SECTION LT
LIGHTING SYSTEM

CONTENTS

PRECAUTIONS

PFP:00001

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

EKS0085Y

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. Information necessary to service the system safely is included in the SRS and SB section of this Service Manual.

WARNING:

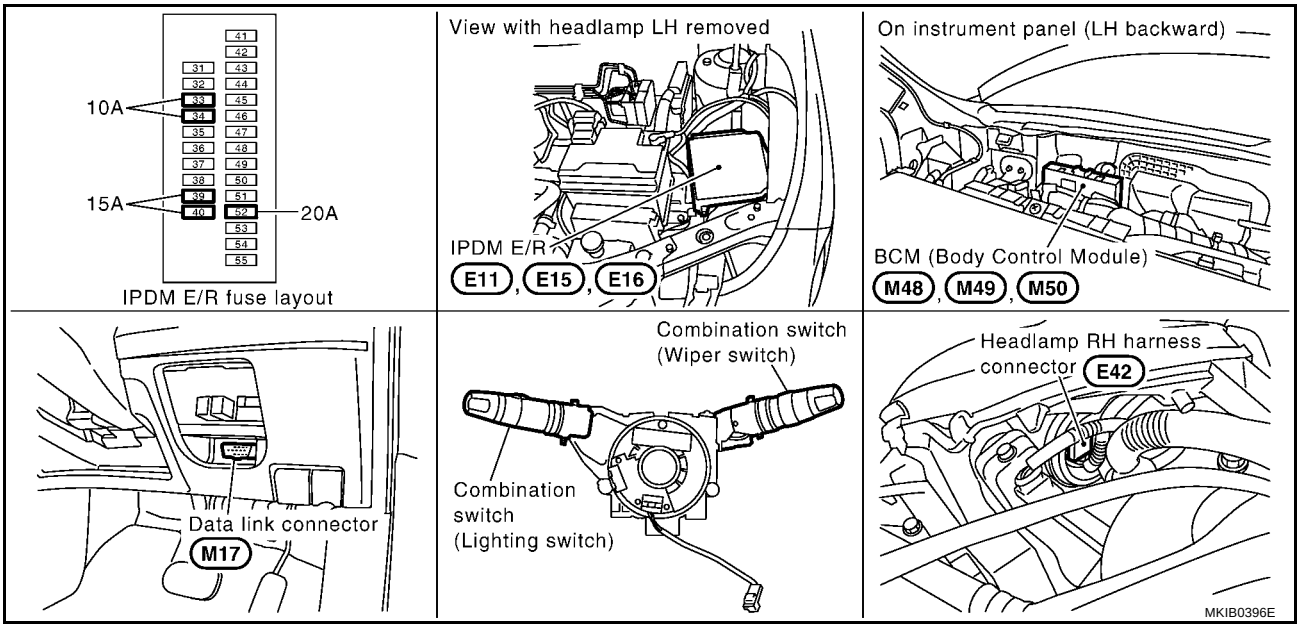
- **To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision which would result in air bag inflation, all maintenance must be performed by an authorized NISSAN/INFINITI dealer.**
- **Improper maintenance, including incorrect removal 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 harness connectors.**

HEADLAMP -CONVENTIONAL TYPE-

PFP:26010

Component Parts and Harness Connector Location

EKS0084Y



System Description

EKS0084Z

The headlamp operation is controlled by the lighting switch which built into the combination switch, BCM and IPDM E/R (intelligent power distribution module engine room).Headlamp low relay, headlamp LH and RH relays are built into IPDM E/R.BCM read combination switch condition.refer toLT-104, "System Description" .

OUTLINE

Power is supplied at all times

- to headlamp high LH relay, located in the IPDM E/R, and
- to headlamp high RH relay, located in the IPDM E/R, and
- to headlamp low relay, located in the IPDM E/R, and
- to BCM (body control module) terminals 74 and 79
- through 40A fusible link (letter **J** , located in the fuse and fusible link box).
- to IPDM E/R
- through 20A fusible link (No.52, located in the IPDM E/R).

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

- to BCM (body control module) terminal 24
- through 10A fuse [No. 4, located in the fuse block (J/B)].
- to IPDM E/R.

Ground is supplied

- to BCM (body control module) terminal 2 and 70
- through body grounds M19 and M20, and
- to IPDM E/R terminals 3 and 54
- through body grounds E25,E26 and E40.

Low Beam Operation

When the lighting switch is turned to 2ND position and placed in LOW position, BCM read combination switch condition (refer to LT-104, "System Description"). And BCM send low beam request signal to IPDM E/R with CAN communication line. Then IPDM E/R is turned on headlamp low relay. Headlamp low relay is energized and then power is supplied.

- to 15A fuse (No. 40, located in the IPDM E/R)
- through terminal 48 of the IPDM E/R
- to terminal 1 of headlamp RH, and

- to 15A fuse (No. 39, located in the IPDM E/R)
- through terminal 50 of the IPDM E/R
- to terminal 1 of headlamp LH.

Ground is supplied

- to terminal 3 of each headlamp
- through body grounds E25, E26 and E40.

With power and ground supplied, low beam headlamps will illuminate.

High Beam Operation/Flash-to-Pass Operation

With the lighting switch is turned to 2ND position and placed in HIGH or PASS position, BCM read combination switch condition (refer to LT-104, "System Description"). And BCM send high beam request signal to IPDM E/R and combination meter with CAN communication line. Then IPDM E/R is turned on headlamp high relay LH and RH. Headlamp high relays are energized and then power is supplied.

- to 10A fuse (No. 33, located in the IPDM E/R)
- through terminal 46 of the IPDM E/R
- to terminal 2 of headlamp RH, and
- to 10A fuse (No. 34, located in the IPDM E/R)
- through terminal 47 of the IPDM E/R
- to terminal 2 of headlamp LH.

Ground is supplied

- to terminal 3 of each headlamp
- through body grounds E25, E26 and E40.

With power and ground supplied, the high beam headlamps will illuminate.
When combination meter received high beam request signal, combination meter will illuminate high beam indicator.

COMBINATION SWITCH READING FUNCTION

Refer to LT-104, "System Description" .

EXTERIOR LAMP BATTERY SAVER CONTROL

When ignition switch is turned from ON (or ACC) to OFF while headlamps illuminated, BCM send headlamp request signal to IPDM E/R with CAN communication line. After counting 5 minutes by BCM, it send headlamp off request signal to IPDM E/R. Then the headlamps are turned off. The headlamps are turned off when driver side door is opened even if 30 seconds have not passed after ignition switch is turned ON (or ACC) to OFF positions while headlamps are illuminated.
Exterior lamp battery saver control mode can be changed by the function setting of CONSULT-II.

FRIENDLY LIGHTING FUNCTION

High beam headlamps will illuminate for 30 seconds when,

- ignition switch is in OFF position,
- lighting switch is placed in OFF position, and
- lighting switch is placed in PASS position.

BCM re-starts to count for 30 seconds, when all doors are locked with remote controller or Intelligent Key during Friendly lighting function is activating.
Friendry lighting function time can be changed using “WORK SUPPORT” mode in “HEADLAMP”.

FAIL-SAFE FUNCTION

When CAN communication with other control units is impossible, IPDM E/R performs fail-safe control. If the fail-safe system is operating, headlamps illuminate when the ignition switch is turned from OFF to ON or ACC and headlamps are turned off when the ignition switch is turn from ON or ACC to OFF. If the fail-safe system is operating, headlamps does not operate when the combination switch is in any position. After CAN communication recovers normally, it also returns to normal control.(Refer toPG-19, "FAIL-SAFE FUNCTION")

CAN Communication

EKS008IU

SYSTEM DESCRIPTION

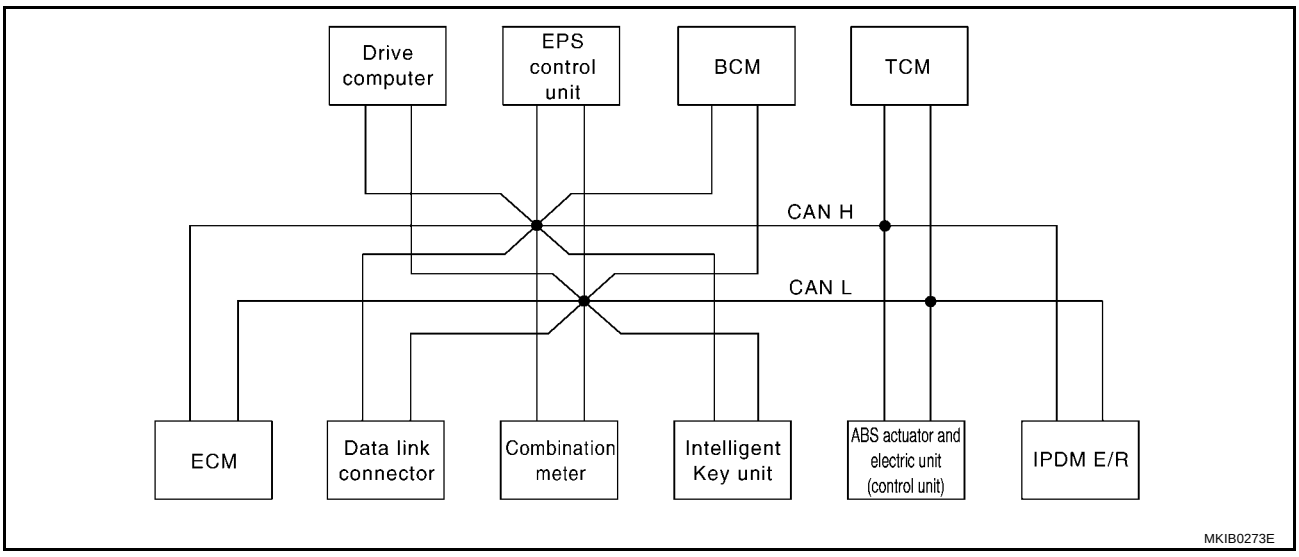
CAN (Controller Area Network) is a serial communication line for real time application. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Many elec-

tronic control units are equipped onto a vehicle, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN-H line, CAN-L line) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.

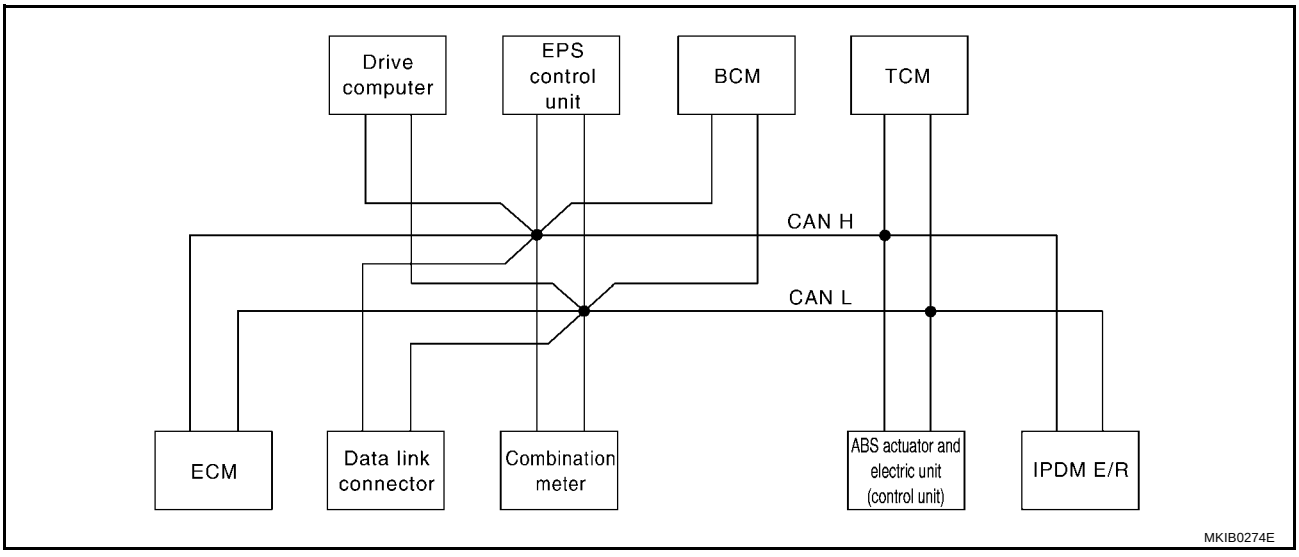
A/T MODELS

System diagram

- With Intelligent Key system



- Without Intelligent Key system



Input/output signal chart

T: Transmit R: Receive

Signals	ECM	Combination meter.	Intelligent Key unit	Drive computer	EPS control unit	BCM	ABS actuator and electric unit (control unit)	TCM	IPDM E/R
Engine speed signal	T	R		R	R				
Engine coolant temperature signal	T	R							
A/T self-diagnosis signal	R							T	
Output shaft revolution signal	R							T	

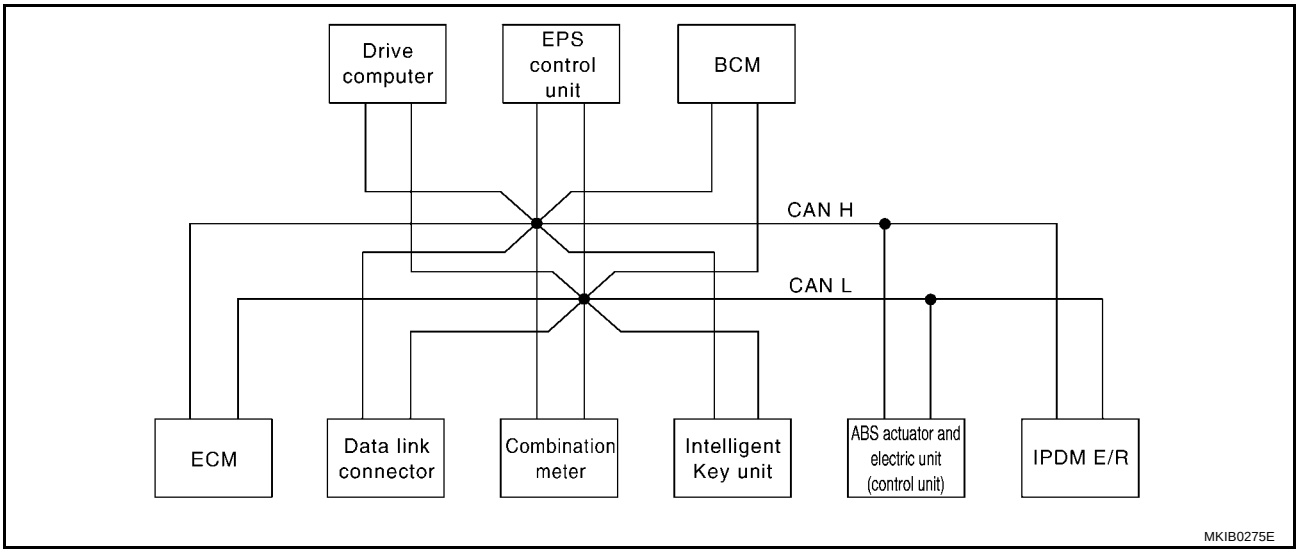
Signals	ECM	Combi-nation meter.	Intelli-gent Key unit	Drive com-puter	EPS control unit	BCM	ABS actuator and electric unit (control unit)	TCM	IPDM E/R
Accelerator pedal position signal	T							R	
Closed throttle position signal	T							R	
Wide open throttle position signal	T							R	
A/T shift position signal		R						T	
Stop lamp switch signal		T						R	
O/D OFF indicator lamp signal		R						T	
Engine and A/T integrated control signal	T							R	
	R							T	
Fuel consumption monitor signal	T	R							
Oil pressure switch signal		R		R					T
A/C compressor request signal	T								R
Heater fan switch signal	R					T			
Cooling fan speed request signal	T								R
Cooling fan speed status signal	R								T
Position lights request signal		R		R		T			R
Position light status signal	R								T
Low beam request signal						T			R
Low beam status signal	R								T
High beam request signal		R				T			R
High beam status signal	R								T
Day time light request signal						T			R
Vehicle speed signal	R	R			R		T		
	R	T	R	R	R	R			
Sleep/wake up signal		R	R			T			R
Door switch signal		R	R	R		T			R
Turn indicator signal		R				T			
Buzzer output signal		R				T			
		R	T						
MI signal	T	R		R					
Front wiper request signal						T			R
Front wiper stop position signal						R			T
Rear window defogger switch signal						T			R
Rear window defogger control signal	R								T
Drive computer signal		T		R					
EPS warning lamp signal		R		R	T				
ABS warning lamp signal		R		R			T		
ABS operation signal	R						T		
Brake warning lamp signal		R		R			T		

Signals	ECM	Combination meter.	Intelligent Key unit	Drive computer	EPS control unit	BCM	ABS actuator and electric unit (control unit)	TCM	IPDM E/R
Buck-up lamp signal					R	T			
Fuel low warning signal		T		R					
Battery charge malfunction signal		T		R					
Air bag system warning signal		T		R					
Brake fluid level warning signal		T		R					
Engine coolant temperature warning signal		T		R					
Front fog lamp request signal		R				T			R
Rear fog lamp status signal		R				T			
Headlamp washer request signal						T			R
Door lock/unlock request signal			R			T			
Door lock/unlock status signal			R			T			
KEY indicator signal		R	T						
LOCK indicator signal		R	T						

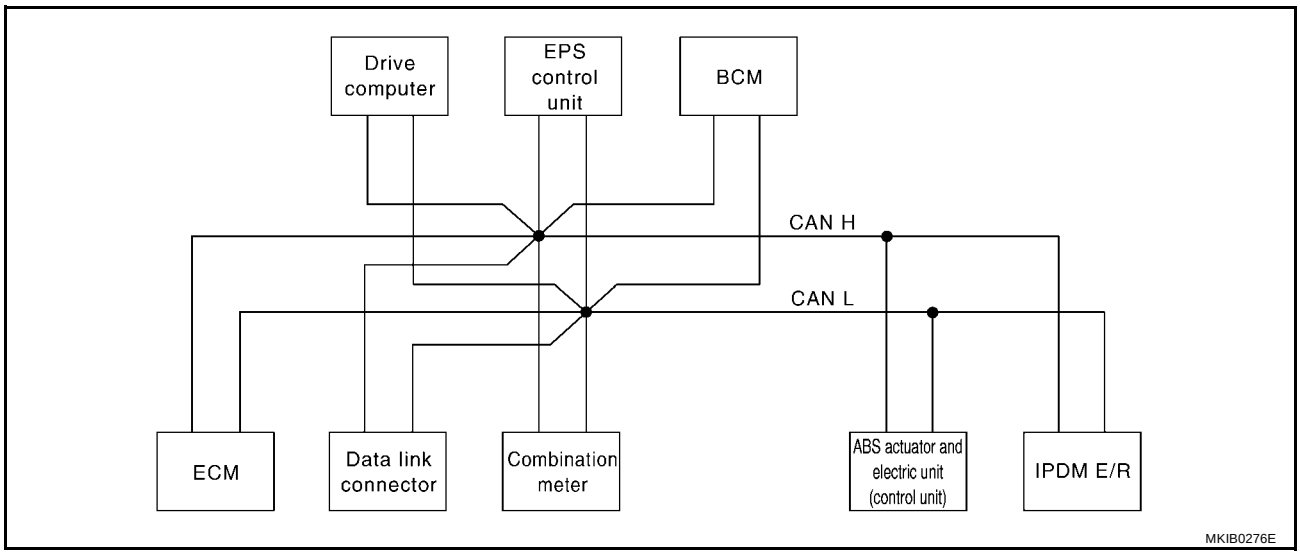
M/T MODELS

System diagram

- With Intelligent Key system



- Without Intelligent Key system



Input/output signal chart

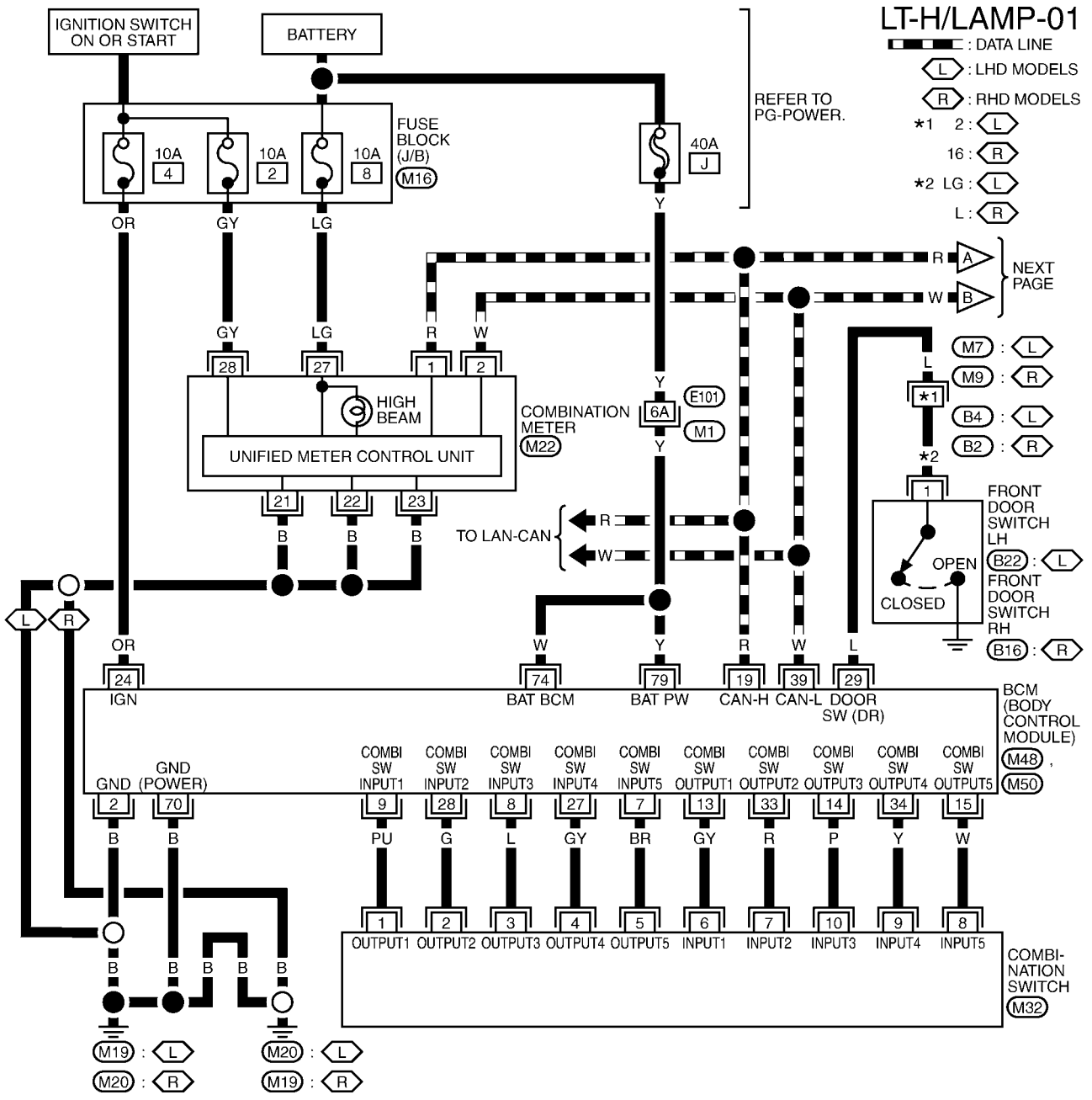
T: Transmit R: Receive

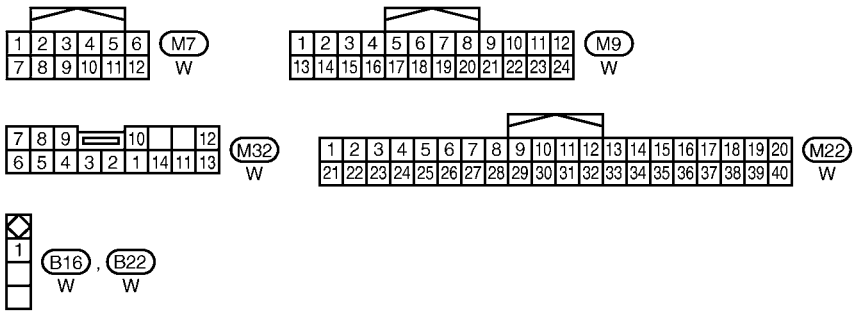
Signals	ECM	Combination meter.	Intelligent Key unit	Drive computer	EPS control unit	BCM	ABS actuator and electric unit (control unit)	IPDM E/R
Engine speed signal	T	R		R	R			
Engine coolant temperature signal	T	R						
Fuel consumption monitor signal	T	R						
Oil pressure switch signal		R		R				T
A/C compressor request signal	T							R
Heater fan switch signal	R					T		
Cooling fan speed request signal	T							R
Cooling fan speed status signal	R							T
Position lights request signal		R		R		T		R
Position light status signal	R							T
Low beam request signal						T		R
Low beam status signal	R							T
High beam request signal		R				T		R
High beam status signal	R							T
Day time light request signal						T		R
Vehicle speed signal	R	R			R		T	
	R	T	R	R	R	R		
Sleep/wake up signal		R	R			T		R
Door switch signal		R	R	R		T		R
Turn indicator signal		R				T		
Buzzer output signal		R				T		
		R	T					
MI signal	T	R		R				
Front wiper request signal						T		R
Front wiper stop position signal						R		T

Signals	ECM	Combination meter.	Intelligent Key unit	Drive computer	EPS control unit	BCM	ABS actuator and electric unit (control unit)	IPDM E/R
Rear window defogger switch signal						T		R
Rear window defogger control signal	R							T
Drive computer signal		T		R				
EPS warning indicator signal		R		R	T			
ABS warning lamp signal		R		R			T	
ABS operation signal	R			R			T	
Brake warning lamp signal		R					T	
Buck-up lamp signal					R	T		
Fuel low warning signal		T		R				
Battery charge malfunction signal		T		R				
Air bag system warning signal		T		R				
Brake fluid level warning signal		T		R				
Engine coolant temperature warning signal		T		R				
Front fog lamp request signal		R				T		R
Rear fog lamp status signal		R				T		
Headlamp washer request signal						T		R
Door lock/unlock request signal			R			T		
Door lock/unlock status signal			R			T		
KEY indicator signal		R	T					
LOCK indicator signal		R	T					

Wiring Diagram — H/LAMP—

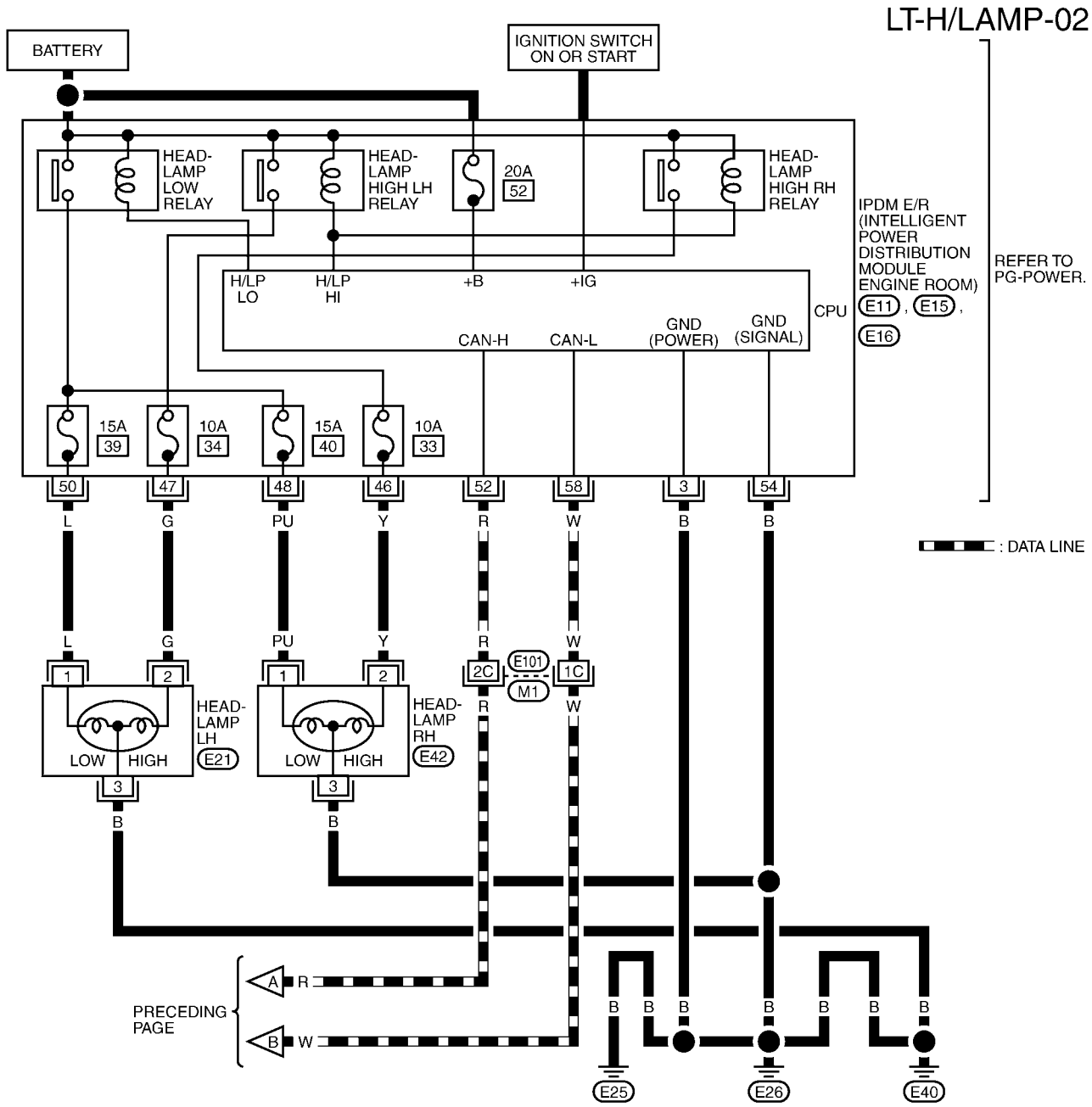
EKS00850

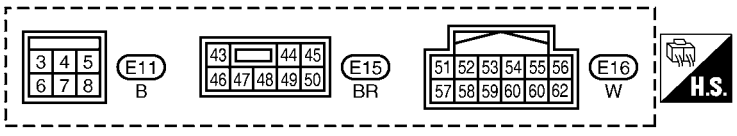


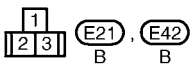


REFER TO THE FOLLOWING.
M1 -SUPER MULTIPLE JUNCTION (SMJ)
M16 -FUSE BLOCK- JUNCTION BOX (J/B)
M48 , M50 -ELECTRICAL UNITS

MKWA0807E





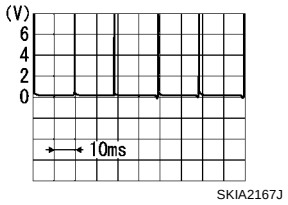
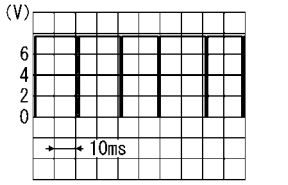
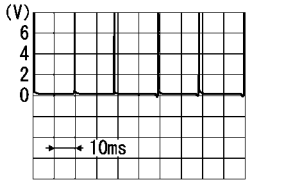


REFER TO THE FOLLOWING.
M1 -SUPER MULTIPLE JUNCTION (SMJ)

MKWA0808E

Terminals and Reference Value for BCM

EKS007Q5

Terminal No.	Wire color	Signal designation	Measuring condition			Reference value (V)
			Ignition switch	Operation or condition		
2	B	Ground	ON	—		Approx. 0
7	BR	Combination switch input 5	ON	Headlamps, turn signal, wipers OFF		 SKIA2167J
8	L	Combination switch input 3				
9	PU	Combination switch input 1				
27	GY	Combination switch input 4				
28	G	Combination switch input 2				
13	GY	Combination switch output 1	ON	Headlamps, turn signals, wipers OFF (wiper volume is 1 or 7)		 SKIA2166J
14	P	Combination switch output 3				
15	W	Combination switch output 5				
33	R	Combination switch output 2		Headlamps, turn signals, wipers OFF (wiper volume is other than 1 or 7)		 SKIA2167J
34	Y	Combination switch output 4				
19	R	CAN H	—	—		—
24	OR	Ignition power supply	ON	—		Approx. 12
29	L	Driver door switch signal	OFF	Driver door switch	ON (open)	Approx. 0
					OFF (closed)	Approx. 12
39	W	CAN L	—	—		—
70	B	Ground	ON	—		Approx. 0
74	W	Battery power supply	OFF	—		Approx. 12
79	Y	Battery power supply	OFF	—		Approx. 12

Terminals and Reference Values for IPDM E/R

EKS007Q6

Terminal No.	Wire color	Signal designation	Measuring condition			Reference value (V)
			Ignition switch	Operation or condition		
3	B	Ground	ON	—		Approx. 0
46	Y	Headlamp high beam (RH)	ON	Lighting switch (high beam)	ON	Approx. 12
47	G	Headlamp high beam (LH)	ON		OFF	Approx. 0
48	PU	Headlamp low beam (RH)	ON	Lighting switch (low beam)	ON	Approx. 12
50	L	Headlamp low beam (LH)	ON		OFF	Approx. 0
52	R	CAN H	—	—		—
54	B	Ground	ON	—		Approx. 0
58	W	CAN L	—	—		—

How to Proceed With Trouble Diagnosis

EKS007Q7

1. Confirm the symptom or customer complaints.
2. Understand operation description and function description.
   Refer to Headlamp LT-5, "System Description" .
3. Carry out the Preliminary Check. Refer to LT-16, "Preliminary Check" .
4. Confirm headlamp does not operate by fail-safe control of IPDM E/R. Refer to PG-19, "FAIL-SAFE FUNCTION" .
5. Check symptom and repair or replace the cause of mulfunction.
6. Dose the headlamp operate normally? Yes: GO TO 7. No: GO TO 5.
7. INSPECTION END.

Preliminary Check

EKS00890

CHECK POWER SUPPLY AND GROUND CIRCUIT

1. CHECK FUSES

- Check BCM fuse and fusible link for blown-out.

UNIT	POWER SOURCE	FUSE No.
BCM	Battery	J
	Ignition switch ON or START position	4

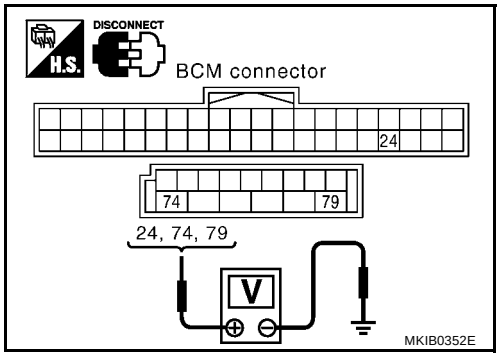
Refer to LT-12, "Wiring Diagram — H/LAMP—" .

OK or NG

OK >> GO TO 2.
NG >> If fuse is blown, be sure to eliminate cause of malfunction before installing new fuse. Refer toPG-4, "POWER SUPPLY ROUTING" .

2. CHECK POWER SUPPLY CIRCUIT

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



Terminals			Ignition switch position		
(+)		(–)	OFF	ACC	ON
Connector	Terminal (Wire color)				
M50	74 (W)	Ground	Battery voltage	Battery voltage	Battery voltage
M50	79 (Y)		Battery voltage	Battery voltage	Battery voltage
M48	24 (OR)		0V	0V	Battery voltage

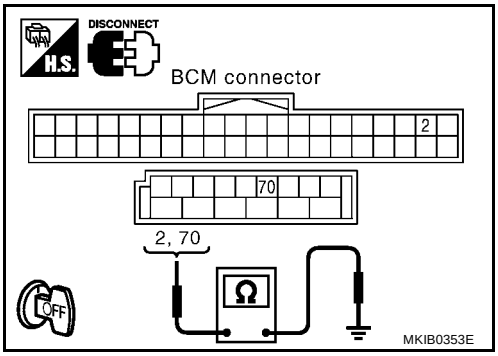
OK or NG

OK >> GO TO 3.
NG >> Check harness for open or short between BCM and fuse.

3. CHECK GROUND CIRCUIT

Check continuity between BCM harness connector and ground.

Terminals			Continuity
(+)		(–)	
Connector	Terminal (Wire color)		
M48	2 (B)	Ground	Yes
M50	70 (B)	Ground	Yes



OK or NG

OK >> INSPECTION END.
NG >> Check ground circuit harness.

CONSULT-II Functions (BCM)

EKS007QA

CONSULT-II has display functions for work support, self-diagnosis, data monitor, and active tests for each part by combining data reception and command transmission via CAN communication lines from the BCM.

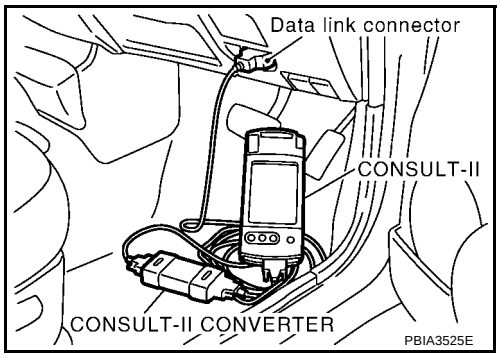
BCM trouble diagnosis item	Inspection Item, Diagnosis Mode	Description
Headlamp	Work support	Changes the setting for each function.
	Data monitor	Displays BCM input data in real time.
	Active test	Sends a drive signal to electronic components to check their operation.

CONSULT-II BASIC OPERATION

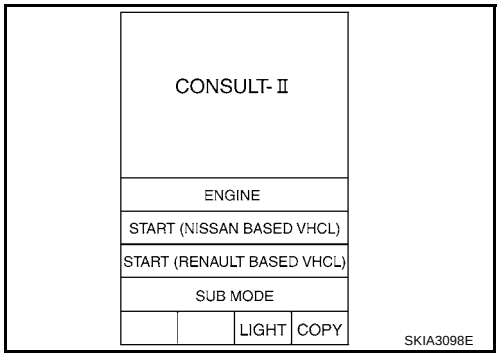
CAUTION:

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

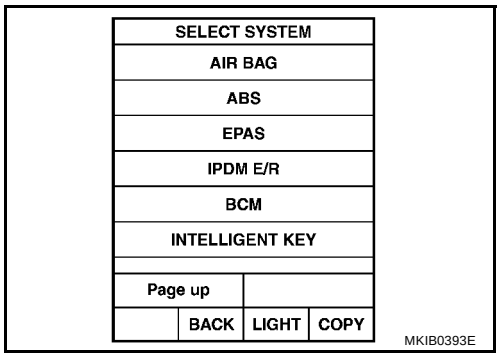
1. Turn ignition switch OFF.
2. Connect “CONSULT-II” and “CONSULT-II CONVERTER” to data link connector.



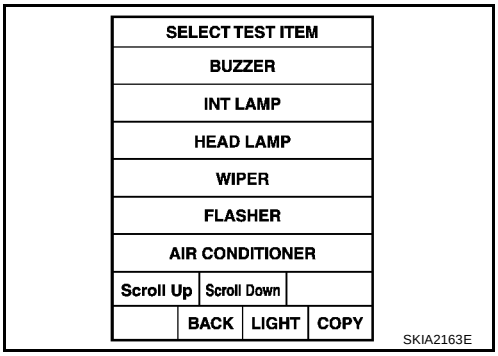
3. Turn ignition switch ON.
4. Touch “START (NISSAN BASED VHCL)”.



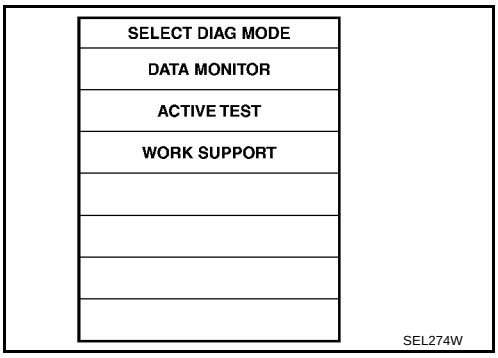
5. Touch “BCM” on the “SELECT SYSTEM” screen.
   If “BCM” is not indicated, go to GI-36, "CONSULT-II Data Link Connector (DLC) Circuit" .



6. Touch “HEAD LAMP” on “SELECT TEST ITEM” screen.



7. Touch “WORK SUPPORT”, “DATA MONITOR”, or “ACTIVE TEST” on the “SELECT DIAG MODE” screen.



WORK SUPPORT

Operation Procedure

1. Touch “HEAD LAMP” on “SELECT TEST ITEM” screen.
2. Touch “WORK SUPPORT” on “SELECT DIAG MODE” screen.
3. Touch “BATTERY SAVER SET” or “LIGHT OFF TIMER SET” on “SELECT WORK ITEM” screen.
4. Touch “START”.
5. Touch “CHANGE SET”.
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 two ON/OFF.	ON	❍
		OFF	—
LIGHT OFF TIMER SET	Friendly lighting function time can be changed. Selects headlamp friendly lighting function mode between two ON/OFF	ON	—
		OFF	❍

DATA MONITOR

Operation Procedure

1. Touch “HEAD LAMP” on “SELECT TEST ITEM” screen.
2. Touch “DATA MONITOR” on the “SELECT DIAG MODE” screen.
3. Touch “ALL SIGNALS” or “SELETION FROM MENU” on the “DATA MONITOR” screen.

ALL SIGNALS	All items will be monitored.
SELECTION FROM MENU	Selects and monitors individual items.

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 to record the status of the item being monitored. To stop recording, touch “STOP”.

Display Item List

Monitor item UNIT.		Display content
IGN ON SW	[ON/OFF]	Displays status (Ignition switch ON: ON/Others OFF, ACC: OFF) as judged from the ignition switch signal.
HI BEAM SW	[ON/OFF]	Displays status (High beam switch: ON/Others: OFF) as judged from lighting switch signal.
HEADLAMP SW	[ON/OFF]	Displays status (Headlamp switch: ON/Others: OFF) as judged from lighting switch signal.
TAIL LAMP SW	[ON/OFF]	Displays status (Lighting switch 1st position: ON/Others: OFF) as judged from lighting switch signal.
PASSING SW	[ON/OFF]	Displays status (Flash-to-pass switch: ON/Others: OFF) as judged from lighting switch signal.
FR FOG SW	[ON/OFF]	Displays status (Front fog lamp switch: ON/Others: OFF) as judged from lighting switch signal.
RR FOG SW	[ON/OFF]	Displays status (Rear fog lamp switch: ON/Others: OFF) as judged from lighting switch signal.
DOOR SW 1	[ON/OFF]	Displays status (Door open: ON/door closed: OFF) as judged from the door switch DR signal.
ENGINE STATUS	[STOP/ STALL/ RUN/ CRA]	Displays status (Engine stop: STOP/engine stall: STALL/engine running: RUN/engine cranking: CRA) as judged from the engine status.

ACTIVE TEST

Operation Procedure

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

Display Item List

Test item	CONSULT-II screen display	Description
Tail lamp relay output	TAIL LAMP	Tail lamp relay can be operated by any ON–OFF operation.
Headlamp relay output	HEADLAMP (LO)	Headlamp relay can be operated by any ON–OFF operation.
Headlamp relay output	HEADLAMP (HI)	Headlamp relay can be operated by any ON–OFF operation.
Front fog lamp relay output	FR FOG LAMP	Front fog lamp relay can be operated by any ON–OFF operation.
Rear fog lamp relay output	RR FOG LAMP	Rear fog lamp relay can be operated by any ON–OFF operation.

CONSULT-II Functions (IPDM E/R)

EKS007QB

The CONSULT-II executes the following functions by combining data reception and command transmission via communication lines from the IPDM E/R.

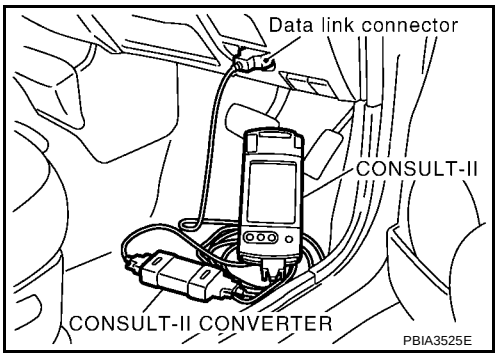
Inspection Item, Diagnosis Mode	Description
Self-diagnostic results	Refer to PG-26, "SELF-DIAG RESULTS" .
Data monitor	Displays the real-time input/output data from IPDM E/R I/O data.
Active test	IPDM E/R can Sends a drive signal to electronic components to check their operation.

