

SECTION **LT**
LIGHTING SYSTEM

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PRECAUTIONS

PRECAUTIONS

PFP:00011

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

AKS00413

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

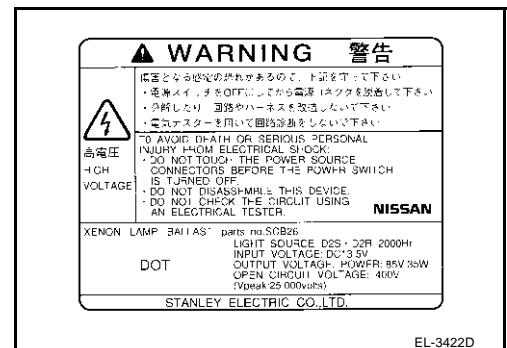
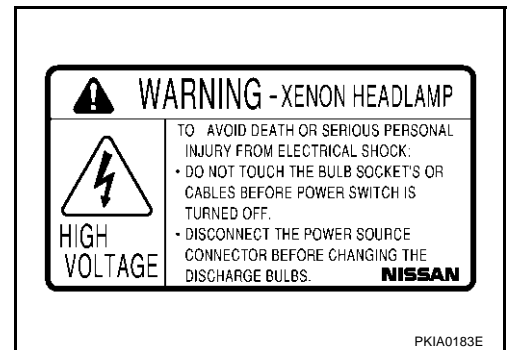
WARNING:

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

General precautions for service operations

AKS00415

- Never work with wet hands.
- Xenon headlamp includes high voltage generating part. Be sure to disconnect battery negative cable (negative terminal) or power fuse before removing, installing, or touching the xenon headlamp (including lamp bulb).
- Turn the lighting switch OFF before disconnecting and connecting the connector.
- When turning the xenon headlamp on and while it is illuminated, never touch the harness, bulb, and socket of the headlamp.
- When checking the headlamp on/off operation, check it on vehicle and with the power connected to the vehicle-side connector.
- Do not touch the headlamp bulb glass surface with bare hands or allow oil or grease to get on it. Do not touch the headlamp bulb just after the headlamp is turned off, because it is very hot.
- Install the xenon headlamp bulb socket correctly. If it is installed improperly, high-voltage leak or corona discharge may occur that can melt the bulb, connector, and housing. Do not illuminate the xenon headlamp bulb out of the headlamp housing. Doing so can cause fire and harm your eyes.
- When the bulb has burned out, wrap it in a thick vinyl bag and discard. Do not break the bulb.
- Leaving the bulb removed from the headlamp housing for a long period of time can deteriorate the performance of the lens and reflector (dirt, clouding). Always prepare a new bulb and have it on hand when replacing the bulb.
- When adjusting the headlamp aiming, turn the aiming adjustment screw only in the tightening direction. (If it is necessary to loosen the screw, first fully loosen the screw, and then turn it in the tightening direction.)
- Do not use organic solvent (paint thinner or gasoline) to clean lamps and to remove old sealant.



PRECAUTIONS

Wiring Diagrams and Trouble Diagnosis

AKS00416

When you read wiring diagrams, refer to the following:

- Refer to [GI-14, "How to Read Wiring Diagrams"](#) in GI section.
- Refer to [PG-3, "POWER SUPPLY ROUTING CIRCUIT"](#) for power distribution in PG section.

When you perform trouble diagnosis, refer to the following:

- Refer to [GI-10, "HOW TO FOLLOW TEST GROUPS IN TROUBLE DIAGNOSES"](#) in GI section.
- Refer to [GI-26, "How to Perform Efficient Diagnosis for an Electrical Incident"](#) in GI section.

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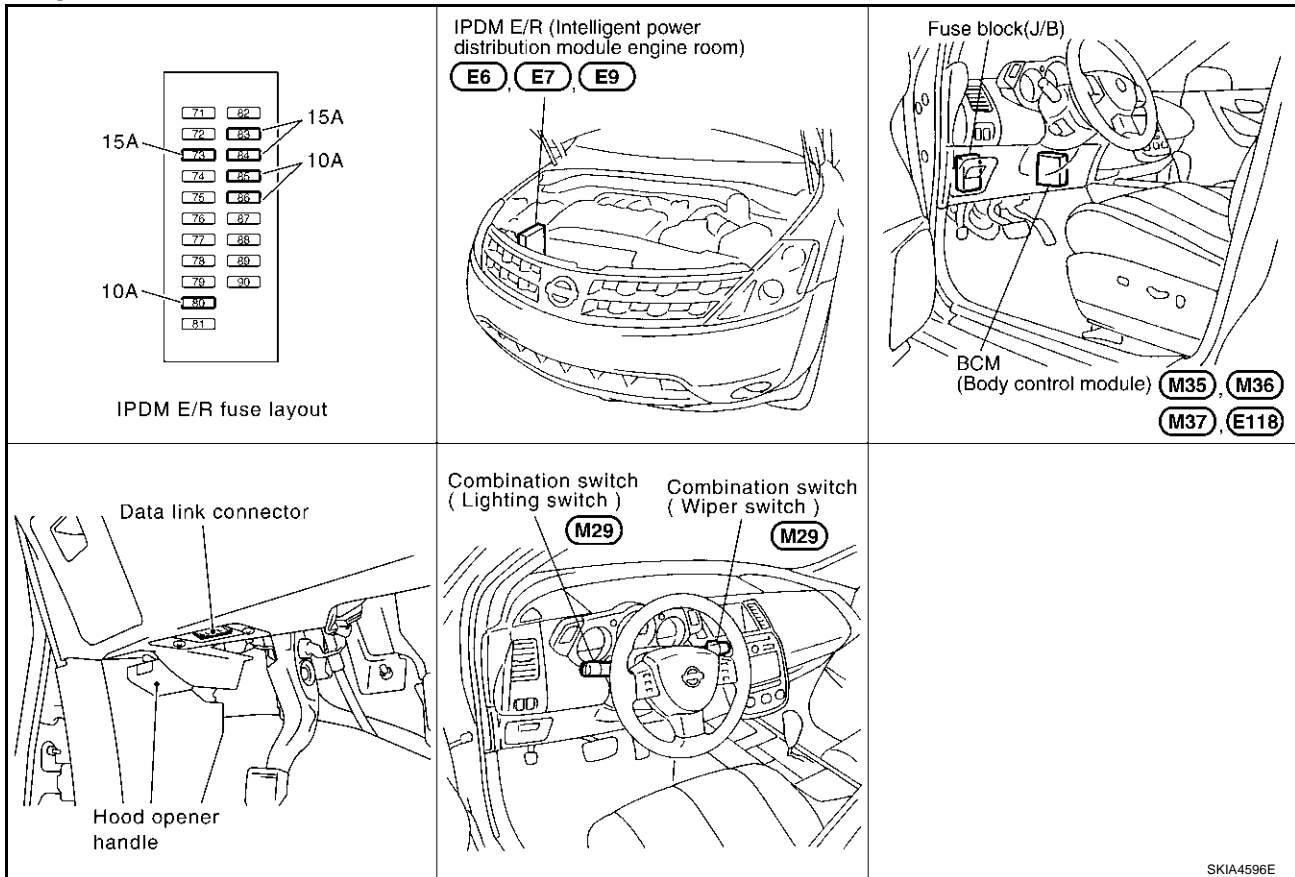
HEADLAMP - XENON TYPE -

HEADLAMP - XENON TYPE -

PFP:26010

Component Parts and Harness Connector Location

AKS007KW



System Description

AKS007KX

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

If voltage is applied to a high beam solenoid, the bulb shade will move, even a xenon head lamp bulb comes out, and a high beam and a low beam are changed.

OUTLINE

Power is supplied at all times

- to headlamp high relay [located in IPDM E/R (intelligent power distribution module engine room)]
- to headlamp low relay [located in IPDM E/R (intelligent power distribution module engine room)]
- through 50A fusible link (letter F, located in fuse and fusible link block)
- to BCM (body control module) terminal 7
- through 15A fuse [No. 73, located in IPDM E/R (intelligent power distribution module engine room)]
- to CPU (central processing unit) [located in IPDM E/R (intelligent power distribution module engine room)]
- through 10A fuse [No. 21, located in fuse block (J/B)]
- to combination meter terminal 21

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

- through 10A fuse [No. 1, located in fuse block (J/B)]
- to BCM (body control module) terminal 35
- through 10A fuse [No. 80, located in IPDM E/R (intelligent power distribution module engine room)]
- to CPU (central processing unit) [located in IPDM E/R (intelligent power distribution module engine room)]

HEADLAMP - XENON TYPE -

- through 10A fuse [No. 14, located in fuse block (J/B)]
- to combination meter terminal 20

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

- through 10A fuse [No. 6, located in fuse block (J/B)]
- to BCM (body control module) terminal 36

Ground is supplied

- to BCM (body control module) terminal 8
- through grounds E13, E26 and E28
- to IPDM E/R (intelligent power distribution module engine room) terminals 14 and 45
- through grounds E13, E26 and E28.
- to combination meter terminal 22, 23 and 24
- through grounds M14 and M78.

Low Beam Operation

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

- to 15A fuse [No. 83, located in IPDM E/R]
- through IPDM E/R terminal 27
- to headlamp RH terminal 4, and
- to 15A fuse [No. 84, located in IPDM E/R]
- through IPDM E/R terminal 21
- to headlamp LH terminal 4.

Ground is supplied

- to headlamp RH terminal 5
- through grounds E13, E26 and E28, and
- to headlamp LH terminal 5
- through grounds E13, E26 and E28.

With power and ground supplied, low beam headlamps illuminate.

High Beam Operation/Flash-to-Pass Operation

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

- to 15A fuse [No. 83, located in IPDM E/R]
- through IPDM E/R terminal 27
- to headlamp RH terminal 4, and
- to 15A fuse [No. 84, located in IPDM E/R]
- through IPDM E/R terminal 21
- to headlamp LH terminal 4
- to 10A fuse [No. 86, located in IPDM E/R]
- through IPDM E/R terminal 24
- to headlamp RH terminal 1, and
- to 10A fuse [No. 85, located in IPDM E/R]
- through IPDM E/R terminal 22
- to headlamp LH terminal 1.

Ground is supplied

- to headlamp RH terminal 5
- through grounds E13, E26 and E28, and
- to headlamp LH terminal 5

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HEADLAMP - XENON TYPE -

- through grounds E13, E26 and E28.

With power and ground supplied, the high beam headlamps illuminate.

If voltage is applied to a high beam solenoid, the bulb shade will move, even a xenon head lamp bulb comes out, and a high beam and a low beam are changed.

The unified meter and A/C amp that received the high beam request signal by BCM across the CAN communication makes a high beam indicator lamp turn on in combination meter.

COMBINATION SWITCH READING FUNCTION

Refer to [LT-251, "Combination Switch Reading Function"](#) .

EXTERIOR LAMP BATTERY SAVER CONTROL

When the combination switch (lighting switch) is in the 2ND position (ON), and the ignition switch is turned from ON or ACC to OFF, the battery saver control function is activated.

Under this condition, the headlamps remain illuminated for 5 minutes, then the headlamps are turned off.

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

AUTO LIGHT OPERATION

Refer to [LT-140, "System Description"](#) in "AUTO LIGHT SYSTEM".

VEHICLE SECURITY SYSTEM

The vehicle security system will flash the high beams if the system is triggered. Refer to [BL-142, "VEHICLE SECURITY \(THEFT WARNING\) SYSTEM"](#) .

XENON HEADLAMP

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

Following are some of the many advantages of the xenon type headlamp.

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

HEADLAMP - XENON TYPE -

CAN Communication System Description

AKS007KY

CAN (Controller Area Network) is a serial communication line for real time application. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Many electronic control units are equipped onto a vehicle, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN H line, CAN L line) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.

CAN Communication Unit For 2WD Models

AKS007QL

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>LT-12. "TYPE 1/TYPE 2/TYPE 3/TYPE 4/TYPE 5/TYPE 6/TYPE 7/TYPE 8"</u>								<u>LT-17. "TYPE 9/TYPE 10/TYPE 11/TYPE 12/TYPE 13/TYPE 14/TYPE 15/TYPE 16"</u>							

×: Applicable

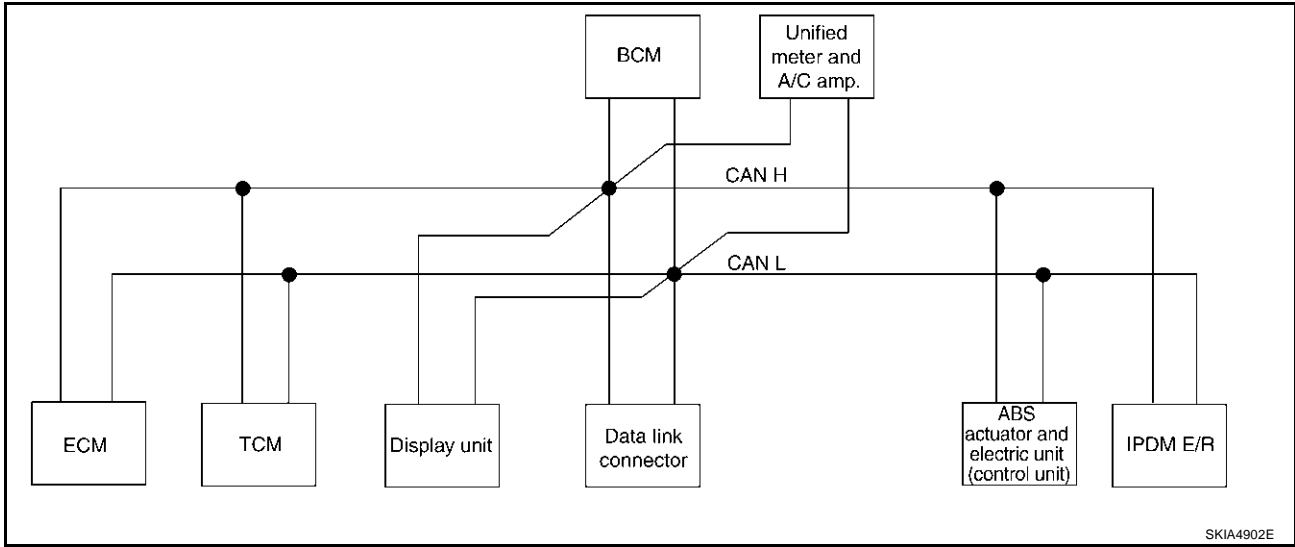
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HEADLAMP - XENON TYPE -

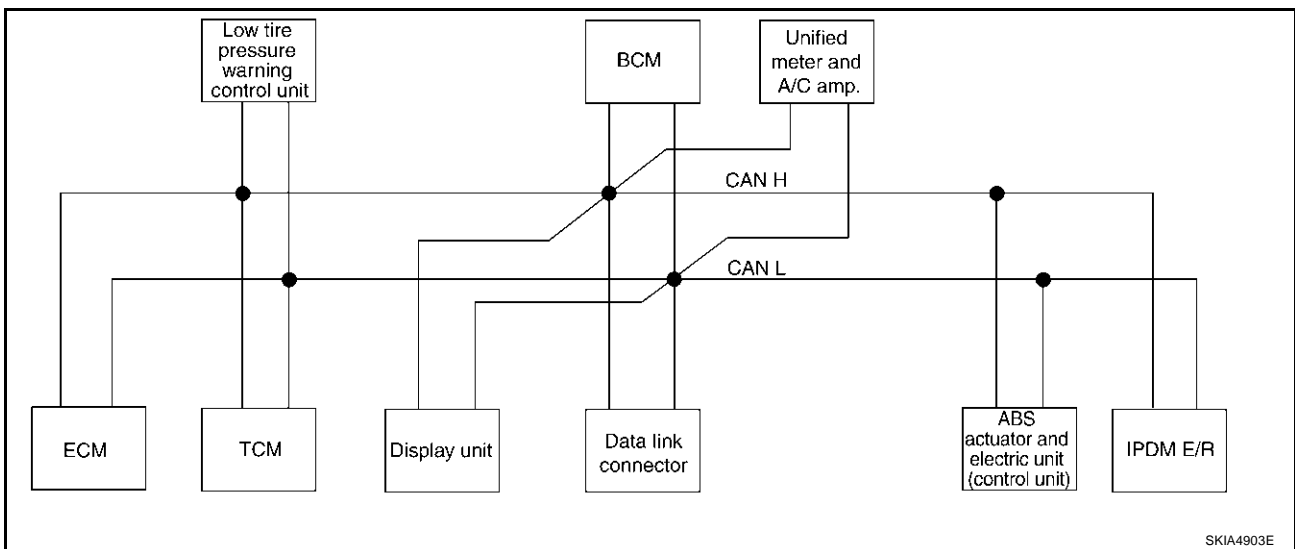
TYPE 1/TYPE 2/TYPE 3/TYPE 4/TYPE 5/TYPE 6/TYPE 7/TYPE 8

System Diagram

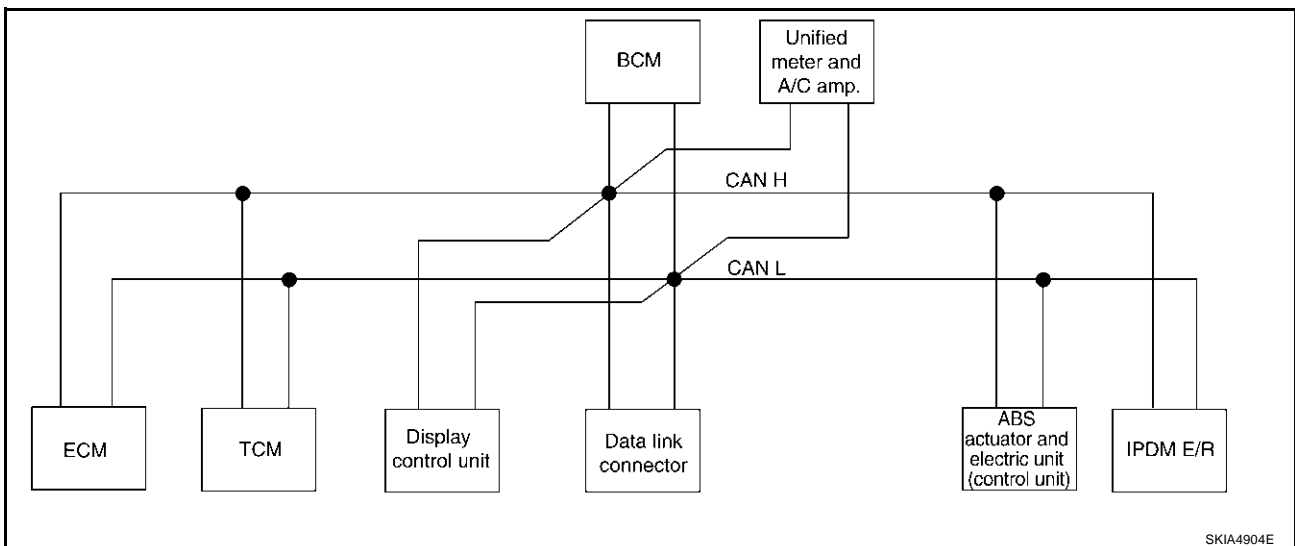
- Type1



- Type2

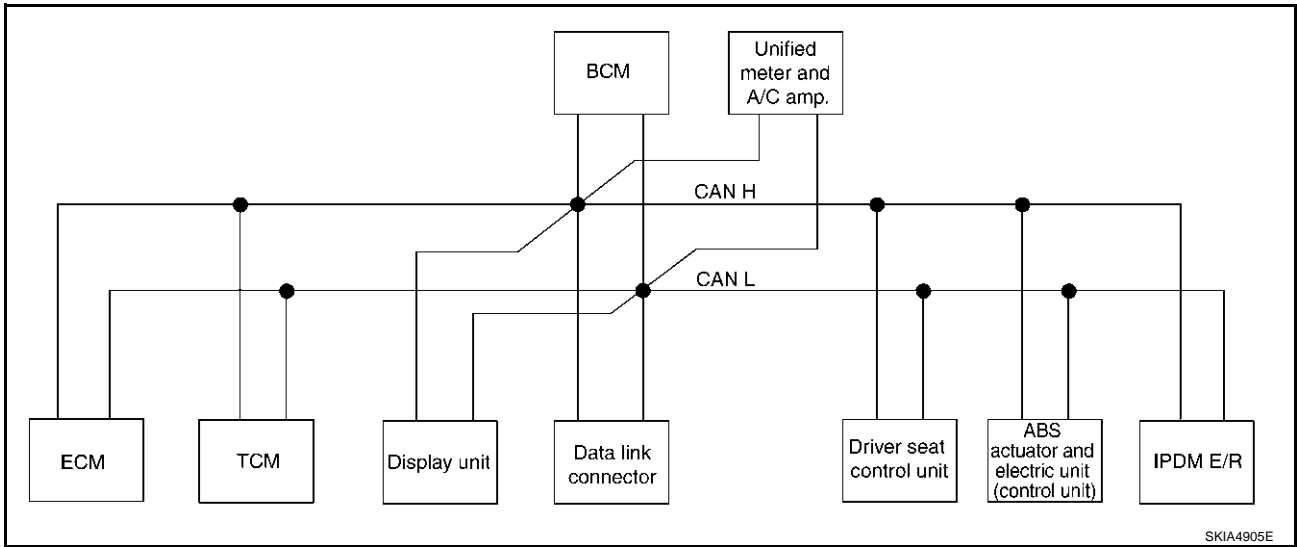


- Type3

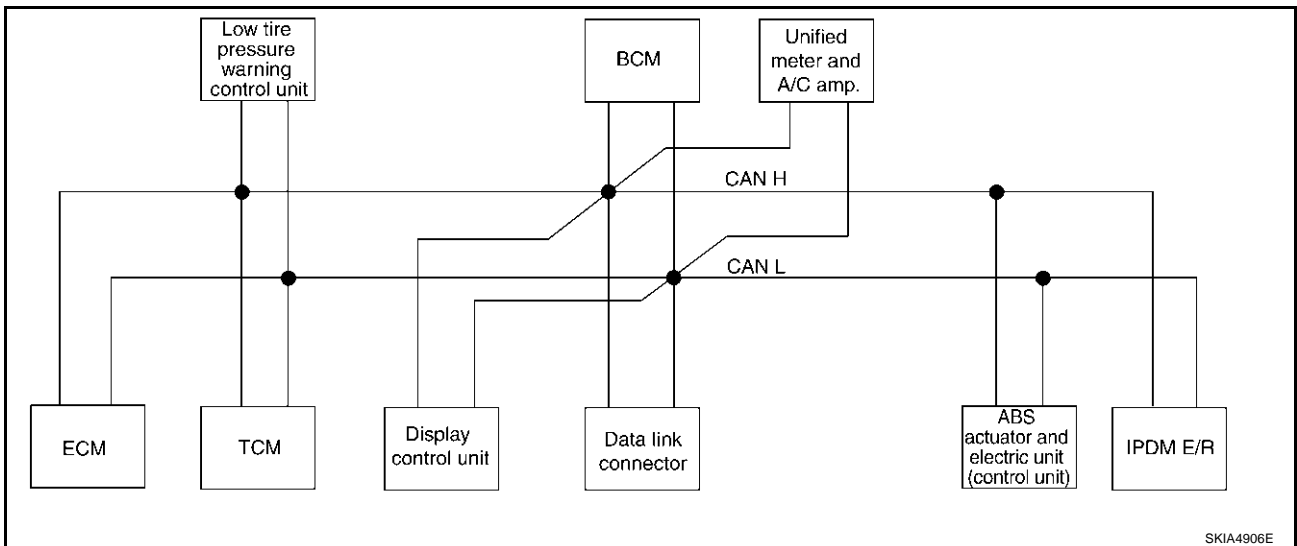


HEADLAMP - XENON TYPE -

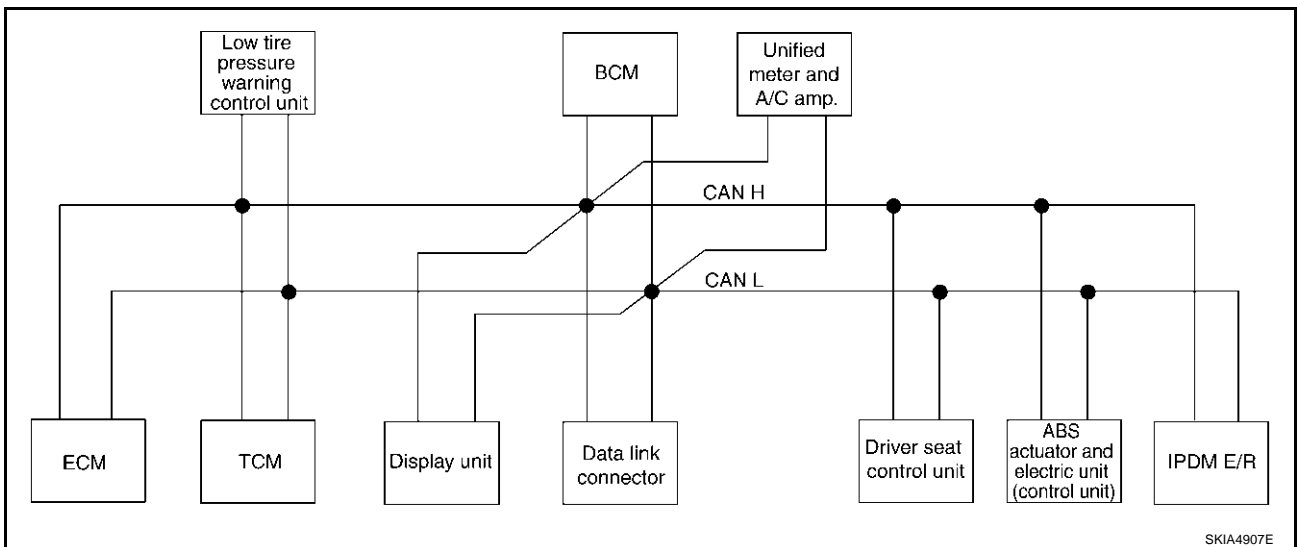
● Type4



● Type5



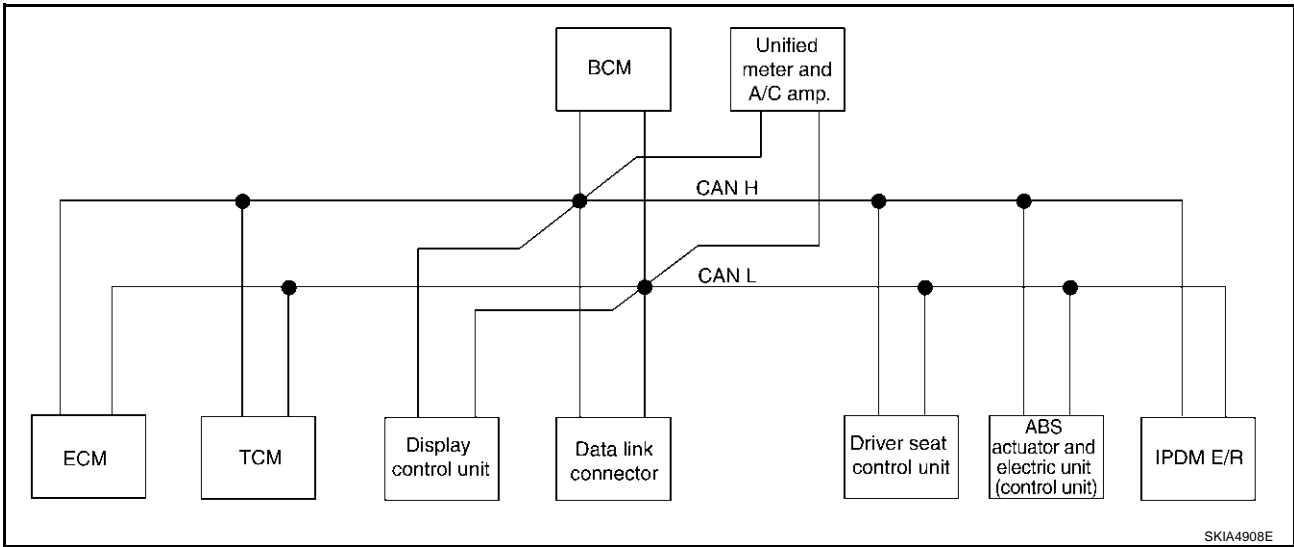
● Type6



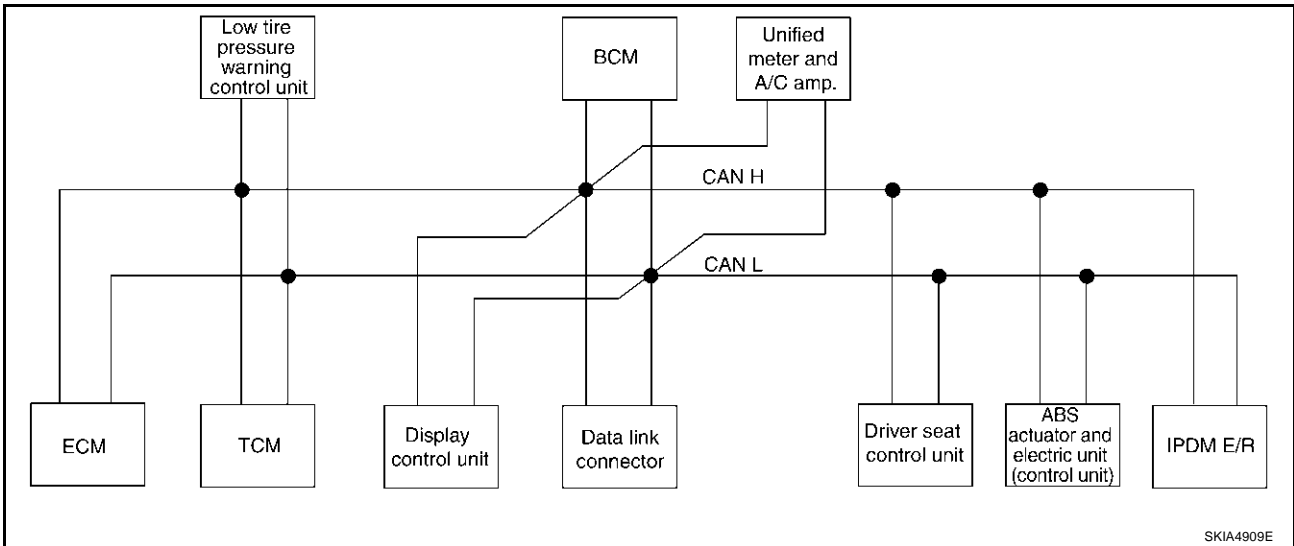
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HEADLAMP - XENON TYPE -

- Type7



- Type8



HEADLAMP - XENON TYPE -

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			

HEADLAMP - XENON TYPE -

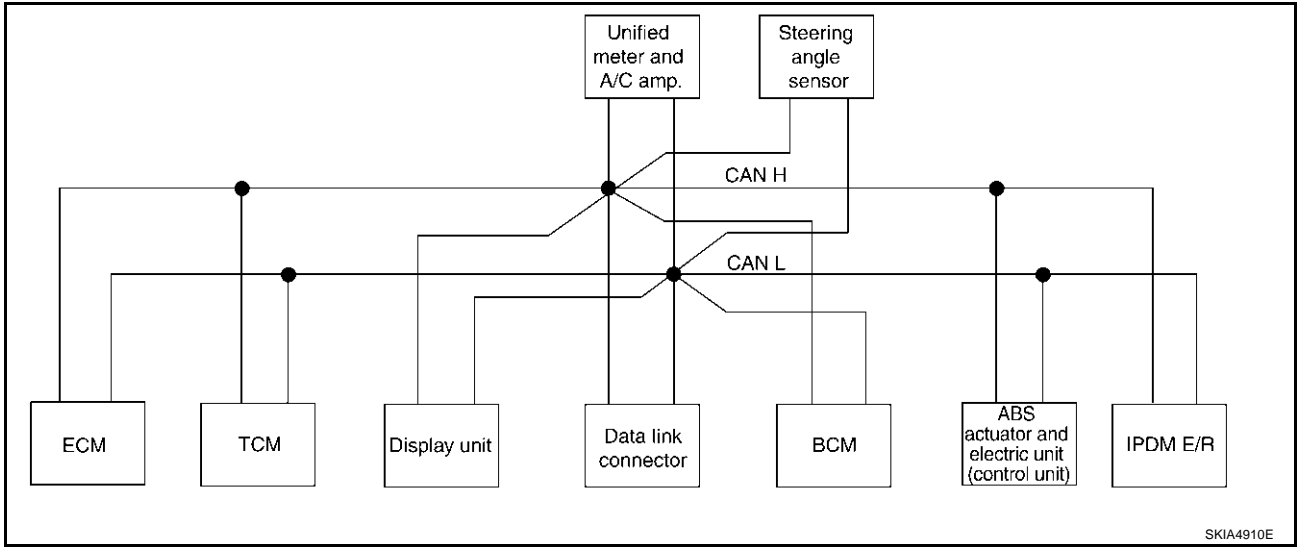
Signals	ECM	TCM	Low tire pressure warning control unit	Display unit	Display control unit	BCM	Unified meter and A/C amp.	Driver seat control unit	ABS actuator and electric unit (control unit)	IPDM E/R
Key fob ID signal						T		R		
Key fob door unlock signal						T		R		
Seat belt buckle switch signal						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 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
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		
Parking brake switch signal						R	T			

HEADLAMP - XENON TYPE -

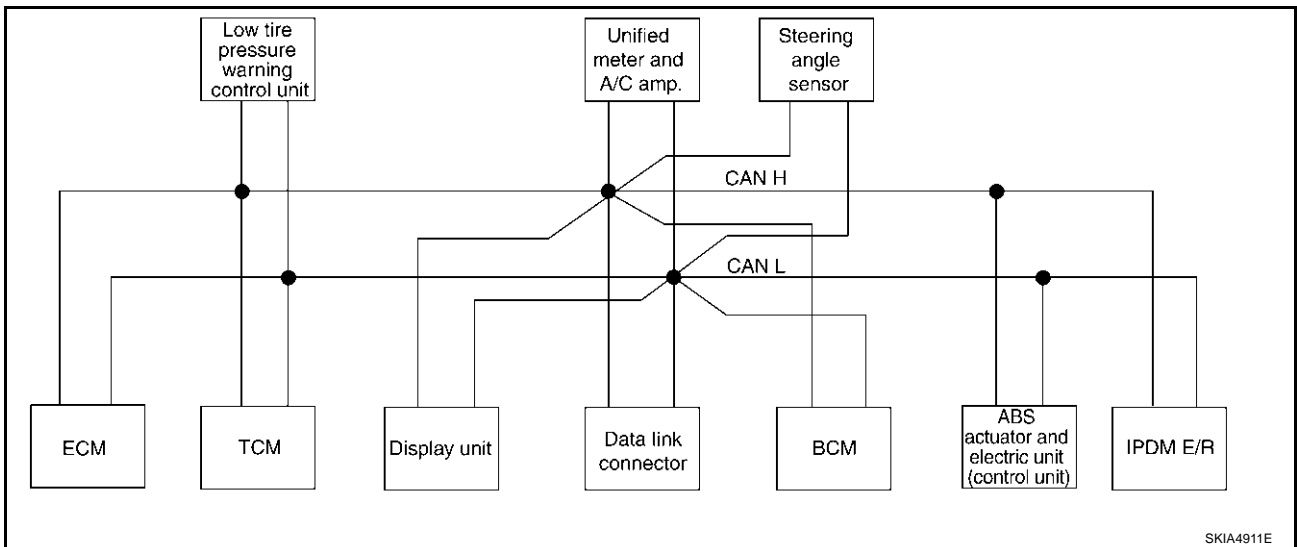
TYPE 9/TYPER10/TYPER 11/TYPER 12/TYPER 13/TYPER 14/TYPER 15/TYPER 16

System Diagram

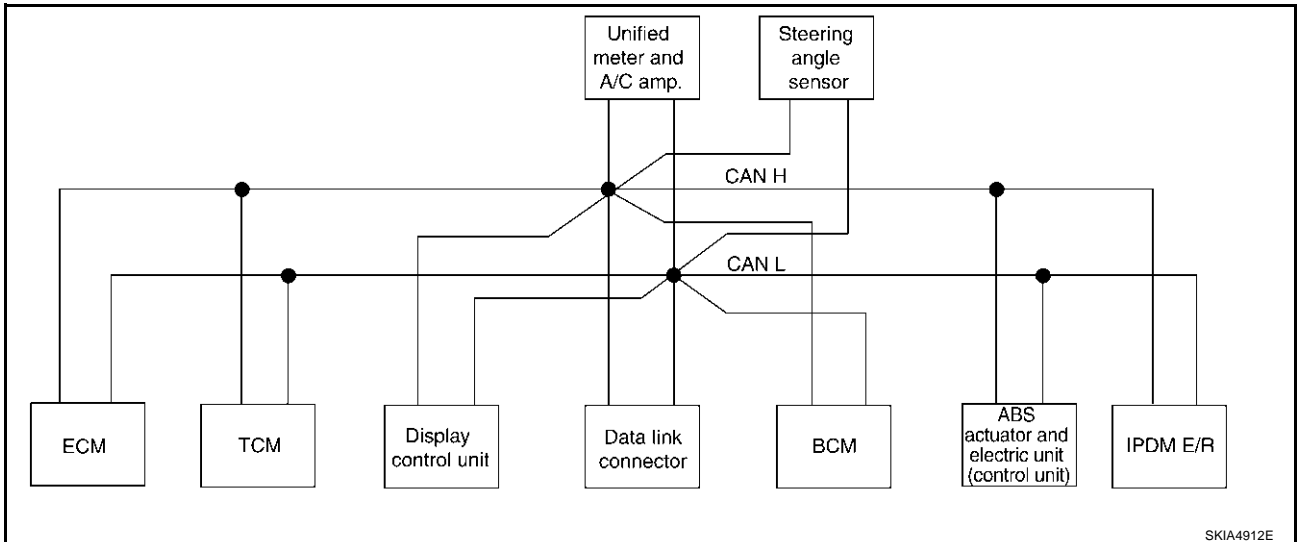
- Type9



- Type10



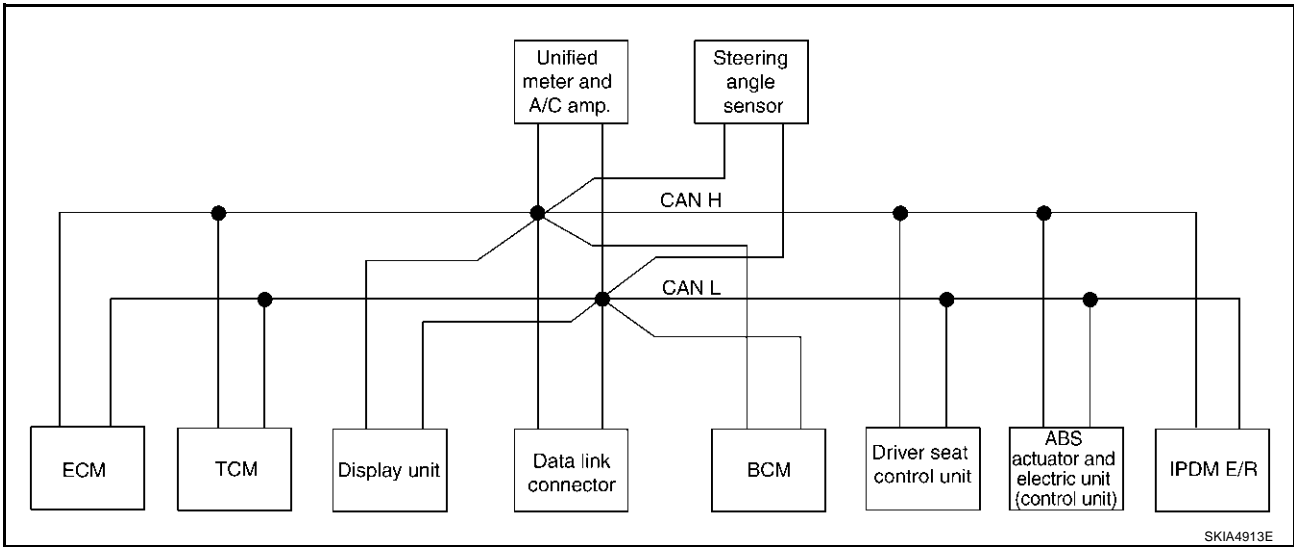
- Type11



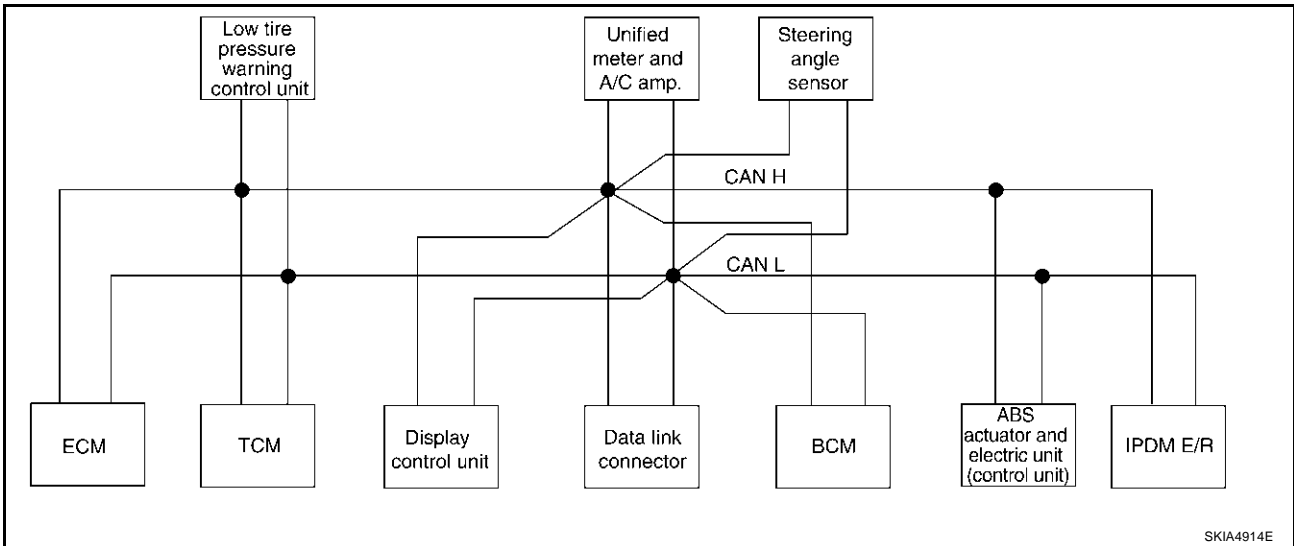
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HEADLAMP - XENON TYPE -

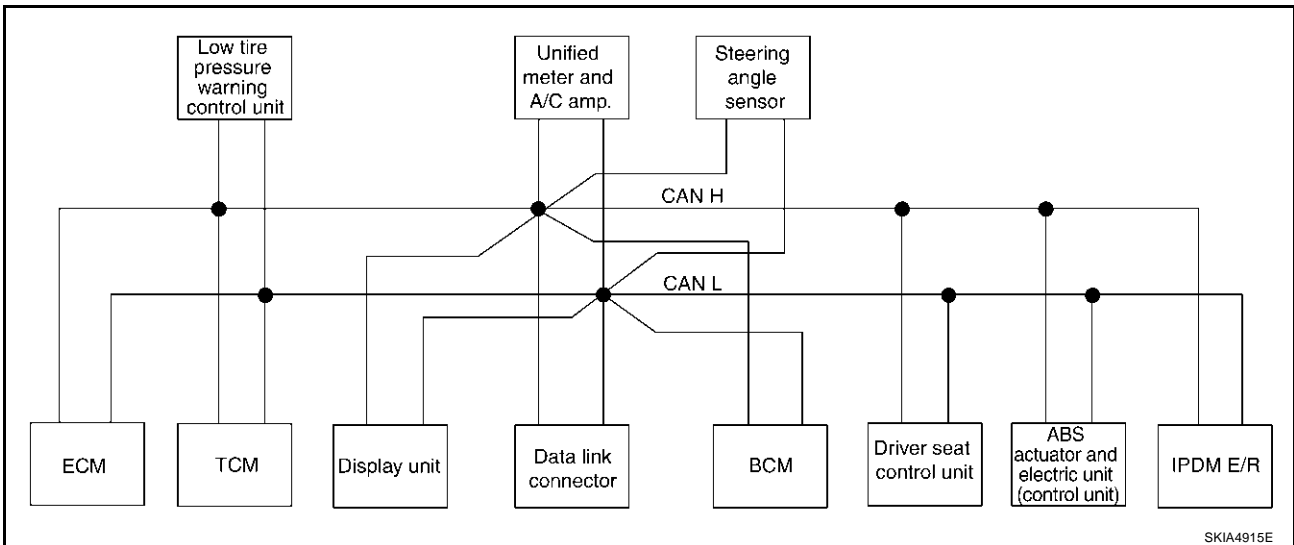
- Type12



- Type13

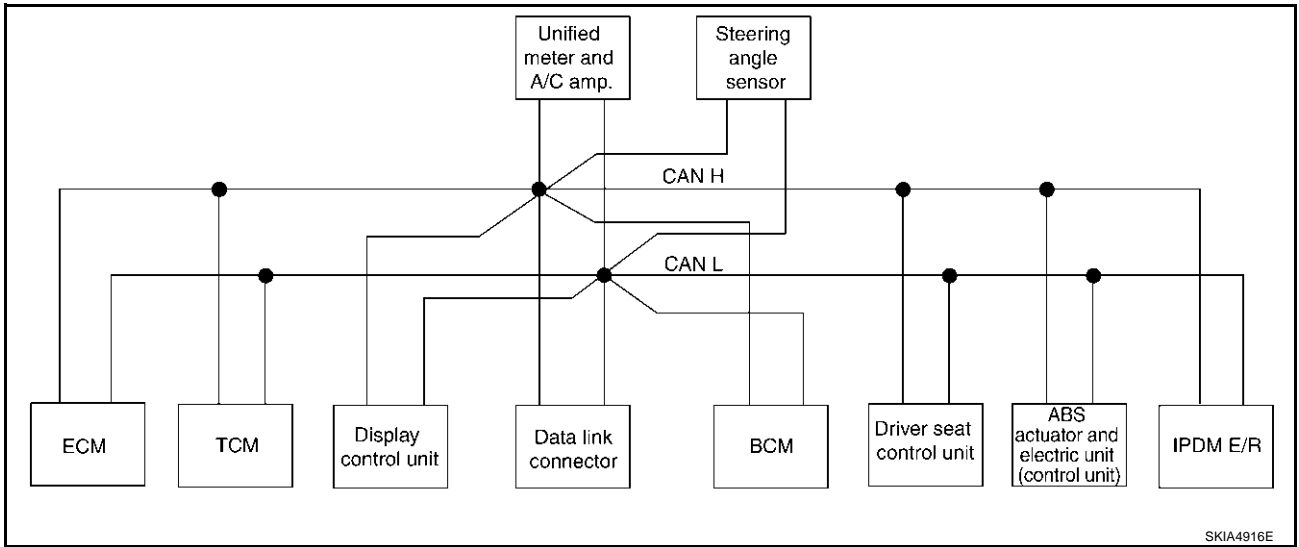


- Type14

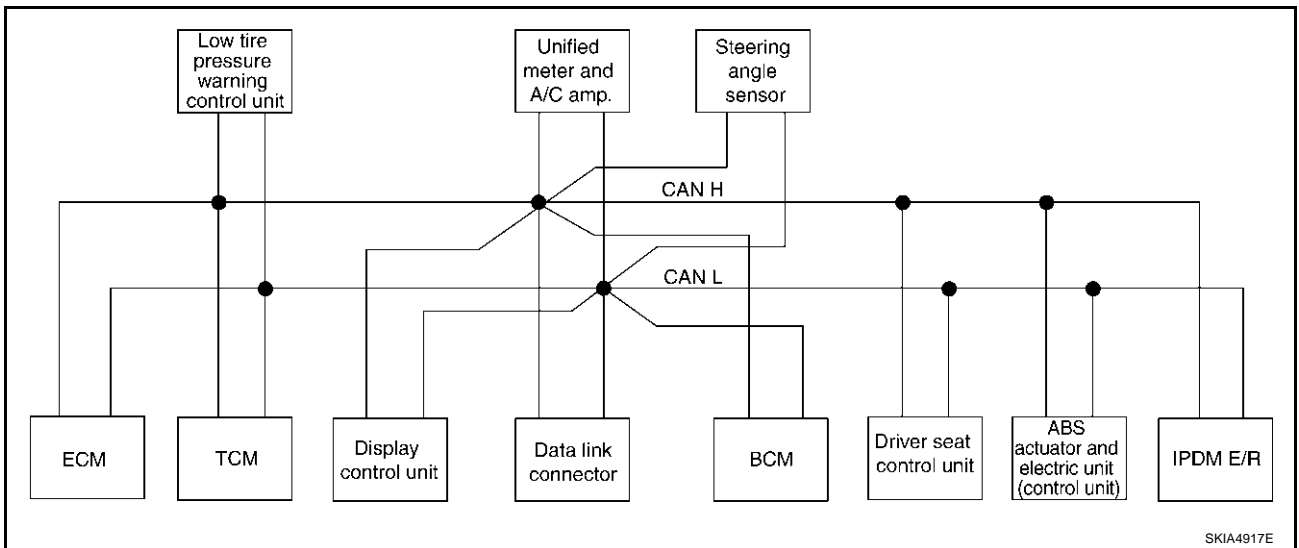


HEADLAMP - XENON TYPE -

- Type15



- Type16



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HEADLAMP - XENON TYPE -

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

HEADLAMP - XENON TYPE -

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	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
Parking brake switch signal						R	T					AD

HEADLAMP - XENON TYPE -

CAN Communication Unit For AWD Models

AKS007QM

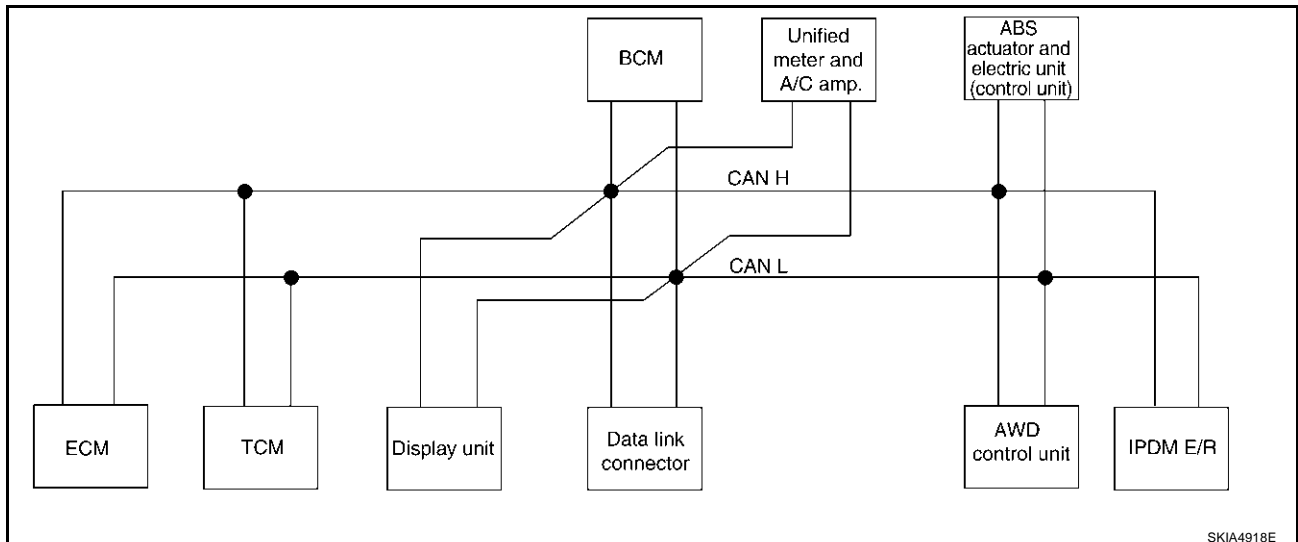
Body type	Wagon															
Axle	AWD															
Engine	VQ35DE															
Transmission	CVT															
Brake control	ABS								VDC							
Low tire pressure warning system		×			×	×		×		×			×	×		×
Navigation system			×		×		×	×			×		×		×	×
Automatic drive positioner				×		×	×	×				×		×	×	×
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	LT-22, "TYPE 17/TYPE 18/TYPE 19/TYPE 20/TYPE 21/TYPE 22/TYPE 23/TYPE 24"								LT-28, "TYPE 25/TYPE 26/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

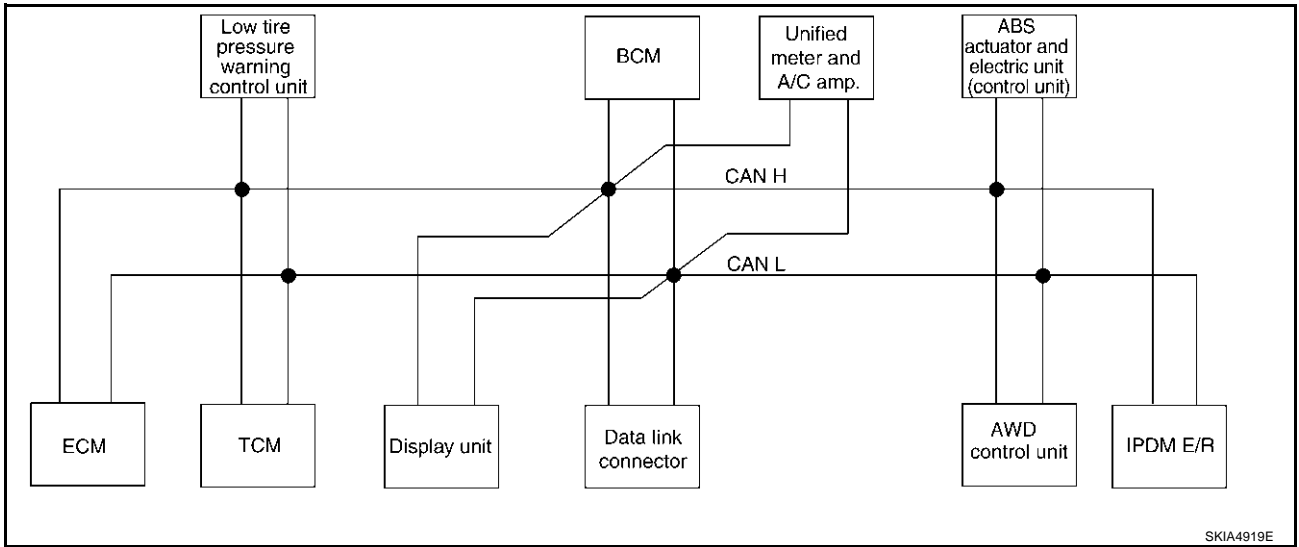
System Diagram

- Type17

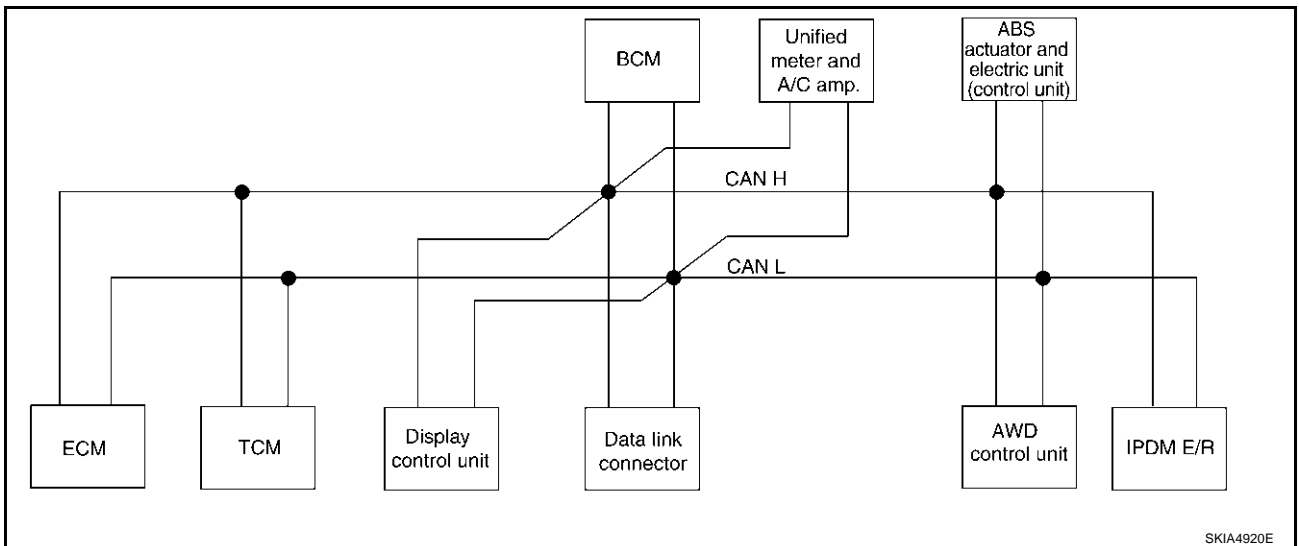


HEADLAMP - XENON TYPE -

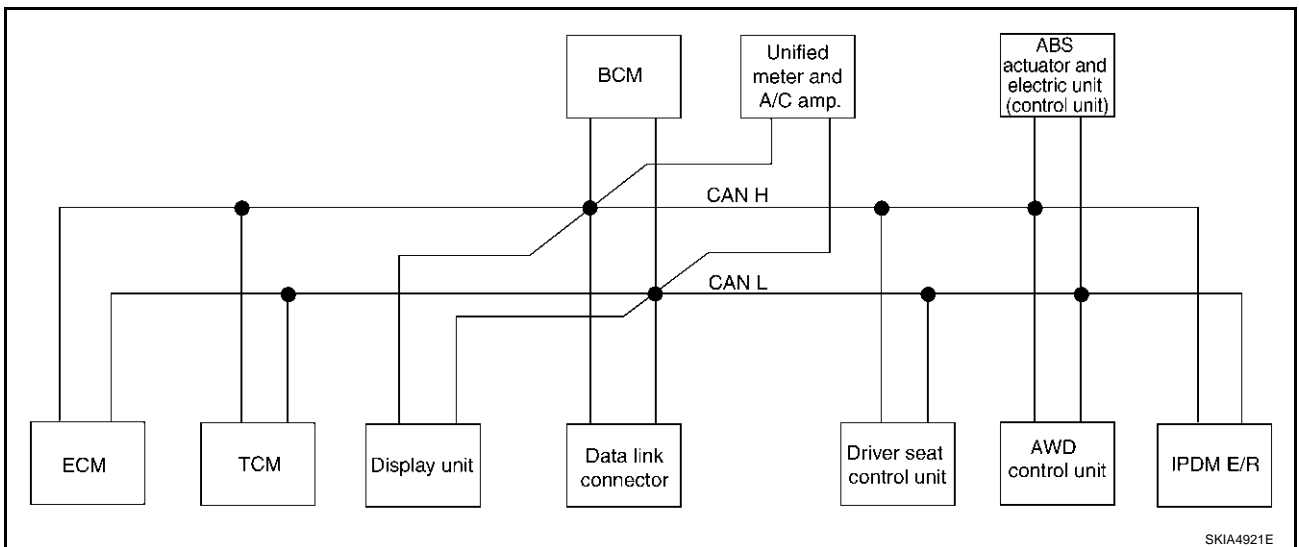
- Type18



- Type19



- Type20

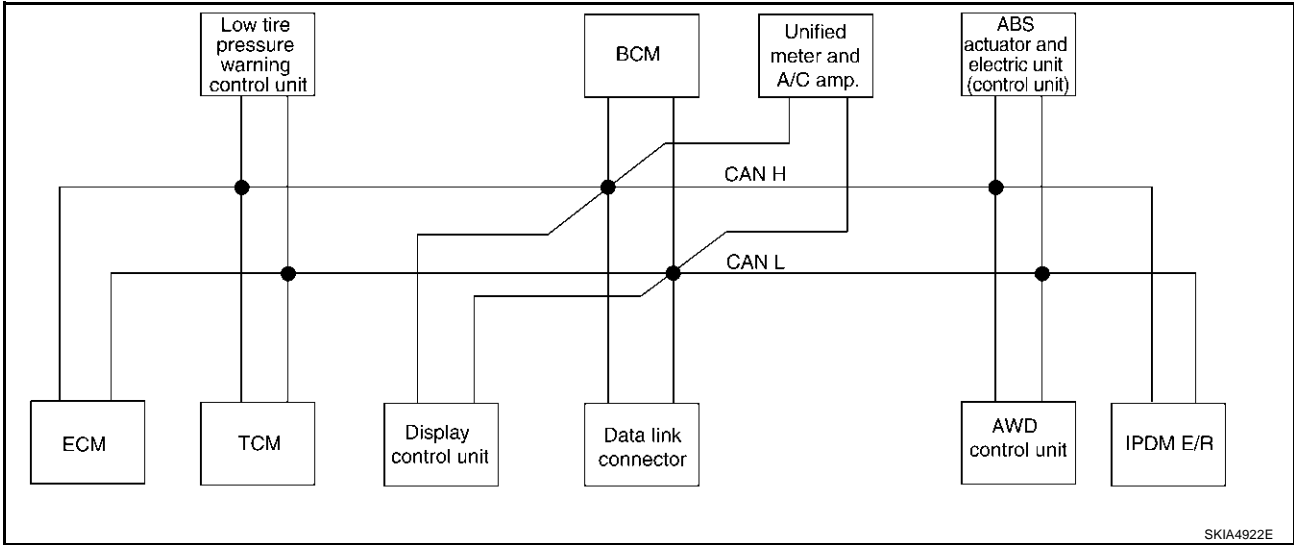


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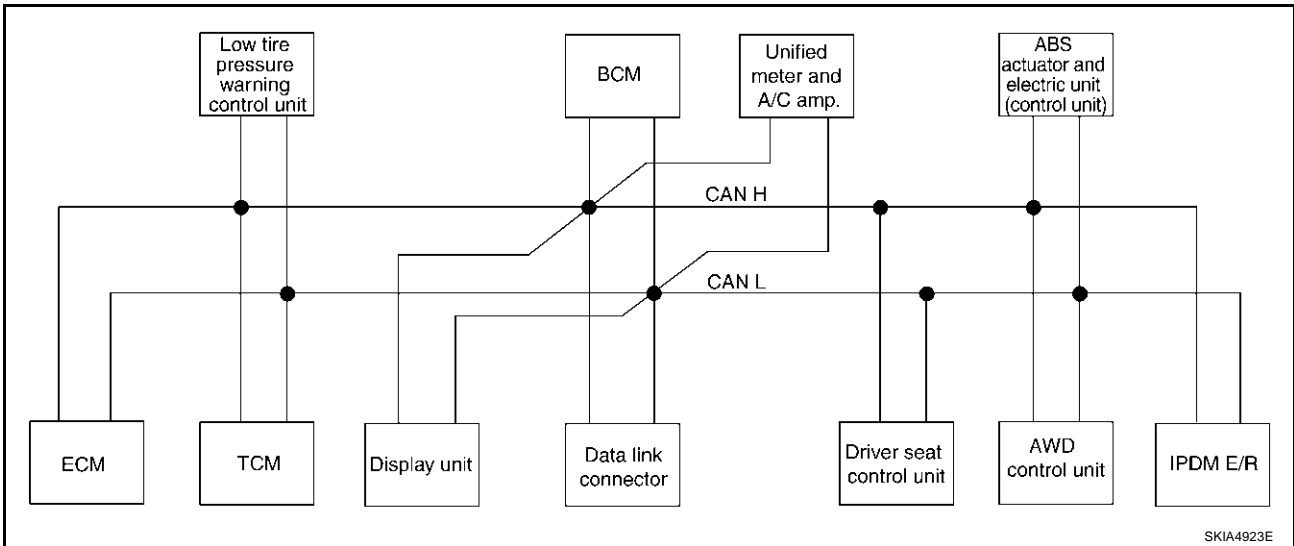
LT

HEADLAMP - XENON TYPE -

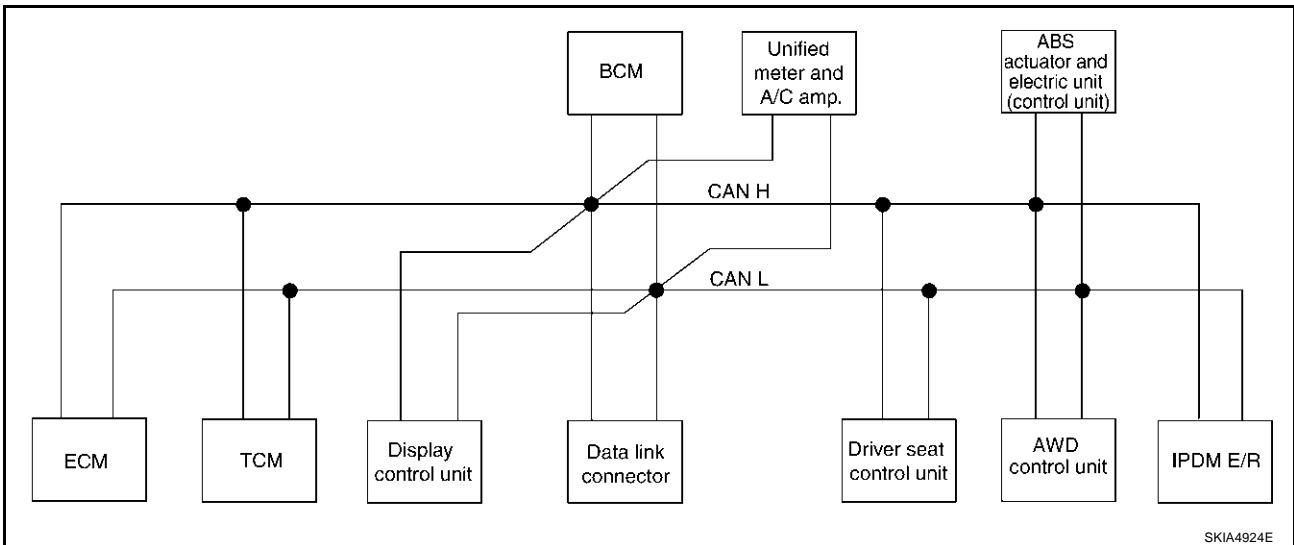
- Type21



- Type22

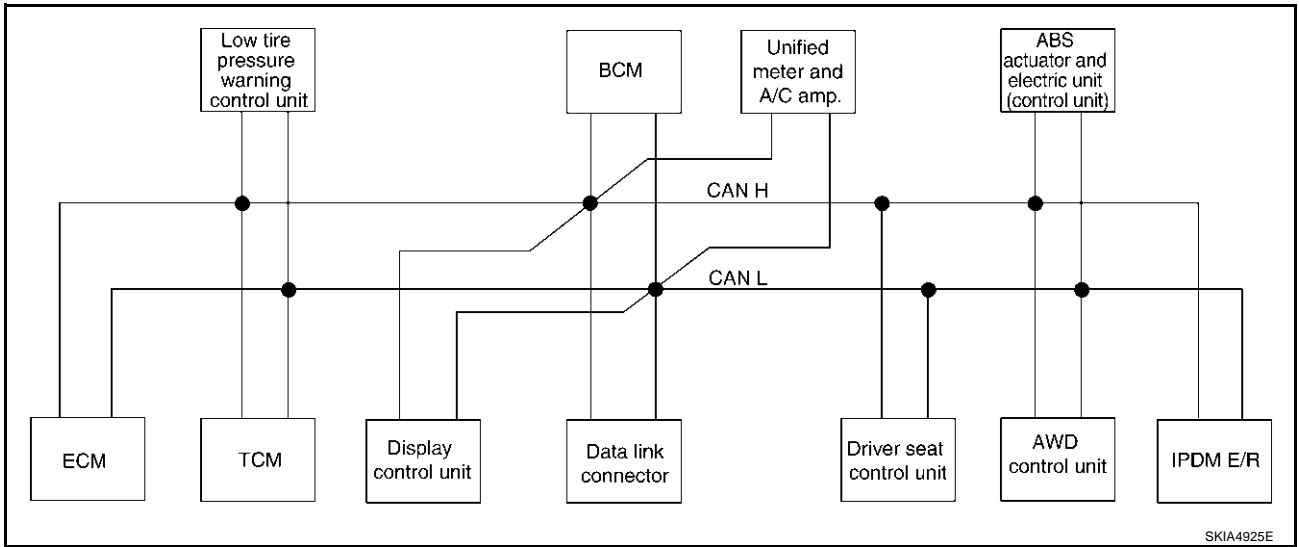


- Type23



HEADLAMP - XENON TYPE -

- Type24



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HEADLAMP - XENON TYPE -

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			

HEADLAMP - XENON TYPE -

Signals	ECM	TCM	Low tire pres- sure warn- ing con- trol unit	Dis- play unit	Dis- play con- trol unit	BCM	Uni- fied meter and A/ C amp.	Driver seat con- trol unit	AWD con- trol unit	ABS actua- tor and elec- tric unit (con- trol 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		

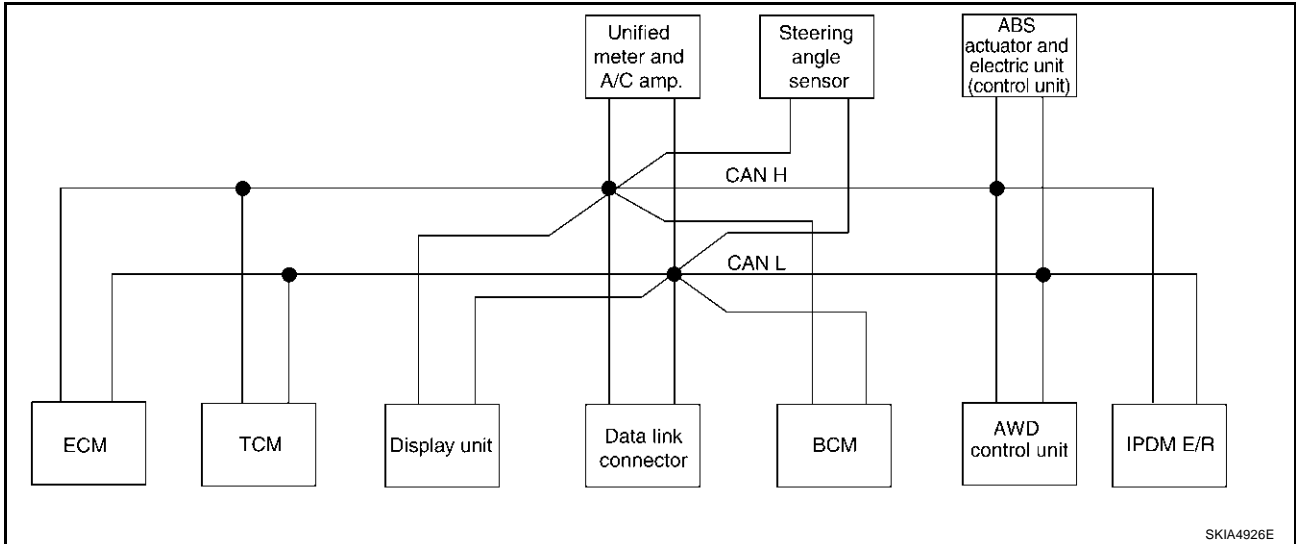
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HEADLAMP - XENON TYPE -

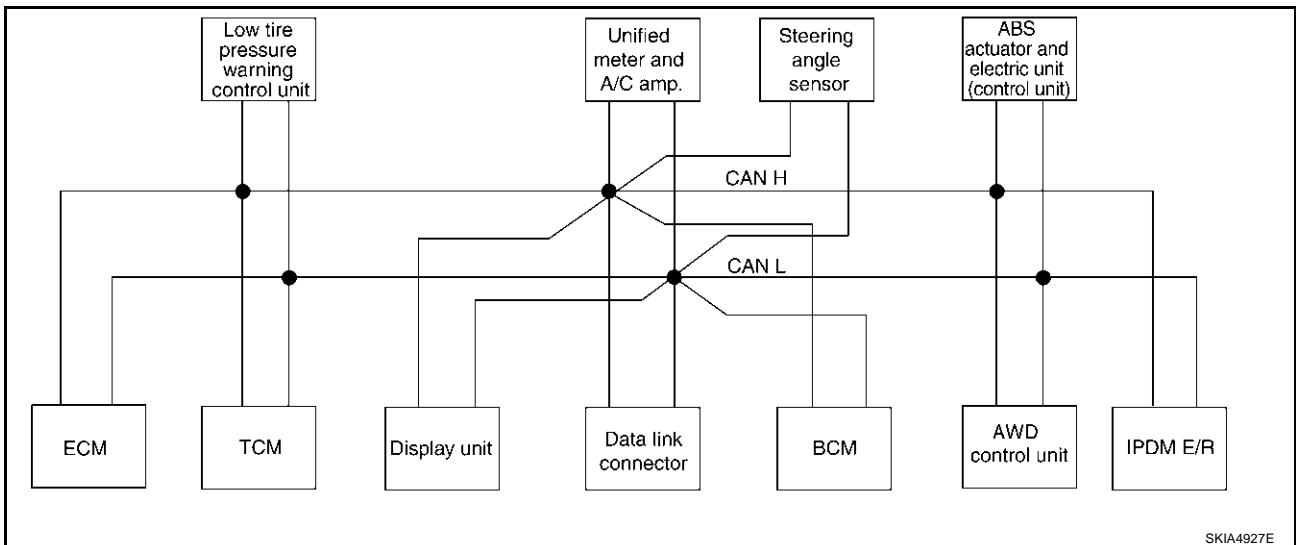
TYPE 25/TYPER26/TYPER 27/TYPER 28/TYPER 29/TYPER 30/TYPER 31/TYPER 32

System Diagram

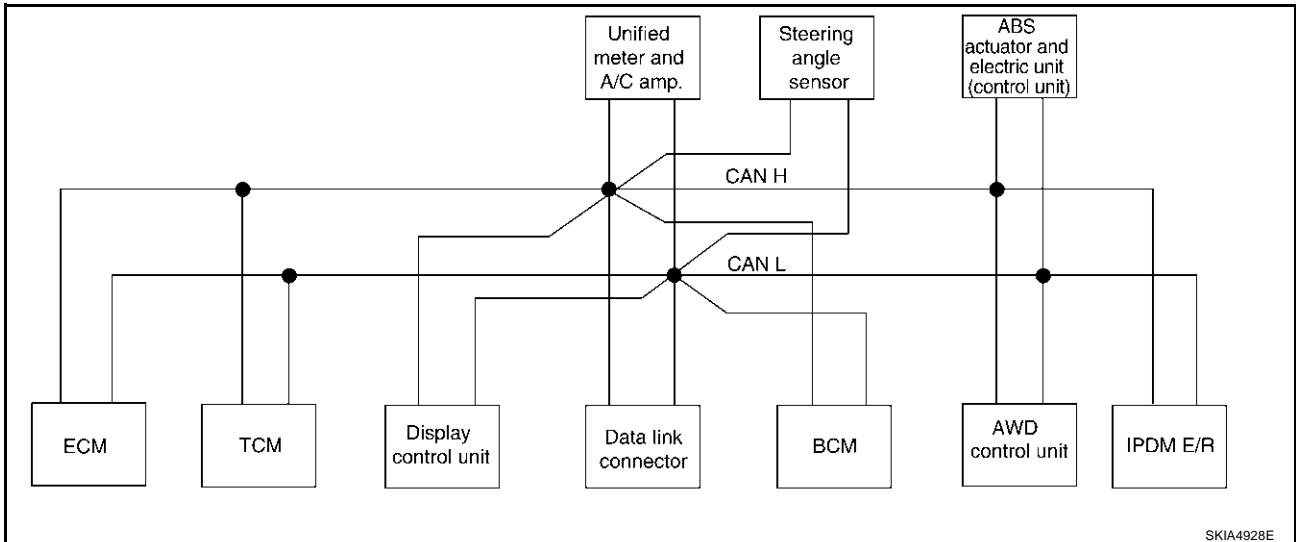
- Type25



- Type26

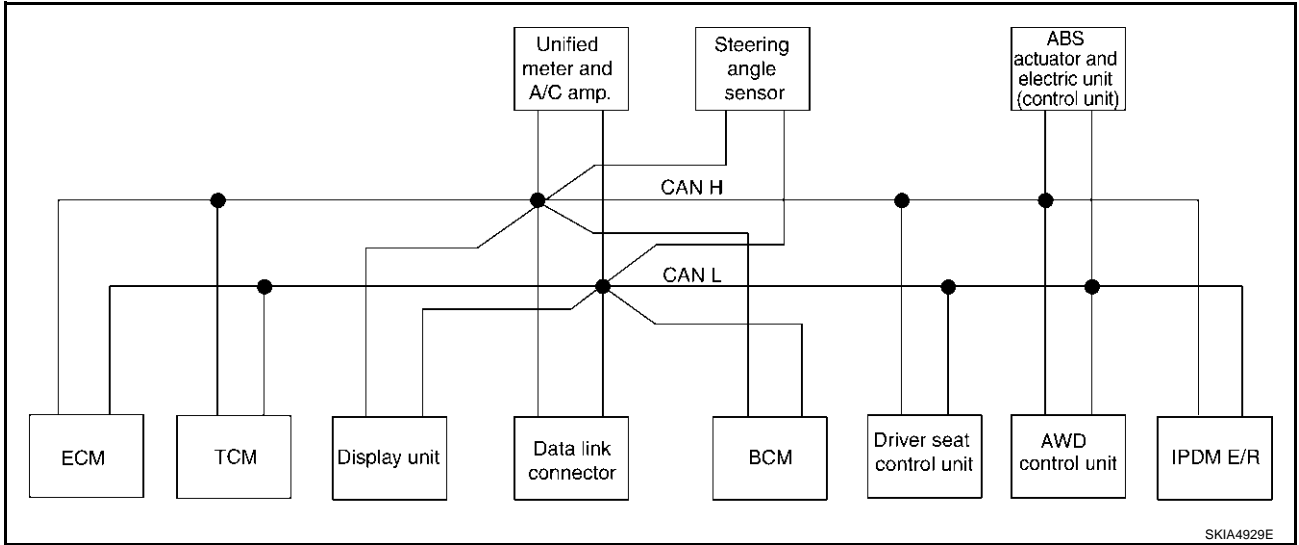


- Type27

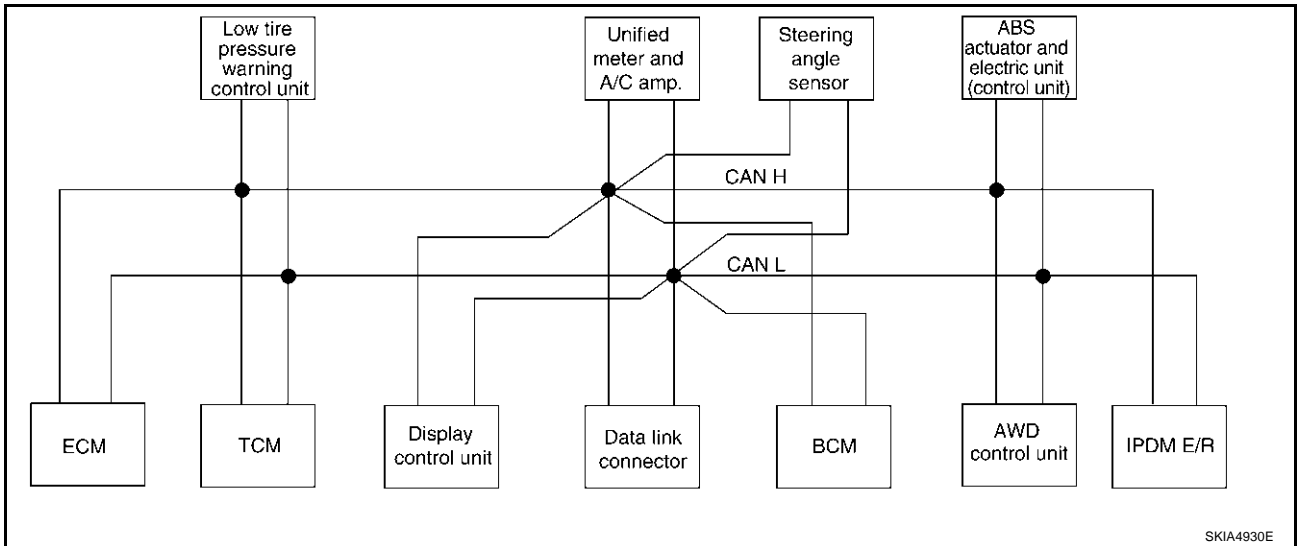


HEADLAMP - XENON TYPE -

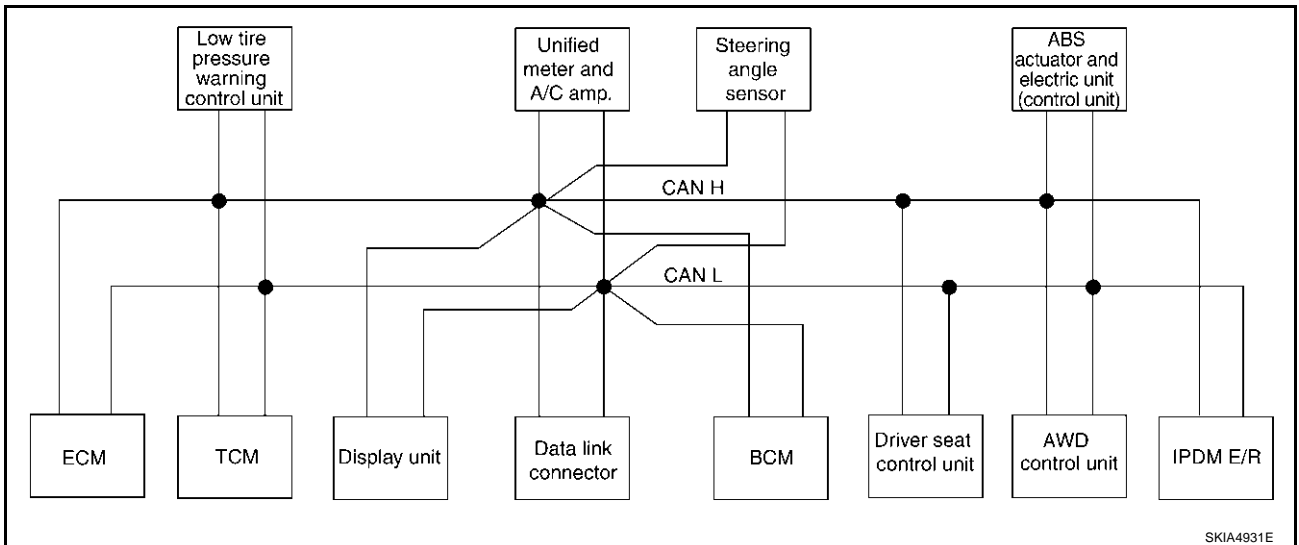
- Type28



- Type29

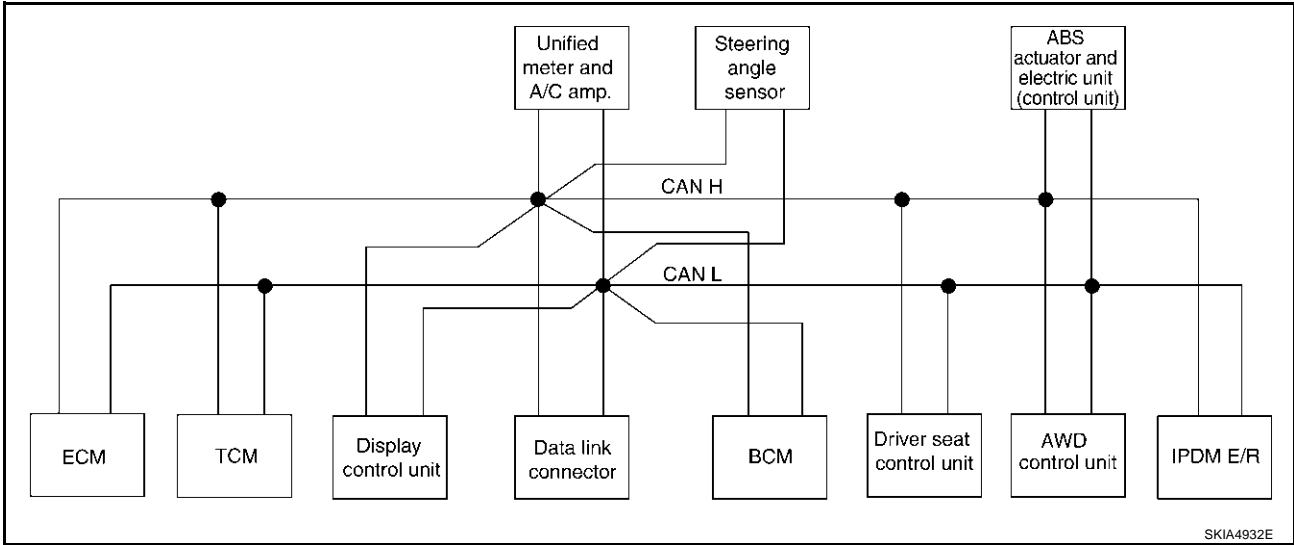


- Type30

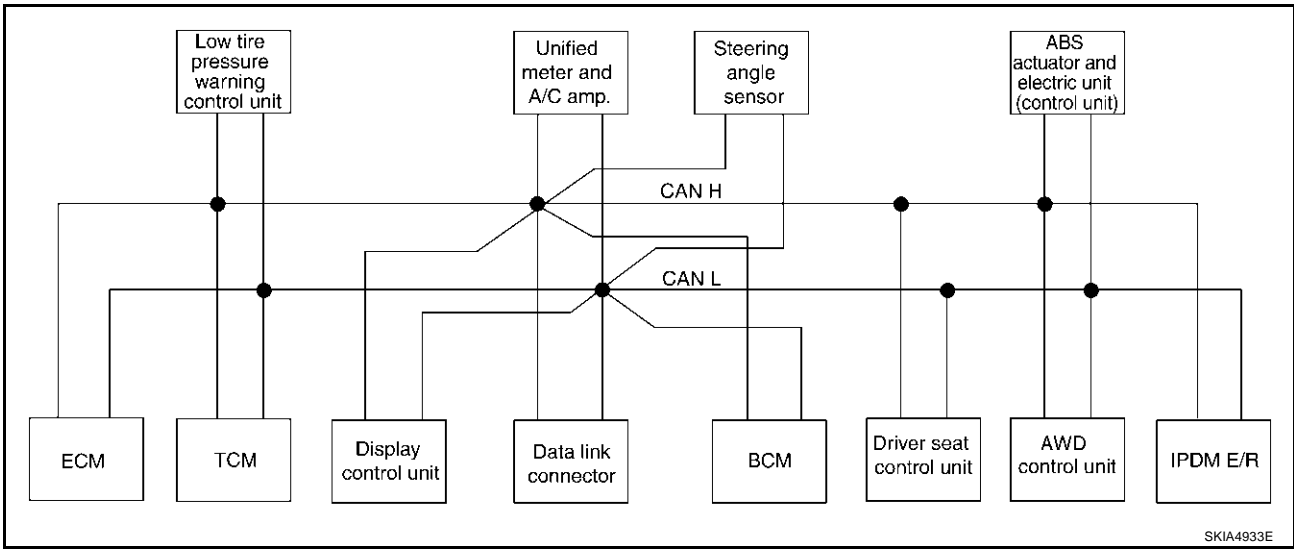


HEADLAMP - XENON TYPE -

- Type31



- Type32



HEADLAMP - XENON TYPE -

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

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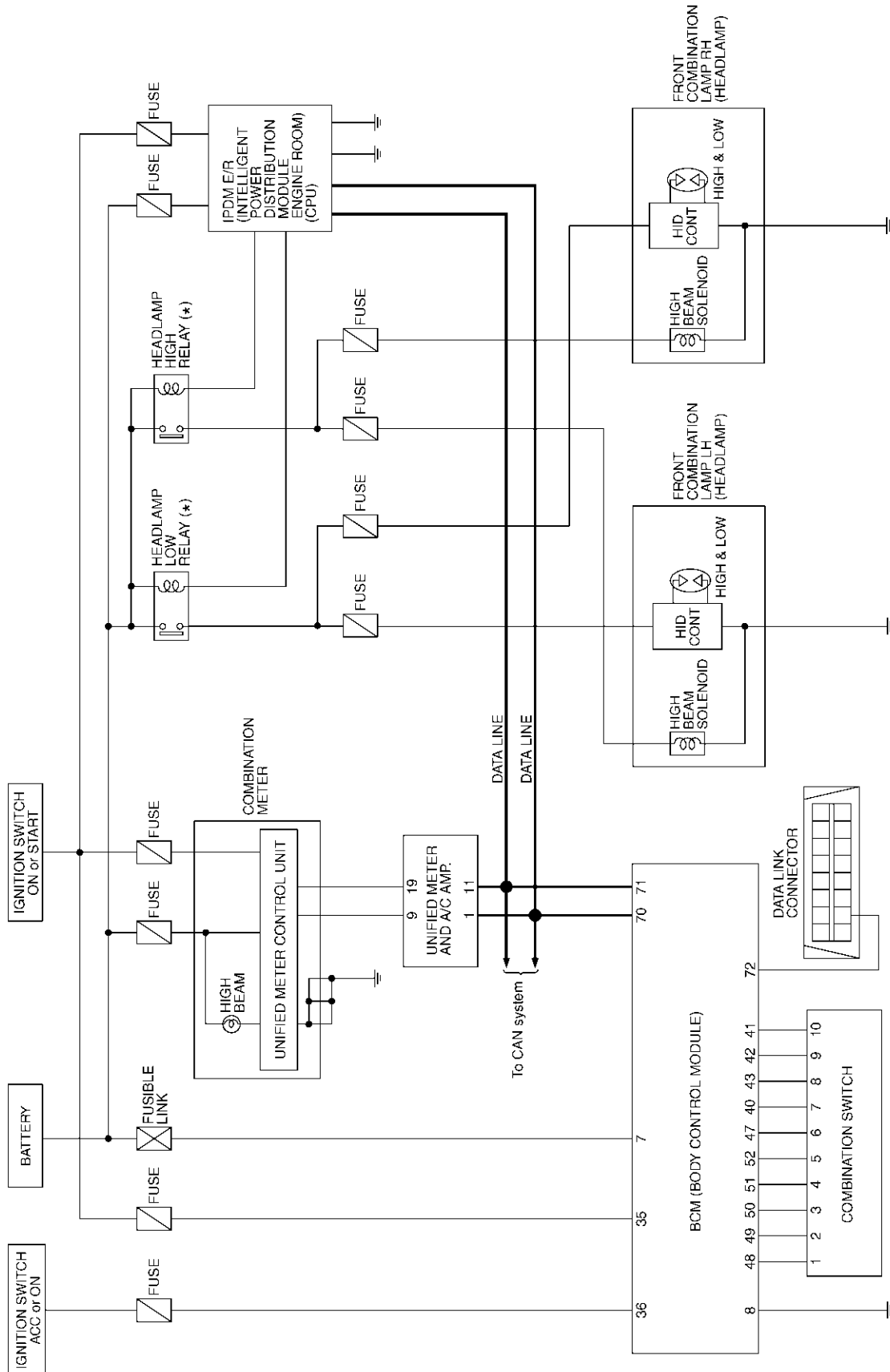
HEADLAMP - XENON TYPE -

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
Door switch signal						R	T					
Turn indicator signal				R	R	T	R		R			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
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			
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		

HEADLAMP - XENON TYPE -

Schematic

AKS007L0



* : This relay is built into the IPDM E/R (Intelligent power distribution module engine room).

A
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TKWA0737E

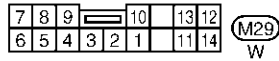
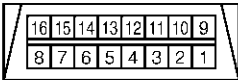
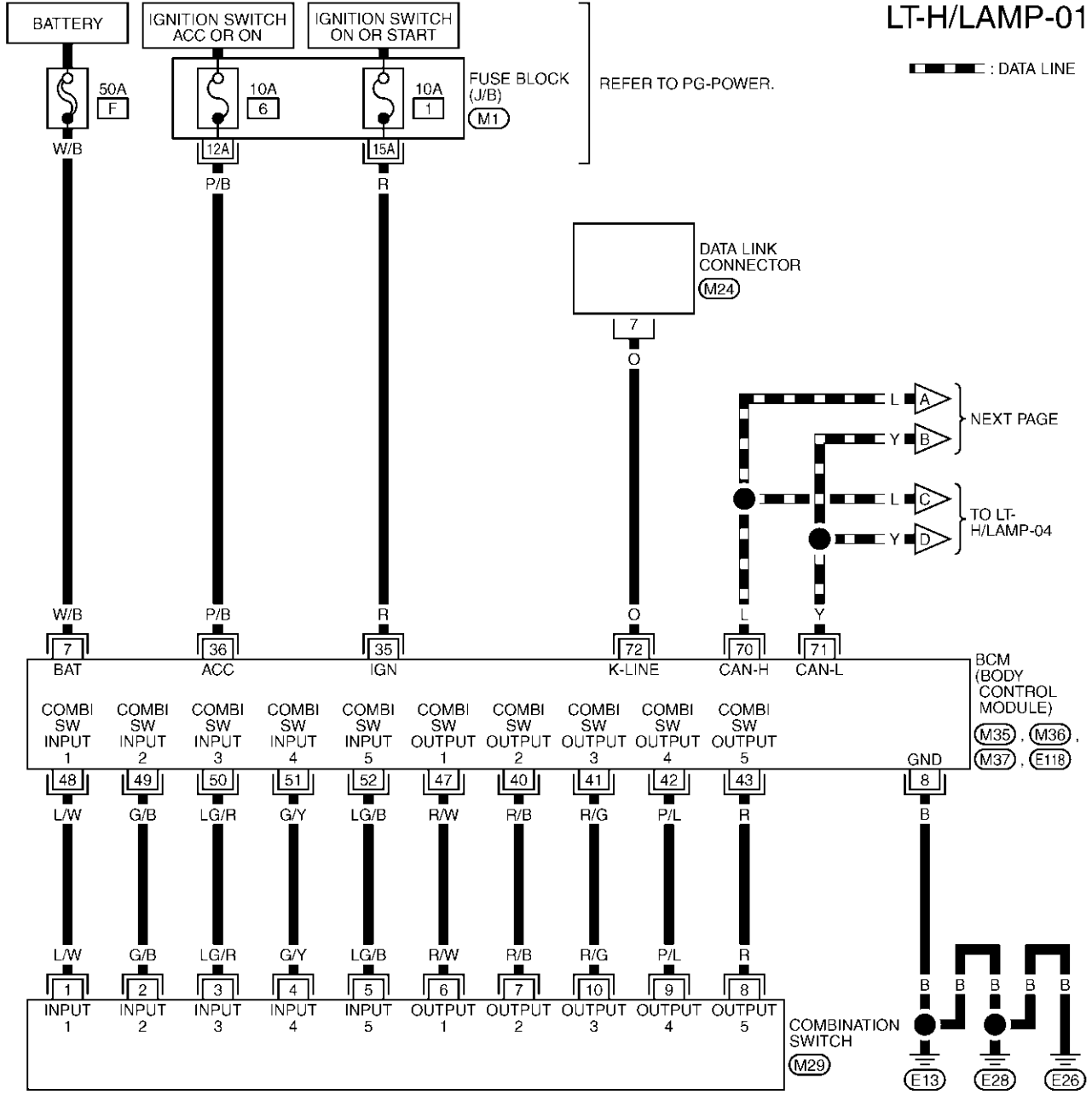
HEADLAMP - XENON TYPE -

AKS007L1

Wiring Diagram — H/LAMP —

LT-H/LAMP-01

▬ : DATA LINE



REFER TO THE FOLLOWING.

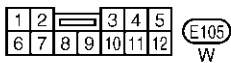
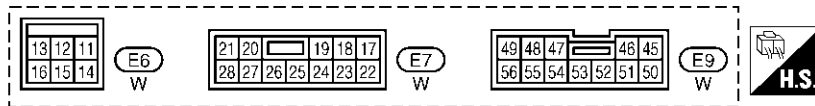
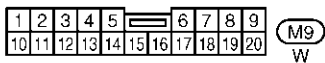
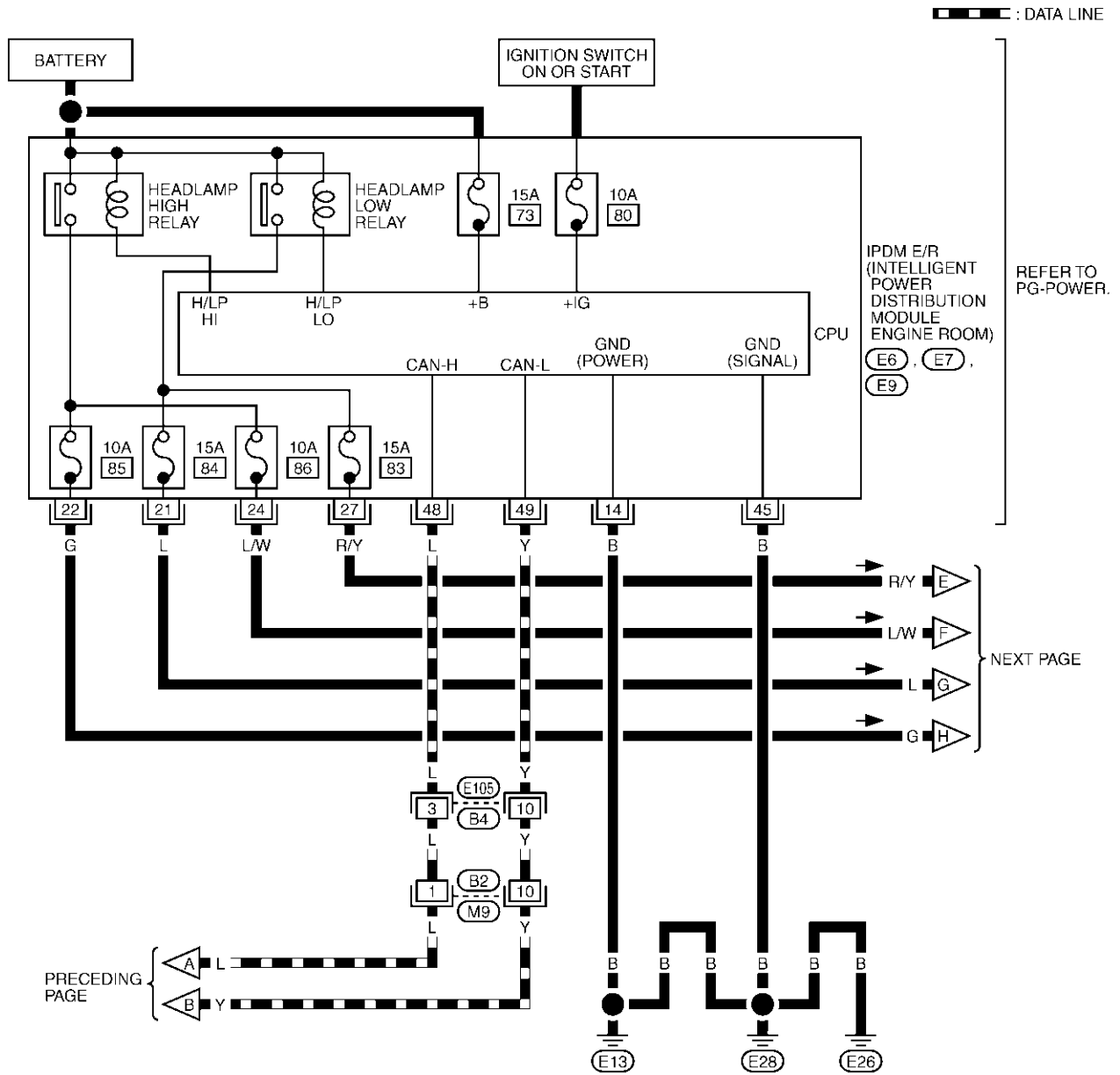
(M1) - FUSE BLOCK-JUNCTION BOX (J/B)

(M35), (M36), (M37), (E18) - ELECTRICAL UNITS

TKWA0738E

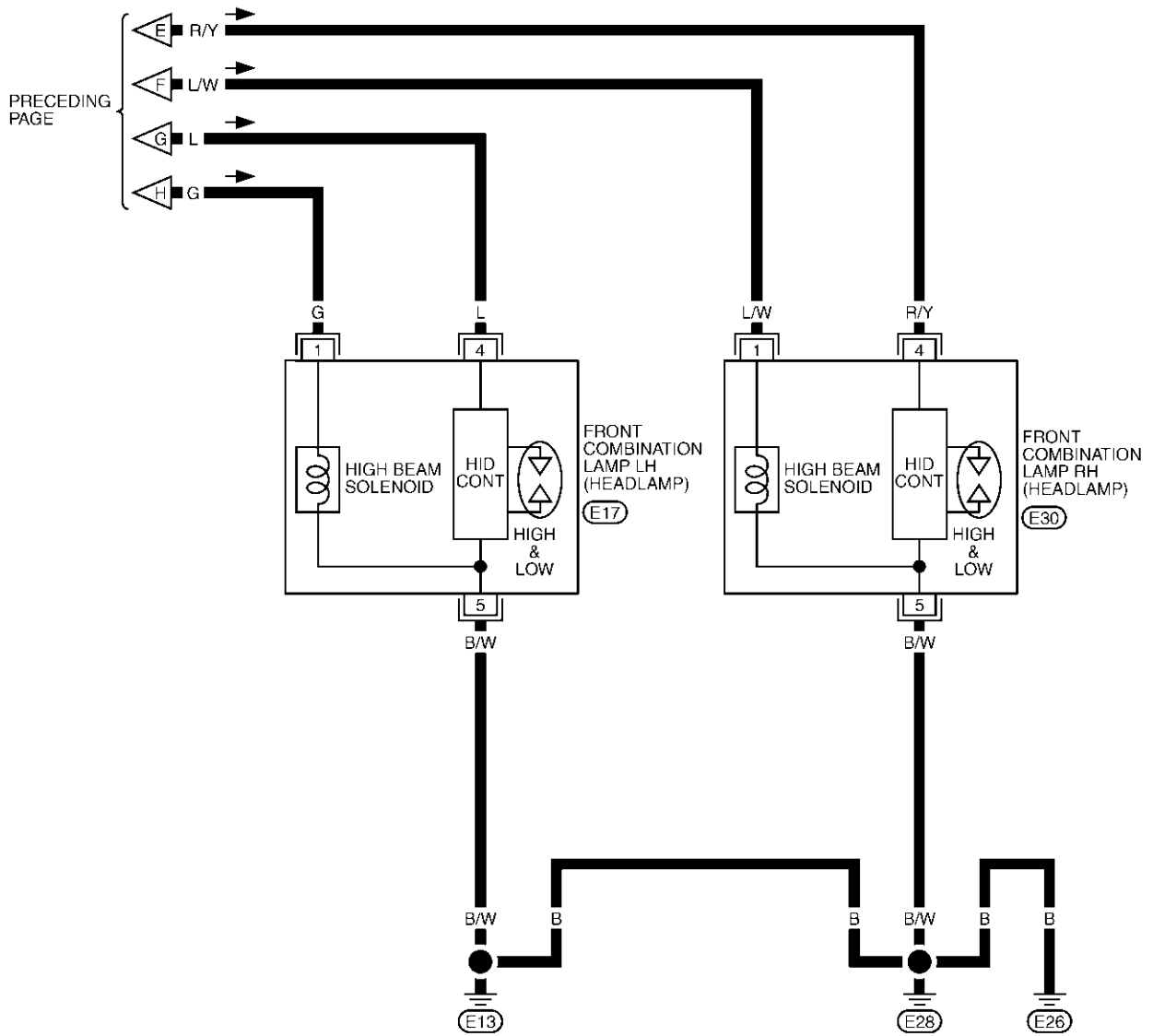
HEADLAMP - XENON TYPE -

LT-H/LAMP-02



HEADLAMP - XENON TYPE -

LT-H/LAMP-03

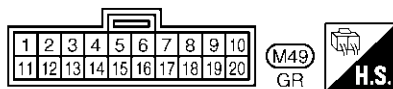
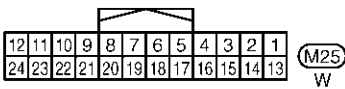
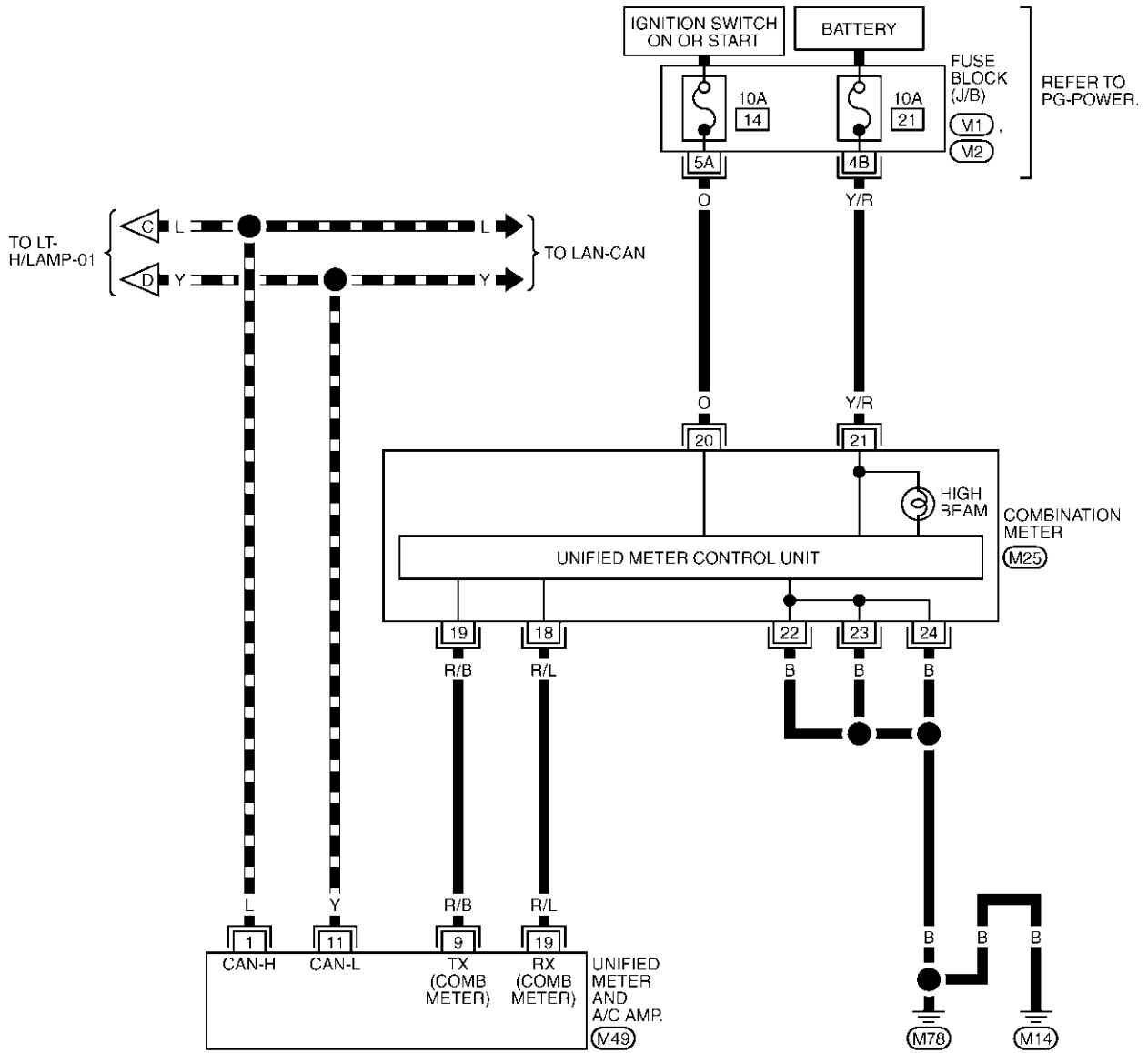


TKWA0740E

HEADLAMP - XENON TYPE -

LT-H/LAMP-04

▬ : DATA LINE



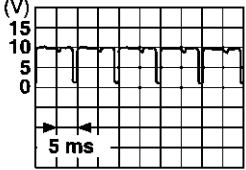
REFER TO THE FOLLOWING.
 (M1), (M2) - FUSE BLOCK-
 JUNCTION BOX (J/B)

TKWA0741E

HEADLAMP - XENON TYPE -

Terminals and Reference Value for BCM

AKS007L2

Terminal No.	Wire color	Signal name	Measuring condition		Reference value
			Ignition switch	Operation or condition	
7	W/B	Battery power supply	OFF	—	Battery voltage
8	B	Ground	ON	—	Approx. 0V
35	R	Ignition switch (ON)	ON	—	Battery voltage
36	P/B	Ignition switch (ACC)	ACC	—	Battery voltage
40	R/B	Combination switch output 2	ON	Lighting, turn, wiper OFF	
41	R/G	Combination switch output 3			
42	P/L	Combination switch output 4			
43	R	Combination switch output 5			
47	R/W	Combination switch output 1			
48	L/W	Combination switch input 1	ON	Lighting, turn, wiper OFF	4.5V or more
49	G/B	Combination switch input 2			
50	LG/R	Combination switch input 3			
51	G/Y	Combination switch input 4			
52	LG/B	Combination switch input 5			
70	L	CAN- H	—	—	—
71	Y	CAN- L	—	—	—
72	O	K-LINE	—	—	—

SKIA1119J

Terminals and Reference Values for IPDM E/R

AKS007L3

Terminal No.	Wire color	Signal name	Measuring condition		Reference value	
			Ignition switch	Operation or condition		
14	B	Ground	ON	—	Approx. 0V	
21	L	Headlamp low (LH)	ON	Lighting switch 2ND position	OFF	Approx. 0V
					ON	Battery voltage
22	G	Headlamp high (LH)	ON	Lighting switch HIGH or PASS position	OFF	Approx. 0V
					ON	Battery voltage
24	L/W	Headlamp high (RH)	ON	Lighting switch HIGH or PASS position	OFF	Approx. 0V
					ON	Battery voltage
27	R/Y	Headlamp low (RH)	ON	Lighting switch 2ND position	OFF	Approx. 0V
					ON	Battery voltage
45	B	Ground	ON	—	Approx. 0V	
48	L	CAN- H	—	—	—	
49	Y	CAN- L	—	—	—	

HEADLAMP - XENON TYPE -

How to Proceed With Trouble Diagnosis

AKS007L4

1. Confirm the symptom or customer complaint.
2. Understand operation description and function description. Refer to [LT-8, "System Description"](#) .
3. Perform the Preliminary Check. Refer to [LT-39, "Preliminary Check"](#) .
4. Check symptom and repair or replace the cause of malfunction.
5. Does the headlamp operate normally? If YES: GO TO 6. If NO: GO TO 4.
6. INSPECTION END

Preliminary Check

AKS007L5

CHECK POWER SUPPLY AND GROUND CIRCUIT

1. CHECK FUSES

- Check for blown fuses.

Unit	Power source	Fuse and fusible link No.
BCM	Battery	F
	Ignition switch ON or START position	1
	Ignition switch ACC or ON position	6
IPDM E/R	Battery	83
		84
		85
		86

Refer to [LT-34, "Wiring Diagram — H/LAMP —"](#) .

OK or NG

OK >> GO TO 2.

NG >> If fuse is blown, be sure to eliminate cause of malfunction before installing new fuse. Refer to [PG-3, "POWER SUPPLY ROUTING CIRCUIT"](#) .

2. CHECK POWER SUPPLY CIRCUIT

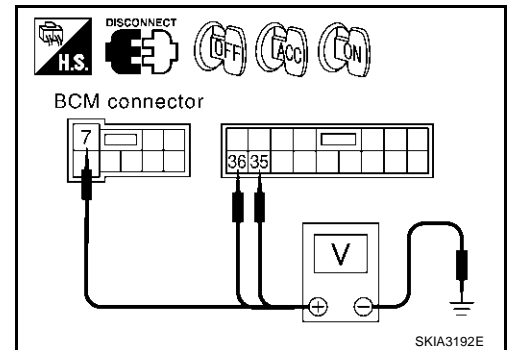
1. Disconnect BCM connector.
2. Check voltage between BCM harness connector and ground.

Terminals		(-)	Ignition switch position		
Connector	Terminal (Wire color)		OFF	ACC	ON
E118	7 (W/B)	Ground	Battery voltage	Battery voltage	Battery voltage
M35	35 (R)		0V	0V	Battery voltage
M35	36 (P/B)		0V	Battery voltage	Battery voltage

OK or NG

OK >> GO TO 3.

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



HEADLAMP - XENON TYPE -

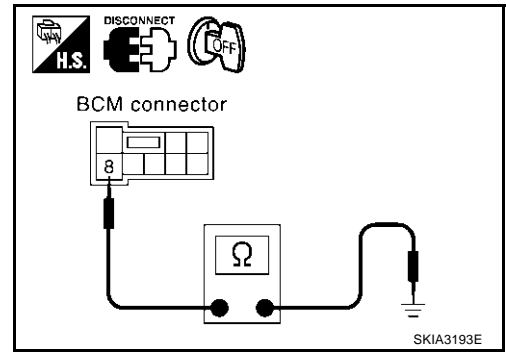
3. CHECK GROUND CIRCUIT

Check continuity between BCM harness connector and ground.

Terminals			Continuity
Connector	Terminal (Wire color)	Ground	Yes
E118	8 (B)		

OK or NG

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



CONSULT-II Function

AKS007L6

CONSULT-II performs the following functions communicating with BCM.

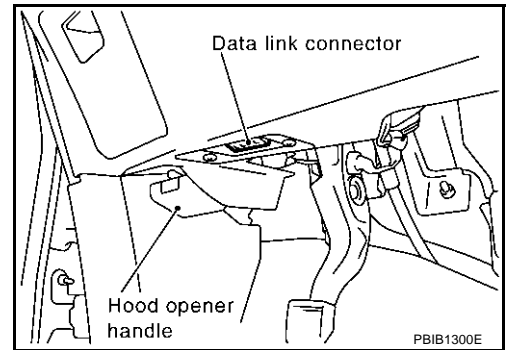
BCM diagnosis part	Check item, diagnosis mode	Description
HEAD LAMP	WORK SUPPORT	Changes the setting for each function.
	DATA MONITOR	Displays BCM input data in real time.
	ACTIVE TEST	Operation of electrical loads can be checked by sending drive signal to them.
BCM C/U	CAN DIAG SUPPORT MNTR	The result of transmit/receive diagnosis of CAN communication can be read.

CONSULT-II BASIC OPERATION

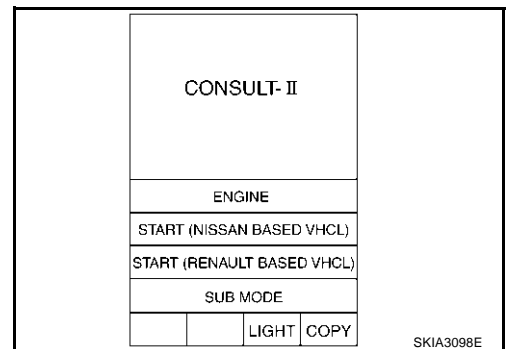
CAUTION:

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

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

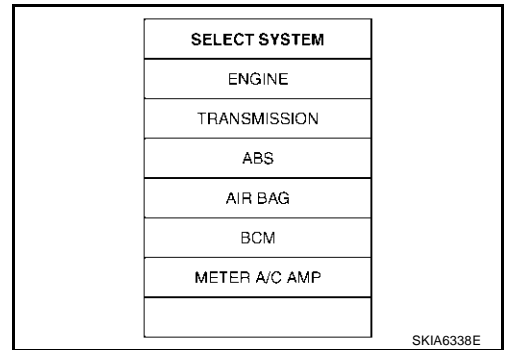


2. Touch "START (NISSAN BASED VHCL)".

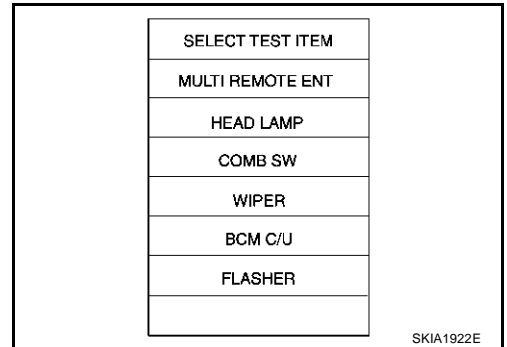


HEADLAMP - XENON TYPE -

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



4. Touch "HEAD LAMP" on "SELECT TEST ITEM" screen.



WORK SUPPORT

Operation Procedure

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

Display Item List

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

DATA MONITOR

Operation Procedure

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

All signals	Monitors all the signals.
Selection from menu	Selects and monitors individual signal.

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

HEADLAMP - XENON TYPE -

Display Item List

Monitor item	Contents
IGN ON SW "ON/OFF"	Displays "IGN position (ON)/OFF, ACC position (OFF)" judged from the ignition switch signal.
ACC ON SW "ON/OFF"	Displays "ACC (ON)/OFF, Ignition OFF (OFF)" status judged from ignition switch signal.
AUTO LIGHT SW ^{Note} "ON/OFF"	Displays status of the lighting switch as judged from the lighting switch signal. (AUTO position: ON/Other than AUTO position: OFF)
TAIL LAMP SW "ON/OFF"	Displays status (lighting switch 1st position: ON/Others: OFF) of lighting switch judged from lighting switch signal.
HEAD LAMP SW 1 "ON/OFF"	Displays status (headlamp switch 1: ON/Others: OFF) of headlamp switch 2 judged from lighting switch signal.
HI BEAM SW "ON/OFF"	Displays status (high beam switch: ON/Others: OFF) of high beam switch judged from lighting switch signal.
PASSING SW "ON/OFF"	Displays status (flash-to-pass switch: ON/Others: OFF) of flash-to-pass switch judged from lighting switch signal.
FR FOG SW "ON/OFF"	Displays status (front fog lamp switch: ON/Others: OFF) of front fog lamp switch judged from lighting switch signal.
DOOR SW - DR "ON/OFF"	Displays status of the driver door as judged from the driver door switch signal. (Door is open: ON/Door is closed: OFF)
DOOR SW - AS "ON/OFF"	Displays status of the passenger door as judged from the passenger door switch signal. (Door is open: ON/Door is closed: OFF)
DOOR SW - RR "ON/OFF"	Displays status of the rear doors as judged from the rear door switch signal. (Door is open: ON/Door is closed: OFF)
HEAD LAMP SW 2 "ON/OFF"	Displays status (headlamp switch 2: ON/Others: OFF) of headlamp switch 2 judged from lighting switch signal.
OPTICAL SENSOR [0 - 5V]	Displays "ambient light (close to 5V when light/close to 0V when dark)" judged from optical sensor signal.

NOTE:

Vehicles without auto light system display this item, but cannot monitor it.

ACTIVE TEST

Operation Procedure

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

Display Item List

Test item	Description
TAIL LAMP	Allows tail lamp relay to operate by switching ON-OFF.
HEAD LAMP (LOW)	Allows headlamp relay to operate by switching ON-OFF.
HEAD LAMP (HI)	Allows headlamp relay to operate by switching ON-OFF.
FR FOG LAMP	Allows fog lamp relay to operate by switching ON-OFF.

Headlamp Does Not Change To High Beam (Both Sides)

AKS007L7

1. HEADLAMP ACTIVE TEST

1. Select "HEADLAMP (HI)" during active test. Refer to [LT-42, "ACTIVE TEST"](#).
2. Make sure headlamp high beam operation.

Headlamp high beam should operate.

OK or NG

- OK >> GO TO 5.
NG >> GO TO 2.

HEADLAMP - XENON TYPE -

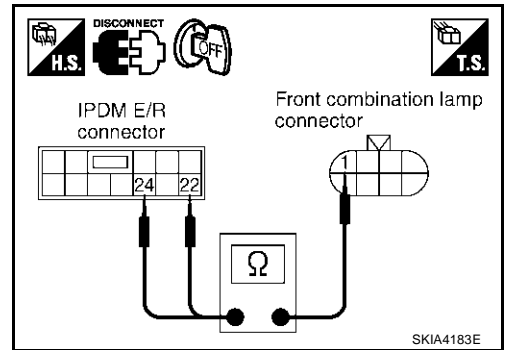
2. CHECK HEADLAMP CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connector and front combination lamp RH and LH connector.
3. Check continuity between IPDM E/R harness connector E7 terminal 24 (L/W) and front combination lamp RH harness connector E30 terminal 1 (L/W).

Continuity should exist.

4. Check continuity between IPDM E/R harness connector E7 terminal 22 (G) and front combination lamp LH harness connector E17 terminal 1 (G).

Continuity should exist.



OK or NG

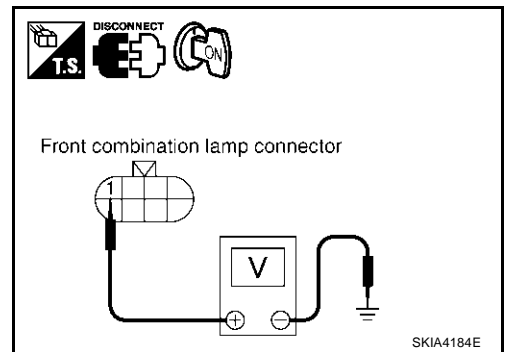
OK >> GO TO 3.

NG >> Repair harness or connector.

3. CHECK HEADLAMP INPUT SIGNAL

1. Connect IPDM E/R connector.
2. Select "HEADLAMP (HI)" during active test. Refer to [LT-42](#), "ACTIVE TEST". When headlamp high beam is operating, check voltage between front combination lamp RH and LH harness connector and ground.

Terminals			(-)	Voltage
(+)				
Connector		Terminal (Wire color)		
RH	E30	1 (L/W)	Ground	Battery voltage
LH	E17	1 (G)		



OK or NG

OK >> GO TO 4.

NG >> Replace IPDM E/R.

4. CHECK HEADLAMP GROUND

1. Turn ignition switch OFF.
2. Check continuity between front combination lamp RH harness connector E30 terminal 5 (B/W) and ground.

Continuity should exist.

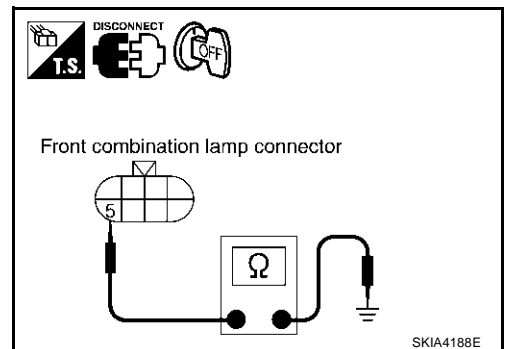
3. Check continuity between front combination lamp LH harness connector E17 terminal 5 (B/W) and ground.

Continuity should exist.

OK or NG

OK >> Replace headlamp assembly.

NG >> Repair harness or connector.



HEADLAMP - XENON TYPE -

5. CHECK COMBINATION SWITCH CIRCUIT

Select "BCM" on CONSULT-II. Carry out "BCM C/U" self-diagnosis.

Displayed results of self-diagnosis

No malfunction detected>> GO TO 6.

CAN communications or CAN system>> Check BCM CAN communication system. Refer to [BCS-34, "CAN Communication Inspection Using CONSULT-II \(Self-Diagnosis\)"](#).

OPEN DETECT 1 - 5>> Combination switch system malfunction. Refer to [LT-257, "Combination Switch Inspection According to Self-Diagnostic Results"](#).

SELF-DIAG RESULTS	
DTC RESULTS	TIME
NO DTC IS DETECTED. FURTHER TESTING MAY BE REQUIRED	

LKIA0073E

6. CHECK COMBINATION SWITCH INPUT SIGNAL

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

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

OK or NG

OK >> Replace BCM. Refer to [BCS-36, "Removal and Installation of BCM"](#).

NG >> Replace lighting switch.

DATA MONITOR	
MONITOR	
HI BEAM SW	ON

SKIA4193E

Headlamp Does Not Change To High Beam (One Side)

AKS007L8

1. CHECK HEADLAMP CIRCUIT

1. Disconnect IPDM E/R connector and front combination lamp RH or LH connector.

2. Check continuity between IPDM E/R harness connector E7 terminal 24 (L/W) and front combination lamp RH harness connector E30 terminal 1 (L/W).

Continuity should exist.

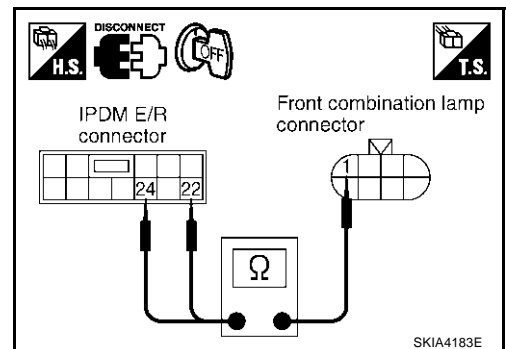
3. Check continuity between IPDM E/R harness connector E7 terminal 22 (G) and front combination lamp LH harness connector E17 terminal 1 (G).

Continuity should exist.

OK or NG

OK >> GO TO 2.

NG >> Repair harness or connector.

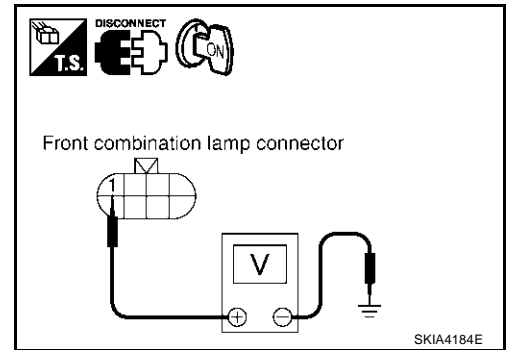


HEADLAMP - XENON TYPE -

2. CHECK HEADLAMP INPUT SIGNAL

1. Connect IPDM E/R connector.
2. Turn ignition switch ON.
3. Lighting switch is turned HIGH position.
4. Check voltage between front combination lamp RH or LH harness connector and ground.

Terminals			(-)	Voltage
(+)		Terminal (Wire color)		
Connector				
RH	E30	1 (L/W)	Ground	Battery voltage
LH	E17	1 (G)		



OK or NG

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

3. CHECK HEADLAMP GROUND

1. Check continuity between front combination lamp RH harness connector E30 terminal 5 (B/W) and ground.

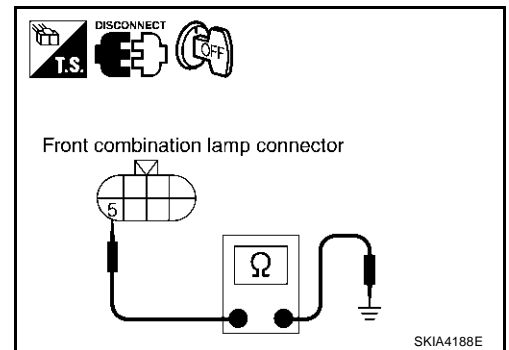
Continuity should exist.

2. Check continuity between front combination lamp LH harness connector E17 terminal 5 (B/W) and ground.

Continuity should exist.

OK or NG

- OK >> Replace headlamp assembly.
 NG >> Repair harness or connector.



High Beam Indicator Lamp Does Not Illuminate

1. CHECK BULB

Inspect bulb of high beam indicator lamp.

OK or NG

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

Headlamp Low Beam Does Not Illuminate (Both Sides)

1. HEADLAMP ACTIVE TEST

1. Select "HEADLAMP (LOW)" during active test. Refer to [LT-42, "ACTIVE TEST"](#).
2. Make sure headlamp low beam operates.

Headlamp low beam should operate.

OK or NG

- OK >> GO TO 5.
 NG >> GO TO 2.

HEADLAMP - XENON TYPE -

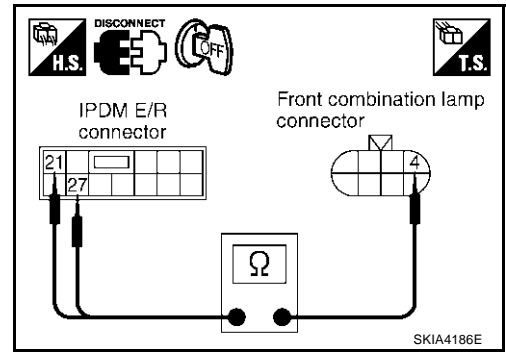
2. CHECK HEADLAMP CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connector and front combination lamp RH and LH connector.
3. Check continuity between IPDM E/R harness connector E7 terminal 27 (R/Y) and front combination lamp RH harness connector E30 terminal 4 (R/Y).

Continuity should exist.

4. Check continuity between IPDM E/R harness connector E7 terminal 21 (L) and front combination lamp LH harness connector E17 terminal 4 (L).

Continuity should exist.



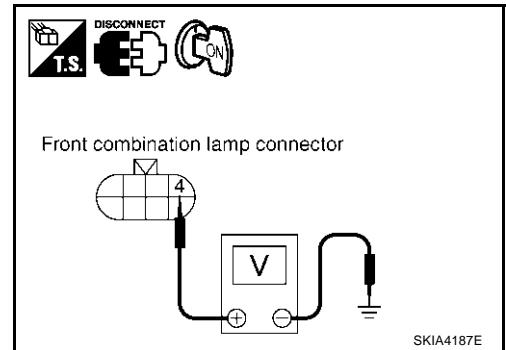
OK or NG

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

3. CHECK HEADLAMP INPUT SIGNAL

1. Connect IPDM E/R connector.
2. Select "HEADLAMP (LOW)" during active test. Refer to [LT-42, "ACTIVE TEST"](#). When headlamp low beam is operating, check voltage between front combination lamp RH and LH harness connector and ground.

Terminals			(-)	Voltage
(+)		Terminal (Wire color)		
Connector				Ground
RH	E30	4 (R/Y)	Ground	
LH	E17	4 (L)		



OK or NG

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

4. CHECK HEADLAMP GROUND

1. Turn ignition switch OFF.
2. Check continuity between front combination lamp RH harness connector E30 terminal 5 (B/W) and ground.

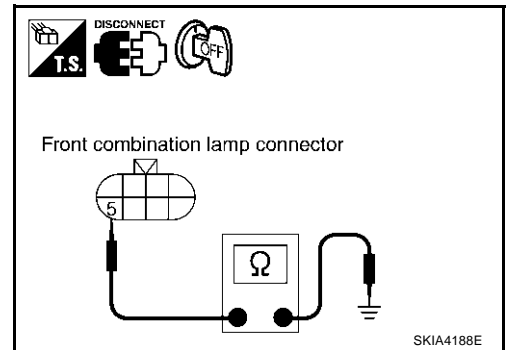
Continuity should exist.

3. Check continuity between front combination lamp LH harness connector E17 terminal 5 (B/W) and ground.

Continuity should exist.

OK or NG

- OK >> Inspect headlamp harness and connectors, ballasts (HID control unit), and xenon bulbs. Refer to [LT-51, "Xenon Headlamp Trouble Diagnosis"](#).
 NG >> Repair harness or connector.



HEADLAMP - XENON TYPE -

5. CHECK COMBINATION SWITCH CIRCUIT

Select "BCM" on CONSULT-II. Carry out "BCM C/U" self-diagnosis.

Displayed results of self-diagnosis

No malfunction detected>> GO TO 6.

CAN communications or CAN system>> Check BCM CAN communication system. Refer to [BCS-34, "CAN Communication Inspection Using CONSULT-II \(Self-Diagnosis\)"](#).

OPEN DETECT 1 - 5>> Combination Switch System malfunction. Refer to [LT-257, "Combination Switch Inspection According to Self-Diagnostic Results"](#).

HEAD LAMP 1 SW or HEAD LAMP 2 SW>> Replace lighting switch.

SELF-DIAG RESULTS	
DTC RESULTS	TIME
NO DTC IS DETECTED. FURTHER TESTING MAY BE REQUIRED	

LKIA0073E

6. CHECK COMBINATION SWITCH INPUT SIGNAL

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

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

OK or NG

OK >> Replace BCM. Refer to [BCS-36, "Removal and Installation of BCM"](#).

NG >> ● Replace lighting switch.

- If one of "HEAD LAMP SW 1" and "HEAD LAMP SW 2" is NG, replace both BCM (Refer to [BCS-36, "Removal and Installation of BCM"](#)) and lighting switch.

DATA MONITOR	
MONITOR	
HEAD LAMP SW1	ON
HEAD LAMP SW2	ON

SKIA4194E

Headlamp Low Beam Does Not Illuminate (One Side)

AKS007LB

1. CHECK BULB

Inspect ballasts (HID control unit) and xenon bulb of lamp which does not illuminate. Refer to [LT-51, "Xenon Headlamp Trouble Diagnosis"](#).

OK or NG

OK >> GO TO 2.

NG >> Repair malfunctioning part.

2. CHECK HEADLAMP CIRCUIT

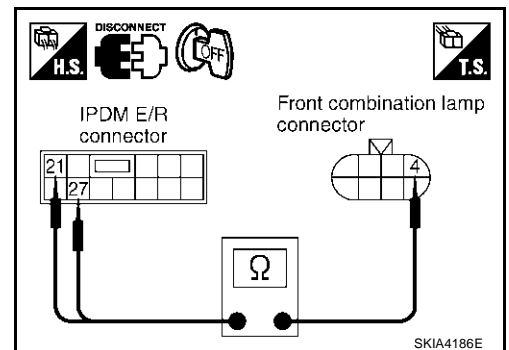
1. Disconnect IPDM E/R connector and front combination lamp RH or LH connector.

2. Check continuity between IPDM E/R harness connector E7 terminal 27 (R/Y) and front combination lamp RH harness connector E30 terminal 4 (R/Y).

Continuity should exist.

3. Check continuity between IPDM E/R harness connector E7 terminal 21 (L) and front combination lamp LH harness connector E17 terminal 4 (L).

Continuity should exist.



OK or NG

OK >> GOTO 3.

NG >> Repair harness or connector.

HEADLAMP - XENON TYPE -

3. CHECK HEADLAMP GROUND

1. Check continuity between front combination lamp RH harness connector E30 terminal 5 (B/W) and ground.

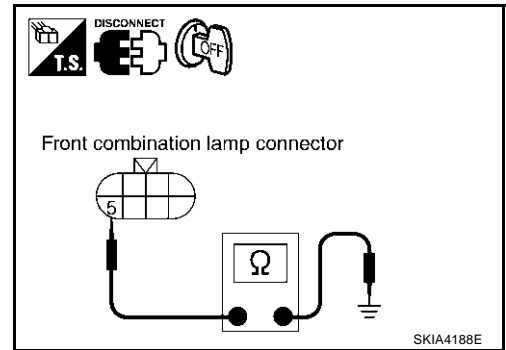
Continuity should exist.

2. Check continuity between front combination lamp LH harness connector E17 terminal 5 (B/W) and ground.

Continuity should exist.

OK or NG

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



Headlamp RH Low Beam and High Beam Does Not Illuminate

AKS007LC

1. CHECK BULB

Inspect ballasts (HID control unit) and xenon bulb of lamp which does not illuminate. Refer to [LT-51, "Xenon Headlamp Trouble Diagnosis"](#).

OK or NG

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

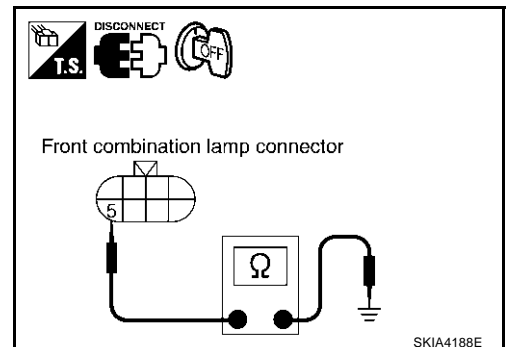
2. CHECK HEADLAMP GROUND

1. Disconnect front combination lamp RH connector.
2. Check continuity between front combination lamp RH harness connector E30 terminal 5 (B/W) and ground.

Continuity should exist.

OK or NG

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

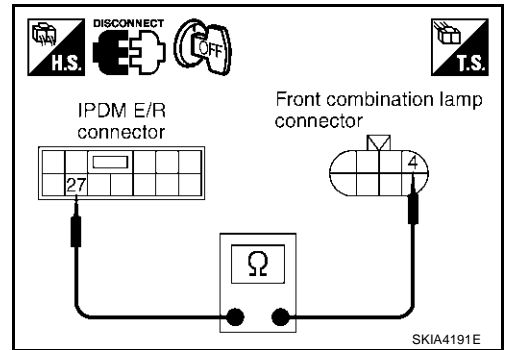


HEADLAMP - XENON TYPE -

3. CHECK HEADLAMP CIRCUIT

1. Disconnect IPDM E/R connector.
2. Check continuity between IPDM E/R harness connector E7 terminal 27 (R/Y) and front combination lamp RH harness connector E30 terminal 4 (R/Y).

Continuity should exist.

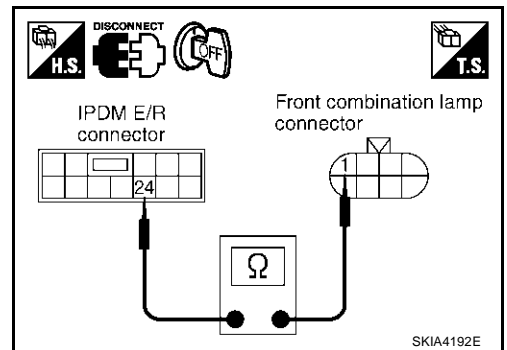


3. Check continuity between IPDM E/R harness connector E7 terminal 24 (L/W) and front combination lamp RH harness connector E30 terminal 1 (L/W).

Continuity should exist.

OK or NG

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



Headlamp LH Low Beam and High Beam Does Not Illuminate

AKS007LD

1. CHECK BULB

Inspect ballasts (HID control unit) and xenon bulb of lamp which does not illuminate. Refer to [LT-51, "Xenon Headlamp Trouble Diagnosis"](#).

OK or NG

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

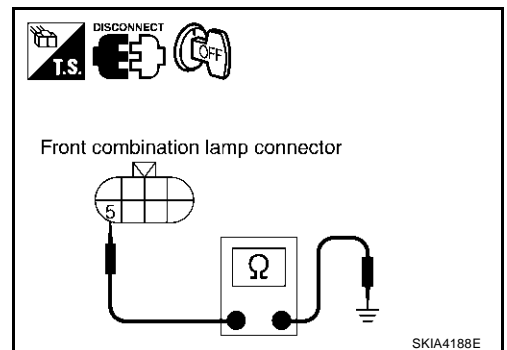
2. CHECK HEADLAMP GROUND

1. Disconnect front combination lamp LH connector.
2. Check continuity between front combination lamp LH harness connector E17 terminal 5 (B/W) and ground.

Continuity should exist.

OK or NG

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

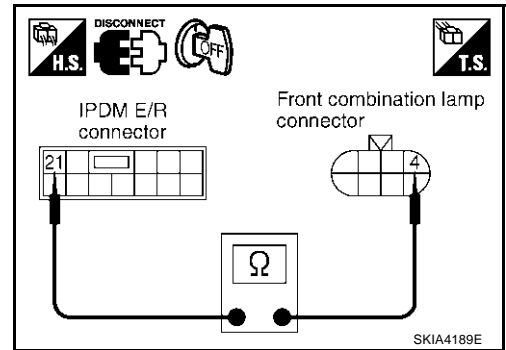


HEADLAMP - XENON TYPE -

3. CHECK HEADLAMP CIRCUIT

1. Disconnect IPDM E/R connector.
2. Check continuity between IPDM E/R harness connector E7 terminal 21 (L) and front combination lamp LH harness connector E17 terminal 4 (L).

Continuity should exist.

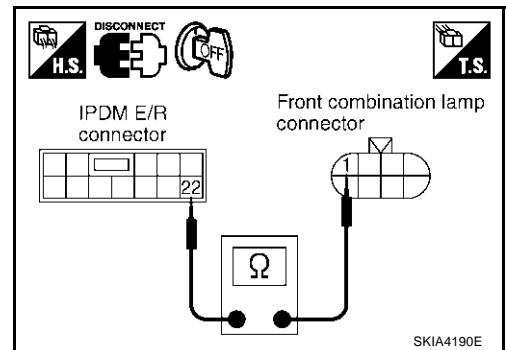


3. Check continuity between IPDM E/R harness connector E7 terminal 22(G) and front combination lamp LH harness connector E17 terminal 1(G).

Continuity should exist.

OK or NG

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



Headlamps Do Not Turn OFF

1. CHECK HEADLAMP TURN OFF

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

OK or NG

- OK >> GO TO 3
- NG >> GO TO 2

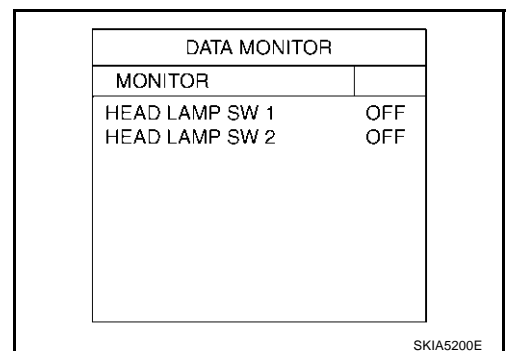
2. CHECK COMBINATION SWITCH INPUT SIGNAL

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

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

OK or NG

- OK >> Replace IPDM E/R.
- NG >> Replace lighting switch.



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

IPDM E/R detects CAN communication malfunction and activates fail-safe operation. Refer to [BCS-34, "CAN Communication Inspection Using CONSULT-II \(Self-Diagnosis\)"](#) and inspect CAN system.

