# SECTION BCS
# BODY CONTROL SYSTEM

## CONTENTS

### BCM

# BASIC INSPECTION

## INSPECTION AND ADJUSTMENT

## ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT

### ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Description

INFOID:0000000003776373

When replacing BCM, save or print current vehicle specification with CONSULT-III configuration before replacement.
Configuration has three functions as follows
- READ CONFIGURATION is the function to read (extract) vehicle configuration of current BCM.
- WRITE CONFIGURATION - Manual selection is the function to select and write vehicle configuration on BCM manually.
- WRITE CONFIGURATION - Config file is the function to write vehicle configuration with the data extracted from current BCM.

**CAUTION:**
- **When replacing BCM, you must perform WRITE CONFIGURATION with CONSULT-III.**
- **Complete the procedure of WRITE CONFIGURATION in order.**
- **If you set incorrect WRITE CONFIGURATION, incidents will occur.**
- **Configuration is different for each vehicle model. Confirm configuration of each vehicle model.**

### ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Special Repair Requirement

INFOID:0000000003776374

1. SAVING VEHICLE SPECIFICATION

Perform “READ CONFIGURATION” with CONSULT-III to save or print current vehicle specification.

>> GO TO 2

2. REPLACE BCM

Replace BCM. Refer to BCS-56, "Removal and Installation".

>> GO TO 3

3. WRITING VEHICLE SPECIFICATION

Perform “WRITE CONFIGURATION - Config file” or “WRITE CONFIGURATION - Manual selection” with CONSULT-III to write vehicle specification. Refer to BCS-4, "CONFIGURATION : Special Repair Requirement".

>> GO TO 4

4. INITIALIZE BCM (NATS)

Perform BCM initialization. (NATS)

>> WORK END

## CONFIGURATION

### CONFIGURATION : Description

INFOID:0000000003776375

Vehicle specification needs to be written with CONSULT-III because it is not written after replacing BCM.
Configuration has three functions as follows
- READ CONFIGURATION is the function to read (extract) vehicle configuration of current BCM.
- WRITE CONFIGURATION - Manual selection is the function to select and write vehicle configuration on BCM manually.
- WRITE CONFIGURATION - Config file is the function to write vehicle configuration with the data extracted from current BCM.

**CAUTION:**

- **When replacing BCM, you must perform WRITE CONFIGURATION with CONSULT-III.**
- **Complete the procedure of WRITE CONFIGURATION in order.**
- **If you set incorrect WRITE CONFIGURATION, incidents will occur.**
- **Configuration is different for each vehicle model. Confirm configuration of each vehicle model.**

## CONFIGURATION : Special Repair Requirement

INFOID:0000000003776376

### 1. WRITING VEHICLE SPECIFICATION

Perform “WRITE CONFIGURATION” with CONSULT-III.

When writing saved data>>GO TO 2
When writing manually>>GO TO 3

### 2. PERFORM “WRITE CONFIGURATION - CONFIG FILE”

Perform “WRITE CONFIGURATION - Config file” with CONSULT-III.

>> WORK END

### 3. PERFORM “WRITE CONFIGURATION - MANUAL SELECTION”

For “WRITE CONFIGURATION - Manual selection”, using the following flow chart, identify the correct model and configuration list.
Confirm and/or change setting value for each item according to the configuration list.
Depending on CONSULT-III software version being used, some or all of the write configuration items shown in the following configuration lists may be displayed. If an item does not display on the CONSULT-III “WRITE CONFIGURATION - Manual selection” screen, then it is an auto setting item and it cannot be manually set or changed.

| MANUAL SETTING ITEM | |
|---|---|
| Items | Setting value |
| KEYLESS ENTRY | WITH⇔WITHOUT |
| I-KEY | WITH⇔WITHOUT |
| DTRL | WITH⇔WITHOUT |
| SPEED SNS WIP | WITH⇔WITHOUT |

**NOTE:**
Confirm vehicle model. Refer to GI-20, "Model Variation".

>> WORK END

# FUNCTION DIAGNOSIS

## BODY CONTROL SYSTEM

### System Description

INFOID:0000000003776377

OUTLINE

- BCM (Body Control Module) controls the various electrical components. It inputs the information required to the control from CAN communication and the signal received from each switch and sensor.
- BCM has combination switch reading function for reading the operation status of combination switches (light, turn signal, wiper and washer) in addition to a function for controlling the operation of various electrical components. It also has the signal transmission function as the passed point of signal and the power consumption control function that reduces the power consumption with the ignition switch OFF.
- BCM is equipped with the diagnosis function that performs the diagnosis with CONSULT-III and various settings.

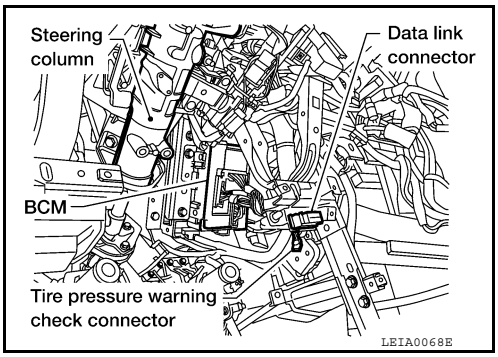
BCM control function list

| System | Refer to |
|---|---|
| Combination switch reading system | BCS-7, "System Diagram" |
| Signal buffer system | BCS-12, "System Diagram" |
| Power consumption control system | BCS-13, "System Diagram" |
| Auto light system | EXL-11, "System Diagram" |
| Turn signal and hazard warning lamp system | EXL-15, "System Diagram" |
| Headlamp system | EXL-7, "System Diagram" |
| Front fog lamp system | EXL-14, "System Diagram" |
| Daytime running light system | EXL-9, "System Diagram" |
| Interior room lamp control system | INL-6, "System Diagram" |
| Step lamp system | INL-6, "System Diagram" |
| Interior room lamp battery saver system | INL-6, "System Diagram" |
| Front wiper and washer system | WW-4, "System Diagram" |
| Rear wiper and washer system | WW-8, "System Diagram" |
| Warning chime system | WCS-4, "WARNING CHIME SYSTEM : System Diagram" |
| Door lock system | DLK-14, "DOOR LOCK AND UNLOCK SWITCH : System Diagram" |
| (NATS) Nissan anti-theft system | SEC-11, "System Diagram" |
| Vehicle security system | SEC-15, "System Diagram" |
| Rear window defogger system | DEF-4, "System Diagram" |
| Intelligent Key system | SEC-7, "System Diagram" |
| Power window system | PWC-5, "System Diagram" |
| RAP (retained accessory power) system | BCS-26, "RETAINED PWR : CONSULT-III Function (BCM - RETAINED PWR)" |
| TPMS (tire pressure monitoring system) | BCS-28, "AIR PRESSURE MONITOR : CONSULT-III Function" |

## Component Parts Location

INFOID:0000000003776378

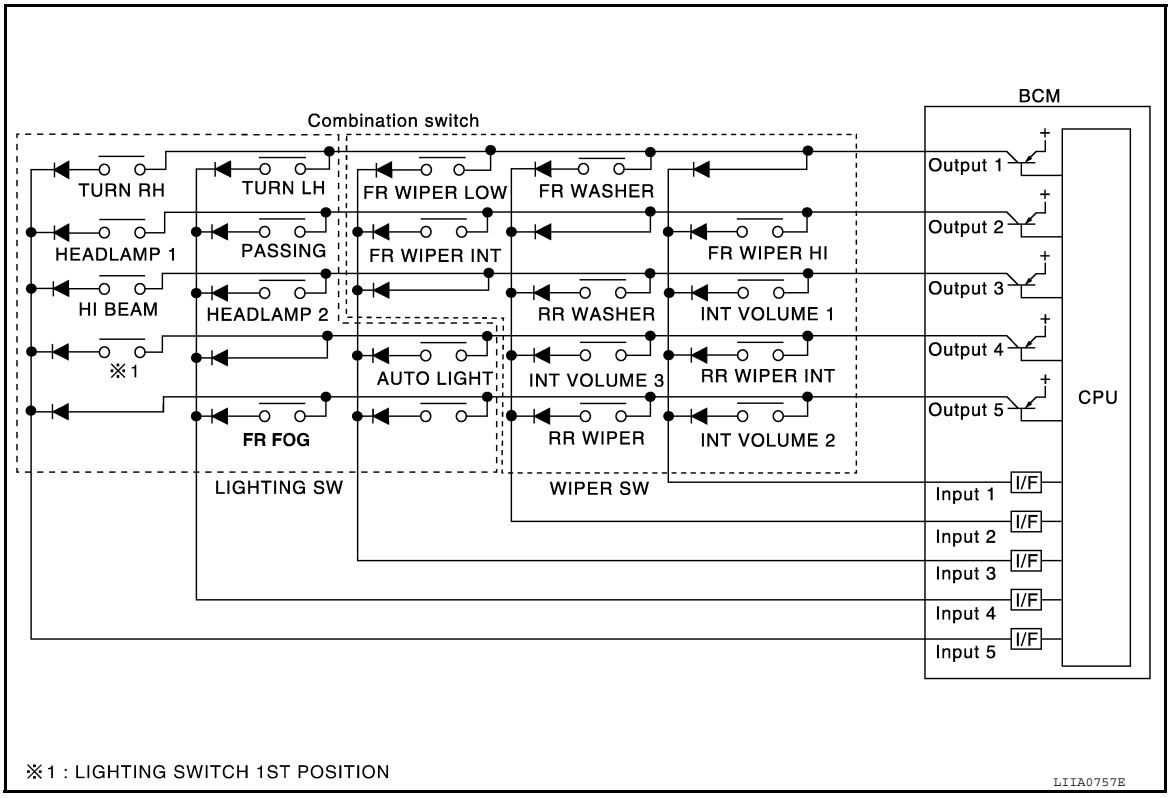
- BCM M18, M19, M20 (view with instrument panel removed)



# COMBINATION SWITCH READING SYSTEM

## System Diagram

INFOID:0000000003776379




## System Description

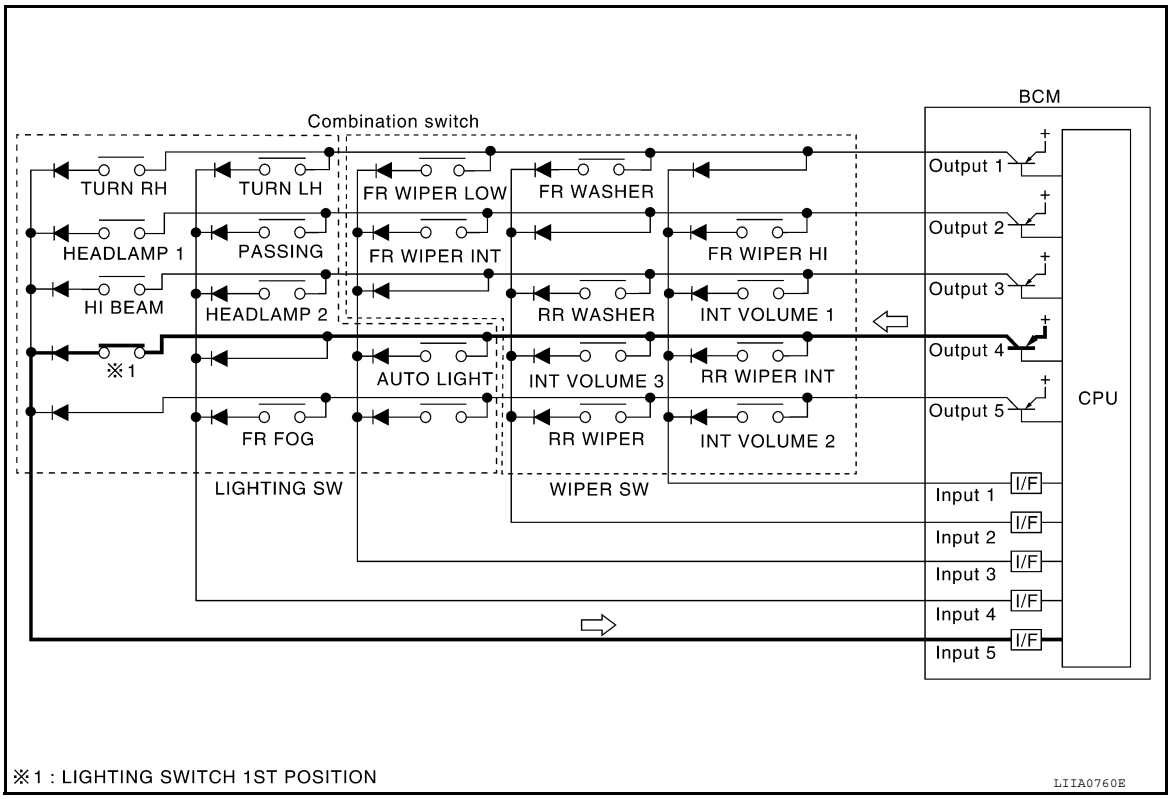
INFOID:0000000003776380

OUTLINE

- BCM reads the status of the combination switch (light, turn signal, wiper and washer) and recognizes the status of each switch.
- BCM is a combination of 5 output terminals (OUTPUT 1 - 5) and 5 input terminals (INPUT 1 - 5). It reads a maximum of 20 switch status.