CONSULT-II BASIC OPERATION

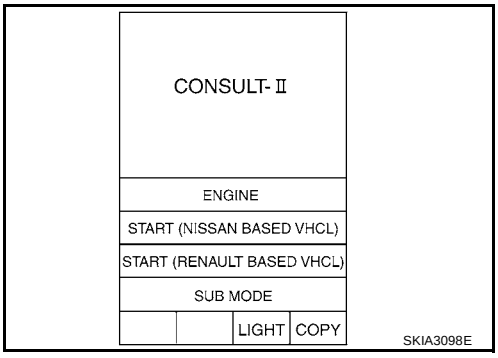
CAUTION:

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

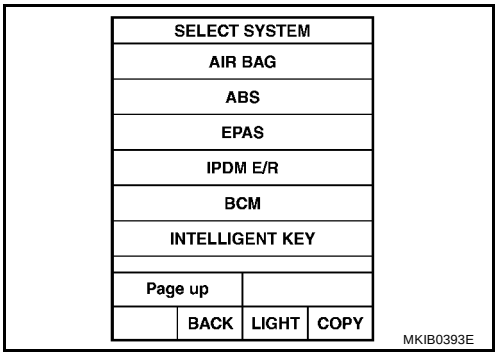
1. Turn ignition switch OFF.
2. Connect “CONSULT-II” and “CONSULT-II CONVERTER” to data link connector.



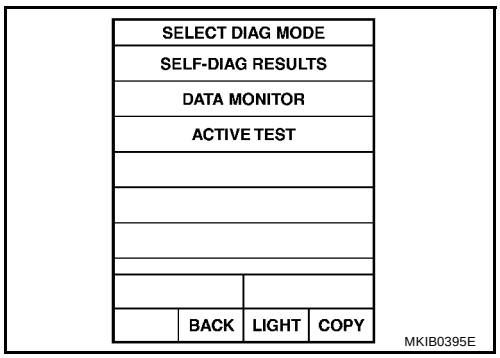
3. Turn ignition switch ON.
4. Touch “START (NISSAN BASED VHCL)”.



5. Touch “IPDM E/R” on the “SELECT SYSTEM” screen.
   If “IPDM E/R” is not indicated, go to GI-36, "CONSULT-II Data Link Connector (DLC) Circuit" .



6. Touch “SELECT DIAG RESULT”, “DATA MONITOR”, “ACTIVE TEST” on the “SELECT DIAG MODE” screen.



SELF-DIAG RESULTS

IPDM E/R perform self-diagnosis of CAN communication. Refer to PG-20, "CAN Communication" .

DATA MONITOR

Operation Procedure

1. Touch “DATA MONITOR” on the “SELECT DIAG MODE” screen.
2. Touch “ALL SIGNALS”,“MAIN SIGNALS”, “SELETION FROM MENU” or “CAN DIAG SUPPORT MNTR” on the “DATA MONITOR” screen.

ALL SIGNALS	All items will be monitored.
MAIN SIGNALS	Monitors previously selected items.
CAN DIAG SUPPORT MNTR	Diagnosis CAN communication
SELECTION FROM MENU	Items are freely selected and monitored.

3. Touch “START”.
4. For “SELECTION FROM MENU”, touch the required monitor items. For “ALL SIGNALS”, all items are monitored. For “MAIN SIGNALS”, the previously selected 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

Monitor item name	Display and unit	Monitor item selection			Display content
		All signals	Main signals	selection from menu	
TAIL & CLR REQ	ON/OFF	×	×	×	Signal status input from BCM
HL LO REQ	ON/OFF	×	×	×	Signal status input from BCM
HL HI REQ	ON/OFF	×	×	×	Signal status input from BCM
FR FOG REQ	ON/OFF	×	×	×	Signal status input from BCM
IGN RLY	ON/OFF	×	×	×	Status of ignition relay being monitored by IPDM E/R
BAT VOLT	V	×		×	Value measured at IPDM E/R

NOTE:

- IPDM E/R data monitoring is performed with ignition switch ON. When monitored at ACC position, the display might not be normal.

ACTIVE TEST

Operation Procedure

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

Test item	CONSULT-II screen display	Description
Headlamp relay (HI, LO) output	HEADLAMP	Headlamp relay (LO, HI) can be operated using random operation (OFF, HI ON, LO ON).
Front fog lamp relay output	FRONT FOGLAMP	Fog lamp relay can be operated by any ON–OFF operation.
Tail lamp relay output	TAIL LAMP	Tail lamp relay can be operated by any ON–OFF operation.

Headlamp High Beam Does Not Illuminate (Both Sides)

EKS00852

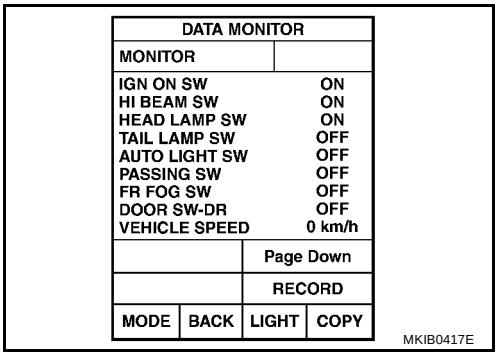
1. CHECK BETWEEN COMBINATION SWITCH AND BCM

With CONSULT-II

Select BCM on CONSULT-II.Check lighting switch (“HI BEAM SW”) in “DATA MONITOR” mode with CONSULT-II.

When lighting switch is in 2nd position and placed in HIGH or PASS position : HI BEAM SW ON

When lighting switch is in OFF position : HI BEAM SW OFF



Without CONSULT-II

Refer to LT-110, "Check Combination Switch" .

OK or NG

OK >> GO TO 2.
NG >> Refer to LT-110, "Check Combination Switch" .

2. CHECK BNETWEEN IPDM E/R TO HEADLAMP

With CONSULT-II

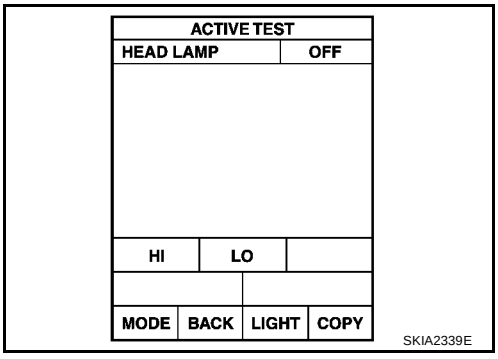
1. Select “IPDM” by CONSULT-II, and select “ACTIVE TEST” on “SELECT DIAG MODE” screen.
2. Select “HEADLAMP” on “SELECT TEST ITEM” screen.
3. Make sure that headlamp (high beam) operate normally.

Without CONSULT-II

1. Start up auto active test. Refer to PG-29, "Auto Active Test" .
2. Make sure that headlamp (high beam) operate normally.

OK or NG

OK >> GO TO 3.
NG >> Replace IPDM E/R.

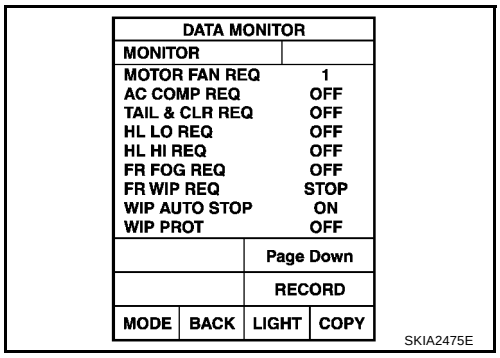


3. CHECK BETWEEN IPDM E/R AND BCM

Select IPDM E/R on CONSULT-II. Check lighting switch (“HL HI REQ”) in “DATA MONITOR” mode with CONSULT-II.

When lighting switch is in 2nd position and placed in HIGH or PASS position : HL HI REQ ON

When lighting switch is in OFF position : HL HI REQ OFF



OK or NG

OK >> Replace IPDM E/R.
NG >> Replace BCM.

Headlamp High Beam Does Not Illuminate (One Side)

EKS00853

1. CHECK BULB

Check headlamp bulb.

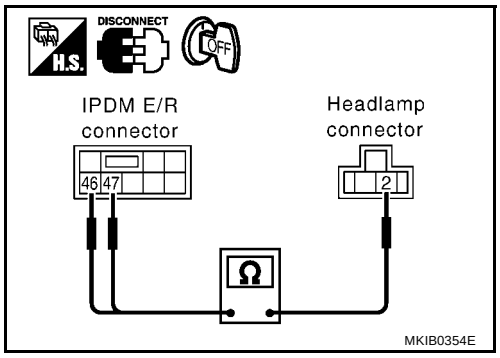
OK or NG

OK >> GO TO 2.
NG >> Replace headlamp bulb.

2. CHECK BETWEEN IPDM E/R AND HEADLAMP

1. Disconnect IPDM E/R connector and headlamp connector.
2. Check continuity between harness connector terminals of IPDM E/R and harness connector terminal of headlamp.

Terminals					Continuity
Headlamp			IPDM E/R		
Connector		Terminal (Wire color)	Connector	Terminal (Wire color)	
RH	E42	2 (Y)	E15	46 (Y)	Yes
LH	E21	2 (G)		47 (G)	



OK or NG

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

3. CHECK FUSE

Check the following

- 10A fuse (No. 33, located in the IPDM E/R).
- 10A fuse (No. 34, located in the IPDM E/R).

OK or NG

OK >> Replace IPDM E/R.
NG >> Replace headlamp fuse.

High-Beam Indicator Lamp Does Not Illuminate

EKS00854

1. CHECK BULB

Check headlamp bulb.

OK or NG

OK >> Replace combination meter.
NG >> Replace indicator bulb.

Headlamp Low Beam Does Not Illuminate (Both Sides)

EKS00855

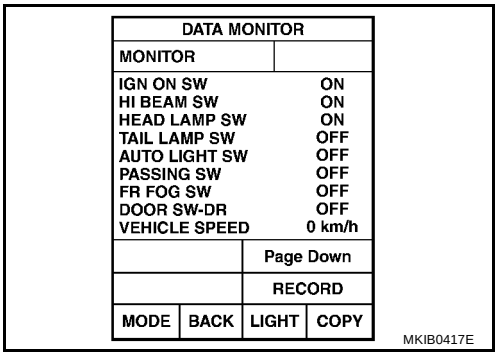
1. CHECK BETWEEN COMBINATION SWITCH AND BCM

With CONSULT-II

Select BCM on CONSULT-II.Check lighting switch (“HEAD LAMP SW”) in “DATA MONITOR” mode with CONSULT-II.

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

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



Without CONSULT-II

Refer to LT-110, "Check Combination Switch" .

OK or NG

OK >> GO TO 2.

NG >> Refer to LT-110, "Check Combination Switch" .

2. CHECK BNETWEEN IPDM E/R TO HEADLAMP

With CONSULT-II

1. Select “IPDM” by CONSULT-II, and select “ACTIVE TEST” on “SELECT DIAG MODE” screen.
2. Select “HEADLAMP” on “SELECT TEST ITEM” screen.
3. Make sure that headlamp (low beam) operate normally.

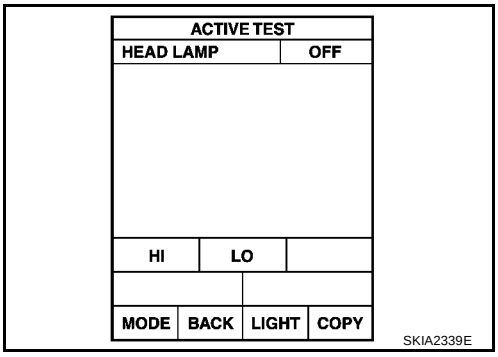
Without CONSULT-II

1. Start up auto active test. Refer to PG-29, "Auto Active Test" .
2. Make sure that headlamp (low beam) operate normally.

OK or NG

OK >> GO TO 3.

NG >> GO TO 4.



3. CHECK BETWEEN IPDM E/R AND BCM

Select IPDM E/R on CONSULT-II.Check lighting switch (“HL LO REQ”) in “DATA MONITOR” mode with CONSULT-II.

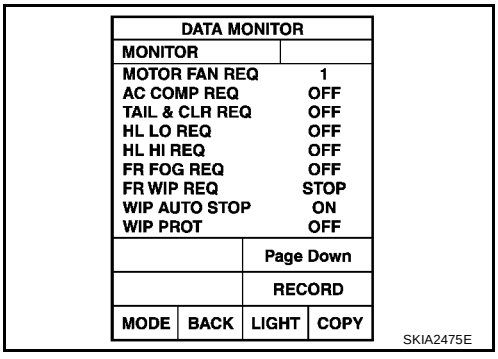
When lighting switch is in 2nd position : HL LO REQ ON

When lighting switch is in OFF position : HL LO REQ OFF

OK or NG

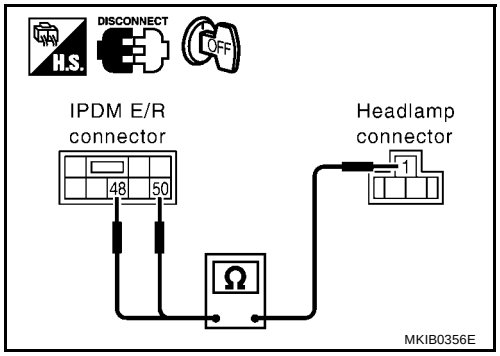
OK >> Replace IPDM E/R.

NG >> Replace BCM.



4. CHECK BETWEEN IPDM E/R AND HEADLAMPS

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connector and LH/RH headlamp connector.
3. Check continuity between harness connector of IPDM E/R and harness connector of LH/RH headlamp.



Terminals					Continuity
Headlamp			IPDM E/R		
Connector		Terminal (Wire color)	Connector	Terminal (Wire color)	
RH	E42	1 (PU)	E15	48 (PU)	Yes
LH	E21	1 (L)		50 (L)	

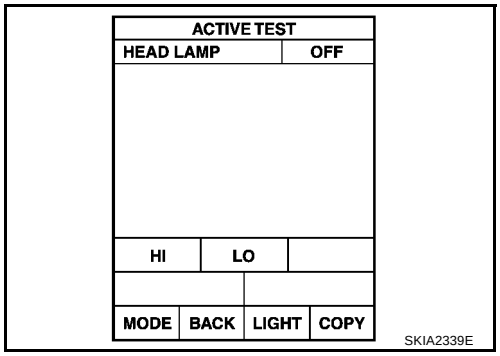
OK or NG

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

5. CHECK IPDM E/R

With CONSULT-II

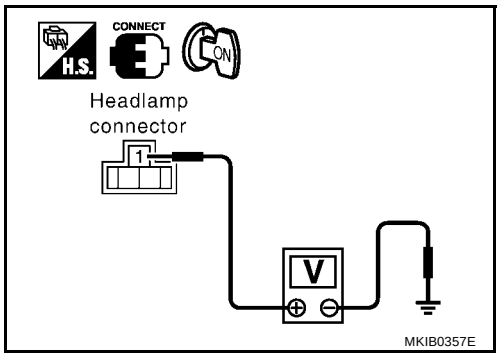
1. Connect IPDM E/R connector and LH/RH headlamp connector.
2. Select “IPDM” by CONSULT-II, and select “ACTIVE TEST” on “SELECT DIAG MODE” screen.
3. Select “HEADLAMP” on “SELECT TEST ITEM” screen.
4. Check voltage between LH/RH headlamp connector terminals and ground.



Terminals				Voltage
(+)			(-)	
Connector		Terminal (Wire color)		
RH	E42	1 (PU)		Battery voltage
LH	E21	1 (L)		

Without CONSULT-II

1. Connect IPDM E/R connector and LH/RH headlamp connector.
2. Start auto active test. Refer to PG-29, "Auto Active Test" , check voltage between LH/RH headlamp connector terminals and ground.



Terminals				Voltage
(+)			(-)	
Connector		Terminal (Wire color)		
RH	E42	1 (PU)		Battery voltage
LH	E21	1 (L)		

OK or NG

OK >> Repair ground circuit.
NG >> Replace IPDM E/R.

Headlamp Low Beam Does Not Illuminate (One Side)

EKS00856

1. CHECK BULB

Check headlamp bulb.

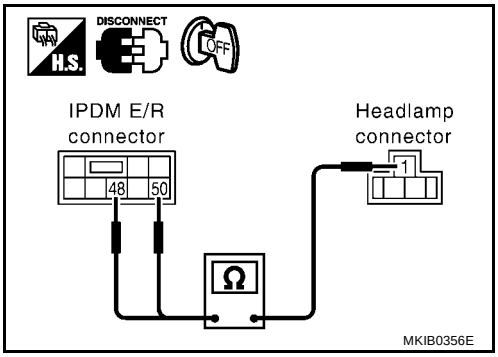
OK or NG

OK >> GO TO 2.
NG >> Replace headlamp bulb.

2. CHECK BETWEEN IPDM E/R AND HEADLAMPS

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

Terminals					Continuity
Headlamp			Terminals		
Connector		Terminal (Wire color)	Connector	Terminal (Wire color)	
RH	E42	1 (PU)	E15	48 (PU)	Yes
LH	E21	1 (L)		50 (L)	



OK or NG

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

3. FUSE CHECK

Check the following
15A fuse (No. 39, located in the IPDM E/R).
15A fuse (No. 40, located in the IPDM E/R).

OK or NG

OK >> Replace IPDM E/R.
NG >> Replace headlamp fuse.

Headlamp Low Beam And High Beam Does Not Illuminate (One Side)

EKS008W7

1. CHECK BULB

Check headlamp bulb.

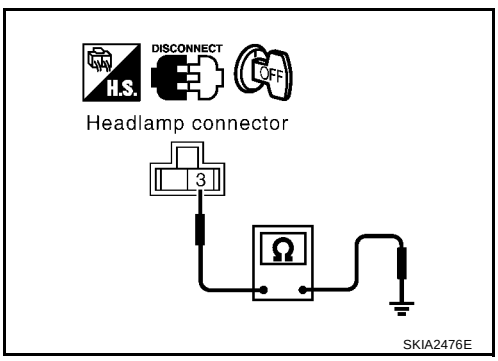
OK or NG

OK >> GO TO 2.
NG >> Replace headlamp bulb.

2. CHECK BETWEEN HEADLAMP AND GROUND

1. Disconnect headlamp connector.
2. Check continuity between harness connector of headlamp and ground.

Headlamp			Continuity
Connector		Terminal (Wire color)	
RH	E42	3 (B)	Yes
LH	E21	3 (B)	



OK or NG

OK >> Replace IPDM E/R.
NG >> Repair harness or connector.

Headlamps Do Not Turn OFF

EKS00857

1. CHECK IPDM E/R

- Check whether symptom is caused by IPDM E/R fail-safe operation or by factors other than fail-safe operation.Refer to PG-19, "FAIL-SAFE FUNCTION" and check CAN system.

OK or NG

Fail-safe operation>>Refer to PG-35, "Inspection With CONSULT-II (Self-Diagnosis)" .
Other than fail-safe operation>>Refer to PG-39, "Diagnosis of IPDM E/R Integrated Relay" .

Exterior Lamp Battery Saver Control Do Not Turn OFF

EKS008WM

1. CHECK DOOR SWITCH INPUT SIGNAL

With CONSULT- II

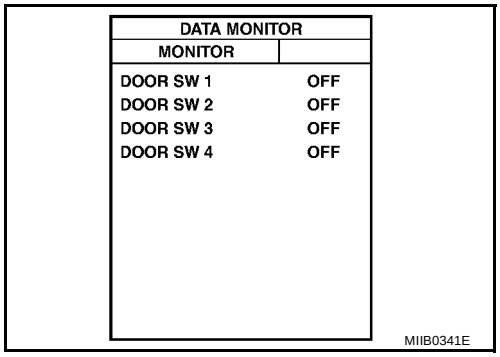
Check door switch “DOOR SW 1” in “DATA MONITOR” mode with CONSULT- II.

When front door (driver side) is opened:

DOOR SW 1 ⇒ ON

When front door (driver side) is close:

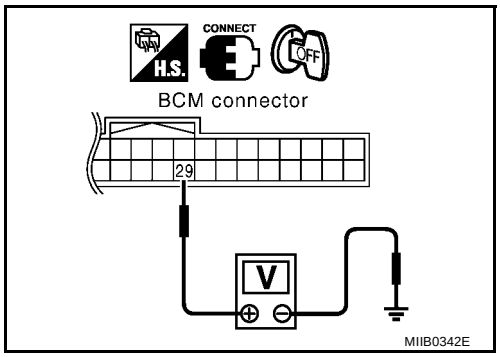
DOOR SW 1 ⇒ OFF



Without CONSULT- II

Check voltage between BCM connector and ground.

Connector	Terminals (Wire color)		Condition	Voltage (V) (Approx.)
	(+)	(-)		
M48	29 (L)	Ground	Open	0
			Close	Battery voltage



OK or NG

OK >> Front door switch RH is OK.
NG >> GO TO 2.

2. CHECK HARNESS CONTINUITY

1. Turn ignition switch OFF.
2. Disconnect BCM and front door switch RH connector.
3. Check continuity between BCM connector M48 terminal 29 and front door switch RH connector B16 terminal 1.

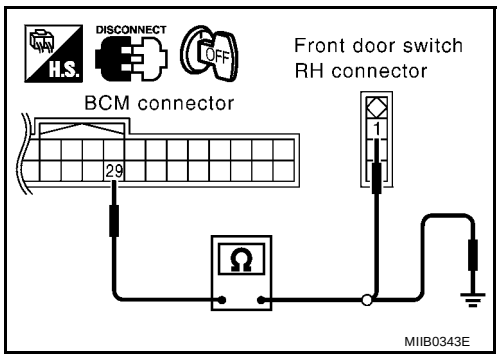
29 (L) – 1 (L) : Continuity should exist.

4. Check continuity between BCM connector M48 terminal 29 and ground.

29 (L) – Ground : Continuity should not exist.

OK or NG

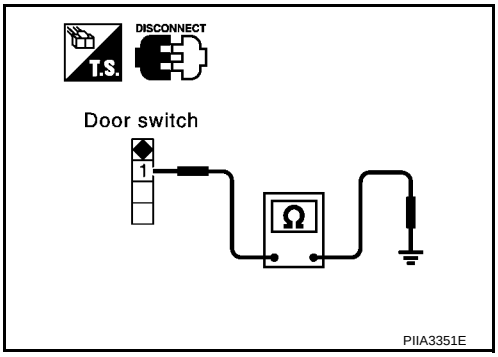
OK >> GO TO 3.
NG >> Repair or replace harness.



3. CHECK DOOR SWITCH

Check continuity between door switch terminal 1 and body ground part of door switch.

Terminals		Condition	Continuity
1	Body ground part of door switch	Pushed	No
		Released	Yes



OK or NG

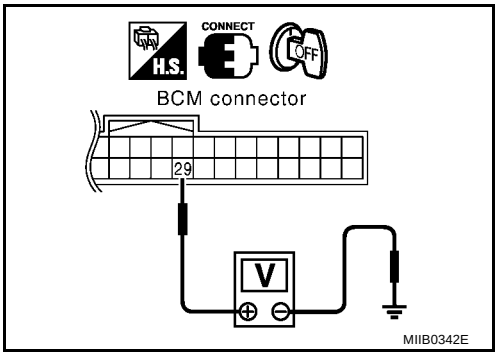
OK >> GO TO 4.
NG >> Replace door switch.

4. CHECK BCM OUTPUT SIGNAL

1. Connect BCM connector.
2. Check voltage between BCM connector M48 terminal 29 and ground.

Driver side door is closed.

29 (L) – Ground : Battery voltage



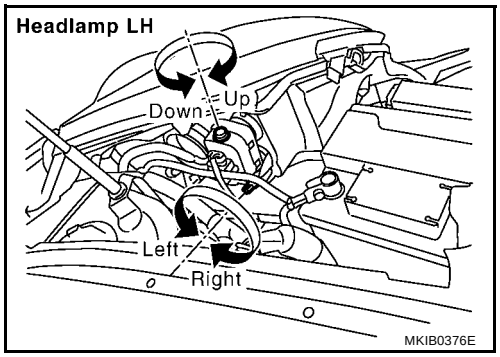
OK or NG

OK >> Check door switch ground condition.
NG >> Replace BCM.

Aiming Adjustment

EKS007QI

- Turn the aiming adjusting screw to adjust.
- For positions of the adjustment screws, refer to the figures.



CAUTION:

Adjustment with the aiming adjusting screw must be done in the tightening direction. (When adjusting in the loosening direction, first loosen the screw, then tighten again.)

PREPARATION BEFORE ADJUSTING

For details, refer to the regulations in your own country.

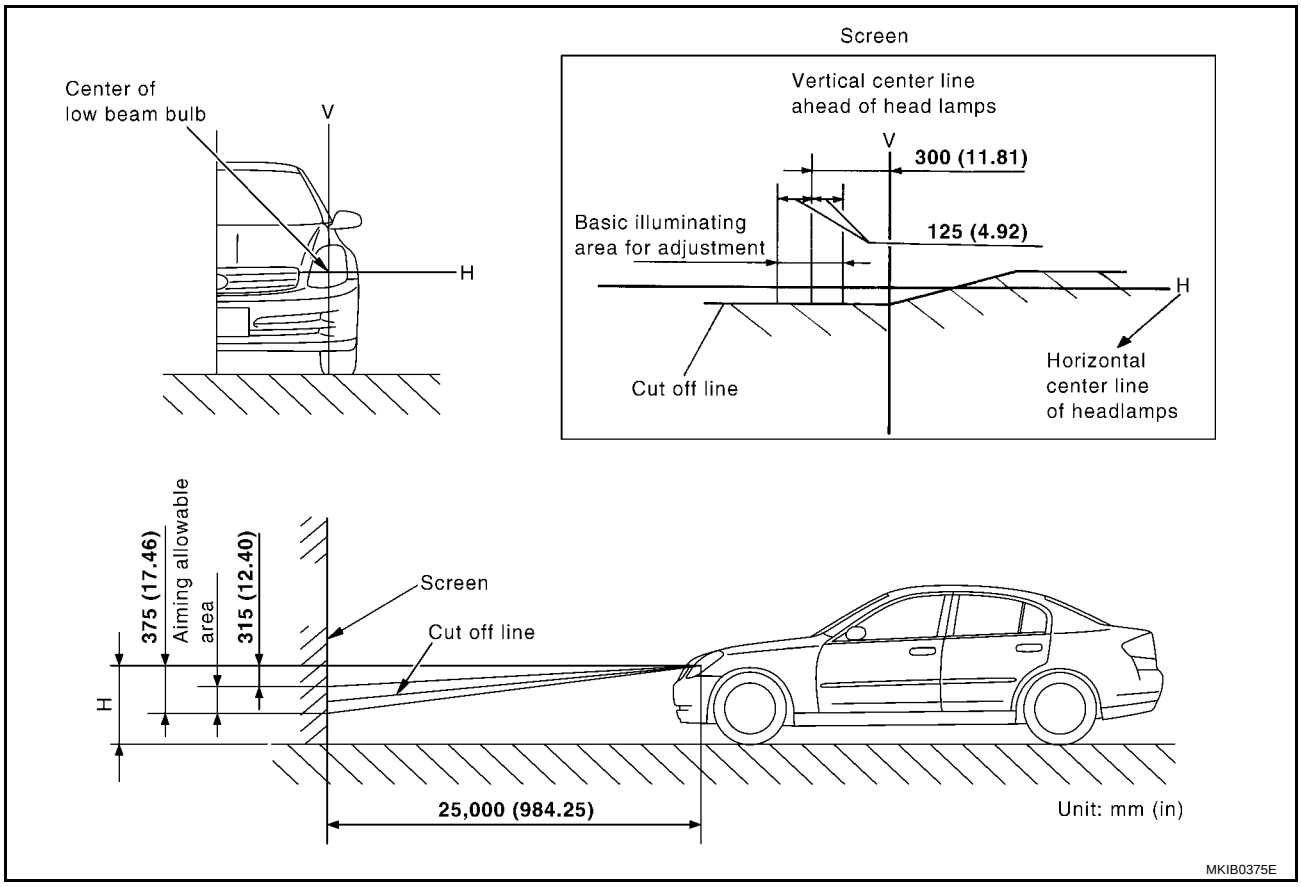
Before performing aiming adjustment, check the following.

1. Keep all tires inflated to correct pressures.
2. Place vehicle on flat surface.
3. Set that there is no-load in vehicle other than the driver (or equivalent weight placed in driver's position). Coolant, engine oil filled up to correct level and full fuel tank.

LOW BEAM AND HIGH BEAM

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

ADJUSTMENT USING AN ADJUSTMENT SCREEN (LIGHT/DARK BORDERLINE)



If the vehicle front body has been repaired and/or the headlamp assembly has been replaced, check aiming. Use the aiming chart shown in the figure.

- Basic illumination area for adjustment should be within the range shown on the aiming chart.

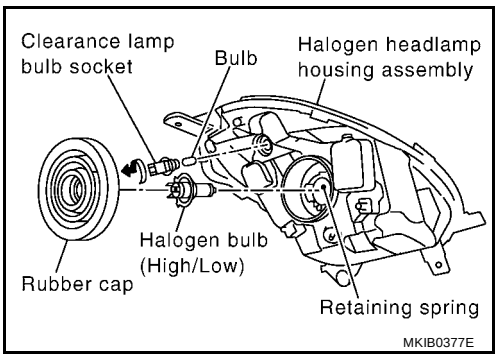
Adjust headlamp accordingly.

Bulb Replacement

EKS007QJ

HEADLAMP

1. Turn ignition switch OFF.
2. Disconnect headlamp connector.
3. Remove rubber cover.
4. Remove the retaining spring lock, then remove the bulb.



CLEARANCE LAMPS

1. Turn ignition switch OFF.
2. Turn bulb socket counterclockwise and unlock it.
3. Remove bulb.

Headlamps (High beam, Low beam) : 12V 60/55W (H4)

Parking lamps : 12V 5W

CAUTION:

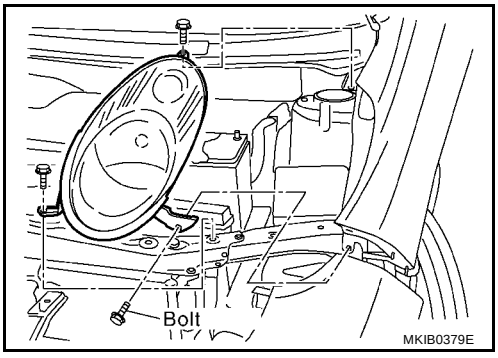
After the bulb is installed, the rubber cover must be attached securely to insure the assembly is water-tight.

Removal and Installation

EKS007QK

REMOVAL

1. Remove fender protector. Refer to EI-12, "FENDER PROTECTOR" .
2. Remove bolt of front fender front end and bolt of front bumper fascia front. Remove front bumper fascia. Refer to EI-4, "FRONT BUMPER" .
3. Disconnect the headlamp, clearance lamp and headlamp aiming connector.
4. Remove headlamp bolts.
5. Pull the entire headlamp forward while raising top mounting bracket.



INSTALLATION

Install in the reverse order of removal, paying attention to the following.

Headlamp bolt

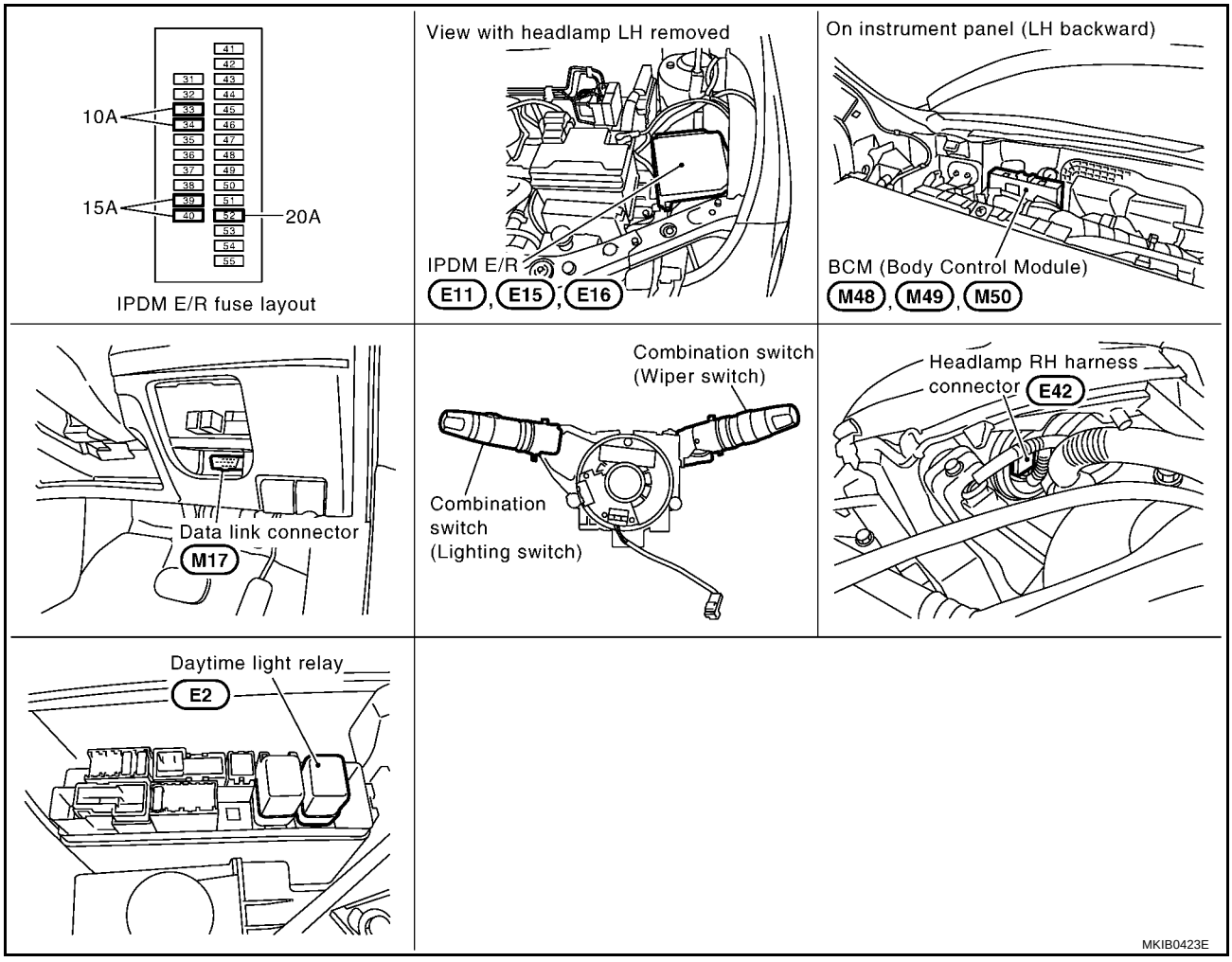
Tightening torque : 4.4 - 6.5 N·m (0.45 - 0.66 kg-m, 39 - 58 in-lb)

HEADLAMP - DAYTIME LIGHT SYSTEM -

PFP:26010

Component Parts and Harness Connector Location

EKS00869



System Description

EKS0086A

The headlamp system for Northern Europe vehicles is equipped with a daytime light system that activates the low beam headlamps at approximately half illumination whenever the engine is running.
And battery saver system is controlled by the BCM (body control module).
Power is supplied at all times

- to headlamp high relay LH and RH located in the IPDM E/R (intelligent power distribution module engine room).
- to headlamp low relay located in the IPDM E/R.

Power is also supplied at all times

- to BCM terminals 74 and 79
- through 40A fusible link (letter **J** , located in the fuse and fusible link box).
- to IPDM E/R
- through 20A fusible link (No.52, located in the IPDM E/R).
- to daytime light relay terminals 1 and 5
- through 10A fusible link (No.27, located in the fuse and fusible link box).

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

- to BCM terminal 24
- through 10A fuse [No. 4, located in the fuse block (J/B)].
- to IPDM E/R

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

- to BCM terminal 3
- through 10A fuse [No. 14, located in the fuse block (J/B)].

Ground is supplied

- to BCM terminals 2 and 70
- through body grounds M19 and M20.
- to IPDM E/R terminals 3 and 54
- through body grounds E25,E26 and E40.

HEADLAMP OPERATION

Low Beam Operation

When the lighting switch is turned to 2ND position and placed in LOW position, BCM read combination switch condition (refer to LT-104, "System Description"). And BCM send low beam request signal to IPDM E/R with CAN communication line. Then IPDM E/R is turned on headlamp low relay. Headlamp low relay is energized and then power is supplied

- to 15A fuse (No. 40, located in the IPDM E/R)
- through terminal 48 of the IPDM E/R
- to terminal 1 of headlamp RH, and
- to 15A fuse (No. 39, located in the IPDM E/R)
- through terminal 50 of the IPDM E/R
- to terminal 1 of headlamp LH.

Ground is supplied at all times

- to terminal 3 of headlamp RH
- through daytime light relay 3, and
- to terminal 4 of daytime light relay
- through body grounds E25, E26, E40, and
- to terminal 3 of headlamp LH
- through body grounds E25, E26 and E40.

With power and ground supplied, low beam headlamps will illuminate.

High Beam Operation (When engine stopped)/Flash-to-Pass Operation

With the lighting switch in 2ND position and placed in HIGH or PASS position, BCM read combination switch condition (refer to LT-104, "System Description"). And BCM send high beam request signal to IPDM E/R and combination meter with CAN communication line. Then IPDM E/R is turned on headlamp high relay LH and RH. Headlamp high relays are energized and then power is supplied

- to 10A fuse (No. 34, located in the IPDM E/R)
- through terminal 47 of the IPDM E/R
- to terminal 2 of the headlamp LH and
- to 10A fuse (No. 33, located in the IPDM E/R)
- through terminal 46 of the IPDM E/R
- to terminal 2 of the headlamp RH.

Ground is supplied

- to terminal 3 of each headlamp
- through body grounds E25, E26 and E40

When power and ground supplied, the high beam headlamps will illuminate.
When combination meter received high beam request signal, combination meter will illuminate high beam indicator.

COMBINATION SWITCH READING FUNCTION

Refer to LT-104, "System Description"

EXTERIOR LAMP BATTERY SAVER CONTROL

When ignition switch is turned from ON (or ACC) to OFF while headlamps illuminated, BCM send headlamp request signal to IPDM E/R with CAN communication line. After counting 5 minutes by BCM, it send headlamp off request signal to IPDM E/R. Then the headlamps are turned off. The headlamps are turned off when driver

side door is opened even if 30 seconds have not passed after ignition switch is turned ON (or ACC) to OFF positions while headlamps are illuminated.
Exterior lamp battery saver control made can be changed by the function setting of CONSULT-II.

DAYTIME LIGHT OPERATION

With the engine running and the lighting switch in the OFF position. BCM send daytime light request signal to IPDM E/R with CAN communication line. Ground is supplied

- through terminal 65 of IPDM E/R
- to terminal 2 of daytime light relay.

Daytime light relay is energized, power is supplied.

- through daytime light relay terminals 3 and 5
- to terminal 3 of headlamp RH
- through terminal 1 of headlamp RH
- to IPDM E/R terminal 48
- through IPDM E/R terminal 50
- to terminal 1 of headlamp LH.

Ground is supplied

- to terminal 3 of headlamp LH and
- to IPDM E/R terminals 3 and 54
- through body grounds E25, E26 and E40.

Because the low beam headlamps are now wired in series, they operate at half illumination.
If the lighting switch is in the 1st and 2nd position, daytime light operation is canceled. On this occasion, power is supplied

FRIENDLY LIGHTING FUNCTION

High beam headlamps will illuminate for 30 seconds when,

- ignition switch is in OFF position,
- lighting switch is placed in OFF position, and
- lighting switch is placed in PASS position.

BCM re-starts to count for 30 seconds, when all doors are locked with remote controller or Intelligent Key during Friendly lighting function is activating.
Friendry lighting function time can be changed using “WORK SUPPORT” mode in “HEADLAMP”.

FAIL-SAFE FUNCTION

When CAN communication with other control units is impossible, IPDM E/R performs fail-safe control. If the fail-safe system is operating, headlamps illuminate when the ignition switch is turned from OFF to ON or ACC and headlamps are turned off when the ignition switch is turn from ON or ACC to OFF. If the fail-safe system is operating, headlamps does not operate when the combination switch is in any position. After CAN communication recovers normally, it also returns to normal control. (Refer to PG-19, "FAIL-SAFE FUNCTION")

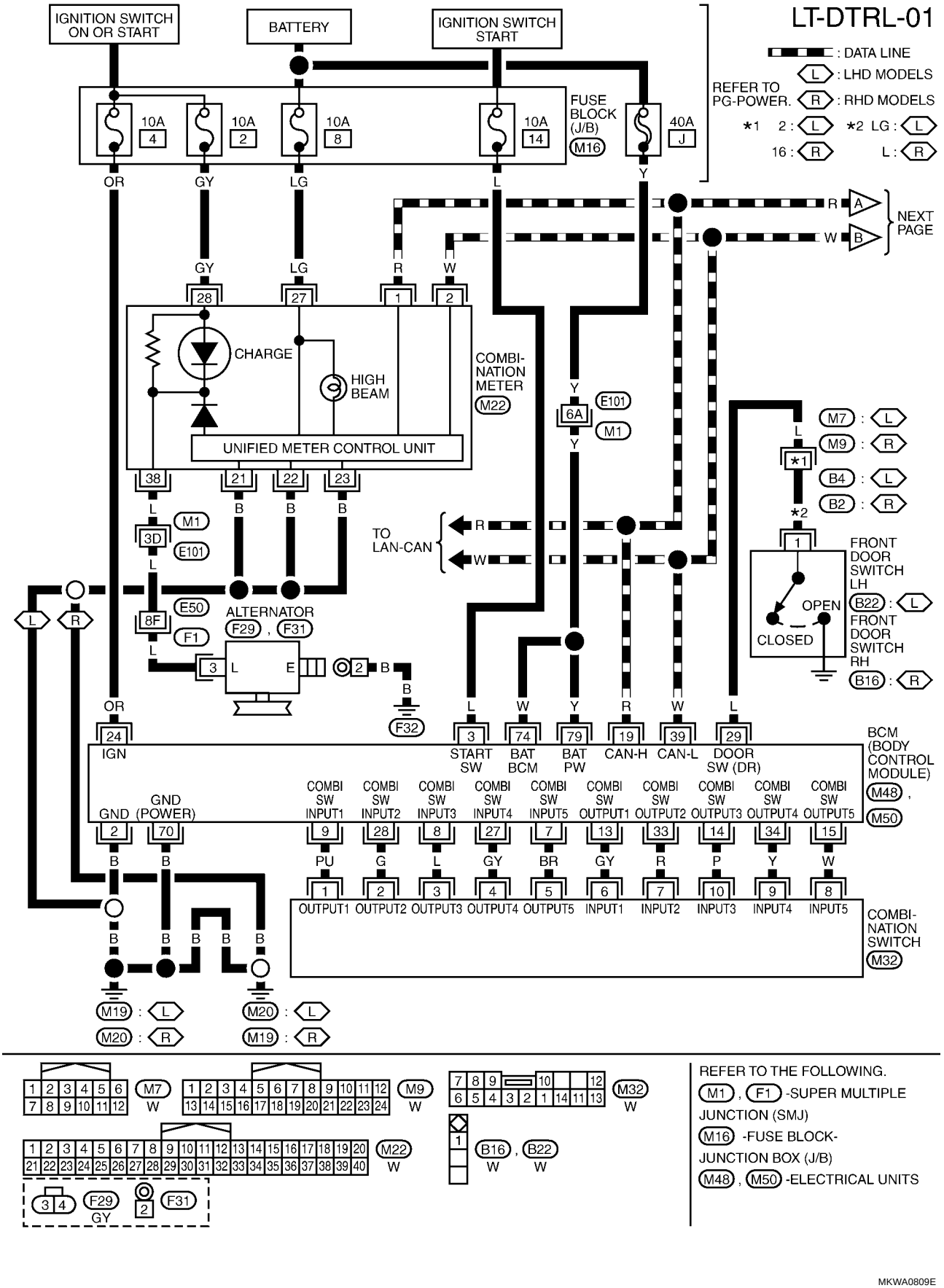
CAN Communication System Description

EKS0086B

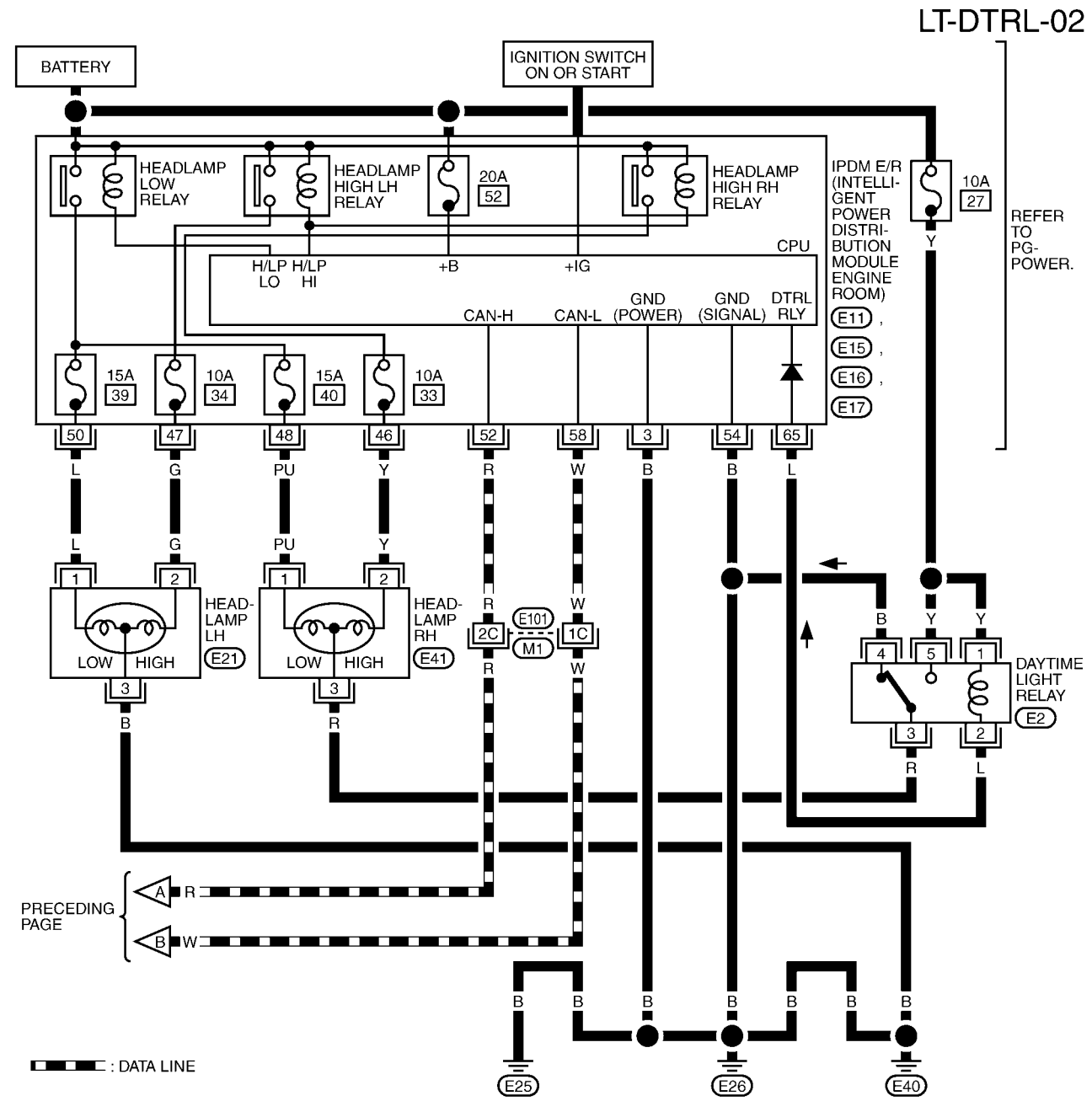
Refer to LT-6, "CAN Communication" .

