminal 1
- to rear console lamp (with rear console) terminal 2
- to ignition keyhole illumination terminal 1
- to foot lamp LH nd RH terminal 1
- to vanity mirror lamp LH and RH terminal 1
- to personal lamp terminal 2
- to interior room lamp terminal 7, and
- to trunk room lamp terminal 1.

Ground is supplied

- to BCM terminal 67
- through grounds M57, M61 and M79.

When the front door LH is opened, ground is supplied

- to BCM terminal 47
- through front door switch LH terminal 2
- through case ground of front door switch LH

When the front door RH is opened, ground is supplied

- to BCM terminal 12
- through front door switch RH terminal 2
- through case ground of front door switch RH.

When the rear door LH is opened, ground is supplied

- to BCM terminal 48
- through rear door switch LH terminal 1
- through case ground of rear door switch LH.

When the rear door RH is opened, ground is supplied

- to BCM terminal 13

- through rear door switch RH terminal 1
- through case ground of rear door switch RH.

When the front door LH is unlocked by the door lock and unlock switch, BCM receives serial data

- to BCM terminal 22
- through main power window and door lock/unlock switch terminal 14 or power window and door lock/unlock switch RH terminal 16.

The main power window and door lock/unlock switch receives a ground signal

- to main power window and door lock/unlock switch terminal 17
- through grounds M57, M61 and M79.

The power window and door lock/unlock switch RH receives a ground signal

- to front power window and door lock/unlock switch terminal 11
- through grounds M57, M61 and M79.

When the front door LH is unlocked by the front door lock assembly LH (key cylinder switch), BCM receives serial data

- to BCM terminal 22
- through main power window and door lock/unlock switch terminal 14.

And the main power window and door lock/unlock switch receives a ground signal

- to main power window and door lock/unlock switch terminal 6
- through front door lock assembly LH (key cylinder switch) terminal 6
- through front door lock assembly LH (key cylinder switch) terminal 5
- through grounds M57, M61 and M79.

When a signal or combination of signals is received by BCM, ground is supplied

- to personal lamp terminals 4 and 6
- through interior room lamp (room/map lamps) terminal 5, and
- to interior room lamp (room/map lamps) when interior room lamp switch is in AUTO
- through interior room lamp (room/map lamps) terminal.

With power and ground supplied, the interior lamp illuminates.

SWITCH OPERATION

When front door switch LH is ON (door is open), ground is supplied

- to ignition keyhole illumination terminal 2
- through BCM terminal 1.

And power is supplied

- through BCM terminal 56
- to ignition keyhole illumination terminal 1.

When any door switch is ON (door is open), ground is supplied

- to front and rear step lamp LH and RH terminal 2
- to foot lamp LH and RH terminal 2
- through BCM terminal 62.

And power is supplied

- through BCM terminal 56
- to every step lamp terminal 1.

When personal lamp switch is HI/LO, ground is supplied

- to personal lamp terminal 5
- through grounds M57, M61 and M79.

And power is supplied

- through BCM terminal 56
- to personal lamp LH and RH terminal 2.

When map lamp switch LH or RH is ON, ground is supplied

- to map lamp LH and RH terminal 4

- through grounds M57, M61 and M79.

And power is supplied

- through BCM terminal 56
- to map lamp LH or RH terminal 7.

When vanity mirror lamp (LH or RH) is ON, ground is supplied

- to vanity mirror lamp (LH or RH) terminal 2
- through grounds M57, M61 and M79.

And power is supplied

- through BCM terminal 56
- to vanity mirror lamp (LH and RH) terminal 1.

When rear console lamp switch (with rear console) is ON, ground is supplied

- to rear console lamp terminal 4
- through grounds B117 and B132.

And power is supplied

- through BCM terminal 56
- to rear console lamp terminal 2.

When trunk lamp switch and trunk release solenoid is ON, ground is supplied

- to BCM terminal 42
- through trunk lamp switch and trunk release solenoid (trunk lamp switch) terminal 1
- through trunk lamp switch and trunk release solenoid (trunk lamp switch) terminal 2
- through grounds B7 and B19.

When the BCM receives a ground signal on terminal 42, ground is supplied

- through BCM terminal 49
- to trunk room lamp terminal 2.

And power is supplied

- through BCM terminal 56
- to trunk room lamp terminal 1.

ROOM LAMP TIMER OPERATION

When interior room lamp/map lamp switch is in AUTO position and when all conditions below are met, BCM performs timer control (maximum 30 seconds) for interior room lamp/map lamp ON/OFF.
In addition, when map lamp turns ON or OFF there is gradual brightening or dimming over 1 second.
Power is supplied

- through 10A fuse [No. 2, located in the fuse block (J/B)]
- to key switch and ignition knob switch terminal 3.

When key is removed from key switch and ignition knob switch (key switch OFF), power will not be supplied to BCM terminal 37.
Serial data is supplied

- to BCM terminal 22
- through main power window and door lock/unlock switch terminal 14.

At the time that front door LH is opened, BCM detects that front door LH is unlocked. It determines that interior room lamp/map lamp timer operation conditions are met and turns the interior room lamp/map lamp ON for 30 seconds.
When key is in key switch and ignition knob switch (key switch ON), power is supplied

- through key switch and ignition knob switch terminal 4
- to BCM terminal 37.

When key is removed from key switch and ignition knob switch (key switch OFF), power supply to BCM terminal 37 is terminated. BCM detects that key has been removed, determines that interior room lamp and map lamp timer conditions are met, and turns the interior room lamp/map lamp ON for 30 seconds.
When front door LH opens → closes and the key is not inserted in the key switch and ignition knob switch (key switch OFF), BCM terminal 62 changes between 0V (door open) → 12V (door closed). The BCM determines

that conditions for interior room lamp/map lamp operation are met and turns the interior room lamp/map lamp ON for 30 seconds.
Timer control is canceled under the following conditions.

- Front door LH is locked (when locked by keyfob, main power window and door lock/unlock switch, or front door lock assembly LH (key cylinder switch)
- Front door LH is opened (front door switch LH turns ON)
- Ignition switch ON.

INTERIOR LAMP BATTERY SAVER CONTROL

If interior lamp is left “ON”, it will not be turned out even when door is closed.
BCM turns off interior lamp automatically to save battery 30 minutes after ignition switch is turned off.
BCM controls interior lamps listed below:

- Vanity mirror lamp
- Interior room lamp (room/map lamps)
- Personal lamp
- Step lamp
- Foot lamp
- Ignition keyhole illumination
- Rear console lamp (with rear console)
- Trunk room lamp

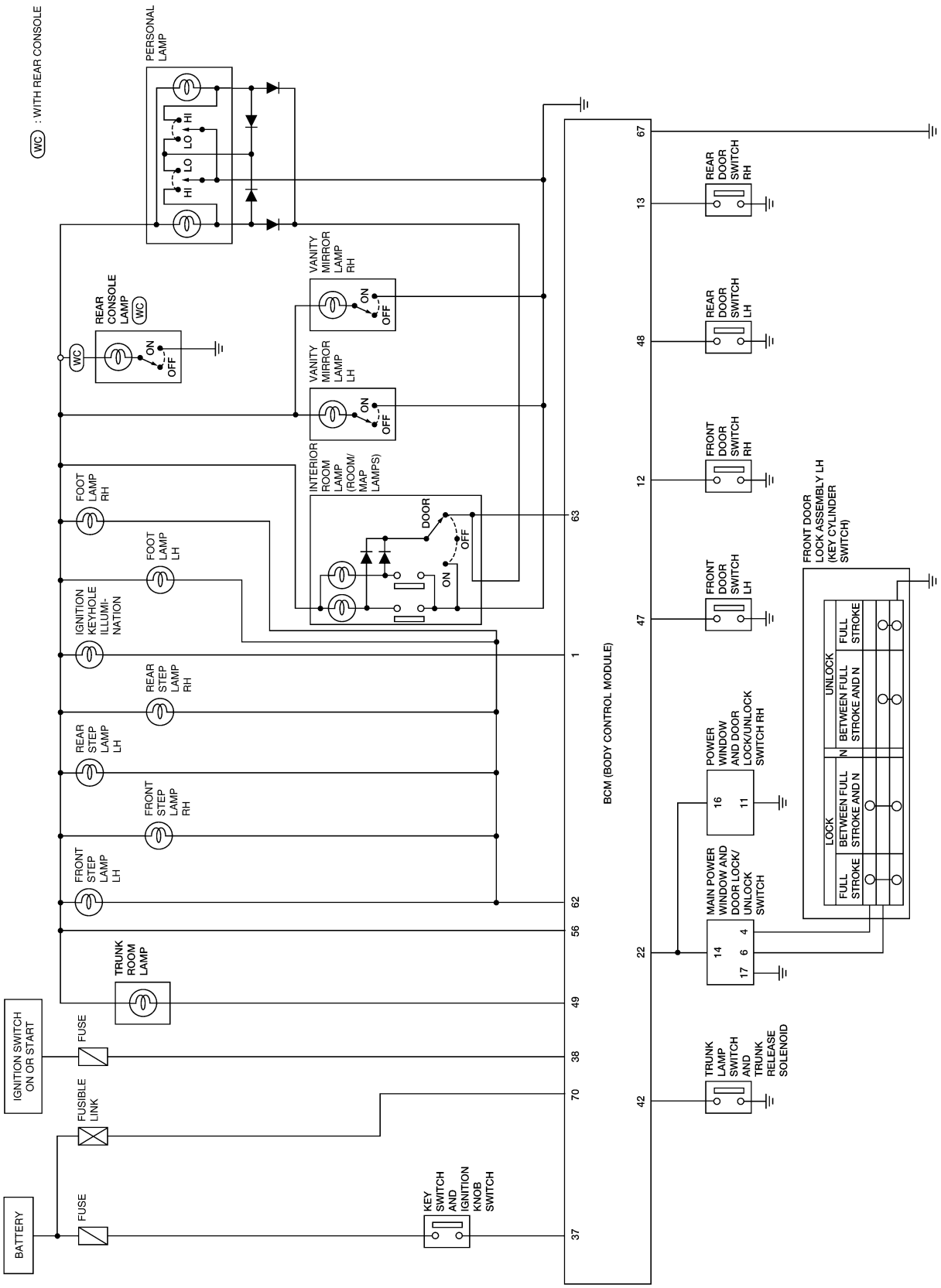
After lamps turn OFF by the battery saver system, the lamps illuminate again when

- signal received from keyfob, or main power window and door lock/unlock switch or front door lock assembly LH (key cylinder switch) is locked or unlocked
- door is opened or closed
- key is removed from or inserted in key switch and ignition knob switch.

Interior lamp battery saver control period can be changed by the function setting of CONSULT-II.