COMBINATION SWITCH MATRIX

Combination switch circuit




Combination switch INPUT-OUTPUT system list

| System | OUTPUT 1 | OUTPUT 2 | OUTPUT 3 | OUTPUT 4 | OUTPUT 5 |
|---|---|---|---|---|---|
| INPUT 1 | — | FR WASHER | FR WIPER LOW | TURN LH | TURN RH |
| INPUT 2 | FR WIPER HI | — | FR WIPER INT | PASSING | HEADLAMP 1 |
| INPUT 3 | INT VOLUME 1 | RR WASHER | — | HEADLAMP 2 | HI BEAM |
| INPUT 4 | RR WIPER INT | INT VOLUME 3 | AUTO LIGHT | — | TAIL LAMP |
| INPUT 5 | INT VOLUME 2 | RR WIPER | — | FR FOG | — |

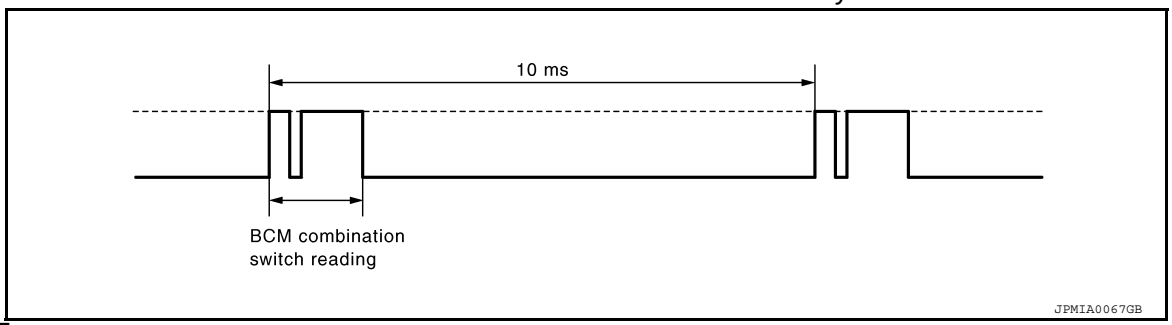
**NOTE:**

Headlamp has a dual system switch.

## COMBINATION SWITCH READING FUNCTION

Description

- BCM reads the status of the combination switch at 10 ms interval normally.

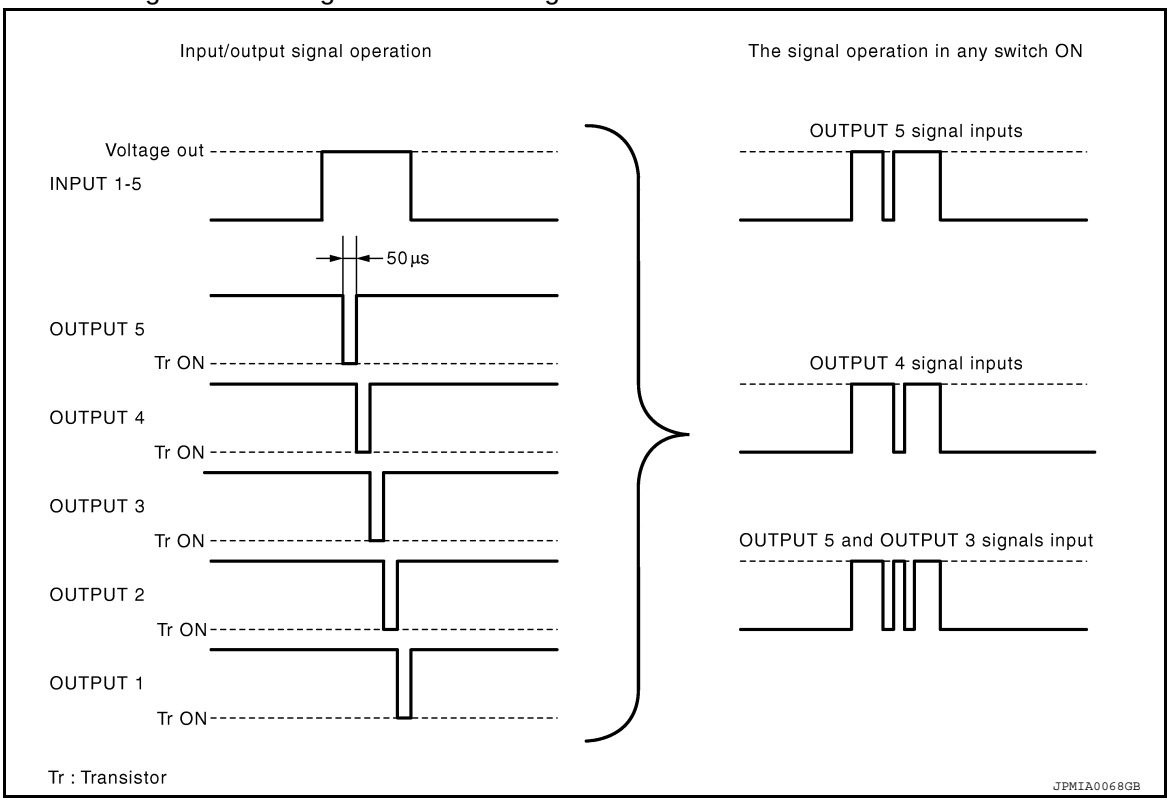



**NOTE:**

BCM reads the status of the combination switch at 20 ms interval when BCM is controlled at low power consumption control mode.

- BCM operates as follows and judges the status of the combination switch.
- INPUT 1 - 5 outputs the voltage waveforms of 5 systems simultaneously.
- It operates the transistor on OUTPUT side in the following order: OUTPUT 5 → 4 → 3 → 2 → 1.

- The voltage waveform of INPUT corresponding to the formed circuit changes according to the operation of the transistor on OUTPUT side if any (1 or more) switches are ON.
- It reads this change of the voltage as the status signal of the combination switch.

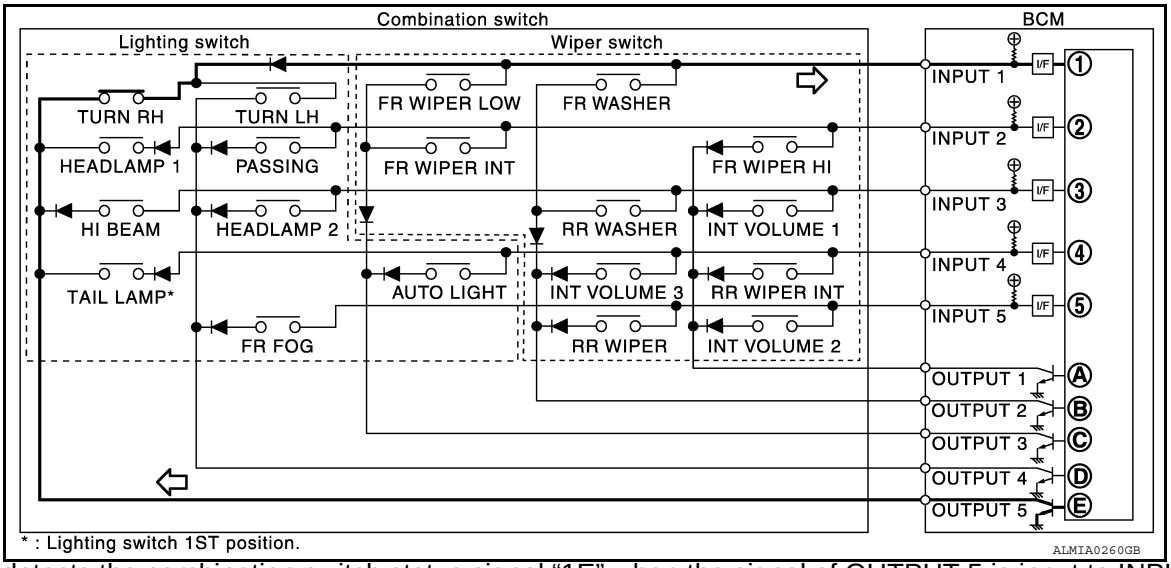



Operation Example

In the following operation example, the combination of the status signals of the combination switch is replaced as follows: INPUT 1 - 5 to “1 - 5” and OUTPUT 1 - 5 to “A - E”.

Example 1: When a switch (TURN RH switch) is turned ON

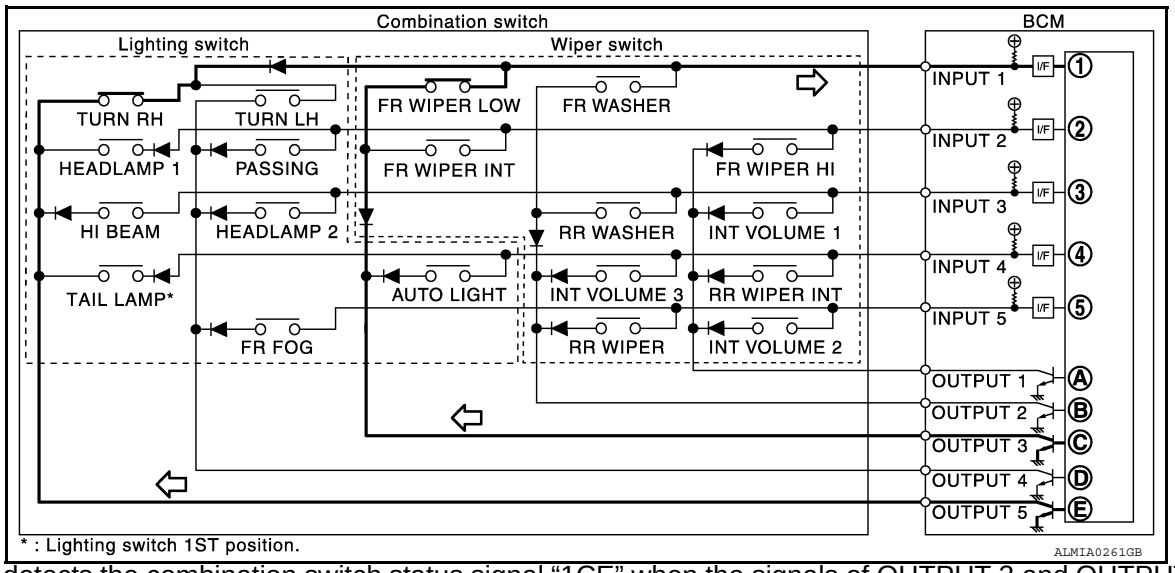
- The circuit between INPUT 1 and OUTPUT 5 is formed when the TURN RH switch is turned ON.




- BCM detects the combination switch status signal “1E” when the signal of OUTPUT 5 is input to INPUT 1.
- BCM judges that the TURN RH switch is ON when the signal “1E” is detected.

Example 2: When some switches (turn RH switch, front wiper LO switch) are turned ON

- The circuits between INPUT 1 and OUTPUT 5 and between INPUT 1 and OUTPUT 3 are formed when the TURN RH switch and FR WIPER LOW switch are turned ON.




- BCM detects the combination switch status signal “1CE” when the signals of OUTPUT 3 and OUTPUT 5 are input to INPUT 1.
- BCM judges that the TURN RH switch and FR WIPER LOW switch are ON when the signal “1CE” is detected.

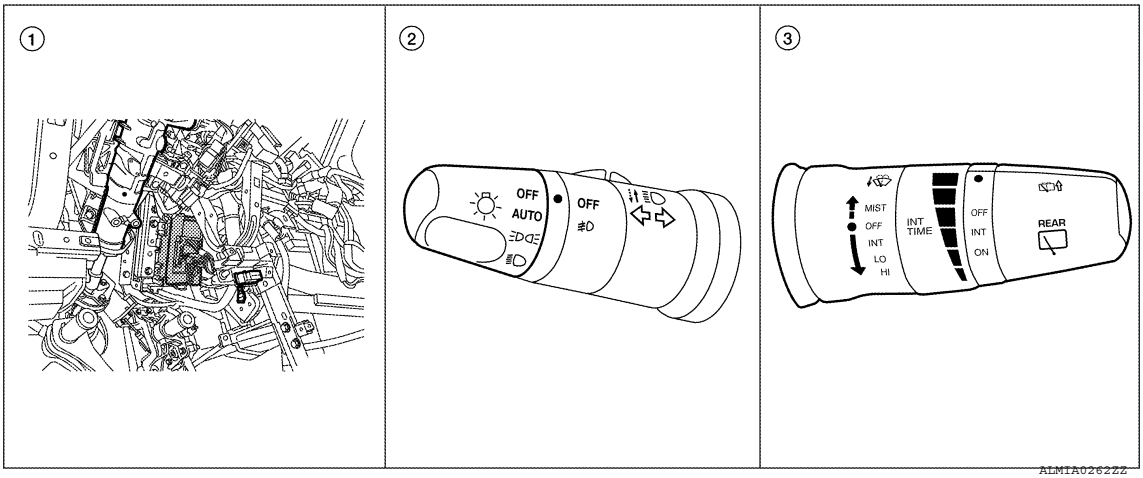
WIPER INTERMITTENT DIAL POSITION SETTING (FRONT WIPER INTERMITTENT OPERATION)

BCM judges the wiper intermittent dial 1 - 7 by the status of INT VOLUME 1, 2 and 3 switches.

| Wiper intermittent dial position | Intermittent operation delay interval | INT VOLUME switch ON/OFF status | | |
|---|---|---|---|---|
| | | INT VOLUME 1 switch | INT VOLUME 2 switch | INT VOLUME 3 switch |
| 1 | Short ↑ | ON | ON | ON |
| 2 | | ON | ON | OFF |
| 3 | | ON | OFF | OFF |
| 4 | | OFF | OFF | OFF |
| 5 | | OFF | OFF | ON |
| 6 | ↓ Long | OFF | ON | ON |
| 7 | | OFF | ON | OFF |

## Component Parts Location

INFOID:0000000003776381

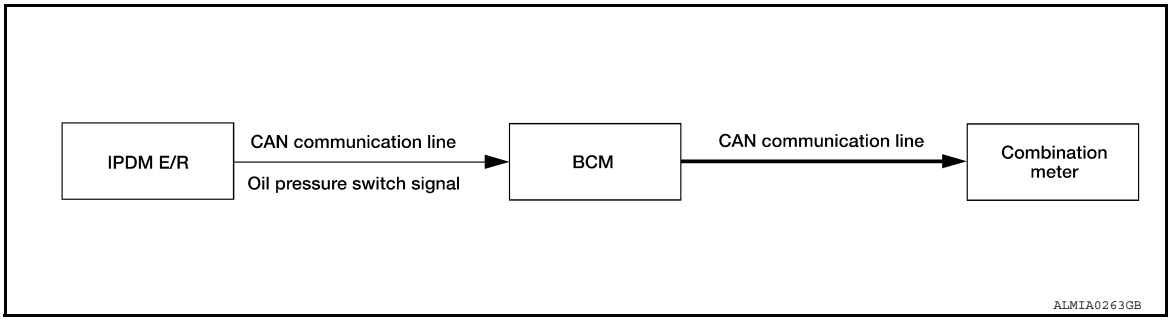


1. BCM M18, M19, M20 (view with instrument panel removed)
2. Combination switch (lighting and turn signal switch) M28
3. Combination switch (wiper and washer switch) M28

# SIGNAL BUFFER SYSTEM

## System Diagram

INFOID:0000000003776382




## System Description

INFOID:0000000003776383

OUTLINE

BCM has the signal transmission function that outputs/transmits each input/received signal to each unit.