OK or NG

- OK >> Replace IPDM E/R.
- NG >> Repair malfunctioning part.

HEADLAMP - XENON TYPE -

CAUTION:

AKS007LF

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

Xenon Headlamp Trouble Diagnosis

AKS007LG

1. INSPECTION 1: CHECK XENON HEADLAMP LIGHTING

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

OK or NG

- OK >> Replace xenon bulb.
- NG >> GO TO 2.

2. INSPECTION 2: CHECK XENON HEADLAMP LIGHTING

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

OK or NG

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

3. INSPECTION 3: CHECK XENON HEADLAMP LIGHTING

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

OK or NG

- OK >> Malfunction in starter (boosting circuit) in xenon headlamp housing (Replace xenon headlamp housing assembly)
- NG >> INSPECTION END

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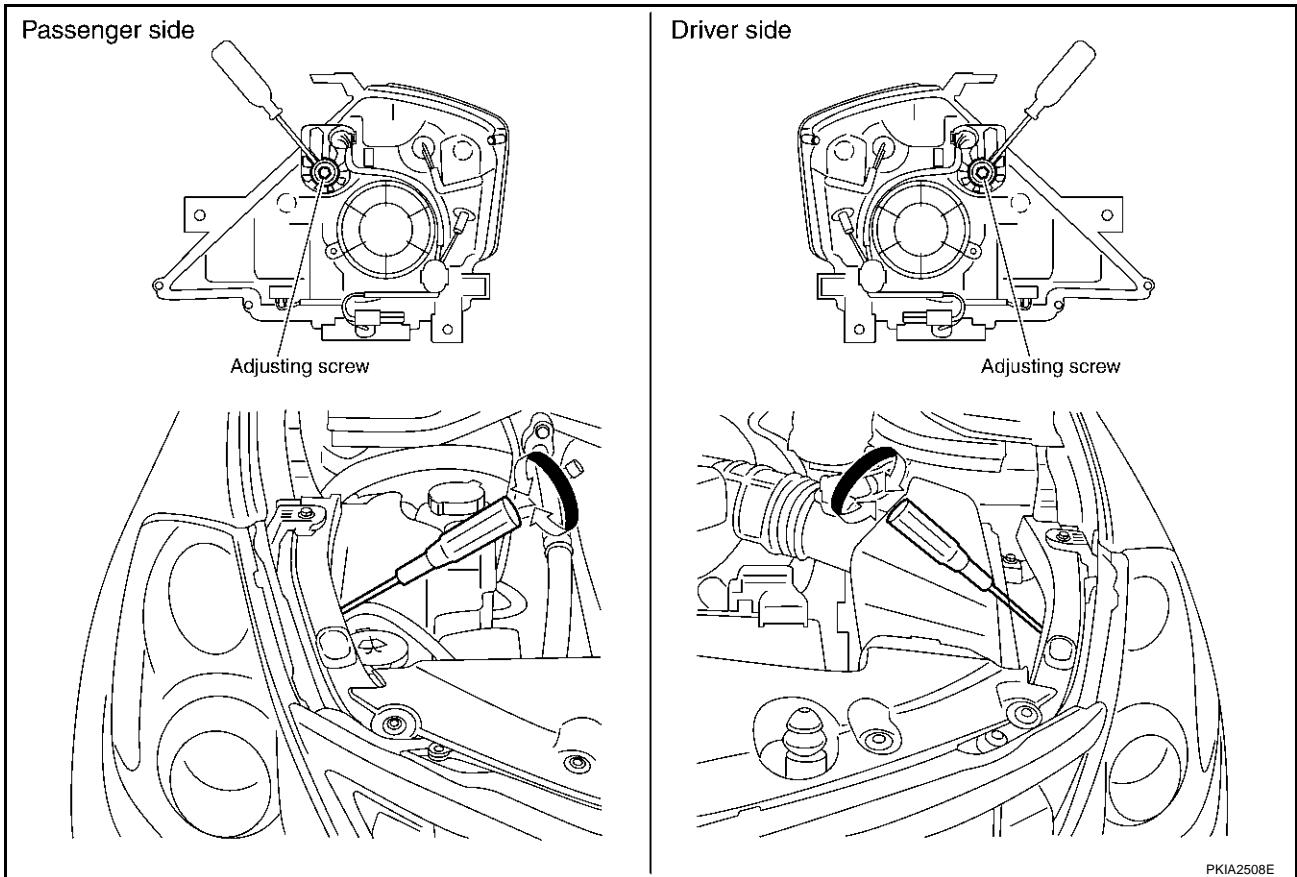
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HEADLAMP - XENON TYPE -

Aiming Adjustment

AKS007LH



PREPARATION BEFORE ADJUSTING

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

Before performing aiming adjustment, check the following.

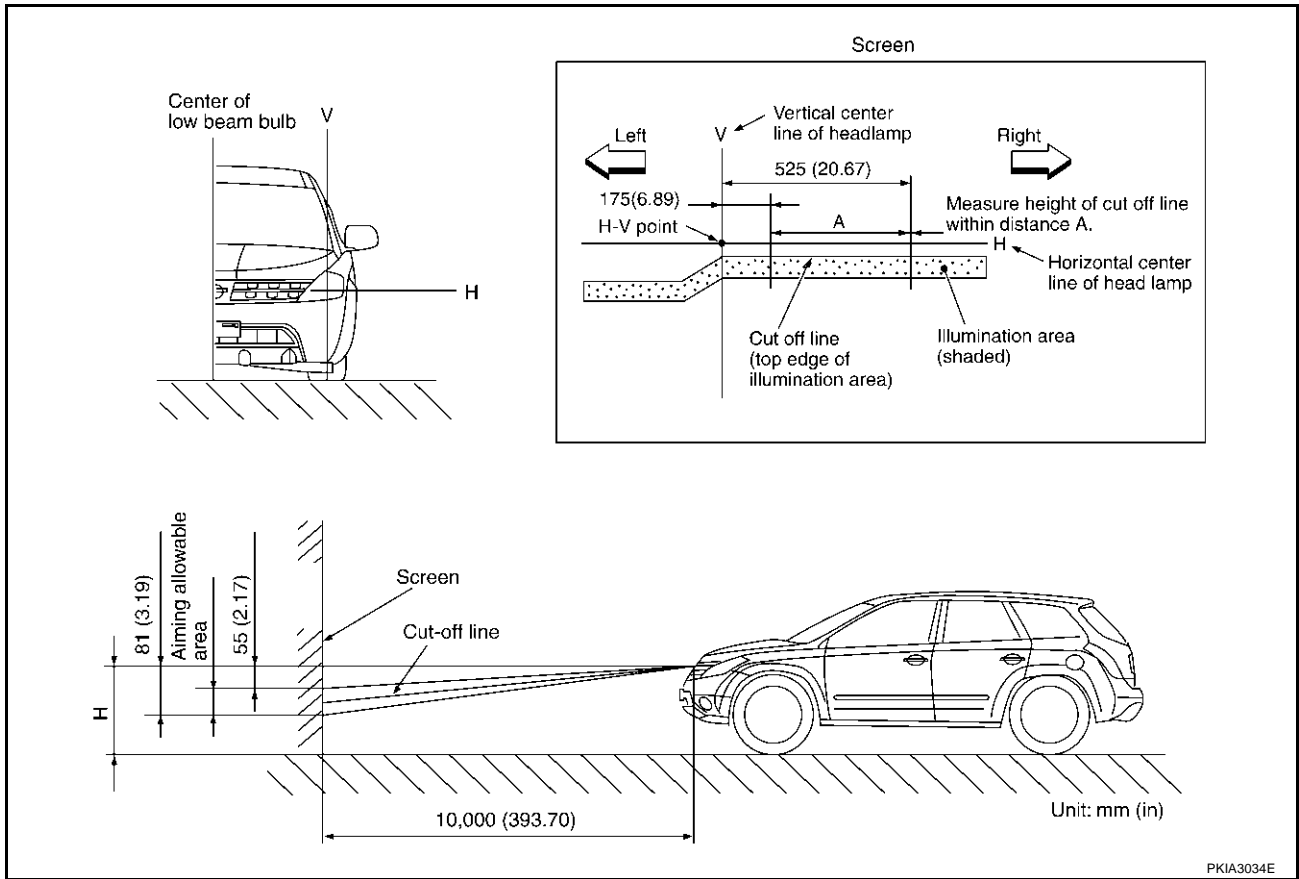
1. Keep all tires inflated to correct pressures.
2. Place vehicle on flat surface.
3. Set that there is no-load in vehicle other than the driver (or equivalent weight placed in driver's position). Coolant, engine oil filled up to correct level and full fuel tank.

LOW BEAM AND HIGH BEAM

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

HEADLAMP - XENON TYPE -

ADJUSTMENT USING AN ADJUSTMENT SCREEN (LIGHT/DARK BORDERLINE)

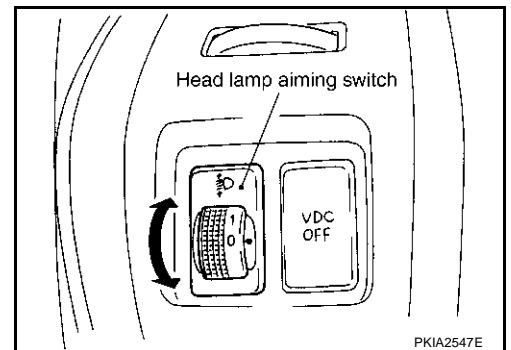


If the vehicle front body has been repaired and/or the headlamp assembly has been replaced, check aiming. Use the aiming chart shown in the figure.

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

CAUTION:

Be sure aiming switch is set to "0" when performing aiming adjustment.



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HEADLAMP - XENON TYPE -

AKS007LI

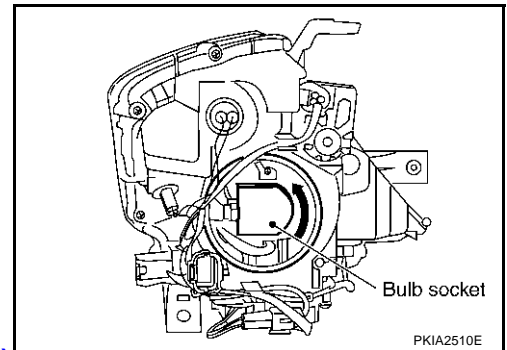
Bulb Replacement HEADLAMP HIGH/LOW BEAM

1. Turn lighting switch OFF.
2. Remove headlamp. Refer to [LT-55, "Removal and Installation"](#).
3. Turn plastic cap counterclockwise and unlock it.
4. Turn bulb socket counterclockwise and unlock it.
5. Unlock retaining spring and remove bulb from headlamp.
6. Install in reverse order of removal.

NOTE:

After installation, perform aiming adjustment. Refer to [LT-52, "Aiming Adjustment"](#).

Headlamp high/low beam (Xenon) : 12V - 35W (D2R)



PARKING LAMP (CLEARANCE LAMP)

1. Turn lighting switch OFF.
2. Remove fender protector (front). Refer to [EI-22, "FENDER PROTECTOR"](#) in "EI" section.
3. Turn bulb socket counterclockwise and unlock it.
4. Remove bulb from its socket.
5. Install in reverse order of removal.

Parking lamp (Clearance lamp) : 12V - 3.8W

FRONT TURN SIGNAL LAMP

1. Turn lighting switch OFF.
2. Remove air cleaner case (when replacing LH bulb). Refer to [EM-14, "AIR CLEANER AND AIR DUCT"](#) in "EM" section.
3. Remove IPDM E/R (when replacing RH bulb). Refer to [PG-46, "Removal and Installation of IPDM E/R"](#) in "PG" section (RH).
4. Turn bulb socket counterclockwise and unlock it.
5. Remove bulb from its socket.
6. Install in reverse order of removal.

Front turn signal lamp : 12V - 21W (amber)

FRONT SIDE MARKER LAMP

1. Turn lighting switch OFF.
2. Remove fender protector (front). Refer to [EI-22, "FENDER PROTECTOR"](#) in "EI" section.
3. Turn bulb socket counterclockwise and unlock it.
4. Remove bulb from its socket.
5. Install in reverse order of removal.

Front side marker lamp : 12V - 3.8W

CAUTION:

After installing bulb, be sure to install plastic cap and bulb socket securely to insure watertightness.

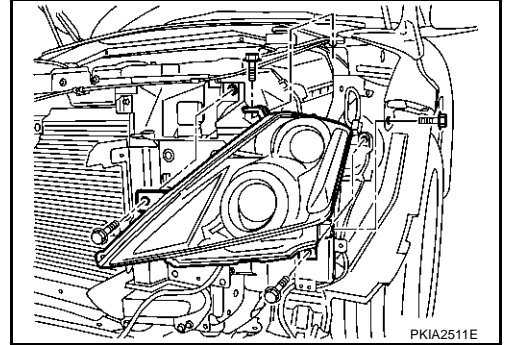
HEADLAMP - XENON TYPE -

AKS007LJ

Removal and Installation

REMOVAL

1. Disconnect the battery negative cable.
2. Remove front bumper. Refer to [EI-14, "FRONT BUMPER"](#) in "EI" section.
3. Remove headlamp mounting bolts.
4. Remove plastics bumper bracket, then pull head lamp toward vehicle front, disconnect connector, and remove headlamp.



INSTALLATION

Note the following, and install in the reverse order of removal.

Headlamp mounting bolt

 : 6.1 N·m (0.62 kg-m, 54 in-lb)

NOTE:

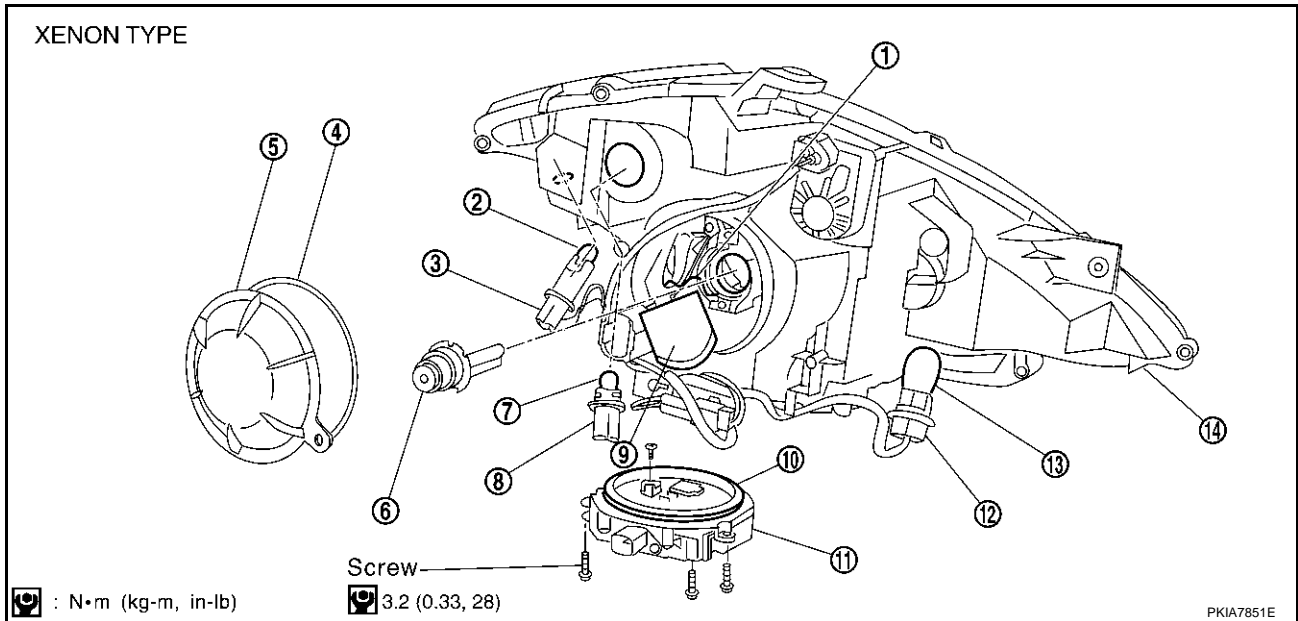
After installation, perform aiming adjustment. Refer to [LT-52, "Aiming Adjustment"](#).

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HEADLAMP - XENON TYPE -

Disassembly and Assembly

AKS007LK



- | | | |
|---------------------------------------|--|--|
| 1. Retaining spring | 2. Side marker lamp bulb | 3. Side marker lamp bulb socket |
| 4. Seal rubber | 5. Plastic cap | 6. Xenon bulb |
| 7. Parking lamp (Clearance lamp) bulb | 8. Parking lamp (Clearance lamp) bulb socket | 9. Xenon bulb socket |
| 10. Seal packing | 11. HID C/U | 12. Front turn signal lamp bulb socket |
| 13. Front turn signal lamp bulb | 14. Headlamp housing assembly | |

DISASSEMBLY

1. Turn plastic cap counterclockwise and unlock it.
2. Turn xenon bulb socket counterclockwise, and unlock it.
3. Unlock retaining spring, and remove xenon bulb (high/low).
4. Disconnect HID control unit connector, and remove HID control unit screws.
5. Turn parking lamp bulb socket counterclockwise and unlock it.
6. Remove parking lamp bulb from its socket.
7. Turn front turn signal lamp bulb socket counterclockwise and unlock it.
8. Remove front turn signal lamp bulb from its socket.
9. Turn front side marker lamp bulb socket counterclockwise and unlock it.
10. Remove front side marker lamp bulb from its socket.

HEADLAMP - XENON TYPE -

ASSEMBLY

Note the following, and assemble in the reverse order of disassemble.

HID control unit mounting screw

 : 3.2 N·m (0.33 kg-m, 28 in-lb)

CAUTION:

- When HID control unit is removed, reinstall it securely and avoid any looseness.
- After installing bulb, be sure to install plastic cap and bulb socket securely to insure watertightness

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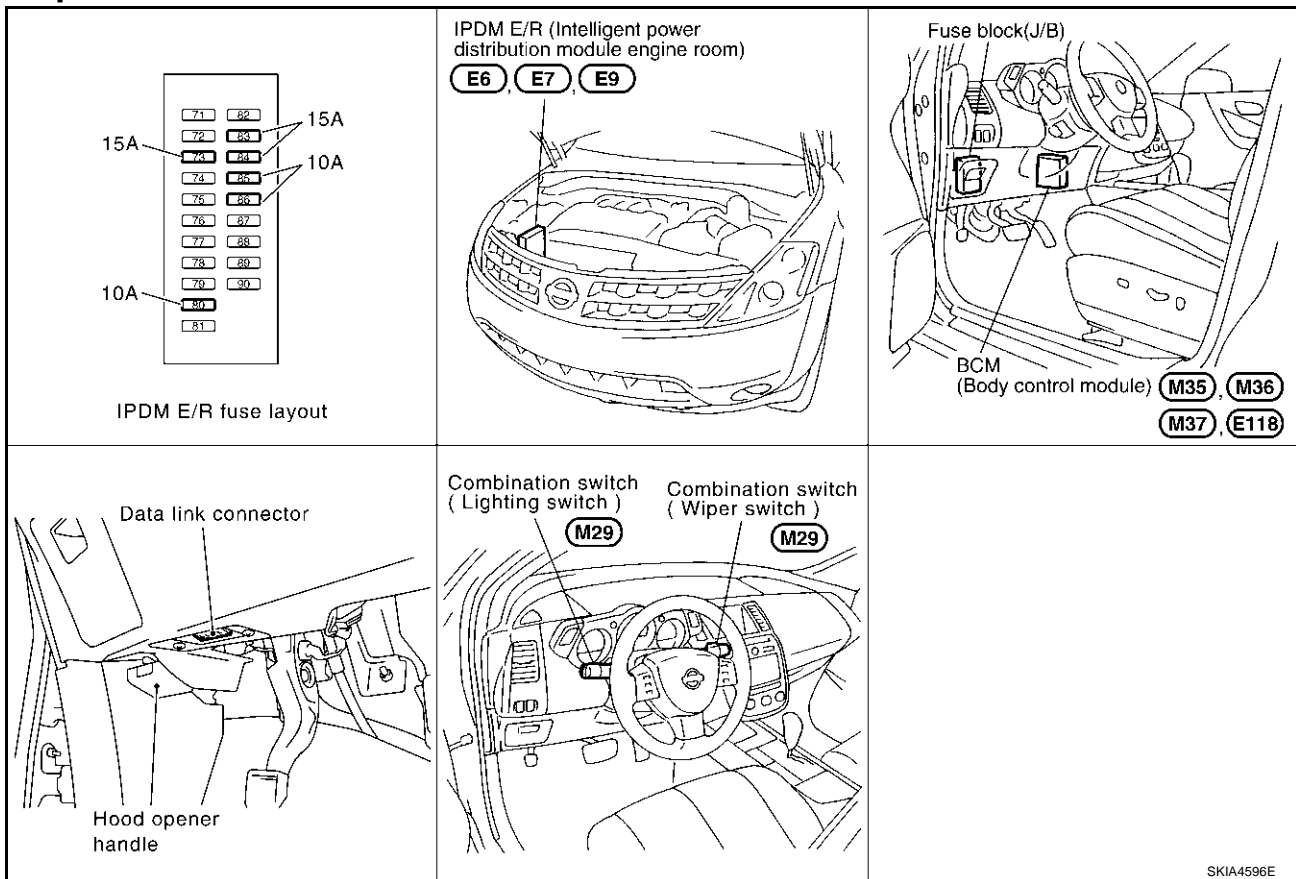
HEADLAMP -CONVENTIONAL TYPE-

HEADLAMP -CONVENTIONAL TYPE-

PFP:26010

Component Parts and Harness Connector Location

AKS007LL



System Description

AKS007LM

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

OUTLINE

Power is supplied at all times

- to headlamp high relay [located in IPDM E/R (intelligent power distribution module engine room)]
- to headlamp low relay [located in IPDM E/R (intelligent power distribution module engine room)]
- through 50A fusible link (letter F, located in fuse and fusible link block)
- to BCM (body control module) terminal 7
- through 15A fuse [No. 73, located in IPDM E/R (intelligent power distribution module engine room)]
- to CPU (central processing unit) [located in IPDM E/R (intelligent power distribution module engine room)]
- through 10A fuse [No. 21, located in fuse block (J/B)]
- to combination meter terminal 21.

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

- through 10A fuse [No. 1, located in fuse block (J/B)]
- to BCM (body control module) terminal 35
- through 10A fuse [No. 80, located in IPDM E/R (intelligent power distribution module engine room)]
- to CPU (central processing unit) [located in IPDM E/R (intelligent power distribution module engine room)].

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

HEADLAMP -CONVENTIONAL TYPE-

- through 10A fuse [No. 6, located in fuse block (J/B)]
- to BCM (body control module) terminal 36
- through 10A fuse [No. 14, located in fuse block (J/B)]
- to combination meter terminal 20.

Ground is supplied

- to BCM (body control module) terminal 8
- through grounds E13, E26 and E28
- to IPDM E/R (intelligent power distribution module engine room) terminals 14 and 45
- through grounds E13, E26 and E28.
- to combination meter terminal 22, 23 and 24
- through grounds M14 and M78.

Low Beam Operation

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

- to 15A fuse [No. 83, located in IPDM E/R]
- through IPDM E/R terminal 27
- to headlamp RH terminal 4, and
- to 15A fuse [No. 84, located in IPDM E/R]
- through IPDM E/R terminal 21
- to headlamp LH terminal 4.

Ground is supplied at all times

- to headlamp RH terminal 5
- through grounds E13, E26 and E28, and
- to headlamp LH terminal 5
- through grounds E13, E26 and E28.

With power and ground supplied, low beam headlamps illuminate.

High Beam Operation/Flash-to-Pass Operation

With the lighting switch in 2ND position and placed in HIGH or PASS position, the BCM (body control module) receives input signal requesting the headlamp high beams to illuminate. This input signal is communicated to the IPDM E/R (intelligent power distribution module engine room) across the CAN communication lines. The CPU (central processing unit) in the IPDM E/R controls the headlamp high relay coil, which when energized, directs power

- to 10A fuse [No. 86, located in IPDM E/R]
- through IPDM E/R terminal 24
- to headlamp RH terminal 1, and
- to 10A fuse [No. 85, located in IPDM E/R]
- through IPDM E/R terminal 22
- to headlamp LH terminal 1.

Ground is supplied

- to headlamp RH terminal 5
- through grounds E13, E26 and E28, and
- to headlamp LH terminal 5
- through grounds E13, E26 and E28.

With power and ground supplied, the high beam headlamps illuminate.

The unified meter and A/C amp that received the high beam request signal by BCM across the CAN communication makes a high beam indicator lamp turn on in combination meter.

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HEADLAMP -CONVENTIONAL TYPE-

COMBINATION SWITCH READING FUNCTION

Refer to [LT-251, "Combination Switch Reading Function"](#) .

EXTERIOR LAMP BATTERY SAVER CONTROL

When the combination switch (lighting switch) is in the 2ND position (ON), and the ignition switch is turned from ON or ACC to OFF, the battery saver control function is activated.

Under this condition, the headlamps remain illuminated for 5 minutes, then the headlamps are turned off. Exterior lamp battery saver control mode can be changed by the function setting of CONSULT-II.

AUTO LIGHT OPERATION

Refer to [LT-140, "System Description"](#) in "AUTO LIGHT SYSTEM".

VEHICLE SECURITY SYSTEM

The vehicle security system will flash the high beams if the system is triggered. Refer to [BL-142, "VEHICLE SECURITY \(THEFT WARNING\) SYSTEM"](#) .

CAN Communication System Description

AKS007LN

CAN (Controller Area Network) is a serial communication line for real time application. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Many electronic control units are equipped onto a vehicle, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN H line, CAN L line) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.

CAN Communication Unit For 2WD Models

AKS007QN

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	LT-61, "TYPE 1/TYPE 2/TYPE 3/TYPE 4/TYPE 5/TYPE 6/TYPE 7/TYPE 8"								LT-66, "TYPE 9/TYPE10/TYPE 11/TYPE 12/TYPE 13/TYPE 14/TYPE 15/TYPE 16"							

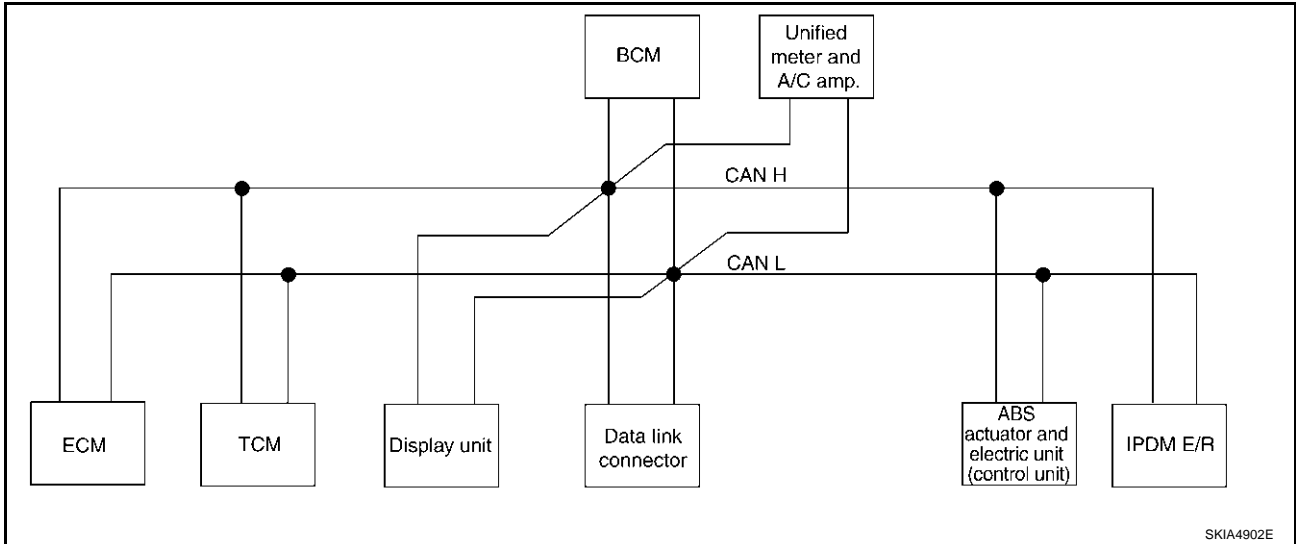
×: Applicable

HEADLAMP -CONVENTIONAL TYPE-

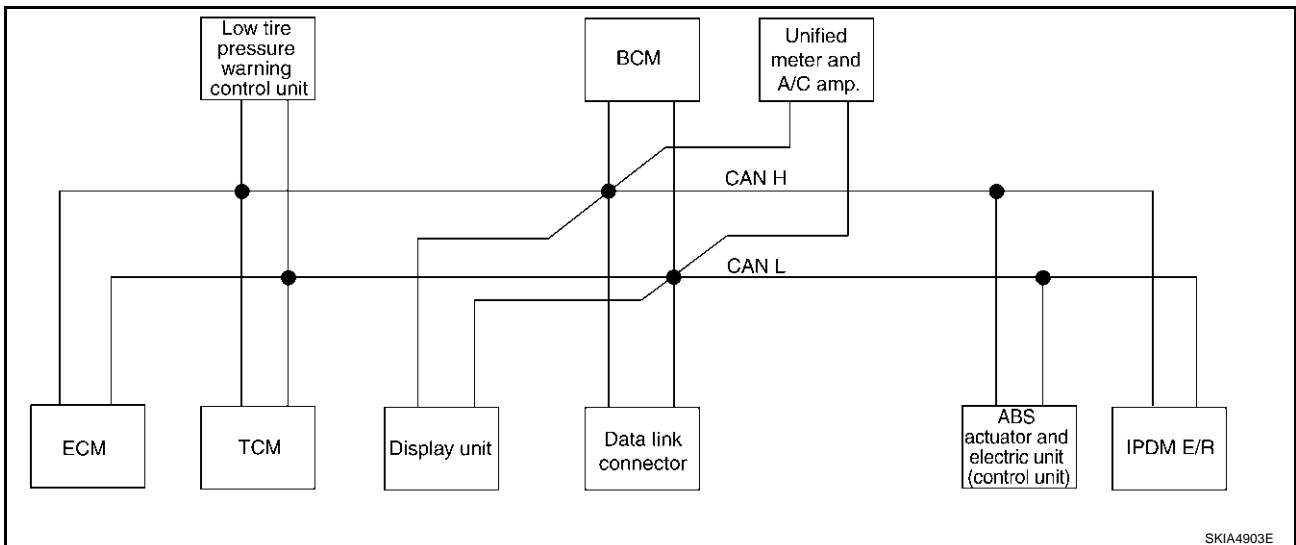
TYPE 1/TYPE 2/TYPE 3/TYPE 4/TYPE 5/TYPE 6/TYPE 7/TYPE 8

System Diagram

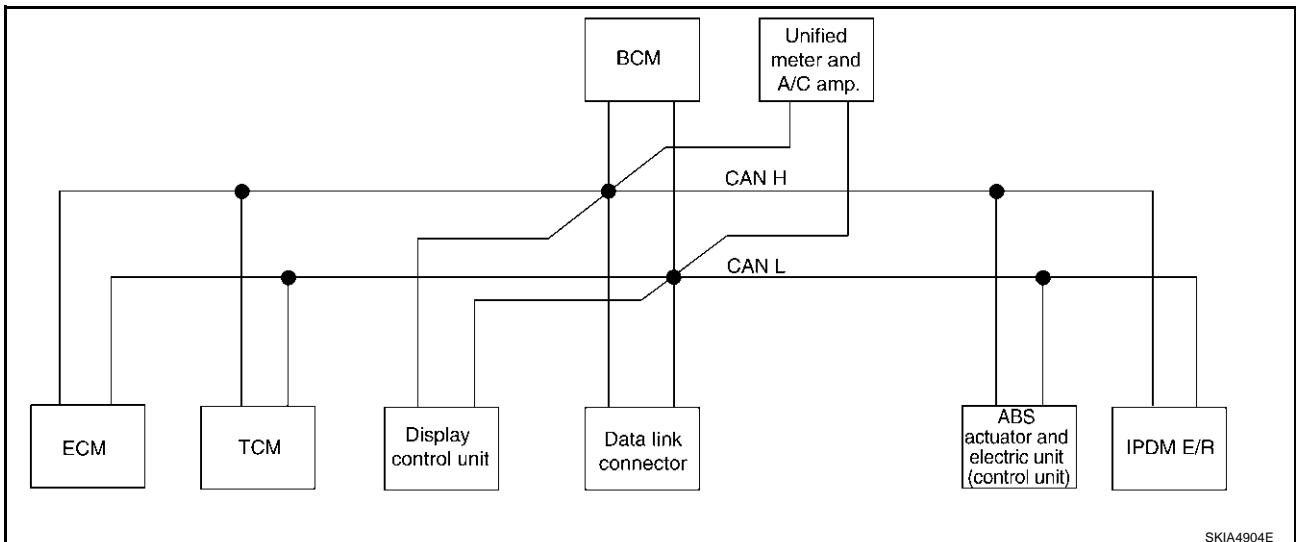
- Type1



- Type2



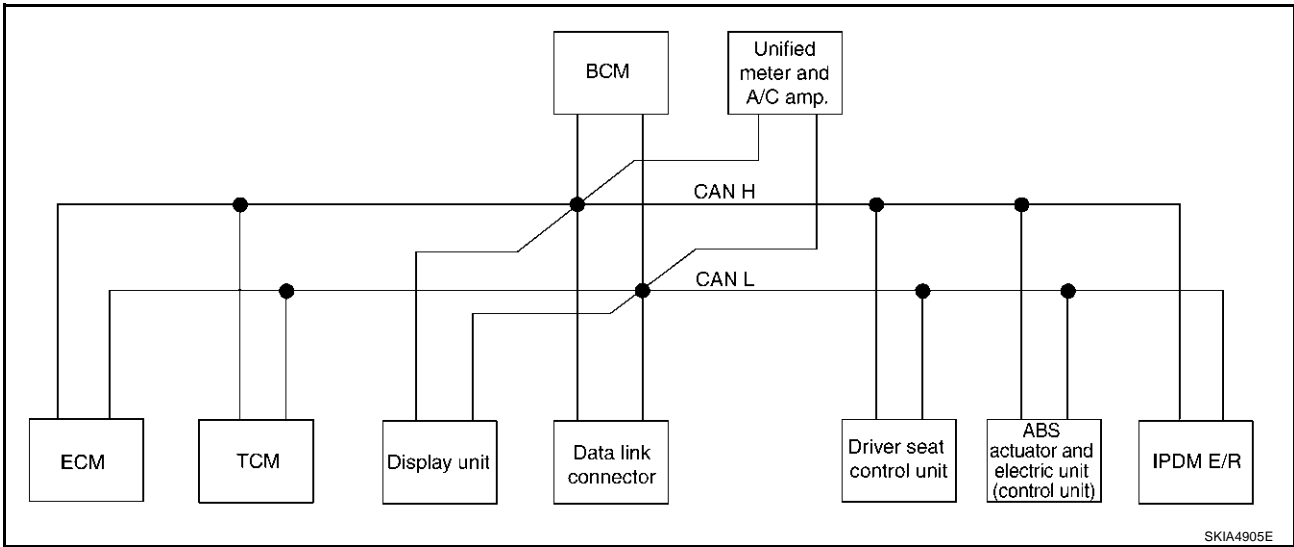
- Type3



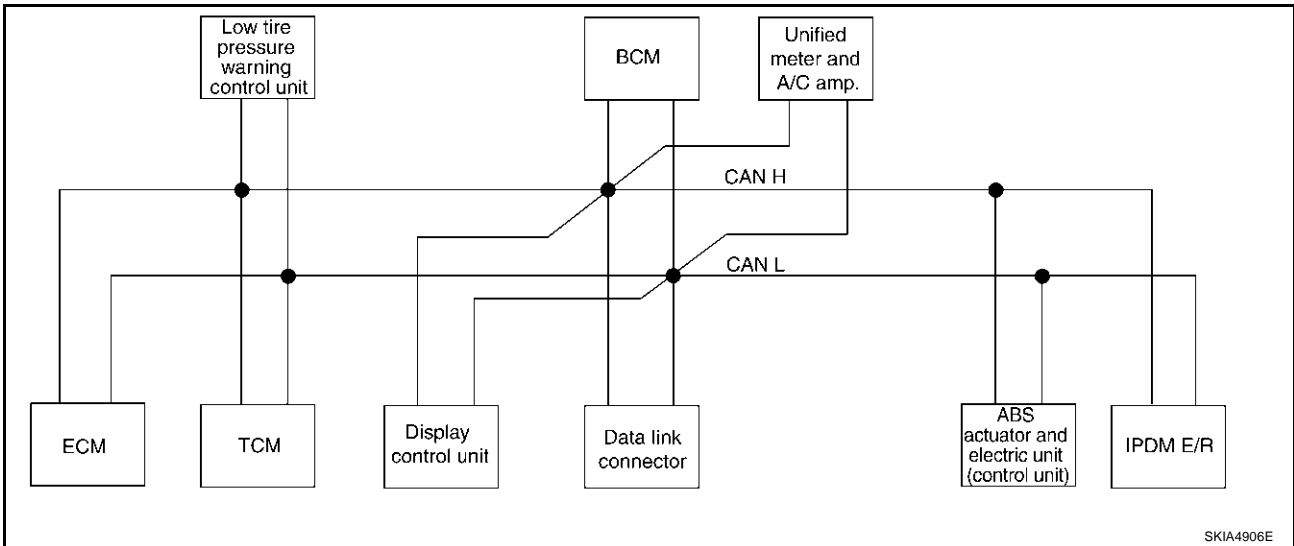
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HEADLAMP -CONVENTIONAL TYPE-

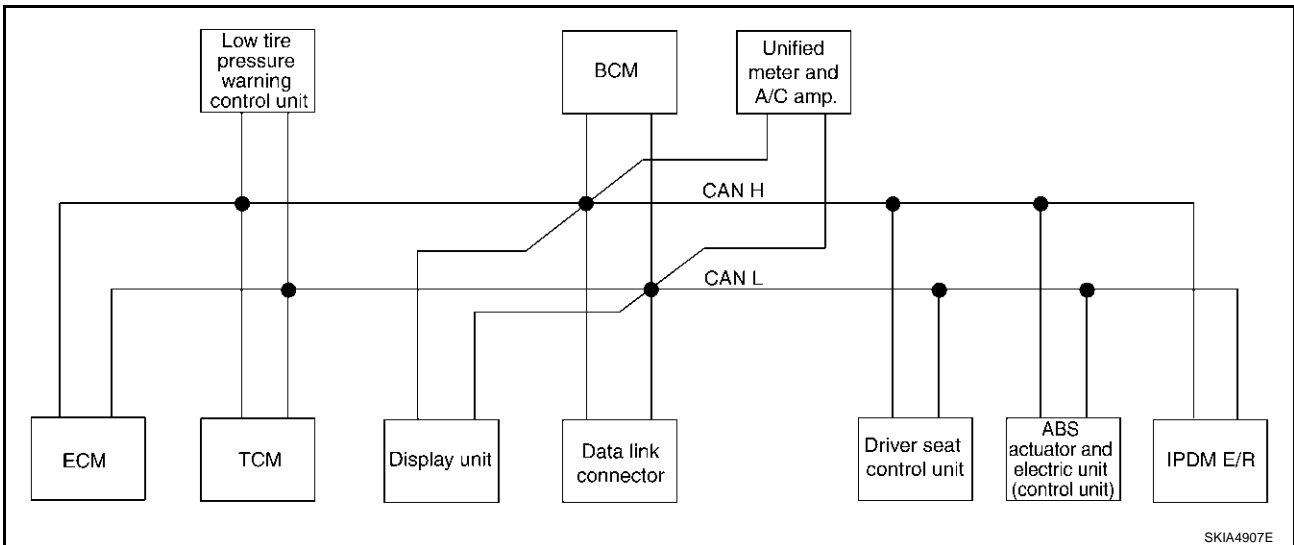
- Type4



- Type5

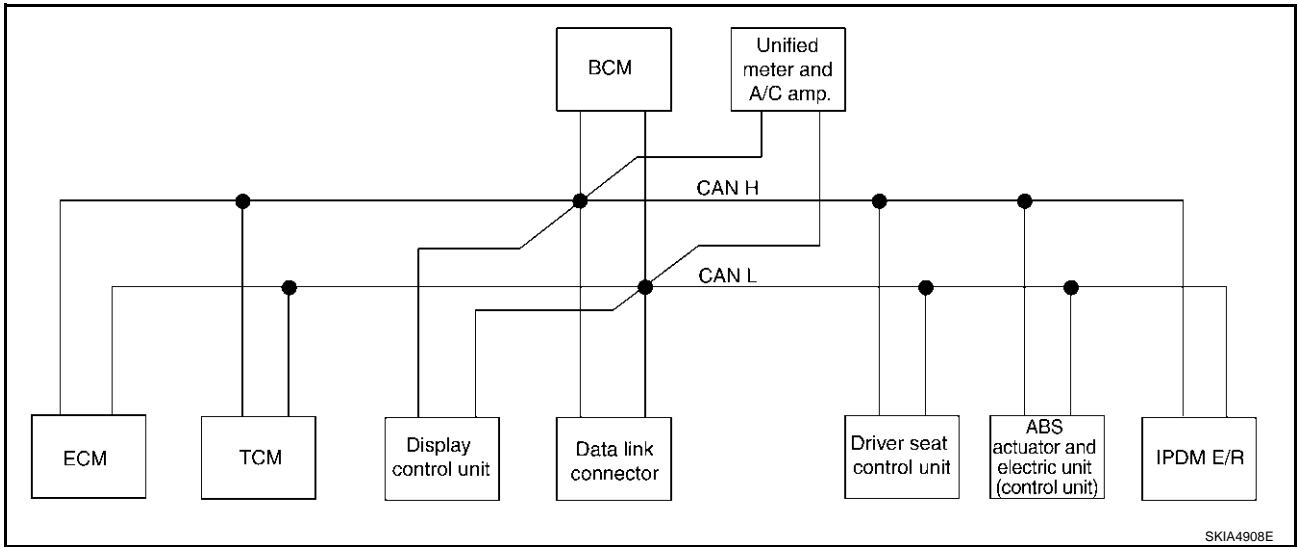


- Type6

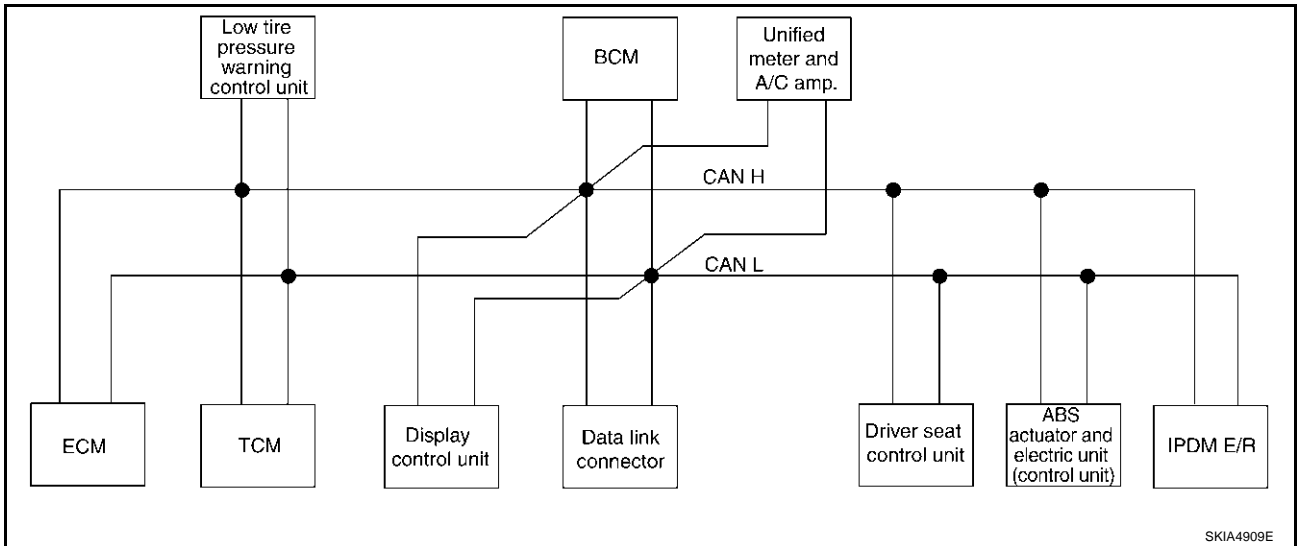


HEADLAMP -CONVENTIONAL TYPE-

- Type7



- Type8



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HEADLAMP -CONVENTIONAL TYPE-

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			

HEADLAMP -CONVENTIONAL TYPE-

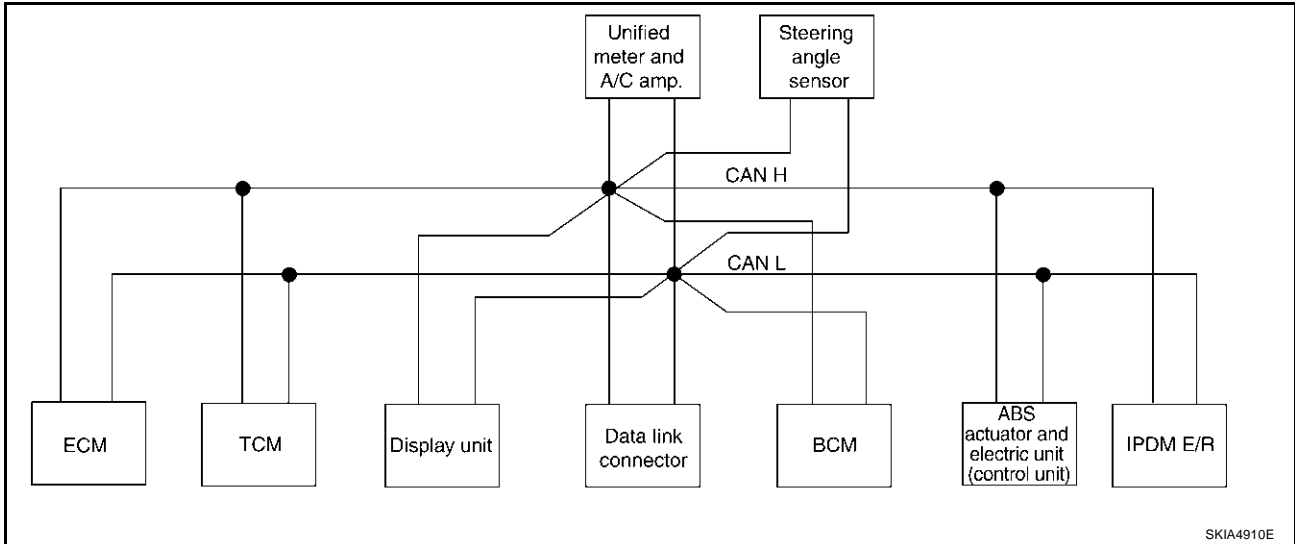
Signals	ECM	TCM	Low tire pres- sure warn- ing control unit	Dis- play unit	Dis- play control unit	BCM	Uni- fied meter and A/ C amp.	Driver seat control unit	ABS actua- tor and elec- tric unit (con- trol unit)	IPDM E/R	A
Key fob ID signal						T		R			C
Key fob door unlock signal						T		R			B
Seat belt 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

HEADLAMP -CONVENTIONAL TYPE-

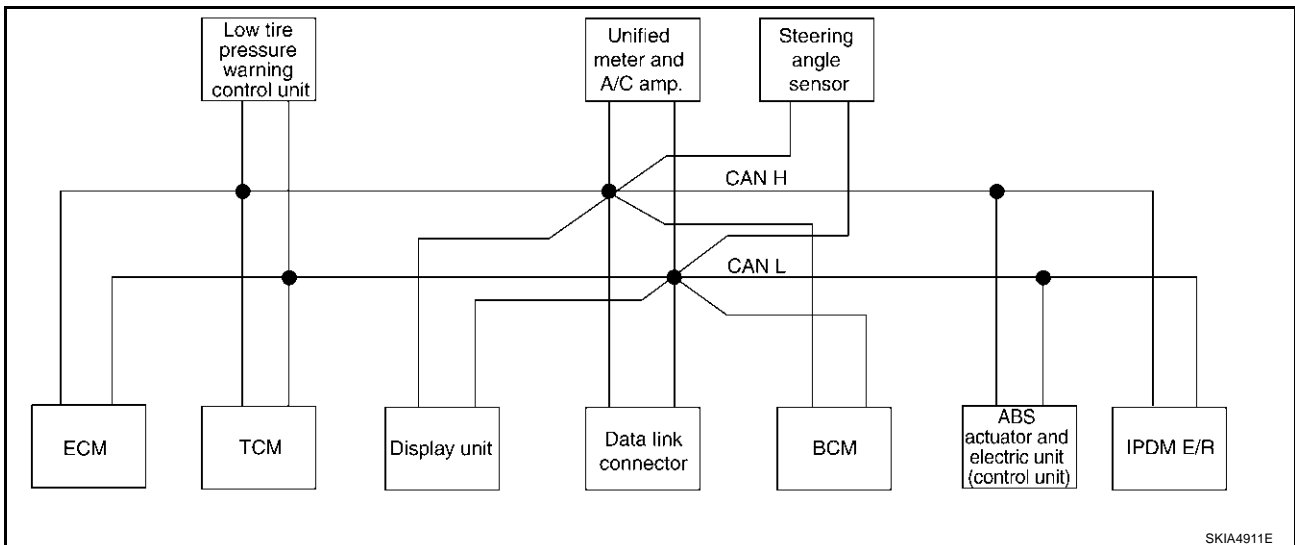
TYPE 9/TYPE10/TYPE 11/TYPE 12/TYPE 13/TYPE 14/TYPE 15/TYPE 16

System Diagram

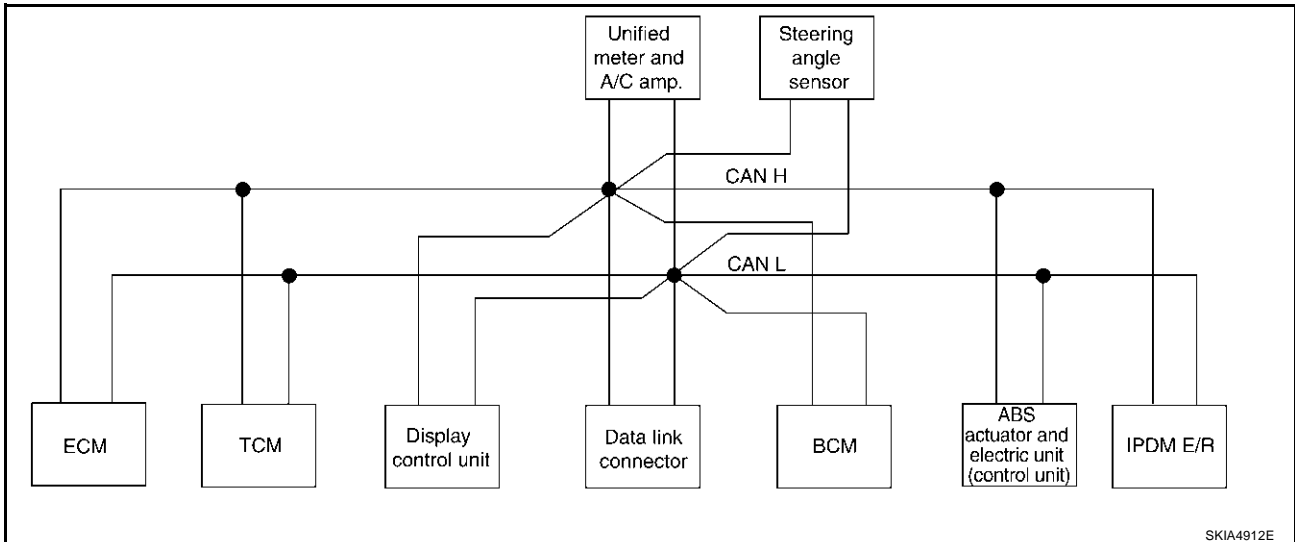
- Type9



- Type10

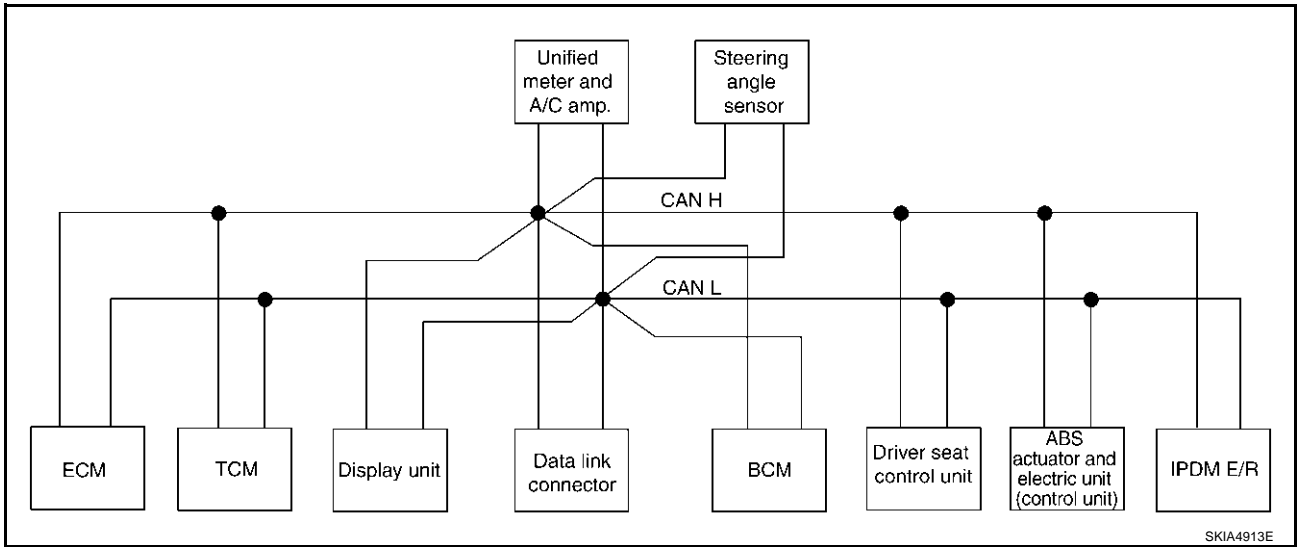


- Type11

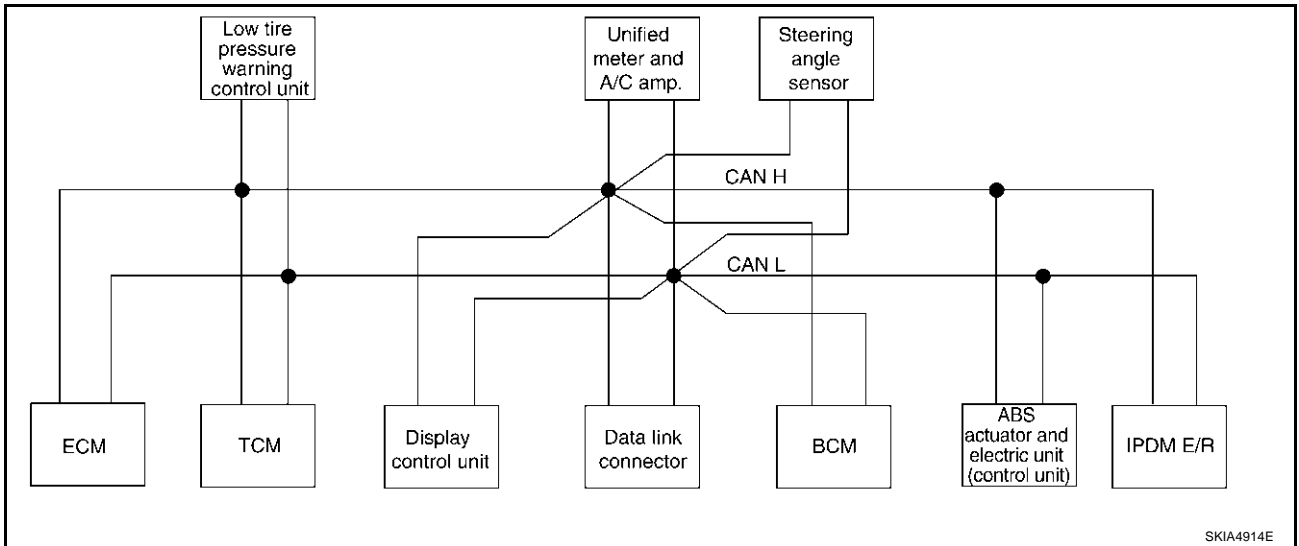


HEADLAMP - CONVENTIONAL TYPE-

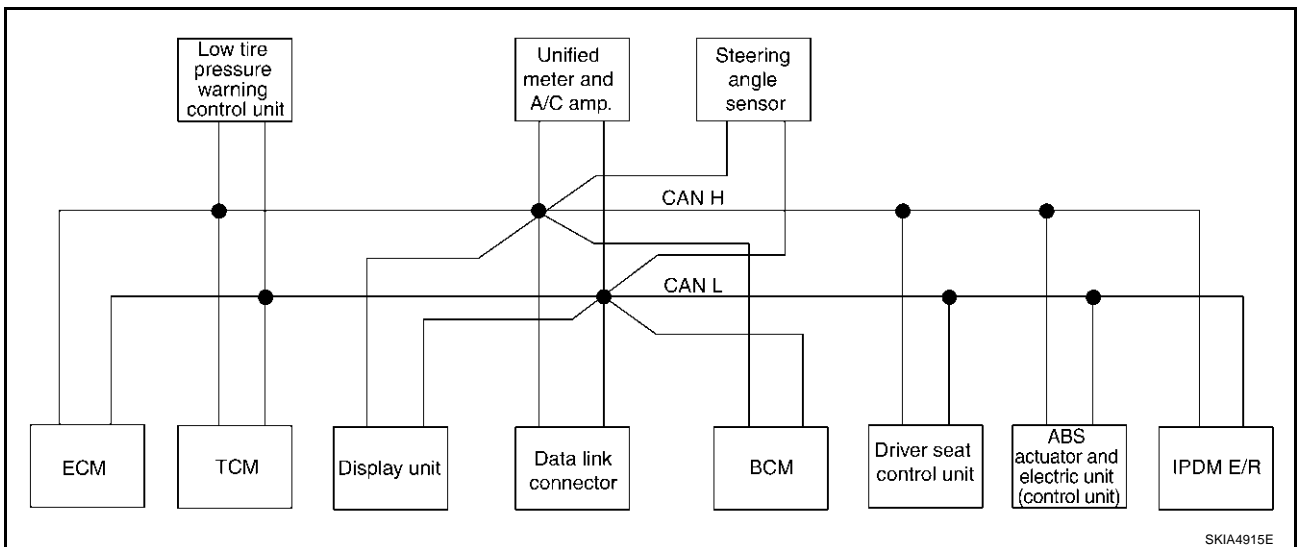
- Type12



- Type13



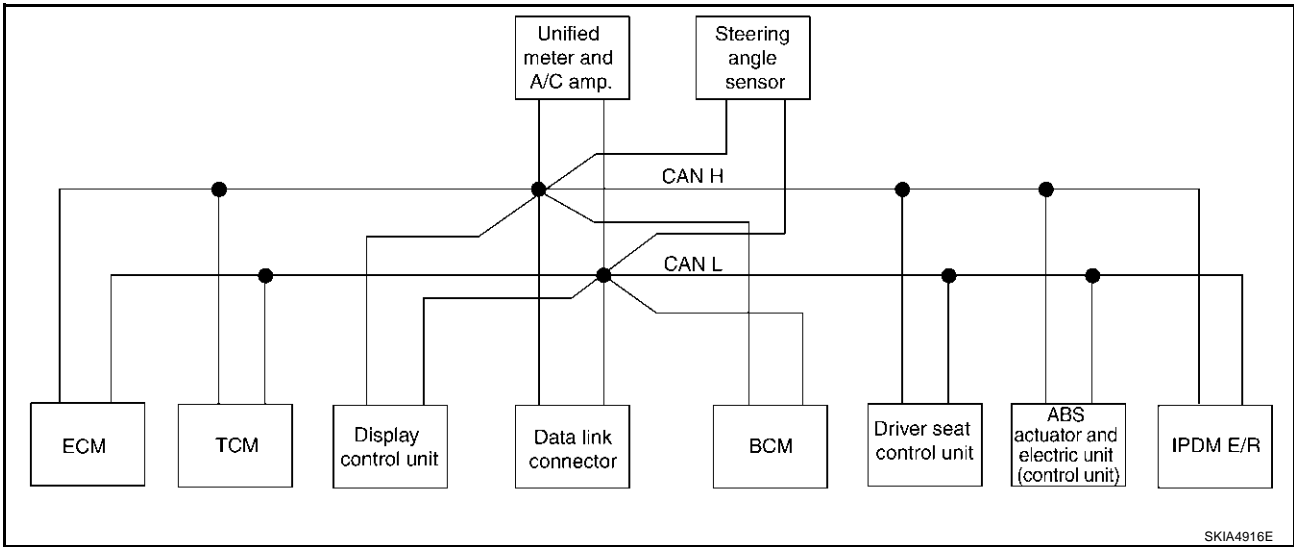
- Type14



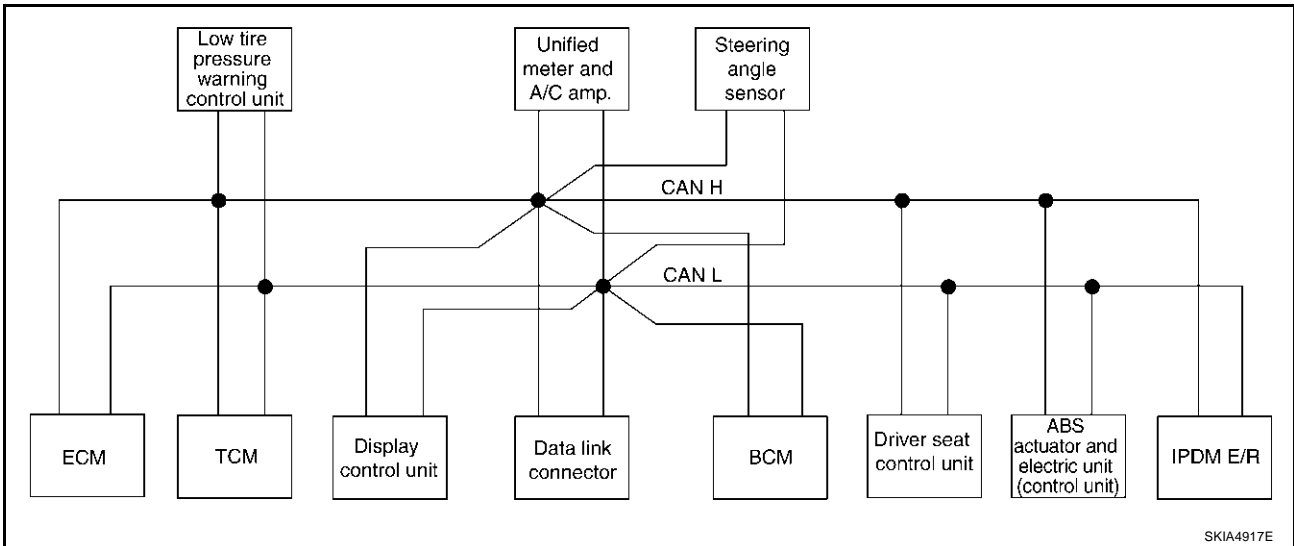
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HEADLAMP -CONVENTIONAL TYPE-

- Type15



- Type16



HEADLAMP -CONVENTIONAL TYPE-

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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HEADLAMP -CONVENTIONAL TYPE-

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				
Turn indicator signal				R	R	T	R		R		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
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				

HEADLAMP -CONVENTIONAL TYPE-

CAN Communication Unit For AWD Models

AKS00700

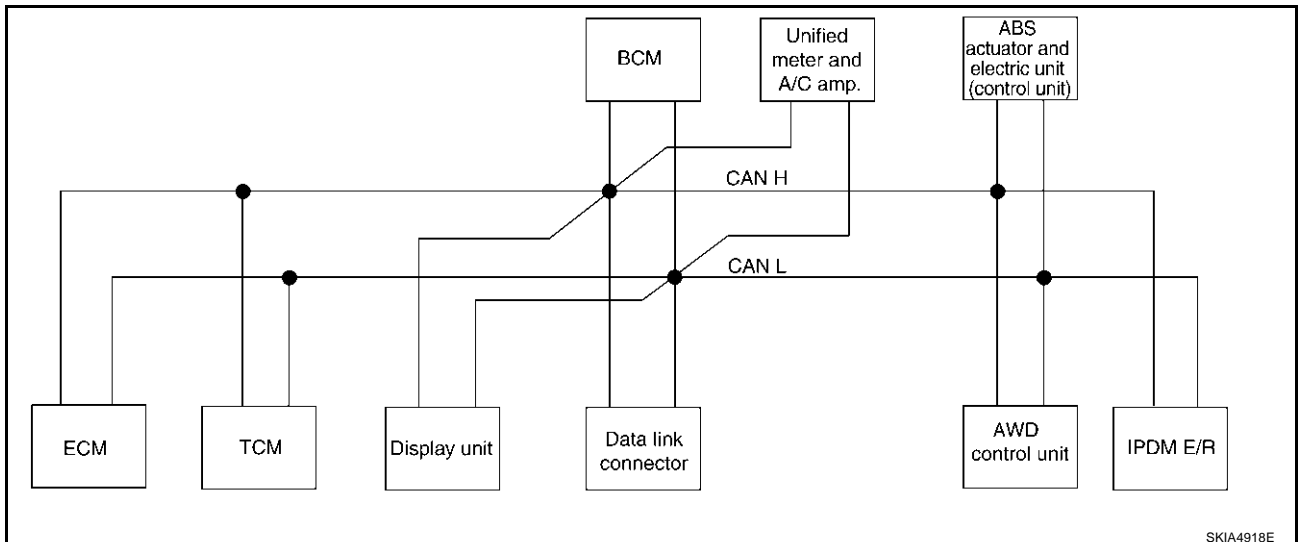
Body type	Wagon														
Axle	AWD														
Engine	VQ35DE														
Transmission	CVT														
Brake control	ABS							VDC							
Low tire pressure warning system		×			×	×		×		×		×	×		×
Navigation system			×		×		×	×			×		×		×
Automatic drive positioner				×		×	×	×				×		×	×
CAN communication 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	<u>LT-71. "TYPE 17/TYPER 18/TYPER 19/TYPER 20/TYPER 21/TYPER 22/TYPER 23/TYPER 24"</u>							<u>LT-77. "TYPE 25/TYPER26/TYPER 27/TYPER 28/TYPER 29/TYPER 30/TYPER 31/TYPER 32"</u>							

×: Applicable

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

System Diagram

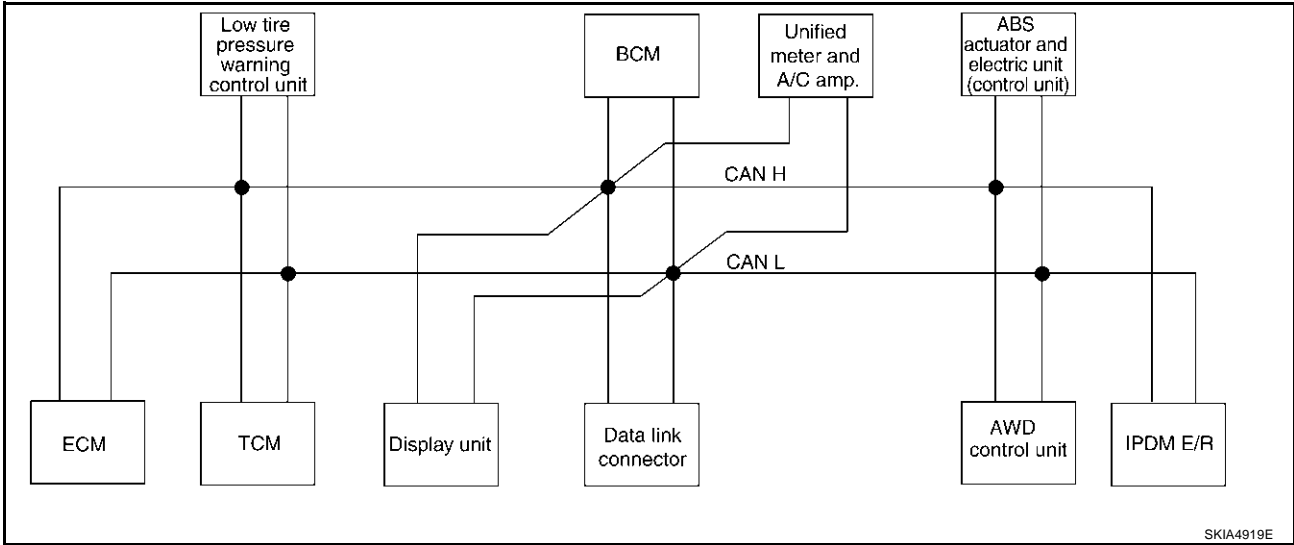
- Type17



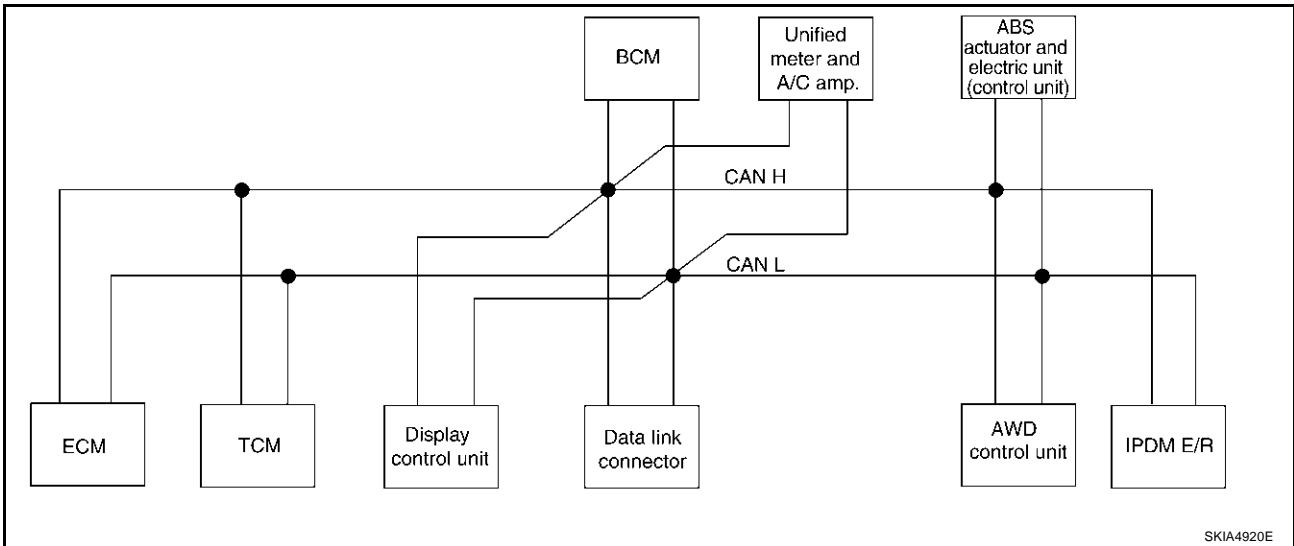
SKIA4918E

HEADLAMP -CONVENTIONAL TYPE-

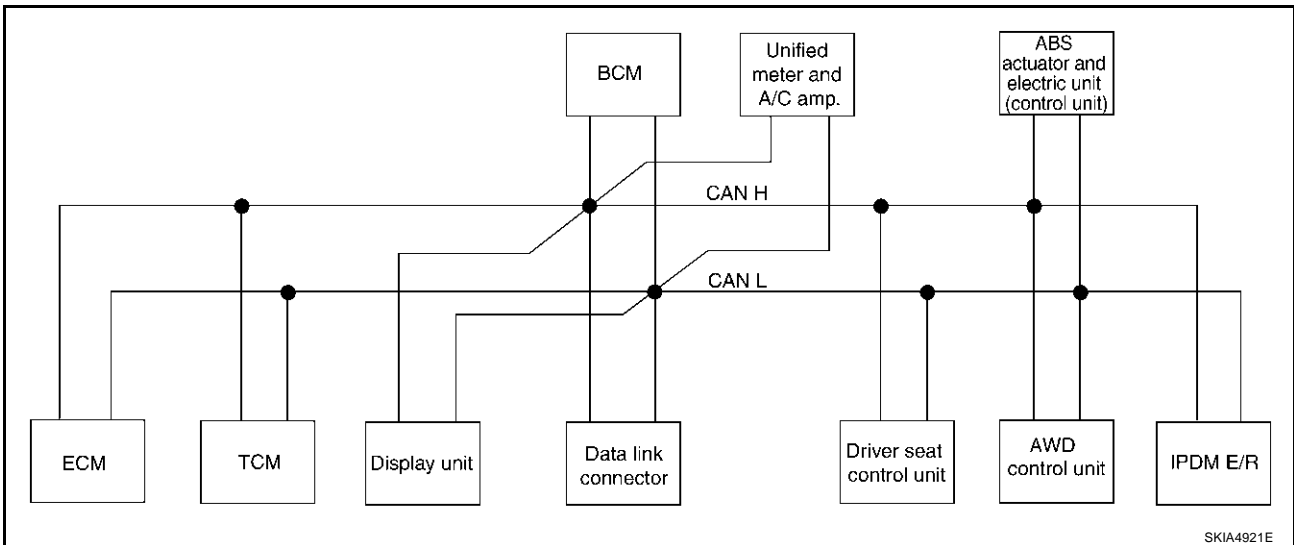
- Type18



- Type19

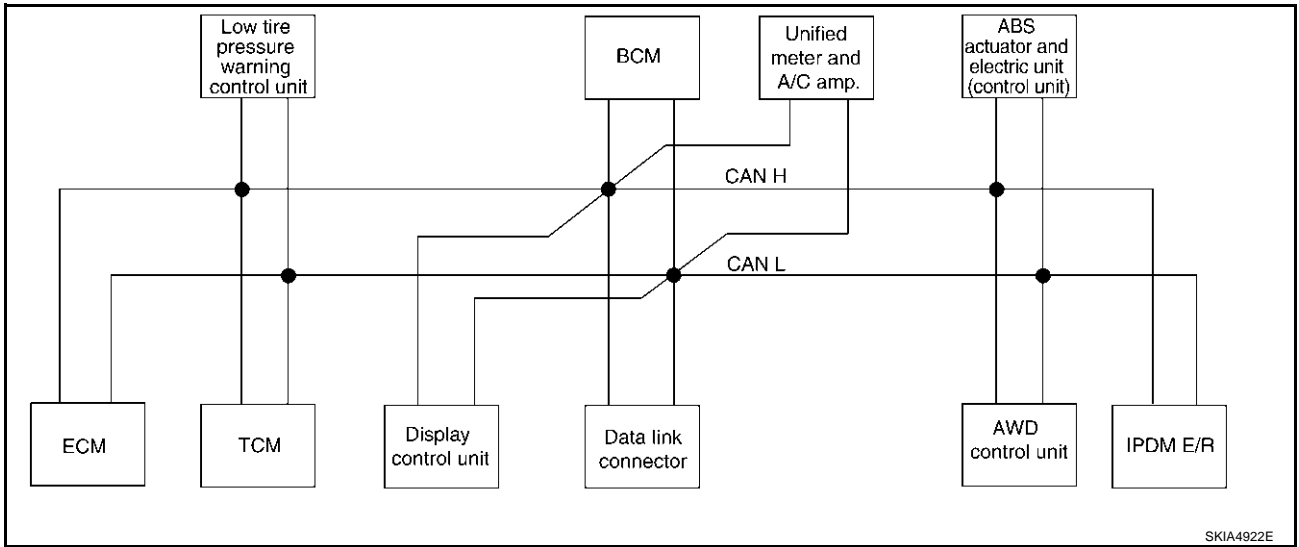


- Type20

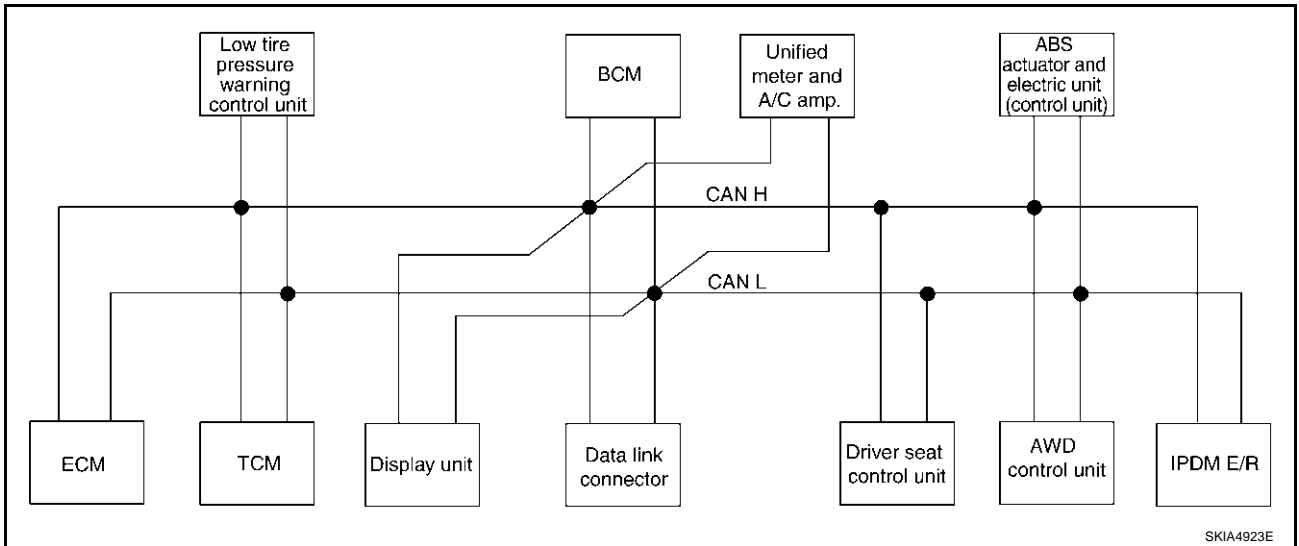


HEADLAMP - CONVENTIONAL TYPE-

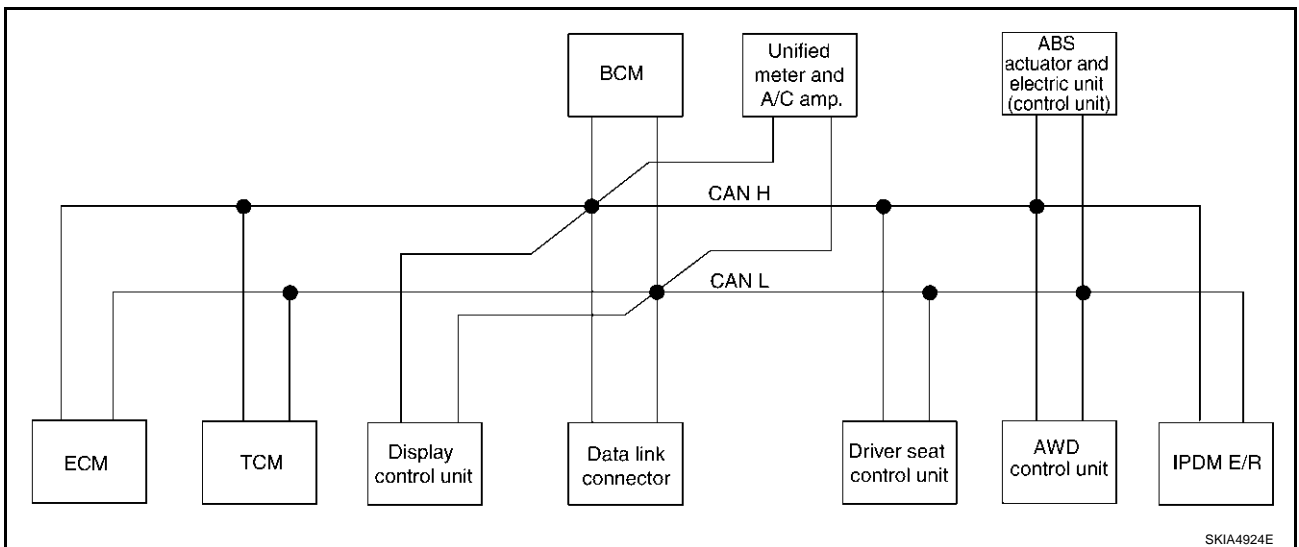
- Type21



- Type22



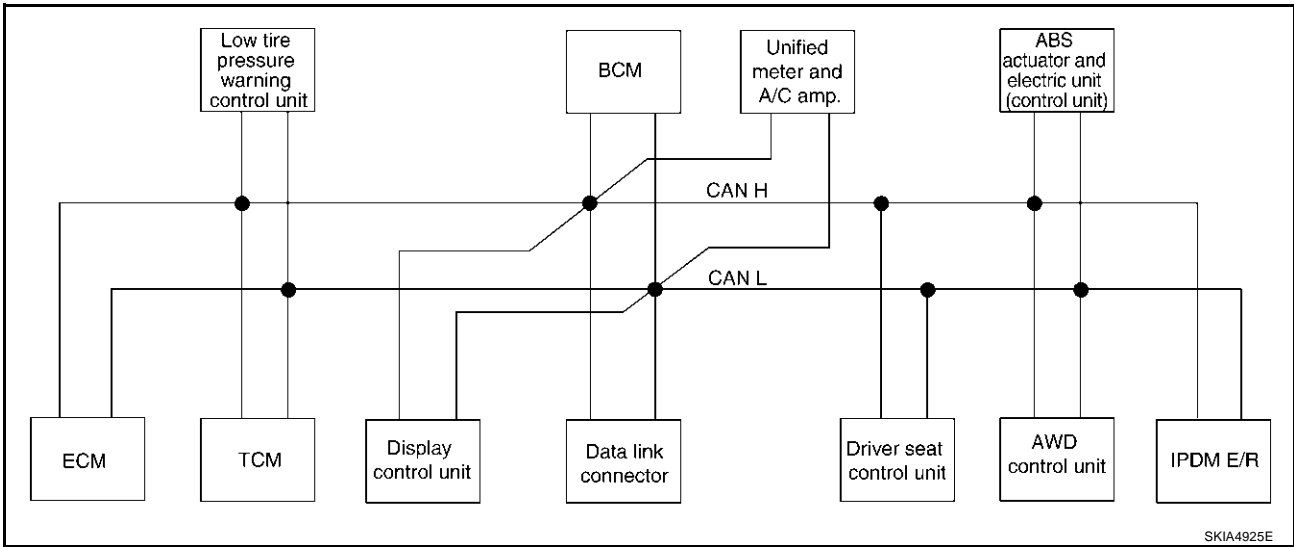
- Type23



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HEADLAMP -CONVENTIONAL TYPE-

- Type24



HEADLAMP -CONVENTIONAL TYPE-

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			

HEADLAMP -CONVENTIONAL TYPE-

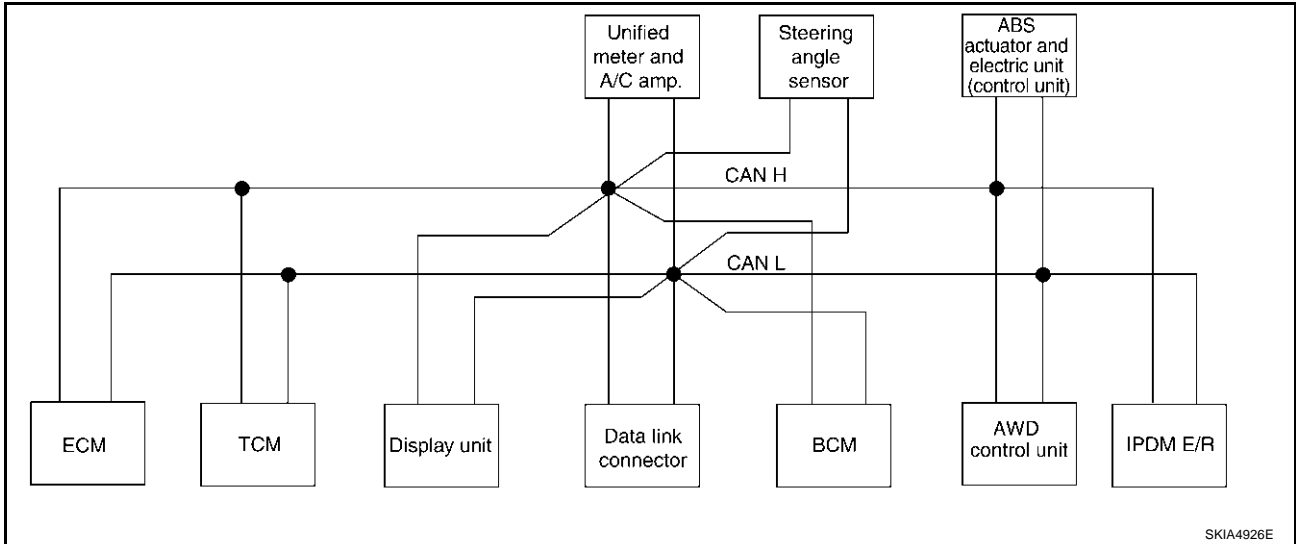
Signals	ECM	TCM	Low tire pressure warning control unit	Display unit	Display control unit	BCM	Unified meter and A/C amp.	Driver seat control unit	AWD control unit	ABS actuator and electric unit (control unit)	IPDM E/R
Turn indicator signal						T	R				
Seat belt buckle switch signal						R	T				
Oil pressure 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		

HEADLAMP - CONVENTIONAL TYPE-

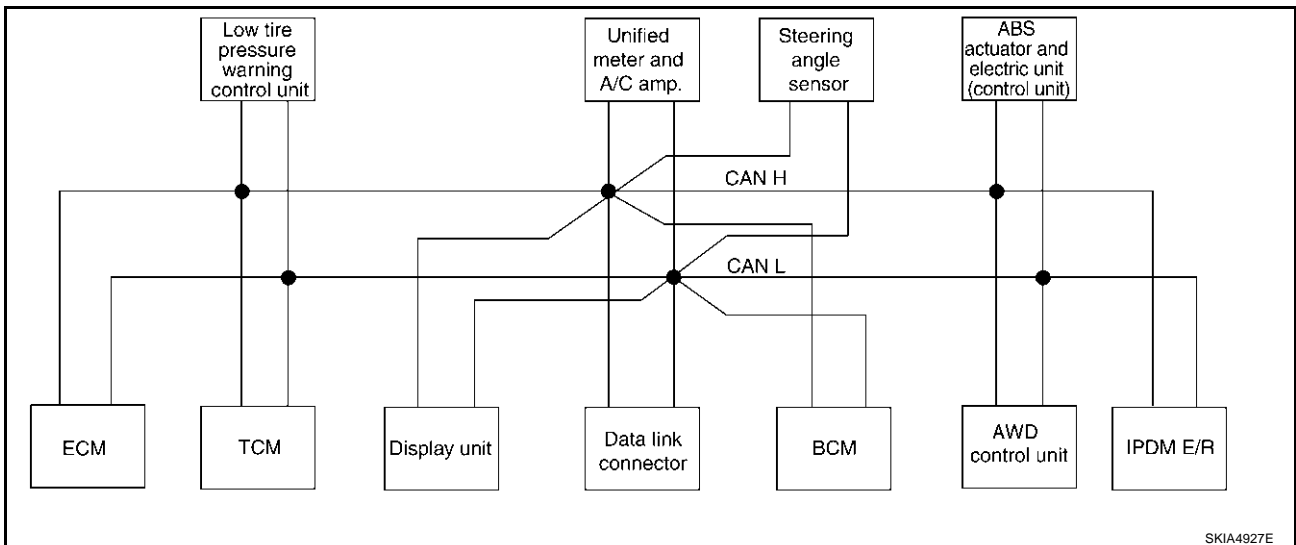
TYPE 25/TYPER26/TYPER 27/TYPER 28/TYPER 29/TYPER 30/TYPER 31/TYPER 32

System Diagram

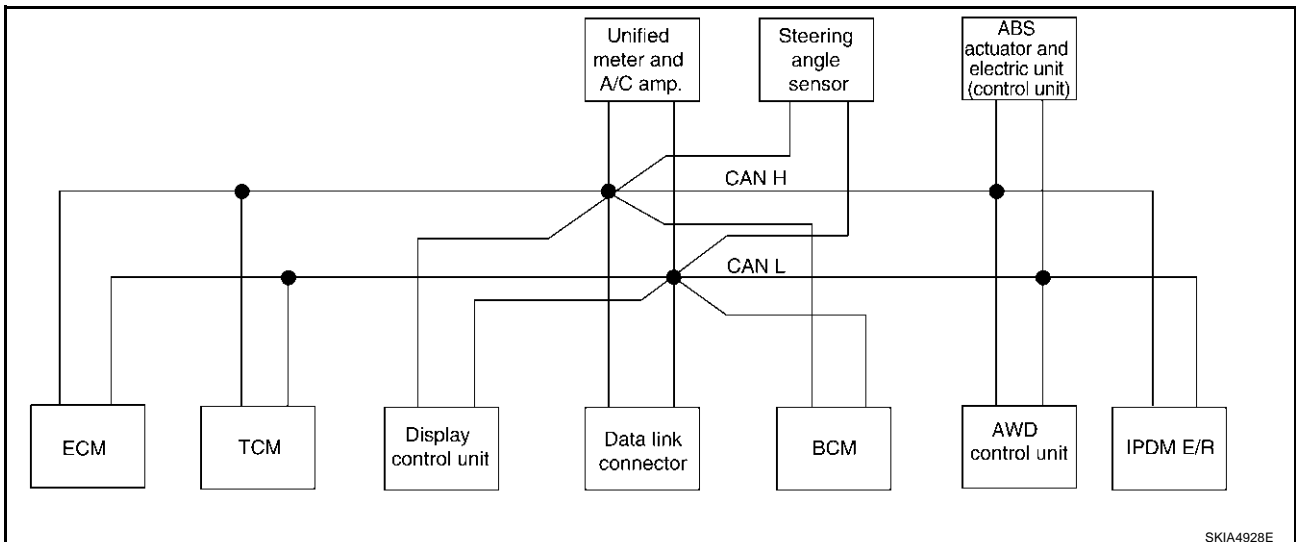
- Type25



- Type26



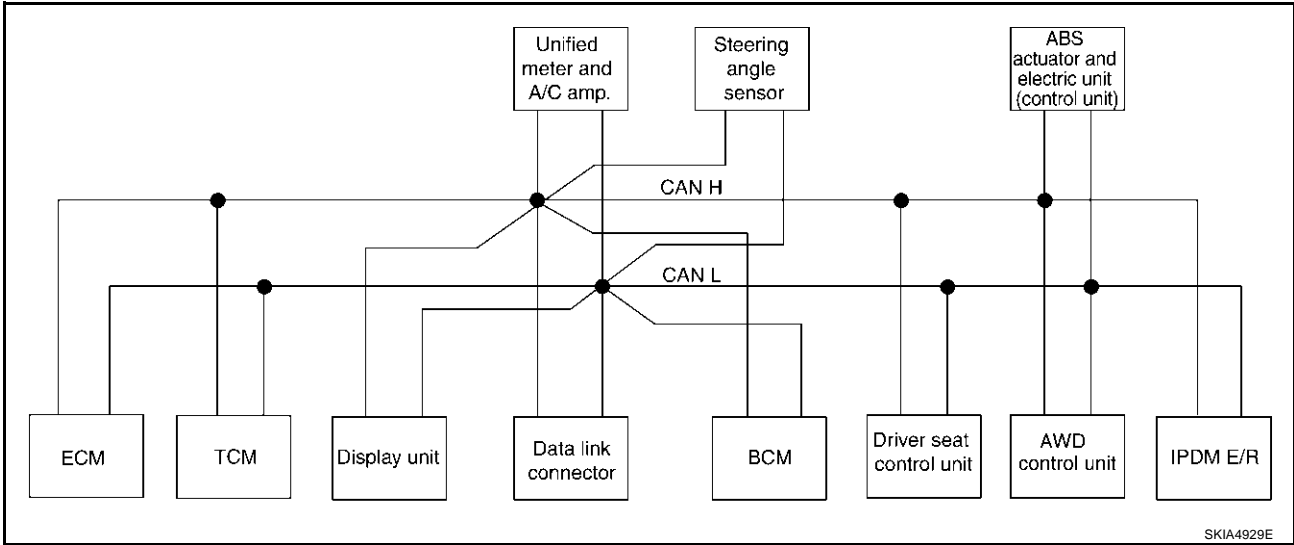
- Type27



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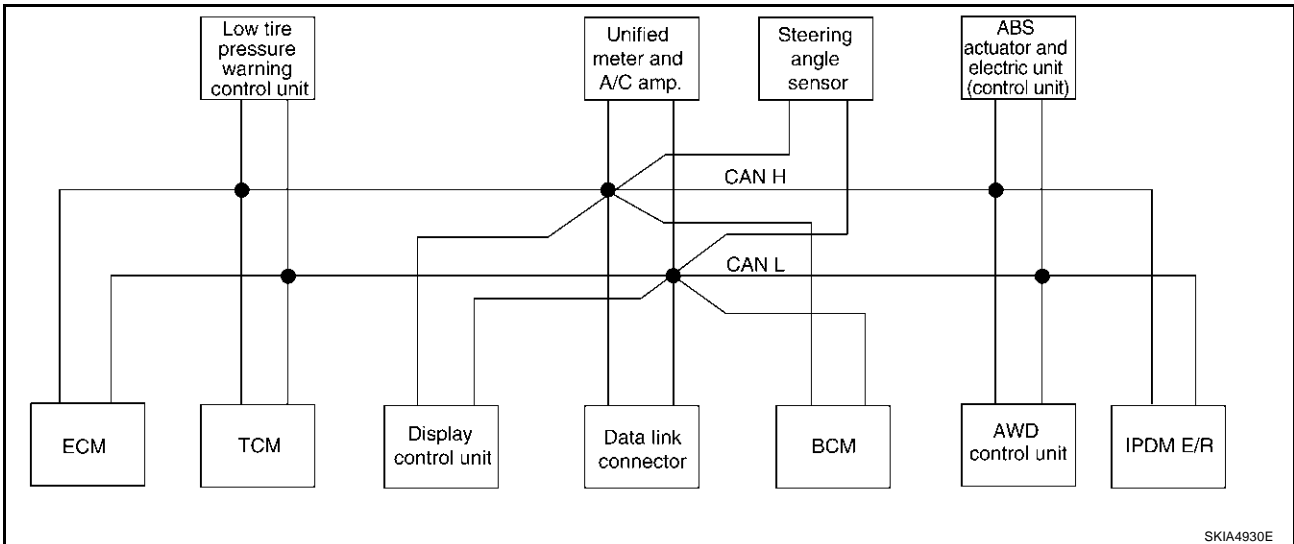
HEADLAMP -CONVENTIONAL TYPE-

- Type28



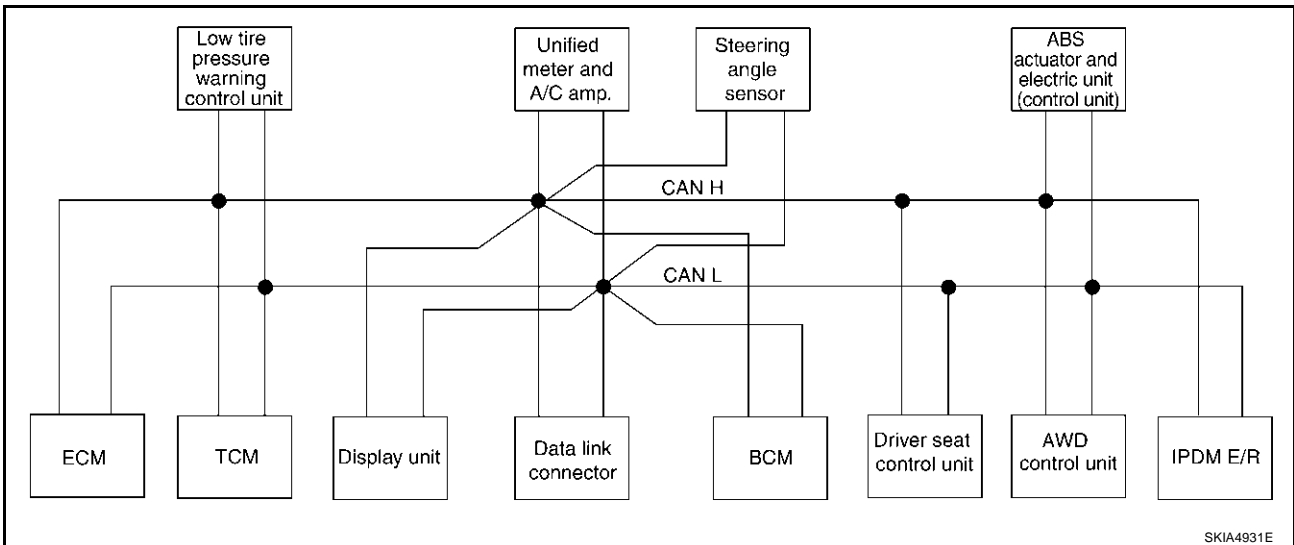
SKIA4929E

- Type29



SKIA4930E

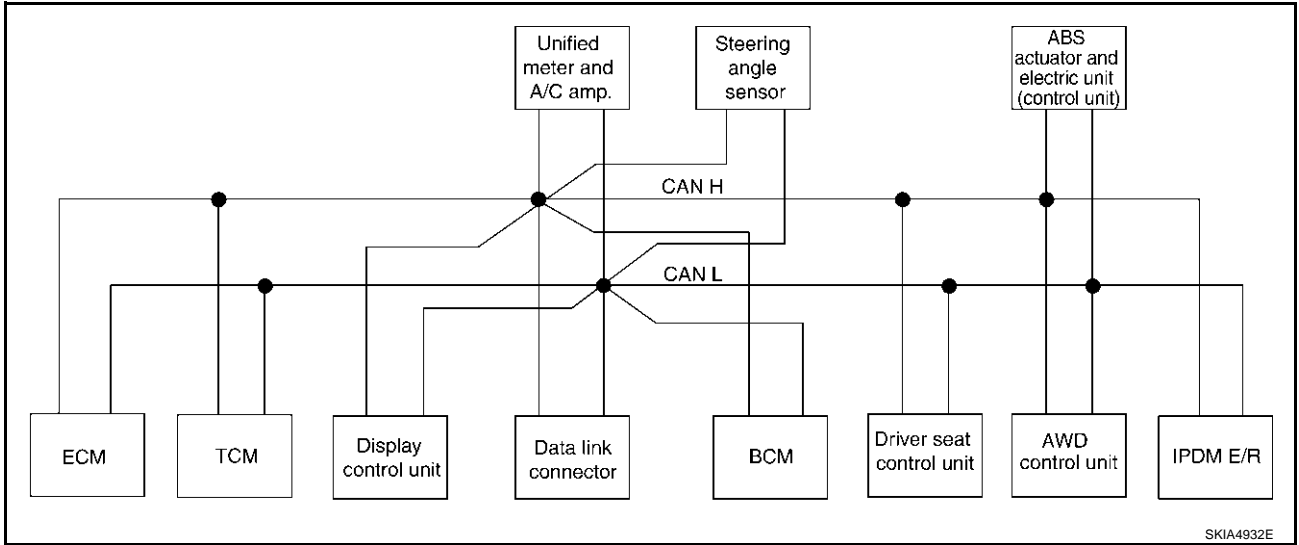
- Type30



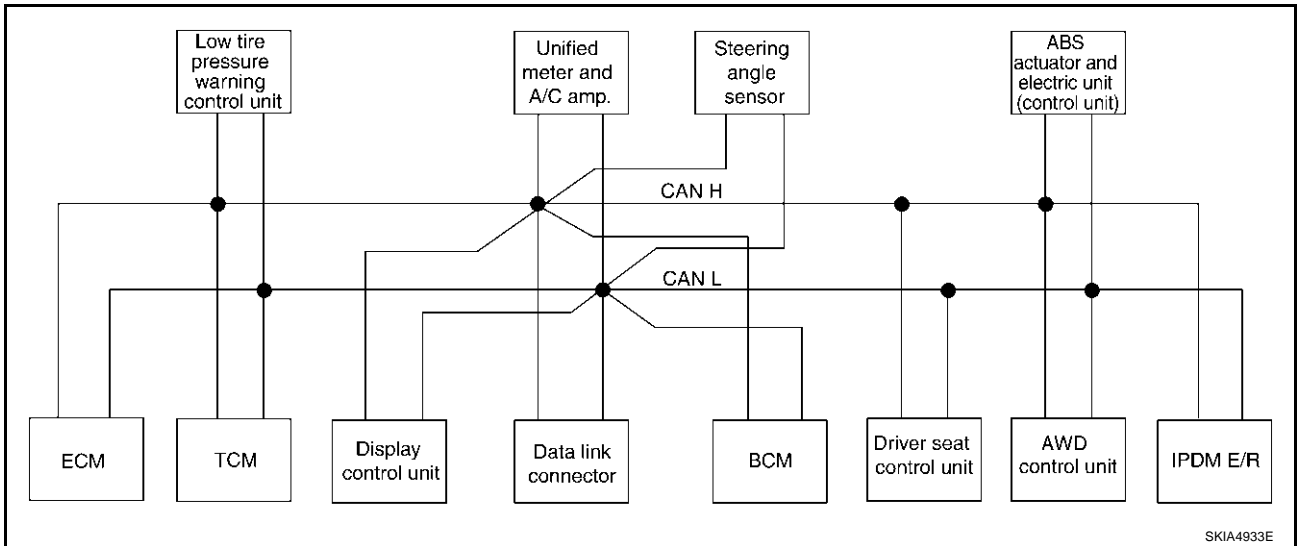
SKIA4931E

HEADLAMP - CONVENTIONAL TYPE-

- Type31



- Type32



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HEADLAMP -CONVENTIONAL TYPE-

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

HEADLAMP -CONVENTIONAL TYPE-

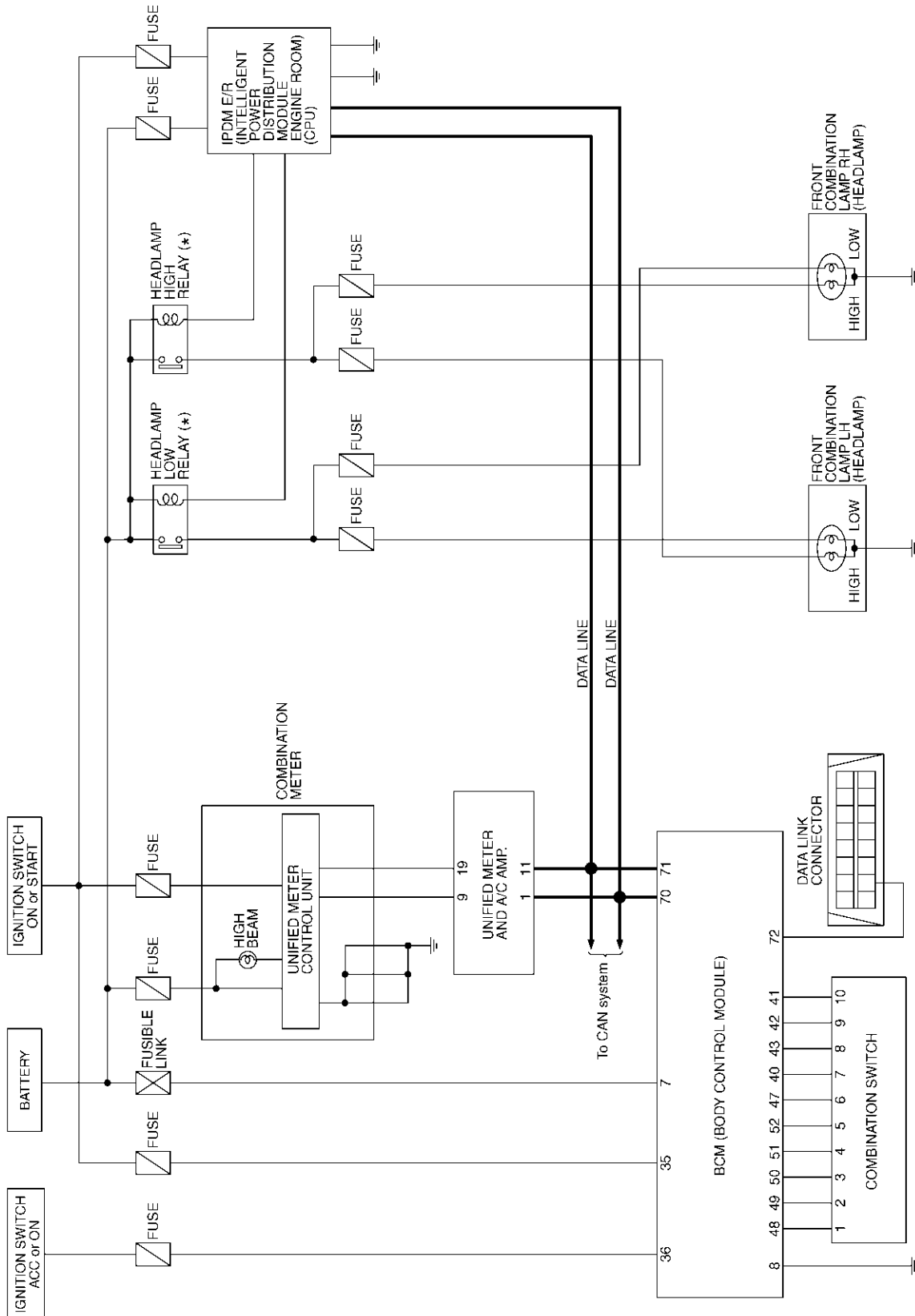
Signals	ECM	TCM	Low tire pressure warning control unit	Display unit	Display control unit	BCM	Unified meter and A/C amp.	Steering angle sensor	Driver seat control unit	AWD control unit	ABS actuator and electric unit (control unit)	IPDM E/R
Door switch signal						R	T					
Turn indicator signal				R	R	T	R		R			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
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			
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		

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

HEADLAMP - CONVENTIONAL TYPE-

Schematic

AKS007LP



* : This relay is built into the IPDM E/R (Intelligent power distribution module engine room).

TKWA0742E

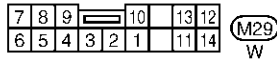
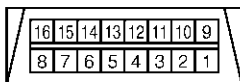
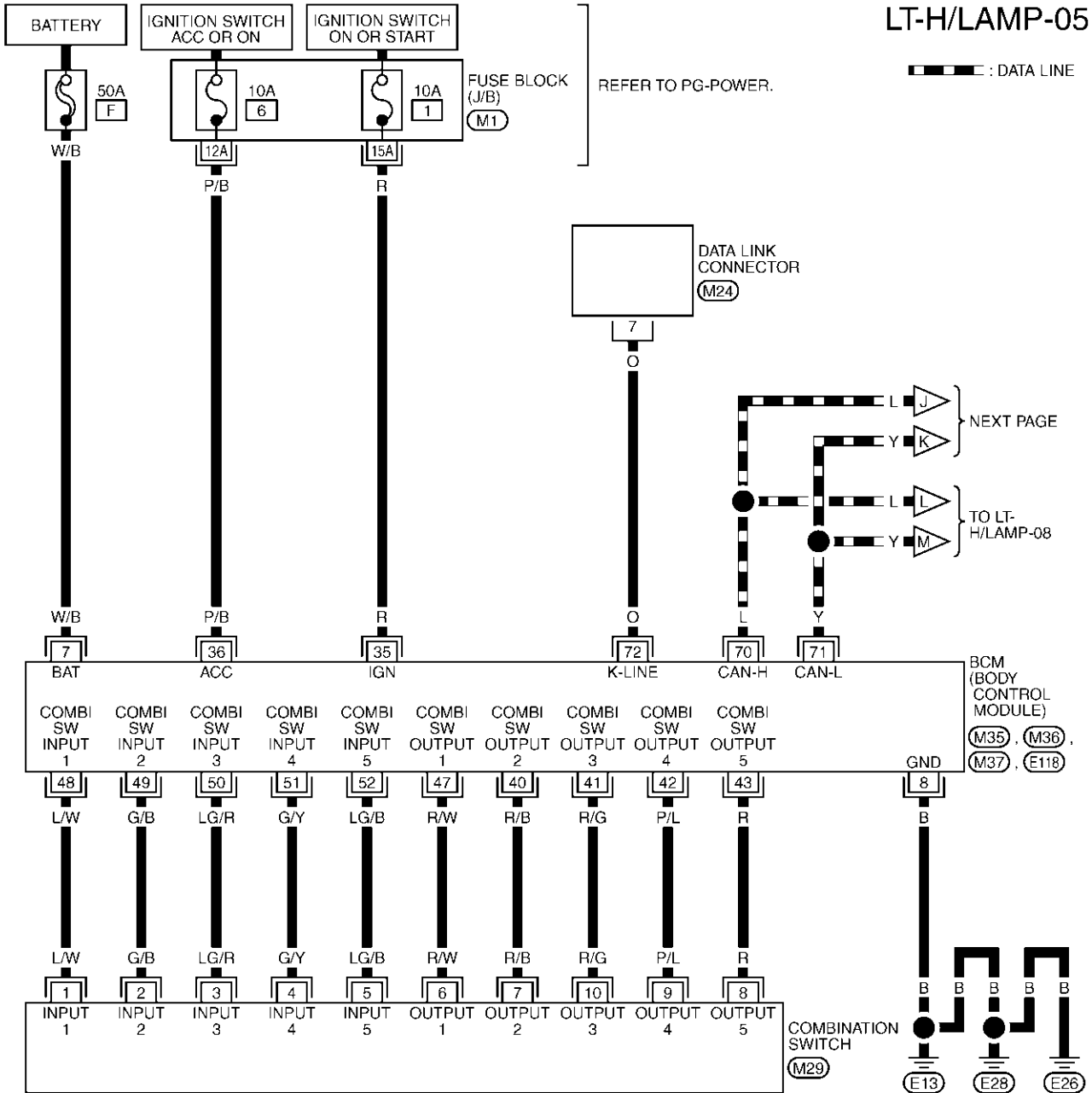
HEADLAMP - CONVENTIONAL TYPE-

Wiring Diagram — H/LAMP —

AKS007LQ

LT-H/LAMP-05

— — — — — : DATA LINE



REFER TO THE FOLLOWING.

(M1) - FUSE BLOCK-JUNCTION BOX (J/B)

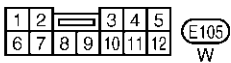
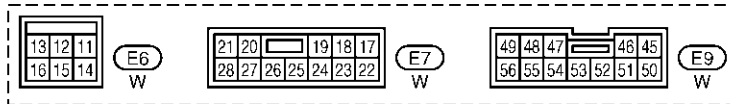
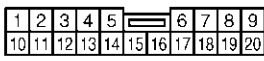
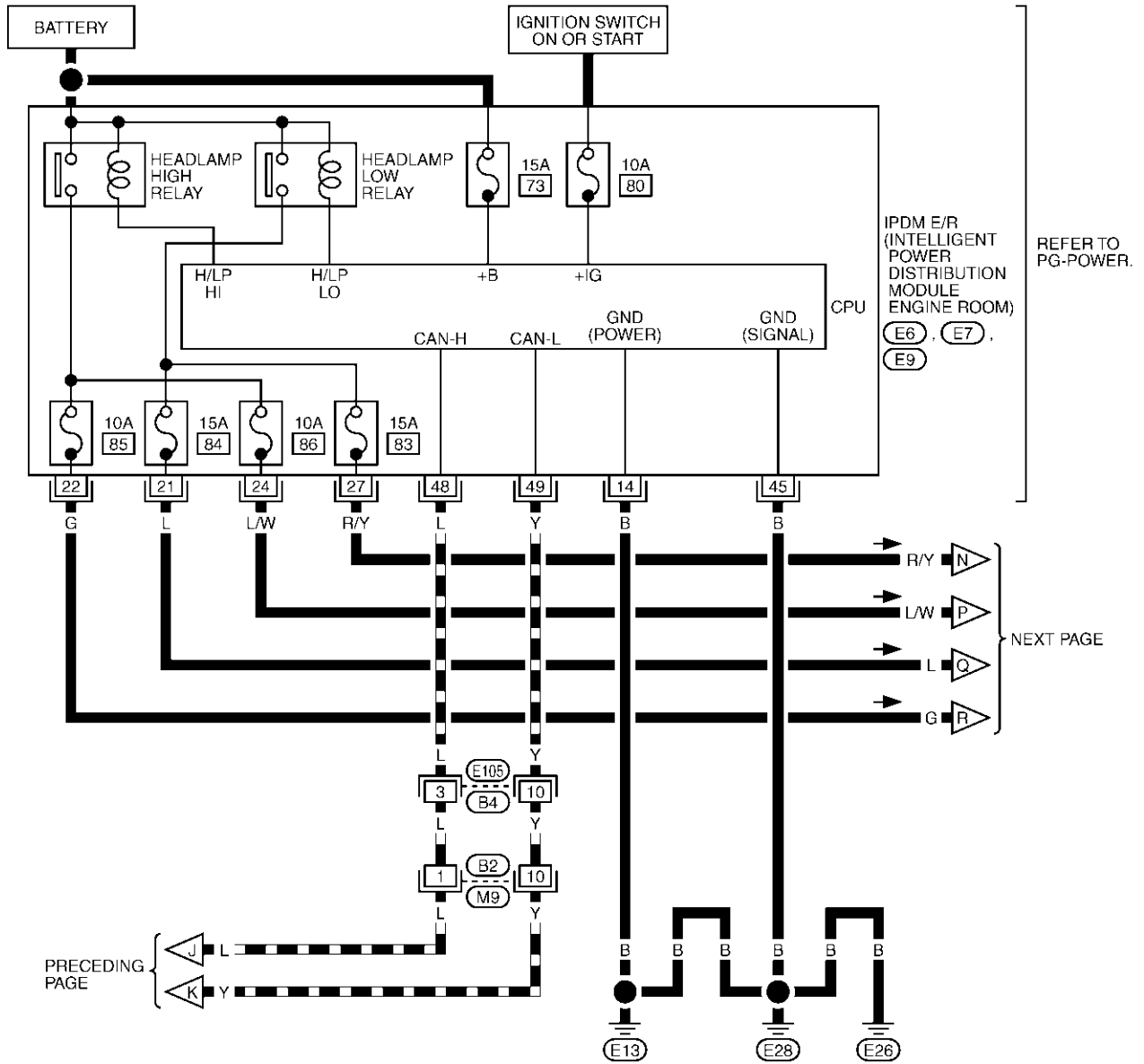
(M35), (M36), (M37), (E118) - ELECTRICAL UNITS

TKWA0743E

HEADLAMP - CONVENTIONAL TYPE-

LT-H/LAMP-06

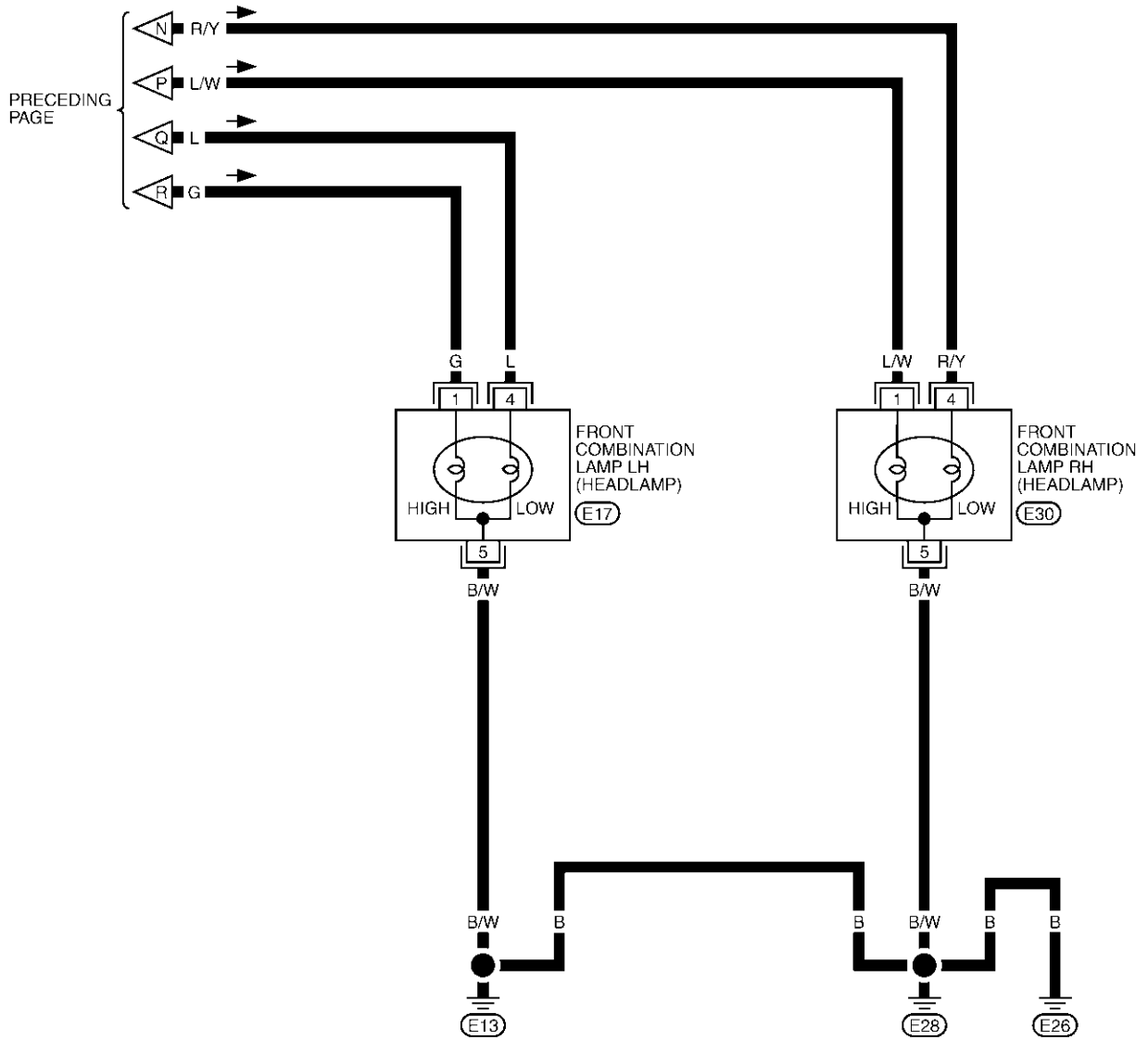
▬ : DATA LINE



TKWA0744E

HEADLAMP - CONVENTIONAL TYPE-

LT-H/LAMP-07

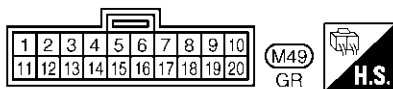
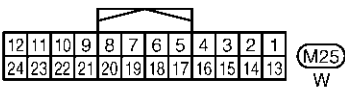
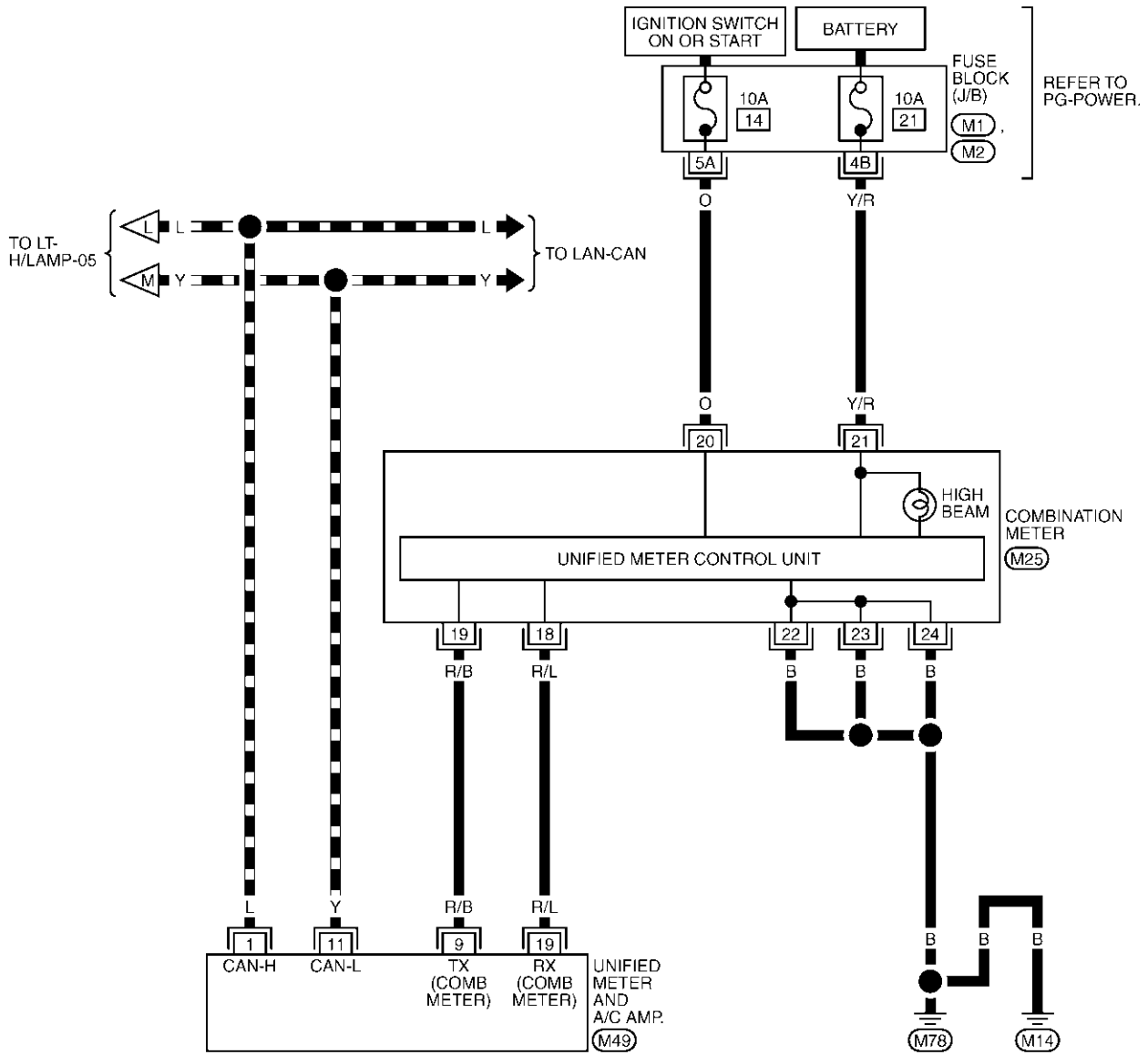


TKWA0745E

HEADLAMP -CONVENTIONAL TYPE-

LT-H/LAMP-08

▬ : DATA LINE



REFER TO THE FOLLOWING.

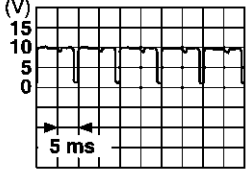
(M1), (M2) - FUSE BLOCK-JUNCTION BOX (J/B)

TKWA0746E

HEADLAMP -CONVENTIONAL TYPE-

Terminals and Reference Value for BCM

AKS007LR

Terminal No.	Wire color	Signal name	Measuring condition		Reference value
			Ignition switch	Operation or condition	
7	W/B	Battery power supply	OFF	—	Battery voltage
8	B	Ground	ON	—	Approx. 0V
35	R	Ignition switch (ON)	ON	—	Battery voltage
36	P/B	Ignition switch (ACC)	ACC	—	Battery voltage
40	R/B	Combination switch output 2	ON	Lighting, turn, wiper OFF	
41	R/G	Combination switch output 3			
42	P/L	Combination switch output 4			
43	R	Combination switch output 5			
47	R/W	Combination switch output 1			
48	L/W	Combination switch input 1	ON	Lighting, turn, wiper OFF	4.5V or more
49	G/B	Combination switch input 2			
50	LG/R	Combination switch input 3			
51	G/Y	Combination switch input 4			
52	LG/B	Combination switch input 5			
70	L	CAN-H	—	—	—
71	Y	CAN-L	—	—	—
72	O	K-LINE	—	—	—

SKIA1119J

Terminals and Reference Values for IPDM E/R

AKS007LS

Terminal No.	Wire color	Signal name	Measuring condition		Reference value	
			Ignition switch	Operation or condition		
14	B	Ground	ON	—	Approx. 0V	
21	L	Headlamp low (LH)	ON	Lighting switch 2ND position	OFF	Approx. 0V
					ON	Battery voltage
22	G	Headlamp high (LH)	ON	Lighting switch HIGH or PASS position	OFF	Approx. 0V
					ON	Battery voltage
24	L/W	Headlamp high (RH)	ON	Lighting switch HIGH or PASS position	OFF	Approx. 0V
					ON	Battery voltage
27	R/Y	Headlamp low (RH)	ON	Lighting switch 2ND position	OFF	Approx. 0V
					ON	Battery voltage
45	B	Ground	ON	—	Approx. 0V	
48	L	CAN-H	—	—	—	
49	Y	CAN-L	—	—	—	

HEADLAMP -CONVENTIONAL TYPE-

AKS007LT

How to Proceed With Trouble Diagnosis

1. Confirm the symptom or customer complaint.
2. Understand operation description and function description. Refer to [LT-58, "System Description"](#) .
3. Perform the Preliminary Check. Refer to [LT-88, "Preliminary Check"](#) .
4. Check symptom and repair or replace the cause of malfunction.
5. Does the headlamp operate normally? If YES: GO TO 6. If NO: GO TO 4.
6. INSPECTION END

Preliminary Check

AKS007LU

CHECK POWER SUPPLY AND GROUND CIRCUIT

1. CHECK FUSES

- Check for blown fuses.

Unit	Power source	Fuse and fusible link No.
BCM	Battery	F
	Ignition switch ON or START position	1
	Ignition switch ACC or ON position	6
IPDM E/R	Battery	83
		84
		85
		86

Refer to [LT-83, "Wiring Diagram — H/LAMP —"](#) .

OK or NG

OK >> GO TO 2.

NG >> If fuse is blown, be sure to eliminate cause of malfunction before installing new fuse. Refer to [PG-3, "POWER SUPPLY ROUTING CIRCUIT"](#) .

2. CHECK POWER SUPPLY CIRCUIT

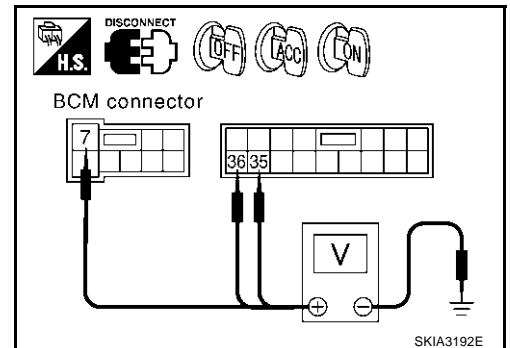
1. Disconnect BCM connector.
2. Check voltage between BCM harness connector and ground.

Terminals		(-)	Ignition switch position		
Connector	Terminal (Wire color)		OFF	ACC	ON
E118	7 (W/B)	Ground	Battery voltage	Battery voltage	Battery voltage
M35	35 (R)		0V	0V	Battery voltage
M35	36 (P/B)		0V	Battery voltage	Battery voltage

OK or NG

OK >> GO TO 3.

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



HEADLAMP -CONVENTIONAL TYPE-

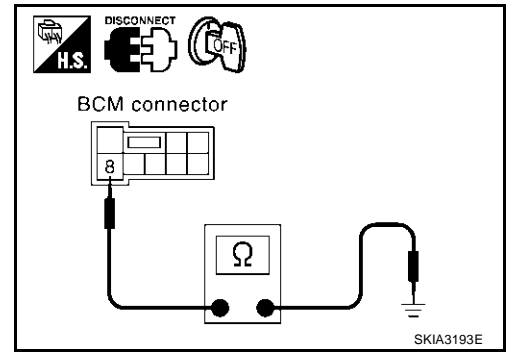
3. CHECK GROUND CIRCUIT

Check continuity between BCM harness connector and ground.

Terminals		Ground	Continuity
Connector	Terminal (Wire color)		Yes
E118	8 (B)		

OK or NG

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



CONSULT-II Function

CONSULT-II performs the following functions communicating with BCM.

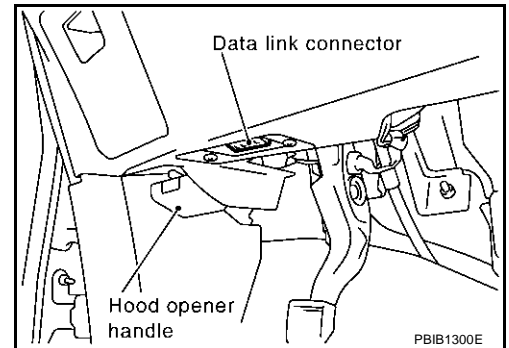
BCM diagnosis part	Check item, diagnosis mode	Description
HEAD LAMP	WORK SUPPORT	Changes the setting for each function.
	DATA MONITOR	Displays BCM input data in real time.
	ACTIVE TEST	Operation of electrical loads can be checked by sending drive signal to them.
BCM C/U	CAN DIAG SUPPORT MNTR	The result of transmit/receive diagnosis of CAN communication can be read.

CONSULT-II BASIC OPERATION

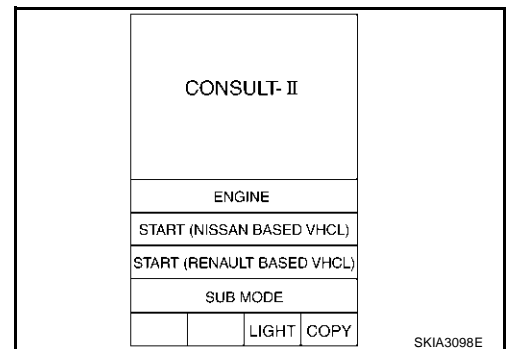
CAUTION:

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

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

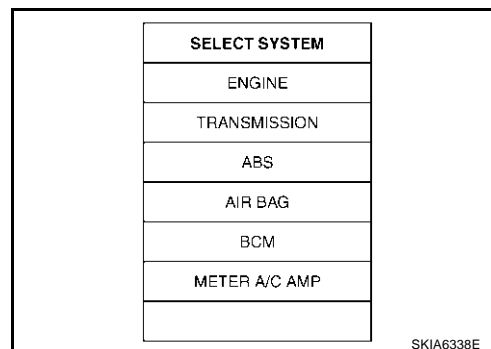


2. Touch "START (NISSAN BASED VHCL)".

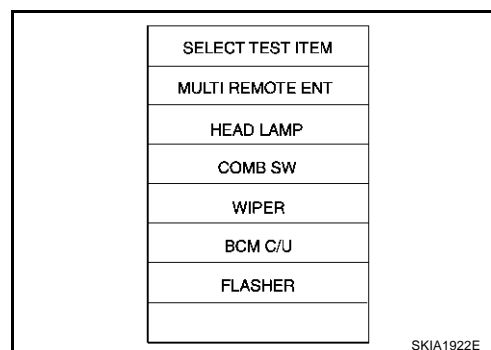


HEADLAMP -CONVENTIONAL TYPE-

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



4. Touch "HEAD LAMP" on "SELECT TEST ITEM" screen.



WORK SUPPORT

Operation Procedure

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

Display Item List

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

DATA MONITOR

Operation Procedure

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

All signals	Monitors all the signals.
Selection from menu	Selects and monitors individual signal.

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

HEADLAMP -CONVENTIONAL TYPE-

Display Item List

Monitor item	Contents
IGN ON SW "ON/OFF"	Displays "IGN position (ON)/OFF, ACC position (OFF)" judged from the ignition switch signal.
ACC ON SW "ON/OFF"	Displays "ACC (ON)/OFF, Ignition OFF (OFF)" status judged from ignition switch signal.
AUTO LIGHT SW ^{Note} "ON/OFF"	Displays status of the lighting switch as judged from the lighting switch signal. (AUTO position: ON/Other than AUTO position: OFF)
TAIL LAMP SW "ON/OFF"	Displays status (lighting switch 1st position: ON/Others: OFF) of lighting switch judged from lighting switch signal.
HEAD LAMP SW 1 "ON/OFF"	Displays status (headlamp switch 1: ON/Others: OFF) of headlamp switch 1 judged from lighting switch signal.
HI BEAM SW "ON/OFF"	Displays status (high beam switch: ON/Others: OFF) of high beam switch judged from lighting switch signal.
PASSING SW "ON/OFF"	Displays status (flash-to-pass switch: ON/Others: OFF) of flash-to-pass switch judged from lighting switch signal.
FR FOG SW "ON/OFF"	Displays status (front fog lamp switch: ON/Others: OFF) of front fog lamp switch judged from lighting switch signal.
DOOR SW - DR "ON/OFF"	Displays status of the driver door as judged from the driver door switch signal. (Door is open: ON/Door is closed: OFF)
DOOR SW - AS "ON/OFF"	Displays status of the passenger door as judged from the passenger door switch signal. (Door is open: ON/Door is closed: OFF)
DOOR SW - RR "ON/OFF"	Displays status of the rear doors as judged from the rear door switch signal. (Door is open: ON/Door is closed: OFF)
HEAD LAMP SW 2 "ON/OFF"	Displays status (headlamp switch 2: ON/Others: OFF) of headlamp switch 2 judged from lighting switch signal.
OPTICAL SENSOR [0 - 5V]	Displays "ambient light (close to 5V when light/close to 0V when dark)" judged from optical sensor signal.

NOTE:

Vehicles without auto light system display this item, but cannot monitor it.

ACTIVE TEST

Operation Procedure

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

Display Item List

Test item	Description
TAIL LAMP	Allows tail lamp relay to operate by switching ON-OFF.
HEAD LAMP (LOW)	Allows headlamp relay to operate by switching ON-OFF.
HEAD LAMP (HI)	Allows headlamp relay to operate by switching ON-OFF.
FR FOG LAMP	Allows fog lamp relay to operate by switching ON-OFF.

Headlamp High Beam Does Not Illuminate (Both Sides)

AKS007LW

1. HEADLAMP ACTIVE TEST

1. Select "HEAD LAMP (HI)" during active test. Refer to [LT-91, "ACTIVE TEST"](#).
2. Make sure headlamp high beam operation.

Headlamp high beam should operate.

OK or NG

- OK >> GO TO 5.
 NG >> GO TO 2.

HEADLAMP -CONVENTIONAL TYPE-

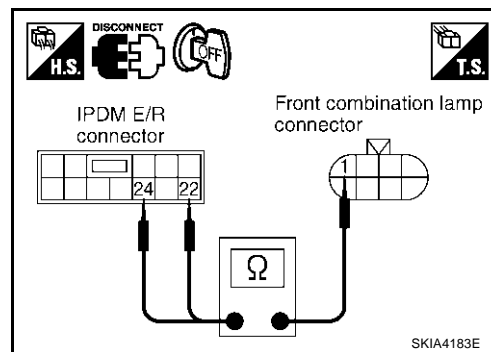
2. CHECK HEADLAMP CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connector and front combination lamp RH and LH connector.
3. Check continuity between IPDM E/R harness connector E7 terminal 24 (L/W) and front combination lamp RH harness connector E30 terminal 1 (L/W).

Continuity should exist.

4. Check continuity between IPDM E/R harness connector E7 terminal 22 (G) and front combination lamp LH harness connector E17 terminal 1 (G).

Continuity should exist.



OK or NG

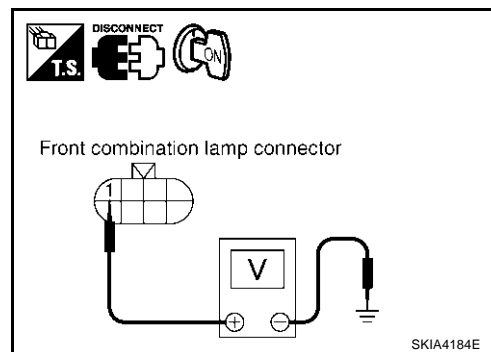
OK >> GO TO 3.

NG >> Repair harness or connector.

3. CHECK HEADLAMP INPUT SIGNAL

1. Connect IPDM E/R connector.
2. Select "HEAD LAMP (HI)" during active test. Refer to [LT-91](#), "ACTIVE TEST". When headlamp high beam is operating, check voltage between front combination lamp RH and LH harness connector and ground.

Terminals			(-)	Voltage
(+) Connector		Terminal (Wire color)		
RH	E30	1 (L/W)	Ground	Battery voltage
LH	E17	1 (G)		



OK or NG

OK >> GO TO 4.

NG >> Replace IPDM E/R.

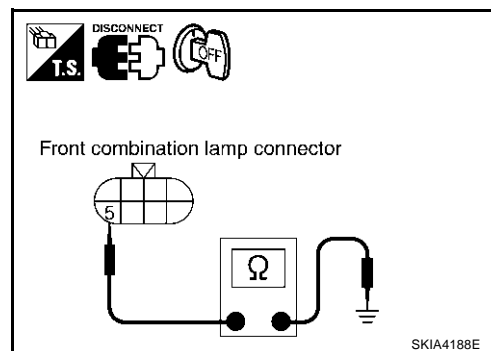
4. CHECK HEADLAMP GROUND

1. Turn ignition switch OFF.
2. Check continuity between front combination lamp RH harness connector E30 terminal 5 (B/W) and ground.

Continuity should exist.

3. Check continuity between front combination lamp LH harness connector E17 terminal 5 (B/W) and ground.

Continuity should exist.



OK or NG

OK >> Check headlamp bulb.

NG >> Repair harness or connector.

HEADLAMP -CONVENTIONAL TYPE-

5. CHECK COMBINATION SWITCH CIRCUIT

Select "BCM" on CONSULT-II. Carry out "BCM C/U" self-diagnosis.

Displayed results of self-diagnosis

No malfunction detected>> GO TO 6.

CAN communications or CAN system>> Check BCM CAN communication system. Refer to [BCS-34, "CAN Communication Inspection Using CONSULT-II \(Self-Diagnosis\)"](#).

OPEN DETECT 1 - 5>> Combination switch system malfunction. Refer to [LT-257, "Combination Switch Inspection According to Self-Diagnostic Results"](#).

SELF-DIAG RESULTS	
DTC RESULTS	TIME
NO DTC IS DETECTED. FURTHER TESTING MAY BE REQUIRED	

LKIA0073E

6. CHECK COMBINATION SWITCH INPUT SIGNAL

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

When lighting switch is HIGH position : HI BEAM SW ON

OK or NG

OK >> Replace BCM. Refer to [BCS-36, "Removal and Installation of BCM"](#).

NG >> Replace lighting switch.

DATA MONITOR	
MONITOR	
HI BEAM SW	ON

SKIA4193E

Headlamp High Beam Does Not Illuminate (One Side)

1. CHECK BULB

Inspect bulbs of lamps which do not illuminate.

OK or NG

OK >> GO TO 2.

NG >> Replace headlamp bulb.

2. CHECK HEADLAMP CIRCUIT

1. Disconnect IPDM E/R connector and front combination lamp RH or LH connector.

2. Check continuity between IPDM E/R harness connector E7 terminal 24 (L/W) and front combination lamp RH harness connector E30 terminal 1 (L/W).

Continuity should exist.

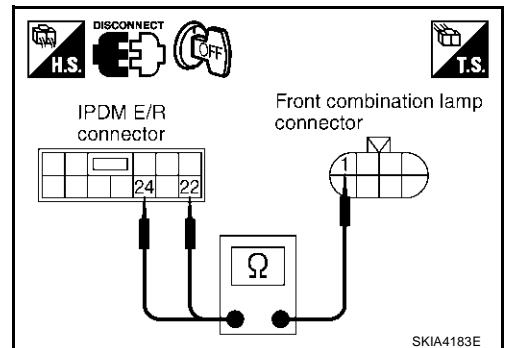
3. Check continuity between IPDM E/R harness connector E7 terminal 22 (G) and front combination lamp LH harness connector E17 terminal 1 (G).

Continuity should exist.

OK or NG

OK >> GO TO 3.

NG >> Repair harness or connector.



HEADLAMP -CONVENTIONAL TYPE-

3. CHECK HEADLAMP GROUND

1. Check continuity between front combination lamp RH harness connector E30 terminal 5 (B/W) and ground.

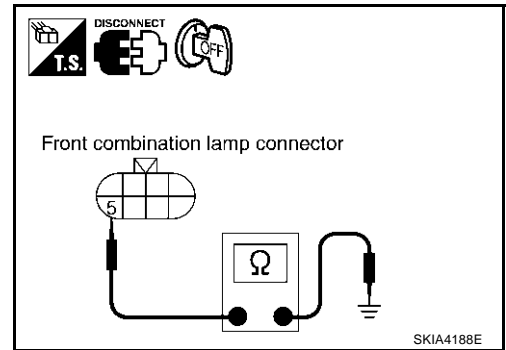
Continuity should exist.

2. Check continuity between front combination lamp LH harness connector E17 terminal 5 (B/W) and ground.

Continuity should exist.

OK or NG

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



High Beam Indicator Lamp Does Not Illuminate

AKS007LY

1. CHECK BULB

Inspect bulb of high beam indicator lamp.

OK or NG

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

Headlamp Low Beam Does Not Illuminate (Both Sides)

AKS007LZ

1. HEADLAMP ACTIVE TEST

1. Select "HEAD LAMP (LOW)" during active test. Refer to [LT-91, "ACTIVE TEST"](#).
2. Make sure headlamp low beam operation.

Headlamp low beam should operate.

