SECTION BCS
BODY CONTROL SYSTEM

CONTENTS

PRECAUTIONS

PFP:00001

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

AKS008YN

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

WARNING:

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

BCM (BODY CONTROL MODULE)

PFP:284B2

System Description

AKS000B6

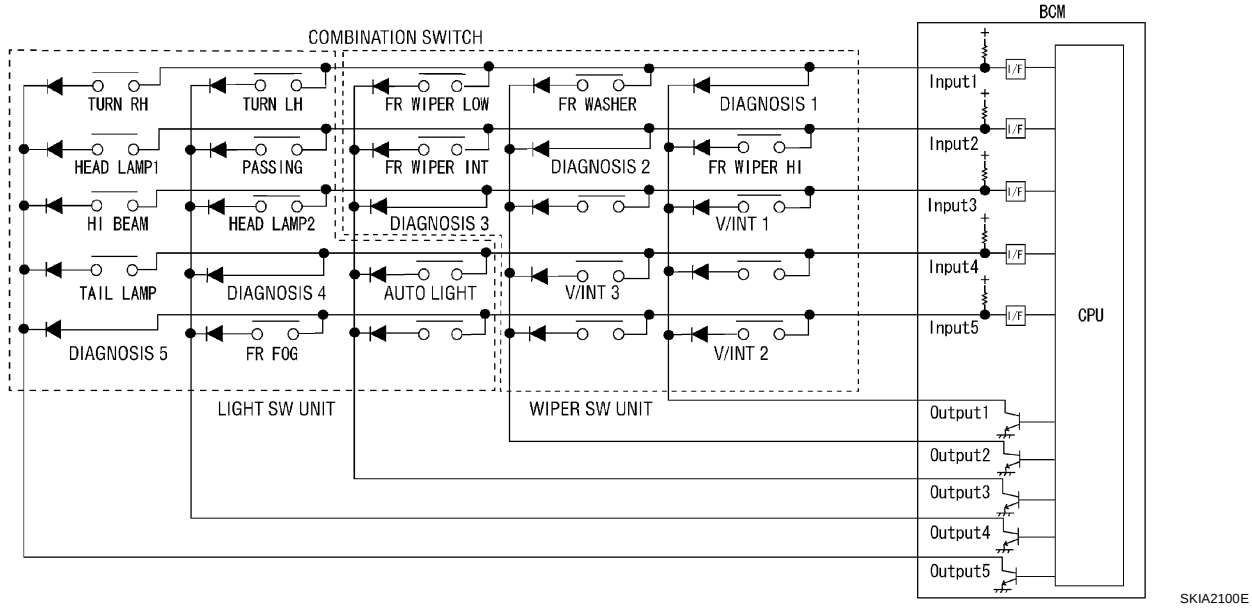
- BCM (Body Control Module) controls the operation of various electrical units installed on the vehicle.

BCM FUNCTION

BCM has a combination switch reading function for reading the operation of combination switches (light, wiper washer, turn signal) in addition to the function for controlling the operation of various electrical components. Also, it functions as an interface that receives signals from the A/C auto amplifier, and sends signals to ECM using CAN communication.

COMBINATION SWITCH READING FUNCTION

1. Description
   - BCM reads combination switch (light, wiper washer, turn signal) status, and controls various electrical components according to the results.
   - BCM reads information of 20 switches and 5 diagnostic results by combining five output terminals (OUTPUT 1 - 5) and five input terminals (INPUT 1 - 5).
2. Operation description
   - BCM outputs battery voltage from input terminals (INPUT 1 - 5) all the time. At the same time output terminals (OUTPUT 1 - 5) activate transistors in turn, and allow current to flow. At this time, if any (1 or more) of the switches are ON, the input terminals corresponding to these switches detect current flow, and the interface of BCM detects the condition. Then BCM judges switches are ON.



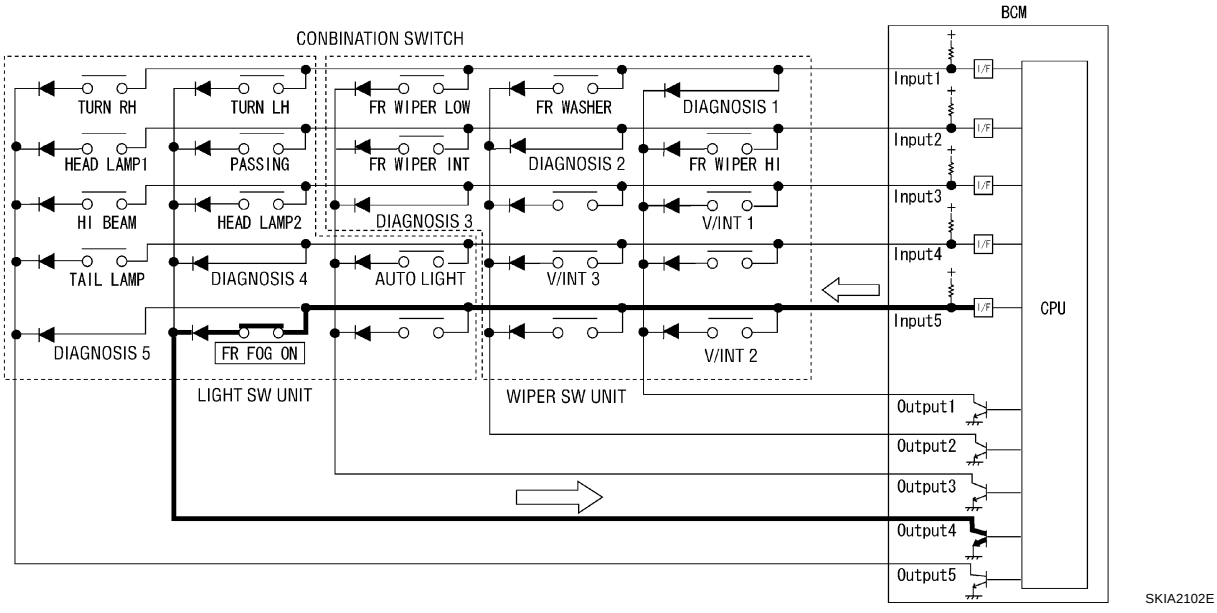
3. BCM - Operation table of combination switches
   - BCM reads operation status of combination switches by the combination shown in the table.

	COMB SW INPUT 1		COMB SW INPUT 2		COMB SW INPUT 3		COMB SW INPUT 4		COMB SW INPUT 5	
	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF
COMB SW OUTPUT 1	DIAGNOSIS 1 OK	DIAGNOSIS 1 NG	FR WIPER HI ON	FR WIPER HI OFF	V/INT 1 ON	V/INT 1 OFF	—	—	V/INT 2 ON	V/INT 2 OFF
COMB SW OUTPUT 2	FR WASHER ON	FR WASHER OFF	DIAGNOSIS 2 OK	DIAGNOSIS 2 NG	—	—	V/INT 3 ON	V/INT 3 OFF	—	—
COMB SW OUTPUT 3	FR WIPER LOW ON	FR WIPER LOW OFF	FR WIPER INT ON	FR WIPER INT OFF	DIAGNOSIS 3 OK	DIAGNOSIS 3 NG	AUTO LIGHT ON	AUTO LIGHT OFF	—	—
COMB SW OUTPUT 4	TURN LH ON	TURN LH OFF	PASSING ON	PASSING OFF	HEAD LAMP 2 ON	HEAD LAMP 2 OFF	DIAGNOSIS 4 OK	DIAGNOSIS 4 NG	FR FOG ON	FR FOG OFF
COMB SW OUTPUT 5	TURN RH ON	TURN RH OFF	HEAD LAMP ON	HEAD LAMP OFF	HI BEAM ON	HI BEAM OFF	LIGHTING SWITCH 1ST POSITION ON	LIGHTING SWITCH 1ST POSITION OFF	DIAGNOSIS 5 OK	DIAGNOSIS 5 NG

SKIA2101E

NOTE:
Dual switches are set for head lamps.