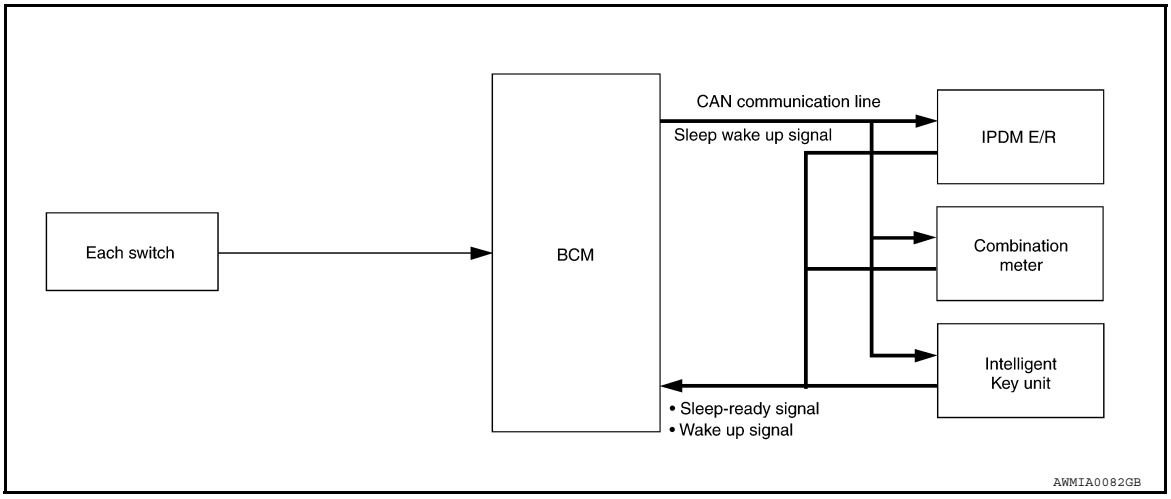
Signal transmission function list

| Signal name | Input | Output | Description |
|---|---|---|---|
| Oil pressure switch signal | IPDM E/R (CAN) | Combination meter (CAN) | Transmits the received oil pressure switch signal via CAN communication. |

# POWER CONSUMPTION CONTROL SYSTEM

## System Diagram

INFOID:0000000003776384




## System Description

INFOID:0000000003776385

### OUTLINE

- BCM incorporates a power consumption control function that reduces the power consumption according to the vehicle status.
- BCM switches the status (control mode) by itself with the power saving control function. It performs the sleep request to each unit (PDM E/R, combination meter and Intelligent Key unit) that operates with the ignition switch OFF.

Normal mode (wake-up)
- CAN communication is normally performed with other units
- Each control with BCM is operating properly

CAN communication sleep mode (CAN sleep)
- CAN transmission is stopped
- Control with BCM only is operating

Low power consumption mode (BCM sleep)
- Low power consumption control is active
- CAN transmission is stopped

### LOW POWER CONSUMPTION CONTROL WITH BCM

BCM reduces the power consumption with the following operation in the low power consumption mode.
- The reading interval of the each switches changes from 10 ms interval to 20 ms interval.

### Sleep mode activation

- BCM receives the sleep-ready signal (ready) from IPDM E/R, combination meter and Intelligent Key unit via CAN communication.
- BCM transmits the sleep wake up signal (sleep) to each unit when all of the CAN sleep conditions are fulfilled.
- Each unit stops the transmission of CAN communication with the sleep wake up signal. BCM is in CAN communication sleep mode.
- BCM is in the low power consumption mode and perform the low power consumption control when all of the BCM sleep conditions are fulfilled with CAN sleep condition.

Sleep condition

| CAN sleep condition | BCM sleep condition |
|---|---|
| • Receiving the sleep-ready signal (ready) from all units<br>• Ignition switch: OFF<br>• Vehicle security system alarm: No operation<br>• Warning lamp: No operation<br>• Warning chime: No operation<br>• Stop lamp switch: OFF<br>• Key switch status: No change for 2 seconds<br>• Hazard warning lamp: No operation<br>• Exterior lamp: OFF<br>• Door lock status: No change for 2 seconds<br>• CONSULT-III communication status: No communication<br>• Door switch status: No change for 2 seconds | The controls only BCM are completed.<br>(Interior room lamp battery saver: Time out etc.) |

## Wake-up operation

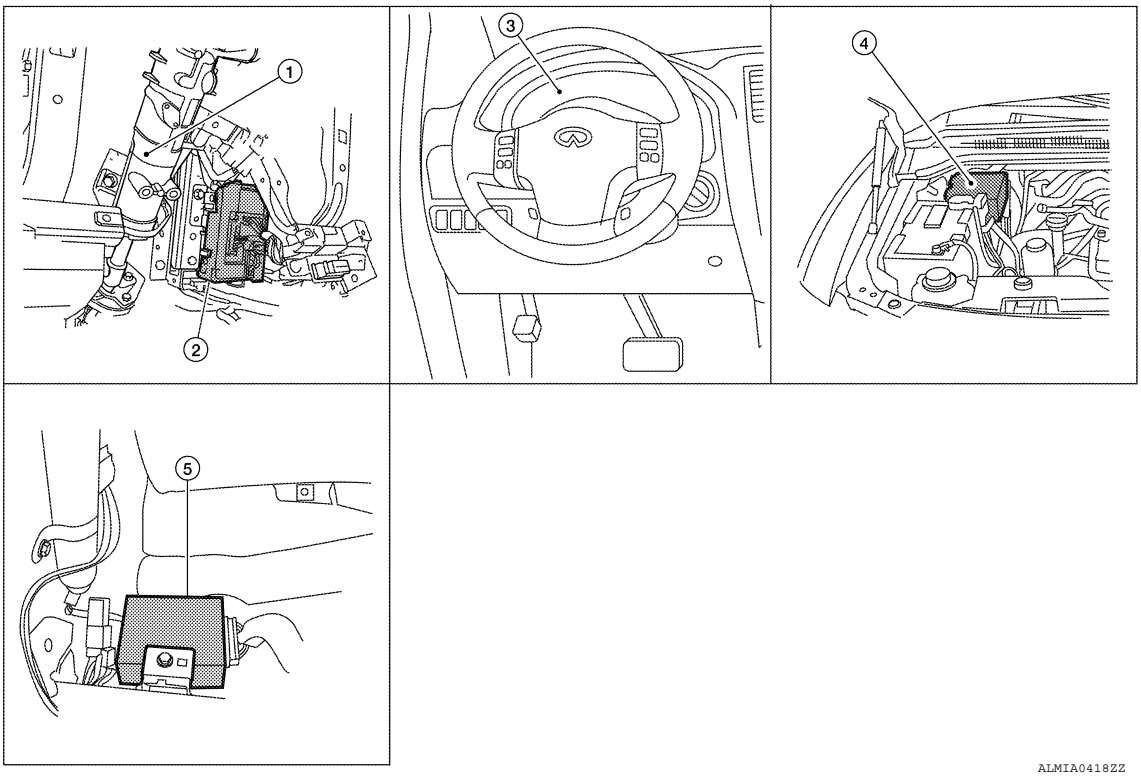
- BCM transmits sleep wake up signal (wake up) to each unit when any condition listed below is established, and then goes into normal mode from low power consumption mode.
- Each unit starts transmissions with CAN communication by receiving sleep wake up signals. Each unit transmits wake up signals to BCM with CAN communication to convey the start of CAN communication.

Wake-up condition

| BCM wake-up condition |
|---|
| • Ignition switch: OFF → ACC or ON<br>• Stop lamp switch: ON (Depress brake pedal)<br>• Any door switch: OFF → ON<br>• Lighting switch: OFF → 1ST or PASS<br>• Hazard switch: OFF → ON<br>• Back door opener switch OFF → ON<br>• Remote keyless entry receiver: Receiving<br>• Intelligent Key unit: Receiving |

## Component Parts Location

INFOID:0000000003776386

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1. Steering column (view with instrument panel removed)
2. BCM M18, M19, M20
3. Combination meter M24
4. IPDM E/R E119, E120, E121, E122, E123, E124
5. Intelligent Key unit M70 (view with instrument panel removed)

# DIAGNOSIS SYSTEM (BCM)

## COMMON ITEM

### COMMON ITEM : CONSULT-III Function (BCM - COMMON ITEM)

INFOID:0000000003776387

#### APPLICATION ITEM

CONSULT-III performs the following functions via CAN communication with BCM.

| Diagnosis mode | Function Description |
|---|---|
| WORK SUPPORT | Changes the setting for each system function. |
| SELF-DIAG RESULTS | Displays the diagnosis results judged by BCM. Refer to BCS-51, "DTC Index". |
| CAN DIAG SUPPORT MNTR | Monitors the reception status of CAN communication viewed from BCM. |
| DATA MONITOR | The BCM input/output signals are displayed. |
| ACTIVE TEST | The signals used to activate each device are forcibly supplied from BCM. |
| ECU IDENTIFICATION | The BCM part number is displayed. |
| CONFIGURATION | • Enables to read and save the vehicle specification.<br>• Enables to write the vehicle specification when replacing BCM. |

#### SYSTEM APPLICATION

BCM can perform the following functions for each system.

**NOTE:**

It can perform the diagnosis modes except the following for all sub system selection items.

| System | Sub system selection item | Diagnosis mode | | |
|---|---|---|---|---|
| | | WORK SUPPORT | DATA MONITOR | ACTIVE TEST |
| BCM | BCM | × | | |
| Door lock | DOOR LOCK | × | × | × |
| Rear window defogger | REAR DEFOGGER | | × | |
| Warning chime | BUZZER | | × | × |
| Interior room lamp timer | INT LAMP | × | × | × |
| Remote keyless entry system | MULTI REMOTE ENT | × | × | |
| Exterior lamp | HEAD LAMP | × | × | × |
| Wiper and washer | WIPER | × | × | × |
| Turn signal and hazard warning lamps | FLASHER | | × | × |
| Air conditioner | AIR CONDITONER | | × | |
| Intelligent Key system | INTELLIGENT KEY | | × | |
| Combination switch | COMB SW | | × | |
| Immobilizer | IMMU | | × | × |
| Interior room lamp battery saver | BATTERY SAVER | × | × | × |
| Back door open | TRUNK | | × | × |
| RAP (retained accessory power) | RETAINED PWR | × | × | × |
| Signal buffer system | SIGNAL BUFFER | | × | × |
| TPMS (tire pressure monitoring system) | AIR PRESSURE MONITOR | × | × | × |
| Vehicle security system | PANIC ALARM | | | × |

## BCM

### BCM : CONSULT-III Function (BCM - BCM)

INFOID:0000000003776388

#### WORK SUPPORT

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

# DOOR LOCK

## DOOR LOCK : CONSULT-III Function (BCM - DOOR LOCK)

INFOID:0000000003776389

### WORK SUPPORT

| Work Item | Description |
|---|---|
| DOOR LOCK-UNLOCK SET | • ON<br>• OFF |
| ANTI-LOCK OUT SET | • ON<br>• OFF |
| AUTOMATIC DOOR LOCK SELECT | • SHIFT OUT OF P<br>• VH SPD |
| AUTOMATIC DOOR UNLOCK SELECT | • MODE1<br>• MODE2<br>• MODE3<br>• MODE4<br>• MODE5<br>• MODE6 |
| AUTOMATIC LOCK/UNLOCK SELECT | • ON<br>• OFF |