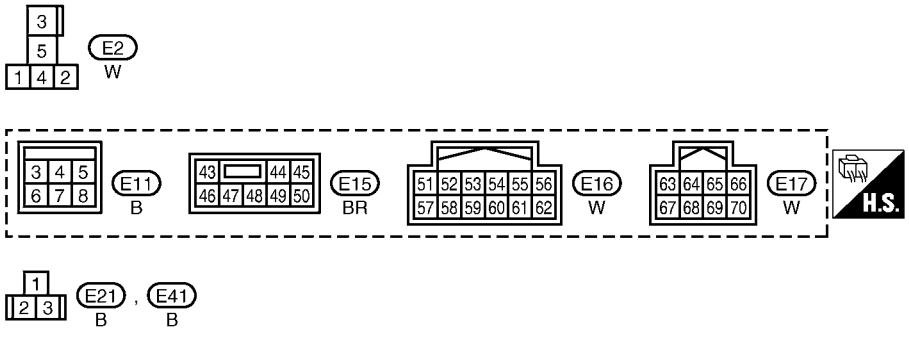
Wiring Diagram — DTRL —

EKS0086C



MKWA0809E



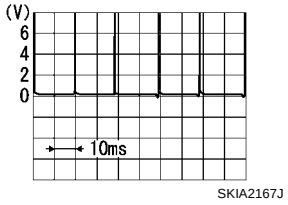
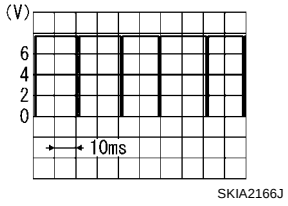
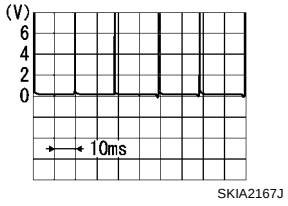


REFER TO THE FOLLOWING.
M1 -SUPER MULTIPLE JUNCTION (SMJ)

MKWA0810E

Terminals and Reference Value for BCM

EKS0086F

Terminal No.	Wire color	Signal designation	Measuring condition		Reference value (V)
			Ignition switch	Operation or condition	
2	B	Ground	ON	—	Approx. 0
3	L	Start signal	OFF	—	Approx. 0
			ON	—	Approx. 0
			START	—	Approx. 12
7	BR	Combination switch input 5	ON	Headlamps, turn signal, wipers OFF	 SKIA2167J
8	L	Combination switch input 3			
9	PU	Combination switch input 1			
27	GY	Combination switch input 4			
28	G	Combination switch input 2			
13	GY	Combination switch output 1	ON	Headlamps, turn signal, wipers OFF (wiper volume is 1 or 7)	 SKIA2166J
14	P	Combination switch output 3			
15	W	Combination switch output 5			
33	R	Combination switch output 2		Headlamps, turn signal, wipers OFF (wiper volume is other than 1 or 7)	 SKIA2167J
34	Y	Combination switch output 4			
19	R	CAN H	—	—	—
24	OR	Ignition power supply	ON	—	Approx. 12
29	L	Driver door switch signal	OFF	Driver door switch: ON (open)	Approx. 0
				Driver door switch: OFF (closed)	Approx. 12
39	W	CAN L	—	—	—
70	B	Ground	ON	—	Approx. 0
74	W	Battery power supply	OFF	—	Approx. 12
79	Y	Battery power supply	OFF	—	Approx. 12

Terminals and Reference Values for IPDM E/R

EKS0086G

Terminal No.	Wire color	Signal designation	Measuring condition			Reference value (V)
			Ignition switch	Operation or condition		
3	B	Ground	ON	—		Approx. 0
46	Y	Headlamp HI (RH)	ON	Lighting switch (high beam)	ON	Approx. 12
47	G	Headlamp HI (LH)	ON		OFF	Approx. 0
48	PU	Headlamp LO (RH)	ON	Lighting switch (low beam)	ON	Approx. 12
50	L	Headlamp LO (LH)	ON		OFF	Approx. 0
52	R	CAN H	—	—		—
54	B	Ground	ON	—		Approx. 0
58	W	CAN L	—	—		—
65	L	Daytime light relay	ON	Engine status (Lighting switch OFF)	RUNNING	Approx. 12
					STOP	Approx. 0

How to Proceed With Trouble Diagnosis

EKS00891

1. Confirm the symptom or customer complaints.
2. Understand operation description and function description.
   Refer to Headlamp LT-32, "System Description" .
3. Carry out the Preliminary Check. Refer to LT-38, "Preliminary Check"
4. Confirm headlamp does not operate by fail-safe control of IPDM E/R. Refer to PG-19, "FAIL-SAFE FUNCTION"
5. Check symptom and repair or replace the cause of malfunction.
6. Dose the headlamp operate normally? Yes: GO TO 7. No: GO TO 5.
7. INSPECTION END.

Preliminary Check

EKS0086E

CHECK POWER SUPPLY AND GROUND CIRCUIT

1. CHECK FUSES

- Check BCM fuse and fusible link for blown-out.

UNIT	POWER SOURCE	FUSE No.
BCM	Battery	J
	Ignition switch (ON)	4
	Ignition switch (START)	14

Refer to LT-35, "Wiring Diagram — DTRL —" .

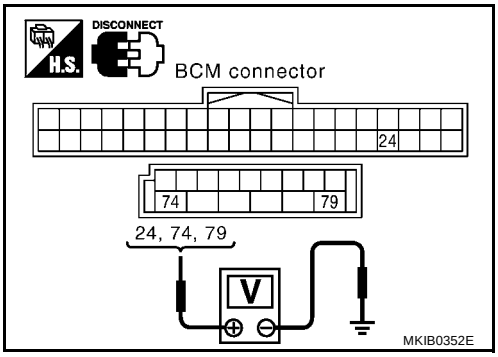
OK or NG

OK >> GO TO 2.

NG >> If fuse is blown, be sure to eliminate cause of malfunction before installing new fuse. Refer to PG-4, "POWER SUPPLY ROUTING" .

2. CHECK POWER SUPPLY CIRCUIT

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



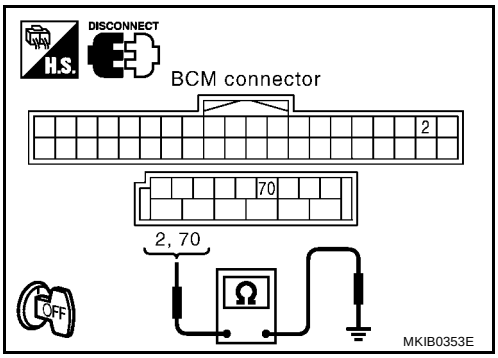
Terminals			Ignition switch position		
(+)		(–)	OFF	ACC	ON
Connector	Terminal (Wire color)				
E50	74 (W)	Ground	Battery voltage	Battery voltage	Battery voltage
M50	79 (Y)		Battery voltage	Battery voltage	Battery voltage
M48	24 (OR)		0V	0V	Battery voltage

OK or NG

OK >> GO TO 3.
NG >> Check harness for open or short between BCM and fuse.

3. CHECK GROUND CIRCUIT

Check continuity between BCM harness connector and ground.



Terminals			Continuity
(+)		(–)	
Connector	Terminal (Wire color)		
M48	2 (B)	Ground	Yes
M50	70 (B)		

OK or NG

OK >> INSPECTION END
NG >> Check harness ground circuit.

CONSULT-II Function (BCM)

EKS008IR

Refer to LT-18, "CONSULT-II Functions (BCM)" .

CONSULT-II Function (IPDM E/R)

EKS008IS

Refer to LT-21, "CONSULT-II Functions (IPDM E/R)" .

Daytime Light Control Does Not Operate Properly

EKS0086M

1. CHECK HEADLAMP OPERATION

Lighting switch is turned to 2nd position.

Does headlamp operate normally?

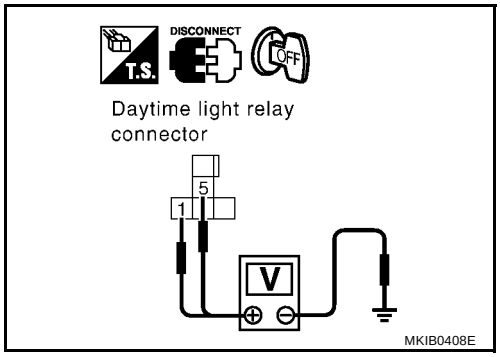
Yes >> GO TO 2.
No >> Check the following.

- Headlamp does not illuminate (both sides). GO TO LT-25, "Headlamp Low Beam Does Not Illuminate (Both Sides)" .
- Headlamp does not illuminate (one side). GO TO LT-27, "Headlamp Low Beam Does Not Illuminate (One Side)" .

2. CHECK DAYTIME LIGHT RELAY

1. Turn ignition switch OFF.
2. Disconnect daytime light relay connector.
3. Check voltage between daytime light relay and ground.

Terminals			Voltage
(+)		(–)	
Connector	Terminal (Wire color)		
E2	1 (Y)	Ground	Battery voltage
	5 (Y)		



OK or NG

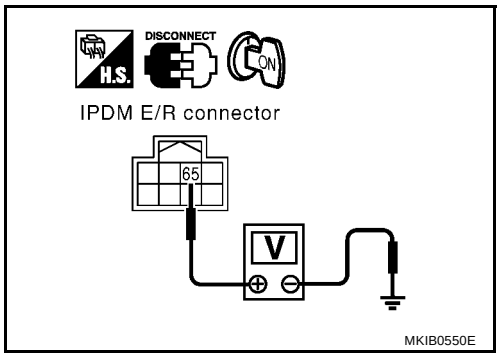
OK >> GO TO 2.
NG >> Check the following.

- 10A fuse (No. 27, located in fuse and fusible link box).
- Harness for open or short daytime relay and fuse.

3. CHECK IPDM E/R OUTPUT SIGNAL

1. Disconnect IPDM E/R connector.
2. Check battery voltage between IPDM E/R harness connector E17 terminal 65(L) and ground.

Battery voltage should exist.



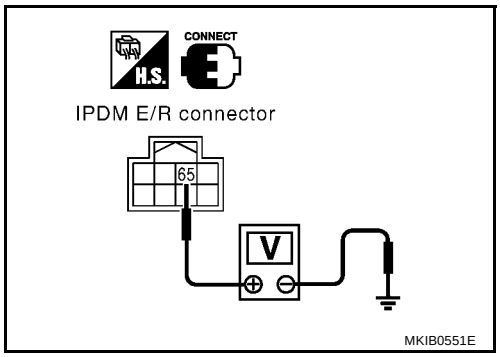
OK or NG

OK >> GO TO 4.
NG >> GO TO 5.

4. CHECK IPDM E/R OUTPUT SIGNAL

1. Connect IPDM E/R connector.
2. Check continuity between IPDM and ground.

Connector	Terminal (Wire color)	Condition	Voltage
E17	65 (L)	Engine stop	Approx. 0
		Engine running	Approx. 12



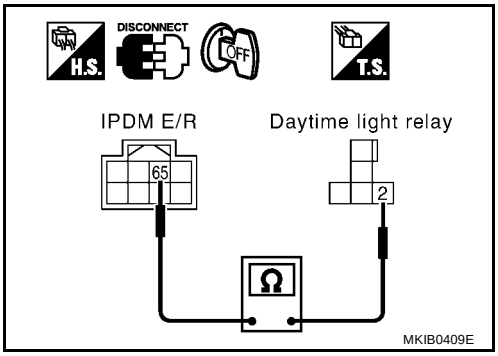
OK or NG

OK >> GO TO 7.
NG >> Replace IPDM E/R.

5. CHECK IPDM E/R OUTPUT SIGNAL CIRCUIT

Check continuity between harness connector E2 terminal 2 (L) of daytime light relay and harness connector E17 terminal 65 (L) of IPDM E/R.

Continuity should exist.



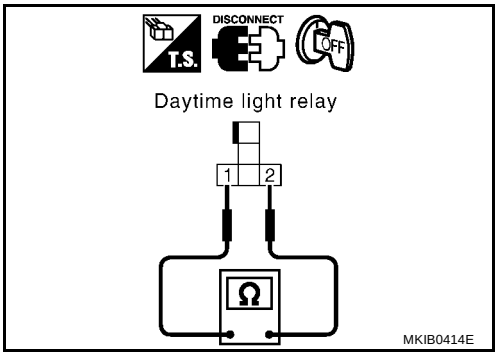
OK or NG

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

6. CHECK DAYTIME LIGHT RELAY

1. Disconnect daytime light relay connector.
2. Check continuity relay daytime light relay connector E2 terminals 1 and 2.

Continuity should exist.



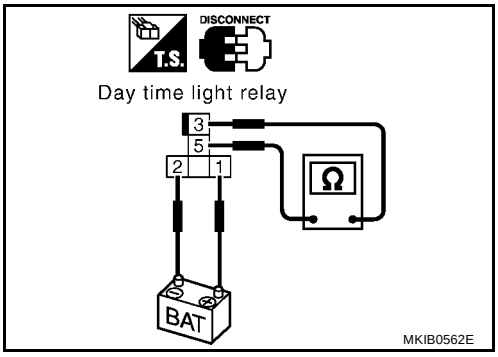
OK or NG

OK >> GO TO 7.
NG >> Replace daytime light relay.

7. CHECK DAYTIME LIGHT RELAY

1. Turn ignition switch OFF.
2. Remove the daytime light relay.
3. Apply 12V between daytime light relay terminals 1 and 2, and check continuity between terminals 3 and 5.

Continuity should exist.



OK or NG

OK >> Repair harness or connector.
NG >> Replace daytime light relay.

Headlamp High Beam Does Not Illuminate (Both Sides)

EKS0086N

Refer to LT-23, "Headlamp High Beam Does Not Illuminate (Both Sides)" .

RH High beam Does Not Illuminate

EKS0086O

1. CHECK BULB

Check bulb of headlamp RH.

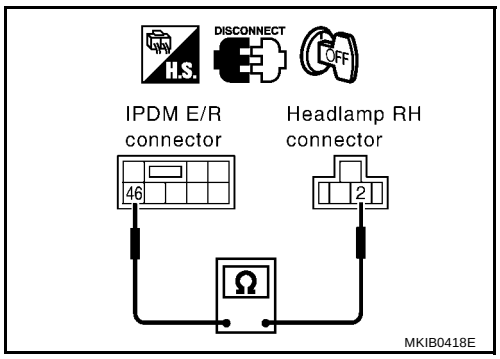
OK or NG

OK >> GO TO 2.
NG >> Replace bulb of headlamp.

2. CHECK IPDM E/R CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connector and headlamp connector.
3. Check continuity between harness connector E15 terminal 46 (Y) of IPDM E/R and harness connector E41 terminal 2 (Y) of headlamp RH.

Continuity should exist.



OK or NG

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

3. CHECK FUSE

Check 10A fuse [No. 33, located in IPDM E/R].

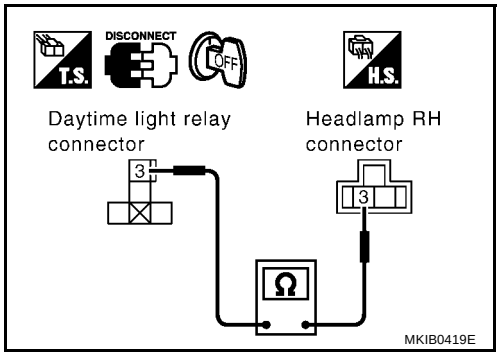
OK or NG

OK >> GO TO 4.
NG >> Replace fuse.

4. CHECK HEADLAMP RH GROUND CIRCUIT

Check continuity between harness connector E2 terminal 3 (R) of daytime light relay and harness connector E41 terminal 3 (R) of headlamp RH.

Continuity should exist.



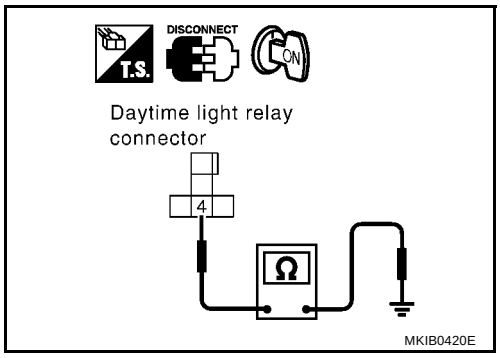
OK or NG

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

5. CHECK DAYTIME LIGHT GROUND CIRCUIT

Check continuity daytime light relay harness connector E2 terminal 4 (B) and ground.

Continuity should exist.



OK or NG

OK >> Replace daytime light relay.
NG >> Repair harness connector.

Headlamp LH High Beam Does Not Illuminate

EKS0086P

Refer to LT-24, "Headlamp High Beam Does Not Illuminate (One Side)" .

Headlamp Low Beam Does Not Illuminate (Both Sides)

EKS0086Q

Refer to LT-25, "Headlamp Low Beam Does Not Illuminate (Both Sides)" .

RH Low Beam Does Not Illuminate

EKS0086R

1. CHECK BULB

Check bulb of headlamp RH.

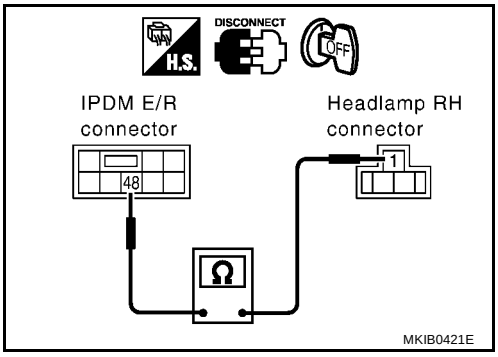
OK or NG

OK >> GO TO 2.
NG >> Replace bulb of lamp.

2. CHECK IPDM E/R CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connector and headlamp connector.
3. Check continuity between harness E51 connector terminal 48 (PU) of IPDM E/R and harness connector E41 terminal 1 (PU) of headlamp RH.

Continuity should exist.



OK or NG

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

3. CHECK FUSE

Check 15A fuse [No. 40 located in IPDM E/R]. Refer to PG-37, "IPDM E/R Terminal Inspection"

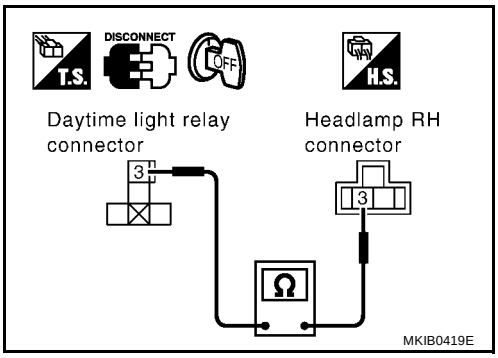
OK or NG

OK >> GO TO 4.
NG >> Replace fuse.

4. CHECK HEADLAMP RH GROUND CIRCUIT

Check continuity between harness connector E2 terminal 3 (R) of daytime light relay and harness connector E41 terminal 3 (R) of headlamp RH.

Continuity should exist.



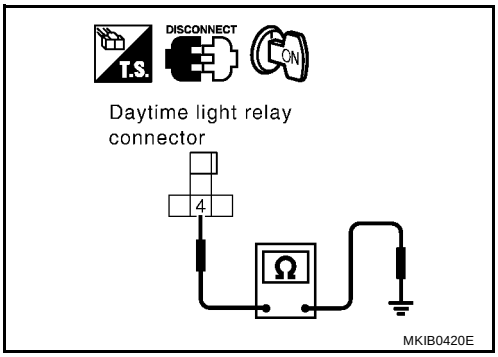
OK or NG

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

5. CHECK DAYTIME LIGHT GROUND CIRCUIT

Check continuity daytime light relay harness connector E2 terminal 4 (B) and ground.

Continuity should exist.



OK or NG

OK >> Replace daytime light relay.
NG >> Repair harness connector.

Headlamp LH Low Beam Does Not Illuminate

EKS0086S

Refer to LT-27, "Headlamp Low Beam Does Not Illuminate (One Side)" .

High-Beam Indicator Lamp Does Not Illuminate

EKS0086T

Refer to LT-24, "High-Beam Indicator Lamp Does Not Illuminate" .

Headlamps Do Not Turn OFF

EKS0086U

Refer to LT-28, "Headlamps Do Not Turn OFF" .

Exterior Lamp Battery Saver Control Do Not Turn OFF

EKS008WN

Refer to LT-28, "Exterior Lamp Battery Saver Control Do Not Turn OFF" .

Aiming Adjustment

EKS0086V

Refer to LT-30, "Aiming Adjustment" .

Bulb Replacement

EKS0086W

Refer to LT-31, "Bulb Replacement" .

Removal and Installation

EKS0086X

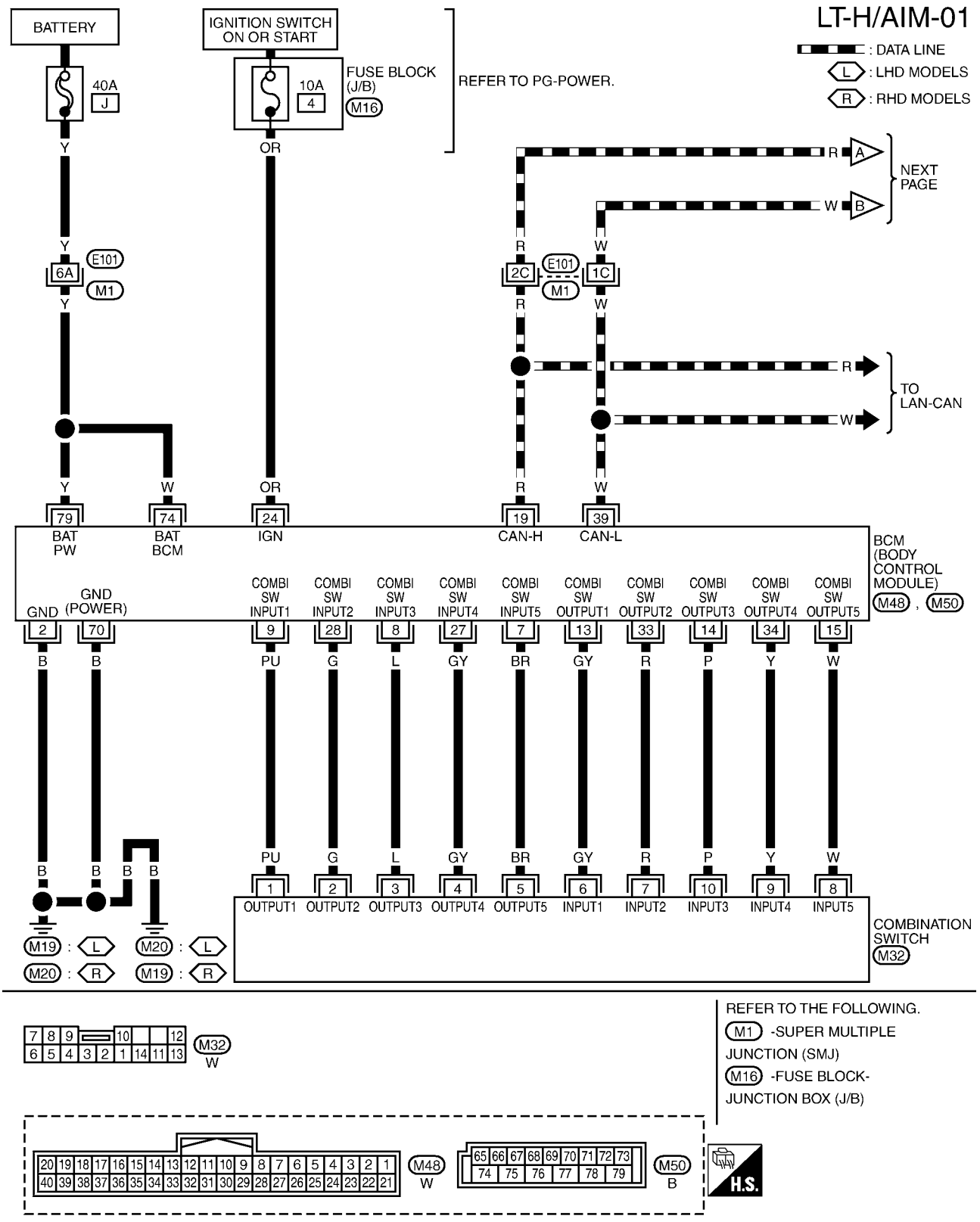
Refer to LT-31, "Removal and Installation" .

HEADLAMP AIMING CONTROL

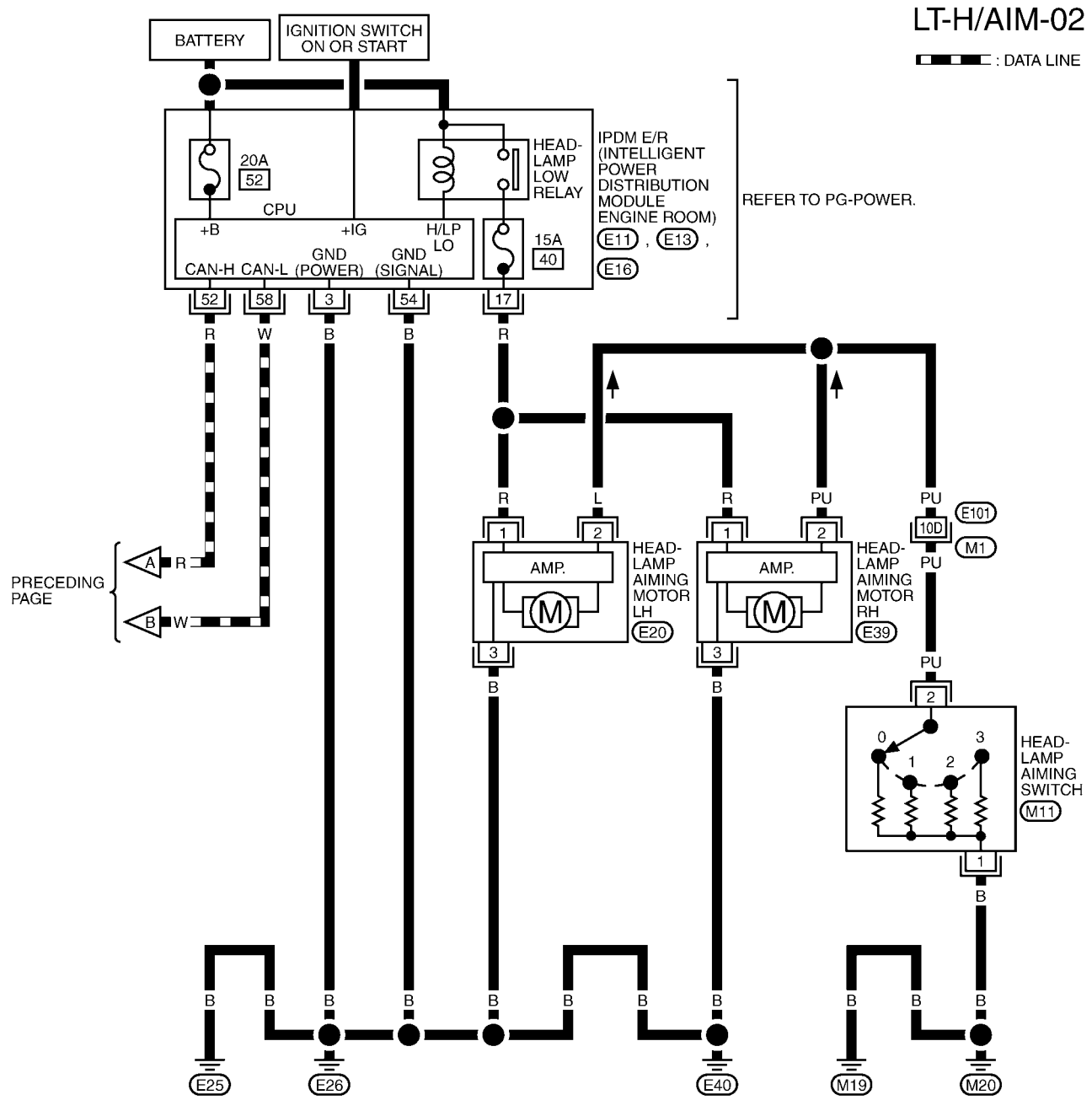
PFP:26010

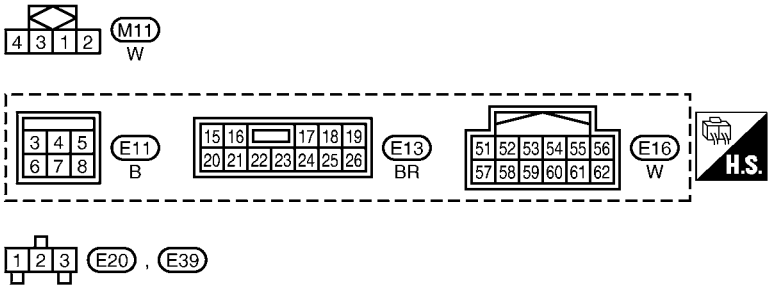
Wiring Diagram— H/AIM —

EKS0085U



MKWA1381E





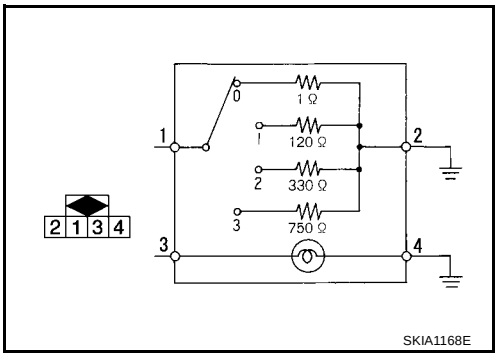
REFER TO THE FOLLOWING.
M1 -SUPER MULTIPLE JUNCTION (SMJ)

MKWA0811E

Switch Circuit Inspection

EKS007SC

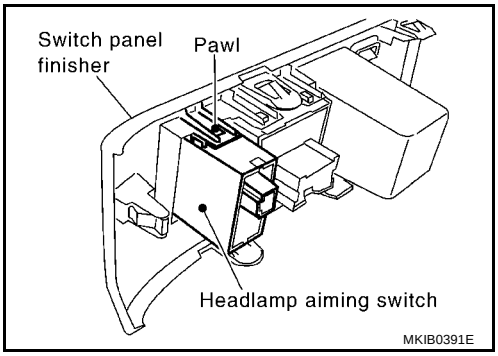
Using a circuit tester, check continuity between the headlamp aiming switch connector terminals in each operation status of the aiming switch.



Removal and Installation

EKS007SB

1. Remove switch panel finisher. Refer to IP-6, "E. Switch Panel Finisher" .
2. Pull forward while expands switch panel finisher hooks, and remove from switch panel finisher.



FRONT FOG LAMP

PFP:26150

System Description

EKS0083V

The front fog lamp operation is controlled by the lighting switch which built into the combination switch, BCM (body control module) and IPDM E/R (intelligent power distribution module engine/room).Front fog lamp relay is built into IPDM E/R.BCM read combination switch condition.Refer toLT-104, "System Description"

OUTLINE

Power is supplied at all times

- to front fog lamp relay, located in the IPDM E/R
- to IPDM E/R
- through 20A fusible link (No.52, located in the IPDM E/R).

Power is also supplied at all times

- to terminals 74 and 79 of the BCM.

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

- to terminal 24 of the BCM.
- to IPDM E/R

Ground is supplied

- to BCM terminals 2 and 70
- through body grounds M19, and M20.
- to IPDM E/R
- through body grounds E25,E26 and E40.

FOG LAMP OPERATION

The fog lamp switch is built into the combination switch. The lighting switch must be in the 1ST position and the fog lamp switch must be ON for fog lamp operation.
With the fog lamp switch in the ON position, the CPU (central processing unit) of the IPDM E/R grounds the coil side of the fog lamp relay. The fog lamp relay then directs power
When the lighting switch is turned to 1ST position and front fog lamp switch in ON position, BCM read combination switch condition (refer to LT-104, "System Description"). And BCM send low beam request signal to IPDM E/R with CAN communication line. Then IPDM E/R is turned on front fog lamp relay. Front fog lamp relay is energized and then power is supplied.

- to front fog lamp LH terminal 1
- through IPDM E/R terminal 44, and
- to front fog lamp RH terminal 1
- through IPDM E/R terminal 43.

Ground is supplied

- to front fog lamp LH terminal 2
- through body grounds E25, E26, E40, and
- to front fog lamp RH terminal 8
- through body grounds E25, E26 and E40.

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

COMBINATION SWITCH READING FUNCTION

Refer to LT-104, "System Description"

EXTERIOR LAMP BATTERY SAVER CONTROL

When ignition switch is turned from ON (or ACC) to OFF while front fog lamps illuminated, BCM send front fog lamp request signal to IPDM E/R with CAN communication line. After counting 5 minutes by BCM, it send front fog lamp off request signal to IPDM E/R. Then the front fog lamp is turned off. The front fog lamp is turned off when driver side door is opened even if 30 seconds have not passed after ignition switch is turned ON (or ACC) to OFF positions while headlamps are illuminated.
Exterior lamp battery saver control mode can be changed by the function setting of CONSULT-II.

FAIL-SAFE FUNCTION

When CAN communication with other control units is impossible, IPDM E/R performs fail-safe control. If the fail-safe system is operating, front fog lamps does not illuminate. If the fail-safe system is operating, front fog lamps does not operate when the combination switch is in any position. After CAN communication recovers normally, it also returns to normal control.

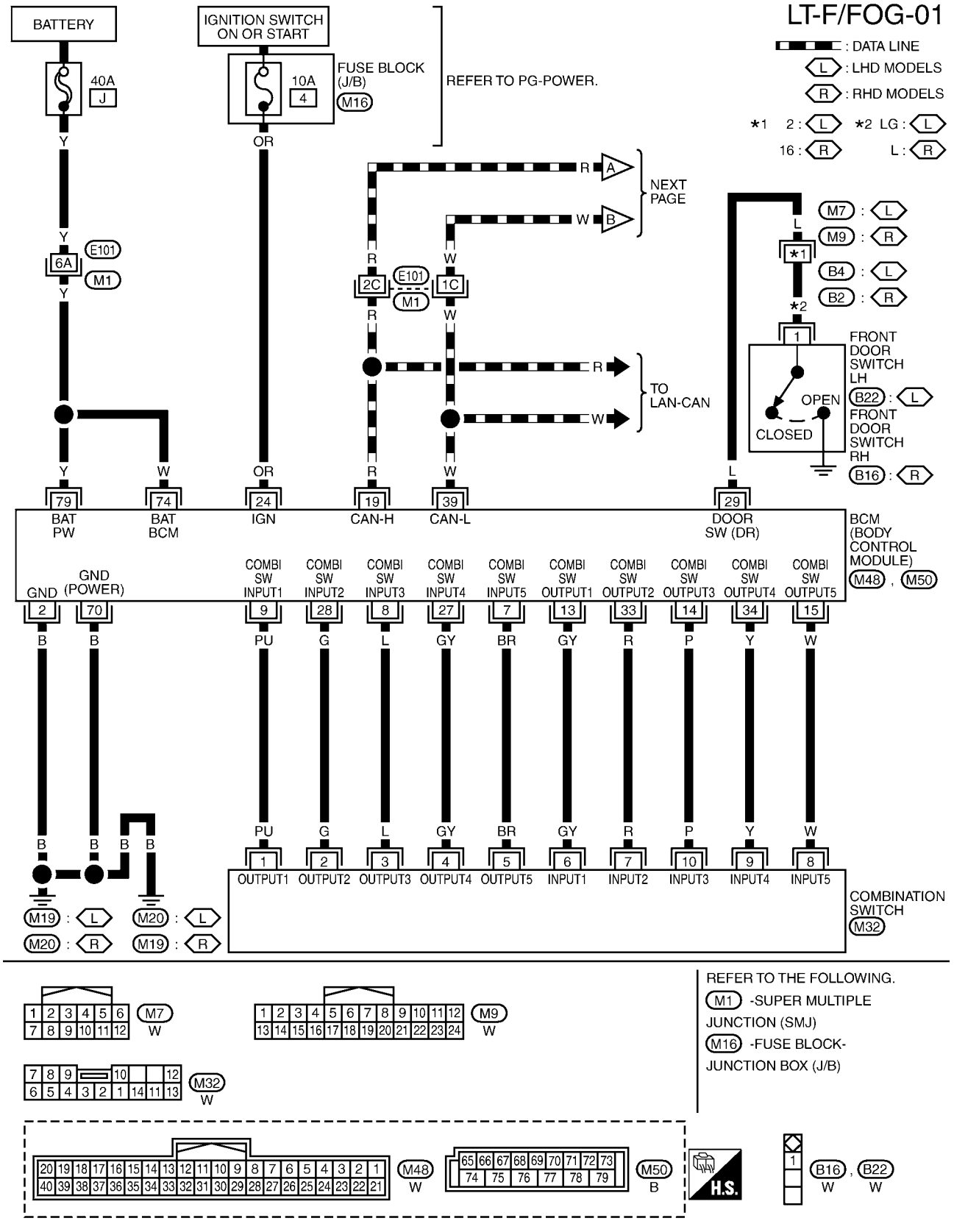
CAN Communication System Description

EKS0089G

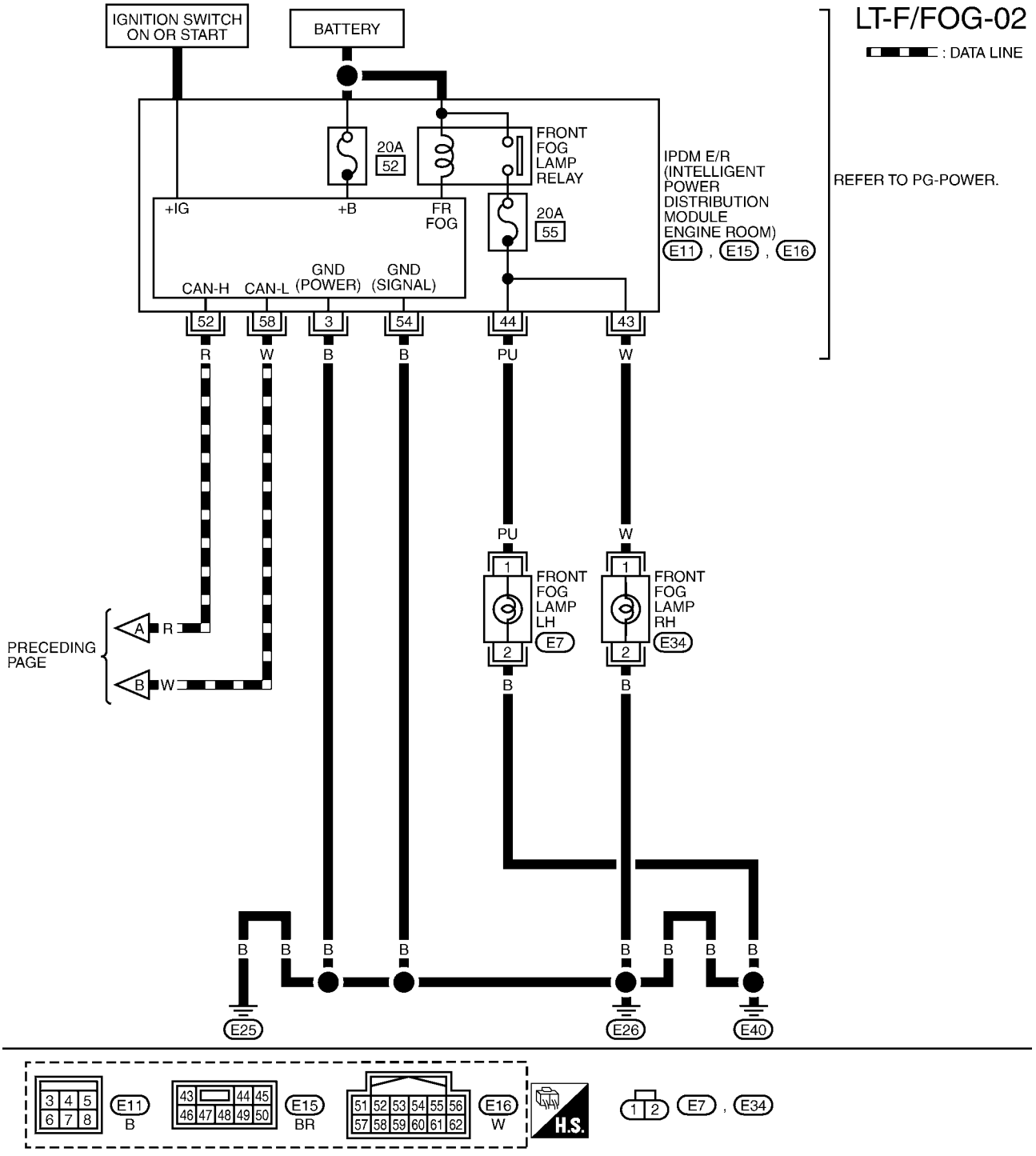
Refer to LT-6, "CAN Communication" .

Wiring Diagram — F/FOG —

EKS0083Y



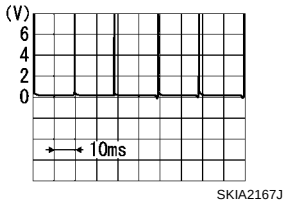
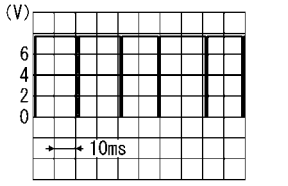
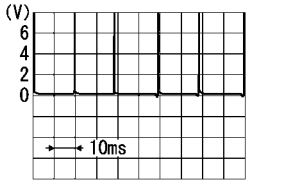
MKWA0821E


LT-F/FOG-02
: DATA LINE
IGNITION SWITCH ON OR START
BATTERY
20A 52
FRONT FOG LAMP RELAY
20A 55
+IG
+B
FR FOG
CAN-H
CAN-L
GND (POWER)
GND (SIGNAL)
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) E11 , E15 , E16
REFER TO PG-POWER.
52
58
3
54
44
43
R
W
B
B
PU
W
PRECEDING PAGE
A
R
B
W
FRONT FOG LAMP LH E7
FRONT FOG LAMP RH E34
E25
E26
E40
E11
B
E15
BR
E16
W
H.S.
E7 , E34

MKWA0822E

Terminals and Reference Value for BCM

EKS0083Z

Terminal No.	Wire color	Signal designation	Measuring condition		Reference value (V)
			Ignition switch	Operation or condition	
2	B	Ground	ON	—	Approx. 0
7	BR	Combination switch input 5	ON	Headlamps, turn signal, wipers OFF	 SKIA2167J
8	L	Combination switch input 3			
9	PU	Combination switch input 1			
27	GY	Combination switch input 4			
28	G	Combination switch input 2			
13	GY	Combination switch output 1	ON	Headlamps, turn signal, wipers OFF (wiper volume is 1 or 7)	 SKIA2166J
14	P	Combination switch output 3			
15	W	Combination switch output 5			
33	R	Combination switch output 2		Headlamps, turn signal, wipers OFF (wiper volume is other than 1 or 7)	 SKIA2167J
34	Y	Combination switch output 4			
19	R	CAN H	—	—	—
24	OR	Ignition power supply	ON	—	Approx. 12
39	W	CAN L	—	—	—
70	B	Ground	ON	—	Approx. 0
74	W	BAT power supply	OFF	—	Approx. 12
79	Y	Battery power supply	OFF	—	Approx. 12

Terminals and Reference Values for IPDM E/R

EKS0089N

Terminal No.	Wire color	Signal designation	Measuring condition			Reference value (V)
			Ignition switch	Operation or condition		
3	B	Ground	ON	—		Approx. 0
43	W	Front fog lamp (RH)	ON	Front fog lamp switch	ON	Approx. 12
44	PU	Front fog lamp (LH)	ON		OFF	Approx. 0
52	R	CAN H	—	—		—
54	B	Ground	ON	—		Approx. 0
58	W	CAN L	—	—		—

How to Proceed With Trouble Diagnosis

EKS00892

1. Confirm the symptom or customer complaints.
2. Understand operation description and function description.
   Refer to Front fog lamp LT-48, "System Description" .
3. Carry out the Preliminary Check. Refer to LT-53, "Preliminary Check"
4. Confirm headlamp does not operate by fail-safe control of IPDM E/R. Refer to PG-19, "FAIL-SAFE FUNCTION" .
5. Check symptom and repair or replace the cause of mulfunction.
6. Dose the front fog lamp operate normally? Yes: GO TO 7. No: GO TO 5.
7. INSPECTION END.