4. Example (When fog lamp switch is turned ON)
   - When fog lamp switch is turned ON, contact in combination switch turns ON. At this time if OUTPUT 4 transistor is activated, BCM detects current flow in INPUT 5.
   - When OUTPUT 4 transistor is ON, BCM detects current flow in INPUT 5, and judges fog lamp switch is ON. Then BCM sends fog lamp ON signal to IPDM E/R using CAN communication.
   - When OUTPUT 4 transistor is activated again, BCM detects current flow in INPUT 5, and confirms fog lamp switch is continuously ON.



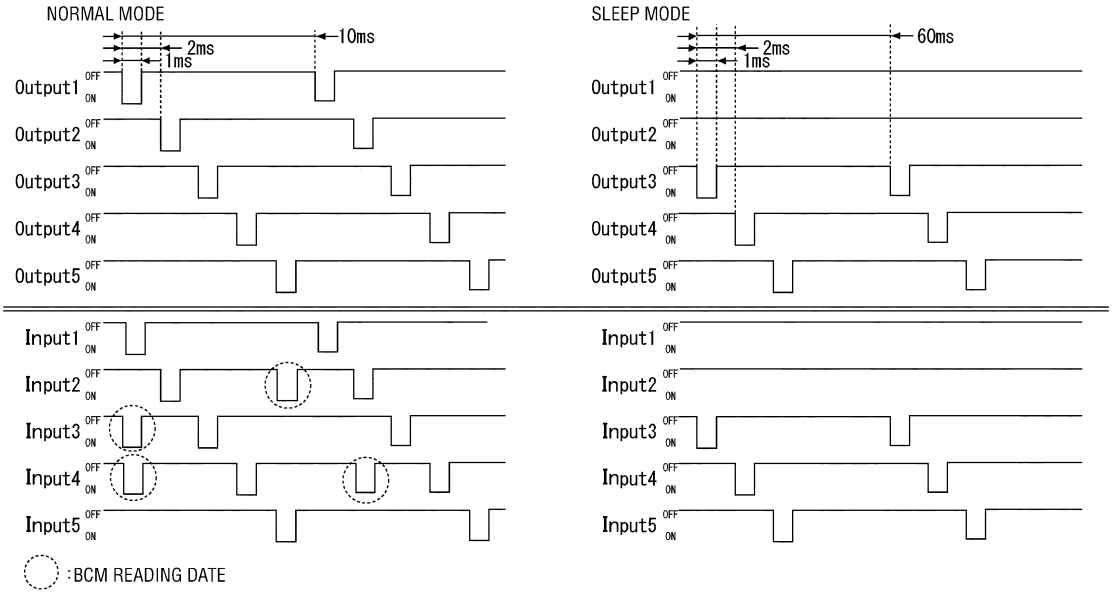
SKIA2102E

NOTE:
Each OUTPUT terminal transistor is activated at 10 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 10 ms intervals.

b. Sleep mode
   - When BCM is in sleep mode, transistors of OUTPUT 1 and 2 stop the output, and BCM enters low-current-consumption mode. OUTPUTS (3 - 5) turn ON-OFF at 60 ms intervals, and receive lighting switch input only.



SKIA3097E

CAN COMMUNICATION CONTROL

CAN communication is capable of dealing with a lot of information through the two communication lines (CAN L-line, CAN H-line) connecting control units in the system. Also each control unit functions to transmit and receive data, and reads necessary information only.

BCM STATUS CONTROL

BCM changes its status depending on the operation status in order to save power consumption.

1. CAN communication status
   - With ignition switch ON, CAN communicates with other control units normally.
   - Control by BCM is being operated properly.
   - When ignition switch is OFF, switching to sleep mode is possible.
   - Even when ignition switch is OFF, if CAN communication with IPDM E/R and combination meter is active, CAN communication status is active.
2. Sleep status
   - This is the status to stop CAN communication when ignition switch is turned OFF.
   - It transmits sleep request signal to IPDM E/R and combination meter.
   - Two seconds after CAN communication with another control unit stops, it switches to CAN communication inactive status.
3. CAN communication inactive status
   - With ignition switch OFF, CAN communication is not active.
   - With ignition switch OFF, control performed only by BCM is active.
   - Two seconds after CAN communication with another control unit stops, it switches to CAN communication inactive status.

4. Sleep status
   - BCM is activated with low-current-consumption mode.
   - CAN communication is not active.
   - When CAN communication operation is detected, it switches to CAN communication status.
   - When control performed only by BCM is required by switch, it shifts to CAN communication inactive mode.
   - It changes combination switch reading function.

SYSTEMS CONTROLLED BY BCM DIRECTLY

- Power door lock system. Refer to BL-19, "POWER DOOR LOCK SYSTEM" .
- Remote keyless entry system. Refer to.BL-49, "REMOTE KEYLESS ENTRY SYSTEM" .
- Power window system. Refer to GW-16, "POWER WINDOW SYSTEM" . NOTE
- Sunroof system. Refer to RF-10, "SUNROOF" . NOTE
- Room lamp timer. Refer to LT-166, "INTERIOR ROOM LAMP" .
- Key reminder
- Warning chime
- Turn signal and hazard warning lamps

NOTE:
Power supply only. No system control.

SYSTEMS CONTROLLED BY BCM AND IPDM E/R

- Panic alarm
- Theft warning system
- IVIS (NATS)
- Headlamp, tail lamp, fog lamp, auto light system. Battery saver control
- Wiper
- Front washer
- Rear window defogger

MAJOR COMPONENTS AND CONTROL SYSTEM

System	Input	Output
Remote keyless entry system	key fob	All-door locking actuator Trunk lid opener actuator
Power door lock system	● Power window main switch (door lock and unlock switch) ● Power window sub switch (passenger side) (door lock and unlock switch)	All-door locking actuator
Power supply (IGN) to power window, sunroof	Ignition power supply	Power supply to power window and sun-roof system
Power supply (BAT) to power window, sunroof and power seat	Battery power supply	Power supply to power window, sunroof system and power seat
Panic alarm	Key switch Remote controller	IPDM E/R
Theft warning system	All-door locking actuator Trunk lid opener actuator	IPDM E/R
Auto light system	Optical sensor Combination switch	IPDM E/R
Battery saver control	Ignition switch Combination switch	IPDM E/R
Headlamp	Combination switch	IPDM E/R
Tail lamp	Combination switch	IPDM E/R
Fog lamp	Combination switch	IPDM E/R