Schematic

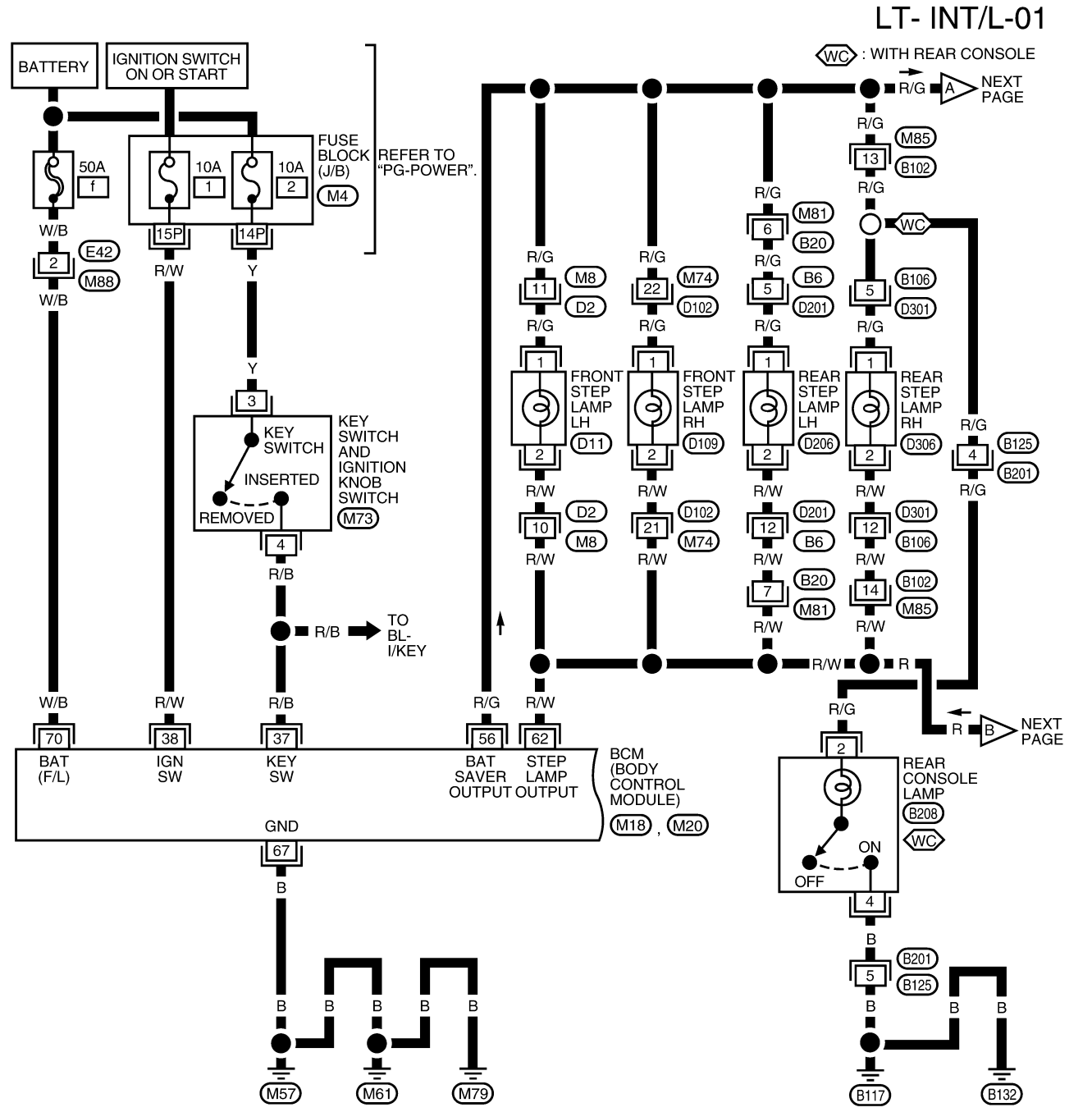
EKS00927

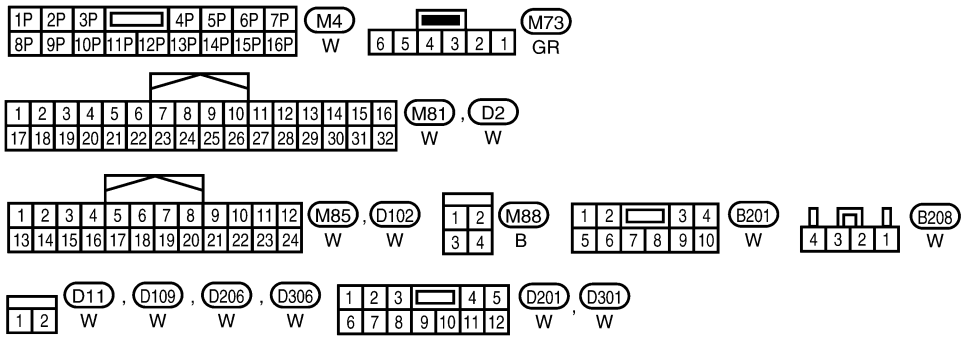


WKWA4879E

Wiring Diagram — ROOM/L —

EKS00928

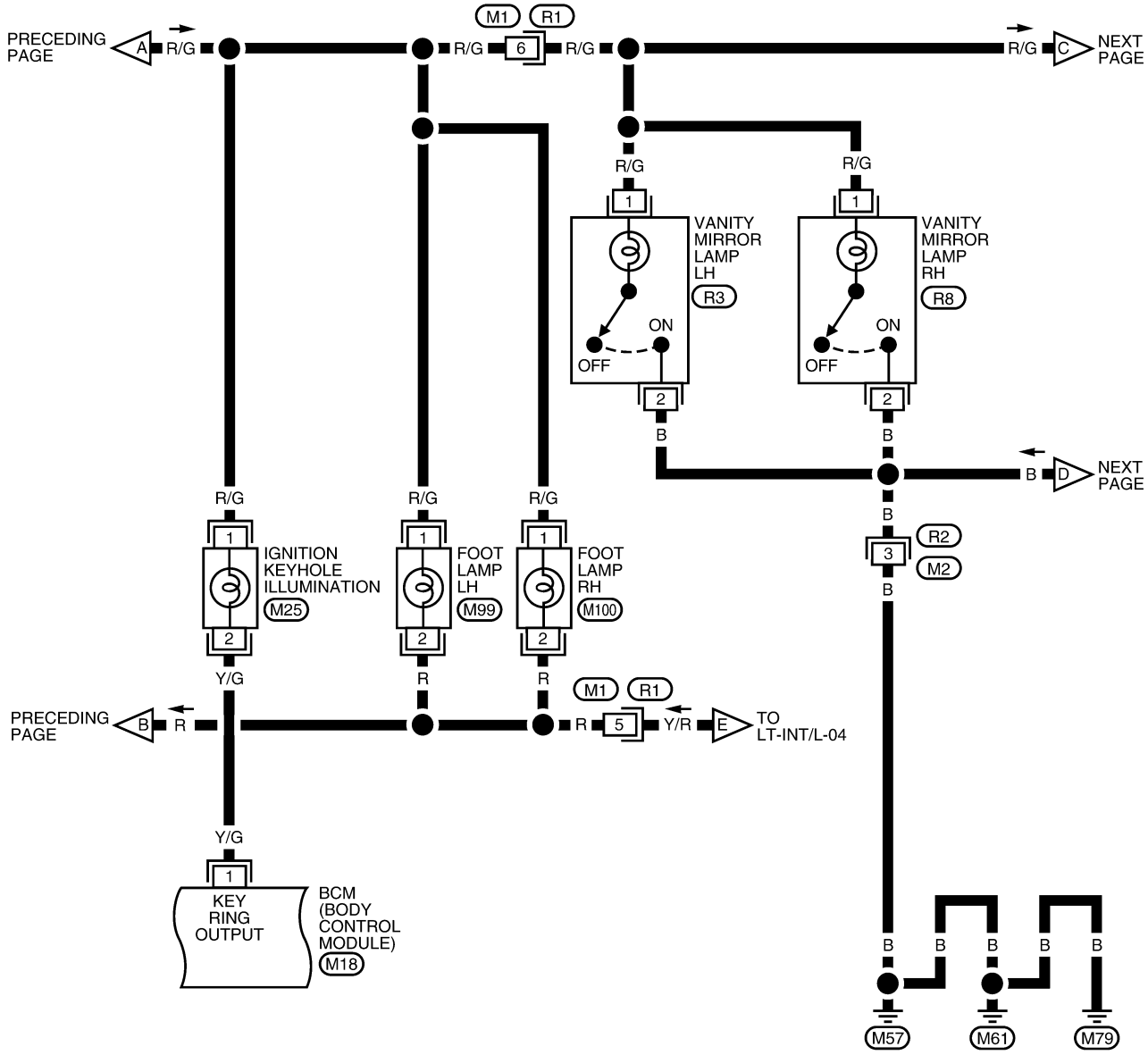


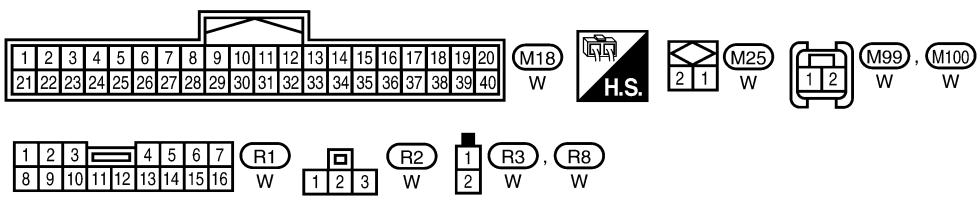


REFER TO THE FOLLOWING.
M18 , M20 - ELECTRICAL UNITS

WKWA4880E

LT-INT/L-02





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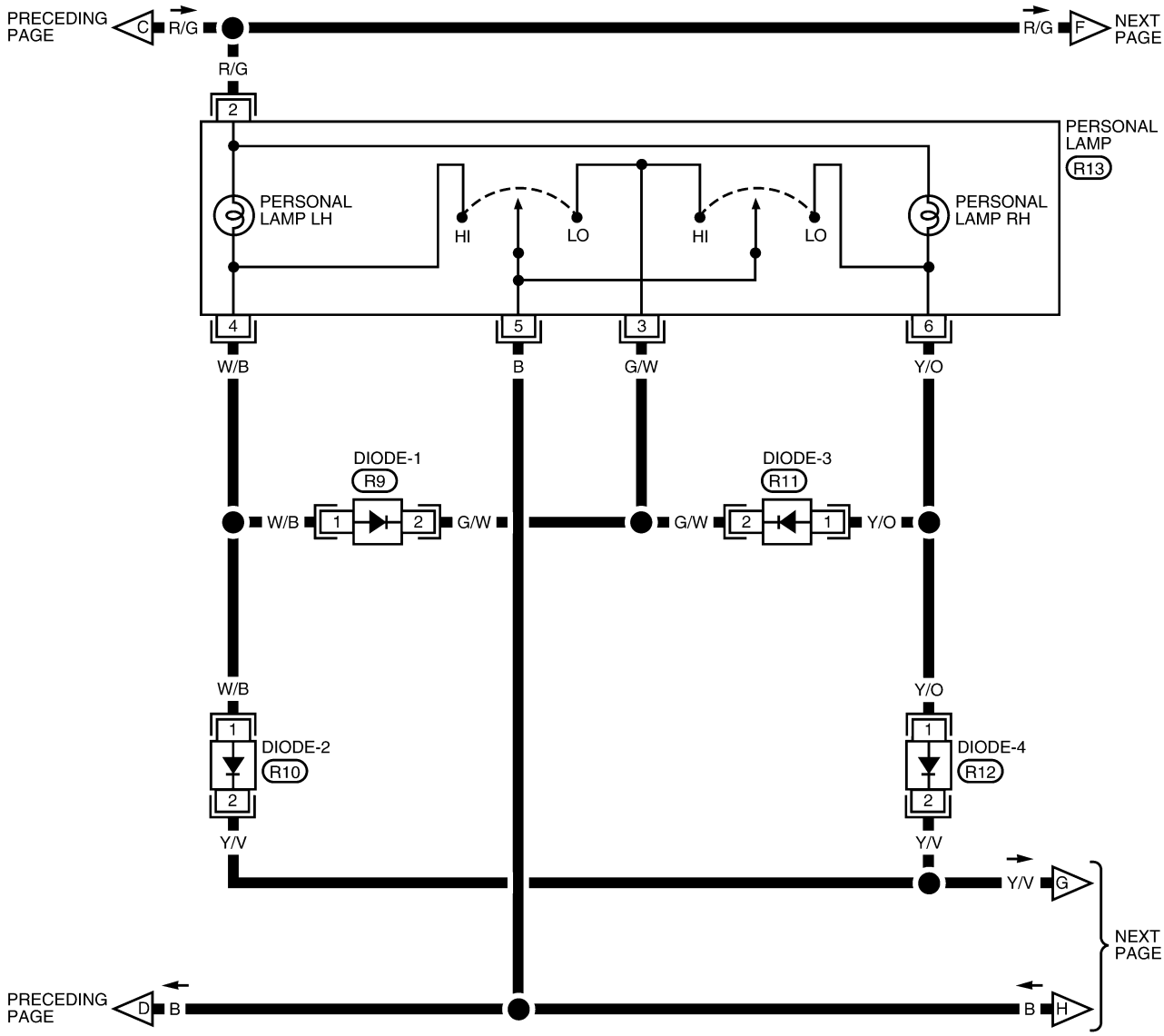
LT-INT/L-03



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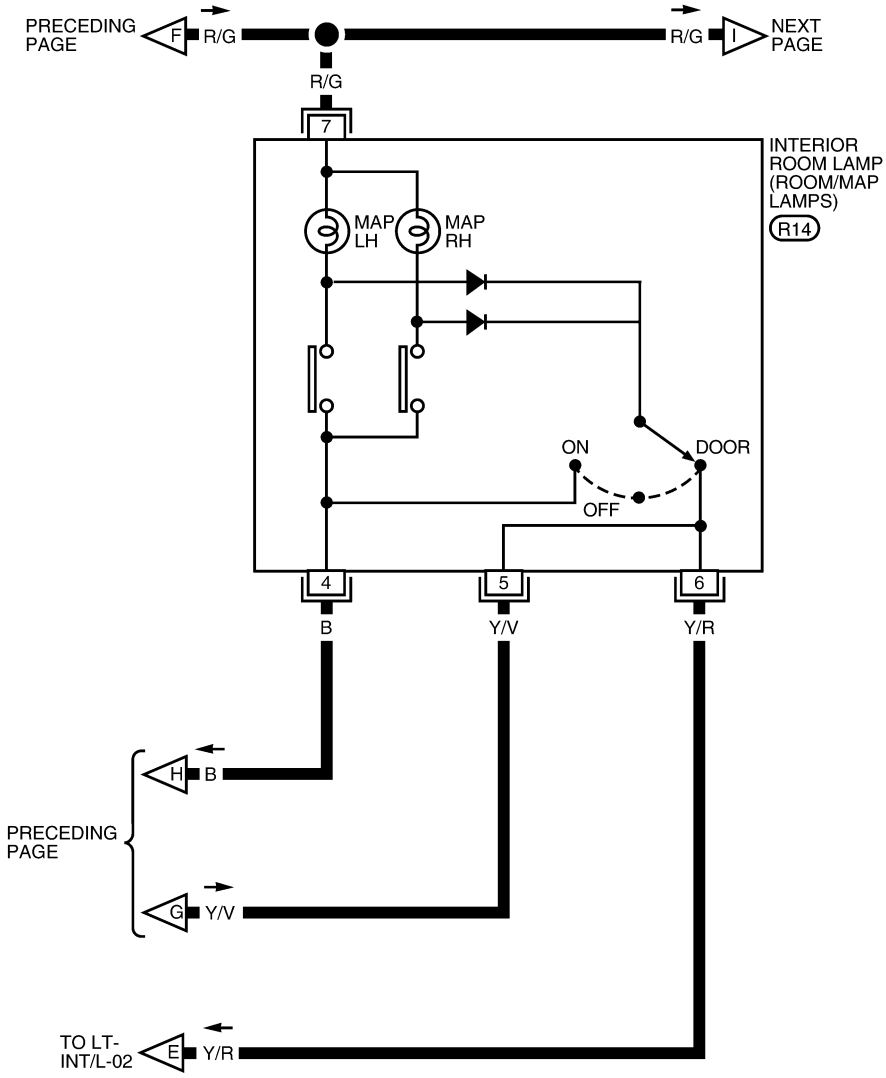
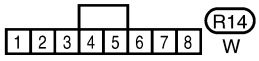
LT-INT/L-04





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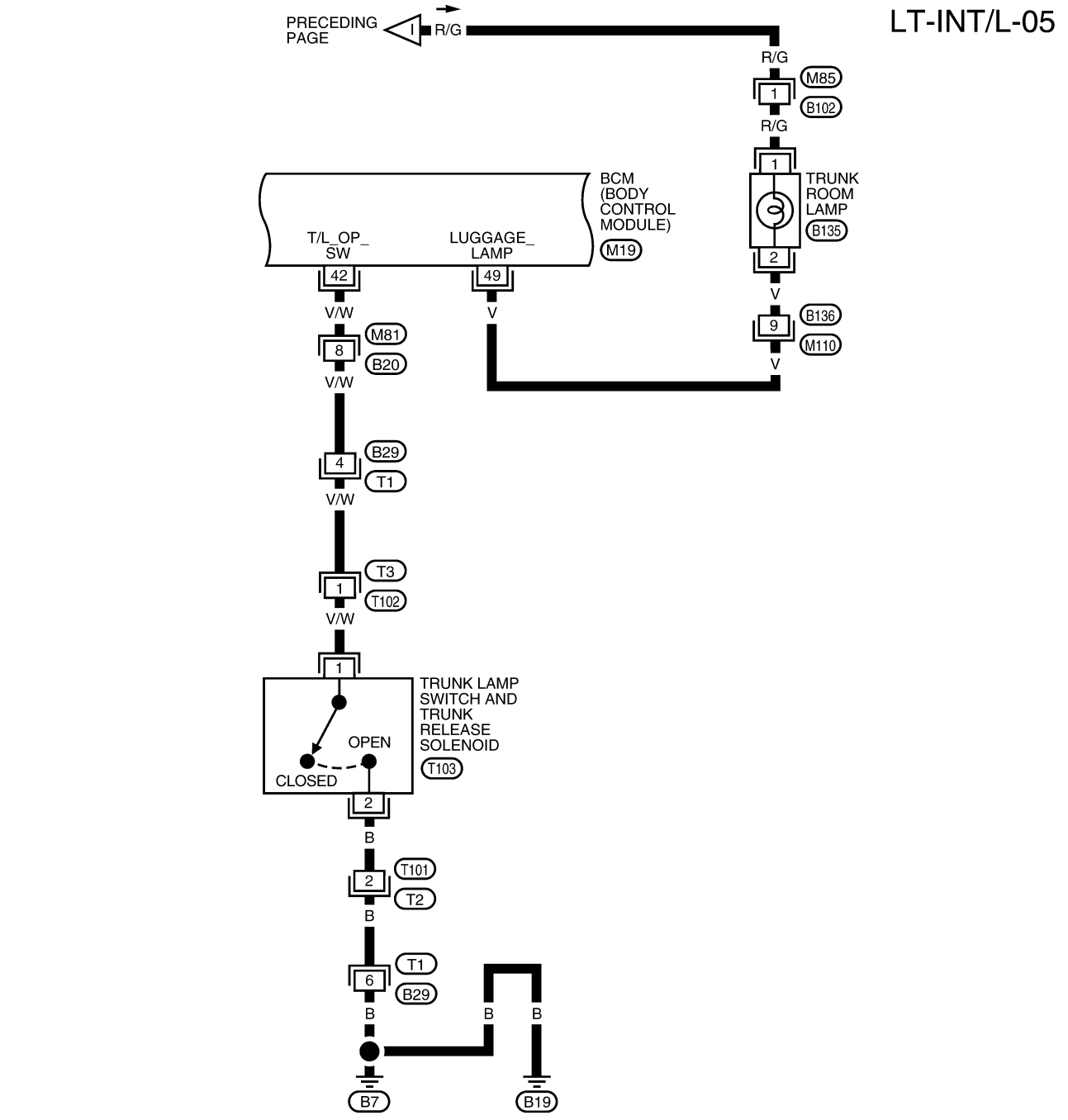
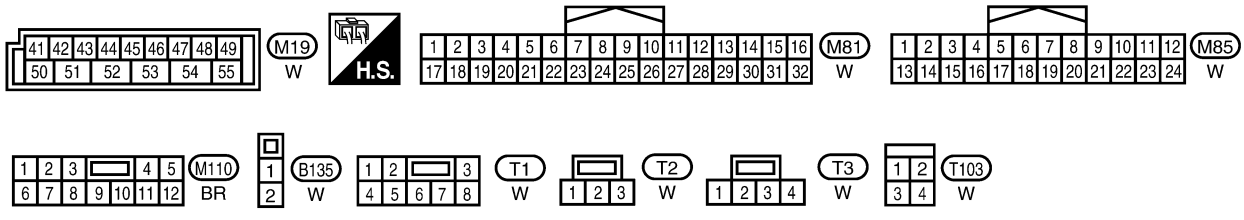
LT-INT/L-05





