

SECTION **BCS**

BODY CONTROL SYSTEM

CONTENTS

PRECAUTIONS	2	TEM	8
Precautions for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER"	2	CAN Communication System Description	9
BCM (BODY CONTROL MODULE)	3	CAN Communication Unit	9
System Description	3	TYPE 1/TYPE2	10
BCM FUNCTION	3	TYPE 3	13
COMBINATION SWITCH READING FUNCTION	3	TYPE 4/TYPE5	16
CAN COMMUNICATION CONTROL	5	TYPE 6	19
BCM STATUS CONTROL	6	Schematic	23
SYSTEMS CONTROLLED BY BCM DIRECTLY	7	CONSULT-II	25
SYSTEMS CONTROLLED BY BCM AND IPDM E/R	7	CONSULT-II INSPECTION PROCEDURE	25
SYSTEMS CONTROLLED BY BCM AND COMBINATION METER	7	ITEMS OF EACH PART	26
SYSTEMS CONTROLLED BY BCM AND INTELLIGENT KEY UNIT	7	WORK SUPPORT	27
MAJOR COMPONENTS AND CONTROL SYSTEM	8	CAN Communication Inspection Using CONSULT-II (Self-Diagnosis)	27
		Removal and Installation of BCM	28
		REMOVAL	28
		INSTALLATION	28

A
B
C
D
E
F
G
H
I
J
L
M

BCS

PRECAUTIONS

PRECAUTIONS

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

AKS007KR

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

BCM (BODY CONTROL MODULE)

System Description

AKS00587

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

BCM FUNCTION

BCM has combination switch reading function for reading the operation of combination switches (light, wiper washer, turn signal) in addition to a function for controlling the operation of various electrical components. Also it has an interface function allowing it to receive signals from the unified meter and A/C amp., and send signals to ECM using CAN communication.

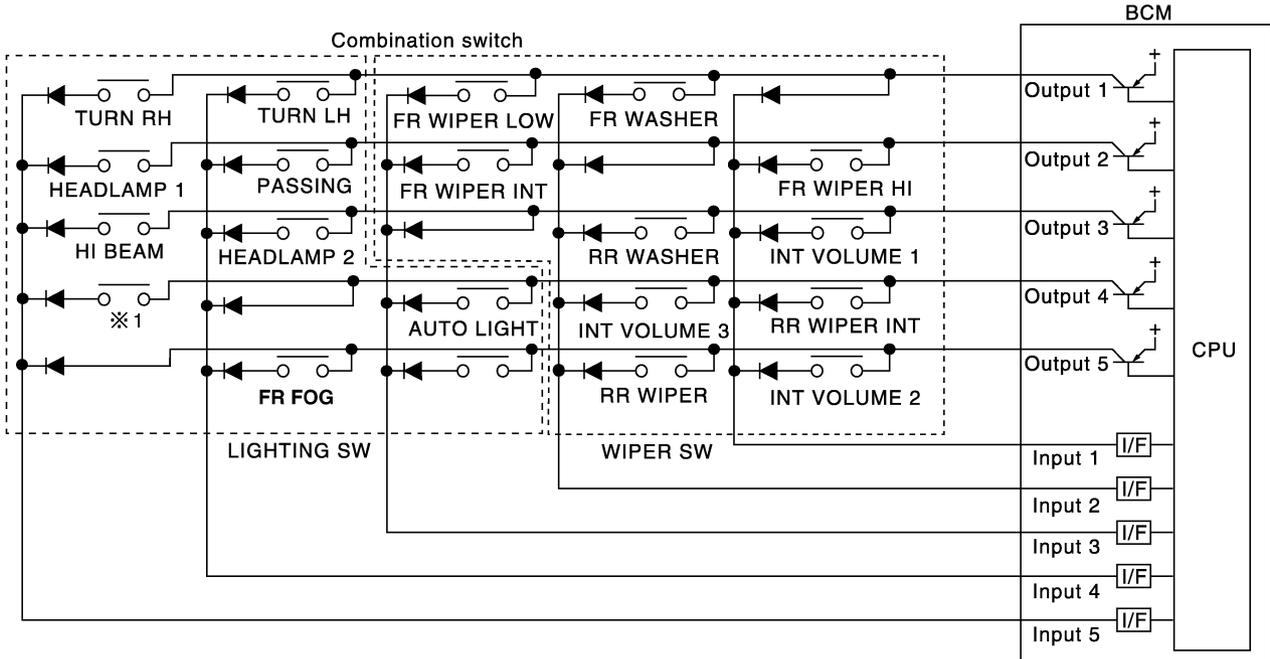
COMBINATION SWITCH READING FUNCTION

1. Description

- BCM reads combination switch (light, wiper) status, and controls related systems such as head lamps and wipers, according to the results.
- BCM reads information of a maximum of 20 switches by combining five output terminals (OUTPUT 1-5) and five input terminals (INPUT 1-5).

2. Operation description

- BCM activates transistors of output terminals (OUTPUT 1-5) periodically and, allows current to flow in turn.
- If any (1 or more) switches are turned ON, circuit of output terminals (OUTPUT 1-5) and input terminals (INPUT 1-5) becomes active.
- At this time, transistors of output terminals (OUTPUT 1-5) are activated to allow current to flow. When voltage of input terminals (INPUT 1-5) corresponding to that switch changes, interface in BCM detects voltage change, and BCM determines that switch is ON.



※1 : LIGHTING SWITCH 1ST POSITION

SKIA4958E

3. BCM - Operation table of combination switches

A
B
C
D
E
F
G
H
I
J
L
M

BCS

BCM (BODY CONTROL MODULE)

- BCM reads operation status of combination switch using combinations shown in table below.

	COMB SW OUTPUT 1		COMB SW OUTPUT 2		COMB SW OUTPUT 3		COMB SW OUTPUT 4		COMB SW OUTPUT 5	
	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF
COMB SW INPUT 1	—	—	FR WIPER HI ON	FR WIPER HI OFF	INT VOLUME 1 ON	INT VOLUME 1 OFF	RR WIPER INT ON	RR WIPER INT OFF	INT VOLUME 2 ON	INT VOLUME 2 OFF
COMB SW INPUT 2	FR WASHER ON	FR WASHER OFF	—	—	RR WASHER ON	RR WASHER OFF	INT VOLUME 3 ON	INT VOLUME 3 OFF	RR WIPER ON	RR WIPER OFF
COMB SW INPUT 3	FR WIPER LOW ON	FR WIPER LOW OFF	FR WIPER INT ON	FR WIPER INT OFF	—	—	AUTO LIGHT ON	AUTO LIGHT OFF	—	—
COMB SW INPUT 4	TURN LH ON	TURN LH OFF	PASSING ON	PASSING OFF	HEAD-LAMP 2 ON	HEAD-LAMP 2 OFF	—	—	FR FOG ON	FR FOG OFF
COMB SW INPUT 5	TURN RH ON	TURN RH OFF	HEAD-LAMP 1 ON	HEAD-LAMP 1 OFF	HI BEAM ON	HI BEAM OFF	LIGHTING SW (1st) ON	LIGHTING SW (1st) OFF	—	—