System	Input	Output
Turn signal lamp	Combination switch	Turn signal lamp Combination meter
Hazard lamp	Hazard switch	Turn signal lamp Combination meter
Room lamp timer	Key switch Power window main switch (door lock and unlock switch) Front door switch driver side All-door switch	Interior room lamp
Key warning chime	Key switch Front door switch driver side	Combination meter (warning buzzer)
Light warning chime	Combination switch Key detection switch Front door switch driver side	Combination meter (warning buzzer)
Seat belt warning chime	Combination meter (Seat belt buckle (driver side) switch)	Combination meter (warning buzzer)
Vehicle-speed-sensing intermittent wiper	Combination switch Combination meter	IPDM E/R
Front washer	Combination switch	Front washer motor IPDM E/R
Rear window defogger	Rear window defogger switch	IPDM E/R
Air conditioner switch signal	Display and A/C auto amplifier	ECM
Blower fan switch signal	Display and A/C auto amplifier	ECM

CAN Communication Unit

AKS008YG

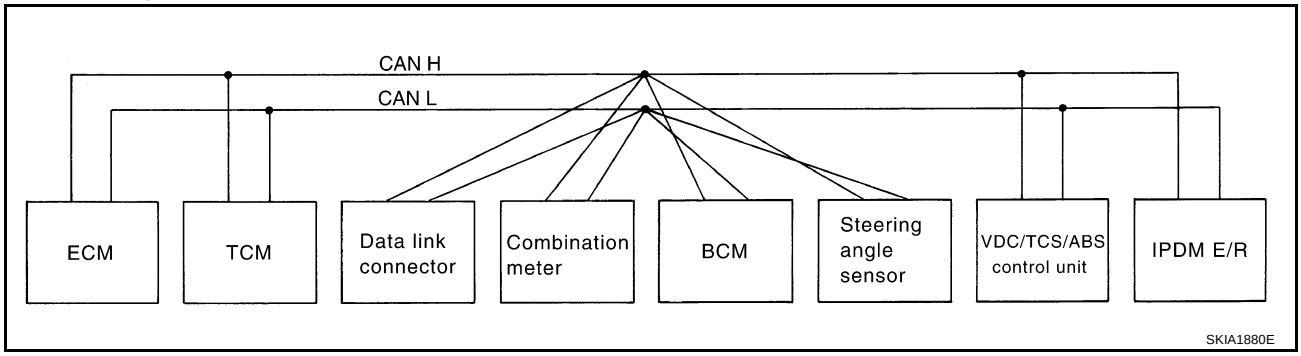
Body type	Sedan	
Axle	2WD	
Engine	VQ35DE	
Transmission	A/T	M/T
	UP to serial 329287* / From serial 329288*	
Brake control	VDC	
CAN communication unit		
ECM	×	×
TCM	×	
Data link connector	×	×
Combination meter	×	×
BCM	×	×
Steering angle sensor	×	×
VDC/TCS/ABS control unit	×	×
IPDM E/R	×	×
CAN communication type	BCS-8, "TYPE 1/TYPE 3"	BCS-10, "TYPE 2"

×: Applicable

*:For further information, refer to GI-47, "IDENTIFICATION NUMBER" .

TYPE 1/TYPE 3

System Diagram



Input/Output Signal Chart

T: Transmit R: Receive

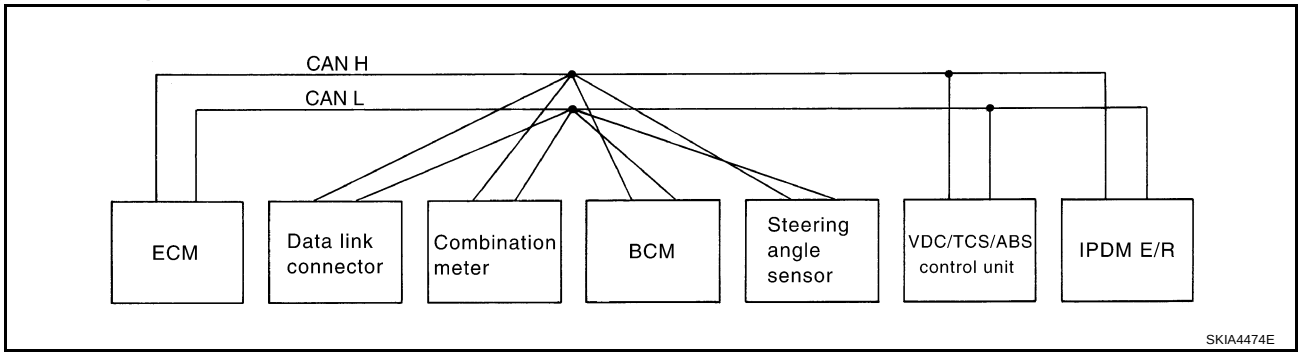
Signals	ECM	TCM	Combination meter	BCM	Steering angle sensor	VDC/TCS/ABS control unit	IPDM E/R
Engine torque signal	T	R					
Engine speed signal	T	R	R			R	
Engine coolant temperature signal	T	R	R				
Accelerator pedal position signal	T	R				R	
Closed throttle position signal	T	R					
Wide open throttle position signal	T	R					
Battery voltage signal	T	R					
Stop lamp switch signal		R	T				
Fuel consumption monitor signal	T		R				
A/T self-diagnosis signal	R	T					
A/T CHECK indicator lamp signal		T	R				
A/T position indicator signal		T	R			R	
ABS operation signal		R				T	
A/T shift schedule change demand signal		R				T	
A/C switch signal	R			T			
A/C compressor request signal	T						R
A/C compressor feedback signal	T		R				
Blower fan motor switch signal	R			T			
Cooling fan motor operation signal	T						R
Position lights request signal			R	T			R
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
Front fog lights request signal				T			R
Vehicle speed signal			R			T	
	R	R	T	R			
Sleep request 1 signal			R	T			
Sleep request 2 signal				T			R
Wake up request 1 signal			R	T			R

Signals	ECM	TCM	Combination meter	BCM	Steering angle sensor	VDC/TCS/ABS control unit	IPDM E/R
Wake up request 2 signal			R	T			R
Door switch signal (without navigation system)			R	T			R
Door switch signal (with navigation system)			T	R			
Turn indicator signal			R	T			
Seat belt buckle switch signal			T	R			
Oil pressure switch signal			R				T
Buzzer output signal			R	T			
ASCD SET lamp signal	T		R				
ASCD CRUISE lamp signal	T		R				
ASCD OD cancel request signal	T	R					
ASCD operation signal	T	R					
Output shaft revolution signal	R	T					
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
Manual mode signal		R	T				
Not manual mode signal		R	T				
Manual mode shift up signal		R	T				
Manual mode shift down signal		R	T				
Manual mode indicator signal		T	R				
Hood switch signal				R			T
Theft warning horn request signal				T			R
Horn chirp signal				T			R
Steering angle sensor signal					T	R	
Malfunction indicator lamp signal (Type 3 only : From serial 329288*)	T		R				
Fuel level sensor signal (Type 3 only : From serial 329288*)	R		T				
Turbine revolution signal (Type 3 only : From serial 329288*)	R	T					

* : For further information, refer to GI-47, "IDENTIFICATION NUMBER" .

