

SECTION **BCS**

BODY CONTROL SYSTEM

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BCS

PRECAUTIONS

PRECAUTIONS

PF:00001

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

AKS007KU

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)

BCM (BODY CONTROL MODULE)

PFP:284B2

System Description

AKS004CD

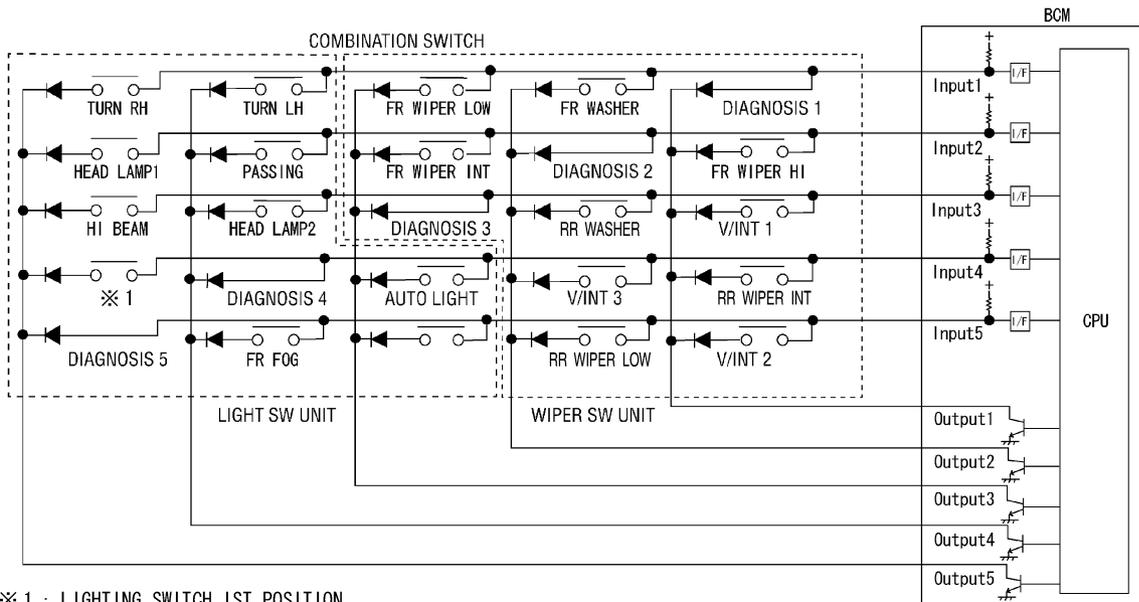
- BCM (Body Control Module) controls the operation of various electrical units installed on the vehicle.

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 unified meter and A/C amp., 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 (BODY CONTROL MODULE)

- 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	RR WIPER INT ON	RR WIPER INT 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	RR WASHER ON	RR WASHER OFF	V/INT 3 ON	V/INT 3 OFF	RR WIPER ON	RR WIPER 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 1 ON	HEAD LAMP 1 OFF	HI BEAM ON	HI BEAM OFF	LIGHTING SWITCH 1ST POSITION ON	LIGHTING SWITCH 1ST POSITION OFF	DIAGNOSIS 5 OK	DIAGNOSIS 5 NG

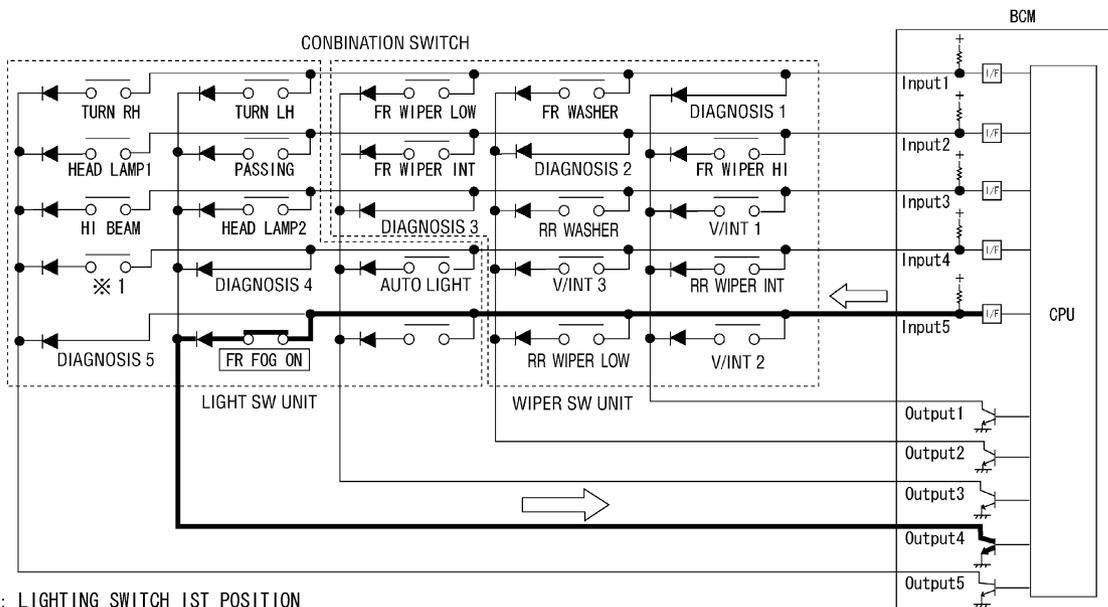
SKIA4107E

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.



※ 1 : LIGHTING SWITCH 1ST POSITION

SKIA4108E

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.

BCM (BODY CONTROL MODULE)

5. Operation mode

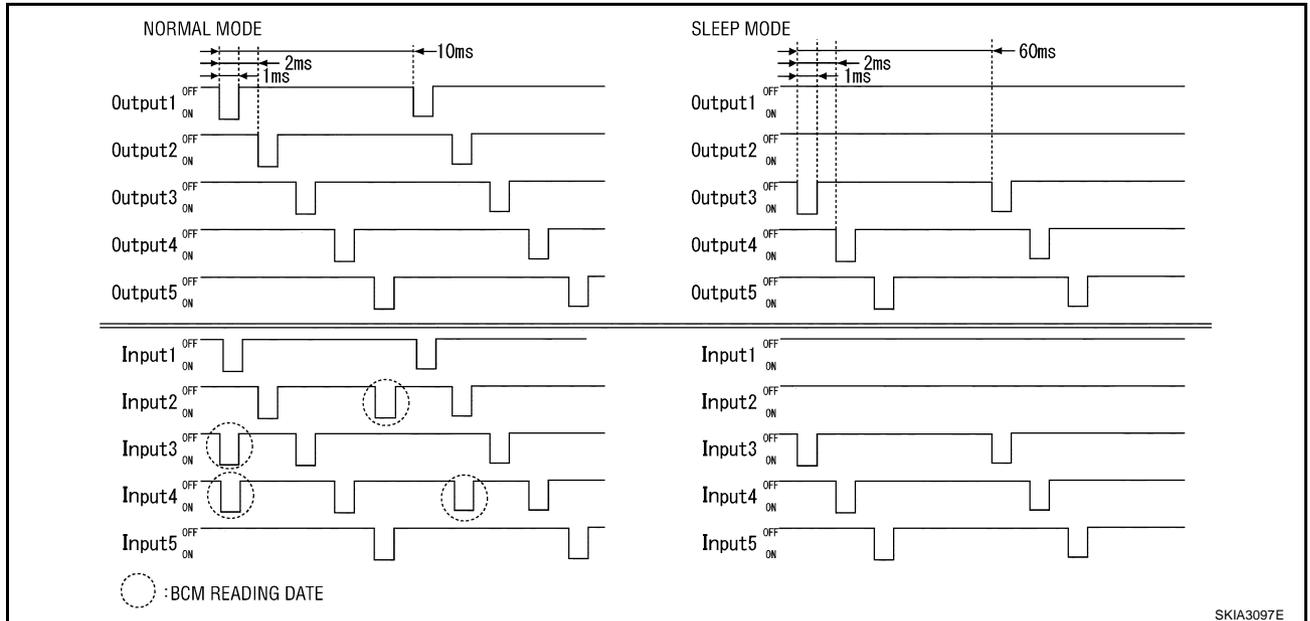
- Combination switch reading function has operation modes shown below.

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.



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.

BCM (BODY CONTROL MODULE)

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-23, "POWER DOOR LOCK SYSTEM"](#) .
- Remote keyless entry system. Refer to [BL-76, "REMOTE KEYLESS ENTRY SYSTEM"](#) .
- Power window system. Refer to [GW-17, "POWER WINDOW SYSTEM"](#) . ^{NOTE}
- Sunroof system. Refer to [RF-10, "SUNROOF"](#) . ^{NOTE}
- Power seat. Refer to [SE-112, "POWER SEAT"](#) . ^{NOTE}
- Room lamp timer. Refer to [LT-309, "INTERIOR ROOM LAMP"](#) .
- Warning chime. Refer to [DI-76, "WARNING CHIME"](#)
- Turn signal and hazard warning lamps Refer to [LT-213, "TURN SIGNAL AND HAZARD WARNING LAMPS"](#)

NOTE:

Power supply only. No system control.

SYSTEMS CONTROLLED BY BCM AND IPDM E/R

- Panic alarm. Refer to [BL-76, "REMOTE KEYLESS ENTRY SYSTEM"](#)
- Theft warning system. Refer to [BL-142, "VEHICLE SECURITY \(THEFT WARNING\) SYSTEM"](#)
- IVIS (NATS). Refer to [BL-187, "NVIS \(NISSAN VEHICLE IMMOBILIZER SYSTEM-NATS\)"](#)
- Headlamp, tail lamp, fog lamp, auto light system, Battery saver control, day time light system.
- Wiper. Refer to [WW-4, "FRONT WIPER AND WASHER SYSTEM"](#)
- Front washer. Refer to [WW-4, "FRONT WIPER AND WASHER SYSTEM"](#)
- Rear window defogger. Refer to [GW-65, "REAR WINDOW DEFOGGER"](#)

BCM (BODY CONTROL MODULE)

MAJOR COMPONENTS AND CONTROL SYSTEM

System	Input	Output
Remote keyless entry system	key fob	<ul style="list-style-type: none"> ● All-door locking actuator ● Back door lock 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 supply to power window and sunroof 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	<ul style="list-style-type: none"> ● Key switch ● Remote controller 	IPDM E/R
Theft warning system	<ul style="list-style-type: none"> ● All-door locking actuator ● Back door lock actuator 	IPDM E/R
Auto light system	<ul style="list-style-type: none"> ● Optical sensor ● Combination switch 	IPDM E/R
Battery saver control	Ignition switch Combination switch	IPDM E/R
Headlamp	Combination switch	IPDM E/R
Day time light system	<ul style="list-style-type: none"> ● Engine speed signal ● Ignition switch ● 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 ● Key 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	<ul style="list-style-type: none"> ● Combination switch ● Combination meter 	IPDM E/R
Rear window defogger	Rear window defogger switch	IPDM E/R
Air conditioner switch signal	Unified meter and A/C amp.	ECM
Blower fan switch signal	Unified meter and A/C amp.	ECM

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BCM (BODY CONTROL MODULE)

CAN Communication System Description

AKS004CE

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 For 2WD Models

AKS007PS

Go to CAN system, when selecting your car model from the following table.

Body type	Wagon															
Axle	2WD															
Engine	VQ35DE															
Transmission	CVT															
Brake control	ABS								VDC							
Low tire pressure warning system		×			×	×		×		×			×	×		×
Navigation system			×		×		×	×			×		×		×	×
Automatic drive positioner				×		×	×	×				×		×	×	×
CAN communication unit																
ECM	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×
TCM	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×
Low tire pressure warning control unit		×			×	×		×		×			×	×		×
Display unit	×	×		×		×			×	×		×		×		
Display control unit			×		×		×	×			×		×		×	×
Data link connector	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×
BCM	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×
Unified meter and A/C amp.	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×
Steering angle sensor									×	×	×	×	×	×	×	×
Driver seat control unit				×		×	×	×				×		×	×	×
ABS actuator and electric unit (control unit)	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×
IPDM E/R	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×
CAN communication type	<u>BCS-9. "TYPE 1/TYPE 2/TYPE 3/TYPE 4/TYPE 5/TYPE 6/TYPE 7/TYPE 8"</u>								<u>BCS-14. "TYPE 9/TYPE10/TYPE 11/TYPE 12/TYPE 13/TYPE 14/TYPE 15/TYPE 16"</u>							

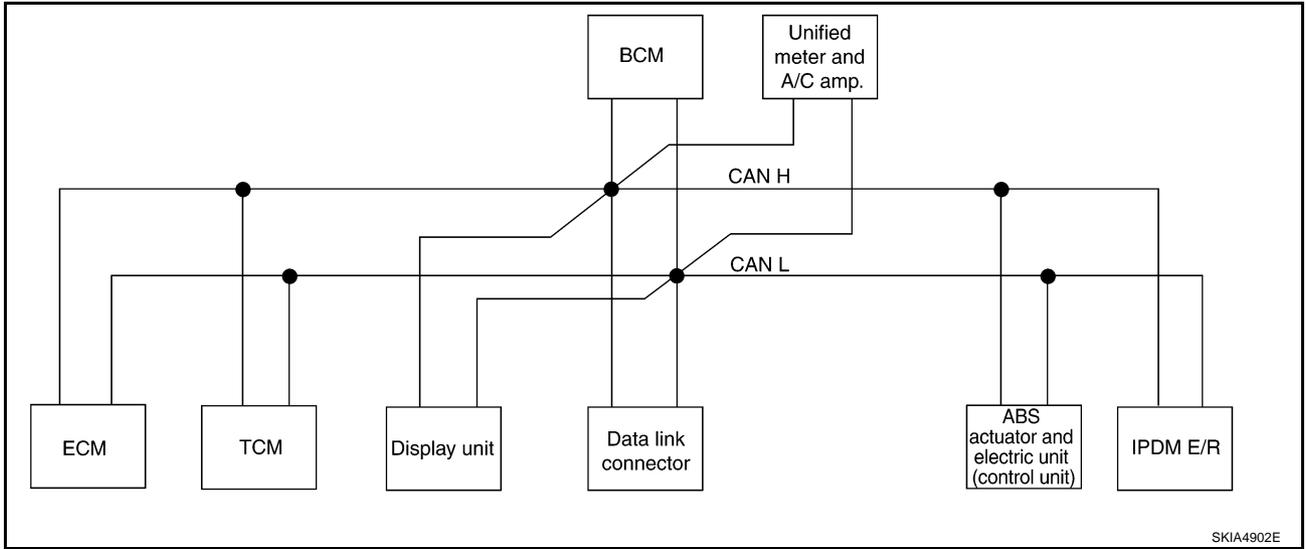
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BCM (BODY CONTROL MODULE)