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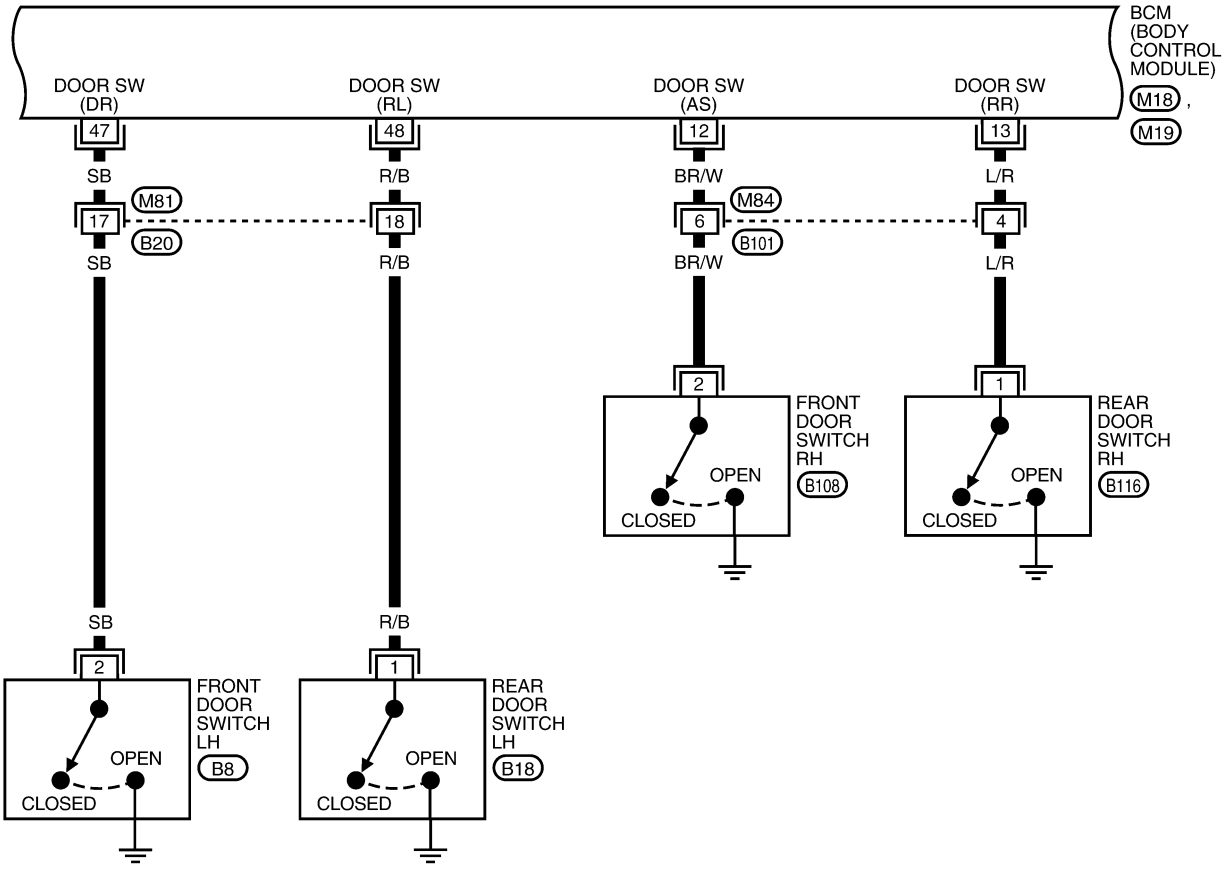
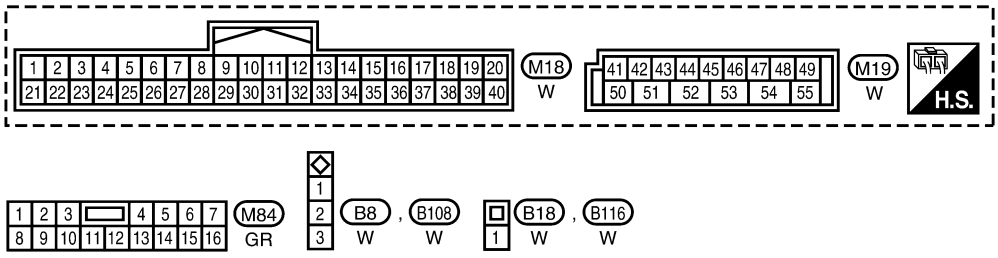

BCM
(BODY
CONTROL
MODULE)
M18
M19
DOOR SW
(DR)
DOOR SW
(RL)
DOOR SW
(AS)
DOOR SW
(RR)
47
48
12
13
SB
R/B
BR/W
L/R
M81
B20
M84
B101
17
18
6
4
SB
R/B
BR/W
L/R
2
1
FRONT
DOOR
SWITCH
RH
B108
REAR
DOOR
SWITCH
RH
B116
OPEN
CLOSED
SB
R/B
2
1
FRONT
DOOR
SWITCH
LH
B8
REAR
DOOR
SWITCH
LH
B18
OPEN
CLOSED


1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40
M18
W
41 42 43 44 45 46 47 48 49
50 51 52 53 54 55
M19
W
H.S.
1 2 3 4 5 6 7
8 9 10 11 12 13 14 15 16
M84
GR
1
2
3
B8
W
B108
W
1
B18
W
B116
W

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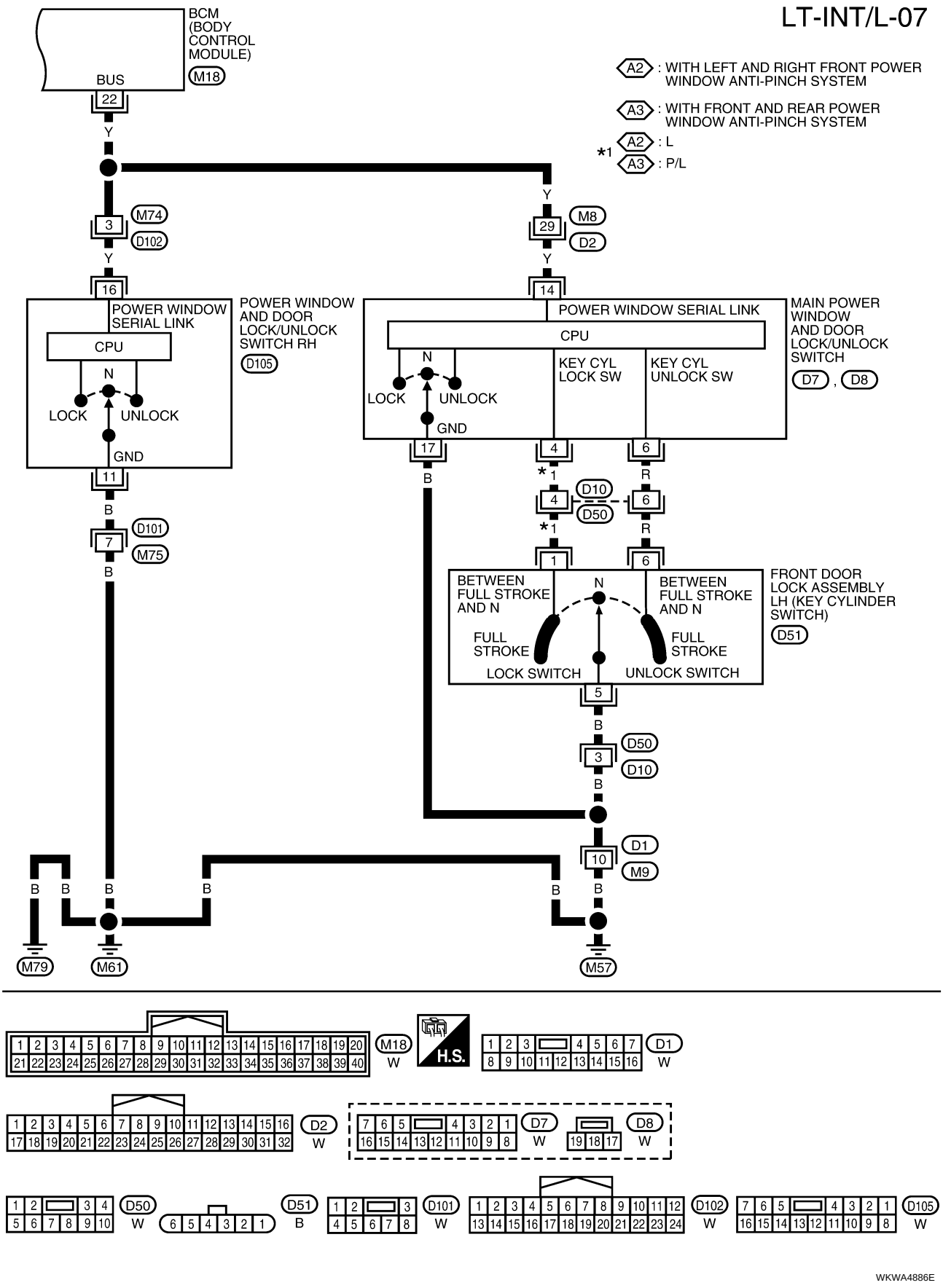

LT-INT/L-07
BCM (BODY CONTROL MODULE)
BUS
M18
22
Y
A2 : WITH LEFT AND RIGHT FRONT POWER WINDOW ANTI-PINCH SYSTEM
A3 : WITH FRONT AND REAR POWER WINDOW ANTI-PINCH SYSTEM
*1 A2 : L
A3 : P/L
M74
3
D102
16
POWER WINDOW SERIAL LINK
CPU
N
LOCK
UNLOCK
GND
POWER WINDOW AND DOOR LOCK/UNLOCK SWITCH RH
D105
11
B
D101
7
M75
M8
29
D2
14
POWER WINDOW SERIAL LINK
CPU
KEY CYL LOCK SW
KEY CYL UNLOCK SW
MAIN POWER WINDOW AND DOOR LOCK/UNLOCK SWITCH
D7 , D8
17
4
6
*1
R
D10
D50
1
BETWEEN FULL STROKE AND N
FULL STROKE
LOCK SWITCH
UNLOCK SWITCH
FRONT DOOR LOCK ASSEMBLY LH (KEY CYLINDER SWITCH)
D51
5
3
D1
10
M9
M79
M61
M57

M18
W
H.S.
D1
W
D2
W
D7
W
D8
W
D50
W
D51
B
D101
W
D102
W
D105
W

WKWA4886E

Terminals and Reference Values for BCM

EKS00929

Refer to BCS-12, "Terminals and Reference Values for BCM" .

How to Proceed With Trouble Diagnosis

EKS0092A

1. Confirm the symptom or customer complaint.
2. Understand operation description and function description. Refer to LT-127, "System Description" .
3. Carry out the Preliminary Check. Refer to LT-140, "Preliminary Check" .
4. Check symptom and repair or replace the cause of malfunction.
5. Does the interior room lamp operate normally? If YES: GO TO 6. If NO: GO TO 4.
6. Inspection End.

Preliminary Check

EKS0092B

INSPECTION FOR POWER SUPPLY AND GROUND CIRCUIT

Refer to BCS-15, "BCM Power Supply and Ground Circuit Check" .

CONSULT-II Function (BCM)

EKS0092C

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

BCM diagnostic test item	Diagnostic mode	Description
Inspection by part	WORK SUPPORT	Supports inspections and adjustments. Commands are transmitted to the BCM for setting the status suitable for required operation, input/output signals are received from the BCM and received data is displayed.
	DATA MONITOR	Displays BCM input/output data in real time.
	ACTIVE TEST	Operation of electrical loads can be checked by sending drive signal to them.
	SELF-DIAG RESULTS	Displays BCM self-diagnosis results.
	CAN DIAG SUPPORT MNTR	The result of transmit/receive diagnosis of CAN communication can be read.
	ECU PART NUMBER	BCM part number can be read.
	CONFIGURATION	Performs BCM configuration read/write functions.

CONSULT-II START PROCEDURE

GI-37, "CONSULT-II Start Procedure".

WORK SUPPORT

Operation Procedure

1. Touch "INT LAMP" on "SELECT TEST ITEM" screen.
2. Touch "WORK SUPPORT" on "SELECT DIAG MODE" screen.
3. Touch "SET I/L D-UNLCK INTCON" on "SELECT WORK ITEM" screen.
4. Touch "START".
5. Touch "CHANGE SETT".
6. The setting will be changed and "CUSTOMIZING COMPLETED" will be displayed.
7. Touch "END".

Display Item List

Item	Description	CONSULT-II
SET I/L D-UNLCK INTCON	The 30 seconds glowing function the interior room lamps and the ignition keyhole illumination can be selected when front door LH is released (unlocked).	ON/OFF
ROOM LAMP ON TIME SET	The time in order to escalate illumination can be adjusted when the interior room lamps and the ignition keyhole illumination is turned on.	MODE 1 - 7
ROOM LAMP OFF TIME SET	The time in order to diminish illumination can be adjusted when the interior room lamps and the ignition keyhole illumination is turned off.	MODE 1 - 7

Reference between "MODE" and "TIME" for "TURN ON/OFF".

MODE	1	2	3	4	5	6	7
Time (sec.)	0.5	1	2	3	4	5	0

DATA MONITOR

Operation Procedure

1. Touch "INT LAMP" on "SELECT TEST ITEM" screen.
2. Touch "DATA MONITOR" on "SELECT DIAG MODE" screen.
3. Touch either "ALL SIGNALS" or "SELECTION FROM MENU" on "SELECT MONITOR ITEM" screen.

ALL SIGNALS	Monitors all the signals.
SELECTION FROM MENU	Selects and monitors the individual signal.

4. When "SELECTION FROM MENU" is selected, touch items to be monitored. When "ALL SIGNALS" is selected, all the items will be monitored.
5. Touch "RECORD" while monitoring, then the status of the monitored item can be recorded. To stop recording, touch "STOP".