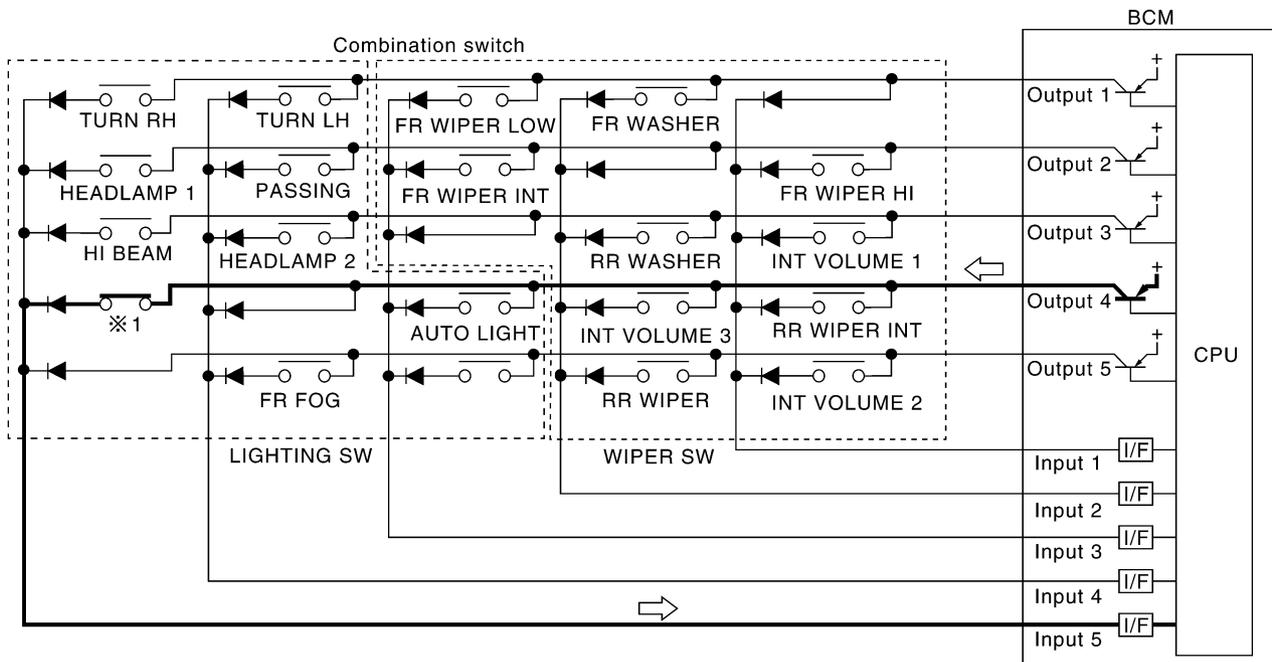
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NOTE:

Headlamp has a dual system switch.

4. Sample operation: (When lighting switch 1st position turned ON)

- When lighting switch 1st position is turned ON, contact in combination switch turns ON. At this time if OUTPUT 4 transistor is activated, BCM detects that voltage changes in INPUT 5.
- When OUTPUT 4 transistor is ON, BCM detects that voltage changes in INPUT 5, and judges that lighting switch 1st position is ON. Then BCM sends tail lamp ON signal to IPDM E/R using CAN communication.
- When OUTPUT 4 transistor is activated again, BCM detects that voltage changes in INPUT 5, and recognizes that lighting switch 1st position is continuously ON.



※ 1 : LIGHTING SWITCH 1ST POSITION

SKIA4960E

BCM (BODY CONTROL MODULE)

NOTE:

Each OUTPUT terminal transistor is activated at 10 ms intervals. Therefore after switch is turned ON, electrical loads are activated with time delay. But this time delay is so short that it cannot be detected by human senses.

5. Operation mode

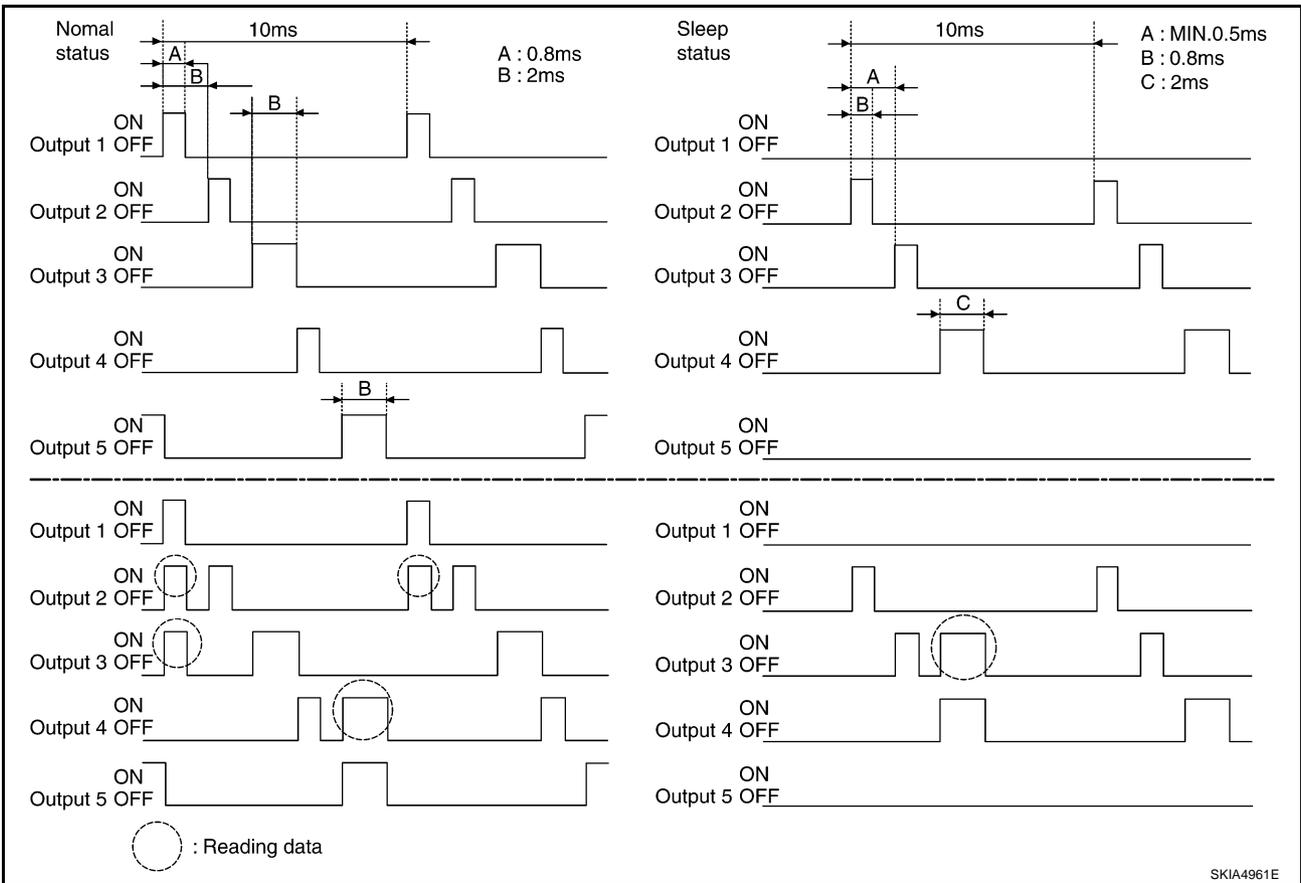
- Combination switch reading function has operation modes shown below.

a. Normal status

- When BCM is not in sleep status, OUTPUT terminals (1-5) each turn ON-OFF every 10 ms.

b. Sleep status

- When BCM is in sleep status, transistors of OUTPUT 1 and 5 stop the output, and BCM enters low current consumption mode. OUTPUT (2, 3, and 4) turn ON-OFF every 10 ms, and only input from light switch system is accepted.



CAN COMMUNICATION CONTROL

CAN communication allows a high rate of information transmission through the two communication lines (CAN L line, CAN H line) connecting the various control units in the system. Each control unit transmits/receives data but selectively reads required data only. For details of signals that are transmitted/received by BCM via CAN communication, refer to [BCS-9, "CAN Communication Unit"](#).