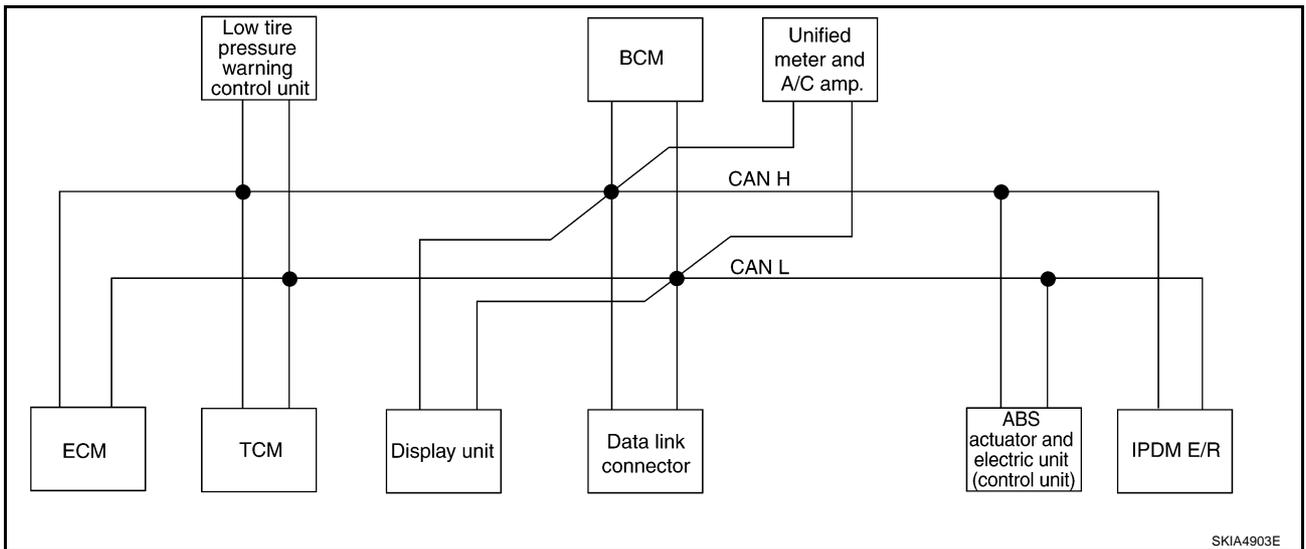
TYPE 1/TYPE 2/TYPE 3/TYPE 4/TYPE 5/TYPE 6/TYPE 7/TYPE 8

System Diagram

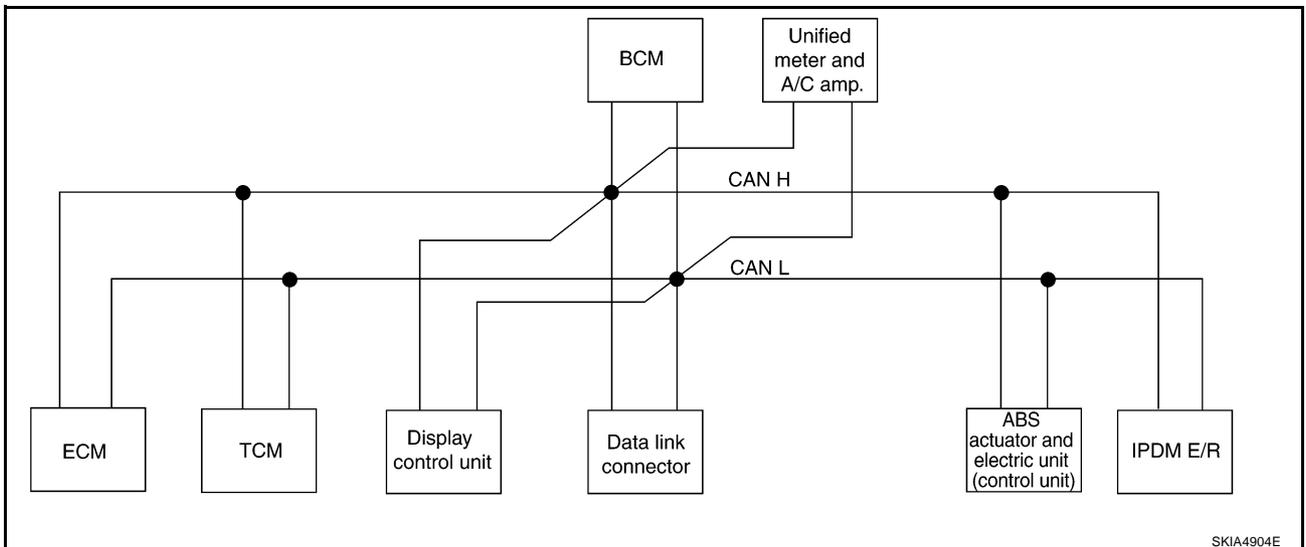
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- Type2



- Type3

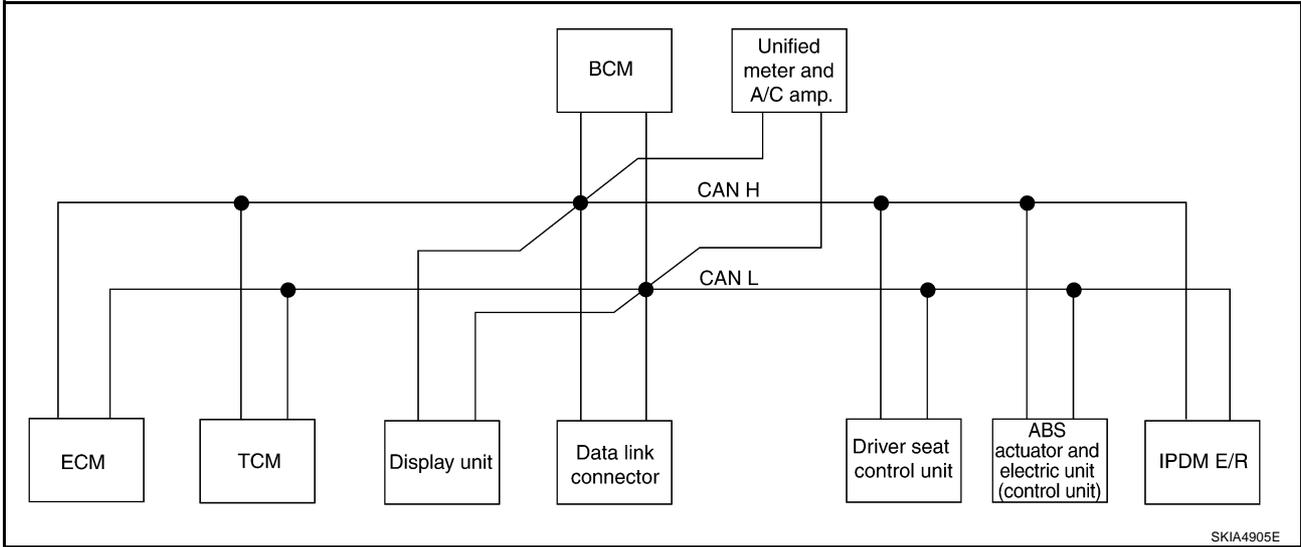


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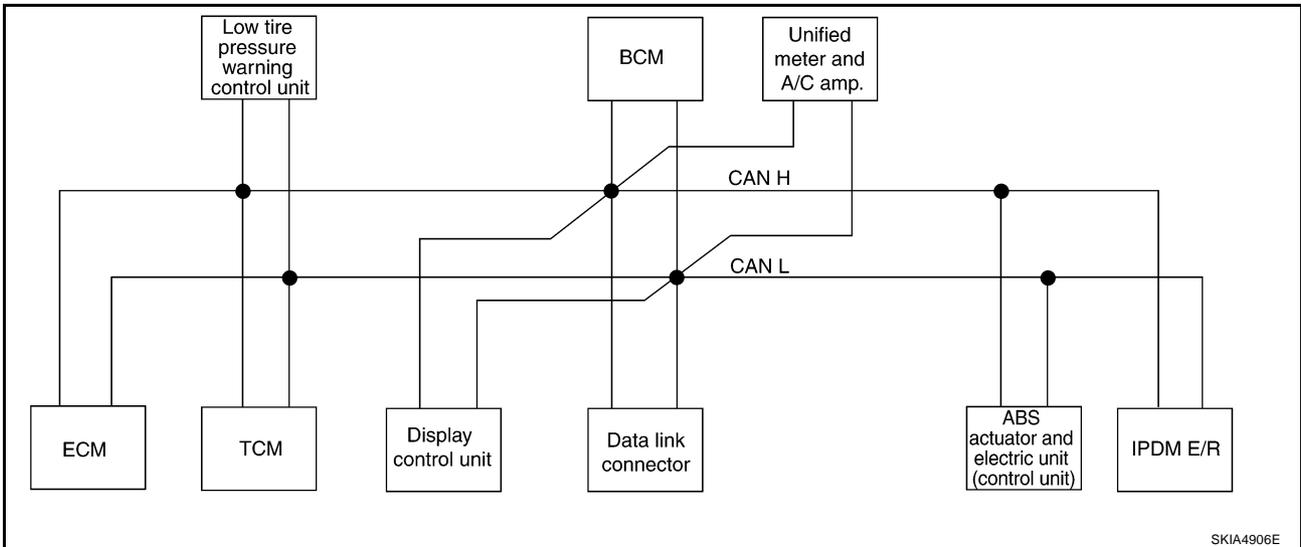
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BCM (BODY CONTROL MODULE)