Preliminary Check

EKS00842

CHECK POWER SUPPLY AND GROUND CIRCUIT

1. CHECK FUSES

- Check BCM fuse and fusible link for blown-out.

UNIT	POWER SOURCE	FUSE No.
BCM	Battery	J
	Ignition switch ON or START position	4

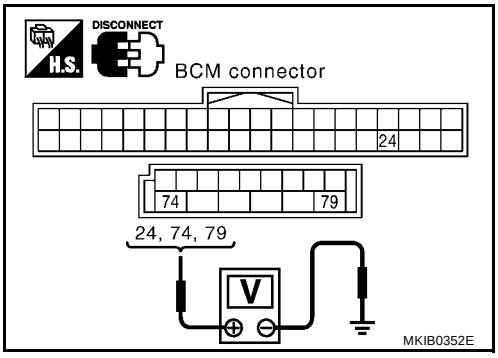
Refer to LT-50, "Wiring Diagram — F/FOG —" .

OK or NG

OK >> GO TO 2.
NG >> If fuse is blown, be sure to eliminate cause of mulfanction before installing new fuse. Refer to PG-4, "POWER SUPPLY ROUTING" .

2. POWER SUPPLY CIRCUIT CHECK

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



Terminals			Ignition switch position		
(+)		(–)	OFF	ACC	ON
Connector	Terminal (Wire color)				
M50	74 (W)	Ground	Battery voltage	Battery voltage	Battery voltage
M50	79 (Y)		Battery voltage	Battery voltage	Battery voltage
M48	24 (R)		0V	0V	Battery voltage

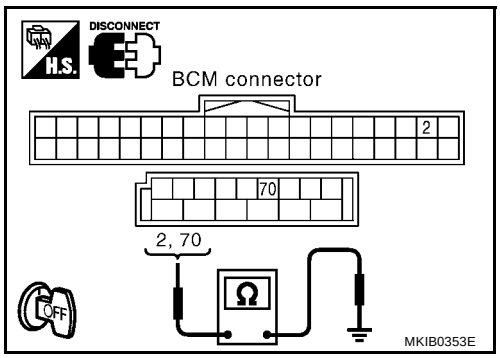
OK or NG

OK >> GO TO 3.
NG >> Check harness for open or short between BCM and fuse.

3. CHECK GROUND CIRCUIT

Check continuity between BCM and ground.

Terminals			Continuity
(+)		(–)	
Connector	Terminal (Wire color)		
M48	2 (B)	Ground	Yes
M50	70 (B)		



OK or NG

OK >> INSPECTION END.
NG >> Check harness ground circuit.

CONSULT-II Function (BCM)

EKS00843

Refer to LT-18, "CONSULT-II Functions (BCM)" .

CONSULT-II Function (IPDM)

EKS008IT

Refer to LT-21, "CONSULT-II Functions (IPDM E/R)" .

Front fog lamps Does Not Illuminate (Both Sides)

EKS008W8

1. CHECK FUSE

Check the following
20A fuse (No. 55, located in the IPDM E/R).

OK or NG

OK >> GO TO 2.
NG >> Replace headlamp fuse.

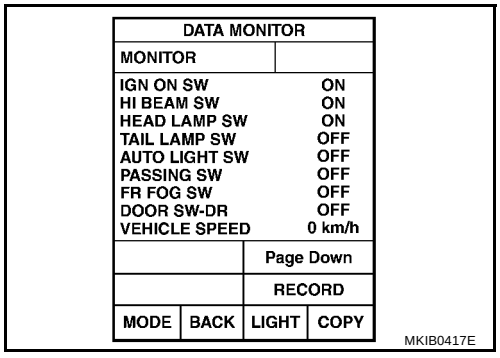
2. CHECK BETWEEN COMBINATION SWITCH AND BCM

With CONSULT-II

Select BCM on CONSULT-II.Check lighting switch (“FR FOG SW”) in “DATA MONITOR” mode with CONSULT-II.

When lighting switch is in 1st position and fog lamp switch in ON position : FR FOG SW ON

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



Without CONSULT-II

Refer to LT-110, "Check Combination Switch" .

OK or NG

OK >> GO TO 3.
NG >> Refer to LT-110, "Check Combination Switch" .

3. CHECK BNETWEEN IPDM E/R TO HEADLAMP

With CONSULT-II

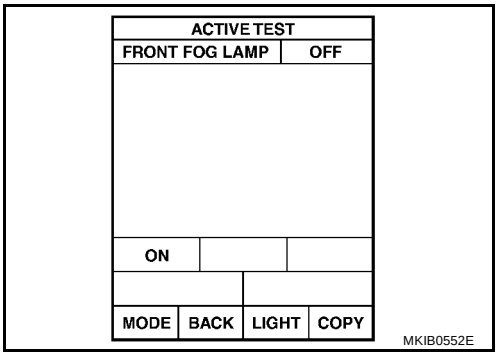
1. Select “IPDM” by CONSULT-II, and select “ACTIVE TEST” on “SELECT DIAG MODE” screen.
2. Select “FRONT FOG” on “SELECT TEST ITEM” screen.
3. Make sure that front fog lamp operate normally.

Without CONSULT-II

1. Start up auto active test. Refer to PG-29, "Auto Active Test" .
2. Make sure that front fog lamp operate normally.

OK or NG

OK >> GO TO 4.
NG >> Replace IPDM E/R.



4. CHECK BETWEEN IPDM E/R AND BCM

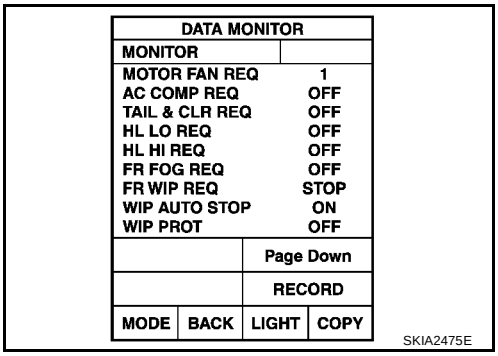
Select IPDM E/R on CONSULT-II. Check lighting switch (“FR FOG REQ”) in “DATA MONITOR” mode with CONSULT-II.

When lighting switch is in 1st position and fog lamp switch in ON position : FR FOG REQ ON

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

OK or NG

OK >> Replace IPDM E/R.
NG >> Replace BCM.



Front Fog Lamp Does Not Illuminate (One Side)

EKS00845

1. CHECK BULB

Check front fog bulb.

OK or NG

OK >> GO TO 2.
NG >> Replace front fog lamp bulb.

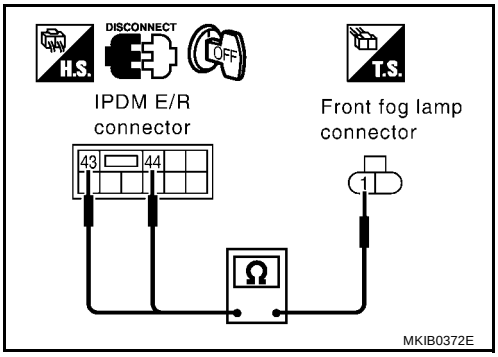
2. CHECK BETWEEN IPDM E/R AND FRONT FOG LAMPS

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connector and front fog lamp connector.
3. Check continuity between harness connector terminals of IPDM E/R and harness connector terminal of front fog lamps.

Terminals					Continuity
IPDM E/R		Front fog lamp			
Connector	Terminal (Wire color)	Connector		Terminal (Wire color)	
E15	43 (W)	RH	E34	1 (W)	Yes
	44 (PU)	LH	E7	1 (PU)	

OK or NG

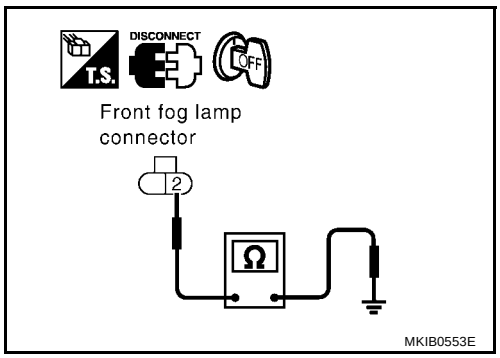
OK >> GO TO 3.
NG >> Repair harness or connector.



3. CHECK FRONT FOG LAMP AND GROUND CIRCUIT

Check continuity between front fog lamp harness connector E7 (LH) or E34 (RH) terminal 2 (B) and ground.

Continuity should exist.



OK or NG

OK >> Replace IPDM E/R.
NG >> Repair harness or connector.

Exterior Lamp Battery Saver Control Do Not Turn OFF

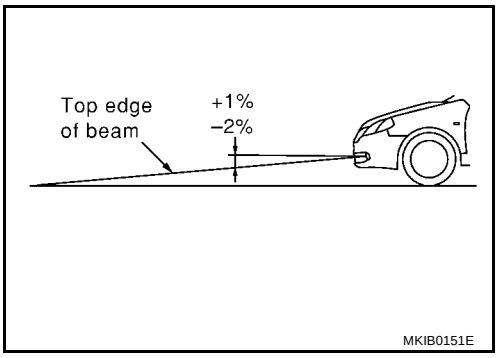
EKS008WR

Refer to LT-28, "Exterior Lamp Battery Saver Control Do Not Turn OFF" .

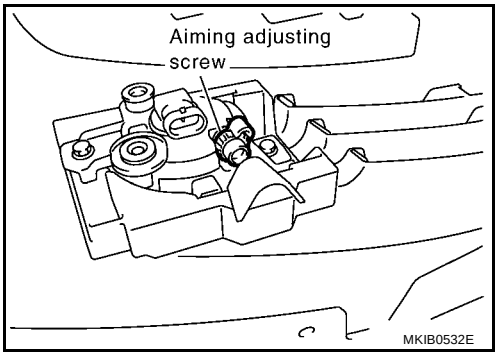
Aiming Adjustment

EKS00893

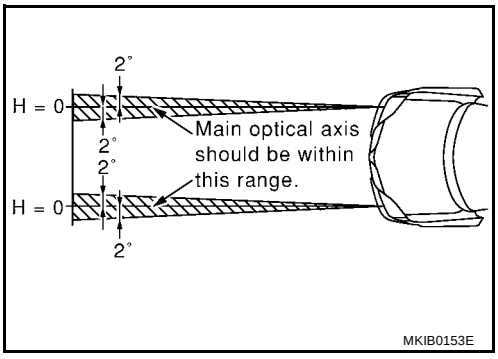
1. Set the top edge of the fog lamp lens as shown in the figure.



2. Turn front fog lamps ON.



3. Adjust front fog lamps as shown in the figure.
   - When performing adjustment, if necessary, cover the headlamps and opposite fog lamp.



Bulb Replacement

EKS00849

1. Turn ignition switch OFF
2. Remove fender protector. Refer to EI-12, "FENDER PROTECTOR"
3. Remove front bumper. Refer to EI-4, "FRONT BUMPER"
4. Turn bulb socket counterclockwise and unlock it.
5. Remove bulb from is socket.

Front fog lamp: 12V-55W (H11)

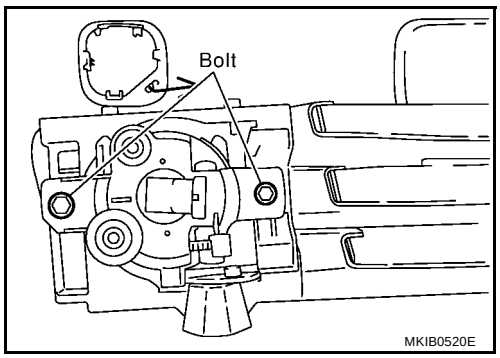
Removal and Installation

EKS0088Y

REMOVAL

1. Turn ignition switch OFF
2. Remove fender protector. Refer to EI-12, "FENDER PROTECTOR"
3. Remove front bumper. Refer to EI-4, "FRONT BUMPER"

4. Remove front fog lamp mounting bolt.



INSTALLTION

Install in the reverse order of removal.

REAR FOG LAMP

PFP:26550

System Description

EKS0084A

The rear fog lamp operation is controlled by the lighting switch which built into the combination switch and BCM (body control module).BCM read combination switch condition.Refer toLT-104, "System Description"

OUTLINE

Power is supplied at all times

- to terminals 74 and 79 of the BCM.

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

- to terminal 24 of the BCM.

Ground is supplied

- to BCM terminals 2 and 70
- through body grounds M19 and M20.

FOG LAMP OPERATION

When the lighting switch is turned to 2ND position or front fog lamp switch ON position and rear fog lamp switch in ON position, BCM read combination switch condition (refer to LT-104, "System Description"). Rear fog lamp is energized and then power is supplied.
With the rear fog lamp switch in the ON position, BCM supplies the power supply to rear fog lamp.

- to rear combination lamp LH terminal 6
- through BCM terminal 69 (LHD models)
- to rear combination lamp RH terminal 6
- through BCM terminal 69 (RHD models).

Ground is supplied

- to rear combination lamp LH terminal 4
- through body grounds B17, B23, B44 and B51 (LHD models)
- to rear combination lamp RH terminal 4
- through body grounds B17, B23, B44 and B51 (RHD models).

With power and grounds supplied, the rear fog lamps illuminate.
Rear fog indicator illuminate when combination meter receives input requesting rear fog indicator illuminate. This is communicated to BCM across the CAN communication lines.
When combination meter received rear fog lamp request signal, combination meter will illuminate rear fog indicator.

COMBINATION SWITCH READING FUNCTION

Refer to LT-104, "System Description"

EXTERIOR LAMP BATTERY SAVER CONTROL

When ignition switch is turned from ON (or ACC) to OFF while rear fog lamps illuminated, After counting 5 minutes by BCM, Then the rear fog lamp is turned off. The rear fog lamp is turned off when driver side door is opened even if 30 seconds have not passed after ignition switch is turned ON (or ACC) to OFF positions while headlamps are illuminated.
Exterior lamp battery saver control mode can be changed by the function setting of CONSULT-II.

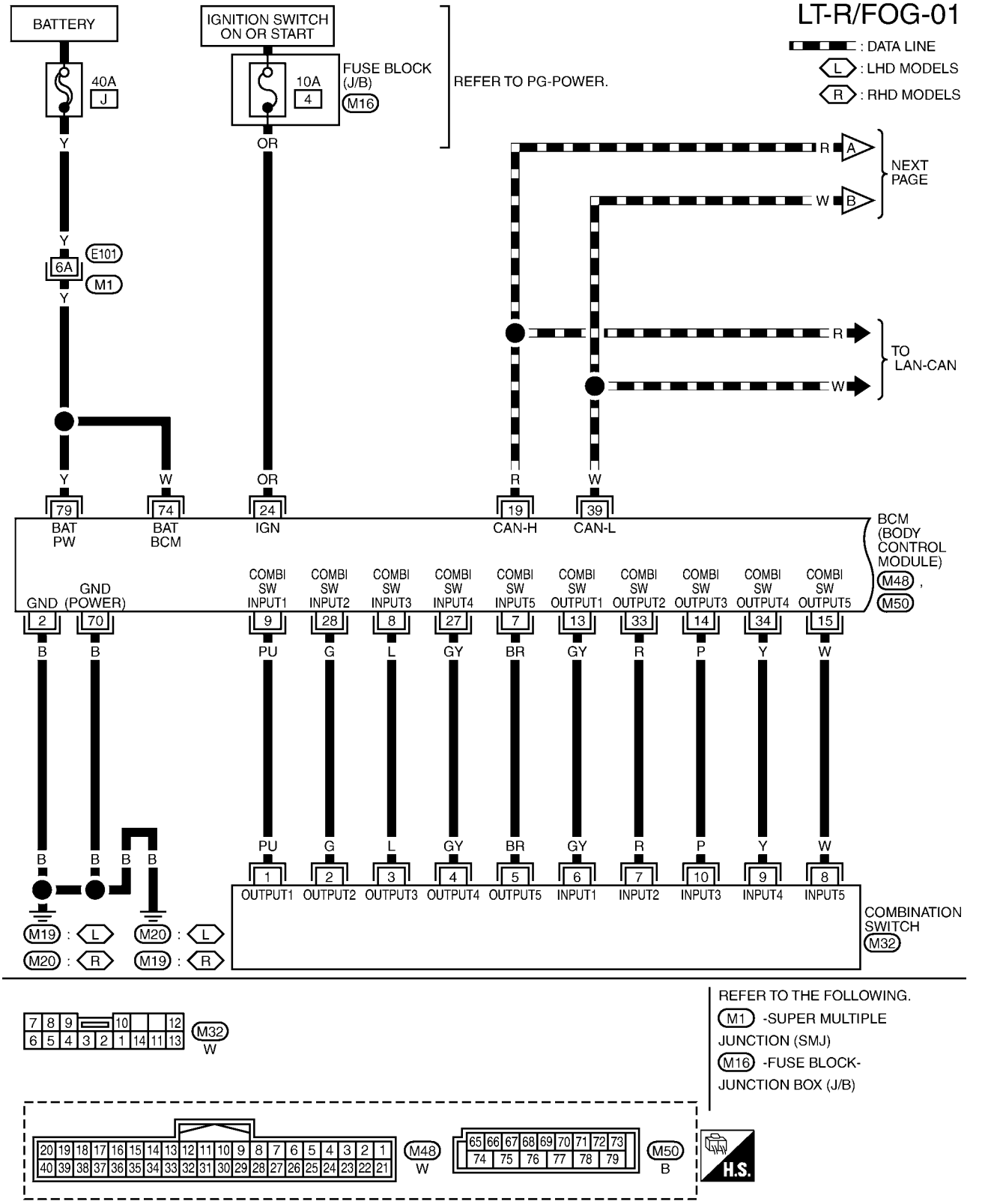
CAN Communication System Description

EKS0089H

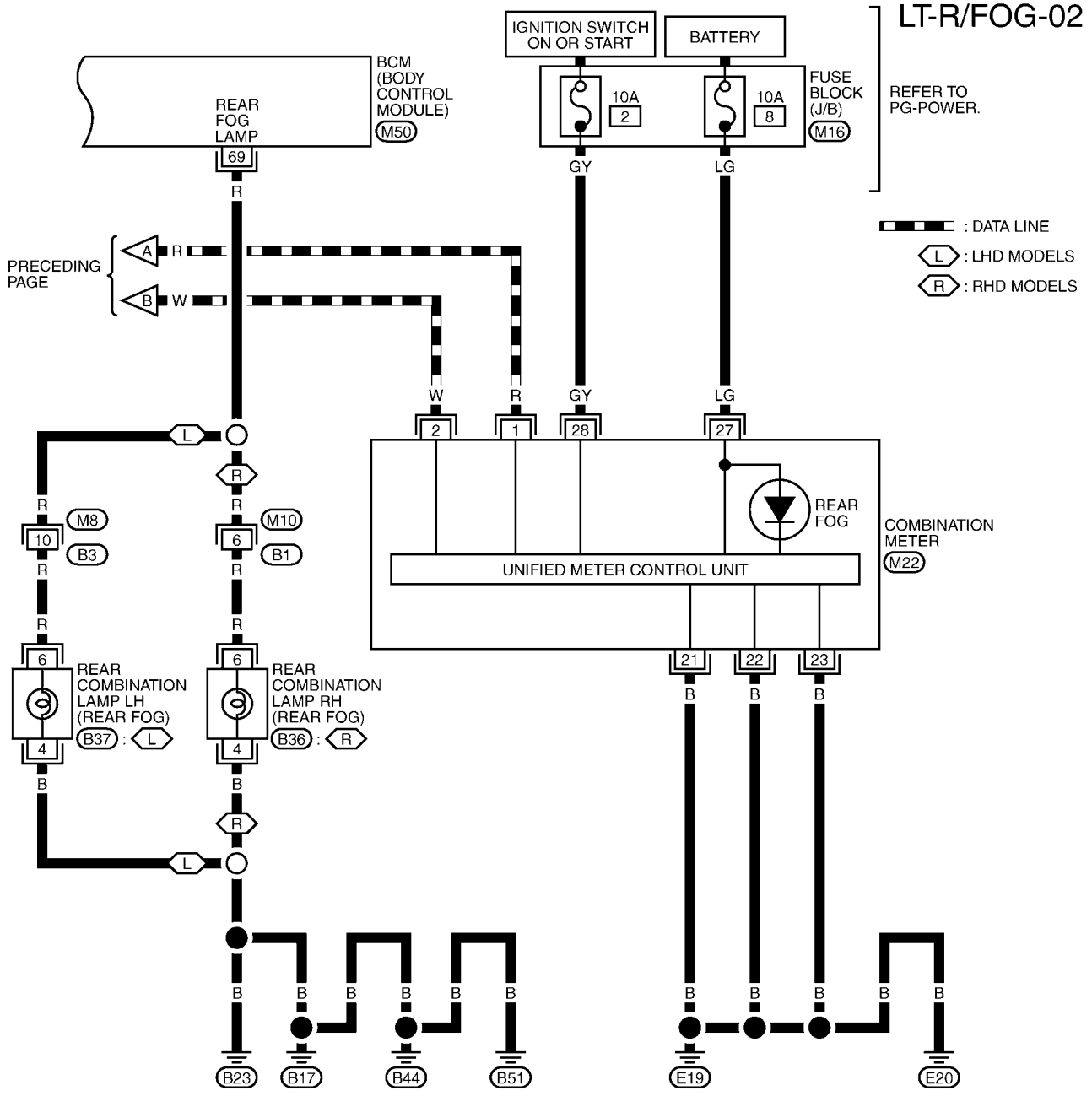
Refer to LT-6, "CAN Communication" .

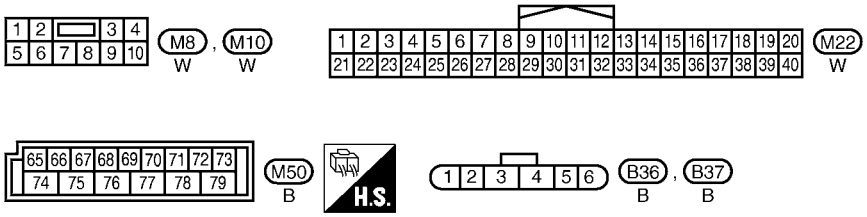
Wiring Diagram — R/FOG —

EKS0084D



MKWA0823E



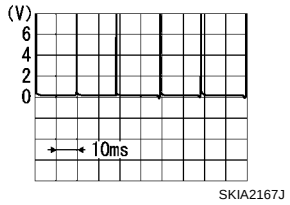
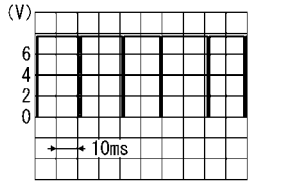
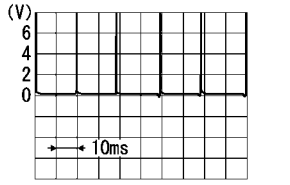


REFER TO THE FOLLOWING.
M16 -FUSE BLOCK-JUNCTION BOX (J/B)

MKWA0824E

Terminals and Reference Value for BCM

EKS00894

Terminal No.	Wire color	Signal designation	Measuring condition		Reference value (V)
			Ignition switch	Operation or condition	
2	B	Ground	ON	—	Approx. 0
7	BR	Combination switch input 5	ON	Headlamps, turn signal, wipers OFF	 SKIA2167J
8	L	Combination switch input 3			
9	PU	Combination switch input 1			
27	GY	Combination switch input 4			
28	G	Combination switch input 2			
13	GY	Combination switch output 1	ON	Headlamps, turn signal, wipers OFF (wiper volume is 1 or 7)	 SKIA2166J
14	P	Combination switch output 3			
15	W	Combination switch output 5			
33	R	Combination switch output 2		Headlamps, turn signal, wipers OFF (wiper volume is other than 1 or 7)	 SKIA2167J
34	Y	Combination switch output 4			
19	R	CAN H	—	—	—
24	OR	Ignition power supply	ON	—	Approx. 12
39	W	CAN L	—	—	—
69	R	Rear fog lamp signal	ON	Rear fog lamp switch: ON	Approx. 12
				Rear fog lamp switch: OFF	Approx. 0
70	B	Ground	ON	—	Approx. 0
74	W	BAttery power supply	OFF	—	Approx. 12
79	Y	Battery power supply	OFF	—	Approx. 12

How to Proceed With Trouble Diagnosis

EKS00895

1. Confirm the symptom or customer complaints.
2. Understand operation description and function description.
   Refer to rear fog lamp LT-59, "System Description" .
3. Carry out the Preliminary Check. Refer to LT-63, "Preliminary Check"
4. Check symptom and repair or replace the cause of mulfunction.
5. Dose the rear fog lamp operate normally? Yes: GO TO 6. No: GO TO 4.
6. INSPECTOPN END.

Preliminary Check

EKS0084H

CHECK POWER SUPPLY AND GROUND CIRCUIT

1. CHECK FUSES

- Check BCM fuse and fusible link for blown-out.

UNIT	POWER SOURCE	FUSE No.
BCM	Battery	J
	Ignition switch (ON)	4

Refer to LT-60, "Wiring Diagram — R/FOG —" .

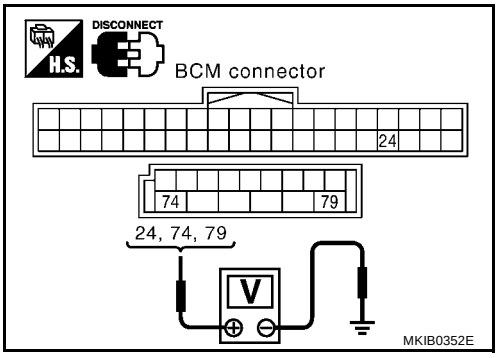
OK or NG

OK >> GO TO 2.
NG >> If fuse is blown, be sure to eliminate cause of mulfunction before installing new fuse. Refer to PG-4, "POWER SUPPLY ROUTING" .

2. CHECK POWER SUPPLY CIRCUIT

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

Terminals			Ignition switch position		
(+)		(–)	OFF	ACC	ON
Connector	Terminal (Wire color)				
M50	79 (Y)	Ground	Battery voltage	Battery voltage	Battery voltage
M48	24 (R)		0V	0V	Battery voltage
M50	74 (W)		Battery voltage	Battery voltage	Battery voltage



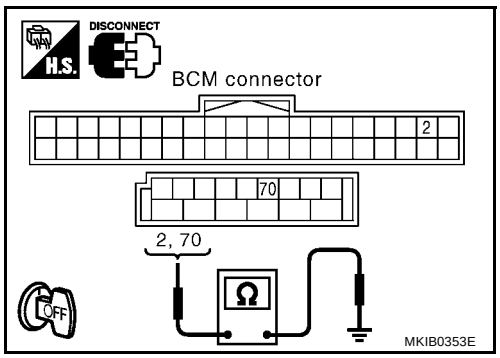
OK or NG

OK >> GO TO 3.
NG >> Check harness for open or short between BCM and fuse.

3. CHECK GROUND CIRCUIT

Check continuity between BCM and ground.

Terminals			Continuity
(+)		(–)	
Connector	Terminal (Wire color)		
M48	2 (B)	Ground	Yes
M50	70 (B)		



OK or NG

OK >> INSPECTION END.
NG >> Check harness ground circuit.

CONSULT-II Function (BCM)

EKS0084I

Refer to LT-18, "CONSULT-II Functions (BCM)" .

Rear Fog Lamp Does Not Illuminate

EKS0084K

1. CHECK BULB

Check rear fog lamp bulb.

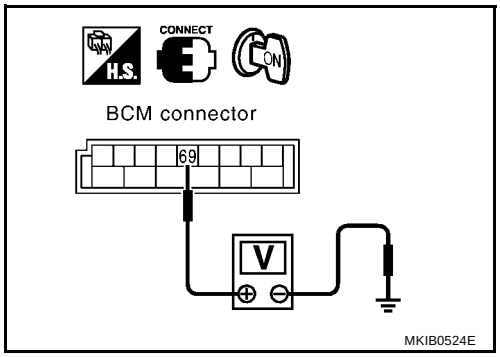
OK or NG

OK >> GO TO 2.
NG >> Replace rear fog lamp bulb.

2. CHECK BCM OUTPUT SIGNAL

Check voltage between BCM terminal 69 (R) and ground.

Connector	Terminal (Wire color)	(–)	Condition	Voltage
M50	69 (R)	Ground	Rear fog switch ON	Battery voltage
			Rear fog switch OFF	Apporox. 0



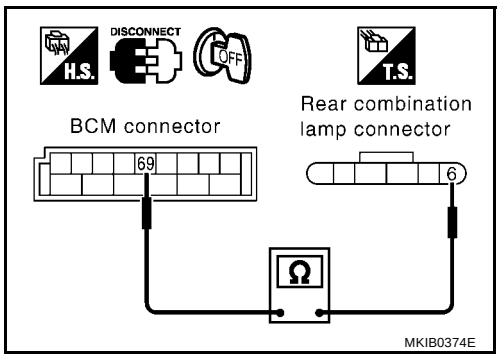
OK or NG

OK >> GO TO 3.
NG >> Replace BCM.

3. CHECK BETWEEN BCM AND REAR FOG LAMPS

1. Turn ignition switch OFF.
2. Disconnect BCM connector and rear combination lamp connector.
3. Check continuity between BCM and rear combination lamps.

Terminals					Continuity
Rear fog lamp (Rear combination lamp)			BCM		
Connector		Terminal (Wire color)	Connector	Terminal (Wire color)	
RHD models	B36	6 (R)	M50	69 (R)	Yes
LHD models	B37	6 (R)			



OK or NG

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

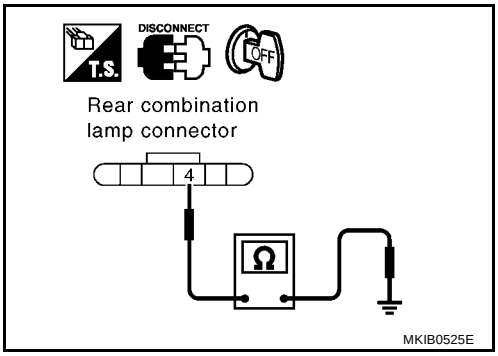
4. CHECK REAR FOG LAMP GROUND CIRCUIT

Check continuity between rear fog lamp harness connector B36 (RHD) or B37 (LHD) terminal 4(B) and ground.

Continuity should exist.

OK or NG

OK >> Replace rear fog lamp.
NG >> Repair harness or connector.



Bulb Replacement

EKS0084O

Refer to LT-101, "Bulb Replacement" .

Removal and Installation

EKS0089I

Refer to LT-101, "Removal and Installation" .

TURN SIGNAL AND HAZARD WARNING LAMPS

PFP:26120

System Description

EKS007R8

TURN SIGNAL OPERATION

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

- through 10A fuse [No. 4, located in the fuse block (J/B)]
- to BCM (body control module) terminal 24, and
- through 10A fuse [No. 2, located in the fuse block (J/B)]
- to combination meter terminal 28.

Ground is supplied

- to BCM terminals 2 and 70, and
- to combination meter terminals 21, 22 and 23
- through body grounds M19 and M20.

LH Turn

When the turn signal switch (combination switch) is moved to the LH position, the BCM read combination switch condition (Refer to LT-104, "System Description")power is supplied.

- through BCM terminal 65
- to front turn signal lamp LH terminal 1,
- to side turn signal lamp LH terminal 1 and
- to rear combination lamp LH (turn signal) terminal 5.

Ground is supplied to the front turn signal lamp LH terminal 2 and side turn signal lamp LH terminal 2 through body grounds E25, E26 and E40.
Ground is supplied to rear combination lamp LH (turn signal) terminal 4 through body grounds B17, B23, B44, and B51.
BCM send turn indicator signal to combination meter with CAN communication line.Combination meter is flashed turn LH indicator lamp.
With power and ground supplied, the BCM controls the flashing of the LH turn signal lamps.

RH Turn

When the turn signal switch (combination switch) is moved to the RH position, the BCM read combination meter condition (Refer to LT-104, "System Description").Power is supplied.

- through BCM terminal 66
- to front turn signal lamp RH terminal 1,
- to side turn signal lamp RH terminal 1 and
- to rear combination lamp RH (turn signal) terminal 5.

Ground is supplied to the front turn signal lamp RH terminal 2 and side turn signal lamp RH terminal 2 through body grounds E25, E26 and E40.
Ground is supplied to rear combination lamp RH (turn signal) terminal 4 through body ground B17, B23, B44 and B51.
BCM send turn indicator signal to combination meter with CAN communication line.Combination meter is flashed turn RH indicator lamp.
With power and ground supplied, the BCM controls the flashing of the RH turn signal lamps.

HAZARD LAMP OPERATION

Power is supplied at all times

- to BCM terminals 74 and 79
- through 40A fusible link (letter J, located in the fuse and fusible link box), and
- to combination meter terminal 27
- through 10A fuse [No. 8, located in the fuse block (J/B)].

Ground is supplied

- to hazard switch terminal 1,
- to BCM terminals 2 and 70 and
- to combination meter terminals 21, 22 and 23
- through body grounds M19 and M20.

When the hazard switch is ON position, ground is supplied

- to BCM terminal 26
- through hazard switch terminal 2.

Power is supplied

- through BCM terminal 65
- to front turn signal lamp LH terminal 1
- to side turn signal lamp LH terminal 1
- to rear combination lamp LH (turn signal) terminal 5
- through BCM terminal 66
- to front turn signal lamp RH terminal 1
- to side turn signal RH terminal 1
- to rear combination lamp RH (turn signal) terminal 5.

Ground is supplied

- to the front turn signal lamp LH terminal 2 and side turn signal lamp LH terminal 2 through body grounds E25, E26 and E40
- to the front turn signal lamp RH terminal 2 and side turn signal lamp RH terminal 2 through body grounds E25, E26 and E40
- to rear combination lamp LH (turn signal) terminal 4 through body grounds B17, B23, B44 and B51
- to rear combination lamp RH (turn signal) terminal 4 through body grounds B17, B23, B44 and B51.

BCM send turn indicator signal to combination meter with CAN communication line.Combination meter is flashed turn LH and RH indicator lamps.
With power and ground supplied, the BCM controls the flashing of the hazard warning lamps.

MOLTI-REMOTE CONTROL SYSTEM OPERATION

Power is supplied at all times

- to BCM terminals 74 and 79
- through 40A fusible link (letter J, located in the fuse and fusible link box), and
- to combination meter terminal 27
- through 10A fuse [No. 8, located in the fuse block (J/B)].

Ground is supplied

- to BCM terminals 2 and 70
- through body grounds M19, M20, and
- to combination meter terminals 21, 22 and 23
- through body grounds M19 and M20.

When BCM receives LOCK or UNLOCK signal from remote controller with all doors closed, power is supplied.

- through BCM terminal 65
- to front turn signal lamp LH terminal 1
- to side turn signal lamp LH terminal 1
- to rear combination lamp LH (turn signal) terminal 5
- through BCM terminal 66
- to front turn signal lamp RH terminal 1
- to side turn signal lamp RH terminal 1
- to rear combination lamp RH (turn signal) terminal 5.

Ground is supplied

- to the front turn signal lamp LH terminal 2 and side turn signal lamp LH terminal 2 through body grounds E25, E26 and E40.
- to the front turn signal lamp RH terminal 2 and side turn signal lamp RH terminal 2 through body grounds E25, E26 and E40.
- to rear combination lamp LH (turn signal) terminal 4 through body grounds B17, B23, B44 and B51.
- to rear combination lamp RH (turn signal) terminal 4 through body grounds B17, B23, B44 and B51.

BCM send turn indicator signal to combination meter with CAN communication line.Combination meter is flashed turn LH and RH indicator lamps.
With power and ground supplied, the BCM controls the flashing of the hazard warning lamps.

COMBINATION SWITCH READING FUNCTION

Refer to LT-104, "System Description"

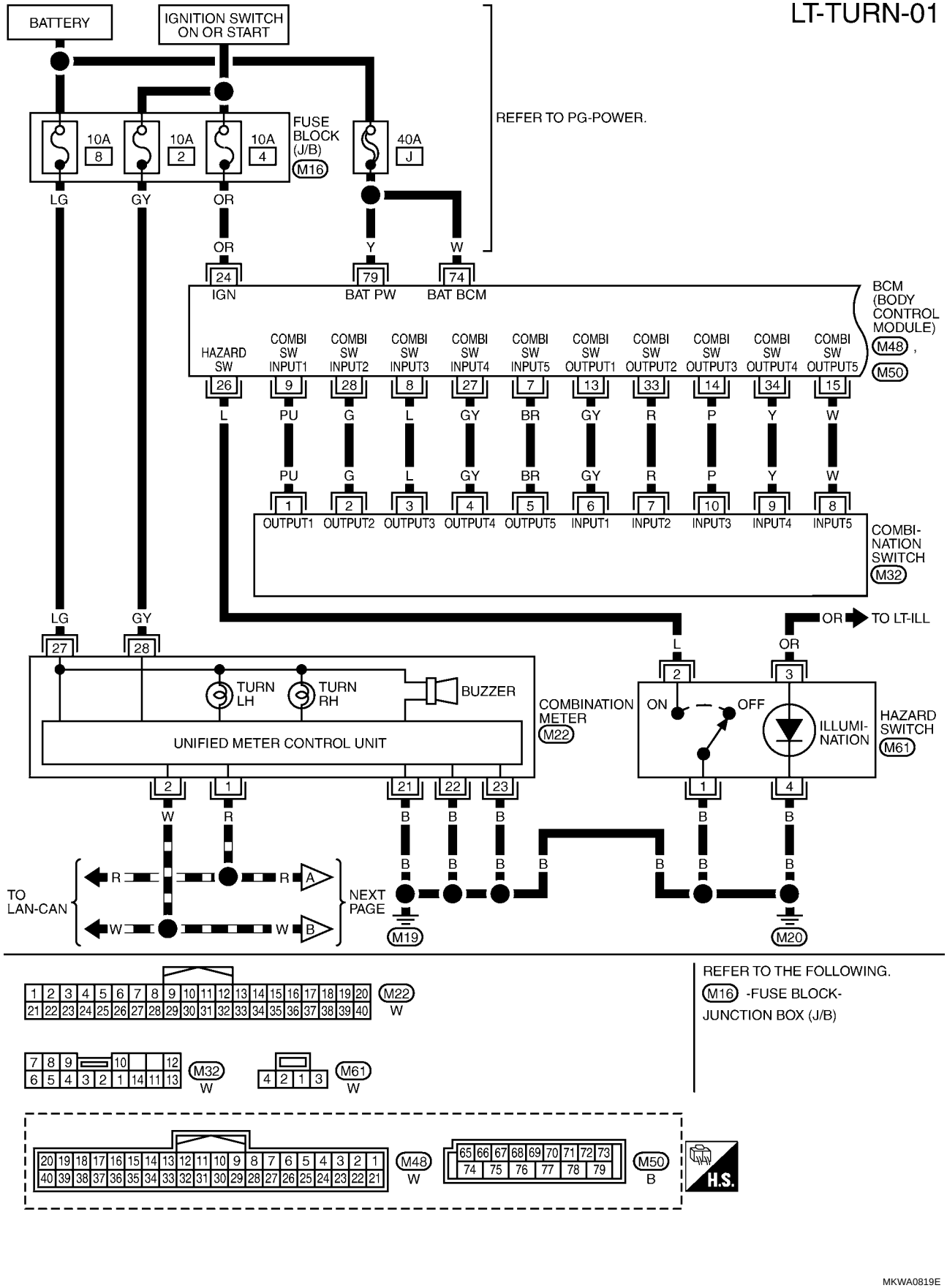
CAN Communication System Description

EKS0085H

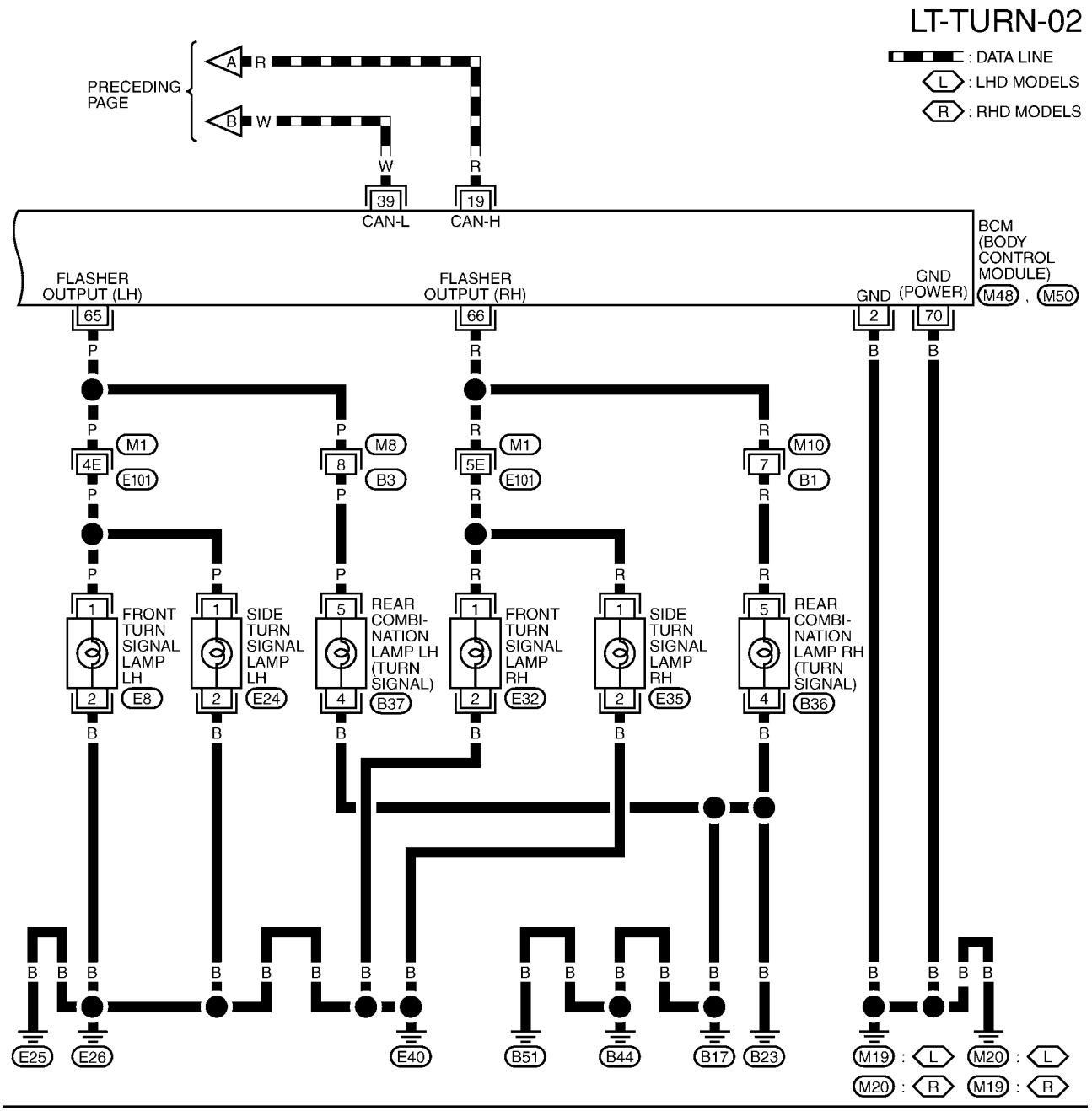
Refer to LT-6, "CAN Communication" .