BCM (BODY CONTROL MODULE)

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 transient status
 - This status shuts down 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 of all control units stops, CAN communication switches to 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.
 - Three seconds after CAN communication of all control units stops, CAN communication switches to 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 a state of the following switches changes, it switches to CAN communication state.
 - Key switch
 - Hazard switch
 - Door lock/unlock switch
 - Front door switch (driver side, passenger side)
 - Rear door switch (LH, RH)
 - Back door opener switch
 - Combination switch (passing, lighting switch 1st position, Front fog lamp)
 - Key fob (lock/unlock signal)
 - Key cylinder switch
 - When control performed only by BCM is required by switch, it shifts to CAN communication inactive mode.
 - Status of combination switch reading function is changed.

BCM (BODY CONTROL MODULE)

SYSTEMS CONTROLLED BY BCM DIRECTLY

System	Reference
Power door lock	BL-20. "POWER DOOR LOCK SYSTEM"
Remote keyless entry	BL-67. "REMOTE KEYLESS ENTRY SYSTEM"
Power window ^{NOTE}	GW-15. "POWER WINDOW SYSTEM"
Sunroof ^{NOTE}	RF-10. "SUNROOF"
Room lamp timer	LT-239. "INTERIOR ROOM LAMP"
Warning chime	DI-72. "WARNING CHIME"
Rear wiper	WW-50. "REAR WIPER AND WASHER SYSTEM"

NOTE:

Power supply only. No system control.

SYSTEMS CONTROLLED BY BCM AND IPDM E/R

System	Reference
Panic alarm	BL-67. "REMOTE KEYLESS ENTRY SYSTEM"
Theft warning	BL-216. "VEHICLE SECURITY (THEFT WARNING) SYSTEM"
IVIS (NATS)	BL-253. "IVIS (INFINITI VEHICLE IMMOBILIZER SYSTEM-NATS)"
Headlamp, tail lamp, auto light system, Battery saver control	<ul style="list-style-type: none"> • LT-7. "HEADLAMP - XENON TYPE -" • LT-51. "DAYTIME LIGHT SYSTEM"
Fog lamp	LT-119. "FRONT FOG LAMP"
Front wiper	WW-4. "FRONT WIPER AND WASHER SYSTEM"
Rear window defogger	GW-98. "REAR WINDOW DEFOGGER"

SYSTEMS CONTROLLED BY BCM AND COMBINATION METER

System	Reference
Warning chime	DI-72. "WARNING CHIME"
Turn signal and hazard warning lamps	LT-145. "TURN SIGNAL AND HAZARD WARNING LAMPS"

SYSTEMS CONTROLLED BY BCM AND INTELLIGENT KEY UNIT

System	Reference
Intelligent Key	BL-110. "INTELLIGENT KEY SYSTEM"

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B
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D
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F
G
H
I
J
L
M

BCS

BCM (BODY CONTROL MODULE)

MAJOR COMPONENTS AND CONTROL SYSTEM

System	Input	Output
Remote control entry system	key fob	<ul style="list-style-type: none"> ● All-door locking actuator ● Turn signal lamp (LH, RH)
Power door lock system	<ul style="list-style-type: none"> ● 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 window and sunroof system
Power supply (BAT) to power window, sunroof and power seat	Battery power supply	Power window, sunroof system and power seat
Panic alarm	<ul style="list-style-type: none"> ● Key switch ● Key fob 	IPDM E/R
Theft warning system	<ul style="list-style-type: none"> ● All-door switch ● Hood switch ● Key fob ● Power window main switch (door lock and unlock switch) 	<ul style="list-style-type: none"> ● IPDM E/R ● Security indicator lamp
Auto light system	<ul style="list-style-type: none"> ● Optical sensor ● Combination switch 	IPDM E/R
Battery saver control	<ul style="list-style-type: none"> ● 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
Turn signal lamp	Combination switch	<ul style="list-style-type: none"> ● Turn signal lamp ● Combination meter
Hazard lamp	Hazard switch	<ul style="list-style-type: none"> ● Turn signal lamp ● Combination meter
Room lamp timer	<ul style="list-style-type: none"> ● Key switch ● key fob ● Power window main switch (door lock and unlock switch) ● Front door switch driver side ● All-door switch 	Interior room lamp
Key warning chime	<ul style="list-style-type: none"> ● Key switch ● Front door switch driver side 	Combination meter (warning buzzer)
Light warning chime	<ul style="list-style-type: none"> ● Combination switch ● Front door switch driver side 	Combination meter (warning buzzer)
Seat belt warning chime	<ul style="list-style-type: none"> ● Combination meter (Seat belt buckle (driver side) switch) ● Ignition switch 	Combination meter (warning buzzer)
Vehicle-speed-sensing intermittent wiper	<ul style="list-style-type: none"> ● Combination switch ● Combination meter 	IPDM E/R
Rear intermittent wiper	Combination switch	Rear wiper motor
Rear window defogger	<ul style="list-style-type: none"> ● Rear window defogger switch ● Ignition switch 	IPDM E/R
A/C switch signal	Unified meter and A/C amp.	ECM
Blower fan switch signal	Unified meter and A/C amp.	ECM

BCM (BODY CONTROL MODULE)

CAN Communication System Description

AKS00588

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. Modern vehicles are equipped with many electronic control units 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.

CAN Communication Unit

AKS00589

Body type	Wagon					
Axle	2WD			AWD		
Engine	VQ35DE			VQ35DE/VK45DE		
Transmission	A/T					
Brake control	VDC					
Navigation system			×			×
Low tire pressure warning system			×			×
ICC system			×			×
Intelligent Key system			×			×
Automatic drive positioner		×	×		×	×
CAN communication unit						
ECM	×	×	×	×	×	×
TCM	×	×	×	×	×	×
Display unit	×	×		×	×	
Display control unit			×			×
Low tire pressure warning control unit			×			×
AWD control unit				×	×	×
ICC unit			×			×
Intelligent Key unit			×			×
Data link connector	×	×	×	×	×	×
BCM	×	×	×	×	×	×
Steering angle sensor	×	×	×	×	×	×
Unified meter and A/C amp.	×	×	×	×	×	×
ICC sensor			×			×
ABS actuator and electric unit (control unit)	×	×	×	×	×	×
Driver seat control unit		×	×		×	×
IPDM E/R	×	×	×	×	×	×
CAN communication type	<u>BCS-10, "TYPE 1/ TYPE2"</u>		<u>BCS-13, "TYPE 3"</u>	<u>BCS-16, "TYPE 4/ TYPE5"</u>		<u>BCS-19, "TYPE 6"</u>

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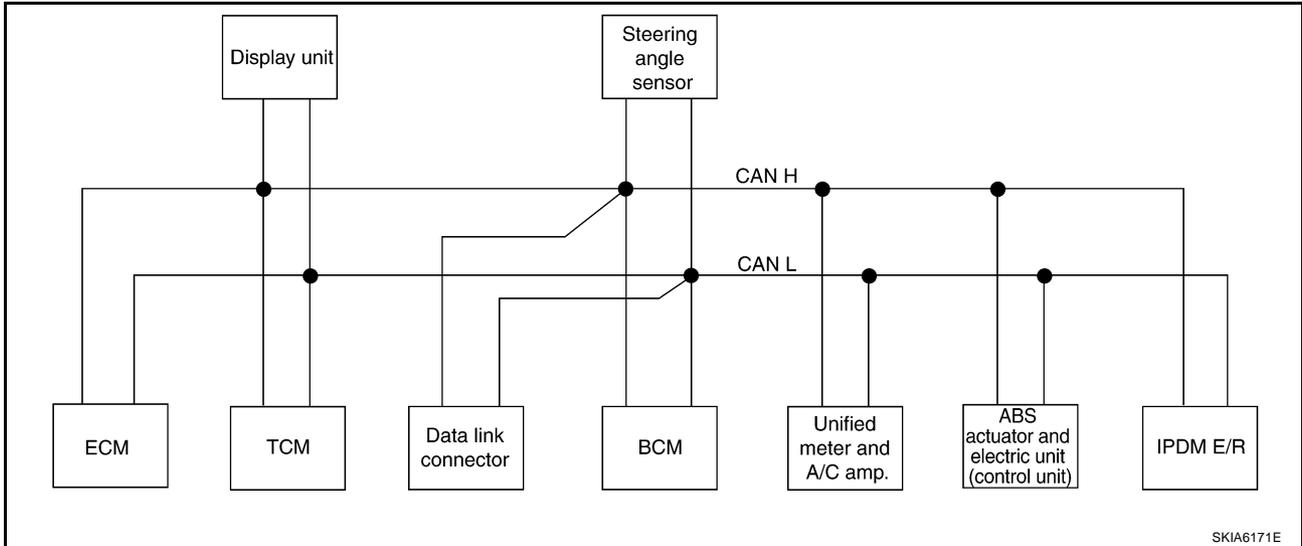
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BCM (BODY CONTROL MODULE)