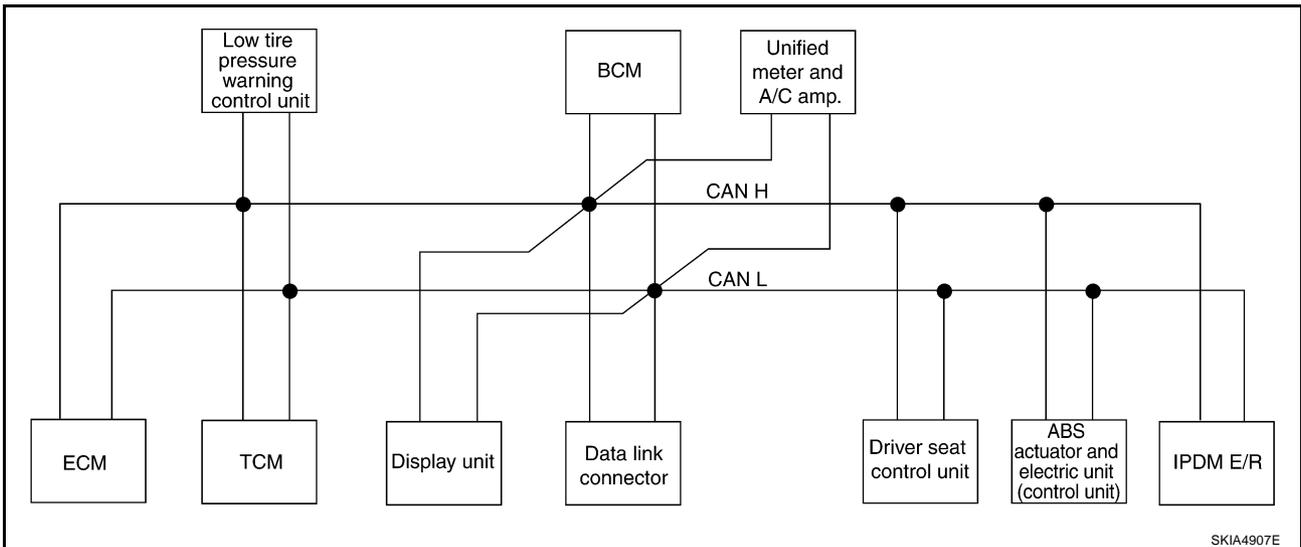
- Type4



- Type5

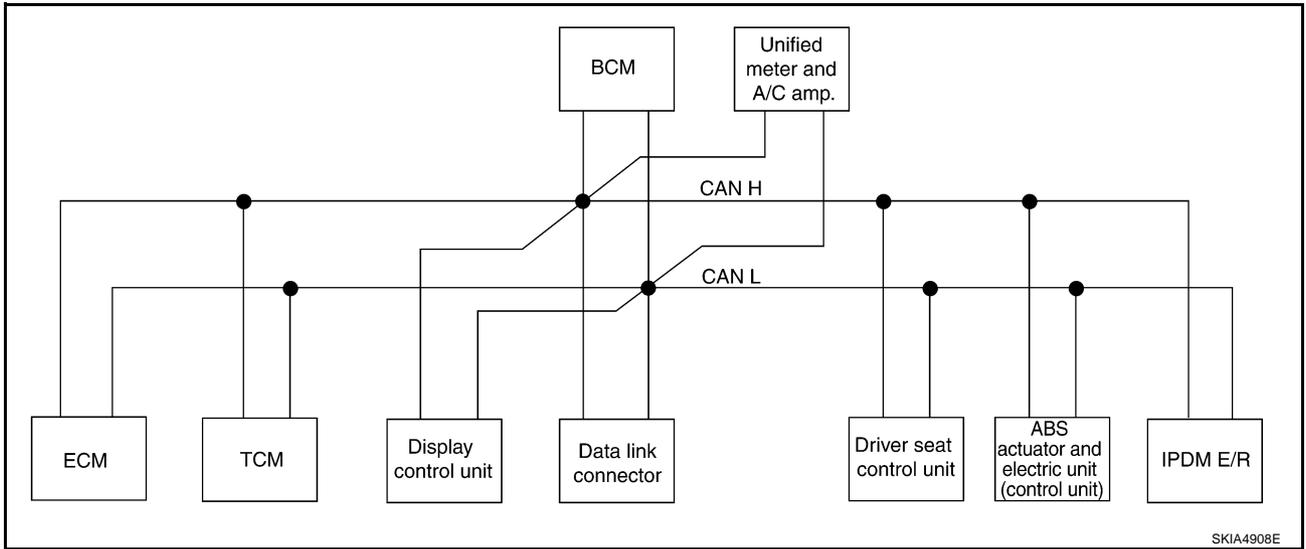


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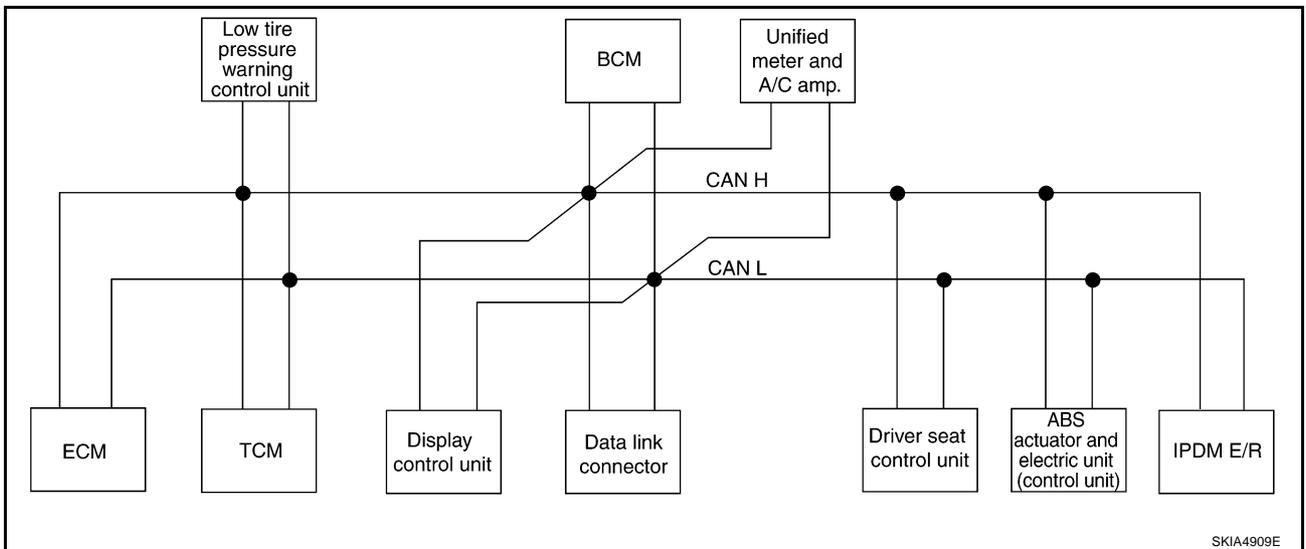


BCM (BODY CONTROL MODULE)

- Type7



- Type8



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BCM (BODY CONTROL MODULE)

Input/output Signal Chart

T: Transmit R: Receive

Signals	ECM	TCM	Low tire pressure warning control unit	Display unit	Display control unit	BCM	Unified meter and A/C amp.	Driver seat control unit	ABS actuator and electric unit (control unit)	IPDM E/R
Engine speed signal	T	R			R	R	R			
Engine status signal	T					R				
Engine coolant temperature signal	T						R			
CVT position indicator signal		T					R			
Second position signal		R					T			
Second position indicator signal		T					R			
Engine and CVT integrated control signal	T	R								
	R	T								
Accelerator pedal position signal	T	R								
Closed throttle position signal	T	R								
Wide open throttle position signal	T	R								
Key switch signal						T		R		
Ignition switch signal						T		R		R
P range signal		T						R		
Stop lamp switch signal		R					T			
Fuel consumption monitor signal	T						R			
CVT self-diagnosis signal	R	T								
ABS operation signal		R							T	
Air conditioner 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				
A/C control signal				T	T		R			
				R	R		T			
Cooling fan speed request signal	T									R
Position lights request signal						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 lights request signal						T				R
Vehicle speed signal		R					R		T	
	R		R		R	R	T	R		
Sleep request 1 signal						T	R			
Sleep request 2 signal						T				R
Door switch signal						R	T			
				R	R	T	R	R		R
Turn indicator signal						T	R			

BCM (BODY CONTROL MODULE)

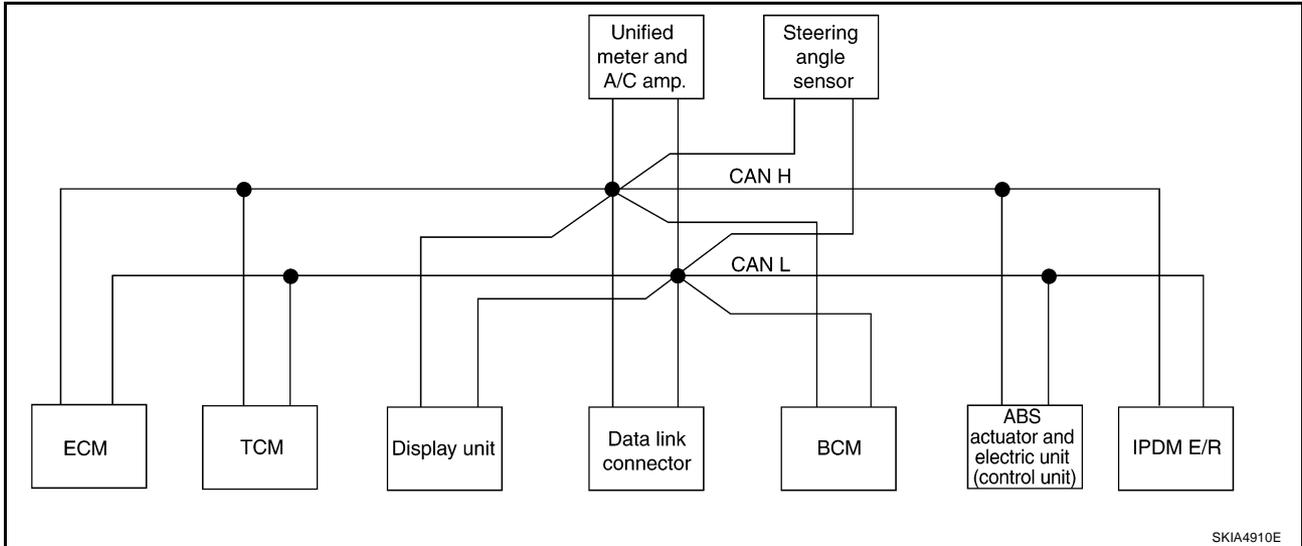
Signals	ECM	TCM	Low tire pres- sure warn- ing control unit	Dis- play unit	Dis- play control unit	BCM	Uni- fied meter and A/ C amp.	Driver seat control unit	ABS actua- tor and elec- tric unit (con- trol unit)	IPDM E/R	A
Key fob ID signal						T		R			B
Key fob door unlock signal						T		R			C
Seat belt buckle switch signal						R	T				D
Oil pressure switch signal						R				T	E
						T	R				F
Buzzer output signal						T	R				G
Fuel level sensor signal	R						T				H
Fuel level low warning signal				R	R		T				I
Malfunction indicator lamp signal	T						R				J
ASCD SET lamp signal	T						R				K
ASCD CRUISE lamp signal	T						R				L
Input shaft revolution signal	R	T									M
Output shaft revolution signal	R	T									N
Front wiper request signal						T				R	O
Front wiper stop position signal						R				T	P
Rear window defogger switch signal						T				R	Q
Rear window defogger control signal	R			R	R					T	R
Hood switch signal						R				T	S
Theft warning horn request signal						T				R	T
Horn chirp signal						T				R	U
Tire pressure signal			T				R				V
Tire pressure data signal			T	R	R						W
ABS warning lamp signal							R		T		X
Brake warning lamp signal							R		T		Y
System setting signal				T	T			R			Z
Parking brake switch signal						R	T				AA

BCM (BODY CONTROL MODULE)

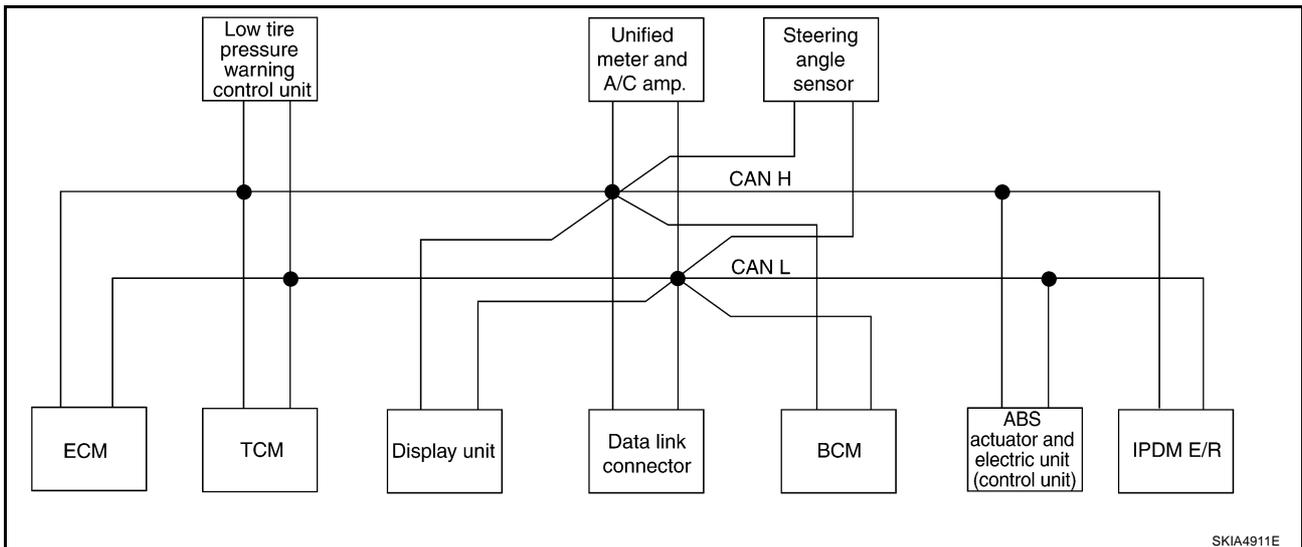
TYPE 9/TYPER10/TYPER 11/TYPER 12/TYPER 13/TYPER 14/TYPER 15/TYPER 16

System Diagram

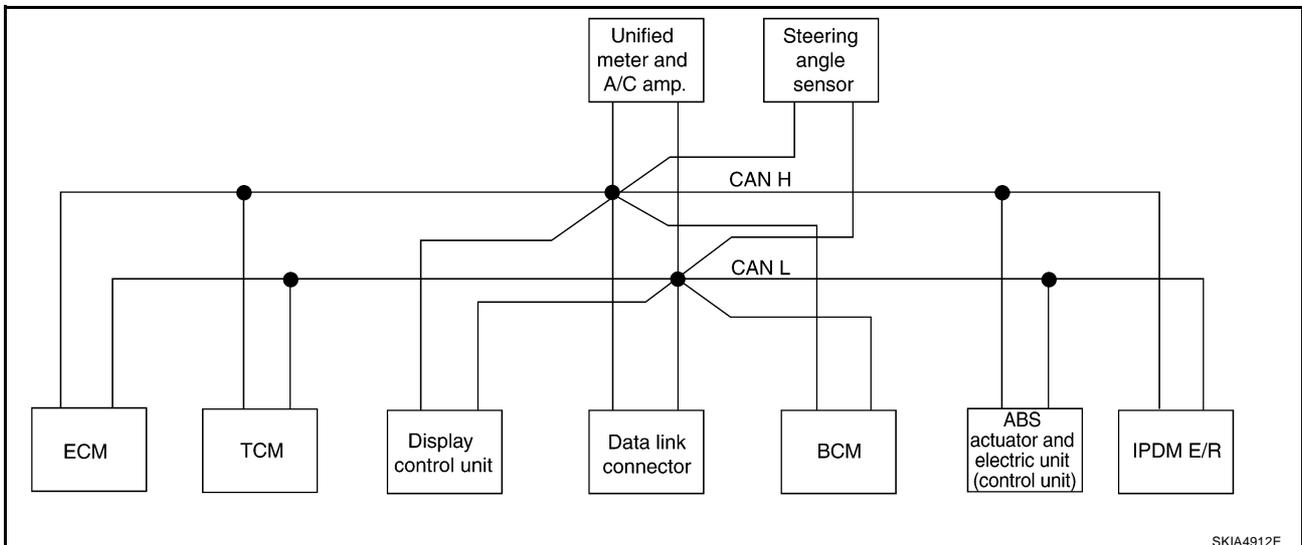
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- Type10