### DATA MONITOR

| Monitor Item [Unit} | Description |
|---|---|
| IGN ON SW [ON/OFF] | Indicates condition of ignition switch in ON position |
| KEY ON SW [ON/OFF] | Indicates condition of key switch |
| CDL LOCK SW [ON/OFF] | Indicates condition of door lock and unlock switch |
| CDL UNLOCK SW [ON/OFF] | Indicates condition of door lock and unlock switch |
| DOOR SW-DR [ON/OFF] | Indicates condition of front door switch LH |
| DOOR SW-AS [ON/OFF] | Indicates condition of front door switch RH |
| DOOR SW-RR [ON/OFF] | Indicates condition of rear door switch RH |
| DOOR SW-RL [ON/OFF] | Indicates condition of rear door switch LH |
| BACK DOOR SW [ON/OFF] | Indicates condition of back door switch |
| KEY CYL LK-SW [ON/OFF] | Indicates condition of lock signal from door key cylinder switch |
| KEY CYL UN-SW [ON/OFF] | Indicates condition of unlock signal from door key cylinder switch |
| I-KEY LOCK [ON/OFF] | Indicates condition of lock signal from Intelligent Key |
| I-KEY UNLOCK [ON/OFF] | Indicates condition of unlock signal from Intelligent Key |

### ACTIVE TEST

| Test Item | Description |
|---|---|
| DOOR LOCK | This test is able to check door lock operation [ALL LOCK/ALL UNLOCK/DR UNLOCK/ OTHER UNLOCK]. |
| TRUNK/BACK DOOR | This test is able to check trunk/back door lock operation [LOCK (SET)/UNLOCK (RELEASE)]. |

# REAR WINDOW DEFOGGER

## REAR WINDOW DEFOGGER : CONSULT-III Function (BCM - REAR DEFOGGER)

INFOID:0000000003776390

### DATA MONITOR

| Monitor Item [Unit] | Description |
|---|---|
| IGN ON SW [ON/OFF] | Indicates condition of ignition switch in ON position |
| IGN ACC SW [ON/OFF] | Indicates condition of ignition switch in ACC position |
| REAR DEF SW [ON/OFF] | Displays “Press (ON)/other (OFF)” status determined with the rear window defogger switch |

# BUZZER

## BUZZER : CONSULT-III Function (BCM - BUZZER)

INFOID:0000000003776391

### DATA MONITOR

| Monitor Item [Unit] | Description |
|---|---|
| IGN ON SW [ON/OFF] | Ignition switch (ON) status judged by ignition power supply input |
| KEY ON SW [ON/OFF] | Key switch status |
| DOOR SW -DR [ON/OFF] | Front door switch (driver side) status judged by BCM |
| LIGHT SW 1ST [ON/OFF] | Lighting switch status judged by the lighting switch signal read with combination switch reading function |
| BUCKLE SW [ON/OFF] | Seat belt buckle switch status |

### ACTIVE TEST

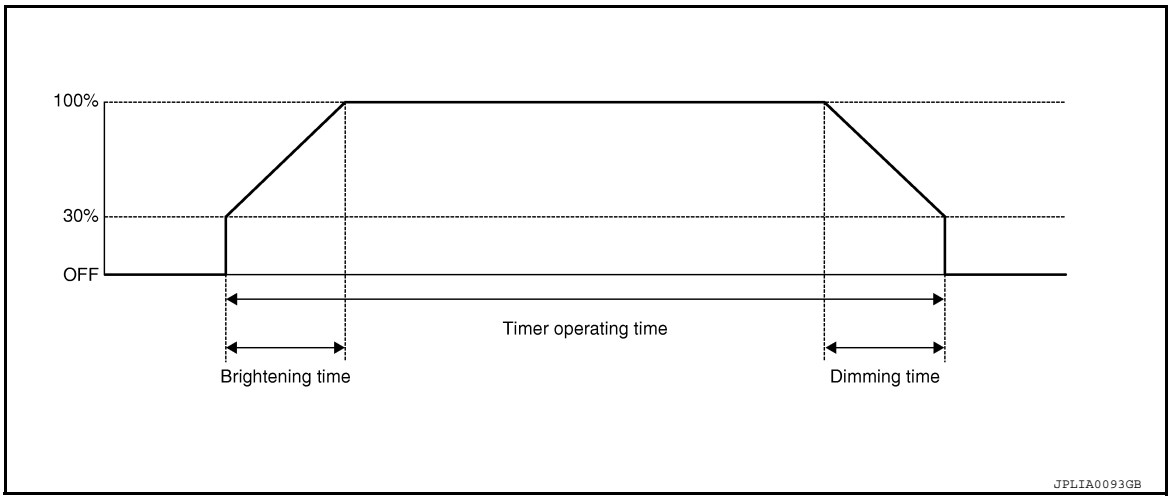
| Test Item | Description |
|---|---|
| LIGHT WARN ALM | The light reminder warning operation can be checked by operating the relevant function (On/Off). |
| IGN KEY WARN ALM | The key reminder warning operation can be checked by operating the relevant function (On/Off). |
| SEAT BELT WARN TEST | The seat belt warning operation can be checked by operating the relevant function (On/Off). |
| DOOR WARNING IND | The door open warning operation can be checked by operating the relevant function (On/Off). |

# INT LAMP

## INT LAMP : CONSULT-III Function (BCM - INT LAMP)

INFOID:0000000003776392

### WORK SUPPORT



| Work Item | Setting item | Setting | |
|---|---|---|---|
| SET I/L D-UNLCK INTCON | ON* | With the interior room lamp timer function | |
| | OFF | Without the interior room lamp timer function | |
| ROOM LAMP ON TIME SET | MODE 1 | 0.5 sec. | Sets the interior room lamp gradual brightening time. |
| | MODE 2* | 1 sec. | |
| | MODE 3 | 2 sec. | |
| | MODE 4 | 3 sec. | |
| | MODE 5 | 0 sec. | |
| ROOM LAMP OFF TIME SET | MODE 1 | 0.5 sec. | Sets the interior room lamp gradual dimming time. |
| | MODE 2 | 1 sec. | |
| | MODE 3 | 2 sec. | |
| | MODE 4* | 3 sec. | |
| | MODE 5 | 0 sec. | |

* : Initial setting

## DATA MONITOR

| Monitor Item [Unit] | Description |
|---|---|
| IGN ON SW [ON/OFF] | Ignition switch (ON) status judges from IGN signal (ignition power supply) |
| KEY ON SW [ON/OFF] | The switch status input from key switch |
| DOOR SW-DR [ON/OFF] | The switch status input from front door switch LH |
| DOOR SW-AS [ON/OFF] | The switch status input from front door switch RH |
| DOOR SW-RR [ON/OFF] | The switch status input from rear door switch RH |
| DOOR SW- RL [ON/OFF] | The switch status input from rear door switch LH |
| BACK DOOR SW [ON/OFF] | The switch status input from back door switch |
| KEY CYL LK-SW [ON/OFF] | Lock switch status input from door lock and unlock switch |
| KEY CYL UN-SW [ON/OFF] | Lock switch status input from door lock and unlock switch |
| CDL LOCK SW [ON/OFF] | Lock switch status input from door lock and unlock switch |
| CDL UNLOCK SW [ON/OFF] | Unlock switch status input from door lock and unlock switch |
| I-KEY LOCK [ON/OFF] | Lock signal status received from Intelligent Key unit by CAN communication |
| I-KEY UNLOCK [ON/OFF] | Unlock signal status received from Intelligent Key unit by CAN communication |

## ACTIVE TEST

| Test Item | Operation | Description |
|---|---|---|
| INT LAMP | ON | Outputs the interior room lamp control signal to turn the interior room lamps ON. |
| | OFF | Stops the interior room lamp control signal to turn the interior room lamps OFF. |
| IGN ILLUM | ON | Outputs the ignition keyhole illumination control signal to turn the ignition keyhole illumination lamp ON. |
| | OFF | Stops the ignition keyhole illumination control signal to turn the ignition keyhole illumination lamp OFF. |
| STEP LAMP TEST | ON | Outputs the step lamp control signal to turn the step lamps ON. |
| | OFF | Stops the step lamp control signal to turn the step lamps OFF. |
| LUGGAGE LAMP TEST | ON | Outputs the luggage lamp control signal to turn the luggage lamp ON. |
| | OFF | Stops the luggage lamp control signal to turn the luggage lamp OFF. |

## MULTIREMOTE ENT

# MULTIREMOTE ENT : CONSULT-III Function (BCM - MULTIREMOTE ENT)

INFOID:0000000004176237

## WORK SUPPORT

| Test Item | Description |
|---|---|
| REMO CONT ID REGIST | Keyfob ID code can be registered. |
| REMO CONT ID ERASUR | Keyfob ID code can be erased. |
| REMO CONT ID CONFIR | It can be checked whether keyfob ID code is registered or not in this mode. |
| HORN CHIRP SET | Horn chirp function mode can be changed in this mode. The function mode will be changed when "CHANG SETT" on CONSULT-III screen is touched. |
| HAZARD LAMP SET | Hazard lamp function mode can be changed in this mode. The function mode will be changed when "CHANG SETT" on CONSULT-III screen is touched. |
| MULTI ANSWER BACK SET | Hazard and horn reminder mode can be changed in this mode. The reminder mode will be changed when “CHANG SETT” on CONSULT-III screen is touched. |
| AUTO LOCK SET | Auto locking function mode can be changed in this mode. The function mode will be changed when "CHANG SETT" on CONSULT-III screen is touched. |
| PANIC ALRM SET | Panic alarm operation mode can be changed in this mode. The operation mode will be changed when "CHANG SETT" on CONSULT-III screen is touched. |
| PW DOWN SET | Keyless power window down (open) operation mode can be changed in this mode. The operation mode will be changed when "CHANG SETT" on CONSULT-III screen is touched. |

Hazard and horn reminder mode

| | MODE 1 (C mode) | | MODE 2 (S mode) | | MODE 3 | | MODE 4 | | MODE 5 | | MODE 6 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Keyfob operation | Lock | Unlock | Lock | Unlock | Lock | Unlock | Lock | Unlock | Lock | Unlock | Lock | Unlock |
| Hazard warning lamp flash | Twice | Once | Twice | — | — | — | Twice | Once | Twice | — | — | Once |
| Horn sound | Once | — | — | — | — | — | — | — | Once | — | Once | — |

Auto locking function mode

| | MODE 1 | MODE 2 | MODE 3 |
|---|---|---|---|
| Auto locking function | 5 minutes | Nothing | 1 minute |

Panic alarm operation mode

| | MODE 1 | MODE 2 | MODE 3 |
|---|---|---|---|
| Keyfob operation | 0.5 seconds | Nothing | 1.5 seconds |

Back door open operation mode

| | MODE 1 | MODE 2 | MODE 3 |
|---|---|---|---|
| Keyfob operation | 0.5 seconds | Nothing | 0.5 seconds |

Keyless power window down operation mode

| | MODE 1 | MODE 2 | MODE 3 |
|---|---|---|---|
| Keyfob operation | 3 seconds | Nothing | 5 seconds |

## DATA MONITOR

| Monitored Item | Description |
|---|---|
| DOOR SW-AS | Indicates [ON/OFF] condition of front door switch RH. |
| DOOR SW-RR | Indicates [ON/OFF] condition of rear door switch RH. |
| DOOR SW-RL | Indicates [ON/OFF] condition of rear door switch LH. |
| DOOR SW-DR | Indicates [ON/OFF] condition of front door switch LH. |
| KEY ON SW | Indicates [ON/OFF] condition of key switch. |
| ACC ON SW | Indicates [ON/OFF] condition of ignition switch in ACC position. |

| Monitored Item | Description |
|---|---|
| IGN ON SW | Indicates [ON/OFF] condition of ignition switch in ON position. |
| KEYLESS PANIC | Indicates [ON/OFF] condition of panic signal from keyfob. |
| KEYLESS UNLOCK | Indicates [ON/OFF] condition of unlock signal from keyfob. |
| KEYLESS LOCK | Indicates [ON/OFF] condition of lock signal from keyfob. |
| KEY CYL LK-SW | Indicates [ON/OFF] condition of lock signal from door key cylinder switch. |
| KEY CYL UN-SW | Indicates [ON/OFF] condition of unlock signal from door key cylinder switch. |
| CDL UNLOCK SW | Indicates [ON/OFF] condition of unlock signal from lock/unlock switch. |
| CDL LOCK SW | Indicates [ON/OFF] condition of lock signal from lock/unlock switch. |
| DOOR SW-RL | Indicates [ON/OFF] condition of rear door switch LH. |
| DOOR SW-RR | Indicates [ON/OFF] condition of rear door switch RH. |
| RKE LCK-UNLCK | Indicates [ON/OFF] condition of lock/unlock signal at the same time from keyfob. |
| RKE KEEP UNLK | Indicates [ON/OFF] condition of unlock signal from keyfob. |

## ACTIVE TEST

| Test Item | Description |
|---|---|
| FLASHER | This test is able to check right and left hazard reminder operation. The right hazard lamp turns on when “RH” on CONSULT-III screen is touched and the left hazard lamp turns on when "LH" on CONSULT-III screen is touched. |
| POWER WINDOW DOWN | This test is able to check power window down operation. The windows are lowered when “ON” on CONSULT-III screen is touched. |
| HORN | This test is able to check panic alarm and horn reminder operations. The alarm activate for 0.5 seconds after “ON” on CONSULT-III screen is touched. |
| DOOR LOCK | This test is able to check door lock operation. The doors lock and unlock based on the item on CONSULT-III screen touched. |