TYPE 1/TYPE2

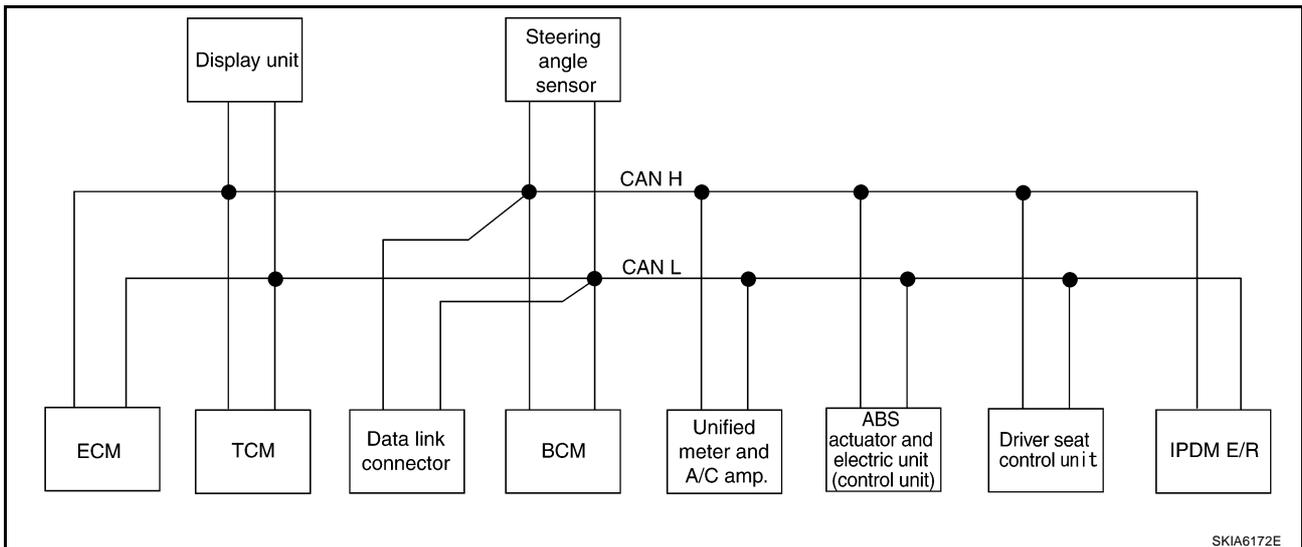
System Diagram

- Type1



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- Type2



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Input/output Signal Chart

T: Transmit R: Receive

Signals	ECM	TCM	Display unit	BCM	Steering angle sensor	Unified meter and A/C amp.	ABS actuator and electric unit (control unit)	Driver seat control unit	IPDM E/R
Engine speed signal	T	R	R			R	R		
Engine status signal	T			R					
Engine coolant temperature signal	T	R				R			
A/T self-diagnosis signal	R	T							
Accelerator pedal position signal	T	R					R		
Closed throttle position signal	T	R							
Wide open throttle position signal	T	R							

BCM (BODY CONTROL MODULE)

Signals	ECM	TCM	Dis- play unit	BCM	Steer- ing angle sensor	Unified meter and A/ C amp.	ABS actua- tor and electric unit (con- trol unit)	Driver seat control unit	IPDM E/R
Battery voltage signal	T	R							
Key switch signal				T				R	
Ignition switch signal				T				R	R
P range signal		T					R	R	
Stop lamp switch signal		R				T			
ABS operation signal	R						T		
TCS operation signal	R						T		
VDC operation signal	R						T		
Fuel consumption monitor signal	T		R			R			
Input shaft revolution signal	R	T							
Output shaft revolution signal	R	T							
A/C switch signal	R			T					
A/C compressor request signal	T								R
A/C relay status signal	R								T
A/C compressor feedback signal	T					R			
Blower fan motor switch signal	R			T					
A/C control signal			T			R			
			R			T			
Cooling fan speed request signal	T								R
Cooling fan speed signal	R								T
Position light request signal			R	T		R			R
Low beam request signal				T					R
Low beam status signal	R								T
High beam request signal				T		R			R
High beam status signal	R								T
Front fog light request signal				T					R
Day time running light request signal				T		R			
Turn LED burnout status signal				R		T			
Vehicle speed signal						R	T		
	R	R	R	R		T		R	
Sleep wake up signal				T		R		R	R
Door switch signal			R	T		R		R	R
Turn indicator signal				T		R			
Key fob ID signal				T				R	
Key fob door unlock signal				T				R	
Oil pressure switch signal				R					T
				T		R			
Buzzer output signal				T		R			
Fuel level sensor signal	R					T			
Fuel level low warning signal			R			T			

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BCM (BODY CONTROL MODULE)

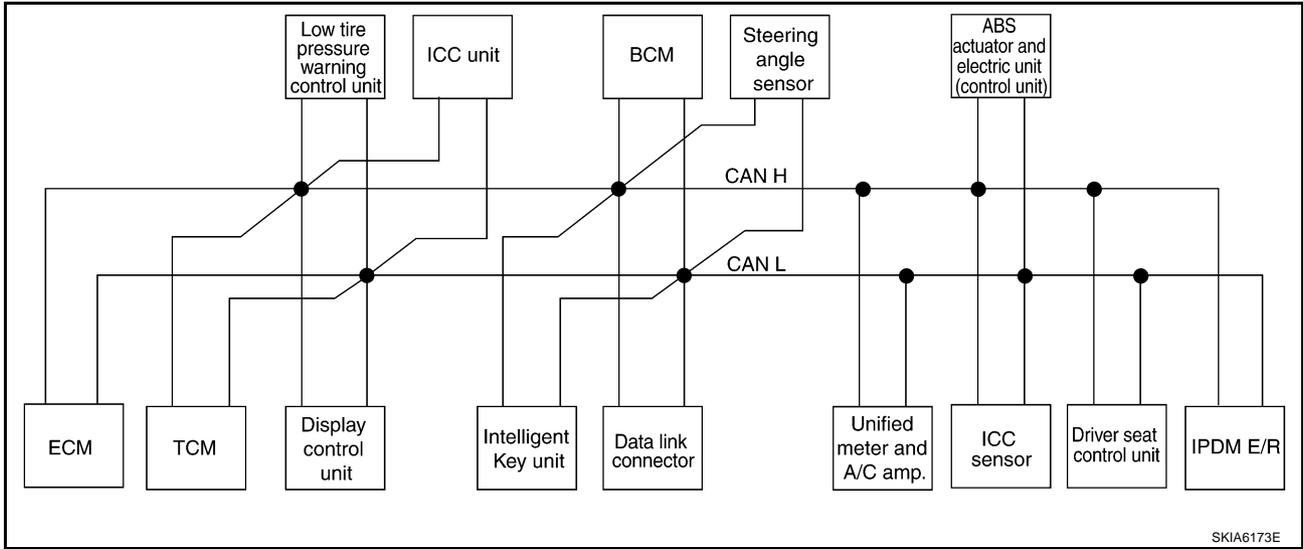
Signals	ECM	TCM	Display unit	BCM	Steering angle sensor	Unified meter and A/C amp.	ABS actuator and electric unit (control unit)	Driver seat control unit	IPDM E/R
ASCD operation signal	T	R							
ASCD OD cancel request	T	R							
Front wiper request signal				T					R
Front wiper stop position signal				R					T
Rear window defogger switch signal				T					R
Rear window defogger control signal	R		R	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		
ABS warning lamp signal						R	T		
VDC OFF indicator lamp signal						R	T		
SLIP indicator lamp signal						R	T		
Brake warning lamp signal						R	T		
System setting signal			T	R				R	
A/T CHECK indicator lamp signal		T				R			
A/T position indicator lamp signal		T				R			
A/T shift schedule change demand 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			
Distance to empty signal			R			T			
Hand brake switch				R		T			