OK or NG

- OK >> GO TO 5.
- NG >> GO TO 2.

2. CHECK HEADLAMP CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connector and front combination lamp RH and LH connector.
3. Check continuity between IPDM E/R harness connector E7 terminal 27 (R/Y) and front combination lamp RH harness connector E30 terminal 4 (R/Y).

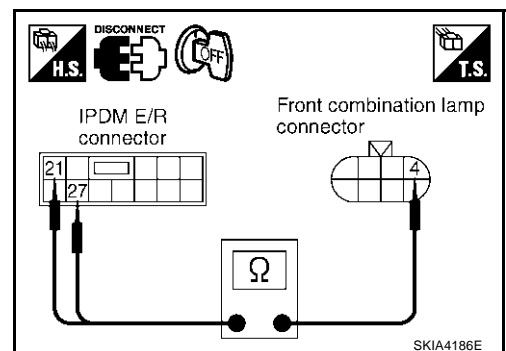
Continuity should exist.

4. Check continuity between IPDM E/R harness connector E7 terminal 21 (L) and front combination lamp LH harness connector E17 terminal 4 (L).

Continuity should exist.

OK or NG

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



HEADLAMP -CONVENTIONAL TYPE-

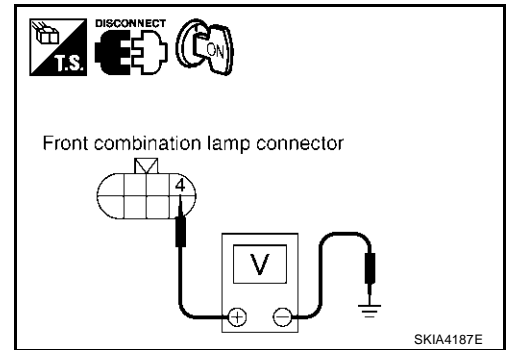
3. CHECK HEADLAMP INPUT SIGNAL

1. Connect IPDM E/R connector.
2. Select "HEAD LAMP (LOW)" during active test. Refer to [LT-91, "ACTIVE TEST"](#). When headlamp low beam is operating, check voltage between front combination lamp LH and RH harness connector and ground.

Terminals			(-)	Voltage
(+)				
Connector		Terminal (Wire color)		
RH	E30	4 (R/Y)	Ground	Battery voltage
LH	E17	4 (L)		

OK or NG

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



4. CHECK HEADLAMP GROUND

1. Turn ignition switch OFF.
2. Check continuity between front combination lamp RH harness connector E30 terminal 5 (B/W) and ground.

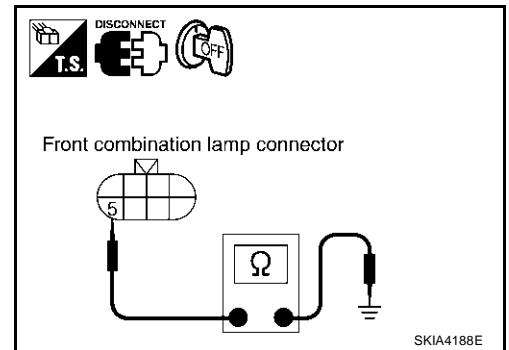
Continuity should exist.

3. Check continuity between front combination lamp LH harness connector E17 terminal 5 (B/W) and ground.

Continuity should exist.

OK or NG

- OK >> Check headlamp bulb.
 NG >> Repair harness or connector.



5. CHECK COMBINATION SWITCH CIRCUIT

Select "BCM" on CONSULT-II. Carry out "BCM C/U" self-diagnosis.

Displayed results of self-diagnosis

- No malfunction detected>> GO TO 6.
 CAN communication or CAN system>> Check BCM CAN communication system. Refer to [BCS-34, "CAN Communication Inspection Using CONSULT-II \(Self-Diagnosis\)"](#).
 OPEN DETECT 1 - 5>> Combination Switch System malfunction. Refer to [LT-257, "Combination Switch Inspection According to Self-Diagnostic Results"](#).
 HEAD LAMP SW 1 or HEAD LAMP SW 2>> Replace lighting switch.

SELF-DIAG RESULTS	
DTC RESULTS	TIME
NO DTC IS DETECTED. FURTHER TESTING MAY BE REQUIRED	

LKIA0073E

HEADLAMP -CONVENTIONAL TYPE-

6. CHECK COMBINATION SWITCH INPUT SIGNAL

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

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

DATA MONITOR	
MONITOR	
HEAD LAMP SW1	ON
HEAD LAMP SW2	ON

SKIA4194E

OK or NG

- OK >> Replace BCM. Refer to [BCS-36, "Removal and Installation of BCM"](#).
- NG >> ● Replace lighting switch.
● If one of "HEAD LAMP SW 1" and "HEAD LAMP SW 2" is NG, replace both BCM (Refer to [BCS-36, "Removal and Installation of BCM"](#)) and lighting switch.

Headlamp Low Beam Does Not Illuminate (One Side)

AKS007M0

1. CHECK BULB

Inspect bulbs of lamps which do not illuminate.

OK or NG

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

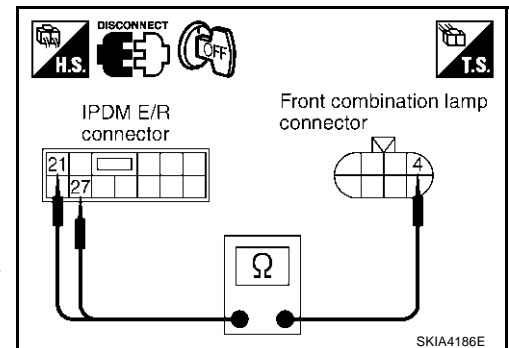
2. CHECK HEADLAMP CIRCUIT

1. Disconnect IPDM E/R connector and front combination lamp RH or LH connector.
2. Check continuity between IPDM E/R harness connector E7 terminal 27 (R/Y) and front combination lamp RH harness connector E30 terminal 4 (R/Y).

Continuity should exist.

3. Check continuity between IPDM E/R harness connector E7 terminal 21 (L) and front combination lamp LH harness connector E17 terminal 4 (L).

Continuity should exist.



OK or NG

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

3. CHECK HEADLAMP GROUND

1. Check continuity between front combination lamp RH harness connector E30 terminal 5 (B/W) and ground.

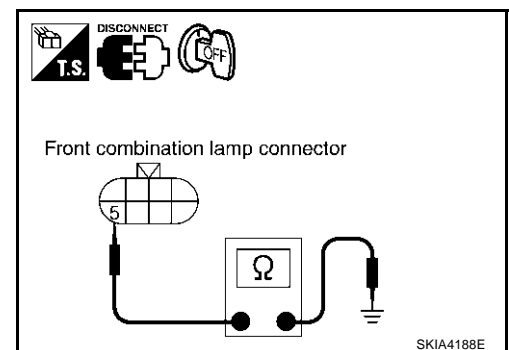
Continuity should exist.

2. Check continuity between front combination lamp LH harness connector E17 terminal 5 (B/W) and ground.

Continuity should exist.

OK or NG

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



HEADLAMP -CONVENTIONAL TYPE-

Headlamp RH Low Beam and High Beam Does Not Illuminate

AKS007M2

1. CHECK BULB

Inspect bulbs of lamps which do not illuminate.

OK or NG

OK >> GO TO 2.

NG >> Replace headlamp bulb.

2. CHECK HEADLAMP GROUND

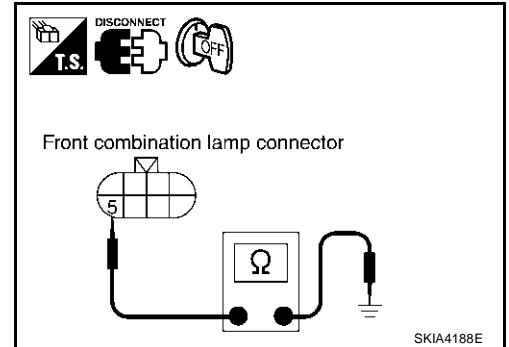
1. Disconnect front combination lamp RH connector.
2. Check continuity between front combination lamp RH harness connector E30 terminal 5 (B/W) and ground.

Continuity should exist.

OK or NG

OK >> GO TO 3.

NG >> Repair harness or connector.



3. CHECK HEADLAMP CIRCUIT

1. Disconnect IPDM E/R connector.
2. Check continuity between IPDM E/R harness connector E7 terminal 27 (R/Y) and front combination lamp RH harness connector E30 terminal 4 (R/Y).

Continuity should exist.

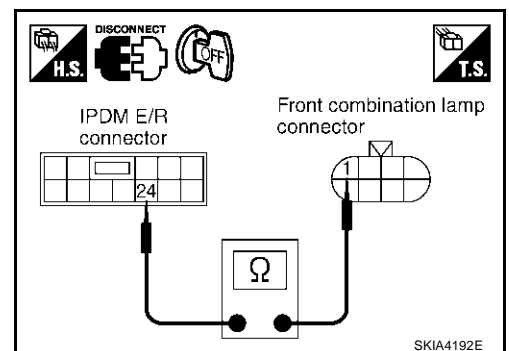
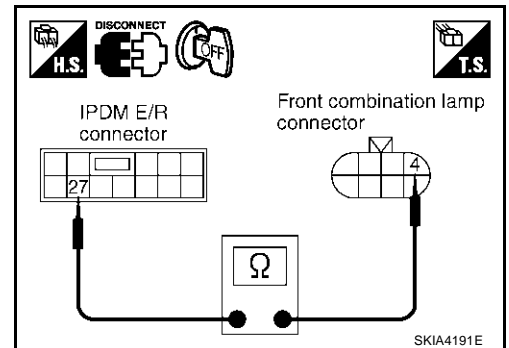
3. Check continuity between IPDM E/R harness connector E7 terminal 24 (L/W) and front combination lamp RH harness connector E30 terminal 1 (L/W).

Continuity should exist.

OK or NG

OK >> Replace IPDM E/R.

NG >> Repair harness or connector.



Headlamp LH Low Beam and High Beam Does Not Illuminate

AKS007M1

1. CHECK BULB

Inspect bulbs of lamps which do not illuminate.

OK or NG

OK >> GO TO 2.

NG >> Replace headlamp bulb.

HEADLAMP -CONVENTIONAL TYPE-

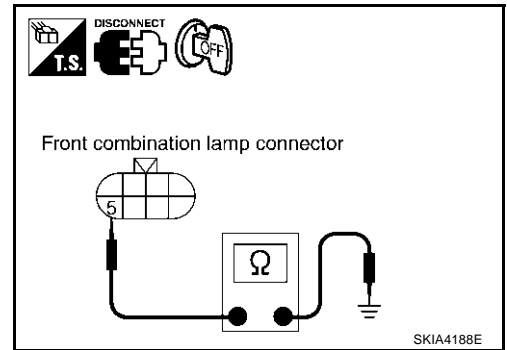
2. CHECK HEADLAMP GROUND

1. Disconnect front combination lamp LH connector.
2. Check continuity between front combination lamp LH harness connector E17 terminal 5 (B/W) and ground.

Continuity should exist.

OK or NG

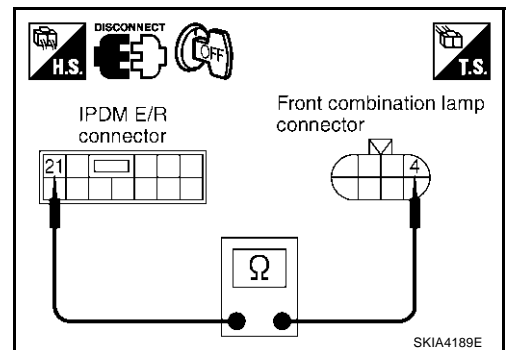
- OK >> GO TO 3.
NG >> Repair harness or connector.



3. CHECK HEADLAMP CIRCUIT

1. Disconnect IPDM E/R connector.
2. Check continuity between IPDM E/R harness connector E7 terminal 21 (L) and front combination lamp LH harness connector E17 terminal 4 (L).

Continuity should exist.

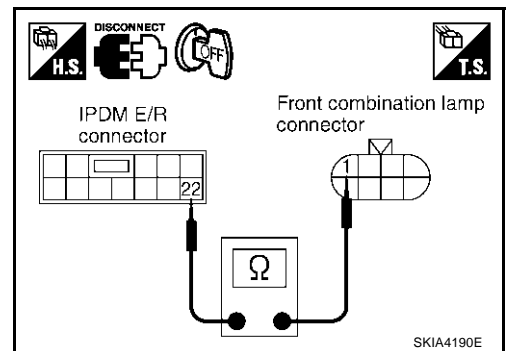


3. Check continuity between IPDM E/R harness connector E7 terminal 22 (G) and front combination lamp LH harness connector E17 terminal 1 (G).

Continuity should exist.

OK or NG

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



Headlamps Do Not Turn OFF

1. CHECK HEADLAMP TURN OFF

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

OK or NG

- OK >> GO TO 3
NG >> GO TO 2

AKS007M3

HEADLAMP -CONVENTIONAL TYPE-

2. CHECK COMBINATION SWITCH INPUT SIGNAL

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

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

OK or NG

- OK >> Replace IPDM E/R.
- NG >> Replace lighting switch.

DATA MONITOR	
MONITOR	
HEAD LAMP SW 1	OFF
HEAD LAMP SW 2	OFF

SKIA5200E

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

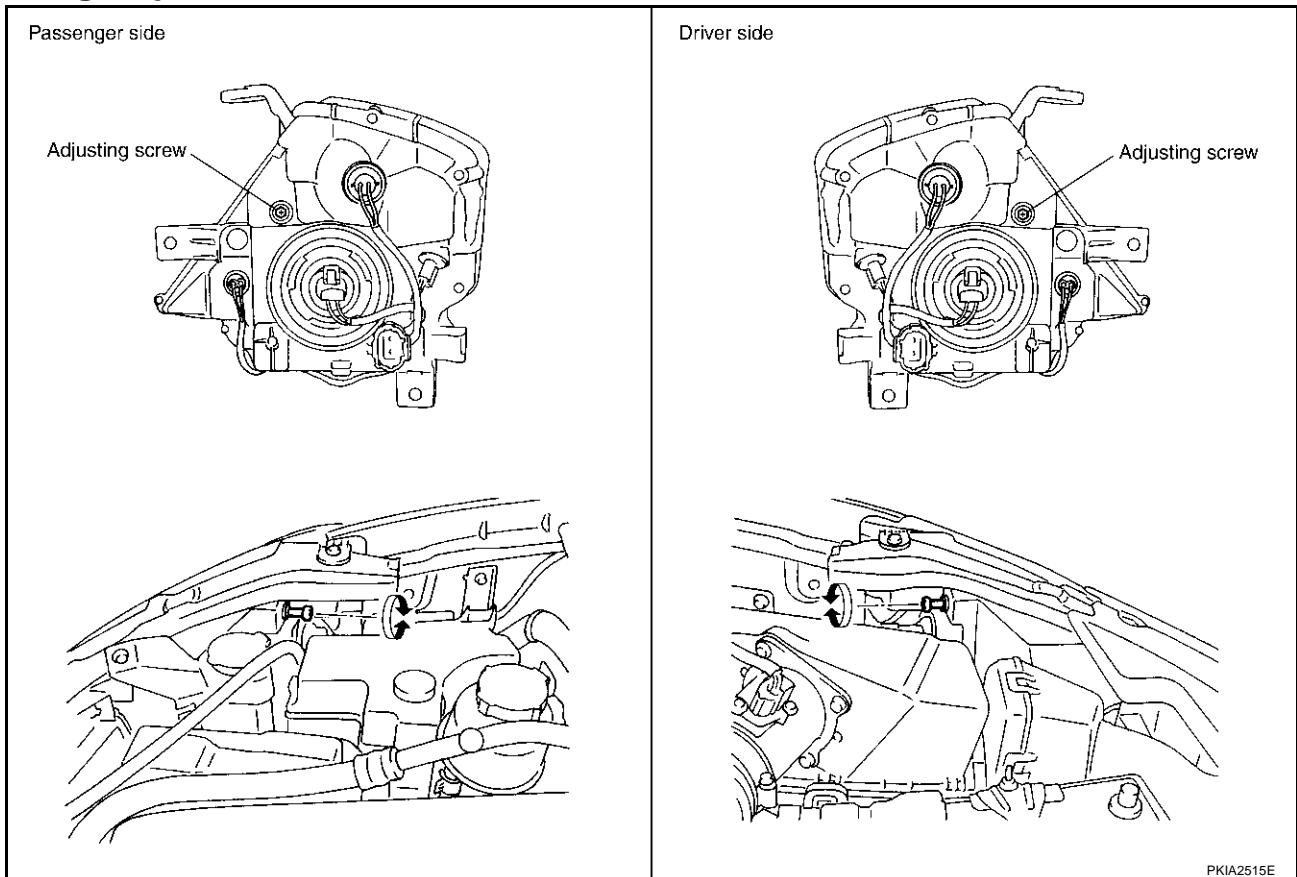
IPDM E/R detects CAN communication malfunction and activates fail-safe operation. Refer to [BCS-34, "CAN Communication Inspection Using CONSULT-II \(Self-Diagnosis\)"](#) and inspect CAN system.

OK or NG

- OK >> Replace IPDM E/R.
- NG >> Repair malfunctioning part.

Aiming Adjustment

AKS007M4



PREPARATION BEFORE ADJUSTING

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

Before performing aiming adjustment, check the following.

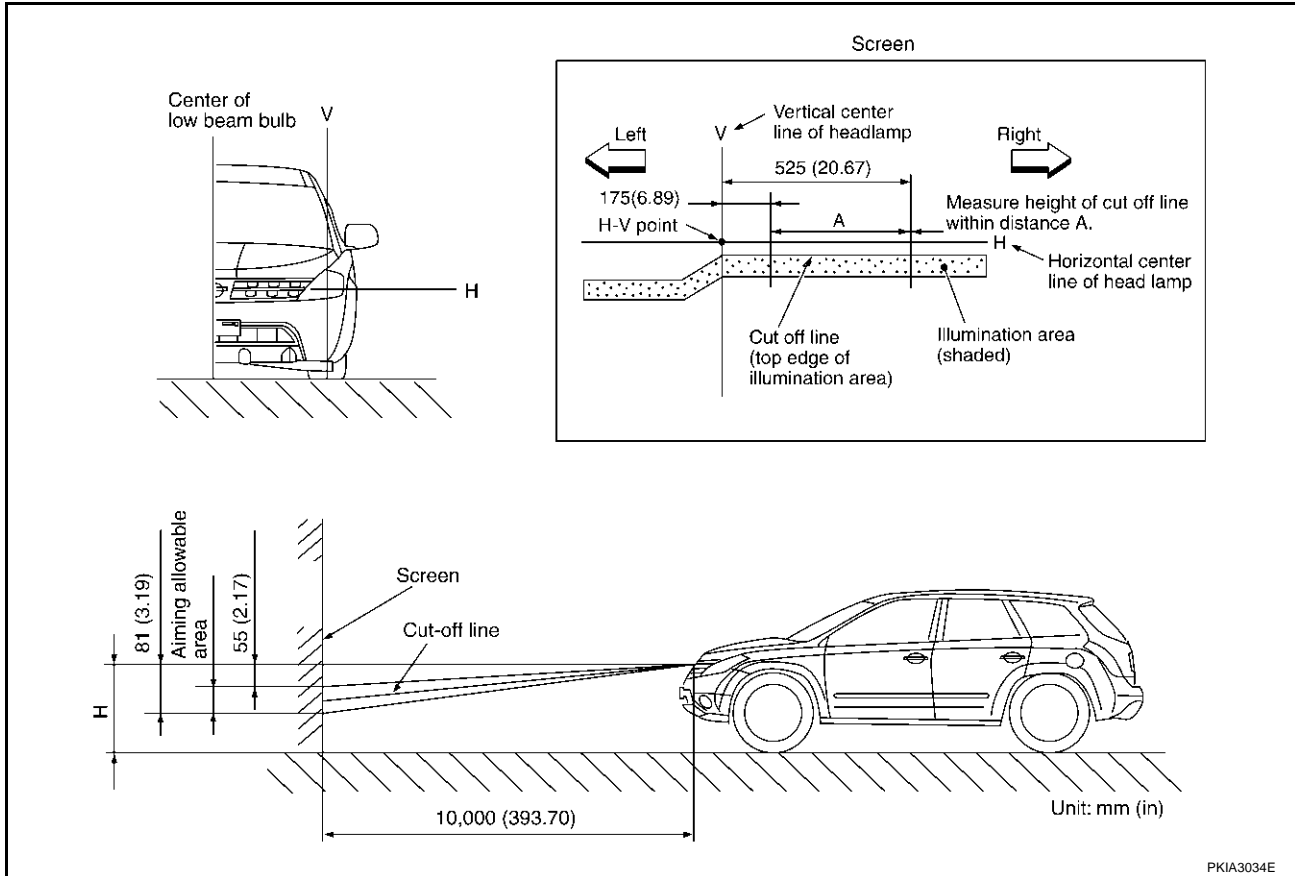
1. Keep all tires inflated to correct pressures.
2. Place vehicle on flat surface.
3. Set that there is no-load in vehicle other than the driver (or equivalent weight placed in driver's position). Coolant, engine oil filled up to correct level and full fuel tank.

HEADLAMP -CONVENTIONAL TYPE-

LOW BEAM AND HIGH BEAM

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

ADJUSTMENT USING AN ADJUSTMENT SCREEN (LIGHT/DARK BORDERLINE)



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

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

Bulb Replacement HEADLAMP HIGH/LOW BEAM

AKS007M5

1. Turn lighting switch OFF.
2. Remove fender protector (front). Refer to [EI-22, "FENDER PROTECTOR"](#) in "EI" section.
3. Turn plastic cap counterclockwise and unlock it.
4. Disconnect bulb terminal.
5. Unlock retaining spring and remove bulb from headlamp.
6. Install in reverse order of removal.

**Headlamp high/low beam
(Halogen)**

: 12V - 65/55W (HB5)

PARKING LAMP (CLEARANCE LAMP)

1. Turn lighting switch OFF.
2. Remove air cleaner case (when replacing LH bulb). Refer to [EM-14, "AIR CLEANER AND AIR DUCT"](#) in "EM" section.
3. Remove IPDM E/R (when replacing RH bulb). Refer to [PG-46, "Removal and Installation of IPDM E/R"](#) in "PG" section.
4. Turn bulb socket counterclockwise and unlock it.

HEADLAMP -CONVENTIONAL TYPE-

5. Remove bulb from its socket.
6. Install in the reverse order of removal.

Parking lamps (Clearance lamps) : 12V - 3.8W

FRONT TURN SIGNAL LAMP

1. Turn lighting switch OFF.
2. Remove fender protector (front). Refer to [EI-22, "FENDER PROTECTOR"](#) in "EI" section.
3. Turn bulb socket counterclockwise and unlock it.
4. Remove bulb from its socket.
5. Install in the reverse order of removal.

Front turn signal lamp : 12V - 21W (amber)

CAUTION:

After installing bulb, be sure to install plastic cap and bulb socket securely to insure watertightness.

FRONT SIDE MARKER LAMP

1. Turn lighting switch OFF.
2. Remove fender protector (front). Refer to [EI-22, "FENDER PROTECTOR"](#) in "EI" section.
3. Turn bulb socket counterclockwise and unlock it.
4. Remove bulb from its socket.
5. Install in the reverse order of removal.

Front side marker lamp : 12V - 3.8W

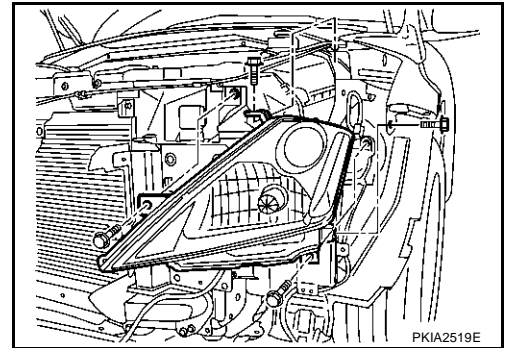
CAUTION:

After installing bulb, be sure to install plastic cap and socket securely to insure watertightness.

Removal and Installation

REMOVAL

1. Remove front bumper. Refer to [EI-14, "FRONT BUMPER"](#) in "EI" section.
2. Remove headlamp mounting bolts.
3. Remove plastics bumper bracket, then pull headlamp toward vehicle front, disconnect connector, and remove headlamp.



INSTALLATION

Note the following, and install in the reverse order of removal.

Headlamp mounting bolt

 : 6.1 N·m (0.62 kg·m, 54 in·lb)

NOTE:

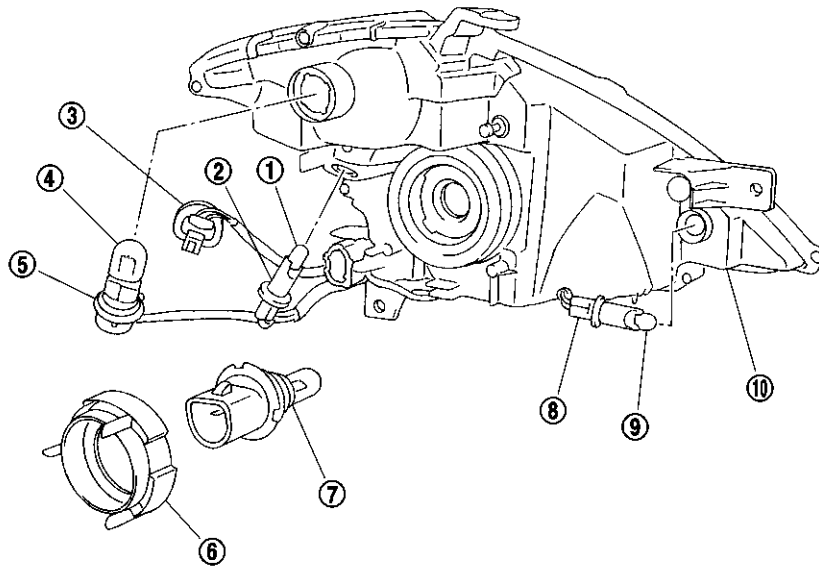
After installation, perform aiming adjustment. Refer to [LT-99, "Aiming Adjustment"](#).

HEADLAMP -CONVENTIONAL TYPE-

Disassembly and Assembly

AKS007M7

HALOGEN TYPE



PKIA2518E

- | | | |
|--------------------------------|--|---------------------------------------|
| 1. Side marker lamp bulb | 2. Side marker lamp bulb socket | 3. Halogen bulb connector |
| 4. Front turn signal lamp bulb | 5. Front turn signal lamp bulb socket | 6. Plastic holder |
| 7. Halogen bulb | 8. Parking lamp (clearance lamp) bulb socket | 9. Parking lamp (clearance lamp) bulb |
| 10. Headlamp housing assembly | | |

DISASSEMBLY

1. Disconnect the connector to the halogen bulb (high/low).
2. Turn plastic holder counterclockwise and unlock it.
3. Disconnect bulb socket.
4. Unlock retaining spring, and remove halogen bulb (high/low).
5. Turn parking lamp bulb socket counterclockwise and unlock it.
6. Remove parking lamp bulb from its socket.
7. Turn front turn signal lamp bulb socket counterclockwise and unlock it.
8. Remove front turn signal lamp bulb from its socket.
9. Turn front side marker lamp bulb socket counterclockwise and unlock it.
10. Remove front side lamp marker lamp bulb from its socket.

ASSEMBLY

Note the following, and assemble in the reverse order of disassemble.

CAUTION:

- After installing bulb, be sure to install plastic cap and bulb socket securely to insure watertightness.

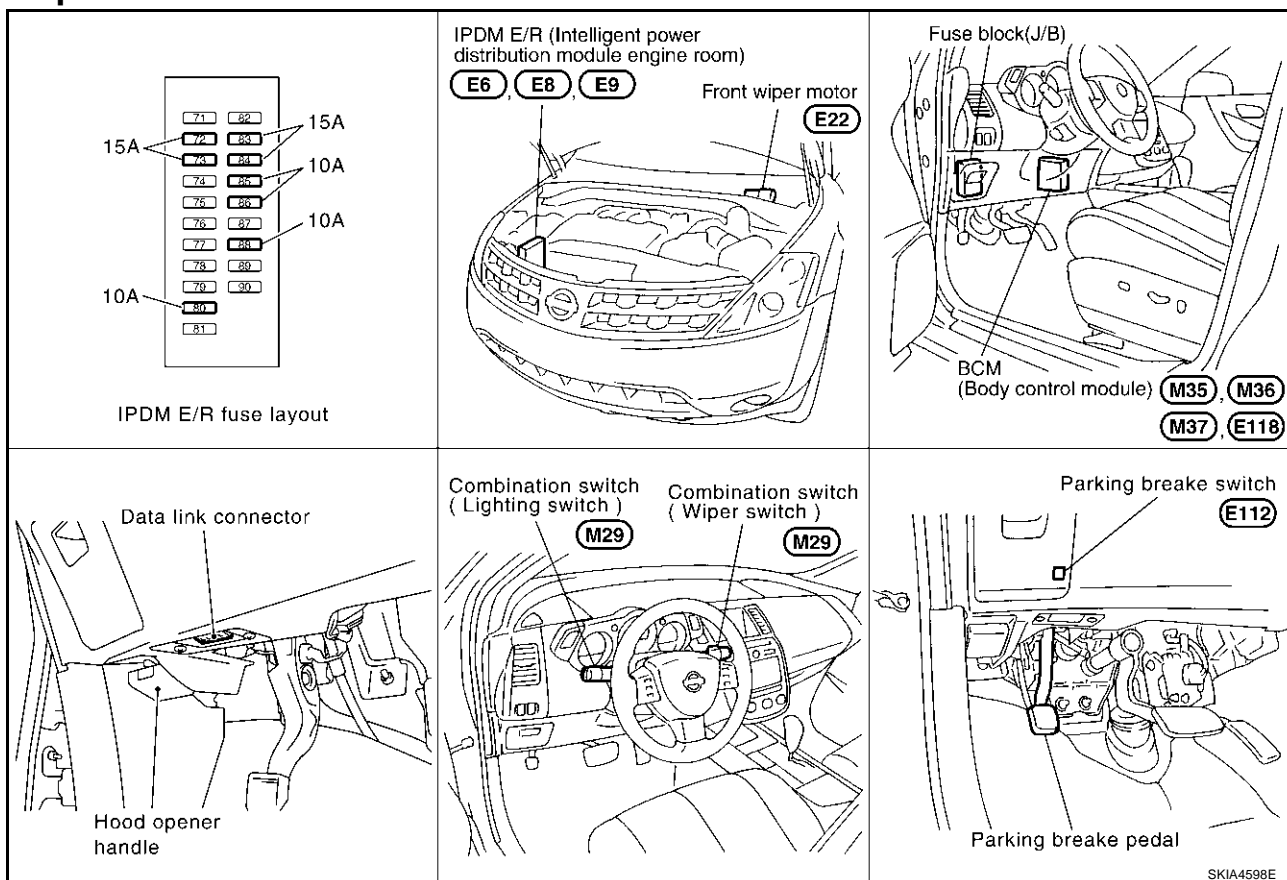
DAYTIME LIGHT SYSTEM

DAYTIME LIGHT SYSTEM

PFP:284B2

Component Parts and Harness Connector Location

AKS007NE



System Description

AKS007NF

During a run, when the engine which makes fog lamp turn on has started and parking brake is detached, foglamp turns do daytime light system for the Canada vehicle, and the light is put out at the of operating parking brake, and the of lighting switch 2ND position or the lighting switch AUTO (at the time of headlamp lighting).

ON/OFF of fog lamp switch is followed at the time of lighting switch 2ND position, and it is turned on and switched off.

An parking brake signal and engine ran or stop signal are sent to BCM (body control module) by CAN communication line, and control daytime light system.

CAUTION:

If an ignition switch is turned ON within several seconds in OFF from the ignition switch ON in the state of daytime light system lighting, daytime light system which put out the light once OFF form the ignition switch ON will relight up for about 2 seconds.

In the state where the parking brake is not operated, if cranking time is extremely short daytime light system will light up for about 2 seconds.

OUTLINE

Power is supplied at all times

- through 15A fuse [No. 72, located in IPDM E/R (intelligent power distribution module engine room)]
- to front fog lamp relay [located in IPDM E/R (intelligent power distribution module engine room)]
- through 15A fuse [No. 73, located in IPDM E/R (intelligent power distribution module engine room)]
- to CPU (central processing unit) [located in IPDM E/R (intelligent power distribution module engine room)]

Power is also supplied at all times

- through 50A fusible link (letter F, located in fuse and fusible link block)
- to BCM (body control module) terminal 7

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

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DAYTIME LIGHT SYSTEM

- through 10A fuse [No. 1, located in fuse block (J/B)]
- to BCM (body control module) terminal 35
- through 10A fuse [No. 80, located in IPDM E/R (intelligent power distribution module engine room)]
- to CPU (central processing unit) [located in IPDM E/R (intelligent power distribution module engine room)]

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

- through 10A fuse [No. 6, located in fuse block (J/B)]
- to BCM (body control module) terminal 36

Ground is supplied

- to BCM (body control module) terminal 8
- through grounds E13, E26 and E28
- to IPDM E/R (intelligent power distribution module engine room) terminal 14 and 45
- through grounds E13, E26 and E28.

FOG LAMP OPERATION

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

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

- through IPDM E/R terminal 32
- to front fog lamp LH terminal 1
- through IPDM E/R terminal 29
- to front fog lamp RH terminal 1

Ground is supplied

- to front fog lamp LH terminal 2
- through grounds E13, E26 and E28, and
- to front fog lamp RH terminal 2
- through grounds E13, E26 and E28.

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

DAYTIME LIGHT OPERATION

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

- through IPDM E/R terminal 32
- to front fog lamp LH terminal 1
- through IPDM E/R terminal 29
- to front fog lamp RH terminal 1.

Ground is supplied

- to front fog lamp LH terminal 2
- through grounds E13, E26 and E28, and
- to front fog lamp RH terminal 2
- through grounds E13, E26 and E28.

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

EXTERIOR LAMP BATTERY SAVER CONTROL

With the combination switch (lighting switch) is in the 2ND position (ON), and the ignition switch is turned from ON or ACC to OFF, the battery saver control function is activated.

Under this condition, the headlamps remain illuminated for 5 minutes, then the headlamps are turned off. Exterior lamp battery saver control made can be changed by the function setting of CONSULT-II.

COMBINATION SWITCH READING FUNCTION

Refer to [LT-251, "Combination Switch Reading Function"](#) .

AUTO LIGHT OPERATION

For auto light operation, refer to [LT-140, "System Description"](#) in "AUTO LIGHT SYSTEM".

DAYTIME LIGHT SYSTEM

CAN Communication System Description

AKS007NG

CAN (Controller Area Network) is a serial communication line for real time application. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Many electronic control units are equipped onto a vehicle, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN H line, CAN L line) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.

CAN Communication Unit For 2WD Models

AKS007QP

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	LT-106, "TYPE 1/TYPE 2/TYPE 3/TYPE 4/TYPE 5/TYPE 6/TYPE 7/TYPE 8"								LT-111, "TYPE 9/TYPE 10/TYPE 11/TYPE 12/TYPE 13/TYPE 14/TYPE 15/TYPE 16"							

×: Applicable

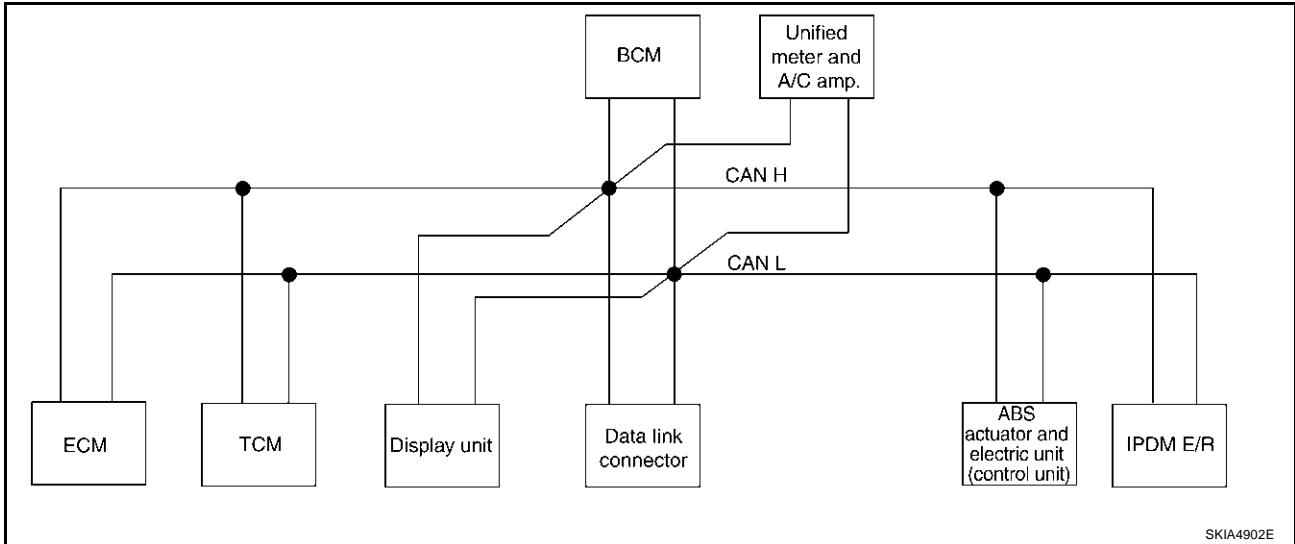
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DAYTIME LIGHT SYSTEM

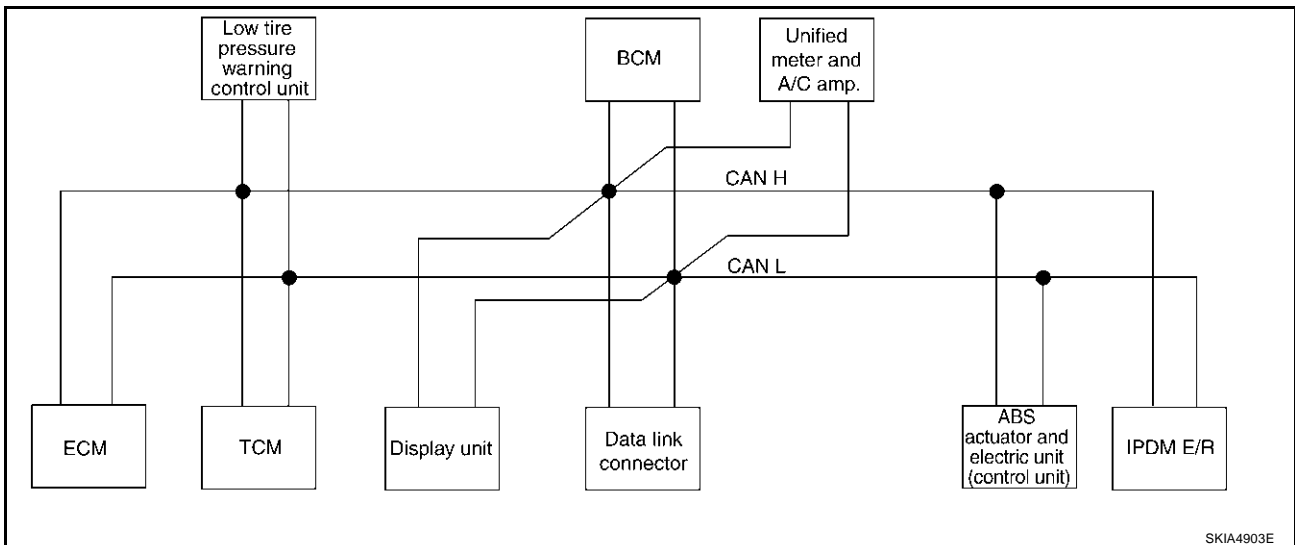
TYPE 1/TYPER 2/TYPER 3/TYPER 4/TYPER 5/TYPER 6/TYPER 7/TYPER 8

System Diagram

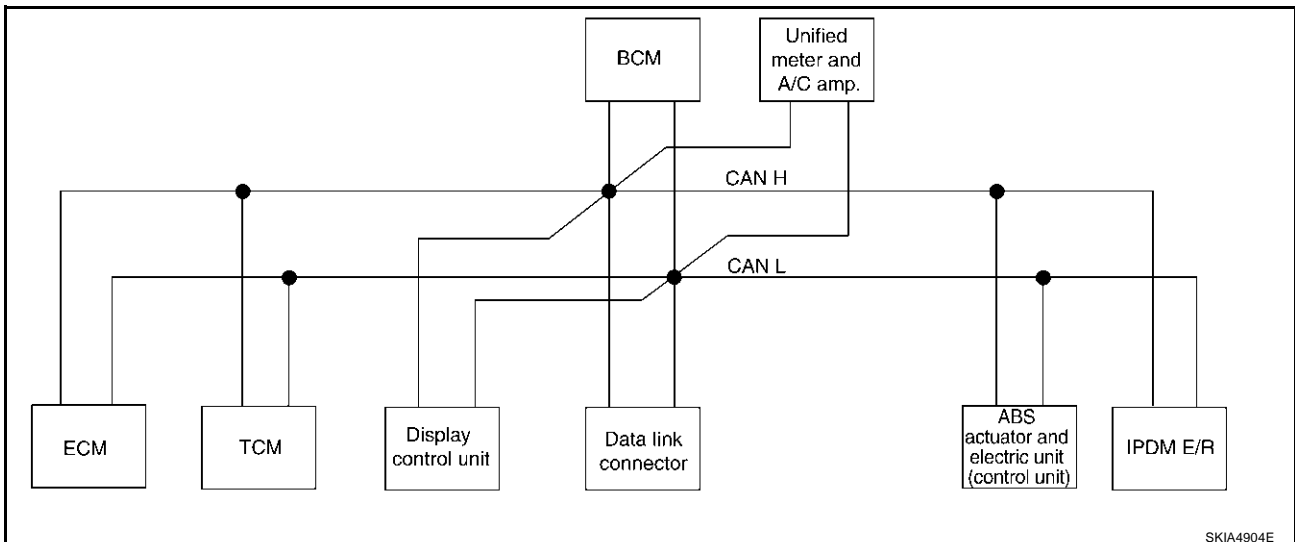
- Type1



- Type2

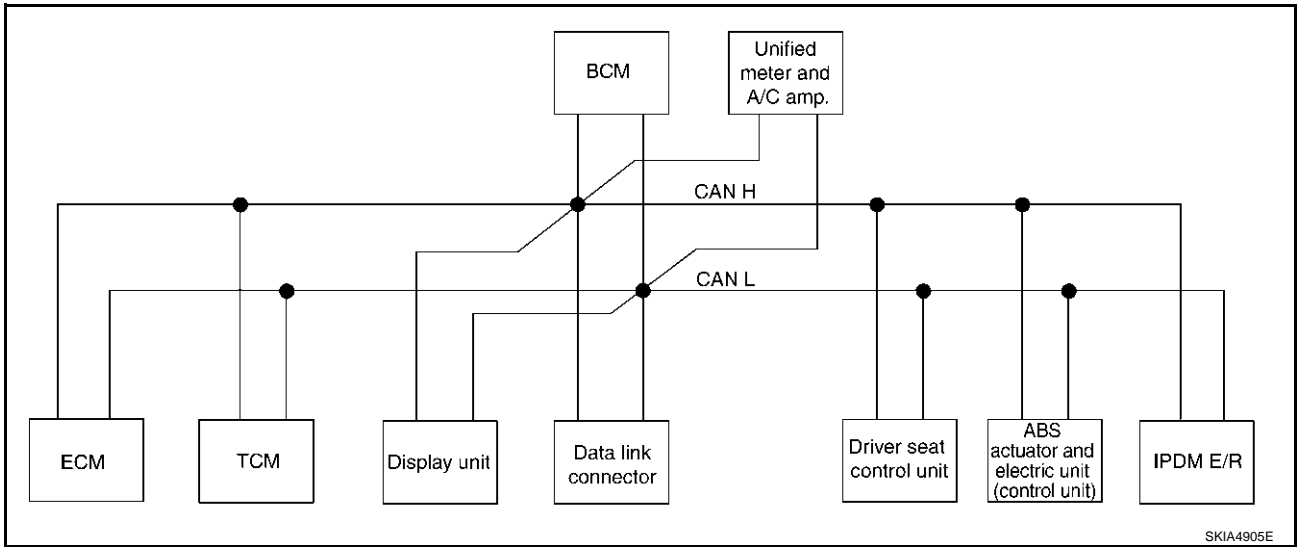


- Type3

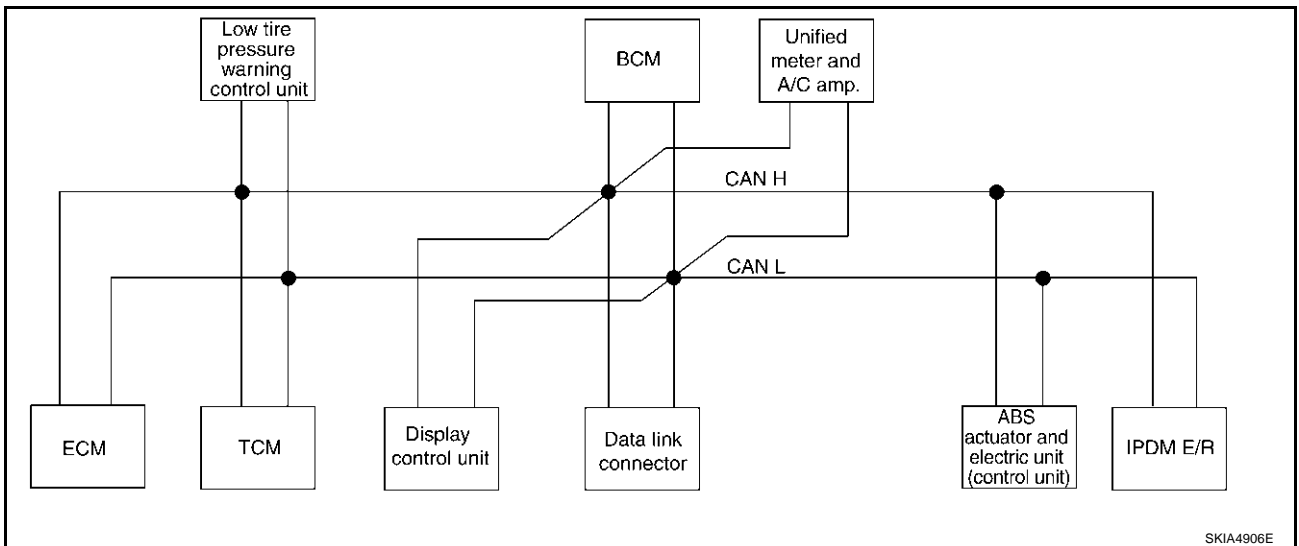


DAYTIME LIGHT SYSTEM

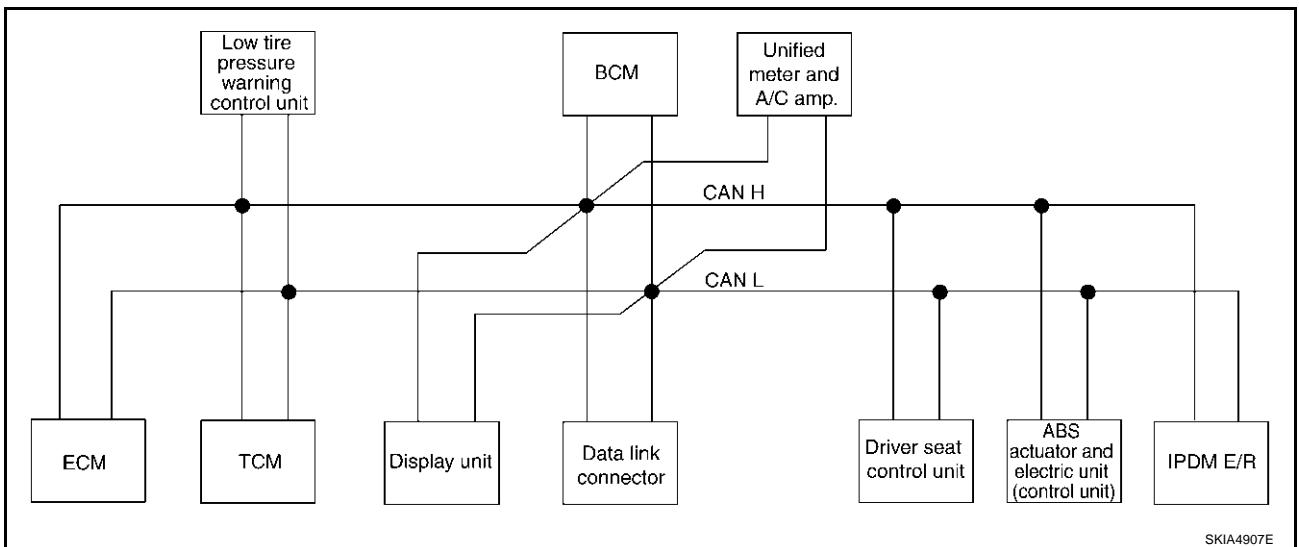
- Type4



- Type5



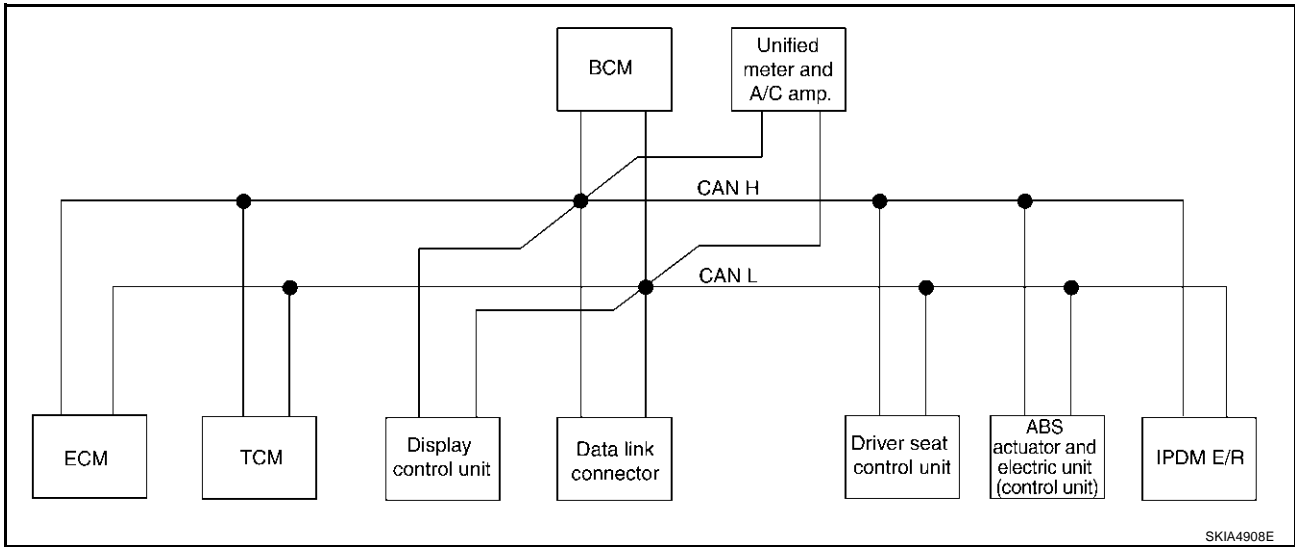
- Type6



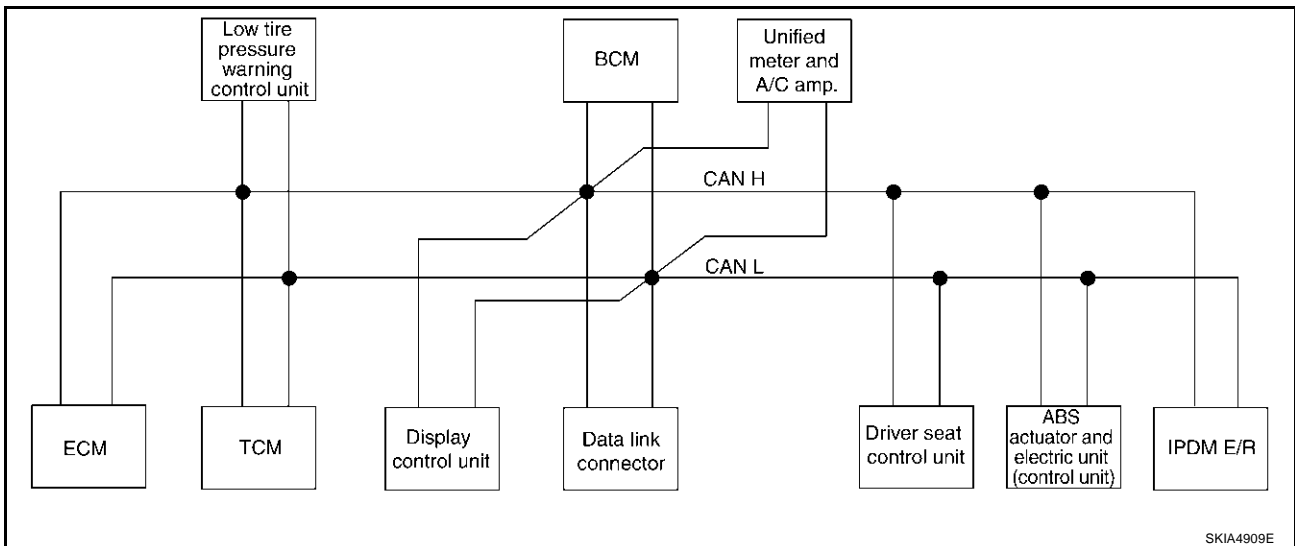
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DAYTIME LIGHT SYSTEM

- Type7



- Type8



DAYTIME LIGHT SYSTEM

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			

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DAYTIME LIGHT SYSTEM

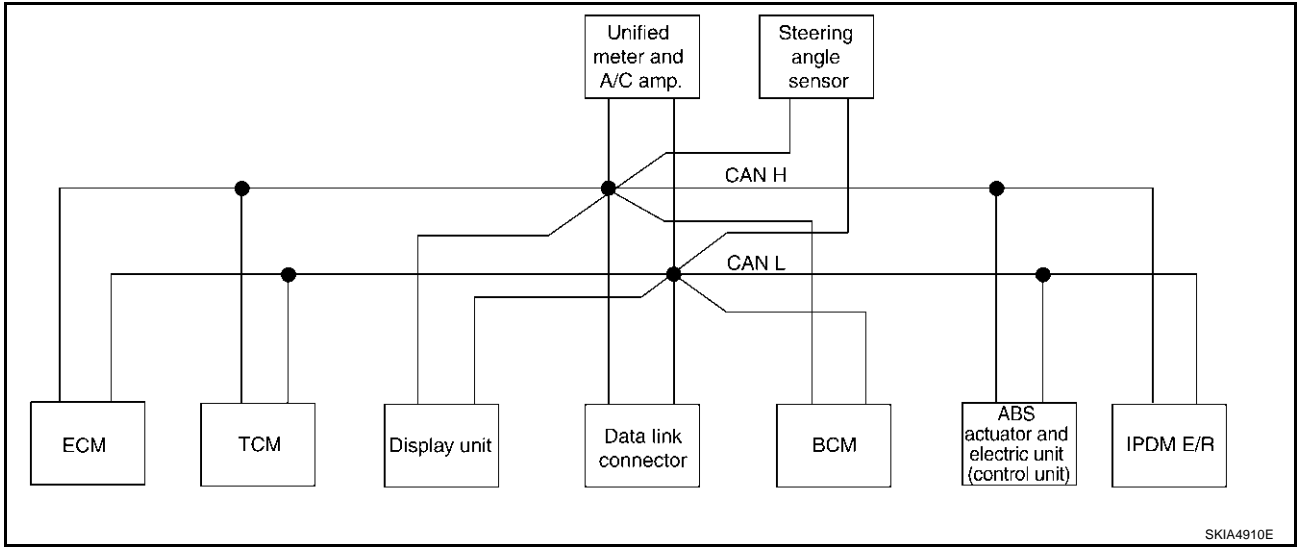
Signals	ECM	TCM	Low tire pressure warning control unit	Display unit	Display control unit	BCM	Unified meter and A/C amp.	Driver seat control unit	ABS actuator and electric unit (control unit)	IPDM E/R
Key fob ID signal						T		R		
Key fob door unlock signal						T		R		
Seat belt buckle switch signal						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 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
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		
Parking brake switch signal						R	T			

DAYTIME LIGHT SYSTEM

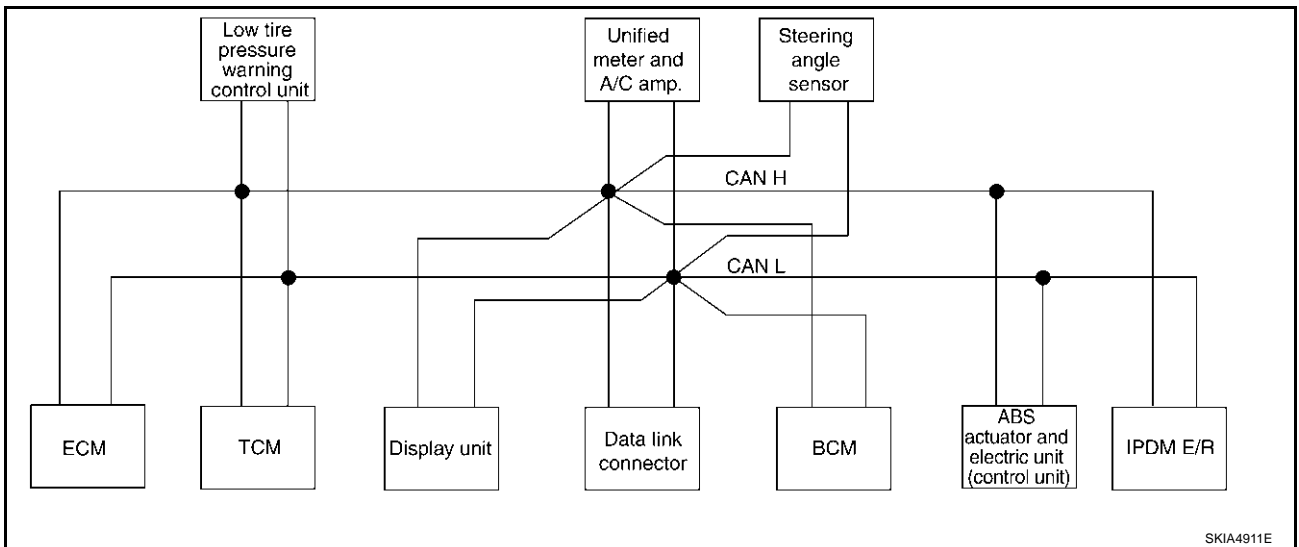
TYPE 9/TYPE10/TYPE 11/TYPE 12/TYPE 13/TYPE 14/TYPE 15/TYPE 16

System Diagram

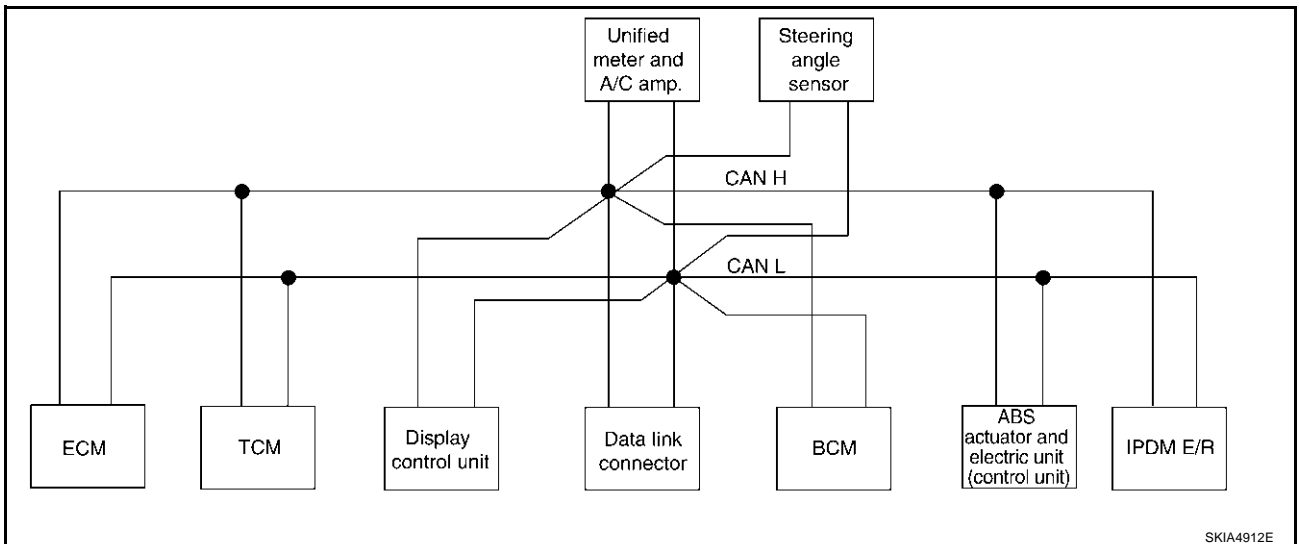
- Type9



- Type10



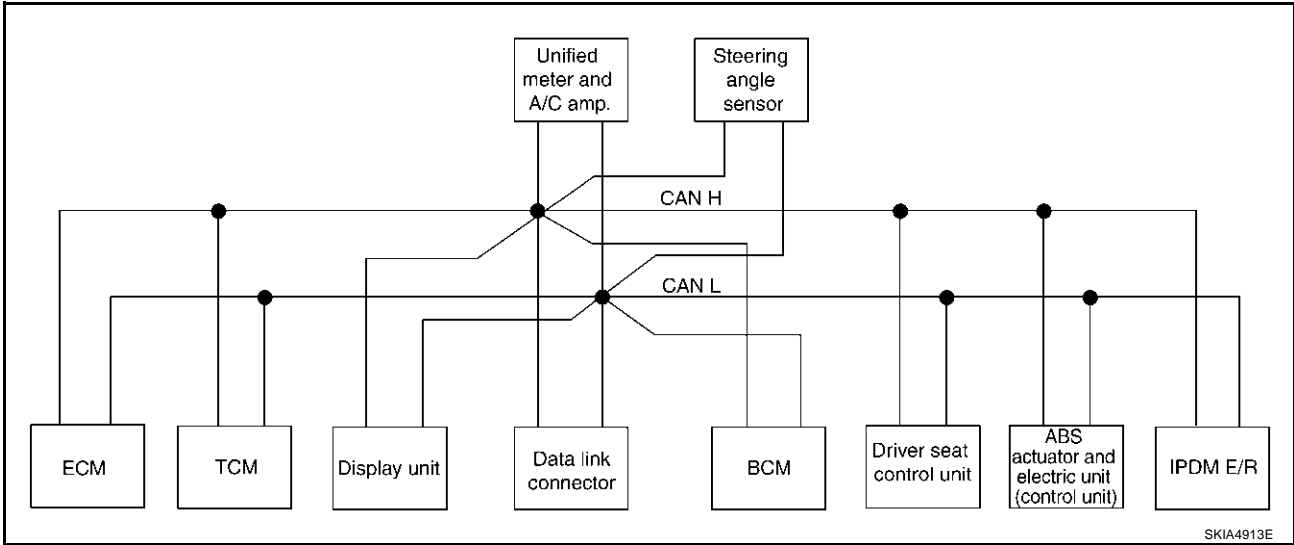
- Type11



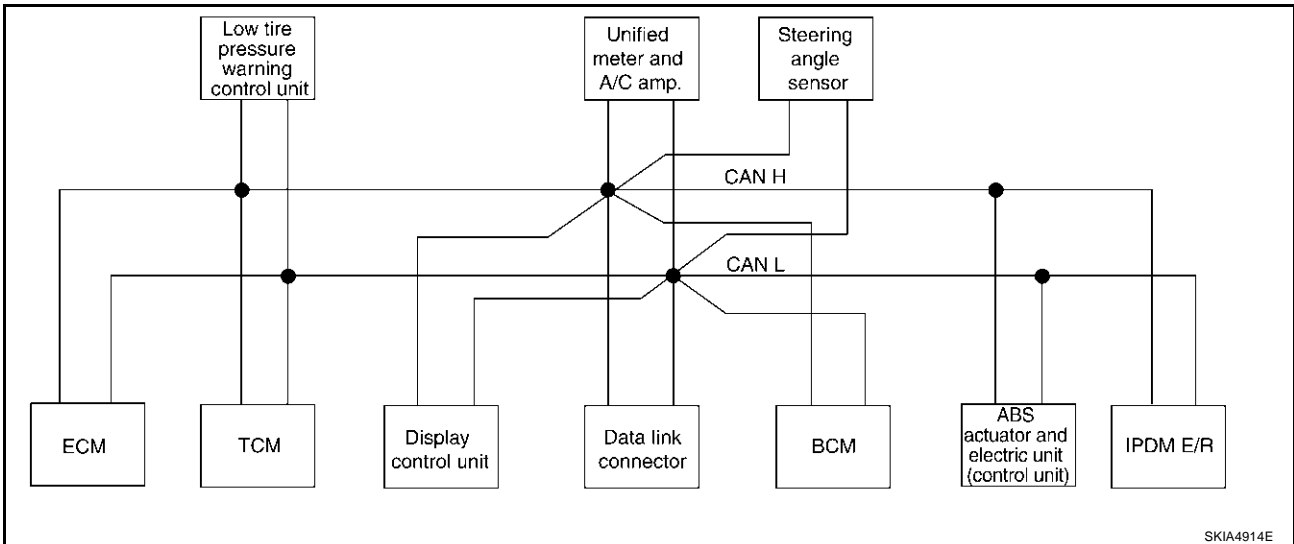
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DAYTIME LIGHT SYSTEM

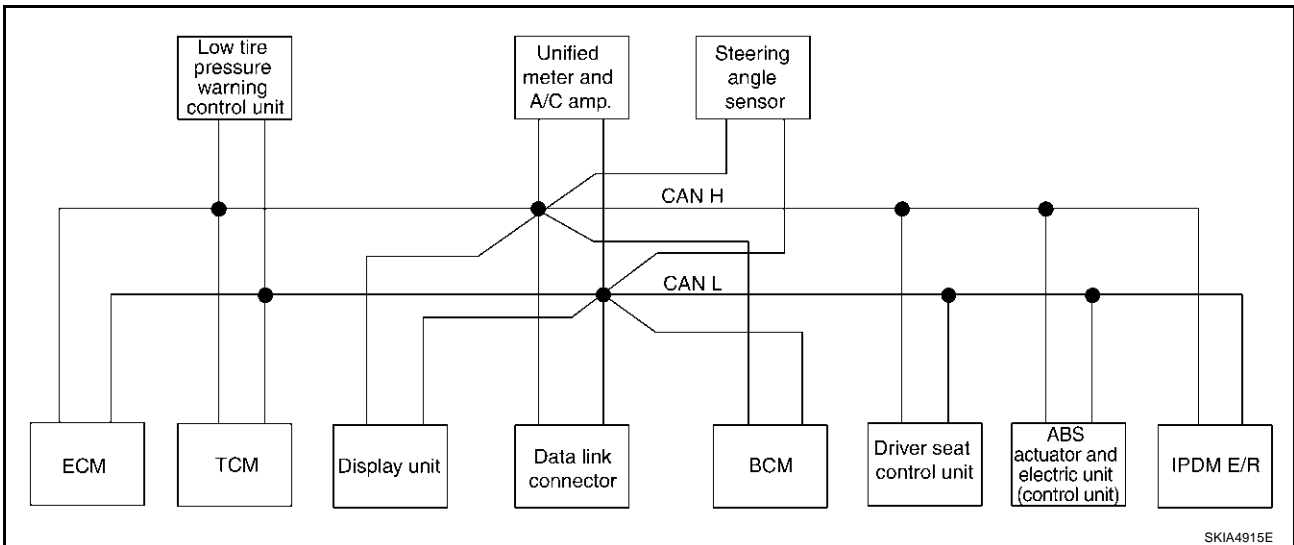
- Type12



- Type13

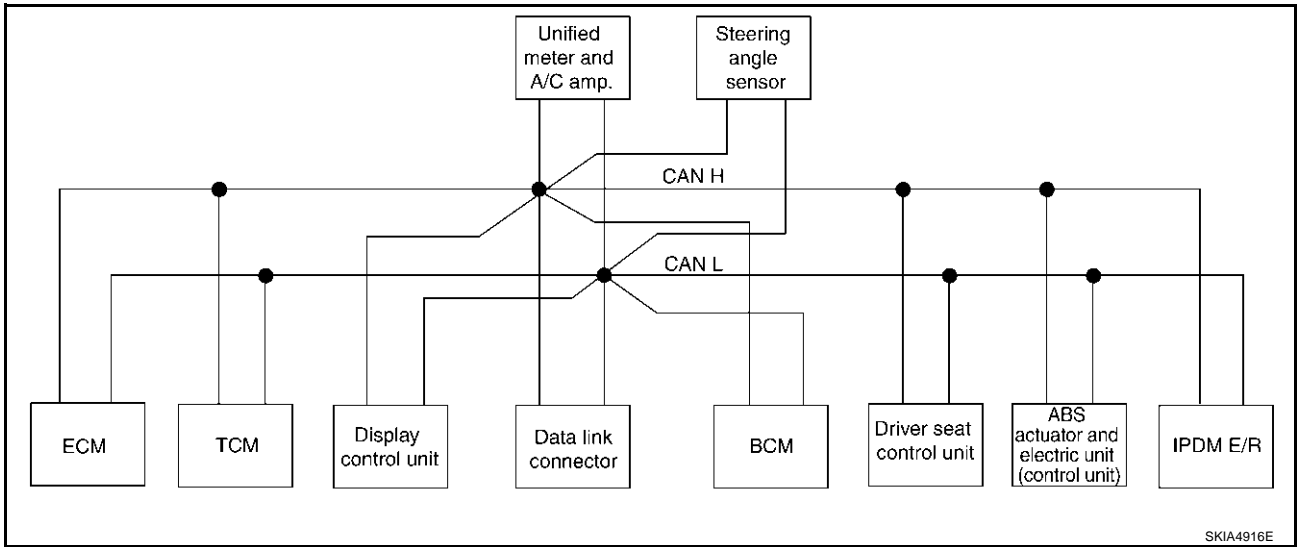


- Type14

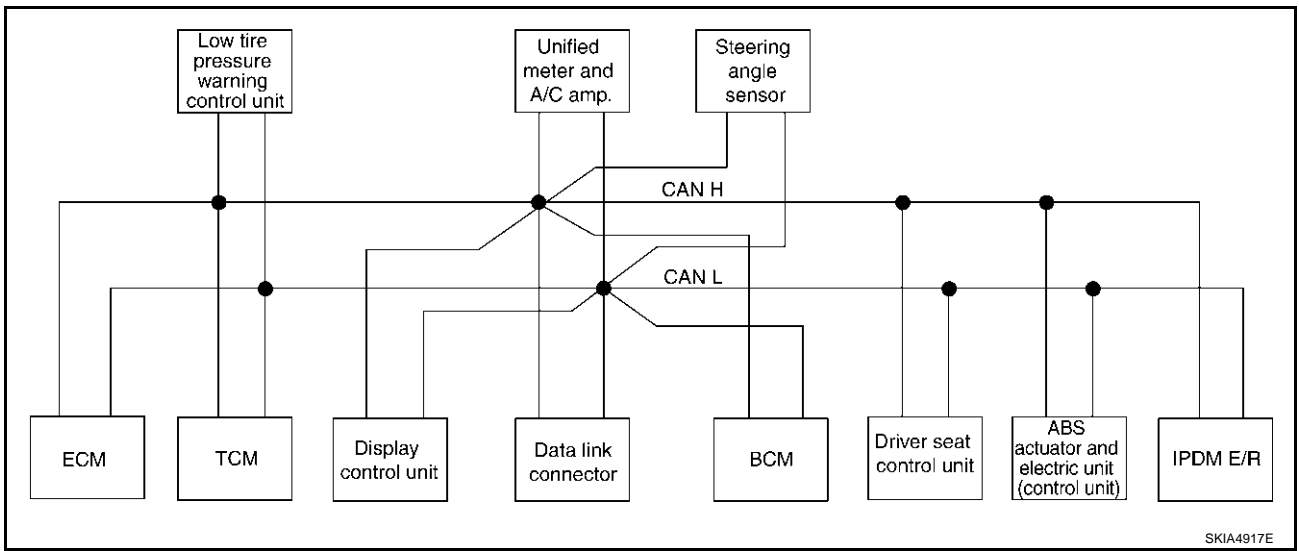


DAYTIME LIGHT SYSTEM

- Type15



- Type16



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DAYTIME LIGHT SYSTEM

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

DAYTIME LIGHT SYSTEM

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				
Turn indicator signal				R	R	T	R		R		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
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				

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DAYTIME LIGHT SYSTEM

CAN Communication Unit For AWD Models

AKS007Q0

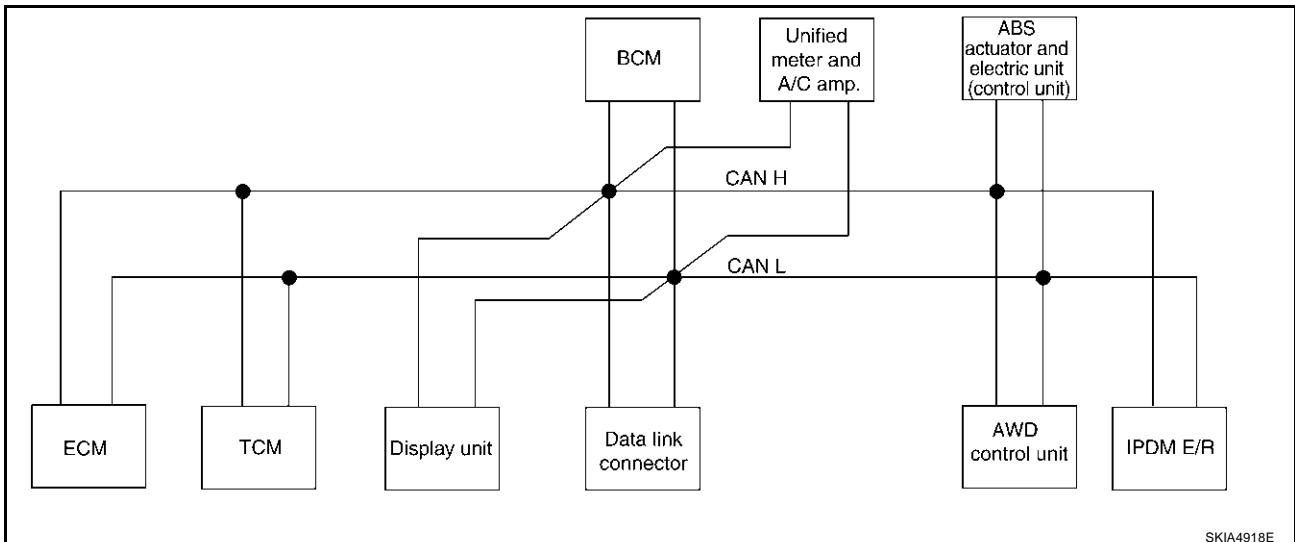
Body type	Wagon														
Axle	AWD														
Engine	VQ35DE														
Transmission	CVT														
Brake control	ABS							VDC							
Low tire pressure warning system		×			×	×		×		×		×	×		×
Navigation system			×		×		×	×			×		×		×
Automatic drive positioner				×		×	×	×				×		×	×
CAN communication 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	<u>LT-116. "TYPE 17/TYPE 18/TYPE 19/TYPE 20/TYPE 21/TYPE 22/TYPE 23/TYPE 24"</u>							<u>LT-122. "TYPE 25/TYPE 26/TYPE 27/TYPE 28/TYPE 29/TYPE 30/TYPE 31/TYPE 32"</u>							

×: Applicable

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

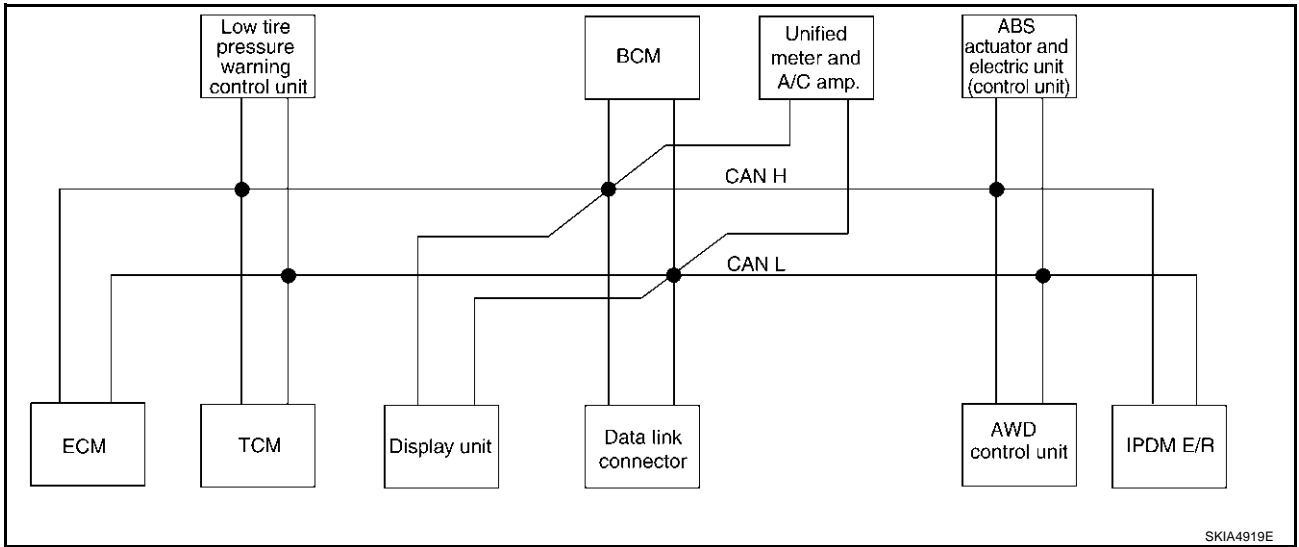
System Diagram

- Type17

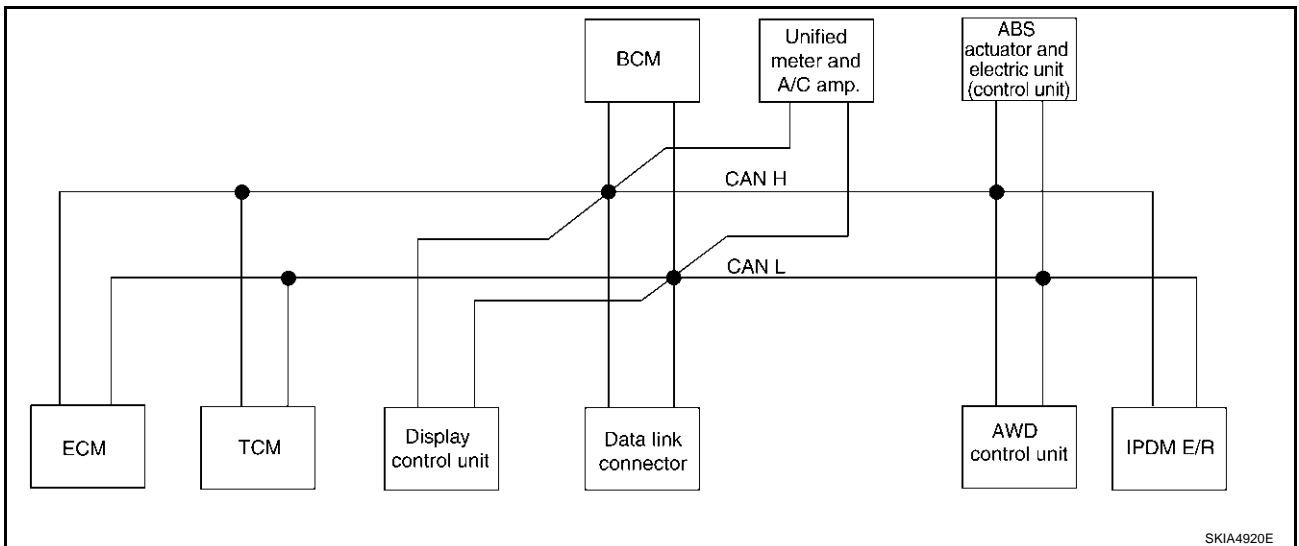


DAYTIME LIGHT SYSTEM

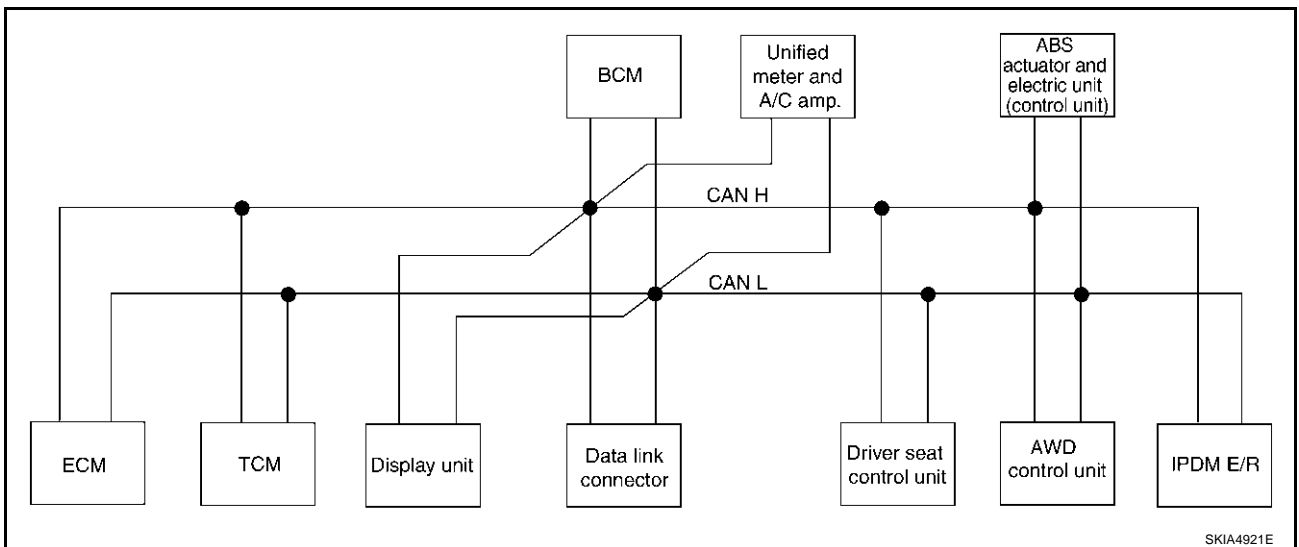
- Type18



- Type19



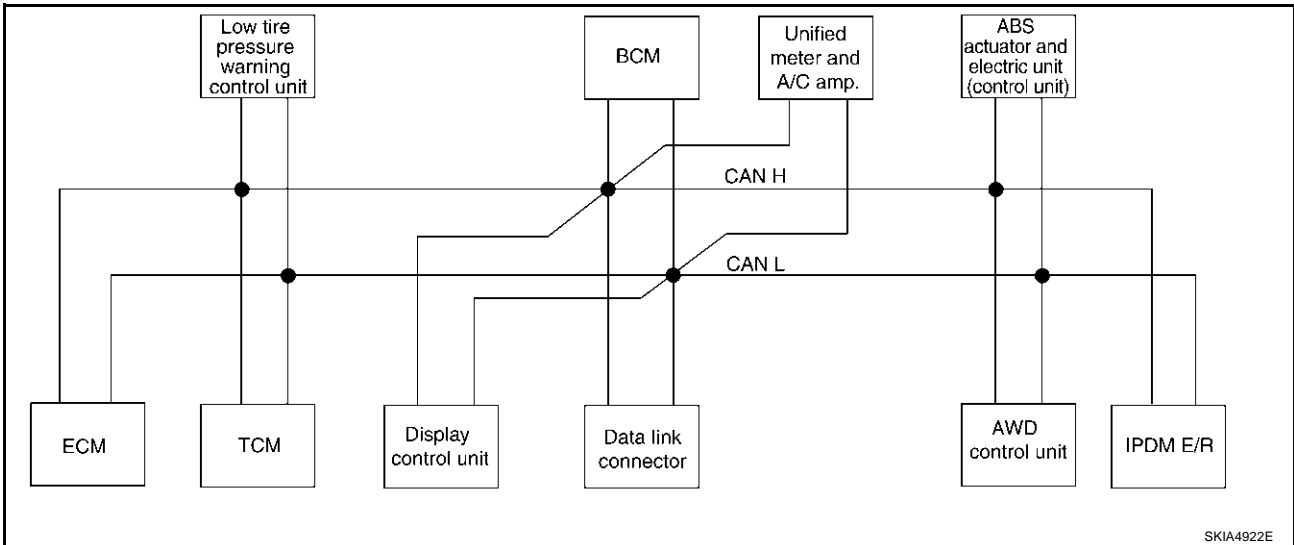
- Type20



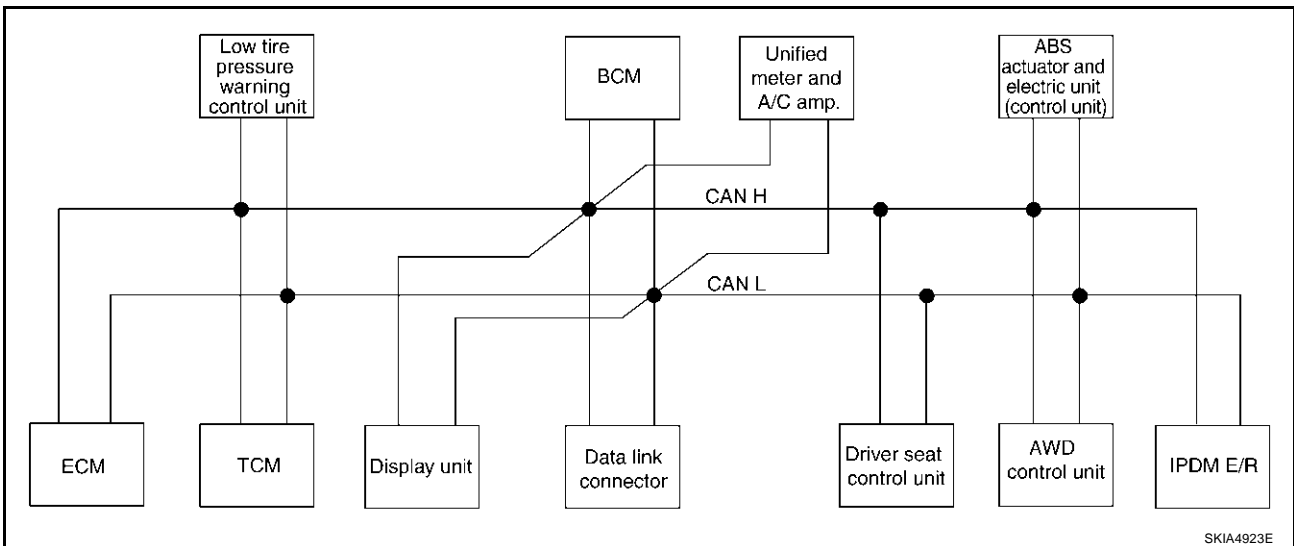
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DAYTIME LIGHT SYSTEM

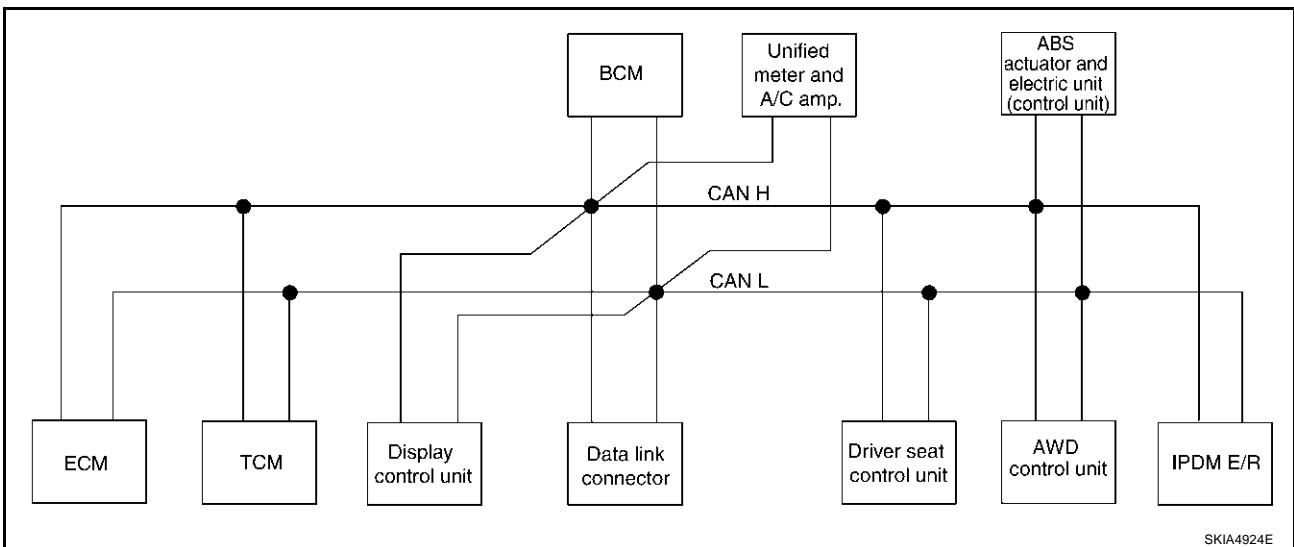
- Type21



- Type22

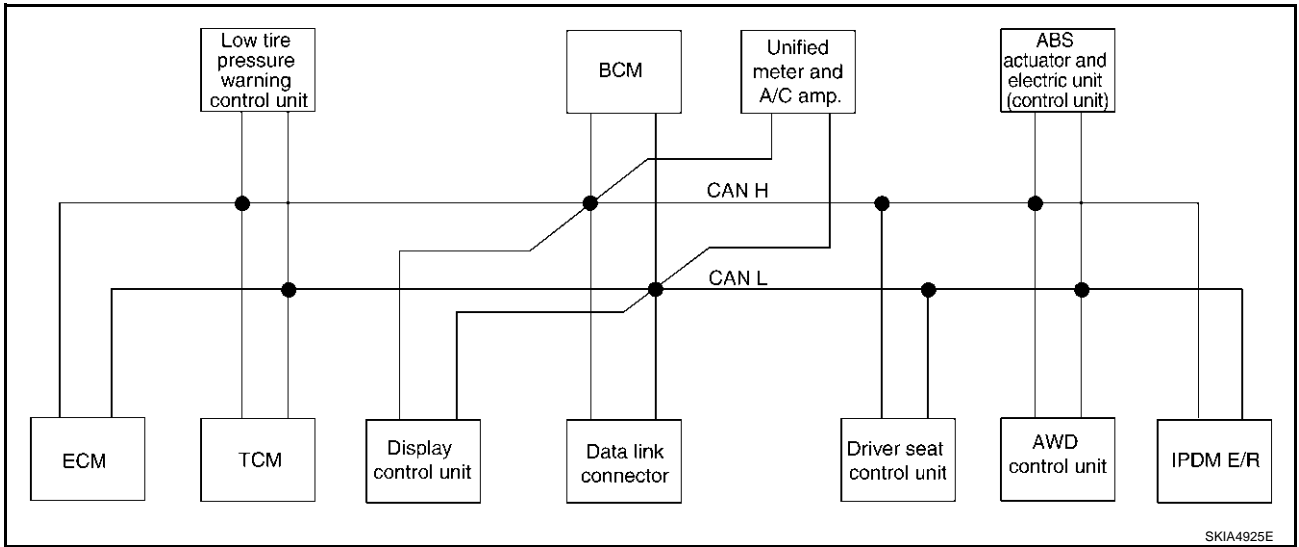


- Type23



DAYTIME LIGHT SYSTEM

- Type24



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DAYTIME LIGHT SYSTEM

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			

DAYTIME LIGHT SYSTEM

Signals	ECM	TCM	Low tire pres- sure warn- ing con- trol unit	Dis- play unit	Dis- play con- trol unit	BCM	Uni- fied meter and A/ C amp.	Driver seat con- trol unit	AWD con- trol unit	ABS actua- tor and elec- tric unit (con- trol 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		

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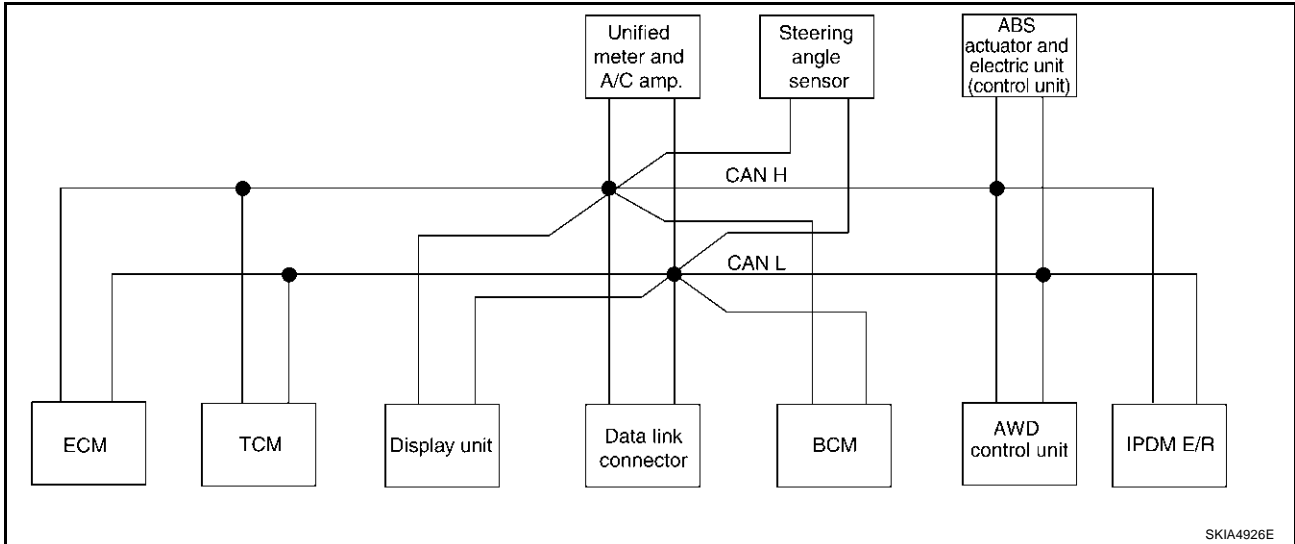
LT

DAYTIME LIGHT SYSTEM

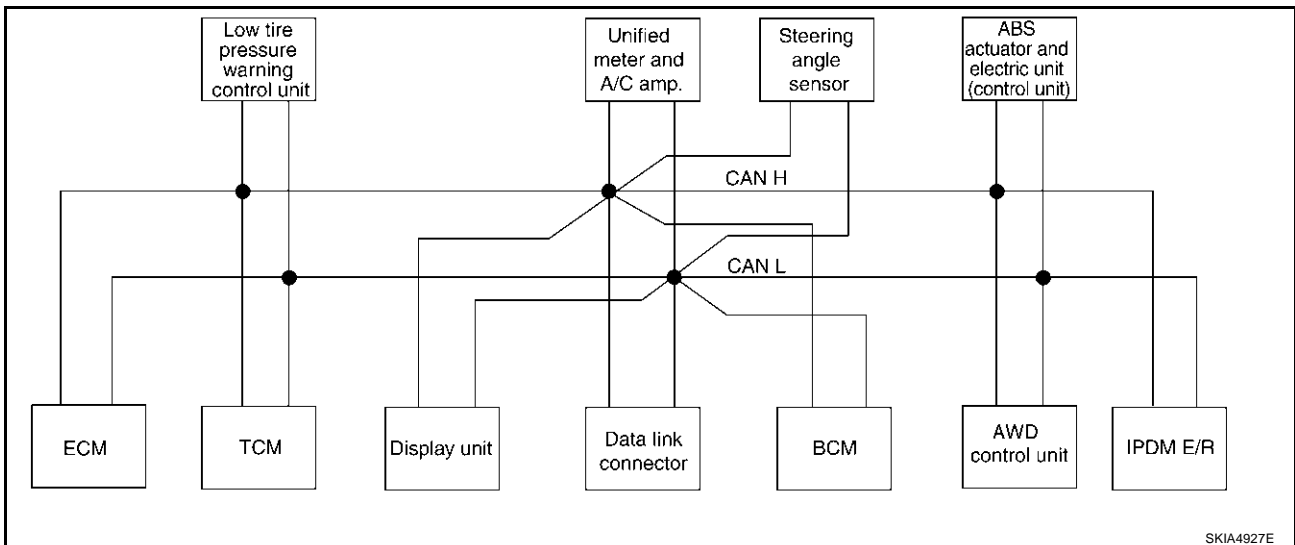
TYPE 25/TYPE26/TYPE 27/TYPE 28/TYPE 29/TYPE 30/TYPE 31/TYPE 32

System Diagram

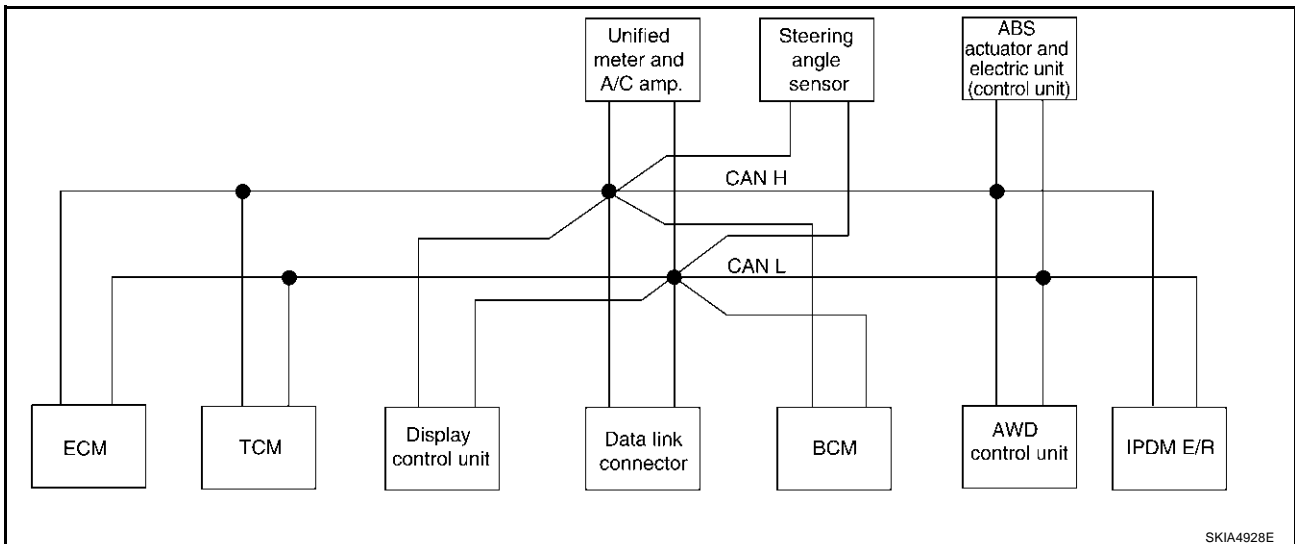
- Type25



- Type26

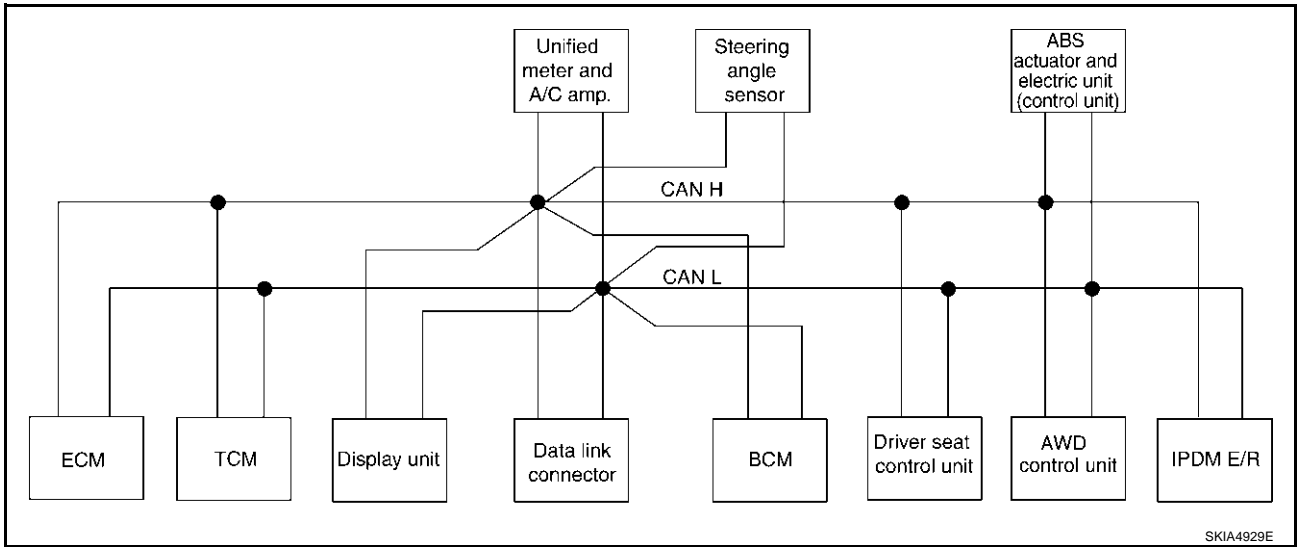


- Type27

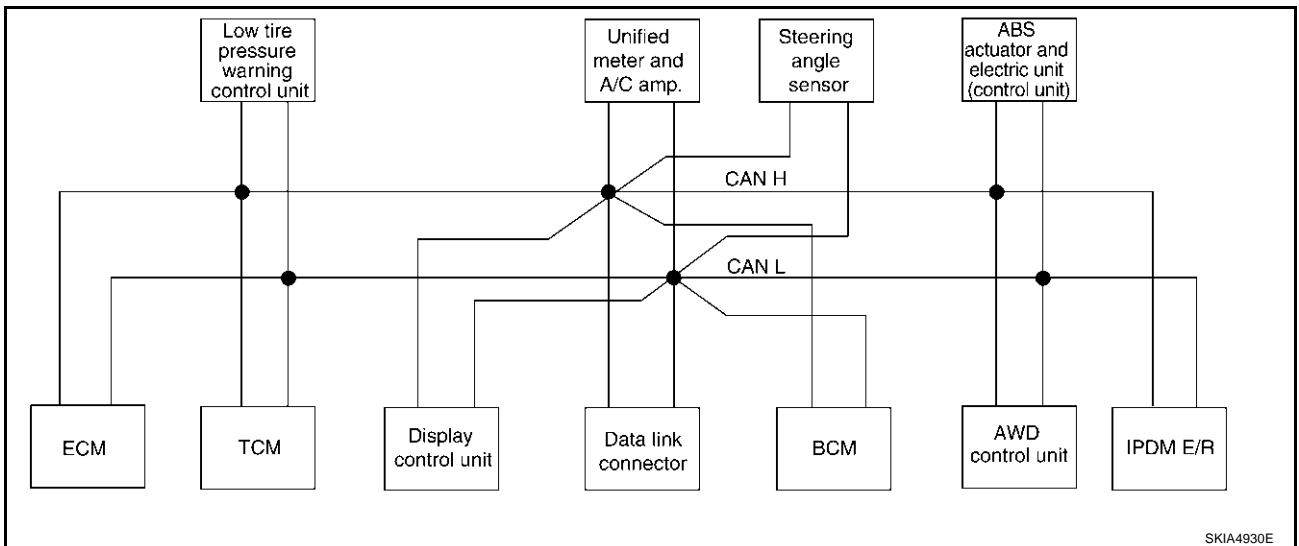


DAYTIME LIGHT SYSTEM

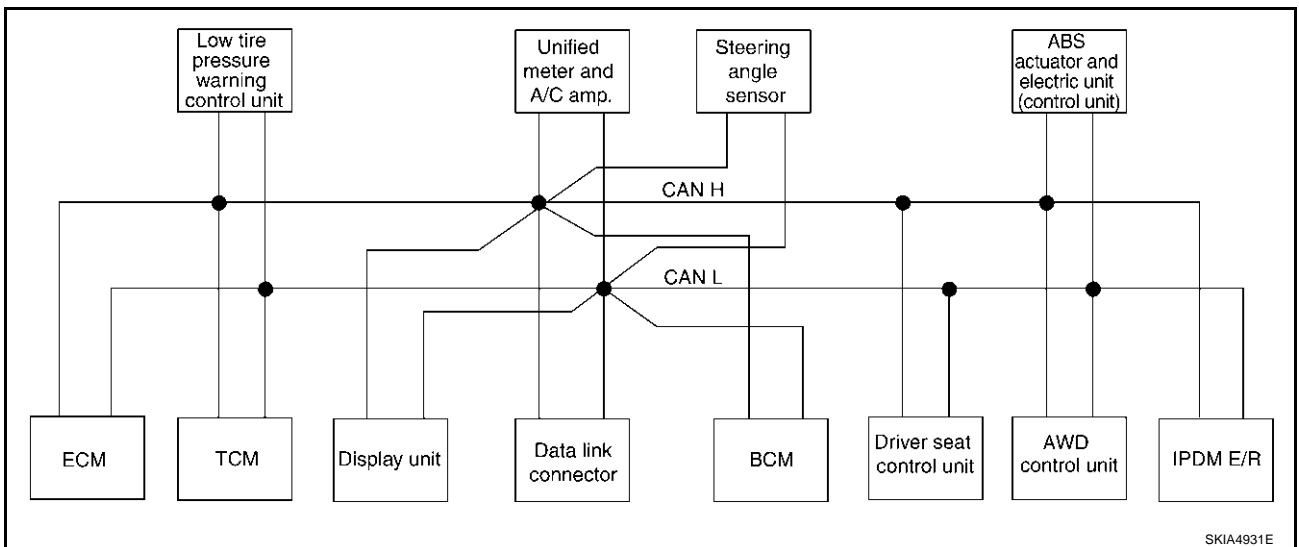
- Type28



- Type29



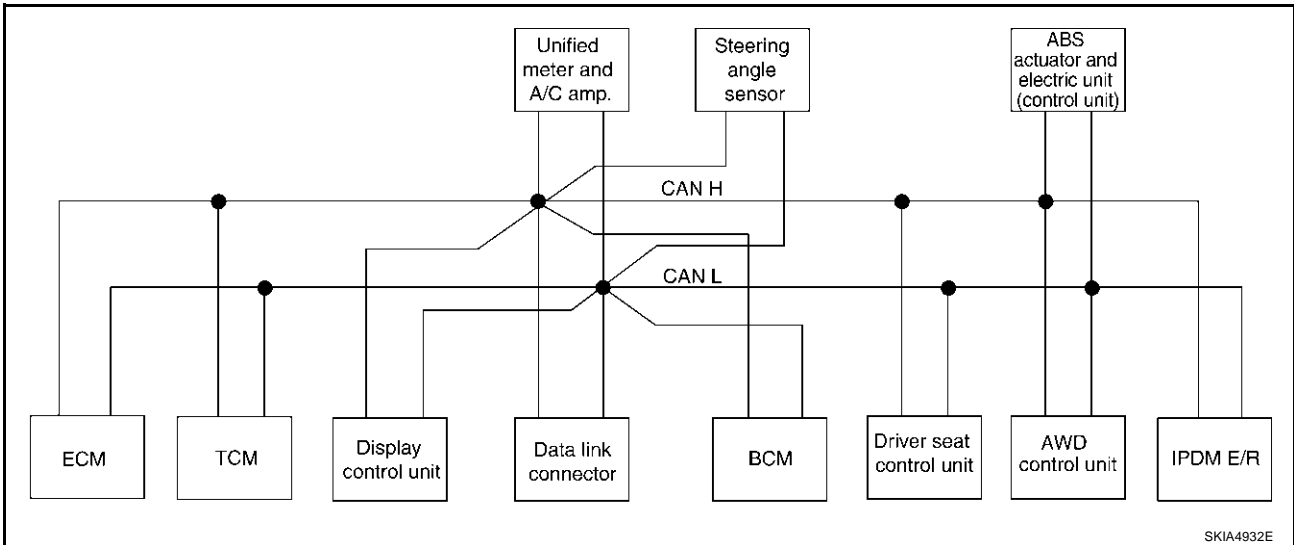
- Type30



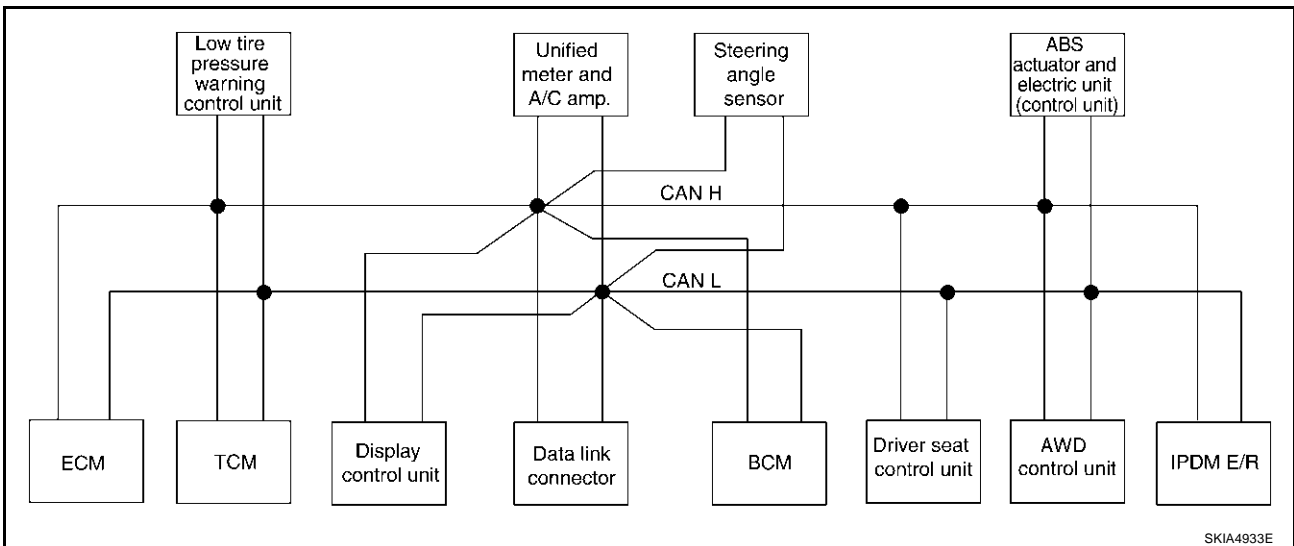
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DAYTIME LIGHT SYSTEM

- Type31



- Type32



DAYTIME LIGHT SYSTEM

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

DAYTIME LIGHT SYSTEM

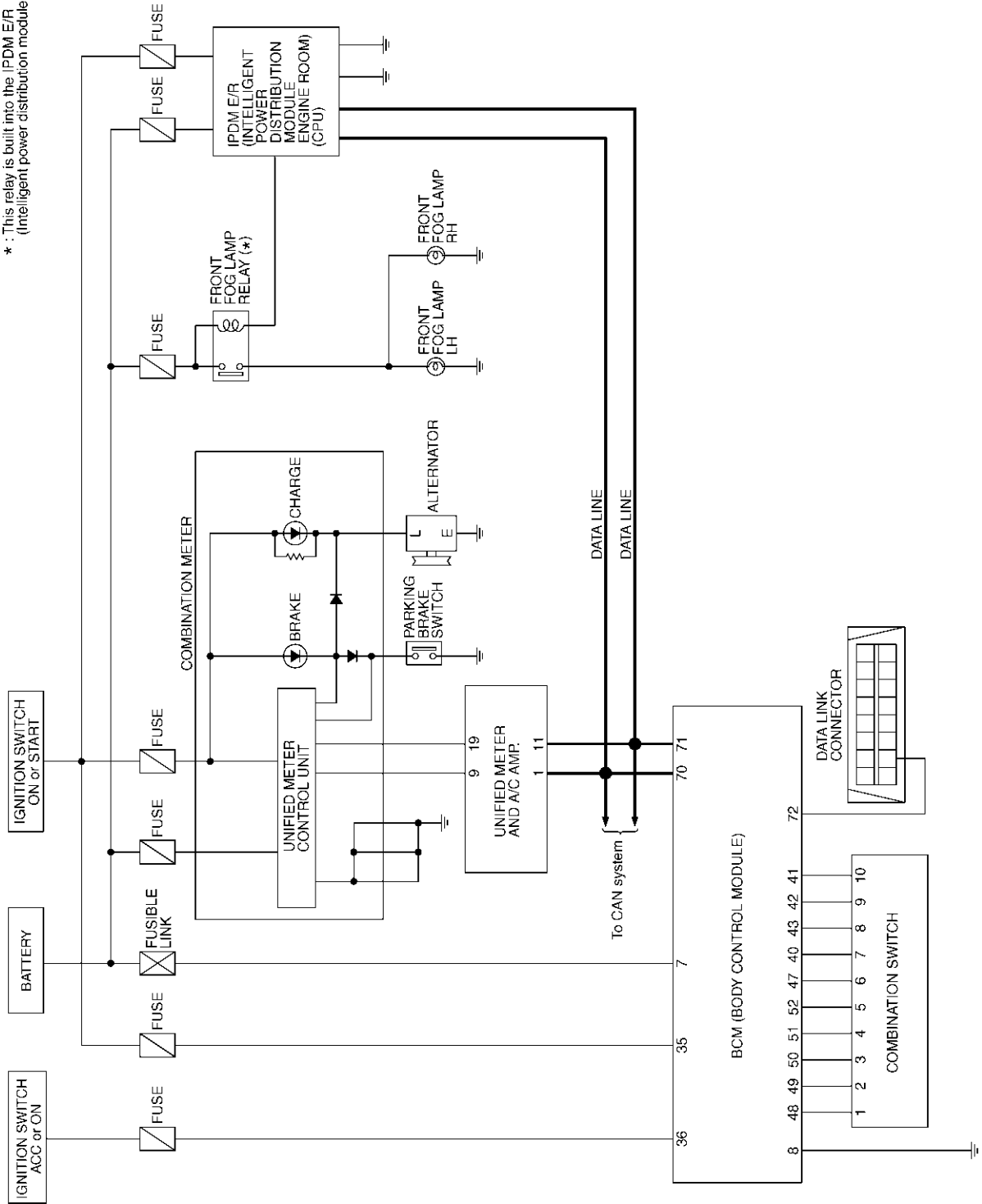
Signals	ECM	TCM	Low tire pressure warning control unit	Display unit	Display control unit	BCM	Unified meter and A/C amp.	Steering angle sensor	Driver seat control unit	AWD control unit	ABS actuator and electric unit (control unit)	IPDM E/R
Door switch signal						R	T					
Turn indicator signal				R	R	T	R		R			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
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			
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		

DAYTIME LIGHT SYSTEM

Schematic

AKS007NI

* : This relay is built into the IPDM E/R
(Intelligent power distribution module engine room).



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TKWA0747E

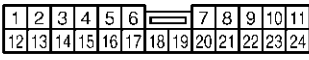
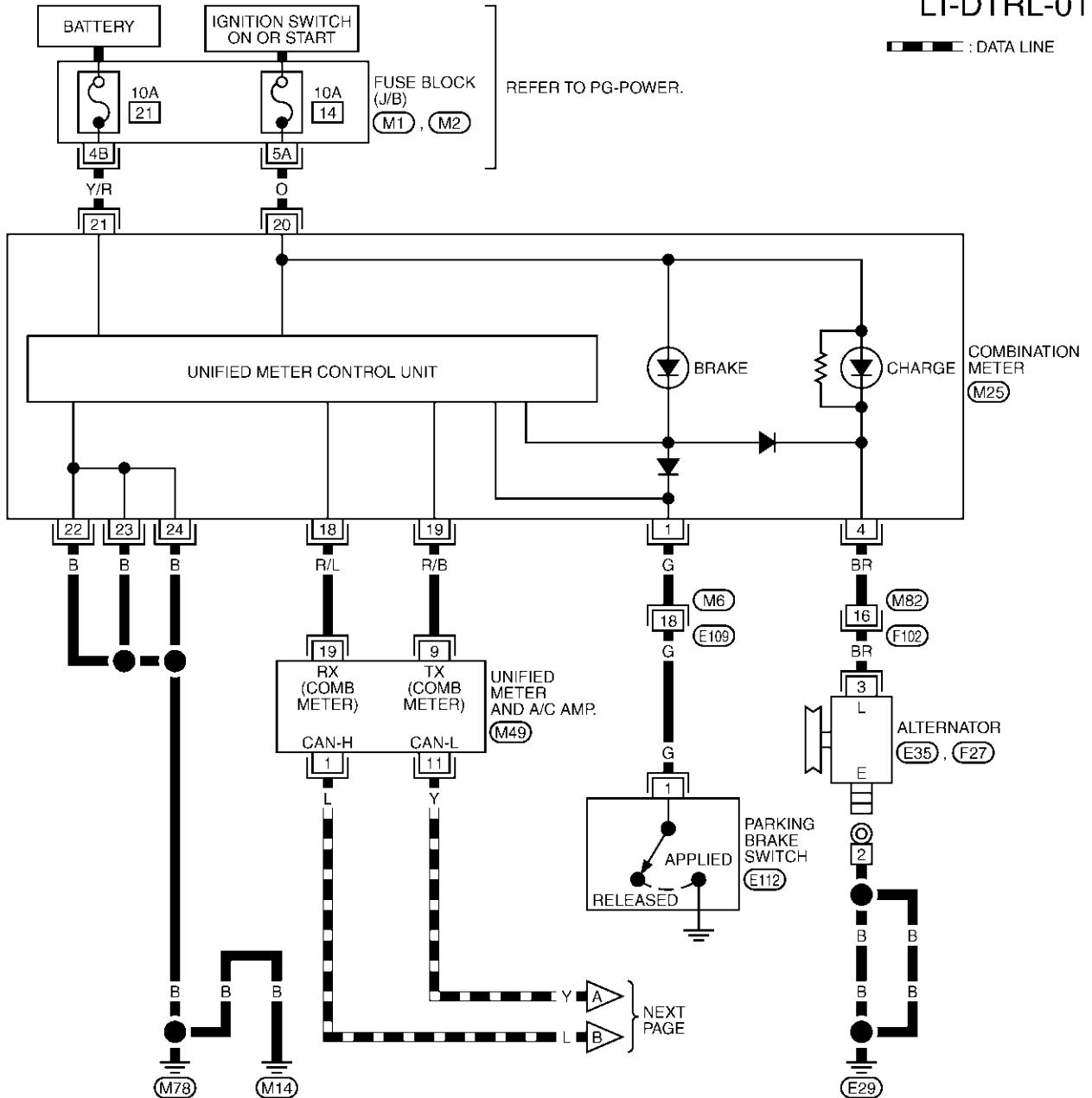
DAYTIME LIGHT SYSTEM

Wiring Diagram — DTRL —

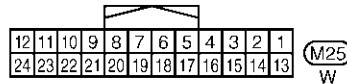
AKS007NJ

LT-DTRL-01

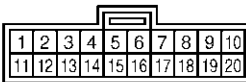
▬ : DATA LINE



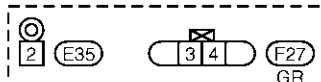
M6
W



M25
W



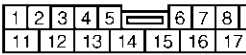
M49
GR



F27
GR



E112
W



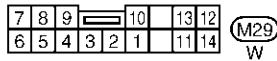
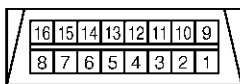
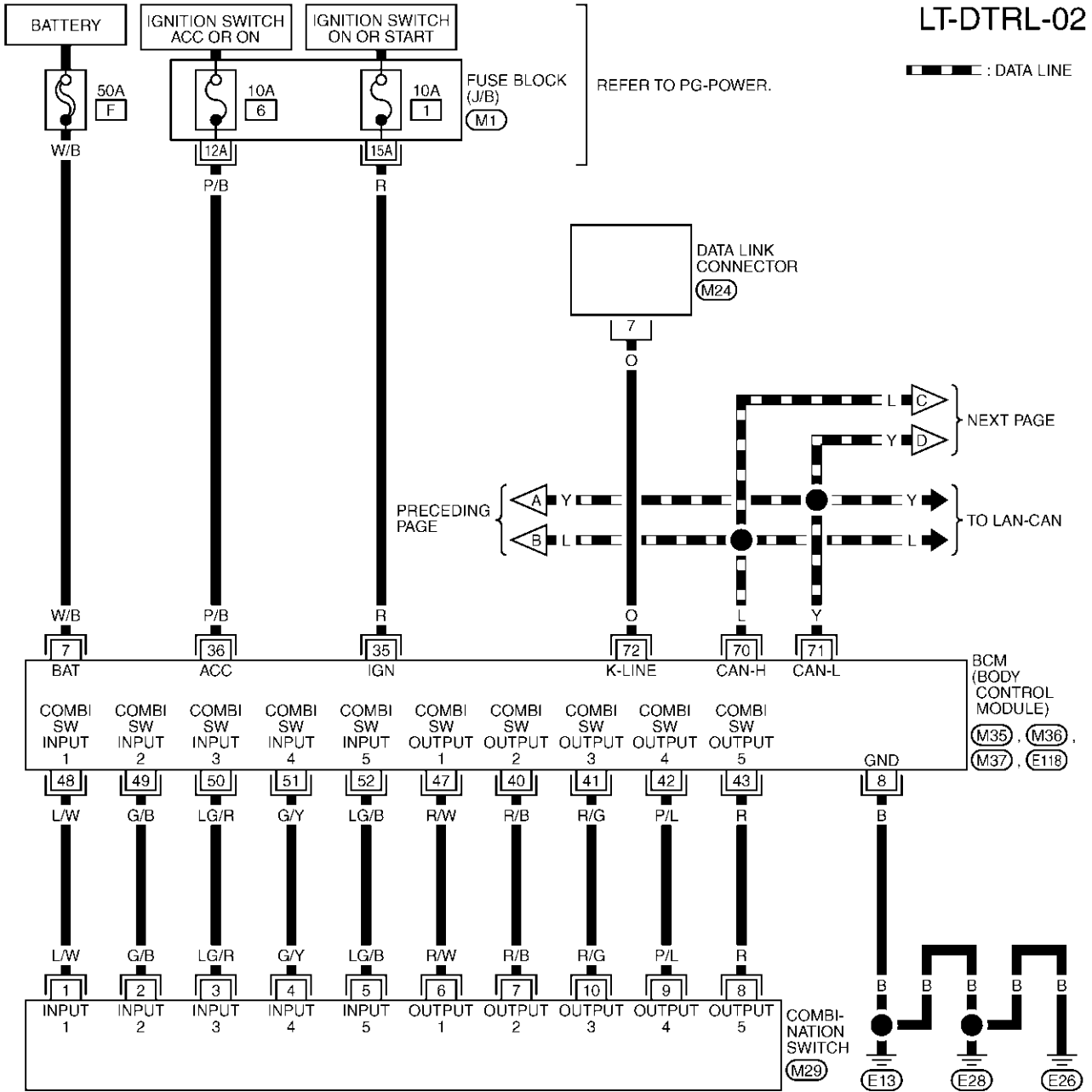
F102
W

REFER TO THE FOLLOWING.

(M1), (M2) - FUSE BLOCK-JUNCTION BOX (J/B)

DAYTIME LIGHT SYSTEM

LT-DTRL-02



REFER TO THE FOLLOWING.

(M1) - FUSE BLOCK-JUNCTION BOX (J/B)

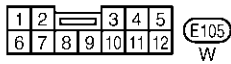
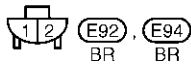
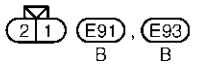
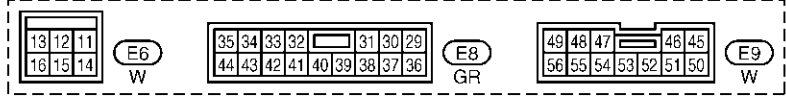
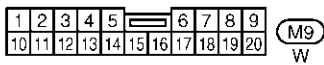
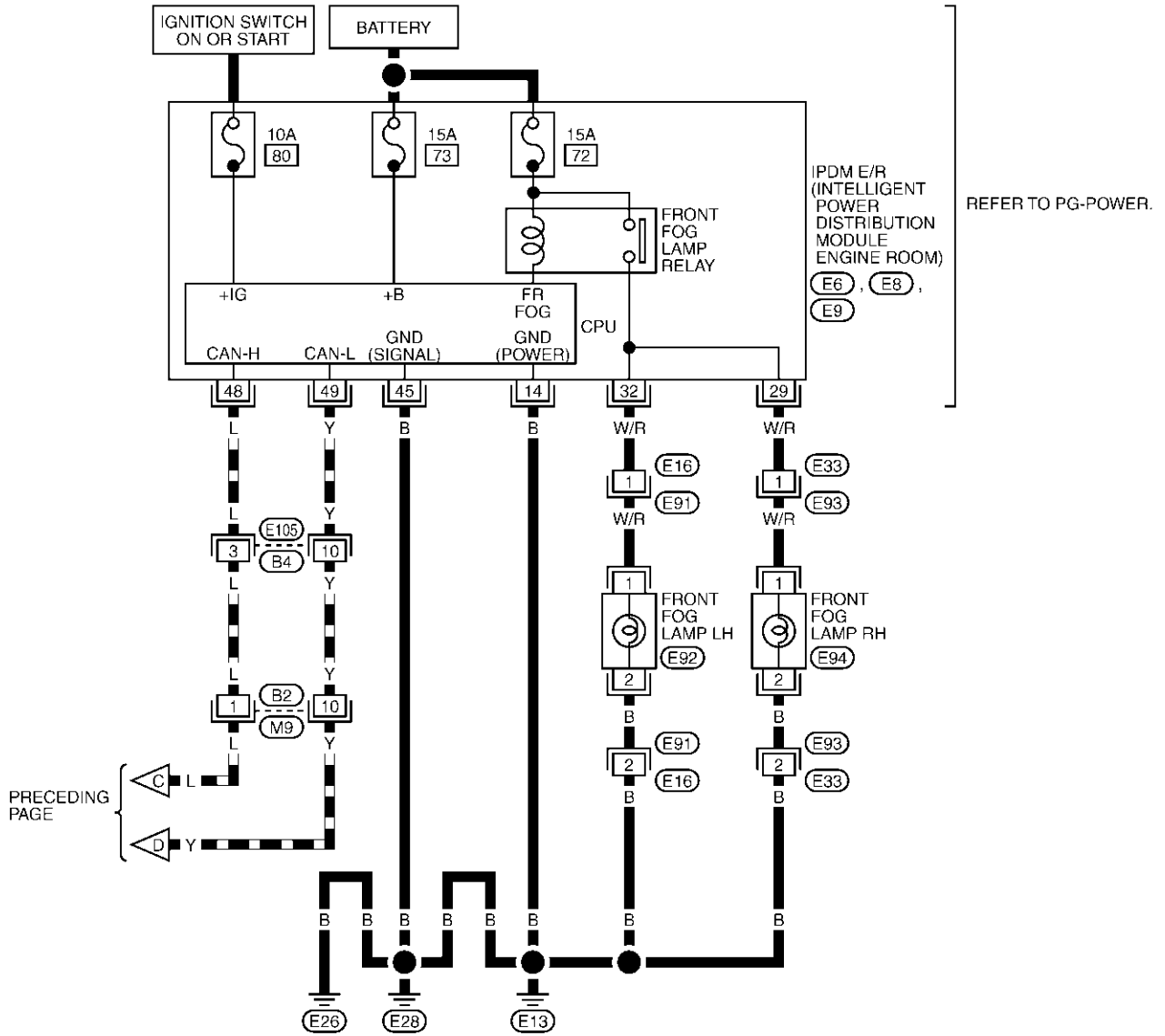
(M35), (M36), (M37), (E118) - ELECTRICAL UNITS

TKWA0749E

DAYTIME LIGHT SYSTEM

LT-DTRL-03

▬ : DATA LINE

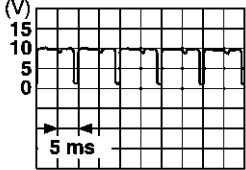


TKWA0750E

DAYTIME LIGHT SYSTEM

Terminals and Reference Value for BCM

AKS007NK

Terminal No.	Wire color	Signal name	Measuring condition		Reference value
			Ignition switch	Operation or condition	
7	W/B	Battery power supply	OFF	—	Battery voltage
8	B	Ground	ON	—	Approx.0
35	R	Ignition switch (ON)	ON	—	Battery voltage
36	P/B	Ignition switch (ACC)	ACC	—	Battery voltage
40	R/B	Combination switch output 2	ON	Lighting, turn, wiper OFF	
41	R/G	Combination switch output 3			
42	P/L	Combination switch output 4			
43	R	Combination switch output 5			
47	R/W	Combination switch output 1			
48	L/W	Combination switch input 1	ON	Lighting, turn, wiper OFF	4.5V or more
49	G/B	Combination switch input 2			
50	LG/R	Combination switch input 3			
51	G/Y	Combination switch input 4			
52	LG/B	Combination switch input 5			
70	L	CAN- H	—	—	—
71	Y	CAN- L	—	—	—
72	O	K-LINE	—	—	—

SKIA1119J

Terminals and Reference Values for IPDM E/R

AKS007NL

Terminal No.	Wire color	Signal name	Measuring condition		Reference value	
			Ignition switch	Operation or condition		
14	B	Ground	ON	—	Approx. 0V	
29	W/R	Front fog lamp (RH)	ON	Lighting switch must be in the 2ND position or AUTO position (LOW beam is ON) and the front fog lamp switch must be ON	OFF	Approx. 0V
					ON	Battery voltage
32	W/R	Front fog lamp (LH)	ON	Lighting switch must be in the 2ND position or AUTO position (LOW beam is ON) and the front fog lamp switch must be ON	OFF	Approx. 0V
						ON
45	B	Ground	ON	—	Approx. 0V	
48	L	CAN- H	—	—	—	
49	Y	CAN- L	—	—	—	

How to Proceed With Trouble Diagnosis

AKS007NM

1. Confirm the symptom or customer complaint.
2. Understand operation description and function description. Refer to [LT-103, "System Description"](#) .
3. Perform the Preliminary Check. Refer to [LT-132, "Preliminary Check"](#) .
4. Check symptom and repair or replace the cause of malfunction.
5. Does the headlamp operate normally? If YES: GO TO 6. If NO: GO TO 4.
6. INSPECTION END.

DAYTIME LIGHT SYSTEM

AKS007NN

Preliminary Check INSPECTION FOR POWER SUPPLY AND GROUND CIRCUIT

1. CHECK FUSES

- Check for blown fuses.

Unit	Power source	Fuse and fusible link No.
BCM	Battery	F
	Ignition switch ON or START position	1
	Ignition switch ACC or ON position	6
IPDM E/R	Battery	72

Refer to [LT-128, "Wiring Diagram — DTRL —"](#) .

OK or NG

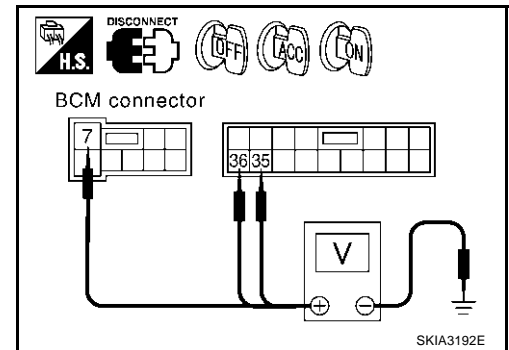
OK >> GO TO 2.

NG >> If fuse is blown, be sure to eliminate cause of malfunction before installing new fuse. Refer to [PG-3, "POWER SUPPLY ROUTING CIRCUIT"](#) .

2. CHECK POWER SUPPLY CIRCUIT

1. Disconnect BCM connector.
2. Check voltage between BCM connector and ground.

Terminals		(-)	Ignition switch position		
Connector	Terminal (Wire color)		OFF	ACC	ON
E118	7 (W/B)	Ground	Battery voltage	Battery voltage	Battery voltage
M35	35 (R)		0V	0V	Battery voltage
M35	36 (P/B)		0V	Battery voltage	Battery voltage



OK or NG

OK >> GO TO 3.

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

3. CHECK GROUND CIRCUIT

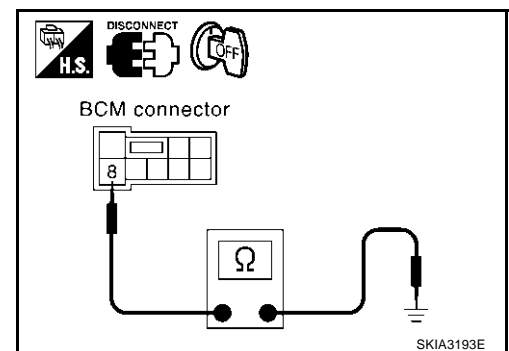
Check continuity between BCM and ground.

Terminals			Continuity
Connector	Terminal (Wire color)	Ground	Yes
E118	8 (B)	Ground	Yes

OK or NG

OK >> INSPECTION END

NG >> Check harness ground circuit.



DAYTIME LIGHT SYSTEM

INSPECTION PARKING BRAKE SWITCH CIRCUIT

1. CHECK BRAKE INDICATOR

1. Turn ignition switch ON
2. When an parking brake is made ON/OFF, it checks whether the brake indicator lamp of combination meter lights up / puts out the light.

OK or NG

- OK >> INSPECTION END
 NG >> GO TO 2.

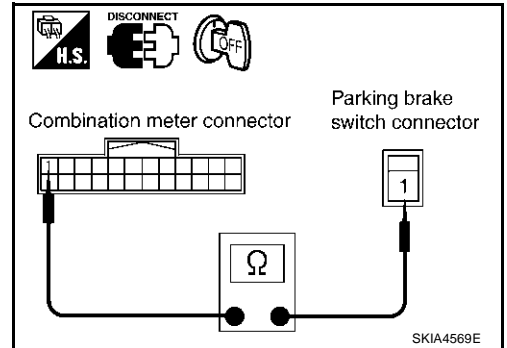
2. CHECK PARKING BRAKE SWITCH CIRCUIT

1. Disconnect parking brake switch connector and combination meter connector.
2. Check continuity between combination meter harness connector M25 terminal 1 (G) and parking brake switch harness connector E112 terminal 1 (G).

Continuity should exist.

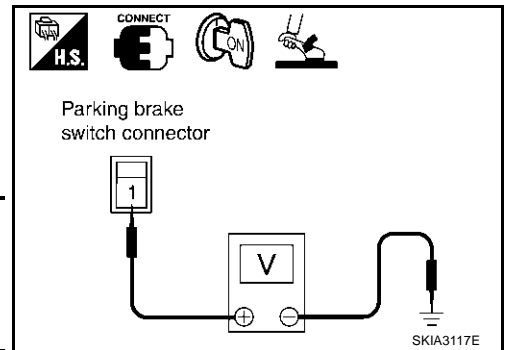
OK or NG

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



3. CHECK PARKING BRAKE SWITCH SIGNAL

1. Connect combination meter connector and parking brake switch connector.
2. Turn ignition switch ON.
3. Check voltage between parking brake switch harness connector and ground, when parking brake is released.



Terminals			Condition	Voltage
(+)		(-)		
Connector	Terminal (Wire color)			
E112	1 (G)	Ground	Not released	Approx. 0V
			Released	Battery voltage

OK or NG

- OK >> INSPECTION END
 NG >> Replace parking brake switch.

DAYTIME LIGHT SYSTEM

CONSULT-II Function

AKS007NO

CONSULT-II performs the following functions communicating with BCM.

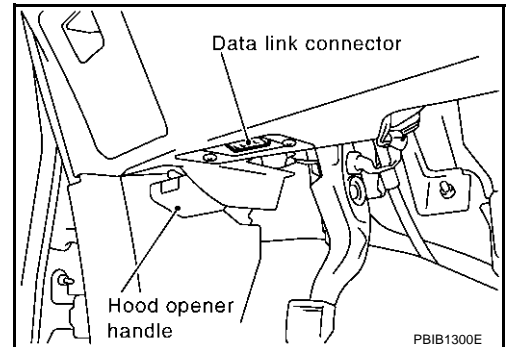
BCM diagnosis part	Check item, diagnosis mode	Description
HEAD LAMP	WORK SUPPORT	Changes the setting for each function.
	DATA MONITOR	Displays BCM input data in real time.
	ACTIVE TEST	Operation of electrical loads can be checked by sending drive signal to them.
BCM C/U	CAN DIAG SUPPORT MNTR	The result of transmit/receive diagnosis of CAN communication can be read.

CONSULT-II BASIC OPERATION

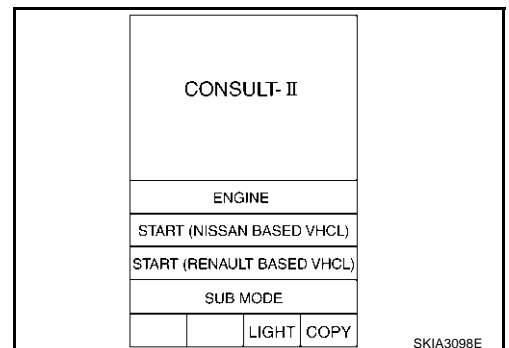
CAUTION:

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

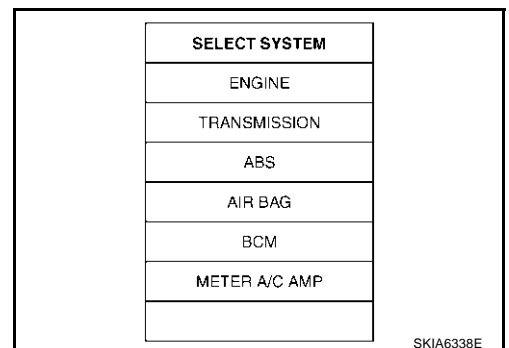
1. With ignition switch OFF, connect CONSULT-II and CONSULT-II CONVERTER to data link connector, then turn ignition switch ON.



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

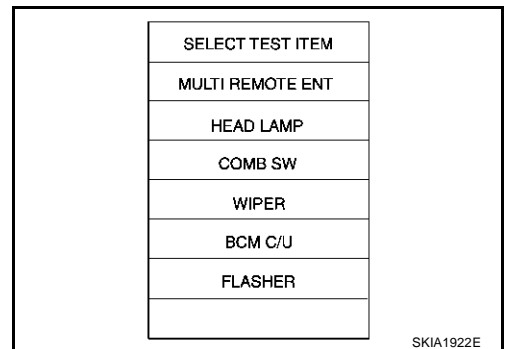


3. Touch "BCM" on "SELECT SYSTEM" screen.
If "BCM" is not indicated, refer to [GI-38, "CONSULT-II Data Link Connector \(DLC\) Circuit"](#).



DAYTIME LIGHT SYSTEM

4. Touch "HEAD LAMP" on "SELECT TEST ITEM" screen.



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WORK SUPPORT

Operation Procedure

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

Display Item List

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

DATA MONITOR

Operation Procedure

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

All signals	Monitors all the signals.
Selection from menu	Selects and monitors individual signal.

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

Display Item List

Monitor item	Contents
IGN ON SW "ON/OFF"	Displays "IGN position (ON)/OFF, ACC position (OFF)" judged from the ignition switch signal.
ACC ON SW "ON/OFF"	Displays "ACC (ON)/OFF, Ignition OFF (OFF)" status judged from ignition switch signal.
AUTO LIGHT SW ^{Note} "ON/OFF"	Displays status of the lighting switch as judged from the lighting switch signal. (AUTO position: ON/Other than AUTO position: OFF)
TAIL LAMP SW "ON/OFF"	Displays status (lighting switch 1st position: ON/Others: OFF) of lighting switch judged from lighting switch signal.
HEAD LAMP SW 1 "ON/OFF"	Displays status (headlamp switch 1: ON/Others: OFF) of headlamp 1 switch judged from lighting switch signal.

DAYTIME LIGHT SYSTEM

Monitor item		Contents
HI BEAM SW	"ON/OFF"	Displays status (high beam switch: ON/Others: OFF) of high beam switch judged from lighting switch signal.
PASSING SW	"ON/OFF"	Displays status (flash-to-pass switch: ON/Others: OFF) of flash-to-pass switch judged from lighting switch signal.
FR FOG SW	"ON/OFF"	Displays status (front fog lamp switch: ON/Others: OFF) of front fog lamp switch judged from lighting switch signal.
DOOR SW - DR	"ON/OFF"	Displays status of the driver door as judged from the driver door switch signal. (Door is open: ON/Door is closed: OFF)
DOOR SW - AS	"ON/OFF"	Displays status of the passenger door as judged from the passenger door switch signal. (Door is open: ON/Door is closed: OFF)
DOOR SW - RR	"ON/OFF"	Displays status of the rear doors as judged from the rear door switch signal. (Door is open: ON/Door is closed: OFF)
HEAD LAMP SW 2	"ON/OFF"	Displays status (headlamp switch 2: ON/Others: OFF) of headlamp switch 2 judged from lighting switch signal.
OPTICAL SENSOR	[0 - 5V]	Displays "ambient light (close to 5V when light/close to 0V when dark)" judged from optical sensor signal.

NOTE:

Vehicles without auto light system display this item, but cannot monitor it.

ACTIVE TEST

Operation Procedure

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

Display Item List

Test item	Description
TAIL LAMP	Allows tail lamp relay to operate by switching ON-OFF.
HEAD LAMP (LOW)	Allows headlamp relay to operate by switching ON-OFF.
HEAD LAMP (HI)	Allows headlamp relay to operate by switching ON-OFF.
FR FOG LAMP	Allows fog lamp relay to operate by switching ON-OFF.