# HEADLAMP

## HEADLAMP : CONSULT-III Function (BCM - HEAD LAMP)

INFOID:0000000003776393

### WORK SUPPORT

| Work Item | Setting item | Setting | |
|---|---|---|---|
| BATTERY SAVER SET | ON* | With the exterior lamp battery saver function | |
| | OFF | Without the exterior lamp battery saver function | |
| CUSTOM A/LIGHT SETTING | MODE1* | Normal | |
| | MODE2 | More sensitive setting than normal setting (Turns ON earlier than normal operation.) | |
| | MODE3 | More sensitive setting than MODE 2 (Turns ON earlier than MODE 2.) | |
| | MODE4 | Less sensitive setting than normal setting (Turns ON later than normal operation.) | |
| ILL DELAY SET | MODE1* | 45 sec. | Sets delay timer function timer operation time (All doors closed) |
| | MODE2 | Without the function | |
| | MODE3 | 30 sec. | |
| | MODE4 | 60 sec. | |
| | MODE5 | 90 sec. | |
| | MODE6 | 120 sec. | |
| | MODE7 | 150 sec. | |
| | MODE8 | 180 sec. | |

*: Initial setting

DATA MONITOR

| Monitor Item [Unit] | Description |
|---|---|
| IGN ON SW [ON/OFF] | Ignition switch (ON) status judged from IGN signal (ignition power supply) |
| HI BEAM SW [ON/OFF] | Each switch status that BCM judges from the combination switch reading function |
| H/L SW POS [ON/OFF] | |
| LIGHT SW 1ST [ON/OFF] | |
| PASSING SW [ON/OFF] | |
| AUTO LIGHT SW [ON/OFF] | |
| FR FOG SW [ON/OFF] | |
| DOOR SW-DR [ON/OFF] | The switch status input from front door switch LH |
| AUT LIGHT SYS [ON/OFF] | Auto light system status that BCM judges from the vehicle condition |

ACTIVE TEST

| Test Item | Operation | Description |
|---|---|---|
| TAIL LAMP | ON | Transmits the position light request signal to IPDM E/R with CAN communication to turn the tail lamp ON. |
| | OFF | Stops the tail lamp request signal transmission. |
| HEAD LAMP | HI | Transmits the high beam request signal with CAN communication to turn the headlamp (HI). |
| | LO | Transmits the low beam request signal with CAN communication to turn the headlamp (LO). |
| | OFF | Stops the high & low beam request signal transmission. |
| FR FOG LAMP | ON | Transmits the front fog lights request signal to IPDM E/R with CAN communication to turn the front fog lamp ON. |
| | OFF | Stops the front fog lights request signal transmission. |
| DAYTIME RUNNING LIGHT | ON | Transmits the day time running light request signal to IPDM E/R with CAN communication to turn the each lamps ON. |
| | OFF | Stops the day time running light request signal transmission. |

# WIPER

## WIPER : CONSULT-III Function (BCM - WIPER)

INFOID:0000000003776394

### WORK SUPPORT

| Work Item | Setting Item | Description |
|---|---|---|
| WIPER SPEED SETTING | ON* | With vehicle speed<br>(Front wiper intermittent time linked with the vehicle speed and wiper intermittent dial position) |
| | OFF | Without vehicle speed<br>(Front wiper intermittent time linked with the wiper intermittent dial position) |

*: Factory setting

### DATA MONITOR

| Monitor Item [Unit] | Description |
|---|---|
| IGN ON SW [ON/OFF] | Ignition switch ON status judged from ignition power supply |

| Monitor Item [Unit] | Description |
|---|---|
| FR WIPER HI [ON/OFF] | Each switch status that BCM judges from the combination switch reading function |
| FR WIPER LOW [ON/OFF] | |
| FR WIPER INT [ON/OFF] | |
| FR WASHER SW [ON/OFF] | |
| INT VOLUME [1 - 7] | Each switch status that BCM judges from the combination switch reading function |
| FR WIPER STOP [ON/OFF] | Front wiper motor (stop position) status received from IPDM E/R with CAN communication |
| VEHICLE SPEED [km/h] | The value of the vehicle speed signal received from combination meter with CAN communication |
| RR WIPER ON [ON/OFF] | Each switch status that BCM judges from the combination switch reading function |
| RR WIPER INT [ON/OFF] | |
| RR WASHER SW [ON/OFF] | |
| RR WIPER STOP [ON/OFF] | Rear wiper motor (stop position) status input from the rear wiper motor |

### ACTIVE TEST

| Test Item | Operation | Description |
|---|---|---|
| FR WIPER | HI | Transmits the front wiper request signal (HI) to IPDM E/R with CAN communication to operate the front wiper HI operation. |
| | LO | Transmits the front wiper request signal (LO) to IPDM E/R with CAN communication to operate the front wiper LO operation. |
| | INT | Transmits the front wiper request signal (INT) to IPDM E/R with CAN communication to operate the front wiper INT operation. |
| | OFF | Stops transmitting the front wiper request signal to stop the front wiper operation. |
| RISE UP WIPER TEST | ON | Outputs the voltage to operate the rear wiper motor. |
| | OFF | Stops the voltage to stop. |

## FLASHER

## FLASHER : CONSULT-III Function (BCM - FLASHER)

INFOID:0000000003776395

### DATA MONITOR

| Monitor Item [Unit] | Description |
|---|---|
| IGN ON SW [ON/OFF] | Ignition switch (ON) status judged from IGN signal (ignition power supply) |
| HAZARD SW [ON/OFF] | The switch status input from the hazard switch |
| TURN SIGNAL R [ON/OFF] | Each switch condition that BCM judges from the combination switch reading function |
| TURN SIGNAL L [ON/OFF] | |
| BRAKE SW [ON/OFF] | The switch status input from the brake switch |

### ACTIVE TEST

| Test Item | Operation | Description |
|---|---|---|
| FLASHER | RH | Outputs the voltage to turn the right side turn signal lamps ON. |
| | LH | Outputs the voltage to turn the left side turn signal lamps ON. |
| | OFF | Stops the voltage to turn the turn signal lamps OFF. |

## AIR CONDITIONER

## AIR CONDITIONER : CONSULT-III Function (BCM - AUTO AIR CONDITIONER)

INFOID:0000000003776396

### DATA MONITOR

| Monitor Item [Unit] | Contents |
|---|---|
| IGN ON SW [ON/OFF] | Display [ignition switch position (On)/(Off), ACC position (Off)] status as judged from ignition switch signal |
| FAN ON SIG [ON/OFF] | Display [FAN (On)/FAN (Off)] status as judged form blower fan motor switch signal |
| AIR COND SW [ON/OFF] | Display [COMP (On)/COMP (Off)] status as judged form air conditioner switch signal |

# INTELLIGENT KEY

## INTELLIGENT KEY : CONSULT-III Function (BCM - INTELLIGENT KEY)

INFOID:0000000003776397

### DATA MONITOR

| Monitor Item [Unit] | Condition |
|---|---|
| PUSH SW [ON/OFF] | Indicates condition of ignition knob switch |
| I-KEY LOCK [ON/OFF] | Indicates condition of lock signal from Intelligent Key |
| I-KEY UNLOCK [ON/OFF] | Indicates [condition of unlock signal from Intelligent Key |
| I-KEY PW DWN [ON/OFF] | Indicates condition of all power window signal from Intelligent Key |
| I-KEY TRUNK [ON/OFF] | Indicates condition of trunk open signal from Intelligent Key |
| I-KEY PANIC [ON/OFF] | Indicates condition of panic signal from Intelligent Key |

# COMB SW

## COMB SW : CONSULT-III Function (BCM - COMB SW)

INFOID:0000000003776398

### DATA MONITOR

| Monitor Item [Unit] | Description |
|---|---|
| TURN SIGNAL R [OFF/ON] | Displays the status of the TURN RH switch in combination switch judged by BCM with the combination switch reading function |
| TURN SIGNAL L [OFF/ON] | Displays the status of the TURN LH switch in combination switch judged by BCM with the combination switch reading function |
| HI BEAM SW [OFF/ON] | Displays the status of the HI BEAM switch in combination switch judged by BCM with the combination switch reading function |
| HEADLAMP SW1 [OFF/ON] | Displays the status of the HEADLAMP switch in combination switch judged by BCM with the combination switch reading function |
| HEADLAMP SW2 [OFF/ON] | Displays the status of the HEADLAMP switch in combination switch judged by BCM with the combination switch reading function |
| LIGHT SW 1ST [OFF/ON] | Displays the status of the HEADLAMP switch in combination switch judged by BCM with the combination switch reading function |
| PASSING SW [OFF/ON] | Displays the status of the PASSING switch in combination switch judged by BCM with the combination switch reading function |
| AUTO LIGHT SW [OFF/ON] | Displays the status of the AUTO LIGHT switch in combination switch judged by BCM with the combination switch reading function |
| FR FOG SW [OFF/ON] | Displays the status of the FR FOG switch in combination switch judged by BCM with the combination switch reading function |
| FR WIPER HI [OFF/ON] | Displays the status of the FR WIPER HI switch in combination switch judged by BCM with the combination switch reading function |

| Monitor Item [Unit] | Description |
|---|---|
| FR WIPER LOW [OFF/ON] | Displays the status of the FR WIPER LOW switch in combination switch judged by BCM with the combination switch reading function |
| FR WIPER INT [OFF/ON] | Displays the status of the FR WIPER INT switch in combination switch judged by BCM with the combination switch reading function |
| FR WASHER SW [OFF/ON] | Displays the status of the FR WASHER switch in combination switch judged by BCM with the combination switch reading function |
| INT VOLUME [1 - 7] | Displays the status of wiper intermittent dial position judged by BCM with the combination switch reading function |
| RR WIPER ON [OFF/ON] | Displays the status of the RR WIPER switch in combination switch judged by BCM with the combination switch reading function |
| RR WIPER INT [OFF/ON] | Displays the status of the RR WIPER INT switch in combination switch judged by BCM with the combination switch reading function |
| RR WASHER SW [OFF/ON] | Displays the status of the RR WASHER switch in combination switch judged by BCM with the combination switch reading function |

# IMMU

## IMMU : CONSULT-III Function (BCM - IMMU)

INFOID:0000000003776399

### DATA MONITOR

| Monitor Item [Unit] | Description |
|---|---|
| IGN ON SW [ON/OFF] | Indicates condition of ignition switch in ON position. |

### ACTIVE TEST

| Test Item | Description |
|---|---|
| THEFT IND | This test is able to check security indicator operation [ON/OFF]. |

# BATTERY SAVER

## BATTERY SAVER : CONSULT-III Function (BCM - BATTERY SAVER)

INFOID:0000000003776400

### WORK SUPPORT

| Work Item | Setting Item | Setting | |
|---|---|---|---|
| ROOM LAMP TIMER SET | MODE 1* | 15 min. | Sets the interior room lamp battery saver timer operating time. |
| | MODE 2 | 30 min. | |

*: Initial setting

### DATA MONITOR

| Monitor Item [Unit] | Description |
|---|---|
| IGN ON SW [ON/OFF] | Ignition switch (ON) status judges from IGN signal (ignition power supply) |
| KEY ON SW [ON/OFF] | The switch status input from key switch |
| DOOR SW-DR [ON/OFF] | The switch status input from front door switch (driver side) |
| DOOR SW-AS [ON/OFF] | The switch status input from front door switch (passenger side) |
| DOOR SW-RR [ON/OFF] | The switch status input from rear door switch RH |
| DOOR SW- RL [ON/OFF] | The switch status input from rear door switch LH |
| BACK DOOR SW [ON/OFF] | The switch status input from back door switch |
| KEY CYL LK-SW [ON/OFF] | Lock switch status input from door key cylinder switch |

| Monitor Item [Unit] | Description |
|---|---|
| KEY CYL UN-SW [ON/OFF] | Unlock switch status input from door key cylinder switch |
| CDL LOCK SW [ON/OFF] | Lock switch status input from door lock and unlock switch |
| CDL UNLOCK SW [ON/OFF] | Unlock switch status input from door lock and unlock switch |
| I-KEY LOCK [ON/OFF] | Lock signal status received from Intelligent Key unit by CAN communication |
| I-KEY UNLOCK [ON/OFF] | Unlock signal status received from Intelligent Key unit by CAN communication |

ACTIVE TEST

| Test Item | Operation | Description |
|---|---|---|
| BATTERY SAVER | OFF | Cuts the interior room lamp power supply to turn interior room lamps OFF. |
| | ON | Outputs the interior room lamp power supply to turn interior room lamps ON.* |

*: Each lamp switch is in ON position.