TYPE 2

System Diagram



Input/Output Signal Chart

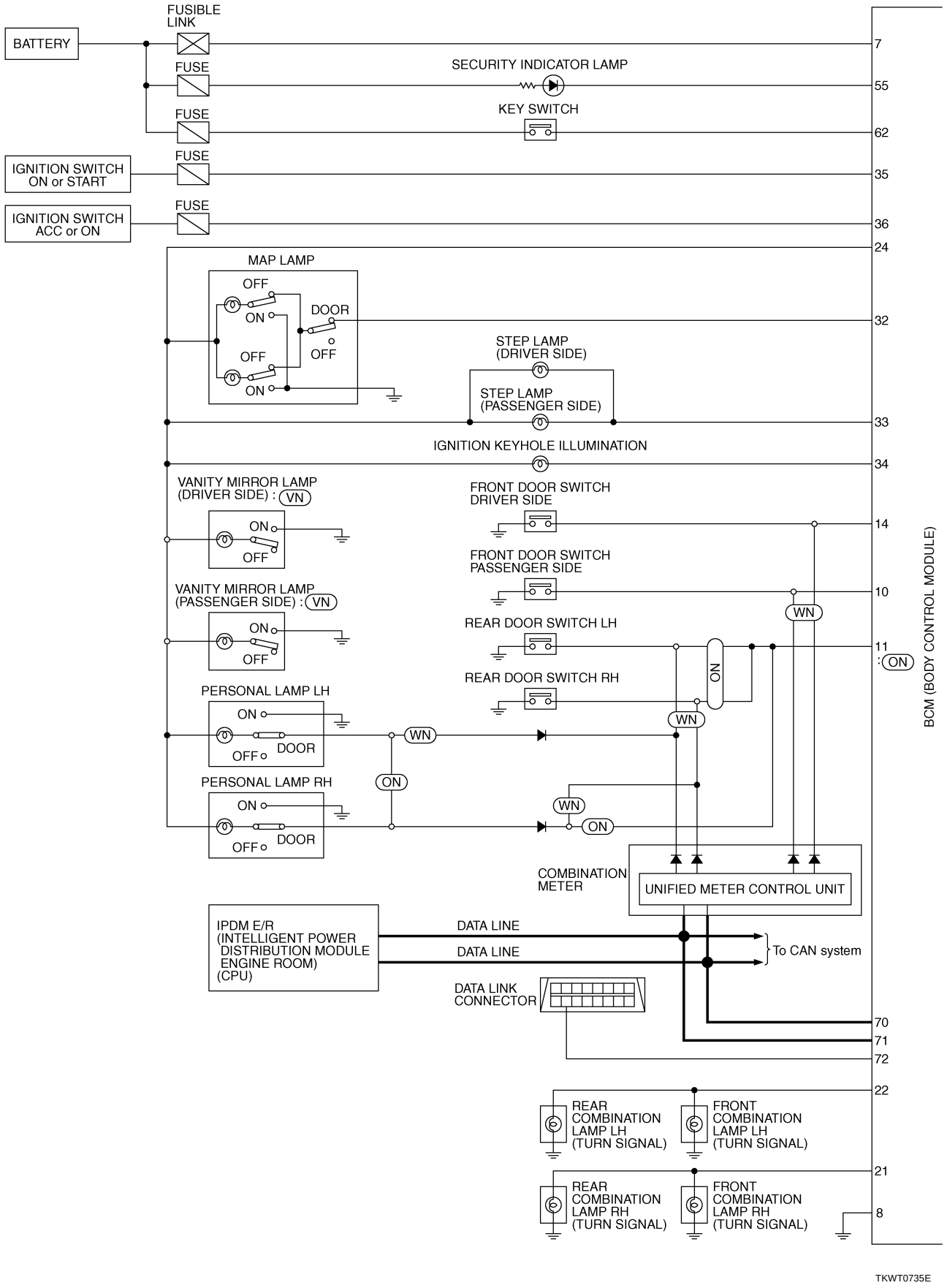
T: Transmit R: Receive

Signals	ECM	Combination meter	BCM	Steering angle sensor	VDC/TCS/ABS control unit	IPDM E/R
Engine speed signal	T	R			R	
Engine coolant temperature signal	T	R				
Accelerator pedal position signal	T				R	
Fuel consumption monitor signal	T	R				
A/C switch signal	R		T			
A/C compressor request signal	T					R
A/C compressor feedback signal	T	R				
Blower fan motor switch signal	R		T			
Cooling fan motor operation signal	T					R
Position lights request signal		R	T			R
Low beam request signal			T			R
Low beam status signal	R		R			T
High beam request signal		R	T			R
High beam status signal	R		R			T
Front fog lights request signal			T			R
Vehicle speed signal		R			T	
	R	T	R			
Sleep request 1 signal		R	T			
Sleep request 2 signal			T			R
Wake up request 1 signal		R	T			
Wake up request 2 signal		R	T			
Door switch signal (without navigation system)		R	T			R
Door switch signal (with navigation system)		T	R			
Turn indicator signal		R	T			
Seat belt buckle switch signal		T	R			
Oil pressure switch signal		R				T
Buzzer output signal		R	T			
Malfunction indicator lamp signal	T	R				
ASCD SET lamp signal	T	R				
ASCD CRUISE lamp signal	T	R				
Fuel level sensor signal	R	T				