Display Item List

Monitor item		Contents
IGN ON SW	"ON/OFF"	Displays "IGN position (ON)/OFF, ACC position (OFF)" judged from the ignition switch signal.
KEY ON SW	"ON/OFF"	Displays "Key inserted (ON)/key removed (OFF)" status judged from the key switch signal.
DOOR SW-DR	"ON/OFF"	Displays status of the front door LH as judged from the front door switch LH signal. (Door is open: ON/Door is closed: OFF)
DOOR SW-AS	"ON/OFF"	Displays "Door open (ON)/Door closed (OFF)" status, determined from front door switch RH signal.
DOOR SW-RR	"ON/OFF"	Displays "Door open (ON)/Door closed (OFF)" status, determined from rear door switch RH signal.
DOOR SW-RL	"ON/OFF"	Displays "Door open (ON)/Door closed (OFF)" status, determined from rear door switch LH signal.
KEY CYL LK-SW	"ON/OFF"	Displays "Door locked (ON)" status, determined from key cylinder lock switch in front door LH.
KEY CYL UN-SW	"ON/OFF"	Displays "Door unlocked (OFF)" status, determined from key cylinder lock switch in front door LH.
CDL LOCK SW	"ON/OFF"	Displays "Door locked (ON)/Door unlocked (OFF)" status, determined from locking detection switch in front door LH.
CDL UNLOCK SW	"ON/OFF"	Displays "Door unlocked (OFF)" status, determined from locking detection switch in front door RH.
KEYLESS LOCK	"ON/OFF"	Displays "Locked (ON)/Other (OFF)" status, determined from lock signal.
KEYLESS UNLOCK	"ON/OFF"	Displays "Unlocked (ON)/Other (OFF)" status, determined from unlock signal.

ACTIVE TEST

Operation Procedure

1. Touch "INT LAMP" on "SELECT TEST ITEM" screen.
2. Touch "ACTIVE TEST" on "SELECT DIAG MODE" screen.
3. Touch item to be tested and check operation of the selected item.
4. During the operation check, touching "BACK" deactivates the operation.

Display Item List

Test item	Description
INT LAMP	Interior room lamp can be operated by any ON-OFF operations.
IGN ILLUM	Ignition keyhole illumination can be operated by ON-OFF operation.

Interior Room Lamp Control Does Not Operate

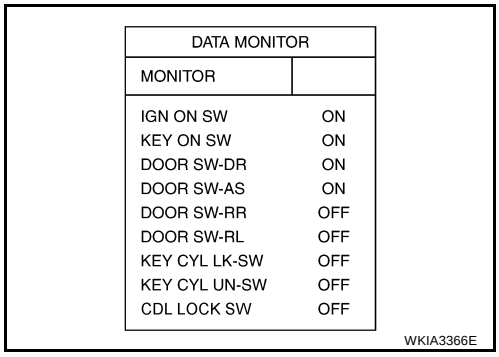
EKS0092D

1. CHECK EACH SWITCH

Select "BCM" on CONSULT-II. With "INT LAMP" data monitor, make sure switches listed in display item list turn ON-OFF linked with switch operation. Refer to LT-142, "Display Item List" for switches and their functions.

OK or NG

OK >> GO TO 2.
NG >> Inspect malfunctioning switch system.

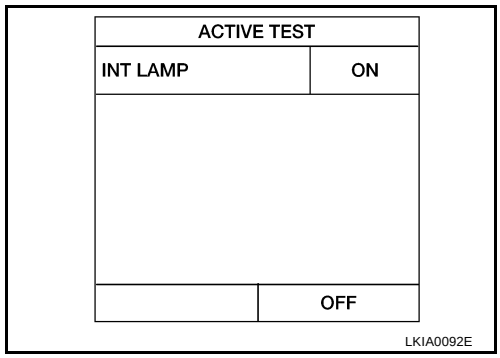


2. ACTIVE TEST

1. With interior room lamp switch in the AUTO position, use active test to make sure interior room lamp operates.
2. Select "BCM" on CONSULT-II. Select "INT LAMP" on "SELECT TEST ITEM" screen.
3. Select "ACTIVE TEST" on "SELECT DIAG MODE" screen.
4. Select "INT LAMP" on "SELECT TEST ITEM" screen.
5. Select "ON" on ACTIVE TEST" screen.

OK or NG

OK >> Replace BCM. Refer to BCS-25, "BCM" .
NG >> GO TO 3.



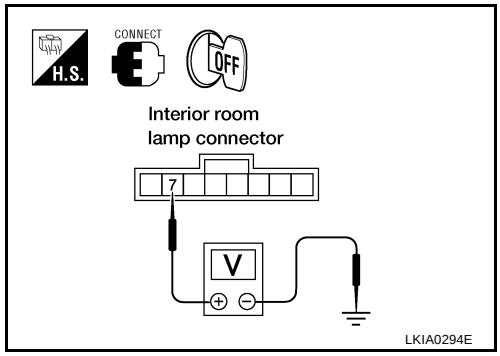
3. CHECK INTERIOR ROOM LAMP INPUT

1. Turn ignition switch OFF.
2. Check voltage between interior room lamp harness connector R14 terminal 7 and ground.

7 - Ground : Battery voltage should exist.

OK or NG

OK >> GO TO 4.
NG >> GO TO 6.



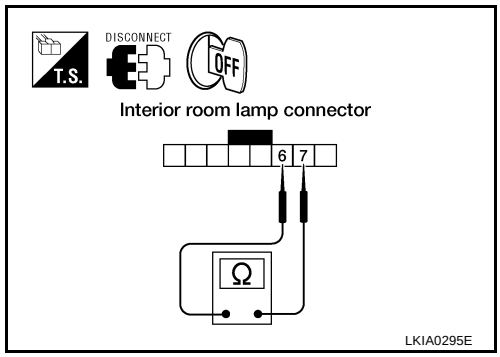
4. CHECK INTERIOR ROOM LAMP

1. Disconnect interior room lamp connector.
2. Check continuity between interior room lamp terminals.

Interior room lamp		Condition	Continuity
Terminal			
7	6	Interior room lamp switch is AUTO	Yes
		Interior room lamp switch is OFF	No

OK or NG

OK >> GO TO 5.
NG >> Replace interior room lamp.



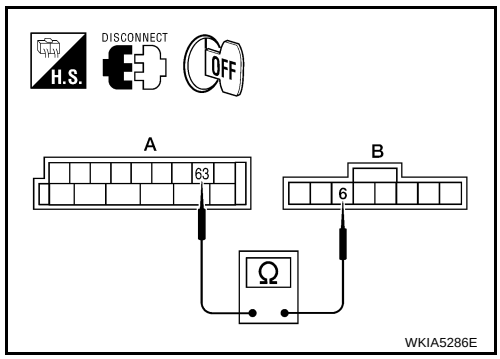
5. CHECK INTERIOR ROOM LAMP CIRCUIT

1. Disconnect BCM connector.
2. Check continuity between BCM connector M20 (A) terminal 63 and interior room lamp connector R14 (B) terminal 6.

63 - 6 : Continuity should exist.

OK or NG

OK >> Replace BCM if interior lamp does not work after setting the connector again. Refer to BCS-25, "BCM" .
NG >> Repair harness or connector.



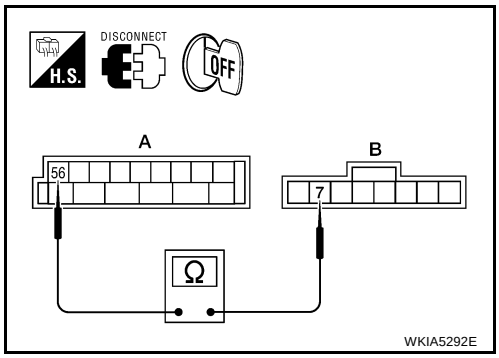
6. CHECK INTERIOR ROOM LAMP CIRCUIT

1. Disconnect BCM connector and interior room lamp connector.
2. Check continuity between BCM connector M20 (A) terminal 56 and interior room lamp connector R14 (B) terminal 7.

56 - 7 : Continuity should exist.

OK or NG

OK >> Replace BCM if interior lamp does not work after setting the connector again. Refer to BCS-25, "BCM" .
NG >> Repair harness or connector.



Map Lamp Control Does Not Operate

EKS0092E

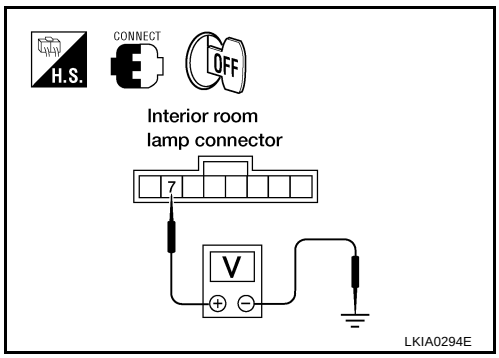
1. CHECK MAP LAMP INPUT

1. Turn ignition switch OFF.
2. Check voltage between map lamp harness connector R14 terminal 7 and ground.

7 - Ground : Battery voltage should exist.

OK or NG

OK >> GO TO 2.
NG >> GO TO 4.



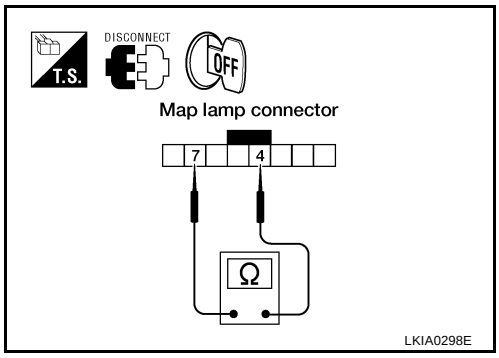
2. CHECK MAP LAMP

1. Disconnect map lamp connector.
2. Check continuity between map lamp terminals.

Map lamp		Condition	Continuity
Terminal			
4	7	Map lamp switch is ON	Yes
		Map lamp switch is OFF	No

OK or NG

OK >> GO TO 3.
NG >> Replace map lamp.



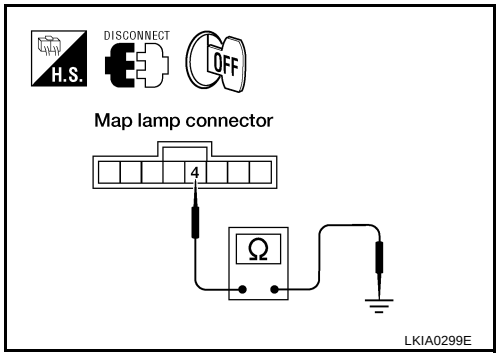
3. CHECK MAP LAMP CIRCUIT

1. Disconnect BCM connector.
2. Check continuity between map lamp harness connector R14 terminal 4 and ground.

4 - Ground : Continuity should exist.

OK or NG

OK >> Check connector for proper connection. Repair as necessary.
NG >> Repair harness or connector.



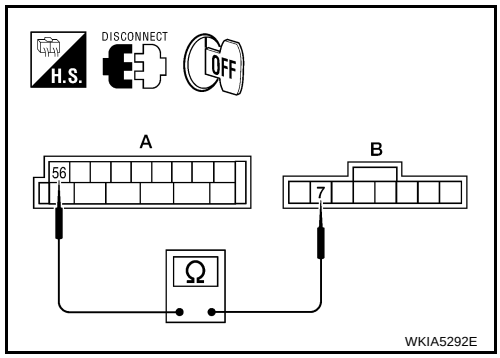
4. CHECK MAP LAMP CIRCUIT

1. Disconnect BCM connector and map lamp connector.
2. Check continuity between BCM connector M20 (A) terminal 56 and map lamp connector R14 (B) terminal 7.

56 - 7 : Continuity should exist.

OK or NG

OK >> Replace BCM if map lamp does not work after setting the connector again. Refer to BCS-25, "BCM" .
NG >> Repair harness or connector.



Personal Lamp Control Does Not Operate

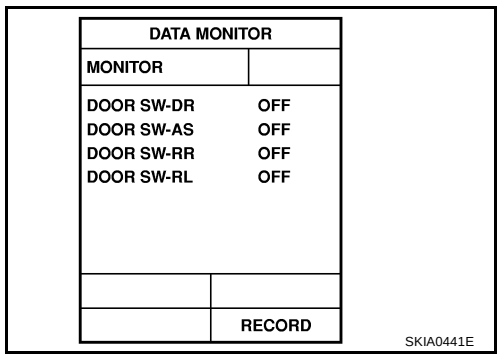
EKS0092F

1. CHECK EACH DOOR SWITCH

Select "BCM" on CONSULT-II. With "INT LAMP" data monitor, make sure switches listed in display item list turn ON-OFF linked with switch operation. Refer to LT-128, "SWITCH OPERATION" for switches and their functions.

OK or NG

OK >> GO TO 2.
NG >> Inspect malfunctioning door switch.



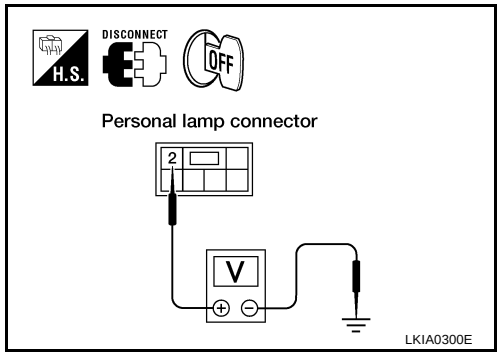
2. CHECK PERSONAL LAMP INPUT

1. Turn ignition switch OFF.
2. Disconnect personal lamp connector.
3. Open the rear door.
4. Check voltage between personal lamp harness connector R13 terminal 2 and ground.

2 - Ground : Battery voltage should exist.

OK or NG

OK >> GO TO 4.
NG >> GO TO 3.



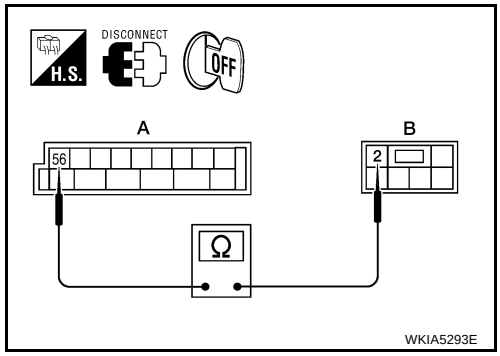
3. CHECK PERSONAL LAMP CIRCUIT

1. Disconnect BCM connector.
2. Check continuity between BCM connector M20 (A) terminal 56 and personal lamp connector R13 (B) terminal 2.

56 - 2 : Continuity should exist.

OK or NG

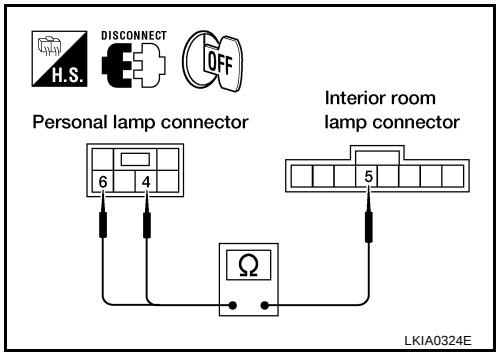
OK >> Replace BCM if personal lamp does not work after setting the connector again. Refer to BCS-25, "BCM" .
NG >> Repair harness or connector.



4. CHECK PERSONAL LAMP AND INTERIOR ROOM LAMP CIRCUIT

1. Disconnect interior room lamp connector.
2. Check continuity between personal lamp harness connector R13 terminals 4 and 6 and interior room lamp harness connector R14 terminal 5.