# TRUNK

## TRUNK : CONSULT-III Function (BCM - TRUNK)

INFOID:0000000003776401

### DATA MONITOR

| Monitor Item [Unit] | Contents |
|---|---|
| IGN ON SW [ON/OFF] | Indicates condition of ignition switch in ON position |
| I-KEY TRUNK [ON/OFF] | Indicates condition of Intelligent Key back door opening operation |
| TRUNK OPNR SW [ON/OFF] | Indicates condition of back door opener switch. |
| VEHICLE SPEED [ON/OFF] | Indicates condition of vehicle speed signal from combination meter |

### ACTIVE TEST

| Test Item | Description |
|---|---|
| TRUNK/BACK DOOR | This test is able to check back door open operation.<br>Back door open when “OPEN” on CONSULT-III screen is touched. |

# RETAINED PWR

## RETAINED PWR : CONSULT-III Function (BCM - RETAINED PWR)

INFOID:0000000003776402

### Data monitor

| Monitor Item [Unit] | Description |
|---|---|
| DOOR SW-DR [ON/OFF] | Indicates condition of front door switch LH. |
| DOOR SW-AS [ON/OFF] | Indicates condition of front door switch RH. |

# SIGNAL BUFFER

## SIGNAL BUFFER : CONSULT-III Function (BCM - SIGNAL BUFFER)

INFOID:0000000003776403

### DATA MONITOR

| Monitor Item [Unit] | Description |
|---|---|
| OIL PRESS SW [ON/OFF] | Displays the status of oil pressure switch received from IPDM E/R via CAN communication. |

### ACTIVE TEST

| Test Item | Operation | Description |
|---|---|---|
| OIL PRESSURE SW | OFF | OFF |
| | ON | BCM transmits the oil pressure switch signal to the combination meter via CAN communication, which operates the oil pressure gauge in the combination meter. |

# AIR PRESSURE MONITOR

## AIR PRESSURE MONITOR : Diagnosis Description

INFOID:0000000003776404

### DESCRIPTION

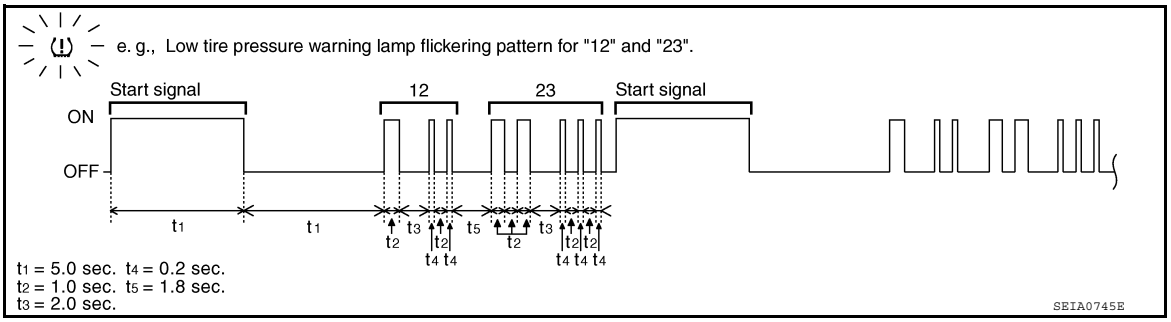
During driving, the TPMS receives the signal transmitted from the transmitter installed in each wheel, when the tire pressure becomes low. The control unit (BCM) of this system has pressure judgment and trouble diagnosis functions.
When the TPMS detects low inflation pressure or another unusual symptom, the warning lamps in the combination meter comes on.

### SELF DIAGNOSTIC PROCEDURE (WITH CONSULT-III)

With CONSULT-III
- Touch “SELF-DIAG RESULTS” display to show malfunction experienced since the last erasing operation. Refer to BCS-51, "DTC Index".

### SELF DIAGNOSTIC PROCEDURE (WITHOUT CONSULT-III)

Without CONSULT-III
To start the self-diagnostic results mode, ground terminal of the tire pressure warning check connector. The malfunction location is indicated by the warning lamp flashing.




**NOTE:**
When the low tire warning lamp flashes 5 Hz and continues repeating it, the system is normal.

| Flickering pattern | Items | Diagnostic items detected when··· | Check item |
|---|---|---|---|
| 15 | Tire pressure value (Front LH) | Front LH tire pressure drops to 181 kPa (1.8 kg/cm, 25.25 psi) or less. | – |
| 16 | Tire pressure value (Front RH) | Front RH tire pressure drops to 181 kPa (1.8 kg/cm, 25.25 psi) or less. | |
| 17 | Tire pressure value (Rear RH) | Rear RH tire pressure drops to 181 kPa (1.8 kg/cm, 25.25 psi) or less. | |
| 18 | Tire pressure value (Rear LH) | Rear LH tire pressure drops to 181 kPa (1.8 kg/cm, 25.25 psi) or less. | |
| 21 | Transmitter no data (Front LH) | Data from front LH transmitter can not be received. | WT-27 |
| 22 | Transmitter no data (Front RH) | Data from front RH transmitter can not be received. | |
| 23 | Transmitter no data (Rear RH) | Data from Rear RH transmitter can not be received. | |
| 24 | Transmitter no data (Rear LH) | Data from Rear LH transmitter can not be received. | |

| Flickering pattern | Items | Diagnostic items detected when··· | Check item |
|---|---|---|---|
| 31 | Transmitter checksum error (Front LH) | Checksum data from front LH transmitter is malfunctioning. | WT-27 |
| 32 | Transmitter checksum error (Front RH) | Checksum data from front RH transmitter is malfunctioning. | |
| 33 | Transmitter checksum error (Rear RH) | Checksum data from rear RH transmitter is malfunctioning. | |
| 34 | Transmitter checksum error (Rear LH) | Checksum data from rear RH transmitter is malfunctioning. | |
| 35 | Transmitter pressure data error (Front LH) | Air pressure data from front LH transmitter is malfunction. | WT-27 |
| 36 | Transmitter pressure data error (Front RH) | Air pressure data from front RH transmitter is malfunction. | |
| 37 | Transmitter pressure data error (Rear RH) | Air pressure data from rear RH transmitter is malfunction. | |
| 38 | Transmitter pressure data error (Rear LH) | Air pressure data from rear LH transmitter is malfunction. | |
| 41 | Transmitter function code error (Front LH) | Function code data from front LH transmitter is malfunction. | WT-27 |
| 42 | Transmitter function code error (Front RH) | Function code data from front RH transmitter is malfunction. | |
| 43 | Transmitter function code error (Rear RH) | Function code data from rear RH transmitter is malfunction. | |
| 44 | Transmitter function code error (Rear LH) | Function code data from rear LH transmitter is malfunction. | |
| 45 | Transmitter battery voltage low (Front LH) | Battery voltage of front LH transmitter drops. | WT-27 |
| 46 | Transmitter battery voltage low (Front RH) | Battery voltage of front RH transmitter drops. | |
| 47 | Transmitter battery voltage low (Rear RH) | Battery voltage of rear RH transmitter drops. | |
| 48 | Transmitter battery voltage low (Rear LH) | Battery voltage of rear LH transmitter drops. | |
| 52 | Vehicle speed signal error | Speed signal is not detected. | WT-27 |
| No flickering | Tire pressure warning check switch | Tire pressure warning switch circuit is open. | – |

## ERASE SELF-DIAGNOSIS

With CONSULT-III
1. Perform applicable inspection of malfunctioning item and then repair or replace.
2. Turn ignition switch “ON” and select “SELF-DIAG RESULTS” mode for “AIR PRESSURE MONITOR” with CONSULTIII.
3. Touch “ERASE” on CONSULT-III screen to erase memory.

Without CONSULT-III
- In order to make it easier to find the cause of hard-to-duplicate malfunctions, malfunction information is stored into the control unit as necessary during use by the user. This memory is not erased no matter how many times the ignition switch is turned “ON” and“OFF”.
- However, this information is erased by turning ignition switch “OFF” after performing self-diagnostic or by erasing the memory using the CONSULT-III.

## AIR PRESSURE MONITOR : CONSULT-III Function

INFOID:0000000003776405

### WORK SUPPORT MODE

ID Read
The registered ID number is displayed.

ID Regist
Refer to WT-6, "ID Registration Procedure".

## SELF-DIAG RESULTS MODE

Operation Procedure
Refer to WT-12, "Self-Diagnosis (With CONSULT-III)".

## DATA MONITOR MODE

Screen of data monitor mode is displayed. Refer to WT-11, "CONSULT-III Function (BCM)".
**NOTE:**
When malfunction is detected, CONSULT-III perform REAL-TIME DIAGNOSIS.
Also, any malfunction detected while in this mode will be displayed at real time.

## ACTIVE TEST MODE

**NOTE:**
Before performing the self-diagnosis, be sure to register the ID, or else the actual malfunction may be different from that displayed on CONSULT-III.

TEST ITEM LIST

| Test item | Content |
|---|---|
| WARNING LAMP | This test is able to check to make sure that the warning lamp turns on. |
| ID REGIST WARNING | This test is able to check to make sure that the buzzer sounds or the warning lamp turns on. |
| FLASHER | This test is able to check to make sure that each turn signal lamp turns on. |
| HORN | This test is able to check to make sure that the horn sounds. |

# THEFT ALM

## THEFT ALM : CONSULT-III Function (BCM - THEFT ALM)

INFOID:0000000003776406

### WORK SUPPORT

| Work Item | Description |
|---|---|
| SECURITY ALARM SET | Vehicle security function mode can be changed in this mode.<br>• ON: Vehicle security function is ON.<br>• OFF: Vehicle security function is OFF. |

# COMPONENT DIAGNOSIS

## U1000 CAN COMM CIRCUIT

### Description

INFOID:0000000003776407

Refer to LAN-44, "CAN Communication Signal Chart".

### DTC Logic

INFOID:0000000003776408

#### DTC DETECTION LOGIC

| DTC | CONSULT-III display description | DTC Detection Condition | Possible cause |
|---|---|---|---|
| U1000 | CAN COMM CIRCUIT | When BCM cannot communicate CAN communication signal continuously for 2 seconds or more. | Any item (or items) of the following listed below is malfunctioning in CAN communication system.<br>• Transmission<br>• Receiving (ECM)<br>• Receiving (METER/M&A)<br>• Receiving (TCM)<br>• Receiving (MULTI AV)<br>• Receiving (IPDM E/R)<br>• Receiving (I-KEY) |

### Diagnosis Procedure

INFOID:0000000003776409

#### 1. PERFORM SELF DIAGNOSTIC

1. Turn ignition switch ON and wait for 2 seconds or more.
2. Check “Self Diagnostic Result” of BCM.

Is “CAN COMM CIRCUIT” displayed?

YES >> Refer to LAN-14, "Trouble Diagnosis Flow Chart".
NO >> Refer to GI-38, "Intermittent Incident".

# U1010 CONTROL UNIT (CAN)

## DTC Logic

INFOID:0000000003776410

### DTC DETECTION LOGIC

| DTC | CONSULT-III display description | DTC Detection Condition | Possible cause |
|---|---|---|---|
| U1010 | CONTROL UNIT (CAN) | When detecting error during the initial diagnosis of CAN controller of BCM. | BCM |

## Diagnosis Procedure

INFOID:0000000003776411

### 1. REPLACE BCM

When “DTC:U1010” is detected, replace BCM.

>> Replace BCM. Refer to BCS-56, "Removal and Installation".

## Special Repair Requirement

INFOID:0000000003776412

### 1. ADDITIONAL SERVICE WHEN REPLACING BCM

>> Refer to BCS-3, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Special Repair Requirement".

# POWER SUPPLY AND GROUND CIRCUIT

## Diagnosis Procedure

INFOID:0000000003776413

### 1. CHECK FUSES AND FUSIBLE LINK

Check that the following fuses and fusible link are not blown.

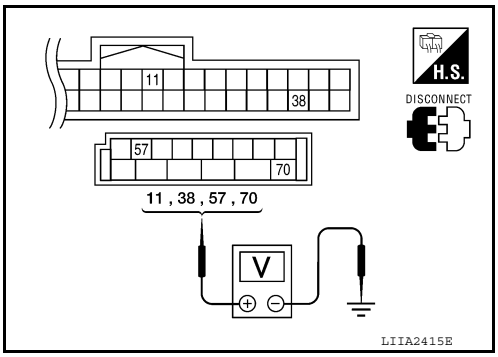
| Terminal No. | Signal name | Fuses and fusible link No. |
|---|---|---|
| 57 | Battery power supply | 22 (15A) |
| 70 | | F (50A) |
| 11 | Ignition ACC or ON | 4 (10A) |
| 38 | Ignition ON or START | 59 (10A) |

Is the fuse blown?

YES >> Replace the blown fuse or fusible link after repairing the affected circuit.
NO >> GO TO 2

### 2. CHECK POWER SUPPLY CIRCUIT

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



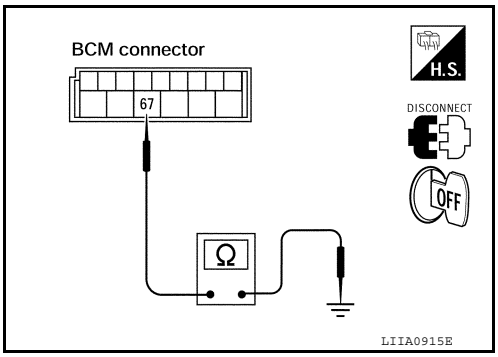

| Connector | Terminals (+) | Terminals (-) | Power source | Condition | Voltage (V) (Approx.) |
|---|---|---|---|---|---|
| M18 | 11 | Ground | ACC power supply | Ignition switch ACC or ON | Battery voltage |
| | 38 | Ground | Ignition power supply | Ignition switch ON or START | Battery voltage |
| M20 | 57 | Ground | Battery power supply | Ignition switch OFF | Battery voltage |
| | 70 | Ground | Battery power supply | Ignition switch OFF | Battery voltage |

Is the measurement value normal?

YES >> GO TO 3
NO >> Repair or replace harness.

### 3. CHECK GROUND CIRCUIT

Check continuity between BCM harness connector and ground.




| BCM | | Ground | Continuity |
|---|---|---|---|
| Connector | Terminal | | |
| M20 | 67 | | Yes |

Does continuity exist?

YES >> Inspection End.
NO >> Repair or replace harness.