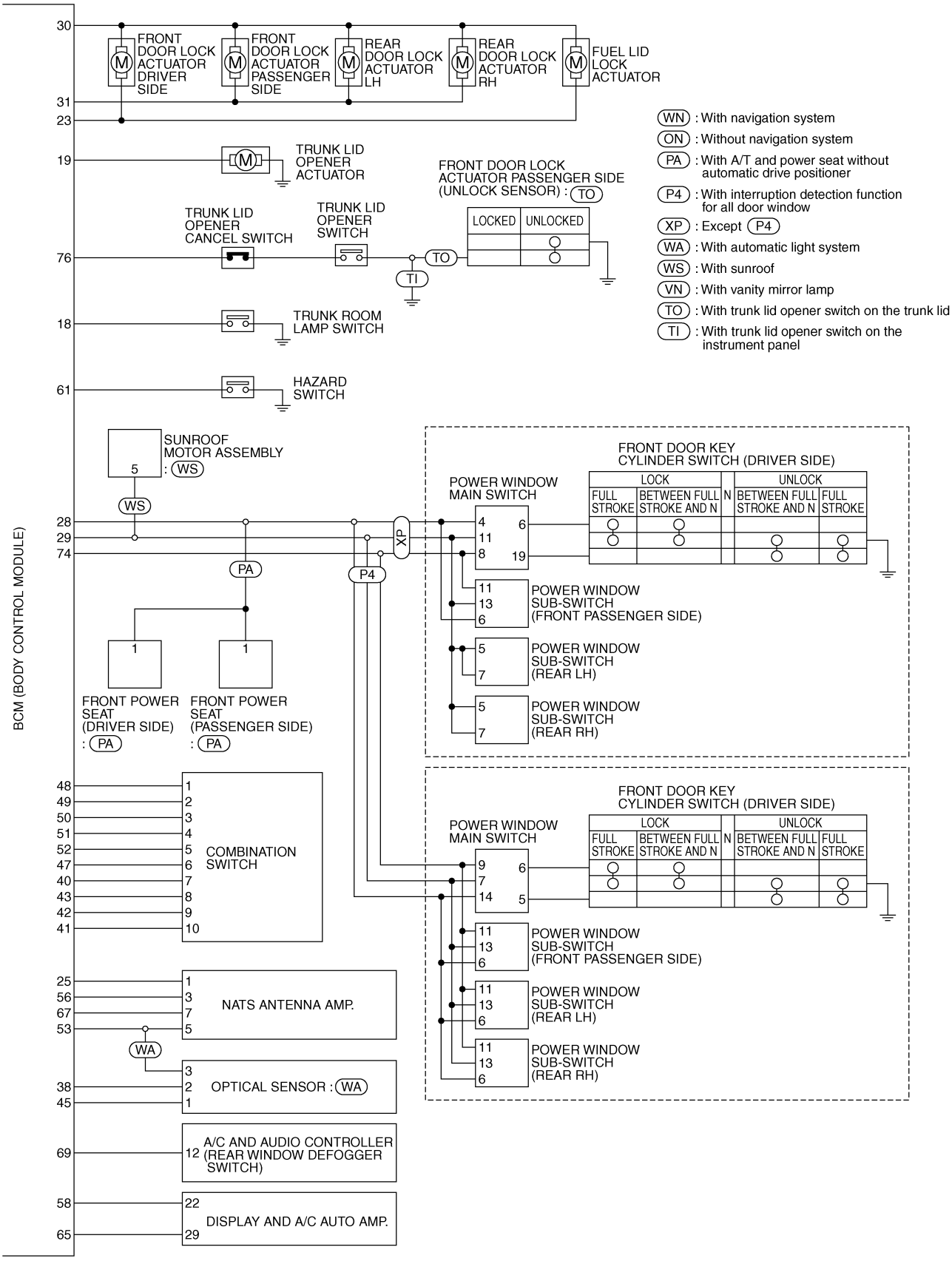
Signals	ECM	Combination meter	BCM	Steering angle sensor	VDC/TCS/ABS control unit	IPDM E/R
Front wiper request signal			T			R
Front wiper stop position signal			R			T
Rear window defogger switch signal			T			R
Rear window defogger control signal	R		R			T
Hood switch signal			R			T
Theft warning horn request signal			T			R
Horn chirp signal			T			R
Steering angle sensor signal				T	R	

Schematic

AKS000B8



TKWT0735E


BCM (BODY CONTROL MODULE)
30
31
23
FRONT DOOR LOCK ACTUATOR DRIVER SIDE
FRONT DOOR LOCK ACTUATOR PASSENGER SIDE
REAR DOOR LOCK ACTUATOR LH
REAR DOOR LOCK ACTUATOR RH
FUEL LID LOCK ACTUATOR
19
TRUNK LID OPENER ACTUATOR
FRONT DOOR LOCK ACTUATOR PASSENGER SIDE (UNLOCK SENSOR) : TO
LOCKED
UNLOCKED
TRUNK LID OPENER CANCEL SWITCH
TRUNK LID OPENER SWITCH
76
TO
TI
18
TRUNK ROOM LAMP SWITCH
61
HAZARD SWITCH
SUNROOF MOTOR ASSEMBLY : WS
5
WS
28
29
74
XP
PA
P4
FRONT DOOR KEY CYLINDER SWITCH (DRIVER SIDE)
POWER WINDOW MAIN SWITCH
LOCK
UNLOCK
FULL STROKE
BETWEEN FULL STROKE AND N
N
BETWEEN FULL STROKE AND N
FULL STROKE
4
6
11
8
19
POWER WINDOW SUB-SWITCH (FRONT PASSENGER SIDE)
11
13
6
POWER WINDOW SUB-SWITCH (REAR LH)
5
7
POWER WINDOW SUB-SWITCH (REAR RH)
1
1
FRONT POWER SEAT (DRIVER SIDE) : PA
FRONT POWER SEAT (PASSENGER SIDE) : PA
48
49
50
51
52
47
40
43
42
41
COMBINATION SWITCH
25
56
67
53
NATS ANTENNA AMP.
WA
38
45
OPTICAL SENSOR : WA
69
A/C AND AUDIO CONTROLLER (REAR WINDOW DEFOGGER SWITCH)
58
65
DISPLAY AND A/C AUTO AMP.
9
7
14
WN : With navigation system
ON : Without navigation system
PA : With A/T and power seat without automatic drive positioner
P4 : With interruption detection function for all door window
XP : Except P4
WA : With automatic light system
WS : With sunroof
VN : With vanity mirror lamp
TO : With trunk lid opener switch on the trunk lid
TI : With trunk lid opener switch on the instrument panel

TKWT0970E

CONSULT-II

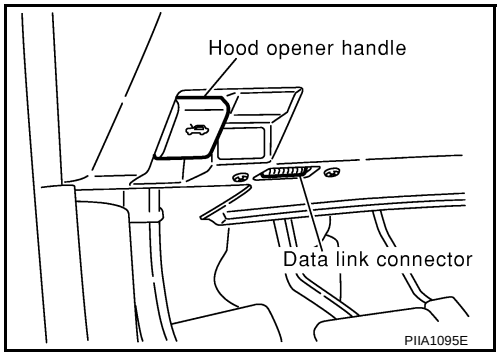
AKS000B9

CONSULT-II can display each diagnostic item using the following diagnostic test modes: work support, self-diagnostic results, data monitor and active test through data reception and command transmission via the BCM communication line.

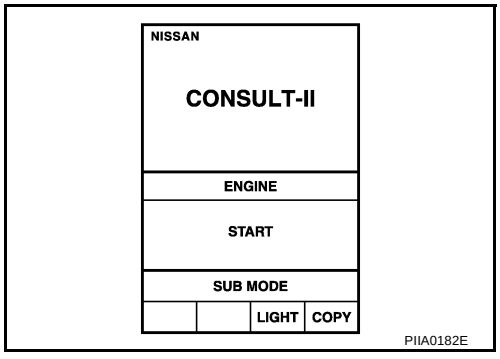
BCM diagnostic test item	Check item, diagnostic test mode	Content
Inspection by part	WORK SUPPORT	Changes setting of each function.
	SELF-DIAGNOSIS RESULTS	BCM performs self-diagnosis of CAN communication and combination switch.
	DATA MONITOR	Displays the input data of BCM in real time.
	CAN DIAG SUPPORT MNTR	The result of transmit/receive diagnostic of CAN communication can be read.
	ACTIVE TEST	Gives a drive signal to a load to check the operation.

CONSULT–II INSPECTION PROCEDURE

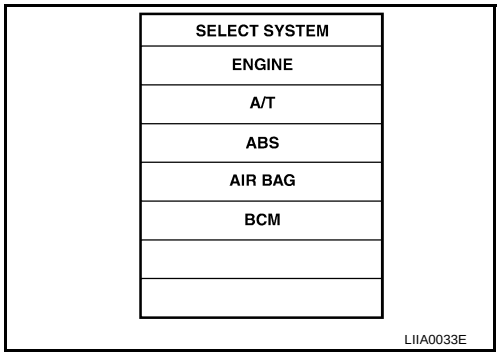
1. With ignition switch OFF, connect CONSULT-II to data link connector and turn ON ignition switch.