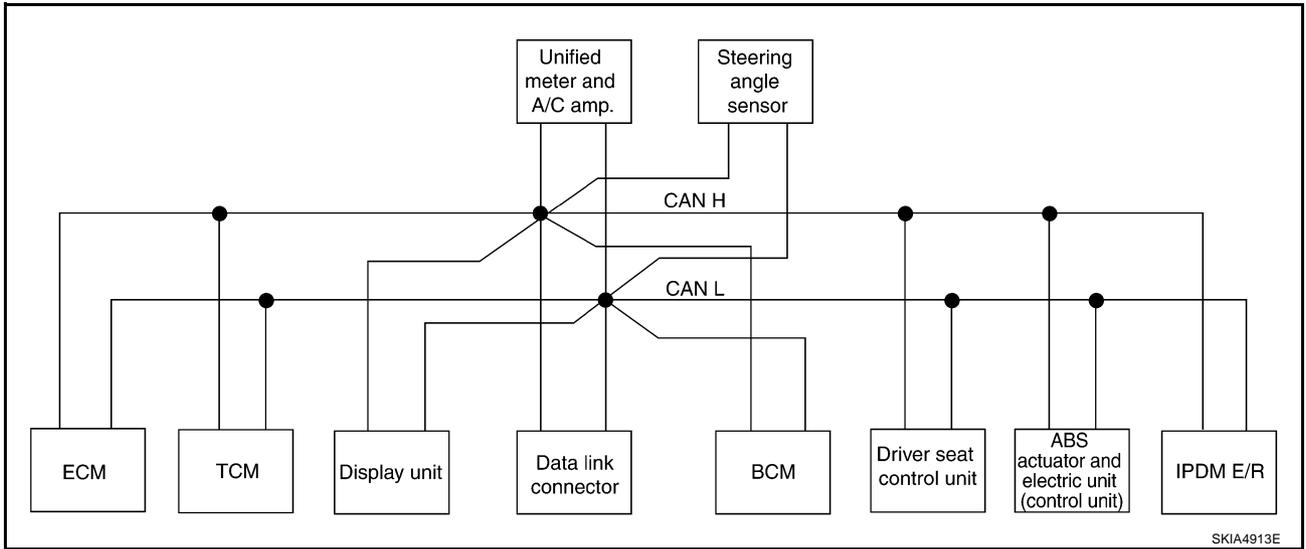


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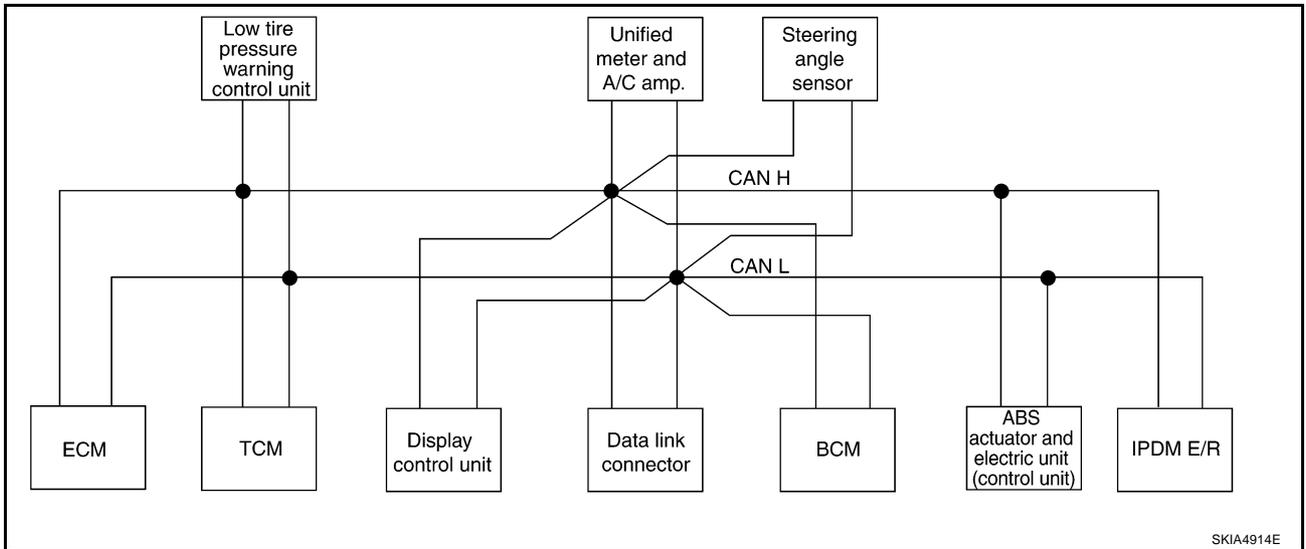


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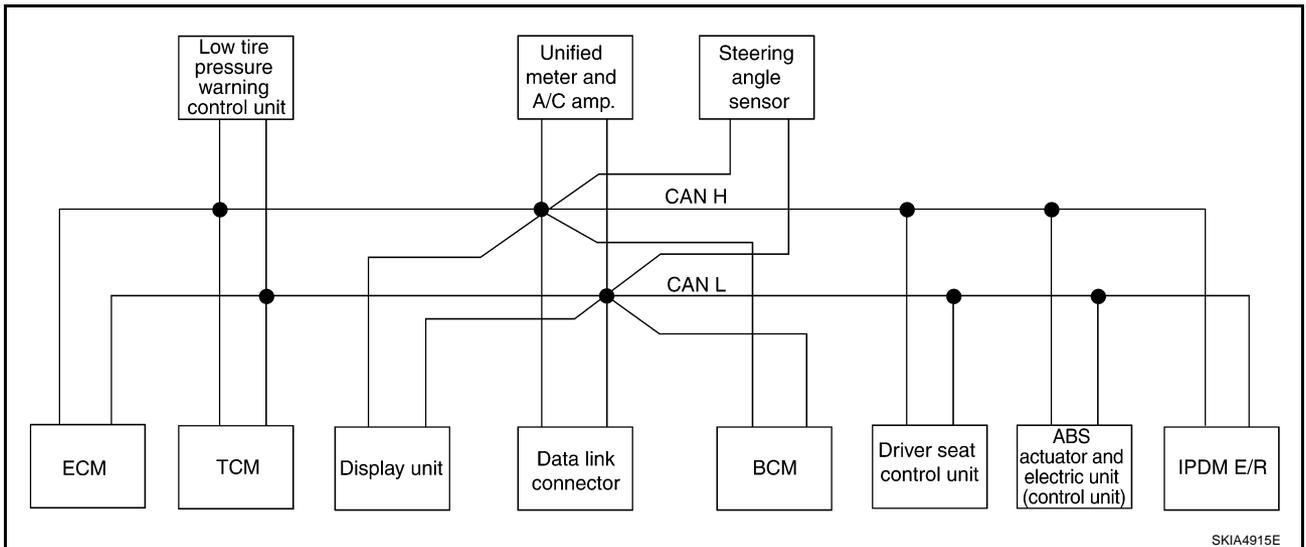
- Type12



- Type13



- Type14

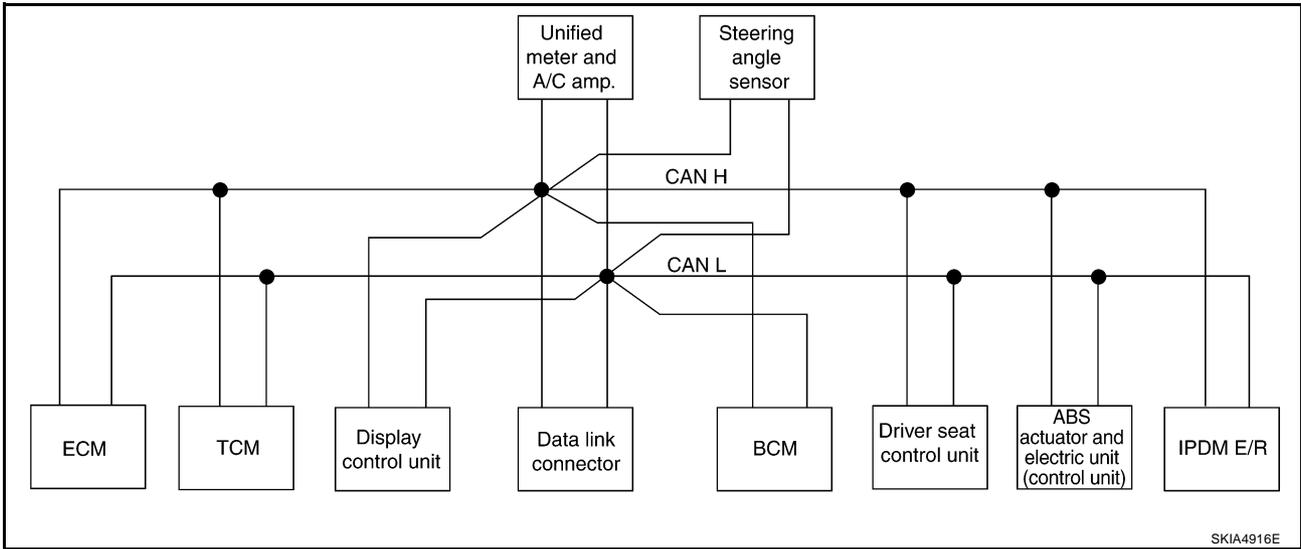


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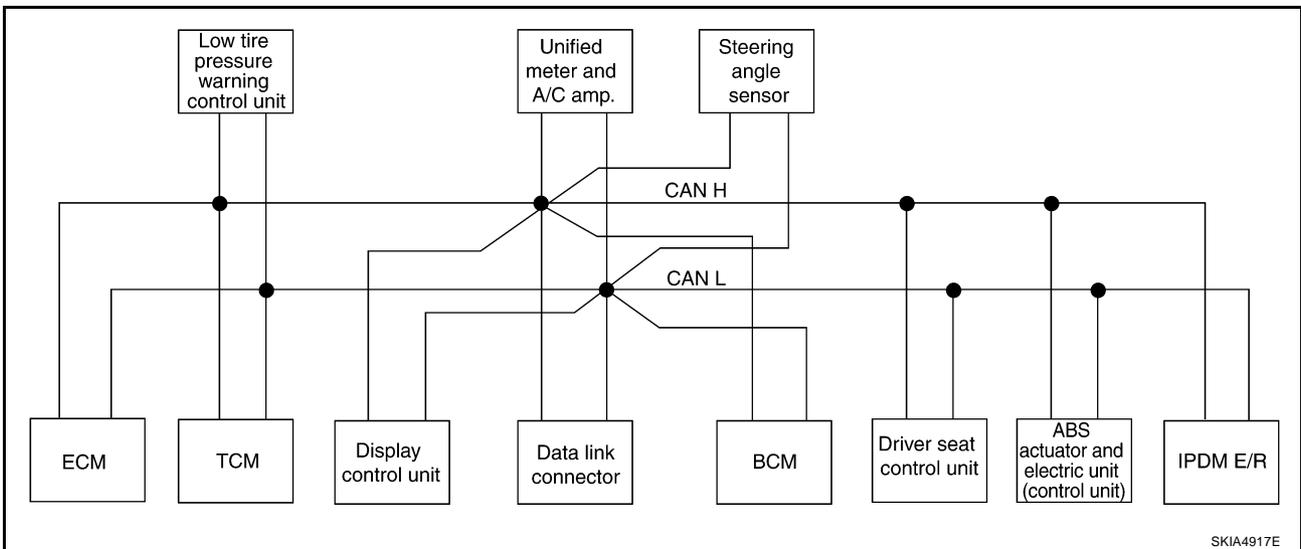
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BCM (BODY CONTROL MODULE)

- Type15



- Type16



BCM (BODY CONTROL MODULE)

Input/output Signal Chart

T: Transmit R: Receive

Signals	ECM	TCM	Low tire pressure warning control unit	Display unit	Display control unit	BCM	Unified meter and A/C amp.	Steering angle sensor	Driver seat control unit	ABS actuator and electric unit (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				
Engine and CVT integrated control signal	T	R									
	R	T									
Accelerator pedal position signal	T	R								R	
Closed throttle position signal	T	R									
Wide open throttle position 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				
VDC operation signal		R								T	
Second position indicator signal		T					R			R	
Second position signal		R					T				
Fuel consumption monitor signal	T						R				
CVT self-diagnosis signal	R	T									
Input shaft revolution signal	R	T								R	
Output shaft revolution signal	R	T								R	
Air conditioner 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					
A/C control signal				T	T		R				
				R	R		T				
Cooling fan speed request signal	T										R
Position lights request signal						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 lights request signal						T					R
Vehicle speed signal		R					R			T	
	R		R		R	R	T		R		
Sleep request 1 signal						T	R				
Sleep request 2 signal						T					R

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Signals	ECM	TCM	Low tire pressure warning control unit	Display unit	Display control unit	BCM	Unified meter and A/C amp.	Steering angle sensor	Driver seat control unit	ABS actuator and electric unit (control unit)	IPDM E/R
Door switch signal						R	T				
				R	R	T	R		R		R
Turn indicator signal						T	R				
Key fob ID signal						T			R		
Key fob door unlock signal						T			R		
Seat belt buckle switch signal						R	T				
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	R		T				
Malfunction indicator signal	T						R				
ASCD SET lamp signal	T						R				
ASCD CRUISE lamp signal	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	
Tire pressure signal			T				R				
Tire pressure data signal			T	R	R						
CVT position indicator signal		T					R			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	T				R		
Parking brake switch signal						R	T				

BCM (BODY CONTROL MODULE)

CAN Communication Unit For AWD Models

AKS007PT

Go to CAN system, when selecting your car model from the following table.

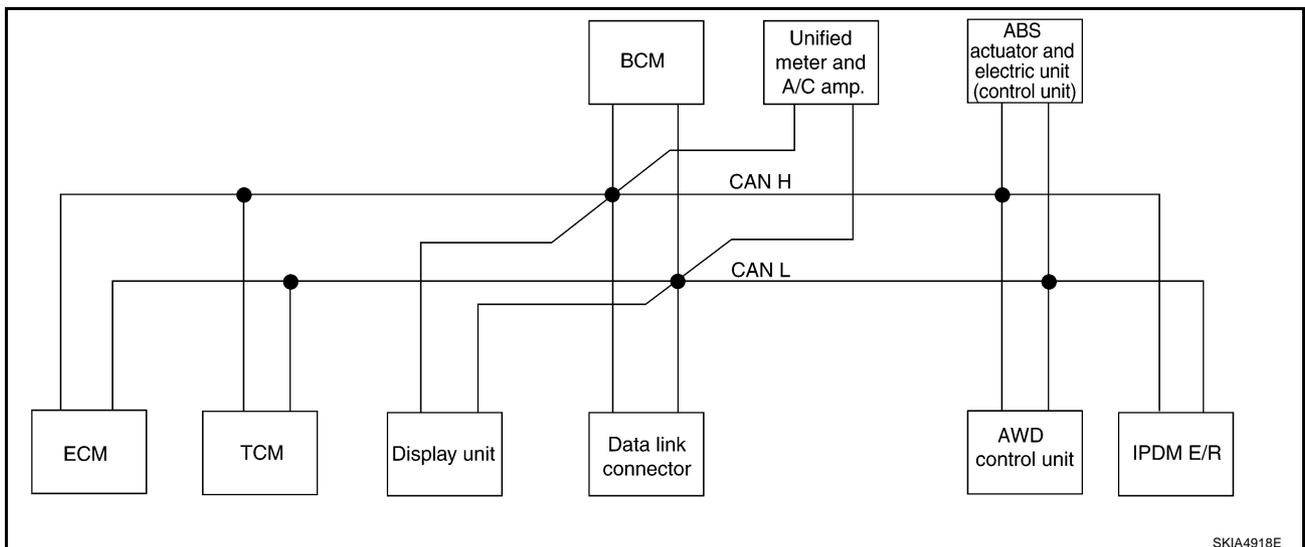
Body type	Wagon															
Axle	AWD															
Engine	VQ35DE															
Transmission	CVT															
Brake control	ABS								VDC							
Low tire pressure warning system		×			×	×		×		×			×	×		×
Navigation system			×		×		×	×			×		×		×	×
Automatic drive positioner				×		×	×	×				×		×	×	×
CAN communication unit																
ECM	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×
TCM	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×
Low tire pressure warning control unit		×			×	×		×		×			×	×		×
Display unit	×	×		×		×			×	×		×		×		
Display control unit			×		×		×	×			×		×		×	×
Data link connector	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×
BCM	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×
Unified meter and A/C amp.	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×
Steering angle sensor									×	×	×	×	×	×	×	×
Driver seat control unit				×		×	×	×				×		×	×	×
AWD control unit	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×
ABS actuator and electric unit (control unit)	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×
IPDM E/R	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×
CAN communication type	BCS-19. "TYPE 17/TYPE 18/TYPE 19/TYPE 20/TYPE 21/TYPE 22/TYPE 23/TYPE 24"								BCS-25. "TYPE 25/TYPE26/TYPE 27/TYPE 28/TYPE 29/TYPE 30/TYPE 31/TYPE 32"							