BCM (BODY CONTROL MODULE)

TYPE 3

System Diagram

- Type3



Input/output Signal Chart

T: Transmit R: Receive

Signals	ECM	TCM	Display control unit	Low tire pressure warning control unit	ICC unit	Intelligent Key unit	BCM	Steering angle sensor	Unified meter and A/C amp.	ICC sensor	ABS actuator and electric unit (control unit)	Driver seat control unit	IPDM E/R
Engine speed signal	T	R	R		R				R		R		
Engine status signal	T						R						
Engine coolant temperature signal	T	R			R				R				
A/T self-diagnosis signal	R	T											
Accelerator pedal position signal	T	R			R						R		
Closed throttle position signal	T	R			R								
Wide open throttle position signal	T	R											
Battery voltage signal	T	R											
Key switch signal							T					R	
Ignition switch signal							T					R	R
P range signal		T			R						R	R	
Stop lamp switch signal		R							T				
ABS operation signal	R				R						T		
TCS operation signal	R				R						T		
VDC operation signal	R				R						T		
Fuel consumption monitor signal	T		R						R				

BCM (BODY CONTROL MODULE)

Signals	ECM	TCM	Display control unit	Low tire pressure warning control unit	ICC unit	Intelligent Key unit	BCM	Steering angle sensor	Unified meter and A/C amp.	ICC sensor	ABS actuator and electric unit (control unit)	Driver seat control unit	IPDM E/R
Input shaft revolution signal	R	T			R								
Output shaft revolution signal	R	T			R								
A/C switch signal	R						T						
A/C compressor request signal	T												R
A/C relay status signal	R												T
A/C compressor feedback signal	T								R				
Blower fan motor switch signal	R						T						
A/C control signal			T						R				
			R						T				
Cooling fan speed signal	R												T
Position light request signal	R						T		R				R
Low beam request signal							T						R
Low beam status signal	R												T
High beam request signal							T		R				R
High beam status signal	R												T
Front fog light request signal							T						R
Day time running light request signal							T		R				
Turn LED burnout status signal							R		T				
Vehicle speed signal					R				R		T		
	R	R	R	R		R	R		T	R		R	
Sleep wake up signal							T		R			R	R
						T	R						
Door switch signal			R			R	T		R			R	R
Turn indicator signal							T		R				
Key fob ID signal							T					R	
Key fob door unlock signal							T					R	
Oil pressure switch signal							R						T
							T		R				
Buzzer output signal							T		R				
						T			R				
					T				R				

BCM (BODY CONTROL MODULE)

Signals	ECM	TCM	Display control unit	Low tire pressure warning control unit	ICC unit	Intelligent Key unit	BCM	Steering angle sensor	Unified meter and A/C amp.	ICC sensor	ABS actuator and electric unit (control unit)	Driver seat control unit	IPDM E/R
Fuel level sensor signal	R								T				
Fuel level low warning signal			R						T				
ICC operation signal	R				T								
Front wiper request signal					R		T						R
Front wiper stop position signal							R						T
Rear window defogger switch signal							T						R
Rear window defogger control signal	R		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		
Tire pressure signal				T					R				
Tire pressure data signal			R	T									
ABS warning lamp signal					R				R		T		
VDC OFF indicator lamp signal					R				R		T		
SLIP indicator lamp signal									R		T		
Brake warning lamp signal									R		T		
System setting signal			T			R						R	
Distance to empty signal			R						T				
Hand brake switch signal							R		T				
Door lock/unlock request signal						T	R						
Door lock/unlock status signal						R	T						
Starter permission signal						T	R						
Back door open request signal						T	R						
Power window open request signal						T	R						
Alarm request signal						T	R						
Key warning signal						T			R				
ICC sensor signal					R					T			
ICC warning lamp signal					T				R				

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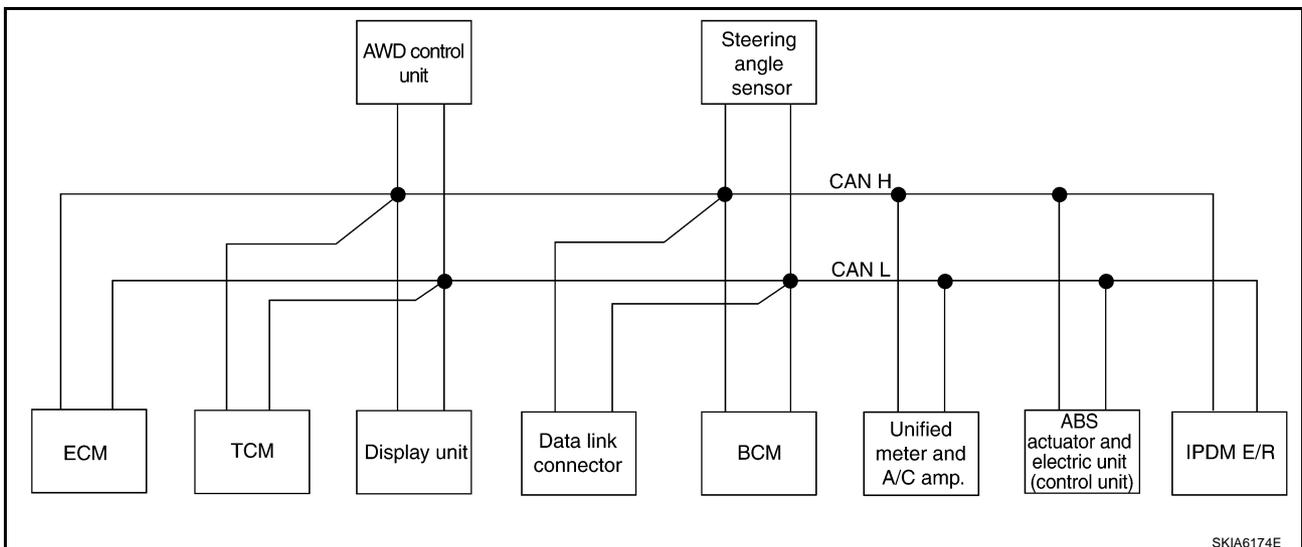
BCM (BODY CONTROL MODULE)

Signals	ECM	TCM	Display control unit	Low tire pressure warning control unit	ICC unit	Intelligent Key unit	BCM	Steering angle sensor	Unified meter and A/C amp.	ICC sensor	ABS actuator and electric unit (control unit)	Driver seat control unit	IPDM E/R
ICC system display signal					T				R				
Current gear position signal		T			R						R		
Steering switch signal	T				R								
ASCD operation signal	T	R											
ASCD OD cancel request	T	R											
ICC OD cancel request	R	R			T								
A/T CHECK indicator lamp signal		T							R				
A/T position indicator lamp signal		T							R				
A/T shift schedule change demand 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				R				
Ignition knob switch signal						T	R						