Wiring Diagram — TURN —

EKS0085I



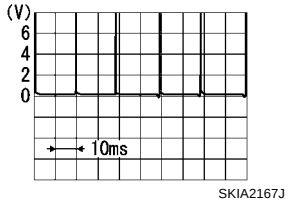
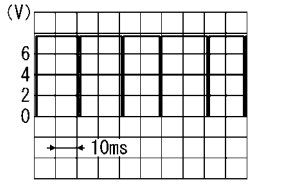
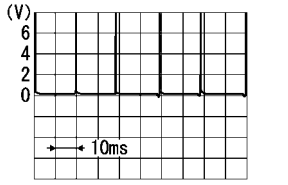
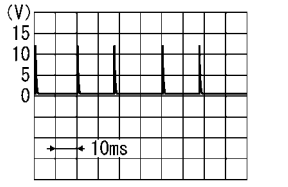
MKWA0819E

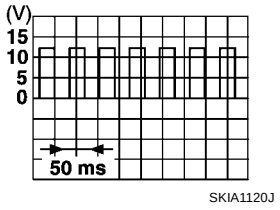
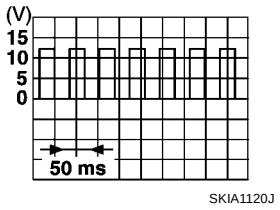

LT-TURN-02
: DATA LINE
L : LHD MODELS
R : RHD MODELS
PRECEDING PAGE
A R
B W
W
R
39
19
CAN-L
CAN-H
BCM (BODY CONTROL MODULE)
M48 , M50
FLASHER OUTPUT (LH)
FLASHER OUTPUT (RH)
GND
GND (POWER)
65
66
2
70
M1
4E
E101
M8
8
B3
5E
M10
7
B1
FRONT TURN SIGNAL LAMP LH
SIDE TURN SIGNAL LAMP LH
REAR COMBI-NATION LAMP LH (TURN SIGNAL)
B37
FRONT TURN SIGNAL LAMP RH
SIDE TURN SIGNAL LAMP RH
REAR COMBI-NATION LAMP RH (TURN SIGNAL)
B36
E8
E24
E32
E35
E25
E26
E40
B51
B44
B17
B23
M19 : L
M20 : L
M20 : R
M19 : R
REFER TO THE FOLLOWING.
M1 -SUPER MULTIPLE JUNCTION (SMJ)
M8 , M10
M48
M50
H.S.
E8 , E32
E24 , E35
B36 , B37

MKWA0820E

Terminals and Reference Value for BCM

EKS007R9

Terminal No.	Wire color	Signal designation	Measuring condition			Reference value (V)
			Ignition switch	Operation or condition		
2	B	Ground	ON	—		Approx. 0
7	BR	Combination switch input 5	ON	Headlamps, turn signal, wipers OFF		 SKIA2167J
8	L	Combination switch input 3				
9	PU	Combination switch input 1				
27	GY	Combination switch input 4				
28	G	Combination switch input 2				
13	GY	Combination switch output 1	ON	Headlamps, turn signal, wipers OFF (wiper volume is 1 or 7)		 SKIA2166J
14	P	Combination switch output 3				
15	W	Combination switch output 5				
33	R	Combination switch output 2		Headlamps, turn signal, wipers OFF (wiper volume is other than 1 or 7)		 SKIA2167J
34	Y	Combination switch output 4				
19	R	CAN H	—	—		—
24	OR	Ignition power supply	ON	—		Approx. 12
26	L	Hazard	OFF	Hazard switch	ON	Approx. 0
					OFF	 SKIA2239J
39	W	CAN L	—	—		—

Terminal No.	Wire color	Signal designation	Measuring condition			Reference value (V)
			Ignition switch	Operation or condition		
65	P	Turn signal (LH)	ON	Combination switch	Turn left ON	 SKIA1120J
66	R	Turn signal (RH)			Turn right ON	 SKIA1120J
70	B	Ground	ON	—		Approx. 0
74	W	Battery power supply	OFF	—		Approx. 12
79	Y	Battery power supply	OFF	—		Approx. 12

How to Proceed With Trouble Diagnosis

EKS00896

1. Confirm the symptom or customer complaints.
2. Understand operation description and function description.
   Refer to Turn signal and hazard warning lamps LT-67, "System Description" .
3. Carry out the Preliminary Check. Refer to LT-74, "Preliminary Check"
4. Check symptom and repair or replace the cause of mulfunction.
5. Dose the turn signal and hazard warning lamps operate normally? Yes: GO TO 6. No: GO TO 4.
6. INSPECTION end.

Preliminary Check

EKS00897

CHECK POWER SUPPLY AND GROUND CIRCUIT

1. CHECK FUSES

- Check BCM fuse and fusible link for blown-out.

UNIT	POWER SOURCE	FUSE No.
BCM	Battery	J
	Ignition switch ON or START position	4

Refer to LT-70, "Wiring Diagram — TURN —" .

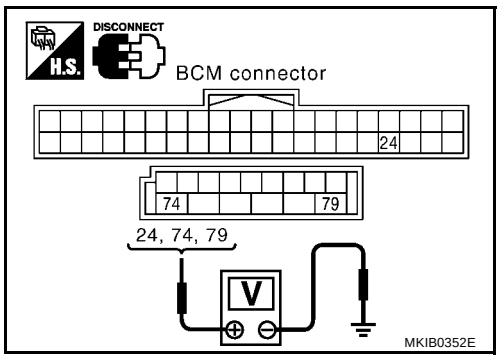
OK or NG

OK >> GO TO 2.
NG >> If fuse is blown, be sure to eliminate cause of mulfunction before installing new fuse. Refer to PG-4, "POWER SUPPLY ROUTING" .

2. POWER SUPPLY CIRCUIT CHECK

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

Terminals			Ignition switch position		
(+)		(–)	OFF	ACC	ON
Connector	Terminal (Wire color)				
M50	74 (W)	Ground	Battery voltage	Battery voltage	Battery voltage
M50	79 (Y)		Battery voltage	Battery voltage	Battery voltage
M48	24 (R)		0V	0V	Battery voltage



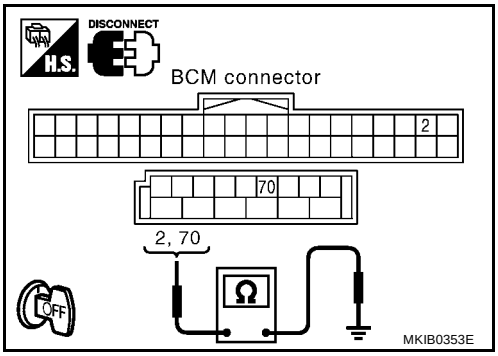
OK or NG

OK >> GO TO 3.
NG >> Check harness for open or short between BCM and fuse.

3. CHECK GROUND CIRCUIT

Check continuity between BCM and ground.

Terminals			Continuity
(+)		(–)	
Connector	Terminal (Wire color)		
M48	2 (B)	Ground	Yes
M50	70 (B)		



OK or NG

OK >> INSPECTION END
NG >> Repair ground circuit.

CONSULT-II Functions (BCM)

EKS007RD

CONSULT-II has display functions for work support, self-diagnosis, data monitoring, and active tests for each part by combining data reception and command transmission via communication lines from the BCM.

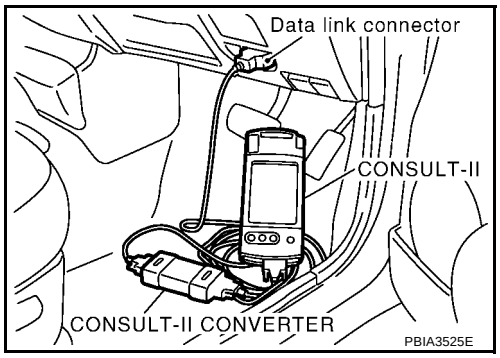
BCM trouble diagnosis item	Inspection Item, Diagnosis Mode	Description
Flasher	Data monitor	Displays BCM input data in real time.

CONSULT-II BASIC OPERATION

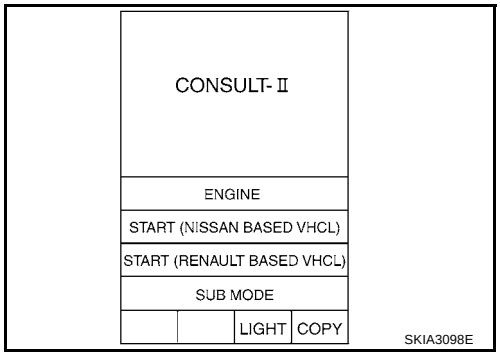
CAUTION:

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

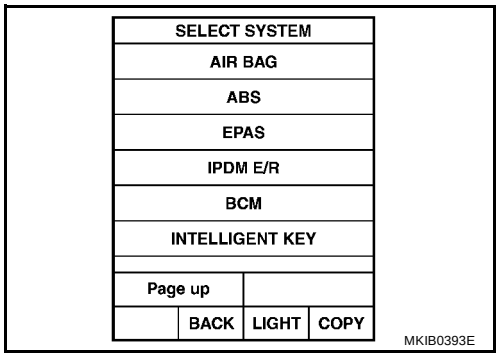
1. Turn ignition switch OFF.
2. Connect CONSULT-II and “CONSULT-II CONVERTER” to data link connector.



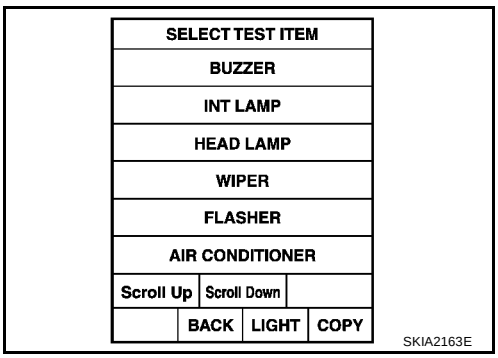
3. Turn ignition switch ON.
4. Touch “START (NISSAN BASED VHCL)”.



5. Touch “BCM” on “SELECT SYSTEM” screen.
   If “BCM” is not indicated, go to GI-36, "CONSULT-II Data Link Connector (DLC) Circuit" .



6. Touch “FLASHER” on “SELECT TEST ITEM” screen.



7. Touch “DATA MONITOR” on “SELECT DIAG MODE” screen.

DATA MONITOR

Operation Procedure

1. Touch “FLASHER” on “SELECT TEST ITEM” screen.
2. Touch “DATA MONITOR” on the “SELECT DIAG MODE” screen.
3. Touch “ALL SIGNALS” or “SELETION FROM MENU” on the “DATA MONITOR” screen.

ALL SIGNALS	All items will be monitored.
SELECTION FROM MENU	Selects and monitors individual items.

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 to record the status of the item being monitored. To stop recording, touch “STOP”.

Display Item List

Monitor item “UNIT”		Display content
IGN ON SW	[ON/OFF]	Displays status (Ignition switch ON: ON/Others OFF, ACC: OFF) as judged from the ignition switch signal.
HAZARD SW	[ON/OFF]	Displays status (Hazard ON: ON/Hazard OFF: OFF) as judged from hazard switch signal.
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.
ONE BULB FAIL	[ON/OFF]	Displays status (One bulb blown: ON/Others: OFF) as judged from bulb signal.

Turn Signal Lamp Does Not Operate

EKS0085K

1. CHECK BULB

Check turn signal lamp bulb.

OK or NG

OK >> GO TO 2.
NG >> Replace turn signal lamp bulb.

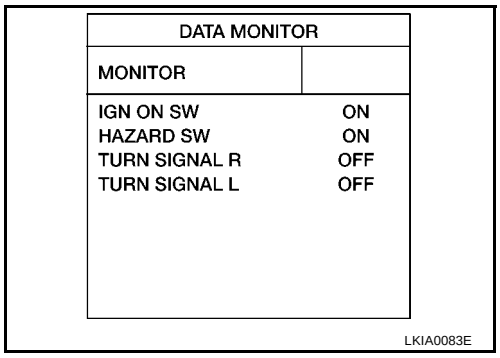
2. CHECK BCM INPUT SIGNAL

With CONSULT-II

Select BCM on CONSULT-II.Check turn signal (“TURN SIGNAL”) in “DATA MONITOR” mode with CONSULT-II.

When combination switch LH position : TURN SIGNAL L ON

When combination switch RH position : TURN SIGNAL R ON



Without CONSULT-II

Refer to LT-110, "Check Combination Switch" .

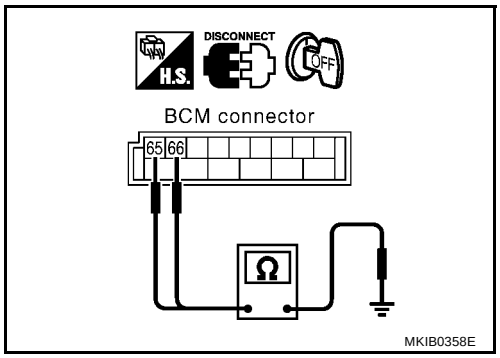
OK or NG

OK >> GO TO 3.
NG >> Refer to LT-110, "Check Combination Switch" .

3. CHECK BCM

1. Turn ignition switch OFF.
2. Disconnect BCM connector and all turn signal lamp connectors.
3. Check harness continuity (short circuit) between BCM connectors and ground.

Terminals				Continuity
(+)			(-)	
Connector		Terminal (Wire color)		
RH	M50	66 (R)	Ground	No
LH		65 (P)		



OK or NG

OK >> Replace BCM.
NG >> Repair harness or connector.

Hazard Lamp Does Not Operate

EKS0085L

1. CHECK BULB

Check turn signal lamp bulb.

OK or NG

OK >> GO TO 2.
NG >> Replace turn signal lamp bulb.

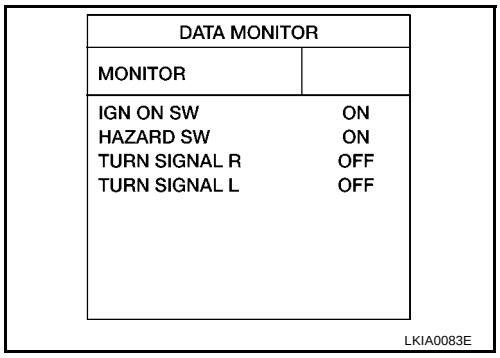
2. CHECK BCM INPUT SIGNAL

With CONSULT-II

Select BCM on CONSULT-II.Check turn signal (“HAZARD SW”) in “DATA MONITOR” mode with CONSULT-II.

When hazard switch ON : HAZARD SW ON

When hazard switch OFF : HAZARD SW OFF



Without CONSULT-II

Refer to LT-110, "Check Combination Switch" .

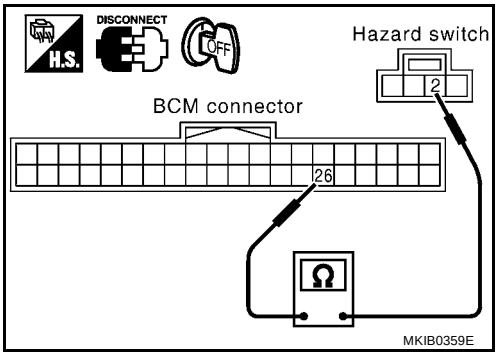
OK or NG

OK >> GO TO 3.
NG >> Refer to LT-110, "Check Combination Switch" .

3. CHECK HAZARD SWITCH AND BCM

1. Turn ignition switch OFF.
2. Disconnect BCM connector and all turn signal lamp connectors.
3. Check continuity between harness connector M48 terminal 26 (L) of BCM and hazard switch terminal 2 (L).

Continuity should exist.



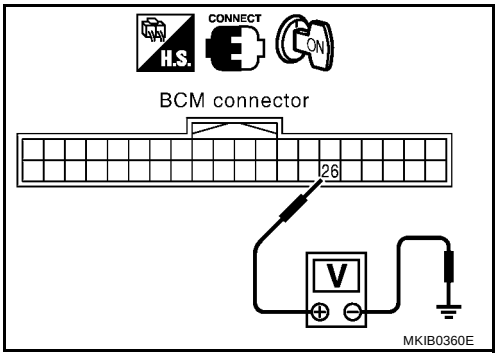
OK or NG

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

4. CHECK BCM AND GROUND

1. Connect BCM connector.
2. Check voltage between harness connector M48 terminal 26 (L) of BCM and ground.

Voltage: Approximately 5V.



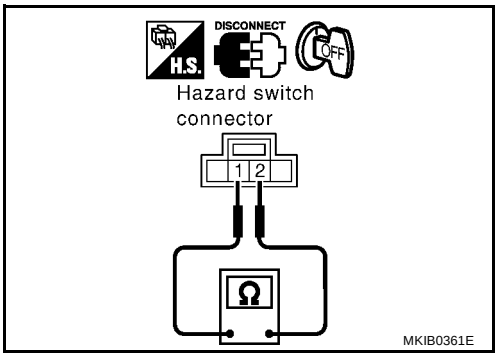
OK or NG

OK >> GO TO 5.
NG >> Replace BCM.

5. CHECK HAZARD SWITCH

Check continuity hazard switch connector M50.

Terminal (Wire color)		Condition	Continuity
2 (L)	1 (B)	Hazard switch is ON	Yes
		Hazard switch is OFF	No



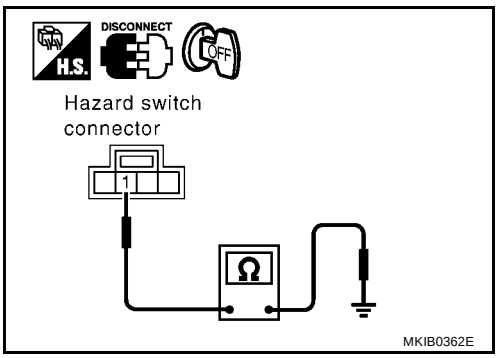
OK or NG

OK >> GO TO 6.
NG >> Repair hazard switch.

6. CHECK BCM AND GROUND

Check continuity between harness connector M61 terminal 1 (B) of BCM and ground.

Continuity should exist.



OK or NG

OK >> INSPECTION END.
NG >> Replace BCM.

Turn Signal Indicator Lamp Does Not Operate

EKS0085M

1. CHECK BULB

Check indicator bulb.

OK or NG

OK >> Replace combination meter.
NG >> Replace indicator bulb.

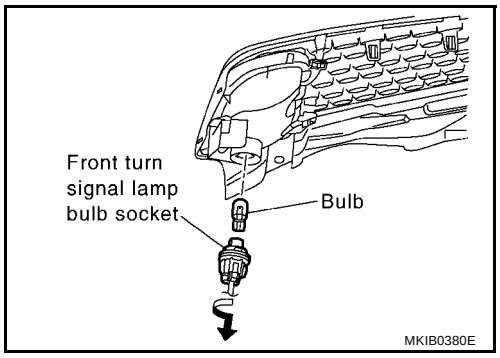
Bulb Replacement

EKS0089C

FRONT TURN SIGNAL LAMP

1. Remove front grille. Refer to EI-9, "FRONT GRILLE" .
2. Turn bulb socket left to release lock and remove it.
3. Remove bulb.

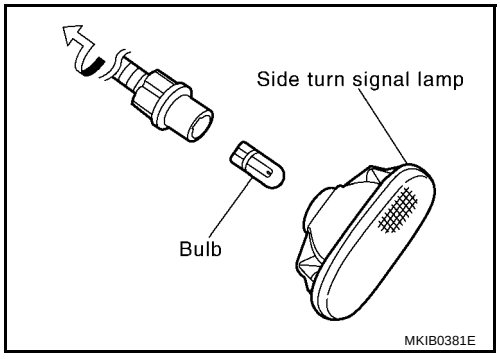
Front turn signal lamp : 12V-21W



SIDE TURN SIGNAL LAMP

1. Remove side turn signal lamp. Refer to LT-81, "SIDE TURN SIGNAL LAMP" .
2. Turn bulb socket left to release lock and remove it.
3. Remove bulb.

Side turn signal lamp : 12V-5W



REAR TURN SIGNAL LAMP

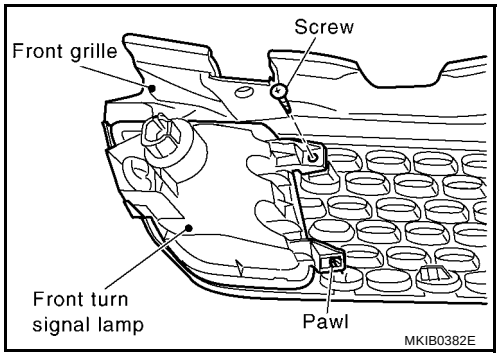
Refer to LT-101, "REAR COMBINATION LAMP" .

Removal and Installation

EKS0089D

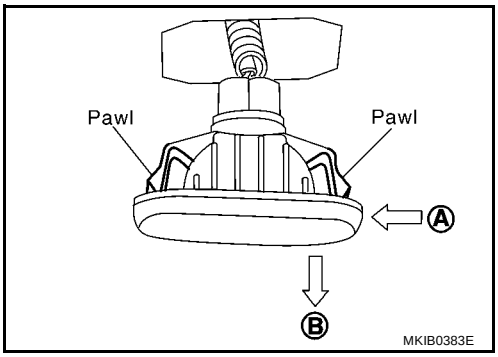
FRONT TURN SIGNAL LAMP

1. Remove front grille. Refer to EI-9, "FRONT GRILLE" .
2. Remove screw and tabs, and then remove front turn signal lamp from front grille.



SIDE TURN SIGNAL LAMP

1. Pull the side turn signal lamp in direction B while pushing it in direction A as shown by the arrow in the figure and remove from the vehicle.
2. Disconnect side turn signal lamp connector.
   When installing, face surface with rib upwards.



REAR TURN SIGNAL LAMP

Refer to LT-101, "REAR COMBINATION LAMP" .

PARKING, LICENSE PLATE AND TAIL LAMPS

PFP:26550

System Description

EKS007RN

The parking license plate and tail lamps operation is controlled by the lighting switch which built into the combination switch, BCM (body control module) and IPDM E/R (intelligent power distribution module engine room).Tail lamp relay is built into IPDM E/R.BCM read combination switch condition.Refer toLT-104, "System Description"

Power is supplied at all times

- to tail lamp relay, located in the IPDM E/R.
- to IPDM E/R
- through 20A fusible link (No.52, located in the IPDM E/R).

Power is also supplied at all times

- to BCM terminals 74 and 79
- through 40A fusible link (letter J, located in the fuse and fusible link box).

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

- to BCM terminal 24
- through 10A fuse [No. 4, located in the fuse block (J/B)].

Ground is supplied

- to BCM terminals 2 and 70
- through body grounds M19 and M20.
- to IPDM E/R terminals 3 and 54
- through body grounds E25,E26 and E40.

OPERATION BY LIGHTING SWITCH

When the lighting switch is turned to 1ST position, BCM read combination switch condition (refer to LT-104, "System Description"). And BCM send parking, license plate and tail lamps request signal to IPDM E/R with CAN communication line. Then IPDM E/R is turned on tail lamp relay. Tail lamp relay is energized and then power is supplied.

- through terminal 49 of the IPDM E/R
- to parking lamp LH terminal 1
- through terminal 15 of the IPDM E/R
- to rear combination lamp LH terminal 3
- through terminal 45 of the IPDM E/R
- to parking lamp RH terminal 1
- through terminal 16 of the IPDM E/R
- to rear combination lamp RH terminal 3
- to license plate lamp terminal 2.

Ground is supplied at all times

- to each parking lamps terminal 2
- through body grounds E25, E26 and E40
- to each rear combination lamps terminal 4
- to license plate lamp terminal 1
- through body grounds B17, B23, B44 and B51.

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

EXTERIOR LAMP BATTERY SAVER CONTROL

When ignition switch is turned from ON (or ACC) to OFF while parking, license plate and tail lamps illuminated, BCM send parking, license plate and tail lamps request signal to IPDM E/R with CAN communication line. After counting 5 minutes by BCM, it send parking, license plate and tail lamps off request signal to IPDM E/R. Then the parking, license plate and tail lamps are turned off. The parking, license plate and tail lamps are turned off when driver side door is opened even if 30 seconds have not passed after ignition switch is turned ON (or ACC) to OFF positions while parking, license plate and tail lamps are illuminated.

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

COMBINATION SWITCH READING FUNCTION

Refer to LT-104, "System Description"

FAIL-SAFE FUNCTION

When CAN communication with other control units is impossible, IPDM E/R performs fail-safe control. If the fail-safe system is operating, parking, license plate and tail lamps illuminate when the ignition switch is turned from OFF to ON or ACC and parking, license plate and tail lamps are turned off when the ignition switch is turn from ON or ACC to OFF. If the fail-safe system is operating, parking, license plate and tail lamps does not operate when the combination switch is in any position. After CAN communication recovers normally, it also returns to normal control. (Refer to PG-19, "FAIL-SAFE FUNCTION")

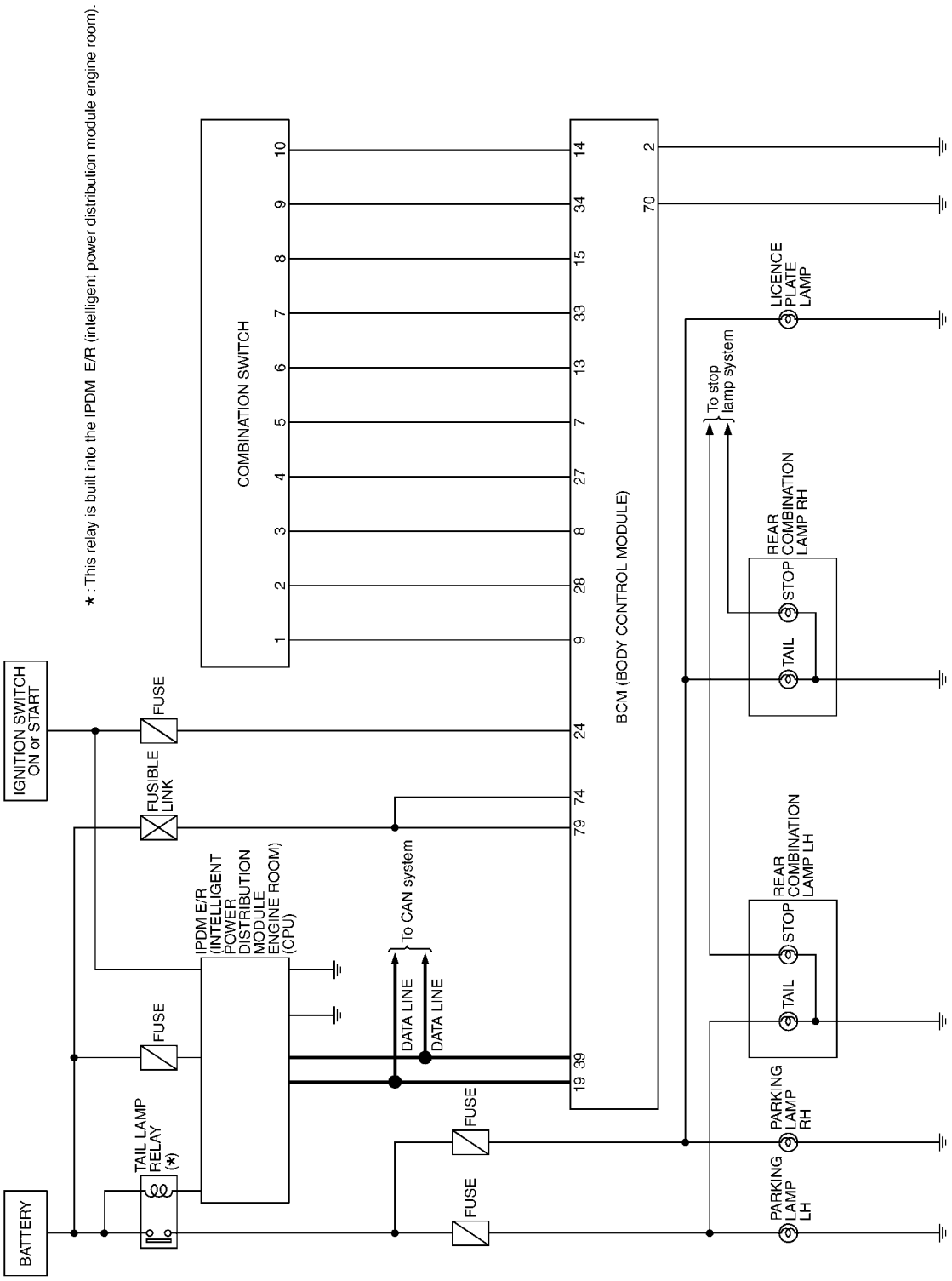
CAN Communication System Description

EKS0085N

Refer to LT-6, "CAN Communication" .

Schematic

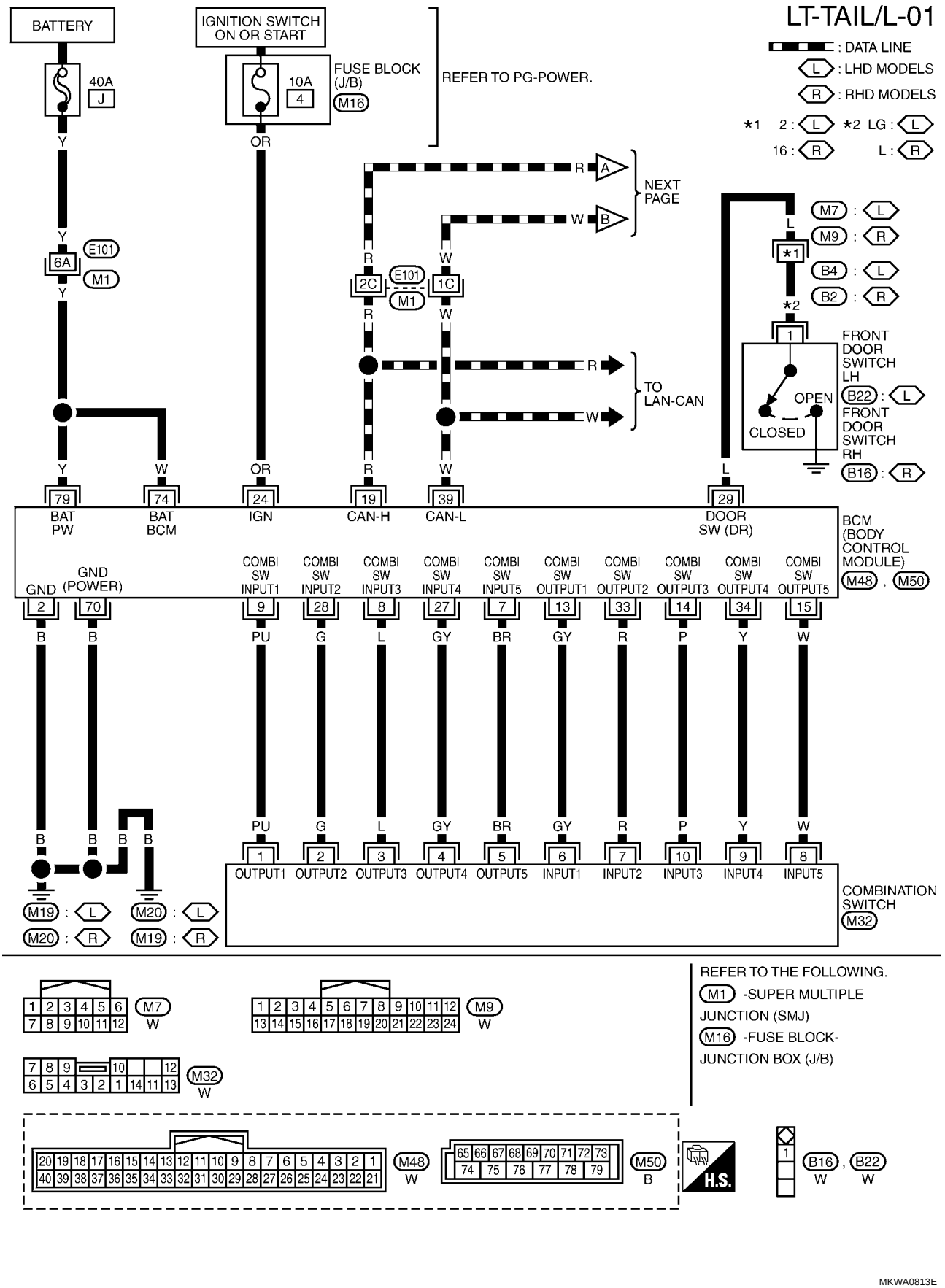
EKS0085O



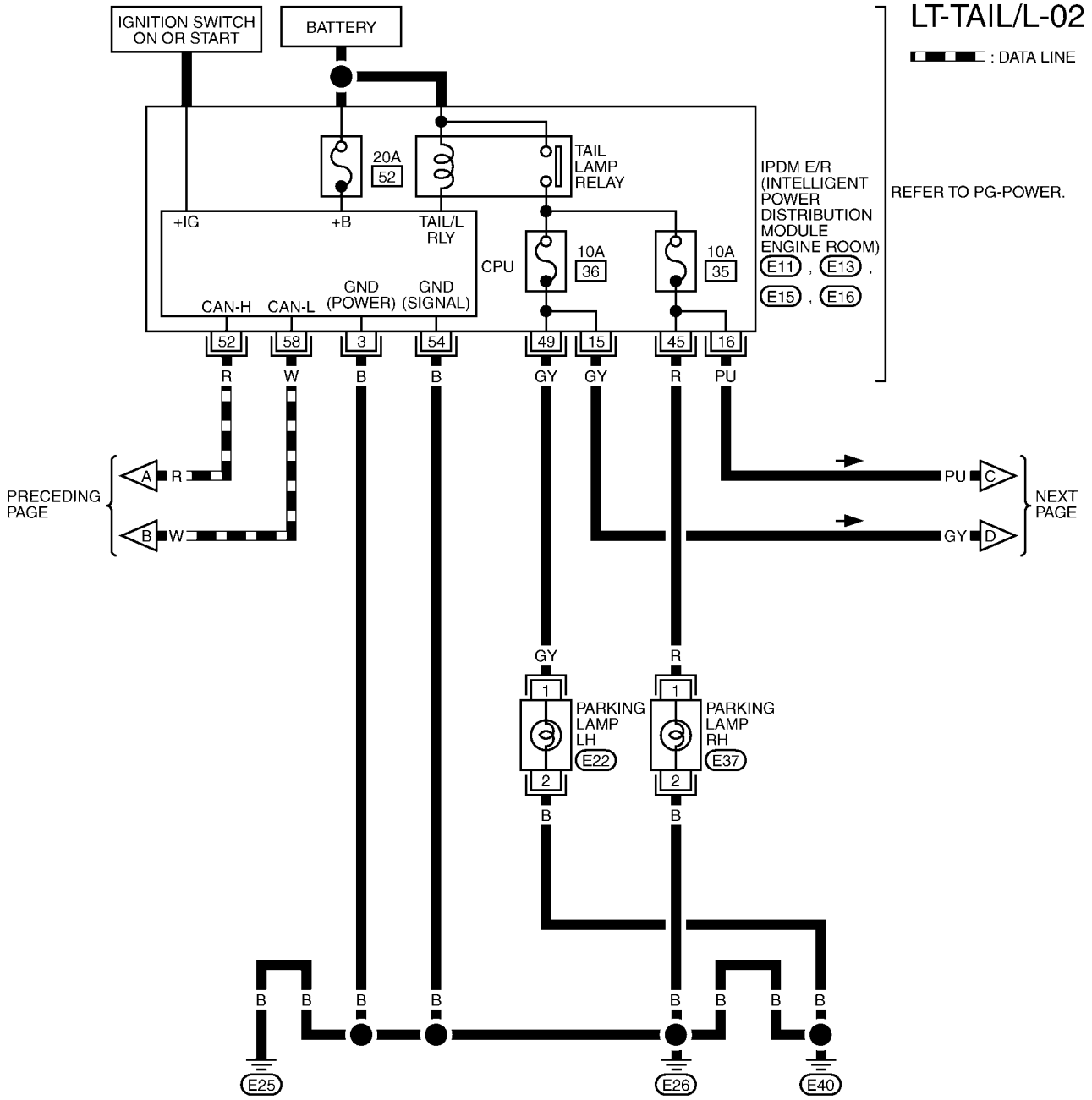
MKWA0812E

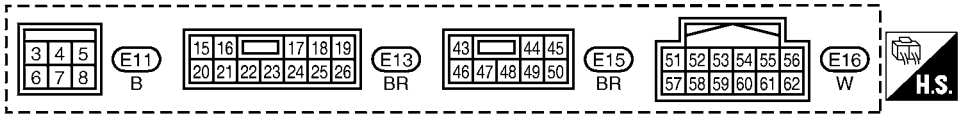
Wiring Diagram — TAIL/L —

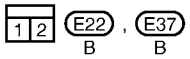
EKS0088X



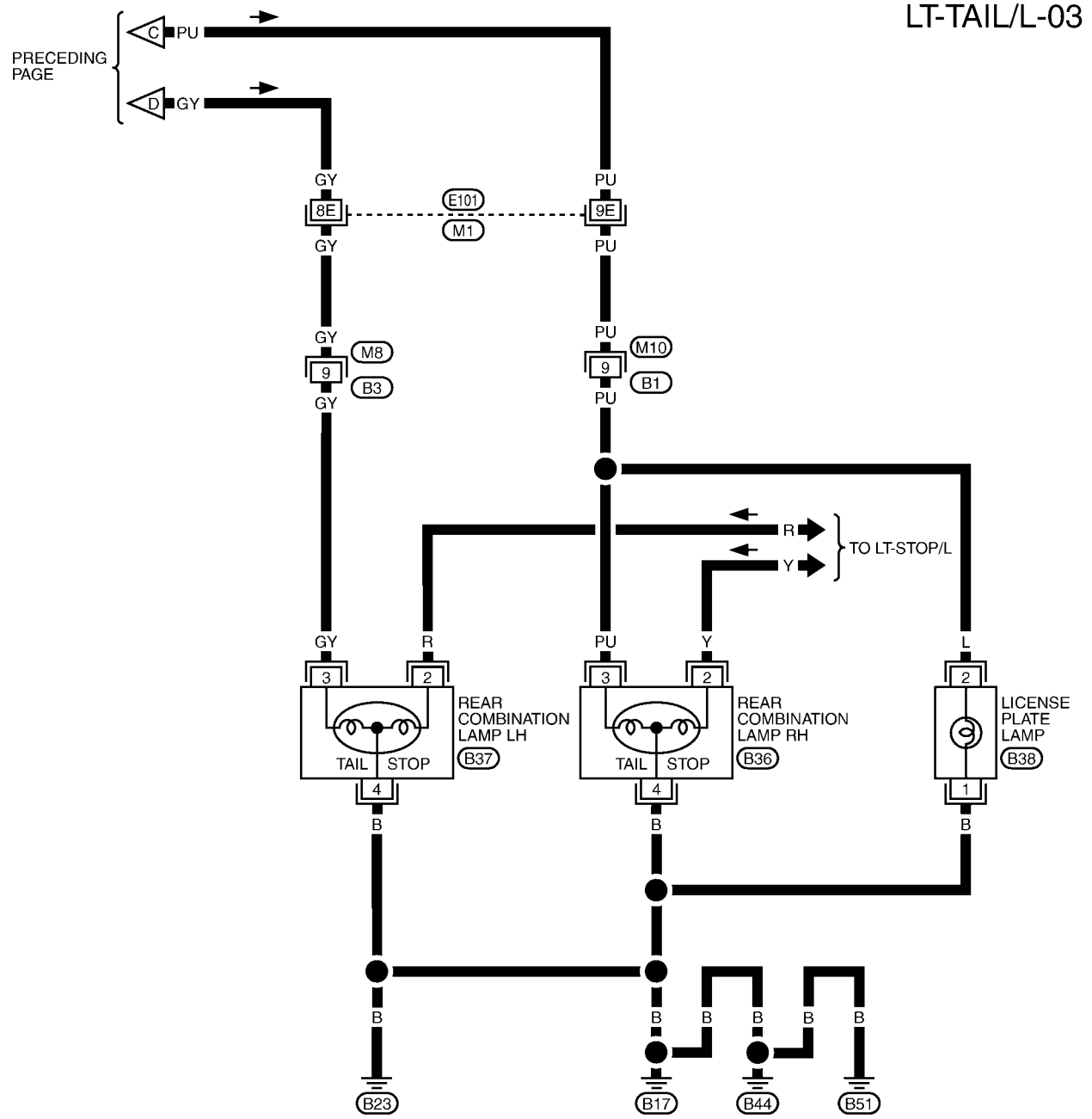
MKWA0813E

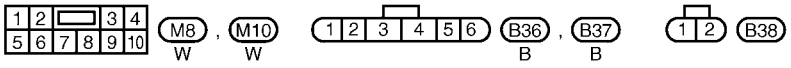

LT-TAIL/L-02
: DATA LINE
IGNITION SWITCH ON OR START
BATTERY
20A 52
TAIL LAMP RELAY
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) E11 , E13 , E15 , E16
REFER TO PG-POWER.
+IG
+B
TAIL/L RLY
CPU
10A 36
10A 35
CAN-H
CAN-L
GND (POWER)
GND (SIGNAL)
52
58
3
54
49
15
45
16
R
W
B
B
GY
GY
R
PU
PRECEDING PAGE
A
R
B
W
PU C
GY D
NEXT PAGE
GY
R
1
PARKING LAMP LH E22
2
1
PARKING LAMP RH E37
2
B
B
B
B
B
B
B
B
B
E25
E26
E40


3 4 5
6 7 8
E11
B
15 16 17 18 19
20 21 22 23 24 25 26
E13
BR
43 44 45
46 47 48 49 50
E15
BR
51 52 53 54 55 56
57 58 59 60 61 62
E16
W
H.S.


1 2
E22 , E37
B
B

MKWA0814E



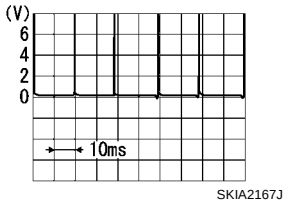
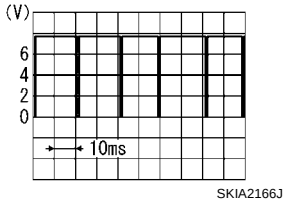
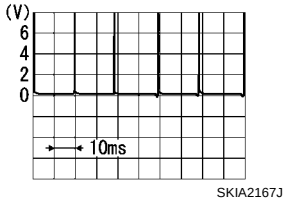


REFER TO THE FOLLOWING.
M1 -SUPER MULTIPLE JUNCTION (SMJ)

MKWA0815E

Terminals and Reference Value for BCM

EKS00898

Terminal No.	Wire color	Signal designation	Measuring condition		Reference value (V)
			Ignition switch	Operation or condition	
2	B	Ground	ON	—	Approx. 0
7	BR	Combination switch input 5	ON	Headlamps, turn signal, wipers OFF	 SKIA2167J
8	L	Combination switch input 3			
9	PU	Combination switch input 1			
27	GY	Combination switch input 4			
28	G	Combination switch input 2			
13	GY	Combination switch output 1	ON	Headlamps, turn signal, wipers OFF (wiper volume is 1 or 7)	 SKIA2166J
14	P	Combination switch output 3			
15	W	Combination switch output 5			
33	R	Combination switch output 2		Headlamps, turn signal, wipers OFF (wiper volume is other than 1 or 7)	 SKIA2167J
34	Y	Combination switch output 4			
19	R	CAN H	—	—	—
24	OR	Ignition power supply	ON	—	Approx. 12
39	W	CAN L	—	—	—
70	B	Ground	ON	—	Approx. 0
74	W	Battery power supply	OFF	—	Approx. 12
79	Y	Battery power supply	OFF	—	Approx. 12

Terminals and Reference Value for IPDM E/R

EKS0089O

Terminal No.	Wire color	Signal designation	Measuring condition			Reference value (V)
			Ignition switch	Operation or condition		
3	B	Ground	ON	—		Approx. 0
15	GY	Tail lamp (LH)	ON	Lighting switch	1st position	Approx. 12
16	PU	Tail lamp (RH)				
45	R	Tail lamp (RH)			OFF	Approx. 0
49	GY	Tail lamp (LH)				
52	R	CAN H	—	—		—
54	B	Ground	ON	—		Approx. 0
58	W	CAN L	—	—		—

How to Proceed With Trouble Diagnosis

EKS00899

1. Confirm the symptom or customer complaints.
2. Understand operation description and function description.
   Refer to Parking, license plate and tail lamps LT-82, "System Description" .
3. Carry out the Preliminary Check. Refer to LT-89, "Preliminary Check" .
4. Confirm parking, license plate and tail lamps does not operate by fail-safe control of IPDM E/R. Refer to PG-19, "FAIL-SAFE FUNCTION" .
5. Check symptom and repair or replace the cause of mulfunction.
6. Dose the parking, license plate and tail lamps operate normally? Yes: GO TO 7. No: GO TO 5.
7. INSPECTION END.

Preliminary Check

EKS0085P

CHECK POWER SUPPLY AND GROUND CIRCUIT

1. CHECK FUSES

- Check BCM fuse and fusible link for blown-out.