×: Applicable

TYPE 17/TYPE 18/TYPE 19/TYPE 20/TYPE 21/TYPE 22/TYPE 23/TYPE 24

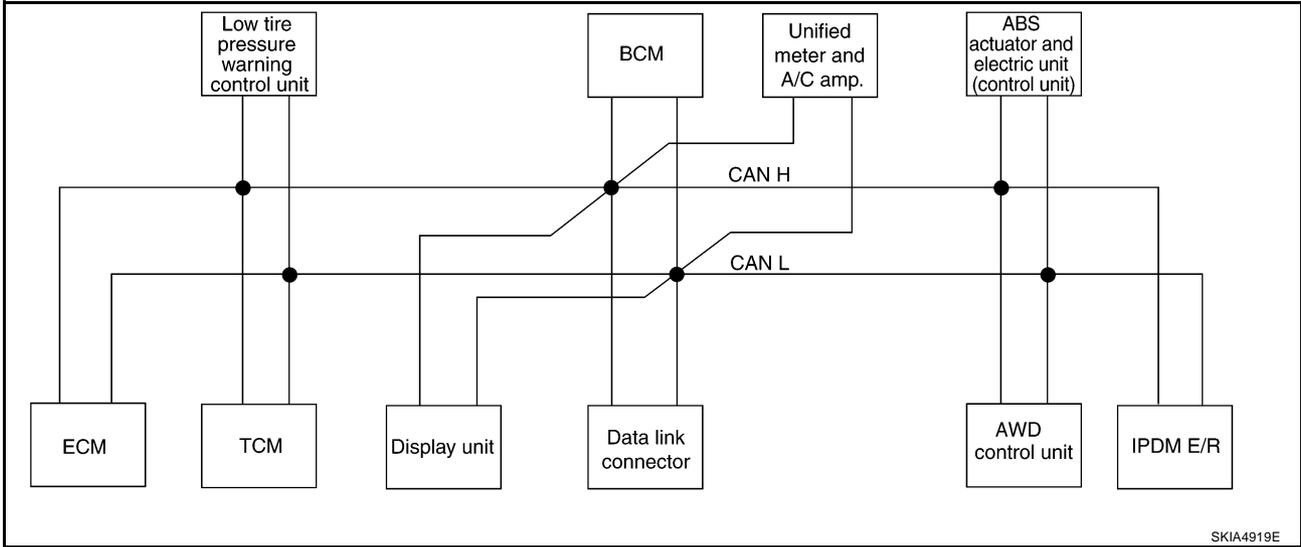
System Diagram

- Type17

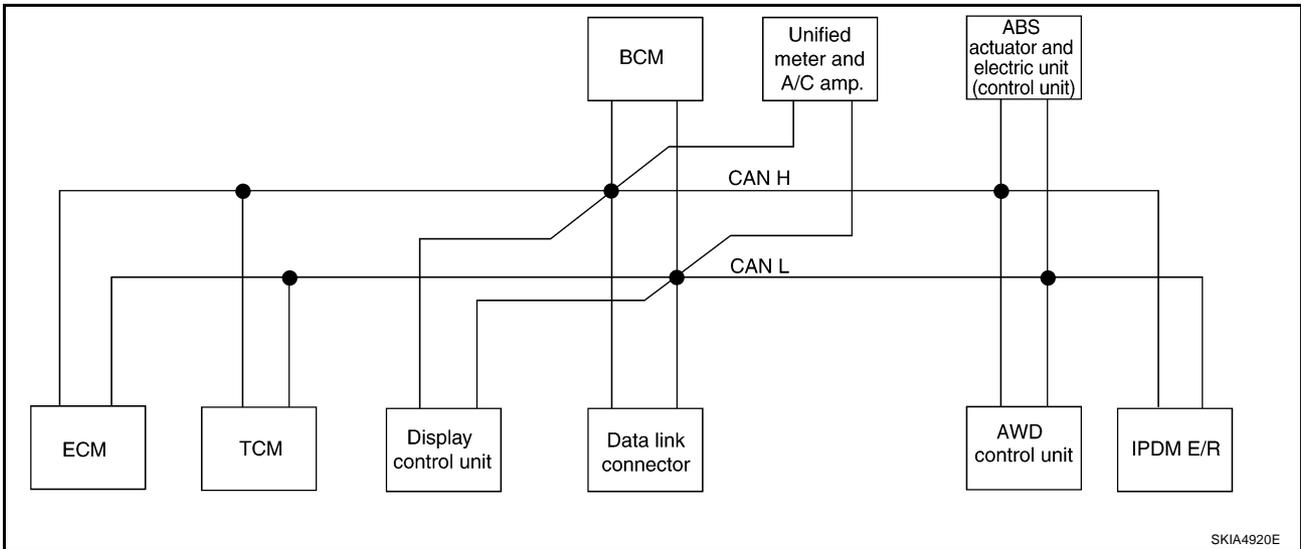


BCM (BODY CONTROL MODULE)

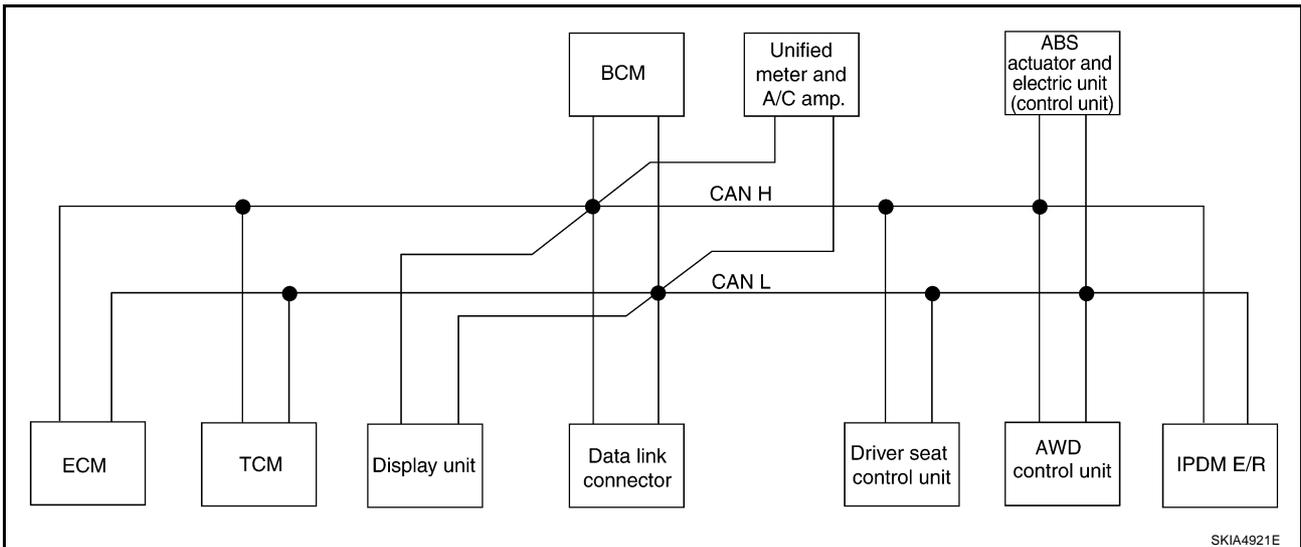
- Type18



- Type19

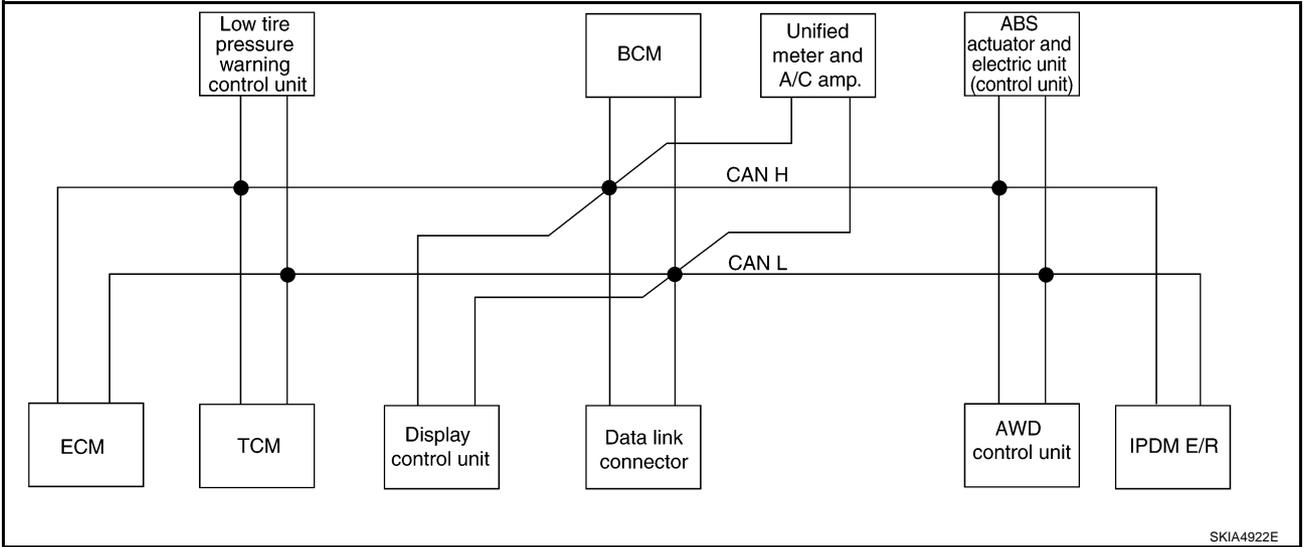


- Type20

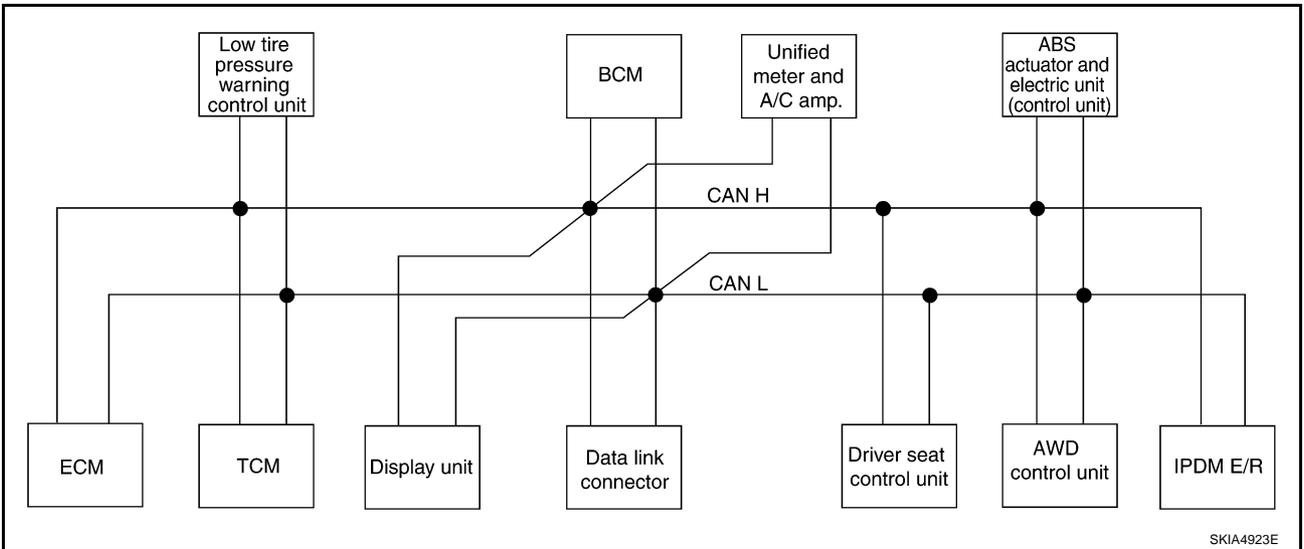


BCM (BODY CONTROL MODULE)