4, 6 - 5 : Continuity should exist.



OK or NG

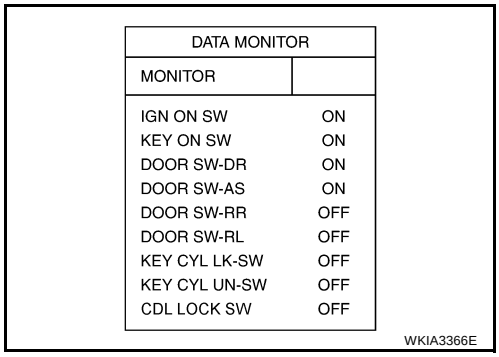
OK >> Replace personal lamp.
NG >> Repair harness or connector.

Ignition Keyhole Illumination Control Does Not Operate

EKS0092G

1. CHECK EACH SWITCH

Select "BCM" on CONSULT-II. With "INT LAMP" data monitor, make sure switches listed in display item list turn ON-OFF linked with switch operation. Refer to LT-142, "Display Item List" for switches and their functions.

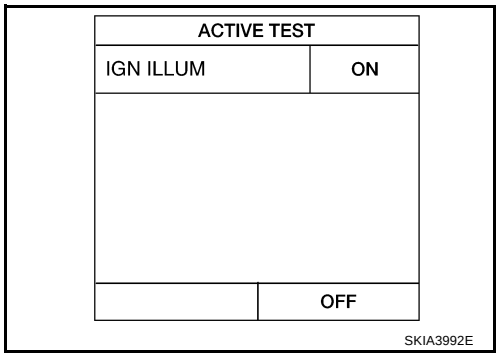


OK or NG

OK >> GO TO 2.
NG >> Inspect malfunctioning switch system.

2. ACTIVE TEST

1. Select "BCM" on CONSULT-II. Select "INT LAMP" on "SELECT TEST ITEM" screen.
2. Select "ACTIVE TEST" on "SELECT DIAG MODE" screen.
3. Select "IGN ILLUM" on "SELECT TEST ITEM" screen.
4. Select "ON" on "ACTIVE TEST" screen to make sure lamp operates.



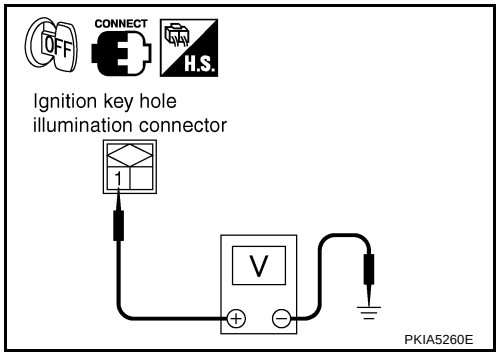
OK or NG

OK >> Replace BCM. Refer to BCS-25, "BCM" .
NG >> GO TO 3.

3. CHECK IGNITION KEYHOLE ILLUMINATION INPUT

1. Turn ignition switch OFF.
2. Check voltage between ignition keyhole illumination harness connector M25 terminal 1 and ground.

1 - Ground : Battery voltage should exist.



OK or NG

OK >> GO TO 4.
NG >> GO TO 6.

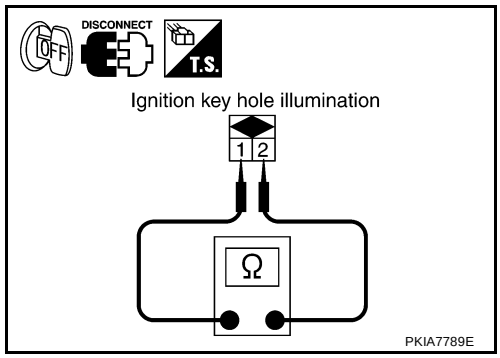
4. CHECK IGNITION KEYHOLE ILLUMINATION BULB

1. Disconnect ignition keyhole illumination connector.
2. Check continuity between ignition keyhole illumination terminals 1 and 2.

1 - 2 : Continuity should exist.

OK or NG

OK >> GO TO 5.
NG >> Replace ignition keyhole illumination.



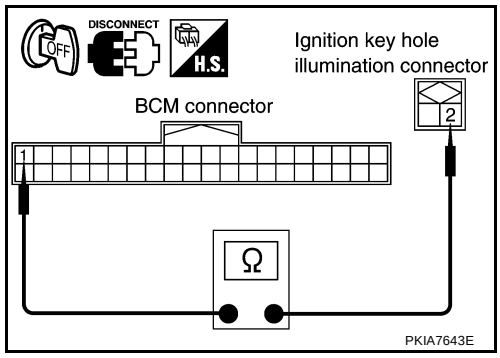
5. CHECK IGNITION KEYHOLE ILLUMINATION CIRCUIT

1. Disconnect BCM connector.
2. Check continuity between BCM harness connector M18 terminal 1 and ignition keyhole illumination harness connector M25 terminal 2.

1 - 2 : Continuity should exist.

OK or NG

OK >> Replace BCM if ignition keyhole illumination does not work after setting the connector again. Refer to BCS-25, "BCM" .
NG >> Repair harness or connector.



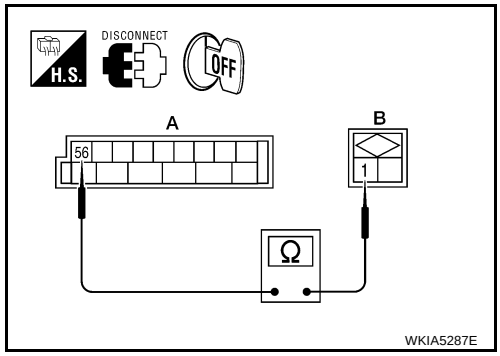
6. CHECK IGNITION KEYHOLE ILLUMINATION CIRCUIT

1. Disconnect BCM connector and ignition keyhole illumination connector.
2. Check continuity between BCM connector M20 (A) terminal 56 and ignition keyhole illumination connector M25 (B) terminal 1.

56 - 1 : Continuity should exist.

OK or NG

OK >> Replace BCM if ignition keyhole illumination does not work after setting the connector again. Refer to BCS-25, "BCM" .
NG >> Repair harness or connector.



All Step Lamps Do Not Operate

EKS0092H

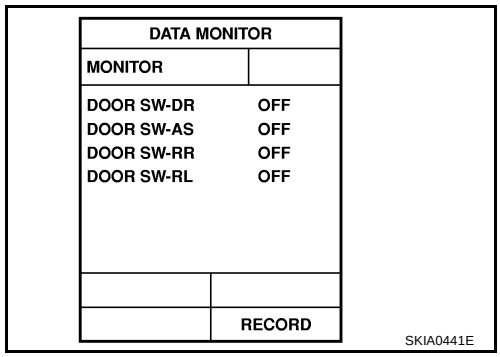
1. CHECK EACH DOOR SWITCH

Select "BCM" on CONSULT-II. With "INT LAMP" data monitor, make sure switches listed below turn ON-OFF linked with switch operation.

Switch name	CONSULT screen
Front door switch LH	DOOR SW-DR
Front door switch RH	DOOR SW-AS
Rear door switch RH	DOOR SW-RR
Rear door switch LH	DOOR SW-RL

OK or NG

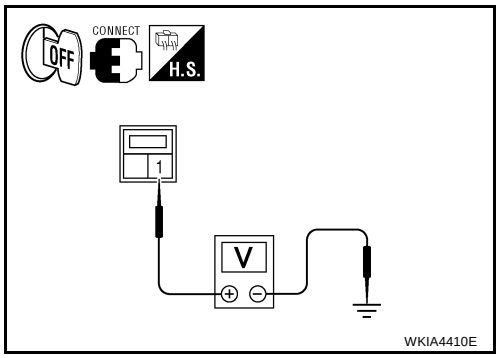
OK >> GO TO 2.
NG >> Inspect malfunctioning switch system.



2. CHECK STEP LAMP INPUT

1. Turn ignition switch OFF.
2. Check voltage between front step lamp LH harness connector D11 terminal 1 and ground.

1 - Ground : Battery voltage should exist.



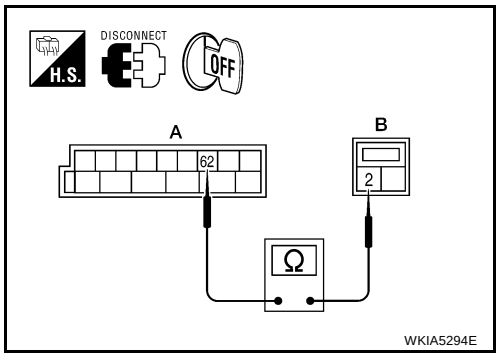
OK or NG

OK >> GO TO 3.
NG >> GO TO 4.

3. CHECK STEP LAMP CIRCUIT

1. Disconnect BCM connector and front step lamp LH connector.
2. Check continuity between BCM connector M20 (A) terminal 62 and front step lamp LH connector D11 (B) terminal 2.

2 - 62 : Continuity should exist.



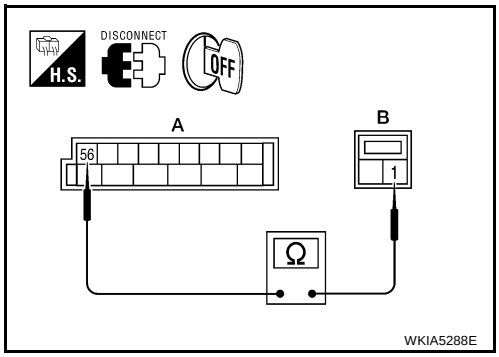
OK or NG

OK >> Replace BCM if front step lamp does not work after setting the connector again. Refer to BCS-25, "BCM" .
NG >> Repair harness or connector.

4. CHECK STEP LAMP CIRCUIT

1. Disconnect BCM connector and front step lamp LH connector.
2. Check continuity between BCM connector M20 (A) terminal 56 and front step lamp LH connector D11 (B) terminal 1.

56 - 1 : Continuity should exist.



OK or NG

OK >> Replace BCM if front step lamp does not work after setting the connector again. Refer to BCS-25, "BCM" .
NG >> Repair harness or connector.

All Foot Lamps Do Not Operate

EKS0092I

1. CHECK INTERIOR ROOM LAMP OPERATION

Check interior room lamp operation.

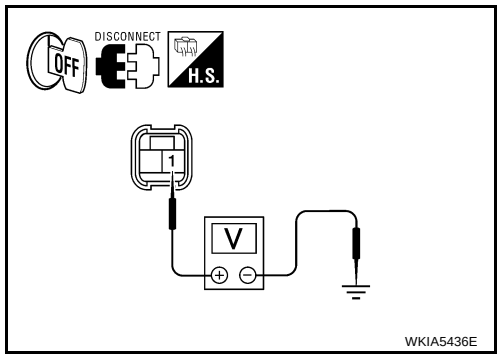
OK or NG

OK >> GO TO 2.
NG >> Inspect malfunction. Refer to LT-149, "All Interior Room Lamps Do Not Operate" .

2. CHECK FOOT LAMP POWER SUPPLY

1. Turn ignition switch OFF.
2. Disconnect foot lamp connector.
3. Open door.
4. Check voltage between foot lamp harness connector M99 (LH) or M100 (RH) terminal 1 and ground.

1 - Ground : Battery voltage should exist.



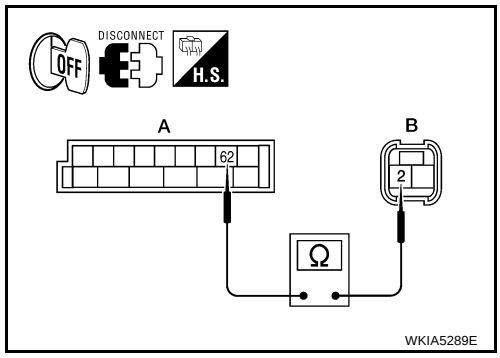
OK or NG

OK >> GO TO 3.
NG >> Repair harness or connector.

3. CHECK FOOT LAMP CIRCUIT

1. Disconnect BCM connector.
2. Check continuity between BCM connector M20 (A) terminal 63 and foot lamp connector M99 (B) (LH) and M100 (B) (RH) terminal 2.

63 - 2 : Continuity should exist.



OK or NG

OK >> Replace foot lamp.
NG >> Repair harness or connector.

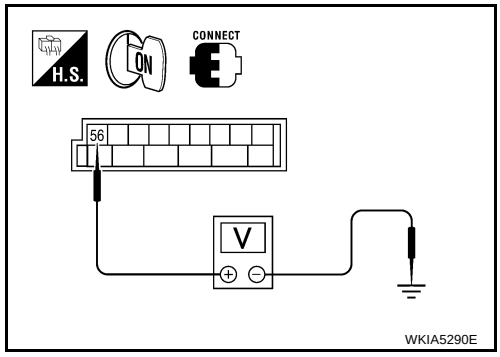
All Interior Room Lamps Do Not Operate

EKS0092J

1. CHECK POWER SUPPLY CIRCUIT

1. All interior room lamp switches are OFF.
2. Turn ignition switch ON.
3. Check voltage between BCM connector M20 terminal 56 ground.

56 - Ground : Battery voltage should exist.



OK or NG

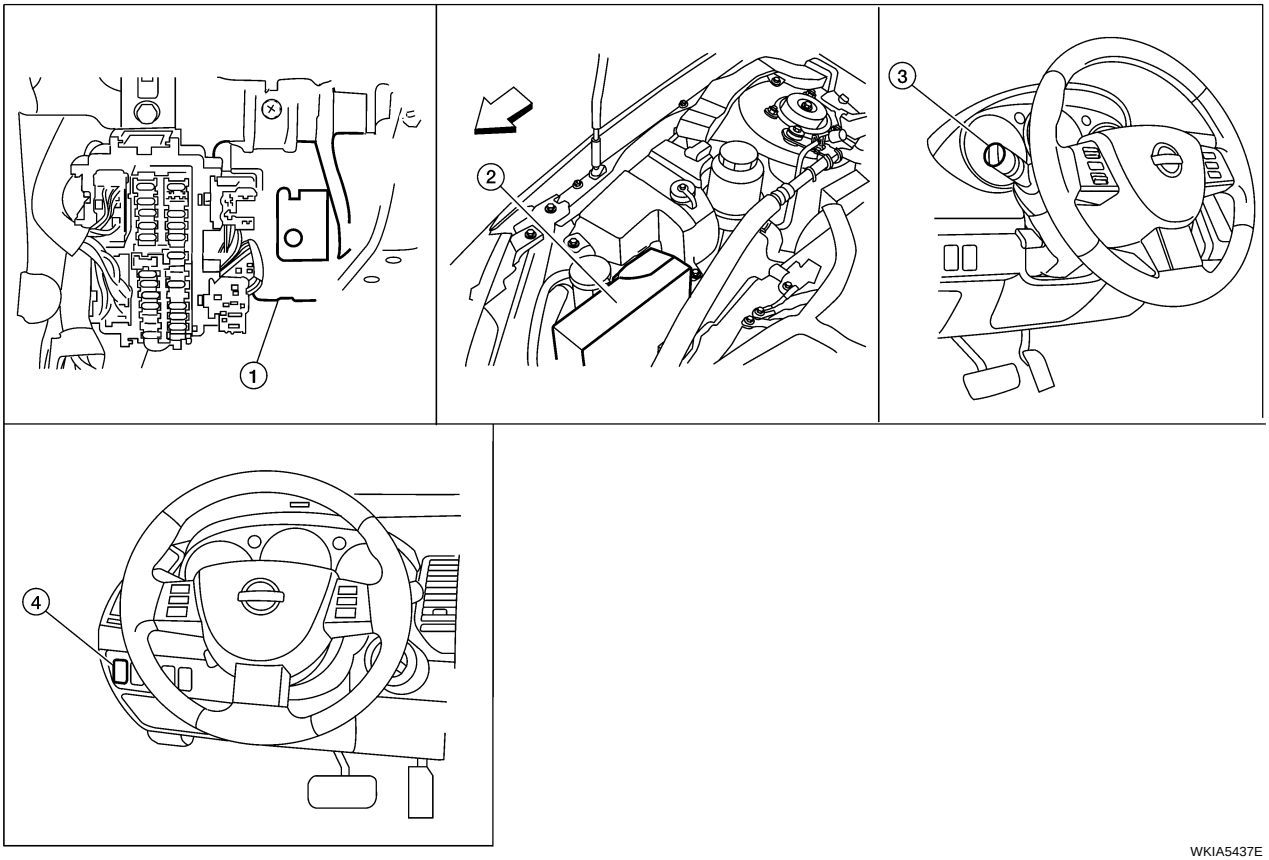
OK >> Repair harness or connector. To prevent making a short circuit, be sure to disconnect battery negative cable after repairing harness, and then reconnect.
NG >> Replace BCM. Refer to BCS-25, "BCM" .