UNIT	POWER SOURCE	FUSE No.
BCM	Battery	J
	Ignition switch ON or START position	4

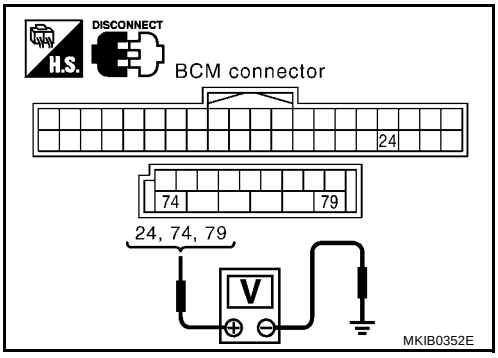
Refer to LT-85, "Wiring Diagram — TAIL/L —" .

OK or NG

OK >> GO TO 2.
NG >> If fuse is blown, be sure to eliminate cause of mulfunction before installing new fuse. Refer toPG-4, "POWER SUPPLY ROUTING" .

2. POWER SUPPLY CIRCUIT CHECK

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



Terminals			Ignition switch position		
(+)		(–)	OFF	ACC	ON
Connector	Terminal (Wire color)				
M50	74 (W)	Ground	Battery voltage	Battery voltage	Battery voltage
M50	79 (Y)		Battery voltage	Battery voltage	Battery voltage
M48	24 (OR)		0V	0V	Battery voltage

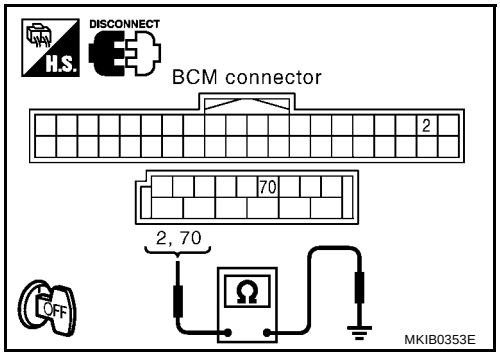
OK or NG

OK >> GO TO 3.
NG >> Check harness for open or short between BCM and fuse.

3. GROUND CIRCUIT CHECK

Check continuity between BCM and ground.

Terminals			Continuity
(+)		(–)	
Connector	Terminal (Wire color)		
M48	2 (B)	Ground	Yes
M50	70 (B)		



OK or NG

OK >> INSPECTION END.
NG >> Check harness ground circuit.

CONSULT-II Function (BCM)

EKS0089A

Refer to LT-18, "CONSULT-II Functions (BCM)" .

CONSULT-II Function (IPDM E/R)

EKS008IW

Refer to LT-21, "CONSULT-II Functions (IPDM E/R)" .

Parking, License Plate And Tail Lamps Does Not Illuminate

EKS008WA

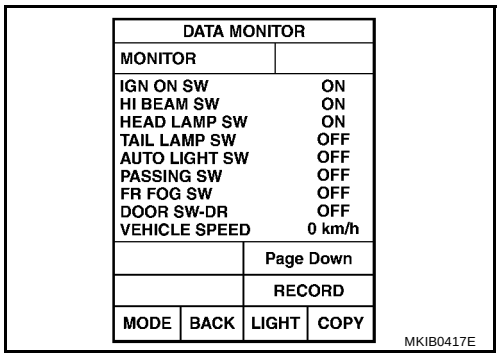
1. CHECK BETWEEN COMBINATION SWITCH AND BCM

With CONSULT-II

Select BCM on CONSULT-II.Check lighting switch (“TAIL LAMP SW”) in “DATA MONITOR” mode with CONSULT-II.

When lighting switch is in 1ST position : TAIL LAMP SW ON

When lighting switch is in OFF position : TAIL LAMP SW OFF



Without CONSULT-II

Refer to LT-110, "Check Combination Switch" .

OK or NG

OK >> GO TO 2.
NG >> Refer to LT-110, "Check Combination Switch" .

2. CHECK BNETWEEN IPDM E/R TO PARKING LAMP

With CONSULT-II

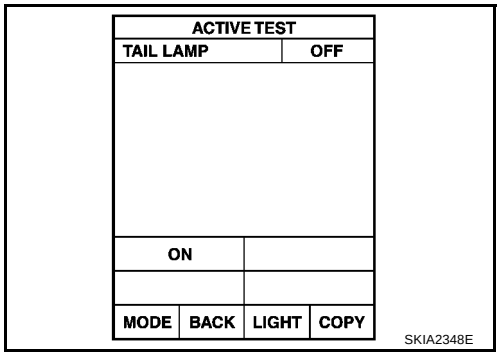
1. Select “IPDM E/R” by CONSULT-II, and select “Active test” on “Diagnosis System selection” screen.
2. Select “TAIL LAMP” on “Select Test Item” screen.
3. Make sure that parking lamps operate normally.

Without CONSULT-II

1. Start up auto active test. Refer to PG-29, "Auto Active Test" .
2. Make sure that parking lamps operate normally.

OK or NG

OK >> GO TO 3.
NG >> Replace IPDM E/R.

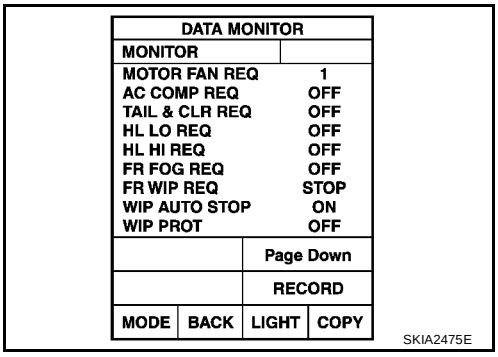


3. CHECK BETWEEN IPDM E/R AND BCM

Select IPDM E/R on CONSULT-II.Check lighting switch (“TAIL & CLR REQ”) in “DATA MONITOR” mode with CONSULT-II.

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

When lighting switch is in OFF position : TAIL & CLR REQ OFF



OK or NG

OK >> Replace IPDM E/R.
NG >> Replace BCM.

Parking Lamps Does Not Illuminate (One Side)

EKS007RR

1. CHECK BULB

Check bulbs of lamps which do not illuminate.

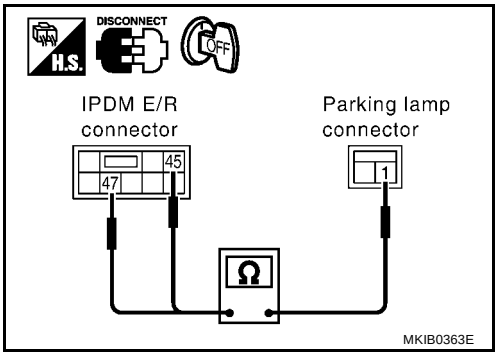
OK or NG

OK >> GO TO 2.
NG >> Replace parking lamp bulb.

2. CHECK BETWEEN IPDM E/R AND PARKING LAMP

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

Terminals					Continuity
IPDM E/R		Parking lamp			
Connector	Terminal (Wire color)	Connector		Terminal (Wire color)	
E8	45 (R)	RH	E37	1 (R)	Yes
	49 (GY)	LH	E22	1 (GY)	

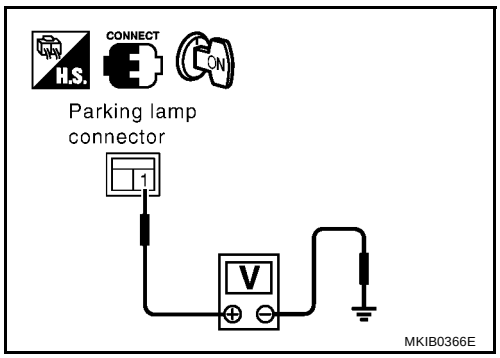


OK or NG

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

3. CHECK IPDM E/R

1. Connect parking lamp connector.
2. When combination switch in 1ST position, check voltage between parking lamp and ground.



Terminals				Voltage (Approx.)
(+)			(–)	
Connector		Terminal (Wire color)	Ground	
RH	E37	1 (R)		12
LH	E22	1 (GY)		

OK or NG

OK >> Repair ground circuit.
NG >> GO TO 4.

4. CHECK FUSE

Check the following

- 10A fuse (No. 35, located in the IPDM E/R).
- 10A fuse (No. 36, located in the IPDM E/R).

OK or NG

OK >> Replace IPDM E/R.
NG >> Replace fuse.

Rear Combination Lamp (Tail lamp) Does Not Illuminate (One Side)

EKS008WB

1. CHECK BULB

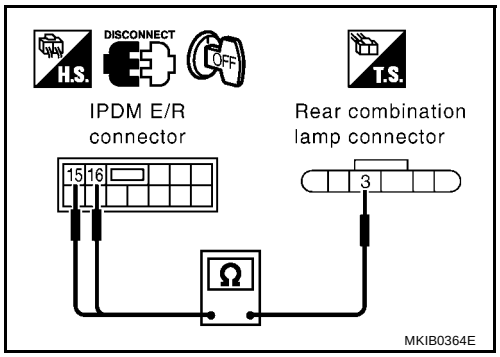
Check rear combination lamp (tail lamp) bulb.

OK or NG

OK >> GO TO 2.
NG >> Replace rear combination lamp (tail lamp) bulb.

2. CHECK BETWEEN IPDM E/R AND REAR COMBINATION LAMP (TAIL LAMP)

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connector, rear combination lamp (tail lamp) connector.
3. Check harness continuity between IPDM E/R connector and rear combination lamp (tail lamp) connector.



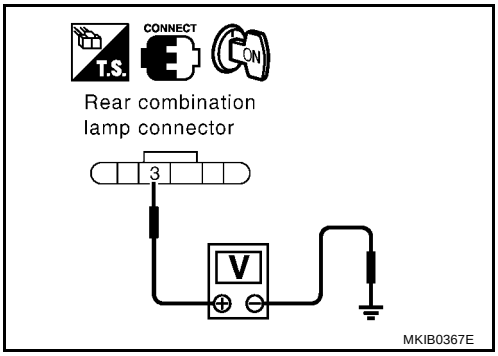
Terminals					Continuity
IPDM E/R		Rear combination lamp			
Connector	Terminal (Wire color)	Connector		Terminal (Wire color)	
E13	16 (PU)	RH	B36	3 (PU)	Yes
	15 (GY)	LH	B37	3 (GY)	

OK or NG

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

3. CHECK IPDM E/R

1. connect rear combination lamp (tail lamp).
2. When combination switch in 1ST position, check voltage between tail lamp and ground.



Terminals				Voltage (Approx.)
(+)			(–)	
Connector		Terminal (Wire color)	Ground	
RH	B36	3 (PU)		12
LH	B37	3 (GY)		

OK or NG

OK >> Repair ground circuit.
NG >> GO TO 4.

4. CHECK FUSE

Check the following

- 10A fuse (No. 35, located in the IPDM E/R).
- 10A fuse (No. 36, located in the IPDM E/R).

OK or NG

OK >> Replace IPDM E/R.
NG >> Replace fuse.

License plate Lamp Does Not Illuminate (One Side)

EKS008WC

1. CHECK BULB

Check bulbs of lamps which do not illuminate.

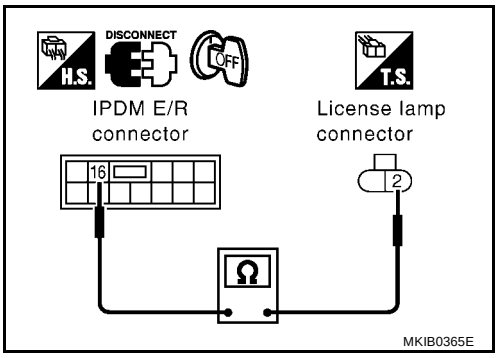
OK or NG

OK >> GO TO 2.
NG >> Replace parking lamp bulb.

2. CHECK BETWEEN IPDM E/R AND LICENSE PLATE LAMP

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connector, license plate lamp connector.
3. Check continuity between harness connector B38 terminal 2 (L) of license plate lamp and harness connector E13 terminal 16 (PU) of IPDM E/R.

Continuity should exist.



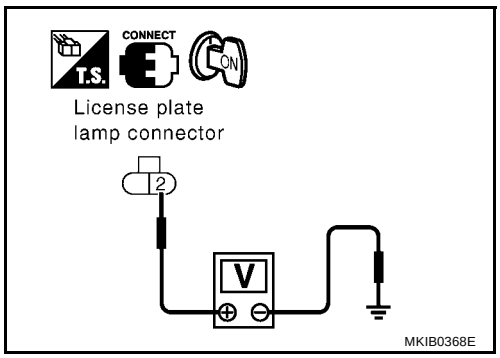
OK or NG

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

3. CHECK IPDM E/R

1. Connect license plate lamp connector.
2. When combination switch in 1ST position, check voltage between harness connector B38 terminal 2 (L) of license plate lamp and ground.

Battery voltage should exist.



OK or NG

OK >> Repair ground circuit.
NG >> GO TO 4.

4. CHECK FUSE

Check the following

- 10A fuse (No. 35, located in the IPDM E/R).
- 10A fuse (No. 36, located in the IPDM E/R).

OK or NG

OK >> Replace IPDM E/R.
NG >> Replace fuse.

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

EKS007RS

1. CHECK IPDM E/R

- Check whether symptom is caused by IPDM E/R fail-safe operation or by factors other than fail-safe operation.Refer to PG-19, "FAIL-SAFE FUNCTION" .

OK or NG

Fail-safe operation>>Refer to PG-35, "Inspection With CONSULT-II (Self-Diagnosis)" .
Other than fail-safe operation>>Refer to PG-39, "Diagnosis of IPDM E/R Integrated Relay"

Exterior Lamp Battery Saver Control Do Not Turn OFF

EKS008WS

Refer to LT-28, "Exterior Lamp Battery Saver Control Do Not Turn OFF" .

Bulb Replacement

EKS007RT

PARKING LAMP

Refer to LT-31, "Bulb Replacement" .

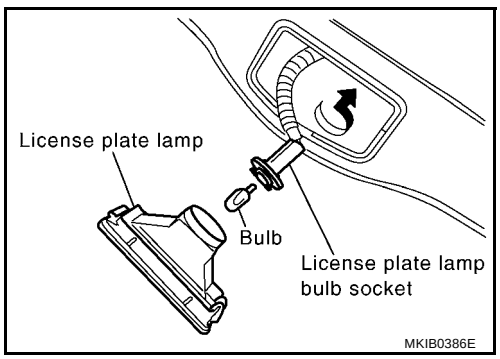
TAIL LAMP

Refer to LT-101, "REAR COMBINATION LAMP" .

LICENSE PLATE LAMP

1. Remove license plate lamp. Refer to LT-95, "LICENSE PLATE LAMP" .
2. Rotate license plate lamp bulb socket counterclockwise to release lock, then remove socket.
3. Remove bulb from license plate lamp bulb socket.

License plate lamp : 12V-10W



Removal and Installation of Parking Lamp

EKS007RV

PARKING LAMP

Refer to LT-31, "Removal and Installation" .

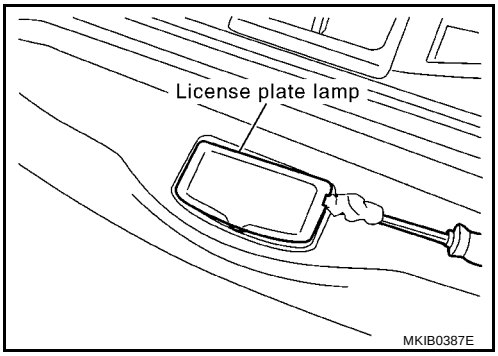
TAIL LAMP

Refer to LT-101, "REAR COMBINATION LAMP" .

LICENSE PLATE LAMP

Removal

1. Insert a screwdriver or the like wrapped in a cloth into the lens notch and remove license plate lamp from rear bumper.



Installation

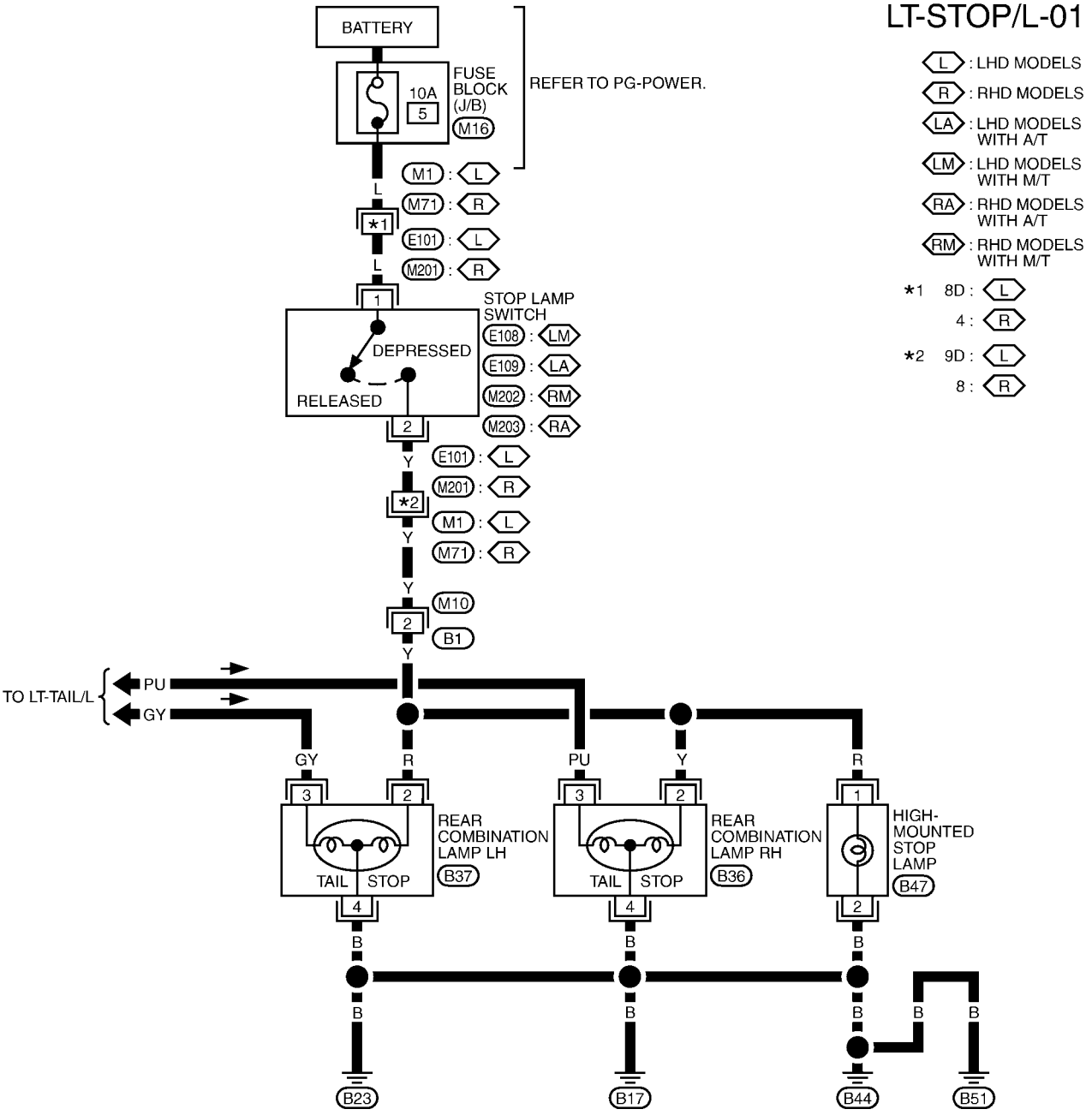
Install in the reverse order of removal.

STOP LAMP

PFP:26554

Wiring Diagram— STOP/L —

EKS0085R



MKWA0816E

Bulb Replacement

EKS0087D

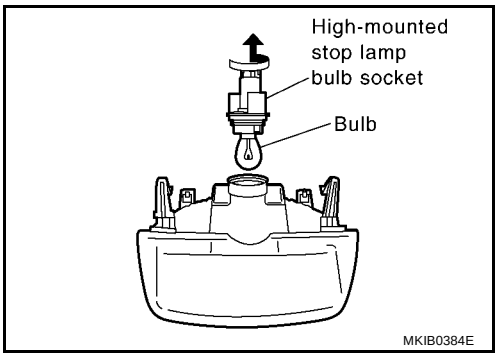
STOP LAMP

Refer to LT-101, "REAR COMBINATION LAMP" .

HIGH-MOUNTED STOP LAMP

1. Remove high-mounted stop lamp. Refer to LT-97, "HIGH-MOUNTED STOP LAMP" .
2. Turn bulb socket left to release lock and remove it.
3. Remove bulb.

High-mounted stop lamp : 12V-21W



Removal and Installation

EKS0089B

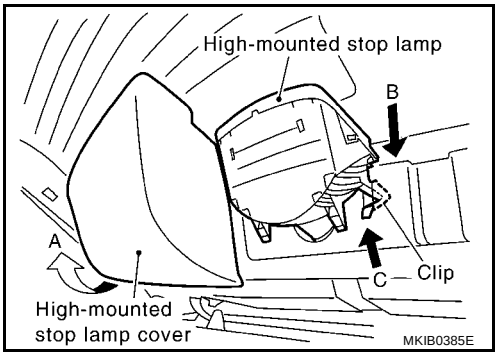
STOP LAMP

Refer to LT-101, "REAR COMBINATION LAMP" .

HIGH-MOUNTED STOP LAMP

Removal

1. Open back door and with both hands pull high-mounted stop lamp cover roof side horizontal edge in direction A to remove it.
2. Push high-mounted stop lamp clip shown in figure in direction B, release top hooks, then push in direction C to release it, then remove it from back door.



Installation

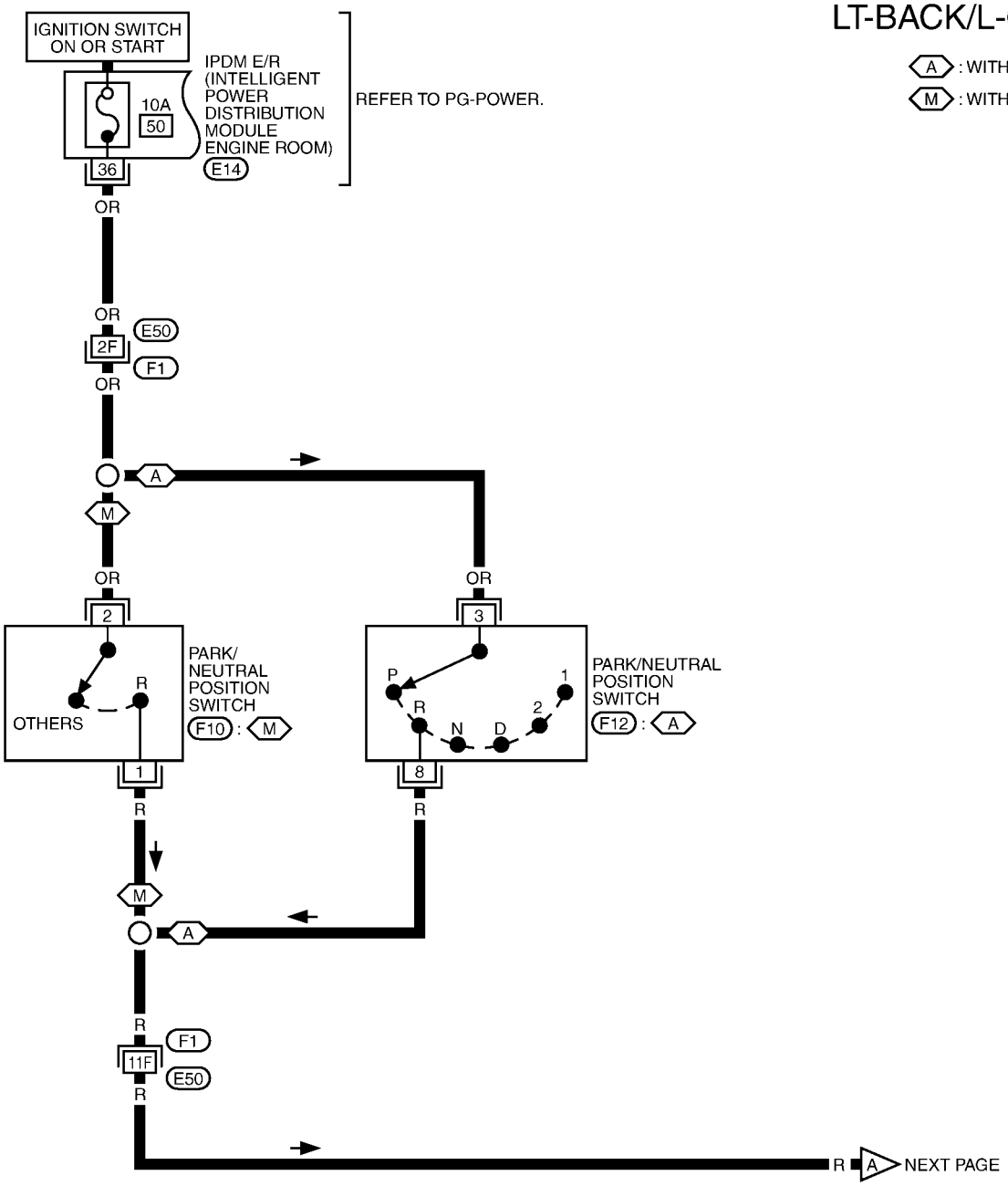
Install in the reverse order of removal.

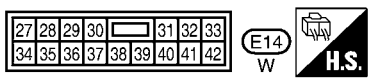
BACK-UP LAMP

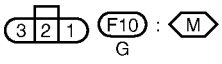
PFP:26550

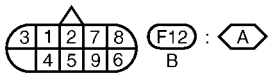
Wiring Diagram — BACK/L —

EKS0085T



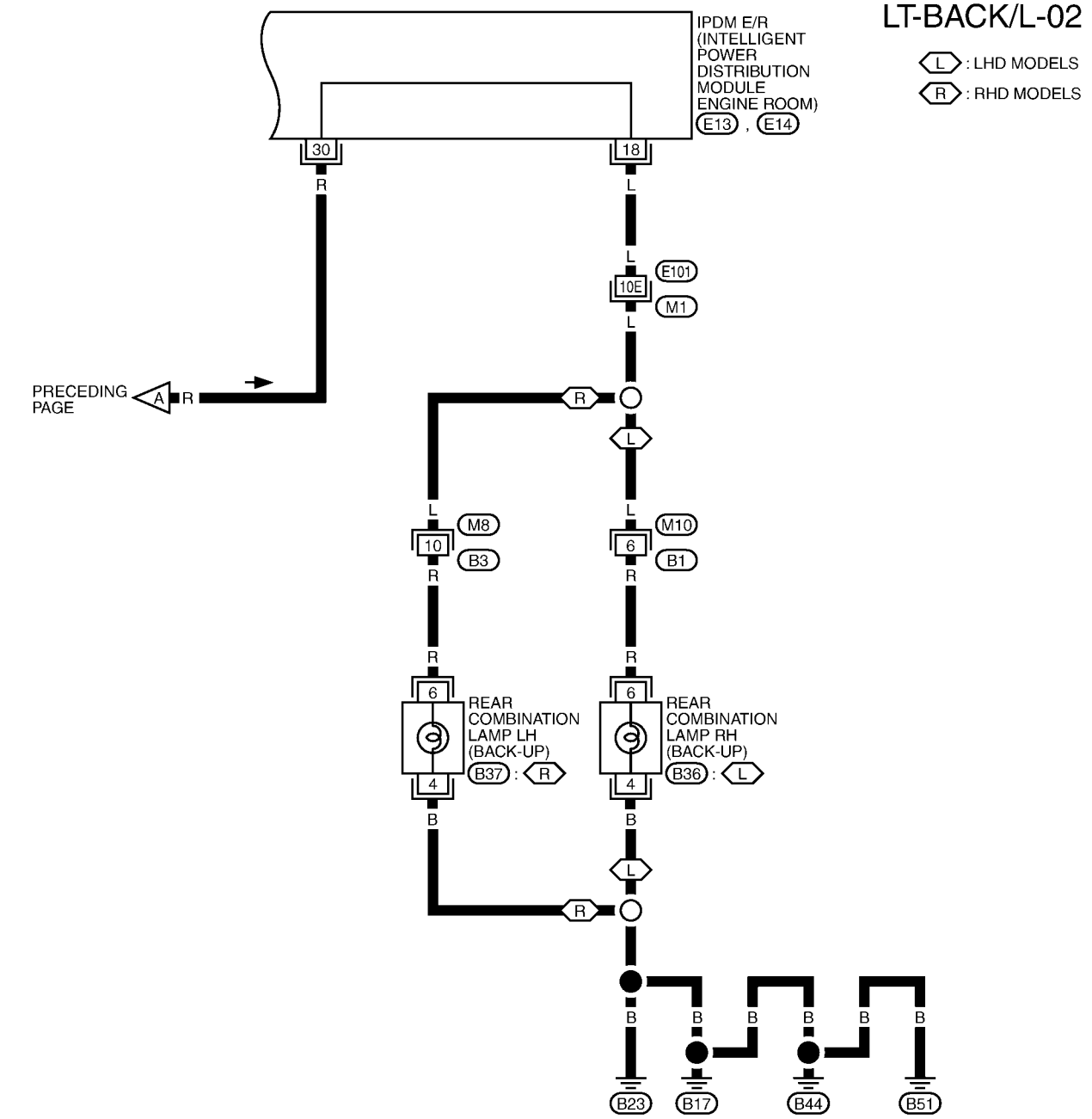


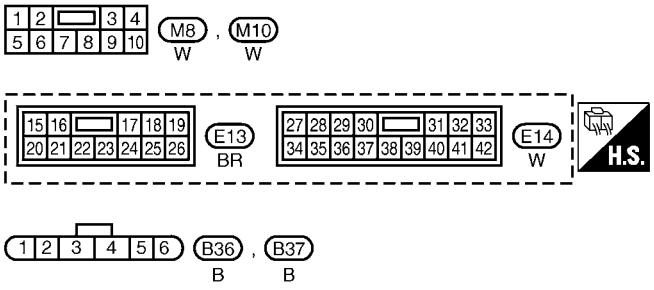




REFER TO THE FOLLOWING.
F1 -SUPER MULTIPLE JUNCTION (SMJ)

MKWA0817E





REFER TO THE FOLLOWING.
M1 -SUPER MULTIPLE JUNCTION (SMJ)

MKWA0818E

Bulb Replacement

EKS007S2

Refer to LT-101, "REAR COMBINATION LAMP" .

Removal and Installation

EKS007S3

Refer to LT-101, "REAR COMBINATION LAMP" .

REAR COMBINATION LAMP

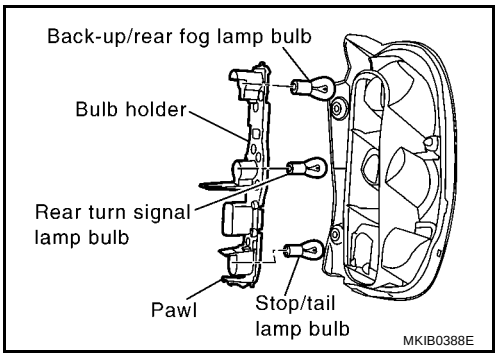
PFP:26554

Bulb Replacement

EKS007S4

REAR TURN SIGNAL LAMP BULB, REVERSE LAMP BULB, STOP/TAIL LAMP BULB,REAR FOG LAMP BULB

1. Open the back door, and remove rear combination lamp. Refer to LT-101, "Removal and Installation" .
2. Release holder assembly bottom hooks and remove from combination lamp housing.
3. Remove all bulbs.



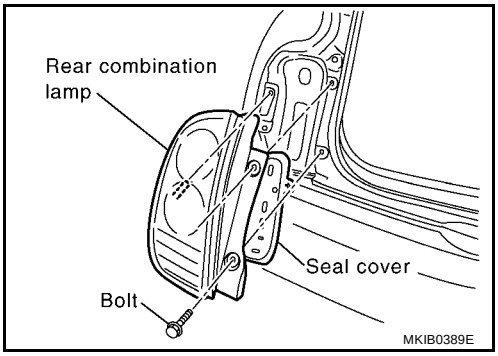
Stop/Tail lamp	**: 12V-21/5W**
Rear turn signal lamp	**: 12V-21W**
Back-up lamp	**: 12V-21W**
Rear fog lamp	**: 12V-21W**

Removal and Installation

EKS007S5

REMOVAL

1. Open the back door, and remove rear combination lamp bolts.
2. Pull the rear combination lamp toward rear of the vehicle and remove from the vehicle.
3. Disconnect rear combination lamp connector.



INSTALLATION

Install in the reverse order of removal, paying attention to the following.

Rear combination lamp bolts

Tightening torque	**: 3.24 - 7.75 N·m (0.33 - 0.79 kg-m, 29 - 69 in-lb)**

LIGHTING AND TURN SIGNAL SWITCH

PFP:25540

Removal and Installation

EKS007S7

Refer to LT-113, "Removal and Installation" .

HAZARD SWITCH

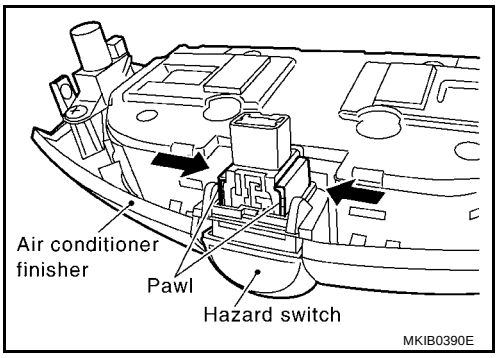
PFP:25290

Removal and Installation

EKS007SA

REMOVAL

1. Remove air conditioner finisher. Refer to IP-7, "L. Air Conditioner Finisher" .
2. Remove connector.
3. Press tab on reverse side and pull hazard switch towards you to remove.



INSTALLATION

Install in the reverse order of removal.

COMBINATION SWTCH

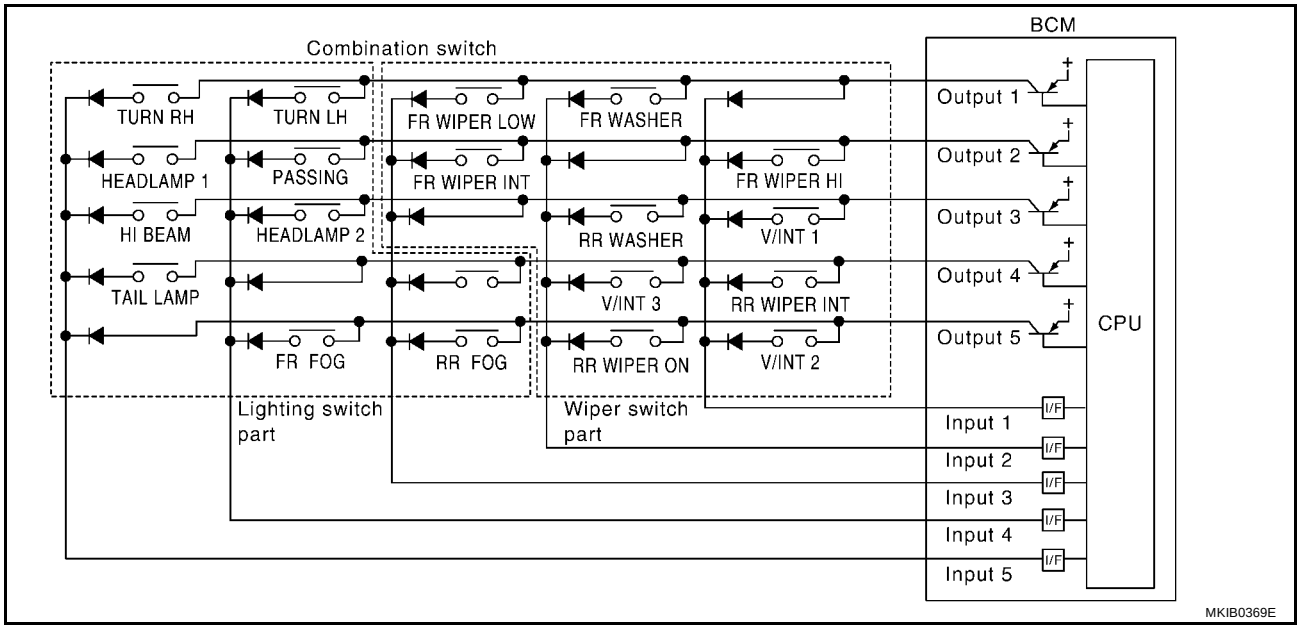
PFP:25567

System Description

EKS007SE

COMBINATION SWITCH READING FUNCTION

1. Description
   - BCM reads combination switch (headlamp, wiper washer, turn signal) status, and controls various electrical components according to the results.
   - BCM reads information of 20 switches results by combining five output terminals (output 1 - 5) and five input terminals (input 1 - 5).
2. Operation description
   - BCM makes current flow through transistors in output terminals (output 1 - 5) at regular intervals in order.
   - When any of switches is turned ON, a circuit is established between output terminals (output 1 - 5) and input terminals (input 1 - 5).
   - At this time, transistors in output terminals (output 1 - 5) operate, and current flows, and then voltage of input terminals (input 1 - 5) corresponding to switch varies. Interface inside BCM detects status, and judges that the switch is ON.



3. BCM - Operation table of combination switches

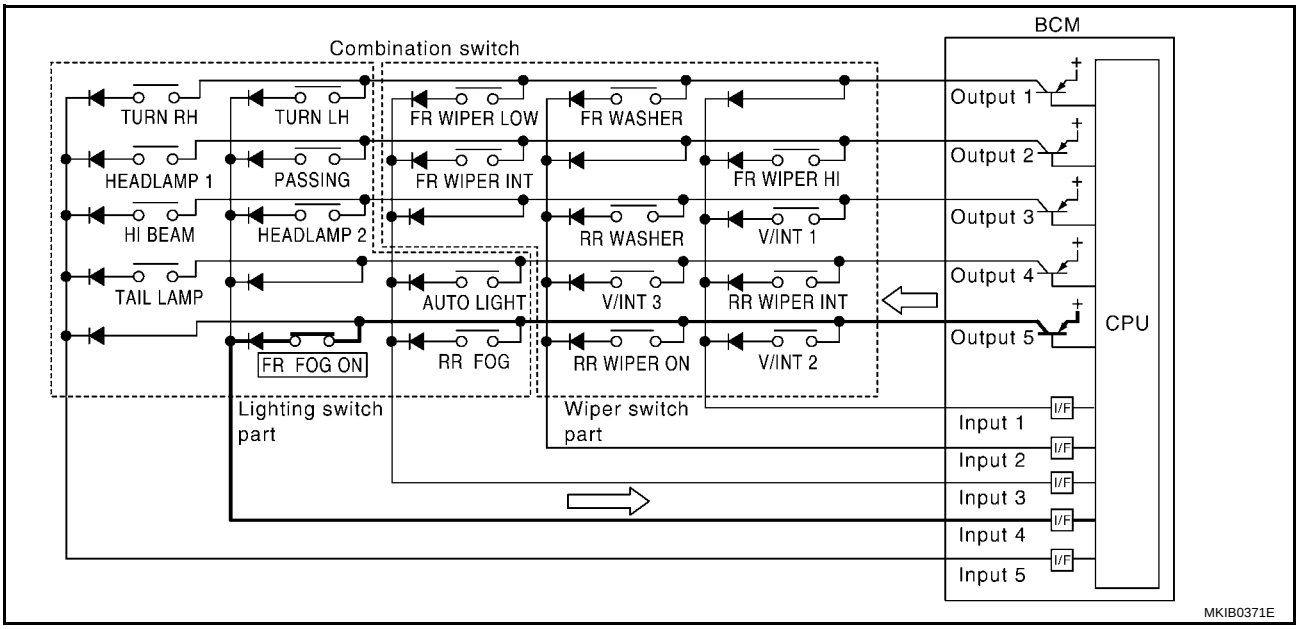
- BCM reads operation status of combination switches by the combination shown in the table.

	Combination SW INPUT 1		Combination SW INPUT 2		Combination SW INPUT 3		Combination SW INPUT 4		Combination SW INPUT 5	
	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF
Combination SW OUTPUT 1	—	—	FR WIPER HI ON	FR WIPER HI OFF	V/INT 1 ON	V/INT 1 OFF	RR WIPER INT ON	RR WIPER INT OFF	V/INT 2 ON	V/INT 2 OFF
Combination SW OUTPUT 2	FR WASHER ON	FR WASHER OFF	—	—	RR WASHER ON	RR WASHER OFF	V/INT 3 ON	V/INT 3 OFF	RR WIPER ON	RR WIPER OFF
Combination SW OUTPUT 3	FR WIPER LOW ON	FR WIPER LOW OFF	FR WIPER INT ON	FR WIPER INT OFF	—	—	—	—	RR FOG ON	RR FOG OFF
Combination SW OUTPUT 4	TURN LH ON	TURN LH OFF	PASSING ON	PASSING OFF	HEADLAMP 2 ON	HEADLAMP 2 OFF	—	—	FR FOG ON	FR FOG OFF
Combination SW OUTPUT 5	TURN RH ON	TURN RH OFF	HEADLAMP 1 ON	HEADLAMP 1 OFF	HI BEAM ON	HI BEAM OFF	TAIL LAMP ON	TAIL LAMP OFF	—	—

MKIB0370E

NOTE:
Dual switches are set for headlamps.

4. Example (When front fog lamp switch is turned ON)
   1. When front fog lamp switch is turned ON position, FR FOG ON contact inside combination switch becomes ON.
   2. Transistor in output 5 operates, and BCM detects that voltage at input 4 varies.
   3. When BCM detects voltage change at input 4 while transistor in output 5 is in ON status, BCM determines that front fog lamp switch is set to ON, and sends a front fog lamp request signal to IPDM E/R via CAN communication line.
   4. When BCM detects voltage change at input 4 when transistor in output 5 is operated again, it determines that front fog lamp ON operation continues.



MKIB0371E

NOTE:
Each output terminal transistor is activated at 20 ms intervals. Therefore, after a switch is turned ON, the electrical loads are activated with a time delay, but this time delay is so short that it cannot be noticed.

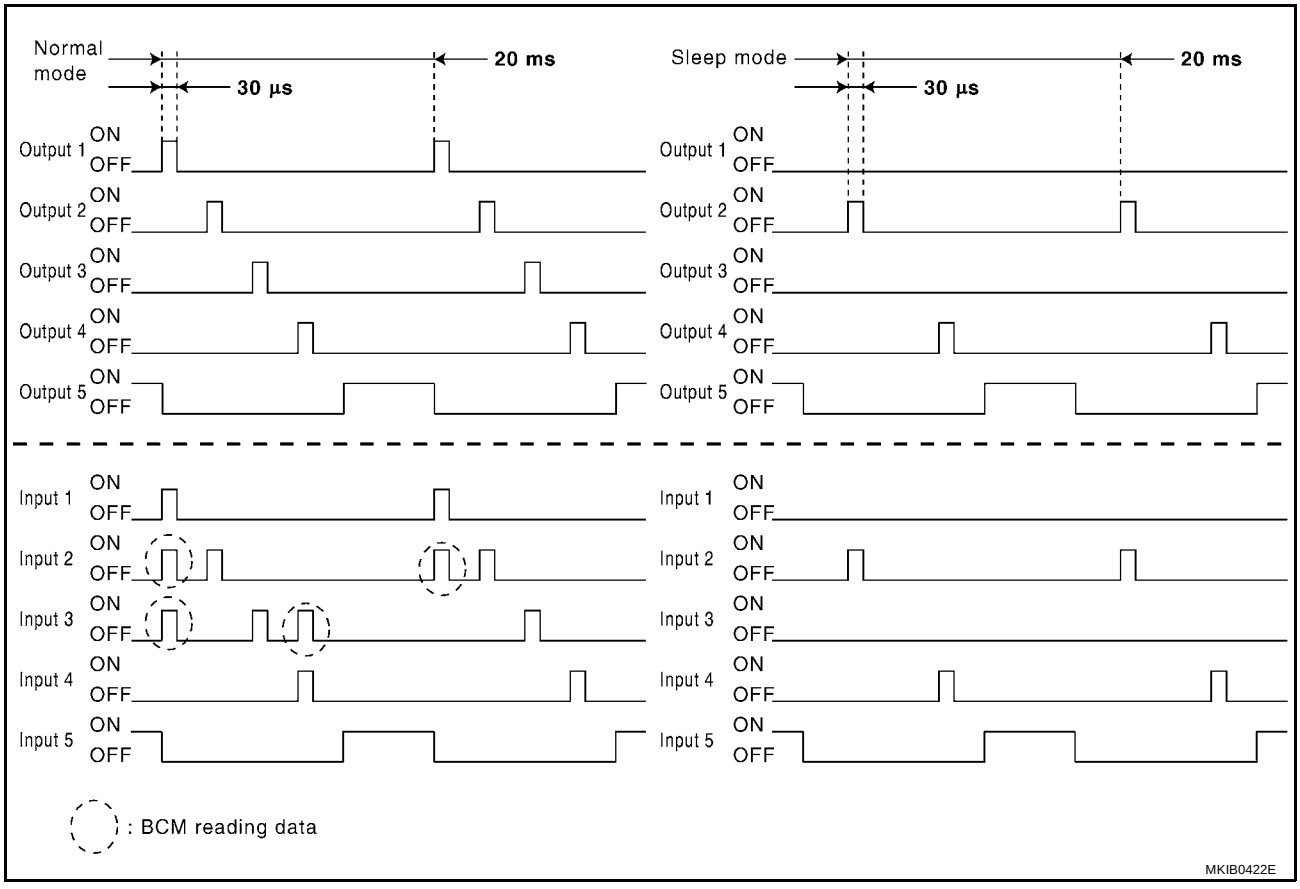
5. Operation mode
   - Combination switch reading function has operation modes shown below.

a. Normal mode

- When BCM is not in sleep mode, each output (1 - 5) terminal turns ON-OFF at 20 ms intervals.