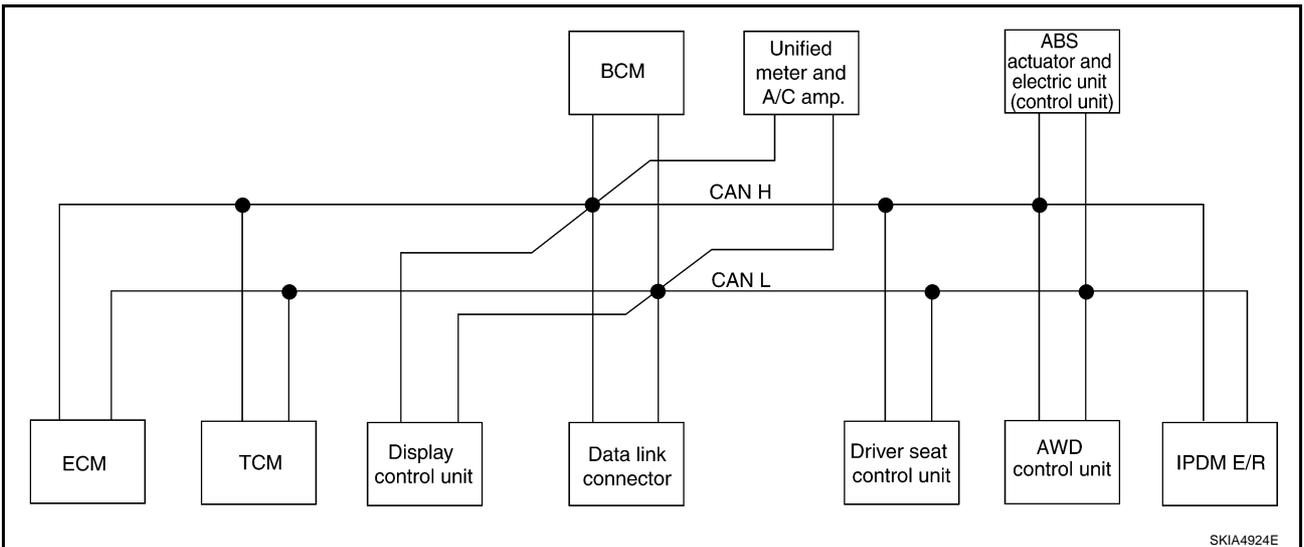
- Type21



- Type22



- Type23

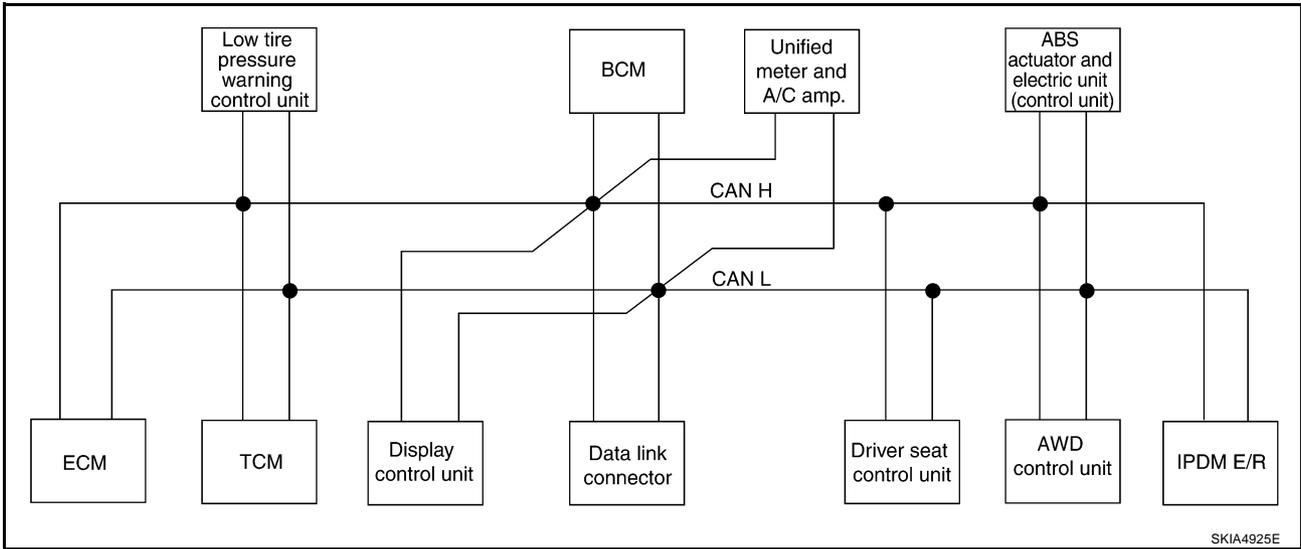


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BCS

BCM (BODY CONTROL MODULE)

- Type24



BCM (BODY CONTROL MODULE)

Input/output Signal Chart

T: Transmit R: Receive

Signals	ECM	TCM	Low tire pressure warning control unit	Display unit	Display control unit	BCM	Unified meter and A/C amp.	Driver seat control unit	AWD control unit	ABS actuator and electric unit (control unit)	IPDM E/R
CVT position indicator signal		T					R				
Second position signal		R					T				
Second position indicator signal		T					R				
Engine speed signal	T	R	R		R	R	R		R		
Engine status signal	T					R					
Engine coolant temperature signal	T						R				
Accelerator pedal position signal	T	R							R		
Closed throttle position signal	T	R									
Wide open throttle position signal	T	R									
Key switch signal						T		R			
Ignition switch signal						T		R			R
P range signal		T						R			
Stop lamp switch signal		R					T		R		
Fuel consumption monitor signal	T						R				
CVT self-diagnosis signal	R	T									
ABS operation signal		R							R	T	
Air conditioner 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					
A/C control signal				T	T		R				
				R	R		T				
Cooling fan speed request signal	T										R
Position lights request signal						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 lights request signal						T					R
Vehicle speed signal		R					R		R	T	
	R		R		R	R	T	R			
Sleep request 1 signal						T	R				
Sleep request 2 signal						T					R
Door switch signal						R	T				
				R	R	T	R	R			R
Key fob ID signal						T		R			
Key fob door unlock signal						T		R			

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BCM (BODY CONTROL MODULE)

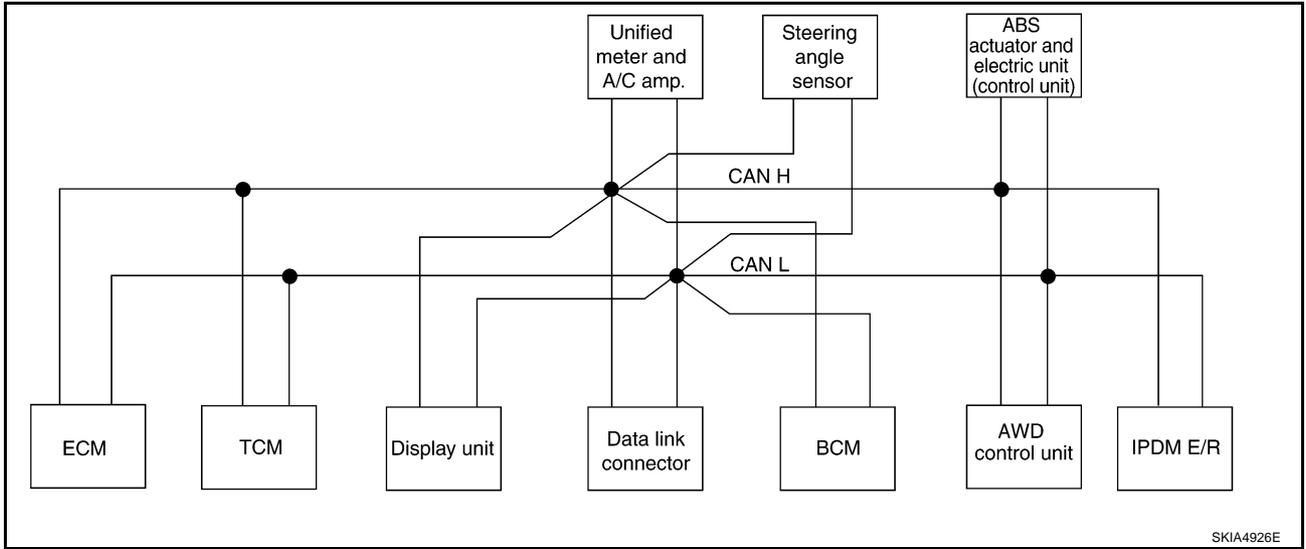
Signals	ECM	TCM	Low tire pressure warning control unit	Display unit	Display control unit	BCM	Unified meter and A/C amp.	Driver seat control unit	AWD control unit	ABS actuator and electric unit (control unit)	IPDM E/R
Turn indicator signal						T	R				
Seat belt buckle switch signal						R	T				
Oil pressure switch signal						R					T
						T	R				
Buzzer output signal						T	R				
Fuel level sensor signal	R						T				
Fuel level low warning signal				R	R		T				
Malfunction indicator lamp signal	T						R				
ASCD SET lamp signal	T						R				
ASCD CRUISE lamp signal	T						R				
Input shaft revolution signal	R	T									
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			R	R						T
Engine and CVT integrated control signal	T	R									
	R	T									
Hood switch signal						R					T
Theft warning horn request signal						T					R
Horn chirp signal						T					R
Tire pressure signal			T				R				
Tire pressure data signal			T	R	R						
ABS warning lamp signal							R			T	
Brake warning lamp signal							R			T	
System setting signal				T	T			R			
AWD warning lamp signal							R		T		
AWD lock indicator lamp signal							R		T		
AWD lock switch signal							T		R		
Parking brake switch signal						R	T		R		

BCM (BODY CONTROL MODULE)

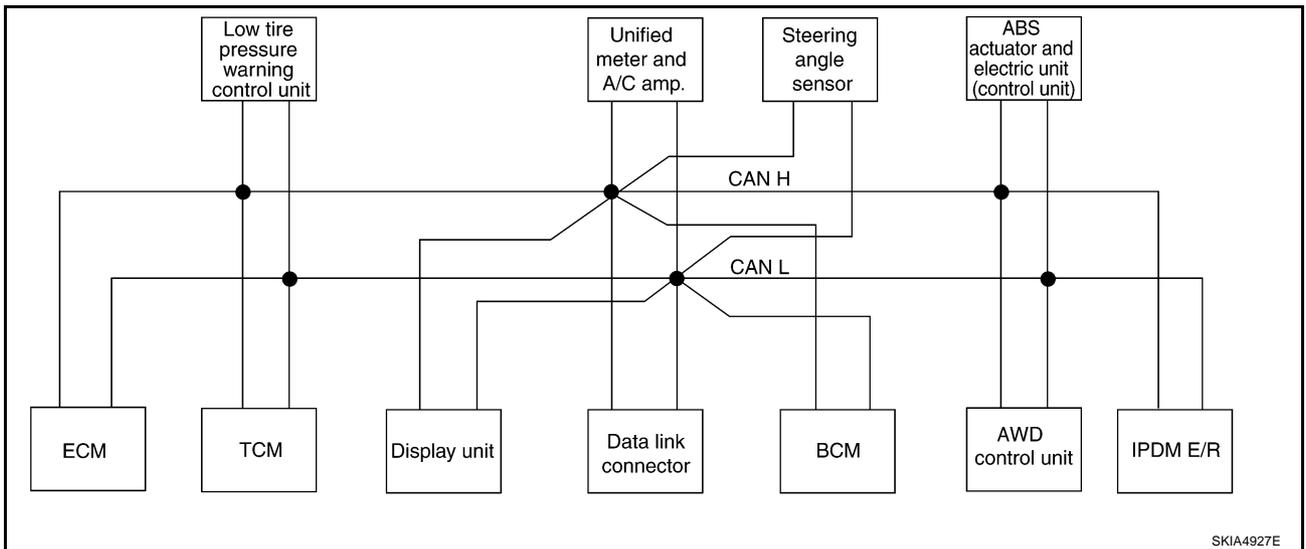
TYPE 25/TYPER26/TYPER 27/TYPER 28/TYPER 29/TYPER 30/TYPER 31/TYPER 32