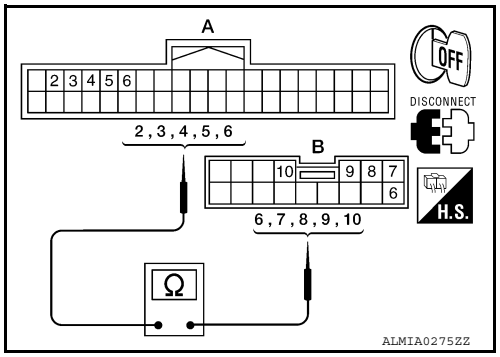
# COMBINATION SWITCH INPUT CIRCUIT

## Diagnosis Procedure

INFOID:0000000003776414

### 1. CHECK INPUT 1 - 5 SYSTEM CIRCUIT FOR OPEN

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



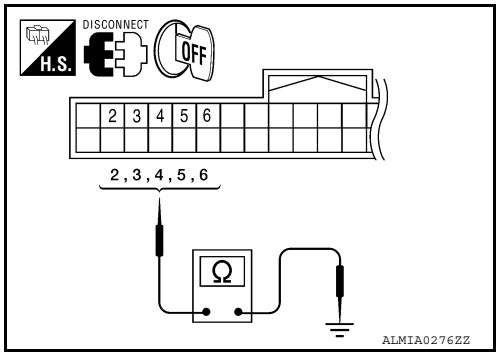

| System | BCM | | Combination switch | | Continuity |
|---|---|---|---|---|---|
| | Connector | Terminal | Connector | Terminal | |
| INPUT 1 | M18 (A) | 6 | M28 (B) | 6 | Yes |
| INPUT 2 | | 5 | | 7 | |
| INPUT 3 | | 4 | | 10 | |
| INPUT 4 | | 3 | | 9 | |
| INPUT 5 | | 2 | | 8 | |

Does continuity exist?

YES >> GO TO 2
NO >> Repair or replace harness.

### 2. CHECK INPUT 1 - 5 SYSTEM CIRCUIT FOR SHORT

Check for continuity between BCM harness connector and ground.



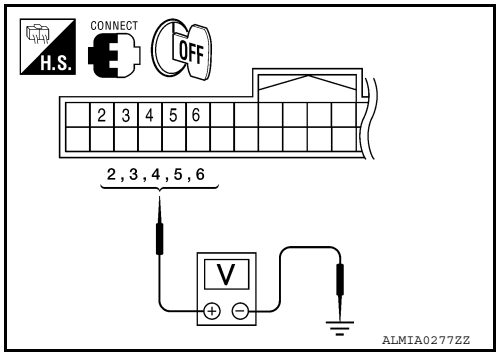

| System | BCM | | Ground | Continuity |
|---|---|---|---|---|
| | Connector | Terminal | | |
| INPUT 1 | M18 | 6 | Ground | No |
| INPUT 2 | | 5 | | |
| INPUT 3 | | 4 | | |
| INPUT 4 | | 3 | | |
| INPUT 5 | | 2 | | |

Does continuity exist?

YES >> Repair or replace harness.
NO >> GO TO 3

### 3. CHECK BCM OUTPUT VOLTAGE

1. Connect BCM.
2. Turn ignition switch ON.
3. Check voltage between BCM harness connector and ground.




| System | Terminals | | | Voltage (Approx.) |
|---|---|---|---|---|
| | (+) | | (–) | |
| | BCM | | | |
| | Connector | Terminal | | |
| INPUT 1 | M18 | 6 | Ground | Refer to BCS-38, "Reference Value". |
| INPUT 2 | | 5 | | |
| INPUT 3 | | 4 | | |
| INPUT 4 | | 3 | | |
| INPUT 5 | | 2 | | |

Is the measurement value normal?

YES >> GO TO 4
NO >> Replace BCM. Refer to BCS-56, "Removal and Installation".

## 4. CHECK COMBINATION SWITCH

Check combination switch. Refer to BCS-36, "Description".

Is the check result normal?

YES >> Replace BCM. Refer to BCS-56, "Removal and Installation".
NO >> Replace the combination switch (applicable parts). Refer to EXL-152, "Removal and Installation".

# Special Repair Requirement

INFOID:0000000003776415

## 1. ADDITIONAL SERVICE WHEN REPLACING BCM

>> Refer to BCS-3, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Special Repair Requirement".

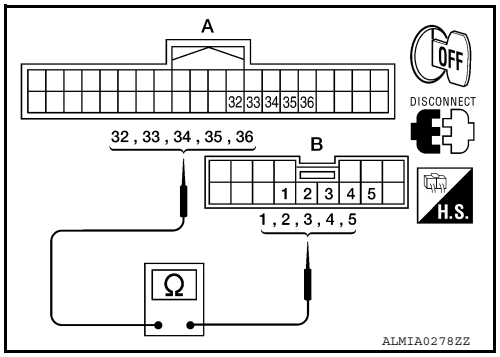
# COMBINATION SWITCH OUTPUT CIRCUIT

## Diagnosis Procedure

INFOID:0000000003776416

### 1. CHECK OUTPUT 1 - 5 SYSTEM CIRCUIT FOR OPEN

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



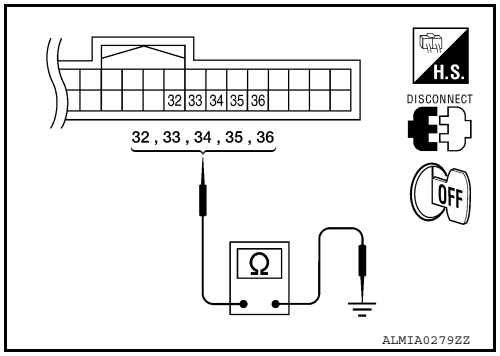

| System | BCM | | Combination switch | | Continuity |
|---|---|---|---|---|---|
| | Connector | Terminal | Connector | Terminal | |
| OUTPUT 1 | M18 (A) | 36 | M28 (B) | 1 | Yes |
| OUTPUT 2 | | 35 | | 2 | |
| OUTPUT 3 | | 34 | | 3 | |
| OUTPUT 4 | | 33 | | 4 | |
| OUTPUT 5 | | 32 | | 5 | |

Does continuity exist?

YES >> GO TO 2
NO >> Repair or replace harness.

### 2. CHECK OUTPUT 1 - 5 SYSTEM CIRCUIT FOR SHORT

Check for continuity between BCM harness connector and ground.




| System | BCM | | Ground | Continuity |
|---|---|---|---|---|
| | Connector | Terminal | | |
| OUTPUT 1 | M18 | 36 | Ground | No |
| OUTPUT 2 | | 35 | | |
| OUTPUT 3 | | 34 | | |
| OUTPUT 4 | | 33 | | |
| OUTPUT 5 | | 32 | | |

Does continuity exist?

YES >> Repair or replace harness.
NO >> GO TO 3

### 3. CHECK COMBINATION SWITCH

Check combination switch. Refer to BCS-36, "Description".

Is the check result normal?

YES >> Replace BCM. Refer to BCS-56, "Removal and Installation".
NO >> Replace combination switch (applicable parts). Refer to EXL-152, "Removal and Installation".

## Special Repair Requirement

INFOID:0000000003776417

### 1. ADDITIONAL SERVICE WHEN REPLACING BCM

>> Refer to BCS-3, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Special Repair Requirement".

# COMBINATION SWITCH

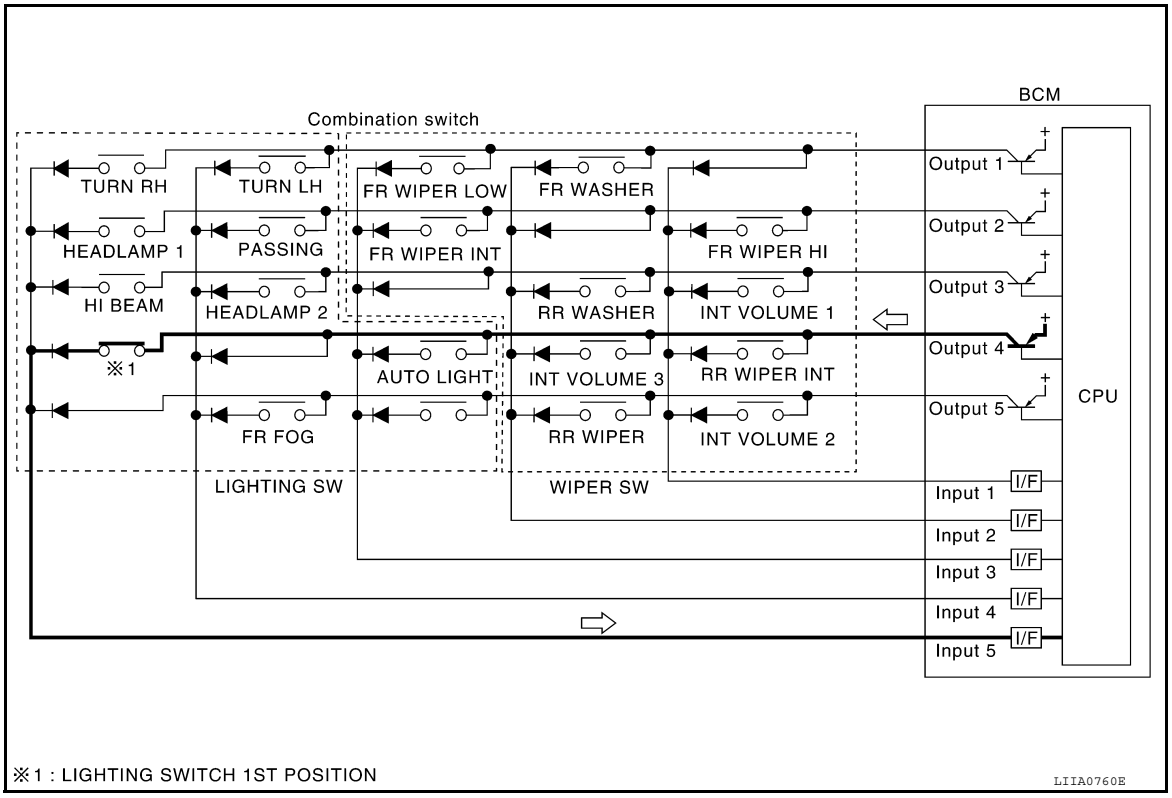
## Description

INFOID:0000000003776418

### COMBINATION SWITCH MATRIX

Combination switch consists of INPUT circuit and OUTPUT circuit.

Combination switch circuit




Combination switch INPUT-OUTPUT system list

| System | OUTPUT 1 | OUTPUT 2 | OUTPUT 3 | OUTPUT 4 | OUTPUT 5 |
|---|---|---|---|---|---|
| INPUT 1 | — | FR WASHER | FR WIPER LOW | TURN LH | TURN RH |
| INPUT 2 | FR WIPER HI | — | FR WIPER INT | PASSING | HEADLAMP 1 |
| INPUT 3 | INT VOLUME 1 | RR WASHER | — | HEADLAMP 2 | HI BEAM |
| INPUT 4 | RR WIPER INT | INT VOLUME 3 | AUTO LIGHT | — | TAIL LAMP |
| INPUT 5 | INT VOLUME 2 | RR WIPER | — | FR FOG | — |

**NOTE:**

Headlamp has a dual system switch.

## Diagnosis Procedure

INFOID:0000000003776419

### 1. CHECK LIGHT & TURN SIGNAL SWITCH

Check operation with normal light and turn signal switch installed.

Does it operate normally?

YES >> Replace light and turn signal switch. Refer to EXL-152, "Removal and Installation".
NO >> GO TO 2

### 2. CHECK WIPER & WASHER SWITCH

Check operation with normal wiper and washer switch installed.

Does it operate normally?

YES >> Replace wiper and washer switch. Refer to WW-80, "Wiper and Washer Switch".

NO >> GO TO 3

## 3. CHECK SWITCH BASE (SPIRAL CABLE)

Check operation with normal switch base (spiral cable) installed.

Does it operate normally?

YES >> Replace switch base (spiral cable). Refer to SR-7, "Removal and Installation".
NO >> Combination switch is normal.