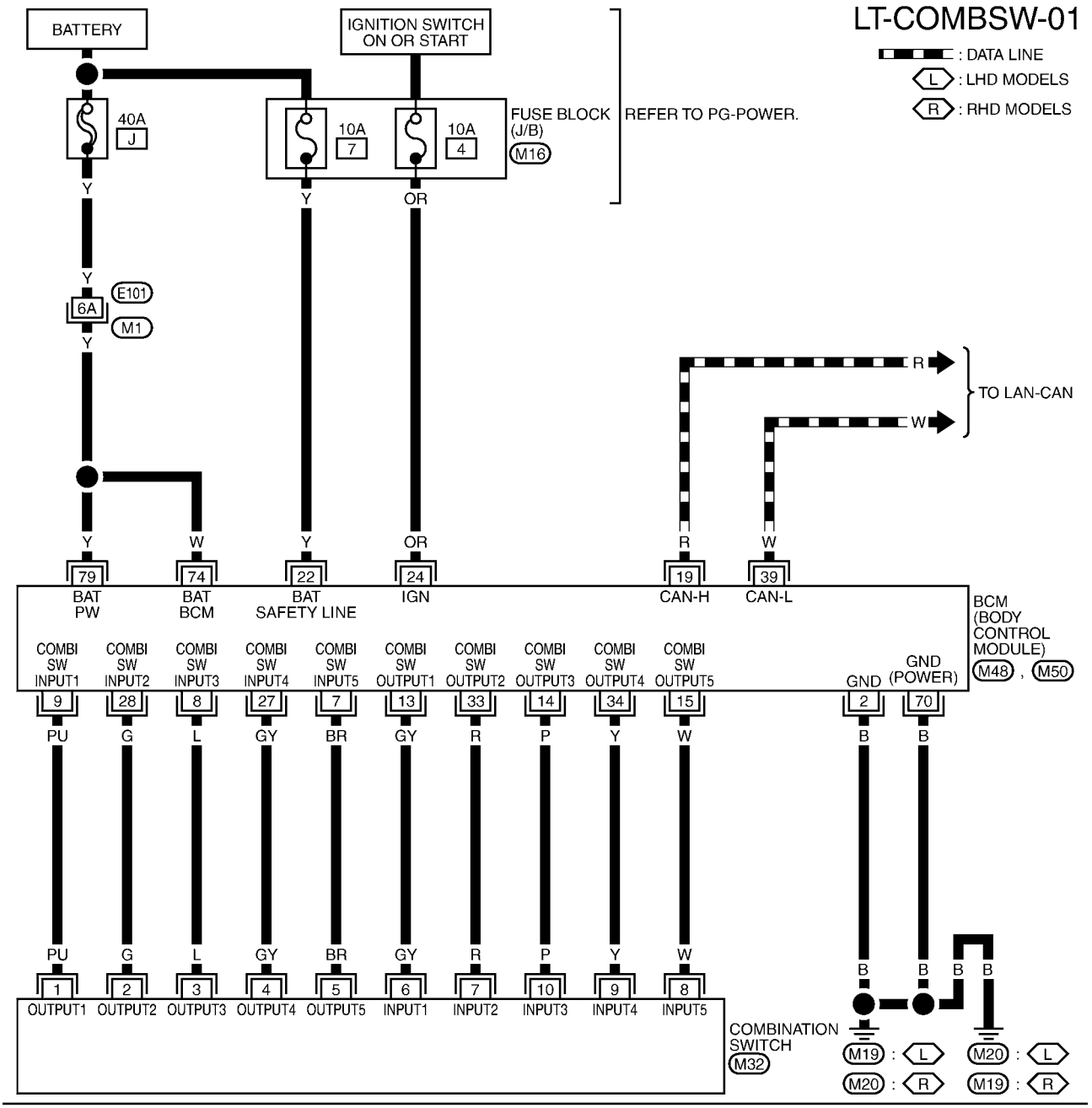
b. Sleep mode

- While BCM is in sleep status, transistors in output 1 and 3 stop their input, with BCM entering a power-saving mode. Input 2, 4 and 5 turn ON-OFF every 20 ms, and accept only output from lighting switch system.



Wiring Diagram — COMBSW —

EKS0089J



MKWA1373E

CONSULT-II Functions (BCM)

EKS007SF

CONSULT-II has display functions for work support, self-diagnosis, data monitoring, and active tests for each part by combining data reception and command transmission via communication lines from the BCM.

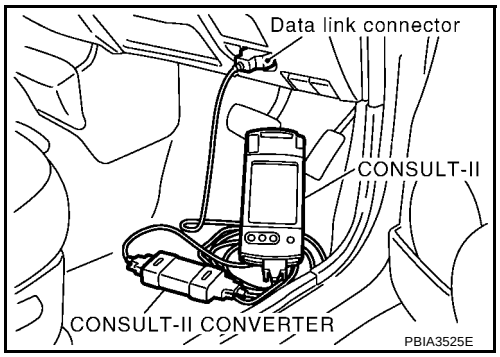
BCM trouble diagnosis item	Inspection Item, Diagnosis Mode	Description
Combination switch	Data monitor	Displays BCM input data in real time.

CONSULT-II BASIC OPERATION

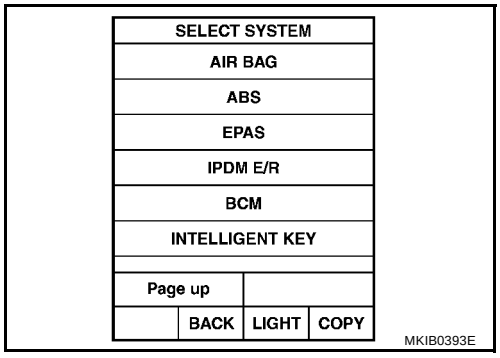
CAUTION:

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

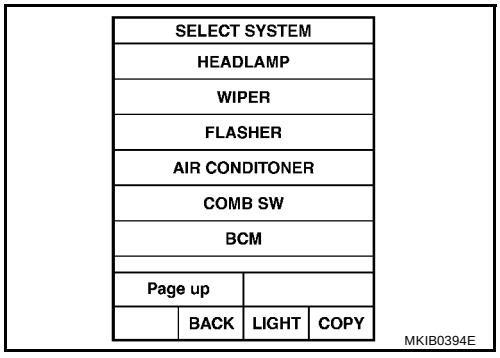
1. Turn ignition switch OFF.
2. Connect CONSULT-II and “CONSULT-II CONVERTER” to data link connector.



3. Turn ignition switch ON.
4. Touch “START (NISSAN BASED VHCL)”.
5. Touch “BCM CAN” on the “SELECT SYSTEM” screen.
   If “BCM” is not indicated, go to GI-36, "CONSULT-II Data Link Connector (DLC) Circuit" .



6. Touch “COMBINATION SWITCH” on “SELECT TEST ITEM” screen.
7. Touch “DATA MONITOR” on the “SELECT DIAG MODE” screen.



DATA MONITOR

Operation Procedure

1. Touch “COMBINATION SWITCH” on “SELECT TEST ITEM” screen.
2. Touch “DATA MONITOR” on the “SELECT DIAG MODE” screen.

3. Touch “ALL SIGNALS” or “SELETION FROM MENU” on the “DATA MONITOR” screen.

ALL SIGNALS	All items will be monitored.
SELECTION FROM MENU	Selects and monitors individual items.

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 to record the status of the item being monitored. To stop recording, touch “STOP”.

Display Item List

Monitor item “UNIT”		Display content
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.
HI BEAM SW	[ON/OFF]	Displays status (High beam switch: ON/Others: OFF) as judged from lighting switch signal.
HEADLAMP SW	[ON/OFF]	Displays status (Headlamp switch 1: ON/Others: OFF) as judged from lighting switch signal.
TAIL LAMP SW	[ON/OFF]	Displays status (Lighting switch 1st position: ON/Others: OFF) as judged from lighting switch signal.
PASSING SW	[ON/OFF]	Displays status (Flash-to-pass switch: ON/Others: OFF) as judged from lighting switch signal.
FR FOG SW	[ON/OFF]	Displays status (Front fog lamp switch: ON/Others: OFF) as judged from lighting switch signal. (ON is also displayed when rear fog lamp switch is on.)
RR FOG SW	[ON/OFF]	Displays status (Rear fog lamp switch: ON/Others: OFF) as judged from lighting switch signal.
FR WIPER HI	[ON/OFF]	Displays status (Front Wiper HI: ON/Others: OFF) as judged from wiper switch signal.
FR WIPER LOW	[ON/OFF]	Displays status (Front Wiper LOW: ON/Others: OFF) as judged from wiper switch signal.
FR WIPER INT	[ON/OFF]	Displays status (Front Wiper INT: ON/Others: OFF) as judged from wiper switch signal.
FR WASHER SW	[ON/OFF]	Displays status (Front Washer Switch: ON/Others: OFF) as judged from wiper switch signal.
INT VOLUME	[1 - 7]	Displays intermittent operation dial position setting (1 - 7) as judged from wiper switch signal.
RR WIPER ON	[ON/OFF]	Displays status (Rear Wiper ON: ON/Others: OFF) as judged from wiper switch signal.
RR WIPER INT	[ON/OFF]	Displays status (Rear Wiper INT: ON/Others: OFF) as judged from wiper switch signal.
RR WASHER SW	[ON/OFF]	Displays status (Rear Washer Switch: ON/Others: OFF) as judged from wiper switch signal.

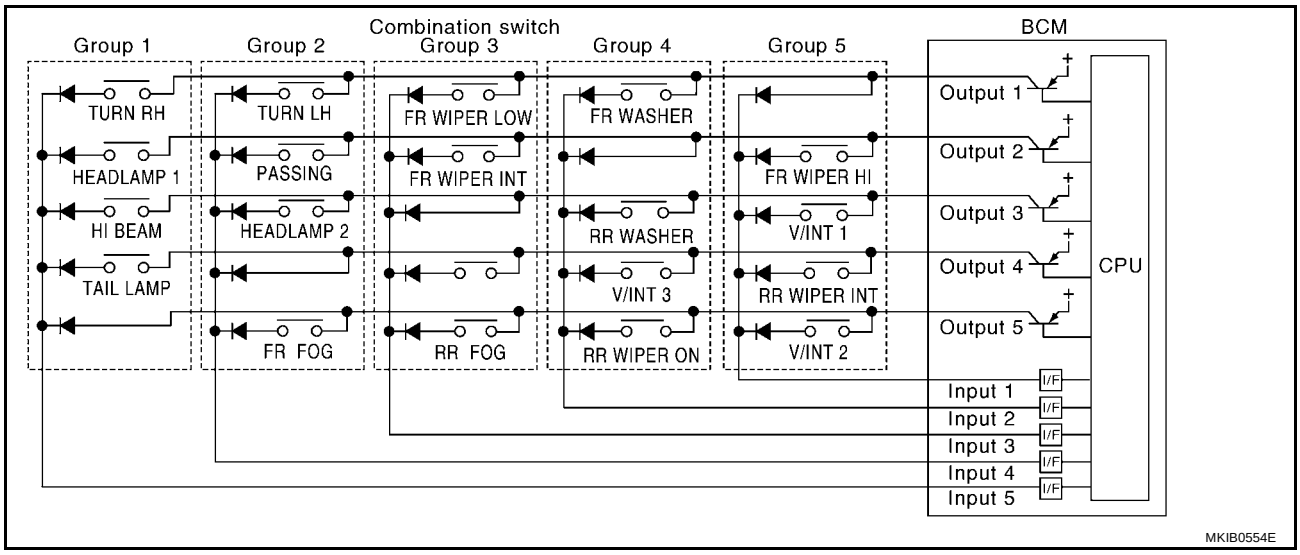
Check Combination Switch

EKS007SH

1. CHECK COMBINATION SWITCH OPERATION

1. Check the malfunctioning operation which is controlled by combination switch, and check the group which including the malfunctioning operation.

Group 5	Group 4	Group 3	Group 2	Group 1
—	FR WASHER	FR WIPER LO	TURN LH	TURN RH
FR WIPER HI	—	FR WIPER INT	PASSING	HEAD LAMP1
V/INT 1	RR WASHER	—	HEAD LAMP2	HI BEAM
RR WIPER INT	V/INT 3	—	—	TAIL LAMP
V/INT 2	RR WIPER ON	RR FOG	FR FOG	—

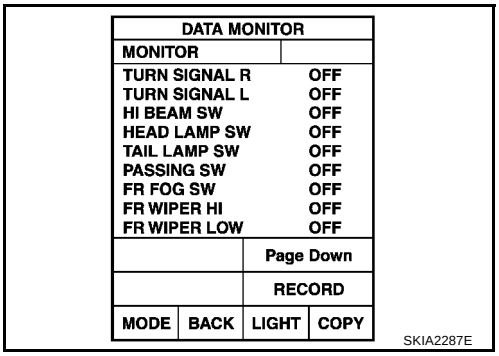


>> Confirm the group where malfunctioning operation is in and GO TO 2.

2. CHECK SYSTEM

With CONSULT-II

1. Select BCM on CONSULT-II.Check combination switch (“COMB SW”) in “DATA MONITOR” mode with CONSULT-II.
2. Select “START” and confirm all switch except the malfunctioning switch are operating normally.(Refer to LT-109, "Display Item List")
   Example: When there is an RR fog lamp switch malfunction, confirm that “FR WIPER LOW” and “FR WIPER INT”, which are in the same group 3, turn ON/OFF normally.



Without CONSULT-II

Operate combination switch to Make sure other switches in the system with an error operate normally.
Example: When there is an error with RR fog lamp switch, make sure front wiper low operation and front wiper intermittent operation in the same group 3 operate normally.

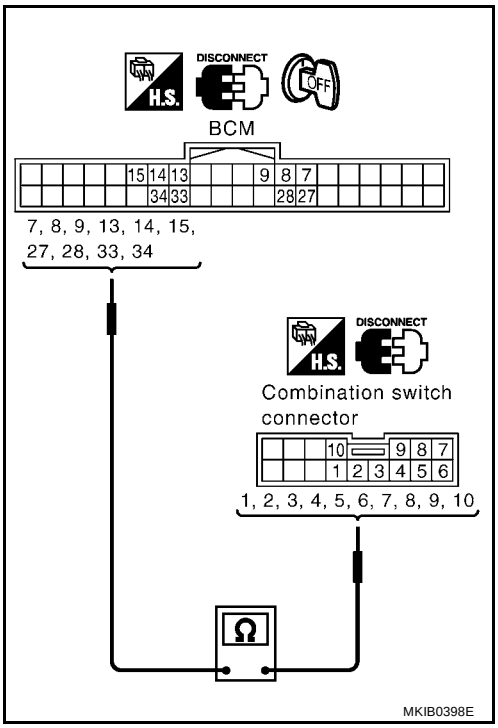
What is the inspection results?

Other switches in the group with an error operate normally.>>Replace combination switch.
Other switches in the group with an error do not operate normally.>>GO TO 3.

3. CHECK HARNESS

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

Group	Connector terminal			Continuity
	BCM		Combination switch	
1	output 1	13 (GY)	6 (GY)	Yes
	input 1	9 (PU)	1 (PU)	
2	output 2	33 (R)	7 (R)	
	input 2	28 (G)	2 (G)	
3	output 3	14 (P)	10 (P)	
	input 3	8 (L)	3 (L)	
4	output 4	34 (Y)	9 (Y)	
	input 4	27 (GY)	4 (GY)	
5	output 5	15 (W)	8 (W)	
	input 5	7 (BR)	5 (BR)	



Group	Connector terminal			Continuity
	BCM		—	
1	output 1	13 (GY)	Ground	No
	input 1	9 (PU)		
2	output 2	33 (R)		
	input 2	28 (G)		
3	output 3	14 (P)		
	input 3	8 (L)		
4	output 4	34 (Y)		
	input 4	27 (GY)		
5	output 5	15 (W)		
	input 5	7 (BR)		

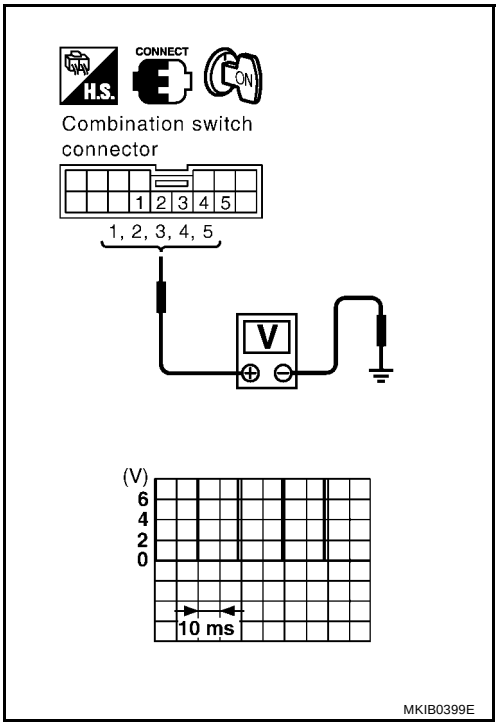
OK or NG

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

4. CHECK BCM OUTPUT SIGNAL

Connect BCM and combination switch connector, and check voltage waveform of malfunctioning system.

Group	Connector	terminal (wire color)	
		(+)	(-)
1	M32	1 (PU)	Ground
2		2 (G)	
3		3 (L)	
4		4 (GY)	
5		5 (BR)	



OK or NG

OK >> Repair combination switch.
NG >> Replace BCM.

Removal and Installation

EKS0089K

REMOVAL

1. Remove steering column cover. Refer to IP-6, "F. Steering Column Cover"
2. Remove driver air bag module. Refer to SRS-36, "DRIVER AIR BAG MODULE"
3. Remove spiral cable. Refer toSRS-38, "SPIRAL CABLE"
4. Remove screw and remove combination switch.

INSTALLATION

Install in the reverse order of removal, paying attention to the following.

INTERIOR ROOM LAMP

PFP:26410

System Description

EKS007SI

POWER SUPPLY AND GROUND

Power is supplied at all times:

- through 10A fuse [No. 6, located in the fuse block (J/B)]
- to key switch terminal 1 (without Intelligent Key system) or
- to key switch and ignition knob switch terminals 1 and 3 (With Intelligent Key system) and
- to luggage room lamp terminal 1
- through 40A fusible link (letter J, located in the fuse and fusible link box)
- to BCM (body control module) terminals 74 and 79.

When the key is removed from ignition key cylinder, power is interrupted:

- through key switch terminal 2 (without Intelligent Key system) or
- through key switch and ignition knob switch terminal 4 (With Intelligent Key system)
- to BCM terminal 48.

When Intelligent Key unit is received unlock signal from Intelligent Key controller. BCM is received door lock/ unlock signal from Intelligent Key unit with CAN communication line.
With the ignition key switch in the ON or START position, power is supplied:

- through 10A fuse [No. 4, located in the fuse block (J/B)]
- to BCM terminal 24.

Ground is supplied:

- through body grounds M19 and M20
- to BCM terminals 2 and 70.

When any door is opened, ground is supplied:

- through case ground of front door switch (driver side)
- to front door switch (driver side) terminal 1
- to BCM terminal 29.
- through case ground of front door switch (passenger side)
- to front door switch (passenger side) terminal 1
- to BCM terminal 30.
- through case ground of rear door switch LH
- to rear door switch LH terminal 1
- to BCM terminal 59.
- through case ground of rear door switch RH
- to rear door switch RH terminal 1
- to BCM terminal 60.
- through body ground M19 and M20
- to back door switch terminal 2
- to back door switch terminal 1
- to BCM terminal 10.

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

- through BCM terminal 21
- to interior room lamp terminal 1

With power and ground are supplied, the interior room lamp illuminates.

SWITCH OPERATION

When interior room lamp switch is ON, ground is supplied:

- through body grounds M19 and M20
- to interior room lamp terminal 3,

When interior room lamp switch is ON, power is supplied:

- to interior room lamp terminal 2

- through BCM terminal 73.

With power and ground are supplied, the interior room lamp illuminates.
When back door is opened, ground supplied:

- to luggage room lamp terminal 2
- through body grounds B17,B23,B44 and B51.

With power and ground are supplied, the luggage room lamp illuminates.

INTERIOR ROOM LAMP TIMER OPERATION

When interior room lamp switch is in the “DOOR” position, the BCM keeps the interior room lamp illuminated for about 30 seconds when:

- unlock signal is received from Intelligent Key controller, while all doors are closed and key is out of the ignition key cylinder (with Intelligent Key system).
- unlock signal is received from remote controller while all doors are closed and key is out of the ignition key cylinder (without Intelligent Key system).
- key is removed from ignition key cylinder while all doors are closed (without Intelligent Key system)
- any door is opened and then closed while key is out of the ignition key cylinder.

The timer is canceled when:

- ignition switch is turned OFF.
- lock signal is received from Intelligent Key controller, while all doors are closed and key is out of the ignition key cylinder (with Intelligent Key system).
- lock signal is received from remote controller while all doors are closed and key is out of the ignition key cylinder (without Intelligent Key system).

ON-OFF CONTROL

When the driver side door, front passenger door, rear LH or RH door is opened, the interior room lamp turns on while the interior room lamp switch is in the “DOOR” position.

INTERIOR ROOM LAMP BATTERY SAVER OPERATION

If the interior room lamp remains illuminated by the door switch open signal, or if the interior room lamp switch is in the “ON” position for more than 30 minutes after the ignition switch is turned to the OFF position, the BCM will automatically turn off the interior room lamp.
While timer is operating, if a following signal is received, timer control uses the more recent signal when:

- unlock signal is received from Intelligent Key controller, while all doors are closed and key is out of the ignition key cylinder (with Intelligent Key system).
- unlock signal is received from remote controller while all doors are closed and key is out of the ignition key cylinder (without Intelligent Key system).
- key is removed from ignition key cylinder while all doors are closed (without Intelligent Key system)
- any door is opened and then closed while key is out of the ignition key cylinder.

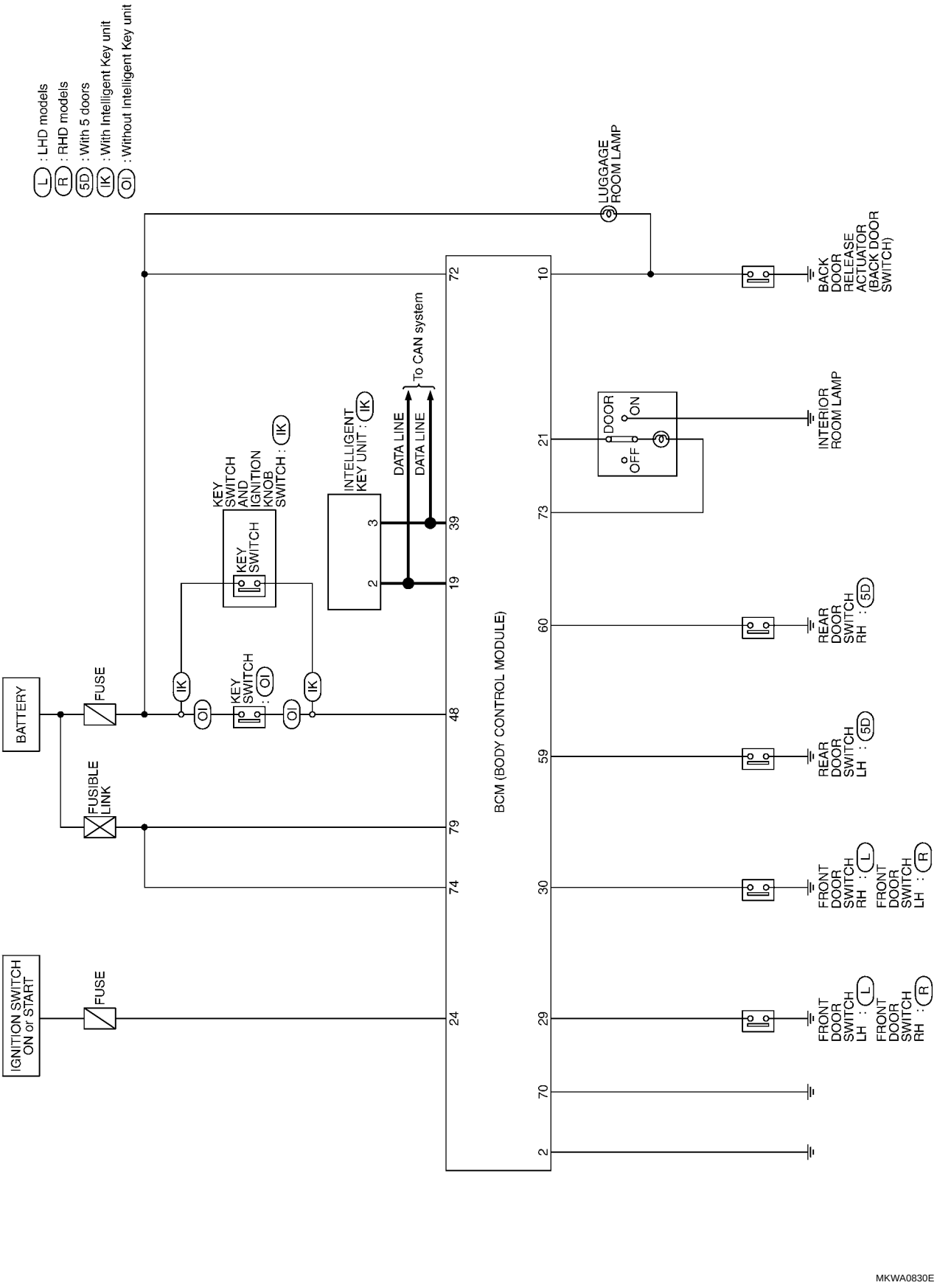
CAN Communication

EKS008IV

Refer to LT-6, "CAN Communication" .

Schematic

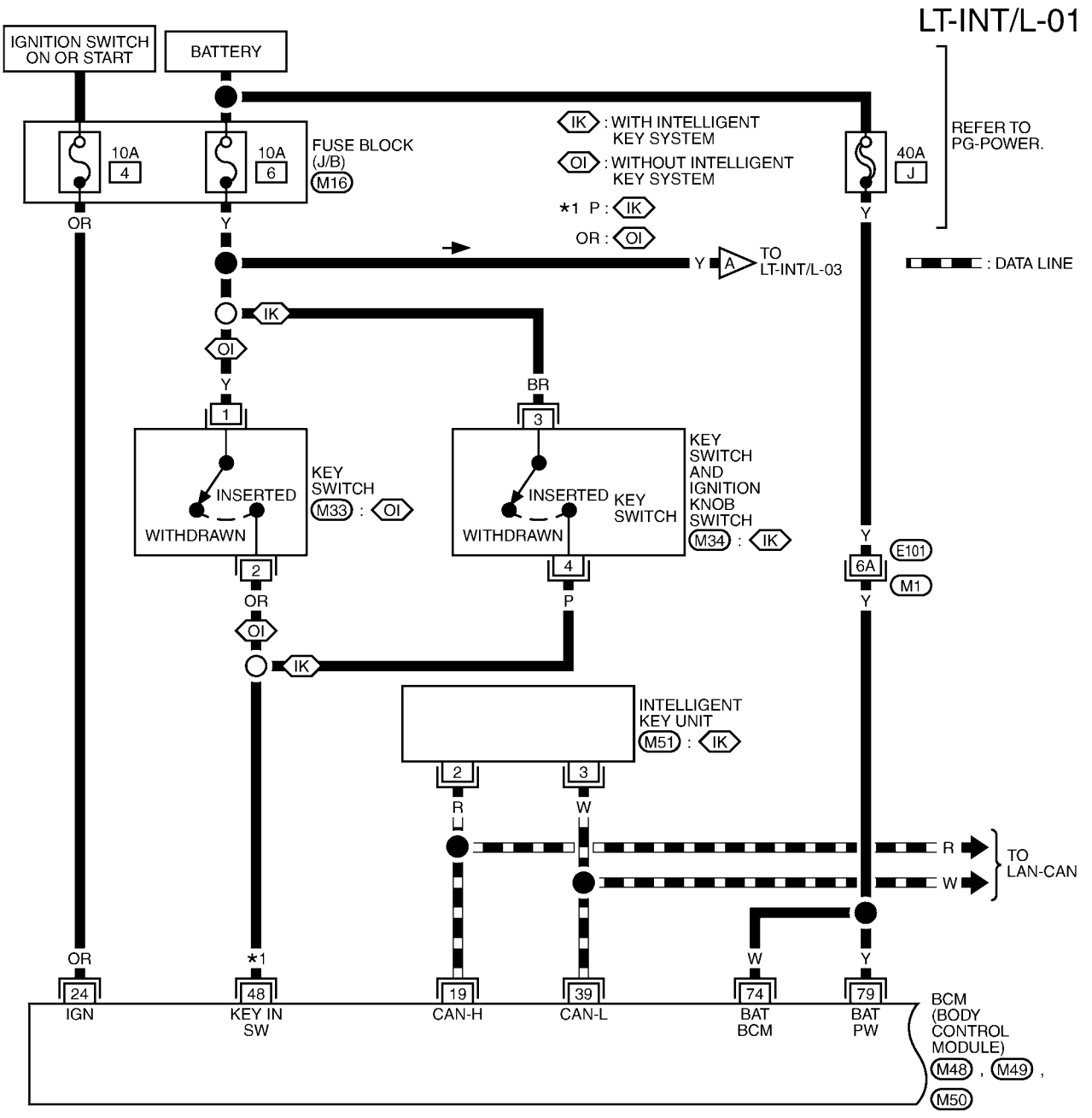
EKS0085W

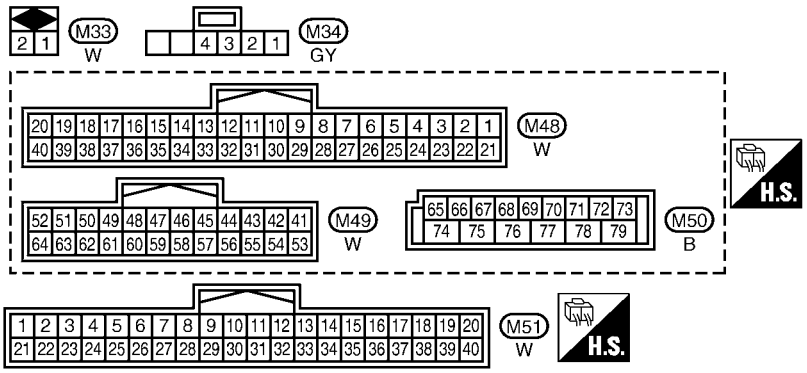


MKWA0830E

Wiring Diagram — INT/L —

EKS0085X

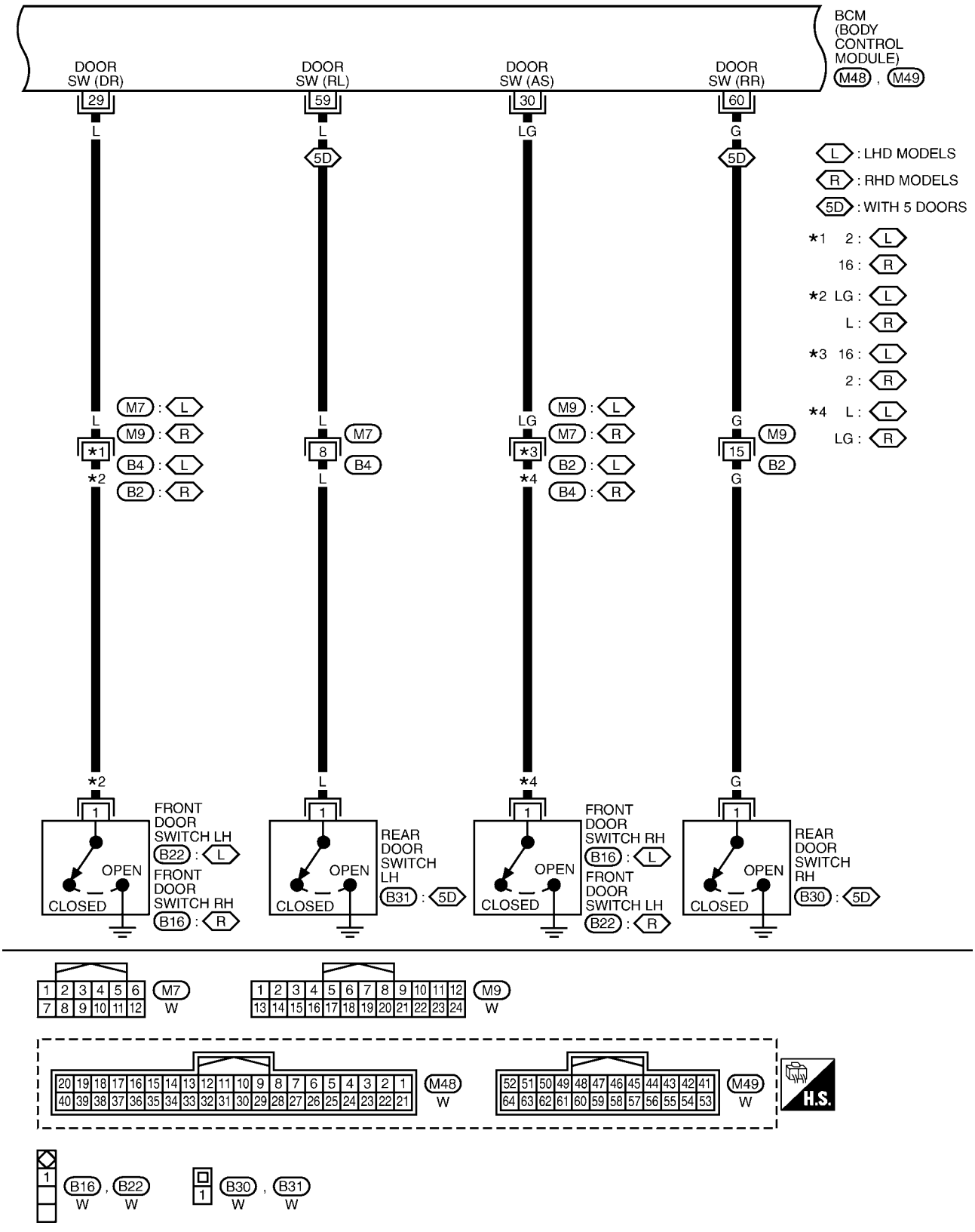




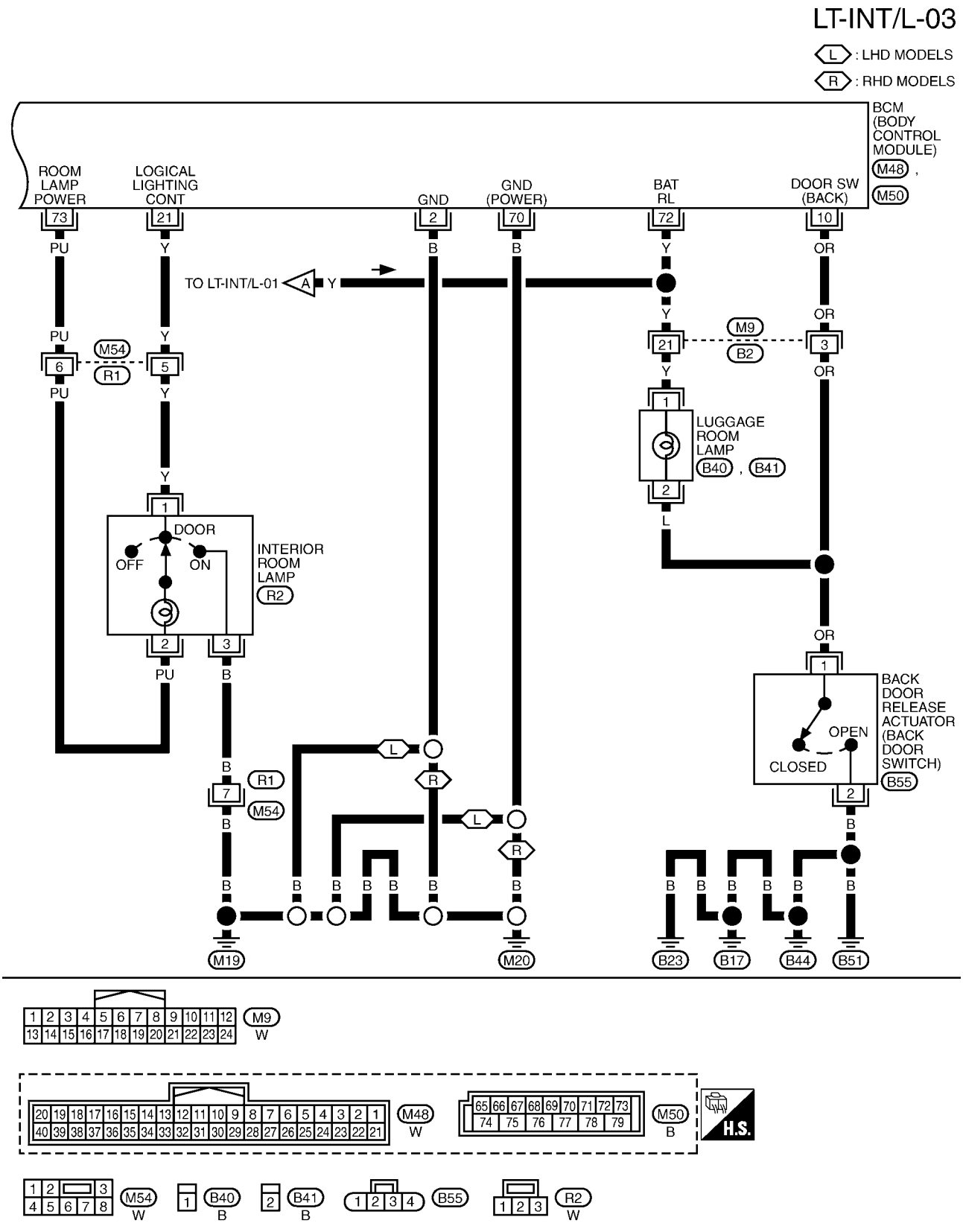
REFER TO THE FOLLOWING.
M1 -SUPER MULTIPLE JUNCTION (SMJ)
M16 -FUSE BLOCK-JUNCTION BOX (J/B)

MKWA0831E

LT-INT/L-02



MKWA0832E


LT-INT/L-03
L : LHD MODELS
R : RHD MODELS
BCM (BODY CONTROL MODULE) M48, M50
ROOM LAMP POWER
LOGICAL LIGHTING CONT
GND
GND (POWER)
BAT RL
DOOR SW (BACK)
TO LT-INT/L-01
LUGGAGE ROOM LAMP B40, B41
INTERIOR ROOM LAMP R2
DOOR
OFF
ON
BACK DOOR RELEASE ACTUATOR (BACK DOOR SWITCH) B55
OPEN
CLOSED
M54
R1
M9
B2
M19
M20
B23
B17
B44
B51
M9 W
M48 W
M50 B
H.S.
M54 W
B40 B
B41 B
B55
R2 W

MKWA0833E

Terminals and Reference Value for BCM

EKS007SJ

Terminal No.	Wire color	Signal designation	Measuring condition				Reference value (V)
			Ignition switch	Operation or condition			
2	B	Ground	ON	—			Approx. 0
10	OR	Back door switch signal	OFF	Back door switch signal	ON (open)		Approx. 0
					OFF (close)		Approx. 12
21	Y	Battery saver output signal	OFF	Room lamp switch: DOOR position	Key is inserted		Approx. 12
					Key is removed		Approx. 0
					Interior room lamp timer OFF		Approx. 12
24	OR	Ignition power supply	ON	—			Approx. 12
29	L	Driver door switch signal	OFF	Driver door switch signal	ON (open)		Approx. 0
					OFF (closed)		Approx. 12
30	LG	Passenger door switch signal	OFF	Passenger door switch signal	ON (open)		Approx. 0
					OFF (close)		Approx. 12
48	P*1	Key detection switch signal	OFF	Remove key.			Approx. 0
	OR*2			Key is inserted.			Approx. 12
59	L	Rear door switch LH signal	OFF	Rear door switch LH signal	ON (open)		Approx. 0
					OFF (close)		Approx. 12
60	G	Rear door switch RH signal	OFF	Rear door switch RH signal	ON (open)		Approx. 0
					OFF (close)		Approx. 12
70	B	Ground	ON	—			Approx. 0
73	PU	Room lamp signal	OFF	Room lamp switch: DOOR position	Key is inserted.	Any door switch	ON (open)	Approx. 0
							OFF (closed)	Approx. 12
			—		Close all doors.	Key is removed after being fully inserted.		Approx. 0
						Turn ignition switch ON.		Approx. 12
74	W	Battery power supply	OFF	—			Approx. 12
79	Y	Battery power supply	OFF	—			Approx. 12

*1: With Intelligent Key system
*2: Without Intelligent Key system

How to Proceed With Trouble Diagnosis

EKS0089E

1. Confirm the symptom or customer complaints.
2. Understand operation description and function description.
   Refer to Interior room lamp LT-114, "System Description" .
3. Carry out the Preliminary Check. Refer to LT-121, "Preliminary Check"
4. Check symptom and repair or replace the cause of malfunction.
5. Dose the interior room lamp operate normally? Yes: GO TO 6. No: GO TO 4.
6. INSPECTION END.

Preliminary Check

EKS0089L

CHECK POWER SUPPLY AND GROUND CIRCUIT

1. CHECK FUSES

Check BCM fuse and fusible link for blown-out.

UNIT	POWER SOURCE	FUSE No.
BCM	Battery	J
	Ignition switch ON or START position	4

Refer to LT-117, "Wiring Diagram — INT/L —" .

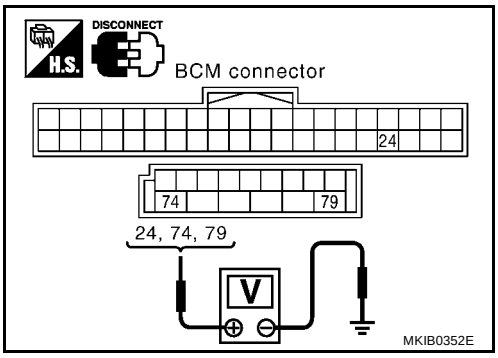
OK or NG

OK >> GO TO 2.

NG >> If fuse is blown, be sure to eliminate cause of malfunction before installing new fuse. Refer to PG-4, "POWER SUPPLY ROUTING" .

2. CHECK POWER SUPPLY CIRCUIT

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



Terminals			Ignition switch position		
(+)		(–)	OFF	ACC	ON
Connector	Terminal (Wire color)				
M50	74 (W)	Ground	Battery voltage	Battery voltage	Battery voltage
	79 (Y)		Battery voltage	Battery voltage	Battery voltage
M48	24 (OR)		0V	0V	Battery voltage

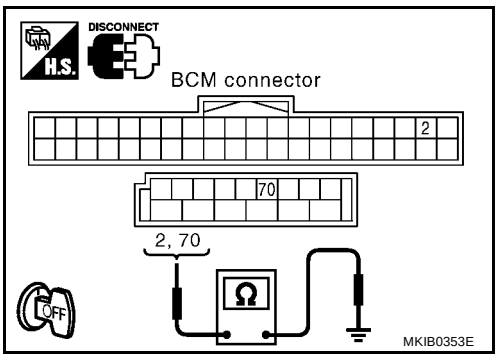
OK or NG

OK >> GO TO 3.

NG >> Repair harness for open or short between BCM and fuse.

3. CHECK GROUND CIRCUIT

Check continuity between BCM harness connector and ground.



Terminals			Continuity
(+)		(–)	
Connector	Terminal (Wire color)		
M48	2 (B)	Ground	Yes
M50	70 (B)		

OK or NG

OK >> INSPECTION END

NG >> Check harness ground circuit.

CONSULT-II Functions (BCM)

EKS007SN

CONSULT-II has display functions for work support, self-diagnosis, data monitoring, and active tests for each part by combining data reception and command transmission via communication lines from the BCM.

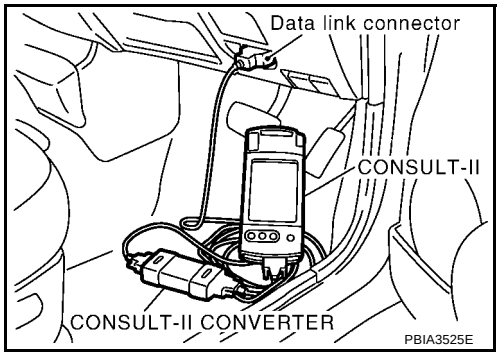
BCM trouble diagnosis item	Inspection Item, Diagnosis Mode	Description
Room lamp	Work support	Change settings for each function.
	Data monitor	Displays BCM input data in real time.