Daytime Light Control Does Not Operate Properly

AKS007NP

1. ACTIVE TEST

1. Select "FR FOG LAMP" during active test. Refer to [LT-136. "ACTIVE TEST"](#).
2. Make sure front fog lamps operation.

Font fog lamps should operate.

OK or NG

- OK >> GO TO 5.
 NG >> GO TO 2.

DAYTIME LIGHT SYSTEM

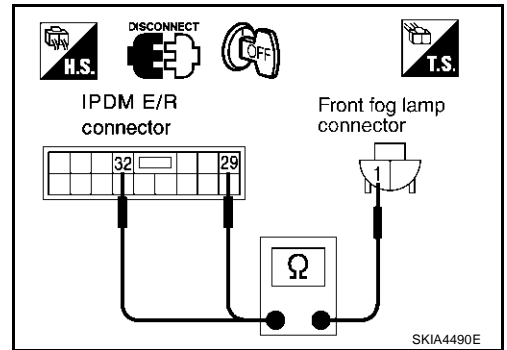
2. CHECK FRONT FOG LAMP CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connector and front fog lamp RH and LH connectors.
3. Check continuity between IPDM E/R harness connector E8 terminal 29 (W/R) and front fog lamp RH harness connector E94 terminal 1 (W/R).

Continuity should exist.

4. Check continuity between IPDM E/R harness connector E8 terminal 32(W/R) and front fog lamp LH harness connector E92 terminal 1(W/R).

Continuity should exist.



OK or NG

OK >> GO TO 3.

NG >> Repair harness or connector.

3. CHECK FRONT FOG LAMP GROUND

1. Check continuity between front fog lamp RH harness connector E94 terminal 2 (B) and ground.

Continuity should exist.

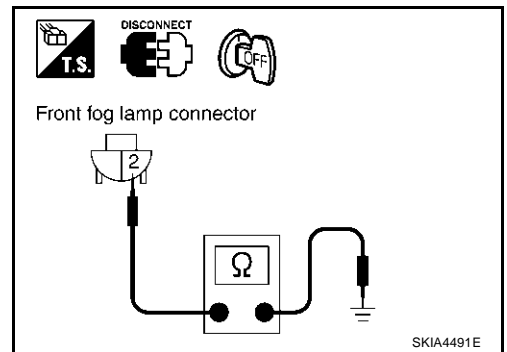
2. Check continuity between front fog lamp LH harness connector E92 terminal 2 (B) and ground.

Continuity should exist.

OK or NG

OK >> GO TO 4.

NG >> Repair harness or connector.



4. CHECK FRONT FOG LAMPS INPUT SIGNAL

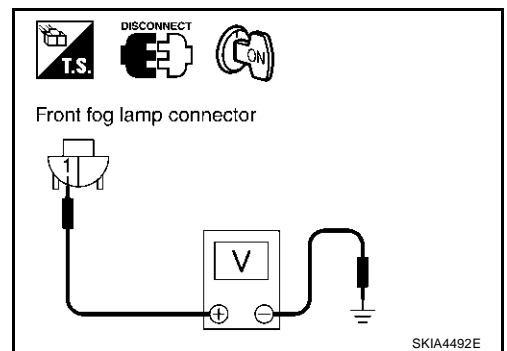
1. Connect IPDM E/R connector.
2. Select "FR FOG LAMP" during active test. Refer to [LT-136](#), "ACTIVE TEST". When front fog lamp relay is operating, check voltage between front fog lamp RH or LH harness connector and ground.

Terminals		Terminal (Wire color)	(-)	Voltage
(+)				
Connector				
RH	E94	1 (W/R)	Ground	Battery voltage
LH	E92			

OK or NG

OK >> Check front fog lamp bulbs.

NG >> Replace IPDM E/R.



DAYTIME LIGHT SYSTEM

5. CHECK SELF-DIAGNOSIS

Select "BCM" on CONSULT-II. Carry out "BCM C/U" self-diagnosis.

Displayed results of self-diagnosis

No malfunction detected>> Replace BCM. Refer to [BCS-36, "Removal and Installation of BCM"](#).

CAN communications or CAN system>> Check BCM CAN communication system. Refer to [BCS-34, "CAN Communication Inspection Using CONSULT-II \(Self-Diagnosis\)"](#).

SELF-DIAG RESULTS	
DTC RESULTS	TIME
NO DTC IS DETECTED. FURTHER TESTING MAY BE REQUIRED	

LKIA0073E

Front Fog Lamp Does Not Illuminate (One Side)

1. CHECK BULB

Inspect bulb of lamp which do not illuminate.

OK or NG

OK >> GO TO 2.

NG >> Replace front fog lamp bulb.

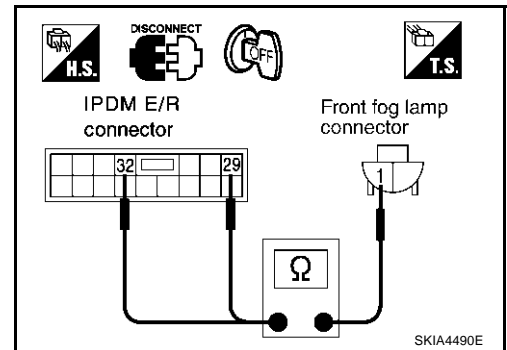
2. CHECK FRONT FOG LAMP CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connector and front fog lamp connector RH or LH.
3. Check continuity between IPDM E/R harness connector E8 terminal 29 (W/R) and front fog lamp RH harness connector E94 terminal 1 (W/R).

Continuity should exist.

4. Check continuity between IPDM E/R harness connector E8 terminal 32 (W/R) and front fog lamp LH harness connector E92 terminal 1 (W/R).

Continuity should exist.



OK or NG

OK >> GO TO 3.

NG >> Repair harness or connector.

3. CHECK FRONT FOG LAMP GROUND

1. Check continuity between front fog lamp RH harness connector E94 terminal 2 (B) and ground.

Continuity should exist.

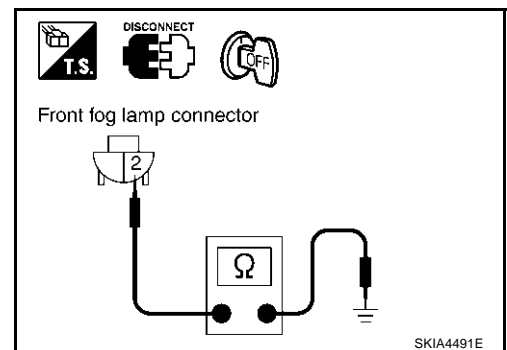
2. Check continuity between front fog lamp LH harness connector E92 terminal 2 (B) and ground.

Continuity should exist.

OK or NG

OK >> Replace IPDM E/R.

NG >> Repair harness or connector.



DAYTIME LIGHT SYSTEM

Aiming Adjustment

AKS007NR

A

Refer to [LT-211, "Aiming Adjustment"](#) in "FRONT FOG LAMP".

Bulb Replacement

AKS007NS

B

Refer to [LT-212, "Bulb Replacement"](#) in "FRONT FOG LAMP".

Removal and Installation

AKS007NT

C

Refer to [LT-212, "Removal and Installation"](#) in "FRONT FOG LAMP".

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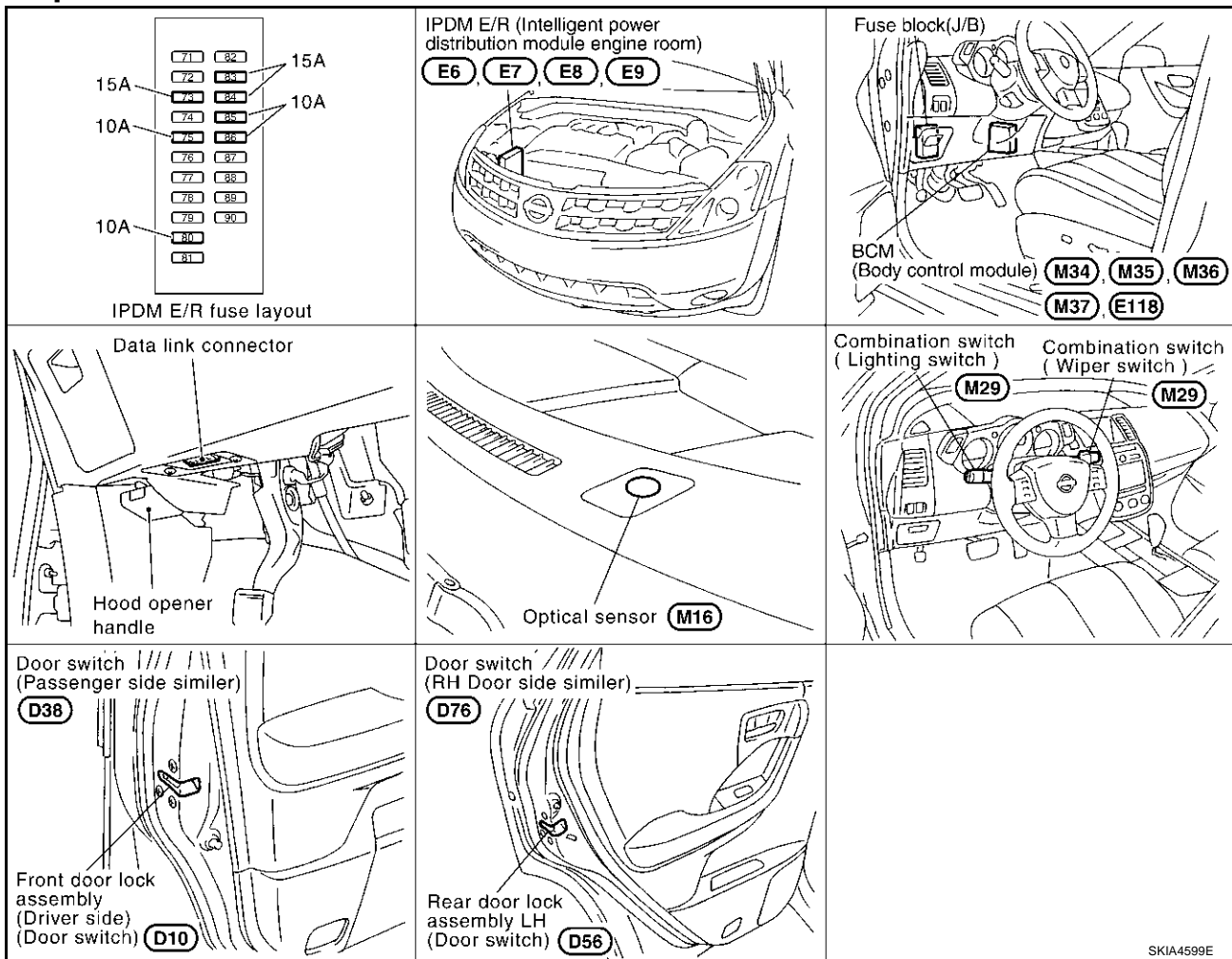
AUTO LIGHT SYSTEM

AUTO LIGHT SYSTEM

PFP:28491

Component Parts and Harness Connector Location

AKS004JH



SKIA4599E

System Description

AKS004JI

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

OUTLINE

The auto light control system has an optical sensor inside it that detects outside brightness. When the lighting switch is in "AUTO" position, it automatically turns on/off the parking lamps and the headlamps in accordance with the ambient light. Sensitivity can be adjusted in four steps. For the details of the setting, Refer to [LT-171. "SETTING CHANGE FUNCTIONS"](#).

Optical sensor, power is supplied

- from BCM (body control module) terminal 45
- to optical sensor terminal 1.

Optical sensor, ground is supplied

- from BCM (body control module) terminal 53
- to optical sensor terminal 3.

When ignition switch is turn to "ON" position, and

When outside brightness is darker than prescribed level, input is supplied

- to BCM (body control module) terminal 38
- from optical sensor terminal 2.

The headlamps will then illuminate. For a description of headlamp operation, Refer to [LT-140. "System Description"](#).

AUTO LIGHT SYSTEM

COMBINATION SWITCH READING FUNCTION

Refer to [LT-251, "Combination Switch Reading Function"](#) .

EXTERIOR LAMP BATTERY SAVER CONTROL

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

SHUT OFF DELAY

When ignition switch is in the state of ON or ACC and a lighting switch is an AUTO position, after OFF and a door switch (a driver, passenger) serve as ON from the state of ON of headlamp in an ignition switch, a headlamp is turned on for 5 minutes, and headlamp, parking lamp, and fog lamp are set OFF after that.

When a door switch (a driver, passenger) is turned on from OFF during 45 seconds or a 5 minute timer operation, the present timer stops, newly turns on a headlamp for 5 minutes, and sets headlamp, parking lamp, and fog lamp to OFF after that.

When a door switch (a driver, passenger) is turned off from ON during 45 seconds or a 5 minute timer operation, the present timer stops, newly turns on a headlamp for 45 seconds, and sets a headlamp, parking lamp, and fog lamp to OFF after that.

When an ignition switch is turned off from ON during the above mentioned timer operation, the function, which stopped the timer and followed each lighting switch, is performed.

Shut off delay control mode can be changed by the function setting of CONSULT-II.

CAN Communication System Description

AKS004JU

CAN (Controller Area Network) is a serial communication line for real time application. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Many electronic control units are equipped onto a vehicle, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN H line, CAN L line) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.

CAN Communication Unit For 2WD Models

AKS007QR

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				×		×	×	×				×		×	×	×

AUTO LIGHT SYSTEM

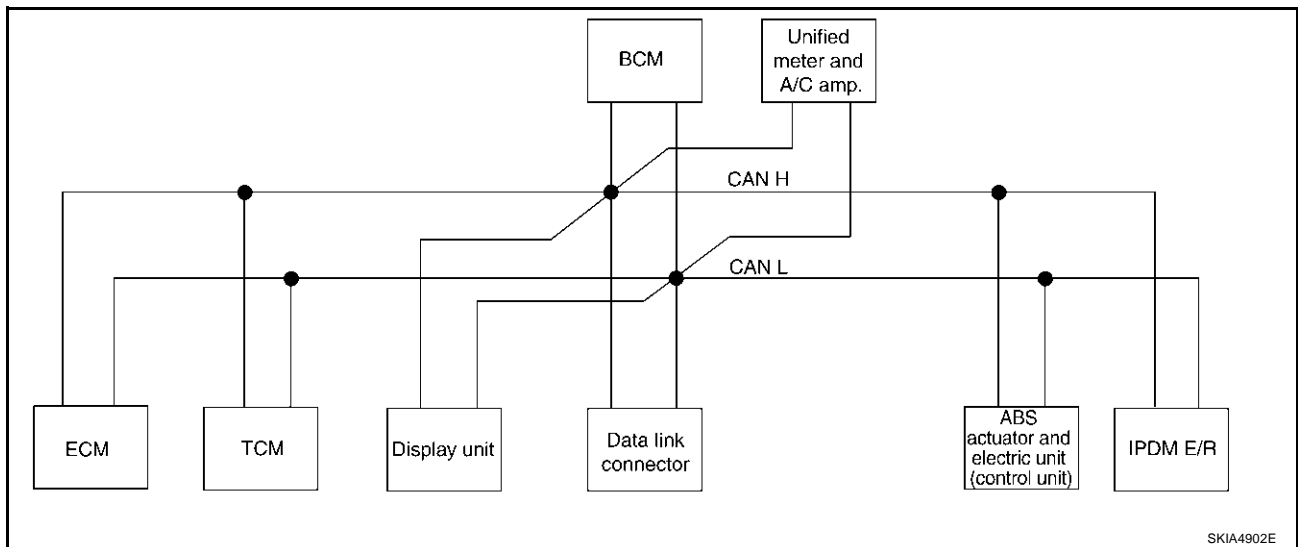
Body type	Wagon															
Axle	2WD															
Engine	VQ35DE															
Transmission	CVT															
Brake control	ABS							VDC								
Low tire pressure warning system		×			×	×		×		×			×	×		×
Navigation system			×		×		×	×			×		×		×	×
Automatic drive positioner				×		×	×	×				×		×	×	×
CAN communication unit																
ABS actuator and electric unit (control unit)	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×
IPDM E/R	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×
CAN communication type	<u>LT-142. "TYPE 1/TYPE 2/TYPE 3/TYPE 4/TYPE 5/TYPE 6/TYPE 7/TYPE 8"</u>								<u>LT-148. "TYPE 9/TYPE 10/TYPE 11/TYPE 12/TYPE 13/TYPE 14/TYPE 15/TYPE 16"</u>							

×: Applicable

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

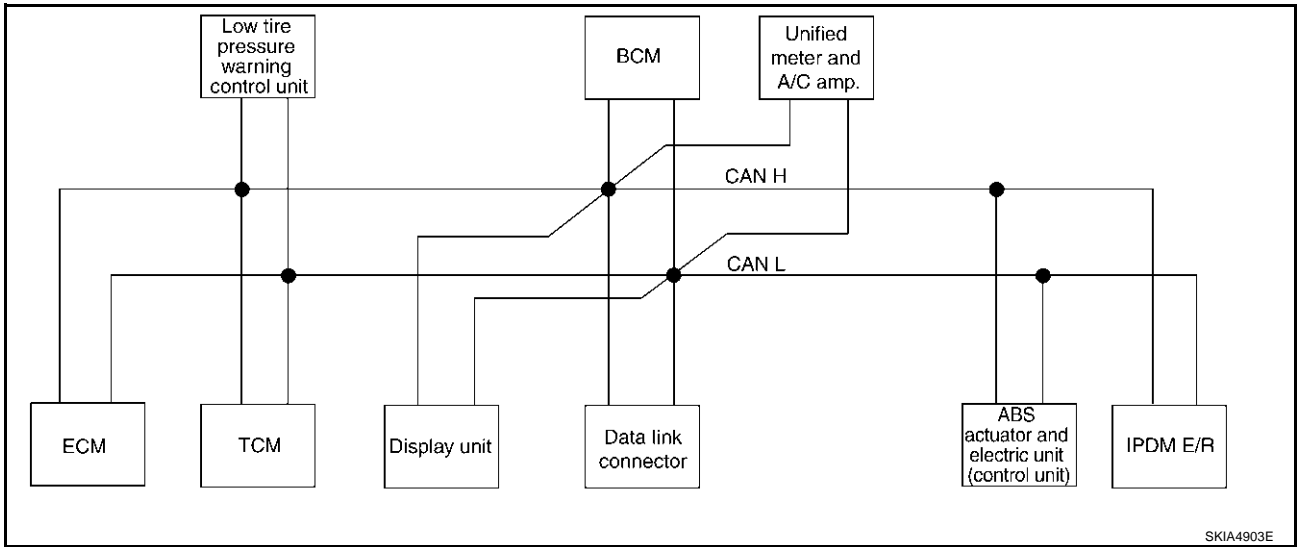
System Diagram

- Type1

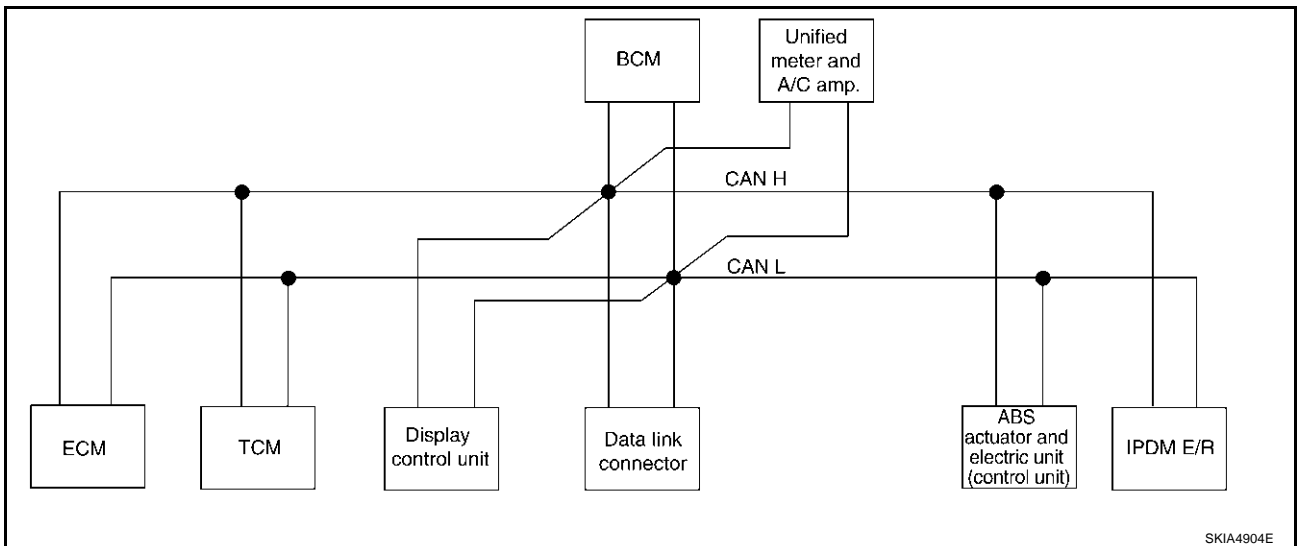


AUTO LIGHT SYSTEM

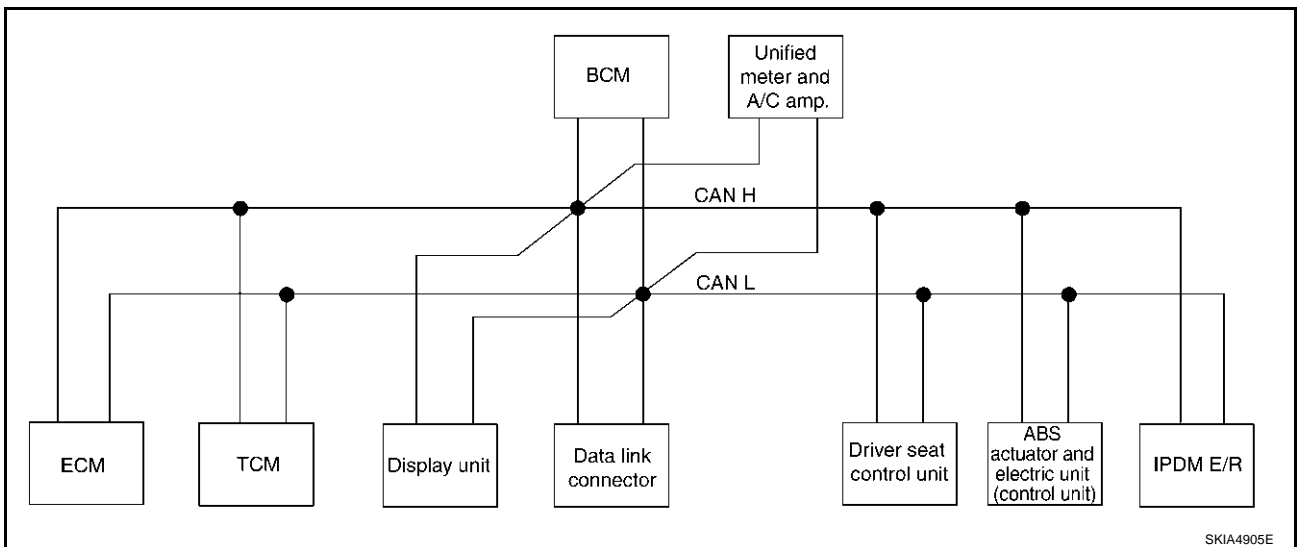
- Type2



- Type3



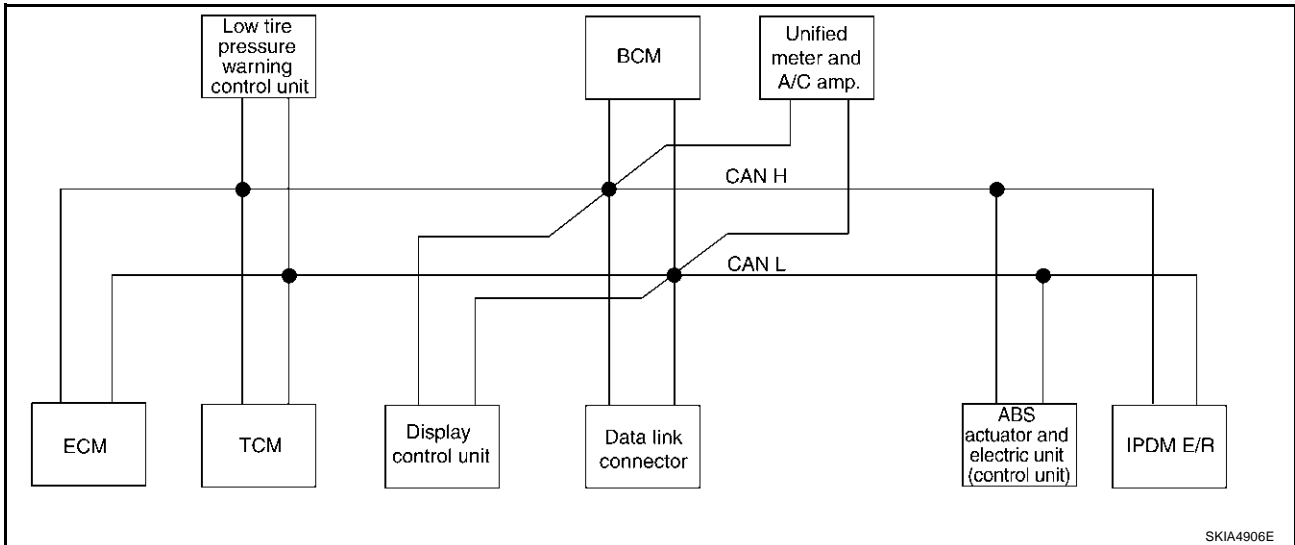
- Type4



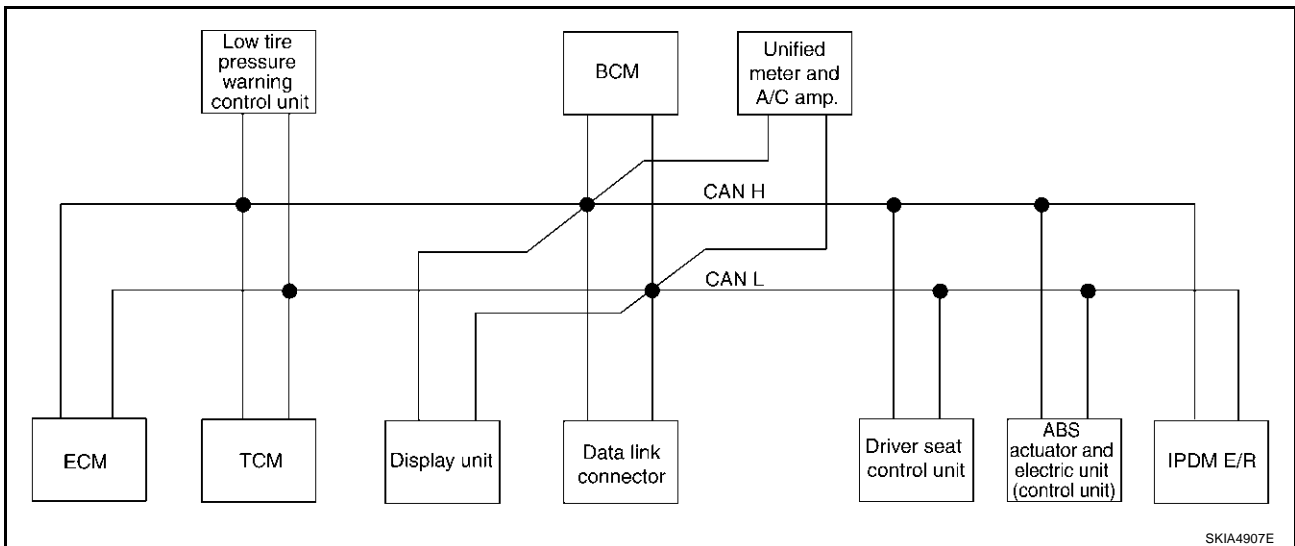
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AUTO LIGHT SYSTEM

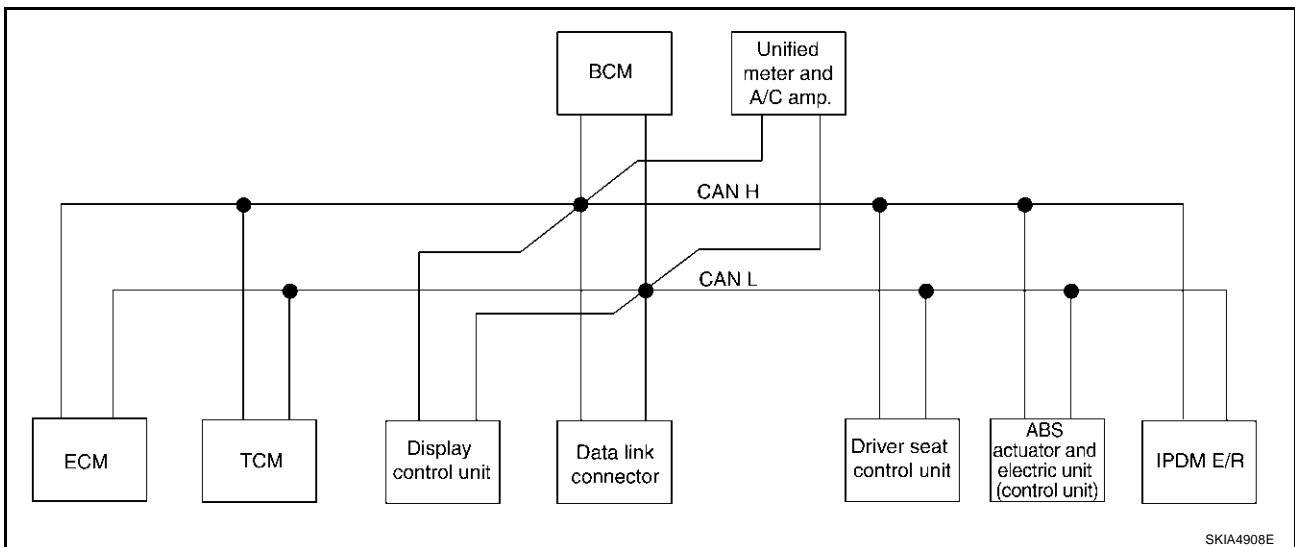
- Type5



- Type6

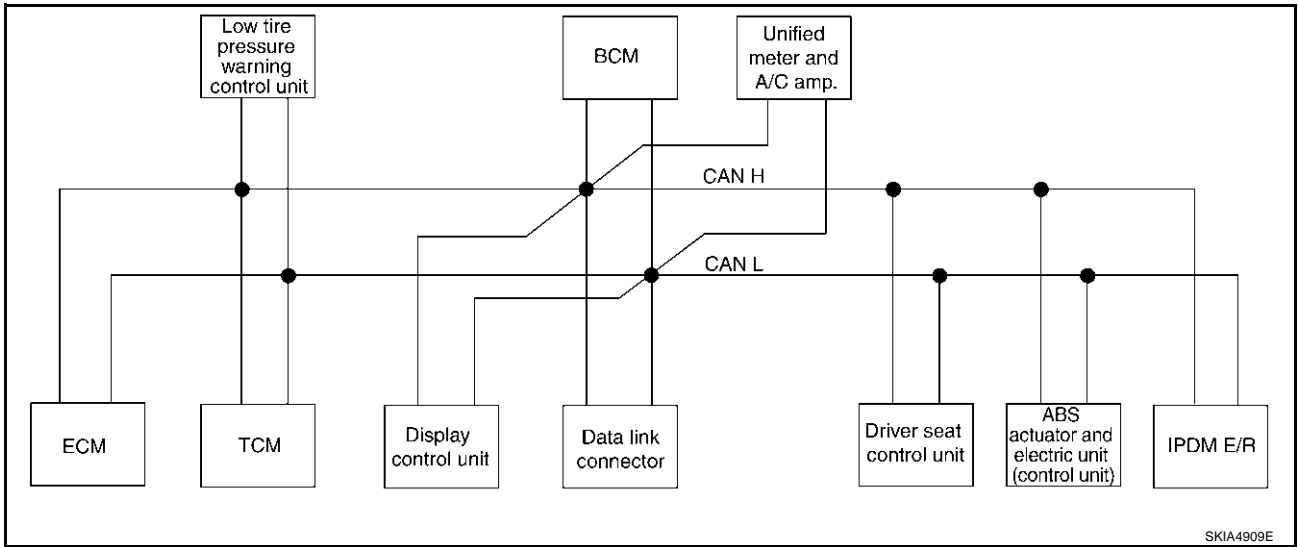


- Type7



AUTO LIGHT SYSTEM

- Type8



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AUTO LIGHT SYSTEM

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			

AUTO LIGHT SYSTEM

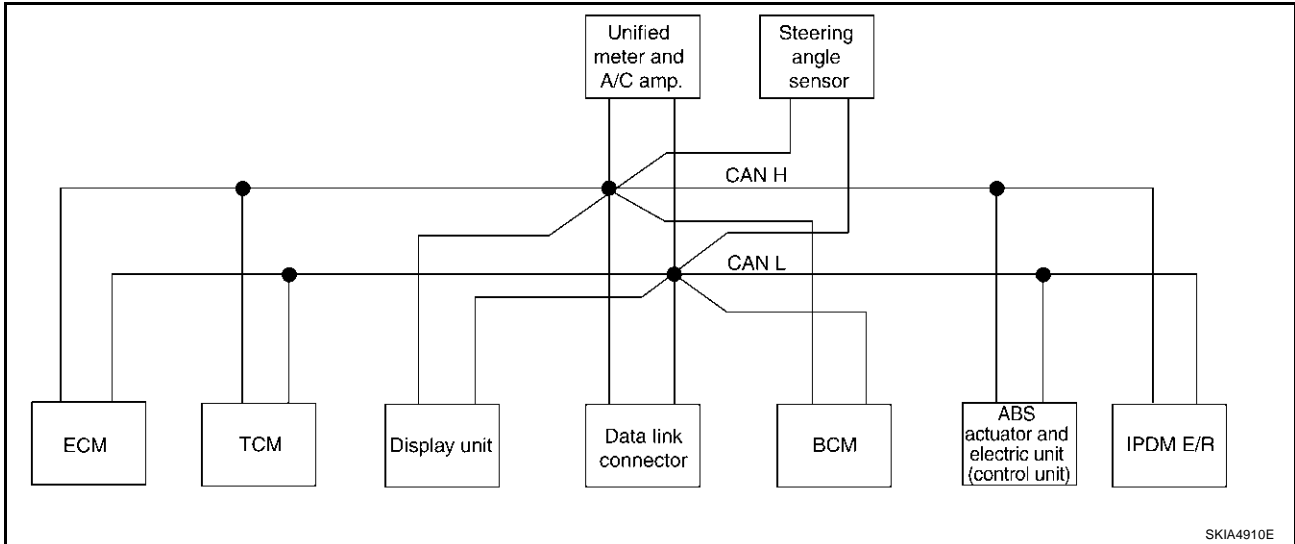
Signals	ECM	TCM	Low tire pressure warning control unit	Display unit	Display control unit	BCM	Unified meter and A/C amp.	Driver seat control unit	ABS actuator and electric unit (control unit)	IPDM E/R	
Key fob ID signal						T		R			A
Key fob door unlock signal						T		R			B
Seat belt buckle switch signal						R	T				C
Oil pressure switch signal						R				T	D
						T	R				E
Buzzer output signal						T	R				E
Fuel level sensor signal	R						T				F
Fuel level low warning signal				R	R		T				F
Malfunction indicator lamp signal	T						R				F
ASCD SET lamp signal	T						R				G
ASCD CRUISE lamp signal	T						R				G
Input shaft revolution signal	R	T									H
Output shaft revolution signal	R	T									H
Front wiper request signal						T				R	H
Front wiper stop position signal						R				T	I
Rear window defogger switch signal						T				R	I
Rear window defogger control signal	R			R	R					T	J
Hood switch signal						R				T	J
Theft warning horn request signal						T				R	J
Horn chirp signal						T				R	J
Tire pressure signal			T				R				LT
Tire pressure data signal			T	R	R						LT
ABS warning lamp signal							R		T		L
Brake warning lamp signal							R		T		L
System setting signal				T	T			R			L
Parking brake switch signal						R	T				M

AUTO LIGHT SYSTEM

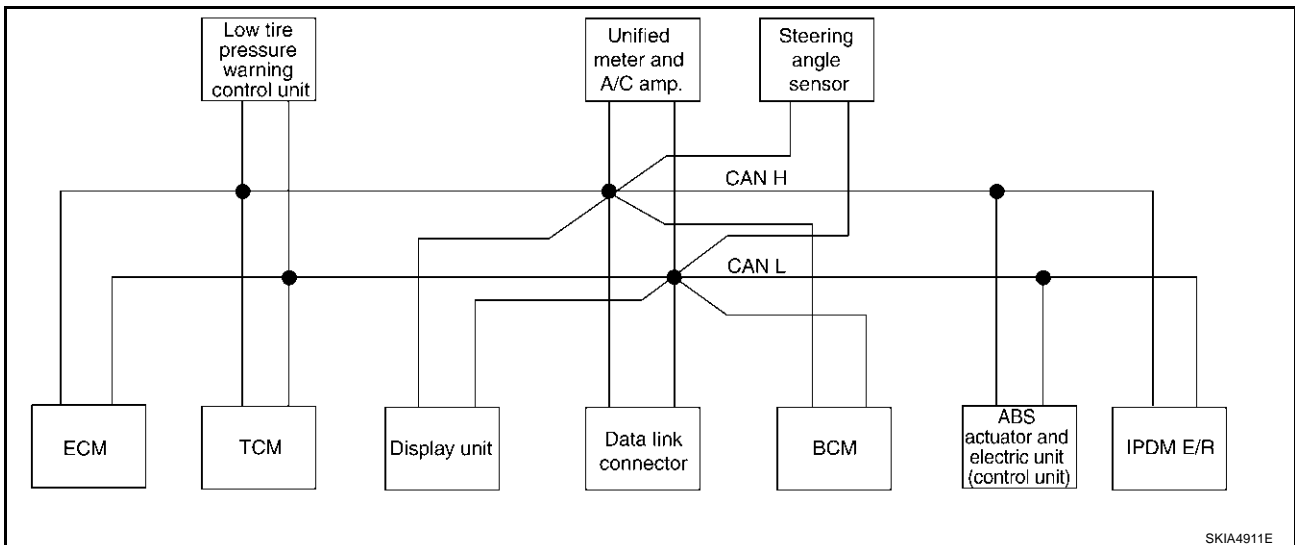
TYPE 9/TYPE10/TYPE 11/TYPE 12/TYPE 13/TYPE 14/TYPE 15/TYPE 16

System Diagram

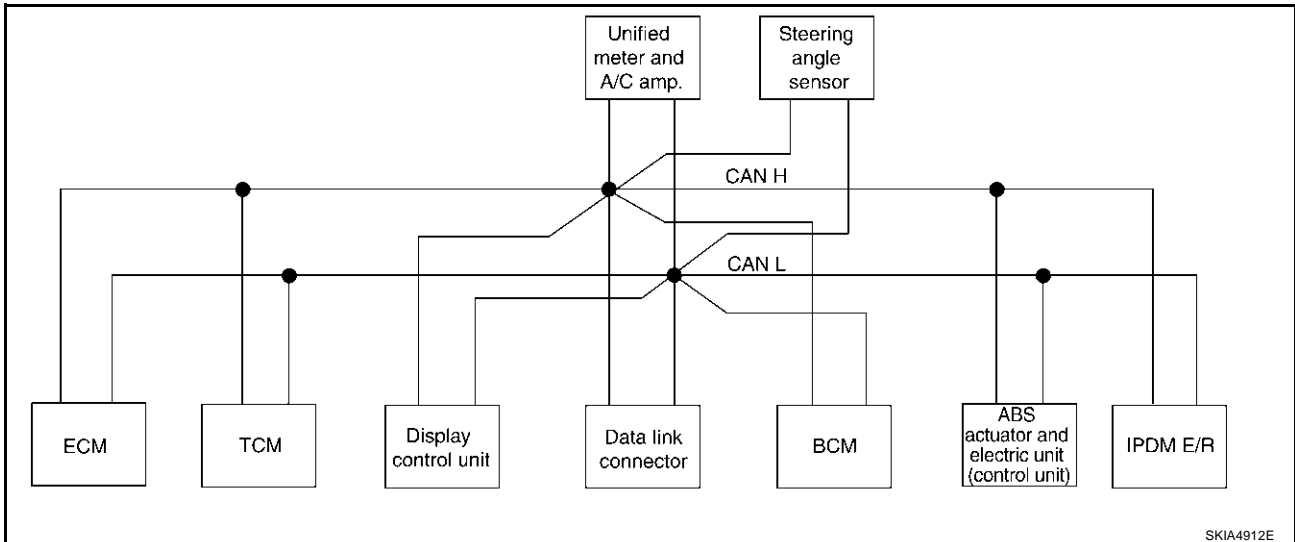
- Type9



- Type10

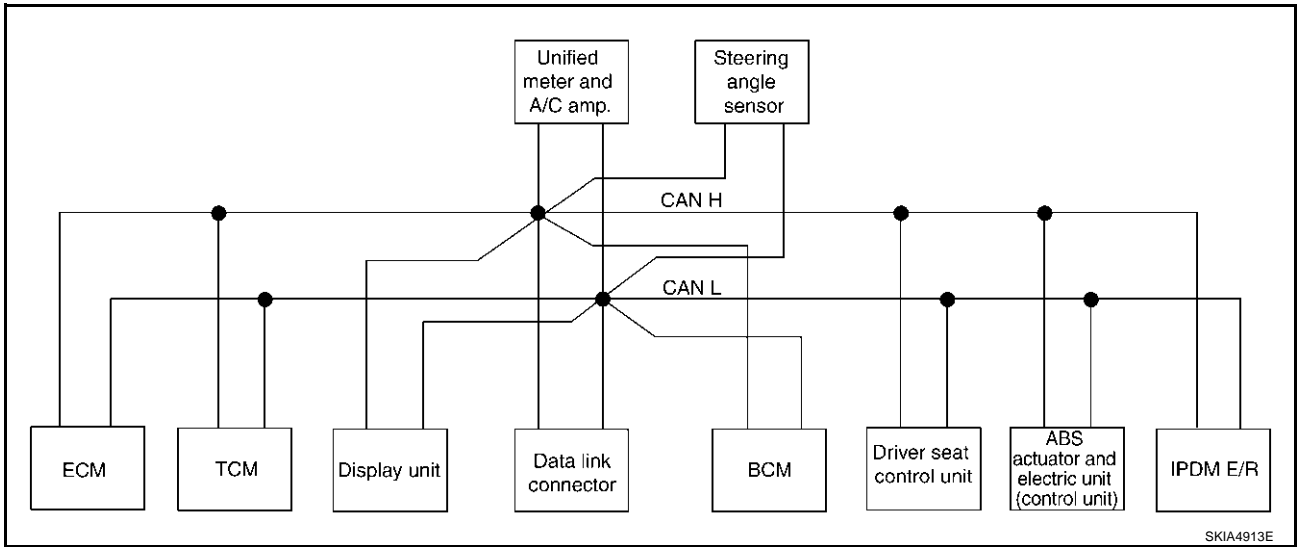


- Type11

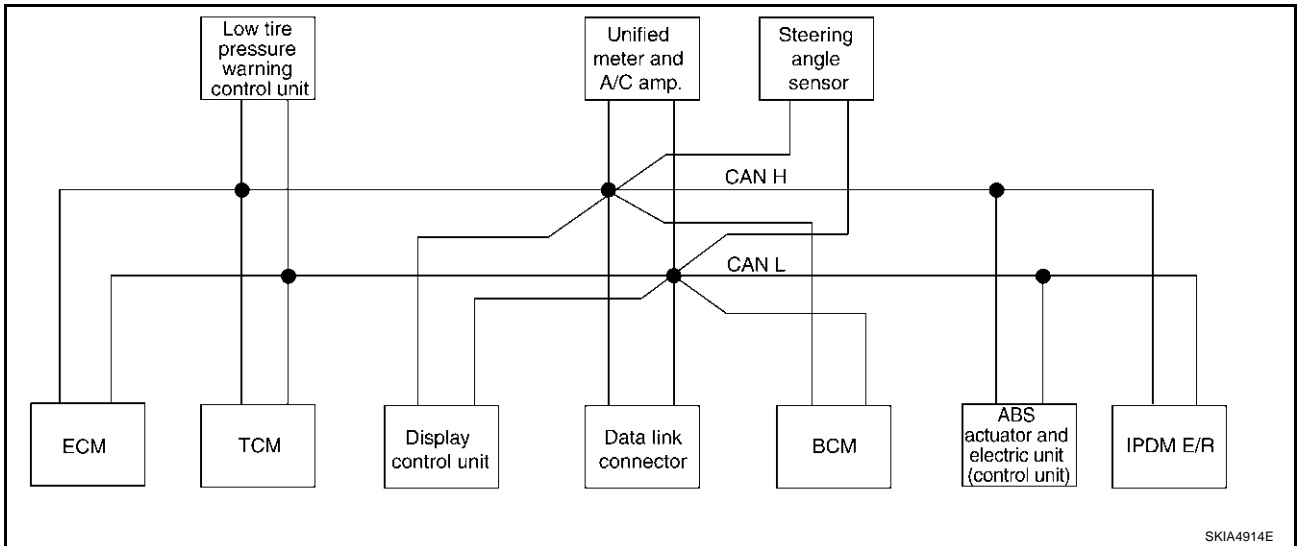


AUTO LIGHT SYSTEM

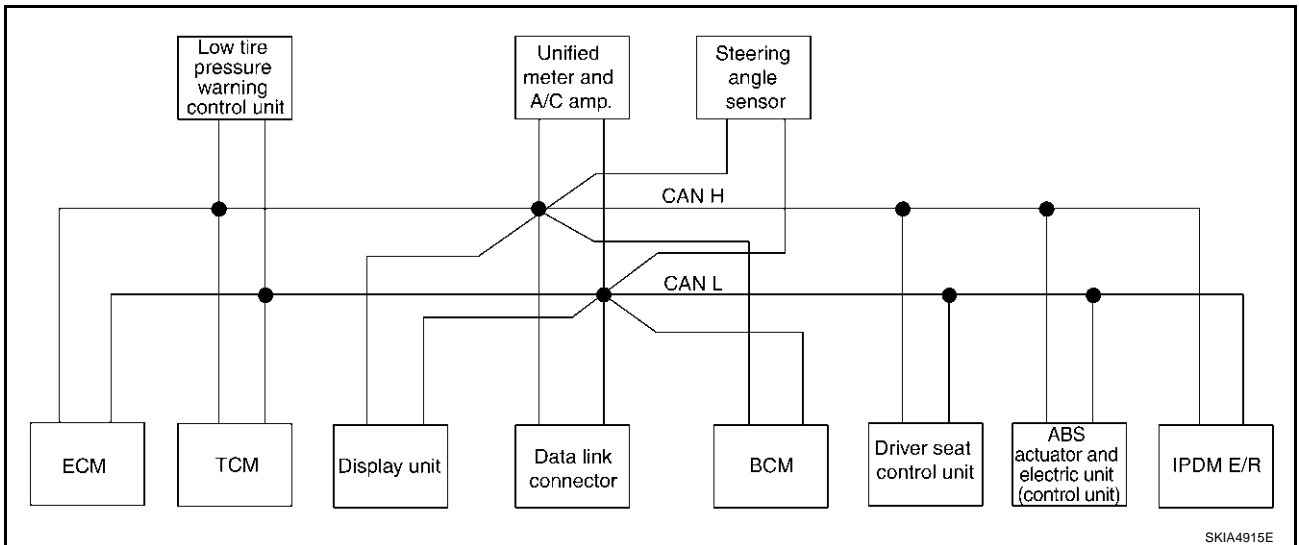
- Type12



- Type13



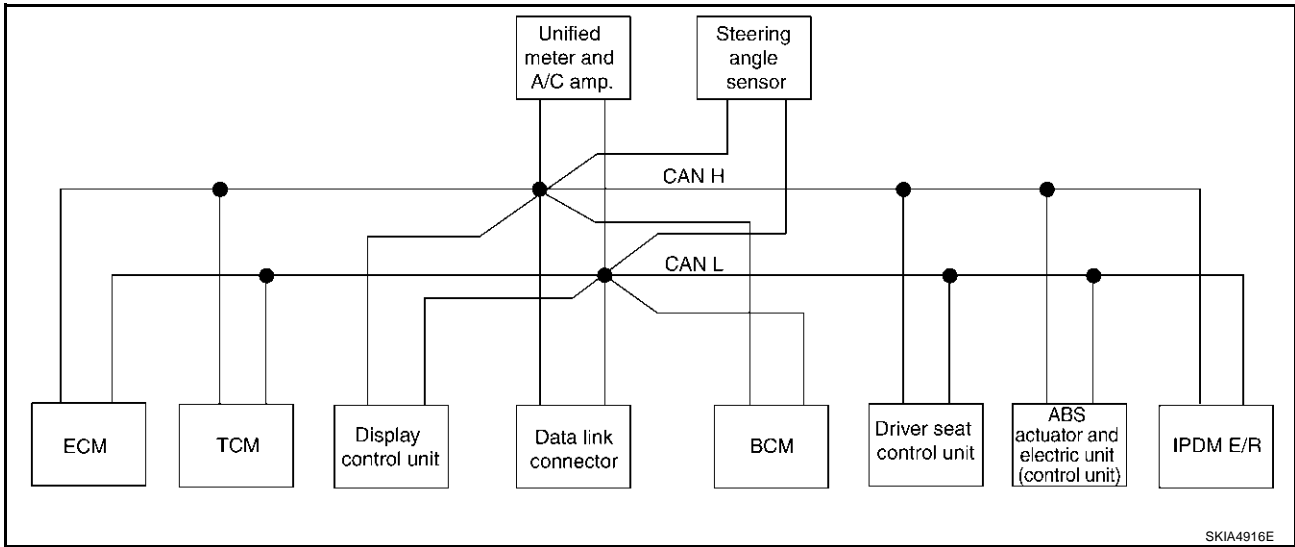
- Type14



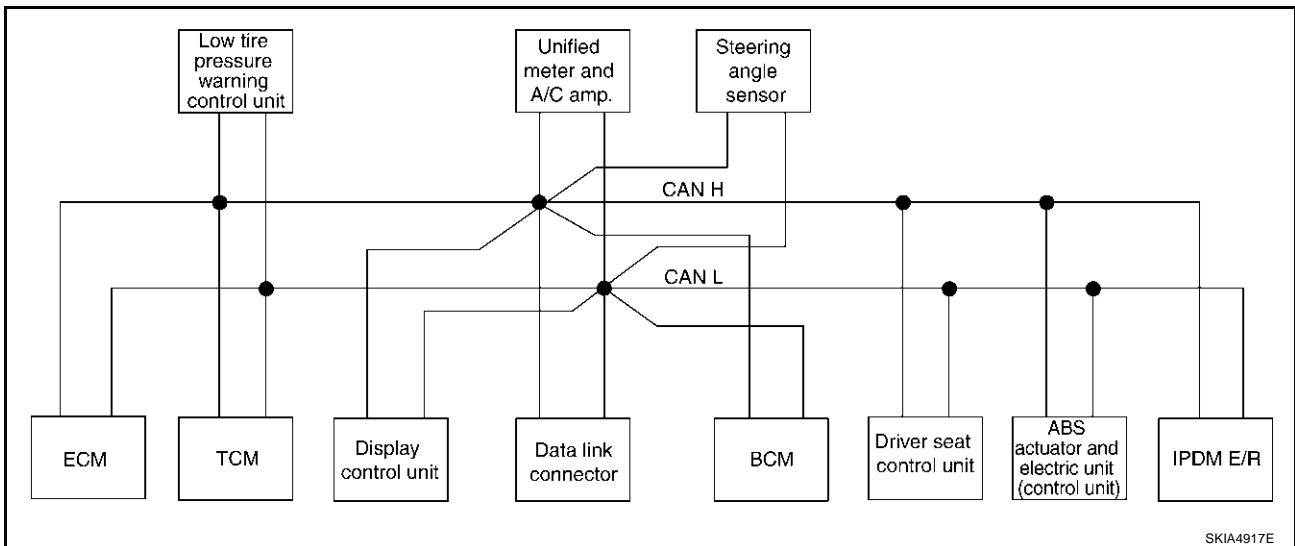
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AUTO LIGHT SYSTEM

- Type15



- Type16



AUTO LIGHT SYSTEM

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

AUTO LIGHT SYSTEM

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				
Turn indicator signal				R	R	T	R		R		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
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				

AUTO LIGHT SYSTEM

CAN Communication Unit For AWD Models

AKS007QS

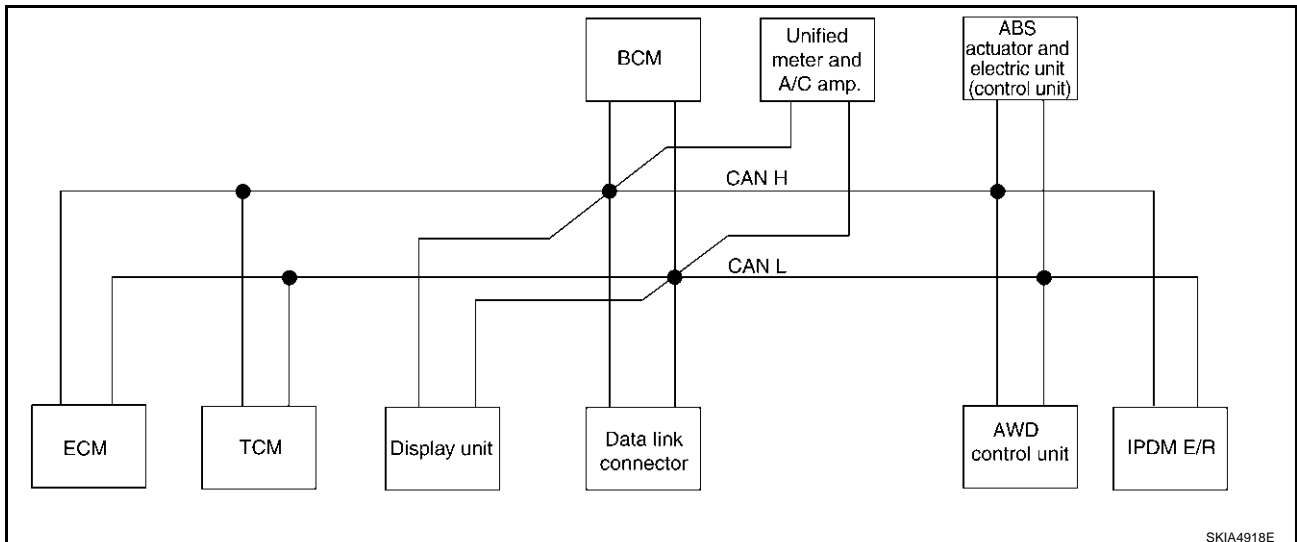
Body type	Wagon															
Axle	AWD															
Engine	VQ35DE															
Transmission	CVT															
Brake control	ABS							VDC								
Low tire pressure warning system		×			×	×		×		×			×	×		×
Navigation system			×		×		×	×			×		×		×	×
Automatic drive positioner				×		×	×	×				×		×	×	×
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	<u>LT-153. "TYPE 17/TYPE 18/TYPE 19/TYPE 20/TYPE 21/TYPE 22/TYPE 23/TYPE 24"</u>								<u>LT-159. "TYPE 25/TYPE 26/TYPE 27/TYPE 28/TYPE 29/TYPE 30/TYPE 31/TYPE 32"</u>							

×: Applicable

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

System Diagram

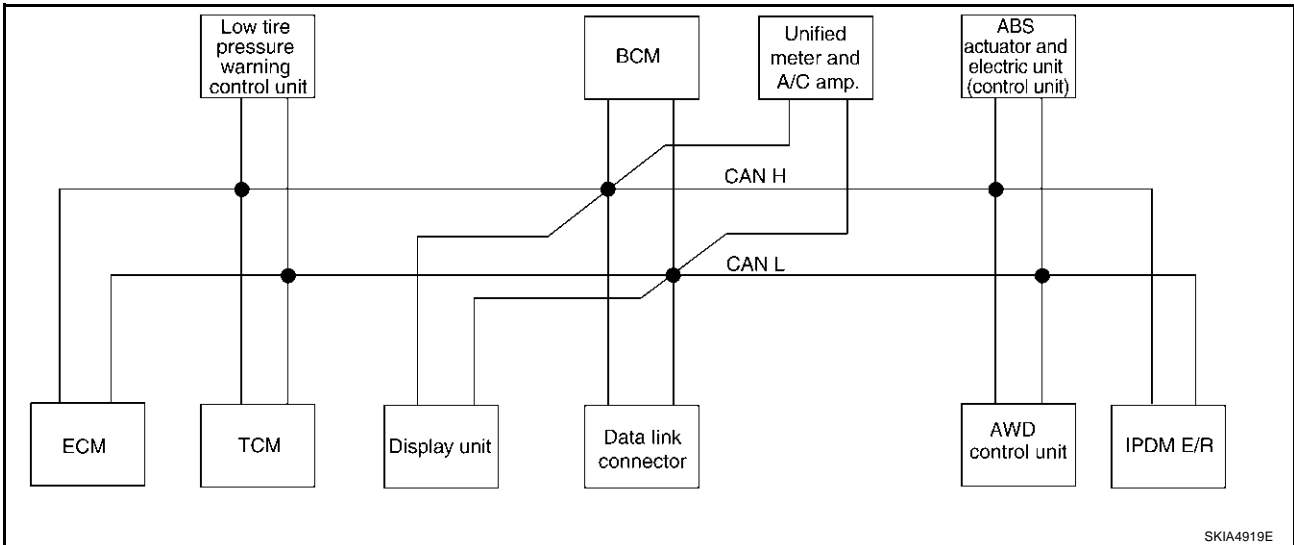
- Type17



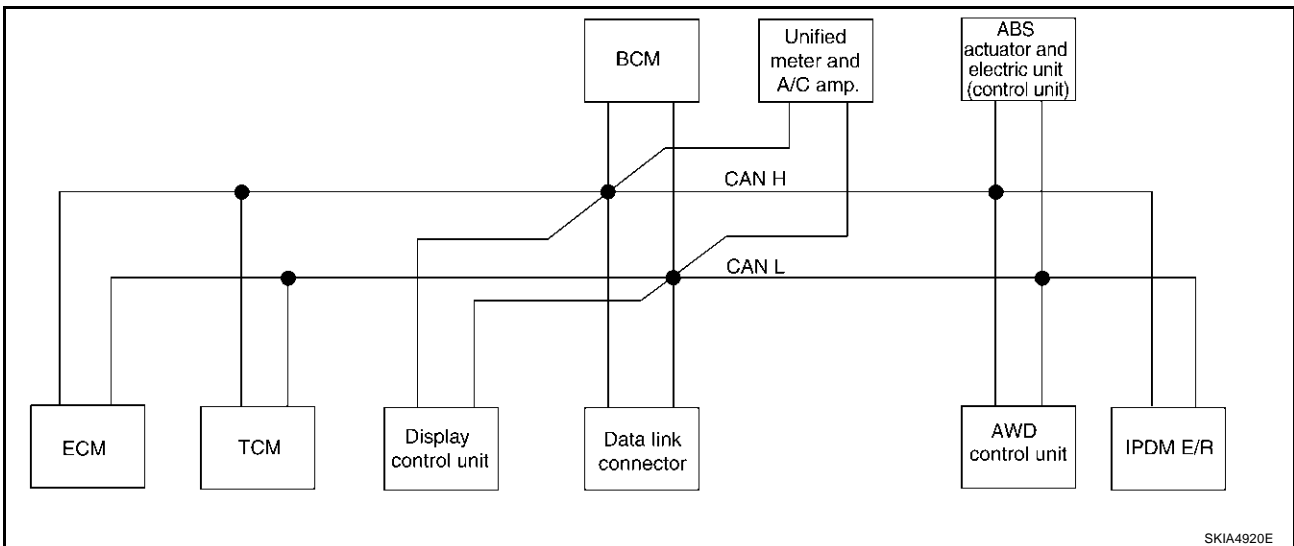
SKIA4918E

AUTO LIGHT SYSTEM

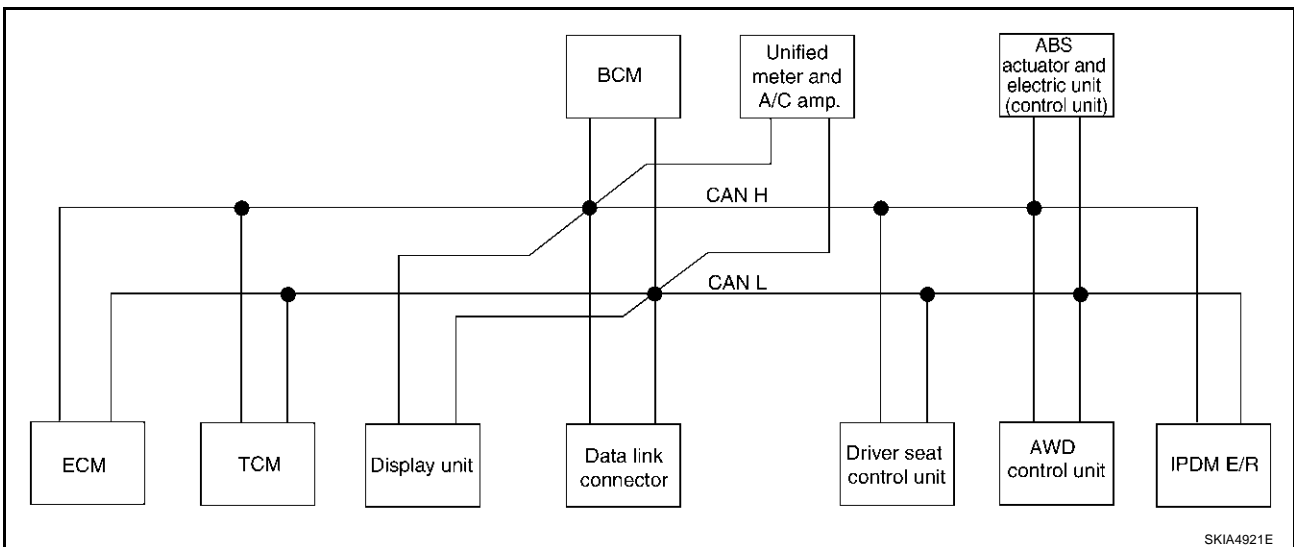
- Type18



- Type19

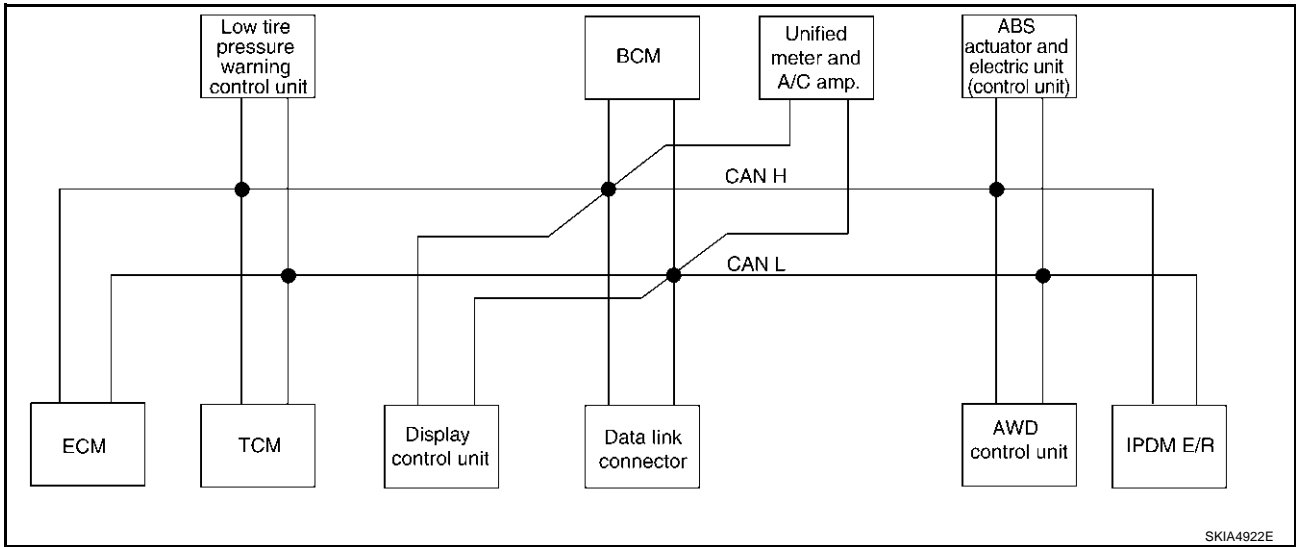


- Type20

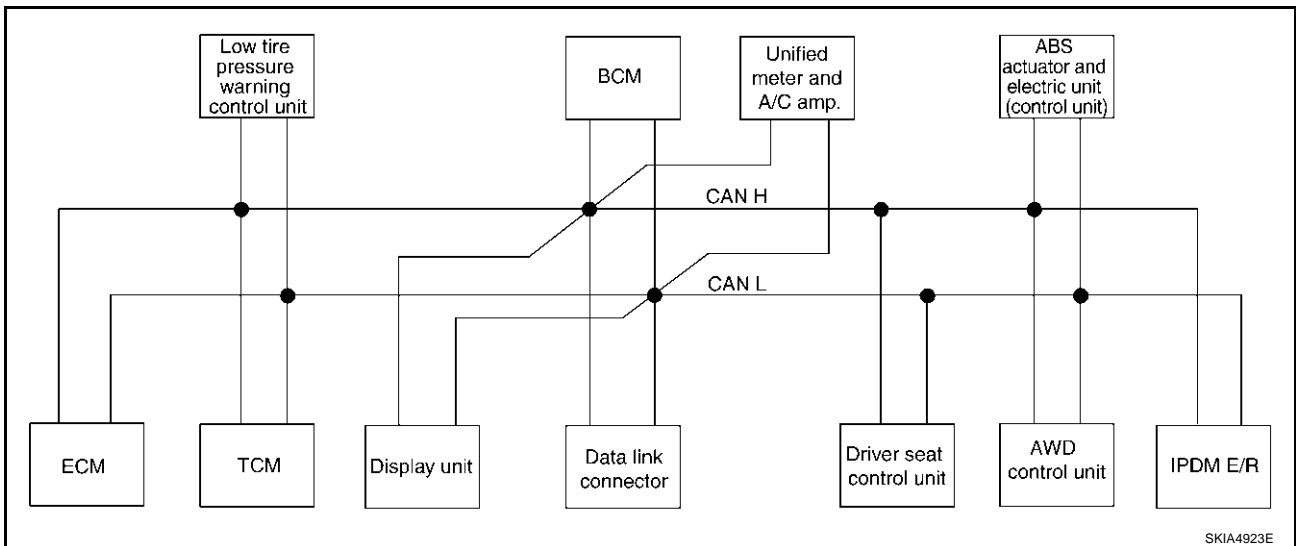


AUTO LIGHT SYSTEM

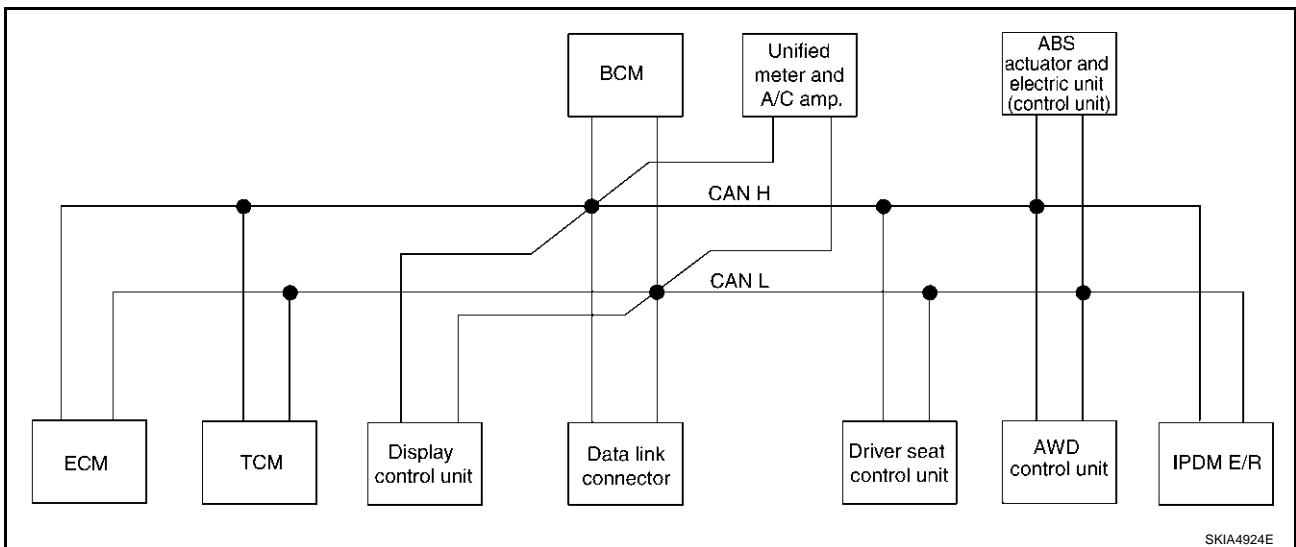
- Type21



- Type22



- Type23

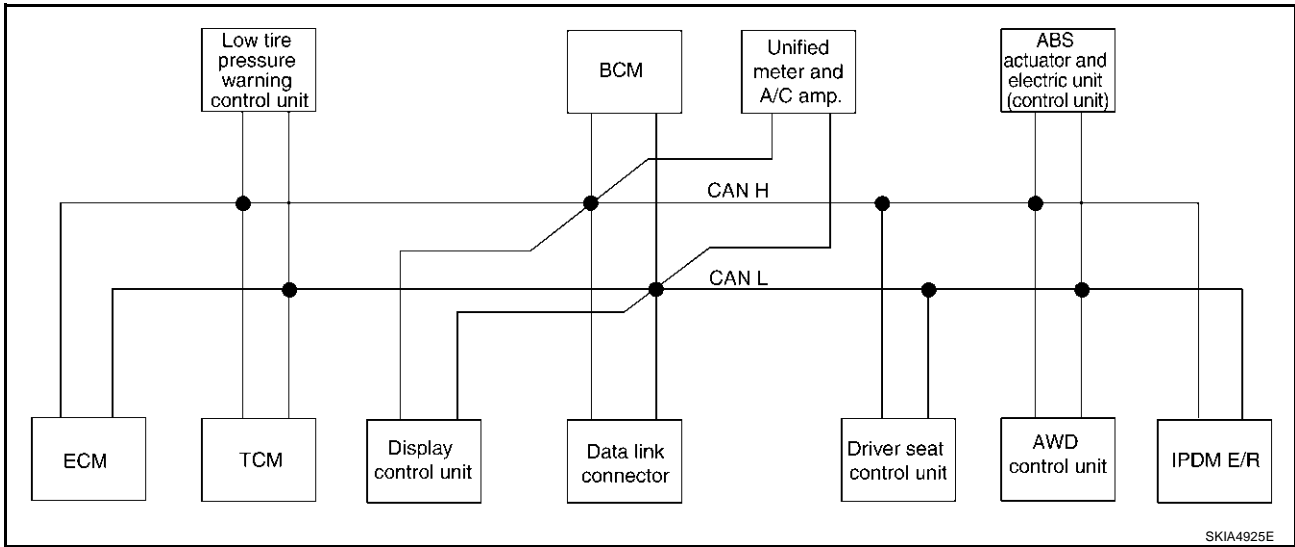


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AUTO LIGHT SYSTEM

- Type24



AUTO LIGHT SYSTEM

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			

AUTO LIGHT SYSTEM

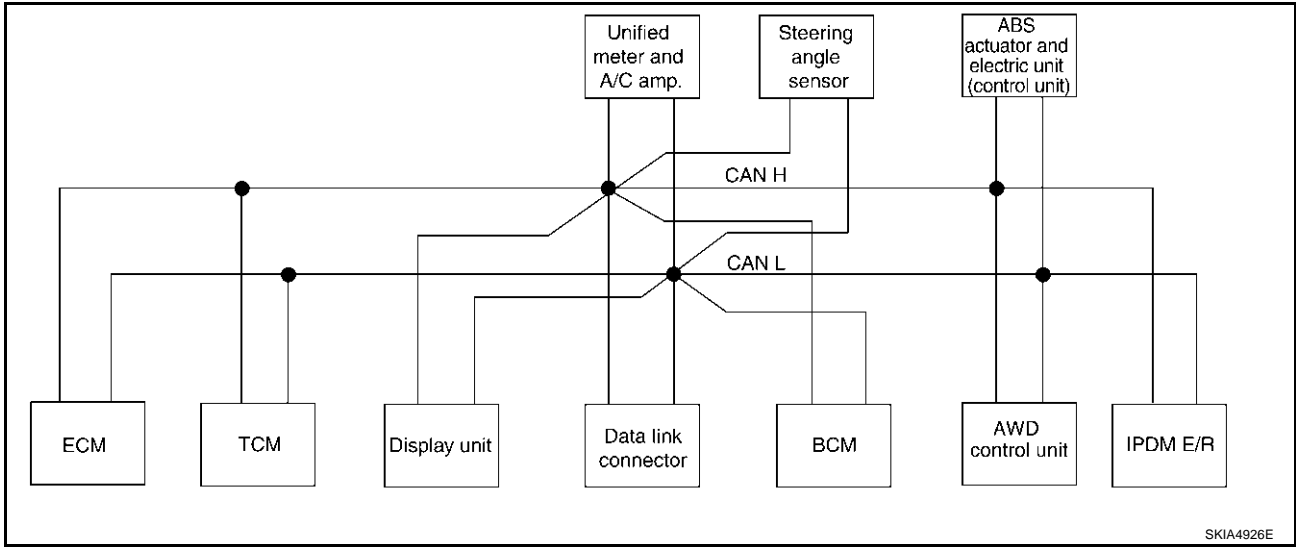
Signals	ECM	TCM	Low tire pressure warning control unit	Display unit	Display control unit	BCM	Unified meter and A/C amp.	Driver seat control unit	AWD control unit	ABS actuator and electric unit (control unit)	IPDM E/R
Turn indicator signal						T	R				
Seat belt buckle switch signal						R	T				
Oil pressure 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		

AUTO LIGHT SYSTEM

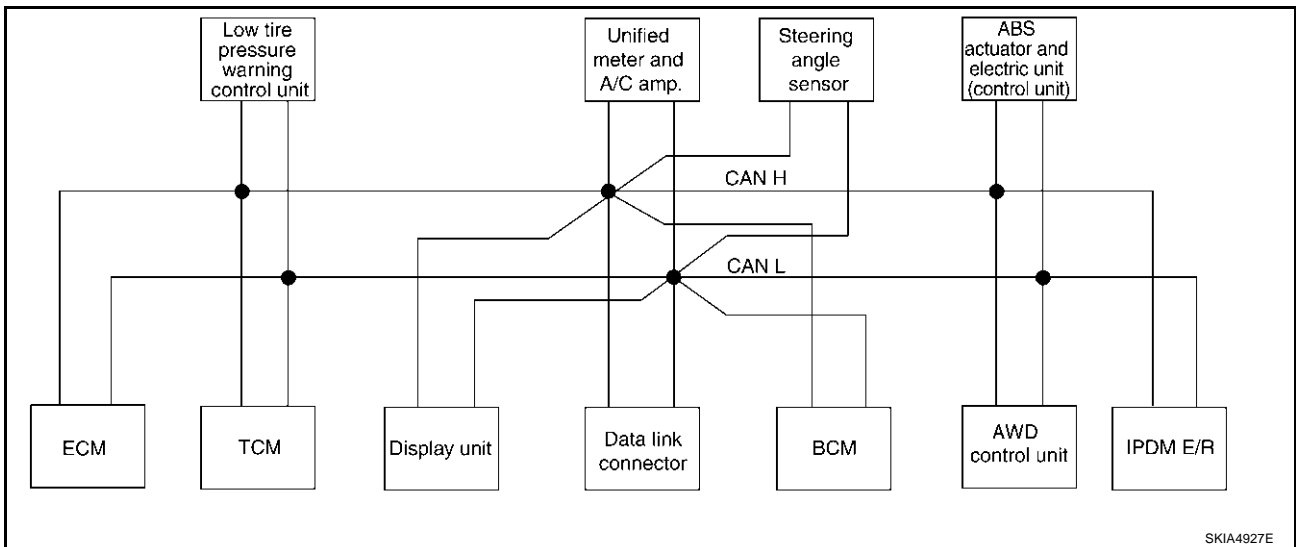
TYPE 25/TYPER26/TYPER 27/TYPER 28/TYPER 29/TYPER 30/TYPER 31/TYPER 32

System Diagram

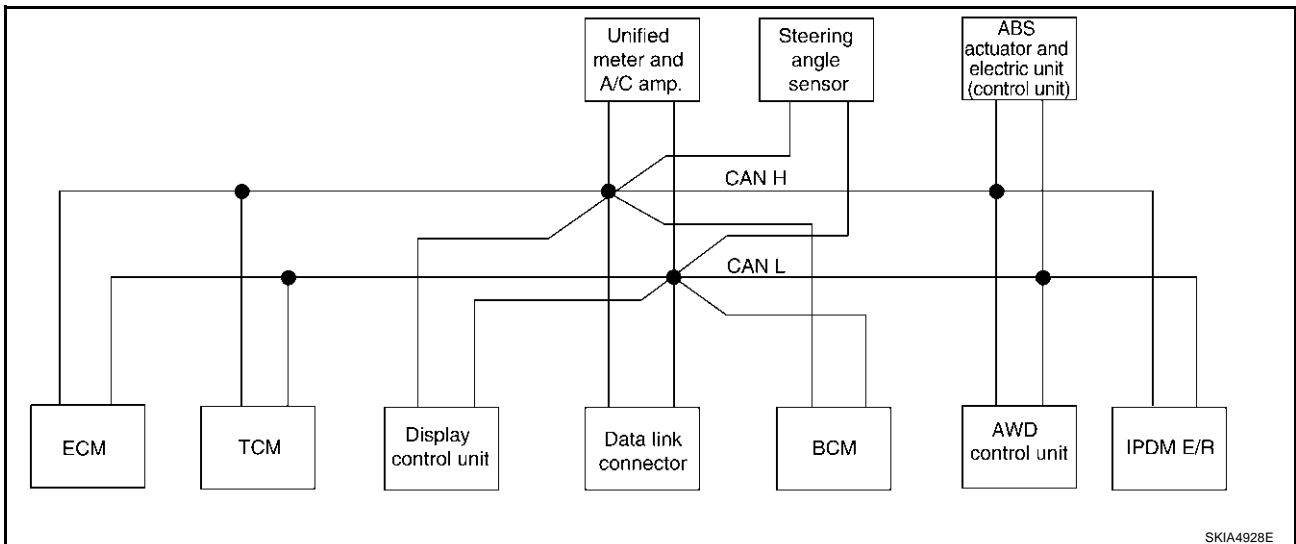
- Type25



- Type26



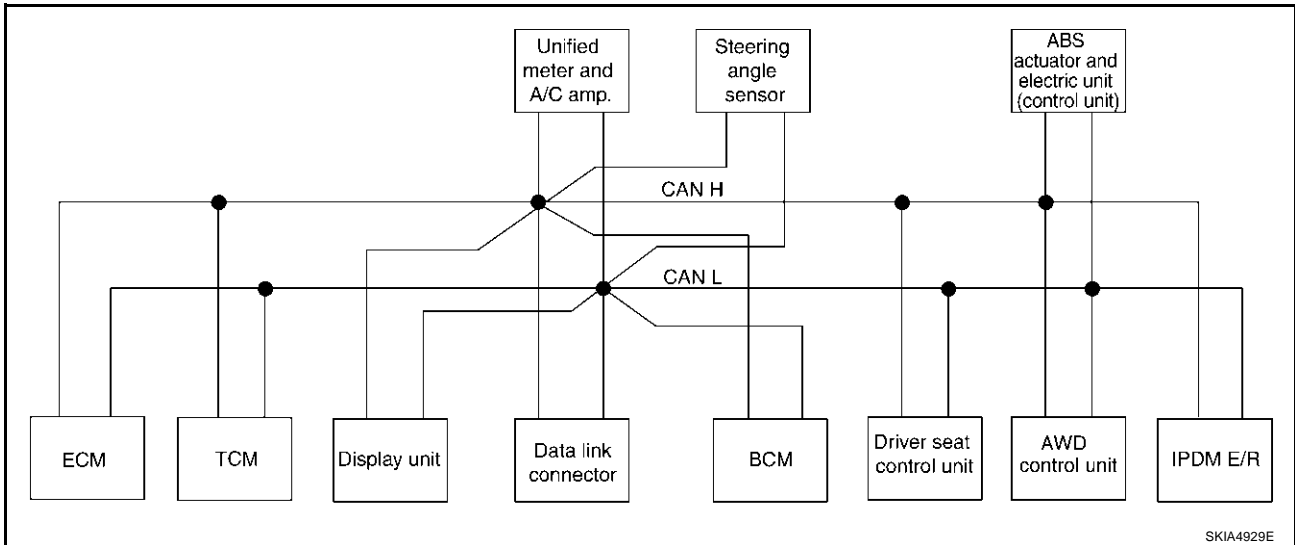
- Type27



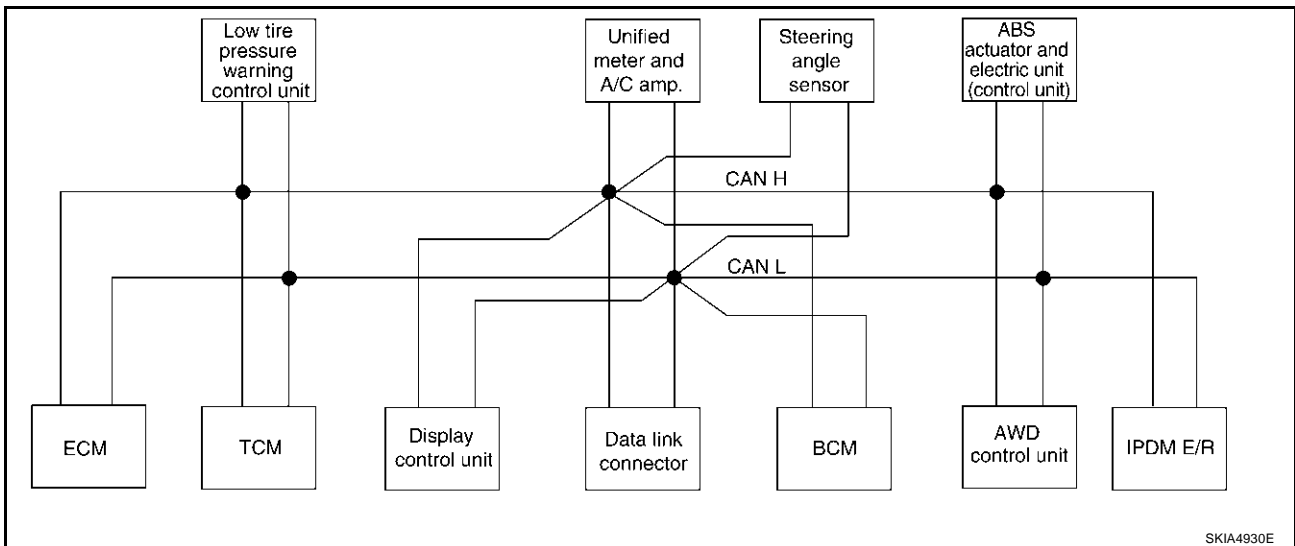
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AUTO LIGHT SYSTEM

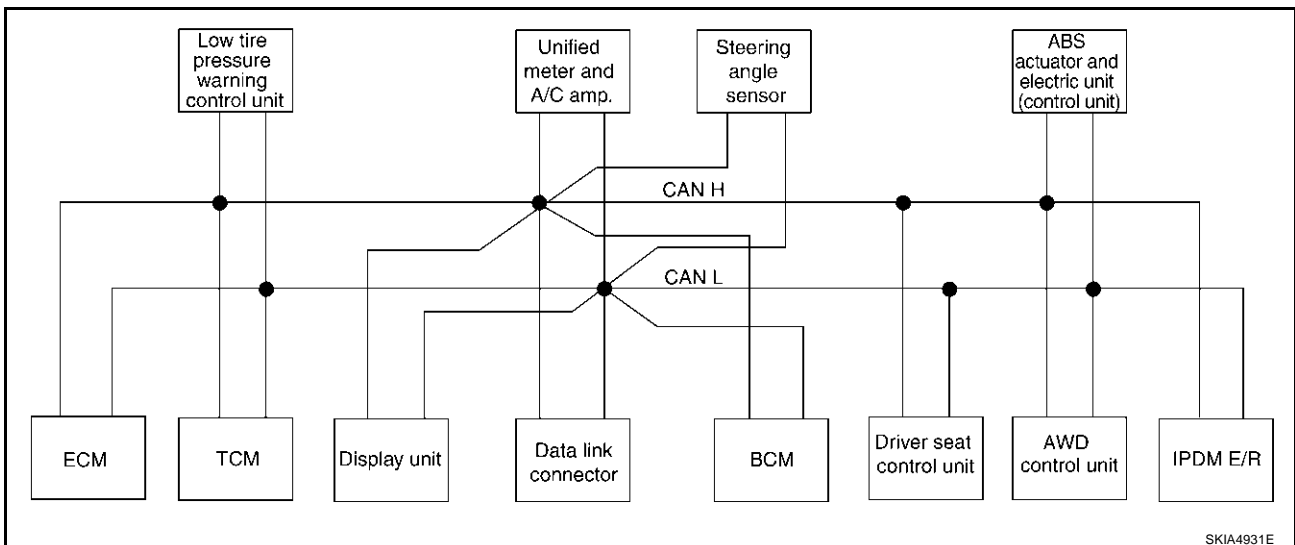
- Type28



- Type29

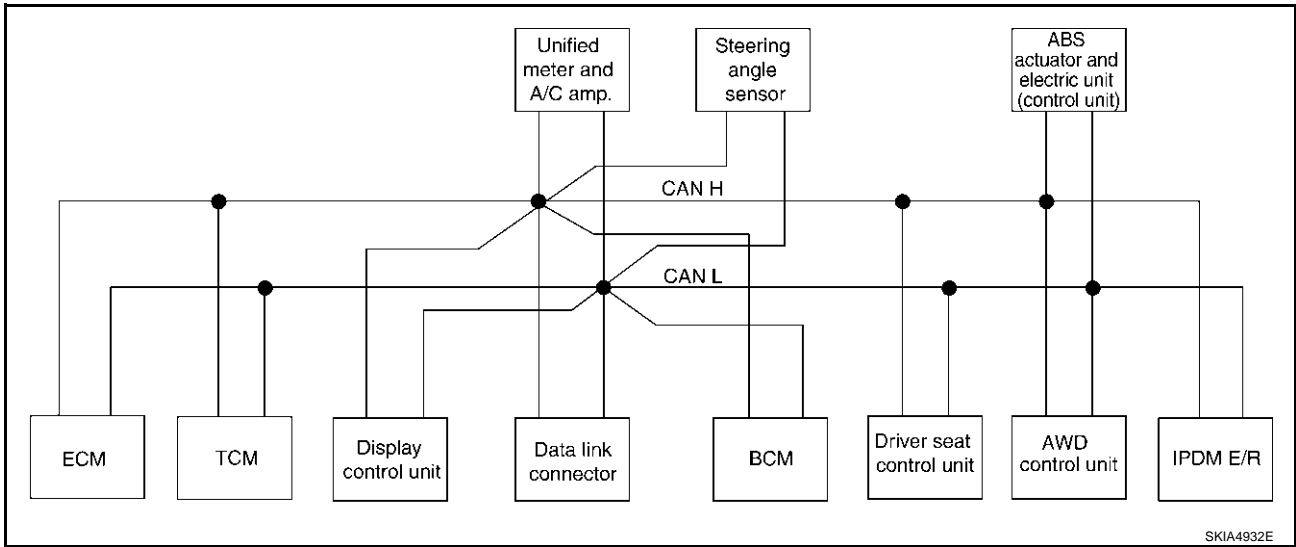


- Type30

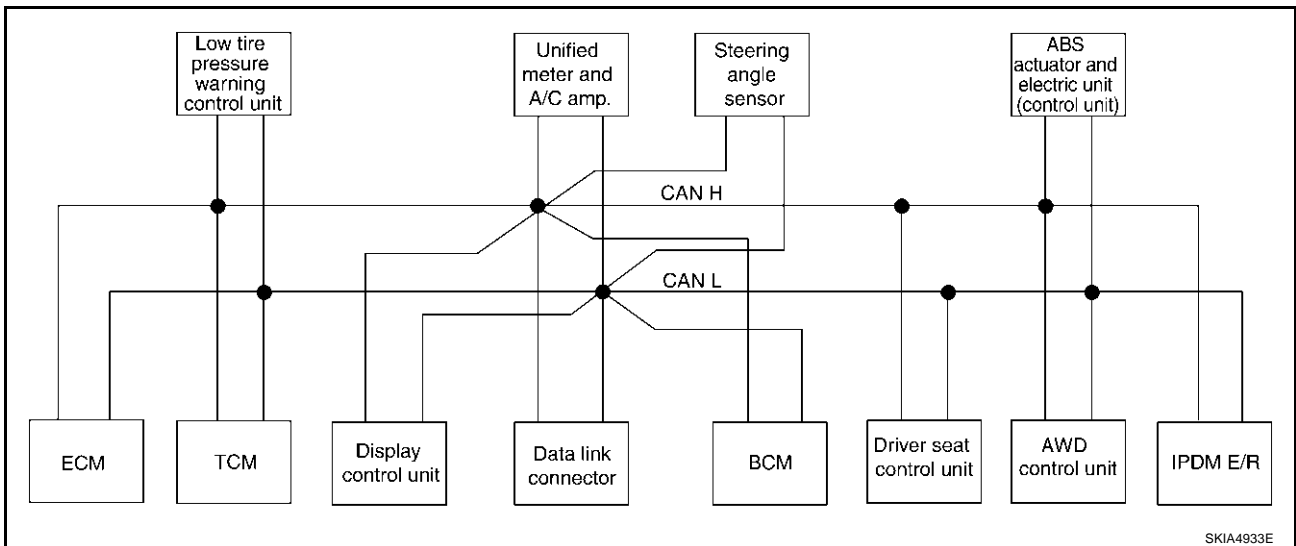


AUTO LIGHT SYSTEM

- Type31



- Type32



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AUTO LIGHT SYSTEM

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

AUTO LIGHT SYSTEM

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
Door switch signal						R	T					
Turn indicator signal				R	R	T	R		R			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
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			
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		

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AUTO LIGHT SYSTEM

Major Components and Functions

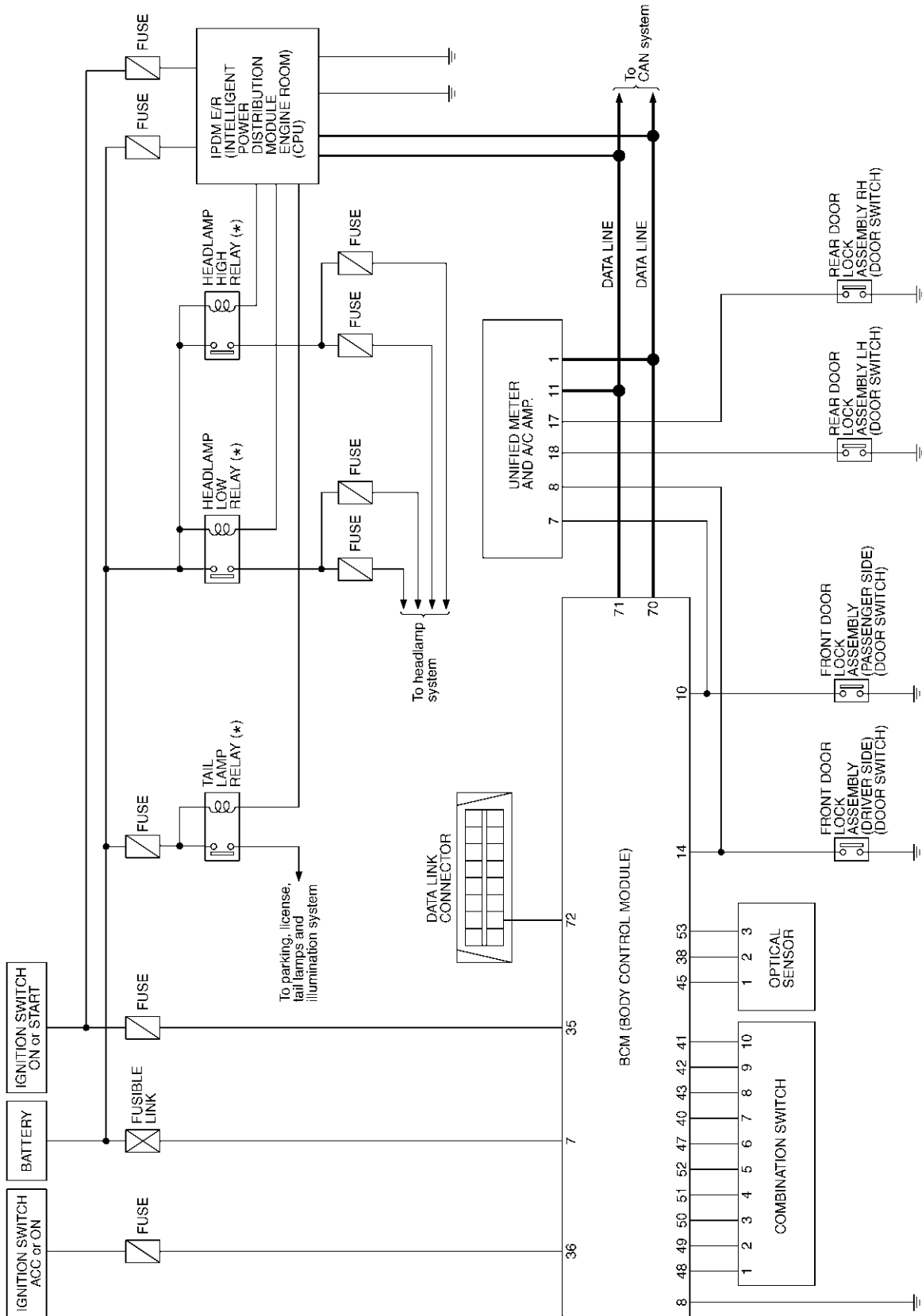
AKS004JL

Components	Functions
BCM	<ul style="list-style-type: none">● Turns on/off circuits of tail light and headlamp according to signals from light sensor, lighting switch (AUTO), driver door switch, passenger door switch, rear door switch, and ignition switch (ON, OFF).
Optical sensor	<ul style="list-style-type: none">● Converts ambient light (lux) to voltage, and sends it to BCM. (Detects lightness of 50 to 1,300 lux)

AUTO LIGHT SYSTEM

Schematic

AKS004JM



*: This relay is built into the IPDM E/R (Intelligent power distribution module engine room).

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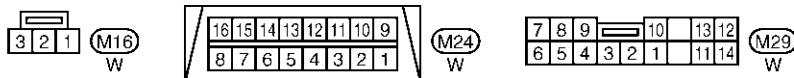
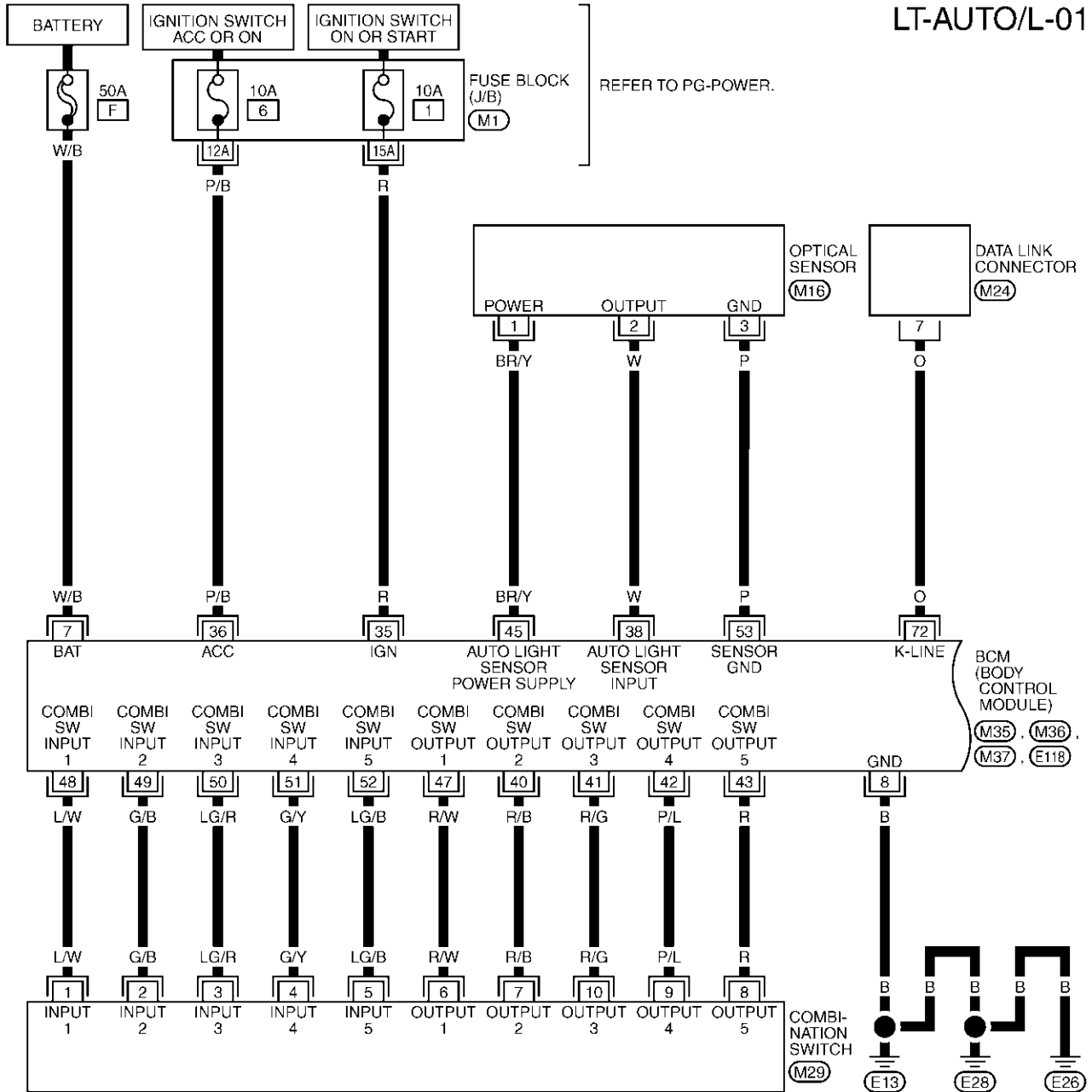
LT

AUTO LIGHT SYSTEM

Wiring Diagram — AUTO/L —

AKS004JN

LT-AUTO/L-01



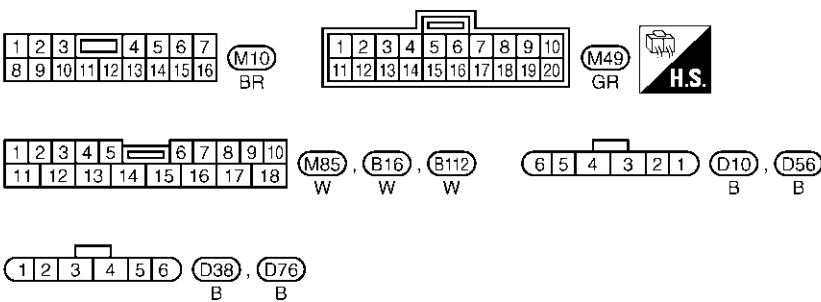
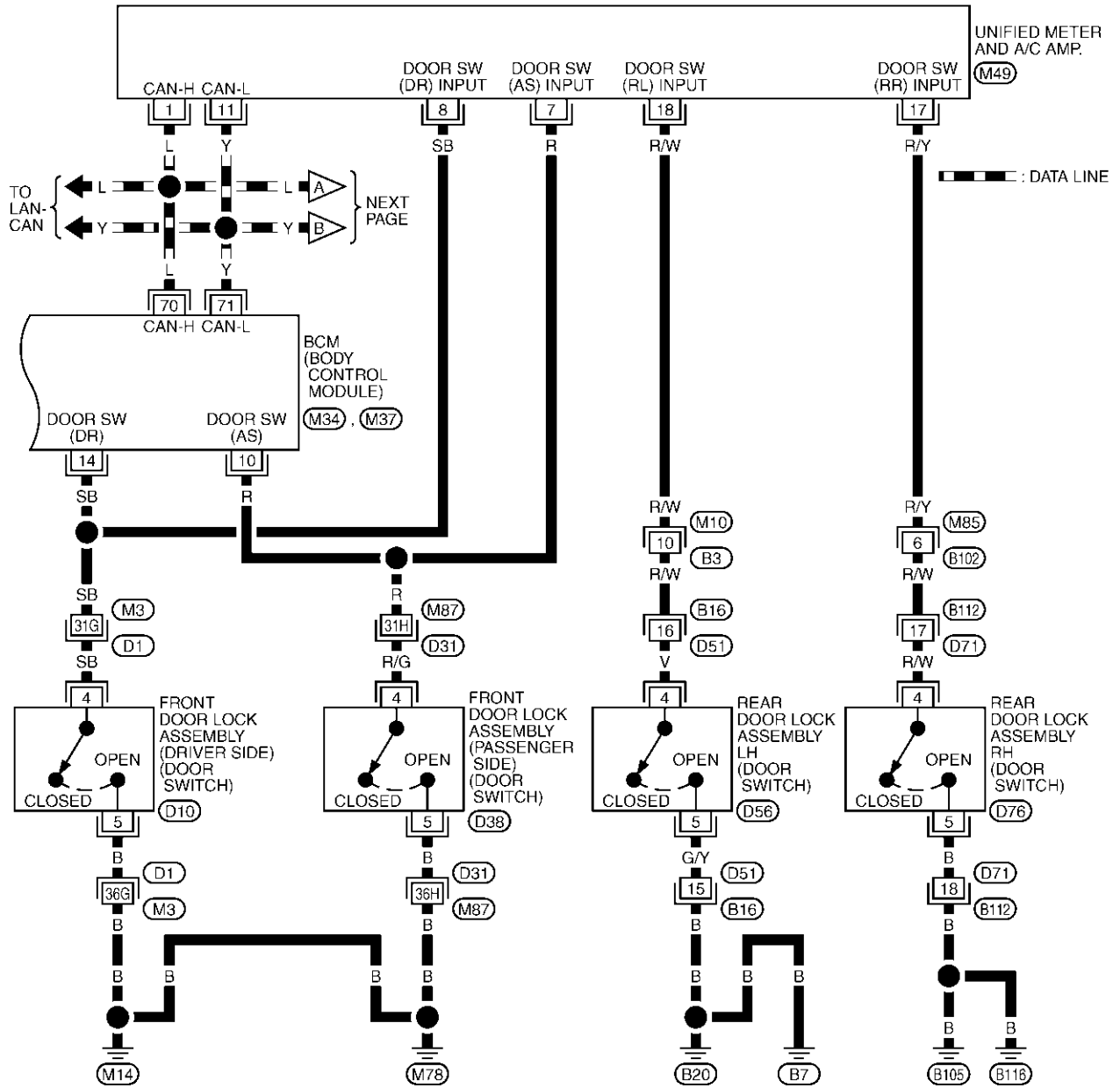
REFER TO THE FOLLOWING.

- (M1) - FUSE BLOCK-JUNCTION BOX (J/B)
- (M35), (M36), (M37), (E118) - ELECTRICAL UNITS

TKWA0758E

AUTO LIGHT SYSTEM

LT-AUTO/L-02



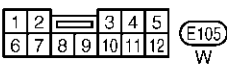
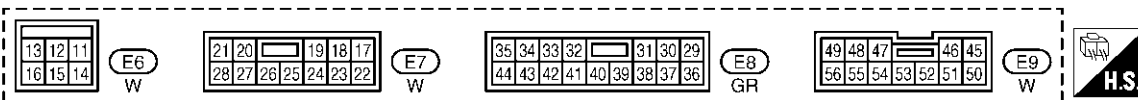
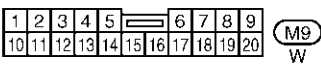
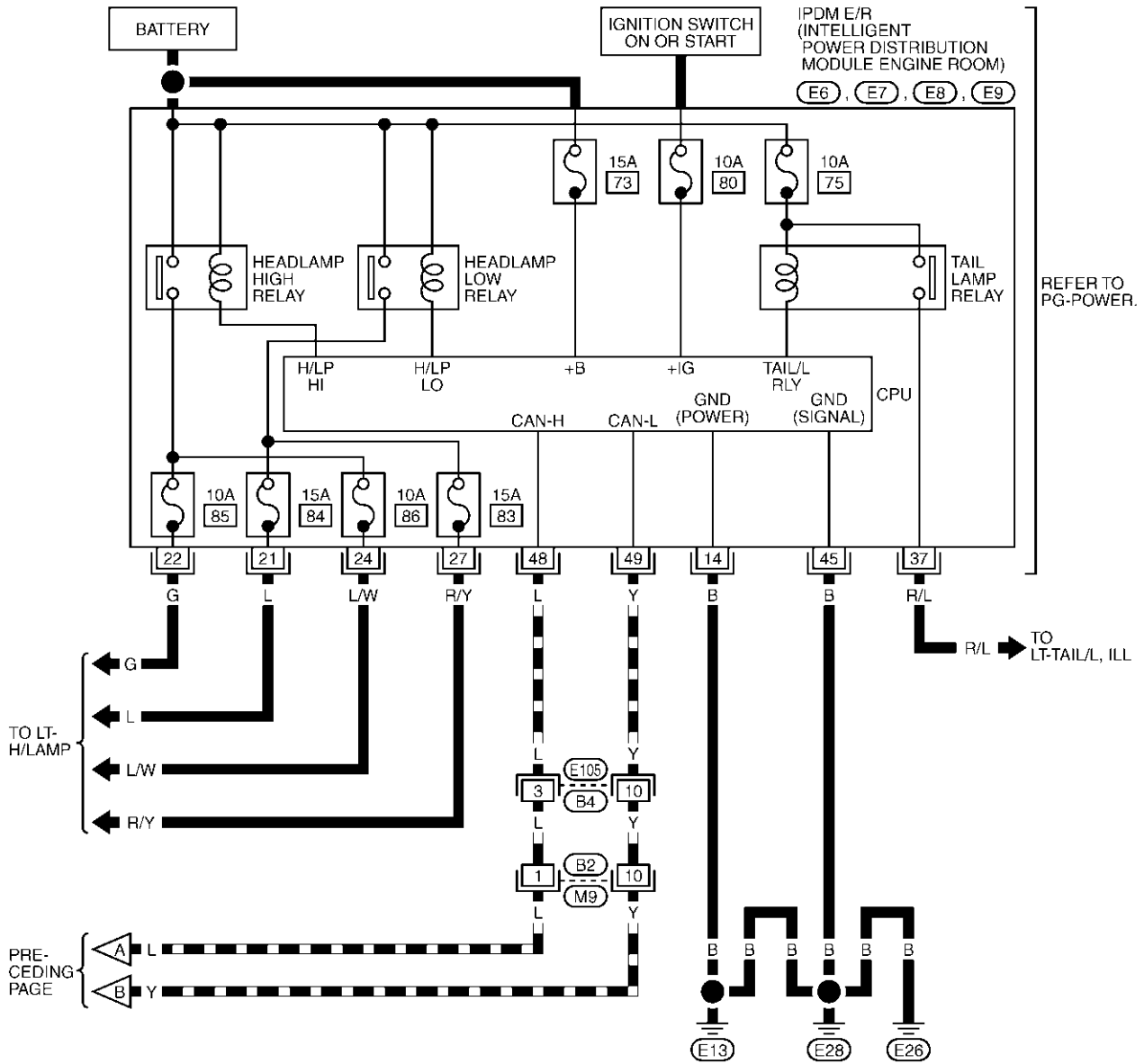
REFER TO THE FOLLOWING.
 (D1), (D31) -SUPER MULTIPLE JUNCTION (SMJ)
 (M34), (M37) -ELECTRICAL UNITS

TKWA0759E

AUTO LIGHT SYSTEM

LT-AUTO/L-03

▬ : DATA LINE



TKWA0760E

AUTO LIGHT SYSTEM

Terminals and Reference Value for BCM

AKS004JO

Terminal No.	Wire color	Signal name	Measuring condition		Reference value	
			Ignition switch	Operation or condition		
7	W/B	Battery power supply	OFF	—	Battery voltage	
8	B	Ground	ON	—	Approx.0	
10	R	Passenger side door switch signal	OFF	Passenger side door switch	ON (open)	Approx. 0V
					OFF (closed)	Battery voltage
14	SB	Driver side door switch signal	OFF	Driver side door switch	ON (open)	Approx. 0V
					OFF (closed)	Battery voltage
35	R	Ignition switch (ON)	ON	—	Battery voltage	
36	P/B	Ignition switch (ACC)	ACC	—	Battery voltage	
38	W	Optical sensor signal	ON	When optical sensor is illuminated	3.1V or more ^{Note}	
				When optical sensor is not illuminated	0.6V or less	
40	R/B	Combination switch output 2	ON	Lighting, turn, wiper OFF		
41	R/G	Combination switch output 3				
42	P/L	Combination switch output 4				
43	R	Combination switch output 5				
45	BR/Y	Optical sensor power supply	ON	—	Approx. 5V	
47	R/W	Combination switch output 1	ON	Lighting, turn, wiper OFF		
48	L/W	Combination switch input 1	ON	Lighting, turn, wiper OFF	4.5V or more	
49	G/B	Combination switch input 2				
50	LG/R	Combination switch input 3				
51	G/Y	Combination switch input 4				
52	LG/B	Combination switch input 5				
53	P	Optical sensor ground	ON	—	Approx. 0V	
70	L	CAN- H	—	—	—	
71	Y	CAN- L	—	—	—	
72	O	K-LINE	—	—	—	

NOTE:

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

AUTO LIGHT SYSTEM

Terminals and Reference Values for IPDM E/R

AKS004JP

Terminal No.	Wire color	Signal name	Measuring condition		Reference value	
			Ignition switch	Operation or condition		
14	B	Ground	ON	—	Approx. 0V	
21	L	Headlamp low (LH)	ON	Lighting switch 2ND position	OFF	Approx. 0V
					ON	Battery voltage
22	G	Headlamp high (LH)	ON	Lighting switch HIGH or PASS position	OFF	Approx. 0V
					ON	Battery voltage
24	L/W	Headlamp high (RH)	ON	Lighting switch HIGH or PASS position	OFF	Approx. 0V
					ON	Battery voltage
27	R/Y	Headlamp low (RH)	ON	Lighting switch 2ND position	OFF	Approx. 0V
					ON	Battery voltage
37	R/L	Parking, license, and tail lamp	ON	Lighting switch 1ST position	OFF	Approx. 0V
					ON	Battery voltage
45	B	Ground	ON	—	Approx. 0V	
48	L	CAN- H	—	—	—	
49	Y	CAN- L	—	—	—	

How to Proceed With Trouble Diagnosis

AKS004JQ

1. Confirm the symptom or customer complaint.
2. Understand operation description and function description. Refer to [LT-140, "System Description"](#) .
3. Carry out the Preliminary Check. Refer to [LT-171, "Preliminary Check"](#) .
4. Check symptom and repair or replace the cause of malfunction. Refer to [LT-175, "Trouble Diagnosis Chart by Symptom"](#) .
5. Does the auto light system operate normally? If YES: GO TO 6. If NO: GO TO 4.
6. INSPECTION END

AUTO LIGHT SYSTEM

AKS004JR

Preliminary Check SETTING CHANGE FUNCTIONS

- Sensitivity of auto light system can be adjusted using CONSULT-II. Refer to [LT-173, "WORK SUPPORT"](#) .

CHECK POWER SUPPLY AND GROUND CIRCUIT

1. CHECK FUSES

- Check for blown fuses.

Unit	Power source	Fuse and fusible link No.
BCM	Battery	F
	Ignition switch ON or START position	1
	Ignition switch ACC or ON position	6
IPDM E/R	Battery	75
		83
		84
		85
		86

Refer to [LT-166, "Wiring Diagram — AUTO/L —"](#) .

OK or NG

OK >> GO TO 2.

NG >> If fuse is blown, be sure to eliminate cause of malfunction before installing new fuse. Refer to [PG-3, "POWER SUPPLY ROUTING CIRCUIT"](#) .

2. CHECK POWER SUPPLY CIRCUIT

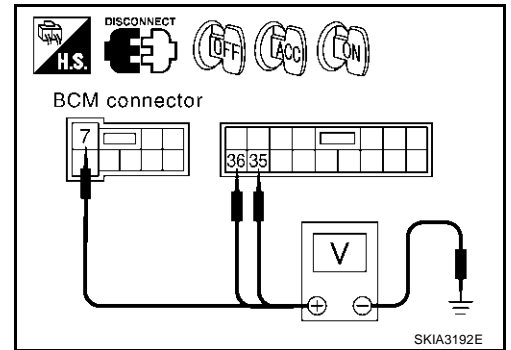
1. Disconnect BCM connector.
2. Check voltage between BCM connector and ground.

Terminals		(-)	Ignition switch position		
Connector	Terminal (Wire color)		OFF	ACC	ON
E118	7 (W/B)	Ground	Battery voltage	Battery voltage	Battery voltage
M35	35 (R)		0V	0V	Battery voltage
M35	36 (P/B)		0V	Battery voltage	Battery voltage

OK or NG

OK >> GO TO 3.

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



AUTO LIGHT SYSTEM

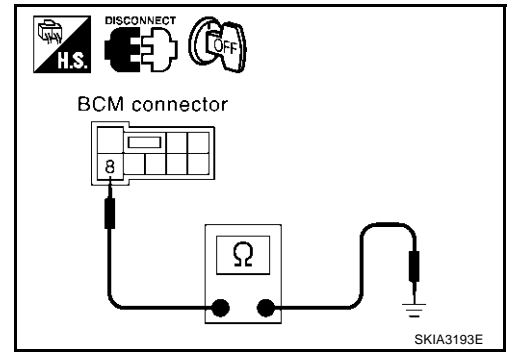
3. CHECK GROUND CIRCUIT

Check continuity between BCM and ground.

Terminals		Ground	Continuity
Connector	Terminal (Wire color)		Yes
E118	8 (B)		

OK or NG

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



CONSULT-II Function

CONSULT-II performs the following functions communicating with BCM.

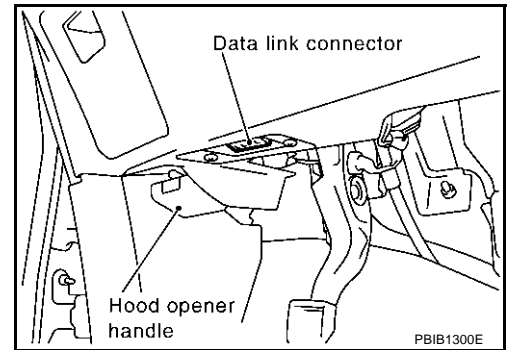
BCM diagnosis part	Check item, diagnosis mode	Description
HEAD LAMP	WORK SUPPORT	Changes the setting for each function.
	DATA MONITOR	Displays BCM input data in real time.
	ACTIVE TEST	Operation of electrical loads can be checked by sending driving signal to them.
BCM C/U	CAN DIAG SUPPORT MNTR	The result of transmit/receive diagnosis of CAN communication can be read.

CONSULT-II BASIC OPERATION

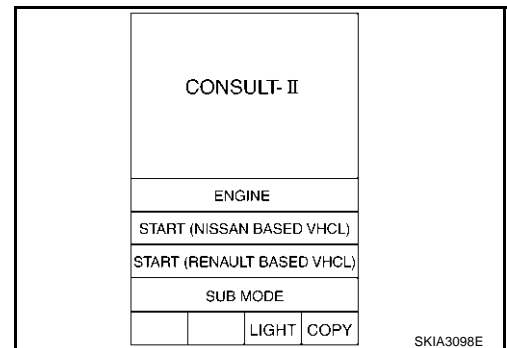
CAUTION:

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

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

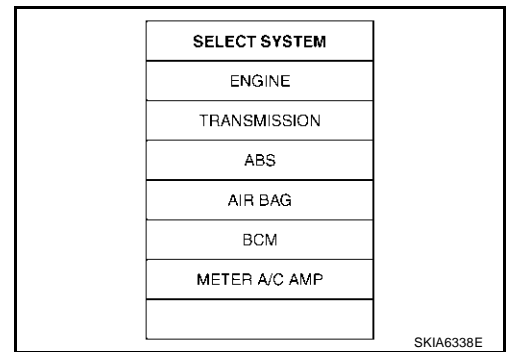


- Touch "START (NISSAN BASED VHCL)".

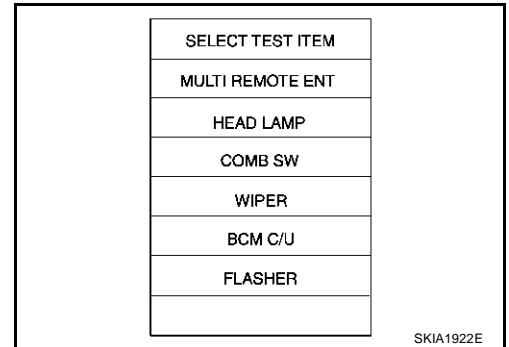


AUTO LIGHT SYSTEM

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



4. Touch "HEAD LAMP" on "SELECT TEST ITEM" screen.



WORK SUPPORT

Operation Procedure

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

Work Support Setting Item

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

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

DATA MONITOR

Operation Procedure

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

All signals	Monitors all the signals.
Selection from menu	Selects and monitors individual signal.

4. Touch "START".

AUTO LIGHT SYSTEM

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

Display Item List

Monitor item	Contents
IGN ON SW "ON/OFF"	Displays "IGN position (ON)/OFF, ACC position (OFF)" judged from the ignition switch signal.
ACC ON SW "ON/OFF"	Displays "ACC (ON)/OFF, Ignition OFF (OFF)" status judged from ignition switch signal.
AUTO LIGHT SW "ON/OFF"	Displays status of the lighting switch as judged from the lighting switch signal. (AUTO position: ON/Other than AUTO position: OFF)
TAIL LAMP SW "ON/OFF"	Displays status (lighting switch 1st position: ON/Others: OFF) of light switch judged from lighting switch signal.
HEAD LAMP SW 1 "ON/OFF"	Displays status (headlamp switch 1: ON/Others: OFF) of headlamp switch 1 judged from lighting switch signal.
HI BEAM SW "ON/OFF"	Displays status (high beam switch: ON/Others: OFF) of high beam switch judged from lighting switch signal.
PASSING SW "ON/OFF"	Displays status (flash-to-pass switch: ON/Others: OFF) of flash-to-pass switch judged from lighting switch signal.
FR FOG SW "ON/OFF"	Displays status (front fog lamp switch: ON/Others: OFF) of front fog lamp switch judged from lighting switch signal.
DOOR SW - DR "ON/OFF"	Displays status of the driver door as judged from the driver door switch signal. (Door is open: ON/Door is closed: OFF)
DOOR SW - AS "ON/OFF"	Displays status of the passenger door as judged from the passenger door switch signal. (Door is open: ON/Door is closed: OFF)
DOOR SW - RR "ON/OFF"	Displays status of the rear doors as judged from the rear door switch signal. (Door is open: ON/Door is closed: OFF)
HEAD LAMP SW 2 "ON/OFF"	Displays status (headlamp switch 2: ON/Others: OFF) of headlamp switch 2 judged from lighting switch signal.
OPTICAL SENSOR [0 - 5V]	Displays "ambient light (close to 5V when light/close to 0V when dark)" judged from optical sensor signal.

ACTIVE TEST

Operation Procedure

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

Display Item List

Test item	Description
TAIL LAMP	Allows tail lamp relay to operate by switching ON-OFF.
HEAD LAMP (LOW)	Allows headlamp relay to operate by switching ON-OFF.
HEAD LAMP (HI)	Allows headlamp relay to operate by switching ON-OFF.
FR FOG LAMP	Allows fog lamp relay to operate by switching ON-OFF.

AUTO LIGHT SYSTEM

Trouble Diagnosis Chart by Symptom

AKS004JT

Trouble phenomenon	Malfunction system and reference
<ul style="list-style-type: none"> ● Parking lamps and headlamps will not illuminate when outside of the vehicle becomes dark. (Lighting switch 1st position and 2nd position operate normally.) ● Parking lamps and headlamp will not go out when outside of the vehicle becomes light. (Lighting switch 1st position and 2nd position operate normally.) ● Headlamps go out when outside of the vehicle becomes light, but parking lamps stay on. 	<ul style="list-style-type: none"> ● Refer to LT-173, "WORK SUPPORT" . ● Refer to LT-175, "Lighting Switch Inspection" . ● Refer to LT-176, "Optical Sensor System Inspection" . <p>If above systems are normal, replace BCM.</p>
<p>Parking lamps illuminate when outside of the vehicle becomes dark, but headlamps stay off. (Lighting switch 1st position and 2nd position operate normally.)</p>	<ul style="list-style-type: none"> ● Refer to LT-173, "WORK SUPPORT" . ● Refer to LT-176, "Optical Sensor System Inspection" . <p>If above systems are normal, replace BCM.</p>
<p>Auto light adjustment system will not operate. (Lighting switch AUTO, 1st position and 2nd position operate normally.)</p>	<ul style="list-style-type: none"> ● Refer to LT-176, "Optical Sensor System Inspection" . <p>If above system is normal, replace BCM.</p>
<p>Auto light adjustment system of combination meter will not operate.</p>	<ul style="list-style-type: none"> ● CAN communication line inspection between BCM and combination meter. Refer to BCS-34, "CAN Communication Inspection Using CONSULT-II (Self-Diagnosis)" .
<p>Shut off delay feature will not operate.</p>	<ul style="list-style-type: none"> ● CAN communication line inspection between BCM and combination meter. Refer to BCS-34, "CAN Communication Inspection Using CONSULT-II (Self-Diagnosis)" . ● Refer to BL-61, "Check Door Switch" . <p>If above system is normal, replace BCM.</p>

Lighting Switch Inspection

AKS004JU

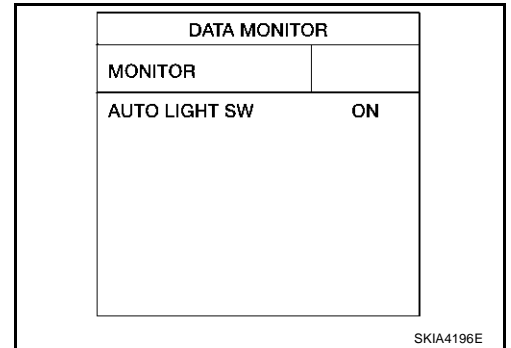
1. CHECK LIGHTING SWITCH INPUT SIGNAL

Select "BCM" in CONSULT-II. Operate lighting switch via "AUTO LIGHT SW" on data monitor screen, and make sure light turns on and off as commanded.

When lighting switch is AUTO : AUTO LIGHT SW ON position

OK or NG

- OK >> INSPECTION END
- NG >> Replace lighting switch.



AUTO LIGHT SYSTEM

AKS004JV

Optical Sensor System Inspection

1. CHECK OPTICAL SENSOR INPUT SIGNAL

Select "BCM" in CONSULT-II. Using "OPTICAL SENSOR" data from "DATA MONITOR", check difference in the voltage when the auto light sensor is illuminated and not illuminated.

Illuminated

Optical sensor : 3.1V or more

Not illuminated

Optical sensor : 0.6V or less

CAUTION:

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

OK or NG

OK >> INSPECTION END

NG >> GO TO 2.

2. CHECK OPTICAL SENSOR POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect BCM connector and optical sensor connector.
3. Check continuity (open circuit) between BCM harness connector M36 terminal 45 (BR/Y) and optical sensor harness connector M16 terminal 1 (BR/Y).

Continuity should exist.

4. Check continuity (short circuit) between BCM harness connector M36 terminal 45 (BR/Y) and ground.

Continuity should not exist.

OK or NG

OK >> GO TO 3.

NG >> Repair harness or connector.

3. CHECK OPTICAL SENSOR POWER SUPPLY CIRCUIT

1. Check continuity (open circuit) between BCM harness connector M36 terminal 38 (W) and optical sensor harness connector M16 terminal 2 (W).

Continuity should exist.

2. Check continuity (short circuit) between BCM harness connector M36 terminal 38 (W) and ground.

Continuity should not exist.

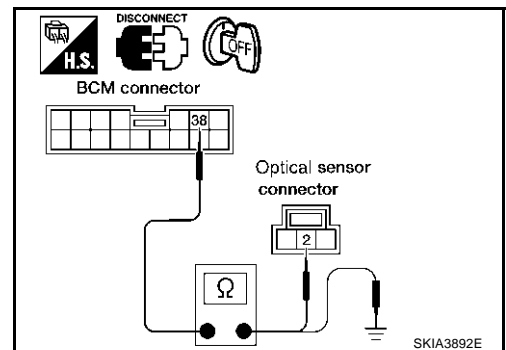
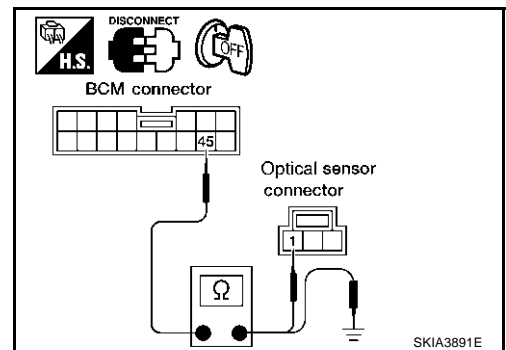
OK or NG

OK >> GO TO 4.

NG >> Repair harness or connector.

DATA MONITOR	
MONITOR	
OPTICAL SENSOR	0.75V

SKIA4197E



AUTO LIGHT SYSTEM

4. CHECK OPTICAL SENSOR POWER SUPPLY CIRCUIT

1. Check continuity (open circuit) between BCM harness connector M37 terminal 53 (P) and optical sensor harness connector M16 terminal 3 (P).

Continuity should exist.

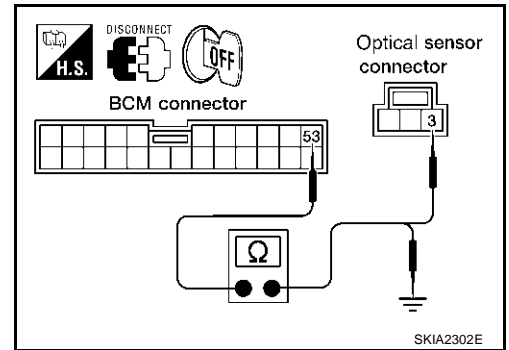
2. Check continuity (short circuit) between BCM harness connector M37 terminal 53 (P) and ground.

Continuity should not exist.

OK or NG

OK >> GO TO 5.

NG >> Repair harness or connector.



5. CHECK OPTICAL SENSOR VOLTAGE

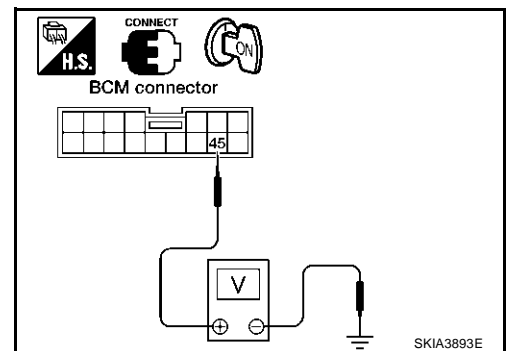
1. Connect BCM connector.
2. Turn ignition switch ON.
3. Check voltage between BCM harness connector M36 terminal 45 (BR/Y) and ground.

Approx. 5V should exist.

OK or NG

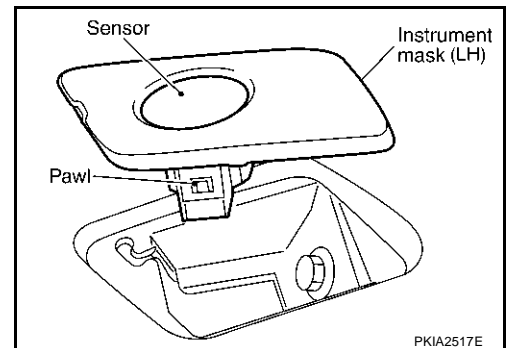
OK >> Replace the optical sensor.

NG >> Replace BCM. Refer to [BCS-36, "Removal and Installation of BCM"](#).



Removal and Installation of Optical Sensor

1. Remove instrument mask (LH) assembly. Refer to [IP-11, "Removal and Installation"](#).
2. While pressing pawl in direction as shown in the figure, remove the sensor unit from instrument mask.



HEADLAMP AIMING CONTROL

PFP:26010

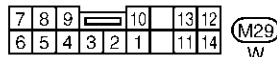
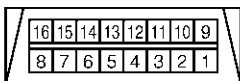
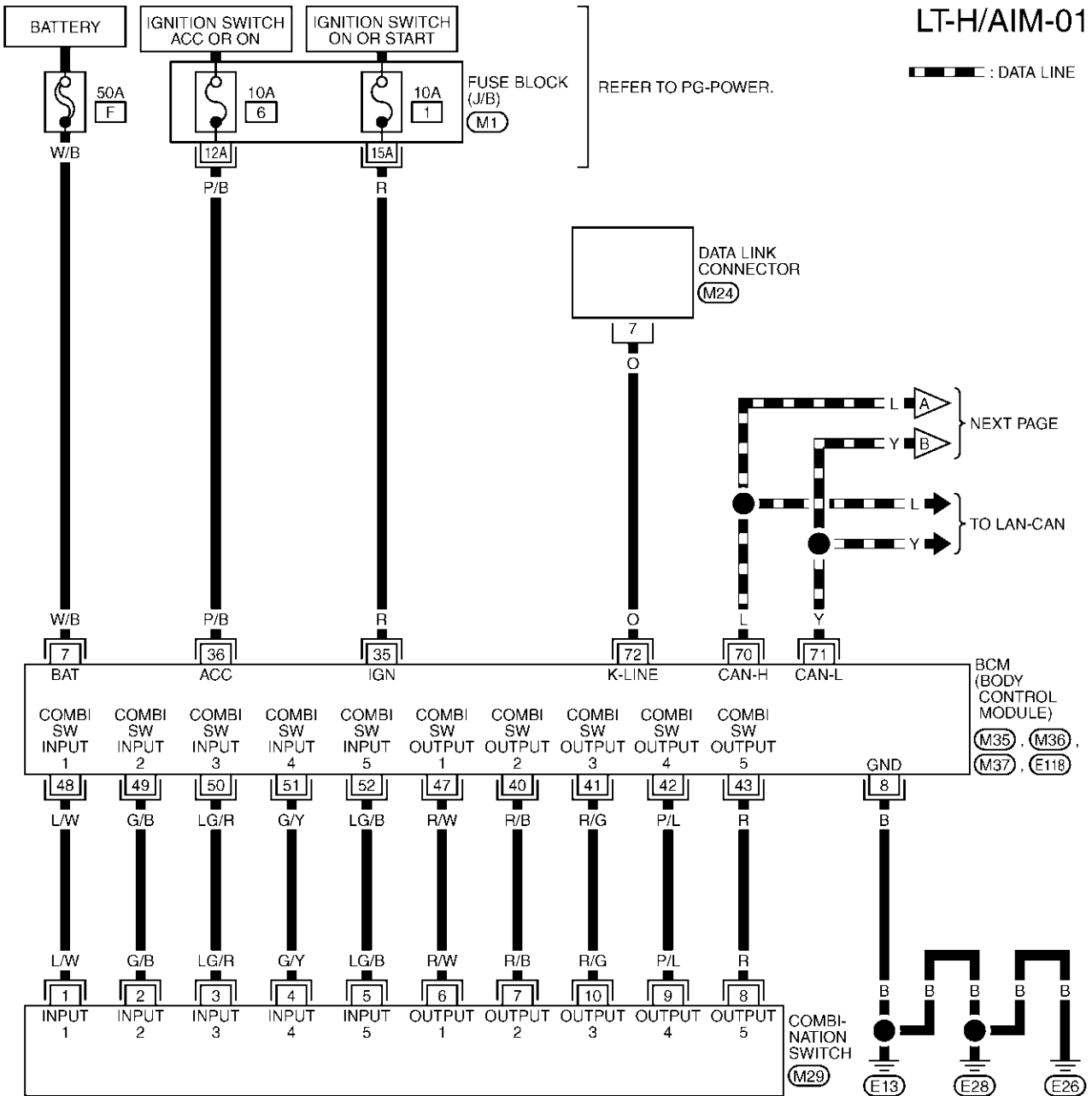
HEADLAMP AIMING CONTROL

Wiring Diagram — H/AIM —

AKS004UC

LT-H/AIM-01

▬ : DATA LINE



REFER TO THE FOLLOWING.

- (M1) - FUSE BLOCK-JUNCTION BOX (J/B)
- (M35), (M36), (M37), (E118) - ELECTRICAL UNITS

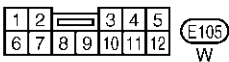
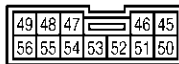
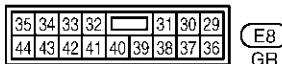
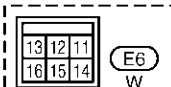
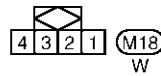
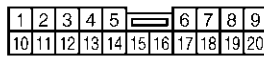
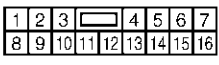
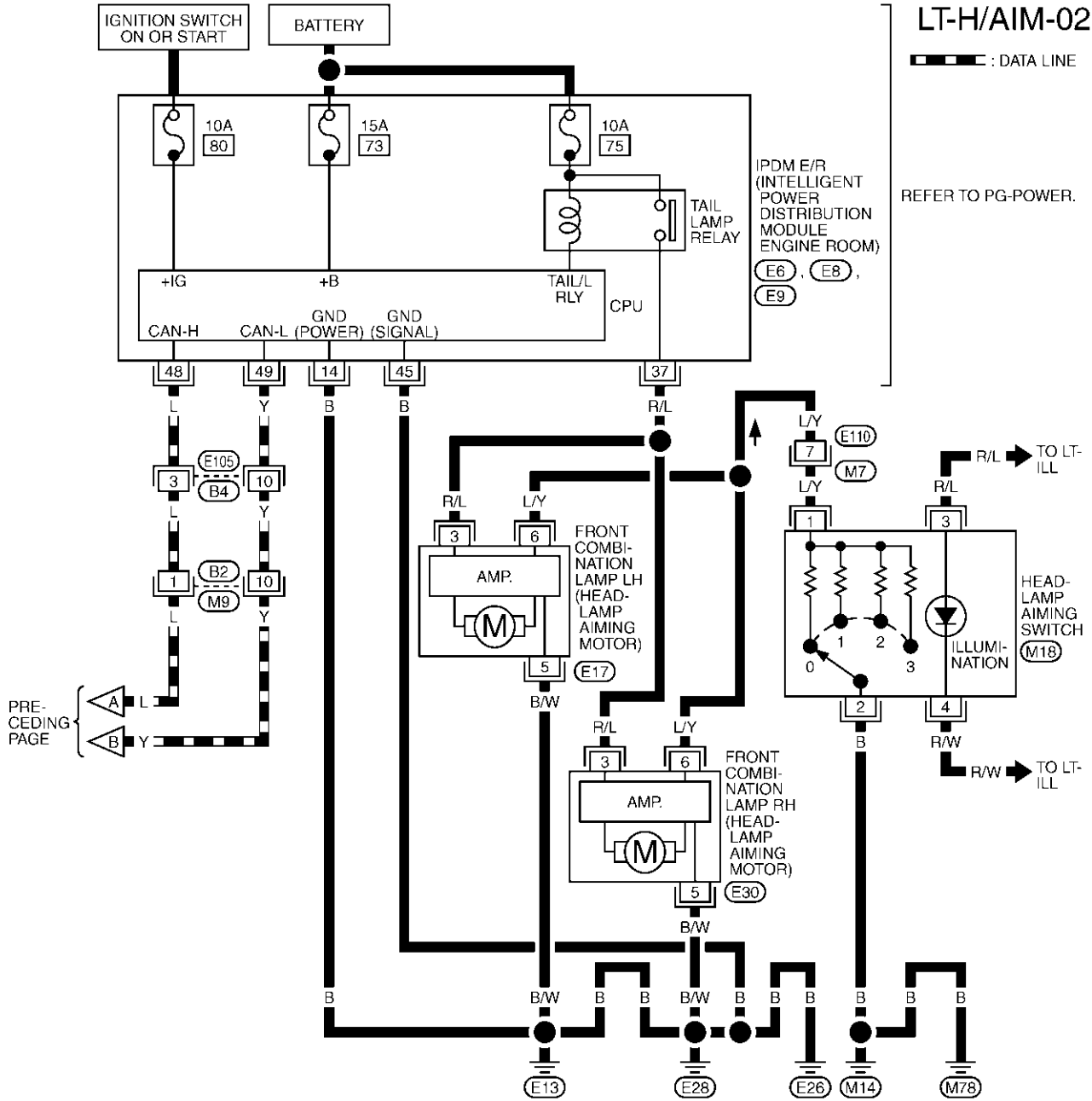
TKWA0761E

HEADLAMP AIMING CONTROL

LT-H/AIM-02

— : DATA LINE

REFER TO PG-POWER.

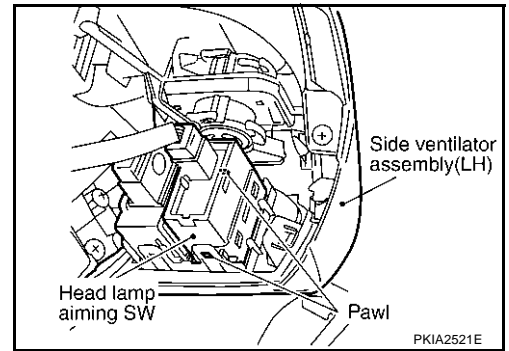


TKWA0762E

HEADLAMP AIMING CONTROL

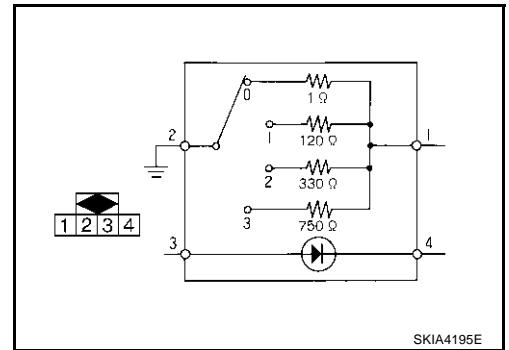
Removal and Installation

1. Remove the side ventilator assembly (LH). Refer to [IP-11. "Removal and Installation"](#) in "INSTRUMENT PANEL (IP)" section.
2. Press the headlamp aiming switch fixing pawls and remove the unit from the side ventilator assembly (LH).



Switch Circuit Inspection (Xenon type)

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



FRONT FOG LAMP

PFP:26150

System Description

AKS005P3

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

OUTLINE

Power is supplied at all times

- through 15A fuse [No. 72, located in IPDM E/R (intelligent power distribution module engine room)]
- to front fog lamp relay [located in IPDM E/R (intelligent power distribution module engine room)]
- through 15A fuse [No. 73, located in IPDM E/R (intelligent power distribution module engine room)]
- to CPU (central processing unit) [located in IPDM E/R (intelligent power distribution module engine room)].

Power is also supplied at all times

- through 50A fusible link (letter F, located in fuse and fusible link block)
- to BCM (body control module) terminal 7

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

- through 10A fuse [No. 1, located in fuse block (J/B)]
- to BCM (body control module) terminal 35
- through 10A fuse [No. 80, located in IPDM E/R (intelligent power distribution module engine room)]
- to CPU (central processing unit) [located in IPDM E/R (intelligent power distribution module engine room)]

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

- through 10A fuse [No. 6, located in fuse block (J/B)]
- to BCM (body control module) terminal 36

Ground is supplied

- to BCM (body control module) terminal 8
- through grounds E13, E26 and E28
- to IPDM E/R (intelligent power distribution module engine room) terminal 14 and 45
- through grounds E13, E26 and E28.

FOG LAMP OPERATION

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

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

- through IPDM E/R terminal 32
- to front fog lamp LH terminal 1
- through IPDM E/R terminal 29
- to front fog lamp RH terminal 1

Ground is supplied

- to front fog lamp LH terminal 2
- through grounds E13, E26 and E28, and
- to front fog lamp RH terminal 2
- through grounds E13, E26 and E28.

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

FRONT FOG LAMP

COMBINATION SWITCH READING FUNCTION

Refer to [LT-251, "Combination Switch Reading Function"](#) .

EXTERIOR LAMP BATTERY SAVER CONTROL

When the combination switch (lighting switch) is in the 2ND position (ON), the fog lamp switch is ON, and the ignition switch is turned from ON or ACC to OFF, the battery saver control feature is activated.

Under this condition, the fog lamps (and headlamps) remain illuminated for 5 minutes, then the fog lamps (and headlamps) are turned off.

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

CAN Communication System Description

AKS004JX

CAN (Controller Area Network) is a serial communication line for real time application. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Many electronic control units are equipped onto a vehicle, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN H line, CAN L line) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.