TYPE 4/TYP5

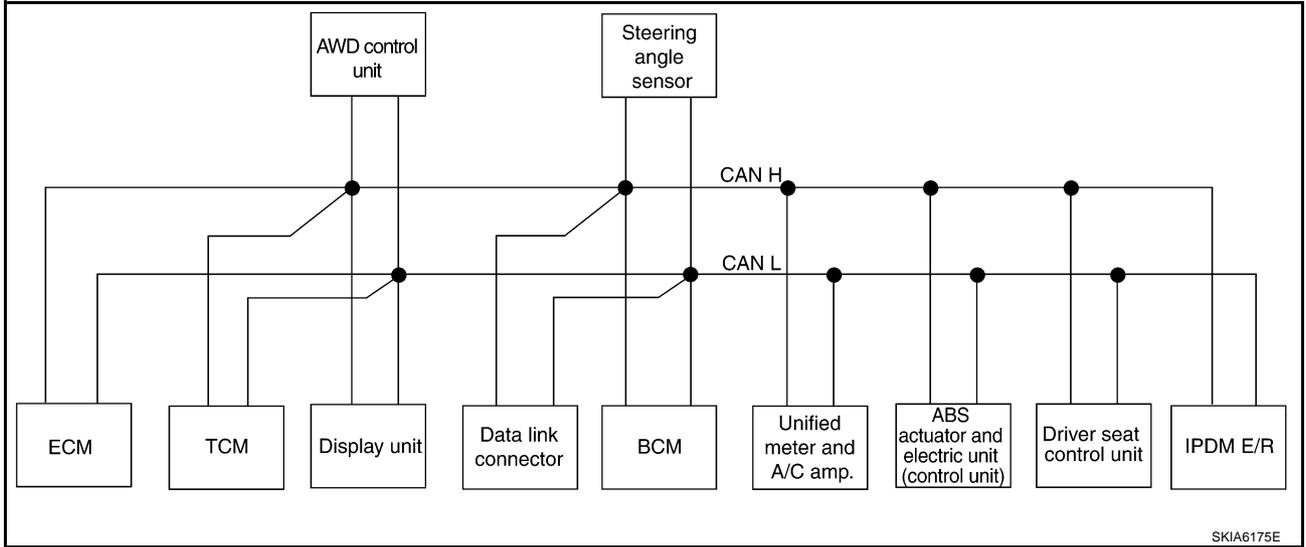
System Diagram

- Type4



BCM (BODY CONTROL MODULE)

● Type5



SKIA6175E

Input/output Signal Chart

T: Transmit R: Receive

Signals	ECM	TCM	Display unit	AWD control unit	BCM	Steering angle sensor	Unified meter and A/C amp.	ABS actuator and electric unit (control unit)	Driver seat control unit	IPDM E/R
A/T self-diagnosis signal	R	T								
ABS operation signal	R			R				T		
TCS operation signal	R							T		
VDC operation signal	R			R				T		
Stop lamp switch signal		R		R			T			
Battery voltage signal	T	R								
Key switch signal					T				R	
Ignition switch signal					T				R	R
P range signal		T						R	R	
Closed throttle position signal	T	R								
Wide open throttle position signal	T	R								
Engine speed signal	T	R	R	R			R	R		
Engine status signal	T				R					
Engine coolant temperature signal	T	R					R			
Accelerator pedal position signal	T	R		R				R		
Fuel consumption monitor signal	T		R				R			
Input shaft revolution signal	R	T								
Output shaft revolution signal	R	T								
A/C switch signal	R				T					
A/C compressor request signal	T									R
A/C relay status signal	R									T
A/C compressor feedback signal	T						R			

BCM (BODY CONTROL MODULE)

Signals	ECM	TCM	Display unit	AWD control unit	BCM	Steering angle sensor	Unified meter and A/C amp.	ABS actuator and electric unit (control unit)	Driver seat control unit	IPDM E/R
Blower fan motor switch signal	R				T					
A/C control signal			T				R			
			R				T			
Cooling fan speed signal	R									T
Position light request signal			R		T		R			R
Low beam request signal					T					R
Low beam status signal	R									T
High beam request signal					T		R			R
High beam status signal	R									T
Front fog light request signal					T					R
Day time running light request signal					T		R			
Turn LED burnout status signal					R		T			
Vehicle speed signal							R	T		
	R	R	R		R		T		R	
Sleep wake up signal					T		R		R	R
Door switch signal			R		T		R		R	R
Turn indicator signal					T		R			
Key fob ID signal					T				R	
Key fob door unlock signal					T				R	
Oil pressure switch signal					R					T
					T		R			
Buzzer output signal					T		R			
Fuel level sensor signal	R						T			
Fuel level low warning 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		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		
ABS warning lamp signal							R	T		
VDC OFF indicator lamp signal							R	T		
SLIP indicator lamp signal							R	T		
Brake warning lamp signal							R	T		
System setting signal			T		R				R	
AWD warning lamp signal				T			R			

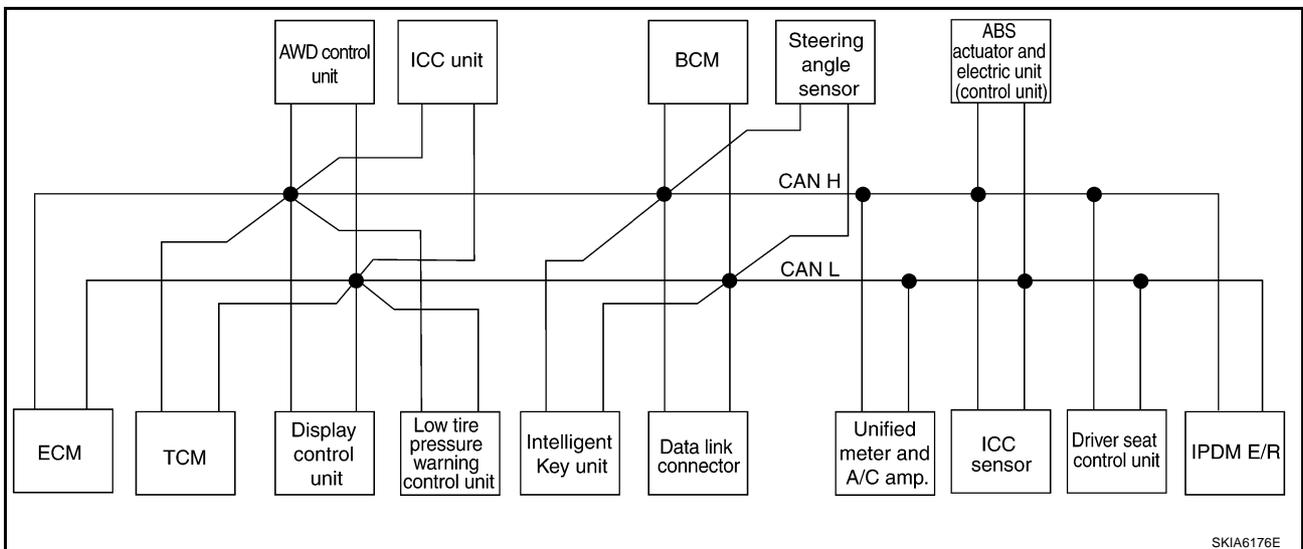
BCM (BODY CONTROL MODULE)

Signals	ECM	TCM	Display unit	AWD control unit	BCM	Steering angle sensor	Unified meter and A/C amp.	ABS actuator and electric unit (control unit)	Driver seat control unit	IPDM E/R
AWD lock indicator lamp signal				T			R			
Distance to empty signal			R				T			
Hand brake switch signal				R	R		T			
ASCD operation signal	T	R								
ASCD OD cancel request	T	R								
A/T CHECK indicator lamp signal		T					R			
A/T position indicator lamp signal		T					R			
A/T shift schedule change demand 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			

TYPE 6

System Diagram

- Type6



BCS

BCM (BODY CONTROL MODULE)