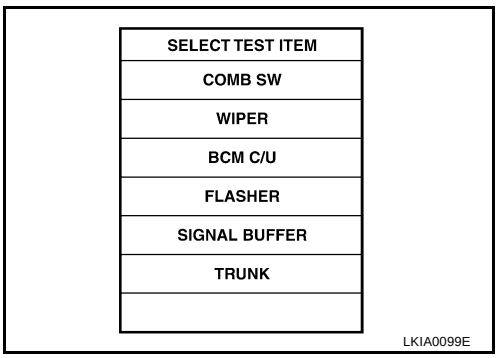
2. Touch “START”.



3. Touch “BCM” on “SELECT SYSTEM” screen.



4. Select item to be diagnosed on “SELECT TEST ITEM” screen.



ITEMS OF EACH PART

×:Applicable

System and item	CONSULT-II display	Diagnostic test mode (Inspection by part)				
		WORK SUPPORT	SELF–DIAG RESULTS	DATA MONITOR	CAN DIAG SUPPORT MNTR	ACTIVE TEST
Power door lock system	DOOR LOCK	×		×		×
Rear window defogger	REAR DEFOGGER			×		×
Key warning chime	KEY WARN ALM			×		×
Light warning chime	LIGHT WARN ALM			×		×
Seat belt warning chime	SEAT BELT ALM			×		×
Room lamp timer	INT LAMP	×		×		×
Exterior lamp battery saver Interior lamp battery saver	BATTERY SAVER	×		× NOTE 1		× NOTE 1
Vehicle security system	THEFT ALM	×		×		×
Retained power control	RETAINED PWR	×		×		×
Remote keyless entry system	MULTI REMOTE ENT	×		×		×
Headlamp	HEAD LAMP	×		×		
Combination switch	COMB SW			×		
Wiper	WIPER			×		×
BCM	BCM C/U		×	×	×	
Turn signal lamp Hazard lamp	FLASHER			×		×
IVIS	IMMU			×		×
Air conditioner switch signal Blower fan switch signal	SIGNAL BUFFER			×		
Trunk lid	TRUNK					×

NOTE:
For interior lamp battery saver only

CAN Communication Inspection Using CONSULT-II (Self-Diagnosis)

AKS000BA

1. SELF-DIAGNOSTIC RESULT CHECK

1. Connect to CONSULT-II, and select “BCM” on “SELECT SYSTEM” screen.
2. Select “BCM control unit ” on “SELECT WORK ITEM” screen, and select “SELF-DIAG RESULTS”.
3. Check display content in self-diagnostic results.

CONSULT-II display code	Diagnosis item
U1000	INTIAL DIAG
	TRANSMIT DIAG
	ECM
	IPDM E/R
	METER/M&A

Contents displayed

No malfunction>>Inspection End

Malfunction in CAN communication system>>After printing the monitor items, go to “CAN System”. Refer to LAN-4, "CAN COMMUNICATION" .

Combination Switch Inspection According to Self-Diagnostic Results

AKS000BB

1. SELF-DIAGNOSTIC RESULT CHECK

1. Connect to CONSULT–II, and select “BCM” on “SELECT SYSTEM” screen.
2. Select “BCM control unit ” on “SELECT WORK ITEM”screen, and select “SELF-DIAG RESULTS”.
3. Check display content in self-diagnostic results.

CONSULT-II display code	Self-diagnostic result content	Malfunctioning switch system	Detection conditions	Possible causes
B2049	OPEN DETECT 1	The following switch operation shown below cannot be input. ● Front wiper Hi ● Intermittent control 1 ● Intermittent control 2	BCM terminal No. 48 (Input 1) does not change. (Open circuit in diagnosis 1 system line or open malfunction in output 1 transistor.)	● Harness between BCM and combination switch ● Wiper switch ● BCM
B2050	OPEN DETECT 2	The following switch operation shown below cannot be input. ● Front washer ● Intermittent control 3	BCM terminal No. 49 (Input 2) does not change. (Open circuit in diagnosis 2 system line or open malfunction in output 2 transistor.)	● Harness between BCM and combination switch ● Wiper switch ● BCM
B2051	OPEN DETECT 3	The following switch operation shown below cannot be input. ● Front wiper Lo ● Front wiper INT ● Auto light	BCM terminal No. 50 (Input 3) does not change. (Open circuit in diagnosis 3 system line or open malfunction in output 3 transistor.)	● Harness between BCM and combination switch ● Wiper switch (Front wiper Lo, INT) ● Lighting switch (Auto light) ● BCM
B2052	OPEN DETECT 4	The following switch operation shown below cannot be input. ● TURN LH ● PASSING ● Headlamp 2 ● Front fog lamp	BCM terminal No. 51 (Input 4) does not change. (Open circuit in diagnosis 4 system line or open malfunction in output 4 transistor.)	● Harness between BCM and combination switch ● Lighting switch ● BCM
B2053	OPEN DETECT 5	The following switch operation shown below cannot be input. ● TURN RH ● Headlamp 1 ● HI BEAM ● Lighting switch 1st position	BCM terminal No. 52 (Input 5) does not change. (Open circuit in diagnosis 5 system line or open malfunction in output 5 transistor.)	● Harness between BCM and combination switch ● Lighting switch ● BCM
B2054	HEADLAMP 1 SW NG	Headlamp 1 malfunction	Headlamp 1 switch OFF Headlamp 2 switch ON	Lighting switch
B2055	HEADLAMP 2 SW NG	Headlamp 2 malfunction	Headlamp 1 switch ON Headlamp 2 switch OFF	Lighting switch

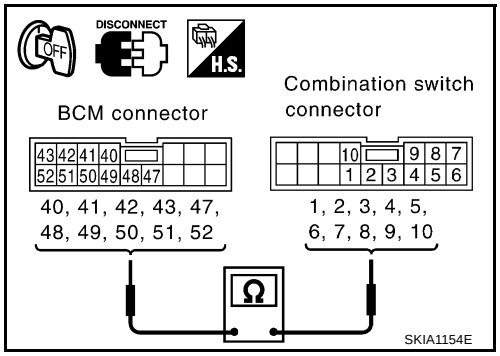
Display content

No malfunction>>Inspection End
Malfunction in diagnosis system>>GO TO 2.
Malfunction in headlamp switch system>>Replace Lighting switch.

2. HARNESS INSPECTION

1. Disconnect BCM connector and combination switch connector.
2. Check continuity between BCM harness connector of suspect system and combination switch connector terminals.

Self-diagnostic result content	Terminals				Continuity
	BCM (+)		Combination switch (–)		
	Connector	Terminal (wire color)	Connector	Terminal (wire color)	
OPEN DETECT 1	M2	Input 1 48 (W/R)	M29	1 (W/R)	Yes
		Output 1 47 (Y)		6 (Y)	
OPEN DETECT 2		Input 2 49 (W/G)		2 (W/G)	
		Output 2 40 (Y/R)		7 (Y/R)	
OPEN DETECT 3		Input 3 50 (W/L)		3 (W/L)	
		Output 3 41 (PU)		10 (PU)	
OPEN DETECT 4		Input 4 51 (G)		4 (G)	
		Output 4 42 (L)		9 (L)	
OPEN DETECT 5		Input 5 52 (G/R)		5 (G/R)	
		Output 5 43 (GY)		8 (GY)	



- Refer to LT wiring diagram LT–H/LAMP–01, LT-14 .