ILLUMINATION

PFP:27545

Component Parts and Harness Connector Location

EKS0092K



WKIA5437E

1. BCM M18, M19 and M20 (View with instrument panel removed)
2. IPDM E/R E121, E122 and E124
3. Combination switch (lighting switch) M28
4. Illumination control switch M5

System Description

EKS0092L

Control of the illumination lamps operation is dependent upon the position of the lighting switch (combination switch). When the lighting switch is placed in the 1ST or 2ND position (or if the auto light system is activated) the BCM (body control module) receives input signal requesting the illumination lamps to illuminate. This input signal is communicated to the IPDM E/R (intelligent power distribution module engine room) across the CAN communication lines. The CPU (central processing unit) of the IPDM E/R controls the tail lamp relay. This relay, when energized, directs power to the illumination lamps, which then illuminate.
Power is supplied at all times

- to ignition relay, located in the IPDM E/R, and
- through 15A fuse (No. 34, located in the IPDM E/R)
- to CPU of the IPDM E/R, and
- through 15A fuse (No. 41, located in the IPDM E/R)
- to CPU of the IPDM E/R, and
- to tail lamp relay, located in the IPDM E/R, and
- through 50A fusible link (letter **f** , located in the fuse and fusible link box)
- to BCM terminal 70, and
- through 10A fuse [No.21, located in fuse block (J/B)]
- to BCM terminal 57.

With the ignition switch in the ON or START position, power is supplied

- to ignition relay, located in the IPDM E/R, and

- through 10A fuse [No. 1, located in the fuse block (J/B)]
- to BCM terminal 38.

With the ignition switch in the ACC or ON position, power is supplied

- through 10A fuse [No. 6, located in the fuse block (J/B)]
- to BCM terminal 11.

Ground is supplied

- to BCM terminal 67
- through grounds M57, M61, and M79, and
- to IPDM E/R terminals 38 and 60
- through grounds E15 and E24.

ILLUMINATION OPERATION BY LIGHTING SWITCH

With the lighting switch in the 1ST or 2ND position (or if the auto light system is activated), the BCM receives input signal requesting the illumination lamps to illuminate. This input signal is communicated to the IPDM E/R across the CAN communication lines. The CPU of the IPDM E/R controls the tail lamp relay which, when energized, directs power

- through IPDM E/R terminal 22
- to illumination control switch terminal 1
- to CVT device terminal 1
- to TCS OFF switch terminal 3 (without VDC)
- to VDC OFF switch terminal 3 (with VDC)
- to AV switch terminal 3
- to hazard switch terminal 3
- to NAVI control unit terminal 61 (with NAVI)
- to front air control switch terminal 5
- to audio unit terminal 9 (without NAVI), terminal 8 (with NAVI)
- to front heated seat switch (LH and RH) terminal 5 (with front heated seats)
- to heated steering wheel switch terminal 3 (with heated steering wheel)
- to Bluetooth ON indicator terminal 3 (with Bluetooth)
- to interior room lamp (console box illumination) terminal 2
- to glove box lamp terminal 1
- to main power window and door lock/unlock switch terminal 16
- to power window and door lock/unlock switch RH terminal 5
- to rear sunshade switch (front and rear) terminal 5 (with rear sunshade)
- to rear heated seat switch (LH and RH) terminal 5 (with rear sunshade)
- to door mirror remote control switch terminal 16
- to display control unit terminal 14 (with NAVI)
- to combination meter terminal 13
- to resistor-1 terminal 1
- through resistor-1 terminal 2
- to combination switch (spiral cable) terminal 26
- to steering switch through combination switch (spiral cable) terminal 18.

Illumination control

- through illumination control switch terminal 2
- to CVT device terminal 2
- to TCS OFF switch terminal 4 (without VDC)
- to VDC OFF switch terminal 4 (with VDC)
- to AV switch terminal 4 (with NAVI)
- to hazard switch terminal 4
- to front air control terminal 6

- to audio unit terminal 8 (without NAVI)
- to audio unit terminal 7 (with NAVI)
- to front heated seat switch (LH and RH) terminal 6 (with front heated seats)
- to heated steering wheel switch terminal 4 (with heated steering wheel)
- to interior room lamp (console box illumination) terminal 3
- to main power window and door lock/unlock switch terminal 12
- to power window and door lock/unlock switch RH terminal 1
- to rear sunshade switch (front and rear) terminal 6 (with rear sunshade)
- to rear heated seat switch (LH and RH) terminal 6 (with rear sunshade)
- to door mirror remote control switch terminal 15
- to combination meter terminal 14
- to combination switch (spiral cable) terminal 27
- to steering switch through spiral cable terminal 21.

Ground is supplied

- to illumination control switch terminal 3
- to glove box lamp terminal 2
- to NAVI control unit terminal 1 (with NAVI)
- through grounds M57, M61 and M79.

With power and ground supplied, illumination lamps illuminate.

EXTERIOR LAMP BATTERY SAVER CONTROL

When the combination switch (lighting switch) is in the 1ST or 2ND position (or if auto light system is activated) and the ignition switch is turned from ON or ACC to OFF, the battery saver control function is activated.
Under this condition, the illumination lamps remain illuminated for 5 minutes, then the illumination lamps are turned off.
When the lighting switch is turned from OFF to 1ST or 2ND position (or if auto light system is activated) after illumination lamps are turned off by the battery saver control, the illumination lamps illuminate again.
Exterior lamp battery saver control mode can be changed by the function setting of CONSULT-II.

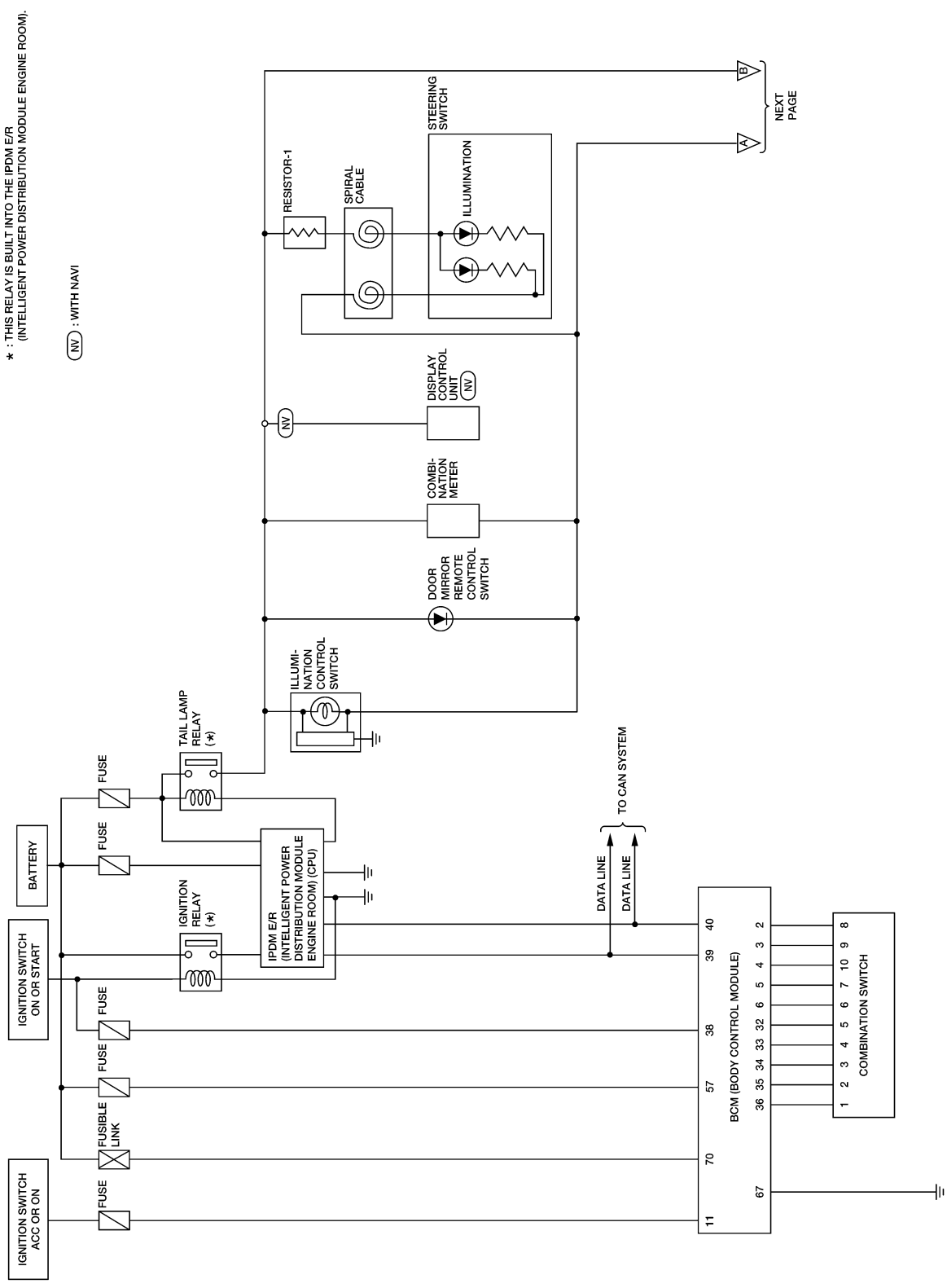
CAN Communication System Description

EKS0092M

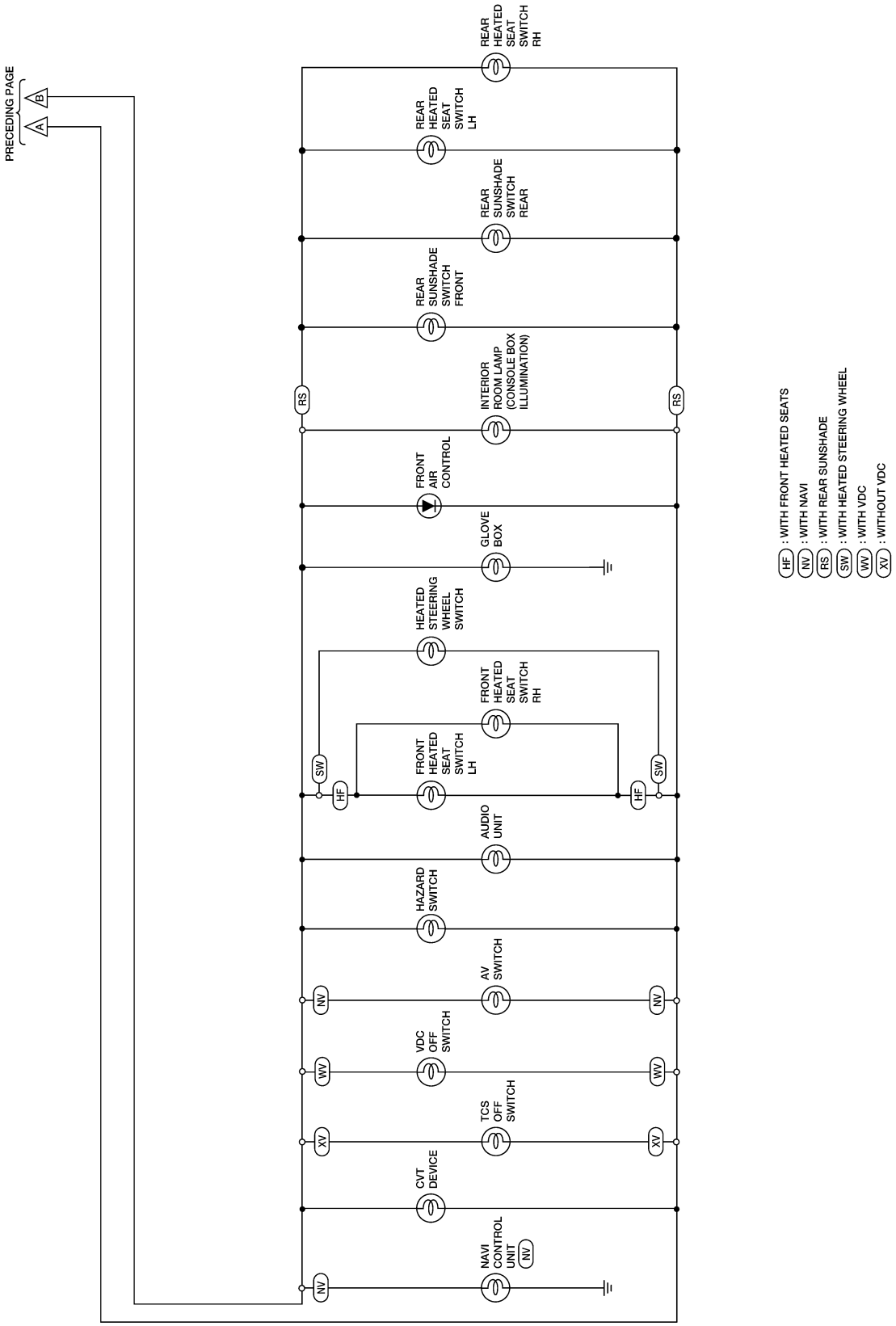
Refer to LAN-4, "SYSTEM DESCRIPTION" .