Input/output Signal Chart

T: Transmit R: Receive

Signals	ECM	TCM	Display control unit	Low tire pressure warning control unit	AWD control unit	ICC unit	Intelligent Key unit	BCM	Steering angle sensor	Unified meter and A/C amp.	ICC sensor	ABS actuator and electric unit (control unit)	Driver seat control unit	IPD M E/R
A/T self-diagnosis signal	R	T												
ABS operation signal	R				R	R						T		
TCS operation signal	R					R						T		
VDC operation signal	R				R	R					R	T		
Stop lamp switch signal		R			R					T				
Battery voltage signal	T	R												
Key switch signal								T					R	
Ignition switch signal								T					R	R
P range signal		T				R						R	R	
Closed throttle position signal	T	R				R								
Wide open throttle position signal	T	R												
Engine speed signal	T	R	R		R	R				R		R		
Engine status signal	T							R						
Engine coolant temperature signal	T	R				R				R				
Accelerator pedal position signal	T	R			R	R						R		
Fuel consumption monitor signal	T		R							R				
A/T self-diagnosis signal	R	T												
Input shaft revolution signal	R	T				R								
Output shaft revolution signal	R	T				R								
A/C switch signal	R							T						
A/C compressor request signal	T													R
A/C relay status signal	R													T
A/C compressor feedback signal	T									R				
Blower fan motor switch signal	R							T						
A/C control signal			T							R				
			R							T				
Cooling fan speed signal	R													T
Position light request signal			R					T		R				R
Low beam request signal								T						R
Low beam status signal	R													T
High beam request signal								T		R				R

BCM (BODY CONTROL MODULE)

Signals	ECM	TCM	Display control unit	Low tire pressure warning control unit	AWD control unit	ICC unit	Intelligent Key unit	BCM	Steering angle sensor	Unified meter and A/C amp.	ICC sensor	ABS actuator and electric unit (control unit)	Driver seat control unit	IPD M E/ R
High beam status signal	R													T
Front fog light request signal								T						R
Day time running light request signal								T		R				
Turn LED burnout status signal								R		T				
Vehicle speed signal						R				R		T		
	R	R	R	R			R	R		T	R		R	
Sleep wake up signal								T		R			R	R
							T	R						
Door switch signal			R				R	T		R			R	R
Key fob ID signal								T					R	
Key fob door unlock signal								T					R	
Oil pressure switch signal								R						T
								T		R				
Buzzer output signal								T		R				
						T				R				
Fuel level sensor signal	R									T				
Fuel level low warning signal			R							T				
ICC operation signal	R					T								
Front wiper request signal						R		T						R
Front wiper stop position signal								R						T
Rear window defogger switch signal								T						R
Rear window defogger control signal	R		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		
Tire pressure signal				T						R				
Tire pressure data signal			R	T										
ABS warning lamp signal						R				R		T		
VDC OFF indicator lamp signal						R				R		T		
SLIP indicator lamp signal										R		T		

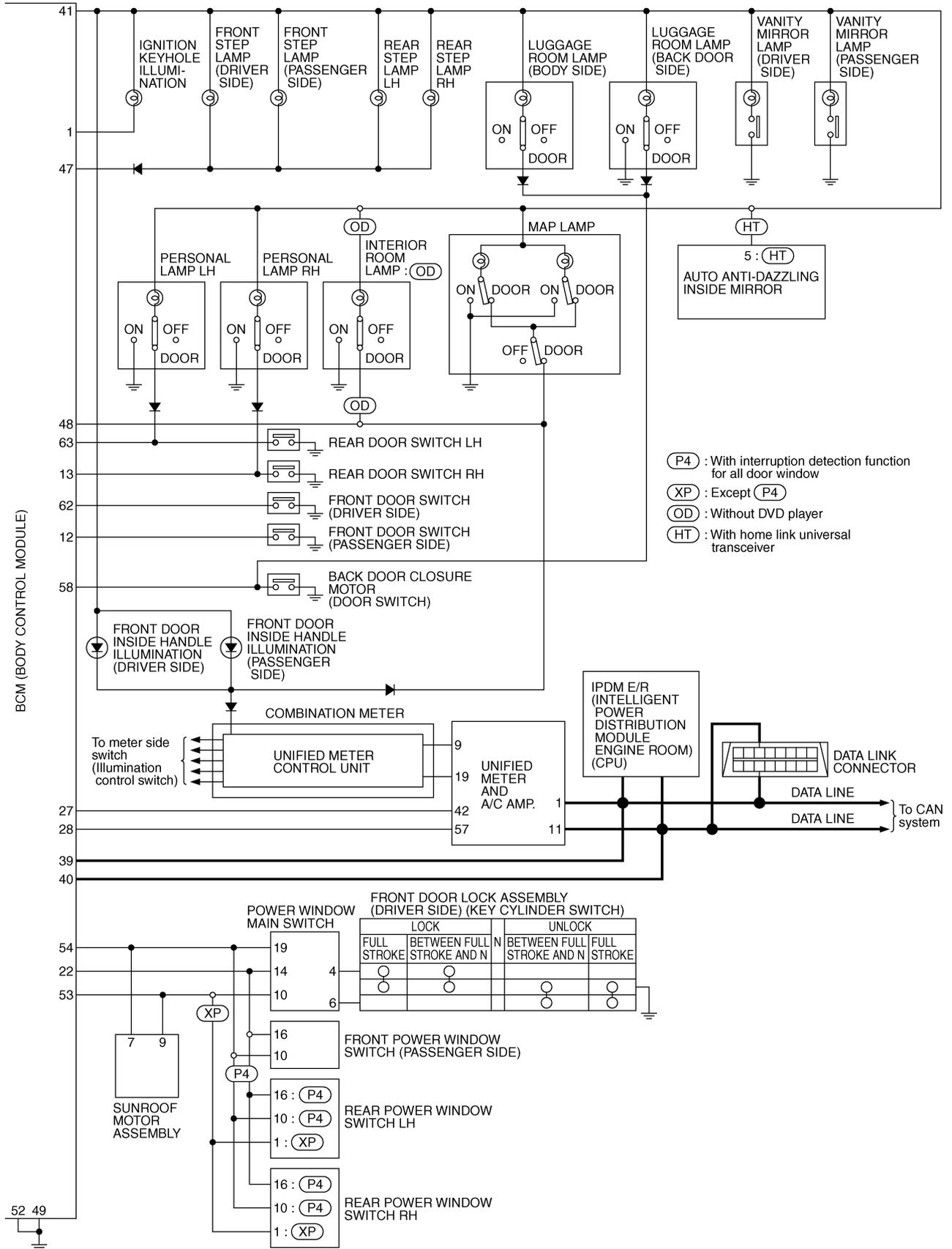
A
B
C
D
E
F
G
H
I
J
L
M

BCS

BCM (BODY CONTROL MODULE)

Signals	ECM	TCM	Display control unit	Low tire pressure warning control unit	AWD control unit	ICC unit	Intelligent Key unit	BCM	Steering angle sensor	Unified meter and A/C amp.	ICC sensor	ABS actuator and electric unit (control unit)	Driver seat control unit	IPD M E/R
Brake warning lamp signal										R		T		
System setting signal			T				R						R	
AWD warning lamp signal					T					R				
AWD lock indicator lamp signal					T					R				
Distance to empty signal			R							T				
Hand brake switch signal					R			R		T				
Door lock/unlock request signal							T	R						
Door lock/unlock status signal							R	T						
Starter permission signal							T	R						
Back door open request signal							T	R						
Power window open request signal							T	R						
Alarm request signal							T	R						
Key warning signal							T			R				
ICC sensor signal						R					T			
ICC warning lamp signal						T				R				
ICC system display signal						T				R				
Current gear position signal		T				R						R		
Steering switch signal	T					R								
ASCD operation signal	T	R												
ASCD OD cancel request	T	R												
ICC OD cancel request	R	R				T								
A/T CHECK indicator lamp signal		T								R				
A/T position indicator lamp signal		T								R				
A/T shift schedule change demand 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				
Ignition knob switch signal							T	R						

BCM (BODY CONTROL MODULE)



TKWM0841E

BCM (BODY CONTROL MODULE)

CONSULT-II

AKS0058B

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 CAN communication line.