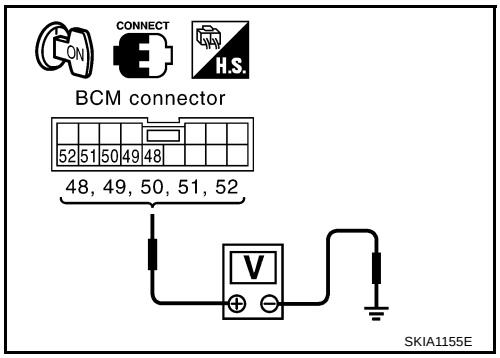
OK or NG

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

3. INSPECTION OF BCM INPUT TERMINAL VOLTAGE

Connect BCM connector, and check BCM input terminal voltage of suspect system.

Self-diagnostic result content	Terminals			Voltage
	BCM			
	Connector	Terminal (wire color)		
OPEN DETECT 1	M2	Input 1	48 (W/R)	4.5V or more
OPEN DETECT 2		Input 2	49 (W/G)	
OPEN DETECT 3		Input 3	50 (W/L)	
OPEN DETECT 4		Input 4	51 (G)	
OPEN DETECT 5		Input 5	52 (G/R)	



- Refer to LT wiring diagram LT–H/LAMP–01, LT-14 .

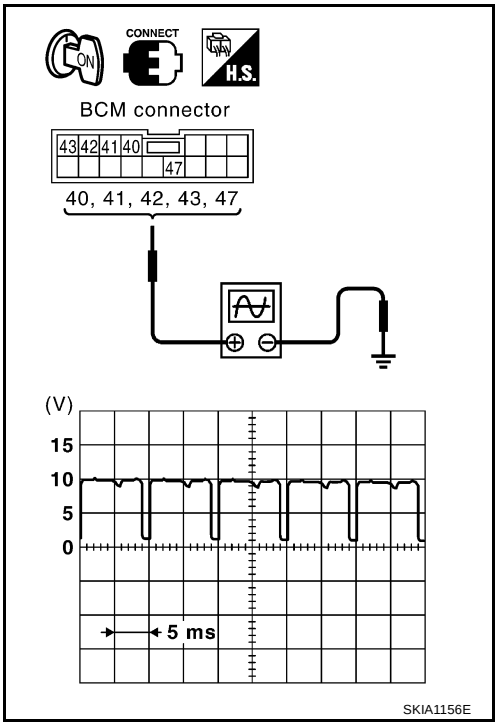
OK or NG

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

4. BCM OUTPUT TERMINAL INSPECTION

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

Self-diagnostic result content	Terminals		
	BCM		
	Connector	Terminal (wire color)	
OPEN DETECT 1	M2	Output 1	47 (Y)
OPEN DETECT 2		Output 2	40 (Y/R)
OPEN DETECT 3		Output 3	41 (PU)
OPEN DETECT 4		Output 4	42 (L)
OPEN DETECT 5		Output 5	43 (GY)



- Refer to LT wiring diagram LT–H/LAMP–01, LT-14 .

OK or NG

OK >> Combination switch malfunction, go to 5.
NG >> Replace BCM.

5. COMBINATION SWITCH INSPECTION

Following the table below, check switches by procedure of appropriate malfunctioning system.

Self-diagnostic result content	Procedure												
	1	2		3	4		5	6		7			
OPEN DETECT 1	Wiper switch replacement	Confirm self-diagnostic results again.	OK	Inspection End	—								
			NG	Confirm symptom again.									
OPEN DETECT 2	Wiper switch replacement	Confirm self-diagnostic results again.	OK	Inspection End	—								
			NG	Confirm symptom again.									
OPEN DETECT 3	Lighting switch replacement	Confirm self-diagnostic results again.	OK	Inspection End	Confirm self-diagnostic results again.	OK	Inspection End	Confirm self-diagnostic results again.	OK	Inspection End			
			NG	Wiper switch replacement		NG	Switch base replacement		NG	Confirm symptom again.			
OPEN DETECT 4	Lighting switch replacement	Confirm self-diagnostic results again.	OK	Inspection End	Confirm self-diagnostic results again.	OK	Inspection End	Confirm self-diagnostic results again.	OK	Inspection End			
			NG	Wiper switch replacement		NG	Switch base replacement		NG	Confirm symptom again.			
OPEN DETECT 5	Lighting switch replacement	Confirm self-diagnostic results again.	OK	Inspection End	Confirm self-diagnostic results again.	OK	Inspection End	Confirm self-diagnostic results again.	OK	Inspection End			
			NG	Wiper switch replacement		NG	Switch base replacement		NG	Confirm symptom again.			

>> Inspection End

Malfunctioning Operation of Lamps and Wipers

AKS000BC

1. SYMPTOM CHECK

Confirm symptom, and confirm malfunctioning system No. from the table below.

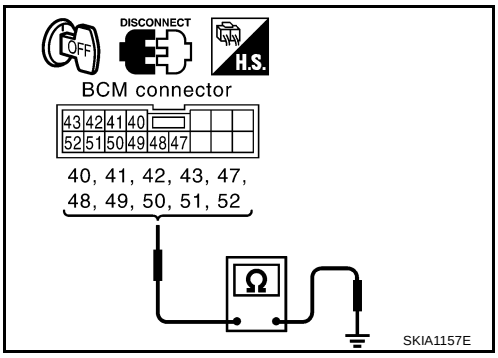
Malfunctioning system	Symptom	Possible causes
1	When the ignition switch is ON position ● LH Turn signal lamp and RH Turn signal lamp on ● Front wiper on (LO speed)	● Harness shorted between BCM input terminal No. 1 and BCM output terminal No. 1 ● BCM ● Combination switch
2	When the ignition switch is ON position ● Headlamp on (HI and LO) ● Front wiper on (HI speed) When the ignition switch is OFF position ● Headlamp on (HI and LO)	● Harness shorted between BCM input terminal No. 2 and BCM output terminal No. 2 ● BCM ● Combination switch
3	When the ignition switch is ON position ● Headlamp on (HI and LO) When the ignition switch is OFF position ● Headlamp on (HI and LO)	● Harness shorted between BCM input terminal No. 3 and BCM output terminal No. 3 ● BCM ● Combination switch
4	When the ignition switch is ON position ● Parking lamp and tail lamp on ● Headlamp on at certain degrees of brightness When the ignition switch is OFF position ● Parking lamp and tail lamp on	● Harness shorted between BCM input terminal No. 4 and BCM output terminal No. 4 ● BCM ● Combination switch
5	When the ignition switch is ON position ● Front fog lamp on When the ignition switch is OFF position ● Front fog lamp on	● Harness shorted between BCM input terminal No. 5 and BCM output terminal No. 5 ● BCM ● Combination switch

>> GO TO 2.

2. HARNESS INSPECTION

1. Disconnect BCM connector and combination switch connector.
2. Check continuity between BCM harness connector of Malfunctioning system and ground.