CAN Communication Unit For 2WD Models

AKS007QT

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	LT-183, "TYPE 1/TYPE 2/TYPE 3/TYPE 4/TYPE 5/TYPE 6/TYPE 7/TYPE 8"								LT-188, "TYPE 9/TYPE10/TYPE 11/TYPE 12/TYPE 13/TYPE 14/TYPE 15/TYPE 16"							

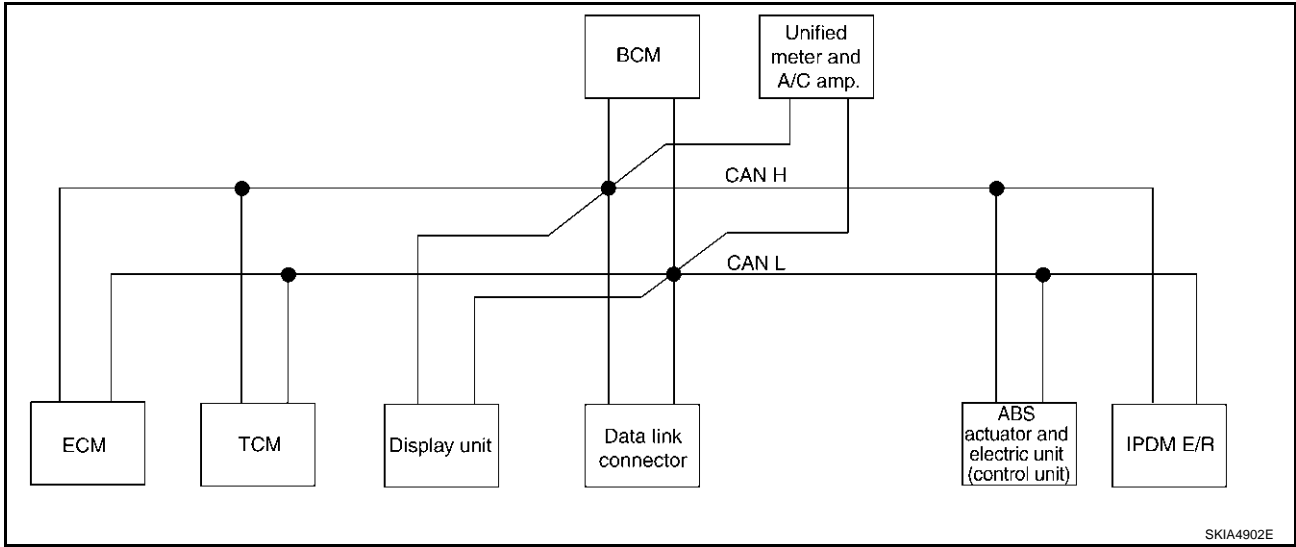
×: Applicable

FRONT FOG LAMP

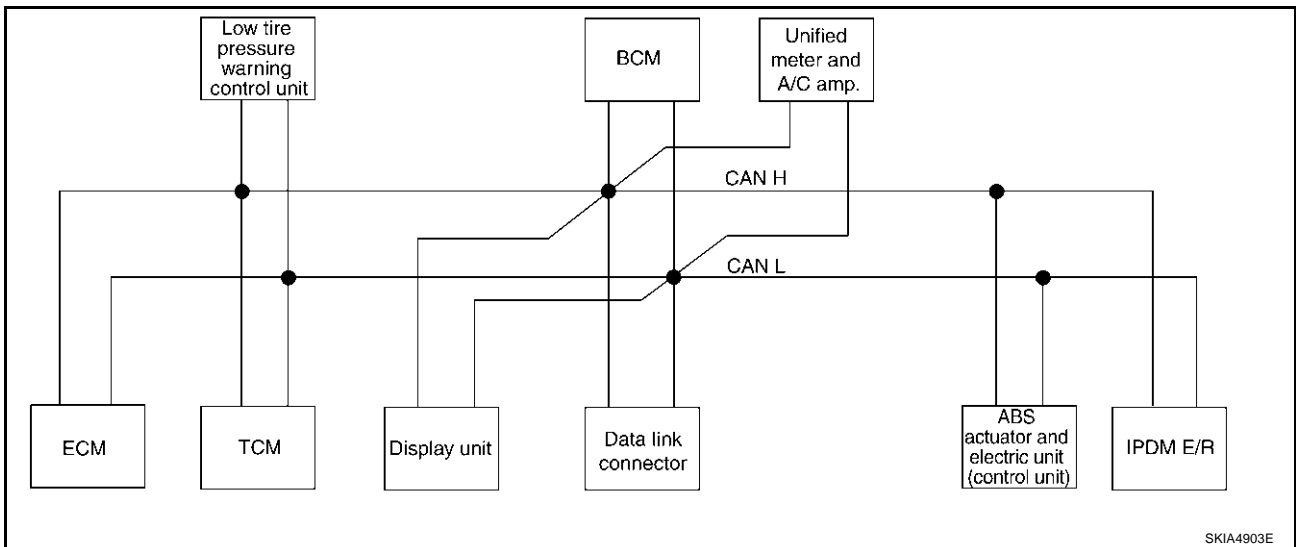
TYPE 1/TYPE 2/TYPE 3/TYPE 4/TYPE 5/TYPE 6/TYPE 7/TYPE 8

System Diagram

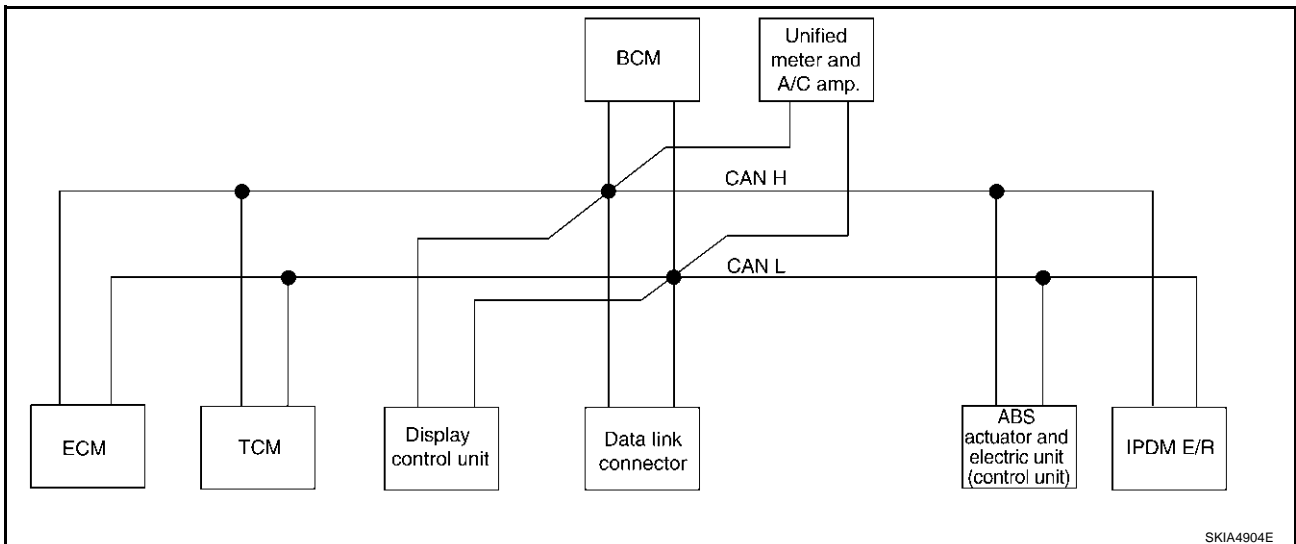
- Type1



- Type2



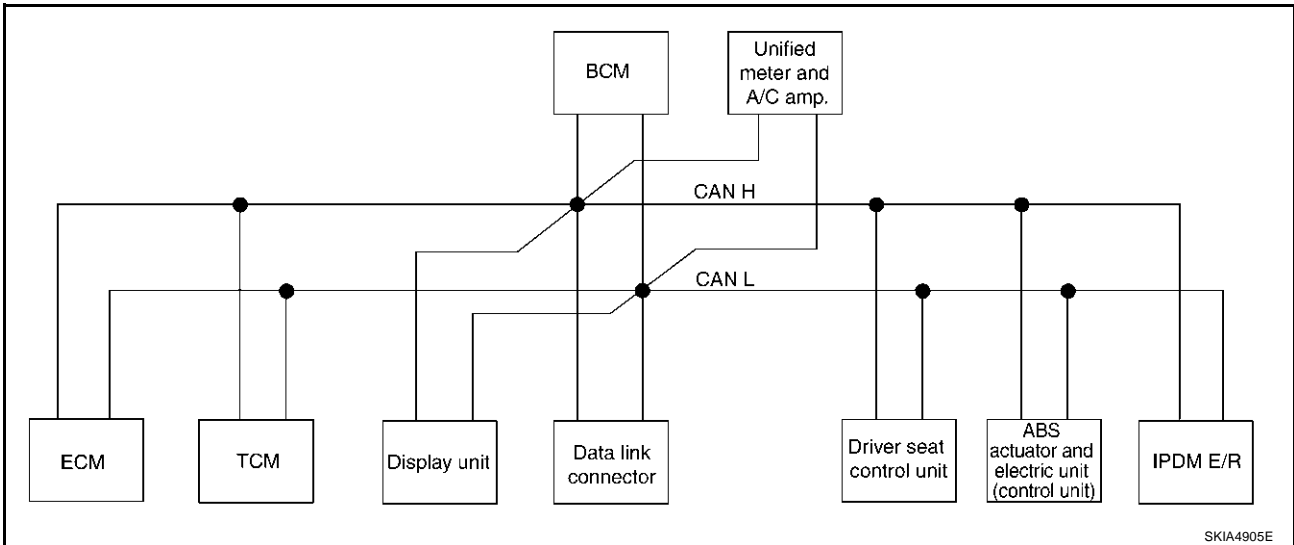
- Type3



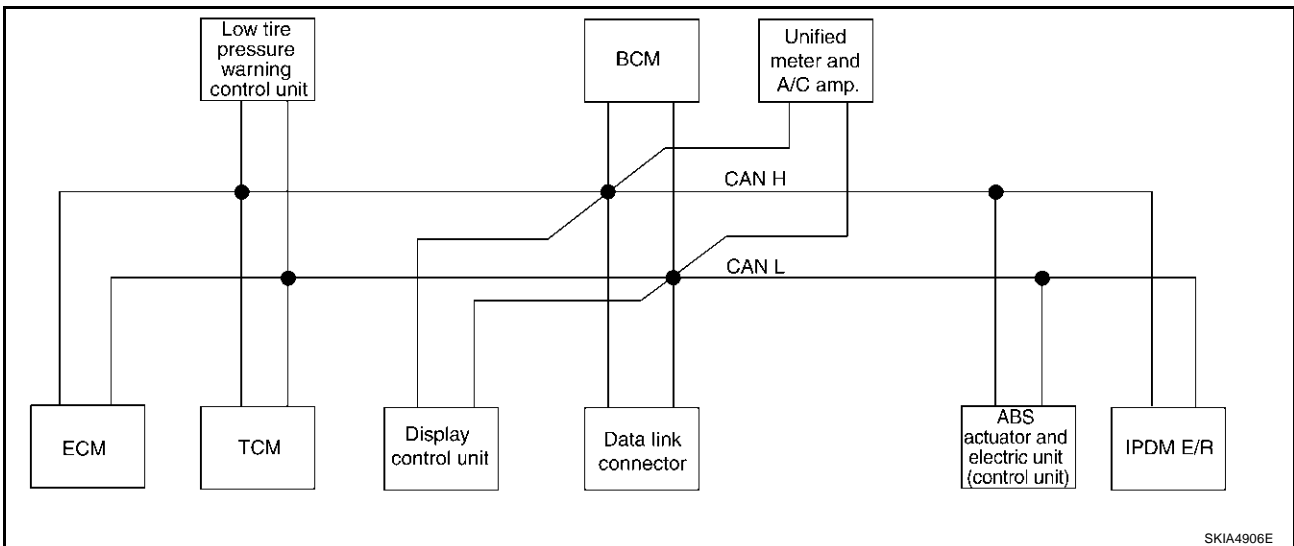
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FRONT FOG LAMP

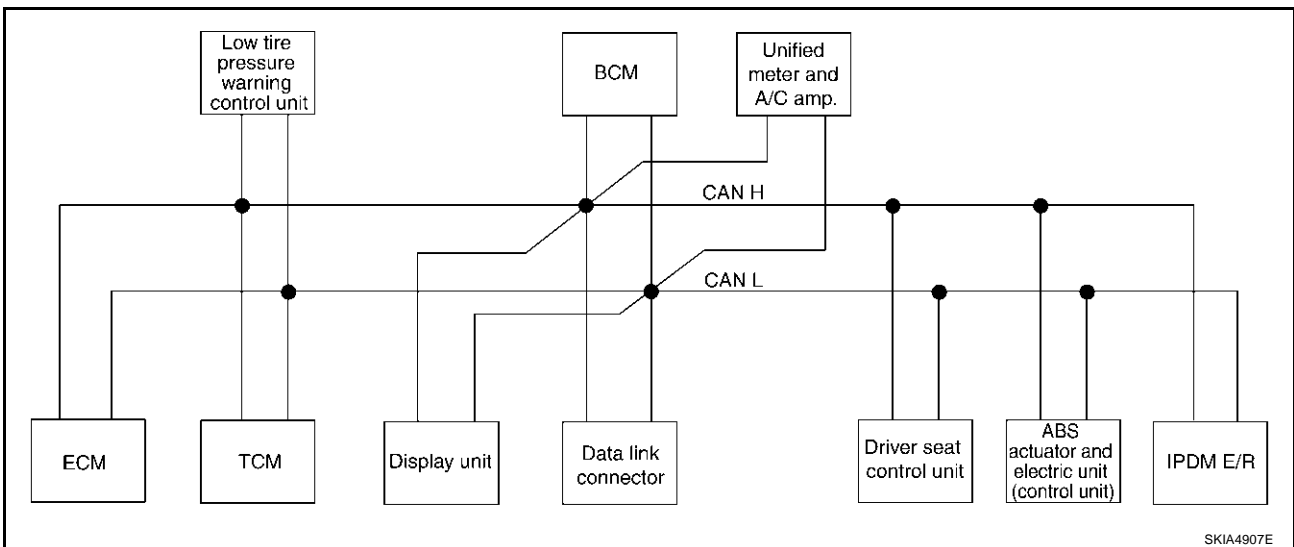
- Type4



- Type5

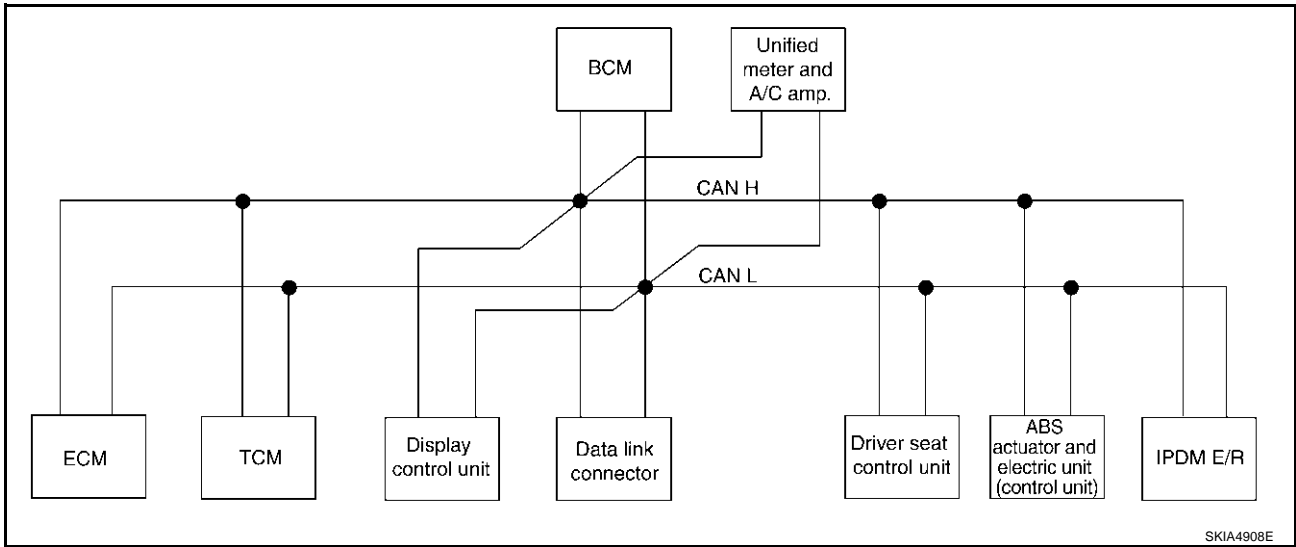


- Type6

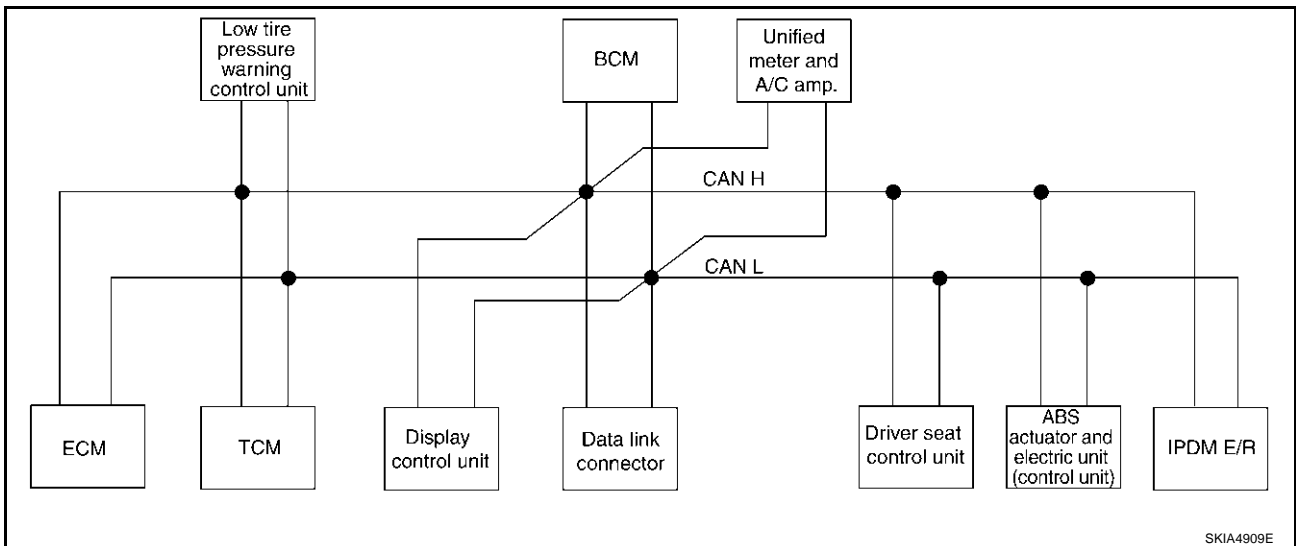


FRONT FOG LAMP

- Type7



- Type8



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FRONT FOG LAMP

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			

FRONT FOG LAMP

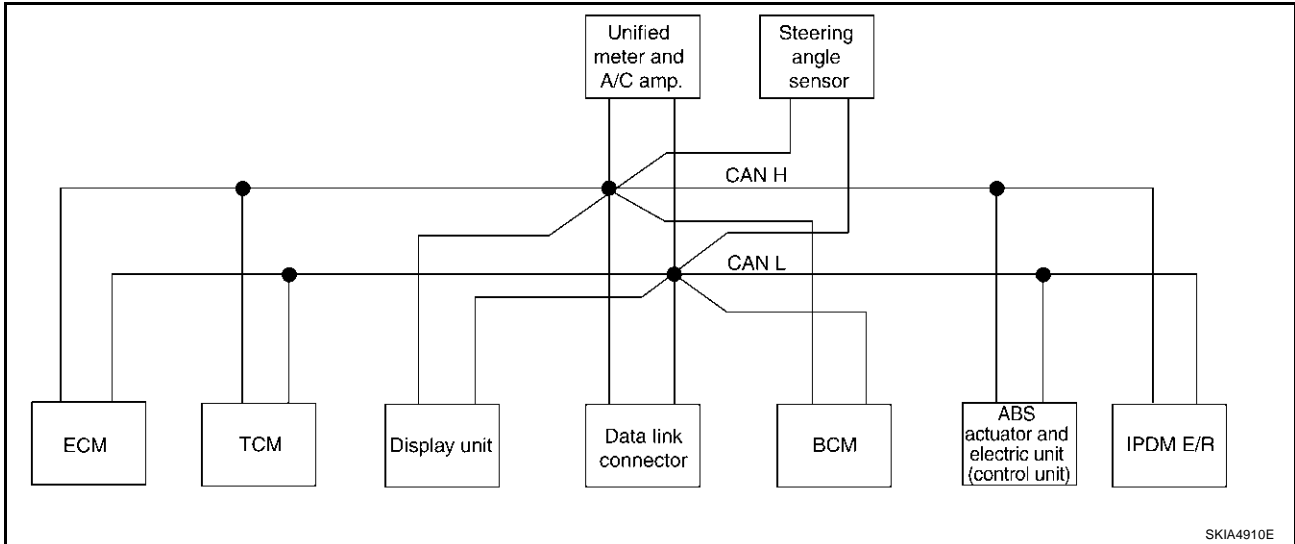
Signals	ECM	TCM	Low tire pres- sure warn- ing control unit	Dis- play unit	Dis- play control unit	BCM	Uni- fied meter and A/ C amp.	Driver seat control unit	ABS actua- tor and elec- tric unit (con- trol unit)	IPDM E/R	A B C D E F G H I J L M
Key fob ID signal						T		R			
Key fob door unlock signal						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 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	
Hood switch signal						R				T	
Theft warning horn request signal						T				R	
Horn chirp signal						T				R	
Tire pressure signal			T				R				LT
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			
Parking brake switch signal						R	T				

FRONT FOG LAMP

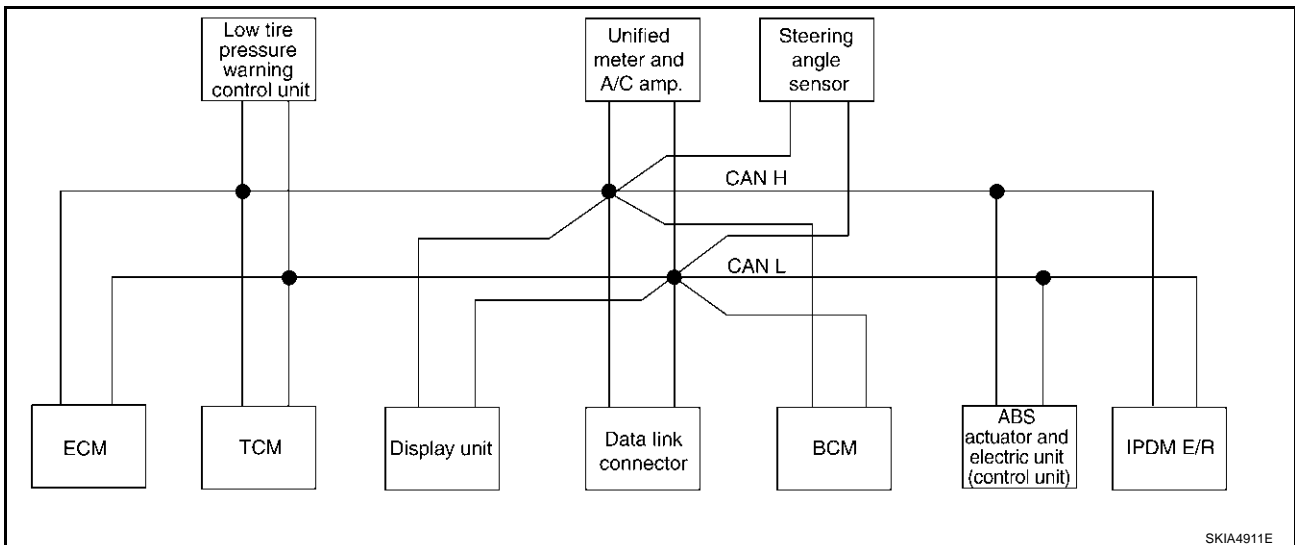
TYPE 9/TYPER10/TYPER 11/TYPER 12/TYPER 13/TYPER 14/TYPER 15/TYPER 16

System Diagram

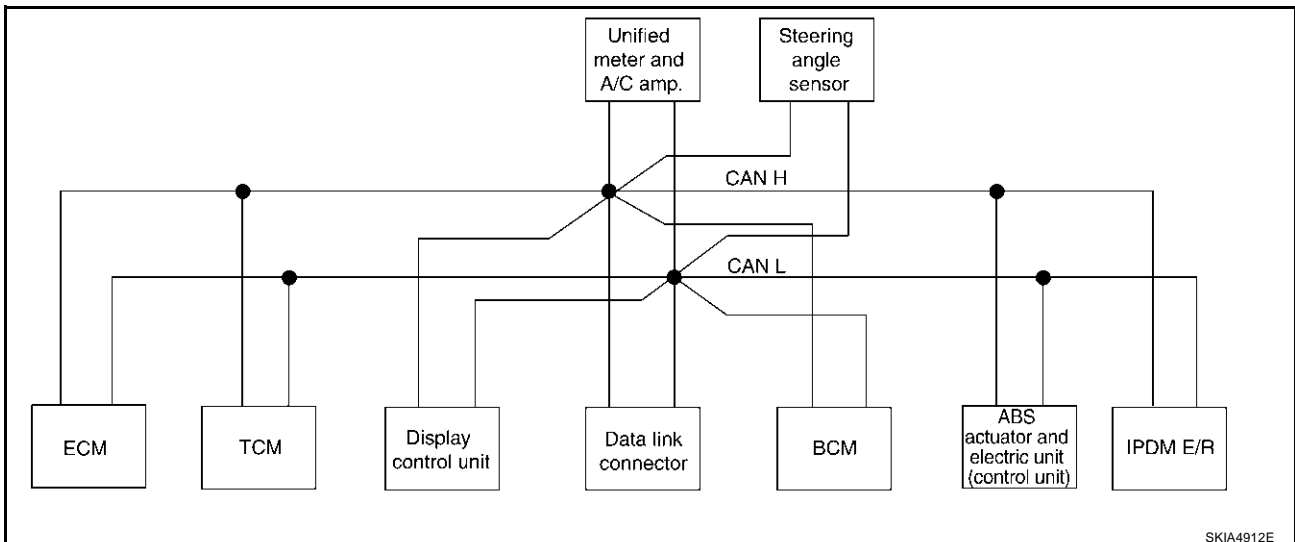
- Type9



- Type10

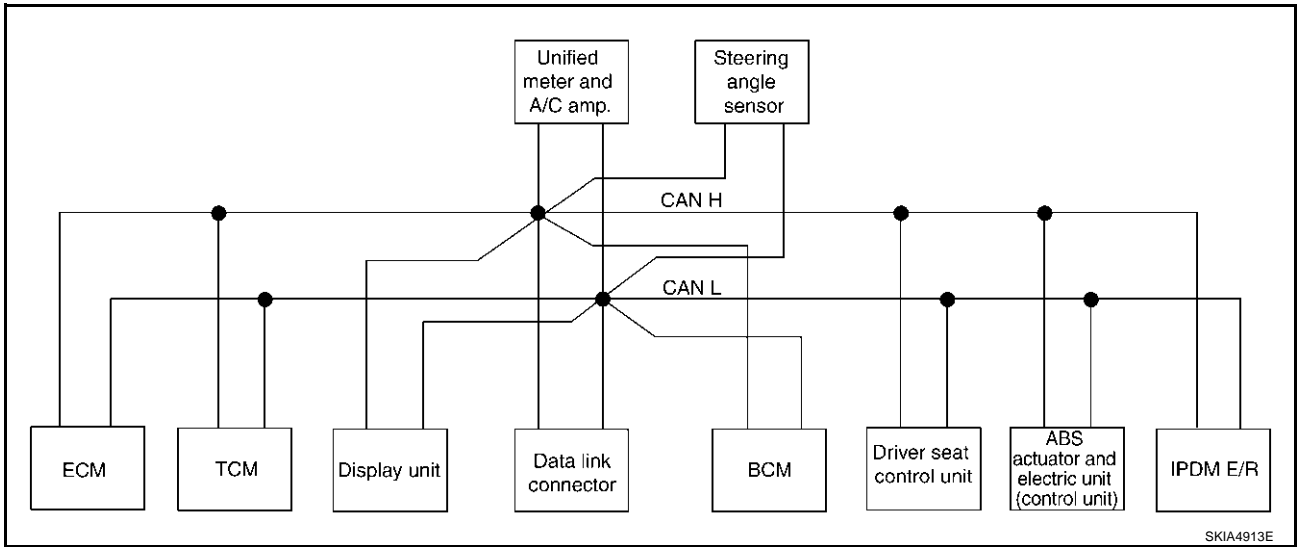


- Type11

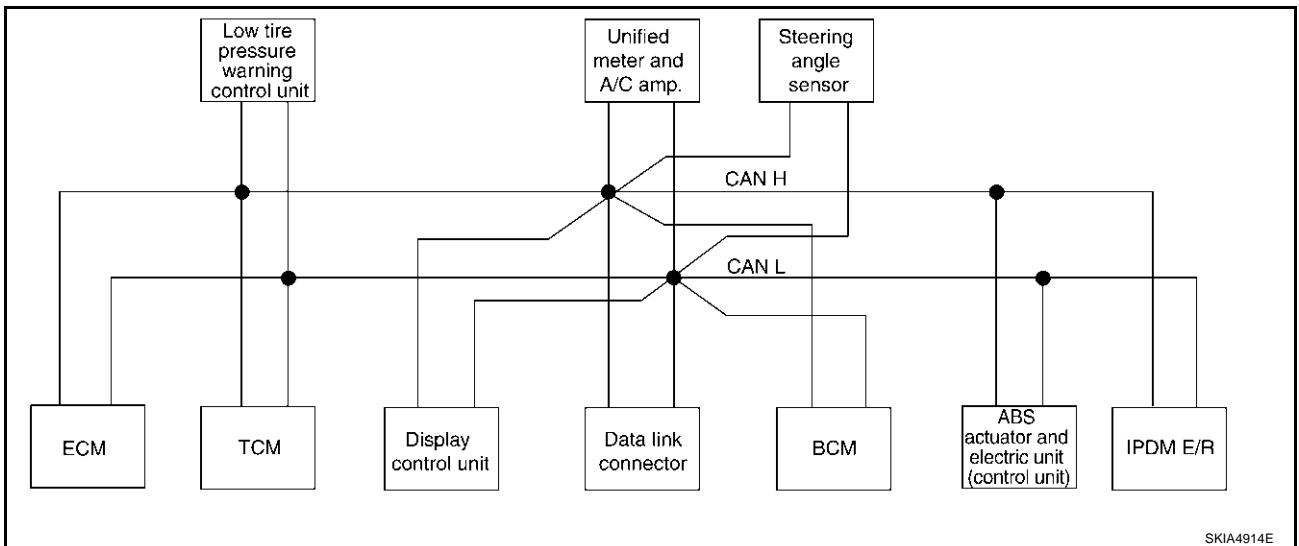


FRONT FOG LAMP

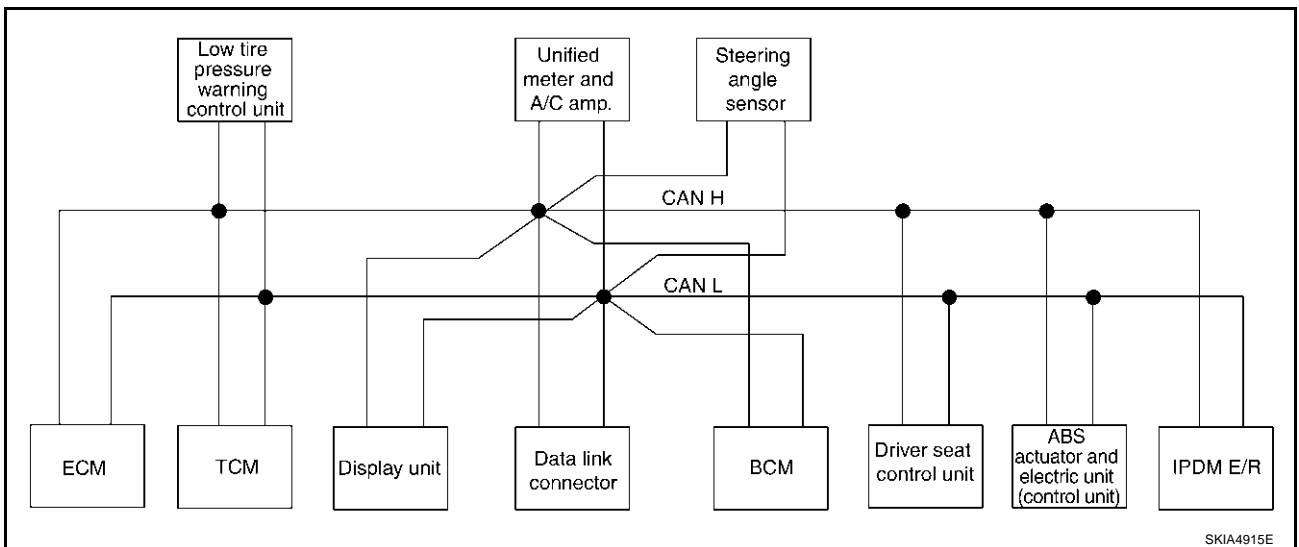
- Type12



- Type13



- Type14

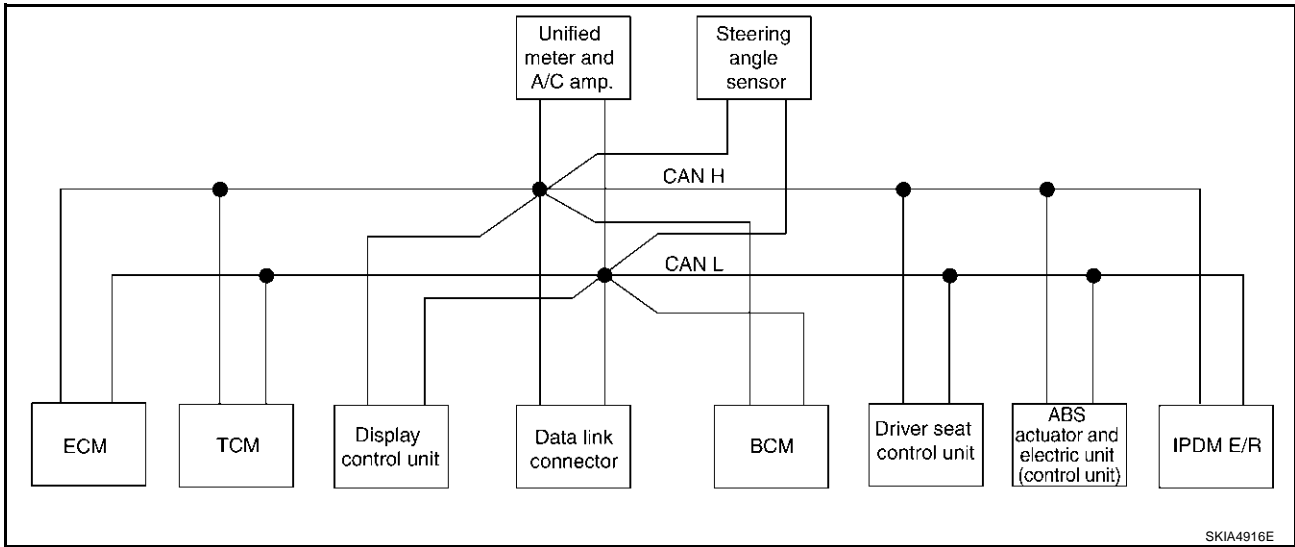


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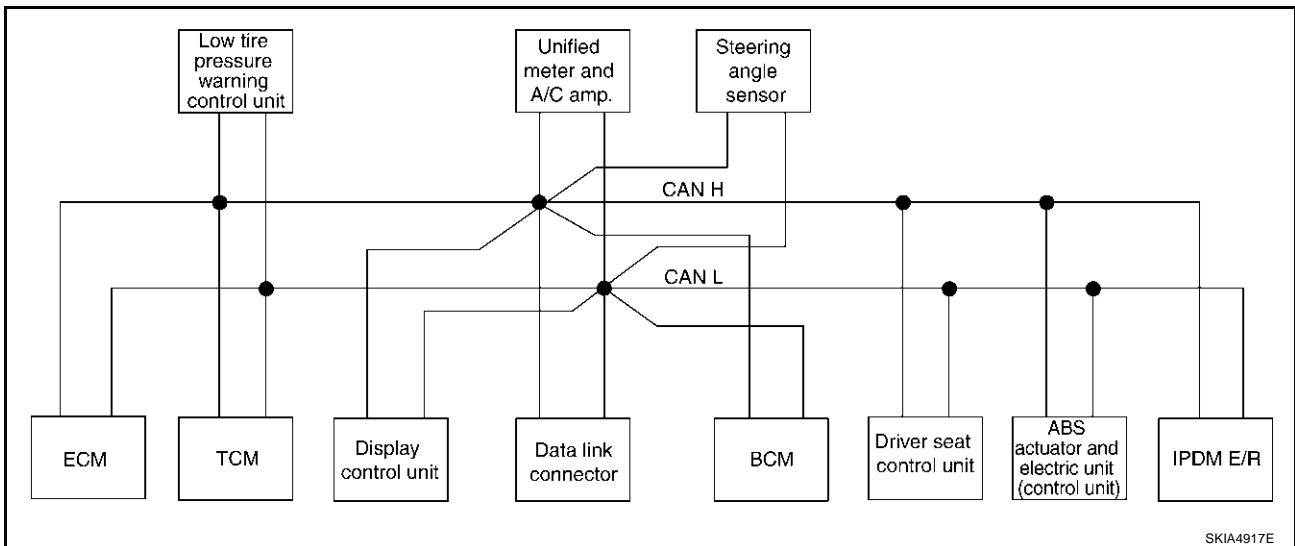
LT

FRONT FOG LAMP

- Type15



- Type16



FRONT FOG LAMP

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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FRONT FOG LAMP

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				
Turn indicator signal				R	R	T	R		R		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
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				

FRONT FOG LAMP

CAN Communication Unit For AWD Models

AKS0070U

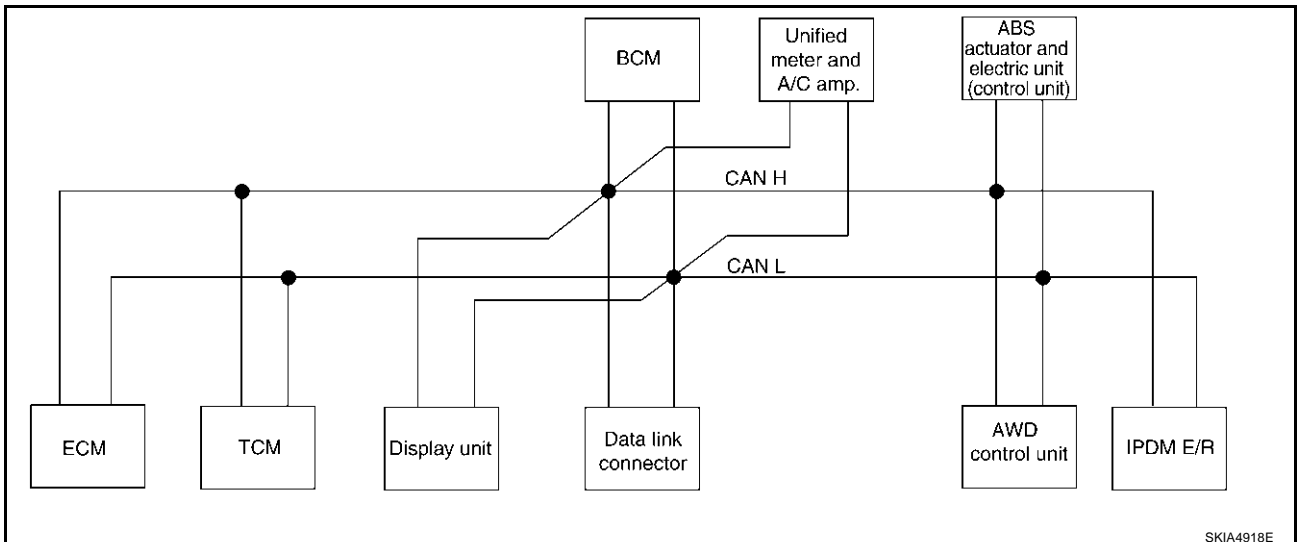
Body type	Wagon															
Axle	AWD															
Engine	VQ35DE															
Transmission	CVT															
Brake control	ABS							VDC								
Low tire pressure warning system		×			×	×		×		×			×	×		×
Navigation system			×		×		×	×			×		×		×	×
Automatic drive positioner				×		×	×	×				×		×	×	×
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	LT-193. "TYPE 17/TYPER 18/TYPER 19/TYPER 20/TYPER 21/TYPER 22/TYPER 23/TYPER 24"								LT-199. "TYPE 25/TYPER 26/TYPER 27/TYPER 28/TYPER 29/TYPER 30/TYPER 31/TYPER 32"							

×: Applicable

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

System Diagram

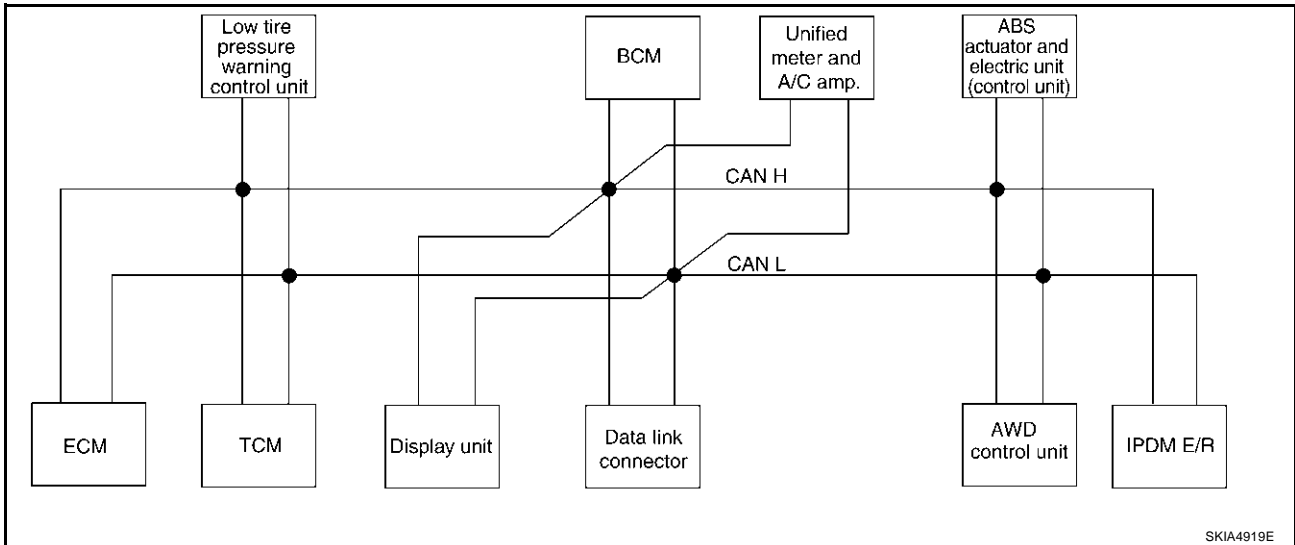
- Type17



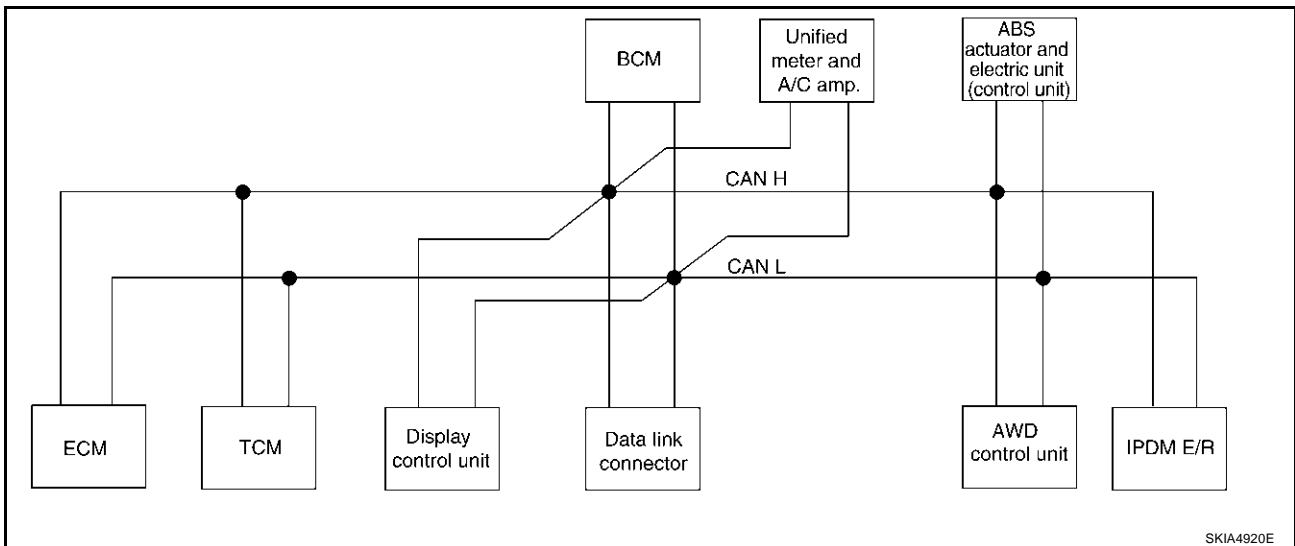
SKIA4918E

FRONT FOG LAMP

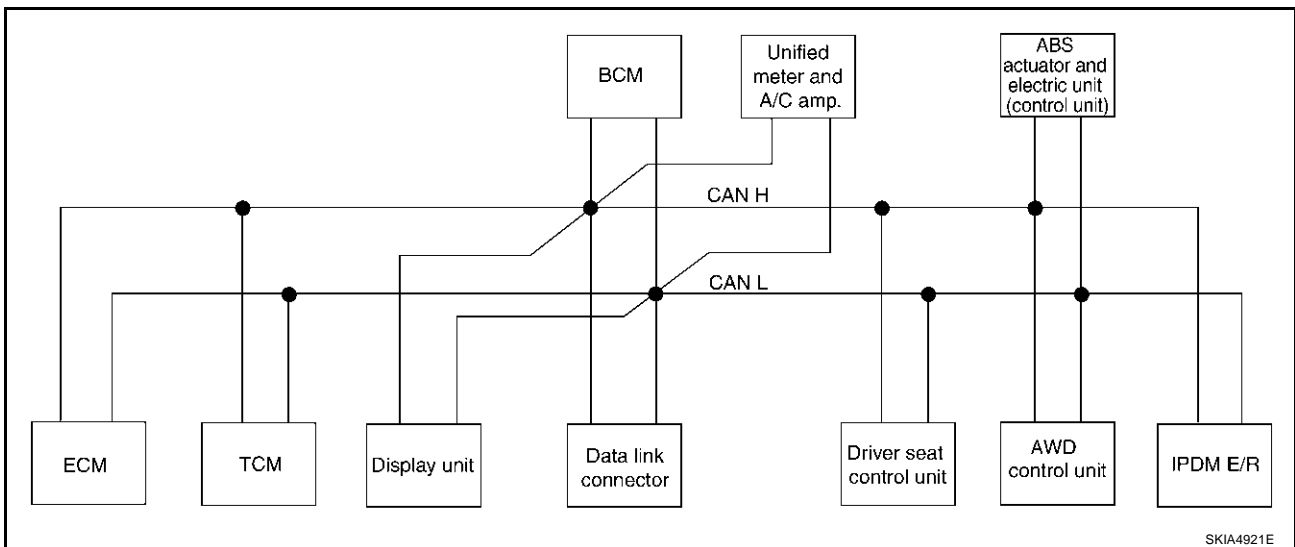
- Type18



- Type19

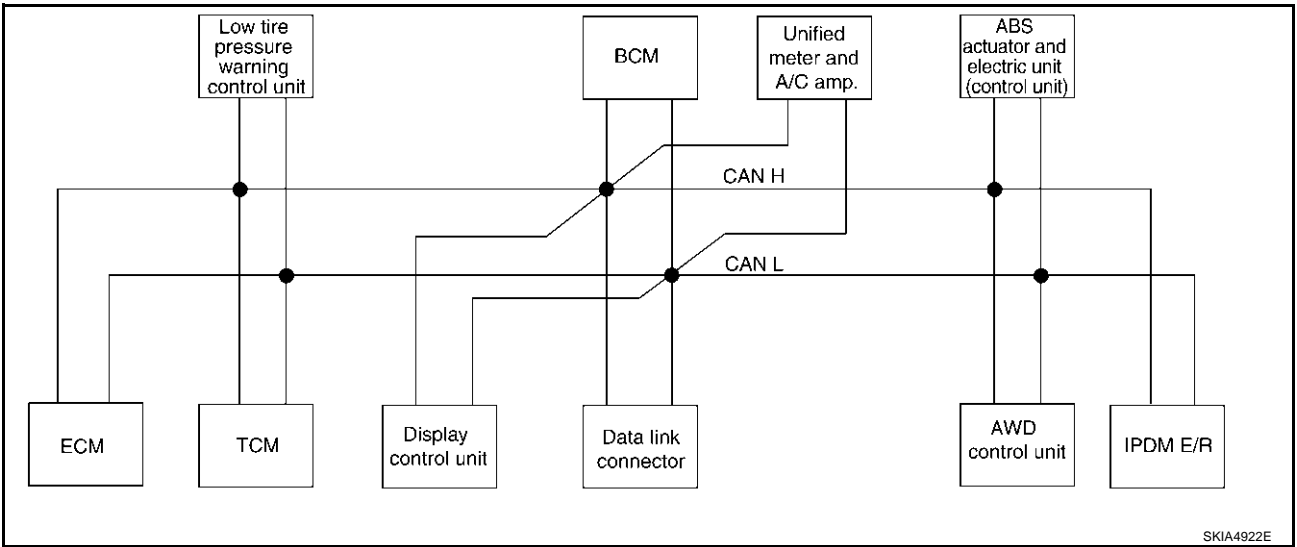


- Type20

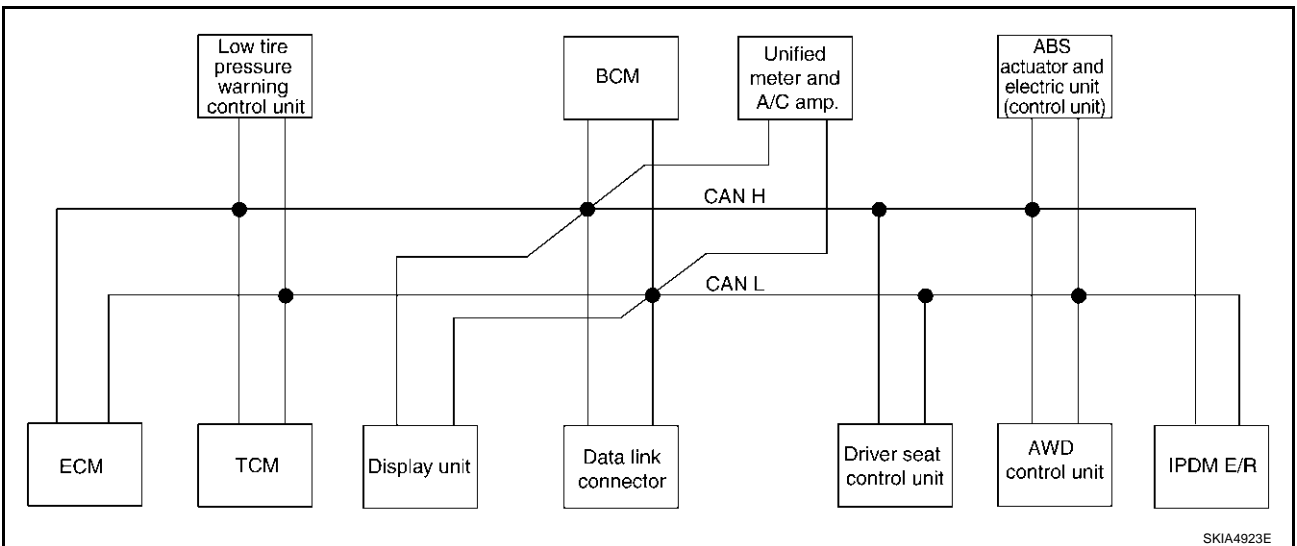


FRONT FOG LAMP

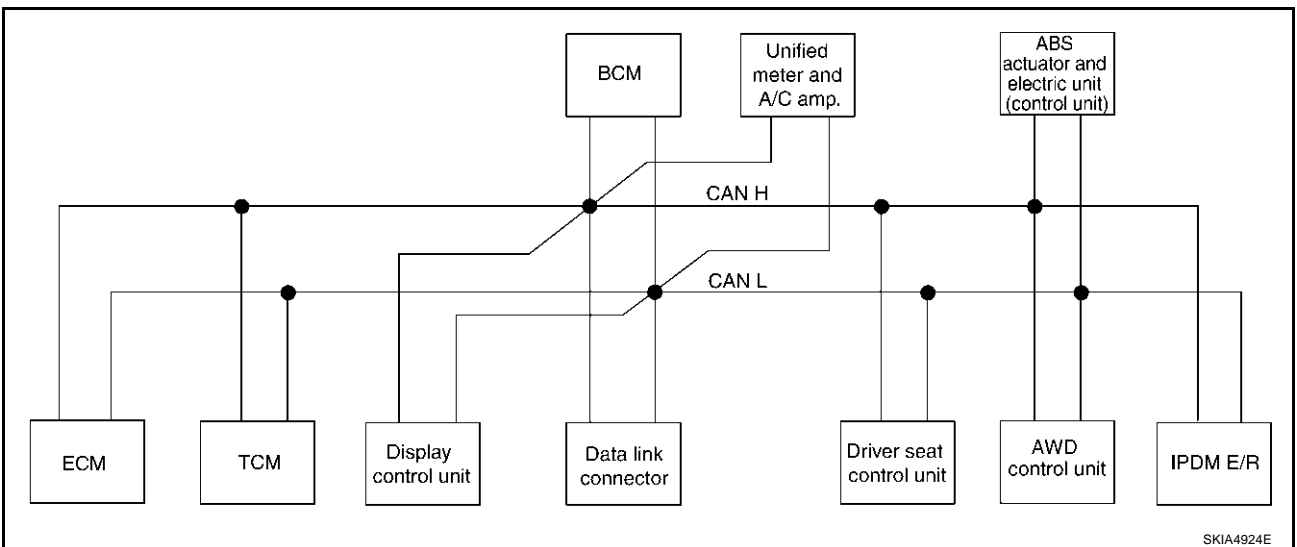
- Type21



- Type22



- Type23

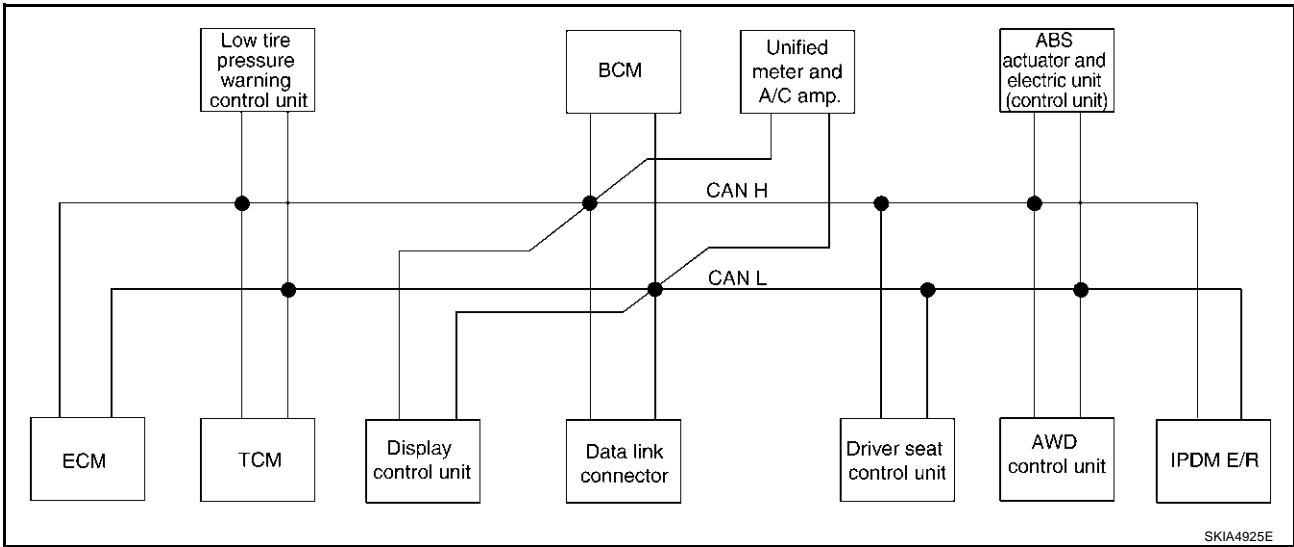


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FRONT FOG LAMP

- Type24



FRONT FOG LAMP

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			

FRONT FOG LAMP

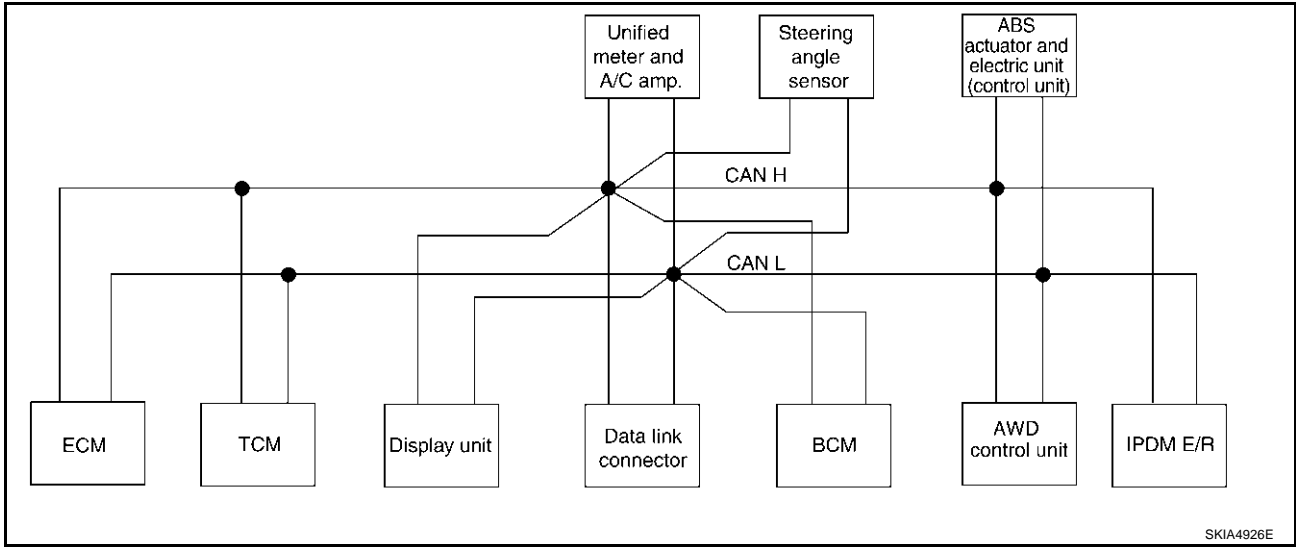
Signals	ECM	TCM	Low tire pressure warning control unit	Display unit	Display control unit	BCM	Unified meter and A/C amp.	Driver seat control unit	AWD control unit	ABS actuator and electric unit (control unit)	IPDM E/R
Turn indicator signal						T	R				
Seat belt buckle switch signal						R	T				
Oil pressure 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		

FRONT FOG LAMP

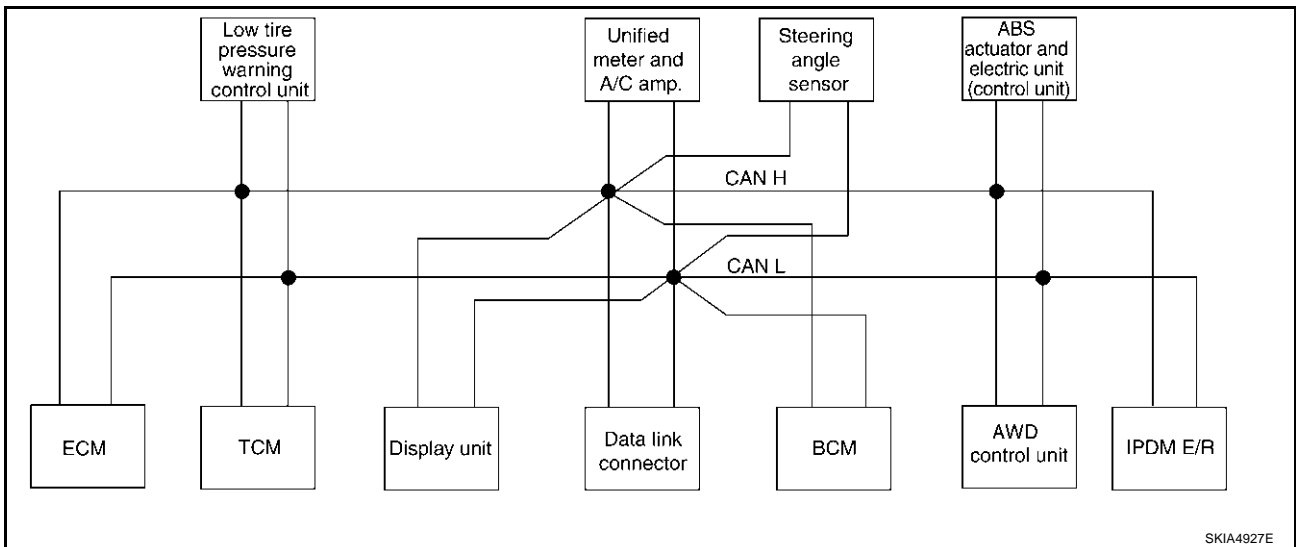
TYPE 25/TYPER26/TYPER 27/TYPER 28/TYPER 29/TYPER 30/TYPER 31/TYPER 32

System Diagram

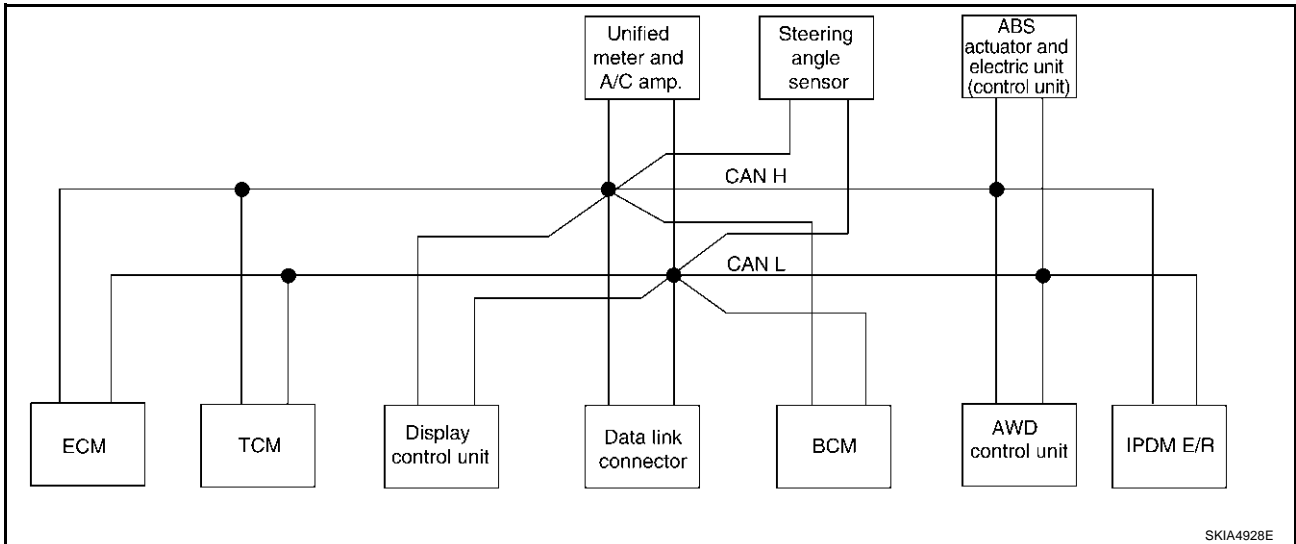
- Type25



- Type26



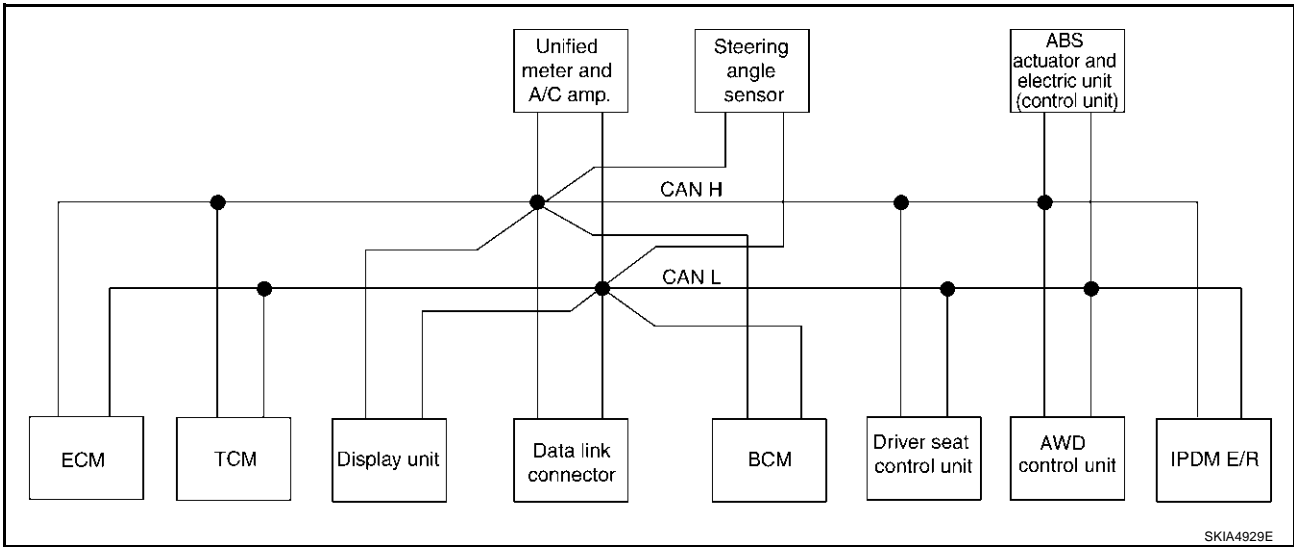
- Type27



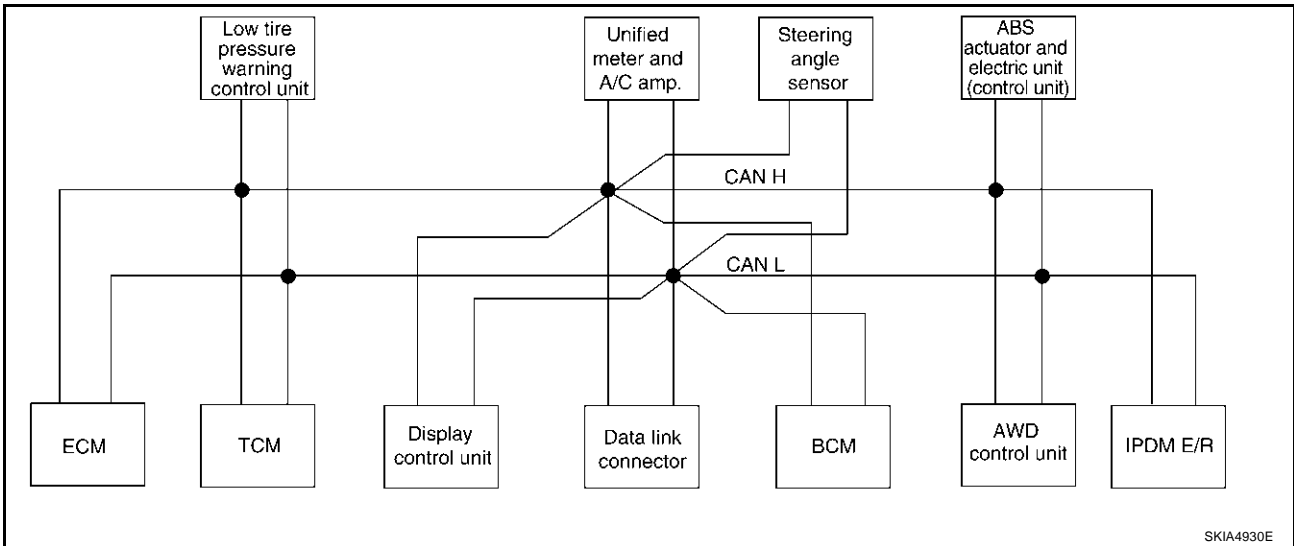
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FRONT FOG LAMP

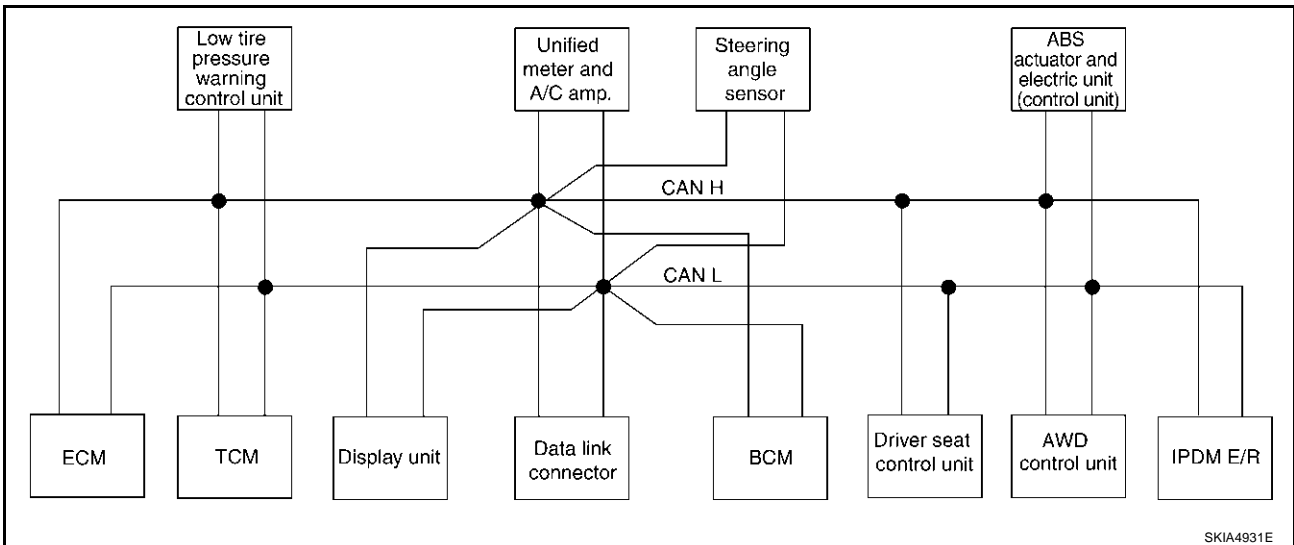
- Type28



- Type29

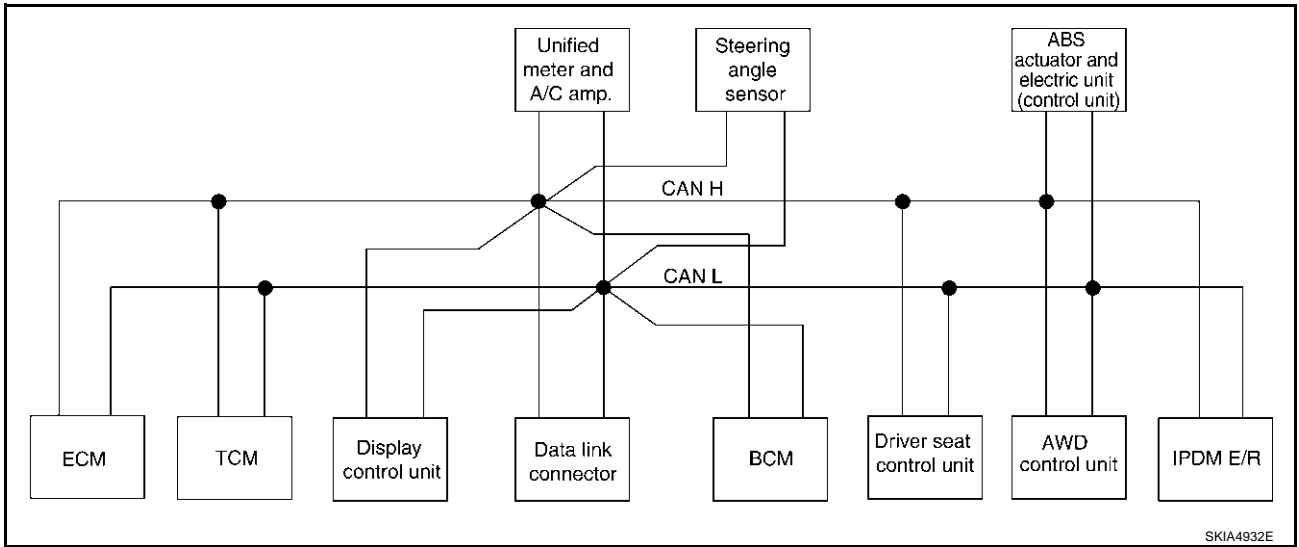


- Type30

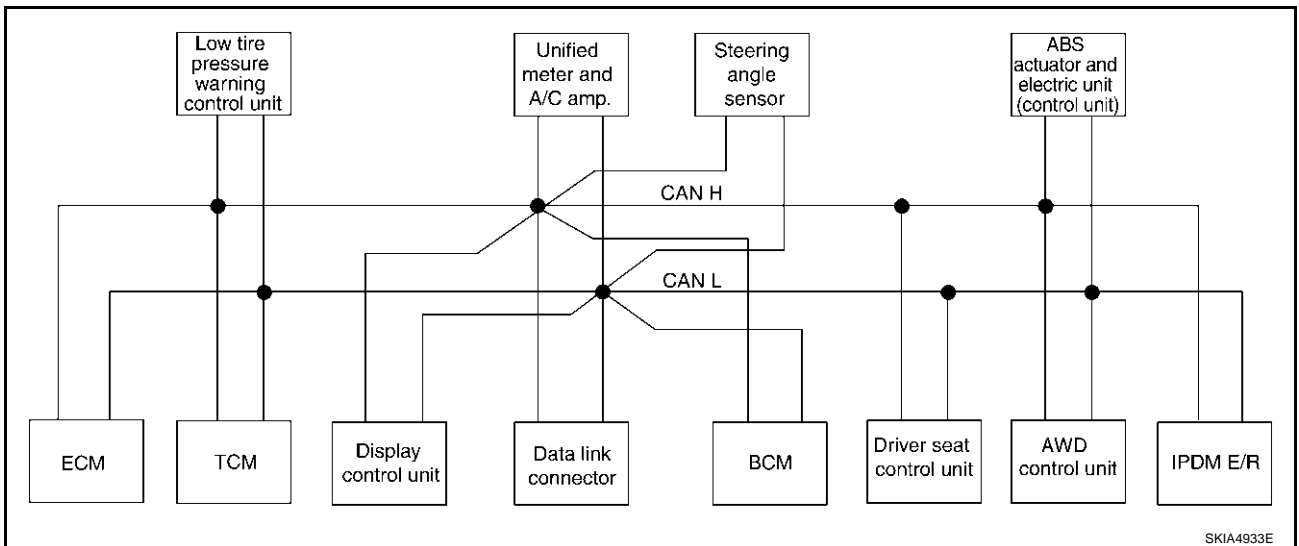


FRONT FOG LAMP

- Type31



- Type32



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FRONT FOG LAMP

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

FRONT FOG LAMP

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
Door switch signal						R	T					
Turn indicator signal				R	R	T	R		R			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
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			
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		

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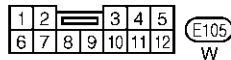
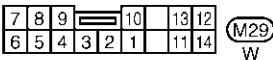
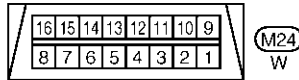
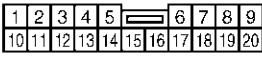
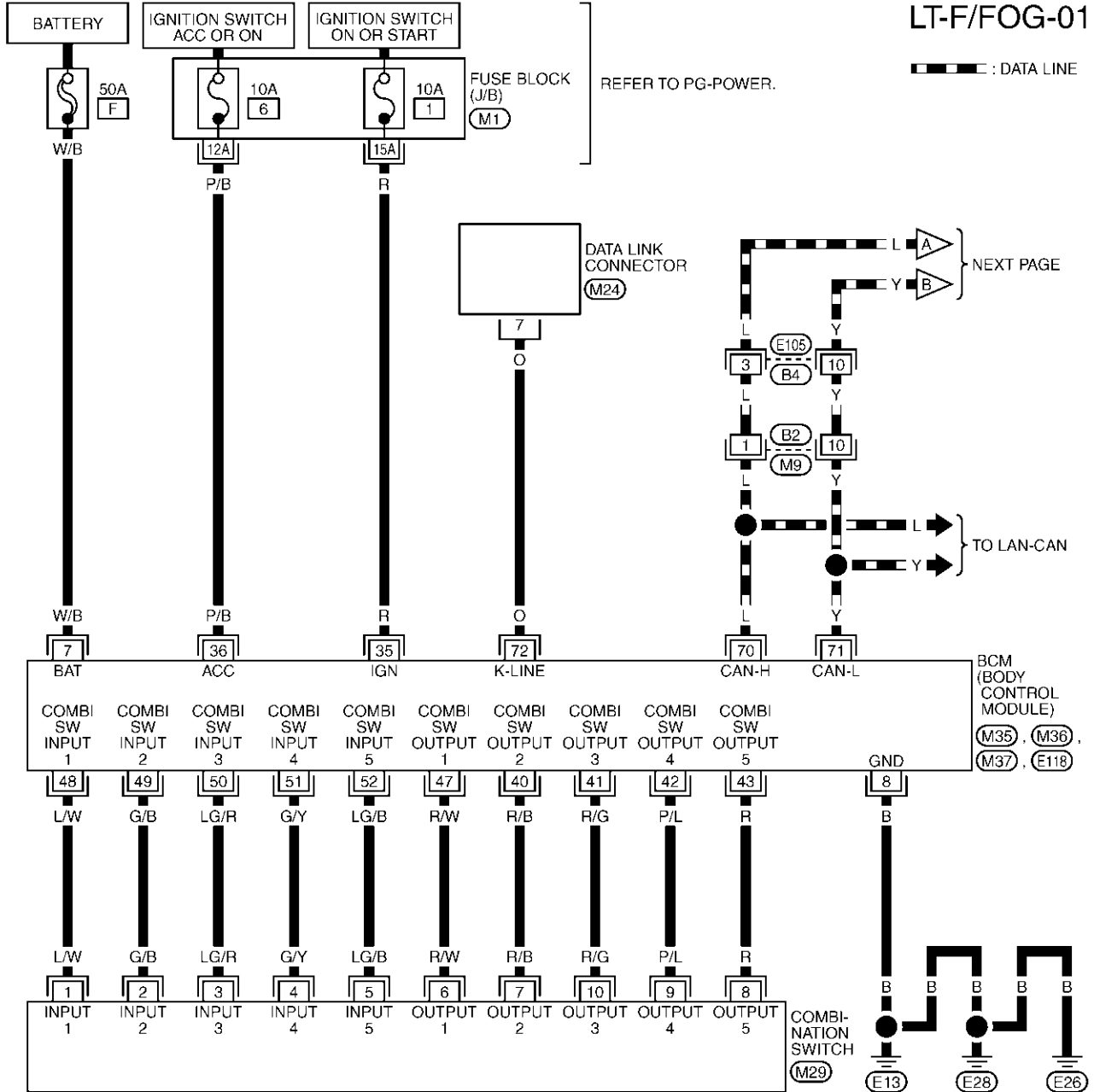
FRONT FOG LAMP

AKS004JZ

Wiring Diagram — F/FOG —

LT-F/FOG-01

▬ : DATA LINE



REFER TO THE FOLLOWING.

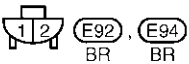
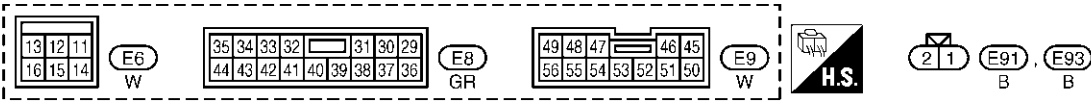
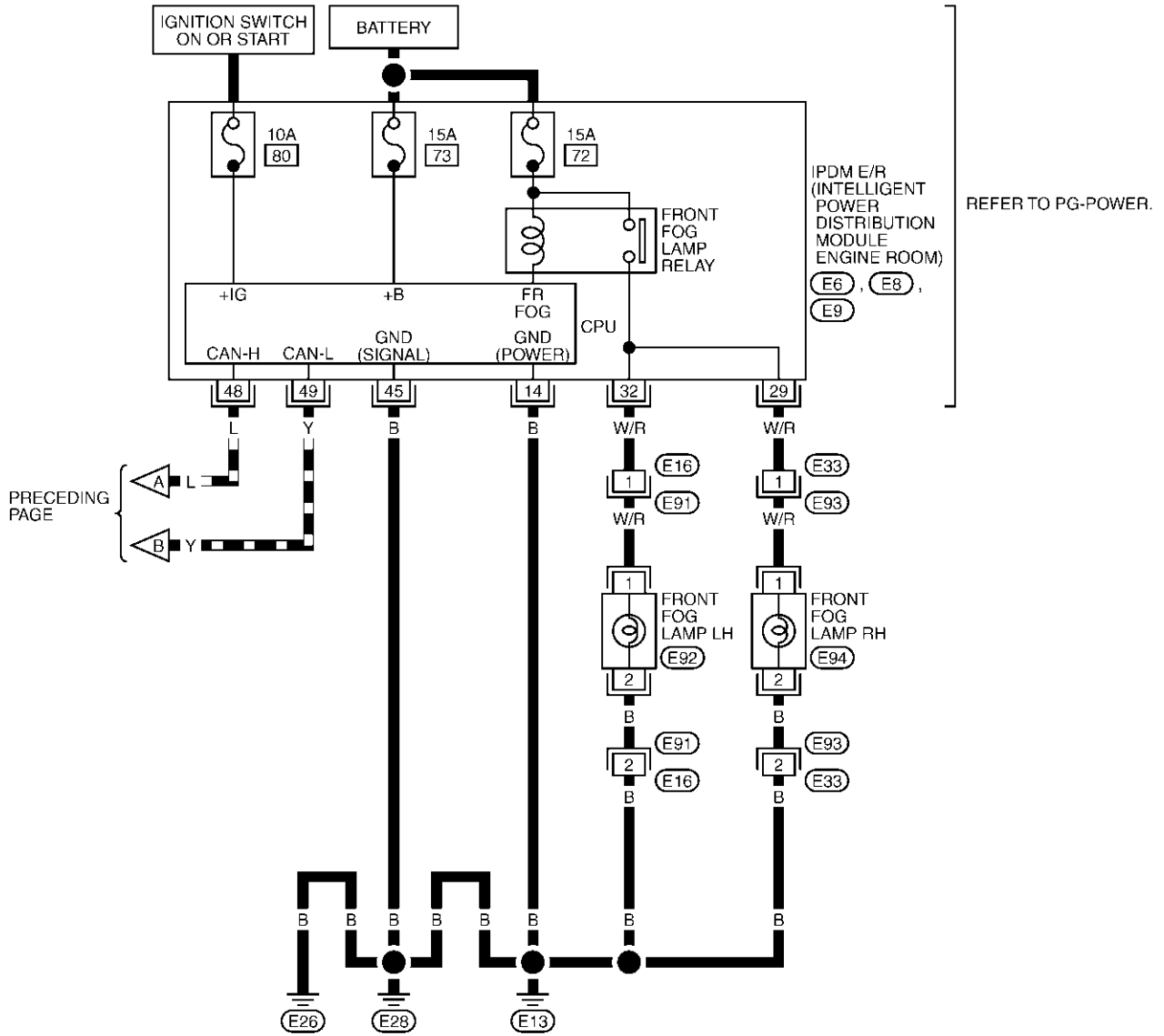
- (M1) - FUSE BLOCK-JUNCTION BOX (J/B)
- (M35), (M36), (M37), (E18) - ELECTRICAL UNITS

TKWA0763E

FRONT FOG LAMP

LT-F/FOG-02

▬ : DATA LINE

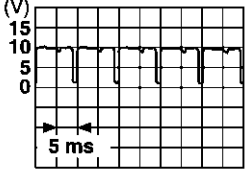


TKWA0764E

FRONT FOG LAMP

Terminals and Reference Value for BCM

AKS004K0

Terminal No.	Wire color	Signal name	Measuring condition		Reference value
			Ignition switch	Operation or condition	
7	W/B	Battery power supply	OFF	—	Battery voltage
8	B	Ground	ON	—	Approx.0
35	R	Ignition switch (ON)	ON	—	Battery voltage
36	P/B	Ignition switch (ACC)	ACC	—	Battery voltage
40	R/B	Combination switch output 2	ON	Lighting, turn, wiper OFF	
41	R/G	Combination switch output 3			
42	P/L	Combination switch output 4			
43	R	Combination switch output 5			
47	R/W	Combination switch output 1			
48	L/W	Combination switch input 1	ON	Lighting, turn, wiper OFF	4.5V or more
49	G/B	Combination switch input 2			
50	LG/R	Combination switch input 3			
51	G/Y	Combination switch input 4			
52	LG/B	Combination switch input 5			
70	L	CAN- H	—	—	—
71	Y	CAN- L	—	—	—
72	O	K-LINE	—	—	—

SKIA1119J

Terminals and Reference Values for IPDM E/R

AKS004K1

Terminal No.	Wire color	Signal name	Measuring condition		Reference value	
			Ignition switch	Operation or condition		
14	B	Ground	ON	—	Approx. 0V	
29	W/R	Front fog lamp (RH)	ON	Lighting switch must be in the 2ND position or AUTO position (LOW beam is ON) and the front fog lamp switch must be ON	OFF	Approx. 0V
					ON	Battery voltage
32	W/R	Front fog lamp (LH)	ON	Lighting switch must be in the 2ND position or AUTO position (LOW beam is ON) and the front fog lamp switch must be ON	OFF	Approx. 0V
					ON	Battery voltage
45	B	Ground	ON	—	Approx. 0V	
48	L	CAN- H	—	—	—	
49	Y	CAN- L	—	—	—	

How to Proceed With Trouble Diagnosis

AKS004K2

1. Confirm the symptom or customer complaint.
2. Understand operation description and function description. Refer to [LT-181, "System Description"](#) .
3. Carry out the Preliminary Check. Refer to [LT-207, "Preliminary Check"](#) .
4. Check symptom and repair or replace the cause of malfunction.
5. Does the front fog lamp operate normally? If YES: GO TO 6. If NO: GO TO 4.
6. INSPECTION END

FRONT FOG LAMP

AKS004K3

Preliminary Check INSPECTION FOR POWER SUPPLY AND GROUND CIRCUIT

1. CHECK FUSES

- Check for blown fuses.

Unit	Power source	Fuse and fusible link No.
BCM	Battery	F
	Ignition switch ON or START position	1
	Ignition switch ACC or ON position	6
IPDM E/R	Battery	72
		73

Refer to [LT-204, "Wiring Diagram — F/FOG —"](#) .

OK or NG

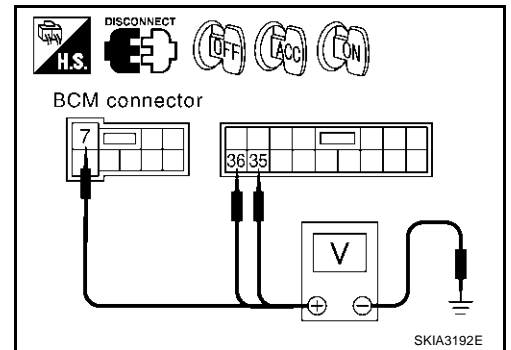
OK >> GO TO 2.

NG >> If fuse is blown, be sure to eliminate cause of problem before installing new fuse. Refer to [PG-3, "POWER SUPPLY ROUTING CIRCUIT"](#) .

2. CHECK POWER SUPPLY CIRCUIT

1. Disconnect BCM connector.
2. Check voltage between BCM connector and ground.

Terminals		(-)	Ignition switch position		
(+)			OFF	ACC	ON
Connector	Terminal (Wire color)				
E118	7 (W/B)	Ground	Battery voltage	Battery voltage	Battery voltage
M35	35 (R)		0V	0V	Battery voltage
M35	36 (P/B)		0V	Battery voltage	Battery voltage



OK or NG

OK >> GO TO 3.

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

3. CHECK GROUND CIRCUIT

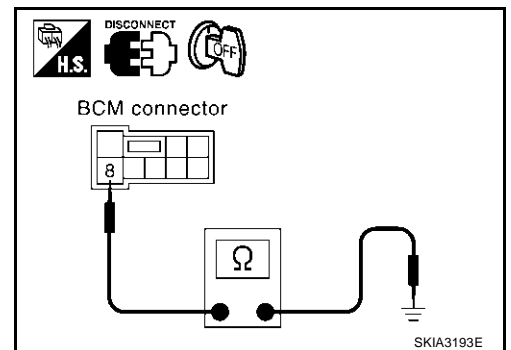
Check continuity between BCM and ground.

Terminals		Ground	Continuity
Connector	Terminal (Wire color)		Yes
E118	8 (B)		Yes

OK or NG

OK >> INSPECTION END

NG >> Check harness ground circuit.



CONSULT-II Function

AKS004K4

Refer to [LT-40, "CONSULT-II Function"](#) in HEAD LAMP.

FRONT FOG LAMP

AKS004K5

Front Fog Lamps Does Not Illuminate (Both Sides)

1. ACTIVE TEST

1. Select "FR FOG LAMP" during active test. Refer to [LT-42, "ACTIVE TEST"](#) .
2. Make sure front fog lamps operation.

Font fog lamps should operate

OK or NG

- OK >> GO TO 5.
NG >> GO TO 2.

2. CHECK FRONT FOG LAMP CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connector and front fog lamp RH and LH connectors.
3. Check continuity between IPDM E/R harness connector E8 terminal 29 (W/R) and front fog lamp RH harness connector E94 terminal 1 (W/R).

Continuity should exist.

4. Check continuity between IPDM E/R harness connector E8 terminal 32 (W/R) and front fog lamp LH harness connector E92 terminal 1 (W/R).

Continuity should exist.

OK or NG

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

3. CHECK FRONT FOG LAMP GROUND

1. Check continuity between front fog lamp RH harness connector E94 terminal 2 (B) and ground.

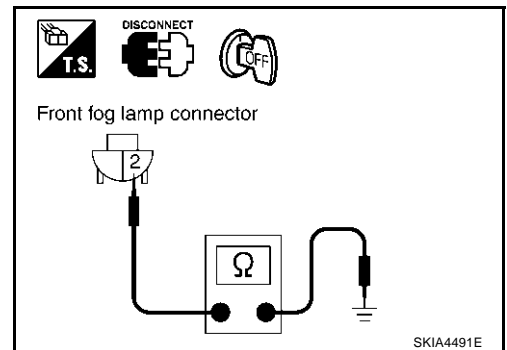
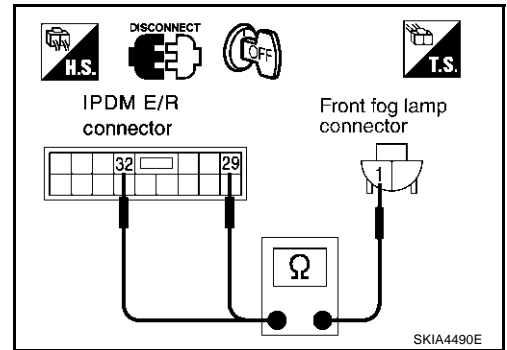
Continuity should exist.

2. Check continuity between front fog lamp LH harness connector E92 terminal 2 (B) and ground.

Continuity should exist.

OK or NG

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



FRONT FOG LAMP

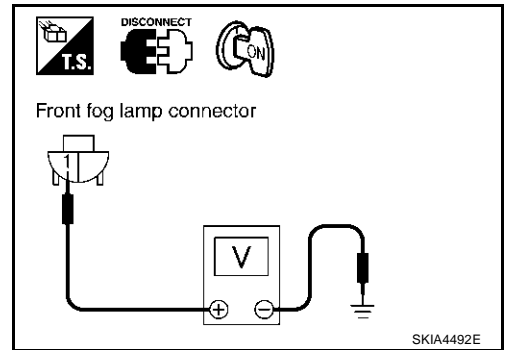
4. CHECK FRONT FOG LAMPS INPUT SIGNAL

1. Connect IPDM E/R connector.
2. Select "FR FOG LAMP" during active test. Refer to [LT-42, "ACTIVE TEST"](#) or When front fog lamp relay is operating, check voltage between front fog lamp RH or LH harness connector and ground.

Terminals		Terminal (Wire color)	(-)	Voltage
(+)				
Connector				
RH	E94	1 (W/R)	Ground	Battery voltage
LH	E92			

OK or NG

- OK >> Check front fog lamp bulbs.
 NG >> Replace IPDM E/R.



5. CHECK COMBINATION SWITCH CIRCUIT

Select "BCM" on CONSULT-II. Carry out "BCM C/U" self-diagnosis.
Displayed results of self-diagnosis

- No malfunction detected >> GO TO 6.
 CAN communications or CAN system >> Check BCM CAN communication system. Refer to [BCS-34, "CAN Communication Inspection Using CONSULT-II \(Self-Diagnosis\)"](#).
 OPEN DETECT 1 - 5 >> Combination switch system malfunction. Refer to [LT-257, "Combination Switch Inspection According to Self-Diagnostic Results"](#).

SELF-DIAG RESULTS	
DTC RESULTS	TIME
NO DTC IS DETECTED. FURTHER TESTING MAY BE REQUIRED	

LKIA0073E

6. CHECK COMBINATION SWITCH INPUT SIGNAL

Select "BCM" on CONSULT-II. Use "HEADLAMP" data monitor to make sure "FR FOG SW" turns ON-OFF linked with operation of fog lamp switch.

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

OK or NG

- OK >> Replace BCM. Refer to [BCS-36, "Removal and Installation of BCM"](#).
 NG >> Replace lighting switch.

DATA MONITOR	
MONITOR	
FR FOG SW	ON

SKIA4493E

FRONT FOG LAMP

AKS004K6

Front Fog Lamp Does Not Illuminate (One Side)

1. CHECK BULB

Inspect bulb of lamp which do not illuminate.

OK or NG

OK >> GO TO 2.

NG >> Replace front fog lamp bulb.

2. CHECK FRONT FOG LAMP CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connector and front fog lamp connector RH or LH.
3. Check continuity between IPDM E/R harness connector E8 terminal 29 (W/R) and front fog lamp RH harness connector E94 terminal 1 (W/R).

Continuity should exist.

4. Check continuity between IPDM E/R harness connector E8 terminal 32 (W/R) and front fog lamp LH harness connector E92 terminal 1 (W/R).

Continuity should exist.

OK or NG

OK >> GO TO 3.

NG >> Repair harness or connector.

3. CHECK FRONT FOG LAMP GROUND

1. Check continuity between front fog lamp RH harness connector E94 terminal 2 (B) and ground.

Continuity should exist.

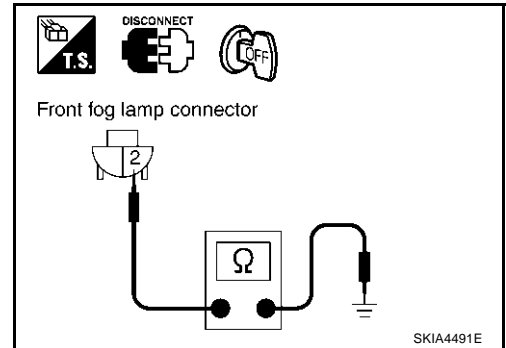
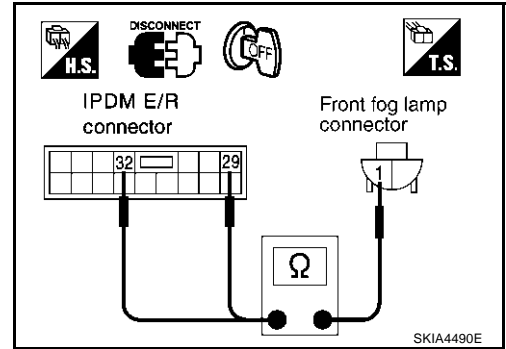
2. Check continuity between front fog lamp LH harness connector E92 terminal 2 (B) and ground.

Continuity should exist.

OK or NG

OK >> Replace IPDM E/R.

NG >> Repair harness or connector.



FRONT FOG LAMP

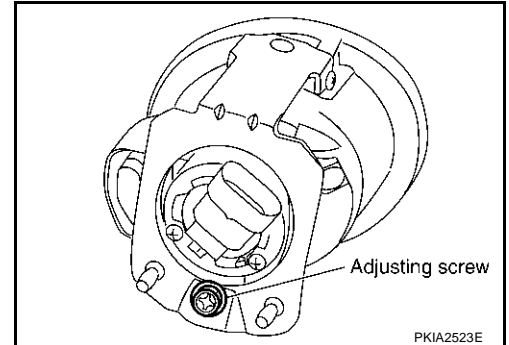
Aiming Adjustment

AKS005LC

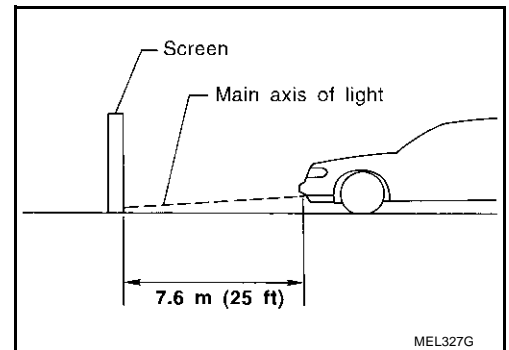
The fog lamp is a semi-sealed beam type which uses a replaceable halogen bulb. Before performing aiming adjustment, make sure of the following.

- Keep all tires inflated to correct pressure.
- Place vehicle on level ground.
- See that vehicle is unloaded (except for full levels of coolant, engine oil and fuel, and spare tire, jack, and tools). Have the driver or equivalent weight placed in driver seat.

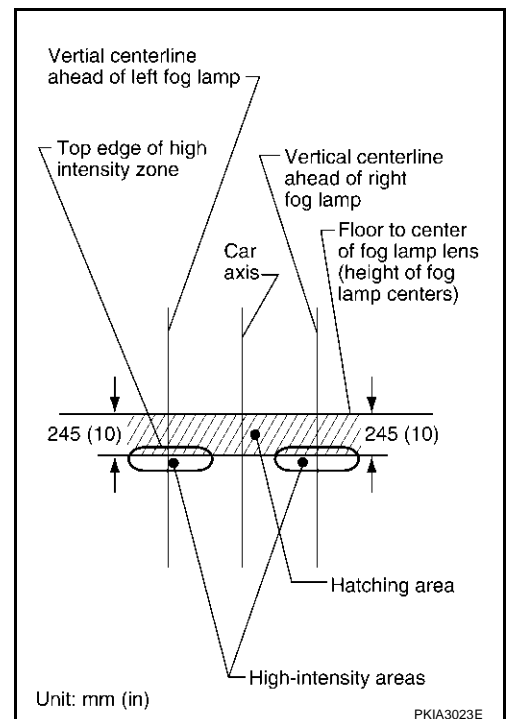
Adjust aiming in the vertical direction by turning the adjusting screw.



1. Set the distance between the screen and the center of the fog lamp lens as shown at left.
2. Turn front fog lamps ON.



3. Adjust front fog lamps using adjusting screw so that the top edge of the high intensity zone is in the hatched area as shown in the figure.
 - When performing this adjustment, cover the headlamps and the opposite fog lamp, if necessary.



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FRONT FOG LAMP

Bulb Replacement

AKS005LE

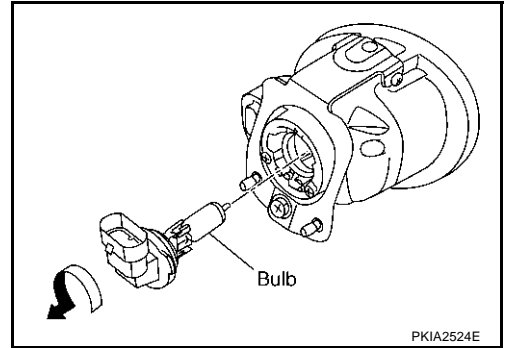
1. Remove fender protector front. Refer to [EI-22, "FENDER PROTECTOR"](#) in "EI" section.
2. Remove the one side of front bumper where a fog lamp bulb to be changed.
3. Disconnect connector.
4. Turn bulb socket counterclockwise and unlock it.

Fog lamp :12 V - 35 W (H3 halogen)

5. Install in the reverse order of removal.

CAUTION:

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

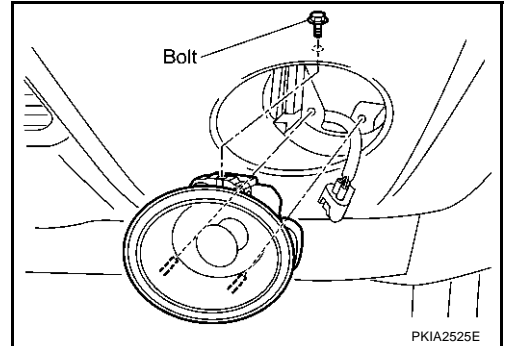


Removal and Installation

REMOVAL

AKS005LF

1. Remove fender protector front. Refer to [EI-22, "FENDER PROTECTOR"](#) in "EI" section.
2. Remove the one side of front bumper where a fog lamp needs to be changed. Refer to [EI-14, "FRONT BUMPER"](#) in "EI" section.
3. Remove fog lamp mounting bolt.
4. Pull out fog lamp from vehicle and disconnect connector.



INSTALLATION

- Install fog lamp in the reverse order of removal, observing the tightening torque shown below.
Fog lamp mounting screw

Tightening torque : 5.5 N·m (0.56 kg·m, 49 in·lb)

TURN SIGNAL AND HAZARD WARNING LAMPS

TURN SIGNAL AND HAZARD WARNING LAMPS

PPF:26120

System Description

AKS004KB

TURN SIGNAL OPERATION

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

- through 10A fuse [No. 1, located in fuse block (J/B)]
- to BCM (body control module) terminal 35
- through 10A fuse [No. 12, located in fuse block (J/B)]
- to unified meter and A/C amp. terminal 22
- through 10A fuse [No. 14, located in fuse block (J/B)]
- to combination meter terminal 20.

Ground is supplied

- to BCM (body control module) terminal 8
- through grounds E13, E26 and E28, and
- to unified meter and A/C amp. terminals 29, and 30
- through grounds M14 and M78
- to combination meter terminals 22, 23 and 24
- through grounds M14 and M78.

LH Turn

When the turn signal switch (combination switch) is moved to the left position, the BCM receives input signal requesting the left turn signals to flash. The BCM then supplies power

- through BCM terminal 22
- to front combination lamp LH terminal 2
- to rear combination lamp LH terminal 3.

Ground is supplied to front combination lamp LH terminal 8 through grounds E13, E26 and E28.

Ground is supplied to rear combination lamp LH terminal 4 through grounds B7 and B20.

The BCM also supplies input to unified meter and A/C amp. terminals 1 and 11 across the CAN communication lines.

The unified meter and A/C amp. which received the turn indicator signal makes a left turn signal indicator turn on in combination meter.

With power and input supplied, the BCM controls the flashing of the LH turn signal lamps.

RH Turn

When the turn signal switch (combination switch) is moved to the right position, the BCM receives input signal requesting the right turn signals to flash. The BCM then supplies power

- through BCM terminal 21
- to front combination lamp RH terminal 2
- to rear combination lamp RH terminal 3.

Ground is supplied to front combination lamp RH terminal 8 through grounds E13, E26 and E28.

Ground is supplied to rear combination lamp RH terminal 4 through grounds B7 and B20.

The BCM also supplies input to unified meter and A/C amp. terminals 1 and 11 across the CAN communication lines.

The unified meter and A/C amp. which received the turn indicator signal makes a right turn signal indicator turn on in combination meter.

With power and input supplied, the BCM controls the flashing of the RH turn signal lamps.

HAZARD LAMP OPERATION

Power is supplied at all times

- through 50A fusible link [letter F, located in fuse and fusible link block]
- to BCM terminal 7
- through 10A fuse [No. 19, located in fuse block (J/B)]
- to unified meter and A/C amp. terminal 21
- through 10A fuse [No. 21, located in fuse block (J/B)]
- to combination meter terminal 21

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TURN SIGNAL AND HAZARD WARNING LAMPS

Ground is supplied

- to BCM terminal 8
- through grounds E13, E26 and E28, and
- to unified meter and A/C amp. terminals 29 and 30
- through grounds M14 and M78
- to combination meter terminals 22, 23 and 24
- through grounds M14 and M78.

When the hazard switch is depressed, ground is supplied

- to BCM terminal 61
- through combination meter terminal 9
- to combination meter terminal 22
- through grounds M14 and M78.

The BCM then supplies power

- through BCM terminal 22
- to front combination lamp LH terminal 2
- to rear combination lamp LH terminal 3
- through BCM terminal 21
- to front combination lamp RH terminal 2
- to rear combination lamp RH terminal 3.

Ground is supplied

- to front combination lamp LH terminal 8 through grounds E13, E26 and E28
- to front combination lamp RH terminal 8 through grounds E13, E26 and E28
- to rear combination lamp LH terminal 4 through grounds B7 and B20
- to rear combination lamp RH terminal 4 through grounds B7 and B20.

The BCM also supplies input to unified meter and A/C amp. terminals 1 and 11 across the CAN communication lines.

The unified meter and A/C amp. which received the turn indicator signal makes a left and right turn signal indicator turn on in combination meter.

With power and input supplied, the BCM controls the flashing of the hazard warning lamps.

REMOTE CONTROL ENTRY SYSTEM OPERATION

Power is supplied at all times

- through 50A fusible link [letter F, located in fuse and fusible link block]
- to BCM terminal 7
- through 10A fuse [No. 19, located in fuse block (J/B)]
- to unified meter and A/C amp. terminal 21
- through 10A fuse [No. 21, located in fuse block (J/B)]
- to combination meter terminal 21

Ground is supplied

- to BCM terminal 8
- through grounds E13, E26 and E28, and
- to unified meter and A/C amp. terminal 29 and 30
- through grounds M14 and M78
- to combination meter terminals 22, 23 and 24
- through grounds M14 and M78.

When the remote control entry system is triggered by input from the key fob, the BCM supplies power

- through BCM terminal 22
- to front combination lamp LH terminal 2
- to rear combination lamp LH terminal 3
- through BCM terminal 21

TURN SIGNAL AND HAZARD WARNING LAMPS

- to front combination lamp RH terminal 2
- to rear combination lamp RH terminal 3.

Ground is supplied

- to front combination lamp LH terminal 8 through grounds E13, E26 and E28
- to front combination lamp RH terminal 8 through grounds E13, E26 and E28
- to rear combination lamp LH terminal 4 through grounds B7 and B20
- to rear combination lamp RH terminal 4 through grounds B7 and B20.

The BCM also supplies input to unified meter and A/C amp. terminals 1 and 11 across the CAN communication lines.

The unified meter and A/C amp. which received the turn indicator signal makes a left and right turn signal indicator turn on in combination meter.

With power and input supplied, the BCM controls the flashing of the hazard warning lamps when key fob is used to activate the remote control entry system.

COMBINATION SWITCH READING FUNCTION

Refer to [LT-251, "Combination Switch Reading Function"](#).

CAN Communication System Description

AKS004KC

CAN (Controller Area Network) is a serial communication line for real time application. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Many electronic control units are equipped onto a vehicle, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN H line, CAN L line) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.

CAN Communication Unit For 2WD Models

AKS007QV

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	LT-216, "TYPE 1/TYPE 2/TYPE 3/TYPE 4/TYPE 5/TYPE 6/TYPE 7/TYPE 8"								LT-221, "TYPE 9/TYPE 10/TYPE 11/TYPE 12/TYPE 13/TYPE 14/TYPE 15/TYPE 16"							

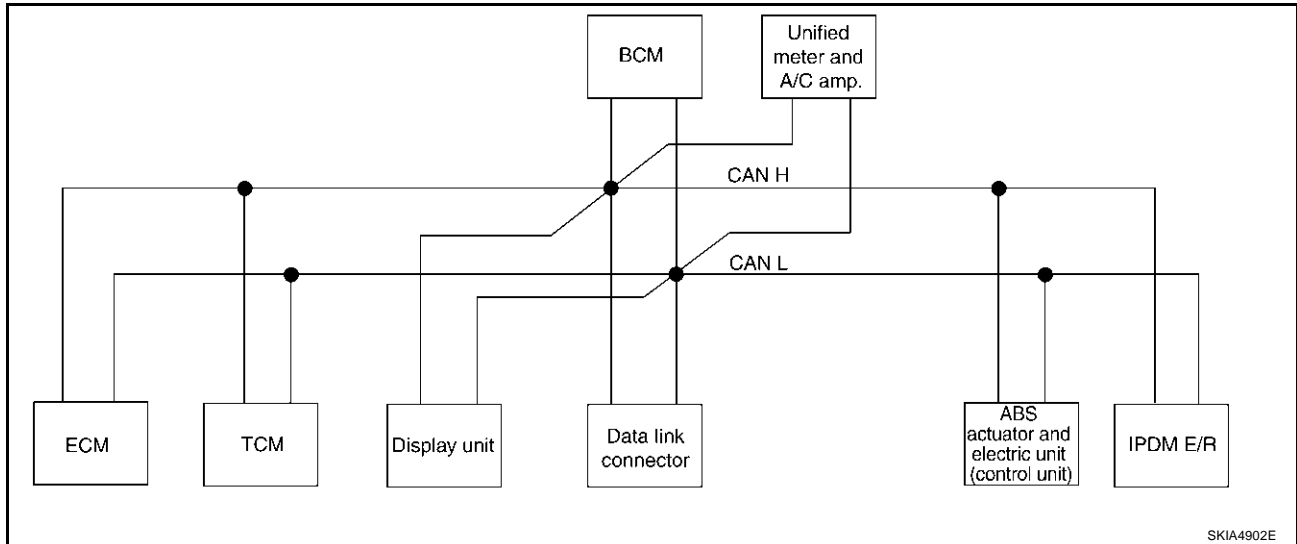
TURN SIGNAL AND HAZARD WARNING LAMPS

×: Applicable

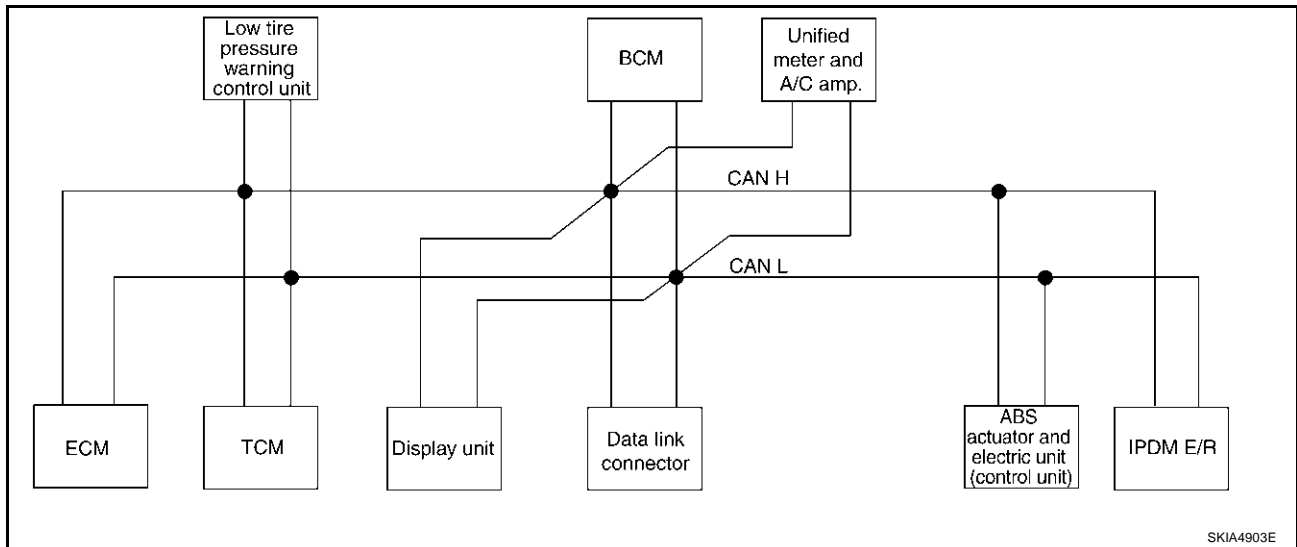
TYPE 1/TYPER 2/TYPER 3/TYPER 4/TYPER 5/TYPER 6/TYPER 7/TYPER 8

System Diagram

- Type1

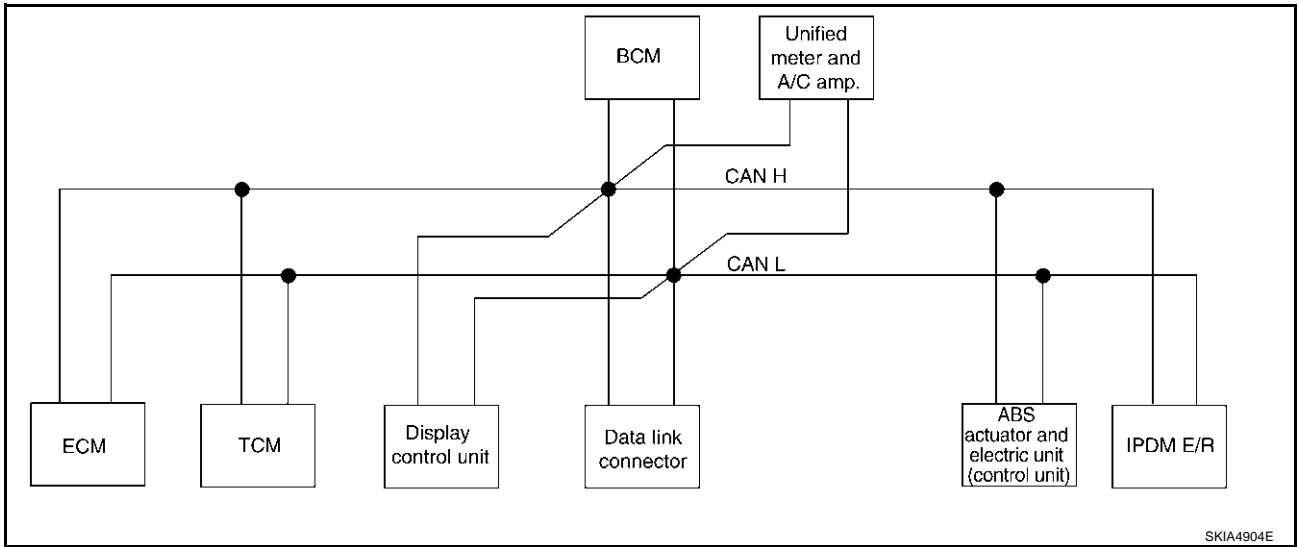


- Type2

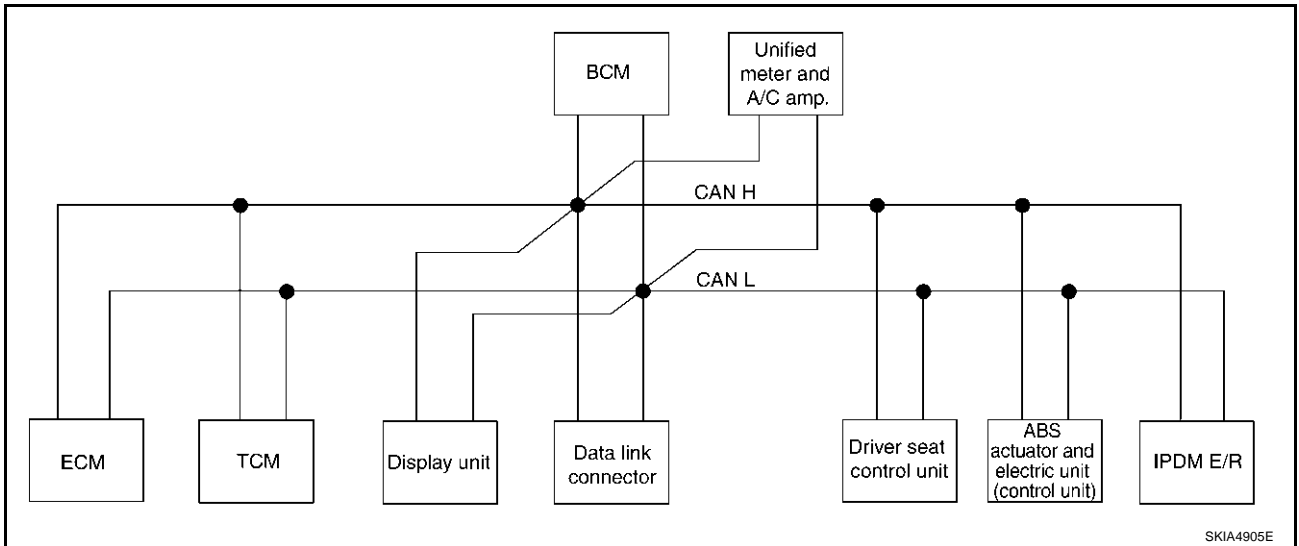


TURN SIGNAL AND HAZARD WARNING LAMPS

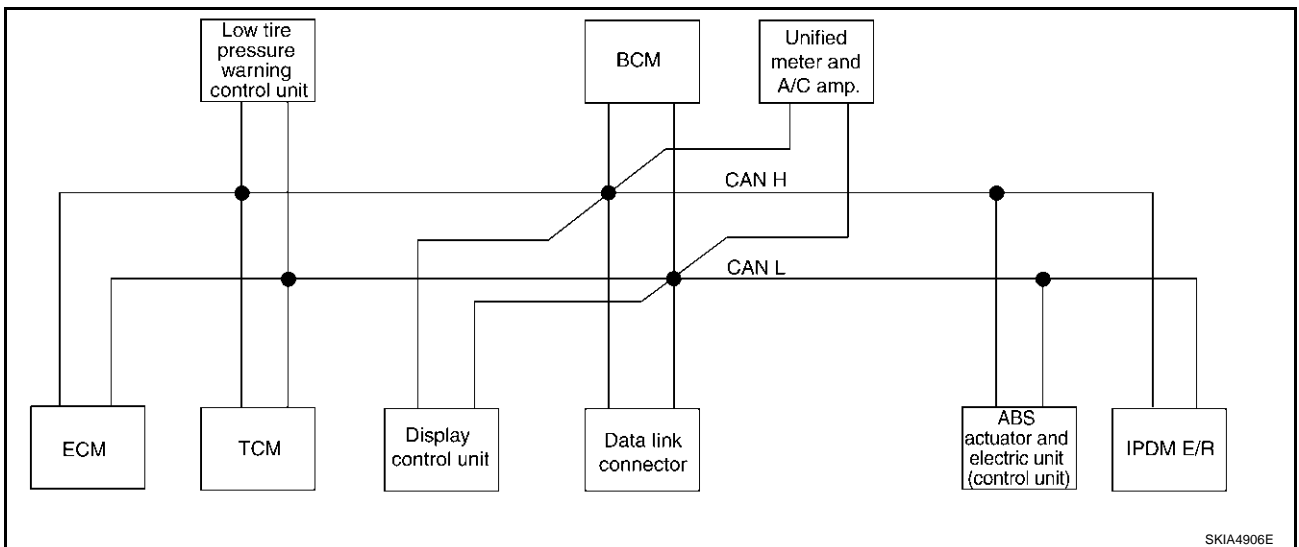
- Type3



- Type4



- Type5

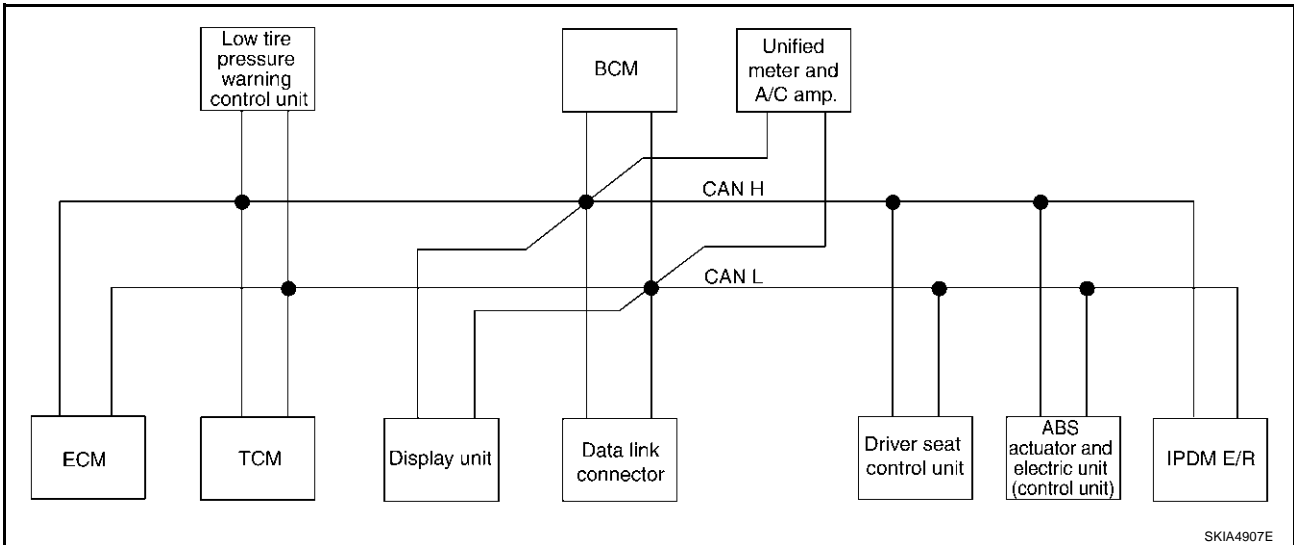


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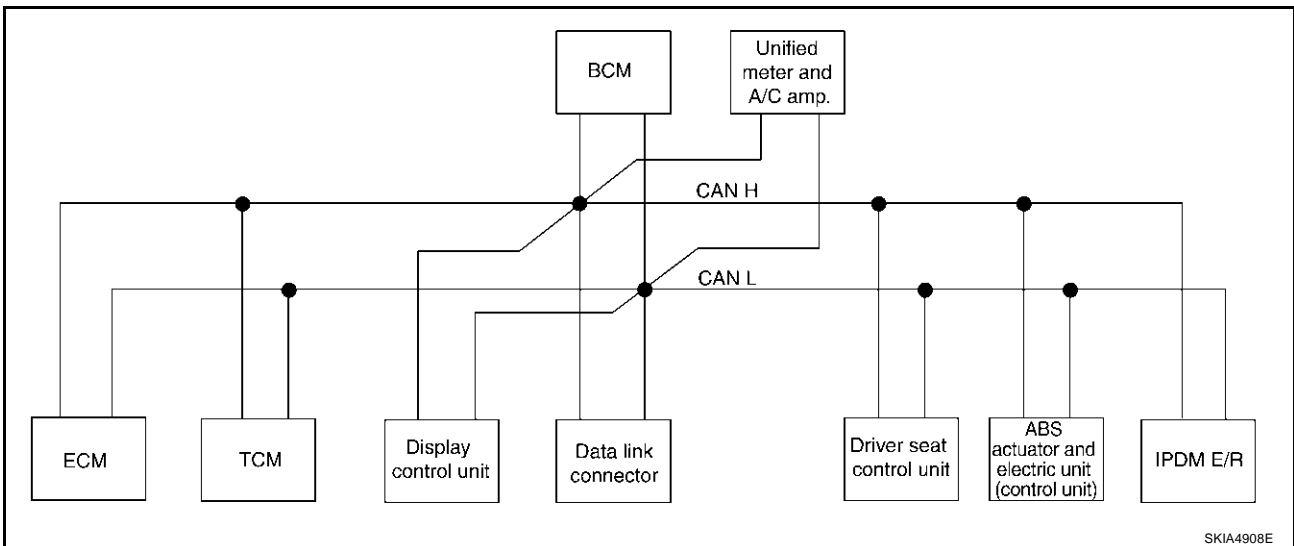
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TURN SIGNAL AND HAZARD WARNING LAMPS

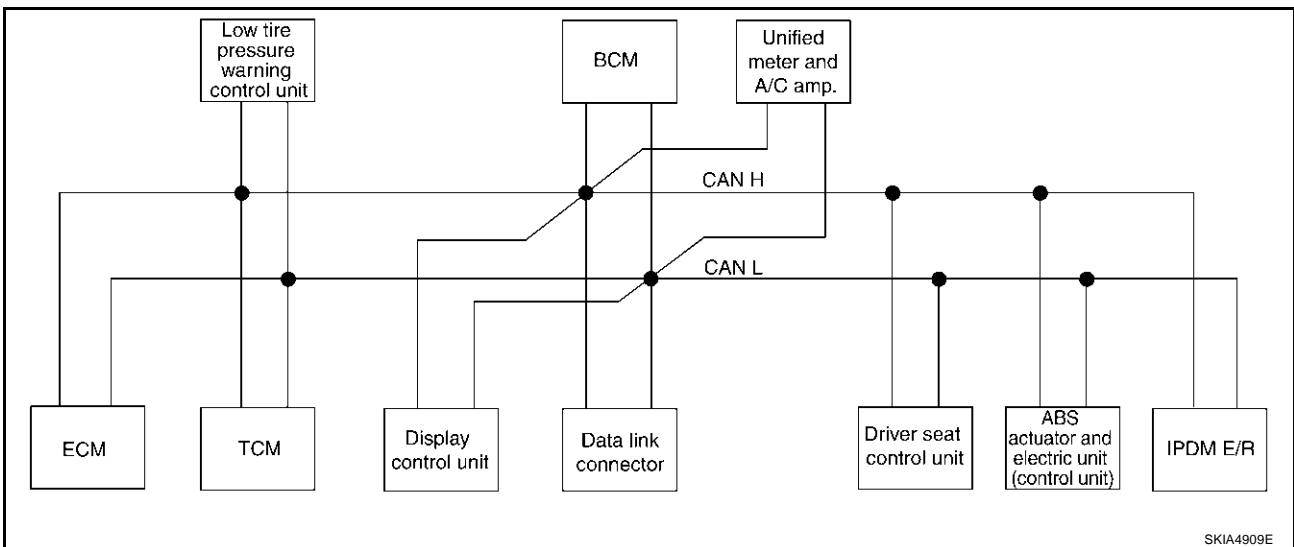
- Type6



- Type7



- Type8



TURN SIGNAL AND HAZARD WARNING LAMPS

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			

TURN SIGNAL AND HAZARD WARNING LAMPS

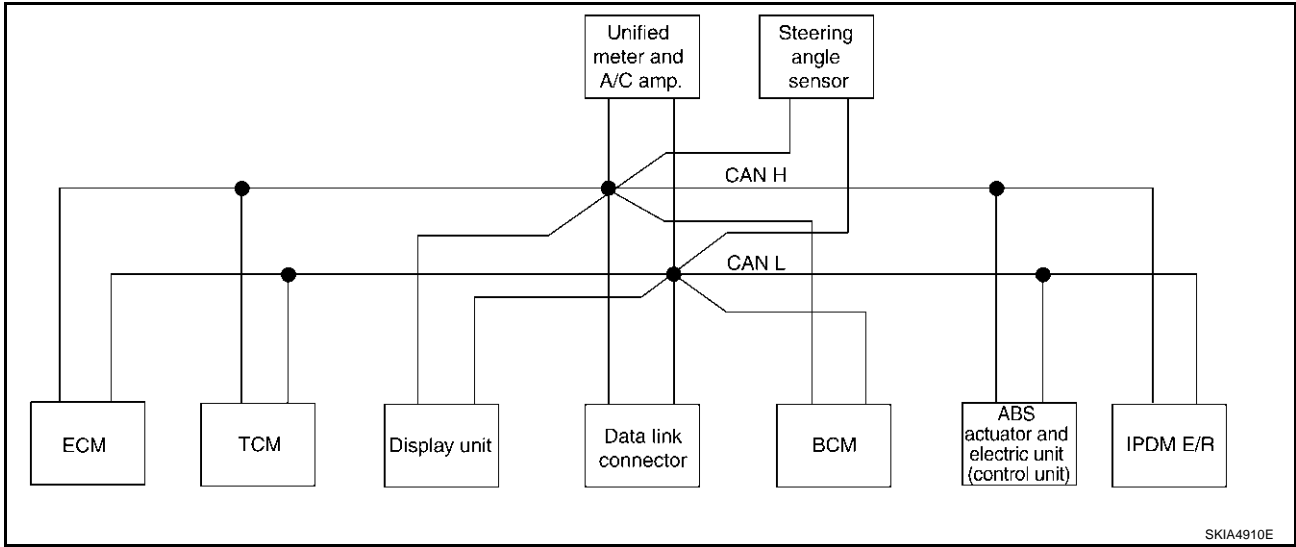
Signals	ECM	TCM	Low tire pressure warning control unit	Display unit	Display control unit	BCM	Unified meter and A/C amp.	Driver seat control unit	ABS actuator and electric unit (control unit)	IPDM E/R
Key fob ID signal						T		R		
Key fob door unlock signal						T		R		
Seat belt buckle switch signal						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 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
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		
Parking brake switch signal						R	T			

TURN SIGNAL AND HAZARD WARNING LAMPS

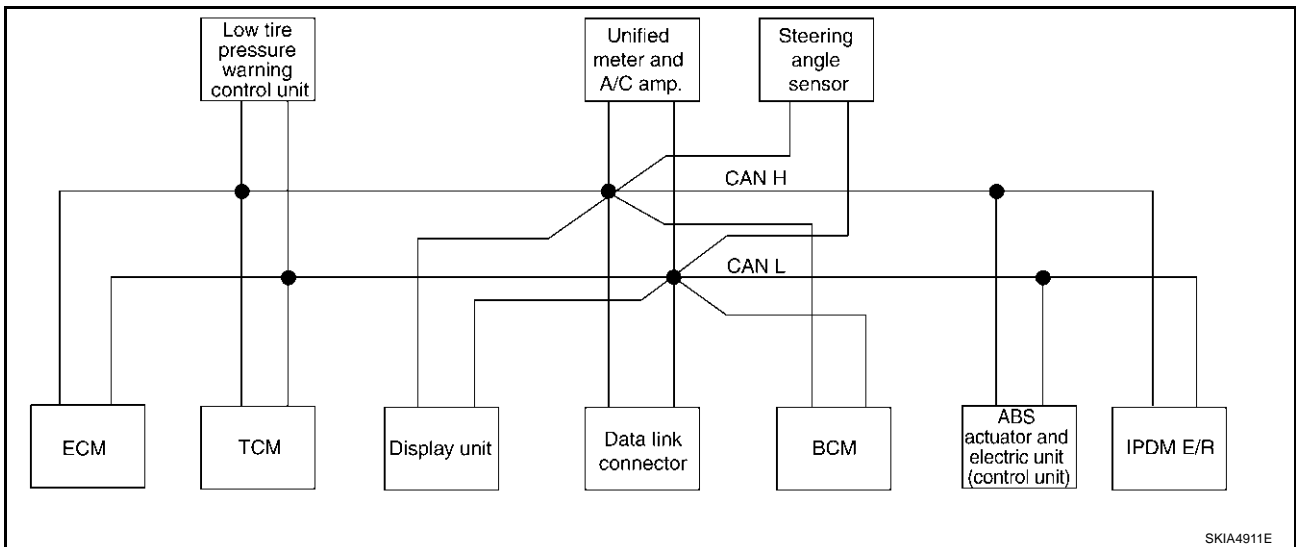
TYPE 9/TYPER10/TYPER 11/TYPER 12/TYPER 13/TYPER 14/TYPER 15/TYPER 16

System Diagram

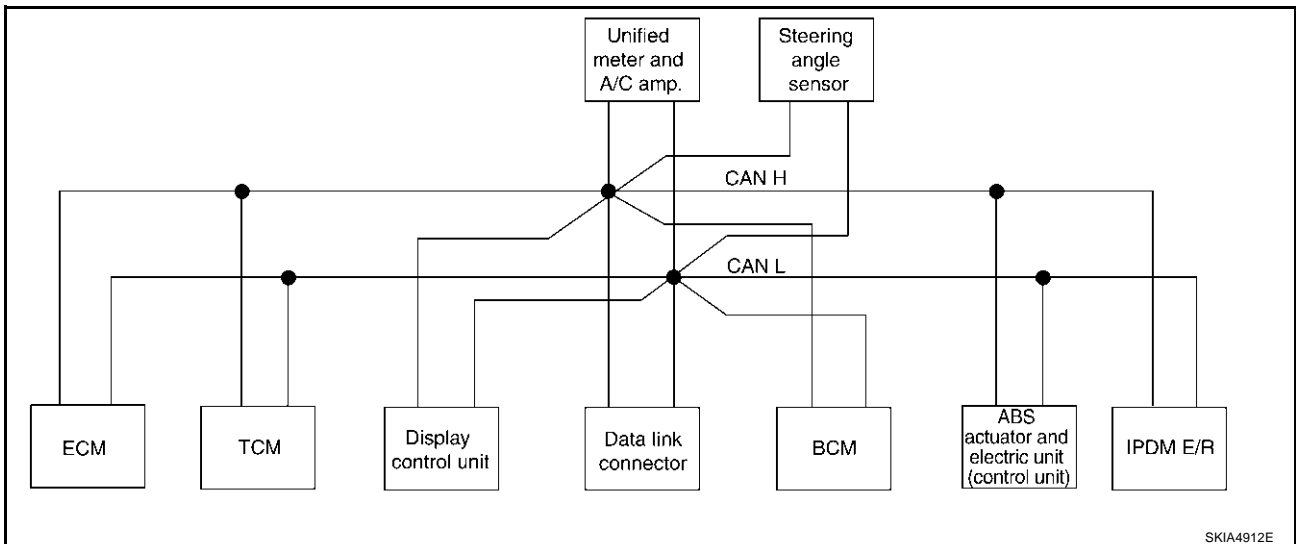
- Type9



- Type10



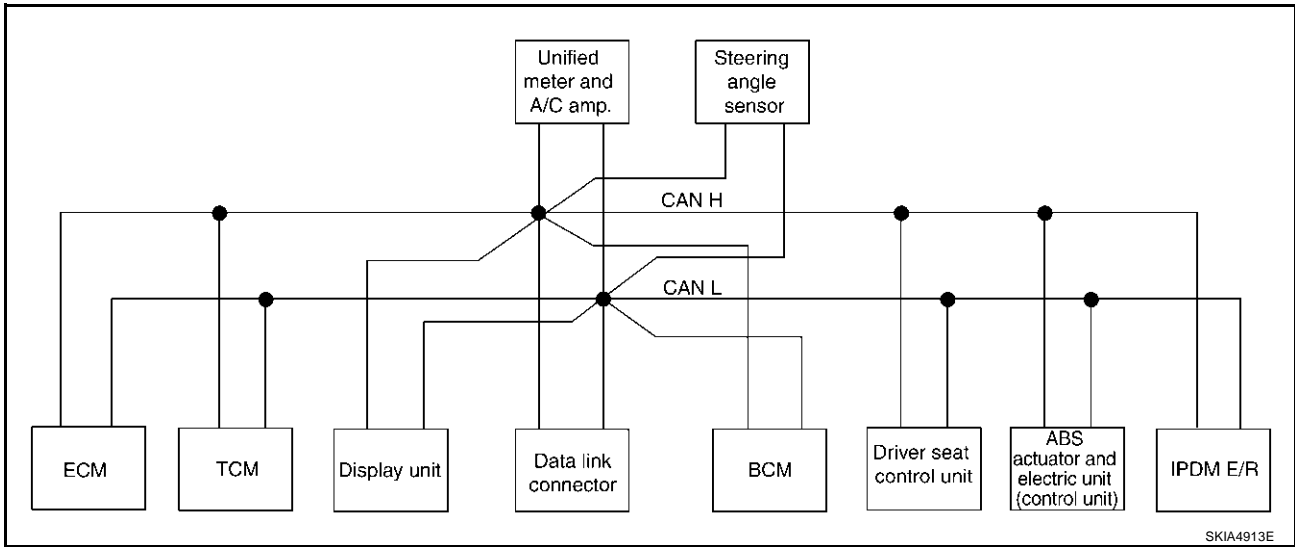
- Type11



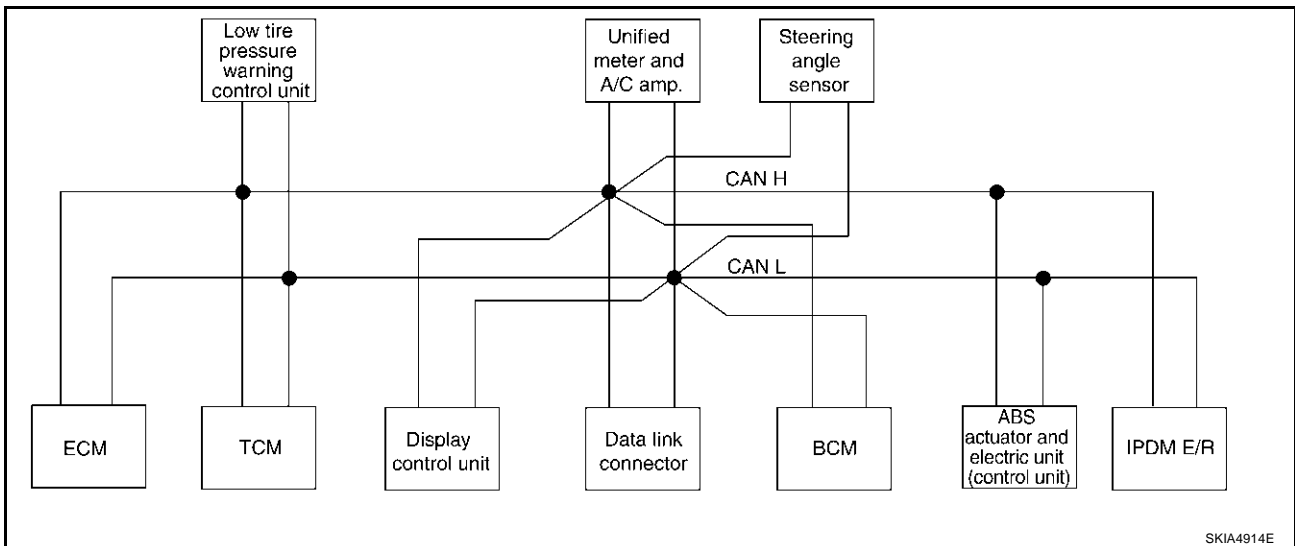
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TURN SIGNAL AND HAZARD WARNING LAMPS