CONSULT-II BASIC OPERATION

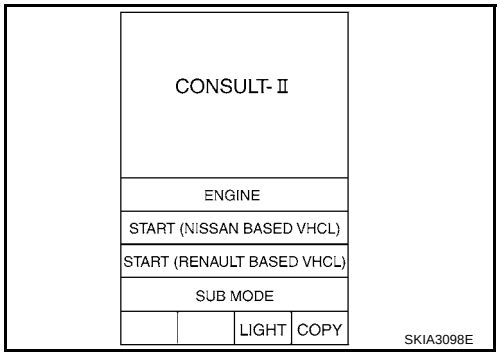
CAUTION:

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

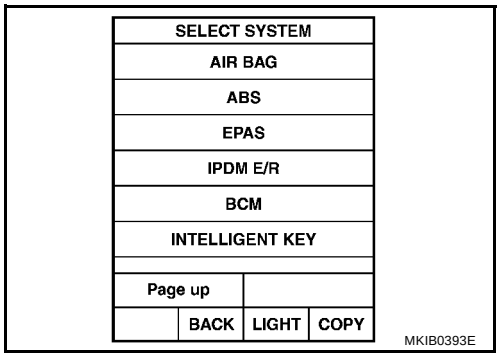
1. Turn ignition switch OFF.
2. Connect CONSULT-II and “CONSULT-II CONVERTER” to data link connector.



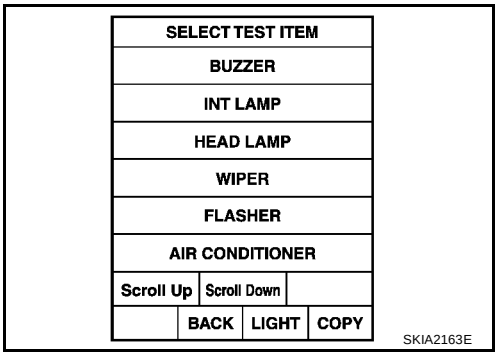
3. Turn ignition switch ON.
4. Touch “START (NISSAN BASED VHCL)”.



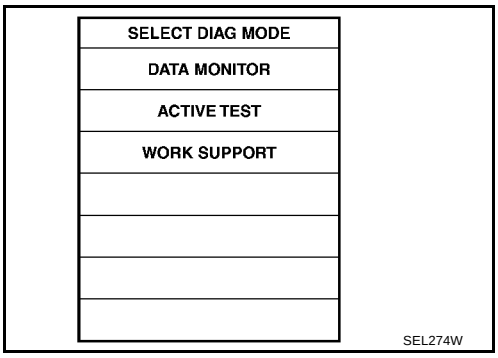
5. Touch “BCM” on the “SELECT SYSTEM” screen.
   If “BCM” is not indicated, go to GI-36, "CONSULT-II Data Link Connector (DLC) Circuit" .



6. Touch “INTERIOR LAMP” on “SELECT TEST ITEM” screen.



7. Touch “WORK SUPPORT”, “DATA MONITOR”, or “ACTIVE TEST” on the “SELECT DIAG MODE” screen.



DATA MONITOR

Operation Procedure

1. Touch “INTERIOR LAMP” on “SELECT TEST ITEM” screen.
2. Touch “DATA MONITOR” on the “SELECT DIAG MODE” screen.
3. Touch “ALL SIGNALS” or “SELETION FROM MENU” on the “DATA MONITOR” screen.

ALL SIGNALS	All items will be monitored.
SELECTION FROM MENU	Selects and monitors individual items.

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 to record the status of the item being monitored. To stop recording, touch “STOP”.

Display Item List

Monitor item “UNIT”		Display content
IGN ON SW	[ON/OFF]	Displays status (Ignition switch ON: ON/Others OFF, ACC: OFF) as judged from the ignition switch signal.
KEY ON SW	[ON/OFF]	Displays status (Key inserted: ON/Key removed: OFF) as judged from the key-in detection switch signal.
DOOR SW 1	[ON/OFF]	Displays status (Door open: ON/door closed: OFF) as judged from the front door switch RH signal.
DOOR SW 2	[ON/OFF]	Displays status (Door open: ON/Door closed: OFF) as judged from the front door switch LH signal.
DOOR SW 3	[ON/OFF]	Displays status (Door open: ON/door closed: OFF) as judged from the rear door switch RH signal.
DOOR SW 4	[ON/OFF]	Displays status (Door open: ON/Door closed: OFF) as judged from the rear door switch LH signal.
DOOR SW BACK	[ON/OFF]	Displays status (Door open: ON/Door closed: OFF) as judged from the back door switch signal.
CDL LOCK SW	[ON/OFF]	Displays status (Locked: ON/Others: OFF) as judged from lock signal.

Monitor item “UNIT”		Display content
CDL UNLOCK SW	[ON/OFF]	Displays status (Unlocked: ON/Others: OFF) as judged from unlock signal.
KEYLESS LOCK	[ON/OFF]	Displays status (Locked: ON/Others: OFF) as judged from lock signal.
KEYLESS UNLOCK	[ON/OFF]	Displays status (Unlocked: ON/Others: OFF) as judged from unlock signal.
SMART LOCK	[ON/OFF]	Displays status (Locked: ON/Others: OFF) as judged from lock signal.
SMART UNLOCK	[ON/OFF]	Displays status (Unlocked: ON/Others: OFF) as judged from unlock signal.
SMART AL DR UNL	[ON/OFF]	Displays status (Unlocked: ON/Others: OFF) as judged from unlock signal.

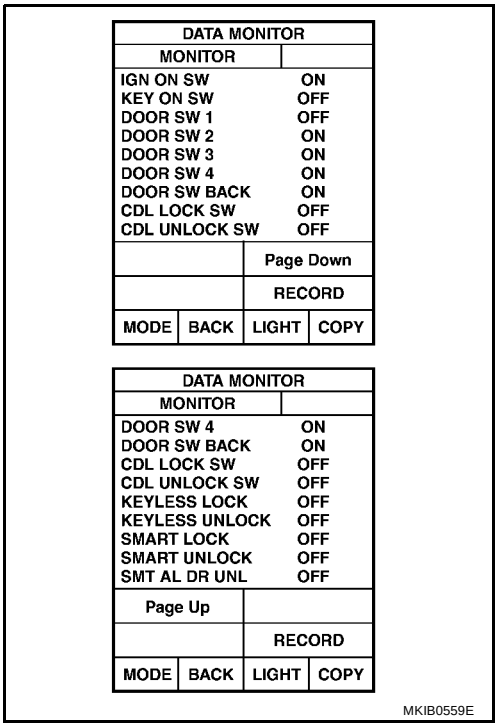
Room Lamp Timer Does Not Operate

EKS007SO

1. CHECK BETWEEN COMBINATION SWITCH AND BCM

Select BCM on CONSULT-II.Check following item in “DATA MONITOR” mode with CONSULT-II.

Monitor item	Condition	
IGN ON SW	Ignition switch is in ON position	ON
	Ignition switch is in other position	OFF
KEY ON SW	Key switch is inserted	ON
	Key switch is removed	OFF
DOOR SW 1	Front RH door is opened	ON
	Front RH door is closed	OFF
DOOR SW 2	Front LH door is opened	ON
	Front LH door is closed	OFF
DOOR SW 3	Rear RH door is opened	ON
	Rear RH door is closed	OFF
DOOR SW 4	Rear LH door is opened	ON
	Rear LH door is closed	OFF
DOOR SW BACK	Back door is opened	ON
	Back door is closed	OFF
CDL LOCK SW	Lock/unlock switch lock position	ON
	Lock/unlock switch unlock position	OFF
CDL UNLOCK SW	Lock/unlock switch unlock position	ON
	Lock/unlock switch lock position	OFF
KEYLESS LOCK	Keyless lock/unlock switch lock position	ON
	Keyless lock/unlock switch unlock position	OFF
KEYLESS UNLOCK	Keyless lock/unlock switch unlock position	ON
	Keyless lock/unlock switch lock position	OFF
SMART LOCK	Intelligent Key lock/unlock switch lock position	ON
	Intelligent Key lock/unlock switch unlock position	OFF
SMART UNLOCK	Intelligent Key lock/unlock switch unlock position	ON
	Intelligent Key lock/unlock switch lock position	OFF
SMT AL DR UNL	Intelligent Key all door unlock switch unlock position	ON
	Intelligent Key all door unlock switch lock position	OFF



OK or NG

OK >> GO TO 2.

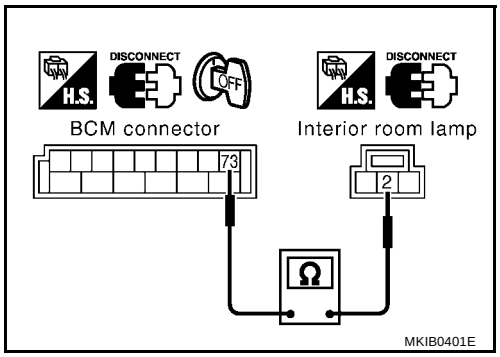
NG >>
- IGN ON SW: Refer to DI-79, "Ignition ON Signal Check"
- KEY ON SW (without Intelligent Key system): Refer toDI-73, "Key Switch Signal Check/Without Intelligent Key System"
- KEY ON SW (with Intelligent Key system): Refer toDI-75, "Key Switch Signal Check/With Intelligent Key System"
- DOOR SW 1: Refer to BL-48, "DRIVER SIDE"
- DOOR SW 2: Refer to BL-50, "PASSENGER SIDE"
- DOOR SW 3: Refer to BL-52, "REAR LH SIDE"
- DOOR SW 4: Refer to BL-54, "REAR RH SIDE"
- DOOR SW BACK: Refer to BL-56, "Check External Back Door Release Switch"
- CDL LOCK/UNLOCK SW: Refer to BL-40, "Check Door Lock / Unlock Switch"

- KEYLESS LOCK/UNLOCK: Refer to BL-123, "Remote controller Check"
- SMART LOCK/UNLOCK: Refer to BL-172, "Check Door Request Switch"
- SMT AL DR UNL: Refer to BL-172, "Check Door Request Switch"

2. CHECK BCM OUTPUT SIGNAL

1. Interior room lamp switch is in DOOR position.
2. Check voltage between BCM and ground.

Connector	Terminal (wire color)	Condition	Voltage [V]
M50	73 (PU)	Interior room lamp ON	Approx. 0
		Interior room lamp OFF	Battery voltage



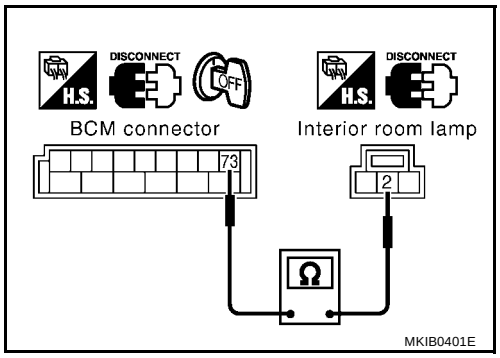
OK or NG

OK >> GO TO 3.
NG >> Replace BCM.

3. CHECK INTERIOR ROOM LAMP INPUT SIGNAL CIRCUIT

Check continuity between BCM harness connector M50 terminal 73(PU) and interior room lamp harness connector R2 terminal 2(PU).

Continuity should exist.



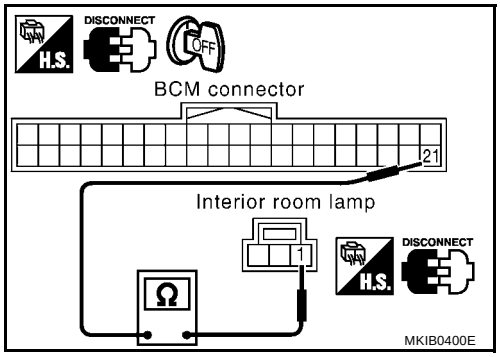
OK or NG

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

4. CHECK INTERIOR ROOM LAMP GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect BCM connector and room lamp connector.
3. Check continuity between BCM harness connector M48 terminal 21(Y) and interior room lamp harness connector R2 terminal 1 (Y).

Continuity should exist.



OK or NG

OK >> Replace BCM.
NG >> Repair harness connector.

Luggage Room Lamp Does Not Illuminate

EKS0085Z

1. CHECK BULB

Check interior room lamp bulb.

OK or NG

OK >> GO TO 2.
NG >> Replace interior room lamp bulb.

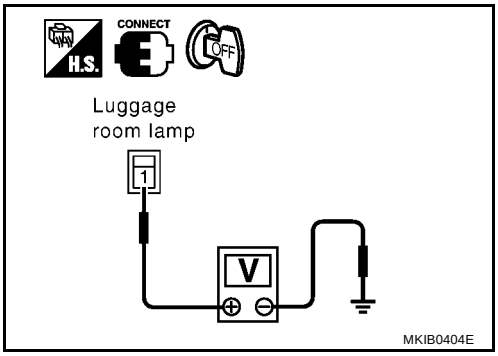
2. CHECK LUGGAGE ROOM LAMP INPUT SIGNAL

Check voltage between luggage room lamp harness connector B40 terminal 1(Y) and ground.

Battery voltage should exist.

OK or NG

OK >> GO TO 3.
NG >> Check harness for open or short between luggage room lamp and fuse.



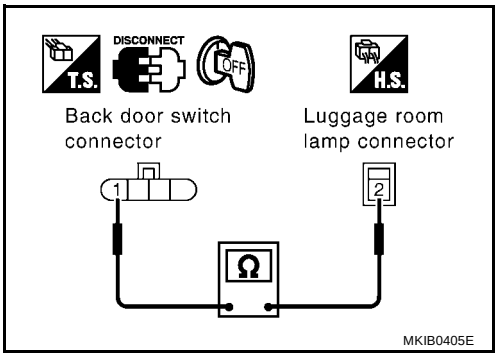
3. CHECK BACK DOOR SWITCH OFF CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect back door release actuator connector and luggage room lamp connector.
3. Check continuity between back door release actuator harness connector B55 terminal 1(OR) and luggage room lamp harness connector terminal 2(L).

Continuity should exist.

OK or NG

OK >> GO TO 4.
NG >> Check harness for open or short between back door switch and luggage room lamp.



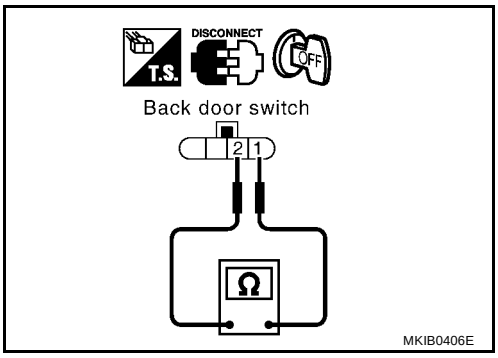
4. CHECK BACK DOOR SWITCH GROUND CIRCUIT

Check continuity between back door release actuator harness connector B55 terminal 2(B) and ground.

Continuity should exist.

OK or NG

OK >> Replace back door switch.
NG >> Repair harness connector.

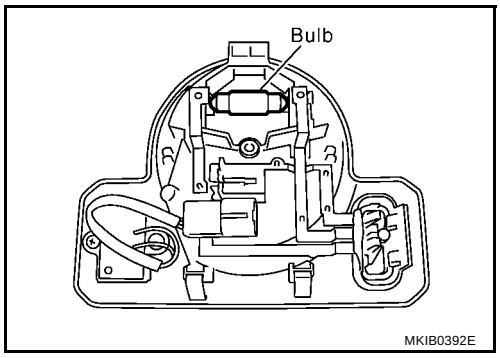


Bulb Replacement

EKS007SP

1. Remove interior room lamp. Refer to LT-128, "Removal and Installation" .
2. Remove bulb.

Interior room lamp : 12V - 10W

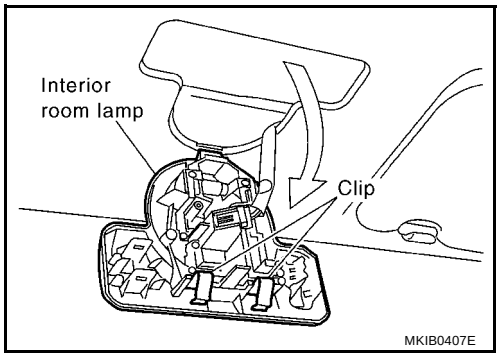


Removal and Installation

EKS0089M

REMOVAL

1. Without damaging the headliner, insert a clip driver in the interior room lamp back edge to disengage metal clips.
2. Disconnect connector and remove interior room lamp.



INSTALLATION

Install in the reverse order of removal, paying attention to the following.

ILLUMINATION

PFP:27545

System Description

EKS0084P

The illumination lamps operation is controlled by the lighting switch which built into the combination switch, BCM and IPDM E/R.Tail lamp relay is built into IPDM E/R.BCM read combination switch condition.Refer toLT-104, "System Description"

Power is supplied at all times

- to tail lamp relay, located in the IPDM E/R (intelligent power distribution module engine room).

Power is also supplied at all times

- to BCM (body control module) terminals 74 and 79
- through 40A fusible link (letter J, located in the fuse and fusible link box).

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

- to BCM (body control module) terminal 24
- through 10A fuse [No. 4, located in the fuse block (J/B)].

Ground is supplied

- to BCM (body control module) terminals 2 and 70
- through grounds M19, and M20.

ILLUMINATION OPERATION BY LIGHTING SWITCH

When the lighting switch is turned to 1ST position, BCM read combination switch condition (refer to LT-104, "System Description"). And BCM send illumination lamp request signal to IPDM E/R with CAN communication line. Then IPDM E/R is turned on tail lamp relay. Tail lamp relay is energized and then power is supplied.

- through terminal 15 of the IPDM E/R
- to heated seat switch driver side (illumination) terminal 5
- to heated seat switch passenger side (illumination) terminal 5
- to door lock/unlock switch terminal 2
- through terminal 16 of the IPDM E/R
- to audio unit terminal 36
- to audio and navi control unit terminal 36
- to A/C control unit terminal 15
- to A/C auto amplifier terminal 11
- to headlamp aiming switch terminal 3
- to headlamp washer switch terminal 3
- to hazard switch terminal 3
- to ashtray illumination terminal 1 and
- to A/T device terminal 5

Ground is supplied at all times

- to door lock/unlock switch terminal 4
- to heated seat switch driver side terminal 6
- to heated seat switch passenger side terminal 6
- through body grounds b17, B23, B44 and D104
- to A/C control unit terminal 7
- to A/T auto amplifier terminal 12
- to headlamp aiming switch terminal 4
- to headlamp washer switch terminal 4
- to hazard switch terminal 4
- to ashtray illumination terminal 2
- to A/T device terminal 4
- through body grounds M19 and M20
- to audio unit terminal 36
- to audio and navi control unit terminal 36

- through body ground M60

With power and ground supplied, illumination lamps illuminate.

EXTERIOR LAMP BATTERY SAVER CONTROL

Refer to LT-6, "EXTERIOR LAMP BATTERY SAVER CONTROL"

COMBINATION SWITCH READING FUNCTION

Refer to LT-104, "System Description"

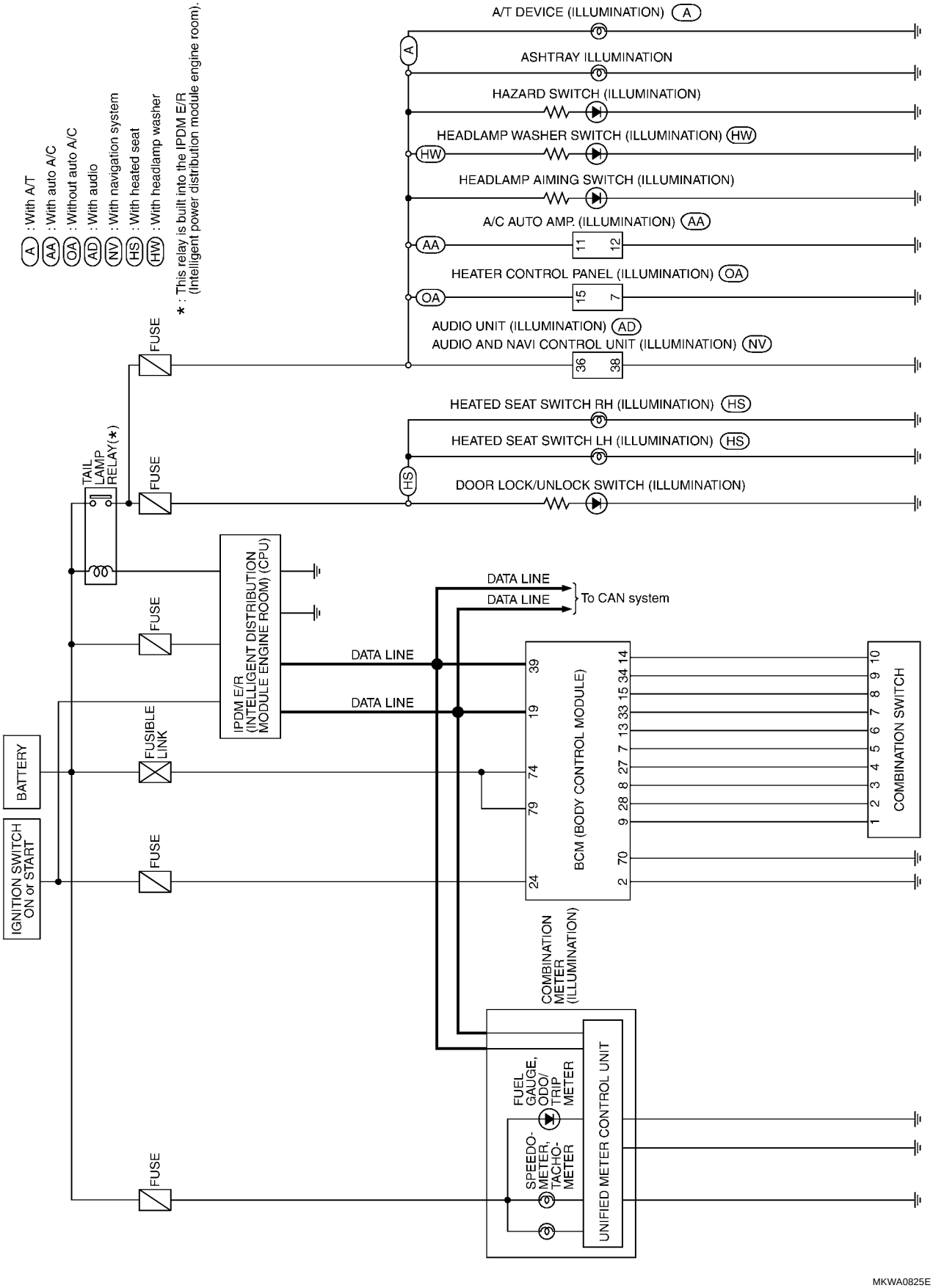
CAN Communication System Description

EKS0089F

Refer to LT-6, "CAN Communication" .

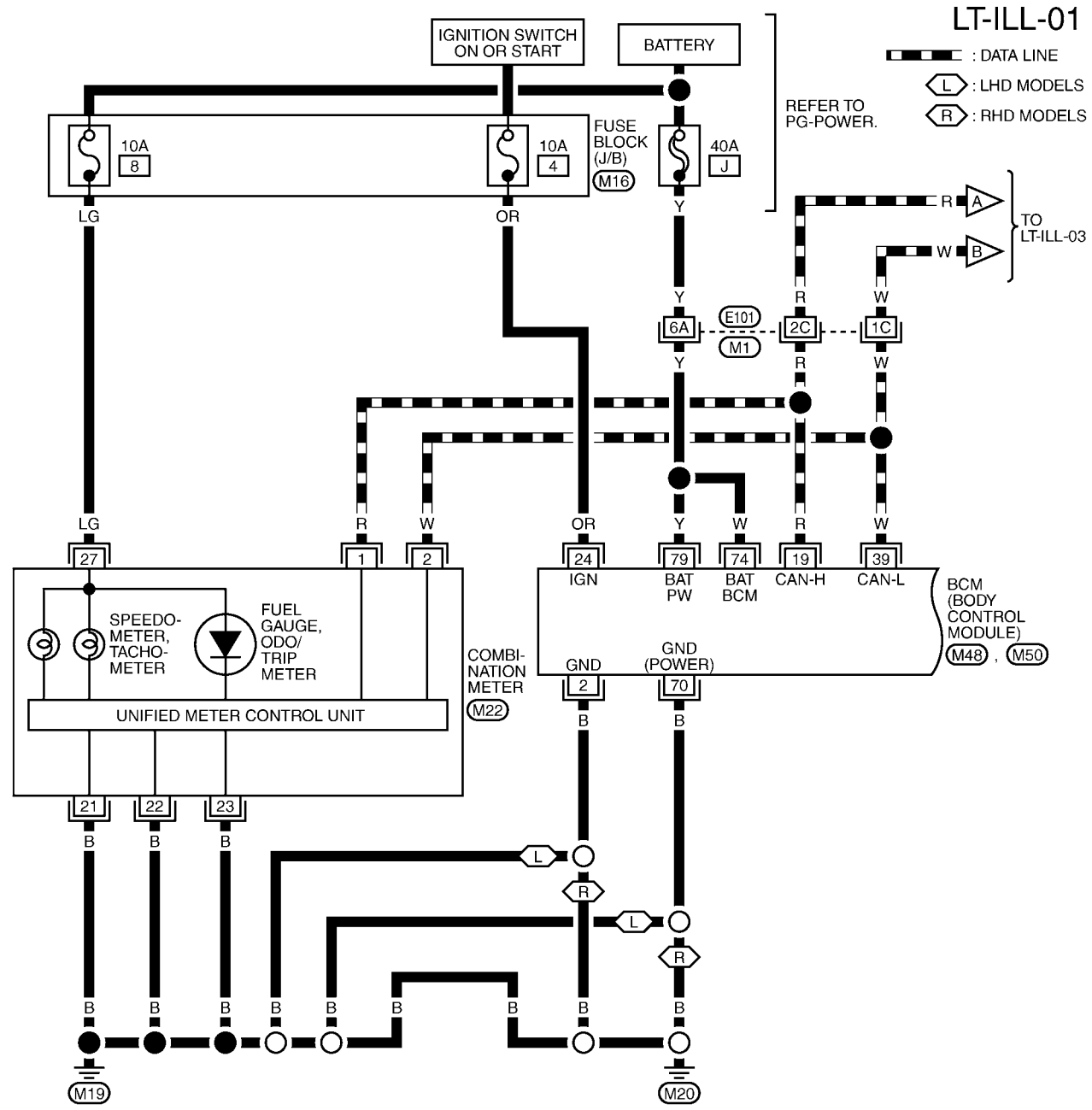
Schematic

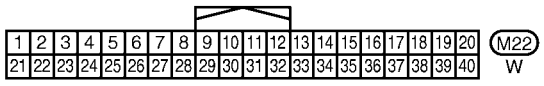
EKS0084S



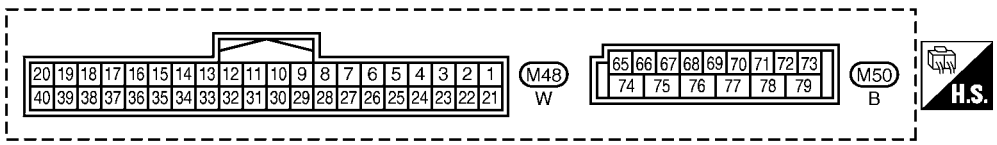
Wiring Diagram — ILL —

EKS0084T



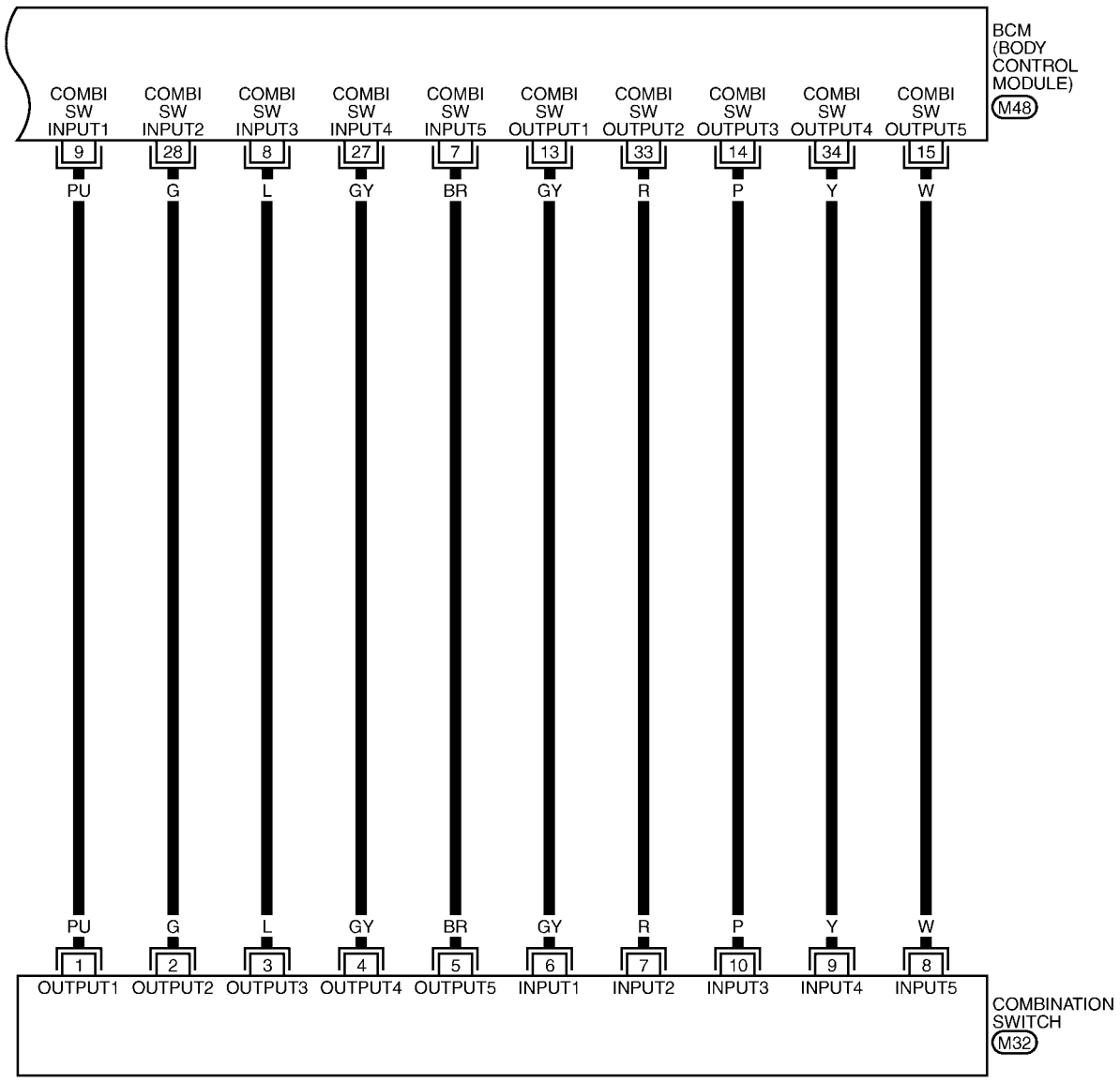


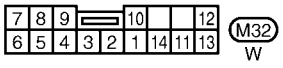
REFER TO THE FOLLOWING.
M1 -SUPER MULTIPLE JUNCTION (SMJ)
M16 -FUSE BLOCK-JUNCTION BOX (J/B)

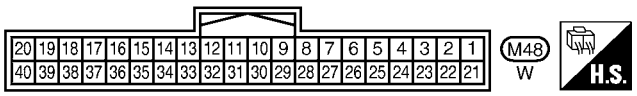


MKWA0826E

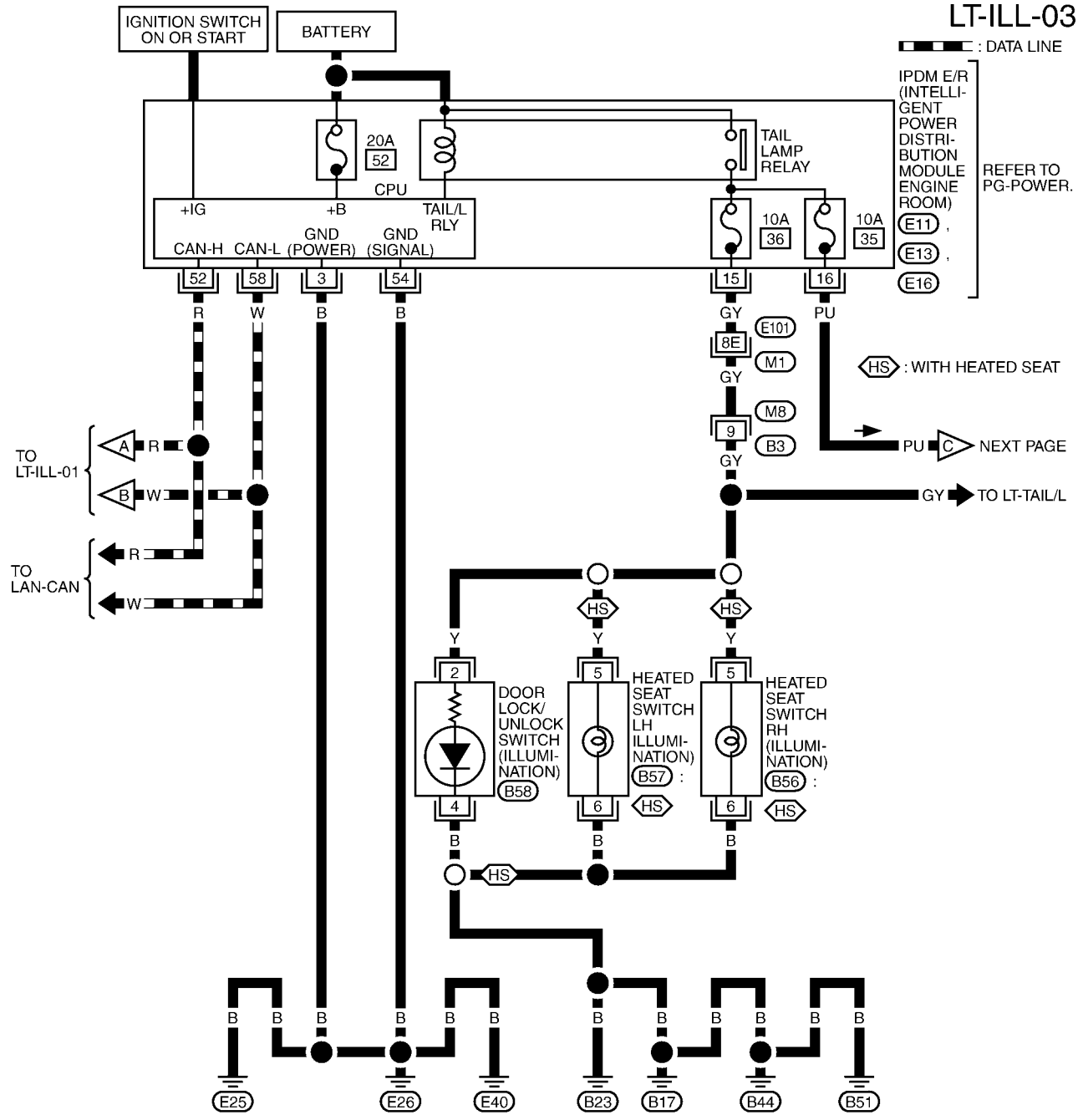
LT-ILL-02

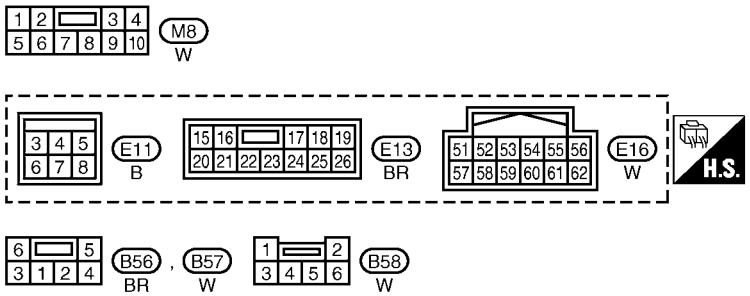






MKWA1379E

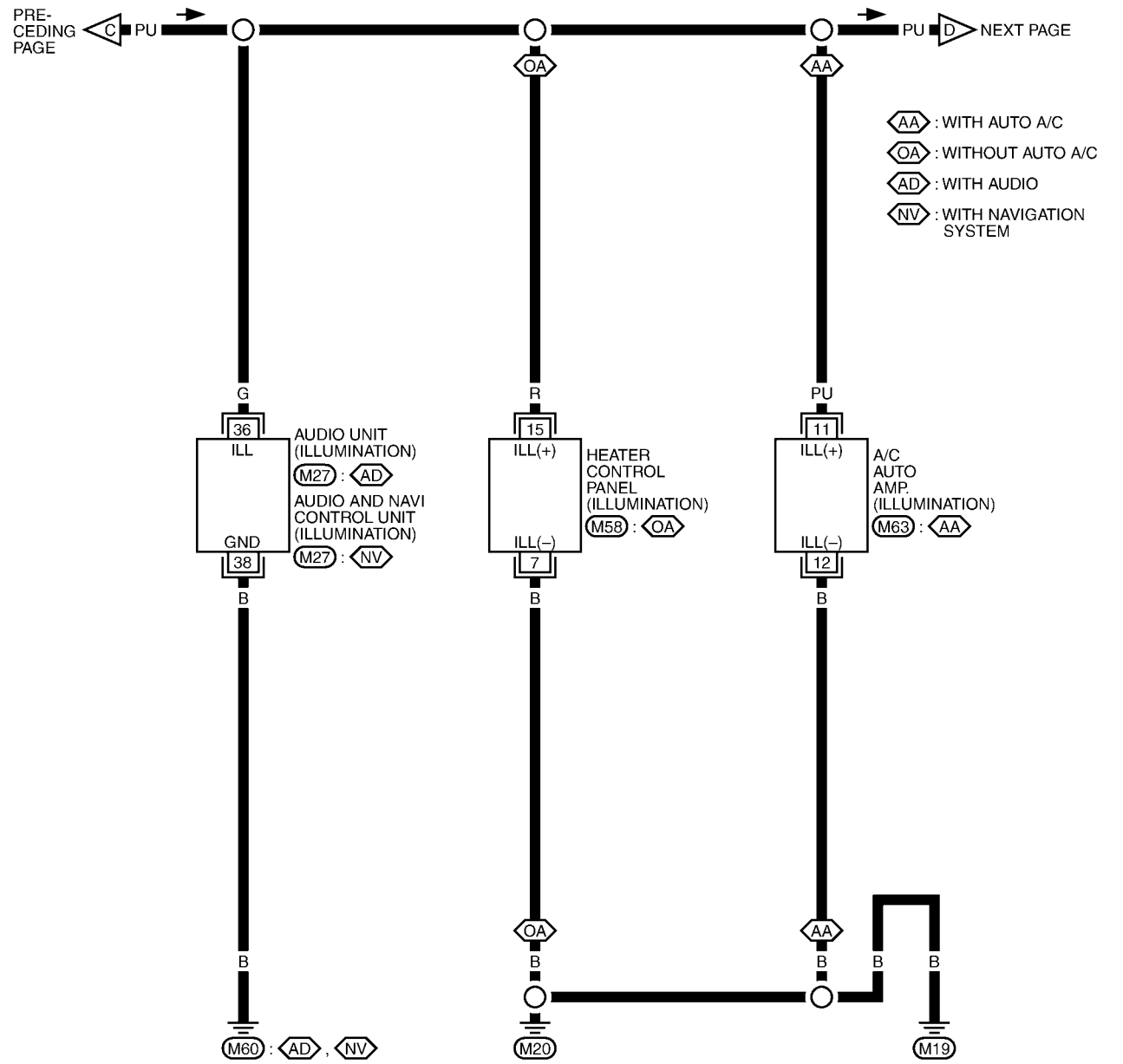




REFER TO THE FOLLOWING.
M1 -SUPER MULTIPLE JUNCTION (SMJ)

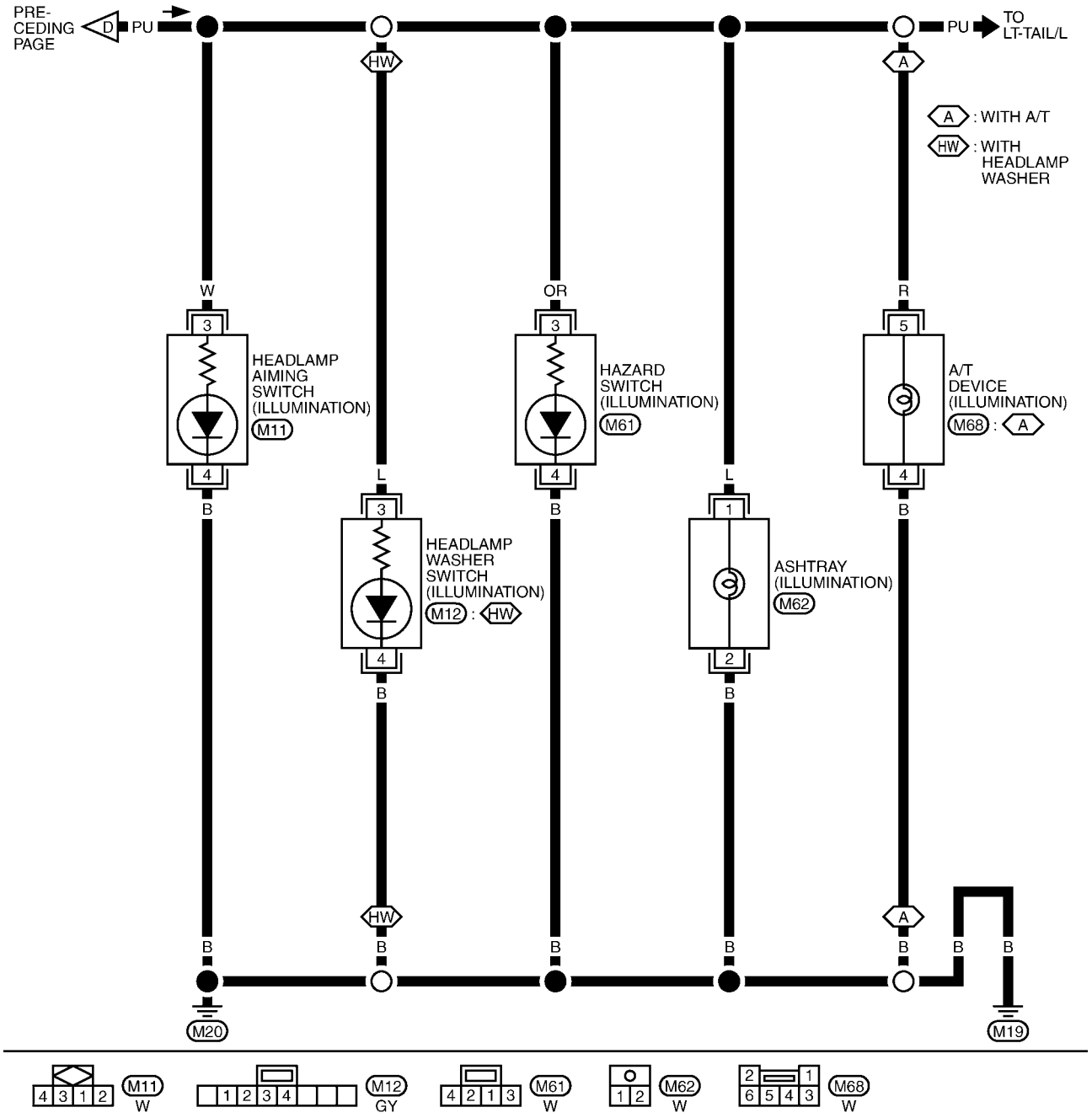
MKWA0828E

LT-ILL-04



MKWA0829E

LT-ILL-05



MKWA1380E

Removal and Installation

EKS0084U

GLOVE BOX LAMP

Refer to IP-8, "O. Glove Box Cover Assembly" .

BULB SPECIFICATIONS

PFP:26297

Headlamp

EKS0084V

Item		Wattage (W)
High/Low	Halogen	60/55 (H4)

Exterior Lamp

EKS0084W

Item		Wattage (W)
Front combination lamp	Clearance lamp	5
	Front turn signal lamp	21 (amber)
Side turn signal lamp		5
Fog lamp	Front fog lamp	55 (H11)
	Rear fog lamp	21
Rear combination lamp	Stop/Tail lamp	21/5
	Turn signal lamp	21
	Back-up lamp	21
License plate lamp		10
High-mounted stop lamp		21

Interior Lamp/Illumination

EKS0084X

Item	Wattage (W)
Interior room lamp	10
Luggage room lamp	10