Schematic

EKS0092N



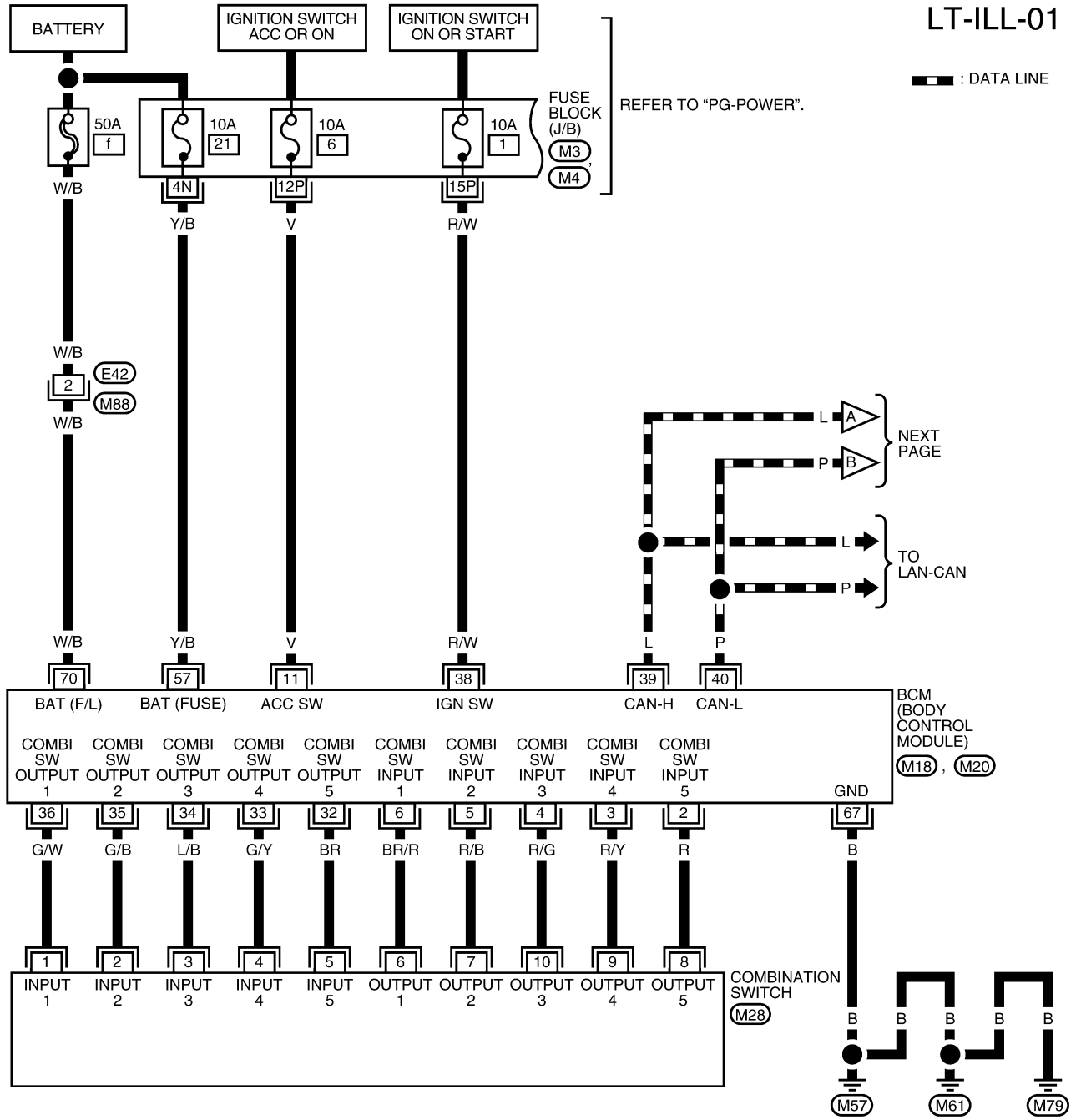
WKWA4887E

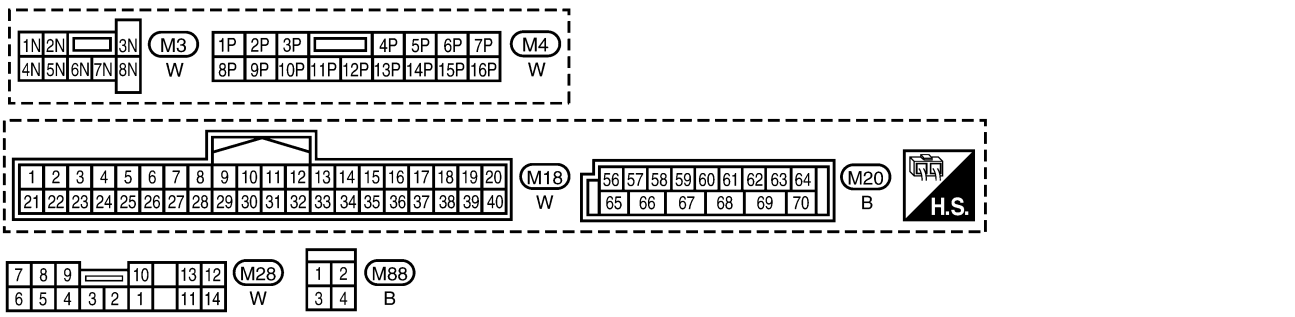

PRECEDING PAGE
A
B
REAR HEATED SEAT SWITCH RH
REAR HEATED SEAT SWITCH LH
REAR SUNSHADE SWITCH REAR
REAR SUNSHADE SWITCH FRONT
INTERIOR ROOM LAMP (CONSOLE BOX ILLUMINATION)
RS
FRONT AIR CONTROL
GLOVE BOX
HEATED STEERING WHEEL SWITCH
FRONT HEATED SEAT SWITCH RH
FRONT HEATED SEAT SWITCH LH
SW
HF
AUDIO UNIT
HAZARD SWITCH
AV SWITCH
NV
VDC OFF SWITCH
WV
TCS OFF SWITCH
XV
CVT DEVICE
NAVI CONTROL UNIT
HF : WITH FRONT HEATED SEATS
NV : WITH NAVI
RS : WITH REAR SUNSHADE
SW : WITH HEATED STEERING WHEEL
WV : WITH VDC
XV : WITHOUT VDC