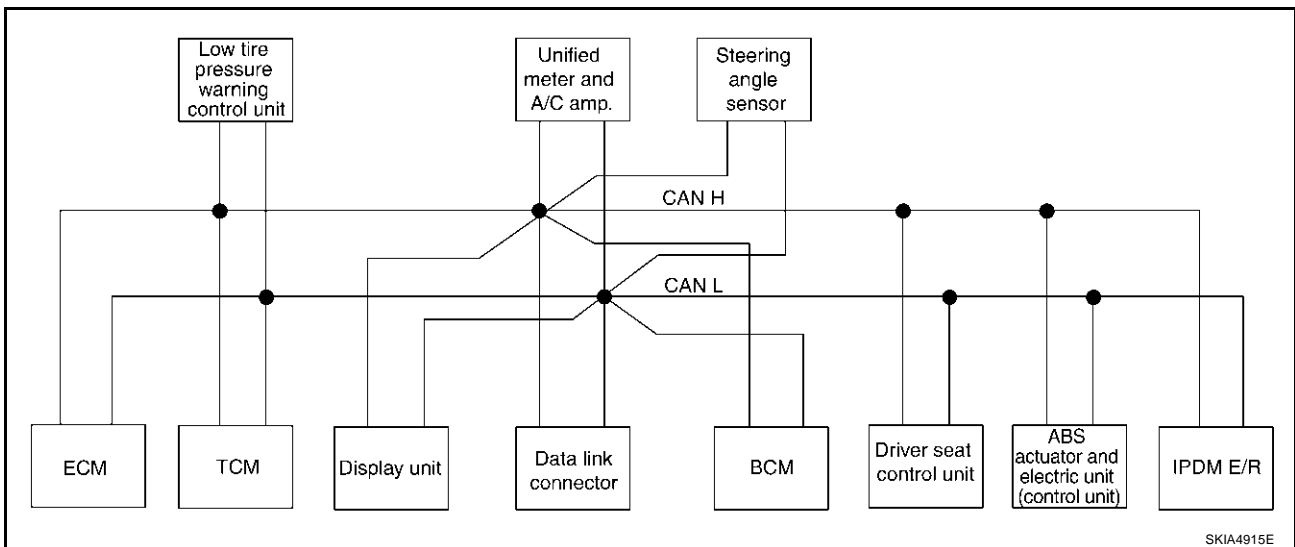
- Type12



- Type13

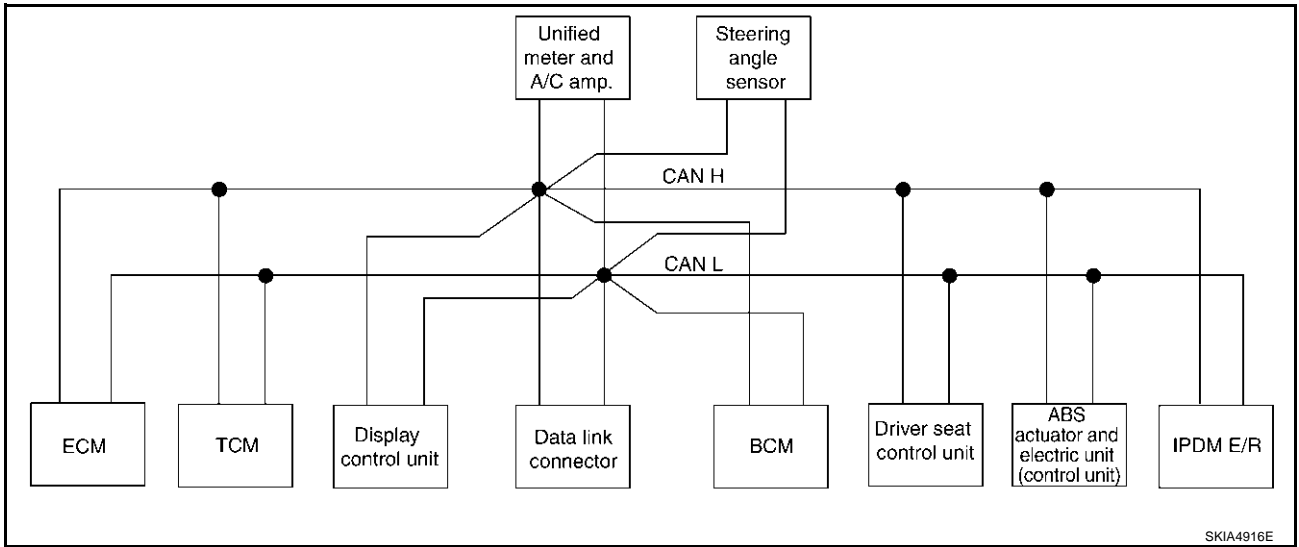


- Type14

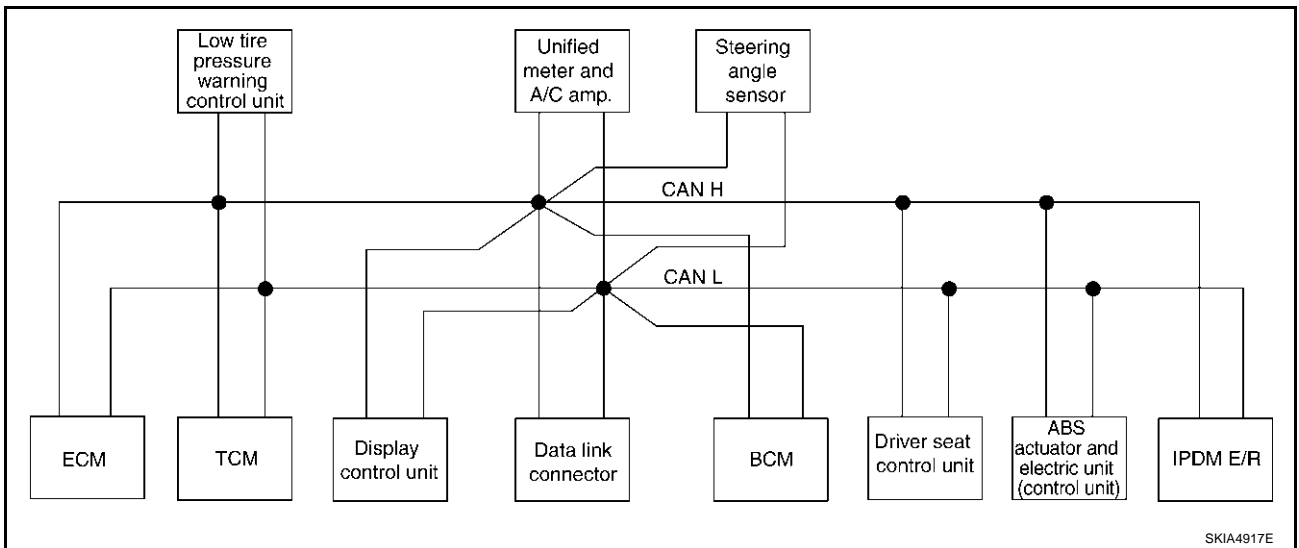


TURN SIGNAL AND HAZARD WARNING LAMPS

- Type15



- Type16



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TURN SIGNAL AND HAZARD WARNING LAMPS

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

TURN SIGNAL AND HAZARD WARNING LAMPS

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					A
Turn indicator signal				R	R	T	R		R		R	B
Key fob ID signal						T			R			C
Key fob door unlock signal						T			R			D
Seat belt buckle switch signal						R	T					E
Oil pressure switch signal						R					T	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 signal	T						R					J
ASCD SET lamp signal	T						R					LT
ASCD CRUISE lamp signal	T						R					L
Front wiper request signal						T					R	M
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					

TURN SIGNAL AND HAZARD WARNING LAMPS

CAN Communication Unit For AWD Models

AKS007QW

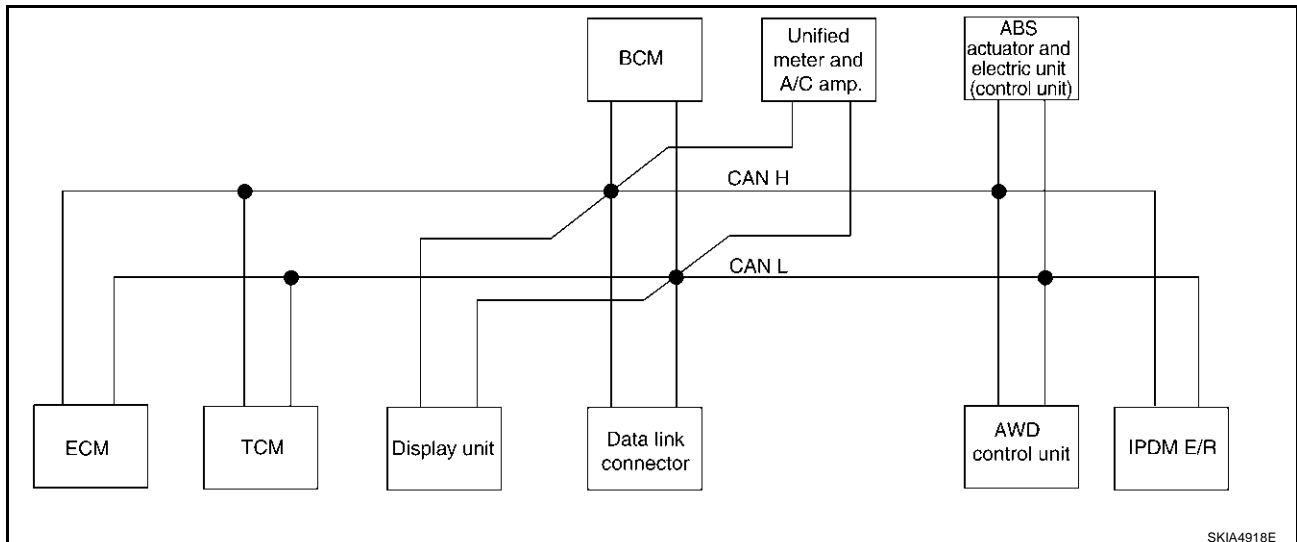
Body type	Wagon														
Axle	AWD														
Engine	VQ35DE														
Transmission	CVT														
Brake control	ABS							VDC							
Low tire pressure warning system		×			×	×		×				×	×		×
Navigation system			×		×		×	×			×		×		×
Automatic drive positioner				×		×	×	×				×		×	×
CAN communication 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	LT-226. "TYPE 17/TYPE 18/TYPE 19/TYPE 20/TYPE 21/TYPE 22/TYPE 23/TYPE 24"							LT-232. "TYPE 25/TYPE 26/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

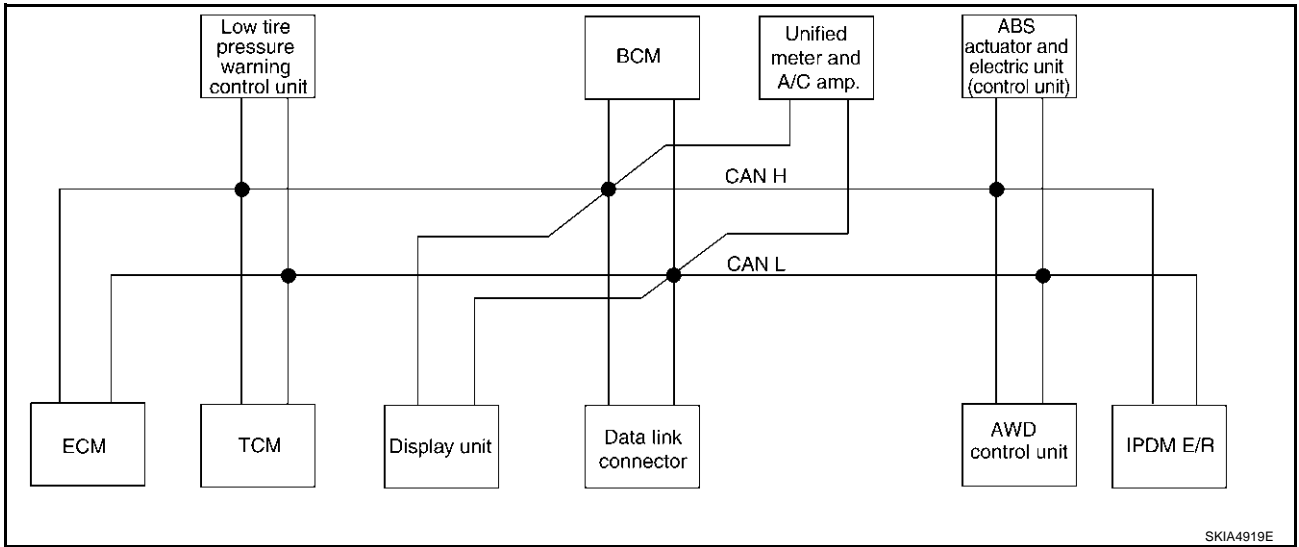
System Diagram

- Type17

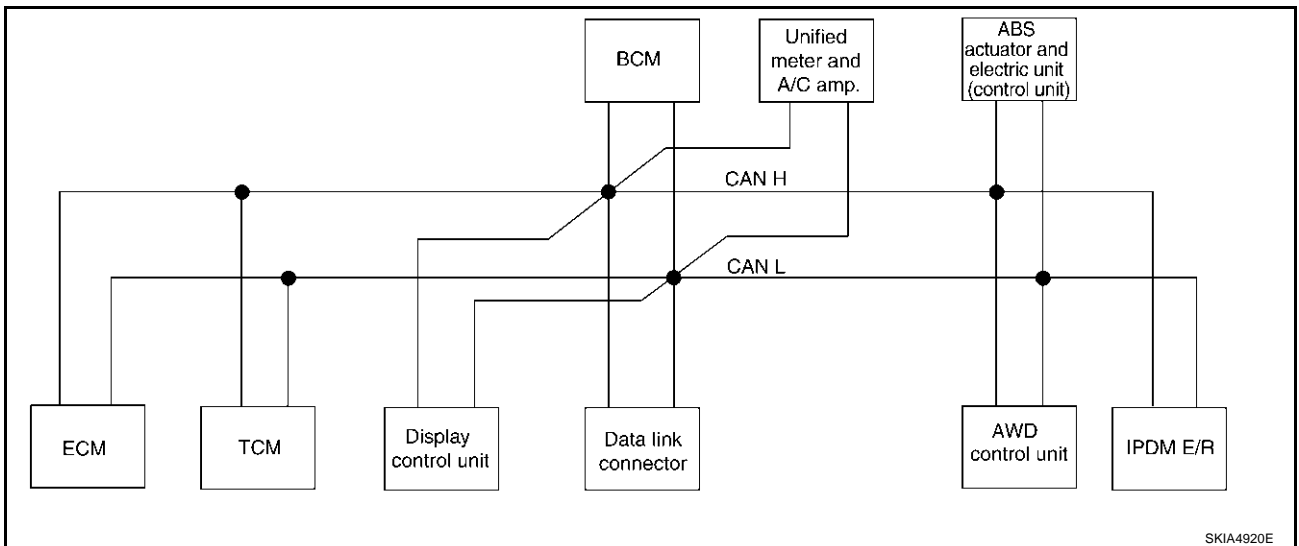


TURN SIGNAL AND HAZARD WARNING LAMPS

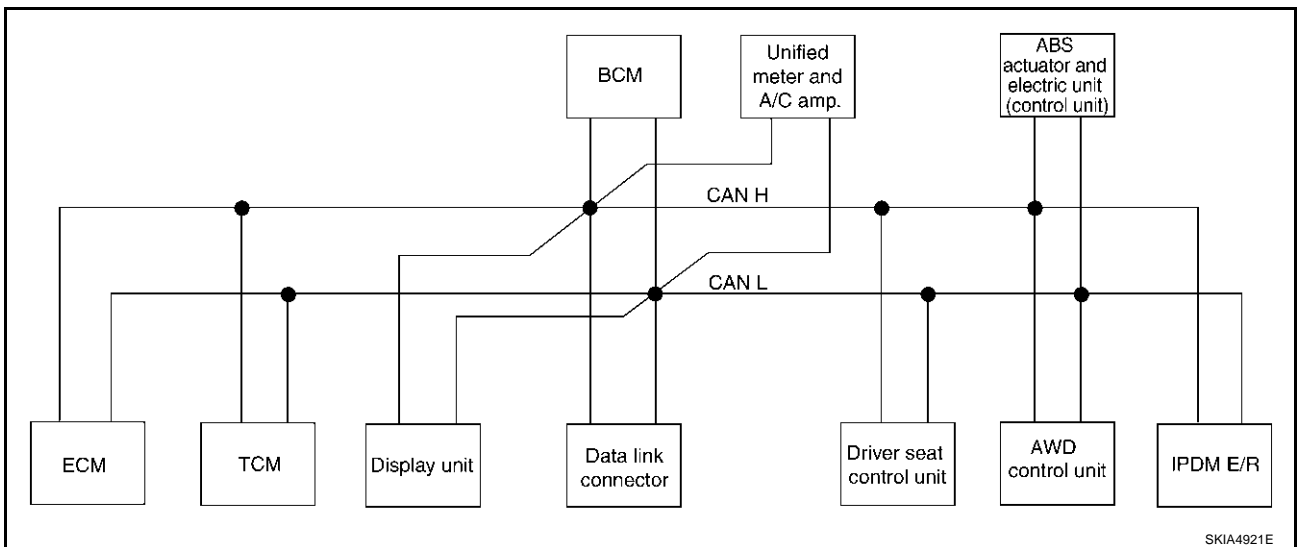
- Type18



- Type19



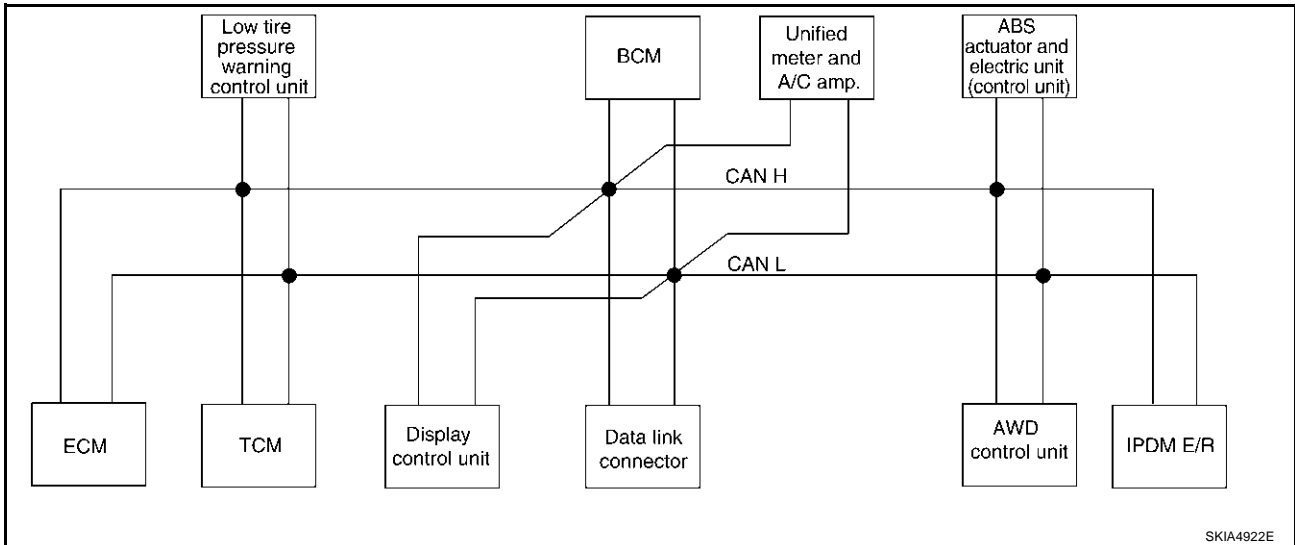
- Type20



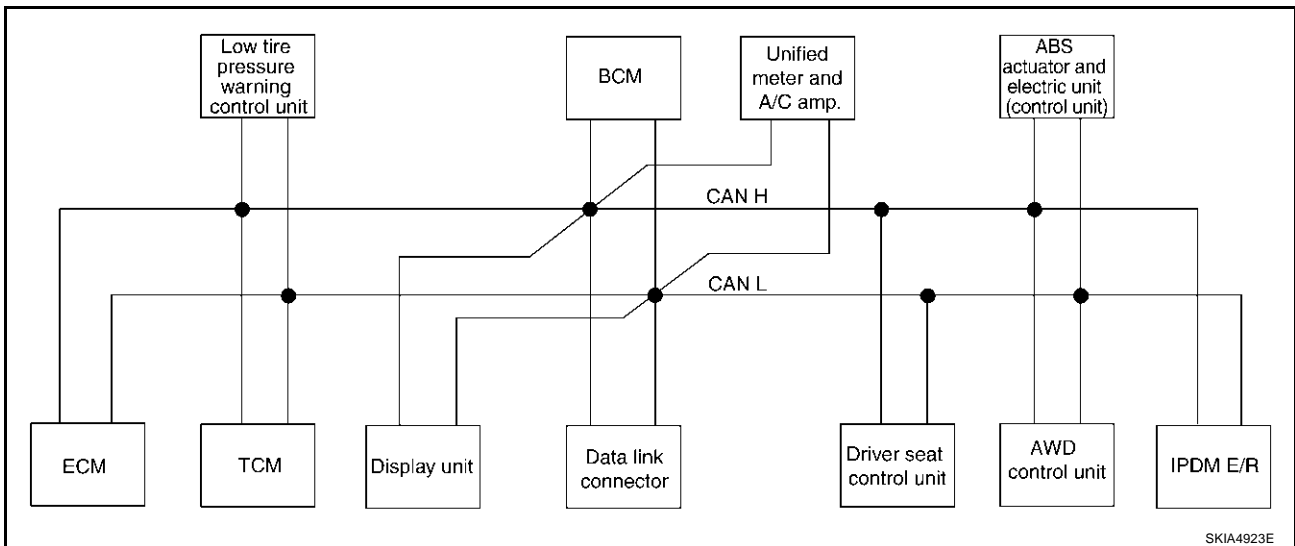
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TURN SIGNAL AND HAZARD WARNING LAMPS

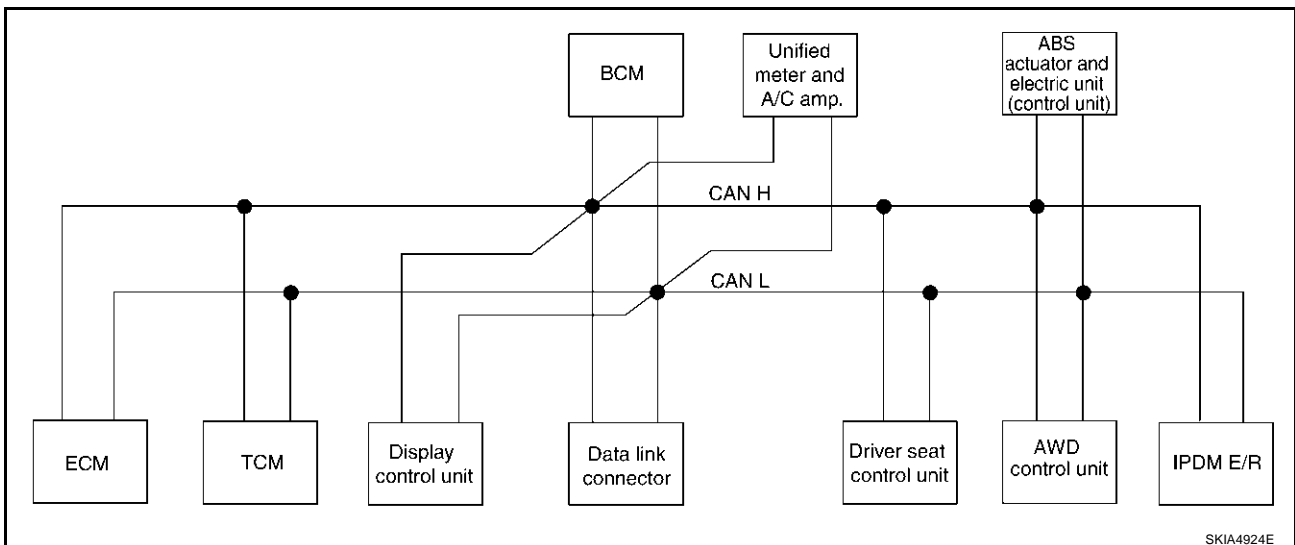
- Type21



- Type22

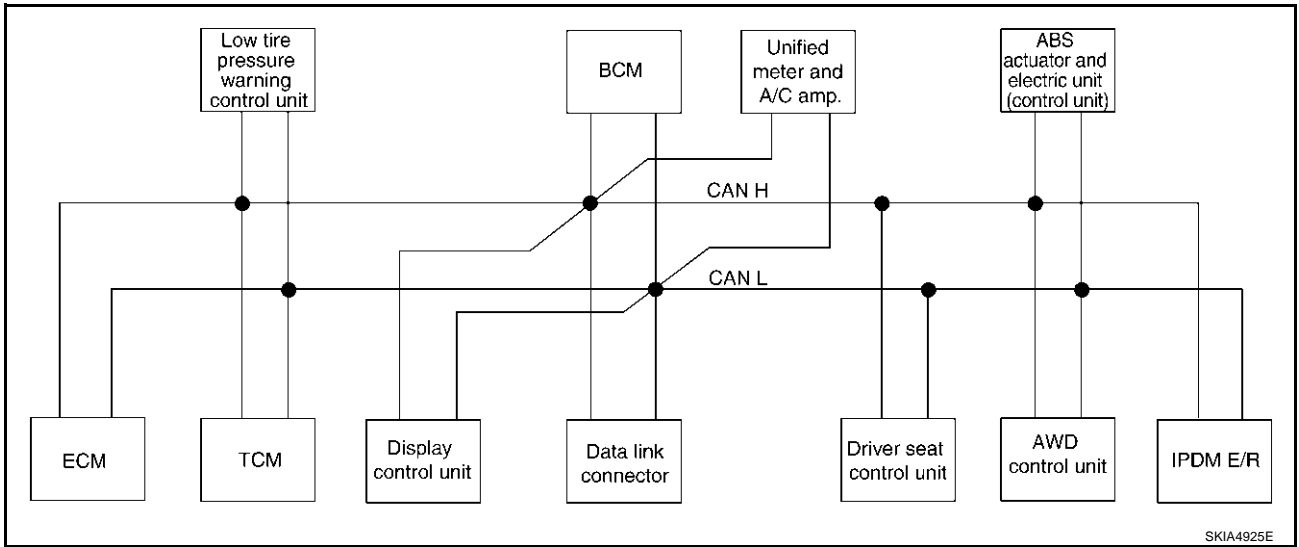


- Type23



TURN SIGNAL AND HAZARD WARNING LAMPS

- Type24



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TURN SIGNAL AND HAZARD WARNING LAMPS

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			

TURN SIGNAL AND HAZARD WARNING LAMPS

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		

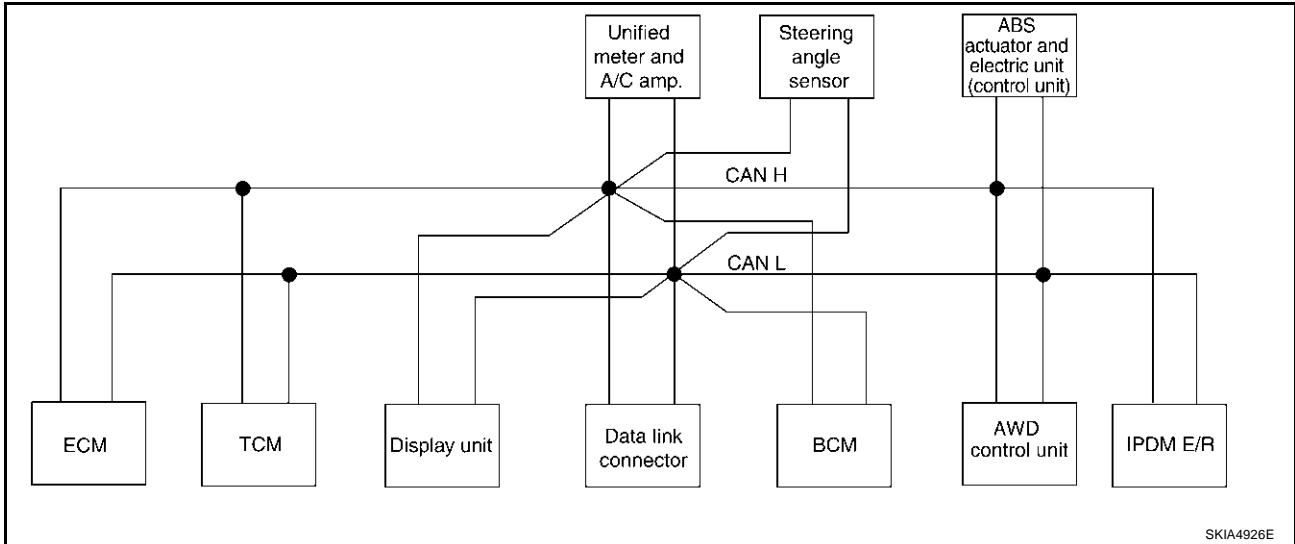
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TURN SIGNAL AND HAZARD WARNING LAMPS

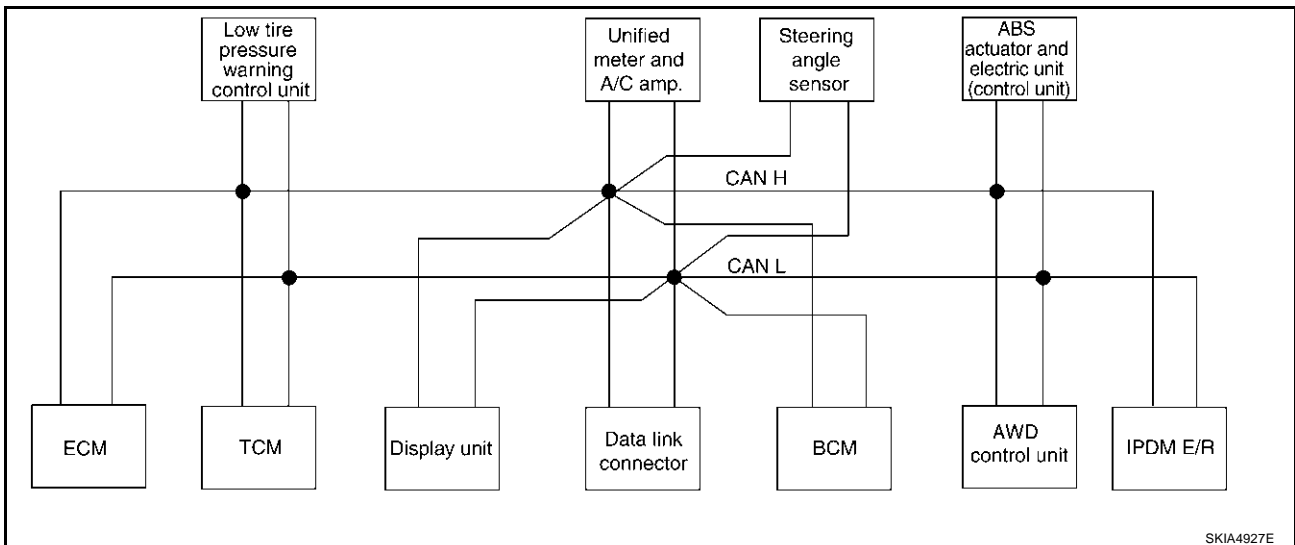
TYPE 25/TYPER26/TYPER 27/TYPER 28/TYPER 29/TYPER 30/TYPER 31/TYPER 32

System Diagram

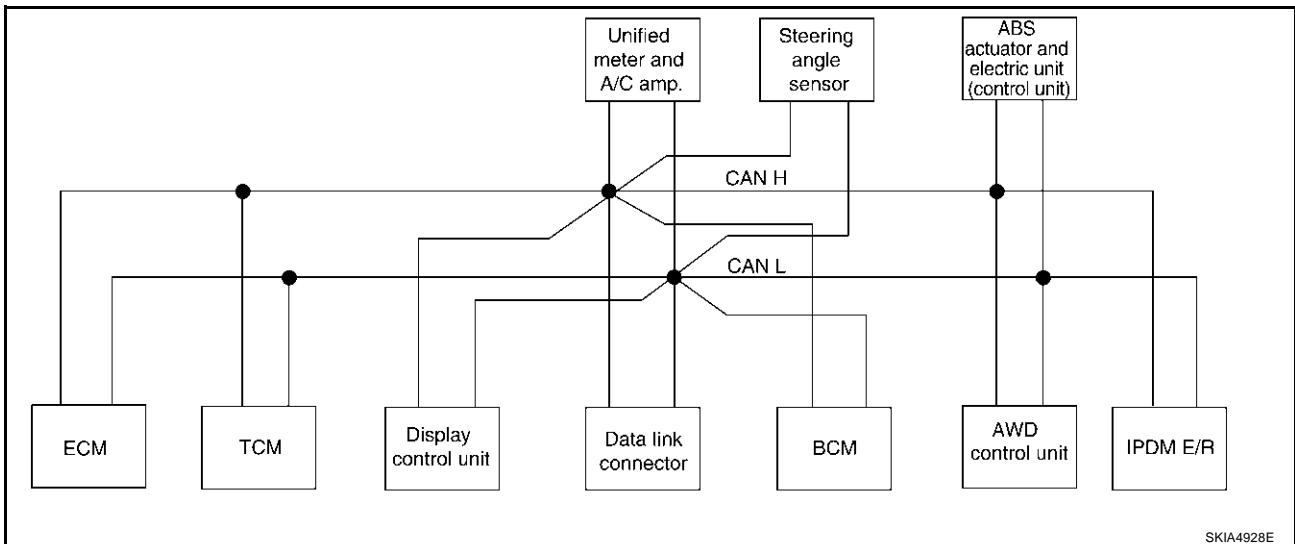
- Type25



- Type26

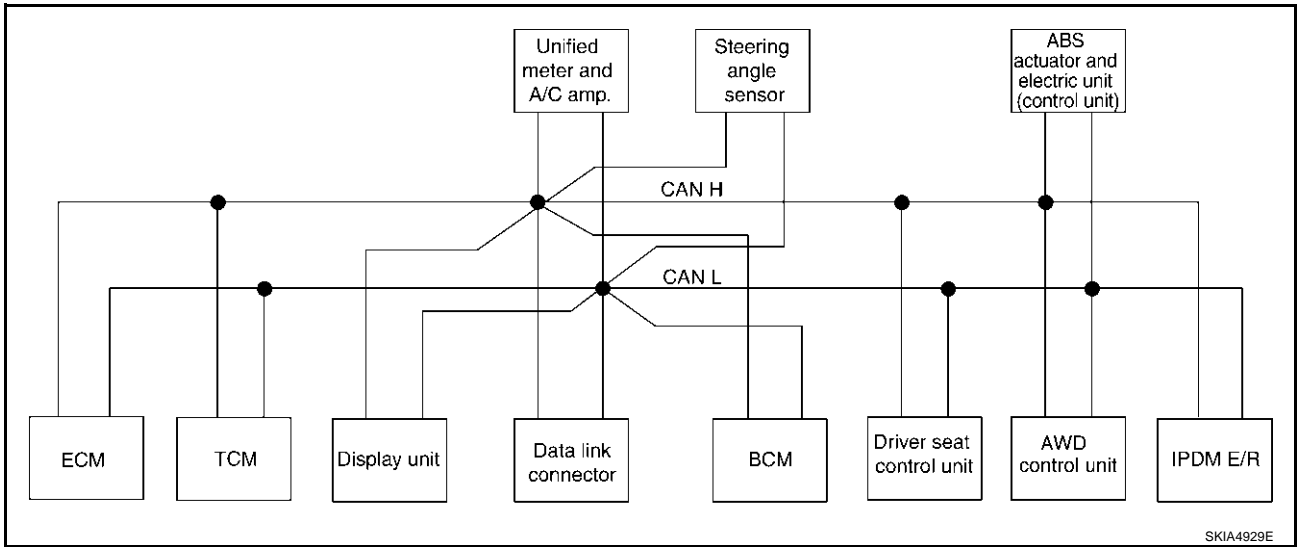


- Type27

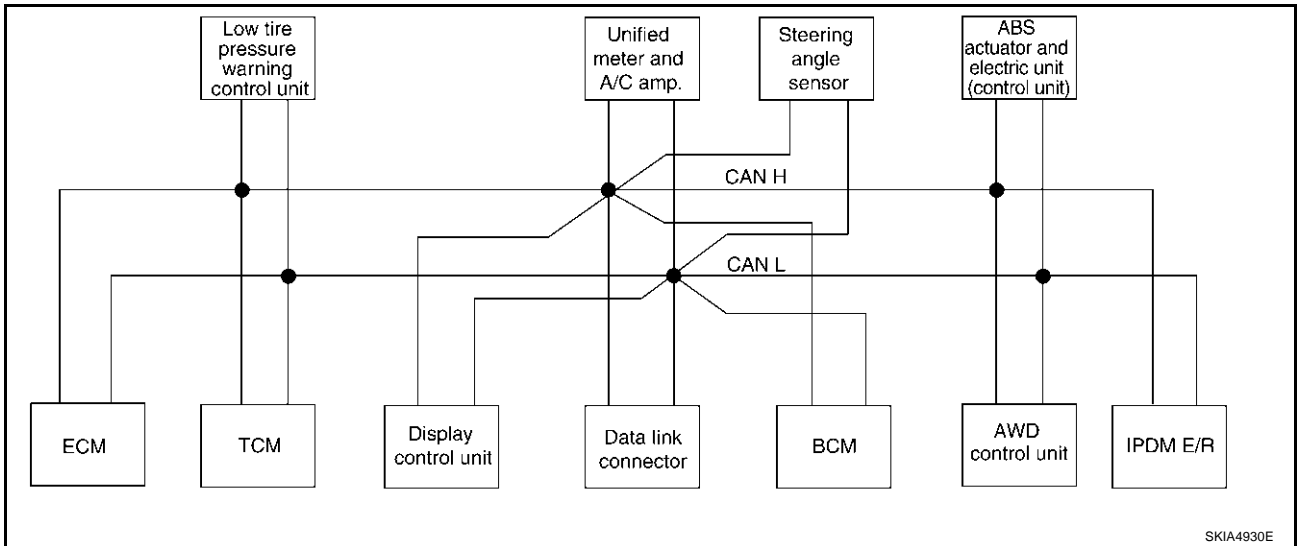


TURN SIGNAL AND HAZARD WARNING LAMPS

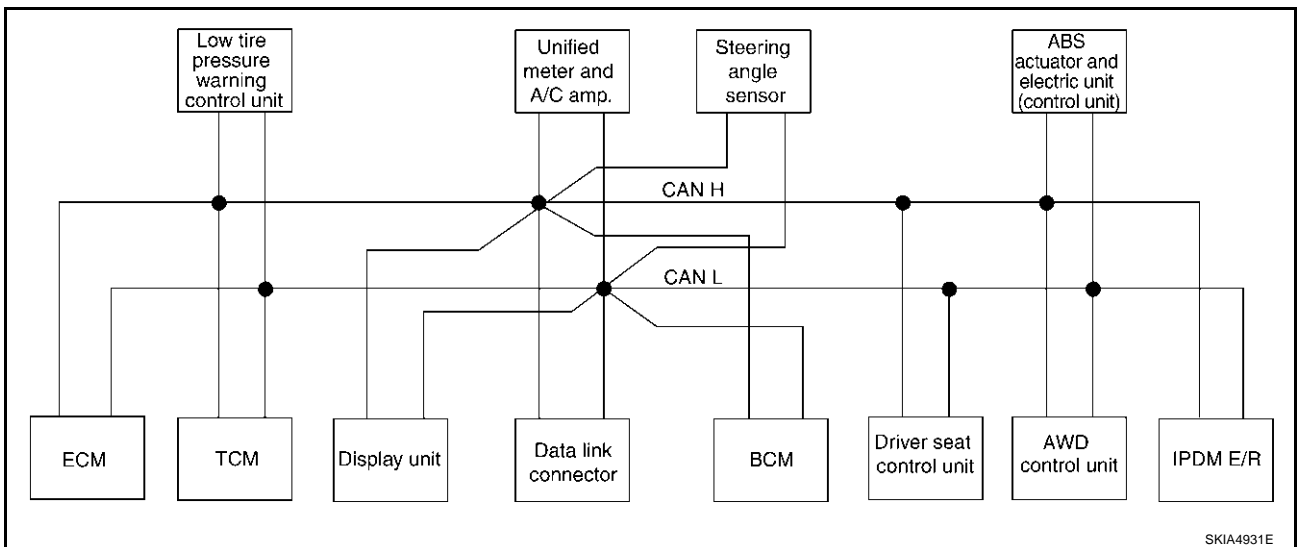
- Type28



- Type29



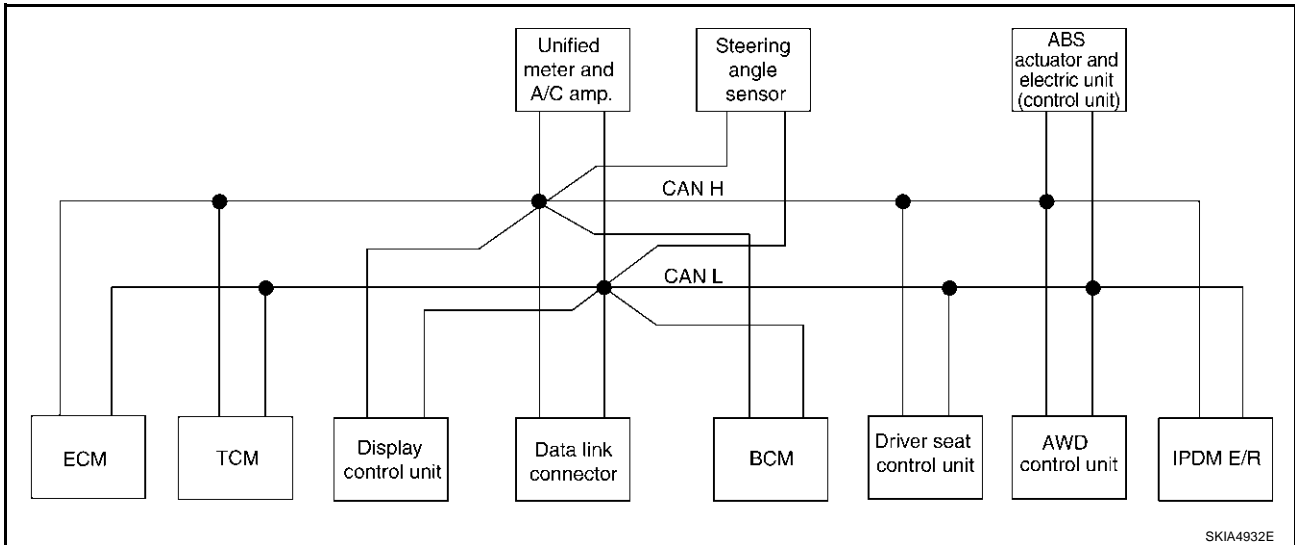
- Type30



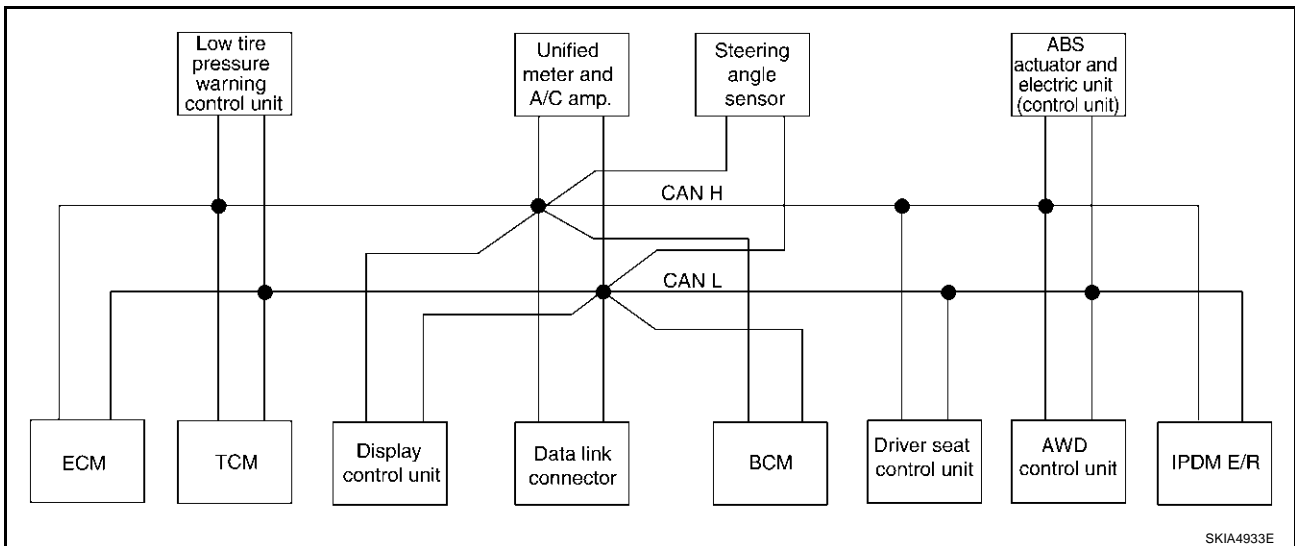
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TURN SIGNAL AND HAZARD WARNING LAMPS

- Type31



- Type32



TURN SIGNAL AND HAZARD WARNING LAMPS

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

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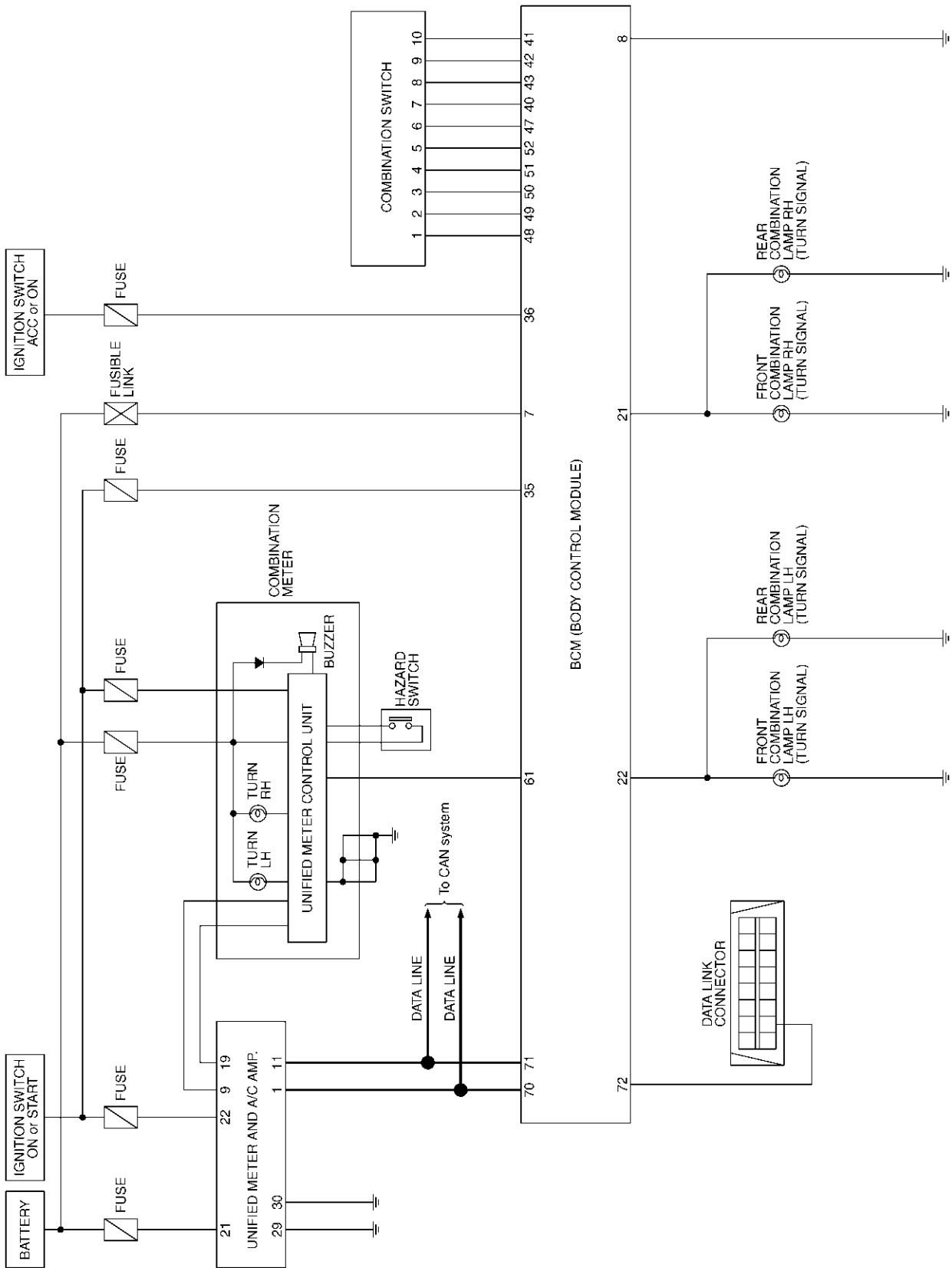
TURN SIGNAL AND HAZARD WARNING LAMPS

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
Door switch signal						R	T					
Turn indicator signal				R	R	T	R		R			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
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			
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		

TURNSIGNAL AND HAZARD WARNING LAMPS

Schematic

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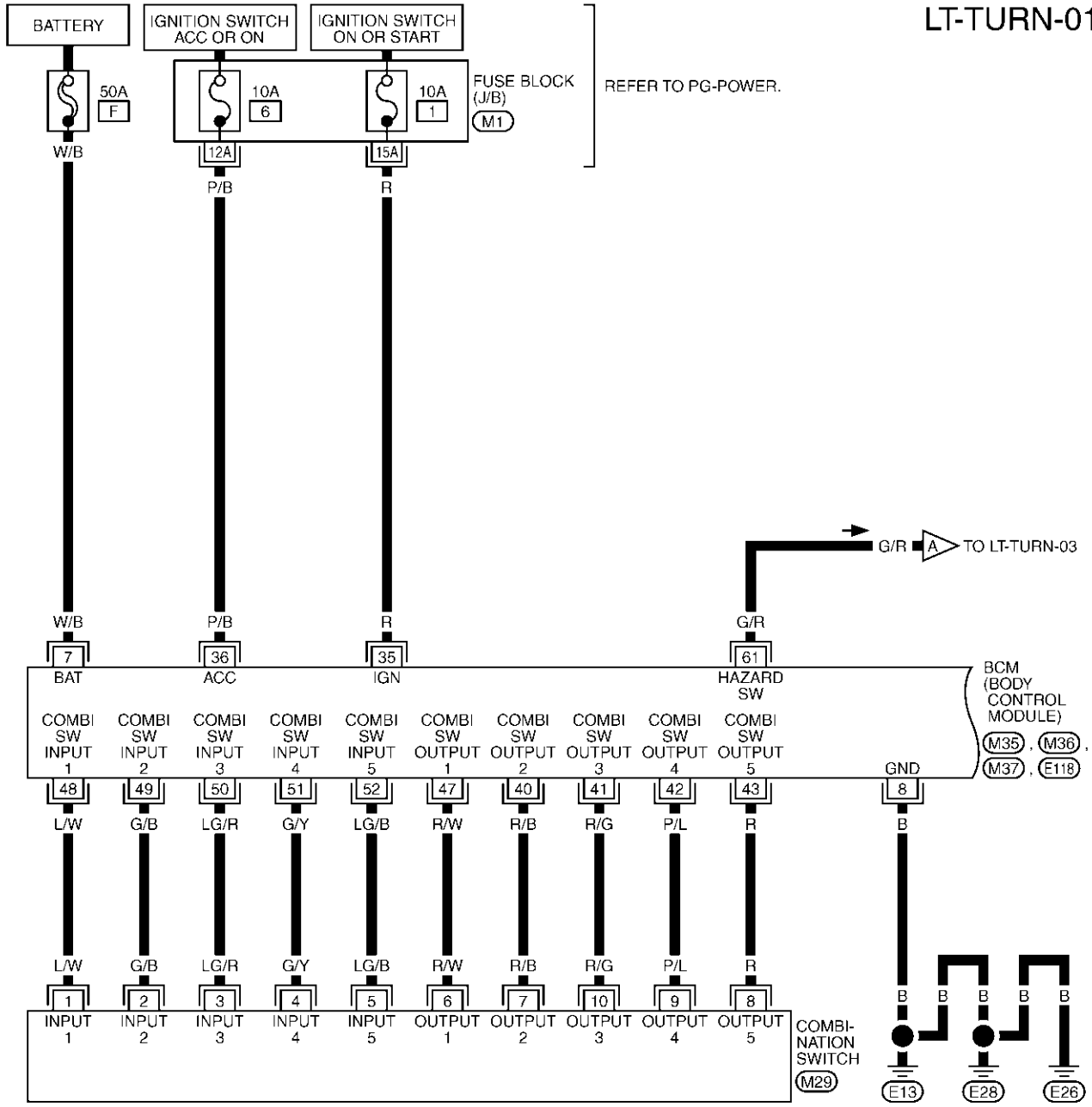
TKWA1148E

TURN SIGNAL AND HAZARD WARNING LAMPS

AKS004KF

Wiring Diagram — TURN —

LT-TURN-01



7	8	9	10	13	12
6	5	4	3	2	1

M29
W

REFER TO THE FOLLOWING.

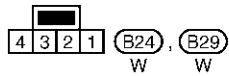
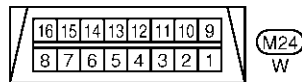
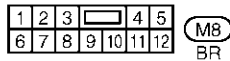
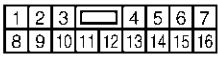
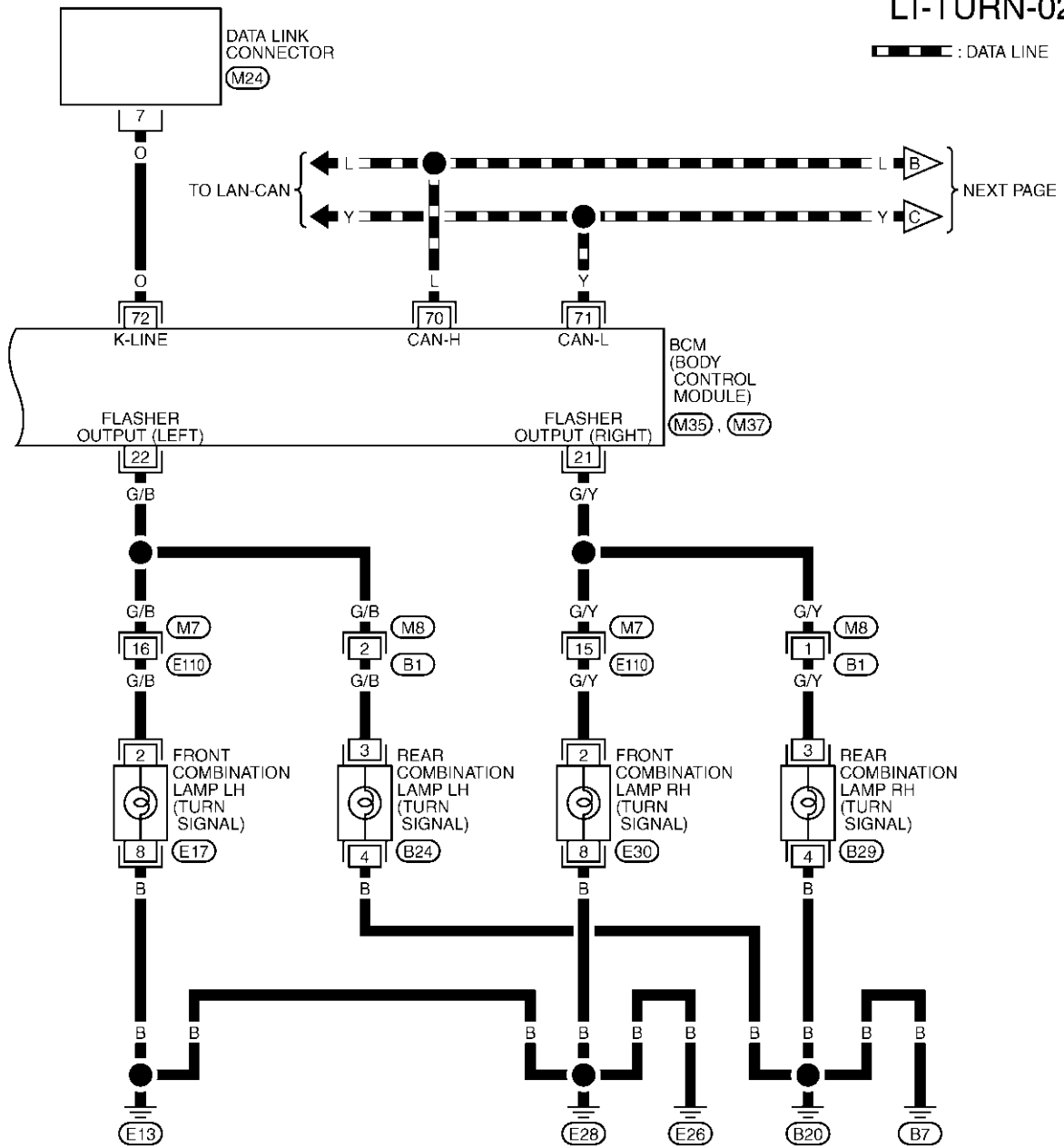
M1 - FUSE BLOCK-JUNCTION BOX (J/B)

M35, M36, M37, E118 - ELECTRICAL UNITS

TKWA0766E

TURN SIGNAL AND HAZARD WARNING LAMPS

LT-TURN-02



REFER TO THE FOLLOWING.
(M35), (M37) -ELECTRICAL UNITS

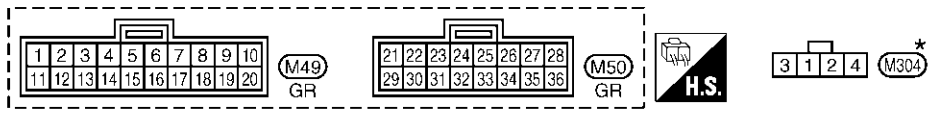
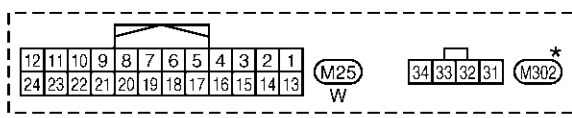
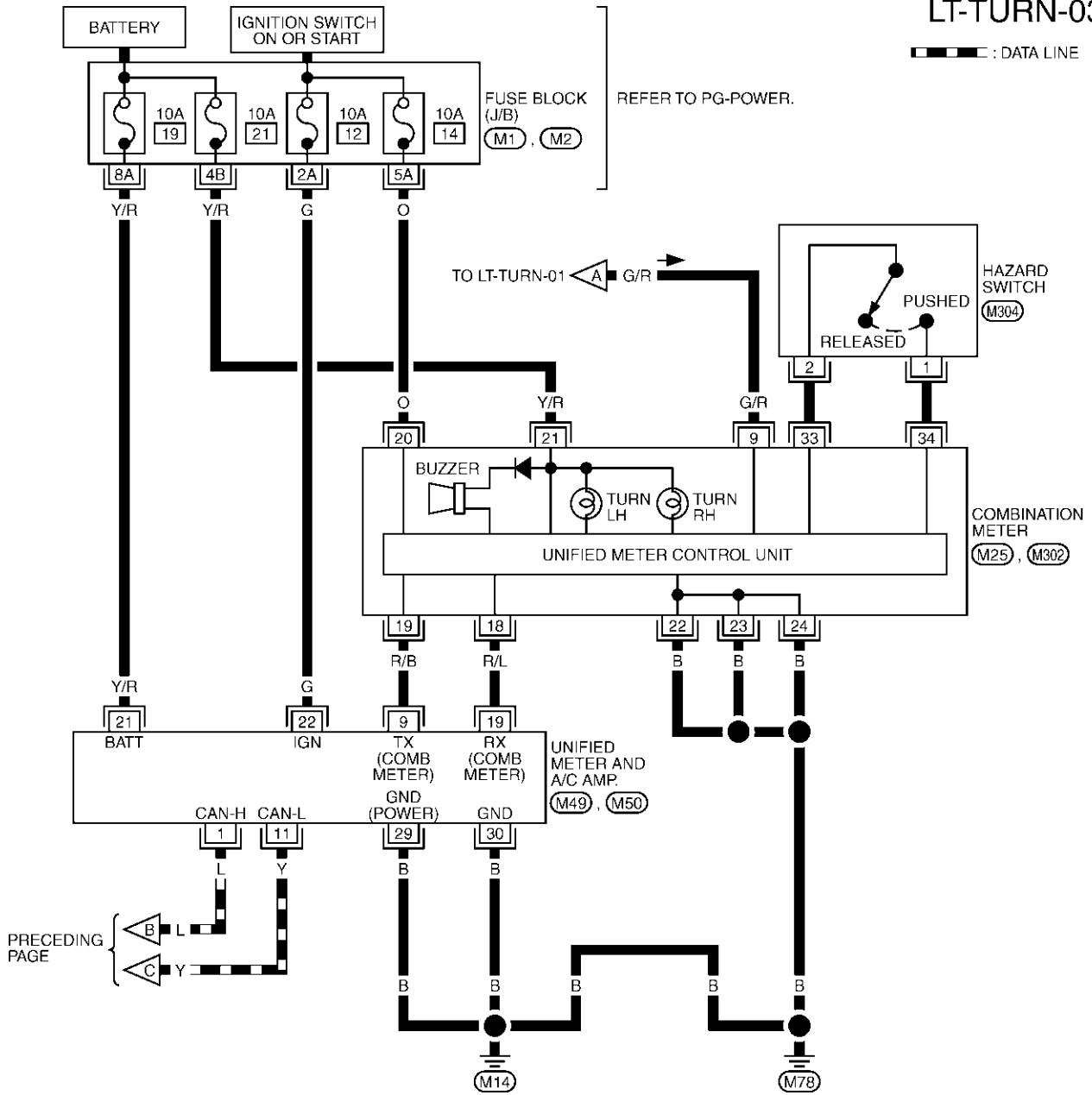
TKWA0767E

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TURN SIGNAL AND HAZARD WARNING LAMPS

LT-TURN-03

▬ : DATA LINE



REFER TO THE FOLLOWING.
 (M1), (M2) - FUSE BLOCK-JUNCTION BOX (J/B)

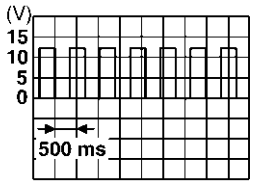
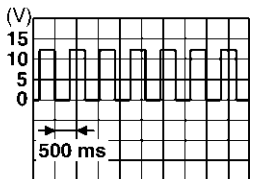
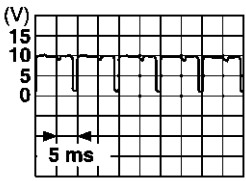
*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

TKWA0768E

TURN SIGNAL AND HAZARD WARNING LAMPS

Terminals and Reference Value for BCM

AKS004KG

Terminal No.	Wire color	Signal name	Measuring condition		Reference value				
			Ignition switch	Operation or condition					
7	W/B	Battery power supply	OFF	—	Battery voltage				
8	B	Ground	ON	—	Approx. 0V				
21	G/Y	Turn signal (right)	ON	Combination switch Turn right ON	 <p style="text-align: right; font-size: small;">SKIA3009J</p>				
22	G/B	Turn signal (left)	ON	Combination switch Turn left ON	 <p style="text-align: right; font-size: small;">SKIA3009J</p>				
35	R	Ignition switch (ON)	ON	—	Battery voltage				
36	P/B	Ignition switch (ACC)	ACC	—	Battery voltage				
40	R/B	Combination switch Output 2	ON	Lighting, turn, wiper OFF	 <p style="text-align: right; font-size: small;">SKIA1119J</p>				
41	R/G	Combination switch Output 3							
42	P/L	Combination switch Output 4							
43	R	Combination switch Output 5							
47	R/W	Combination switch Output 1							
48	L/W	Combination switch Input 1	ON	Lighting, turn, wiper OFF	4.5 V or more				
49	G/B	Combination switch Input 2							
50	LG/R	Combination switch Input 3							
51	G/Y	Combination switch Input 4							
52	LG/B	Combination switch Input 5							
61	G/R	Hazard switch signal	OFF	Hazard switch	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: center;">ON</td> <td style="text-align: center;">Approx. 0V</td> </tr> <tr> <td style="text-align: center;">OFF</td> <td style="text-align: center;">Approx. 5V</td> </tr> </table>	ON	Approx. 0V	OFF	Approx. 5V
ON	Approx. 0V								
OFF	Approx. 5V								
70	L	CAN-H	—	—	—				
71	Y	CAN-L	—	—	—				
72	O	K-LINE	—	—	—				

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TURN SIGNAL AND HAZARD WARNING LAMPS

AKS004KH

How to Proceed With Trouble Diagnosis

1. Confirm the symptom or customer complaint.
2. Understand operation description and function description. Refer to [LT-213, "System Description"](#) .
3. Conduct pre-inspection. Refer to [LT-242, "Preliminary Check"](#) .
4. Check symptom and repair or replace the cause of malfunction.
5. Do turn signal and hazard warning lamps operate normally? If YES: GO TO 6. If NO: GO TO 4.
6. INSPECTION END

Preliminary Check

AKS004KI

INSPECTION FOR POWER SUPPLY AND GROUND CIRCUIT

1. CHECK FUSES

- Check for blown fuses.

Unit	Power source	Fuse and fusible link No.
BCM	Battery	F
	Ignition switch ON or START position	1
	Ignition switch ACC or ON position	6

Refer to [LT-238, "Wiring Diagram — TURN —"](#) .

OK or NG

OK >> GO TO 2.

NG >> If fuse is blown, be sure to eliminate cause of malfunction before installing new fuse. Refer to [PG-3, "POWER SUPPLY ROUTING CIRCUIT"](#) .

2. CHECK POWER SUPPLY CIRCUIT

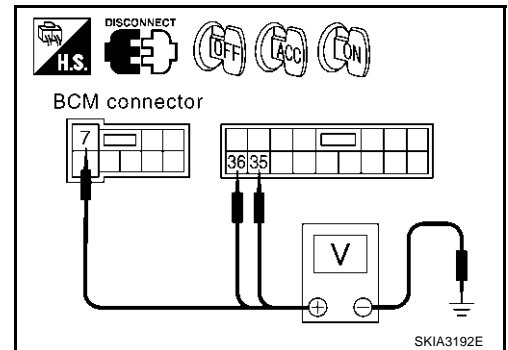
1. Disconnect BCM connector.
2. Check voltage between BCM connector and ground.

Terminals		(-)	Ignition switch position		
Connector	(+) Terminal (Wire color)		OFF	ACC	ON
E118	7 (W/B)	Ground	Battery voltage	Battery voltage	Battery voltage
M35	35 (R)		0V	0V	Battery voltage
M35	36 (P/B)		0V	Battery voltage	Battery voltage

OK or NG

OK >> GO TO 3.

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



TURN SIGNAL AND HAZARD WARNING LAMPS

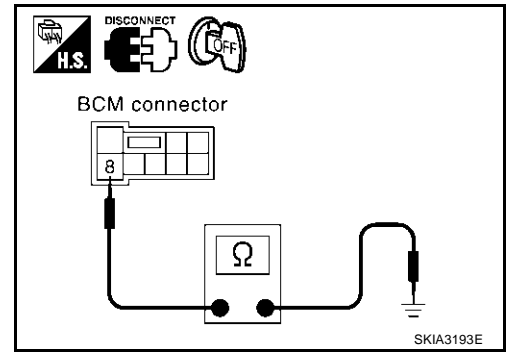
3. CHECK GROUND CIRCUIT

Check continuity between BCM and ground.

Terminals			Continuity
Connector	Terminal (Wire color)	Ground	Yes
E118	8 (B)		

OK or NG

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



AKS004KJ

CONSULT-II Function

CONSULT-II performs the following functions communicating with BCM.

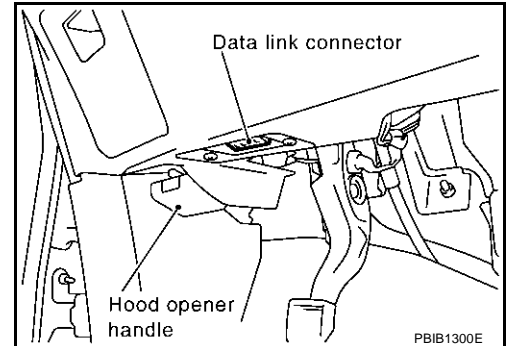
BCM diagnosis part	Check item, diagnosis mode	Description
FLASHER	DATA MONITOR	Displays BCM input data in real time.
	ACTIVE TEST	Operation of electrical loads can be checked by sending driving signal to them.

CONSULT-II BASIC OPERATION

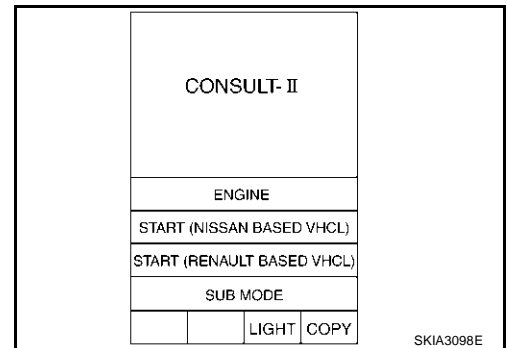
CAUTION:

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

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

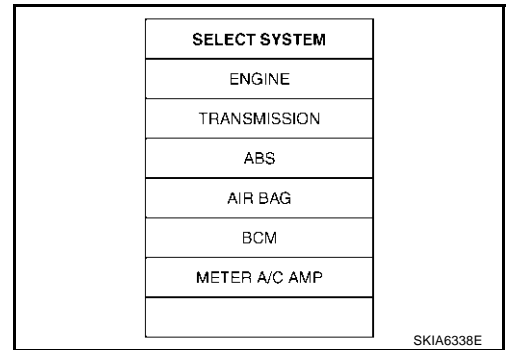


- Touch "START (NISSAN BASED VHCL)".

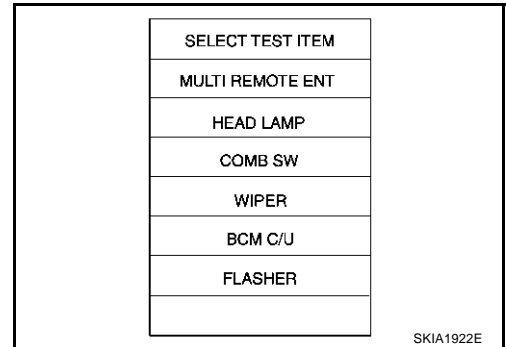


TURN SIGNAL AND HAZARD WARNING LAMPS

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



4. Touch "FLASHER" on "SELECT TEST ITEM" screen.



DATA MONITOR

Operation Procedure

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

All signals	Monitors all the signals.
Selection from menu	Selects and monitors the individual signal.

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

Display Item List

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

ACTIVE TEST

Operation Procedure

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

TURN SIGNAL AND HAZARD WARNING LAMPS

Display Item List

Test item	Description
FLASHER (RIGHT)	Turn signal lamp (right) can be operated by any ON-OFF operations.
FLASHER (LEFT)	Turn signal lamp (left) can be operated by any ON-OFF operations.
FLASHER (RIGHT) (CAN)	Turn signal lamp (right) indicator signal can be output by CAN communication line to gauges by any ON-OFF operations.
FLASHER (LEFT) (CAN)	Turn signal lamp (left) indicator signal can be output by CAN communication line to gauges by any ON-OFF operations.

Turn Signal Lamp Does Not Operate

AKS004KK

1. CHECK BULB

Check bulb standard of each turn signal lamp is correct.

OK or NG

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

2. CHECK COMBINATION SWITCH CIRCUIT

Select "BCM" on CONSULT-II. Carry out "BCM C/U" self-diagnosis.

Displayed results of self-diagnosis

Diagnosis system 1 - 5>> Combination switch system malfunction.
 Refer to [LT-257, "Combination Switch Inspection According to Self-Diagnostic Results"](#) .

No malfunction detected>> GO TO 3.

SELF-DIAG RESULTS	
DTC RESULTS	TIME
NO DTC IS DETECTED. FURTHER TESTING MAY BE REQUIRED	

LKIA0073E

3. CHECK COMBINATION SWITCH INPUT SIGNAL

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

When lighting switch is TURN RH : TURN SIGNAL R ON

When lighting switch is TURN LH : TURN SIGNAL L ON

OK or NG

- OK >> GO TO 4.
 NG >> Replace lighting switch.

DATA MONITOR	
MONITOR	
TURN SIGNAL R	ON
TURN SIGNAL L	ON

SKIA4499E

4. ACTIVE TEST

- Select "FLASHER" during active test. Refer to [LT-244, "ACTIVE TEST"](#) .
- Make sure "FLASHER RIGHT" and "FLASHER LEFT" operate.

OK or NG

- OK >> Replace BCM. Refer to [BCS-36, "Removal and Installation of BCM"](#) .
 NG >> GO TO 5.

TURN SIGNAL AND HAZARD WARNING LAMPS

5. CHECK TURN SIGNAL LAMPS SHORT CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect BCM connector and all turn signal lamp connectors.
3. Check continuity (short circuit) between BCM harness connector M35 terminal 21 (G/Y) (turn RH) and ground.

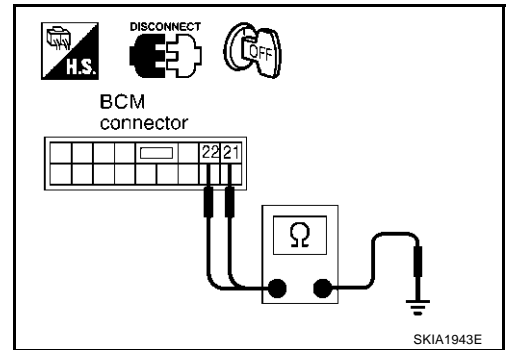
Continuity should not exist.

4. Check continuity (short circuit) between BCM harness connector M35 terminal 22 (G/B) (turn LH) and ground.

Continuity should not exist.

OK or NG

- OK >> Replace BCM. Refer to [BCS-36, "Removal and Installation of BCM"](#) .
NG >> Repair harness or connector.



Hazard Warning Lamp Does Not Operate But Turn Signal Lamp Operate

AKS004KL

1. CHECK BULB

Make sure bulb standard of each turn signal lamp is correct.

OK or NG

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

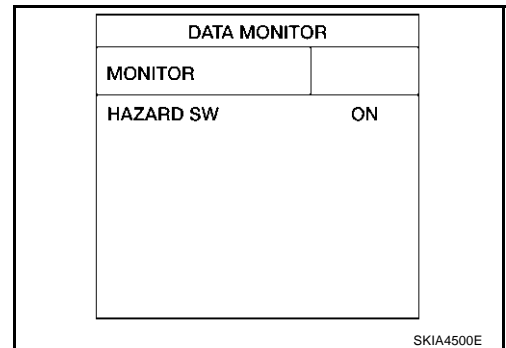
2. CHECK HAZARD SWITCH INPUT SIGNAL

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

When hazard switch is ON : HAZARD SW ON position

OK or NG

- OK >> Replace BCM. Refer to [BCS-36, "Removal and Installation of BCM"](#) .
NG >> GO TO 3.



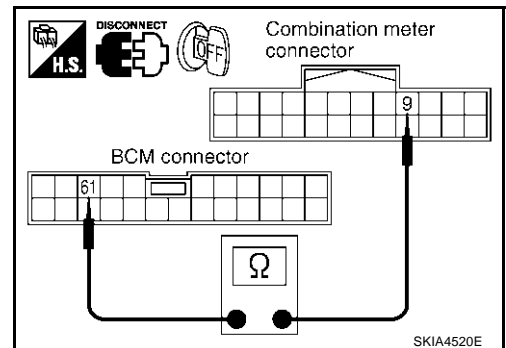
3. CHECK HAZARD SWITCH CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect BCM connector and combination meter connector.
3. Check continuity BCM harness connector M37 terminal 61 (G/R) and combination meter harness connector M25 terminal 9 (G/R).

Continuity should exist.

OK or NG

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



TURN SIGNAL AND HAZARD WARNING LAMPS

4. CHECK BCM

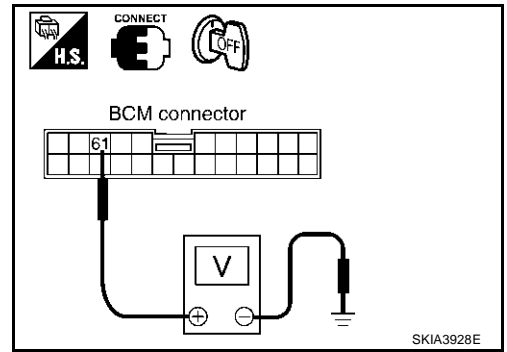
1. Connect BCM connector.
2. Check voltage between BCM harness connector M37 terminal 61 (G/R) and ground.

Approx. 5V should exist.

OK or NG

OK >> GO TO 5.

NG >> Replace BCM. Refer to [BCS-36, "Removal and Installation of BCM"](#).



5. CHECK HAZARD SWITCH

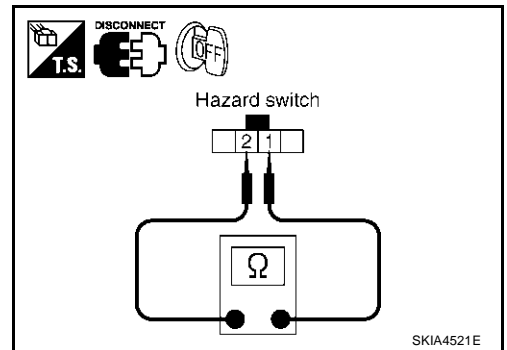
1. Disconnect hazard switch connector.
2. Check continuity hazard switch.

Terminal		Condition	Continuity
Hazard switch			
1	2	Hazard switch is ON	Yes
		Hazard switch is OFF	No

OK or NG

OK >> GO TO 6.

NG >> Replace hazard switch.



6. CHECK HAZARD SWITCH CIRCUIT

1. Check continuity between hazard switch harness connector M304 terminal 1 and combination meter harness connector M302 terminal 34.

Continuity should exist.

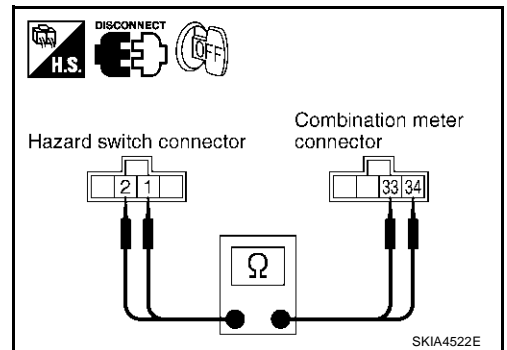
2. Check continuity between hazard switch harness connector M304 terminal 2 and combination meter harness connector M302 terminal 33.

Continuity should exist.

OK or NG

OK >> Replace combination meter.

NG >> Repair or replace harness.



Turn Signal Indicator Lamp Does Not Operate

1. BULB INSPECTION

Inspect bulb of turn signal indicator lamp in combination meter.

OK or NG

OK >> Replace combination meter.

NG >> Replace indicator bulb.

AKS004KM

TURN SIGNAL AND HAZARD WARNING LAMPS

Bulb Replacement (Front Turn Signal Lamp)

AKS005LG

Refer to [LT-54, "Bulb Replacement"](#) in "HEADLAMP". (XENON TYPE)

Refer to [LT-100, "Bulb Replacement"](#) in "HEADLAMP". (CONVENTIONAL TYPE)

Bulb Replacement (Rear Turn Signal Lamp)

AKS005LH

Refer to [LT-304, "Bulb Replacement"](#) in "REAR COMBINATION LAMP".

Removal and Installation of Front Turn Signal Lamp

AKS005LI

Refer to [LT-55, "Removal and Installation"](#) in "HEADLAMP". (XENON TYPE)

Refer to [LT-101, "Removal and Installation"](#) in "HEADLAMP". (CONVENTIONAL TYPE)

Removal and Installation of Rear Turn Signal Lamp

AKS005LJ

Refer to [LT-304, "Removal and Installation"](#) in "REAR COMBINATION LAMP".

LIGHTING AND TURN SIGNAL SWITCH

LIGHTING AND TURN SIGNAL SWITCH

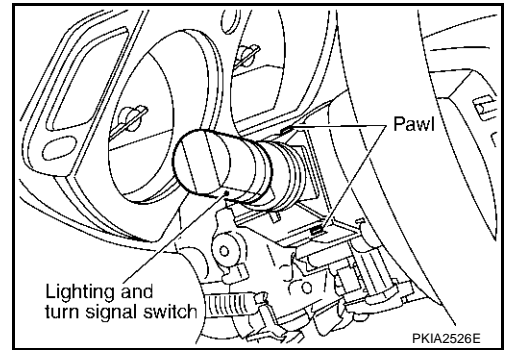
PFP:25540

Removal and Installation

AKS005LK

REMOVAL

1. Remove instrument driver lower panel and steering column cover. Refer to [IP-10, "INSTRUMENT PANEL ASSEMBLY"](#) in "IP" section.
2. While pressing pawls in direction as shown in the figure, pull lighting and turn signal switch toward driver door and disconnect from the base.



INSTALLATION

Install in the reverse order of removal.

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LT

HAZARD SWITCH

HAZARD SWITCH

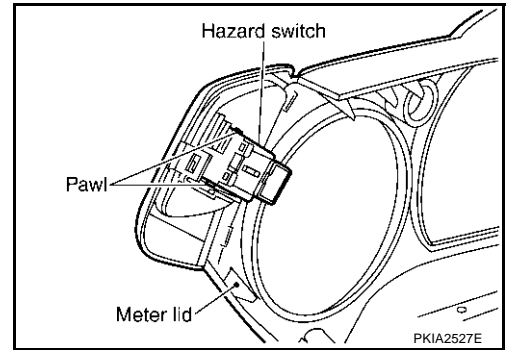
PFP:25290

Removal and Installation

AKS005LL

REMOVAL

1. Remove meter lid. Refer to [DI-30, "Disassembly and Assembly of Combination Meter"](#) in "DI" section.
2. Disconnect hazard switch connector.
3. Press pawl on reverse side and remove the hazard switch.



INSTALLATION

Install in the reverse order of removal.

COMBINATION SWITCH

PDF:25567

COMBINATION SWITCH

Combination Switch Reading Function

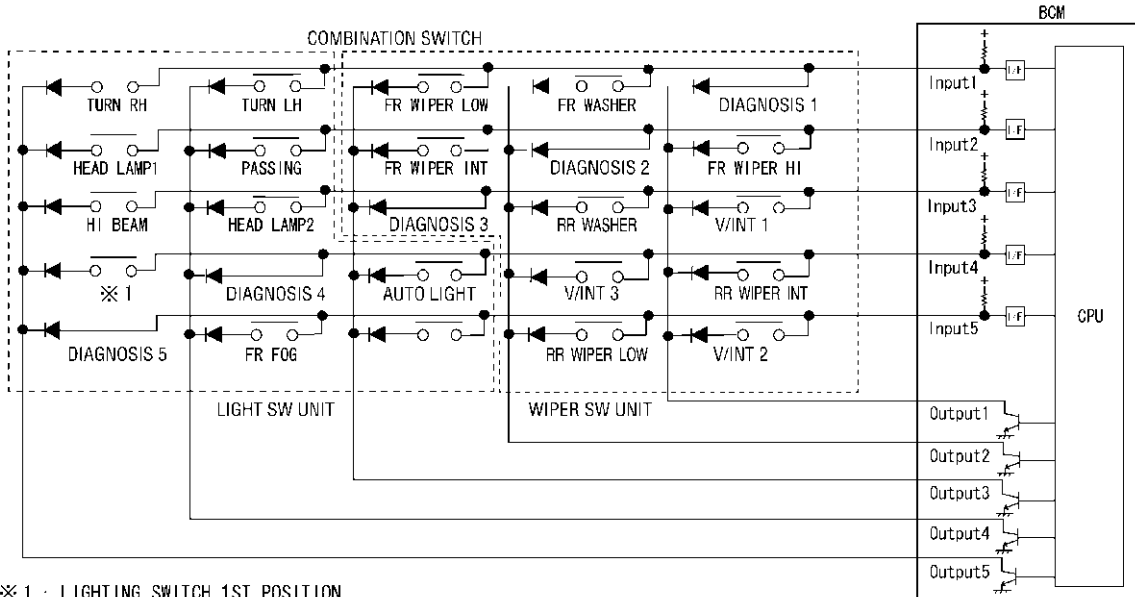
AKS004KV

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.



※ 1 : LIGHTING SWITCH 1ST POSITION

SKIA6458E

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	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 LOW ON	RR WIPER LOW 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

SKIA6459E

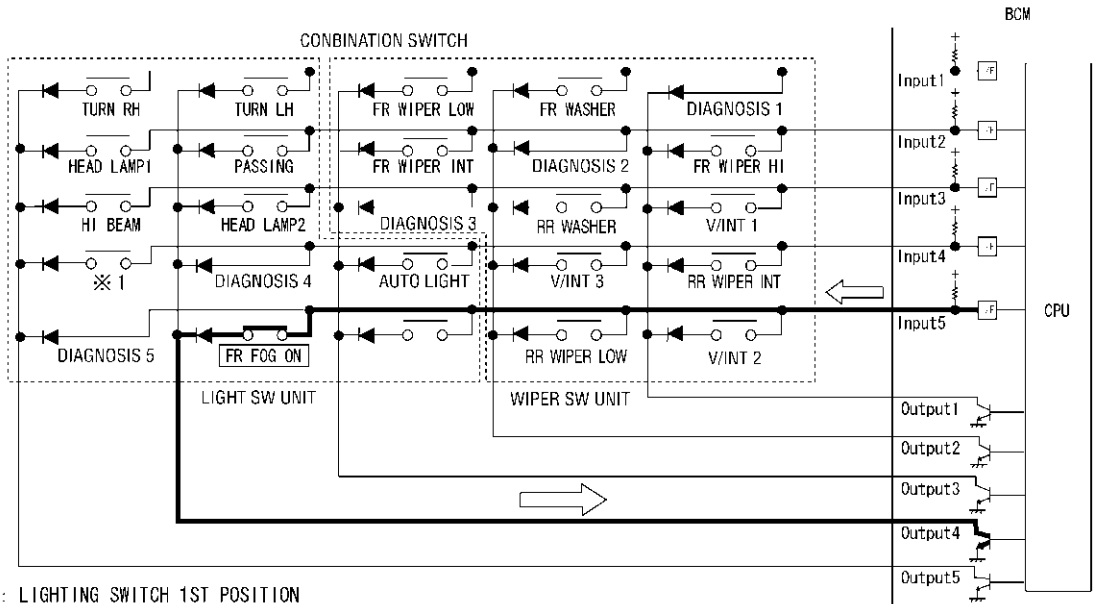
NOTE:

Dual switches are set for head lamps.

4. Example (When fog lamp switch is turned ON.)

COMBINATION SWITCH

- 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

SKIA6473E

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

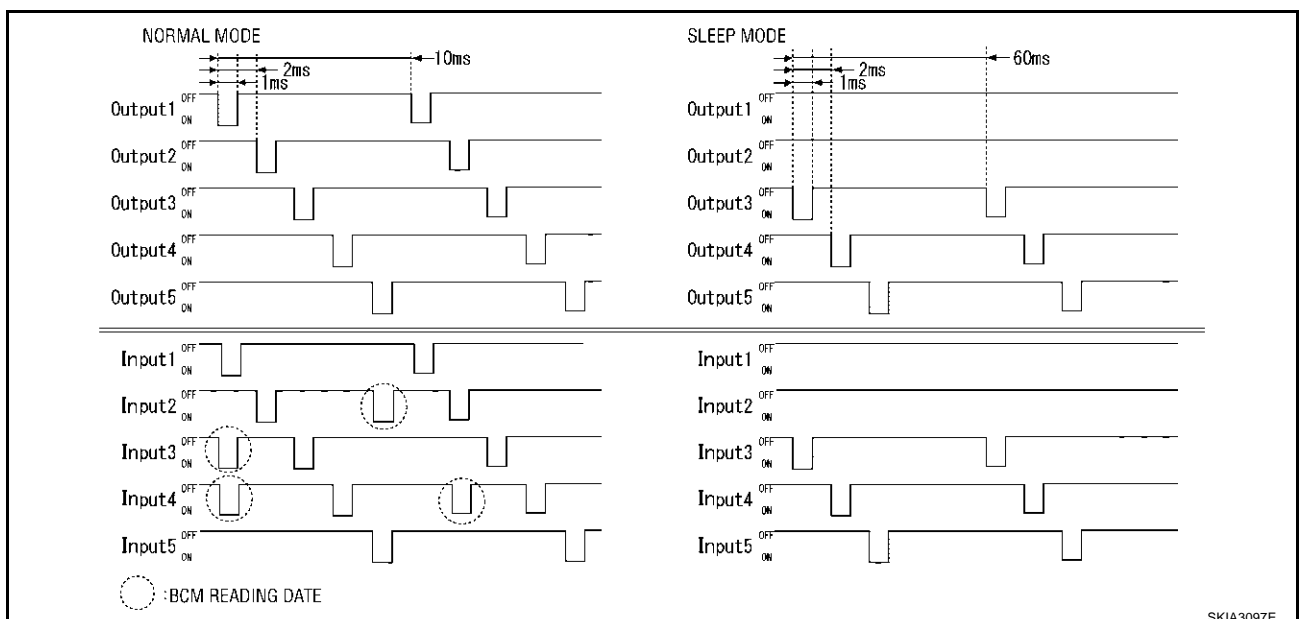
- Combination switch reading function has operation modes shown below.

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

COMBINATION SWITCH

CONSULT-II Function

AKS004KW

CONSULT-II performs the following functions communicating with BCM.

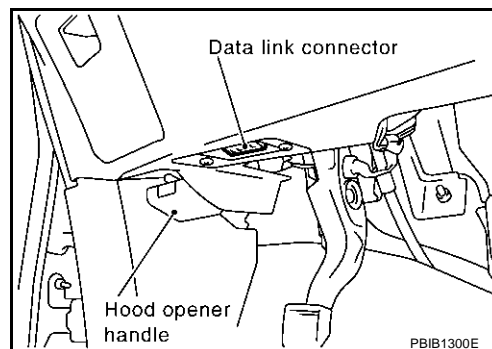
BCM diagnosis part	Check item, diagnosis mode	Description
Combination switch	DATA MONITOR	Displays BCM input data in real time.

CONSULT-II BASIC OPERATION

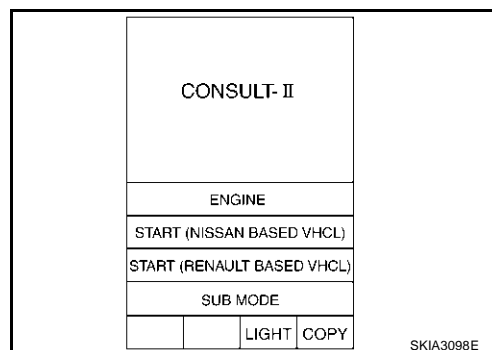
CAUTION:

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

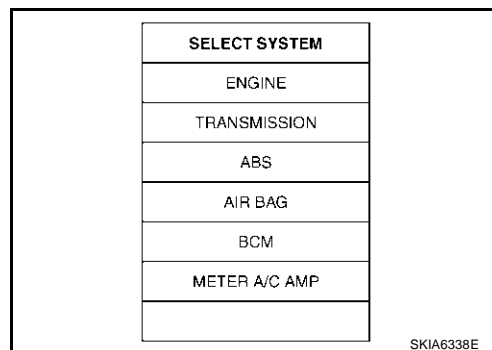
1. With ignition switch OFF, connect CONSULT-II and CONSULT-II CONVERTER to data link connector, then turn ignition switch ON.



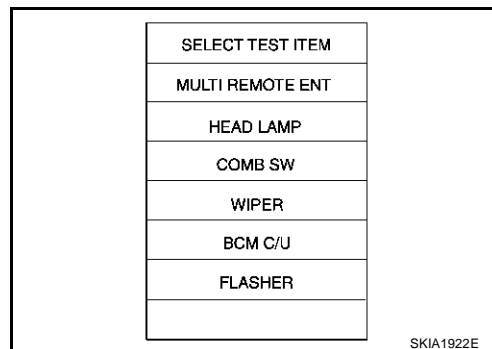
2. Touch "START(NISSAN BASED VHCL)".



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



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



COMBINATION SWITCH

DATA MONITOR

Operation Procedure

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

All signals	Monitors all the signals.
Selection from menu	Selects and monitors individual signal.

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

COMBINATION SWITCH

Display Item List

Monitor item name "OPERATION OR UNIT"	Contents
TAIL LAMP SW "ON/OFF"	Displays status (lighting switch 1st position: ON/Others: OFF) of lighting switch judged from lighting switch signal.
HEAD LAMP SW 1 "ON/OFF"	Displays "Headlamp switch 1 (ON)/Other (OFF)" status, determined from lighting switch signal.
HEAD LAMP SW 2 "ON/OFF"	Displays status (headlamp switch 2: ON/Others: OFF) of headlamp switch 2 judged from lighting switch signal.
HI BEAM SW "ON/OFF"	Displays status (high beam switch: ON/Others: OFF) of high beam switch judged from lighting switch signal.
PASSING SW "ON/OFF"	Displays status (flash-to-pass switch: ON/Others: OFF) of flash-to-pass switch judged from lighting switch signal.
AUTO LIGHT SW "ON/OFF"	Displays status of the lighting switch as judged from the lighting switch signal. (AUTO position: ON/Other than AUTO position: OFF)
FR FOG SW "ON/OFF"	Displays status (front fog lamp switch: ON/Others: OFF) of front fog lamp switch judged from lighting switch signal.
FR WIPER HI "ON/OFF"	Displays "Front Wiper HI (ON)/Other (OFF)" status, determined from wiper switch signal.
FR WIPER LOW "ON/OFF"	Displays "Front Wiper LOW (ON)/Other (OFF)" status, determined from wiper switch signal.
FR WIPER INT "ON/OFF"	Displays "Front Wiper INT (ON)/Other (OFF)" status, determined from wiper switch signal.
INT VOLUME [1 - 7]	Displays intermittent operation knob setting (1 - 7), determined from wiper switch signal.
RR WIPER ON "ON/OFF"	Displays "Rear Wiper Switch (ON)/Other (OFF)" status, determined from wiper switch signal.
RR WIPER INT "ON/OFF"	Displays "Rear Wiper INT (ON)/Other (OFF)" status, determined from wiper switch signal.
FR WASHER SW "ON/OFF"	Displays "Front Washer Switch (ON)/Other (OFF)" status, determined from wiper switch signal.
RR WASHER SW "ON/OFF"	Displays "Rear Washer Switch (ON)/Other (OFF)" status, determined from wiper switch signal.
TURN SIGNAL R "ON/OFF"	Displays "Turn Right (ON)/Other (OFF)" status, determined from lighting switch signal.
TURN SIGNAL L "ON/OFF"	Displays "Turn Left (ON)/Other (OFF)" status, determined from lighting switch signal.

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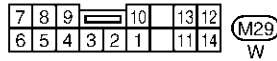
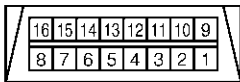
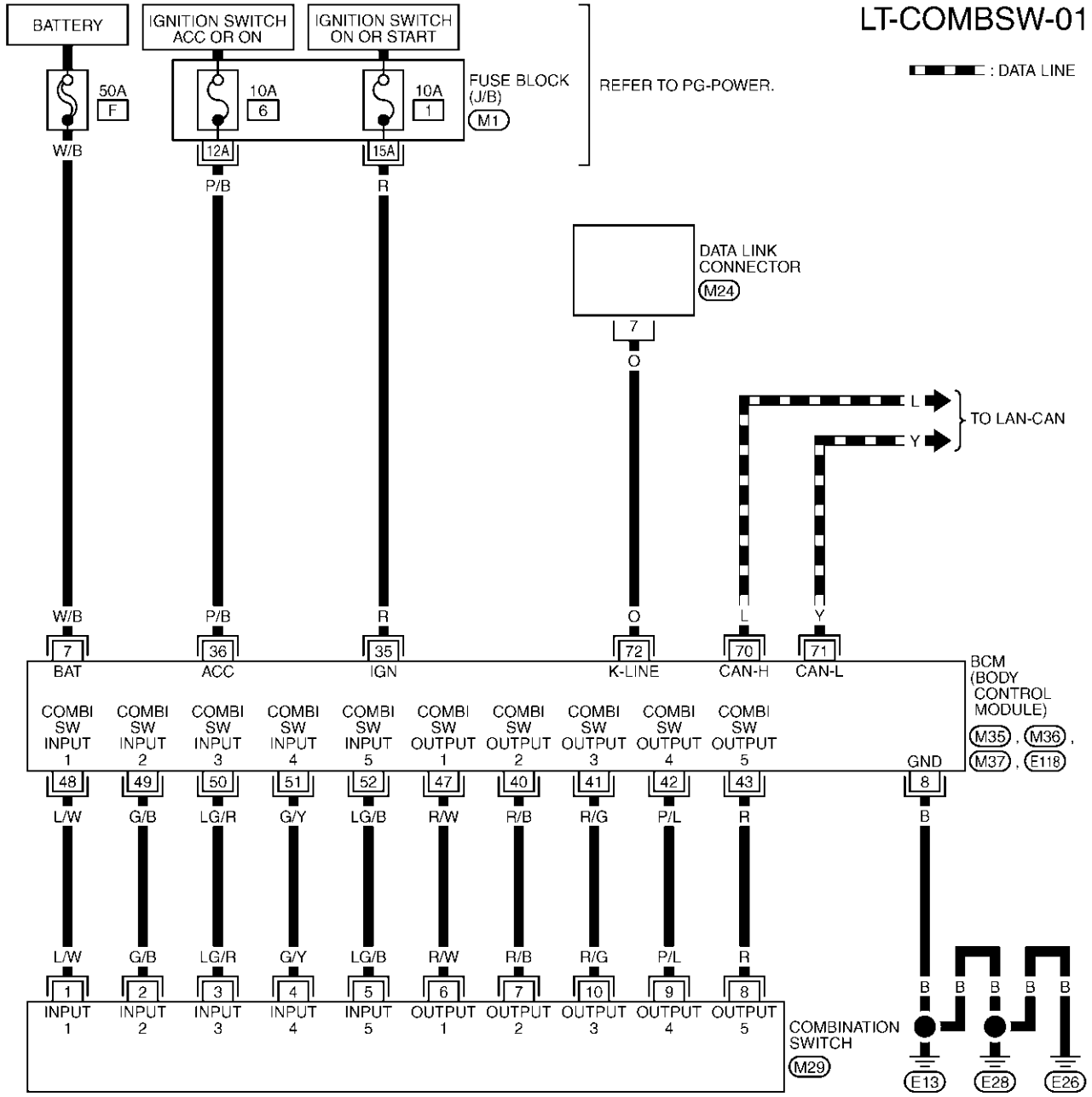
COMBINATION SWITCH

Wiring Diagram—COMBSW—

AKS004KX

LT-COMBSW-01

▬ : DATA LINE



REFER TO THE FOLLOWING.

(M1) - FUSE BLOCK-JUNCTION BOX (J/B)

(M35), (M36), (M37), (E118) - ELECTRICAL UNITS

TKWA0736E

COMBINATION SWITCH

Combination Switch Inspection According to Self-Diagnostic Results

AKS004KY

1. SELF-DIAGNOSTIC RESULT CHECK

CAUTION:

If CONSULT-II is used with no connection of CONSUT-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	Self-diagnostic result content	Malfunctioning switch system	Detection conditions	Possible causes
B2049	OPEN DETECT 1	In the case you are not able to turn on the switch by pattern 1 or 2. Pattern 1 <ul style="list-style-type: none"> ● FRONT WIPER HI ● Intermittent control 1 ● RR WIPER INT ● Intermittent control 2 Pattern 2 <ul style="list-style-type: none"> ● FR WASHER ● FRONT WIPER LOW ● TURN LH ● TURN RH 	BCM terminal No. 48 (Input 1) does not change. (Open circuit in diagnosis 1 system line or open malfunction in output 1 transistor.)	<ul style="list-style-type: none"> ● Harness between BCM and combination switch ● Wiper switch ● BCM
B2050	OPEN DETECT 2	In the case you are not able to turn on the switch by pattern 1 or 2. Pattern 1 <ul style="list-style-type: none"> ● FR WASHER ● RR WASHER ● Intermittent control 3 ● RR WIPER LOW Pattern 2 <ul style="list-style-type: none"> ● FRONT WIPER HI ● FRONT WIPER INT ● PASSING ● HEAD LAMP 1 	BCM terminal No. 49 (Input 2) does not change. (Open circuit in diagnosis 2 system line or open malfunction in output 2 transistor.)	<ul style="list-style-type: none"> ● Harness between BCM and combination switch ● Wiper switch ● BCM
B2051	OPEN DETECT 3	In the case you are not able to turn on the switch by pattern 1 or 2. Pattern 1 <ul style="list-style-type: none"> ● FRONT WIPER LOW ● FRONT WIPER INT ● AUTO LIGHT Pattern 2 <ul style="list-style-type: none"> ● Intermittent control 1 ● RR WASHER ● HEAD LAMP 2 ● HI BEAM 	BCM terminal No. 50 (Input 3) does not change. (Open circuit in diagnosis 3 system line or open malfunction in output 3 transistor.)	<ul style="list-style-type: none"> ● Harness between BCM and combination switch ● Wiper switch (Front wiper Lo, INT) ● BCM

COMBINATION SWITCH

CONSULT-II display code	Self-diagnostic result content	Malfunctioning switch system	Detection conditions	Possible causes
B2052	OPEN DETECT 4	In the case you are not able to turn on the switch by pattern 1 or 2. Pattern 1 <ul style="list-style-type: none"> ● TURN LH ● PASSING ● HEAD LAMP 2 ● FRONT FOG Pattern 2 <ul style="list-style-type: none"> ● RR WIPER INT ● Intermittent control 3 ● AUTO LIGHT ● Lighting switch 1st position 	BCM terminal No. 51 (Input 4) does not change. (Open circuit in diagnosis 4 system line or open malfunction in output 4 transistor.)	<ul style="list-style-type: none"> ● Harness between BCM and combination switch ● Lighting switch ● BCM
B2053	OPEN DETECT 5	In the case you are not able to turn on the switch by pattern 1 or 2. Pattern 1 <ul style="list-style-type: none"> ● TURN RH ● HEAD LAMP 1 ● HI BEAM ● TAIL LAMP Pattern 2 <ul style="list-style-type: none"> ● Intermittent control 2 ● RR WIPER LOW ● FR FOG 	BCM terminal No. 52 (Input 5) does not change. (Open circuit in diagnosis 5 system line or open malfunction in output 5 transistor.)	<ul style="list-style-type: none"> ● Harness between BCM and combination switch ● Lighting switch ● BCM
B2054	HEADLAMP 1 SW NG	HEAD LAMP 1 malfunction	Headlamp 1 switch OFF Headlamp 2 switch ON	Lighting switch
B2055	HEADLAMP 2 SW NG	HEAD LAMP 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.

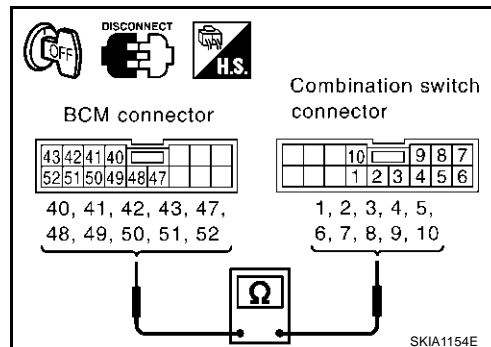
Malfunction in headlamp switch system>>Replace lighting switch.

COMBINATION SWITCH

2. CHECK HARNESS

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

Self-diagnostic result content	Terminals				Continuity	
	BCM		Combination switch			
	Connector	Terminal (Wire color)	Connector	Terminal (Wire color)		
OPEN DETECT 1	M36	Input 1	48 (L/W)	M29	1 (L/W)	Yes
		Output 1	47 (R/W)		6 (R/W)	
OPEN DETECT 2		Input 2	49 (G/B)		2 (G/B)	
		Output 2	40 (R/B)		7 (R/B)	
OPEN DETECT 3		Input 3	50 (LG/R)		3 (LG/R)	
		Output 3	41 (R/G)		10 (R/G)	
OPEN DETECT 4		Input 4	51 (G/Y)		4 (G/Y)	
		Output 4	42 (P/L)		9 (P/L)	
OPEN DETECT 5		Input 5	52 (LG/B)		5 (LG/B)	
		Output 5	43 (R)		8 (R)	



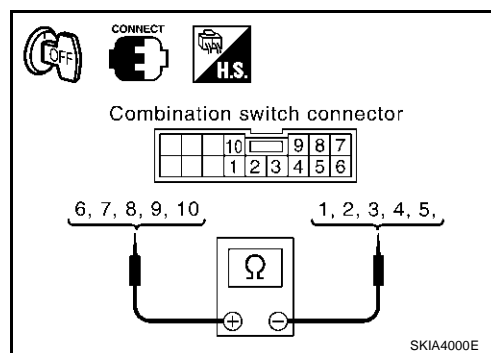
OK or NG

- OK >> GO TO 3.
 NG >> Repair harness.

3. CHECK 1: COMBINATION SWITCH

1. Connect combination switch connector.
2. Check continuity for combination switch harness connector between input and output terminals of applicable malfunctioning system.

Self-diagnostic result content	Combination switch			Continuity
	Connector	Input	Output	
		Terminal (Wire color)	Terminal (Wire color)	
OPEN DETECT 1	M29	1 (L/W)	6 (R/W)	Yes
OPEN DETECT 2		2 (G/B)	7 (R/B)	
OPEN DETECT 3		3 (LG/R)	10 (R/G)	
OPEN DETECT 4		4 (G/Y)	9 (P/L)	
OPEN DETECT 5		5 (LG/B)	8 (R)	



OK or NG

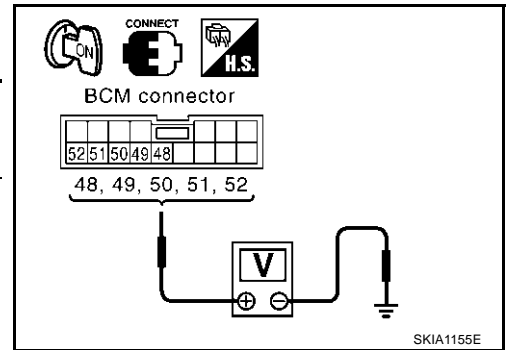
- OK >> GO TO 4.
 NG >> GO TO 6.

COMBINATION SWITCH

4. CHECK BCM INPUT TERMINAL VOLTAGE

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

Self-diagnostic result content	Terminals		Voltage
	Connector	Terminal (Wire color)	
OPEN DETECT 1	M36	Input 1	48 (L/W)
OPEN DETECT 2		Input 2	49 (G/B)
OPEN DETECT 3		Input 3	50 (LG/R)
OPEN DETECT 4		Input 4	51 (G/Y)
OPEN DETECT 5		Input 5	52 (LG/B)



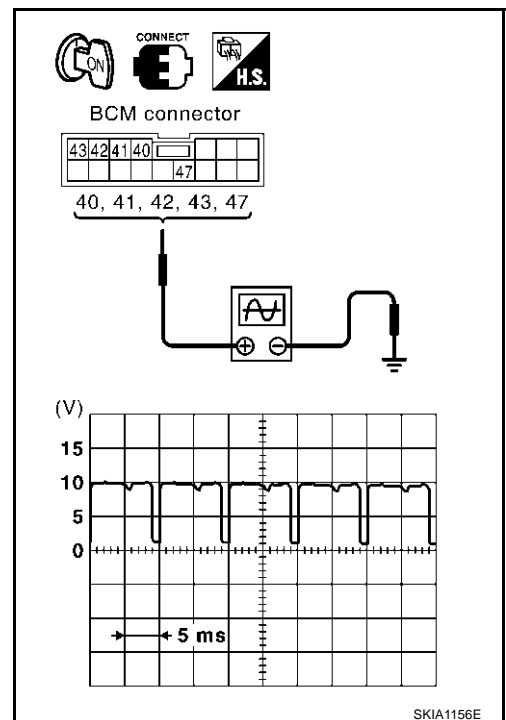
OK or NG

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

5. CHECK BCM OUTPUT TERMINAL

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

Self-diagnostic result content	Terminals		
	Connector	Terminal (Wire color)	
OPEN DETECT 1	M36	Output 1	47 (R/W)
OPEN DETECT 2		Output 2	40 (R/B)
OPEN DETECT 3		Output 3	41 (R/G)
OPEN DETECT 4		Output 4	42 (P/L)
OPEN DETECT 5		Output 5	43 (R)



OK or NG

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

6. CHECK 2: COMBINATION SWITCH

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.			

COMBINATION SWITCH

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

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COMBINATION SWITCH

Malfunctioning Operation of Lamps and Wipers

AKS004KZ

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 <ul style="list-style-type: none"> ● LH Turn signal lamp and RH Turn signal lamp on ● Front wiper on (LO speed) 	<ul style="list-style-type: none"> ● Short between the following harness and ground <ul style="list-style-type: none"> – Between BCM INPUT 1 terminal and combination switch – Between combination switch and BCM OUTPUT 1 ● BCM ● Combination switch
2	When the ignition switch is ON position <ul style="list-style-type: none"> ● Headlamp on (HI and LO) ● Front wiper on (HI speed) 	<ul style="list-style-type: none"> ● Short between the following harness and ground <ul style="list-style-type: none"> – Between BCM INPUT 2 terminal and combination switch – Between combination switch and BCM OUTPUT 2 ● BCM ● Combination switch
	When the ignition switch is OFF position <ul style="list-style-type: none"> ● Headlamp on (HI and LO) 	
3	When the ignition switch is ON position <ul style="list-style-type: none"> ● Headlamp on (HI and LO) ● Rear wiper ON 	<ul style="list-style-type: none"> ● Short between the following harness and ground <ul style="list-style-type: none"> – Between BCM INPUT 3 terminal and combination switch – Between combination switch and BCM OUTPUT 3 ● BCM ● Combination switch
	When the ignition switch is OFF position <ul style="list-style-type: none"> ● Headlamp on (HI and LO) 	
4	When the ignition switch is ON position <ul style="list-style-type: none"> ● Parking lamp and tail lamp on ● Headlamp on at certain degrees of brightness 	<ul style="list-style-type: none"> ● Short between the following harness and ground <ul style="list-style-type: none"> – Between BCM INPUT 4 terminal and combination switch – Between combination switch and BCM OUTPUT 4 ● BCM ● Combination switch
	When the ignition switch is OFF position <ul style="list-style-type: none"> ● Parking lamp and tail lamp on 	
5	When the ignition switch is ON position <ul style="list-style-type: none"> ● Front fog lamp on ● Rear wiper ON 	<ul style="list-style-type: none"> ● Short between the following harness and ground <ul style="list-style-type: none"> – Between BCM INPUT 5 terminal and combination switch – Between combination switch and BCM OUTPUT 5 ● BCM ● Combination switch
	When the ignition switch is OFF position <ul style="list-style-type: none"> ● Front fog lamp on 	

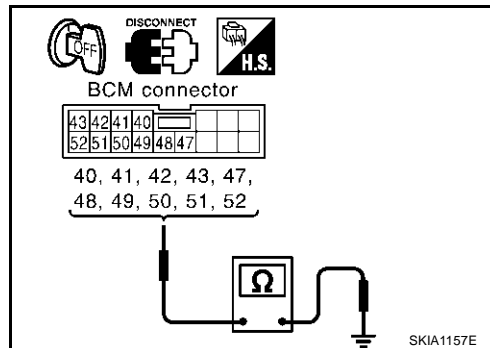
>> GO TO 2.

COMBINATION SWITCH

2. CHECK HARNESS

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

Malfunctioning system	Terminals			Continuity	
	Connector	Terminal (Wire color)			
1	M36	Input 1	48 (L/W)	Ground	No
		Output 1	47 (R/W)		
2		Input 2	49 (G/B)		
		Output 2	40 (R/B)		
3		Input 3	50 (LG/R)		
		Output 3	41 (R/G)		
4		Input 4	51 (G/Y)		
		Output 4	42 (P/L)		
5		Input 5	52 (LG/B)		
		Output 5	43 (R)		



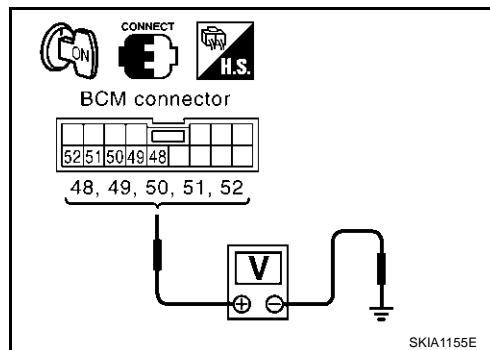
OK or NG

- OK >> GO TO 3.
 NG >> Repair harness.

3. CHECK BCM INPUT TERMINAL VOLTAGE

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

Malfunctioning system	Terminals			Voltage
	Connector	(+)	(-)	
		Terminal (Wire color)		
1	M36	48 (L/W)	Ground	4.5V or more
2		49 (G/B)		
3		50 (LG/R)		
4		51 (G/Y)		
5		52 (LG/B)		



OK or NG

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

4. CHECK COMBINATION SWITCH

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

COMBINATION SWITCH

Removal and Installation

AKS005LM

For details, refer to [SRS-38, "Removal and Installation"](#) in "SRS" section.

Switch Circuit Inspection

AKS005LN

For details, refer to [LT-257, "Combination Switch Inspection According to Self-Diagnostic Results"](#) .

STOP LAMP

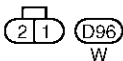
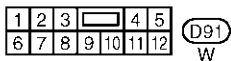
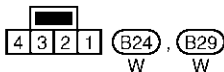
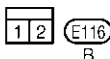
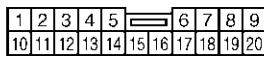
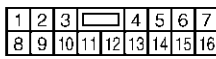
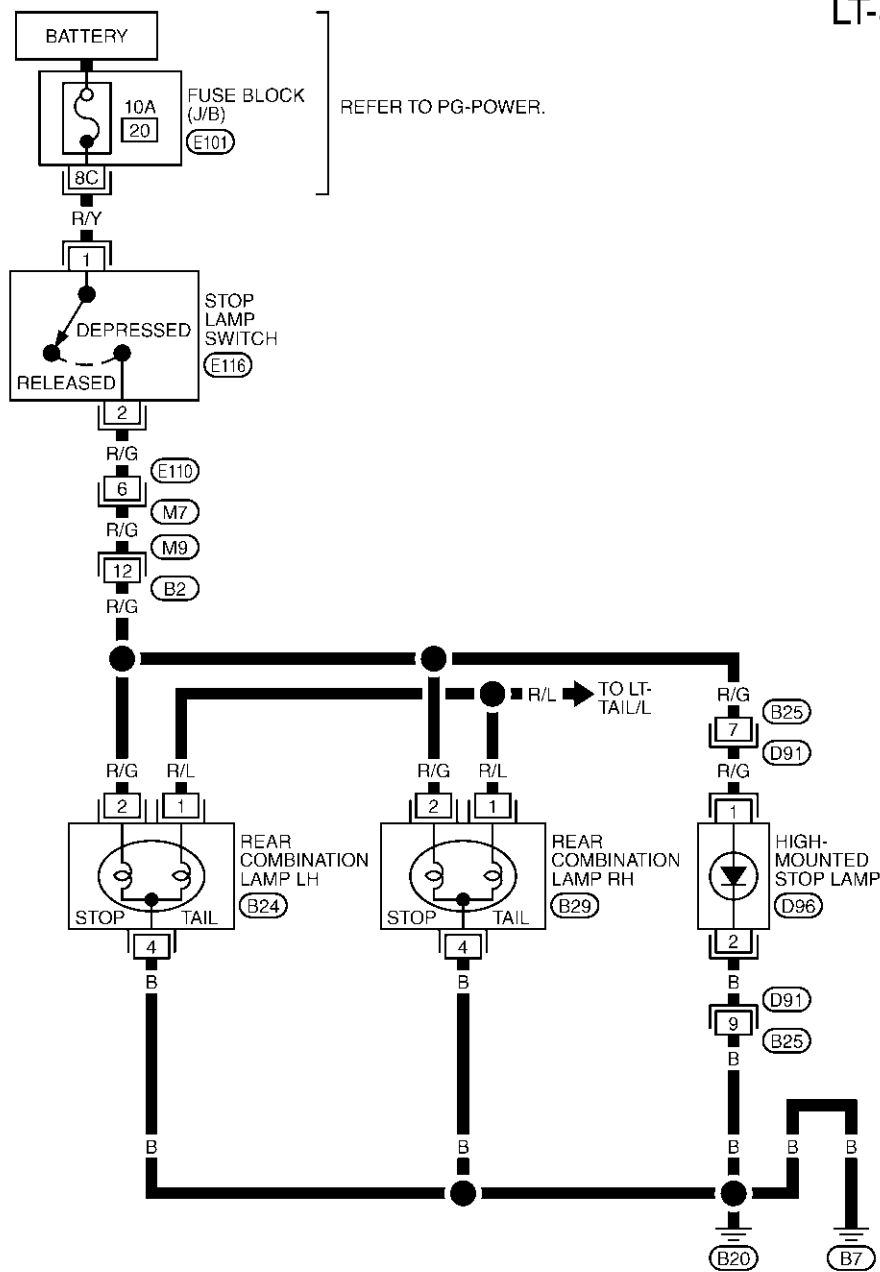
PFP:26550

STOP LAMP

Wiring Diagram — STOP/L —

AKS004L1

LT-STOP/L-01



REFER TO THE FOLLOWING.
(E101) -FUSE BLOCK-JUNCTION BOX (J/B)

LT
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STOP LAMP

High-Mounted Stop Lamp

AKS005LO

BULB REPLACEMENT, REMOVAL AND INSTALLATION

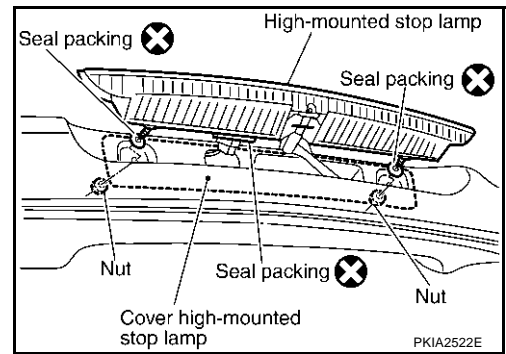
1. Remove cover high-mounted stop lamp on back door inner panel.
2. Disconnect high-mounted stop lamp connector.
3. Remove washer tube from high-mounted stop lamp.
4. Remove nuts and remove high-mounted stop lamp from back door.

High-mounted stop lamp : LED

5. Note the following, and install in the reverse order of removal.
 - Install a new seal packing to the high-mounted stop lamp.

CAUTION:

Seal packing cannot be reused.



Stop Lamp

BULB REPLACEMENT

AKS005LP

Refer to [LT-304, "Bulb Replacement"](#) in "REAR COMBINATION LAMP".

REMOVAL AND INSTALLATION

Refer to [LT-304, "Removal and Installation"](#) in "REAR COMBINATION LAMP".

STEP LAMP

STEP LAMP

PFP:26420

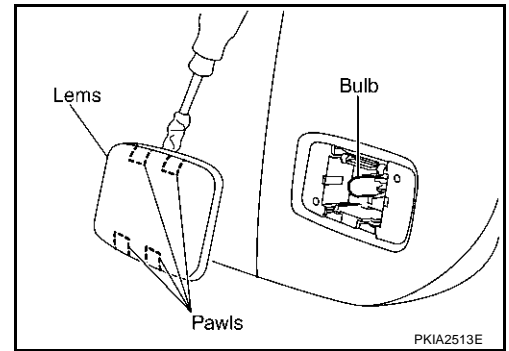
Bulb Replacement

AKS005LQ

1. Disconnect battery negative cable.
2. Insert a screwdriver in the chink between lens and door trim, and remove the lens.
3. Remove the bulb.

Step lamp : 12V - 2.7W

4. Install in the reverse order of removal.

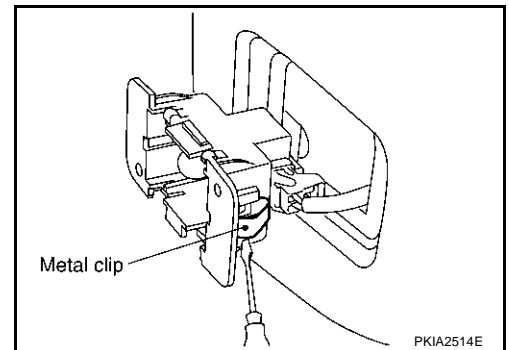


Removal and Installation

REMOVAL

AKS005LR

1. Insert a screwdriver in the chink between lens and door trim, and remove the lens.
2. Using a clip driver or a suitable tool, press and disengage the metal clip fittings of the step lamp.
3. Disconnect the step lamp connector and remove the step lamp.



INSTALLATION

Install in the reverse order of removal.

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BACK-UP LAMP

PF2:26550

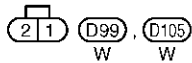
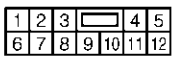
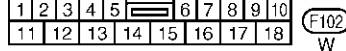
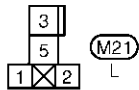
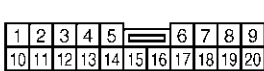
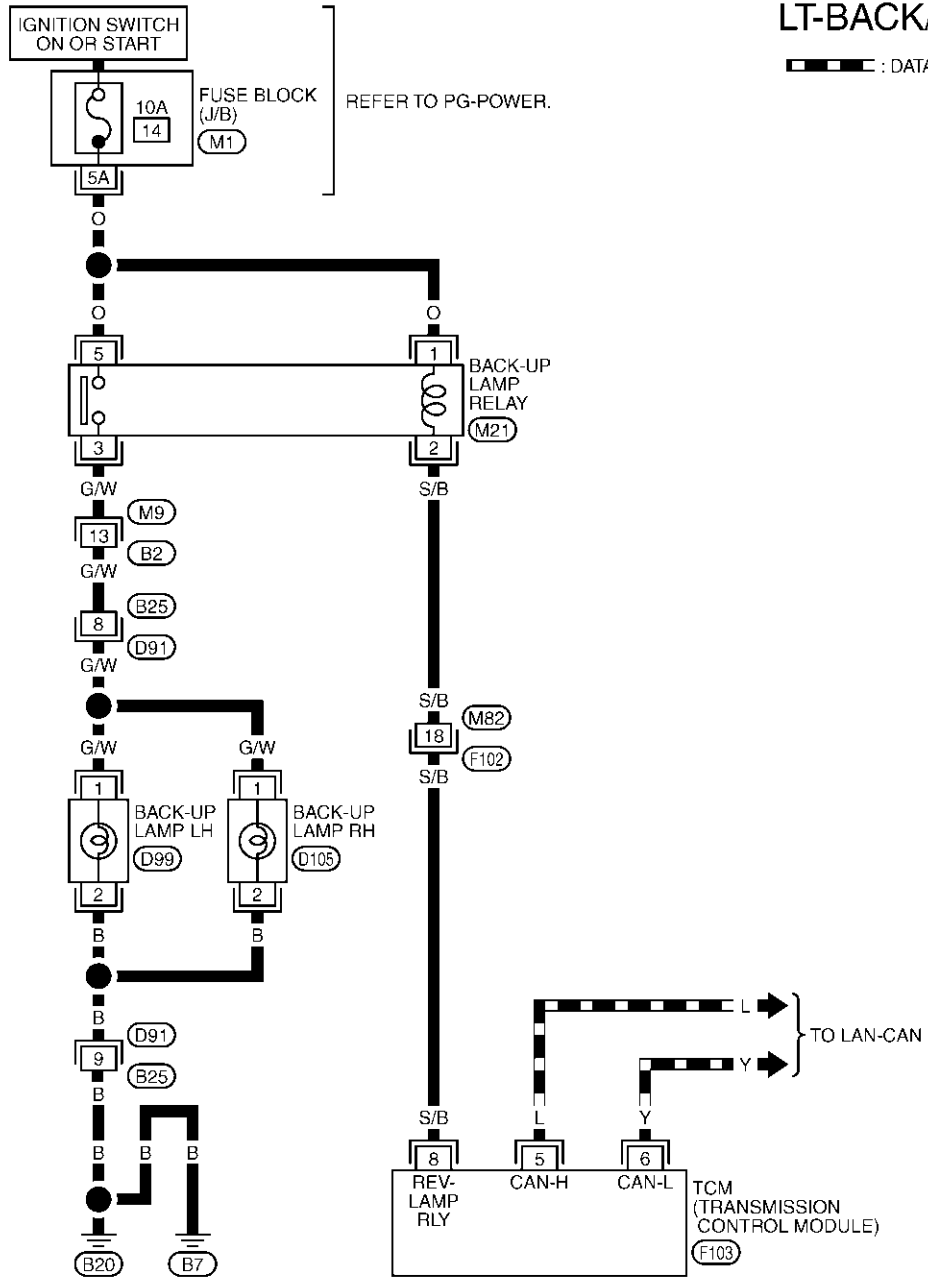
AKS004LB

LT-BACK/L-01

▬ : DATA LINE

BACK-UP LAMP

Wiring Diagram — BACK/L —



REFER TO THE FOLLOWING.

M1 - FUSE BLOCK-JUNCTION BOX (J/B)

F103 - ELECTRICAL UNITS

TKWA0770E

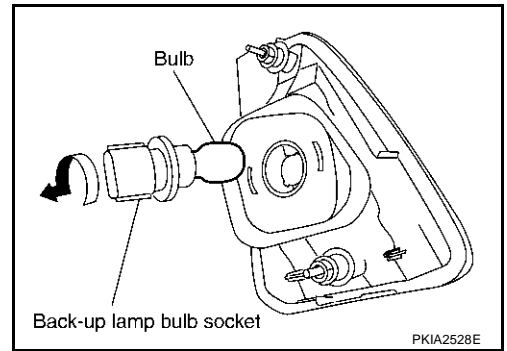
BACK-UP LAMP

Bulb Replacement

1. Remove back door finisher. Refer to [EI-40, "BACK DOOR TRIM"](#) in "EI" section.
2. Disconnect the back-up lamp connector.
3. Turn bulb socket counterclockwise and unlock it.
4. Remove bulb from its socket.

Back-up lamp : 12V - 16W

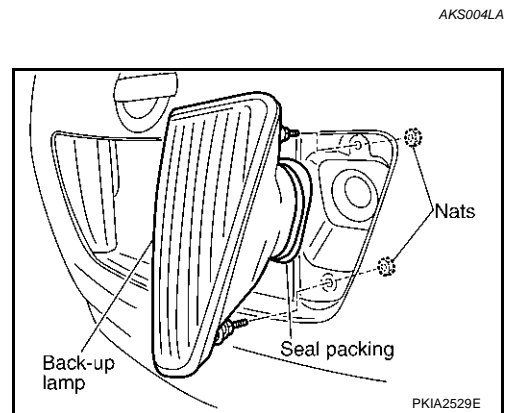
5. Install in the reverse order of removal.



Removal and Installation

REMOVAL

1. Remove back door finisher. Refer to [EI-40, "BACK DOOR TRIM"](#) in "EI" section.
2. Remove the back-up lamp mounting nuts and remove it.
3. Disconnect the back-up lamp connector.



INSTALLATION

Install back up lamp in the reverse order of removal, observing the tightening to torque shown below.

Tightening torque : 5.5 N-m (0.56 kg-m, 49 in-lb)

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PARKING, LICENSE PLATE AND TAIL LAMPS

PFP:26550

System Description

AKS004LB

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

Power is supplied at all times

- through 10A fuse [No. 75, located in IPDM E/R (intelligent power distribution module engine room)]
- to tail lamp relay [located in IPDM E/R (intelligent power distribution module engine room)]
- through 15A fuse [No. 73, located in IPDM E/R (intelligent power distribution module engine room)]
- to CPU (central processing unit) [located in IPDM E/R (intelligent power distribution module engine room)].

Power is also supplied at all times

- through 50A fusible link (letter F, located in fuse and fusible link block)
- to BCM (body control module) terminal 7.

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

- through 10A fuse [No. 1, located in fuse block (J/B)]
- to BCM (body control module) terminal 35
- through 10A fuse [No. 80, located in IPDM E/R (intelligent power distribution module engine room)]
- to CPU (central processing unit) [located in IPDM E/R (intelligent power distribution module engine room)]

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

- through 10A fuse [No. 6, located in fuse block (J/B)]
- to BCM (body control module) terminal 36.

Ground is supplied

- to BCM (body control module) terminal 8
- through grounds E13, E26 and E28
- to IPDM E/R (intelligent power distribution module engine room) terminals 14 and 45
- through grounds E13, E26 and E28.

OPERATION BY LIGHTING SWITCH

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

- through IPDM E/R terminal 37
- to front combination lamp RH terminal 7
- to front combination lamp LH terminal 7
- to rear combination lamp RH terminal 1
- to rear combination lamp LH terminal 1
- to license plate lamp RH terminal 1
- to license plate lamp LH terminal 1.

Ground is supplied at all times

- to front combination lamp RH terminal 5
- through grounds E13, E26 and E28
- to front combination lamp LH terminal 5
- through grounds E13, E26 and E28
- to rear combination lamp RH terminal 4
- through grounds B7 and B20

PARKING, LICENSE PLATE AND TAIL LAMPS

- to rear combination lamp LH terminal 4
- through grounds B7 and B20
- to license plate lamp RH terminal 2
- through grounds B7 and B20
- to license plate lamp LH terminal 2
- through grounds B7 and B20.

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

COMBINATION SWITCH READING FUNCTION

Refer to [LT-251, "Combination Switch Reading Function"](#).

EXTERIOR LAMP BATTERY SAVER CONTROL

When the combination switch (lighting switch) is in the 1ST (or 2ND) position, and the ignition switch is turned from ON or ACC to OFF, the battery saver control feature is activated.

Under this condition, the parking, license plate, side marker and tail lamps remain illuminated for 5 minutes, then the parking, license plate, side marker and tail lamps are turned off.

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

CAN Communication System Description

AKS004LC

CAN (Controller Area Network) is a serial communication line for real time application. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Many electronic control units are equipped onto a vehicle, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN H line, CAN L line) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.