System Diagram

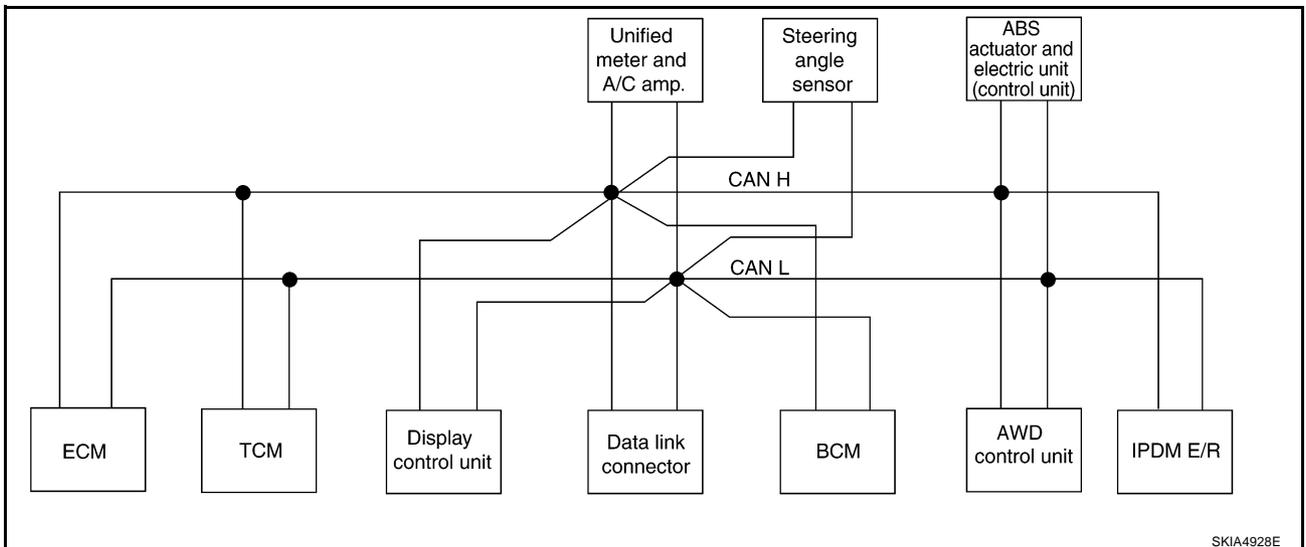
- Type25



- Type26

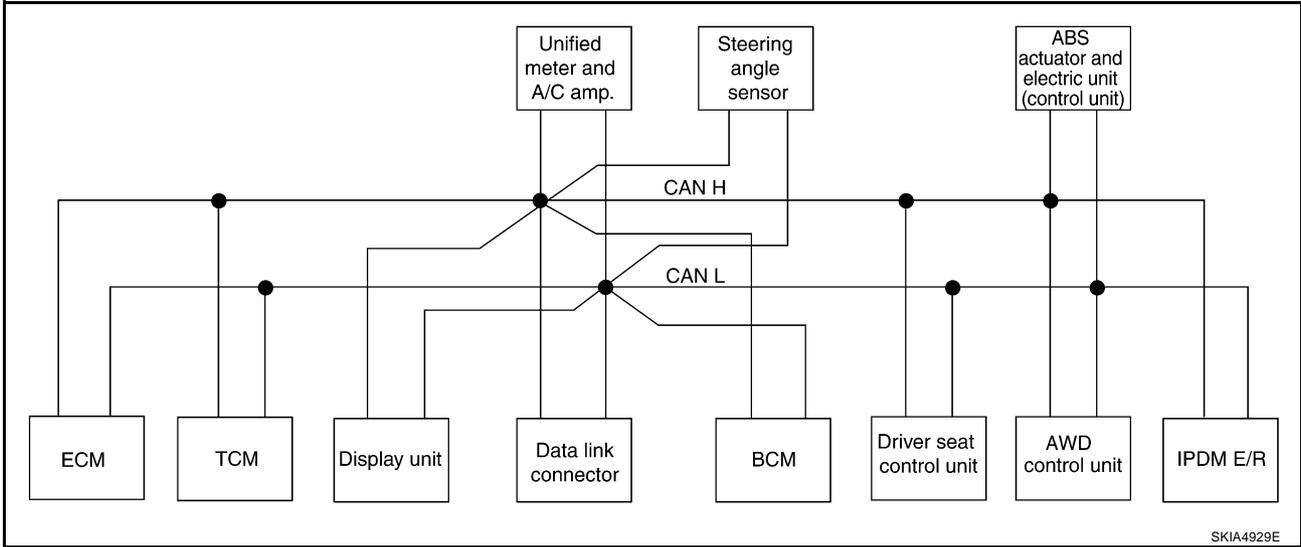


- Type27

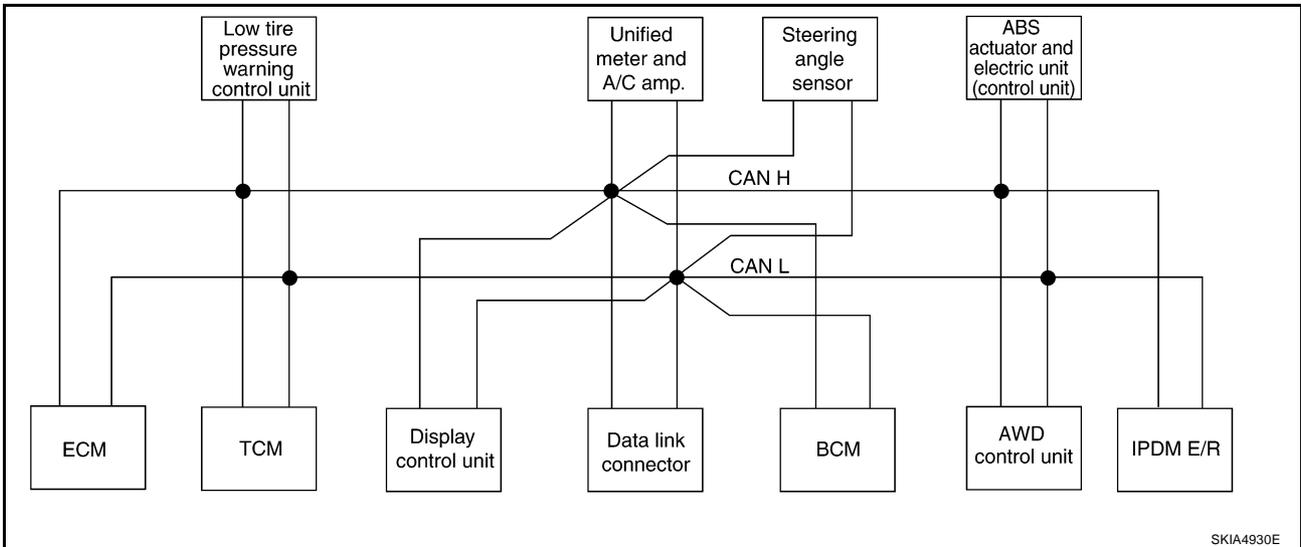


BCM (BODY CONTROL MODULE)

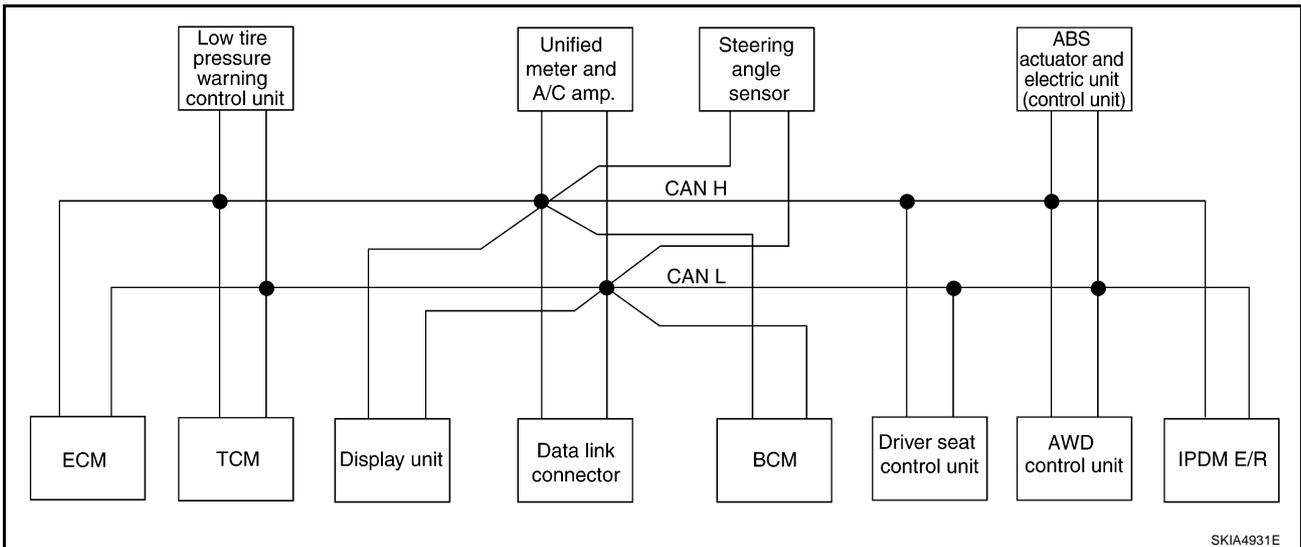
- Type28



- Type29

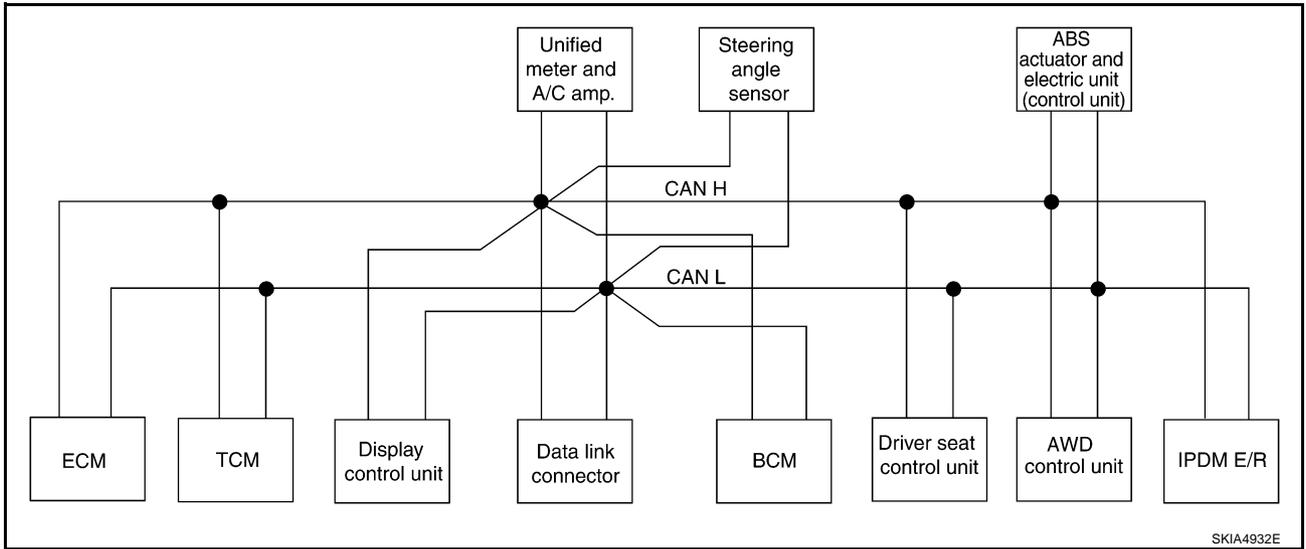


- Type30

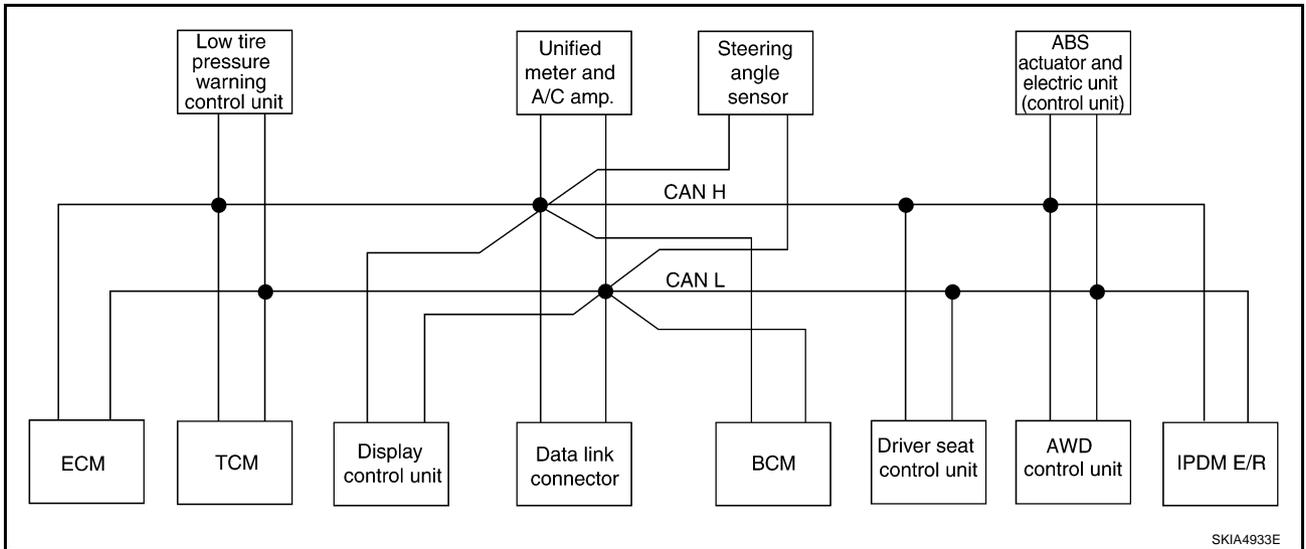


BCM (BODY CONTROL MODULE)

- Type31



- Type32



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BCS

BCM (BODY CONTROL MODULE)

Input/output Signal Chart

T: Transmit R: Receive

Signals	ECM	TCM	Low tire pressure warning control unit	Display unit	Display control unit	BCM	Unified meter and A/C amp.	Steering angle sensor	Driver seat control unit	AWD control unit	ABS actuator and electric unit (control unit)	IPDM E/R
Engine and CVT integrated control signal	T	R										
	R	T										
Second position signal		R					T					
VDC operation signal		R								R	T	
Stop lamp switch signal		R					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										
Second position indicator signal		T					R				R	
Engine speed signal	T	R			R	R	R			R	R	
Engine status signal	T					R						
Engine coolant temperature signal	T						R					
Accelerator pedal position signal	T	R								R	R	
Fuel consumption monitor signal	T						R					
CVT self-diagnosis signal	R	T										
Input shaft revolution signal	R	T									R	
Output shaft revolution signal	R	T									R	
Air conditioner switch signal	R					T						
A/C compressor request signal	T											R
A/C compressor feedback signal	T						R					T
Blower fan motor switch signal	R					T						
A/C control signal				T	T		R					
				R	R		T					
Cooling fan speed request signal	T											R
Position lights request signal						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 lights request signal						T						R
Vehicle speed signal		R					R			R	T	
	R		R		R	R	T		R			
Sleep request 1 signal						T	R					
Sleep request 2 signal						T						R

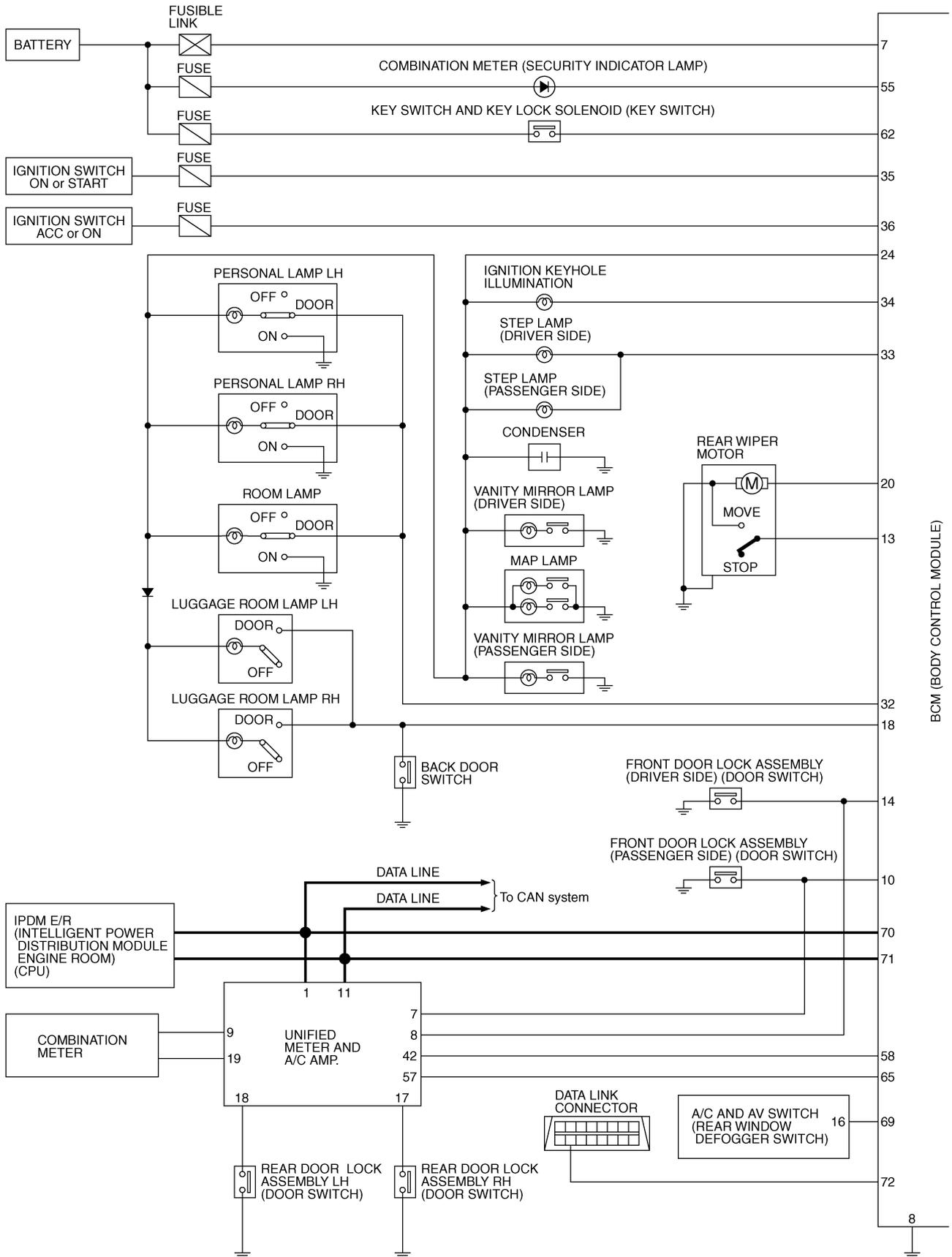
BCM (BODY CONTROL MODULE)