WKWA4888E

Wiring Diagram — ILL —

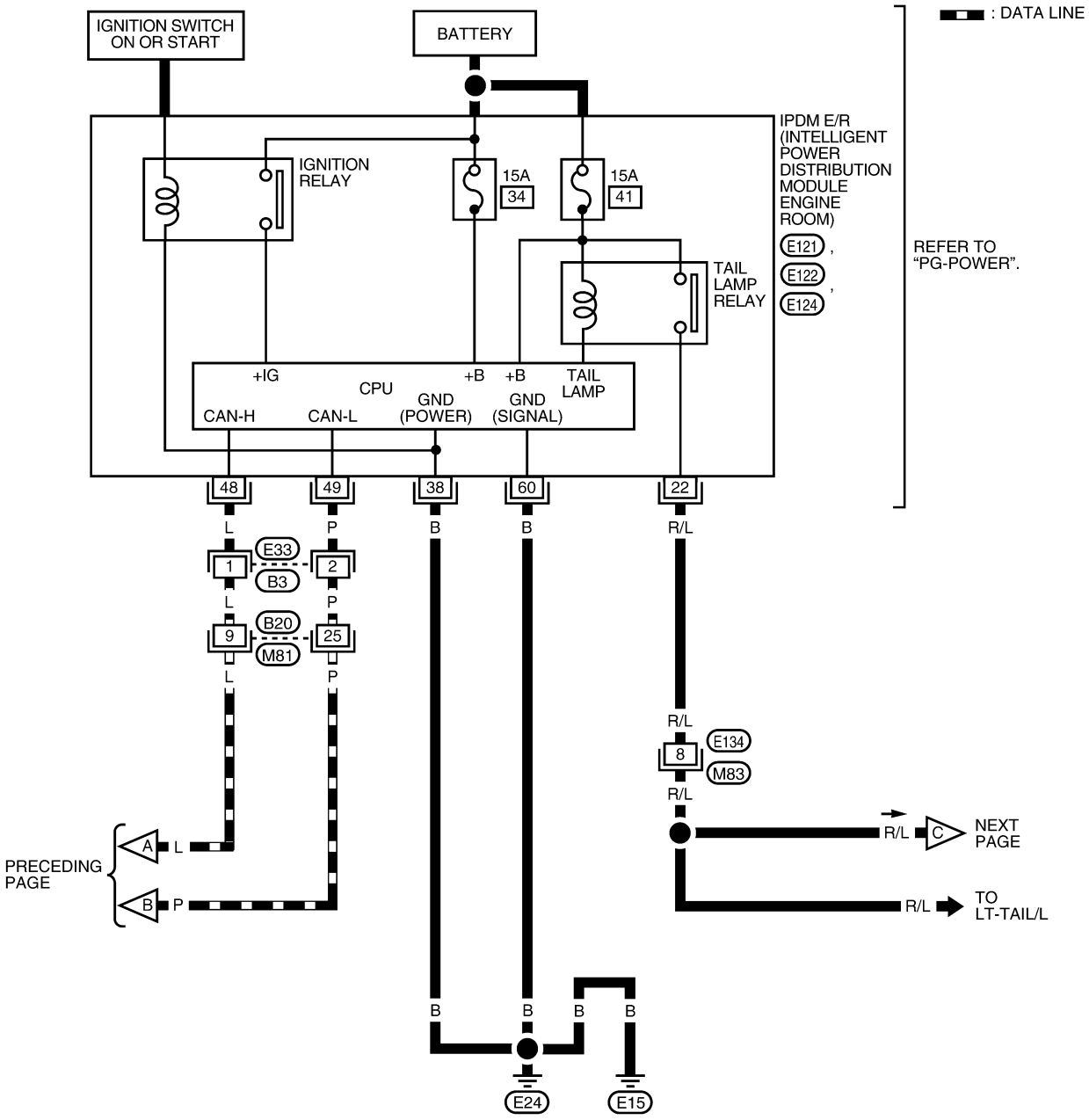
EKS0092O

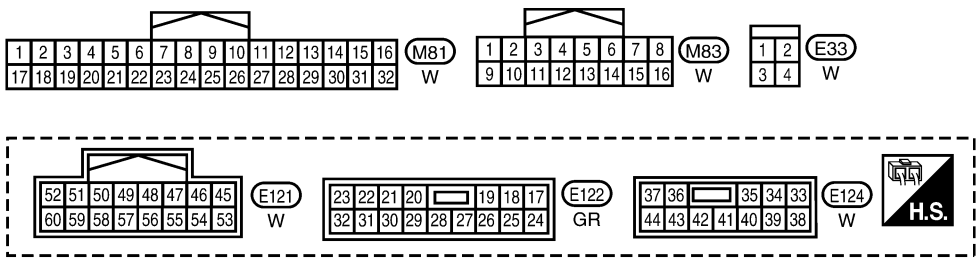




WKWA4889E

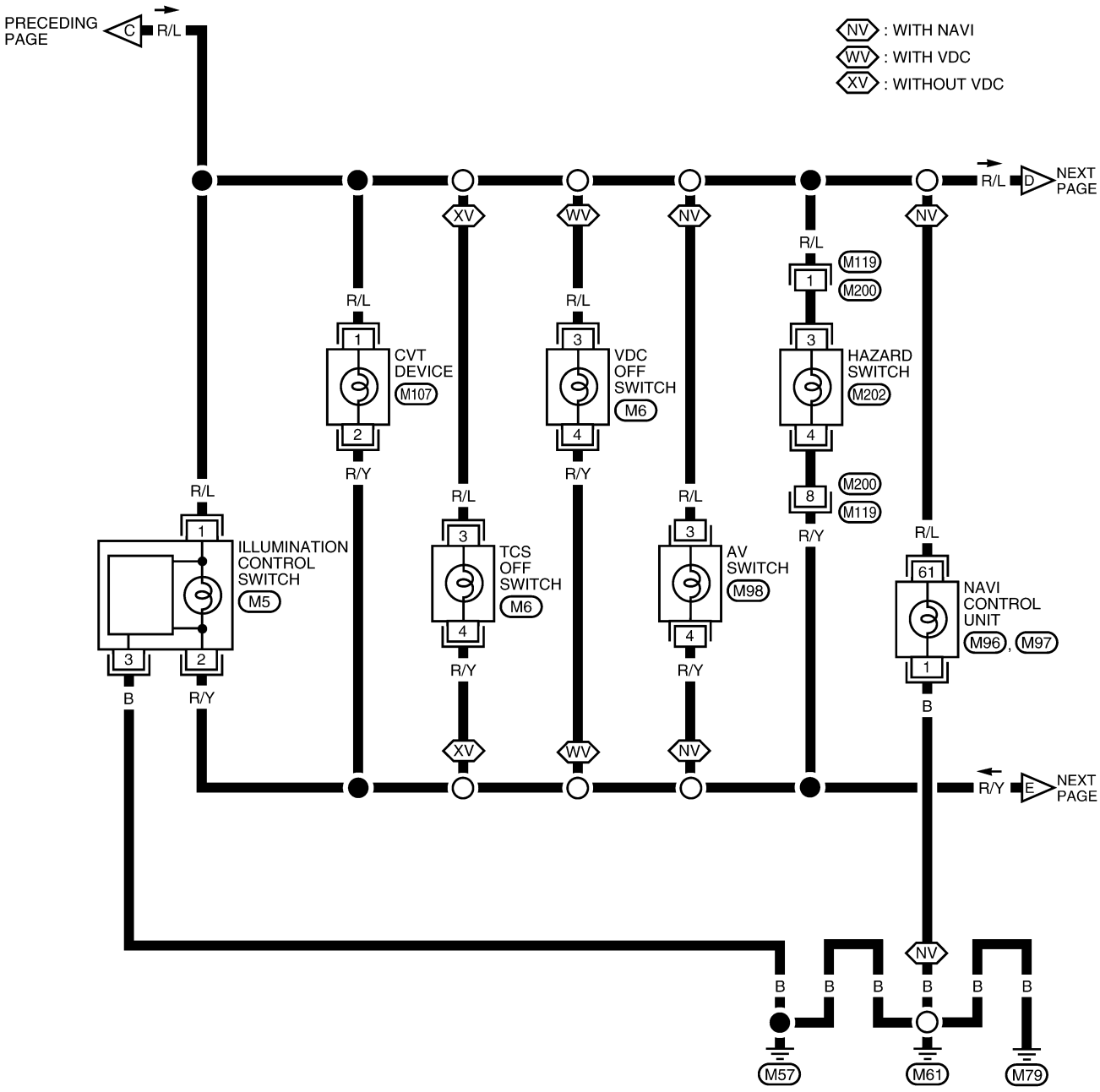
LT-ILL-02

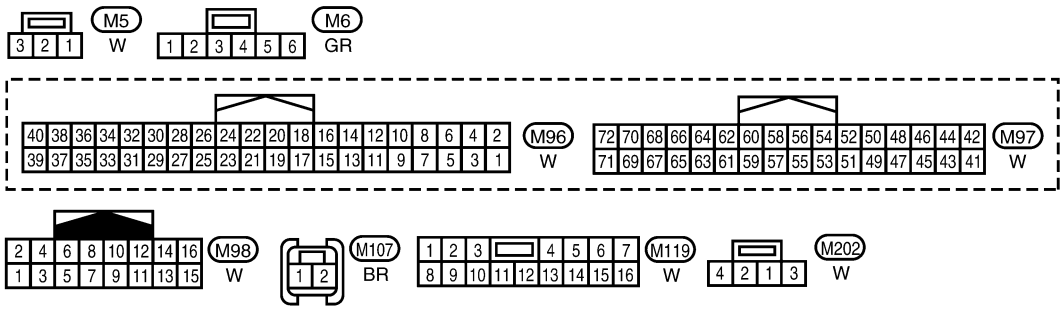




WKWA4890E

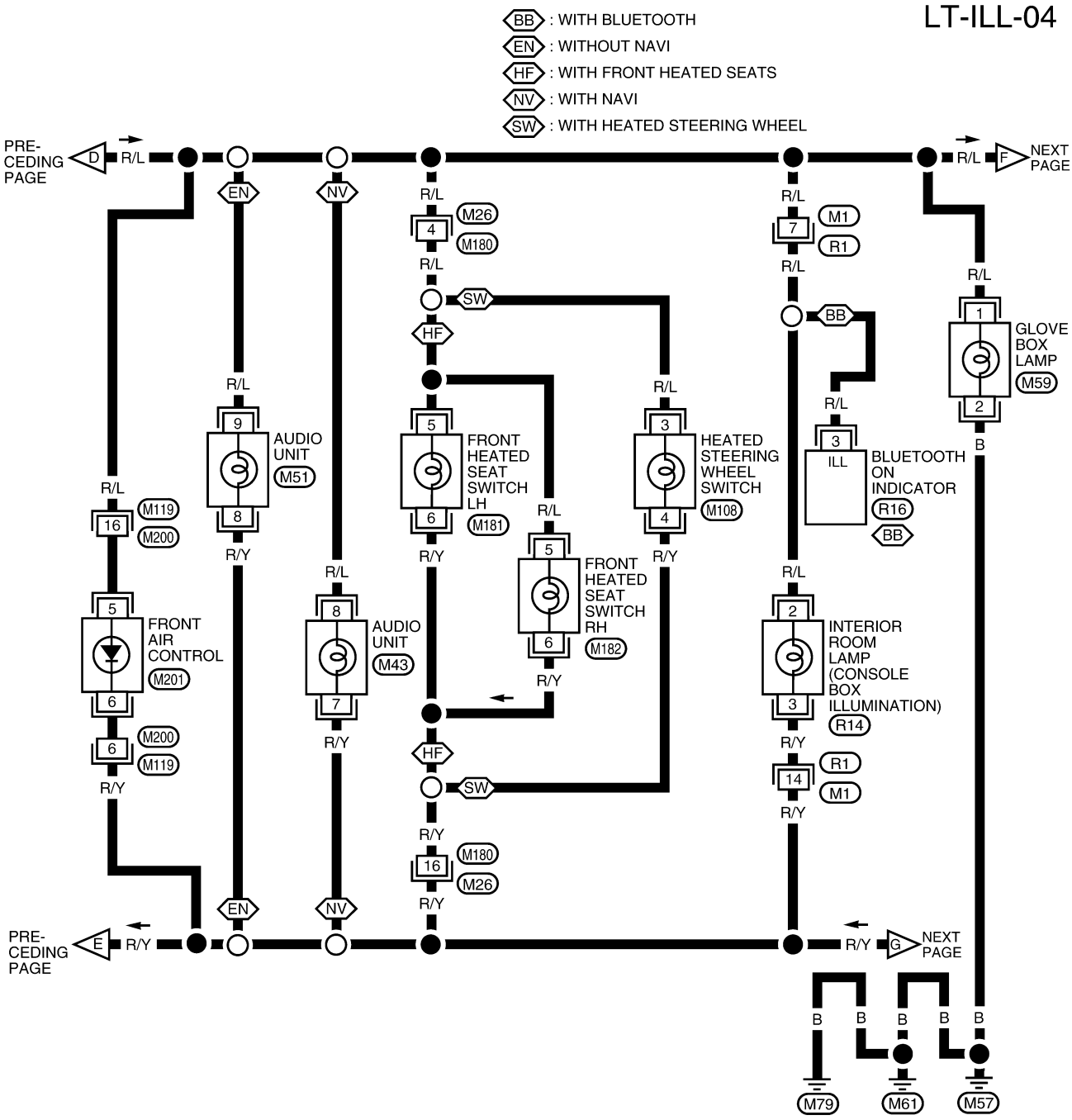
LT-ILL-03

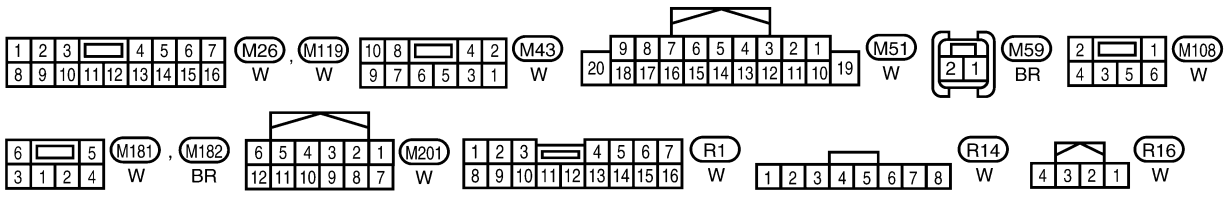




WKWA4891E

LT-ILL-04

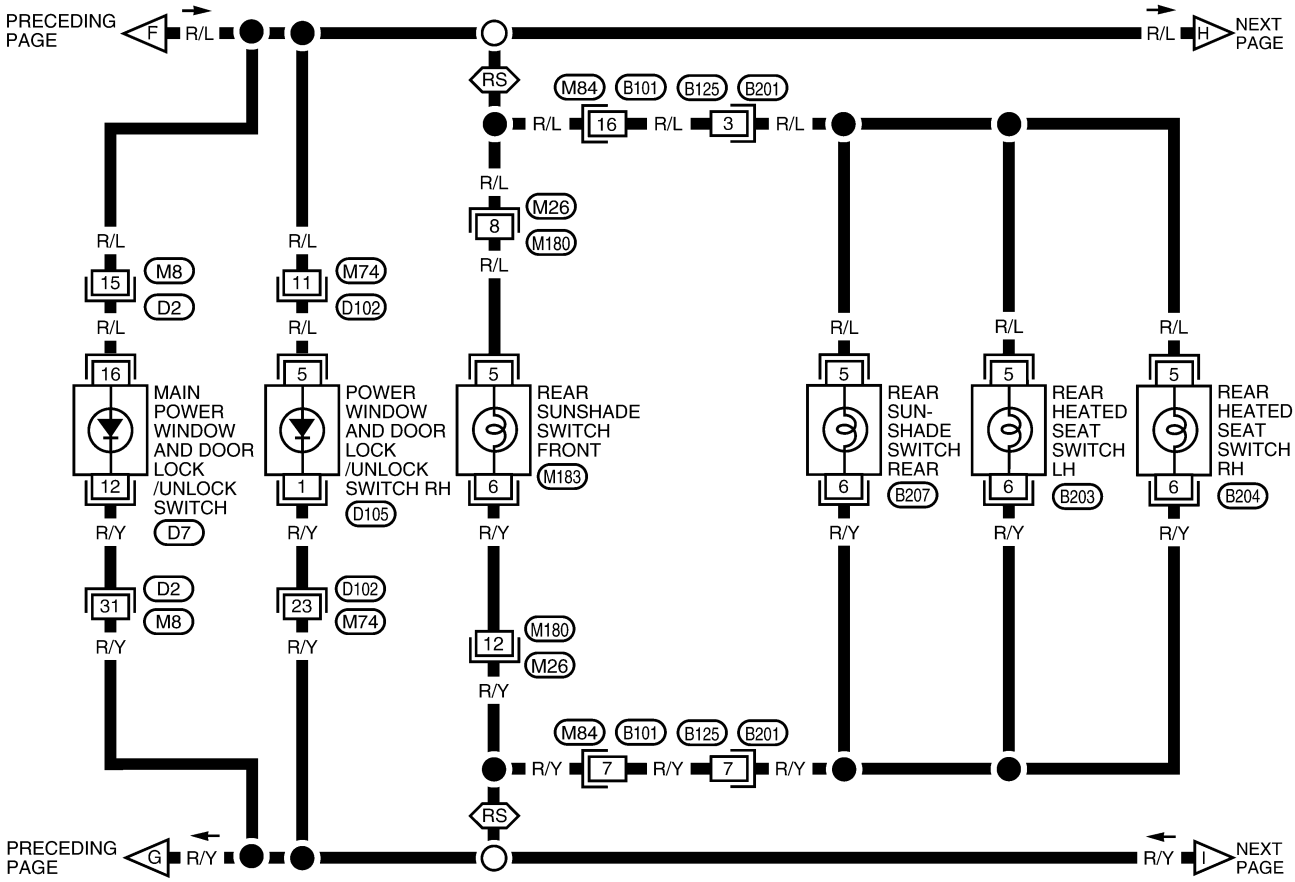


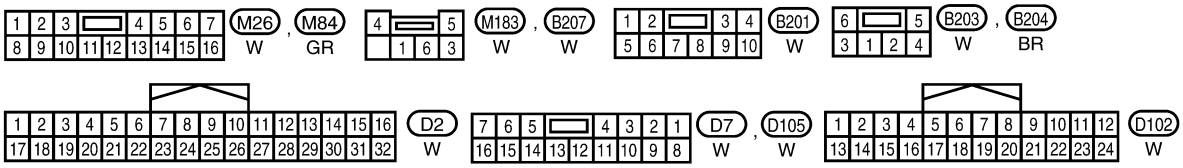


WKWA4892E

LT-ILL-05

RS : WITH REAR SUNSHADE

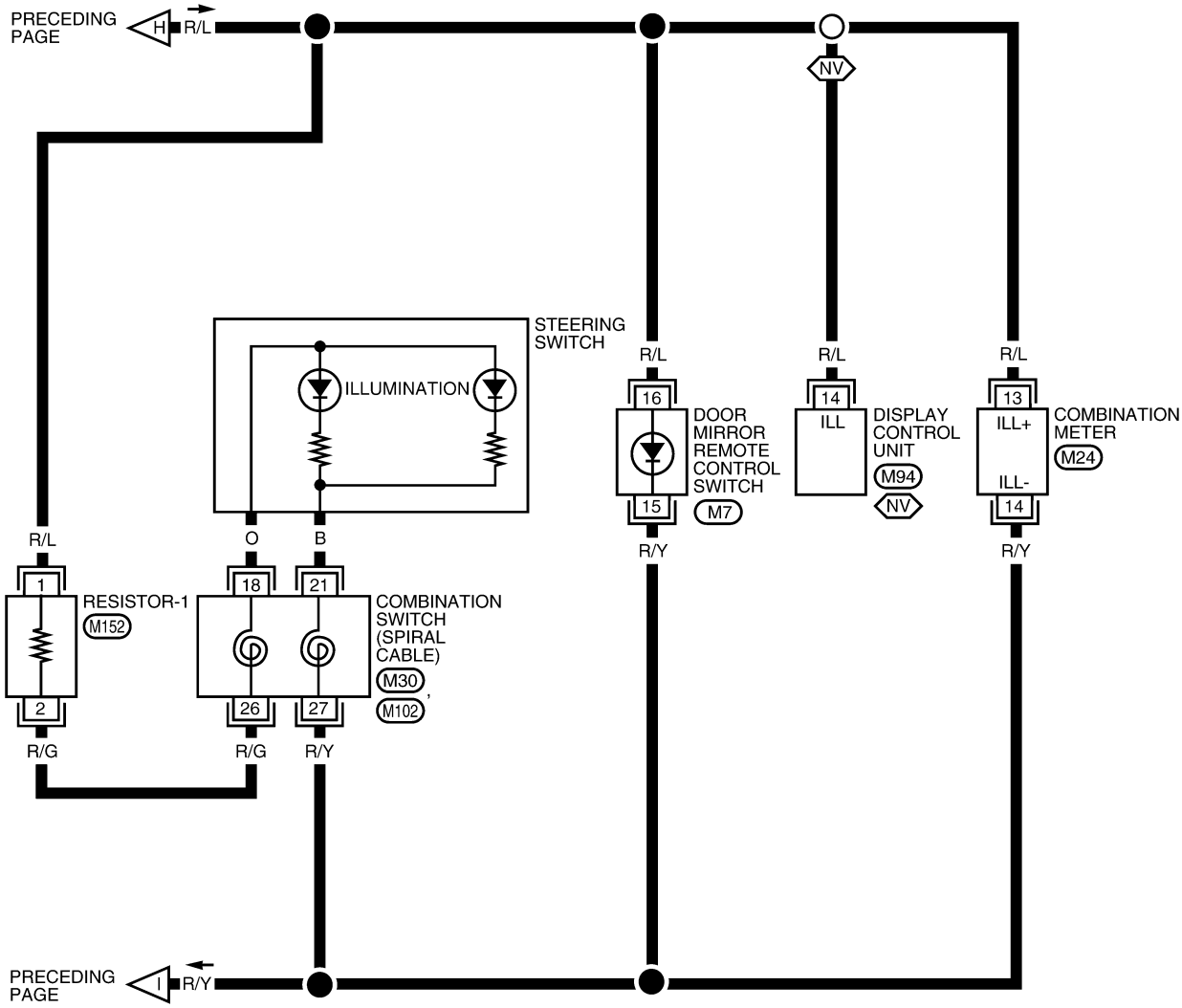


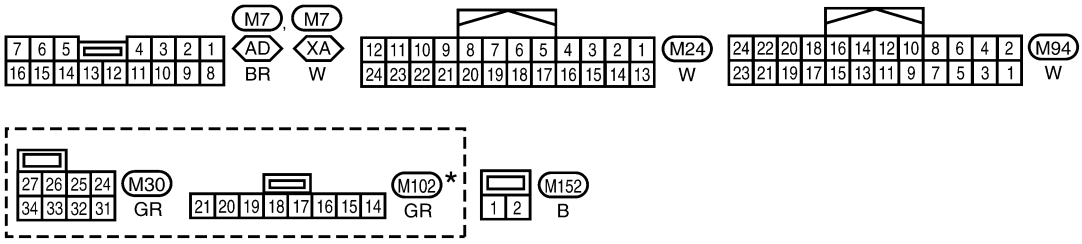


WKWA4893E

LT-ILL-06

AD : WITH AUTOMATIC DRIVE POSITIONER
NV : WITH NAVI
XA : WITHOUT AUTOMATIC DRIVE POSITIONER





*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT" OF PG SECTION.

WKWA4894E

Removal and Installation

EKS0092P

ILLUMINATION CONTROL SWITCH

Removal

1. Remove lower driver instrument panel. Refer to IP-15, "Lower Driver Instrument Panel" .
2. Press tabs and carefully push illumination control switch out of lower driver instrument panel.

Installation

Installation is in the reverse order of removal.

BULB SPECIFICATIONS

PFP:26297

Headlamp

EKS0092Q

Item	Wattage (Bulb No.)
High/Low (Halogen type)	55 (9012)
High/Low (Xenon type)	- (D2S)

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

Exterior Lamp

EKS0092R

Item		Wattage (Bulb No.)
Front combination lamp	Front Park/Turn signal lamp	27/8 (4157NAK)
	Daytime light (for Canada)	27 (3156K)
	Front fog lamp	55 (H11)
Rear combination lamp	Tail/Stop-Turn lamp	27/5 (3057K)
	Rear side marker lamp	5 (168)
Cornering lamp		27 (3156)
Back-up lamp		13 (912)
License plate lamp		5 (168)
High-mounted stop lamp		5 (168)

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

Interior Lamp/Illumination

EKS0092S

Item	Wattage (Bulb No.)
Front personal/map lamp	3.4
Rear personal lamp	8
Trunk room lamp	3.4 (158)
Door step lamp	3.8 (194)
Foot lamp	3.4
Glove box lamp	3.4 (158)
Vanity mirror lamp	2.1
Ignition keyhole illumination	0.74
Console box illumination lamp	3.8 (194)
Rear console box lamp	5 (W5W)

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