CAN Communication Unit For 2WD Models

AKS007QX

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)	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×

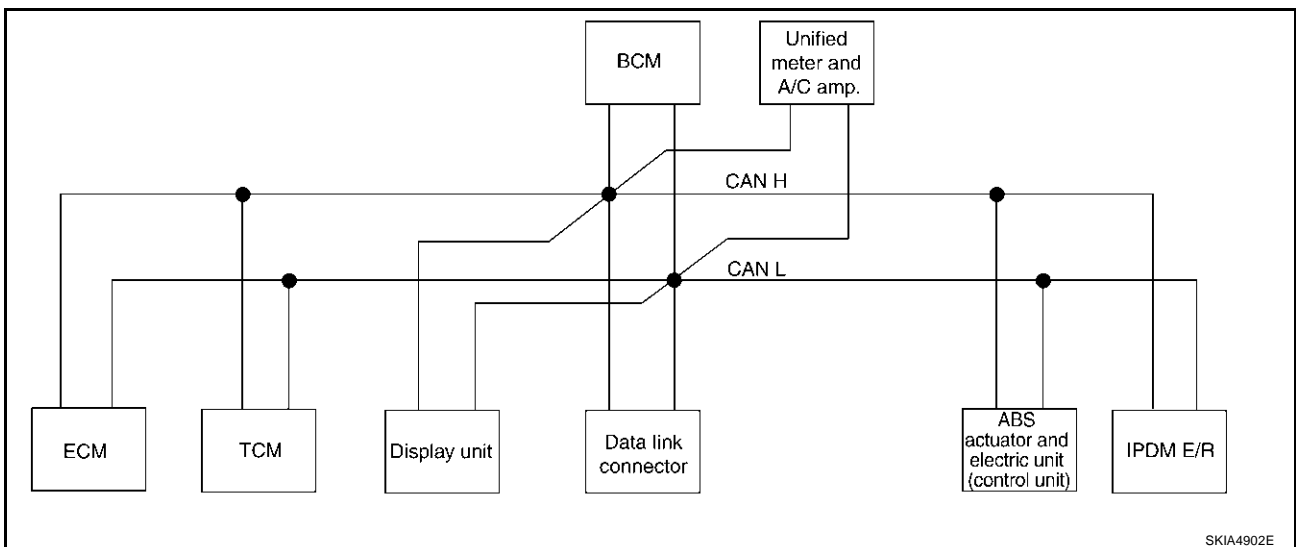
PARKING, LICENSE PLATE AND TAIL LAMPS

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															
IPDM E/R	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×
CAN communication type	LT-272. "TYPE 1/TYPE 2/TYPE 3/TYPE 4/TYPE 5/TYPE 6/TYPE 7/TYPE 8"							LT-277. "TYPE 9/TYPE10/TYPE 11/TYPE 12/TYPE 13/TYPE 14/TYPE 15/TYPE 16"							

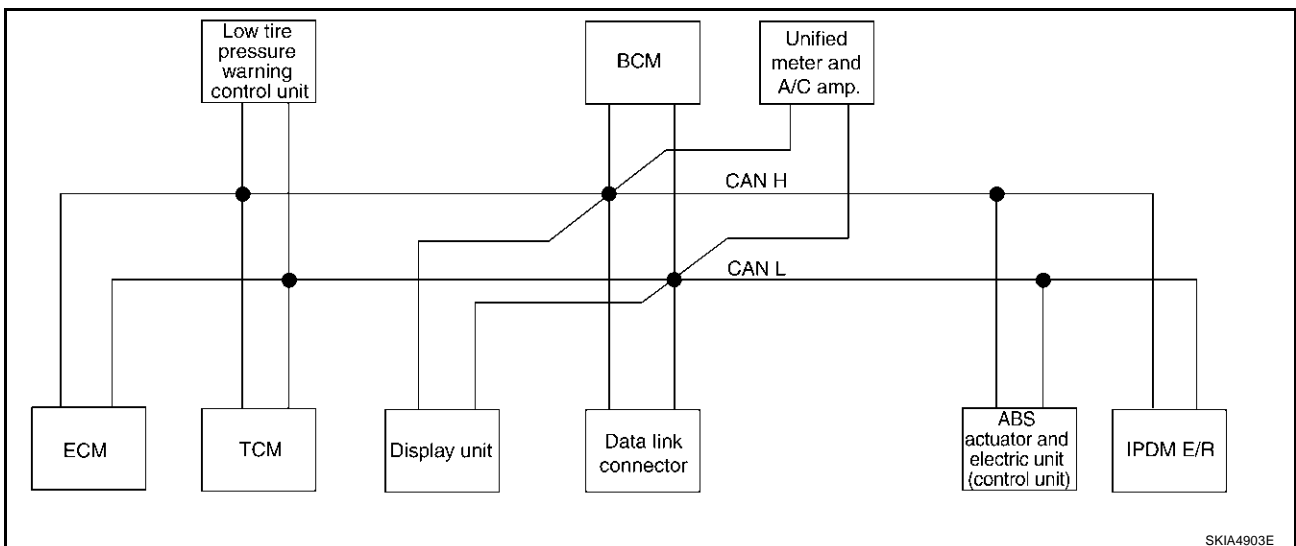
×: Applicable

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

- Type1

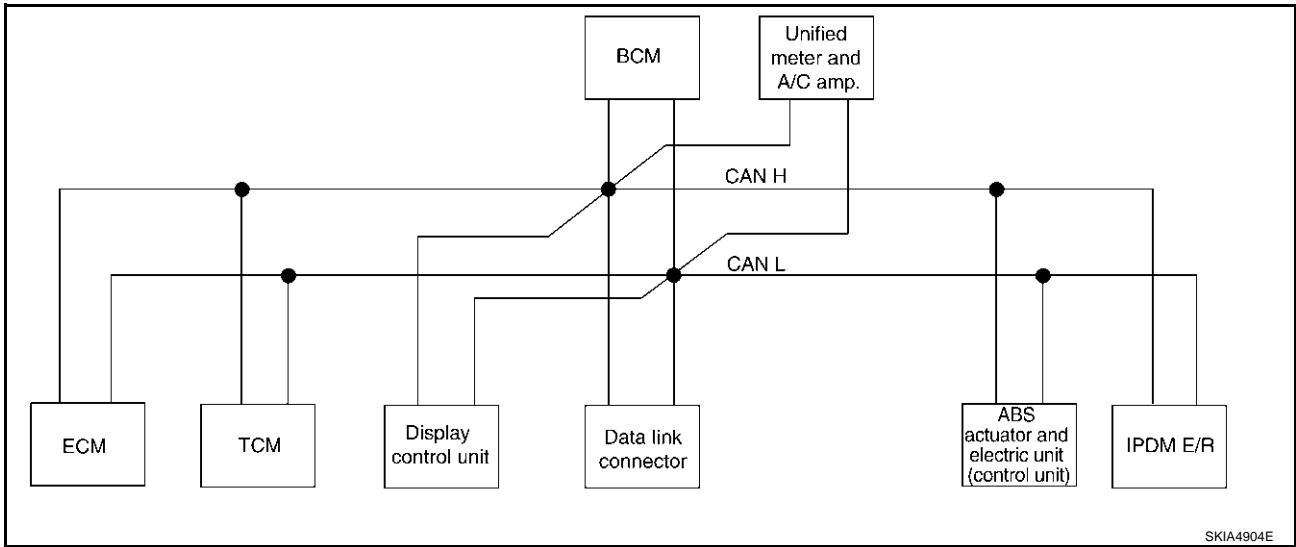


- Type2

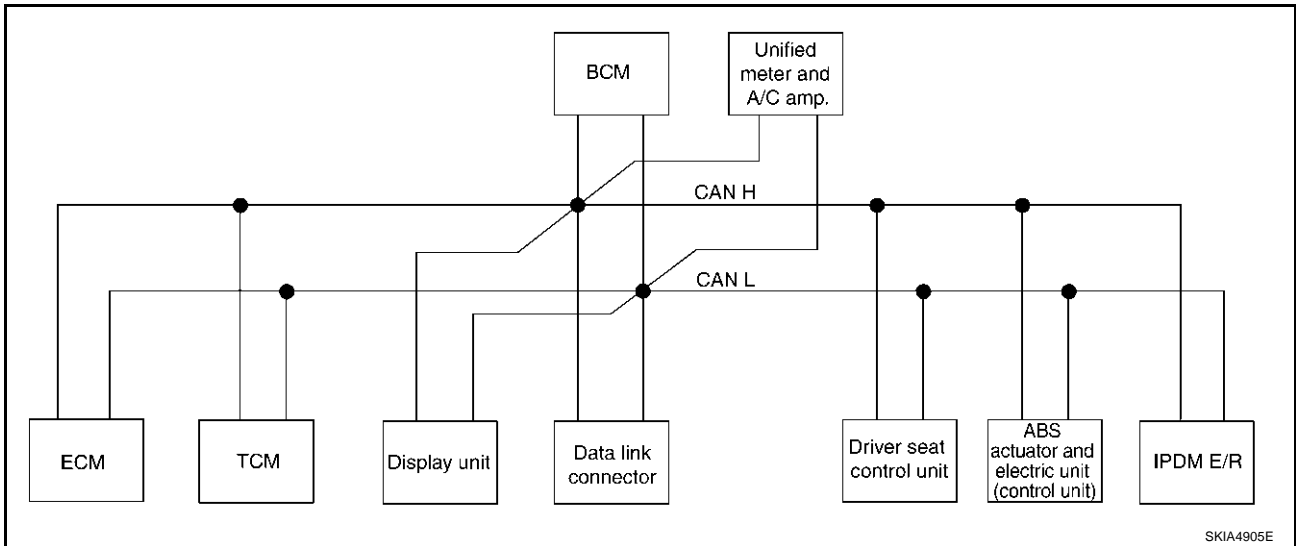


PARKING, LICENSE PLATE AND TAIL LAMPS

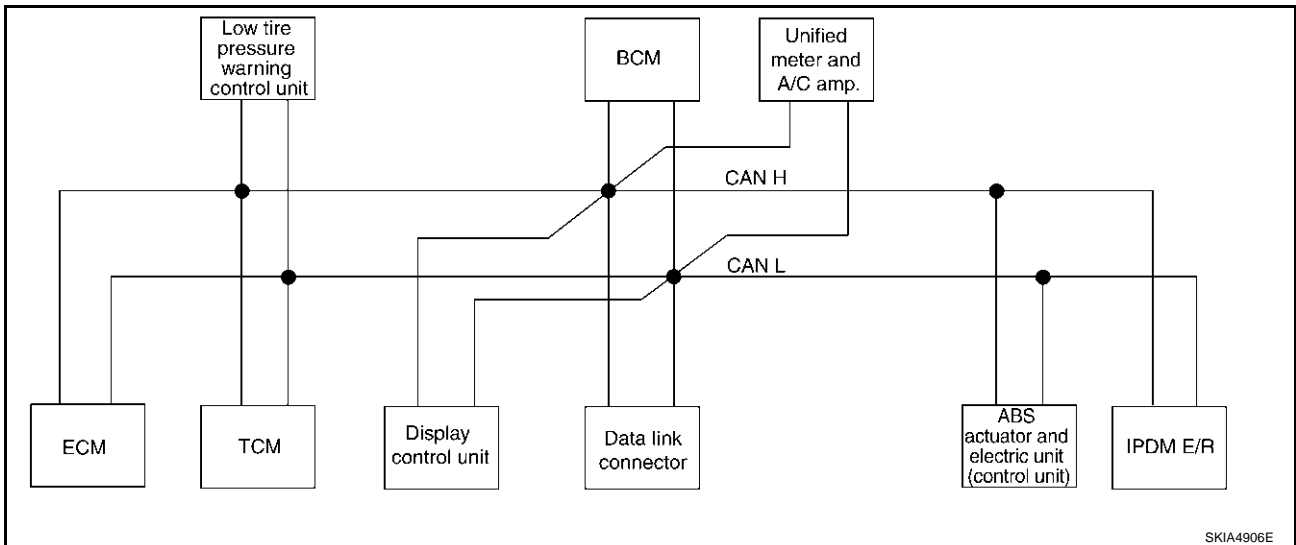
- Type3



- Type4



- Type5

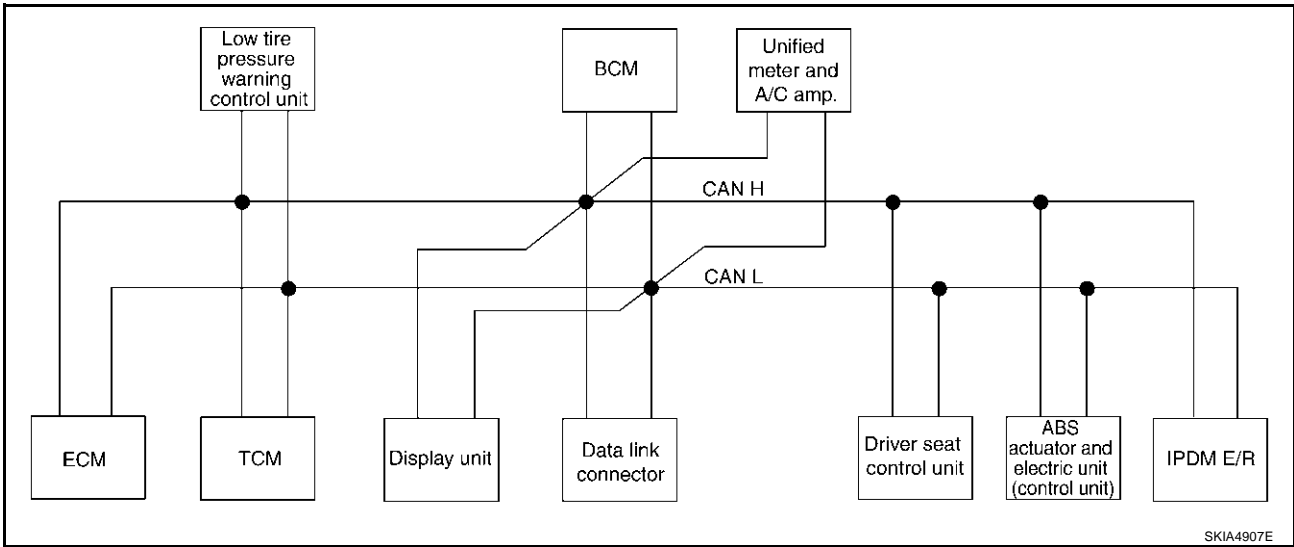


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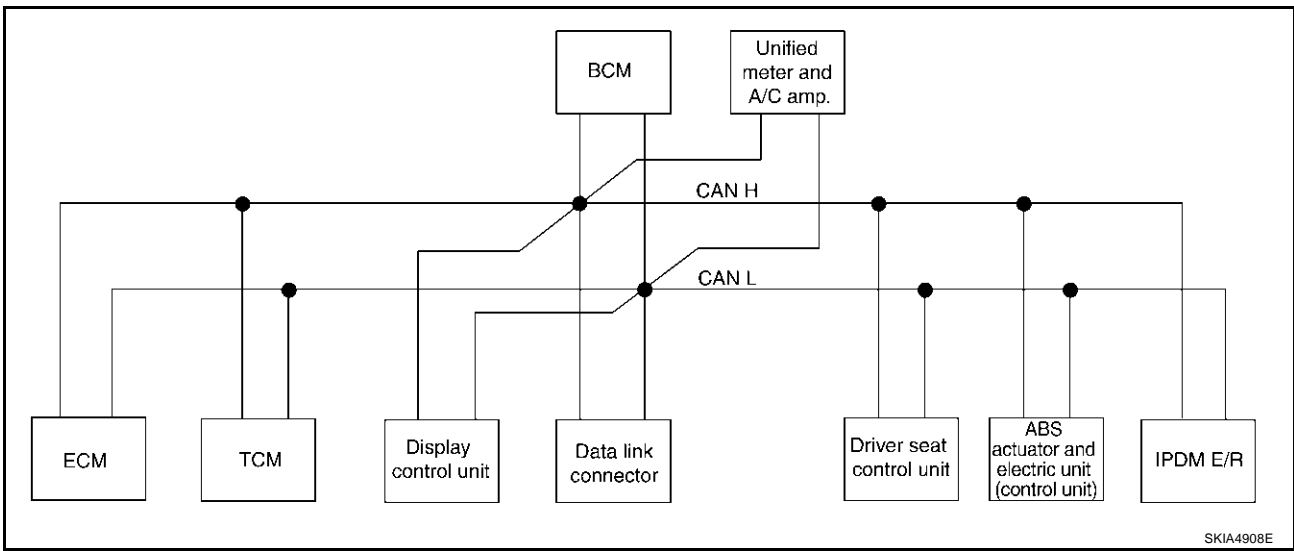
LT

PARKING, LICENSE PLATE AND TAIL LAMPS

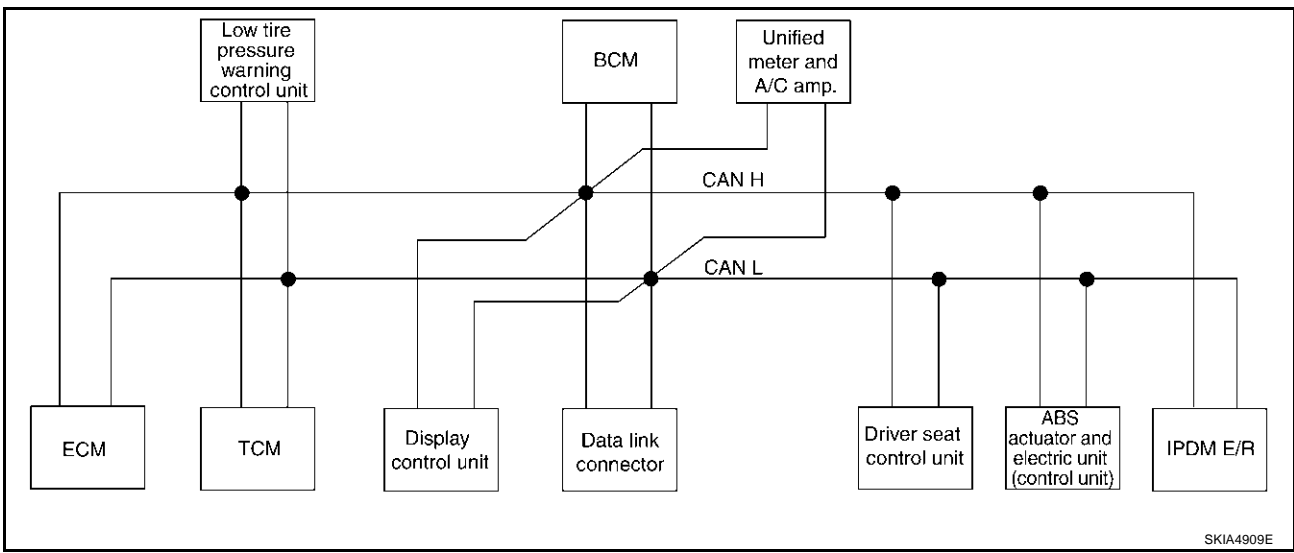
- Type6



- Type7



- Type8



PARKING, LICENSE PLATE AND TAIL LAMPS

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			

PARKING, LICENSE PLATE AND TAIL LAMPS

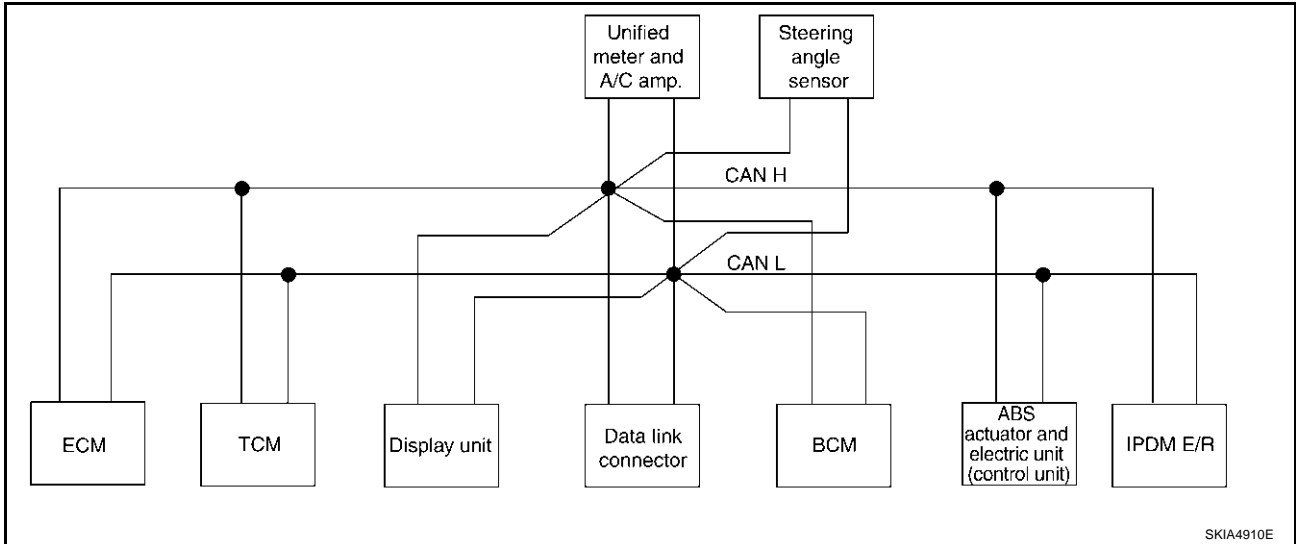
Signals	ECM	TCM	Low tire pressure warning control unit	Display unit	Display control unit	BCM	Unified meter and A/C amp.	Driver seat control unit	ABS actuator and electric unit (control unit)	IPDM E/R
Key fob ID signal						T		R		
Key fob door unlock signal						T		R		
Seat belt buckle switch signal						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 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
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		
Parking brake switch signal						R	T			

PARKING, LICENSE PLATE AND TAIL LAMPS

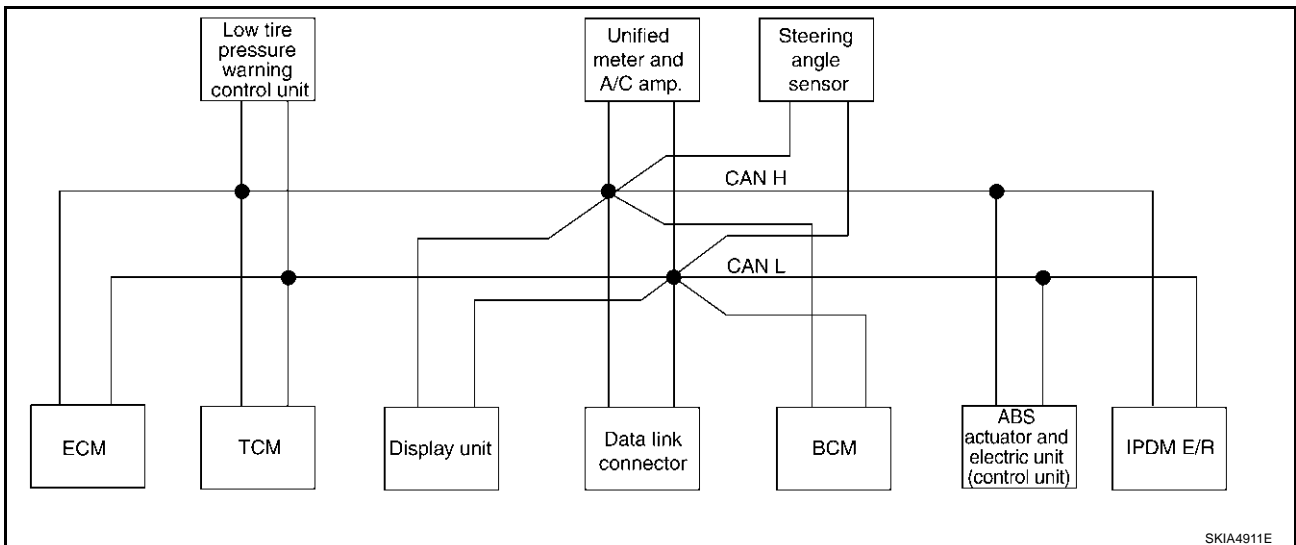
TYPE 9/TYPER10/TYPER 11/TYPER 12/TYPER 13/TYPER 14/TYPER 15/TYPER 16

System Diagram

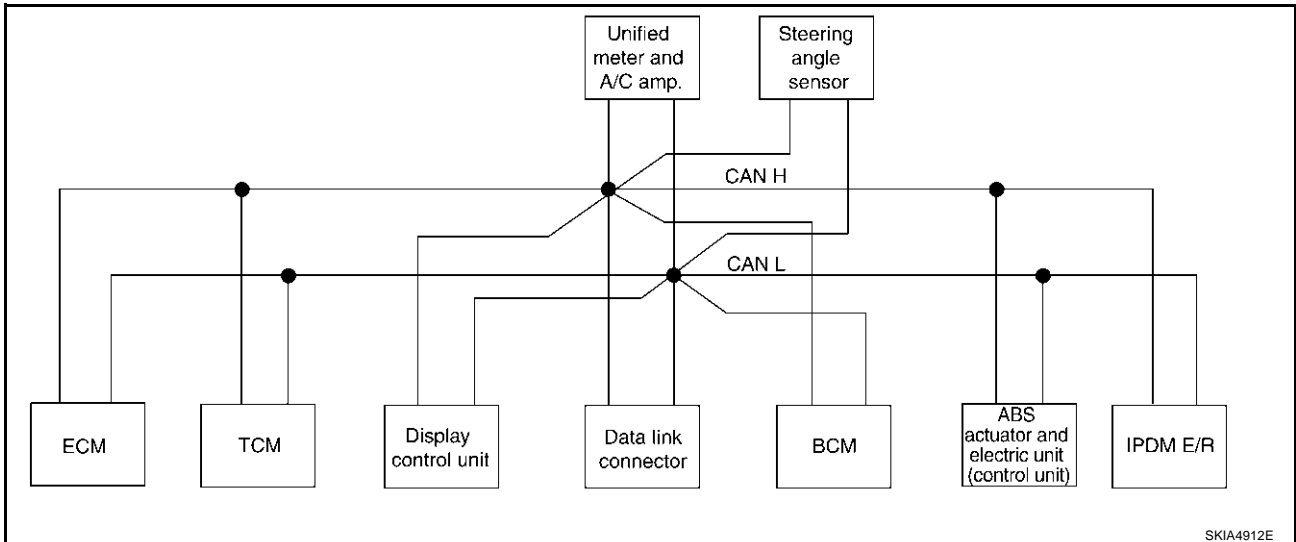
- Type9



- Type10



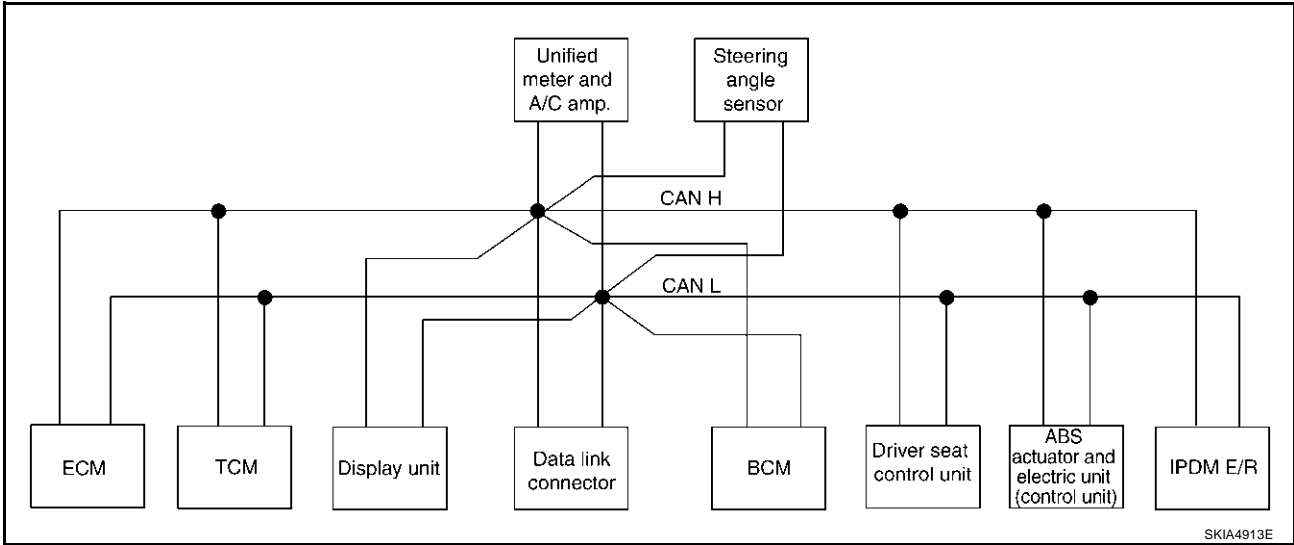
- Type11



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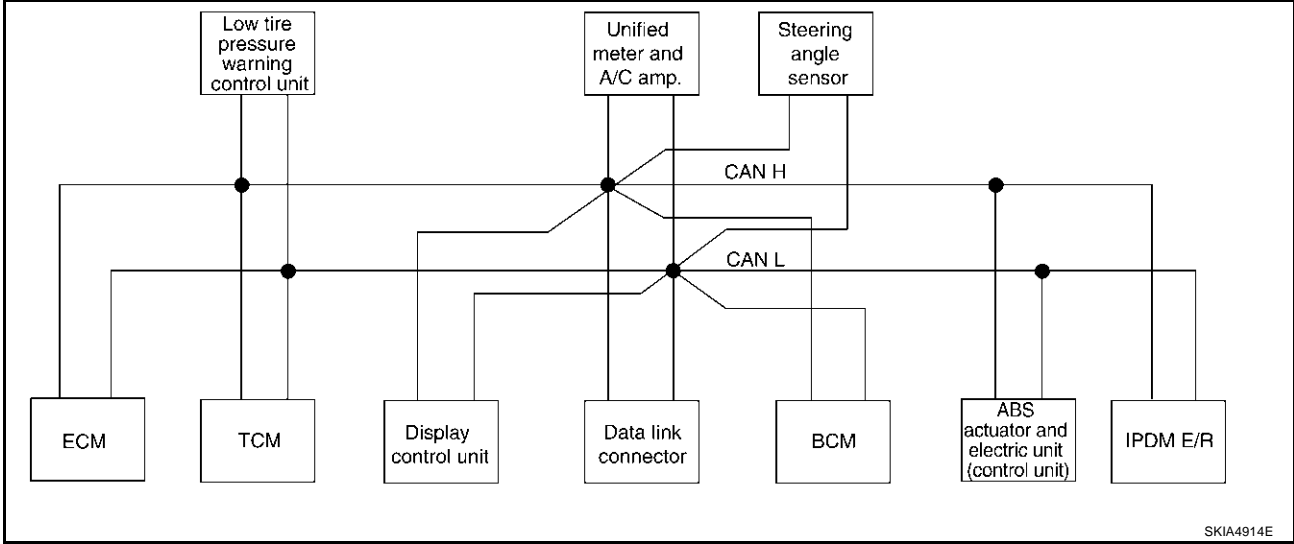
PARKING, LICENSE PLATE AND TAIL LAMPS

- Type12



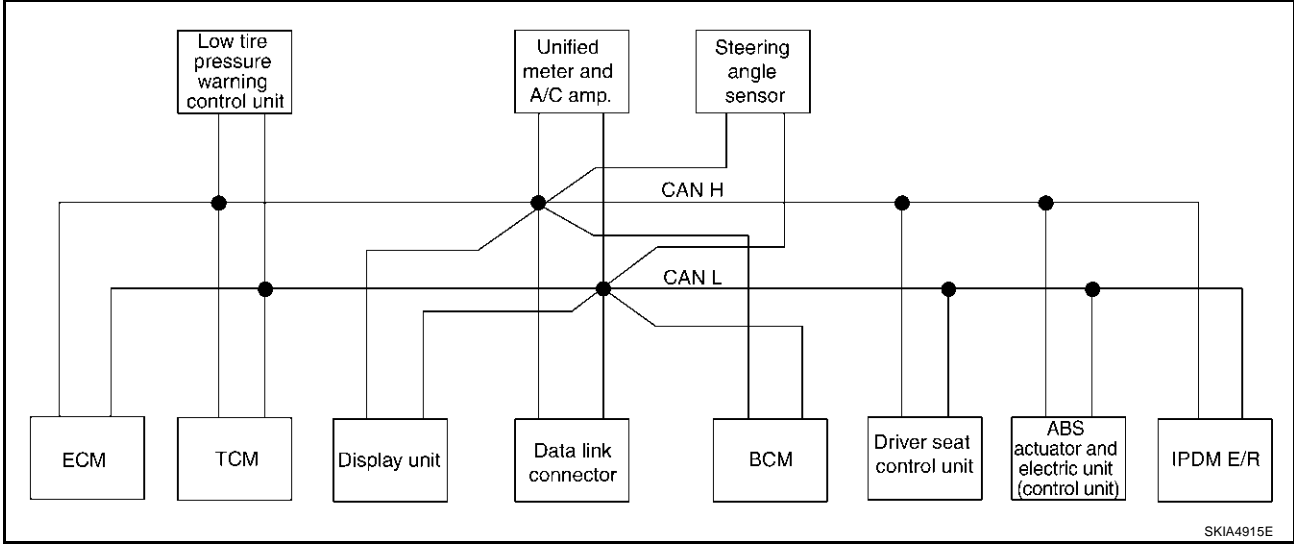
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- Type13



SKIA4914E

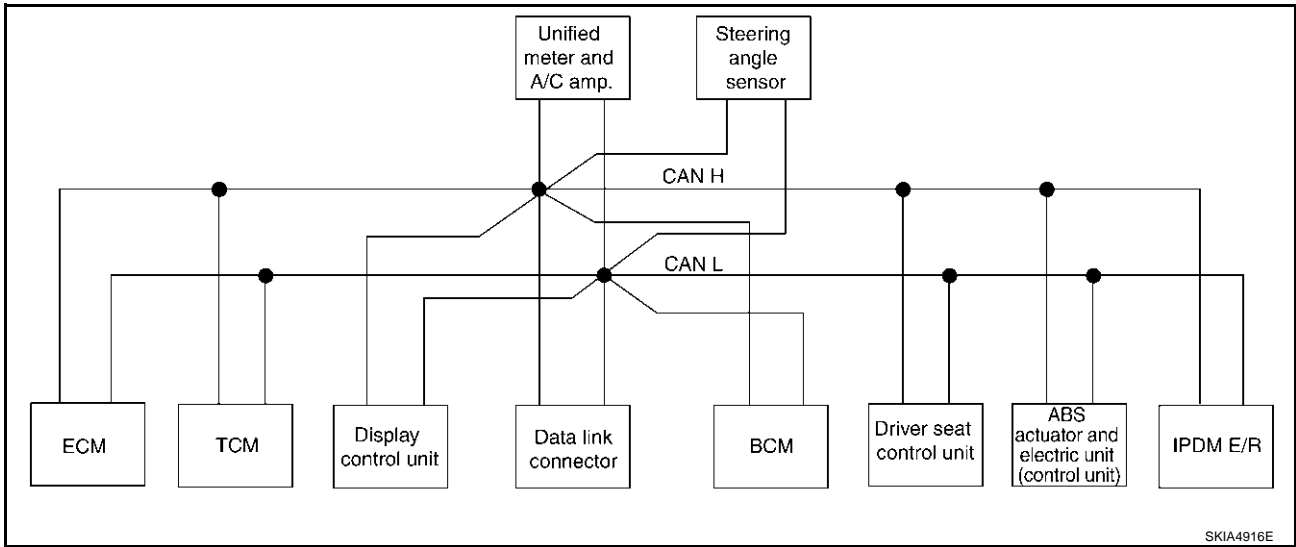
- Type14



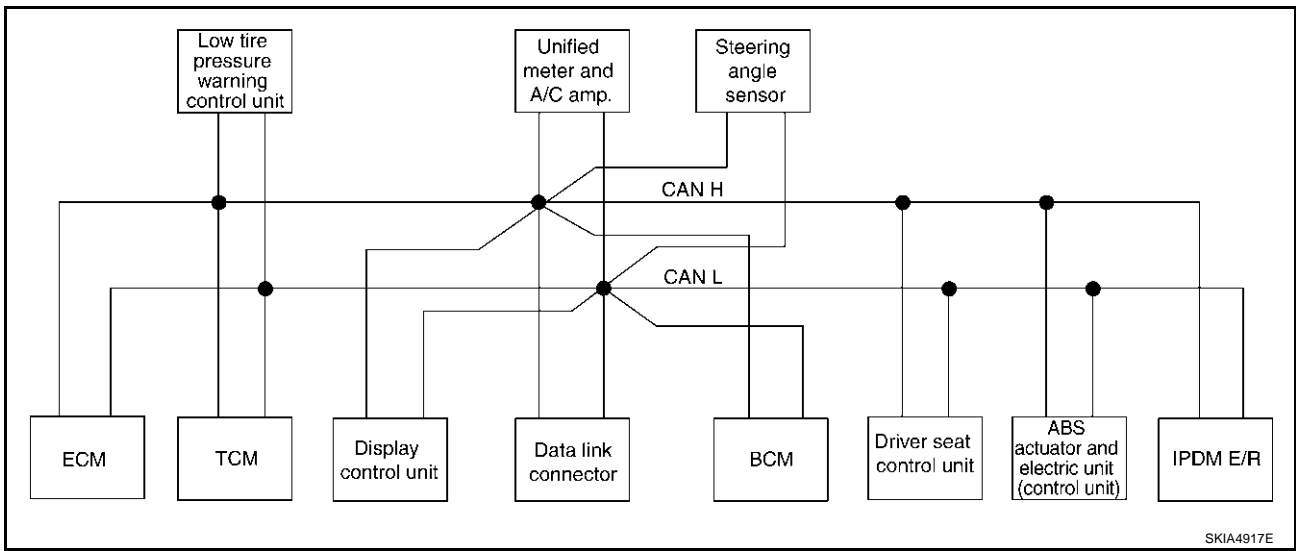
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PARKING, LICENSE PLATE AND TAIL LAMPS

● Type15



● Type16



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PARKING, LICENSE PLATE AND TAIL LAMPS

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

PARKING, LICENSE PLATE AND TAIL LAMPS

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					A
Turn indicator signal				R	R	T	R		R		R	B
Key fob ID signal						T			R			C
Key fob door unlock signal						T			R			D
Seat belt buckle switch signal						R	T					E
Oil pressure switch signal						R					T	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 signal	T						R					J
ASCD SET lamp signal	T						R					LT
ASCD CRUISE lamp signal	T						R					L
Front wiper request signal						T					R	M
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					

PARKING, LICENSE PLATE AND TAIL LAMPS

CAN Communication Unit For AWD Models

AKS0070Y

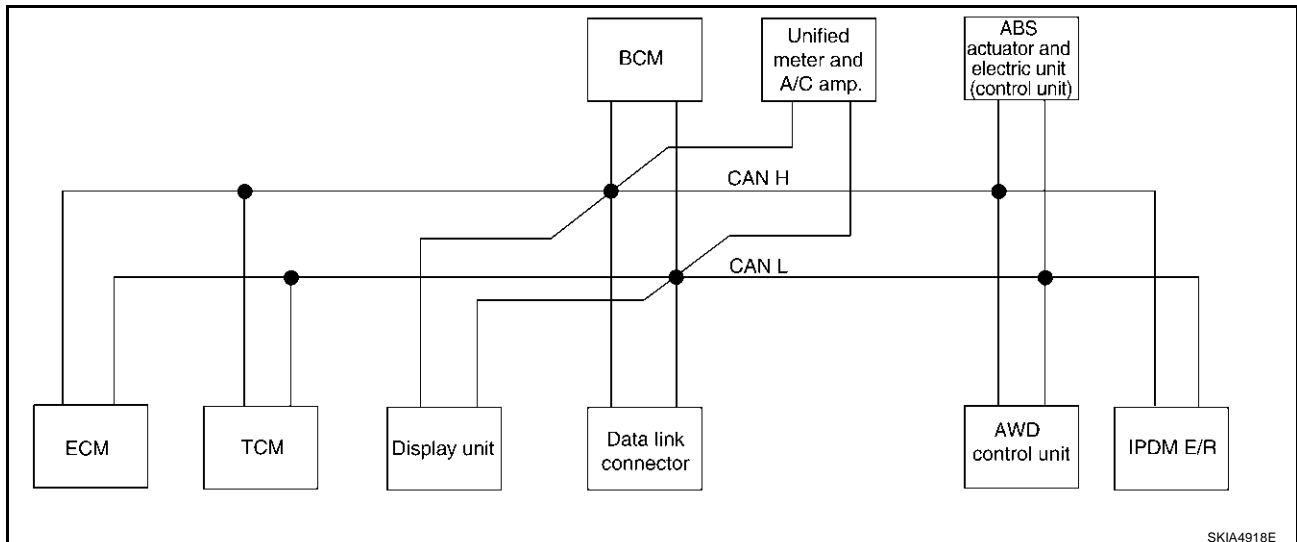
Body type	Wagon															
Axle	AWD															
Engine	VQ35DE															
Transmission	CVT															
Brake control	ABS								VDC							
Low tire pressure warning system		×			×	×		×		×			×	×		×
Navigation system			×		×		×	×			×		×		×	×
Automatic drive positioner				×		×	×	×				×		×	×	×
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	LT-282. "TYPE 17/TYPE 18/TYPE 19/TYPE 20/TYPE 21/TYPE 22/TYPE 23/TYPE 24"								LT-288. "TYPE 25/TYPE 26/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

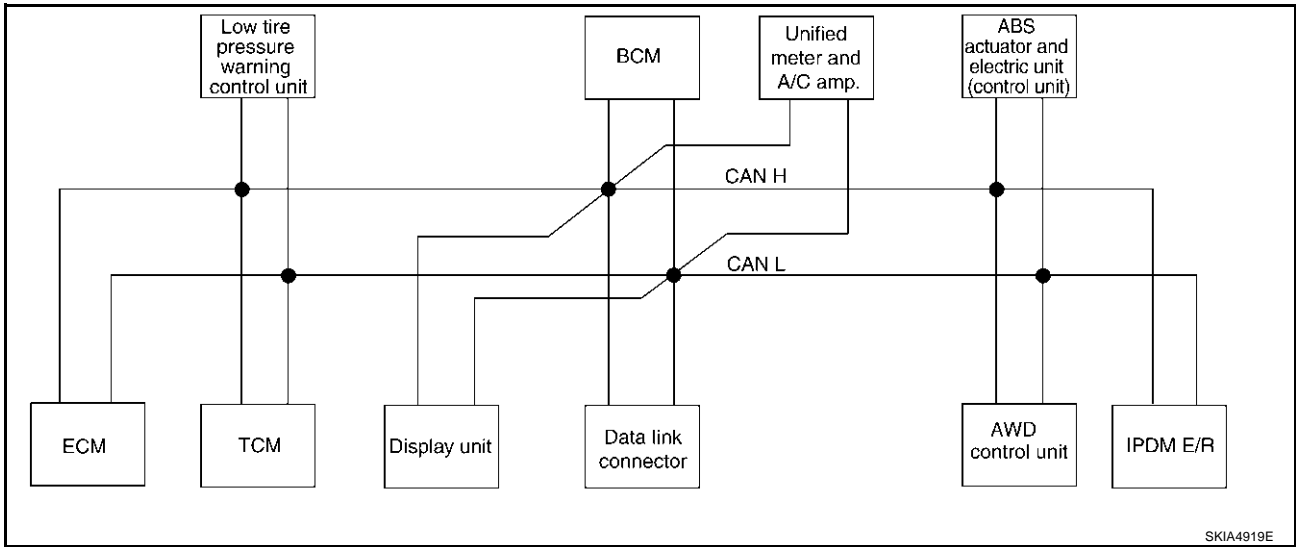
- Type17



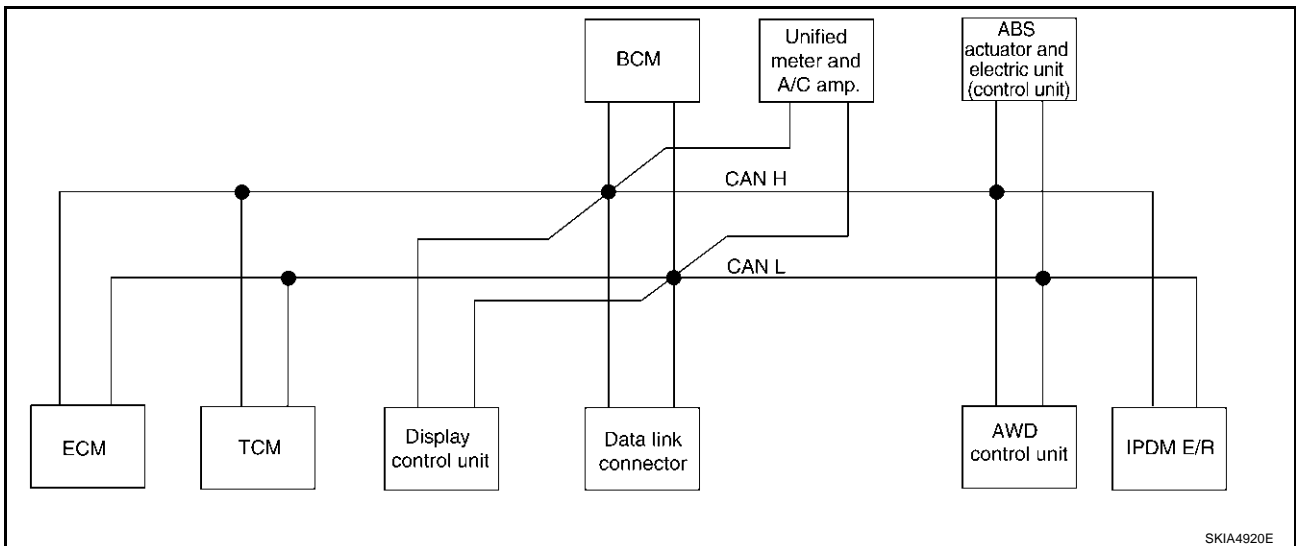
SKIA4918E

PARKING, LICENSE PLATE AND TAIL LAMPS

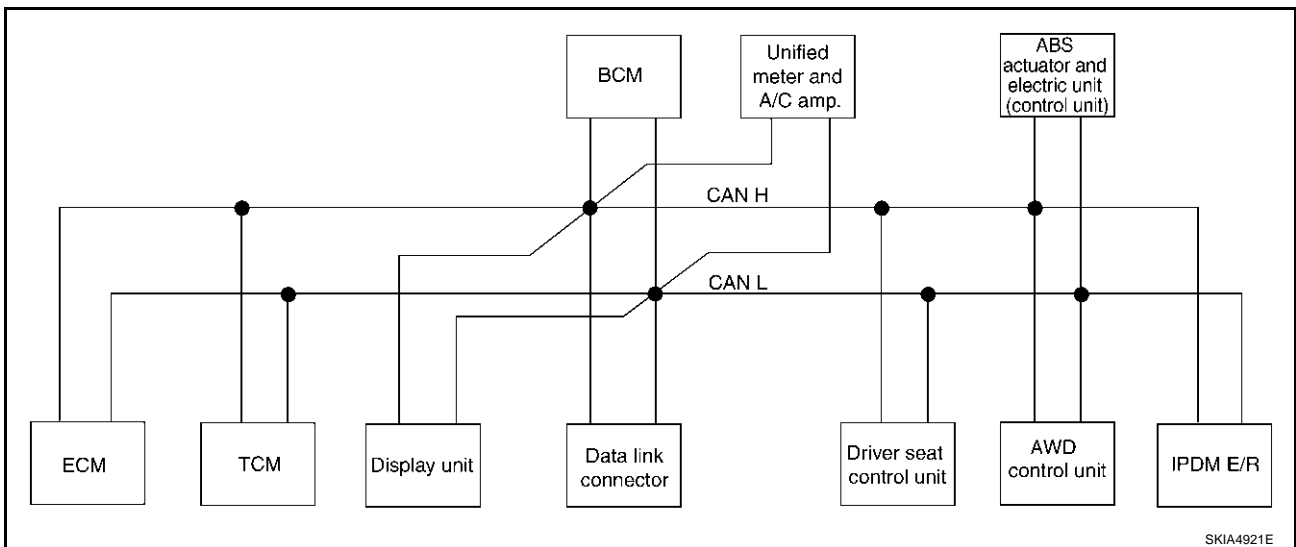
- Type18



- Type19



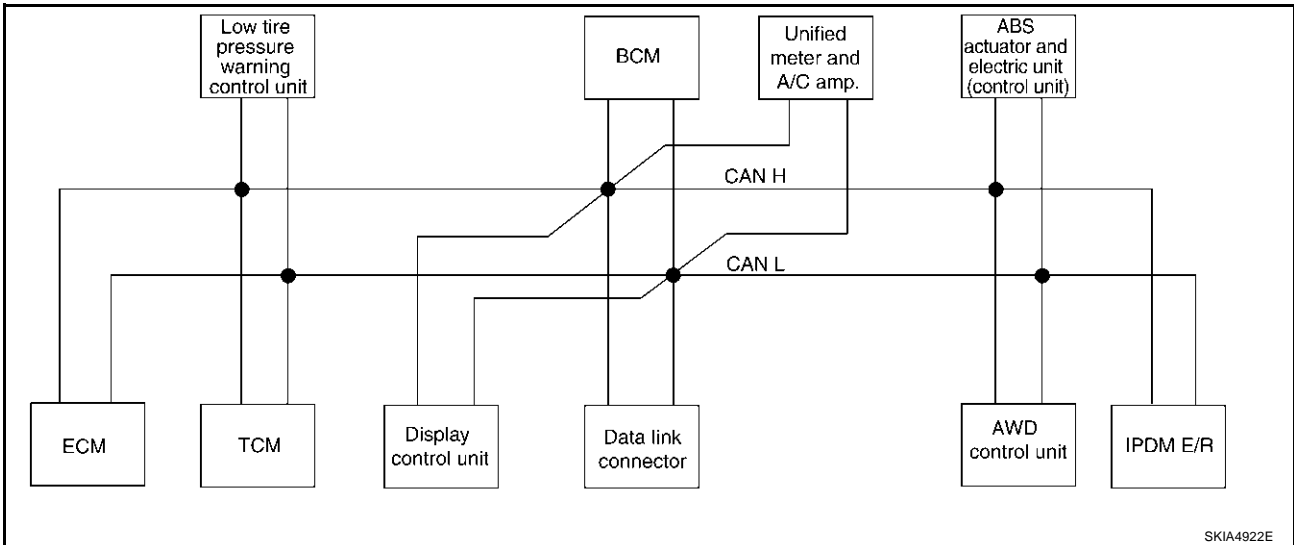
- Type20



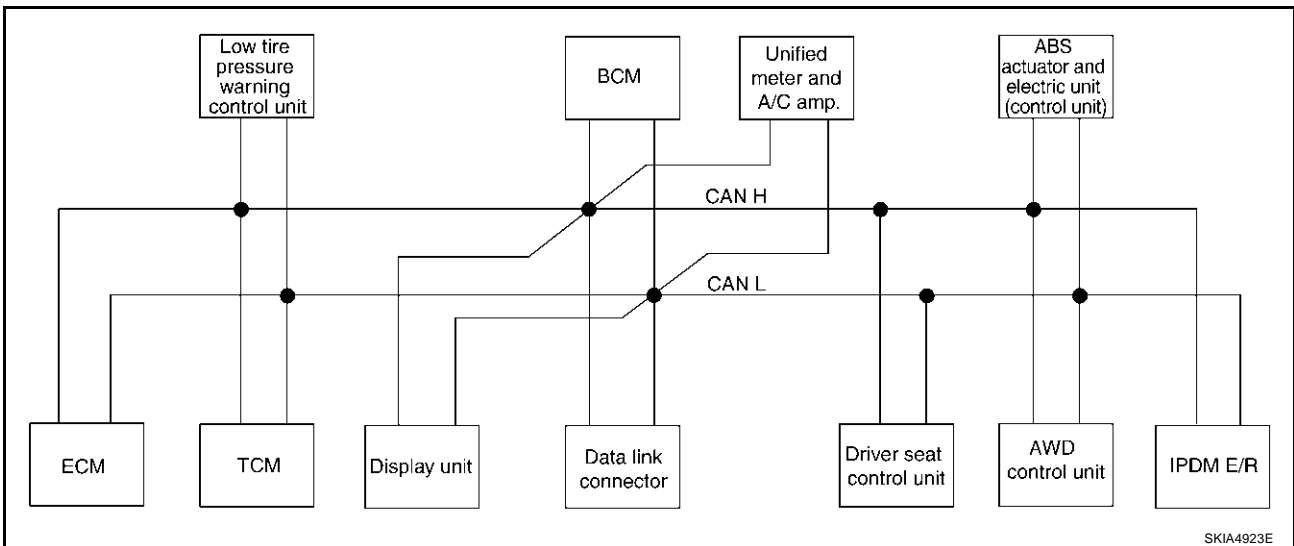
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PARKING, LICENSE PLATE AND TAIL LAMPS

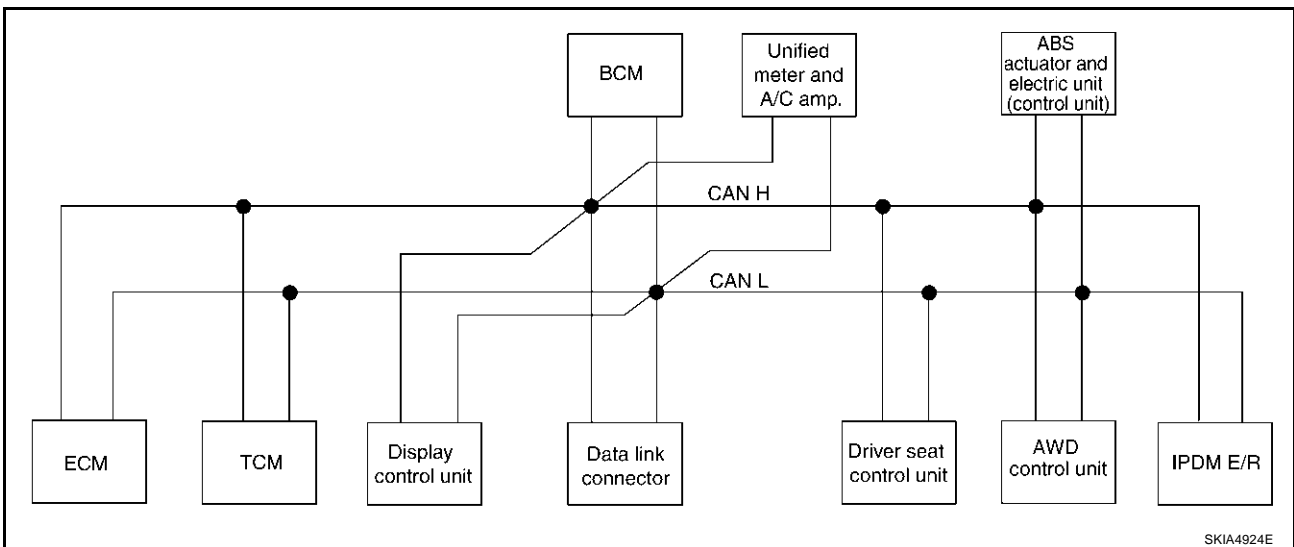
- Type21



- Type22

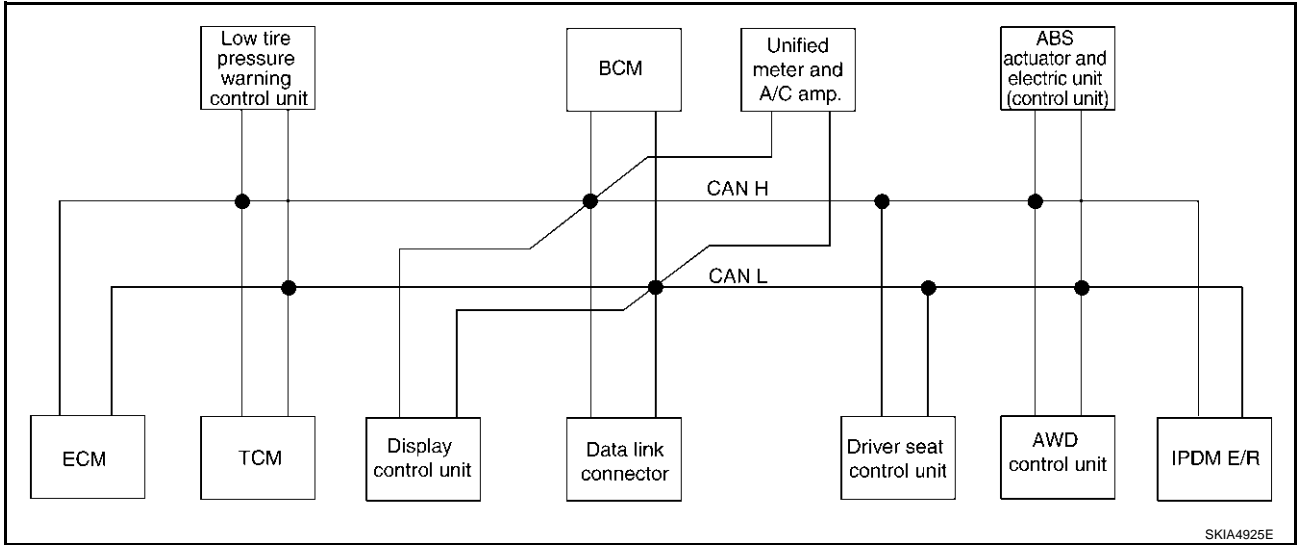


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PARKING, LICENSE PLATE AND TAIL LAMPS

- Type24



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PARKING, LICENSE PLATE AND TAIL LAMPS

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			

PARKING, LICENSE PLATE AND TAIL LAMPS

Signals	ECM	TCM	Low tire pres- sure warn- ing con- trol unit	Dis- play unit	Dis- play con- trol unit	BCM	Uni- fied meter and A/ C amp.	Driver seat con- trol unit	AWD con- trol unit	ABS actua- tor and elec- tric unit (con- trol 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		

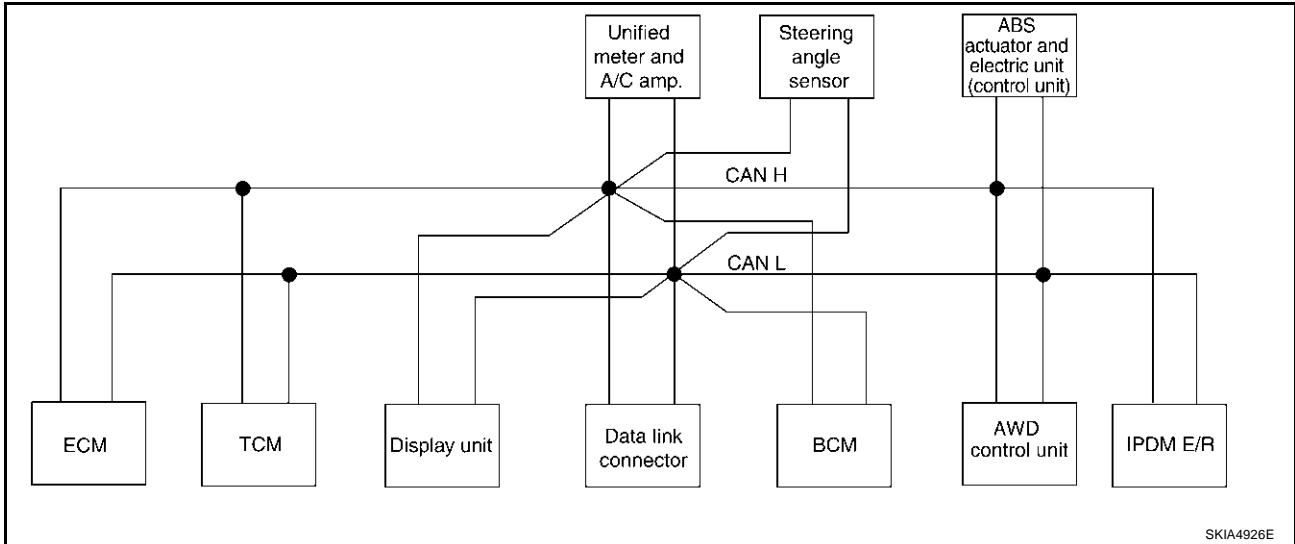
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PARKING, LICENSE PLATE AND TAIL LAMPS

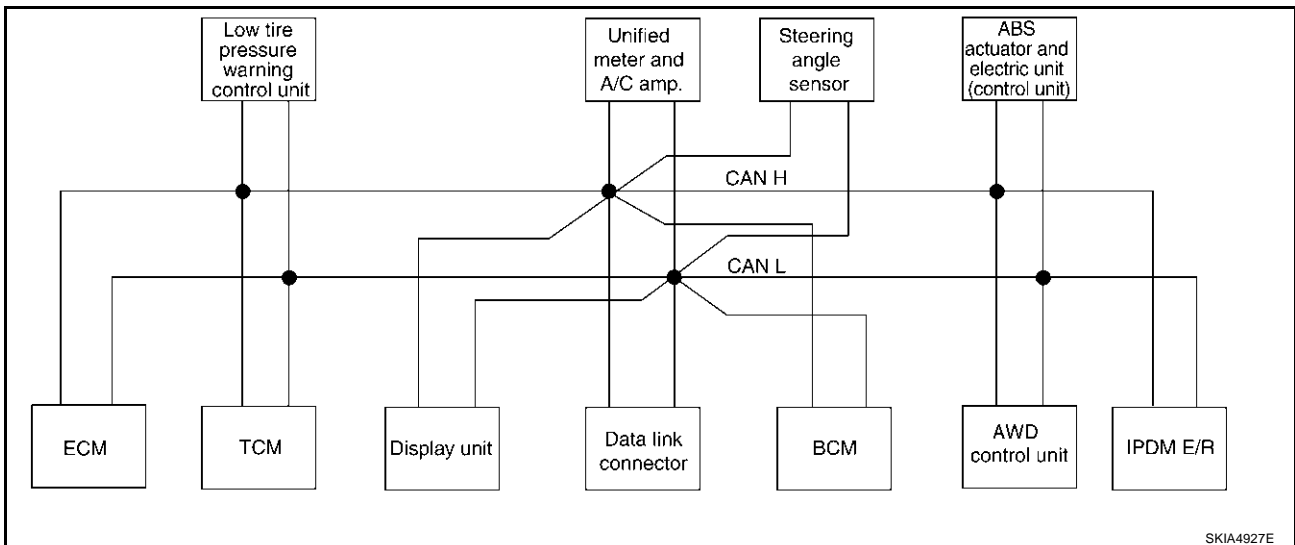
TYPE 25/TYPER26/TYPER 27/TYPER 28/TYPER 29/TYPER 30/TYPER 31/TYPER 32

System Diagram

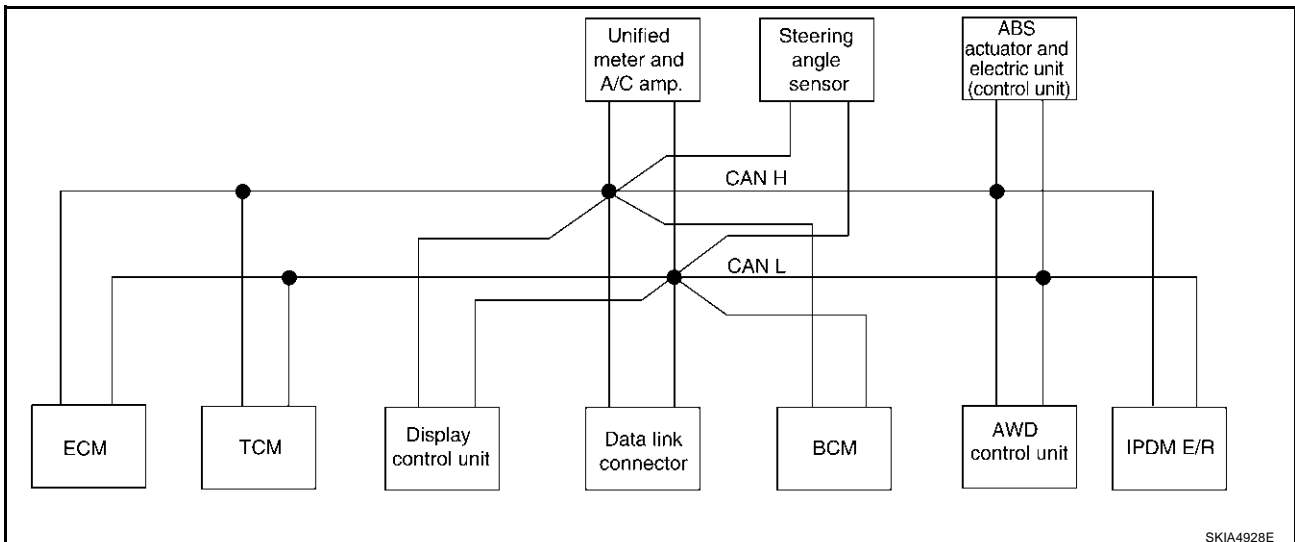
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- Type26

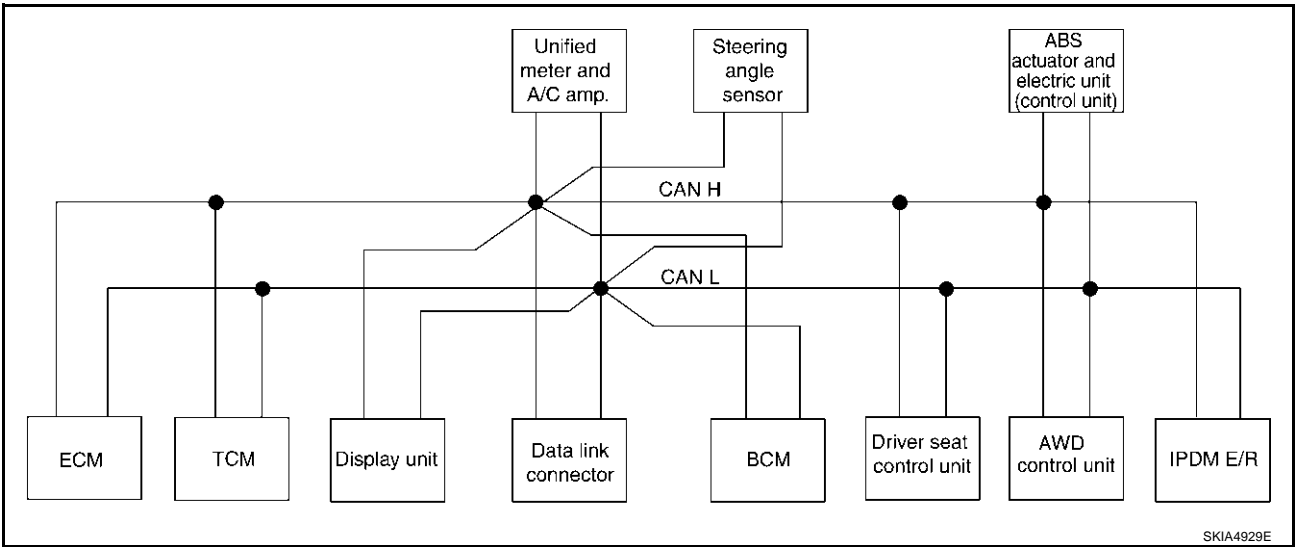


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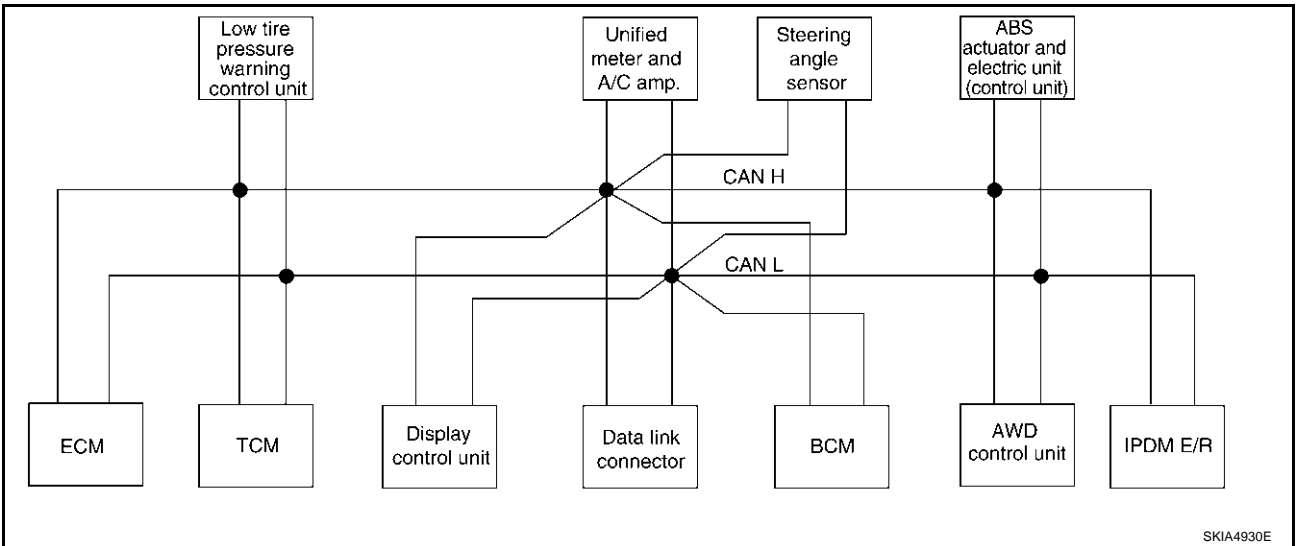


PARKING, LICENSE PLATE AND TAIL LAMPS

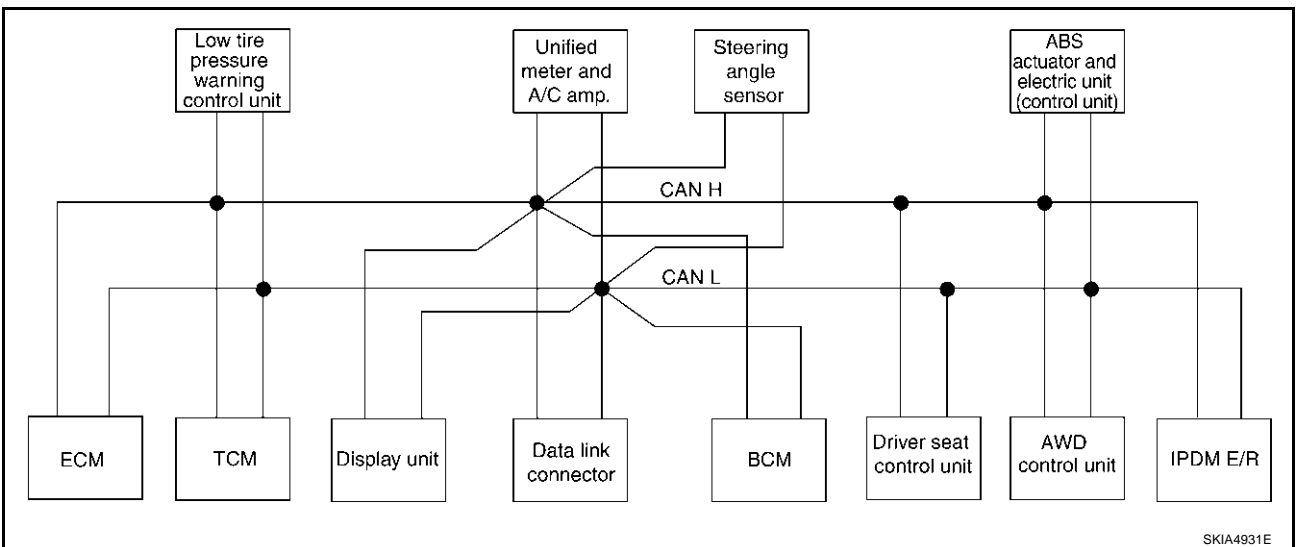
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- Type29



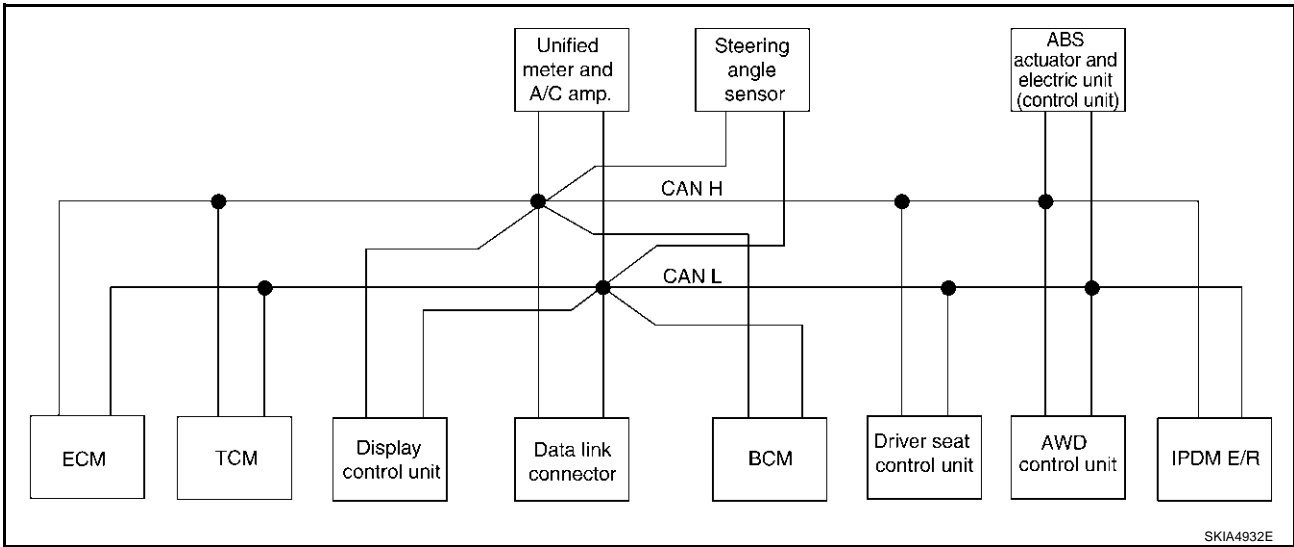
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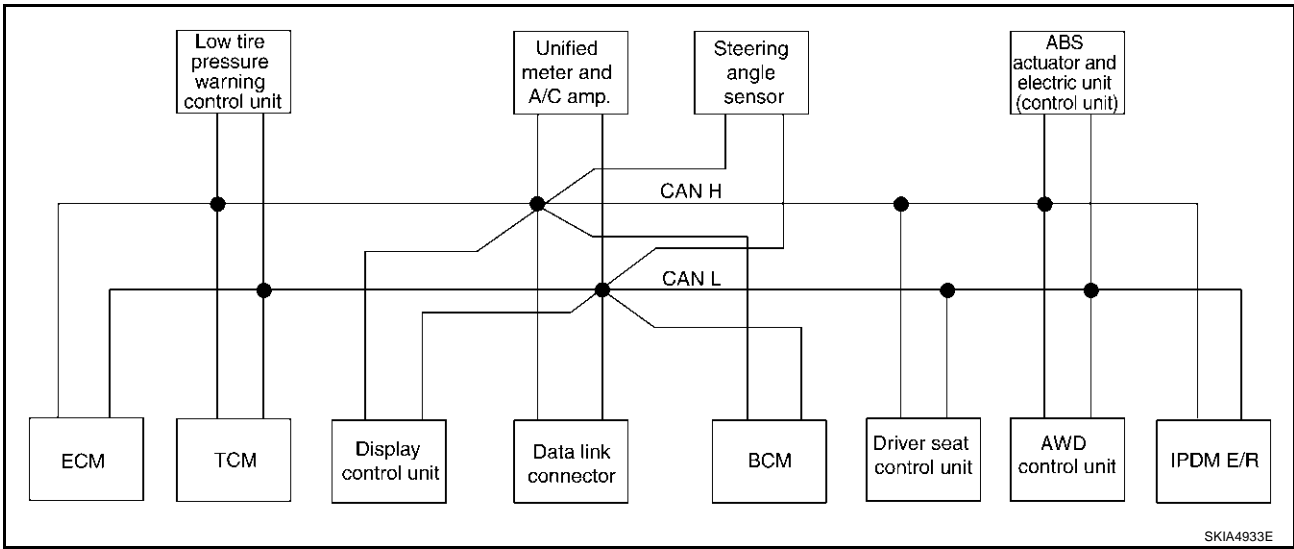
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PARKING, LICENSE PLATE AND TAIL LAMPS

- Type31



- Type32



PARKING, LICENSE PLATE AND TAIL LAMPS

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

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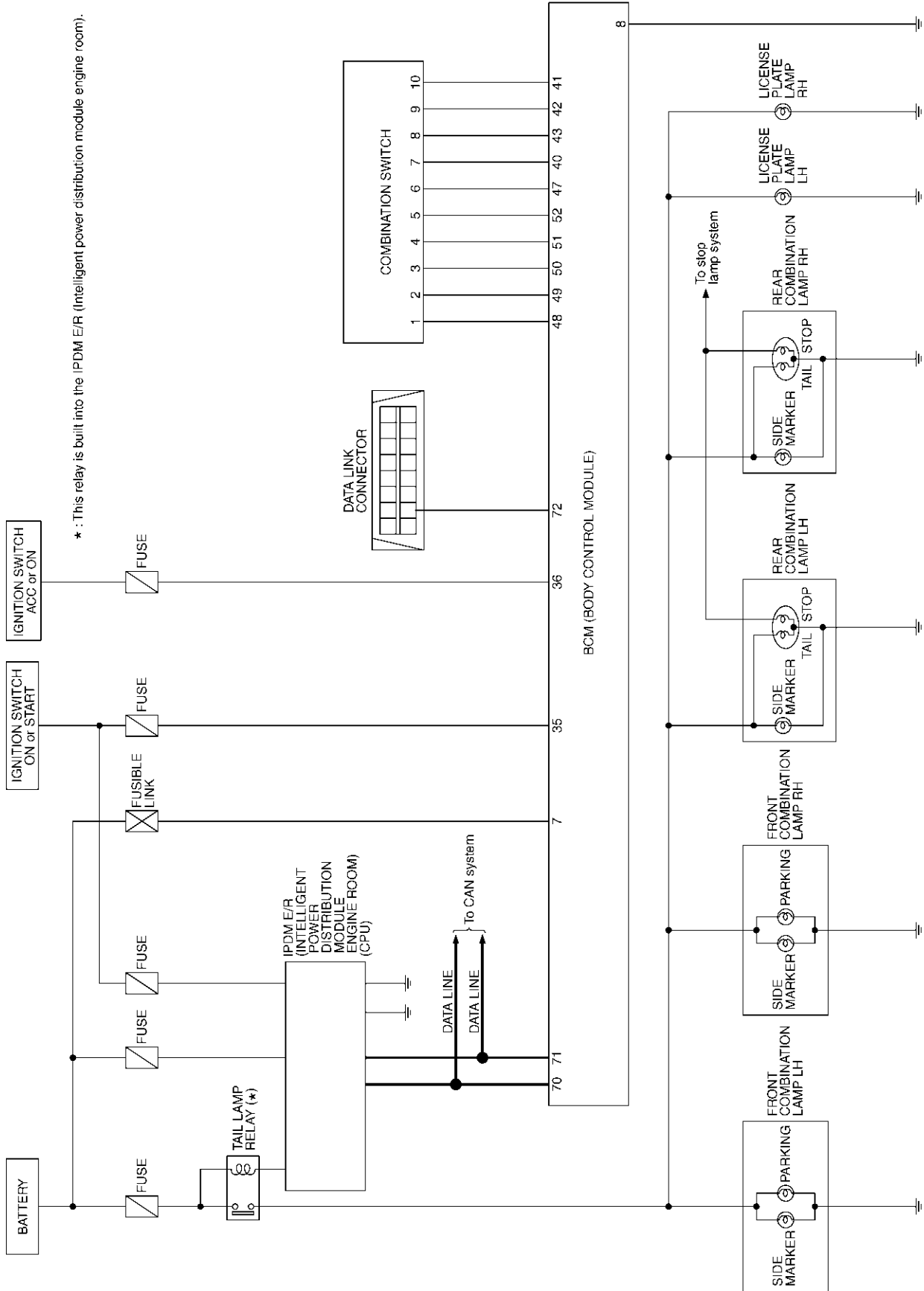
PARKING, LICENSE PLATE AND TAIL LAMPS

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
Door switch signal						R	T					
Turn indicator signal				R	R	T	R		R			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
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			
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		

PARKING, LICENSE PLATE AND TAIL LAMPS

Schematic

AKS004LE



TKWA0771E

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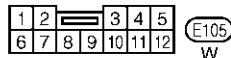
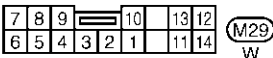
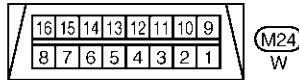
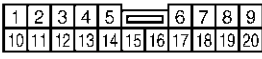
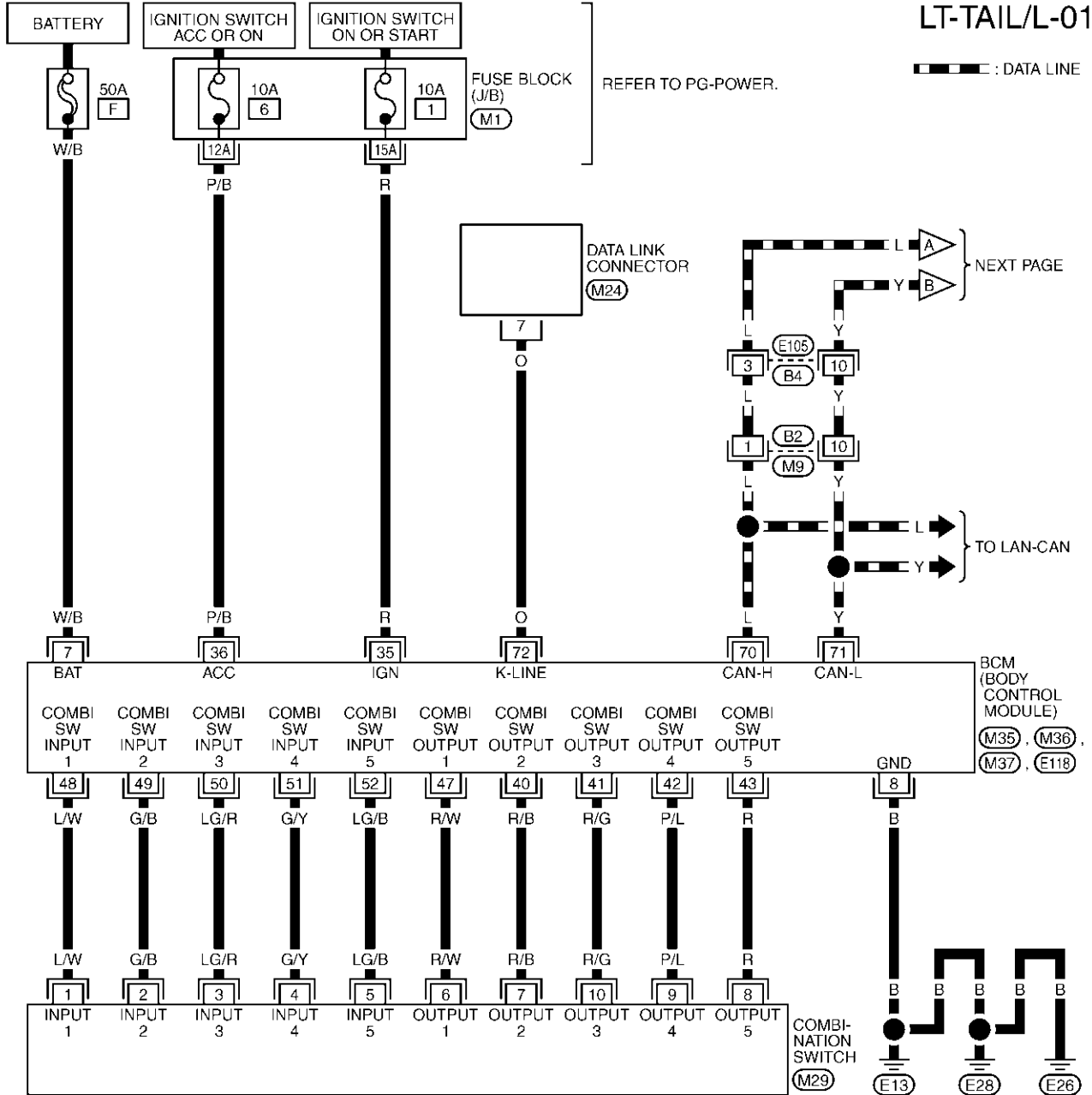
PARKING, LICENSE PLATE AND TAIL LAMPS

AKS004LF

Wiring Diagram — TAIL/L —

LT-TAIL/L-01

▬ : DATA LINE



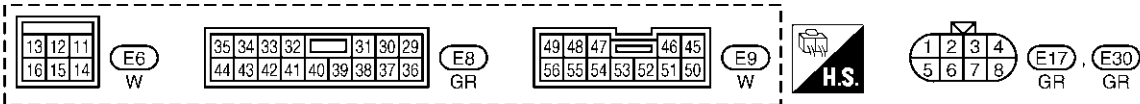
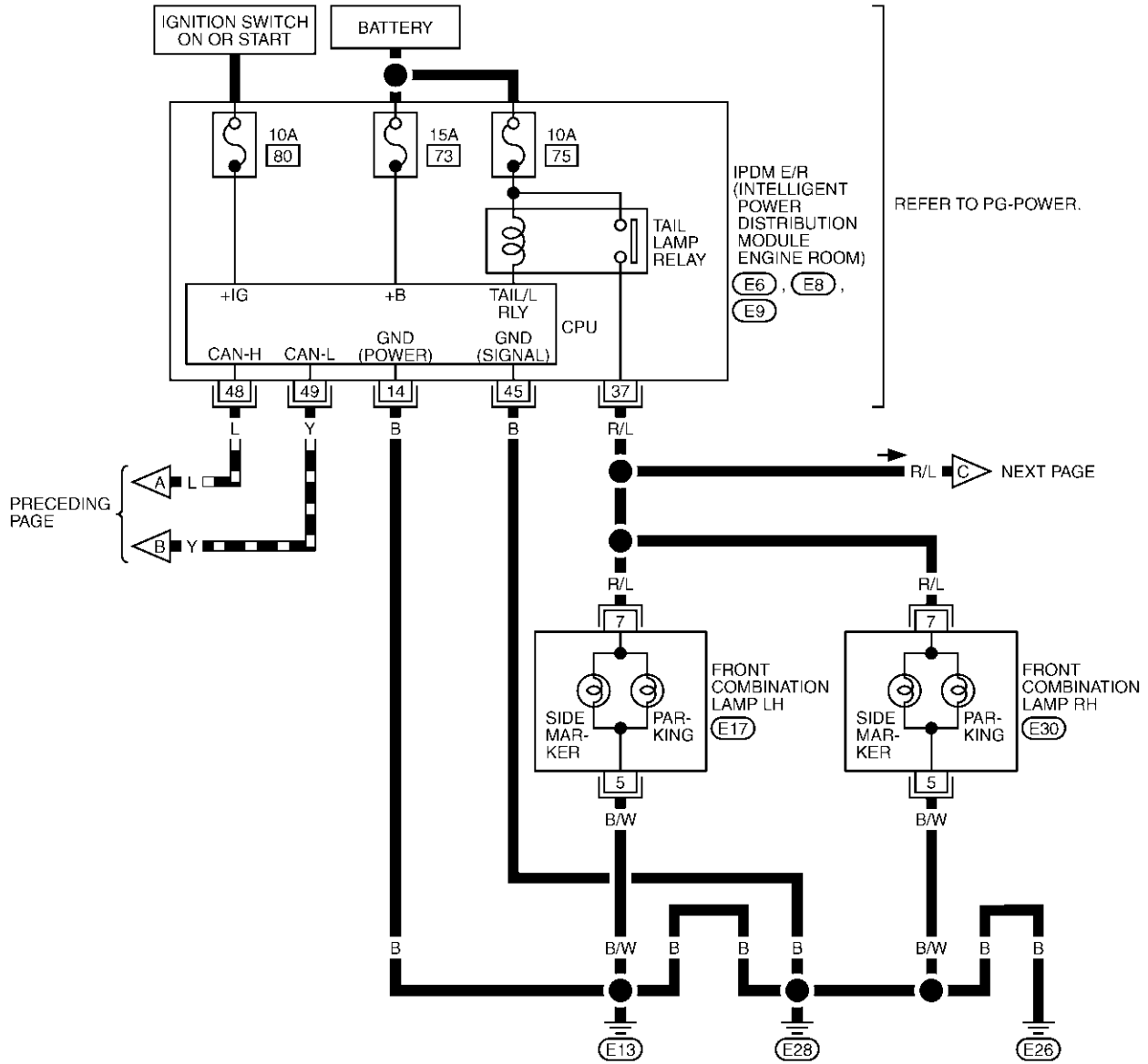
REFER TO THE FOLLOWING.
 (M1) - FUSE BLOCK-JUNCTION BOX (J/B)
 (M35), (M36), (M37), (E18) - ELECTRICAL UNITS

TKWA0772E

PARKING, LICENSE PLATE AND TAIL LAMPS

LT-TAIL/L-02

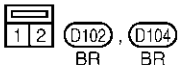
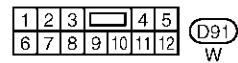
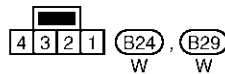
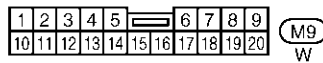
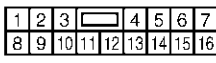
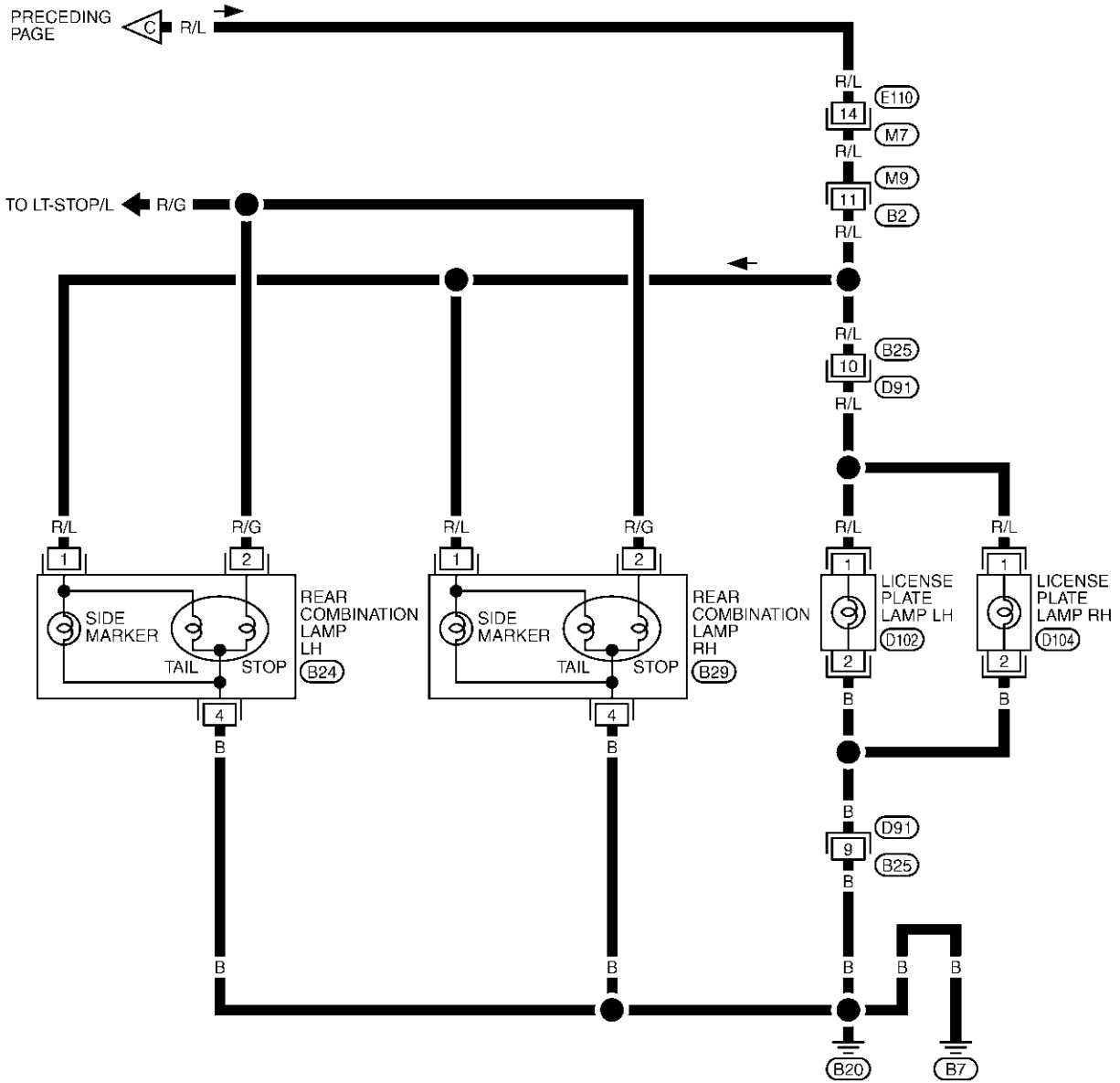
▬ : DATA LINE



TKWA0773E

PARKING, LICENSE PLATE AND TAIL LAMPS

LT-TAIL/L-03

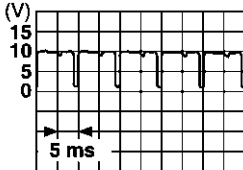


TKWA0774E

PARKING, LICENSE PLATE AND TAIL LAMPS

Terminals and Reference Value for BCM

AKS004LG

Terminal No.	Wire color	Signal name	Measuring condition		Reference value
			Ignition switch	Operation or condition	
7	W/B	Battery power supply	OFF	—	Battery voltage
8	B	Ground	ON	—	Approx. 0V
35	R	Ignition switch (ON)	ON	—	Battery voltage
36	P/B	Ignition switch (ACC)	ACC	—	Battery voltage
40	R/B	Combination switch output 2	ON	Lighting, turn, wiper OFF	
41	R/G	Combination switch output 3			
42	P/L	Combination switch output 4			
43	R	Combination switch output 5			
47	R/W	Combination switch output 1			
48	L/W	Combination switch input 1	ON	Lighting, turn, wiper OFF	4.5V or more
49	G/B	Combination switch input 2			
50	LG/R	Combination switch input 3			
51	G/Y	Combination switch input 4			
52	LG/B	Combination switch input 5			
70	L	CAN- H	—	—	—
71	Y	CAN- L	—	—	—
72	O	K-LINE	—	—	—

SKIA1119J

Terminals and Reference Values for IPDM E/R

AKS004LH

Terminal No.	Wire color	Signal name	Measuring condition		Reference value	
			Ignition switch	Operation or condition		
14	B	Ground	ON	—	Approx. 0V	
37	R/L	Parking, license plate, and tail lamp	ON	Lighting switch 1ST position	OFF	Approx. 0V
					ON	Battery voltage
45	B	Ground	ON	—	Approx. 0V	
48	L	CAN- H	—	—	—	
49	Y	CAN- L	—	—	—	

How to Proceed With Trouble Diagnosis

AKS004LI

1. Confirm the symptom or customer complaint.
2. Understand operation description and function description. Refer to [LT-270, "System Description"](#) .
3. Carry out the Preliminary Check. Refer to [LT-298, "Preliminary Check"](#) .
4. Check symptom and repair or replace the cause of malfunction.
5. Do the parking, license plate and tail lamps operate normally? If YES: GO TO 6. If NO: GO TO 4.
6. INSPECTION END

PARKING, LICENSE PLATE AND TAIL LAMPS

AKS004LJ

Preliminary Check INSPECTION FOR POWER SUPPLY AND GROUND CIRCUIT

1. CHECK FUSES

- Check for blown fuses.

Unit	Power source	Fuse and fusible link No.
BCM	Battery	F
	Ignition switch ON or START position	1
	Ignition switch ACC or ON position	6
IPDM E/R	Battery	73
		75

Refer to [LT-294, "Wiring Diagram — TAIL/L —"](#) .

OK or NG

OK >> GO TO 2.

NG >> If fuse is blown, be sure to eliminate cause of malfunction before installing new fuse. Refer to [PG-3, "POWER SUPPLY ROUTING CIRCUIT"](#) .

2. CHECK POWER SUPPLY CIRCUIT

1. Disconnect BCM connector.
2. Check voltage between BCM connector and ground.

Terminals		(-)	Ignition switch position		
(+)			OFF	ACC	ON
Connector	Terminal (Wire color)				
E118	7 (W/B)	Ground	Battery voltage	Battery voltage	Battery voltage
M35	35 (R)		0V	0V	Battery voltage
M35	36 (P/B)		0V	Battery voltage	Battery voltage

OK or NG

OK >> GO TO 3.

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

3. CHECK GROUND CIRCUIT

Check continuity between BCM and ground.

Terminals			Continuity
Connector	Terminal (Wire color)	Ground	
E118	8 (B)	Ground	Yes

OK or NG

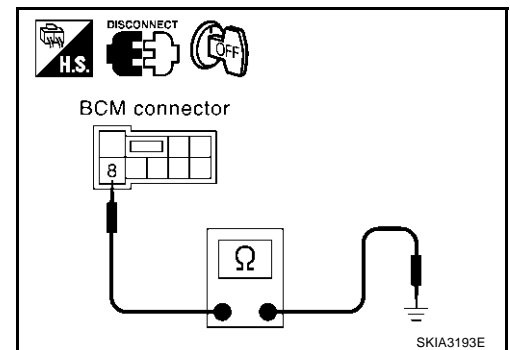
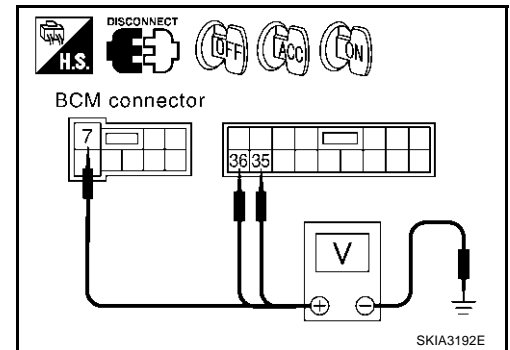
OK >> INSPECTION END

NG >> Check harness ground circuit.

CONSULT-II Function

AKS004LK

Refer to [LT-40, "CONSULT-II Function"](#) in HEAD LAMP.



PARKING, LICENSE PLATE AND TAIL LAMPS

AKS004LL

Parking, License Plate and Tail Lamps Do Not Illuminate

1. ACTIVE TEST

1. Select "TAIL LAMP" during active test. Refer to [LT-42, "ACTIVE TEST"](#).
2. Make sure parking, license plate lamp, side marker and tail lamp operation.

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

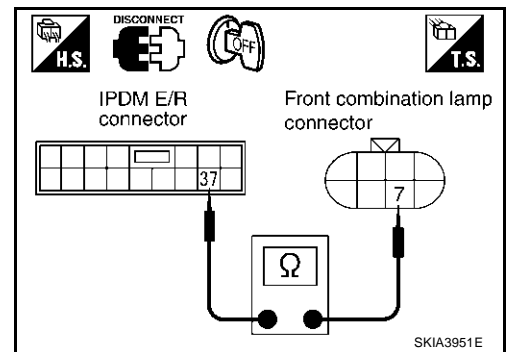
OK or NG

- OK >> GO TO 5.
 NG >> GO TO 2.

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

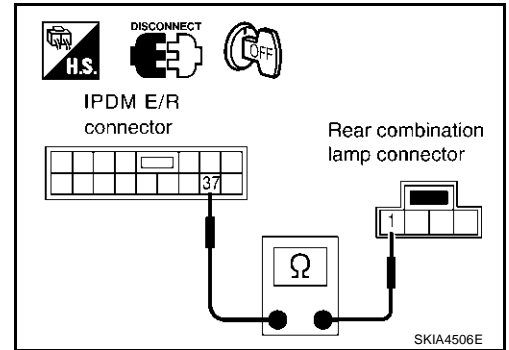
1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connector, front combination lamp connector, license plate lamp connector and rear combination lamp connectors.
3. Check continuity between IPDM E/R harness connector and front combination lamp (parking and side marker) harness connector.

Terminals					Continuity
IPDM E/R		Front combination lamp (Parking and side marker)			
Connector	Terminal (Wire color)	Connector	Terminal (Wire color)		
E8	37 (R/L)	RH	E30	7 (R/L)	Yes
		LH	E17		



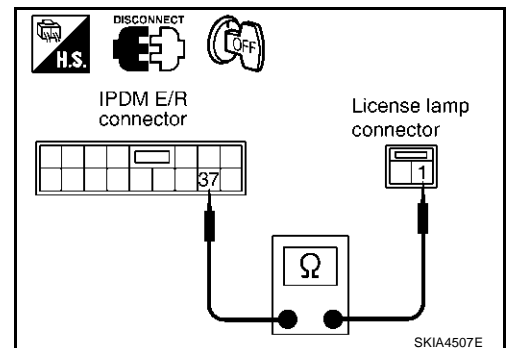
4. Check continuity between IPDM E/R harness connector and rear combination lamp harness connector (tail and side marker).

Terminals					Continuity
IPDM E/R		Rear combination lamp (Tail and side marker)			
Connector	Terminal (Wire color)	Connector	Terminal (Wire color)		
E8	37 (R/L)	RH	B29	1 (R/L)	Yes
		LH	B24		



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

Terminals					Continuity
IPDM E/R		license plate lamp			
Connector	Terminal (Wire color)	Connector	Terminal (Wire color)		
E8	37 (R/L)	RH	D104	1 (R/L)	Yes
		LH	D102		



OK or NG

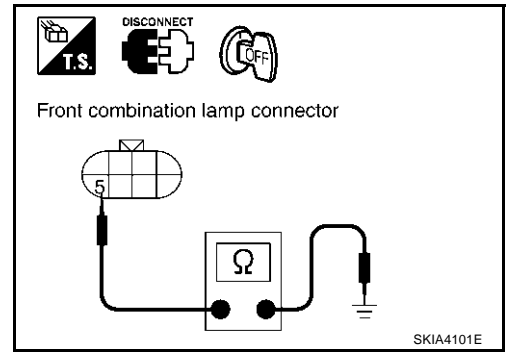
- OK >> GO TO 3.
 NG >> Repair harness or connector.

PARKING, LICENSE PLATE AND TAIL LAMPS

3. CHECK GROUND

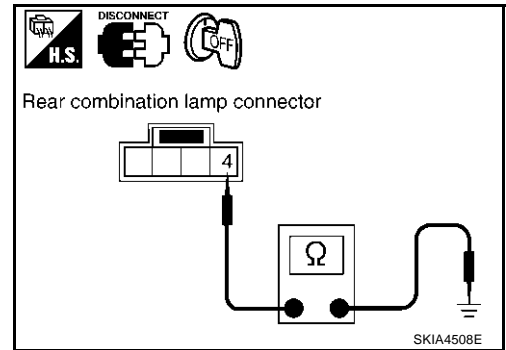
1. Check continuity between harness connector of front combination lamp (parking and side marker) and ground.

Terminals		Ground	Continuity
Front combination lamp (Parking and side marker)			
Connector	Terminal (Wire color)		
RH E30 LH E17	5 (B/W)		



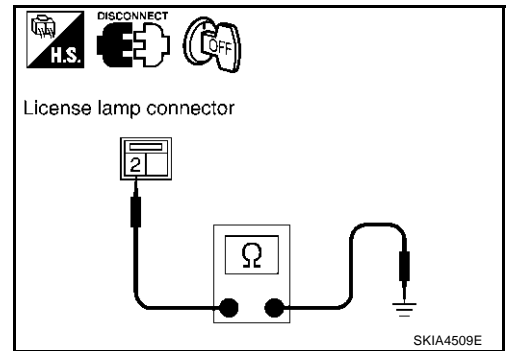
2. Check continuity between rear combination lamp (tail and side marker) harness connector and ground.

Terminals		Ground	Continuity
Rear combination lamp (Tail and side marker)			
Connector	Terminal (Wire color)		
RH B29 LH B24	4 (B)		



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

Terminals		Ground	Continuity
license plate lamp			
Connector	Terminal (Wire color)		
RH D104 LH D102	2 (B)		



OK or NG

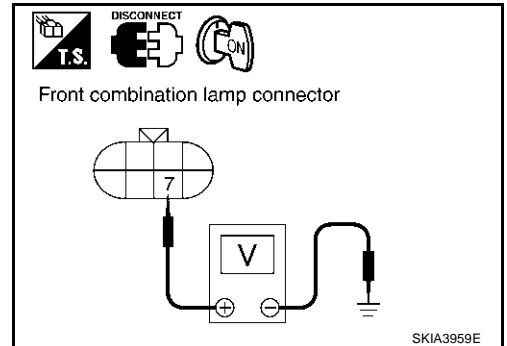
- OK >> GO TO4.
 NG >> Repair harness or connector.

PARKING, LICENSE PLATE AND TAIL LAMPS

4. CHECK PARKING LAMP, LICENSE PLATE LAMP, SIDE MARKER LAMP AND TAIL LAMP INPUT SIGNAL

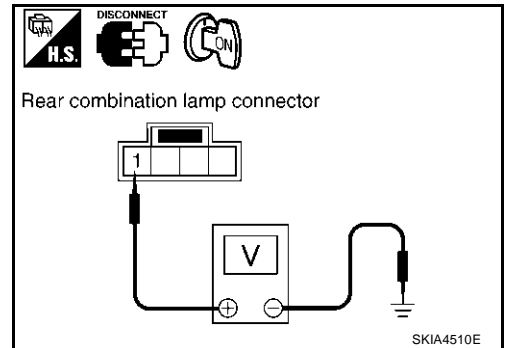
1. Connect IPDM E/R connector.
2. Select "TAIL LAMP" active test. Refer to [LT-42, "ACTIVE TEST"](#).
3. When tail lamp relay is operating, check voltage between front combination lamp (parking and side marker) harness connector and ground.

		Terminals		Voltage
		(+)	(-)	
Connector		Terminal (Wire color)		Battery voltage
RH	E30	7 (R/L)	Ground	
LH	E17			



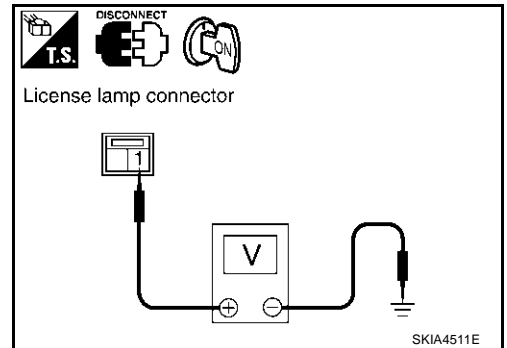
4. When tail lamp relay is operating, check voltage between rear combination lamp (tail and side marker) harness connector and ground.

		Terminals		Voltage
		(+)	(-)	
Connector		Terminal (Wire color)		Battery voltage
RH	B29	1 (R/L)	Ground	
LH	B24			



5. When tail lamp relay is operating, check voltage between license plate lamp harness connector and ground.

		Terminals		Voltage
		(+)	(-)	
Connector		Terminal (Wire color)		Battery voltage
RH	D104	1 (R/L)	Ground	
LH	D102			



OK or NG

- OK >> Check bulb.
- NG >> Replace IPDM E/R.

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PARKING, LICENSE PLATE AND TAIL LAMPS

5. CHECK COMBINATION SWITCH CIRCUIT

Select "BCM" on CONSULT-II. Carry out "BCM C/U" self-diagnosis.

Displayed results of self-diagnosis

No malfunction detected>> GO TO 6.

CAN communication or CAN system>> Check BCM CAN communications system. Refer to [BCS-34, "CAN Communication Inspection Using CONSULT-II \(Self-Diagnosis\)"](#).

OPEN DETECT 1 - 5>> Combination switch system malfunction. Refer to [LT-257, "Combination Switch Inspection According to Self-Diagnostic Results"](#).

SELF-DIAG RESULTS	
DTC RESULTS	TIME
NO DTC IS DETECTED. FURTHER TESTING MAY BE REQUIRED	

LKIA0073E

6. CHECK COMBINATION SWITCH INPUT SIGNAL

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

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

OK or NG

OK >> Replace BCM. Refer to [BCS-36, "Removal and Installation of BCM"](#).

NG >> Replace lighting switch.

DATA MONITOR	
MONITOR	
TAIL LAMP SW	ON

SKIA4512E

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

AKS004LM

1. CHECK IPDM E/R

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

OK or NG

OK >> INSPECTION END

NG >> Ignition relay malfunction. Refer to [PG-40, "Function of Detecting Ignition Relay Malfunction"](#).

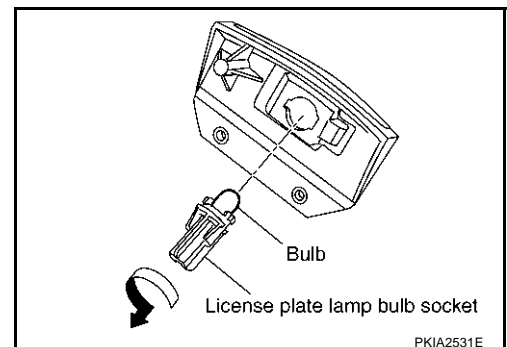
Bulb Replacement LICENSE PLATE LAMP

AKS005LV

1. Remove back door inner finisher. Refer to [EI-30, "Removal and Installation"](#) in "EI" section.
2. Disconnect the license plate lamp connector.
3. Turn bulb socket counterclockwise and unlock it.
4. Remove bulb from its socket.

License plate lamp : 12V - 5W

5. Install in the reverse order of removal.



PARKING LAMP (CLEARANCE LAMP)

For bulb replacement, refer to [LT-54, "Bulb Replacement"](#) in "HEADLAMP". (XENON TYPE)

For bulb replacement, refer to [LT-100, "Bulb Replacement"](#) in "HEADLAMP". (CONVENTIONAL TYPE)

TAIL LAMP

For bulb replacement, refer to [LT-304, "Bulb Replacement"](#) in "REAR COMBINATION LAMP".

PARKING, LICENSE PLATE AND TAIL LAMPS

FRONT SIDE MARKER LAMP

For bulb replacement, refer to [LT-54, "Bulb Replacement"](#) in "HEADLAMP". (XENON TYPE)

For bulb replacement, refer to [LT-100, "Bulb Replacement"](#) in "HEADLAMP". (CONVENTIONAL TYPE)

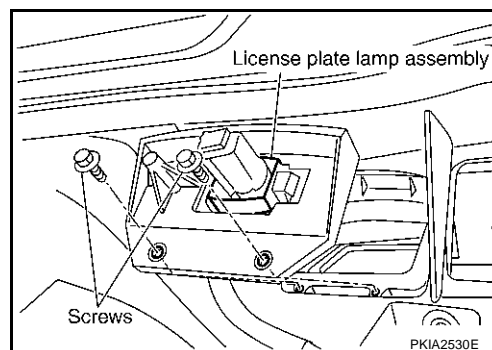
REAR SIDE MARKER LAMP

For bulb replacement, refer to [LT-304, "Bulb Replacement"](#) in "REAR COMBINATION LAMP".

Removal and Installation

LICENSE PLATE LAMP

1. Remove back door inner finisher. Refer to [EI-40, "BACK DOOR TRIM"](#) in "EI" section
2. Remove rear wiper motor. Refer to [WW-66, "Removal and Installation of Rear Wiper Motor"](#).
3. Remove the license plate lamp mounting screws and remove it.
4. Install in the reverse order of removal.



PARKING LAMP (CLEARANCE LAMP)

For parking lamp (clearance lamp) removal and installation procedures, refer to [LT-55, "Removal and Installation"](#) in "HEADLAMP". (XENON TYPE)

For parking lamp (clearance lamp) removal and installation procedures, refer to [LT-101, "Removal and Installation"](#) in "HEADLAMP". (CONVENTIONAL TYPE)

TAIL LAMP

For tail lamp removal and installation procedures, refer to [LT-304, "Removal and Installation"](#) in "REAR COMBINATION LAMP".

FRONT SIDE MARKER LAMP

For headlamp removal and installation procedures, refer to [LT-55, "Removal and Installation"](#) in "HEADLAMP". (XENON TYPE)

For headlamp removal and installation procedures, refer to [LT-101, "Removal and Installation"](#) in "HEADLAMP". (CONVENTIONAL TYPE)

REAR SIDE MARKER LAMP

For rear side marker lamp removal and installation procedures, refer to [LT-304, "Removal and Installation"](#) in "REAR COMBINATION LAMP".

REAR COMBINATION LAMP

REAR COMBINATION LAMP

PFP:26554

Bulb Replacement

AKS005M1

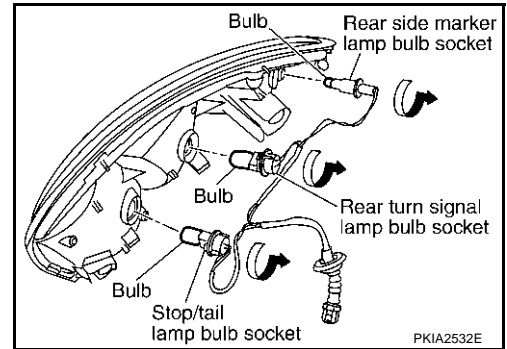
STOP & TAIL LAMP BULB, REAR SIDE MARKER LAMP BULB, REAR TURN SIGNAL LAMP BULB

1. Remove rear combination lamp. Refer to [LT-304, "Removal and Installation"](#) .
2. Turn bulb socket counterclockwise and unlock it.
3. Remove bulb.
4. Install in the reverse order of removal.

Stop/tail lamp : 12V - 21/5W

Rear side marker lamp : 12V - 5W

Rear turn signal lamp : 12V - 21W

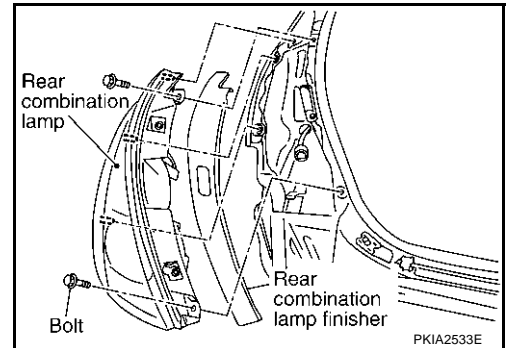


Removal and Installation

REMOVAL

AKS005M2

1. Remove rear combination lamp finisher.
2. Remove rear combination lamp mounting bolts.
3. Pull rear combination lamp toward side of the vehicle and remove from the vehicle.
4. Disconnect rear combination lamp connector.



INSTALLATION

Install in the reverse order of removal. Be careful of the following:

Rear combination lamp mounting bolt

 : 5.5 N-m (0.56 kg-m, 49 in-lb)

VANITY MIRROR LAMP

VANITY MIRROR LAMP

PF9:96400

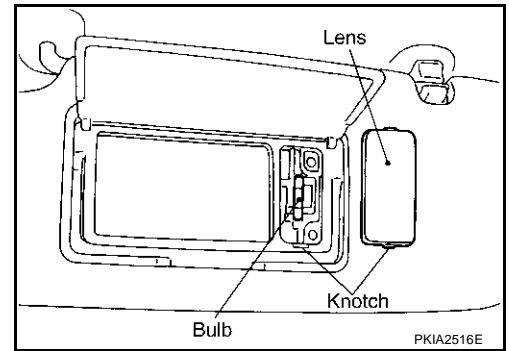
Bulb Replacement

AKS005M3

1. Insert a thin screwdriver in the knotch and remove lens.
2. Remove bulb.

Vanity mirror lamp : 12V - 2.0W

3. Install in the reverse order of removal.



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MAP LAMP

MAP LAMP

PFP:26430

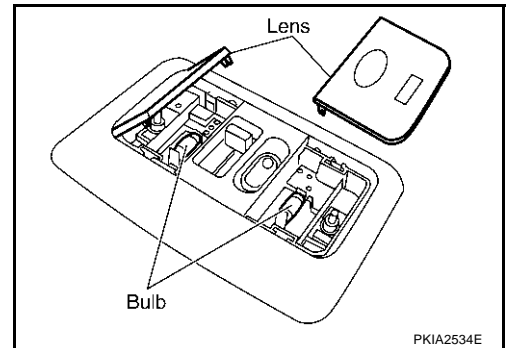
Bulb Replacement

AKS005M4

1. Disconnect the battery negative cable.
2. Remove the lens using clip driver or suitable tool.
3. Remove the bulb.

Map lamp :12V - 8 W

4. Install in the reverse order of removal.

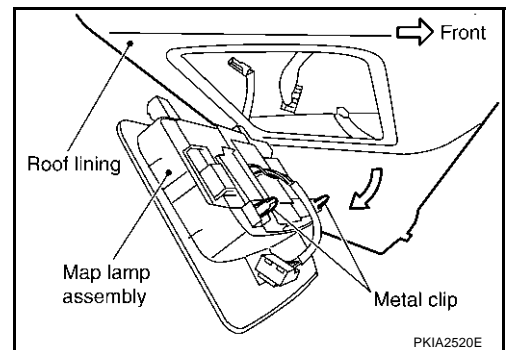


Removal and Installation

REMOVAL

AKS005M5

1. Pull wider part of thin plate of the map lamp to disengage the metal clip.
2. Pull map lamp in direction shown by the arrow in the figure.
3. Disconnect map lamp connector and remove the map lamp.



INSTALLATION

Install in the reverse order of removal.

PERSONAL LAMP

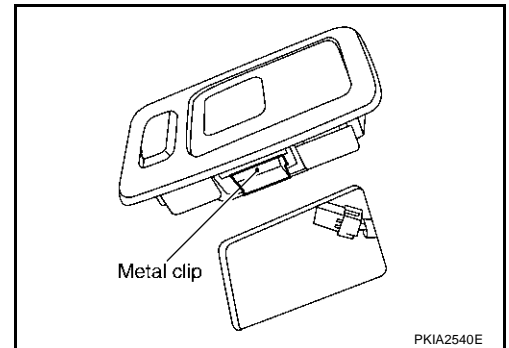
PERSONAL LAMP

PPF:26415

Bulb Replacement, Removal and Installation

AKS004LW

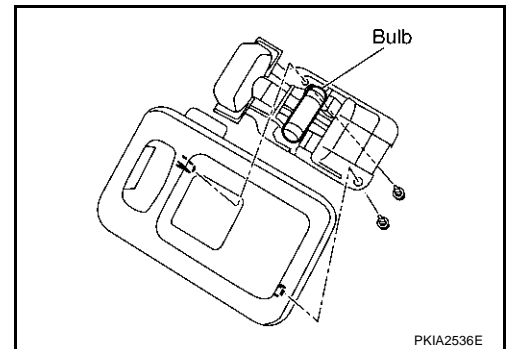
1. Insert a clip driver or suitable tool and disengage the metal clip fittings of the personal lamp.
2. Disconnect personal lamp connector and remove the personal lamp.



3. Remove the housing mounting screws, and separate it.
4. Remove bulb from the base.

Personal lamp : 12V - 8W

5. Install in the reverse order of removal.



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LUGGAGE ROOM LAMP

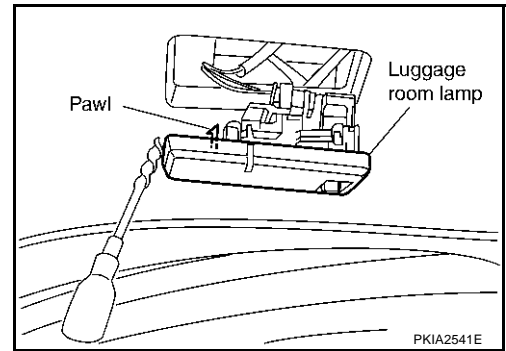
LUGGAGE ROOM LAMP

PFP:26410

Bulb Replacement, Removal and Installation

AKS005M6

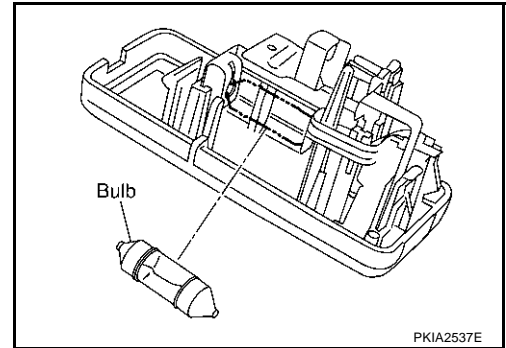
1. Insert a screwdriver as shown in the figure and pull out the luggage room lamp.
2. Disconnect the luggage room lamp connector.



3. Remove the bulb.

Luggage room lamp : 12V - 8W

4. Install in the reverse order of removal.



INTERIOR ROOM LAMP

INTERIOR ROOM LAMP

PF2:26410

System Description

AKS005R0

When room lamp and personal lamp switch is in DOOR position, room lamp and personal lamp ON/OFF is controlled by timer according to signals from switches including key switch, front door switch driver side, unlock signal from keyfob, door lock and unlock switch, key cylinder lock and unlock switch, ignition switch.

When room lamp and personal lamp turns ON, there is a gradual brightening over 1 second. When room lamp and personal lamp turns OFF, there is a gradual dimming over 1 second.

The room lamp and personal lamp timer is controlled by the BCM (body control module).

Room lamp and personal lamp timer control settings can be changed with CONSULT-II.

Ignition keyhole illumination turns ON at time when driver door is opened (door switch ON) or removed keyfob from key cylinder. Illumination turns OFF when driver door is closed (door switch OFF).

Step lamp turns ON at time when driver door or passenger door is opened (door switch ON). Lamp turns OFF when driver, passenger doors are closed (all door switches OFF).

POWER SUPPLY AND GROUND

Power is supplied at all times

- through 10A fuse [No. 21, located in fuse block (J/B)]
- to key switch and key lock solenoid terminal 3
- through 50A fusible link [letter F, located in fuse and fusible link block]
- to BCM (body control module) terminal 7.

When the key is inserted to ignition key cylinder, power is interrupted

- through key switch and key lock solenoid terminal 4
- to BCM (body control module) terminal 62.

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

- through 10A fuse [No. 1, located in fuse block (J/B)]
- to BCM (body control module) terminal 35.

Ground is supplied

- to BCM (body control module) terminal 8
- through grounds terminals E13, E26 and E28.

When the driver side door is opened, ground is supplied

- through grounds terminals M14 and M78
- through door switch driver side terminal 5
- through door switch driver side terminal 4
- to BCM (body control module) terminal 14.

When the passenger side door is opened, ground is supplied

- through grounds terminals M14 and M78
- through door switch passenger side terminal 5
- through door switch passenger side terminal 4
- to BCM (body control module) terminal 10.

When the rear door LH is opened, ground is supplied

- through grounds terminals B7 and B20
- through door switch rear door LH terminal 5
- through door switch rear door LH terminal 4
- to unified meter and A/C amp. terminal 18.

When the rear door RH is opened, ground is supplied

- through grounds terminal B105 and B116
- through door switch rear door RH terminal 5
- through door switch rear door RH terminal 4
- to unified meter and A/C amp. terminal 17.

When the driver side door is unlocked by the door lock and unlock switch, BCM (body control module) receives a ground signal

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INTERIOR ROOM LAMP

- through grounds terminals M14 and M78
- to power window main switch (door lock and unlock switch) terminal 17 or front power window (passenger side) terminal 11 (door lock and unlock switch)
- from power window main switch (door lock and unlock switch) terminal 14 or front power window (passenger side) terminal 16 (door lock and unlock switch)
- to BCM (body control module) terminal 74.

When the front driver side door is unlocked by the driver side door lock assembly (door key cylinder switch), BCM (body control module) receives a ground signal

- through grounds M14 and M78
- to front door lock assembly (driver side) (door key cylinder switch) terminal 5
- from front door lock assembly (driver side) (door key cylinder switch) terminal 6
- to power window main switch (door lock and unlock switch) terminal 6
- from power window main switch (door lock and unlock switch) terminal 14
- to BCM (body control module) terminal 74.

When a signal, or combination of signals is received by BCM (body control module), ground is supplied

- through BCM (body control module) terminal 32
- to room lamp terminal 1 and
- to personal lamp LH and RH terminal 3.

With power and supplied, the interior lamp illuminates.

SWITCH OPERATION

When driver door switch is ON (door is opened), ground is supplied

- through BCM terminal 34
- to ignition keyhole illumination terminal 2.

And power is supplied

- from BCM terminal 24
- to ignition keyhole illumination terminal 1.

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

- through BCM terminal 33
- to step lamp driver side and passenger side terminal 2.

And power is supplied

- from BCM terminal 24
- to step lamp driver side and passenger side terminal 1.

When map lamp switch is ON, ground is supplied

- through grounds M14 and M78
- to map lamp terminal 2.

And power is supplied

- from BCM terminal 24
- to map lamp terminal 1.

When vanity mirror lamp (driver side and passenger side) is ON, ground is supplied

- through grounds M14 and M78
- to vanity mirror lamp (driver side and passenger side) terminal 2.

And power is supplied

- from BCM terminal 24
- to vanity mirror lamp (driver side and passenger side) terminal 1.

When luggage room lamp (RH and LH) is ON, and then back door switch is ON, ground is supplied

- through grounds B7 and B20
- through back door switch terminal 3
- through back door switch terminal 1
- to luggage room lamp (RH and LH) terminal 2.

INTERIOR ROOM LAMP

And power is supplied

- from BCM terminal 24
- to luggage room lamp (RH and LH) terminal 1.

ROOM LAMP TIMER OPERATION

When room lamp and personal lamp switch is in DOOR position, and when all conditions below are met, BCM performs timer control (maximum 30 seconds) for room lamp and personal lamp ON/OFF.

In addition, when spot turns ON or OFF there is gradual brightening or dimming over 1 second.

Power is supplied

- through 10A fuse [No. 21 (located in the fuse block (J/B))]
- to key switch and key lock solenoid terminal 3.

Key is removed from ignition key cylinder (key switch OFF), power will not be supplied to BCM terminal 62.

Ground is supplied

- from BCM terminal 74
- to power window main switch (door lock and unlock switch) terminal 14.

At this time, BCM detects that driver door is unlocked. It determines that room lamp and personal lamp timer operation conditions are met, and turns the room lamp and personal lamp ON for 30 seconds.

Key is in ignition key cylinder (key switch ON),

Power is supplied

- through key switch and key lock solenoid terminal 4
- to BCM terminal 62.

When key is removed from key switch and key lock solenoid (key switch OFF), power supply to BCM terminal 62 is terminated. BCM detects that key has been removed, determines that room lamp and personal lamp timer conditions are met, and turns the room lamp and personal lamp ON for 30 seconds.

When driver door opens → closes, and the key is not inserted in the key switch and key lock solenoid (key switch OFF), BCM terminal 14 changes between 0V (door open) → 12V (door closed). The BCM determines that conditions for room lamp and personal lamp operation are met and turns the interior lamp ON for 30 seconds.

Timer control is canceled under the following conditions.

- Driver door is locked [when locked keyfob or power window main switch (door lock and unlock switch), door key cylinder switch]
- Driver door is opened (driver door switch turns ON)
- Ignition switch ON.

INTERIOR LAMP BATTERY SAVER CONTROL

If the room lamp remains illuminated by the door switch open signal, or if the room lamp switch is in the ON position for more than 30 minutes after the ignition switch is turned to the OFF position, the BCM will automatically turn off the map lamp, step lamp, and/or personal lamp and vanity mirror lamp.

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

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

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

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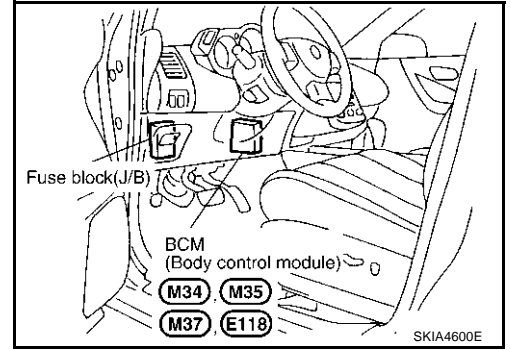
L

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INTERIOR ROOM LAMP

Component Parts and Harness Connector Location

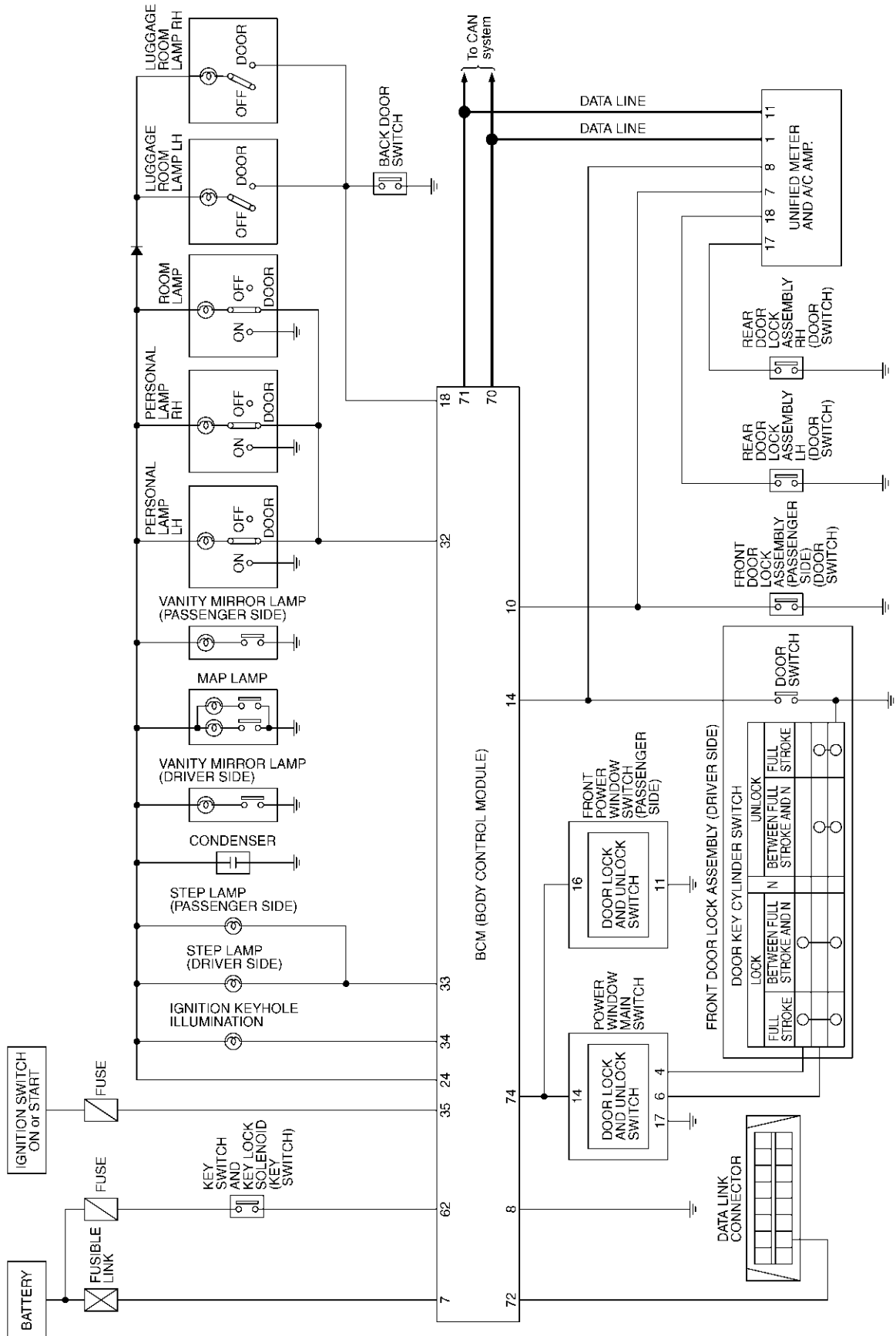
AKS004M3



INTERIOR ROOM LAMP

Schematic

AKS004M4



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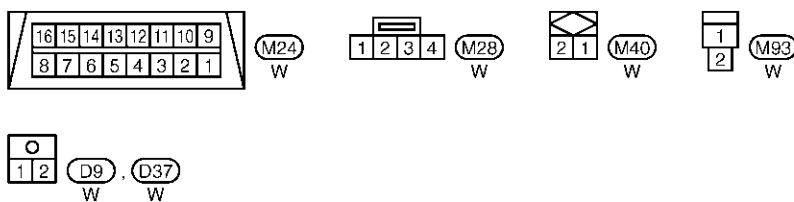
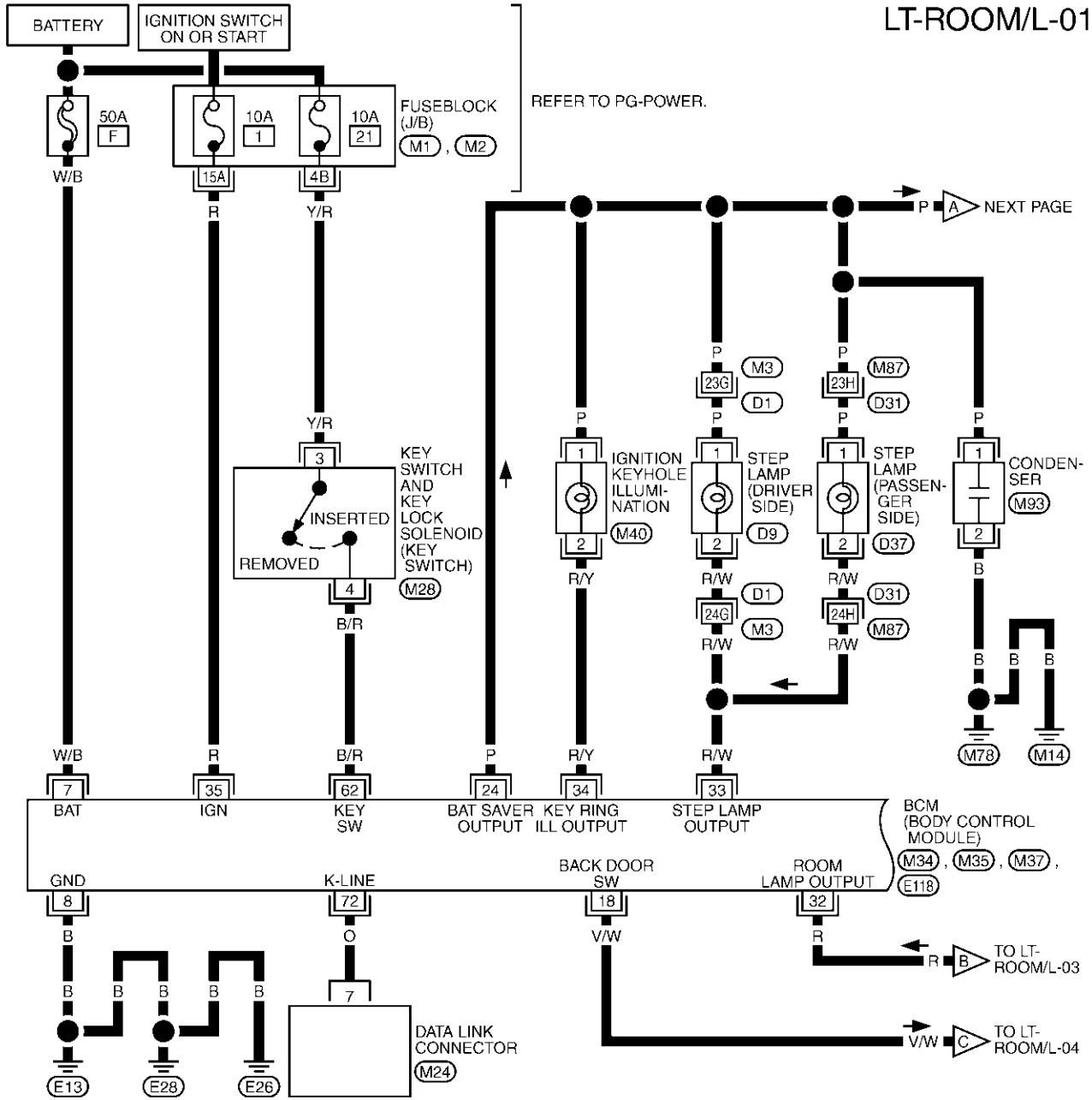
TKWA1150E

INTERIOR ROOM LAMP

AKS004M5

Wiring Diagram — ROOM/L —

LT-ROOM/L-01

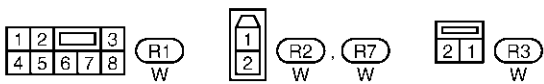
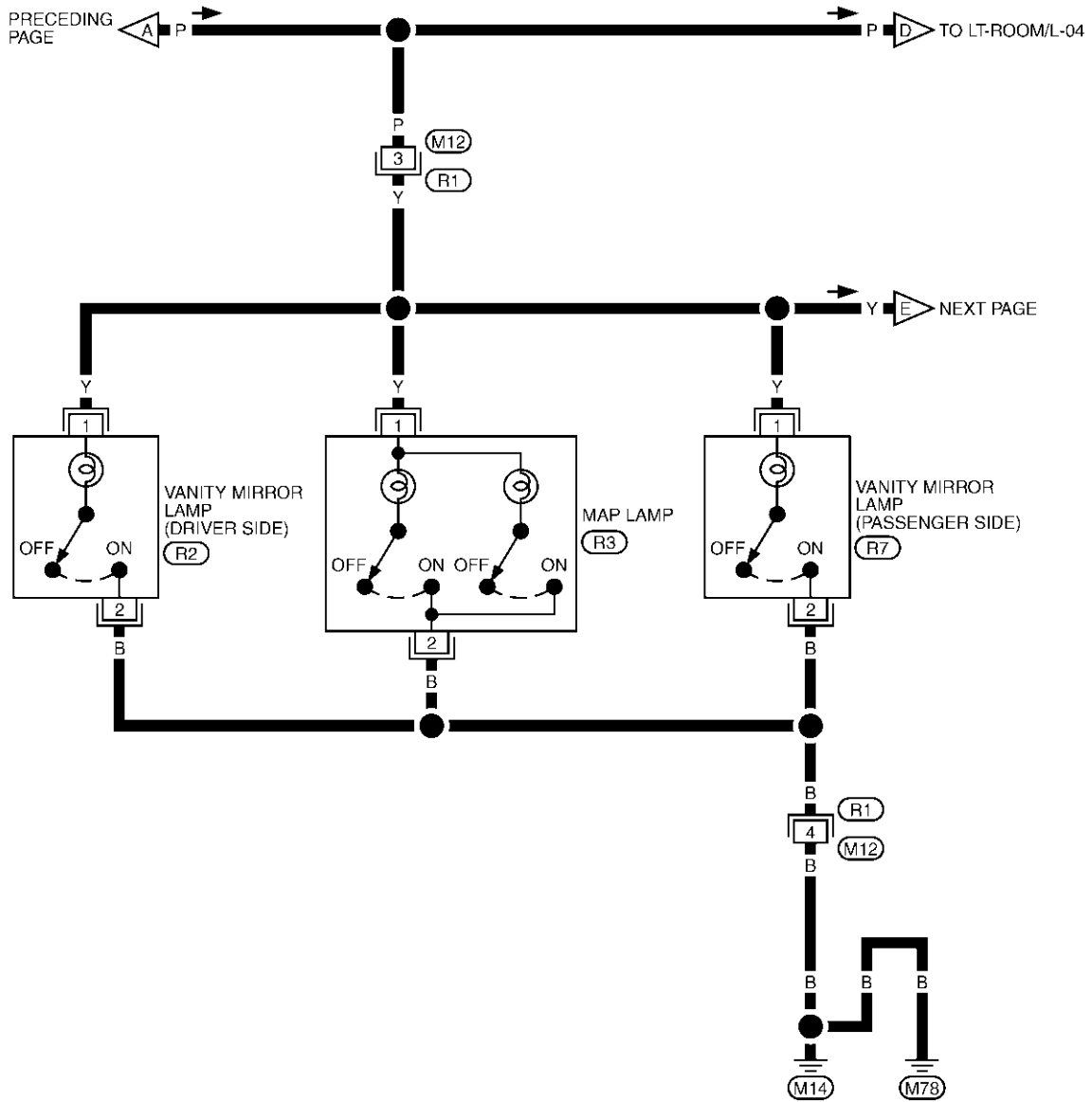


REFER TO THE FOLLOWING.
 (D1), (D31) -SUPER MULTIPLE JUNCTION (SMJ)
 (M1), (M2) -FUSE BLOCK-JUNCTION BOX (J/B)
 (M34), (M35), (M37), (E118) -ELECTRICAL UNITS

TKWA0914E

INTERIOR ROOM LAMP

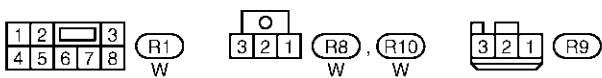
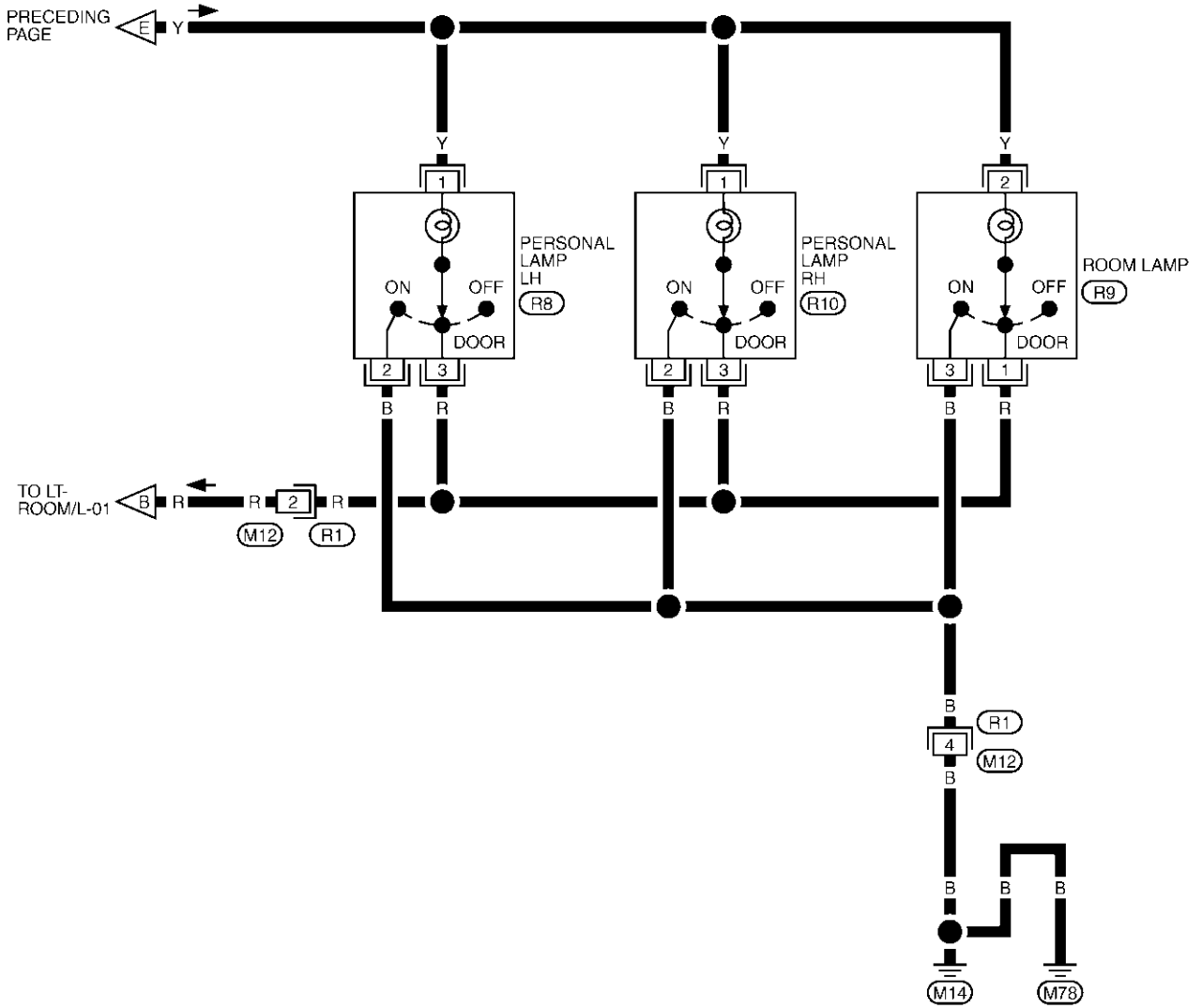
LT-ROOM/L-02



TKWA1152E

INTERIOR ROOM LAMP

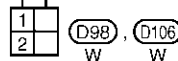
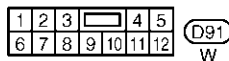
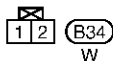
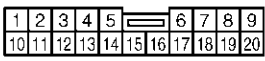
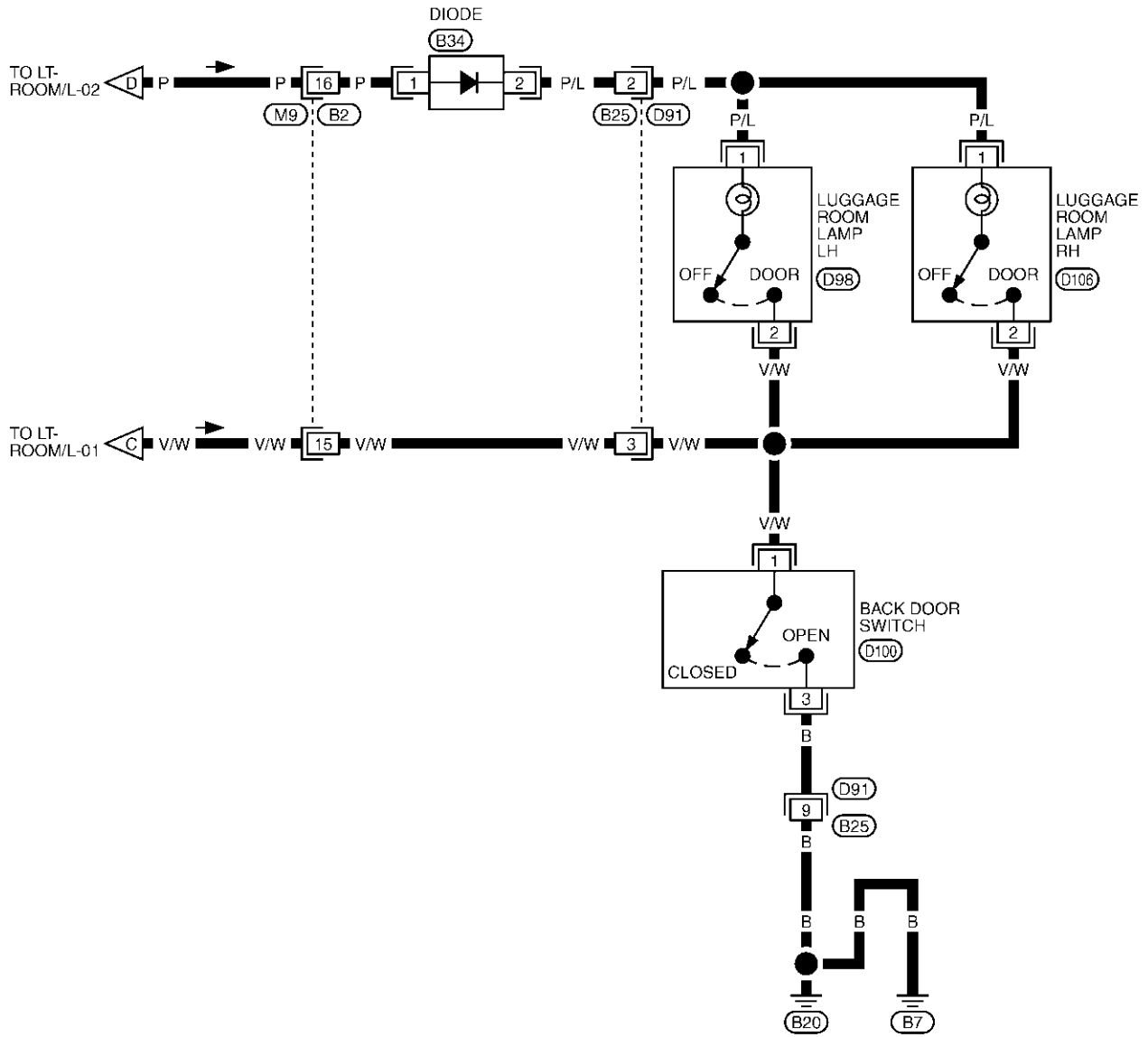
LT-ROOM/L-03



TKWA0916E

INTERIOR ROOM LAMP

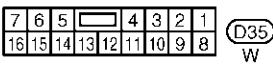
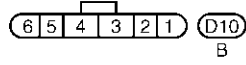
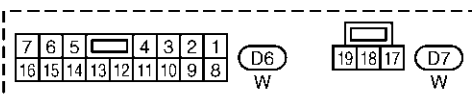
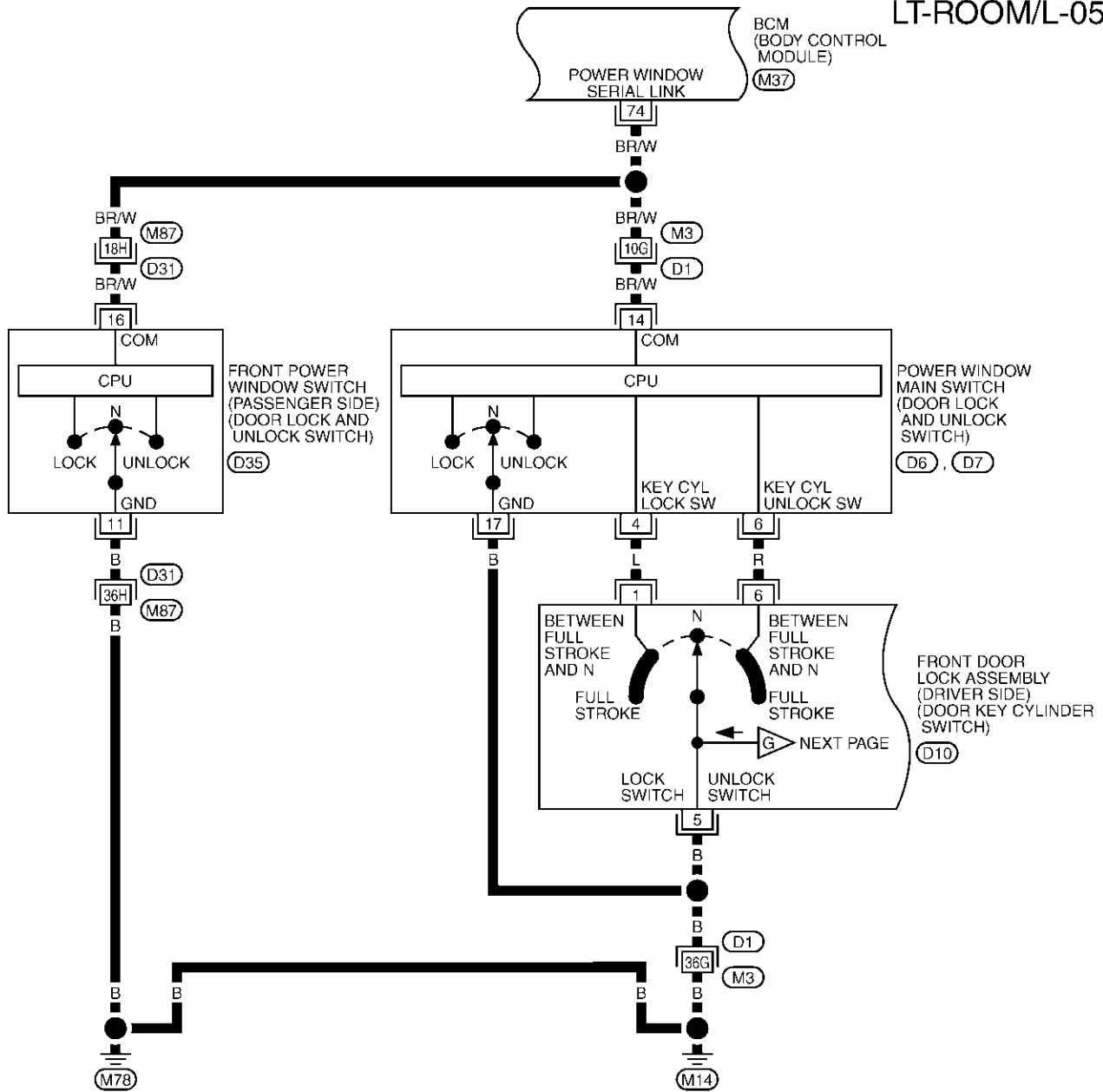
LT-ROOM/L-04



TKWA0917E

INTERIOR ROOM LAMP

LT-ROOM/L-05

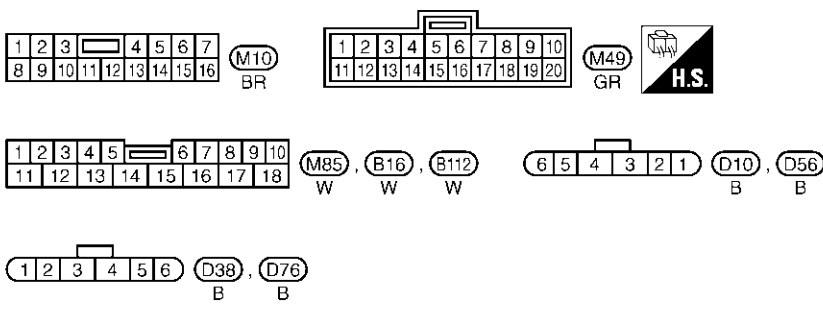
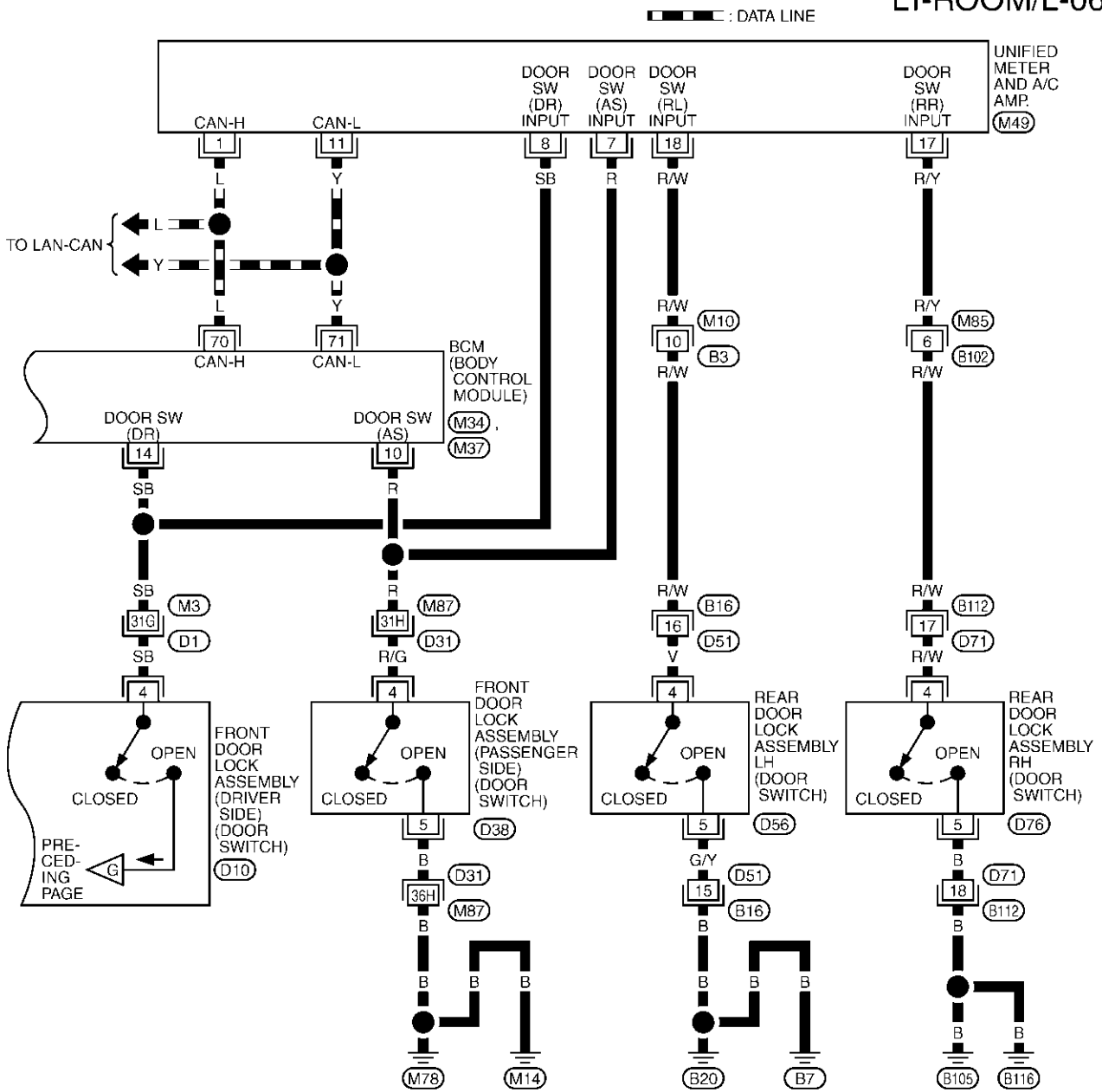


REFER TO THE FOLLOWING.
 (D1), (D31) -SUPER MULTIPLE JUNCTION (SMJ)
 (M37) -ELECTRICAL UNITS

TKWA0918E

INTERIOR ROOM LAMP

LT-ROOM/L-06



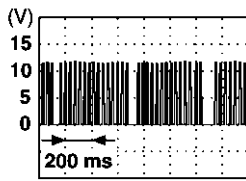
REFER TO THE FOLLOWING.
 (D1), (D31) -SUPER MULTIPLE JUNCTION (SMJ)
 (M34), (M37) -ELECTRICAL UNITS

TKWA0919E

INTERIOR ROOM LAMP

Terminals and Reference Value for BCM

AKS004M6

Terminal No.	Wire color	Signal name	Measuring condition			Reference value
			Ignition switch	Operation or condition		
7	W/B	Battery power supply	OFF	—		Battery voltage
8	B	Ground	ON	—		Approx. 0V
10	R	Front door switch AS signal	OFF	Front door switch AS	ON (open)	Approx. 0V
					OFF (closed)	Battery voltage
14	SB	Front door switch DR signal	OFF	Front door switch DR	ON (open)	Approx. 0V
					OFF (closed)	Battery voltage
18	V/W	Back door switch signal	OFF	Back door switch	ON (open)	Approx. 0V
					OFF (closed)	Battery voltage
24	P	Battery saver output signal	OFF	30 minutes after ignition switch is turned to OFF		Approx. 0V
			ON	—		Battery voltage
32	R	Spot lamp output signal	ON	Spot lamp switch: DOOR position	Any door switch ON (open)	Approx. 0V
					All door switch OFF (closed)	Battery voltage
33	R/W	Step lamp signal	OFF	Any door is open (ON)		Approx. 0V
				All doors are closed (OFF)		Battery voltage
34	R/Y	Ignition keyhole illumination signal	OFF	Door is locked. (SW OFF)		Battery voltage
				Door is unlocked. (SW ON)		Approx. 0V
35	R	Ignition power supply	ON	—		Battery voltage
62	B/R	Key-in detection switch signal	OFF	Vehicle key is removed.		Approx. 0V
				Vehicle key is inserted.		Battery voltage
72	O	K-LINE	—	—		—
74	BR/W	Power window switch serial link	—	—		 <p style="text-align: right;">PIIA2344J</p>

How to Proceed With Trouble Diagnosis

AKS004M7

1. Confirm the symptom or customer complaint.
2. Understand operation description and function description. Refer to [LT-309, "System Description"](#).
3. Carry out the Preliminary Check. Refer to [LT-321, "Preliminary Check"](#).
4. Check symptom and repair or replace the cause of malfunction.
5. Does the interior room lamp operate normally? If YES: GO TO 6. If NO: GO TO 4.
6. INSPECTION END

INTERIOR ROOM LAMP

AKS004M8

Preliminary Check INSPECTION FOR POWER SUPPLY AND GROUND CIRCUIT

1. CHECK FUSES

- Check for blown BCM fuses.