Malfunctioning system	Terminals			(–)	Continuity
	BCM (+)				
	Connector	Terminal (wire color)			
1	M2	Input 1	48 (W/R)	Ground	No
		Output 1	47 (Y)		
2		Input 2	49 (W/G)		
		Output 2	40 (Y/R)		
3		Input 3	50 (W/L)		
		Output 3	41 (PU)		
4		Input 4	51 (G)		
		Output 4	42 (L)		
5		Input 5	52 (G/R)		
		Output 5	43 (GY)		



- Refer to LT wiring diagram LT–H/LAMP–01, LT-14 .

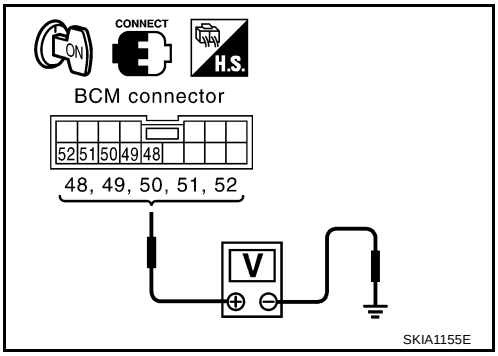
OK or NG

OK >> GO TO 3.
NG >> Check harness between BCM and combination switch for short circuit.

3. INSPECTION OF BCM INPUT TERMINAL VOLTAGE

Connect BCM connector. Check voltage between BCM input terminal of applicable malfunctioning system and ground.

Malfunctioning system	Terminals			(–)	Voltage
	BCM (+)				
	Connector	Terminal (wire color)			
1	M2	48 (W/R)		Ground	4.5V or more
2		49 (W/G)			
3		50 (W/L)			
4		51 (G)			
5		52 (G/R)			



- Refer to LT wiring diagram LT–H/LAMP–01, LT-14 .

OK or NG

OK >> Combination switch malfunction, go to 4.
NG >> Replace BCM.

4. COMBINATION SWITCH INSPECTION

Following the table below, check combination switch.

Procedure									
1	2		3	4		5	6		7
Lighting switch replacement	Confirm self-diagnostic results again.	OK	Inspection End	Confirm self-diagnostic results again.	OK	Inspection End	Confirm self-diagnostic results again.	OK	Inspection End
		NG	Wiper switch replacement		NG	Replacement of switch base		NG	Confirm symptom again.

>> Inspection End

Inspection of BCM Power Supply and Ground Circuit

AKS000BD

1. FUSE AND FUSIBLE LINK INSPECTION

Check if any of the following BCM fuses and fusible links are blown.

Terminal No.	Signal name	Fuse No., fusible link No.
7	Battery	F
35	Ignition switch ON or START	1
36	Ignition switch ACC or ON	6

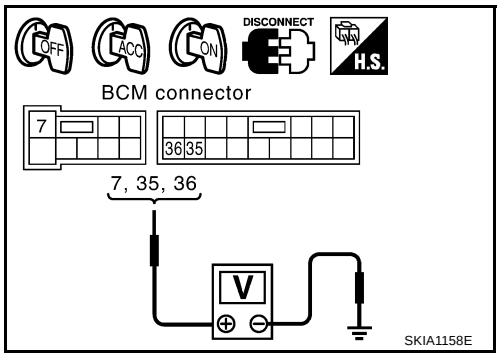
- Refer to LT wiring diagram LT–H/LAMP–01, LT-14 .

OK or NG

OK >> GO TO 2.
NG >> Replace fuse or fusible link.

2. POWER SUPPLY CIRCUIT INSPECTION

Disconnect BCM connector. To measure voltage, connect following connector terminals to positive probe and body ground to negative one.



Terminals			Power source	Ignition switch	Reference voltage (V)
(+)		(–)			
Connector	Terminal (wire color)				
E105	7(W/R)	Ground	Battery power	OFF	Approx. 12
M1	35 (W/L)		Ignition power supply	ON	Approx. 12
	36 (LG)		ACC power supply	ACC	Approx. 12

- Refer to LT wiring diagram LT–H/LAMP–01, LT-14 .

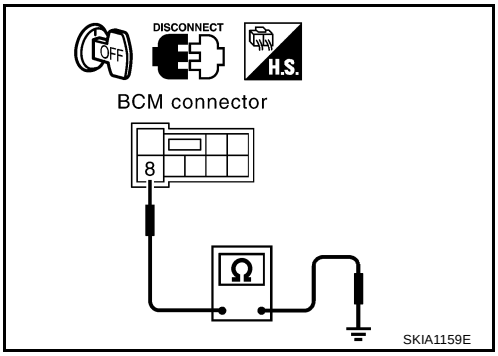
OK or NG

OK >> GO TO 3.
NG >> Replace BCM power supply circuit harness.

3. GROUND CIRCUIT INSPECTION

Check continuity between the following connector of BCM and body ground.

Terminals			Continuity
(+)		(–)	
Connector	Terminal (wire color)		
E105	8 (B)	Ground	YES



- Refer to LT wiring diagram LT–H/LAMP–01, LT-14 .

OK or NG

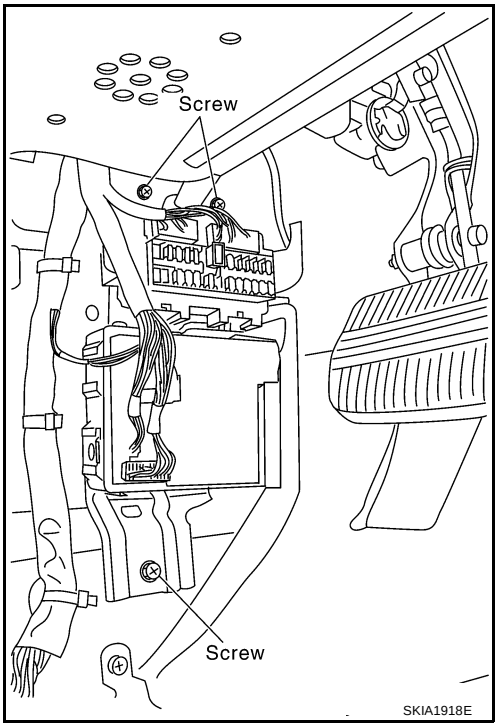
OK >> Normal
NG >> Replace BCM ground circuit harness.

Removal and Installation of BCM

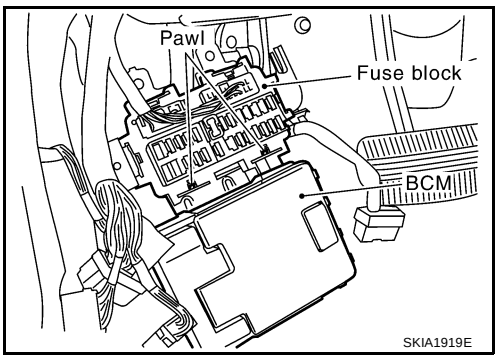
AKS000EU

REMOVAL

1. Remove the dash side finisher. Refer to EI-39, "BODY SIDE TRIM" in “EI Exterior/Interior.”
2. Disconnect BCM connector.
3. Remove bracket mounting screws (3) to remove BCM and fuse block with bracket.



4. Raise the pawl of fuse block and remove bracket from fuse block to remove BCM.



INSTALLATION

Install in the reverse order of removal.

NOTE:
When replacing BCM perform initialization of NATS system and registration of all NATS ignition key IDs.