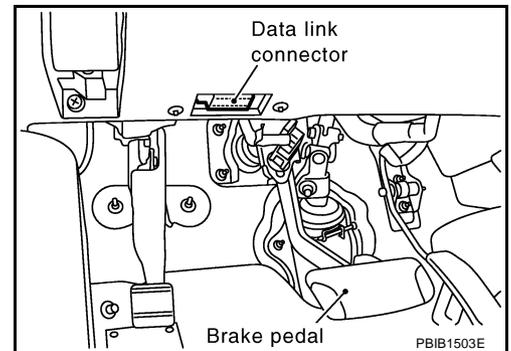
BCM diagnostic test item	Check item, diagnostic test mode	Content
Inspection by part	WORK SUPPORT	Changes setting of each function.
	SELF-DIAGNOSIS RESULTS	BCM performs self-diagnosis of CAN communication.
	DATA MONITOR	Displays the input data of BCM in real time.
	CAN DIAG SPPORT MNTR	The result of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

CONSULT-II INSPECTION PROCEDURE

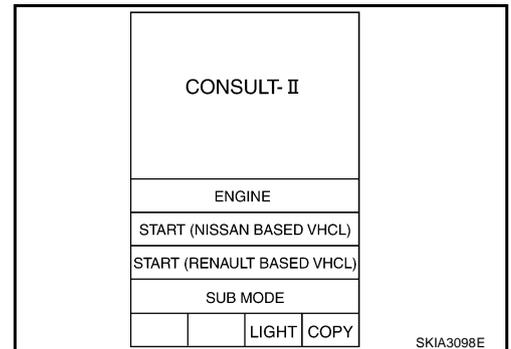
CAUTION:

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.

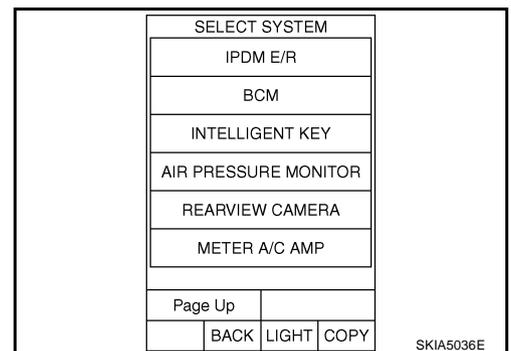
1. With the ignition switch OFF, connect CONSULT-II and CONSULT-II CONVERTER to the data link connector, then turn the ignition switch ON.



2. Touch "START (NISSAN BASED VHCL)".

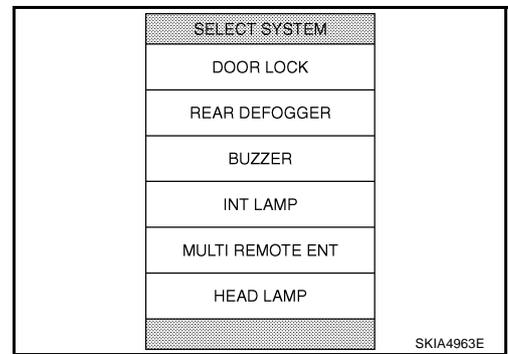


3. Touch "BCM" on "SELECT SYSTEM" screen.
If "BCM" is not indicated, go to [LAN-4, "Precautions When Using CONSULT-II"](#).



BCM (BODY CONTROL MODULE)

4. Select the desired part to be diagnosed on the "SELECT TEST ITEM" screen.



ITEMS OF EACH PART

NOTE:

CONSULT-II will Only display systems the vehicle possesses.

x:Applicable

System and item	CONSULT-II display	Diagnostic test mode (Inspection by part)						
		WORK SUPPORT	SELF-DIAG RESULTS	DATA MONITOR	CAN DIAG SUPPORT MNTR	ECU PART NUMBER	ACTIVE TEST	CON-FIGURATION
Power door lock system	DOOR LOCK	x		x			x	
Rear window defogger	REAR DEFOGGER			x			x	
Warning chime	BUZZER			x			x	
Room lamp timer	INT LAMP	x		x			x	
Remotecontrol entry system	MULTI REMOTE ENT	x		x			x	
Headlamp	HEAD LAMP	x		x			x	
Wiper	WIPER			x			x	
Turn signal lamp Hazard lamp	FLASHER			x			x	
Blower fan switch signal A/C switch signal	AIR CONDITIONER			x				
Intelligent Key system	INTELLIGENT KEY			x				
Combination switch	COMB SW			x				
BCM	BCM	x	x	x	x	x		x ^{Note}
IVIS	IMMU			x			x	
Room lamp battery saver	BATTERY SAVER	x		x			x	
Trunk lid ^{Note}	TRUNK			x			x	
Vehicle security system	THEFT ALM	x		x			x	
Retained power control	RETAINED PWR	x		x			x	
Oil pressure switch	SIGNAL BUFFER			x			x	

NOTE:

This item is indicated, but it is what it does not use.

BCM (BODY CONTROL MODULE)

WORK SUPPORT

Operation Procedure

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

Display Item List

Item	Description
RESET SETTING VALUE	Return a value set with WORK SUPPORT of each system to a default value in factory shipment.

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

AKS0058C

1. CHECK SELF-DIAGNOSTIC RESULT

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. 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	INITIAL DIAG
	TRANSMIT DIAG
	ECM
	IPDM E/R
	METER/M&A
	I-KEY

Contents displayed

No malfunction>>INSPECTION END

Malfunction in CAN communication system>>After printing the monitor items, go to "CAN System". Refer to [LAN-4, "Precautions When Using CONSULT-II"](#).

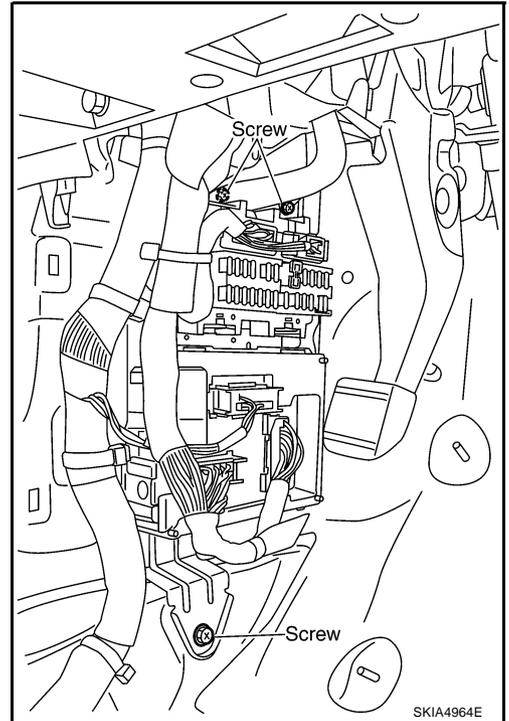
BCM (BODY CONTROL MODULE)

AKS0058E

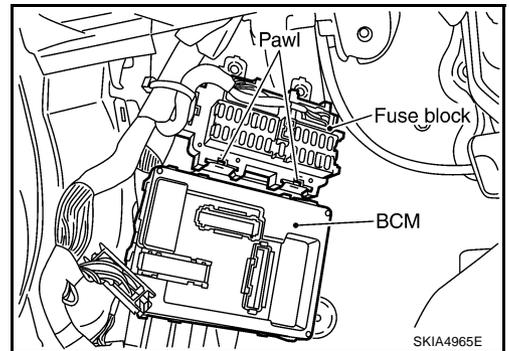
Removal and Installation of BCM

REMOVAL

1. Remove the dash side finisher (LH). Refer to [EI-37, "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.