Unit	Power source	Fuse and fusible link No.
BCM	Battery	F
	Ignition switch ON or START position	1

Refer to [LT-314, "Wiring Diagram — ROOM/L —"](#) .

OK or NG

OK >> GO TO 2.

NG >> If fuse is blown, be sure to eliminate cause of malfunction before installing new fuse. Refer to [PG-3, "POWER SUPPLY ROUTING CIRCUIT"](#) .

2. CHECK POWER SUPPLY CIRCUIT

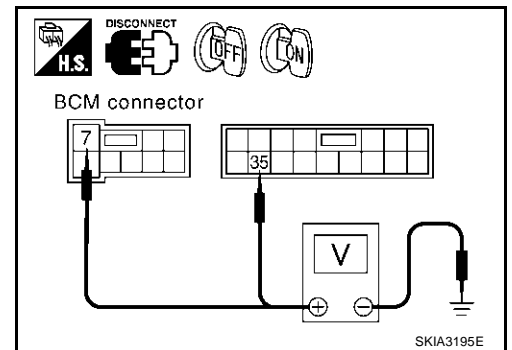
1. Disconnect BCM connector.
2. Check voltage between BCM connector and ground.

Terminals		(-)	Ignition switch position	
(+)			OFF	ON
Connector	Terminal (Wire color)	Ground	Battery voltage	Battery voltage
E118	7 (W/B)		0V	Battery voltage
M35	35 (R)			

OK or NG

OK >> GO TO 3.

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



3. CHECK GROUND CIRCUIT

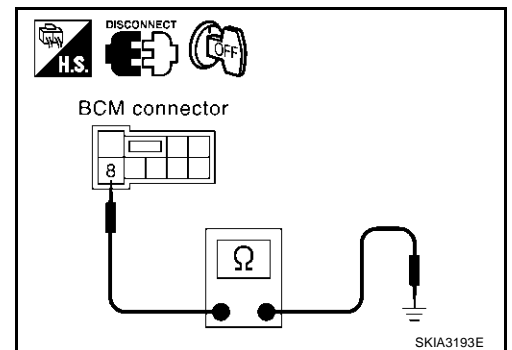
Check continuity between BCM and ground.

Terminals		Ground	Continuity
Connector	Terminal (Wire color)		
E118	8 (B)		Yes

OK or NG

OK >> INSPECTION END

NG >> Check harness ground circuit.



INTERIOR ROOM LAMP

CONSULT-II Function

AKS004M9

CONSULT-II performs the following functions communicating with BCM.

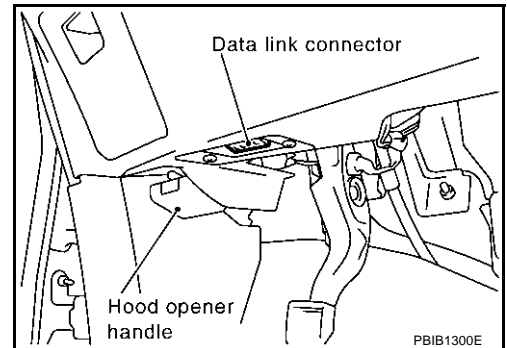
BCM diagnosis part	Check item, diagnosis mode	Description
INTERIOR LAMP	WORK SUPPORT	Changes the setting for each function.
	DATA MONITOR	Displays BCM input data in real time.
	ACTIVE TEST	Operation of electrical loads can be checked by sending driving signal to them.

CONSULT-II BASIC OPERATION

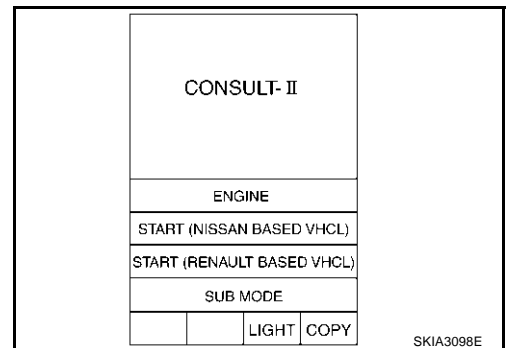
CAUTION:

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

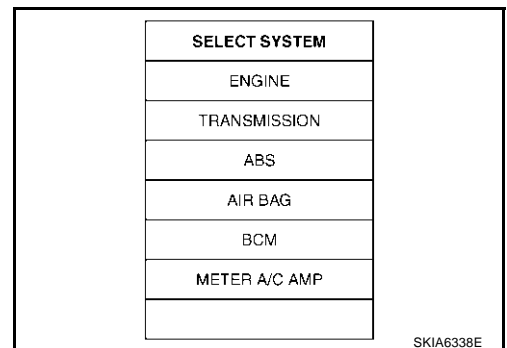
1. With ignition switch OFF, connect CONSULT-II and CONSULT-II CONVERTER to data link connector, then turn ignition switch ON.



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

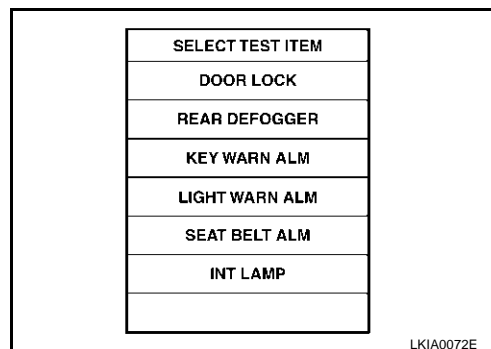


3. Touch "BCM" on "SELECT SYSTEM" screen. If "BCM" is not indicated, refer to [GI-38, "CONSULT-II Data Link Connector \(DLC\) Circuit"](#).



INTERIOR ROOM LAMP

4. Touch "INT LAMP" on "SELECT TEST ITEM" screen.



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WORK SUPPORT

Operation Procedure

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

E
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Display Item List

Item	Description	CONSULT-II	Factory setting
ROOM LAMP TIMER SET	Spot lamp ON/OFF can be selected for when driver door lock is released (unlocked).	ON	×
		OFF	—

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DATA MONITOR

Operation Procedure

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

J
LT

All signals	Monitors all the signals.
Selection from menu	Selects and monitors the individual signal.

L
M

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

Display Item List

Monitor item	Contents
IGN ON SW "ON/OFF"	Displays "IGN position (ON)/OFF, ACC position (OFF)" judged from the ignition switch signal.
KEY ON SW "ON/OFF"	Displays "Key inserted (ON)/key removed (OFF)" status judged from the key switch signal.
DOOR SW - DR "ON/OFF"	Displays status of the driver door as judged from the driver door switch signal. (Door is open: ON/Door is closed: OFF)
DOOR SW - AS "ON/OFF"	Displays "Door open (ON)/Door closed (OFF)" status, determined from passenger door switch signal.
LOCK SW DR/AS "ON/OFF"	Displays "Door locked (ON)/Door unlocked (OFF) status, determined from locking detection switch in driver door.

INTERIOR ROOM LAMP

Monitor item		Contents
UNLK SW DR/AS	"ON/OFF"	Displays "Door unlocked (OFF)" status, determined from locking detection switch in driver door and passenger door.
KEY CYL LK SW	"ON/OFF"	Displays "Door locked (ON) status, determined from key cylinder lock switch in driver door.
KEY CYL UN SW	"ON/OFF"	Displays "Door unlocked (OFF) status, determined from key cylinder lock switch in driver door.
LK BUTTON/SIG	"ON/OFF"	Displays "Locked (ON)/Other (OFF)" status, determined from lock signal.
UN BUTTON/SIG	"ON/OFF"	Displays "Unlocked (ON)/Other (OFF)" status, determined from unlock signal.
DOOR SW - RR	"ON/OFF"	Displays "Door open (ON)/Door closed (OFF)" status, determined from rear door switch signals.

ACTIVE TEST

Operation Procedure

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

Display Item List

Test item	Description
INT LAMP	Spot lamp can be operated by any ON-OFF operations.

Room Lamp Control Does Not Operate

AKS004MA

1. CHECK EACH SWITCH

Select "BCM" on CONSULT-II. With "INT LAMP" data monitor to make sure switches listed in display item list turn ON-OFF linked with switch operation. Refer to [LT-323, "Display Item List"](#) for switches and their functions.

OK or NG

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

DATA MONITOR	
MONITOR	
IGN ON SW	ON
KEY ON SW	ON
DOOR SW-DR	ON
DOOR SW-AS	ON
LOCK SW DR/AS	OFF
UNLK SW DR/AS	OFF
KEY CYL UN SW	OFF
KEY CYL LK SW	OFF
LK BUTTON/SIG	OFF

SKIA3991E

2. ACTIVE TEST

1. Select "BCM" on CONSULT-II. Select "INT LAMP" active test.
2. When room lamp switch is in "DOOR" position, use active test to make sure room lamp operates.

OK or NG

- OK >> Replace BCM. Refer to [BCS-36, "Removal and Installation of BCM"](#) .
 NG >> GO TO 3.

ACTIVE TEST	
INT LAMP	ON
	OFF

LKIA0092E

INTERIOR ROOM LAMP

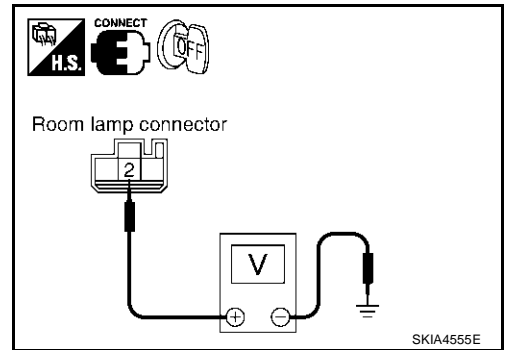
3. CHECK ROOM LAMP INPUT

1. Turn ignition switch OFF.
2. Check voltage between room lamp harness connector R9 terminal 2 (Y) and ground.

Battery voltage should exist.

OK or NG

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



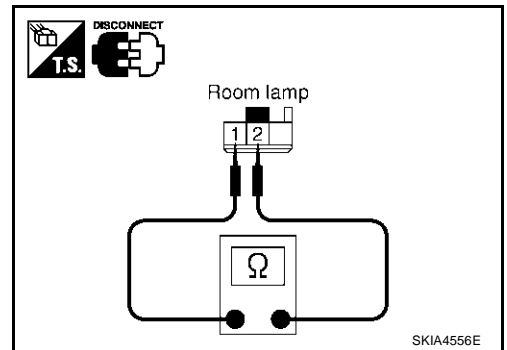
4. CHECK ROOM LAMP

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

Terminal		Condition	Continuity
Room lamp			
1	2	Room lamp switch is ON	Yes
		Room lamp switch is OFF	No

OK or NG

- OK >> GO TO 5.
 NG >> Replace Room lamp.



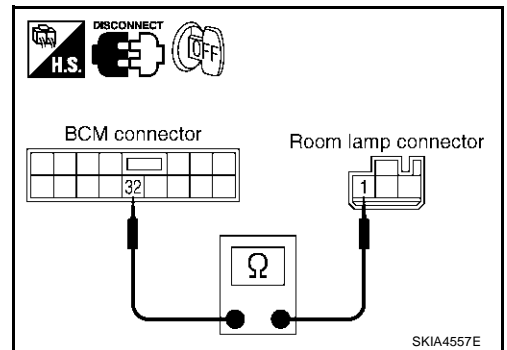
5. CHECK ROOM LAMP CIRCUIT

1. Disconnect BCM connector.
2. Check continuity between BCM harness connector M35 terminal 32 (R) and room lamp harness connector R9 terminal 1 (R).

Continuity should exist.

OK or NG

- OK >> Replace BCM. Refer to [BCS-36, "Removal and Installation of BCM"](#) .
 NG >> Repair harness or connector.



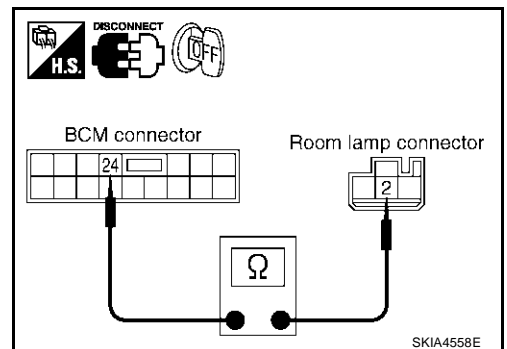
6. CHECK ROOM LAMP CIRCUIT

1. Disconnect BCM connector and room lamp connector.
2. Check continuity between BCM harness connector M35 terminal 24 (P) and room lamp harness connector R9 terminal 2 (Y).

Continuity should exist.

OK or NG

- OK >> Replace BCM. Refer to [BCS-36, "Removal and Installation of BCM"](#) .
 NG >> Repair harness or connector.



INTERIOR ROOM LAMP

AKS005QS

Personal Lamp Control Does Not Operate

1. CHECK EACH SWITCH

Select "BCM" on CONSULT-II. With "INT LAMP" data monitor to make sure switches listed in display item list turn ON-OFF linked with switch operation. Refer to [LT-323, "Display Item List"](#) for switches and their functions.

OK or NG

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

DATA MONITOR	
MONITOR	
IGN ON SW	ON
KEY ON SW	ON
DOOR SW-DR	ON
DOOR SW-AS	ON
LOCK SW DR/AS	OFF
UNLK SW DR/AS	OFF
KEY CYL UN SW	OFF
KEY CYL LK SW	OFF
LK BUTTON/SIG	OFF

SKIA3991E

2. ACTIVE TEST

- Select "BCM" on CONSULT-II. Select "INT LAMP" active test.
- When personal lamp switch is in "DOOR" position, use active test to make sure personal lamp operates.

OK or NG

- OK >> Replace BCM. Refer to [BCS-36, "Removal and Installation of BCM"](#).
- NG >> GO TO 3.

ACTIVE TEST	
INT LAMP	ON
	OFF

LKIA0092E

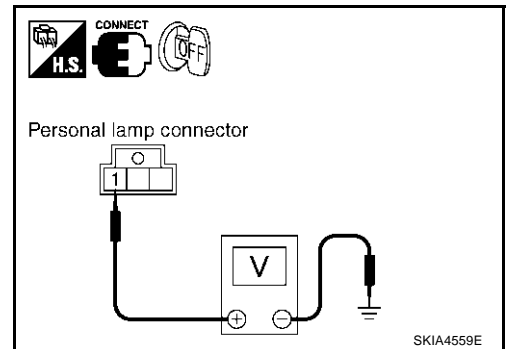
3. CHECK PERSONAL LAMP INPUT

- Turn ignition switch OFF.
- Check voltage between personal lamp harness connector R8 (or R10) terminal 1 (Y) and ground.

Battery voltage should exist.

OK or NG

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



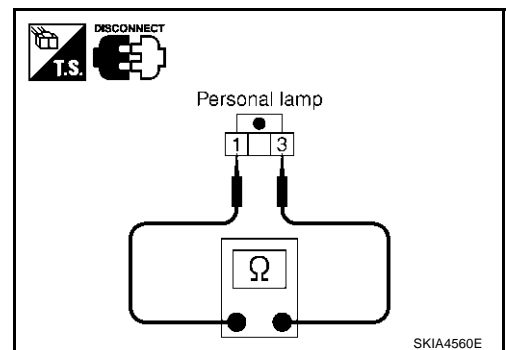
4. CHECK PERSONAL LAMP

- Disconnect personal lamp connector.
- Check continuity between personal lamp.

Terminal		Condition	Continuity
Personal lamp			
1	3	Personal lamp switch is ON	Yes
		Personal lamp switch is OFF	No

OK or NG

- OK >> GO TO 5.
- NG >> Replace personal lamp.



INTERIOR ROOM LAMP

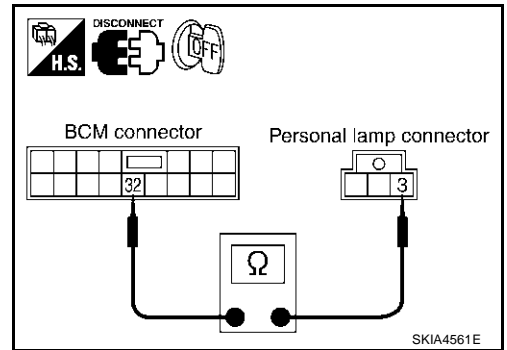
5. CHECK PERSONAL LAMP CIRCUIT

1. Disconnect BCM connector.
2. Check continuity between BCM harness connector M35 terminal 32 (R) and personal lamp harness connector R8 (or R10) terminal 3 (R).

Continuity should exist.

OK or NG

- OK >> Replace BCM. Refer to [BCS-36, "Removal and Installation of BCM"](#).
- NG >> Repair harness or connector.



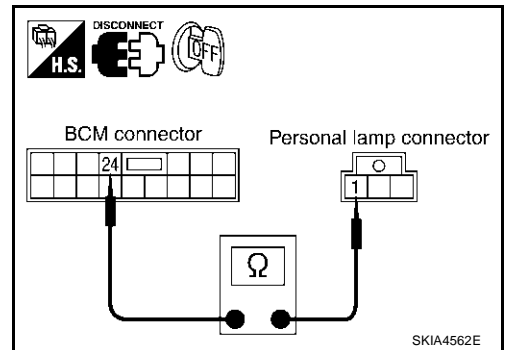
6. CHECK PERSONAL LAMP CIRCUIT

1. Disconnect BCM connector and personal lamp connector.
2. Check continuity between BCM harness connector M35 terminal 24 (P) and personal lamp harness connector R8 (or R10) terminal 1 (Y).

Continuity should exist.

OK or NG

- OK >> Replace BCM. Refer to [BCS-36, "Removal and Installation of BCM"](#).
- NG >> Repair harness or connector.



Ignition Key Hole Illumination Control Does Not Operate

1. CHECK BULB

Inspect bulb of lamp which does not operate.

OK or NG

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

2. CHECK EACH SWITCH

Select "BCM" on CONSULT-II. With "INT LAMP" data monitor to make sure switches listed in display item list turn ON-OFF linked with switch operation. Refer to [LT-323, "Display Item List"](#) for switches and their functions.

OK or NG

- OK >> GO TO 3.
- NG >> Inspect malfunctioning switch system.

DATA MONITOR	
MONITOR	
IGN ON SW	ON
KEY ON SW	ON
DOOR SW-DR	ON
DOOR SW-AS	ON
LOCK SW DR/AS	OFF
UNLK SW DR/AS	OFF
KEY CYL UN SW	OFF
KEY CYL LK SW	OFF
LK BUTTON/SIG	OFF

SKIA3991E

INTERIOR ROOM LAMP

AKS004MC

Step Lamp Does Not Operate

1. CHECK EACH DOOR SWITCH

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

Switch name	CONSULT screen
Driver side door switch	DOOR SW - DR
Passenger side door switch	DOOR SW - AS

OK or NG

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

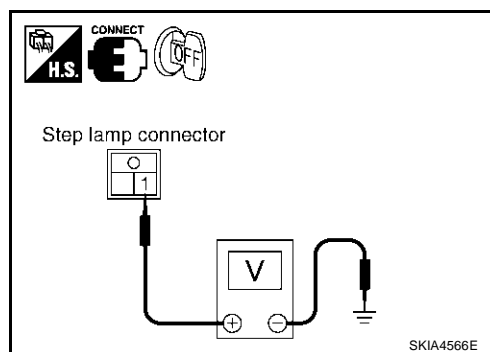
DATA MONITOR	
MONITOR	
IGN ON SW	ON
KEY ON SW	ON
DOOR SW-DR	ON
DOOR SW-AS	ON
LOCK SW DR/AS	OFF
UNLK SW DR/AS	OFF
KEY CYL UN SW	OFF
KEY CYL LK SW	OFF
LK BUTTON/SIG	OFF

SKIA3991E

2. CHECK STEP LAMP INPUT

- Turn ignition switch OFF.
- Check voltage between step lamp harness connector (driver side/passenger side) and ground.

Terminals			Voltage	
(+)		(-)		
Connector	Terminal (Wire color)			
Driver side	D9	1 (P)	Ground	Battery voltage
Passenger side	D37			



OK or NG

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

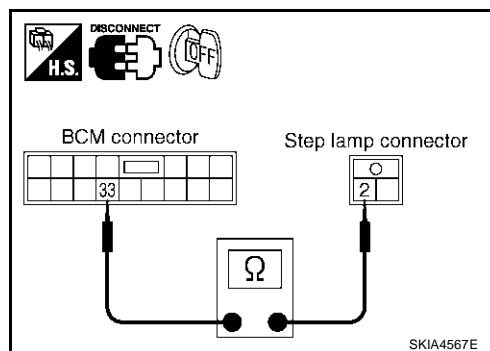
3. CHECK STEP LAMP CIRCUIT

- Disconnect BCM connector and step lamp (driver side/passenger side) connectors.
- Check continuity between BCM harness connector M35 terminal 33 (R/W) and step lamp (driver side) harness connector D9 terminal 2 (R/W).

Continuity should exist.

- Check continuity between BCM harness connector M35 terminal 33 (R/W) and step lamp (passenger side) harness connector D37 terminal 2 (R/W).

Continuity should exist.



OK or NG

- OK >> Replace BCM. Refer to [BCS-36, "Removal and Installation of BCM"](#).
- NG >> Repair harness or connector.

INTERIOR ROOM LAMP

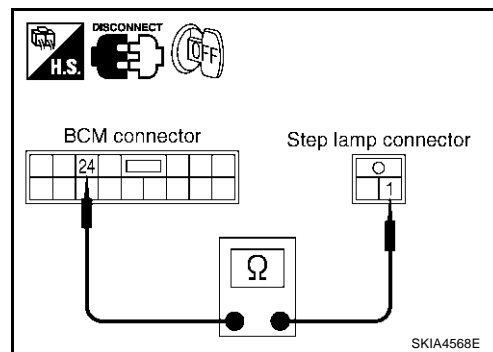
4. CHECK STEP LAMP CIRCUIT

1. Disconnect BCM connector and step lamp connector.
2. Check continuity between BCM harness connector M35 terminal 24 (P) and step lamp (driver side) harness connector D9 terminal 1 (P).

Continuity should exist.

3. Check continuity between BCM harness connector M35 terminal 24 (P) and step lamp (passenger side) harness connector D37 terminal 1 (P).

Continuity should exist.



OK or NG

- OK >> Replace BCM. Refer to [BCS-36, "Removal and Installation of BCM"](#) .
NG >> Repair harness or connector.

All Interior Room Lamp Does Not Operate

AKS004MD

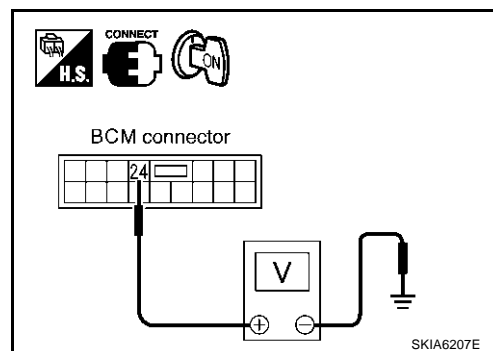
1. CHECK POWER SUPPLY CIRCUIT

1. All interior room lamps switch are OFF.
2. Turn ignition switch ON.
3. Check voltage between BCM harness connector M35 terminal 24 (P) and ground.

Battery voltage should exist.

OK or NG

- OK >> Repair harness or connector. In a case of making a short circuit, be sure to disconnect battery negative cable after repairing harness, and then reconnect
NG >> Replace BCM. Refer to [BCS-36, "Removal and Installation of BCM"](#) .



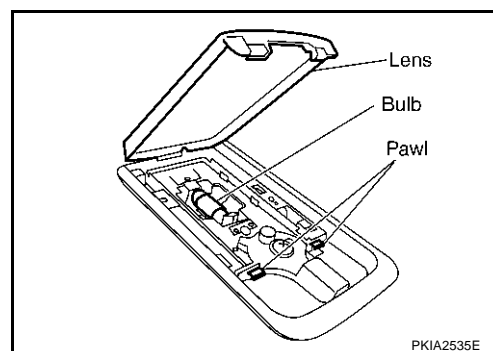
Bulb Replacement ROOM LAMP

AKS005M9

1. Disconnect the battery negative cable.
2. Remove the lens using clip driver or suitable tool.
3. Remove the bulb.

Room lamp :12V - 8W

4. Install in the reverse order of removal.



MAP LAMP

Refer to [LT-306, "Bulb Replacement"](#) in "MAP LAMP".

PERSONAL LAMP

Refer to [LT-307, "Bulb Replacement, Removal and Installation"](#) in "PERSONAL LAMP".

STEP LAMP

Refer to [LT-267, "Bulb Replacement"](#) in "STEP LAMP".

LUGGAGE ROOM LAMP

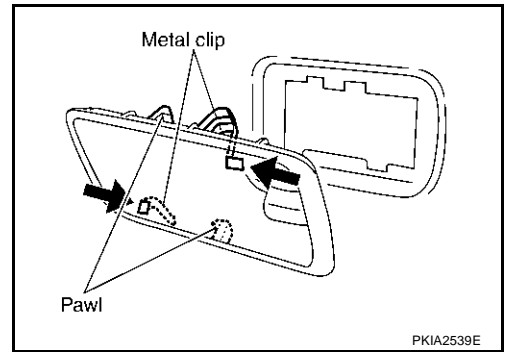
Refer to [LT-308, "Bulb Replacement, Removal and Installation"](#) in "LUGGAGE ROOM LAMP".

INTERIOR ROOM LAMP

AKS005MA

Removal and Installation ROOM LAMP

1. Remove the lens using clip driver or suitable tool.
2. Using a clip driver or suitable tool and disengage the metal clip fittings of the room lamp.
3. Disconnect room lamp connector and remove the room lamp.



MAP LAMP

Refer to [LT-306, "Removal and Installation"](#) in "MAP LAMP".

PERSONAL LAMP

Refer to [LT-307, "Bulb Replacement, Removal and Installation"](#) in "PERSONAL LAMP".

STEP LAMP

Refer to [LT-267, "Removal and Installation"](#) in "STEP LAMP".

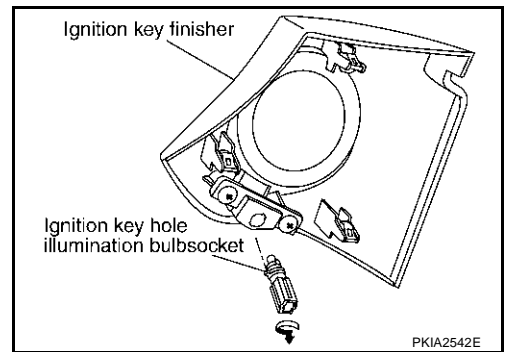
LUGGAGE ROOM LAMP

Refer to [LT-308, "Bulb Replacement, Removal and Installation"](#) in "LUGGAGE ROOM LAMP".

IGNITION KEY HOLE ILLUMINATION

1. Remove the ignition key finisher. Refer to [IP-11, "Removal and Installation"](#) in "INSTRUMENT PANEL (IP)" section.
2. Turn the bulb socket counterclockwise and unlock it.

Ignition key hole illumination : 12V - 1.4W



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ILLUMINATION

PFP:27545

System Description

AKS004MG

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

Power is supplied at all times

- through 10A fuse [No. 75, located in IPDM E/R (intelligent power distribution module engine room)]
- to tail lamp relay [located in IPDM E/R (intelligent power distribution module engine room)]

Power is also supplied at all times

- through 50A fusible link (letter F, located in fuse and fusible link block)
- to BCM (body control module) terminal 7
- through 15A fuse [No. 73, located in IPDM E/R (intelligent power distribution module engine room)]
- to CPU (central processing unit) [located in IPDM E/R (intelligent power distribution module engine room)]
- through 10A fuse [No. 21, located in fuse block (J/B)]
- to combination meter terminal 21.

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

- through 10A fuse [No. 1, located in fuse block (J/B)]
- to BCM (body control module) terminal 35
- through 10A fuse [No. 80, located in IPDM E/R (intelligent power distribution module engine room)]
- to CPU (central processing unit) [located in IPDM E/R (intelligent power distribution module engine room)]
- through 10A fuse [No. 14, located in fuse block (J/B)]
- to combination meter terminal 20.

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

- through 10A fuse [No. 6, located in fuse block (J/B)]
- to BCM (body control module) terminal 36.

Ground is supplied

- to BCM (body control module) terminal 8
- through grounds E13, E26 and E28
- to IPDM E/R (intelligent power distribution module engine room) terminals 14 and 45
- through grounds E13, E26 and E28
- to combination meter terminals 22, 23 and 24
- through grounds M14 and M78.

ILLUMINATION OPERATION BY LIGHTING SWITCH

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

- through IPDM E/R terminal 37
- to CVT illumination terminal 1
- to VDC off switch (illumination) terminal 3 (with VDC)
- to headlamp aiming switch (illumination) terminal 3 (with headlamp aiming)
- to AWD lock switch (illumination) terminal 4 (AWD models)
- to heated seat switch (driver side) (illumination) terminal 5 (with heater seat)
- to heated seat switch (passenger side) (illumination) terminal 5 (with heater seat)
- to A/C and AV switch terminal 3
- to coin box illumination terminal 1

ILLUMINATION

- to glove box lamp terminal 1
- to rear power window switch LH (illumination) terminal 6
- to rear power window switch RH (illumination) terminal 6.

Illumination control

- through combination meter terminal 15
- to CVT illumination terminal 2
- to VDC off switch (illumination) terminal 4 (with VDC)
- to headlamp aiming switch (illumination) terminal 4 (with headlamp aiming)
- to AWD lock switch (illumination) terminal 2 (AWD models)
- to heated seat switch (driver side) (illumination) terminal 6 (with heater seat)
- to heated seat switch (passenger side) (illumination) terminal 6 (with heater seat)
- to A/C and AV switch terminal 4.

Ground is supplied at all times

- to coin box illumination terminal 2
- to glove box lamp terminal 2
- through grounds M14 and M78
- to rear power window switch LH (illumination) terminal 7
- through grounds B7 and B20
- to rear power window switch RH (illumination) terminal 7
- through grounds B105 and B116.

With power and ground supplied, illumination lamps illuminate.

EXTERIOR LAMP BATTERY SAVER CONTROL

When the combination switch (lighting switch) is in the 1ST or 2ND position (or if auto light system is activated), and the ignition switch is turned from ON or ACC to OFF, the battery saver control function is activated. Under this condition, the illumination lamps remain illuminated for 5 minutes, then the illumination lamps are turned off.

When the lighting switch is turned from OFF to 1ST or 2ND position (or if auto light system is activated) after illumination lamps are turned off by the battery saver control, and illumination lamps illuminate again. Exterior lamp battery saver control mode can be changed by the function setting of CONSULT-II.

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ILLUMINATION

CAN Communication System Description

AKS004MH

CAN (Controller Area Network) is a serial communication line for real time application. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Many electronic control units are equipped onto a vehicle, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN H line, CAN L line) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.

CAN Communication Unit For 2WD Models

AKS007QZ

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>LT-335. "TYPE 1/TYPE 2/TYPE 3/TYPE 4/TYPE 5/TYPE 6/TYPE 7/TYPE 8"</u>								<u>LT-340. "TYPE 9/TYPE10/TYPE 11/TYPE 12/TYPE 13/TYPE 14/TYPE 15/TYPE 16"</u>							

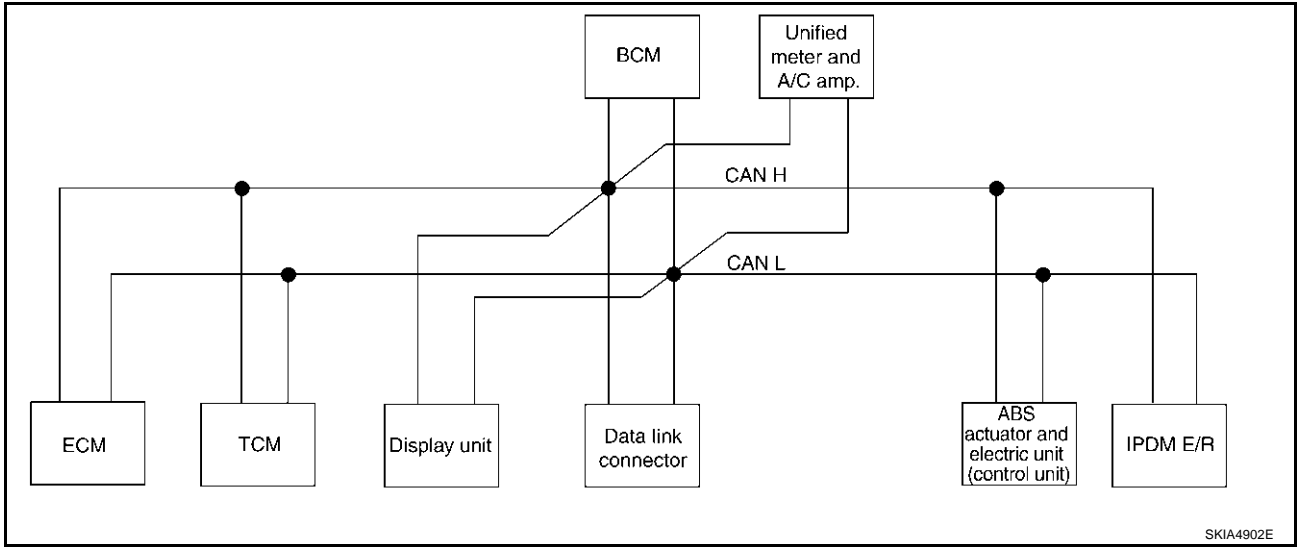
×: Applicable

ILLUMINATION

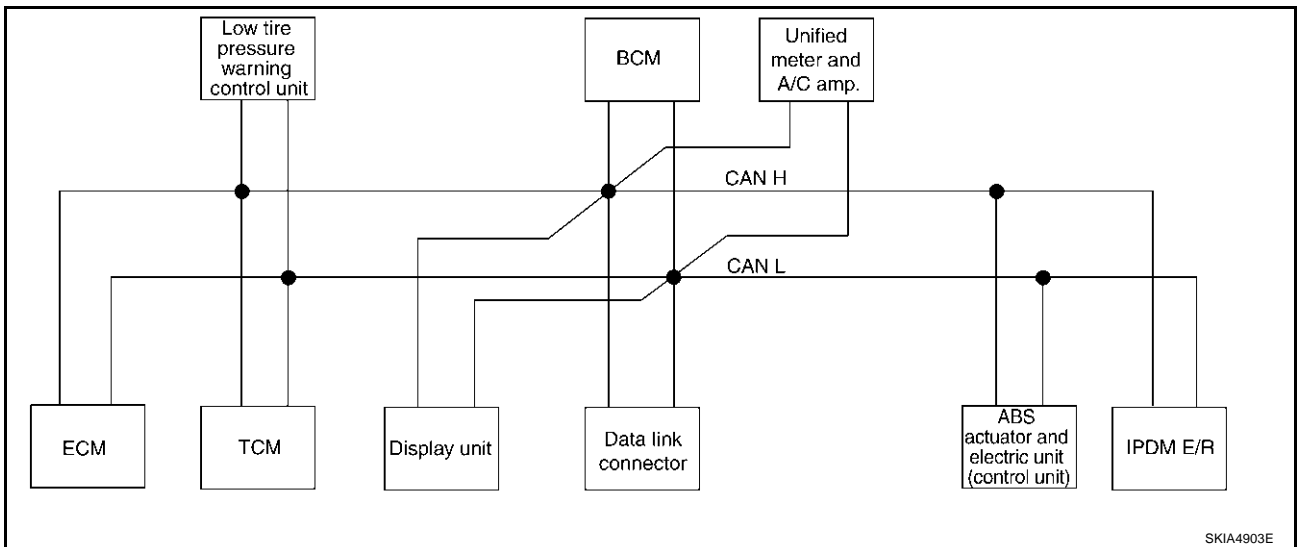
TYPE 1/TYPE 2/TYPE 3/TYPE 4/TYPE 5/TYPE 6/TYPE 7/TYPE 8

System Diagram

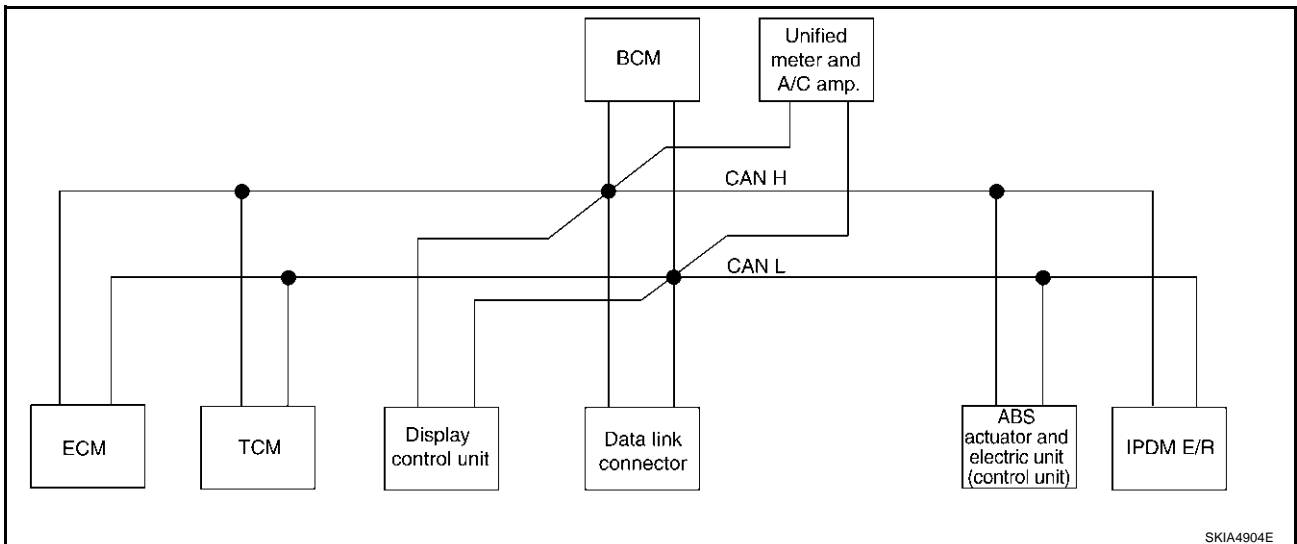
- Type1



- Type2



- Type3

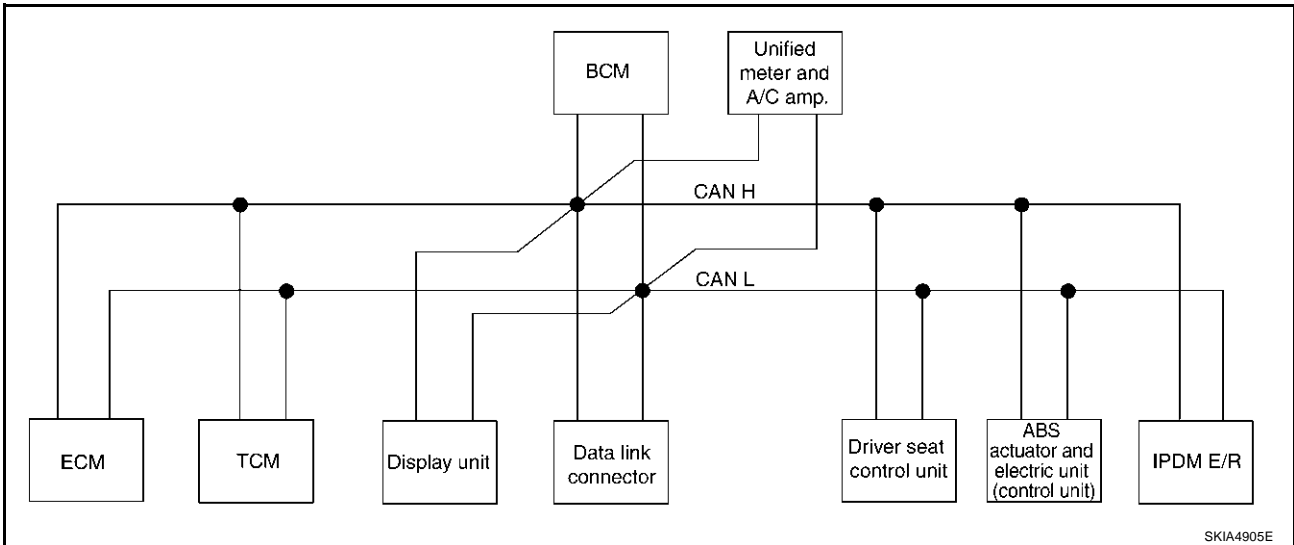


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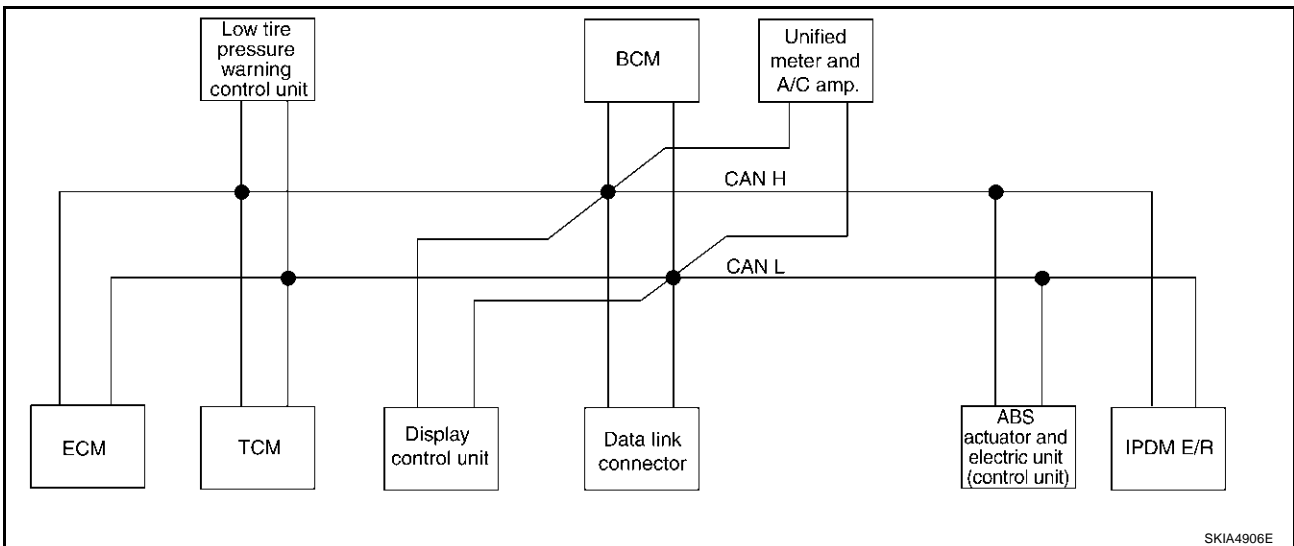
LT

ILLUMINATION

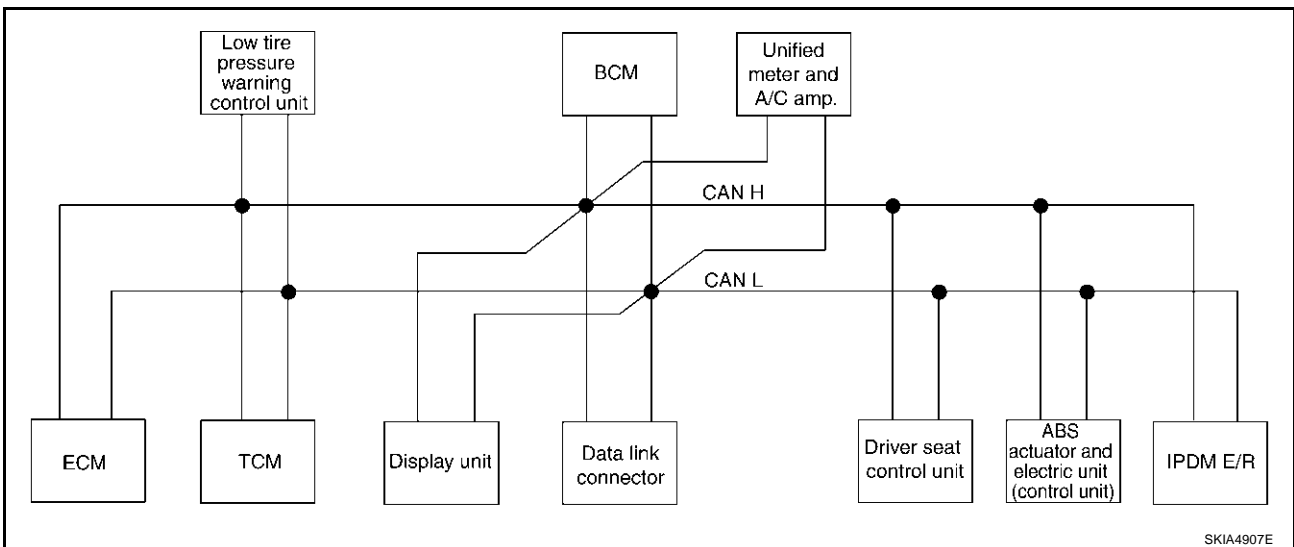
- Type4



- Type5

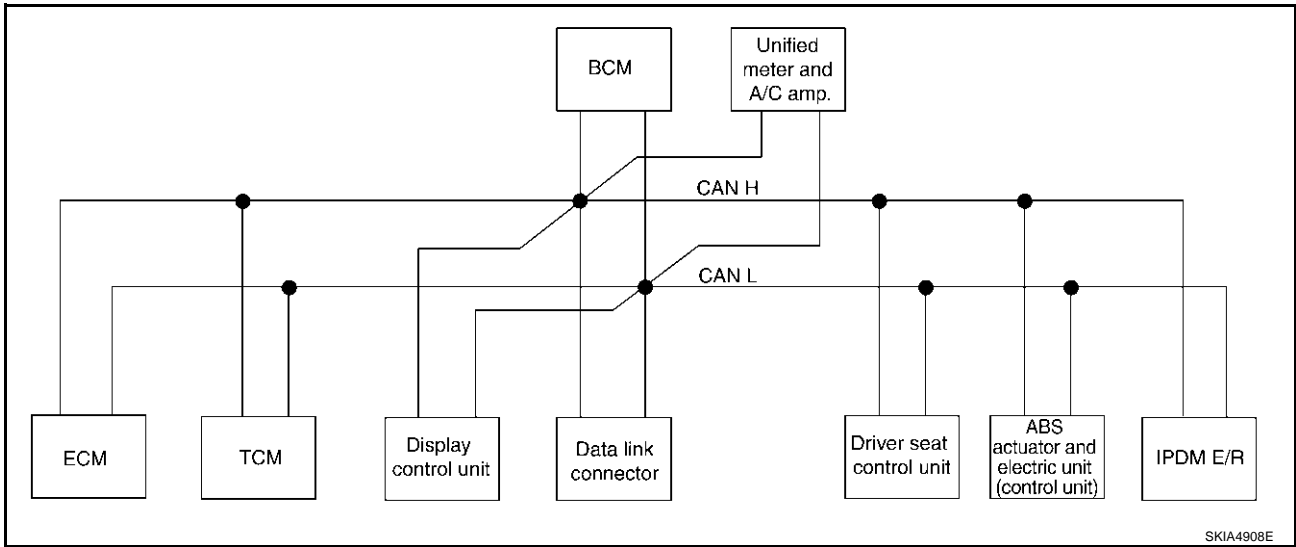


- Type6

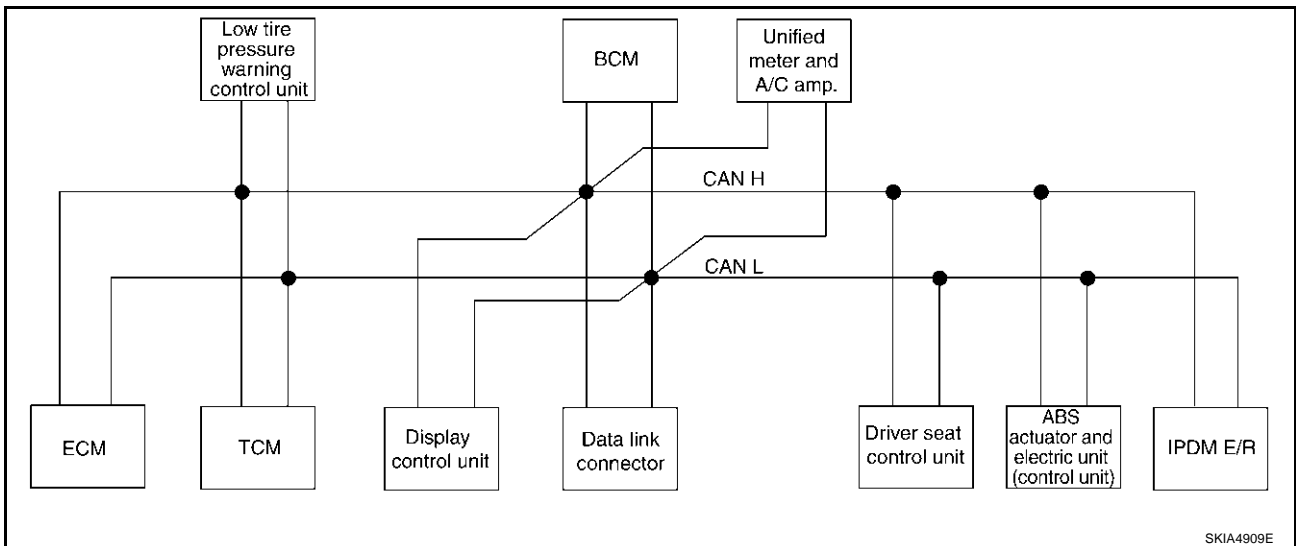


ILLUMINATION

- Type7



- Type8



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ILLUMINATION

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			

ILLUMINATION

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
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 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
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		
Parking brake switch signal						R	T			

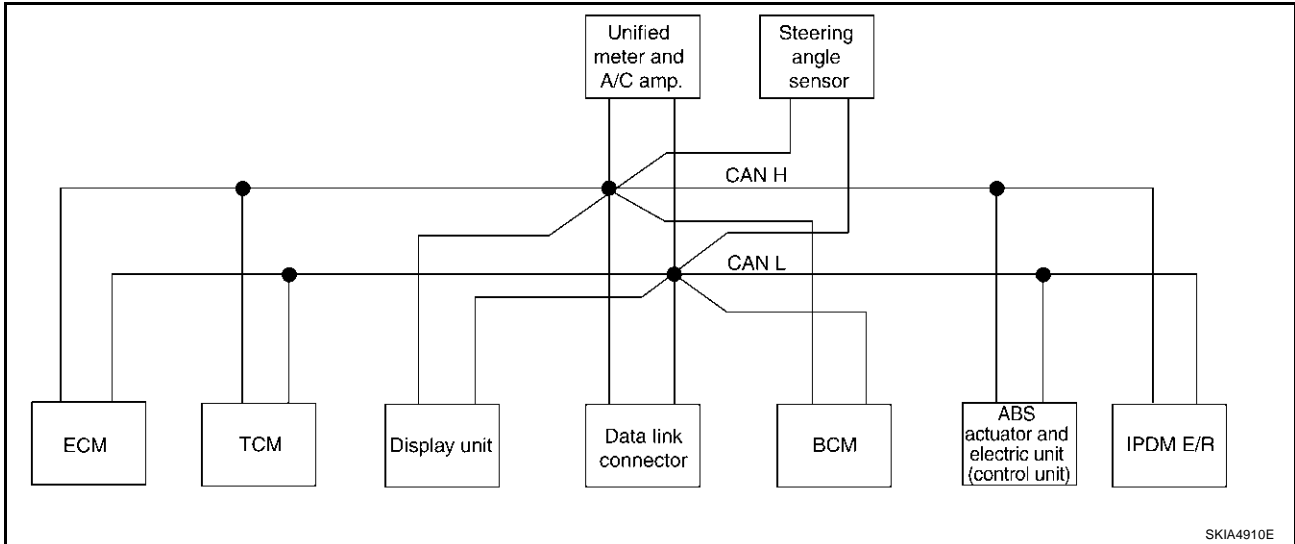
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ILLUMINATION

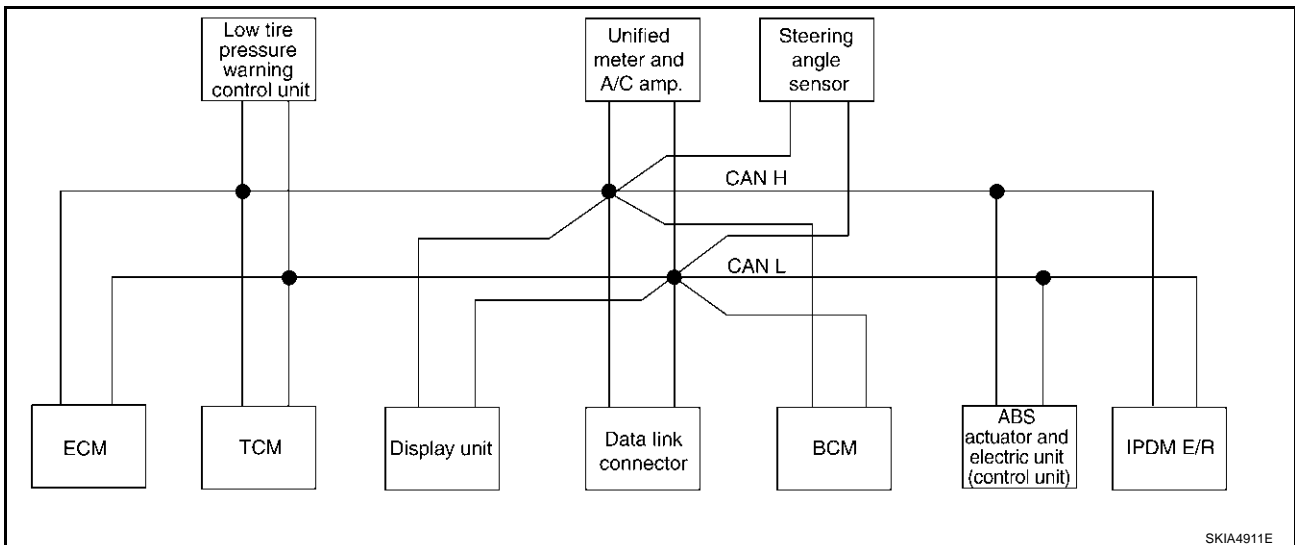
TYPE 9/TYPER10/TYPER 11/TYPER 12/TYPER 13/TYPER 14/TYPER 15/TYPER 16

System Diagram

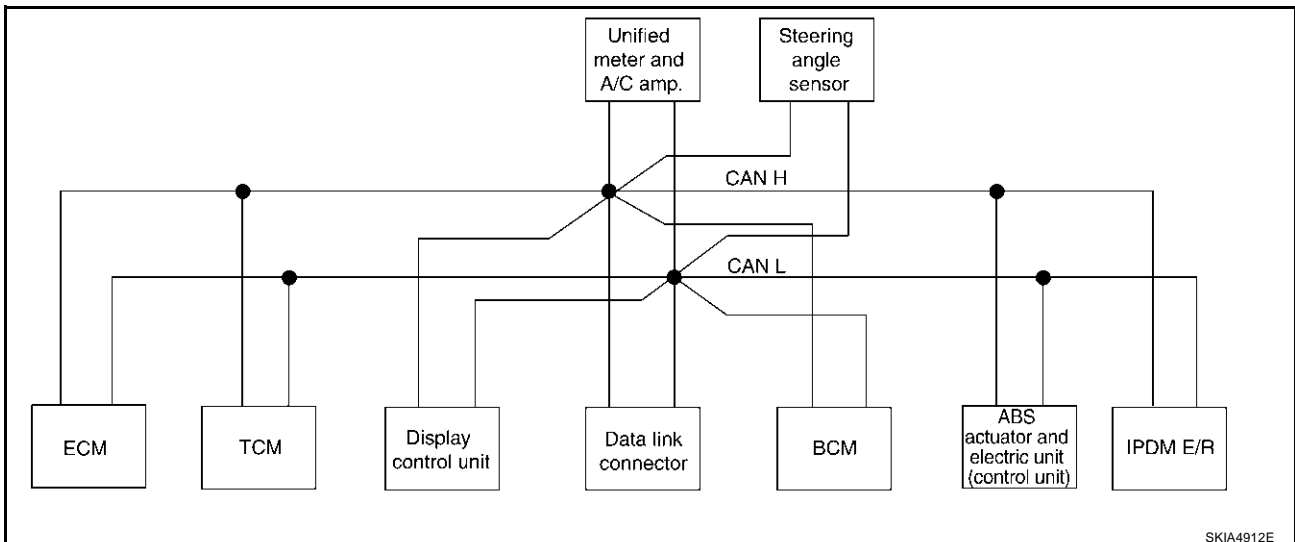
- Type9



- Type10

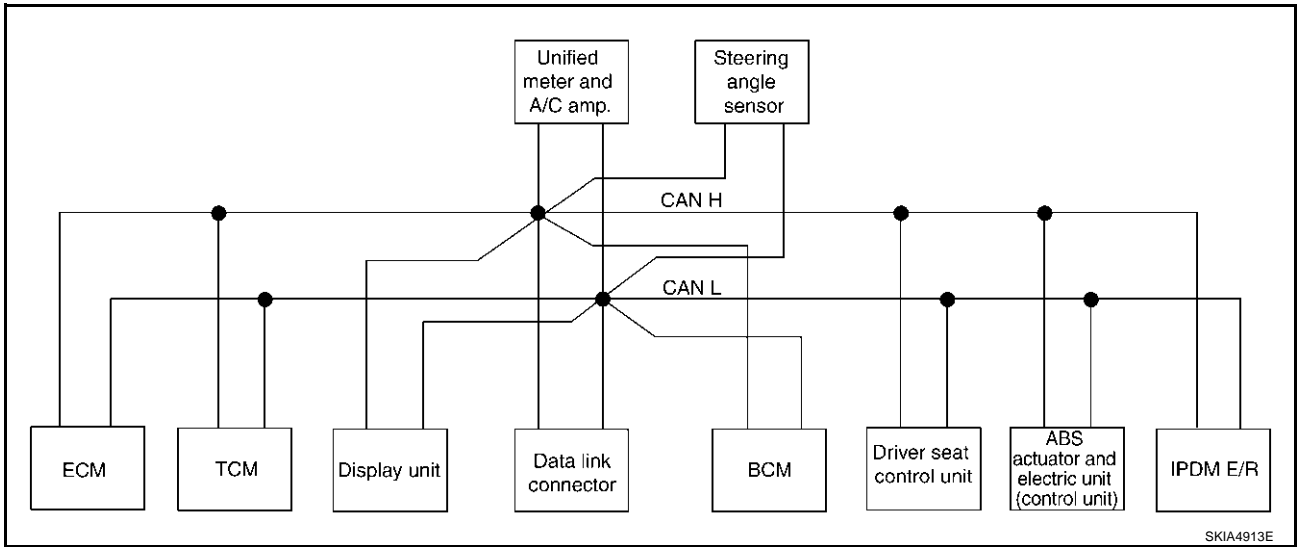


- Type11

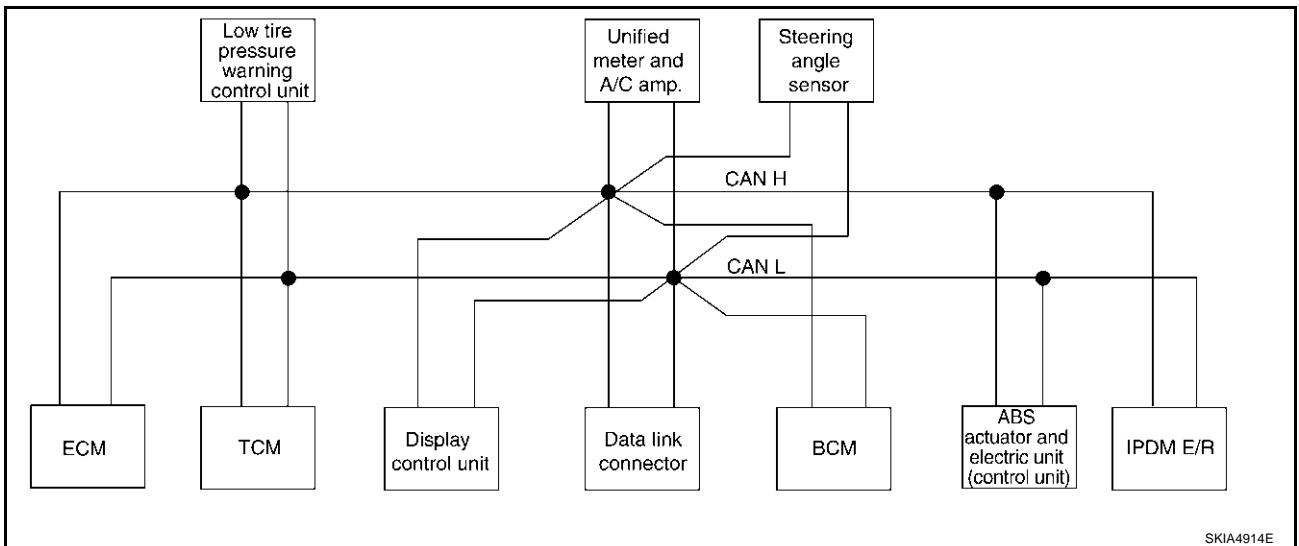


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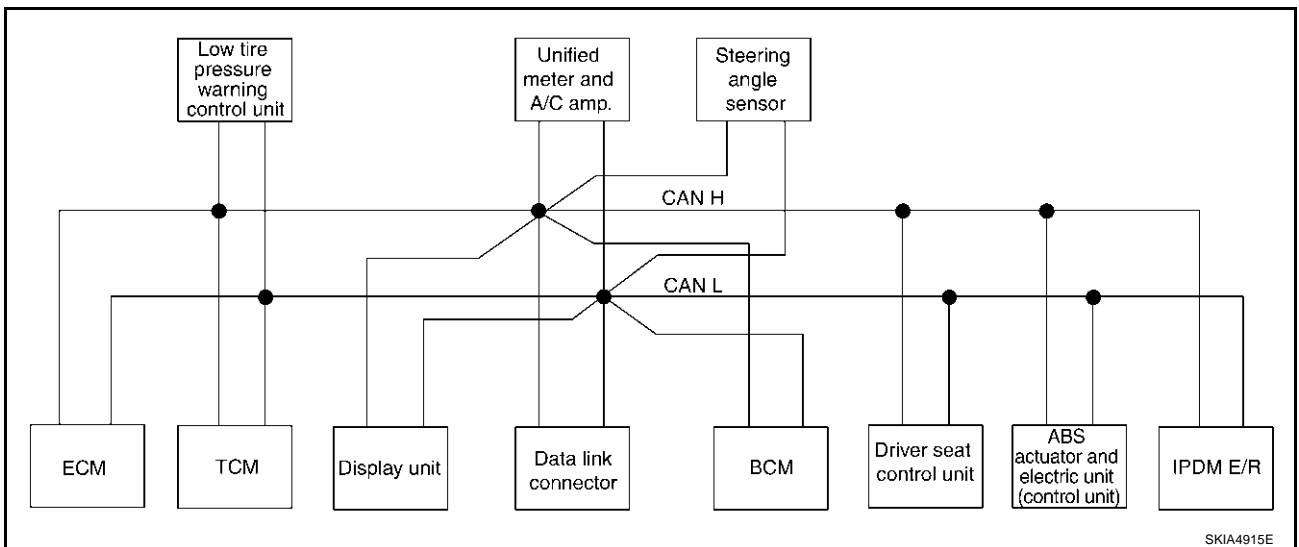
- Type12



- Type13



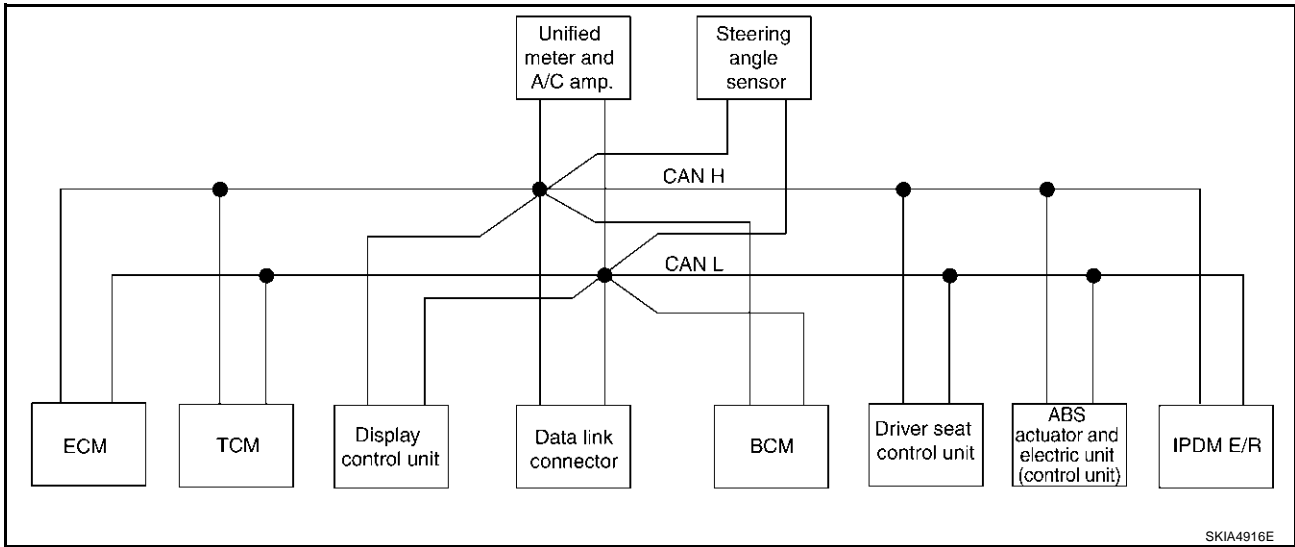
- Type14



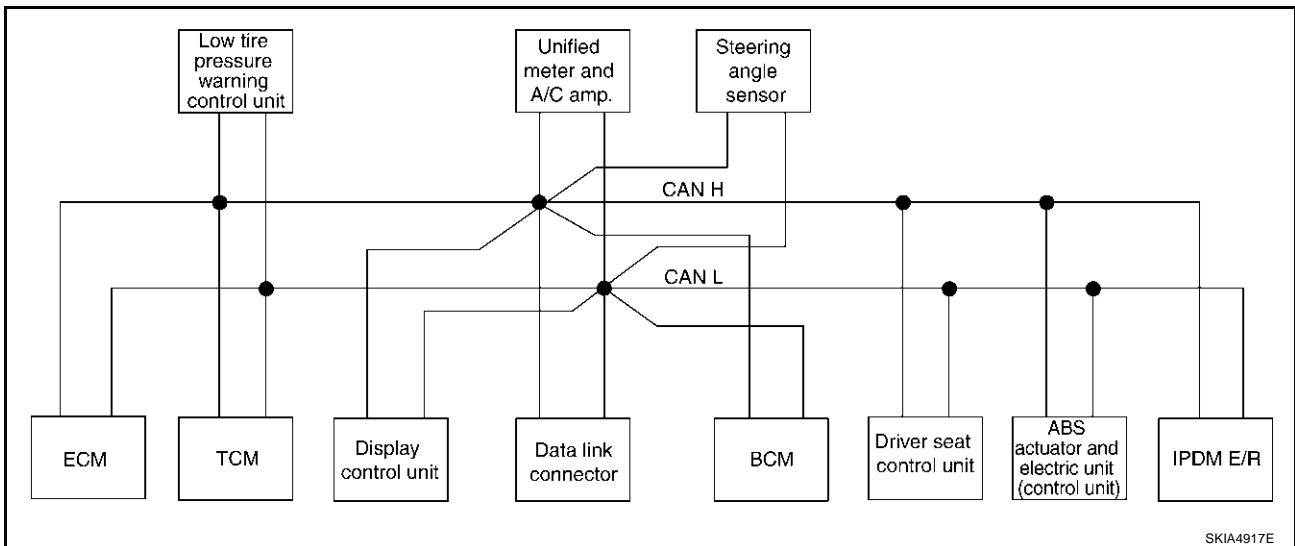
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ILLUMINATION

- Type15



- Type16



ILLUMINATION

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

ILLUMINATION

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				
Turn indicator signal				R	R	T	R		R		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
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				

ILLUMINATION

CAN Communication Unit For AWD Models

AKS007R0

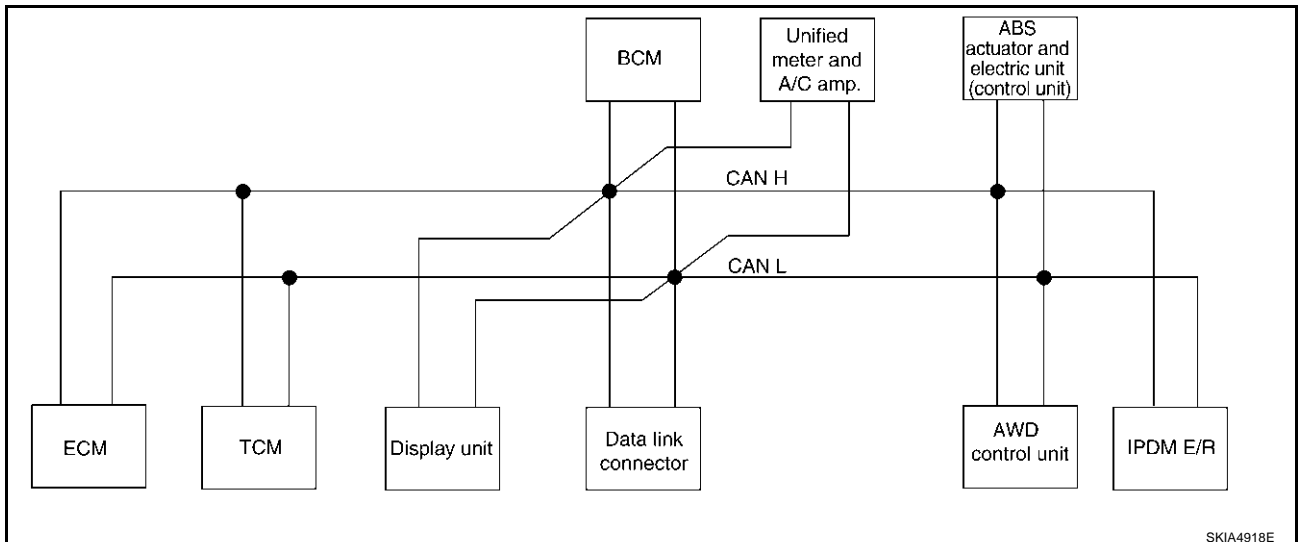
Body type	Wagon															
Axle	AWD															
Engine	VQ35DE															
Transmission	CVT															
Brake control	ABS								VDC							
Low tire pressure warning system		×			×	×		×		×			×	×		×
Navigation system			×		×		×	×			×		×		×	×
Automatic drive positioner				×		×	×	×				×		×	×	×
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	LT-345. "TYPE 17/TYPE 18/TYPE 19/TYPE 20/TYPE 21/TYPE 22/TYPE 23/TYPE 24"								LT-351. "TYPE 25/TYPE 26/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

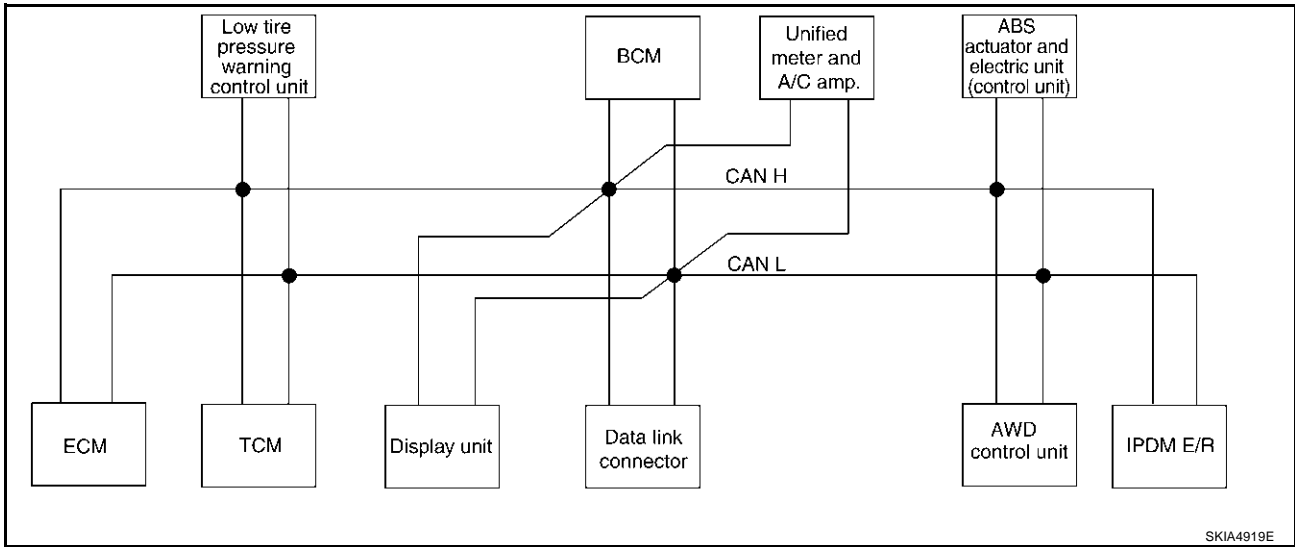
- Type17



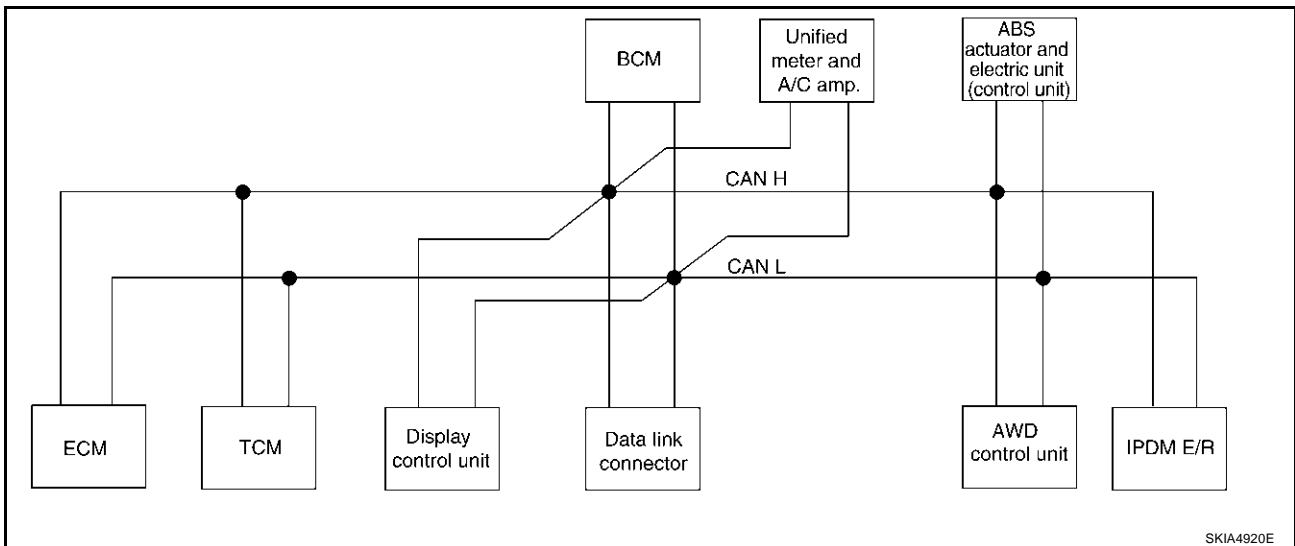
SKIA4918E

ILLUMINATION

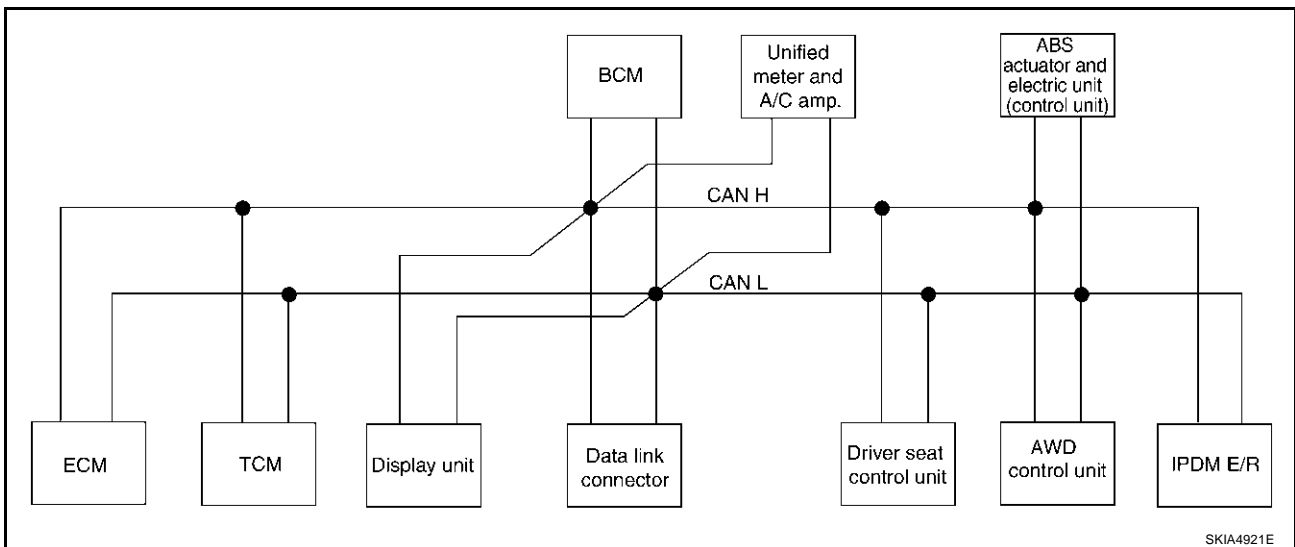
- Type18



- Type19

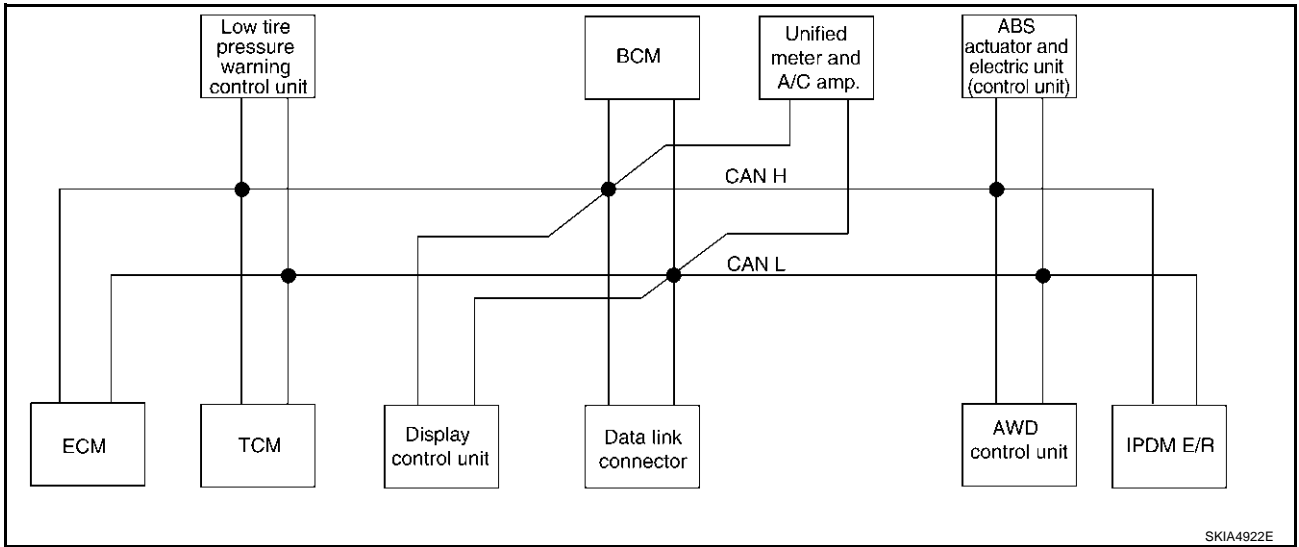


- Type20

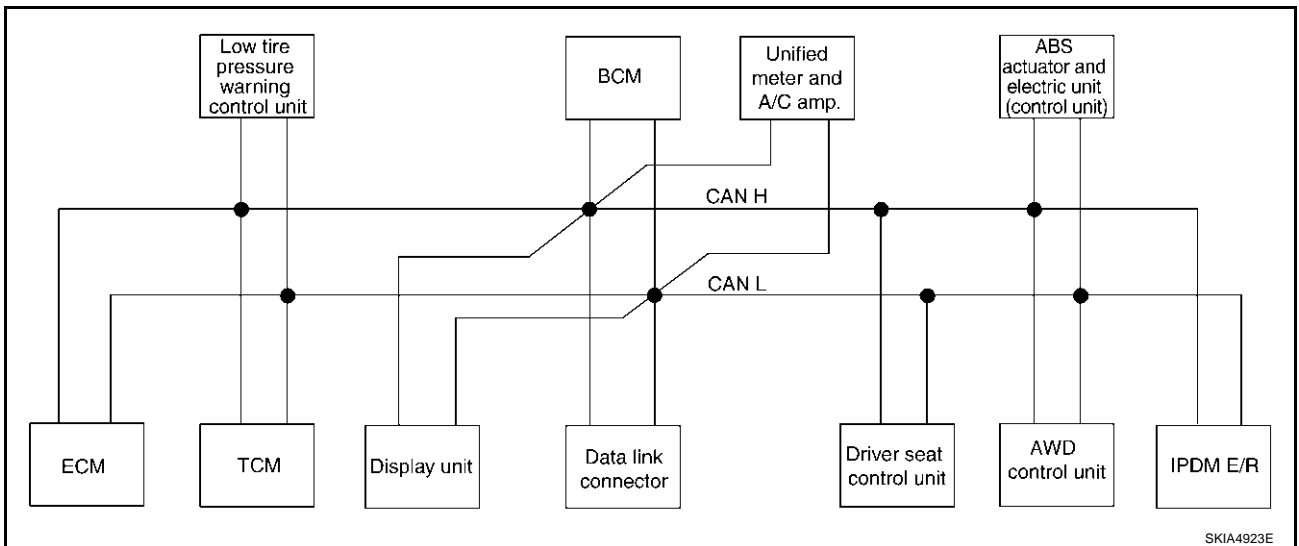


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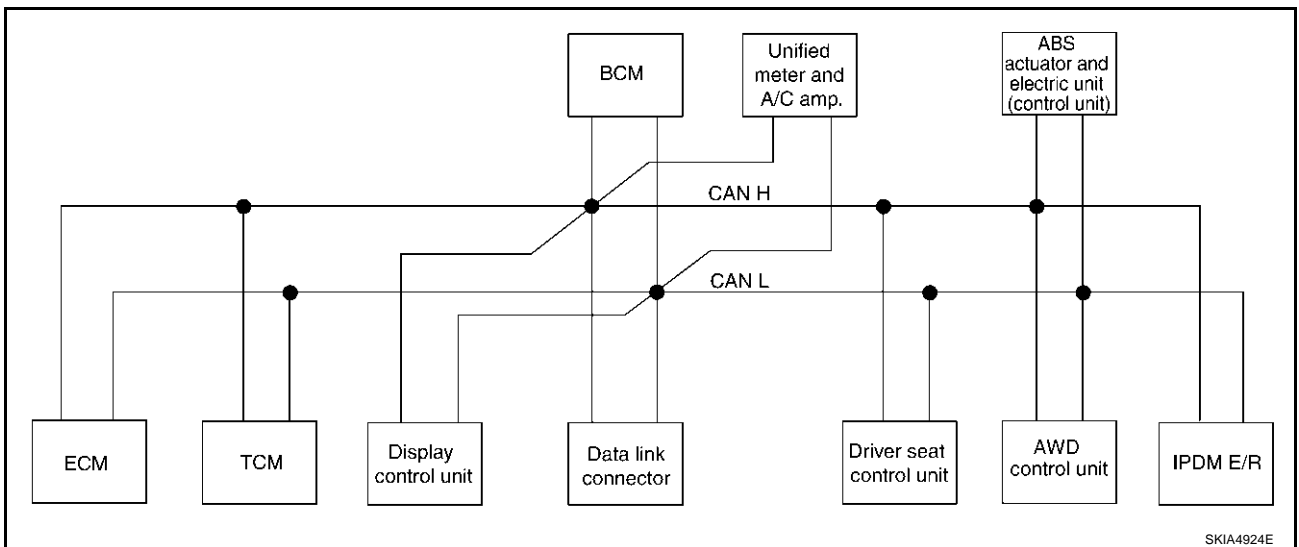
- Type21



- Type22



- Type23

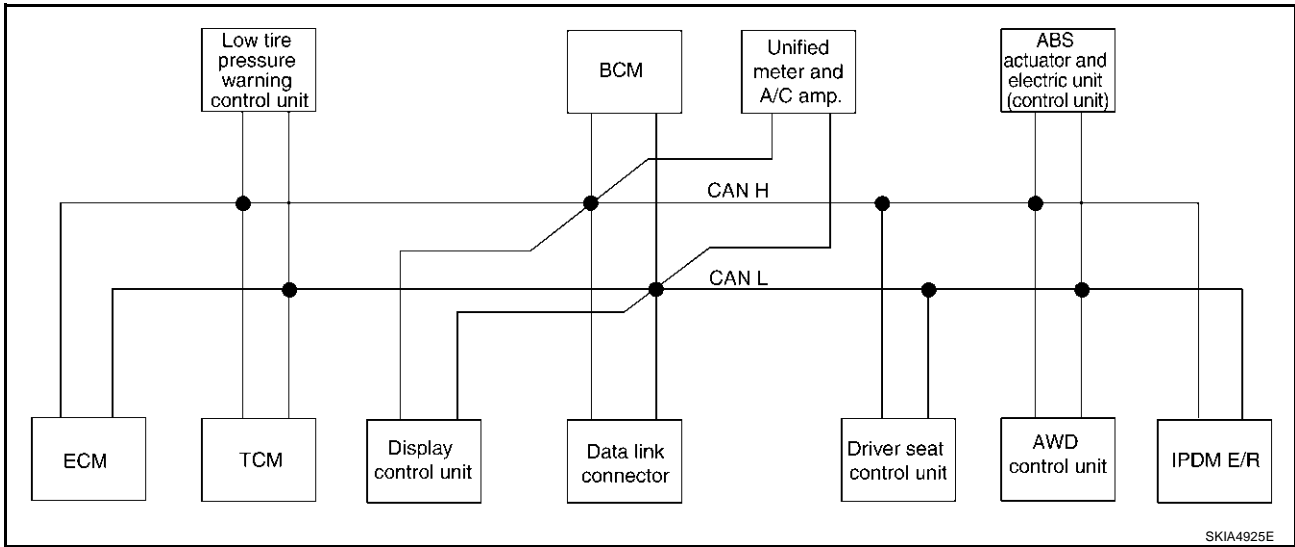


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ILLUMINATION

- Type24



ILLUMINATION

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			

ILLUMINATION

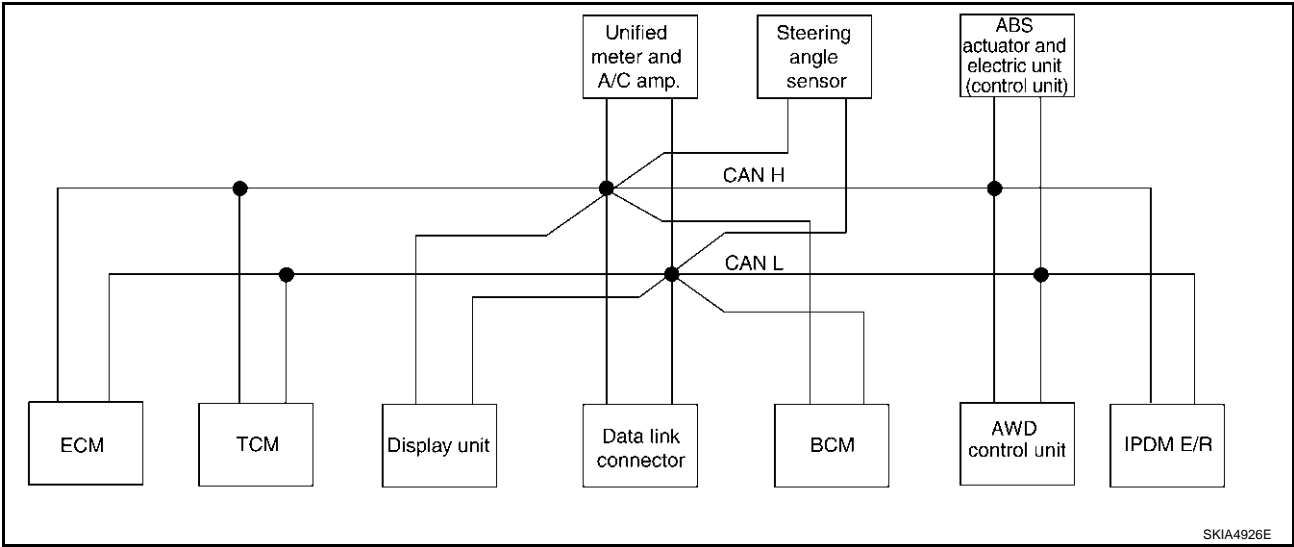
Signals	ECM	TCM	Low tire pressure warning control unit	Display unit	Display control unit	BCM	Unified meter and A/C amp.	Driver seat control unit	AWD control unit	ABS actuator and electric unit (control unit)	IPDM E/R
Turn indicator signal						T	R				
Seat belt buckle switch signal						R	T				
Oil pressure 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		

ILLUMINATION

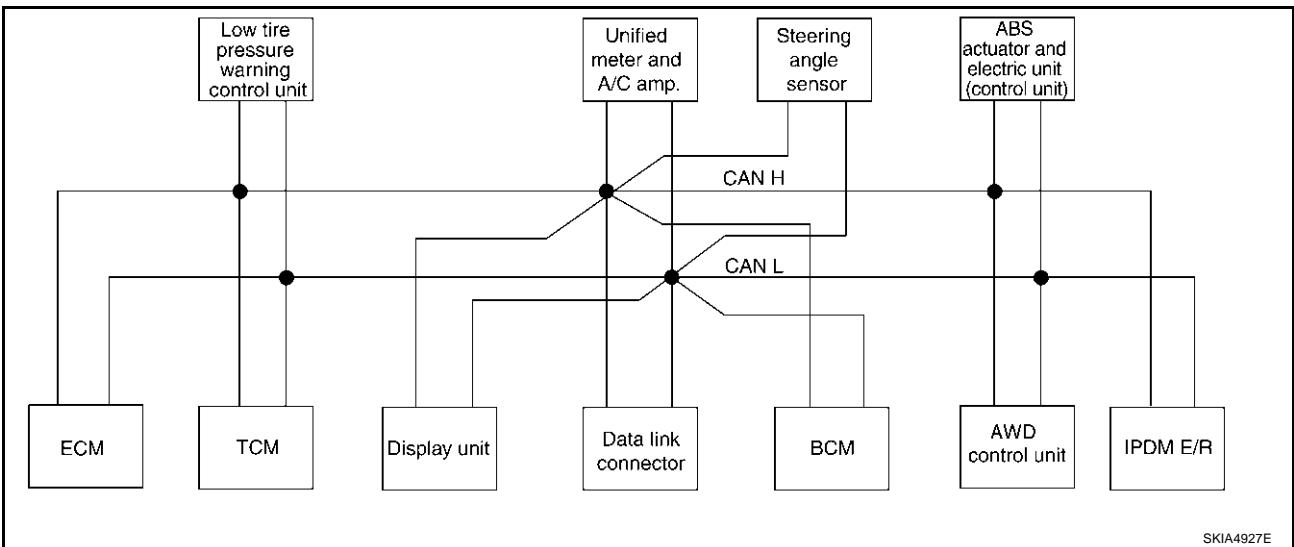
TYPE 25/TYPER26/TYPER 27/TYPER 28/TYPER 29/TYPER 30/TYPER 31/TYPER 32

System Diagram

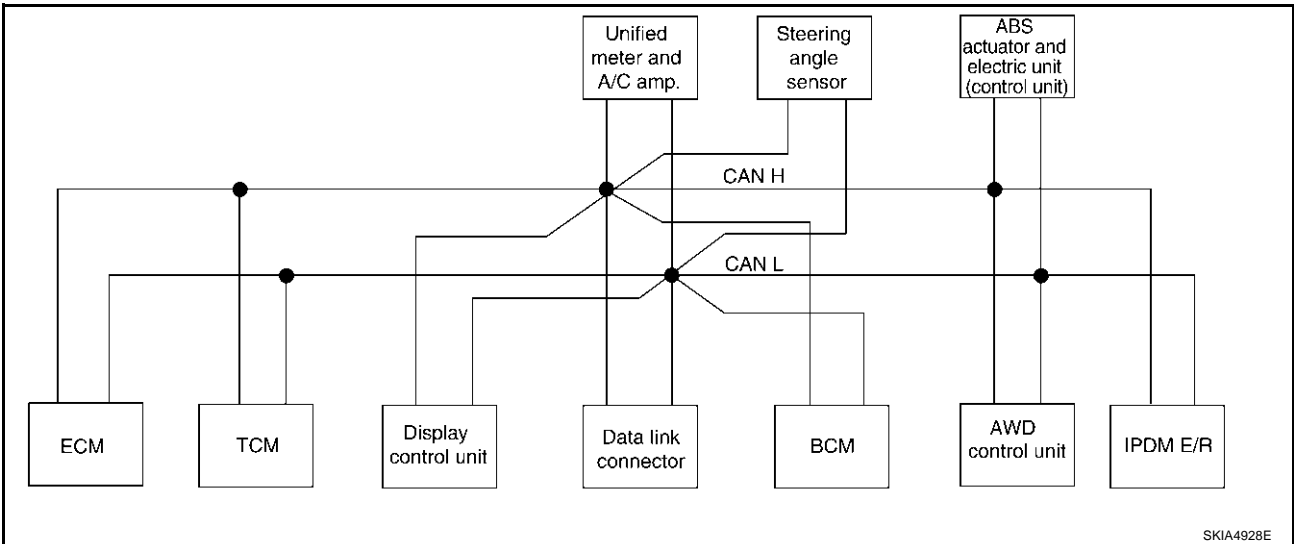
- Type25



- Type26



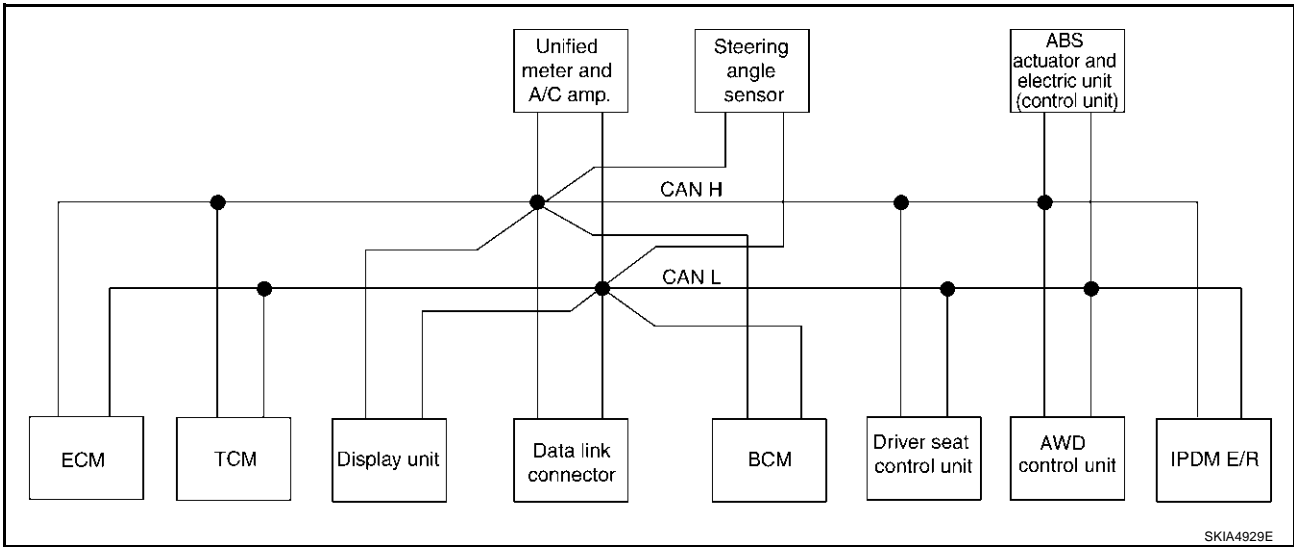
- Type27



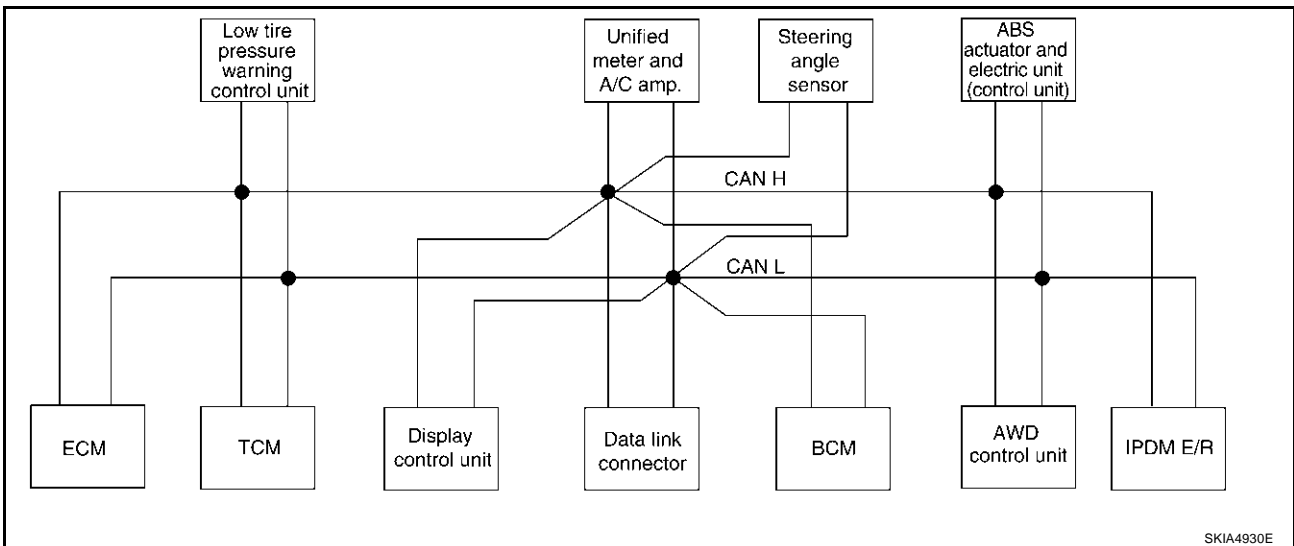
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ILLUMINATION

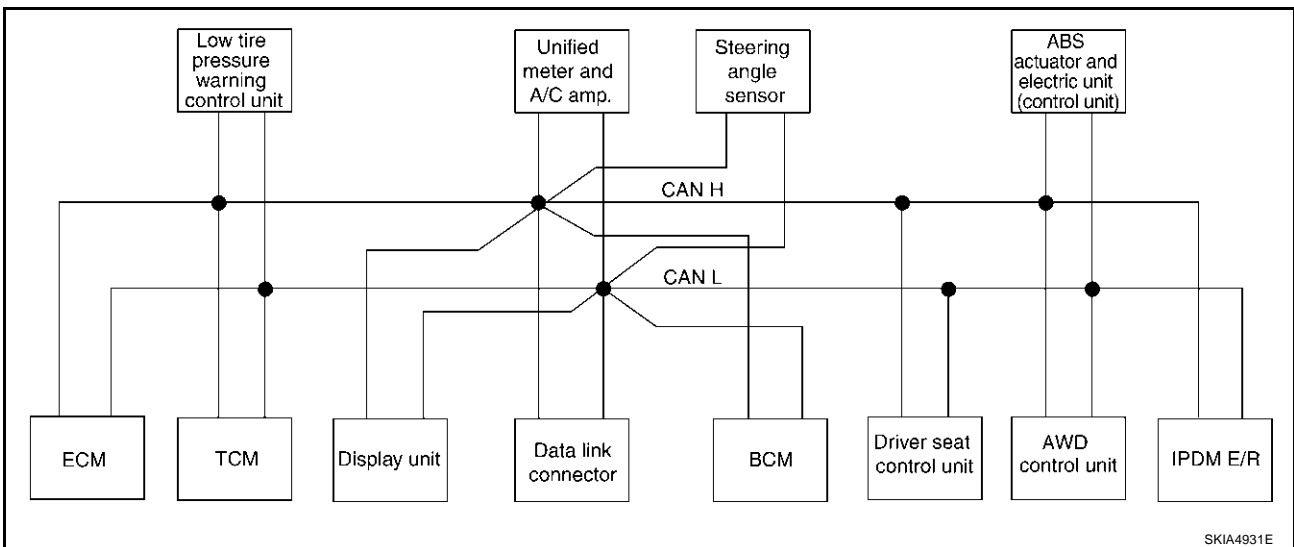
- Type28



- Type29

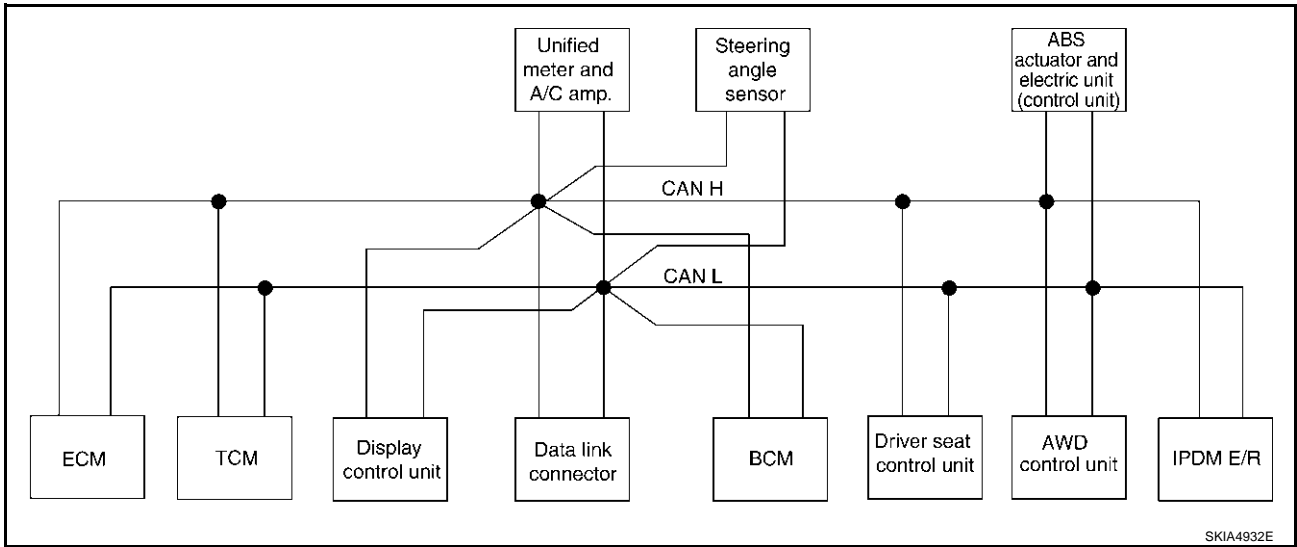


- Type30

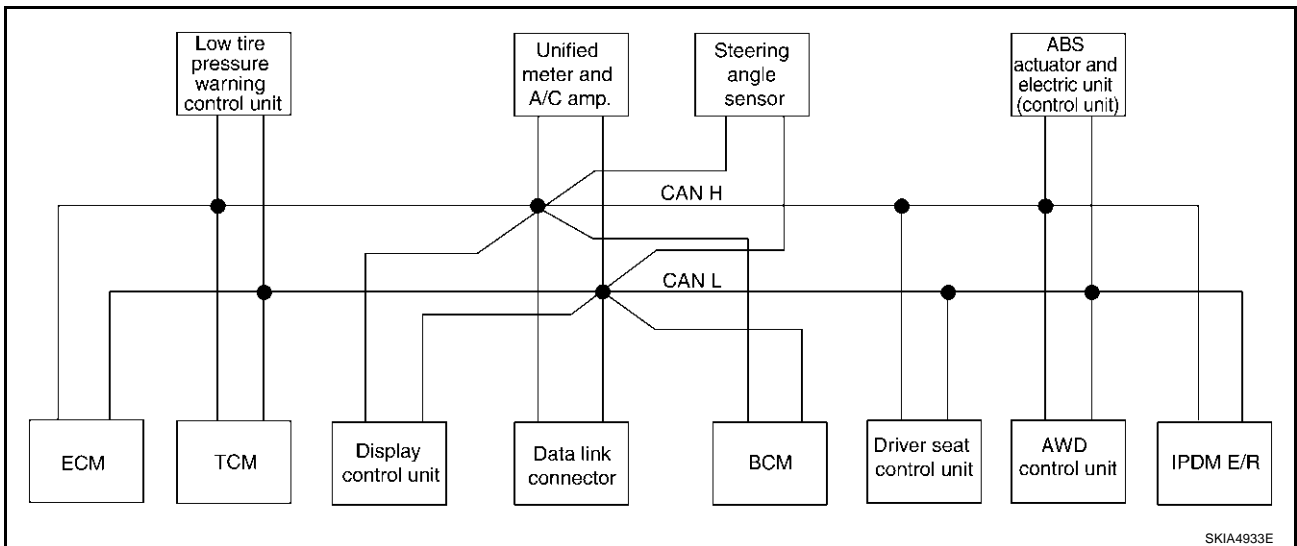


ILLUMINATION

- Type31



- Type32



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ILLUMINATION

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

ILLUMINATION

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
Door switch signal						R	T					
Turn indicator signal				R	R	T	R		R			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
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			
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		

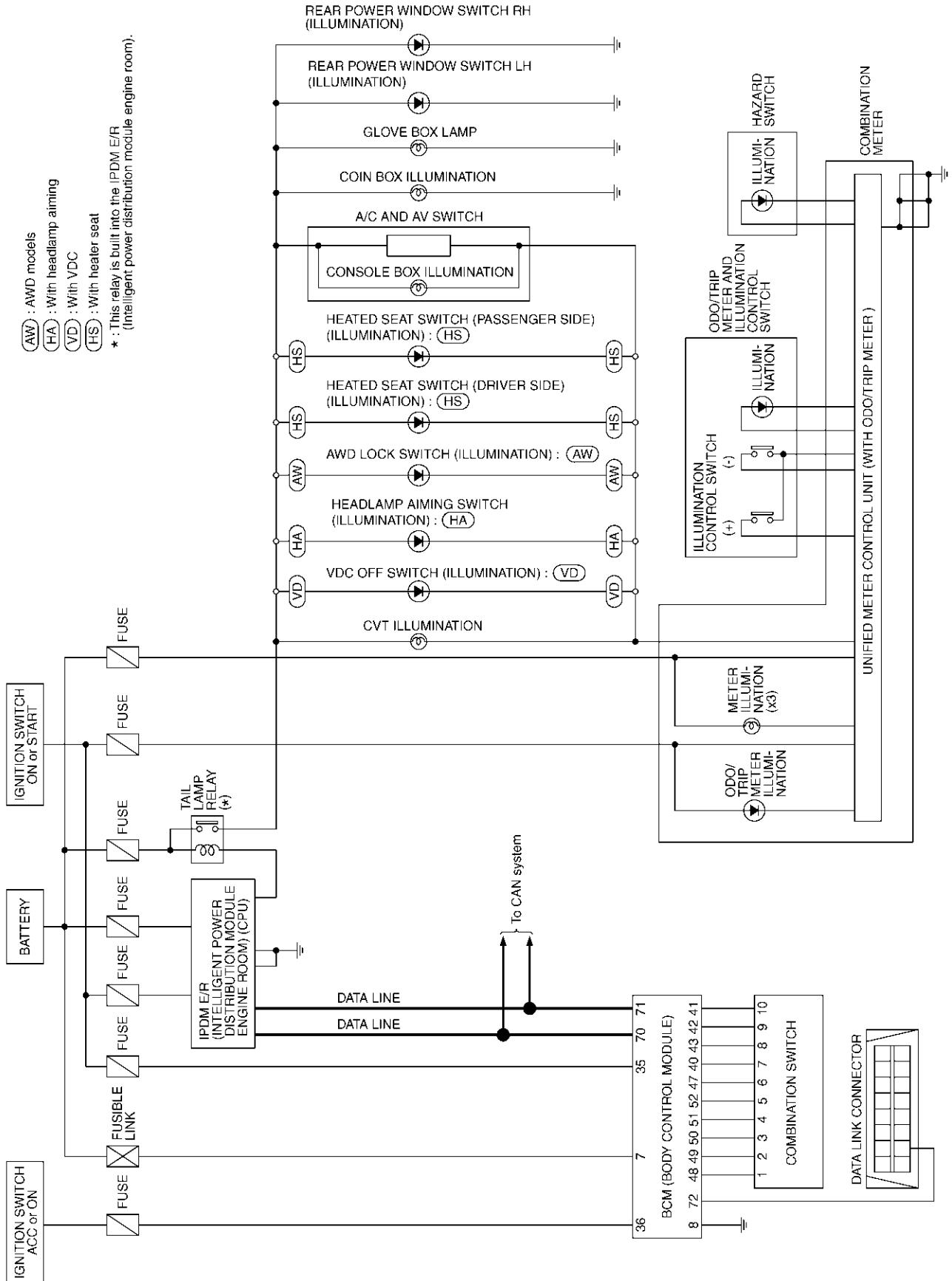
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ILLUMINATION

AKS004MJ

Schematic



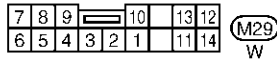
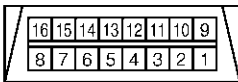
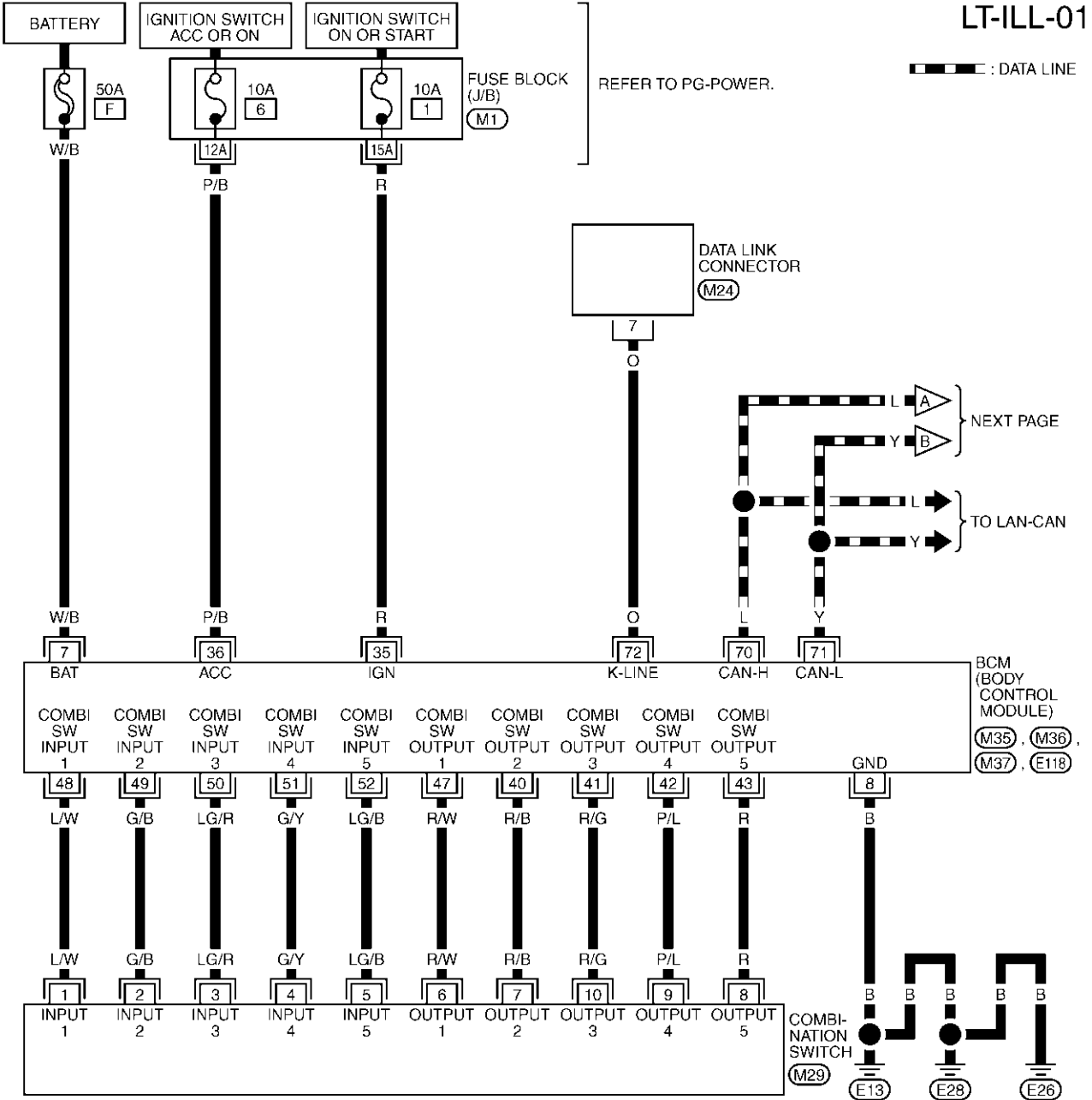
TKWA0920E

ILLUMINATION

Wiring Diagram — ILL —

AKS004MK

LT-ILL-01



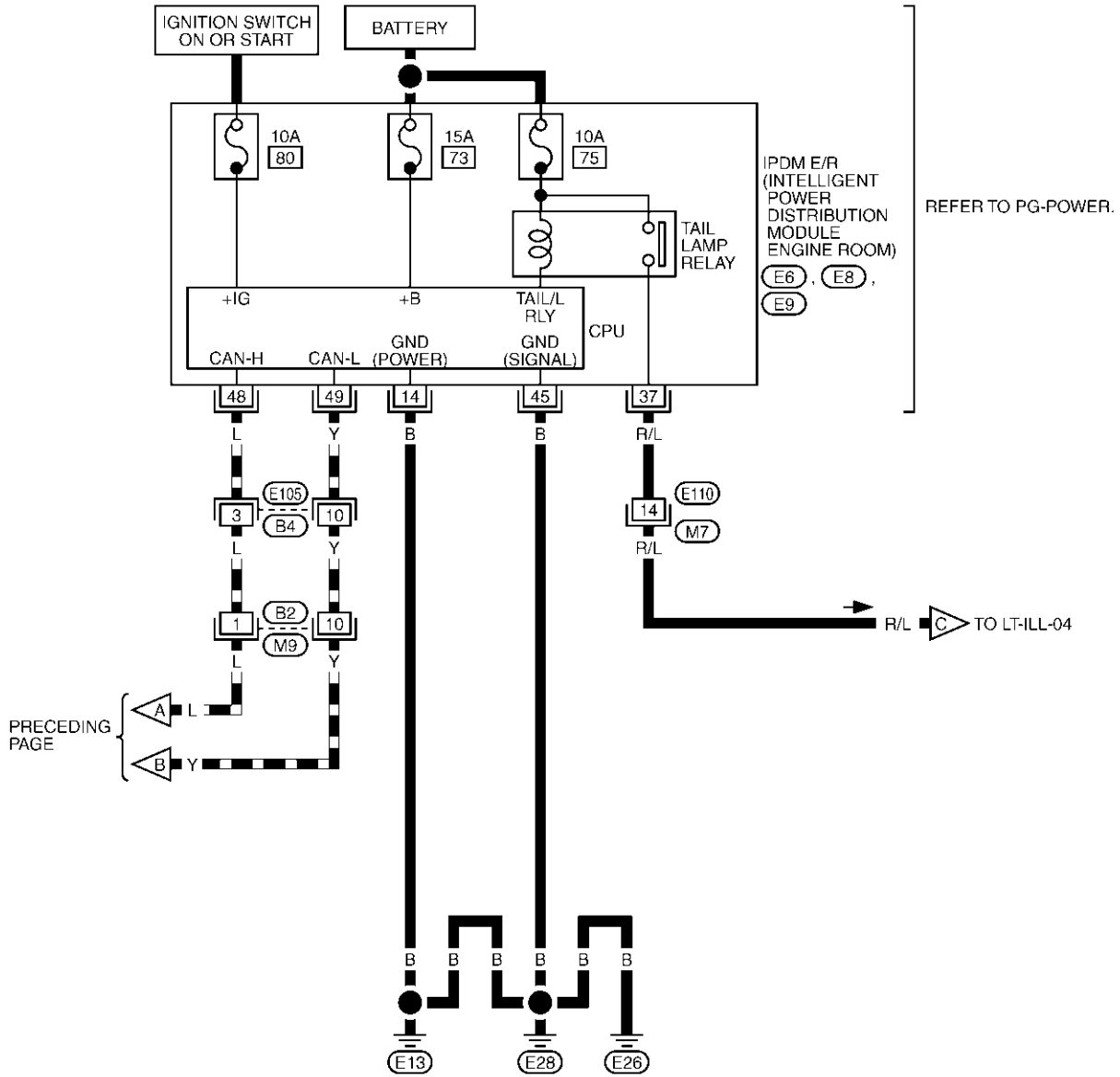
REFER TO THE FOLLOWING.
 (M1) - FUSE BLOCK-JUNCTION BOX (J/B)
 (M35), (M36), (M37), (E118) - ELECTRICAL UNITS

TKWA0921E

ILLUMINATION

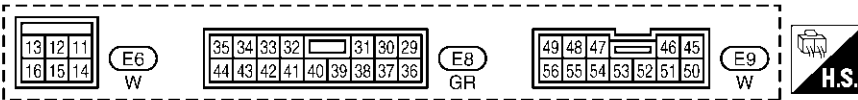
LT-ILL-02

▬ : DATA LINE



1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	M7		GR		

1	2	3	4	5	6	7	8	9
10	11	12	13	14	15	16	17	18
19	20	M9		W				

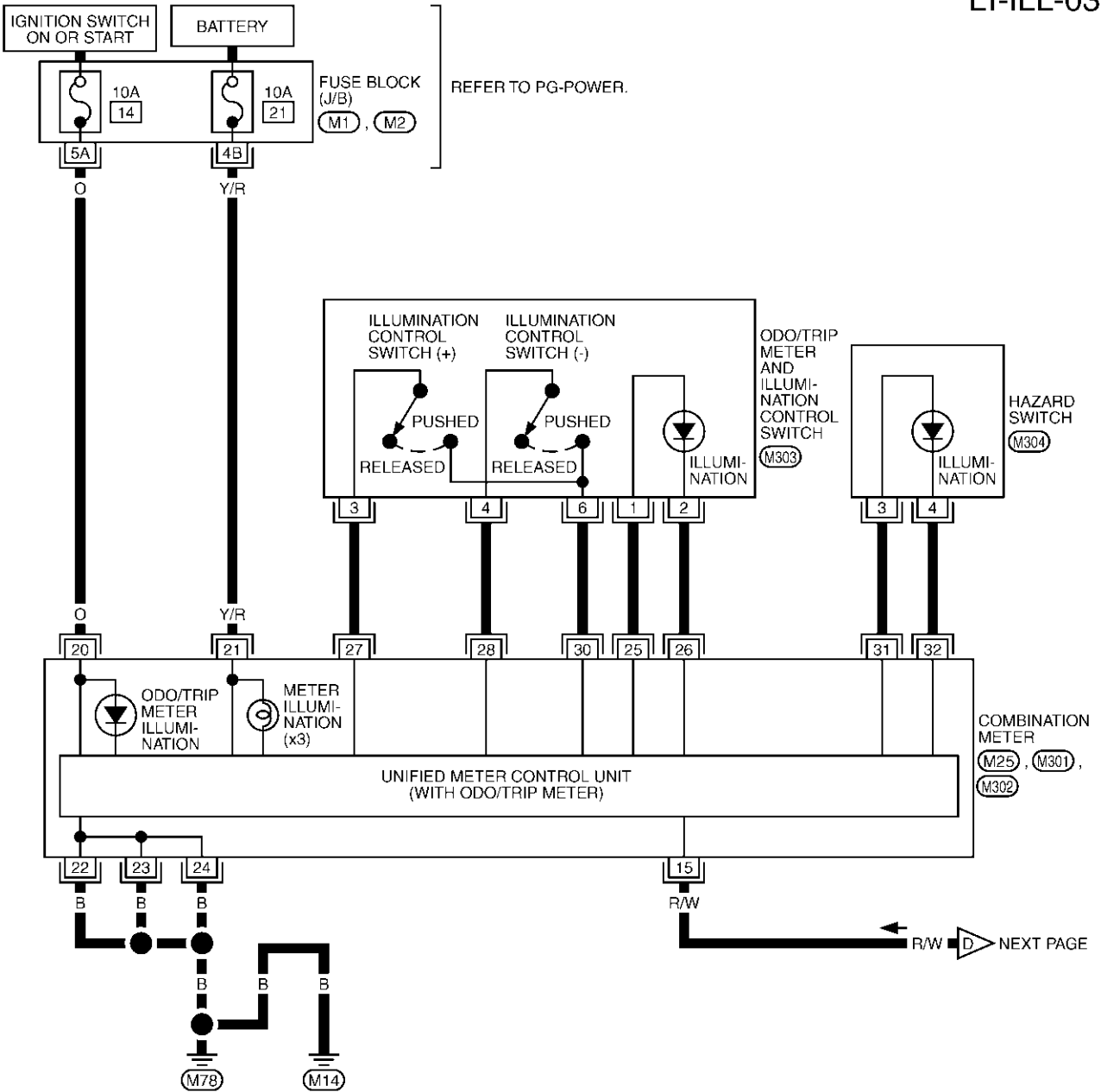


1	2	3	4	5	E105	
6	7	8	9	10	11	12
						W

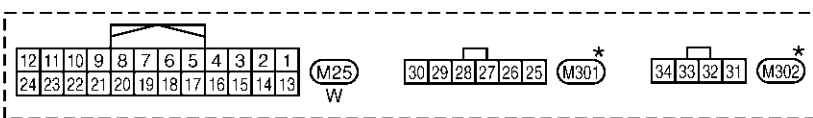
TKWA0922E

ILLUMINATION

LT-ILL-03



R/W → D NEXT PAGE



REFER TO THE FOLLOWING.
 M1, M2 - FUSE BLOCK-JUNCTION BOX (J/B)

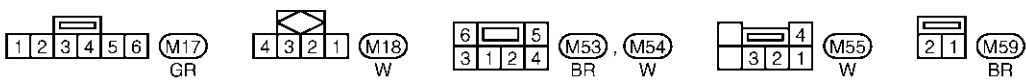
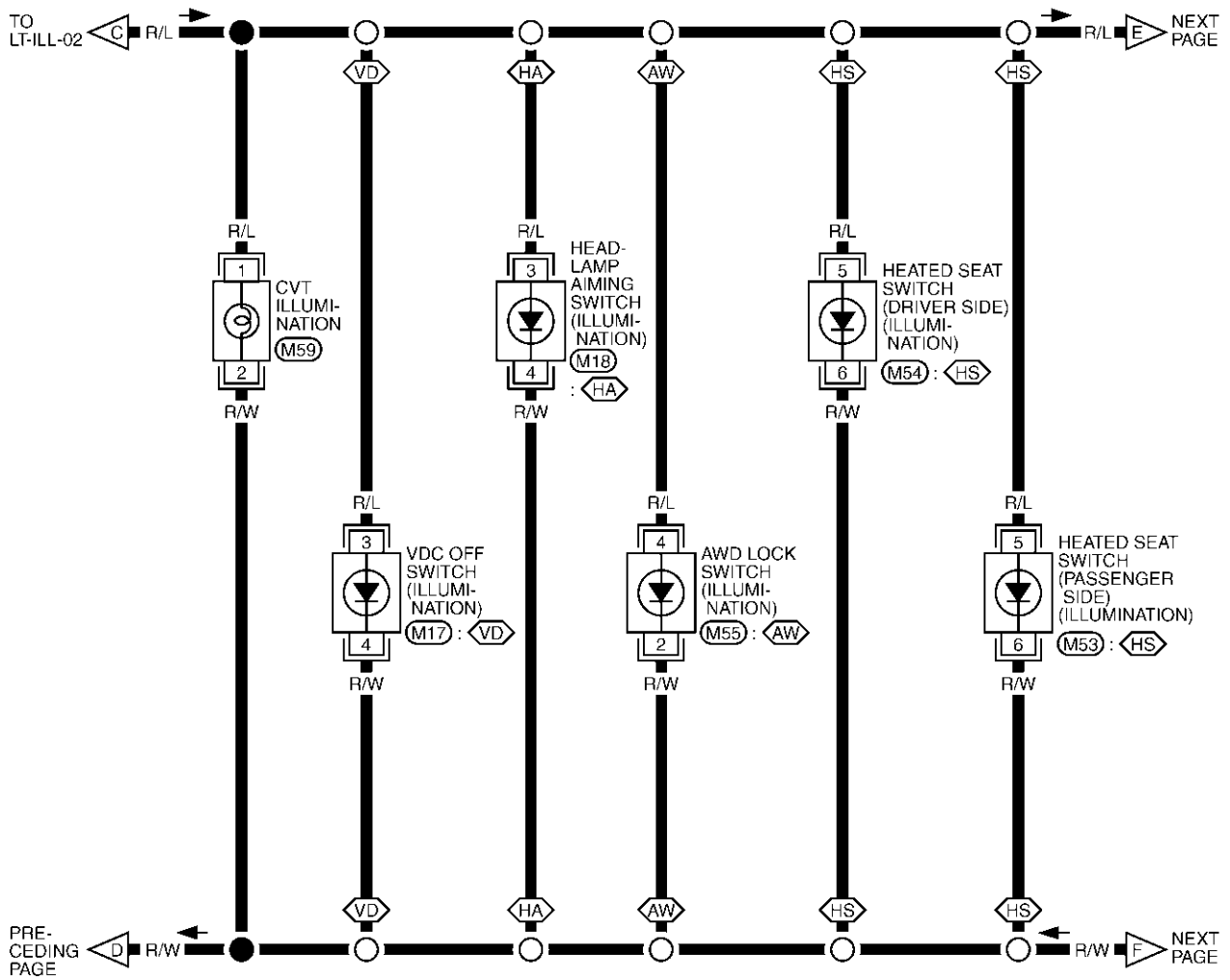
*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

TKWA0923E

ILLUMINATION

LT-ILL-04

- : AWD MODELS
- : WITH HEADLAMP AIMING
- : WITH VDC
- : WITH HEATER SEAT

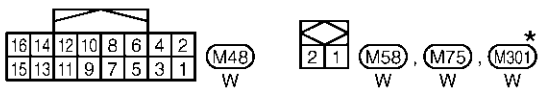
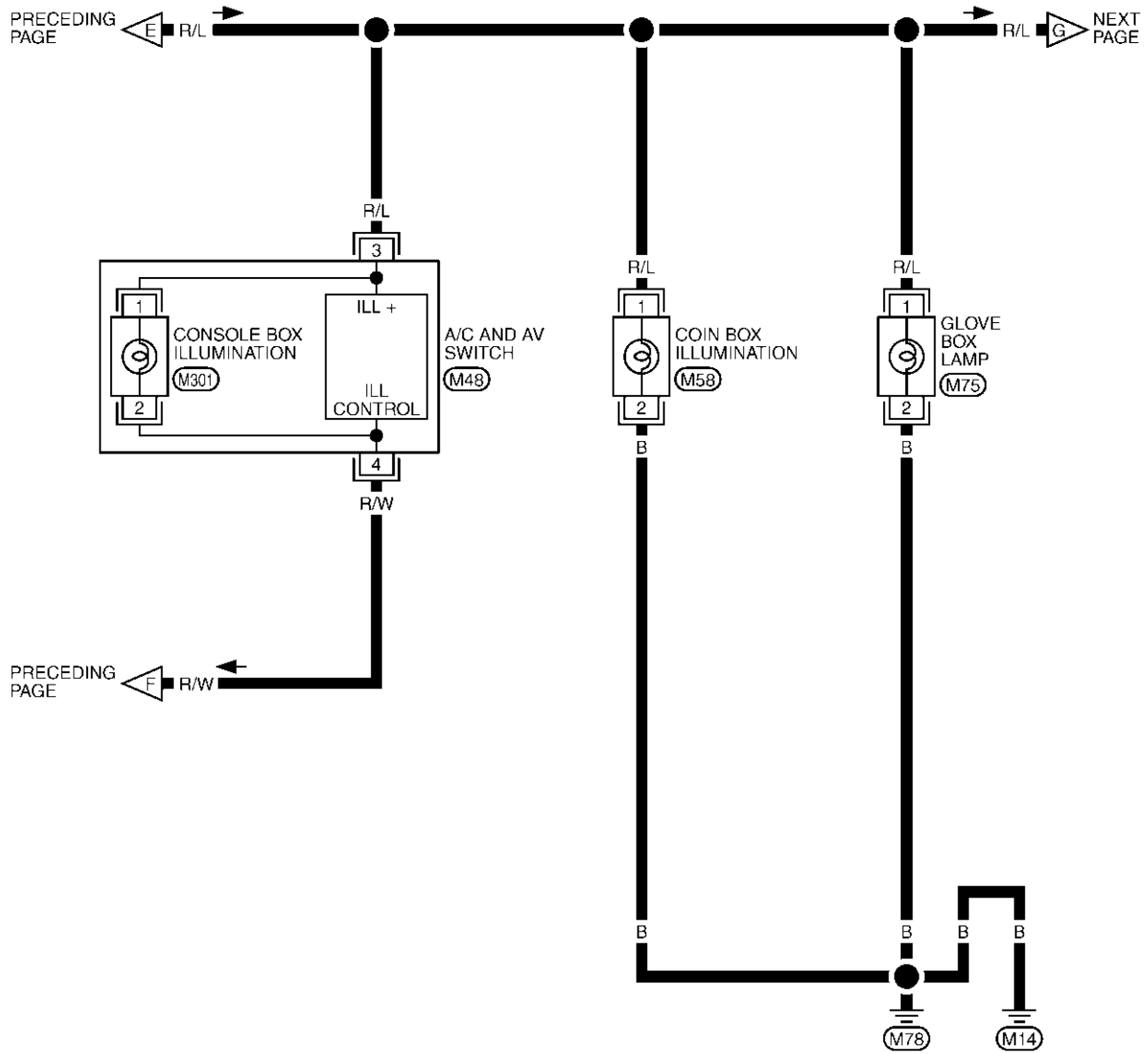


TKWA0924E

ILLUMINATION

LT-ILL-05

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*: THIS CONNECTOR IS NOT SHOWN IN "HARNES LAYOUT", PG SECTION.

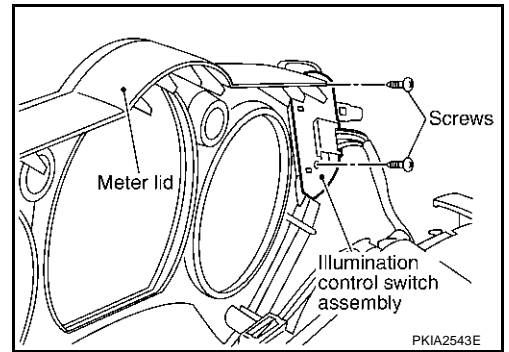
TKWA0925E

ILLUMINATION

Removal and Installation ILLUMINATION CONTROL SWITCH

AKS005MB

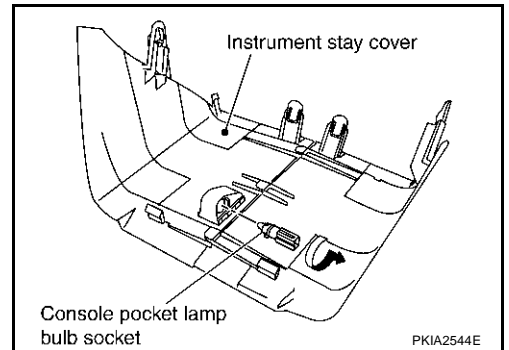
1. Remove meter lid. Refer to [DI-30, "Disassembly and Assembly of Combination Meter"](#) in "DRIVER INFORMATION SYSTEM (DI)" section.
2. Remove illumination control switch fixing screws and remove unit from the meter lid.



CONSOLE POCKET LAMP

1. Remove instrument stay cover. Refer to [IP-11, "Removal and Installation"](#) in "INSTRUMENT PANEL (IP)" section.
2. Turn bulb socket counterclockwise and unlock it.

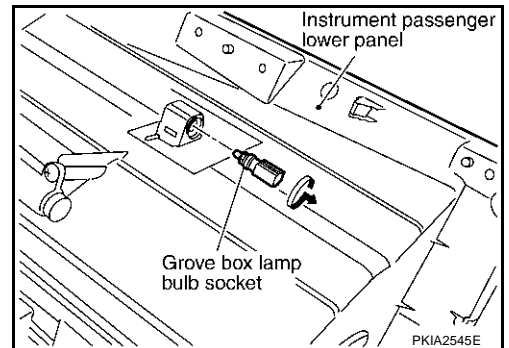
Console pocket lamp : 12V - 1.4W



GLOVE BOX LAMP

1. Remove instrument passenger lower panel. Refer to [IP-11, "Removal and Installation"](#) in "INSTRUMENT PANEL (IP)" section.
2. Turn bulb socket counterclockwise and unlock it.

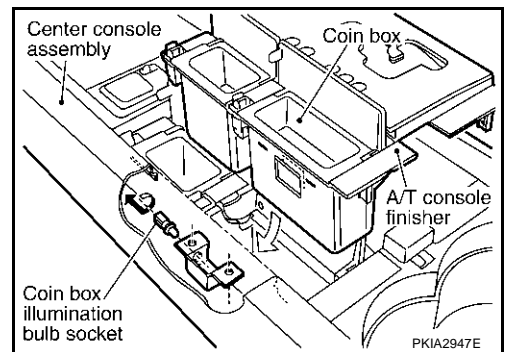
Glove box lamp : 12V - 1.4W



COIN BOX ILLUMINATION

1. Remove A/T console finisher. Refer to [IP-17, "CENTER CONSOLE ASSEMBLY"](#) in "INSTRUMENT PANEL (IP)" section.
2. Turn bulb socket counterclockwise and unlock it.

Coin box illumination : 12V - 1.4W



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BULB SPECIFICATIONS

BULB SPECIFICATIONS

PFP:26297

Headlamp

AKS005ME

Item	Wattage (W)
High/Low (Halogen type)	65/55 (HB5)
High/Low (Xenon type)	35 (D2R)

Exterior Lamp

AKS005MF

Item	Wattage (W)	
Front combination lamp	Front turn signal lamp	21 (amber)
	Parking lamp	3.8
	Front side marker lamp	3.8
Rear combination lamp	Stop/Tail lamp	21/5
	Rear turn signal lamp	21
	Rear side marker lamp	5
Front fog lamp	35 (H3)	
Back-up lamp	16	
License plate lamp	5	
High-mounted stop lamp (back door mount)	LED	

Interior Lamp/Illumination

AKS005MG

Item	Wattage (W)
Map lamp	8
Room lamp	8
Personal lamp	8
Luggage room lamp	8
Step lamp	2.7
Glove box lamp	1.4
Vanity mirror lamp	2
Ignition key hole illumination	1.4
Console pocket lamp	1.4
Coin box illumination	1.4