Signals	ECM	TCM	Low tire pressure warning control unit	Display unit	Display control unit	BCM	Unified meter and A/C amp.	Steering angle sensor	Driver seat control unit	AWD control unit	ABS actuator and electric unit (control unit)	IPDM E/R	A
Door switch signal						R	T						B
Turn indicator signal				R	R	T	R		R			R	C
Key fob ID signal						T			R				D
Key fob door unlock signal						T			R				E
Seat belt buckle switch signal						R	T						F
Oil pressure switch signal						R						T	G
Buzzer output signal						T	R						H
Fuel level sensor signal	R						T						I
Fuel level low warning signal				R	R		T						J
Malfunction indicator signal	T						R						K
ASCD SET lamp signal	T						R						L
ASCD CRUISE lamp signal	T						R						M
Front wiper request signal						T						R	N
Front wiper stop position signal						R						T	O
Rear window defogger switch signal						T						R	P
Rear window defogger control signal	R			R	R							T	Q
Hood switch signal						R						T	R
Theft warning horn request signal						T						R	S
Horn chirp signal						T						R	T
Steering angle sensor signal								T			R		U
Tire pressure signal			T				R						V
Tire pressure data signal			T	R	R								W
CVT position indicator signal		T					R				R		X
ABS warning lamp signal							R				T		Y
VDC OFF indicator lamp signal							R				T		Z
SLIP indicator lamp signal							R				T		AA
Brake warning lamp signal							R				T		AB
System setting signal				T	T				R				AC
AWD warning lamp signal							R			T			AD
AWD lock indicator lamp signal							R			T			AE
AWD lock switch signal							T			R			AF
Parking brake switch signal						R	T			R			AG

BCM (BODY CONTROL MODULE)

Schematic

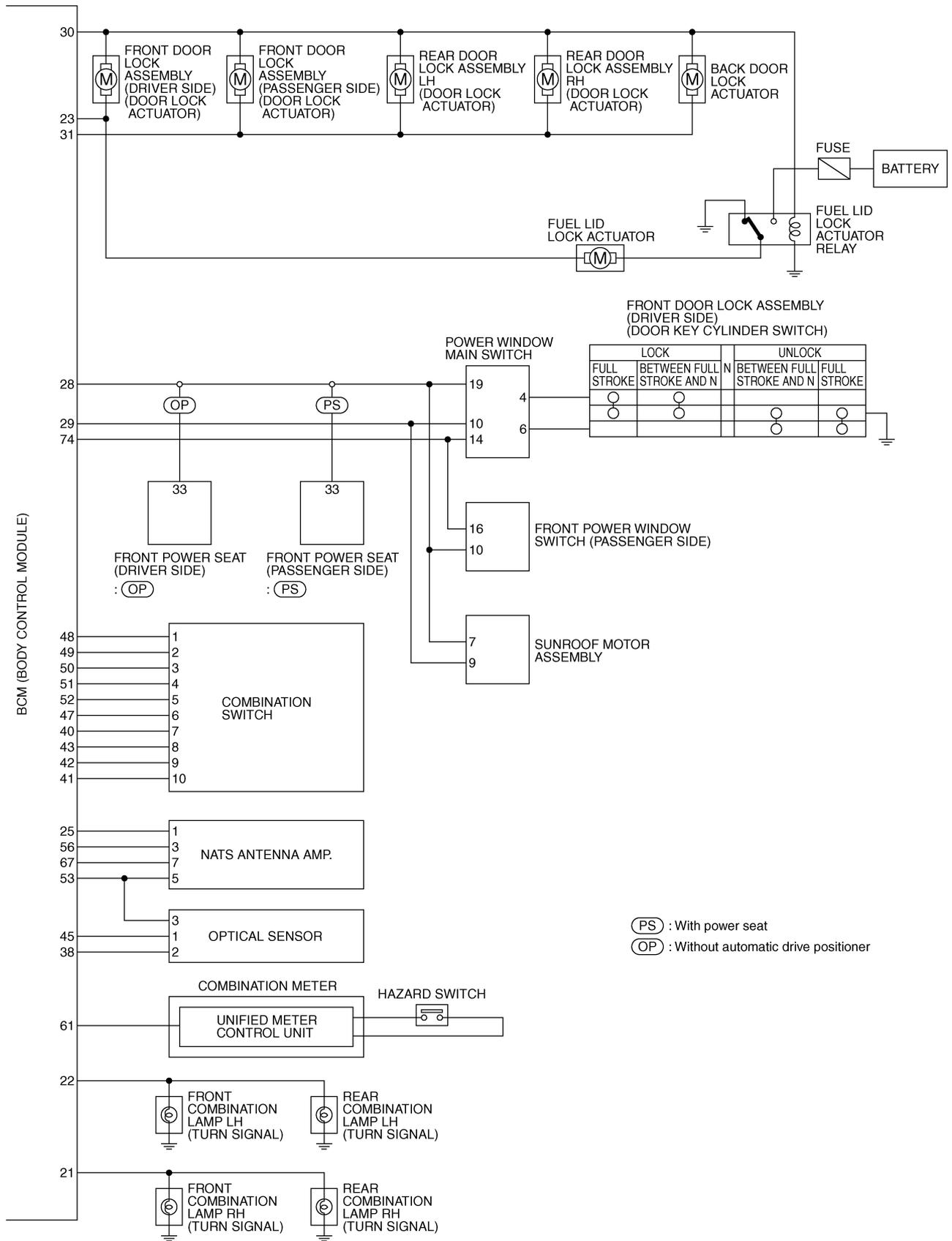
AKS004CF



BCM (BODY CONTROL MODULE)

TKWA0806E

BCM (BODY CONTROL MODULE)



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TKWA0807E

BCM (BODY CONTROL MODULE)

CONSULT-II

AKS004CG

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.

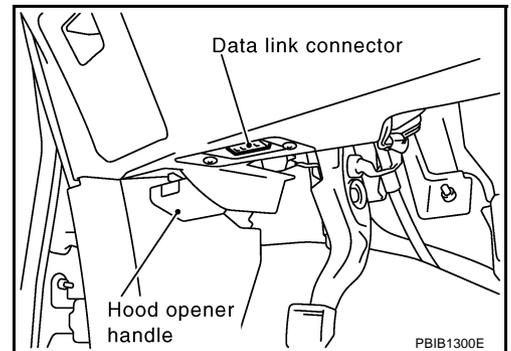
BCM diagnostic test item	Check item, diagnostic test mode	Content
Inspection by part	WORK SUPPORT	Changes setting of each function.
	SELF-DIAGNOSIS RESULTS	BCM performs self-diagnosis of CAN communication and combination switch.
	DATA MONITOR	Displays the input data of BCM in real time.
	CAN DIAG SUPPORT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

CONSULT-II INSPECTION PROCEDURE

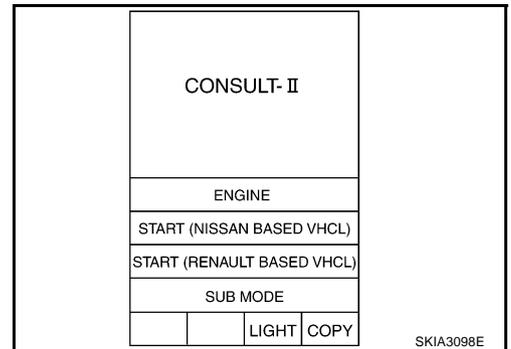
CAUTION:

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.

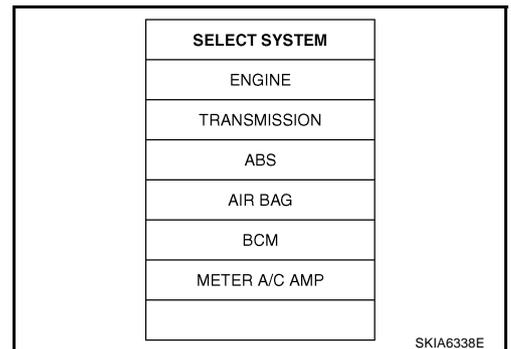
1. With the ignition switch OFF, connect CONSULT-II and CONSULT-II CONVERTER to the data link connector, then turn the ignition switch ON.



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

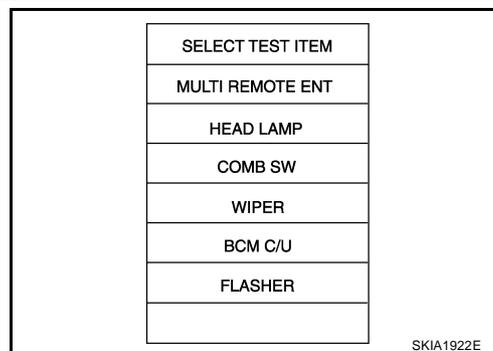


3. Touch "BCM" on "SELECT SYSTEM" screen. If "BCM" is not indicated, go to [GI-38, "CONSULT-II Data Link Connector \(DLC\) Circuit"](#).



BCM (BODY CONTROL MODULE)

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



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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	×		×		×
Interior lamp battery saver	BATTERY SAVER	×		×		×
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 Oil pressure switch	SIGNAL BUFFER			×		×
Trunk lid	TRUNK					×

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BCS

BCM (BODY CONTROL MODULE)

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

AKS004CH

1. SELF-DIAGNOSTIC RESULT CHECK

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 C/U" 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

Contents displayed

No malfunction>>Inspection End

Malfunction in CAN communication system>>After printing the monitor items, go to "CAN System". Refer to [LAN-10, "Precautions When Using CONSULT-II"](#) .

BCM (BODY CONTROL MODULE)

Inspection of BCM Power Supply and Ground Circuit

AKS004C1

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-34](#).

OK or NG

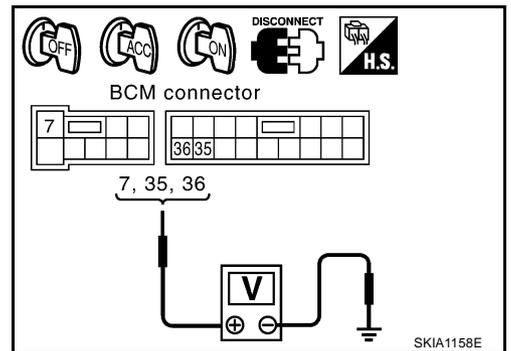
OK >> GO TO 2.

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)			
E118	7(W/B)	Battery power	OFF	Approx. 12
M35	35 (R)	Ignition power supply	ON	Approx. 12
	36 (P/B)	ACC power supply	ACC	Approx. 12



- Refer to LT wiring diagram LT-H/LAMP-01, [LT-34](#).

OK or NG

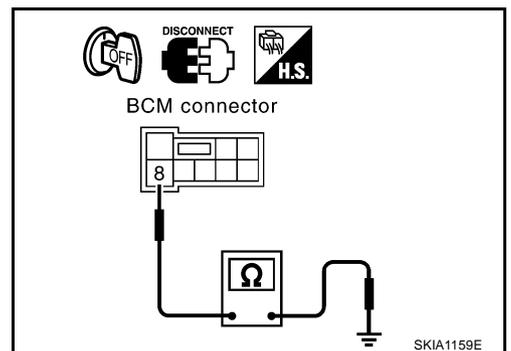
OK >> GO TO 3.

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)	
E118	8 (B)	Ground Yes



- Refer to LT wiring diagram LT-H/LAMP-01, [LT-34](#).

OK or NG

OK >> Inspection end.

NG >> Replace BCM ground circuit harness.

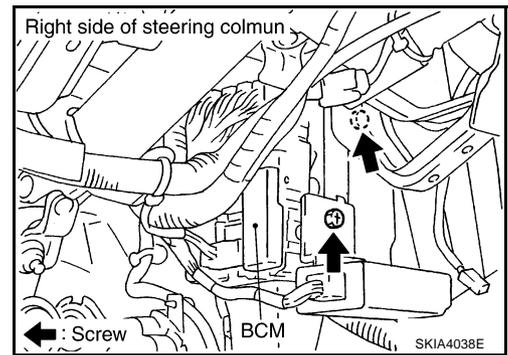
BCM (BODY CONTROL MODULE)

AKS004CJ

Removal and Installation of BCM

REMOVAL

1. Remove the Instrument driver lower panel. Refer to [IP-12. "\(C\) INSTRUMENT DRIVER LOWER PANEL"](#) in "IP INSTRUMENT PANEL."
2. Disconnect BCM connector.
3. Remove screws (2) 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.