# ECU DIAGNOSIS

## BCM (BODY CONTROL MODULE)

### Reference Value

INFOID:0000000003776420

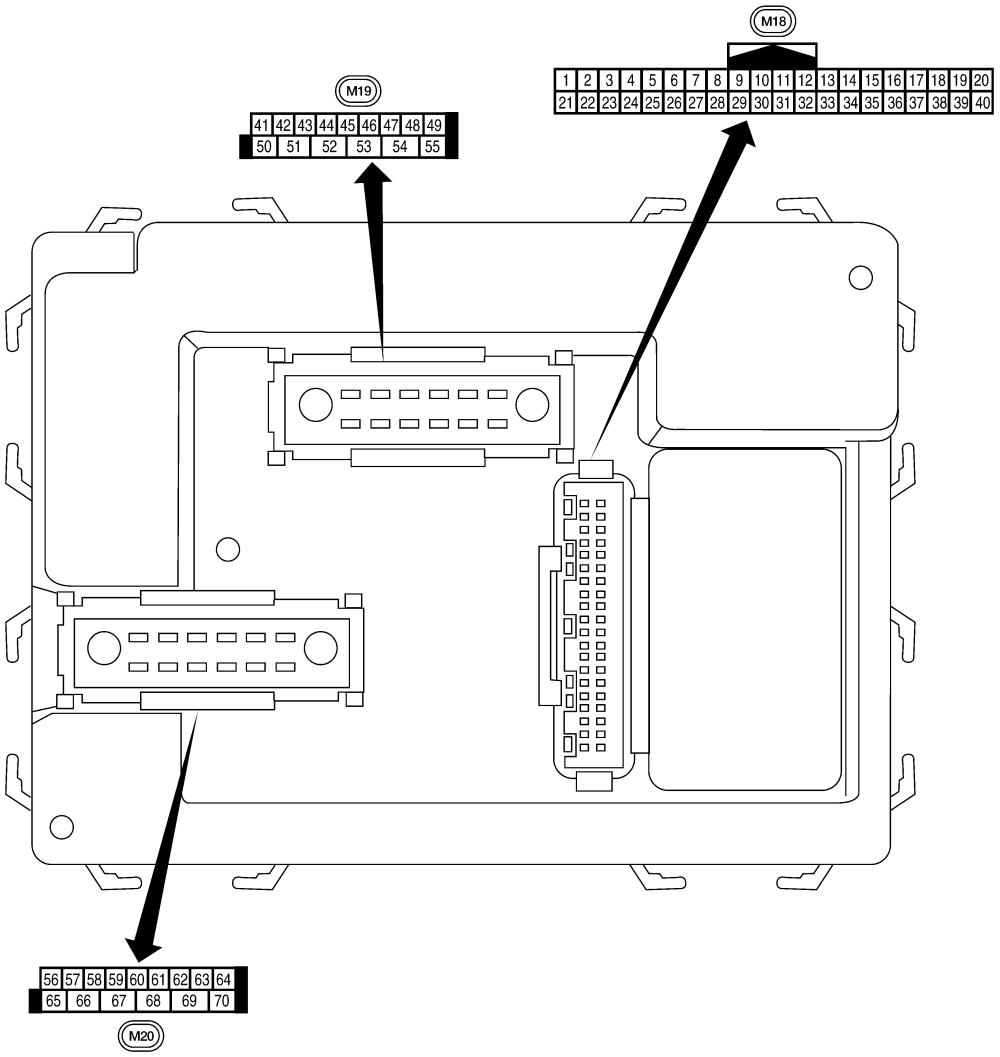
VALUES ON THE DIAGNOSIS TOOL

| Monitor Item | Condition | Value/Status |
|---|---|---|
| AIR COND SW | A/C switch OFF | OFF |
| | A/C switch ON | ON |
| AUT LIGHT SYS | Outside of the room is dark | OFF |
| | Outside of the room is bright | ON |
| AUTO LIGHT SW | Lighting switch OFF | OFF |
| | Lighting switch AUTO | ON |
| BACK DOOR SW | Back door closed | OFF |
| | Back door opened | ON |
| CDL LOCK SW | Door lock/unlock switch does not operate | OFF |
| | Press door lock/unlock switch to the LOCK side | ON |
| CDL UNLOCK SW | Door lock/unlock switch does not operate | OFF |
| | Press door lock/unlock switch to the UNLOCK side | ON |
| DOOR SW-AS | Front door RH closed | OFF |
| | Front door RH opened | ON |
| DOOR SW-DR | Front door LH closed | OFF |
| | Front door LH opened | ON |
| DOOR SW-RL | Rear door LH closed | OFF |
| | Rear door LH opened | ON |
| DOOR SW-RR | Rear door RH closed | OFF |
| | Rear door RH opened | ON |
| ENGINE RUN | Engine stopped | OFF |
| | Engine running | ON |
| FR FOG SW | Front fog lamp switch OFF | OFF |
| | Front fog lamp switch ON | ON |
| FR WASHER SW | Front washer switch OFF | OFF |
| | Front washer switch ON | ON |
| FR WIPER LOW | Front wiper switch OFF | OFF |
| | Front wiper switch LO | ON |
| FR WIPER HI | Front wiper switch OFF | OFF |
| | Front wiper switch HI | ON |
| FR WIPER INT | Front wiper switch OFF | OFF |
| | Front wiper switch INT | ON |
| FR WIPER STOP | Any position other than front wiper stop position | OFF |
| | Front wiper stop position | ON |
| HAZARD SW | When hazard switch is not pressed | OFF |
| | When hazard switch is pressed | ON |
| LIGHT SW 1ST | Lighting switch OFF | OFF |
| | Lighting switch 1st | ON |

| Monitor Item | Condition | Value/Status |
|---|---|---|
| HEADLAMP SW1 | Headlamp switch OFF | OFF |
| | Headlamp switch 1st | ON |
| HEADLAMP SW2 | Headlamp switch OFF | OFF |
| | Headlamp switch 1st | ON |
| HI BEAM SW | High beam switch OFF | OFF |
| | High beam switch HI | ON |
| H/L WASH SW | **NOTE:**<br>The item is indicated, but not monitored | OFF |
| IGN ON SW | Ignition switch OFF or ACC | OFF |
| | Ignition switch ON | ON |
| IGN SW CAN | Ignition switch OFF or ACC | OFF |
| | Ignition switch ON | ON |
| INT VOLUME | Wiper intermittent dial is in a dial position 1 - 7 | 1 - 7 |
| I-KEY LOCK | LOCK button of Intelligent Key is not pressed | OFF |
| | LOCK button of Intelligent Key is pressed | ON |
| I-KEY UNLOCK | UNLOCK button of Intelligent Key is not pressed | OFF |
| | UNLOCK button of Intelligent Key is pressed | ON |
| KEY ON SW | Mechanical key is removed from key cylinder | OFF |
| | Mechanical key is inserted to key cylinder | ON |
| OIL PRESS SW | • Ignition switch OFF or ACC<br>• Engine running | OFF |
| | Ignition switch ON | ON |
| PASSING SW | Other than lighting switch PASS | OFF |
| | Lighting switch PASS | ON |
| REAR DEF SW | Rear window defogger switch OFF | OFF |
| | Rear window defogger switch ON | ON |
| RKE LOCK AND UN-LOCK | **NOTE:**<br>The item is indicated, but not monitored | OFF |
| | | ON |
| RR WASHER SW | Rear washer switch OFF | OFF |
| | Rear washer switch ON | ON |
| RR WIPER INT | Rear wiper switch OFF | OFF |
| | Rear wiper switch INT | ON |
| RR WIPER ON | Rear wiper switch OFF | OFF |
| | Rear wiper switch ON | ON |
| RR WIPER STOP | Rear wiper stop position | OFF |
| | Other than rear wiper stop position | ON |
| TAIL LAMP SW | Lighting switch OFF | OFF |
| | Lighting switch 1ST | ON |
| TRNK OPNR SW | When back door opener switch is not pressed | OFF |
| | When back door opener switch is pressed | ON |
| TURN SIGNAL L | Turn signal switch OFF | OFF |
| | Turn signal switch LH | ON |
| TURN SIGNAL R | Turn signal switch OFF | OFF |
| | Turn signal switch RH | ON |
| VEHICLE SPEED | While driving | Equivalent to speedometer reading |

## Terminal Layout

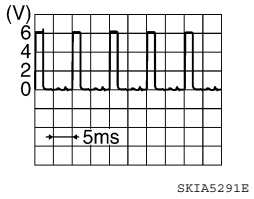
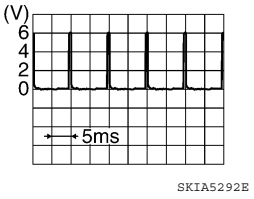
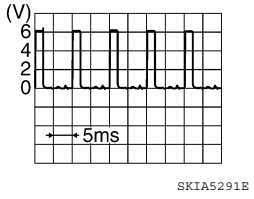
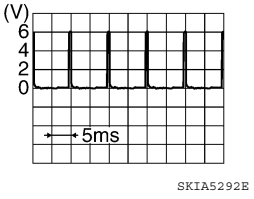
INFOID:0000000003776421

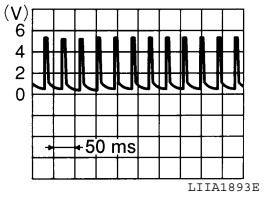
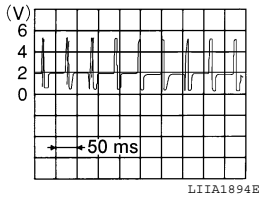
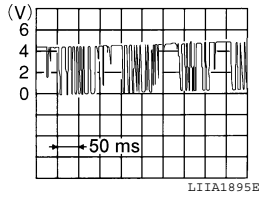
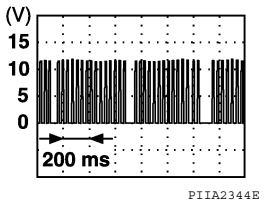


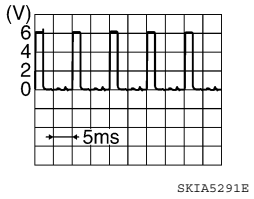
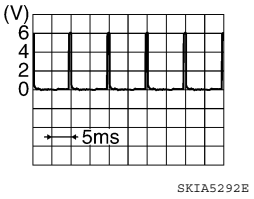
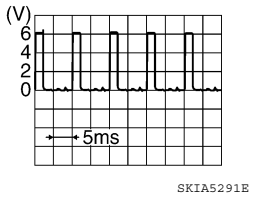
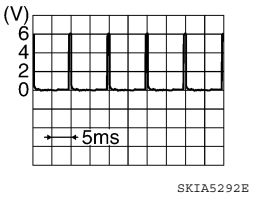

LIIA2443E

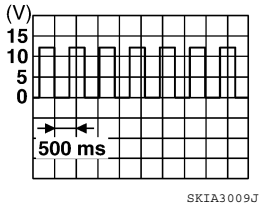
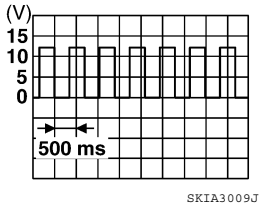
## Physical Values

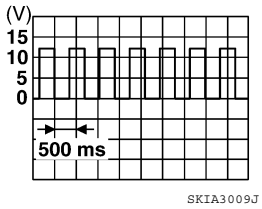
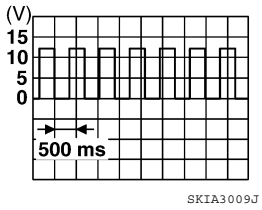
INFOID:0000000003776422

| Terminal | Wire color | Signal name | Signal input/ output | Measuring condition | | Reference value or waveform (Approx.) |
|---|---|---|---|---|---|---|
| | | | | Ignition switch | Operation or condition | |
| 1 | BR/W | Ignition keyhole illumination | Output | OFF | Door is locked (SW OFF) | Battery voltage |
| | | | | | Door is unlocked (SW ON) | 0V |
| 2 | SB | Combination switch input 5 | Input | ON | Lighting, turn, wiper OFF<br>Wiper dial position 4 |  SKIA5291E |
| 3 | G/Y | Combination switch input 4 | Input | ON | Lighting, turn, wiper OFF<br>Wiper dial position 4 |  SKIA5292E |
| 4 | Y | Combination switch input 3 | Input | ON | Lighting, turn, wiper OFF<br>Wiper dial position 4 |  SKIA5291E |
| 5 | G/B | Combination switch input 2 | Input | ON | Lighting, turn, wiper OFF<br>Wiper dial position 4 |  SKIA5292E |
| 6 | V | Combination switch input 1 | | | | |
| 9 | GR/R | Rear window defogger switch | Input | ON | Rear window defogger switch ON | 0V |
| | | | | | Rear window defogger switch OFF | 5V |
| 10 | G | Hazard lamp flash | Input | OFF | ON (opening or closing) | 0V |
| | | | | | OFF (other than above) | Battery voltage |
| 11 | O | Ignition switch (ACC or ON) | Input | ACC or ON | Ignition switch ACC or ON | Battery voltage |
| 12 | R/L | Front door switch RH | Input | OFF | ON (open) | 0V |
| | | | | | OFF (closed) | Battery voltage |
| 13 | GR | Rear door switch RH | Input | OFF | ON (open) | 0V |
| | | | | | OFF (closed) | Battery voltage |
| 15 | L/W | Tire pressure warning check connector | Input | OFF | — | 5V |
| 18 | P | Remote keyless entry receiver and optical sensor (ground) | Output | OFF | — | 0V |

| Terminal | Wire color | Signal name | Signal input/ output | Measuring condition | | Reference value or waveform (Approx.) |
|---|---|---|---|---|---|---|
| | | | | Ignition switch | Operation or condition | |
| 19 | V/W | Remote keyless entry receiver (power supply) | Output | OFF | Ignition switch OFF |  |
| 20 | G/W | Remote keyless entry receiver (signal) | Input | OFF | Stand-by (keyfob buttons released) |  |
| | | | | | When remote keyless entry receiver receives signal from keyfob (keyfob buttons pressed) |  |
| 21 | G | NATS antenna amp. | Input | OFF → ON | Ignition switch (OFF → ON) | Just after turning ignition switch ON: Pointer of tester should move for approx. 1 second, then return to battery voltage. |
| 22 | W/V | BUS | — | — | Ignition switch ON or power window timer operates |  |
| 23 | G/O | Security indicator lamp | Output | OFF | Goes OFF → illuminates (Every 2.4 seconds) | Battery voltage → 0V |
| 25 | BR | NATS antenna amp. | Input | OFF → ON | Ignition switch (OFF → ON) | Just after turning ignition switch ON: Pointer of tester should move for approx. 1 second, then return to battery voltage. |
| 26 | Y/L | Rear wiper auto stop switch 2 | Input | ON | Rise up position (rear wiper arm on stopper) | 0V |
| | | | | | A Position (full clockwise stop position) | 0V |
| | | | | | Forward sweep (counterclockwise direction) | Fluctuating |
| | | | | | B Position (full counterclockwise stop position) | Battery voltage |
| | | | | | Reverse sweep (clockwise direction) | Fluctuating |
| 27 | W/R | Compressor ON signal | Input | ON | A/C switch OFF | 5V |
| | | | | | A/C switch ON | 0V |

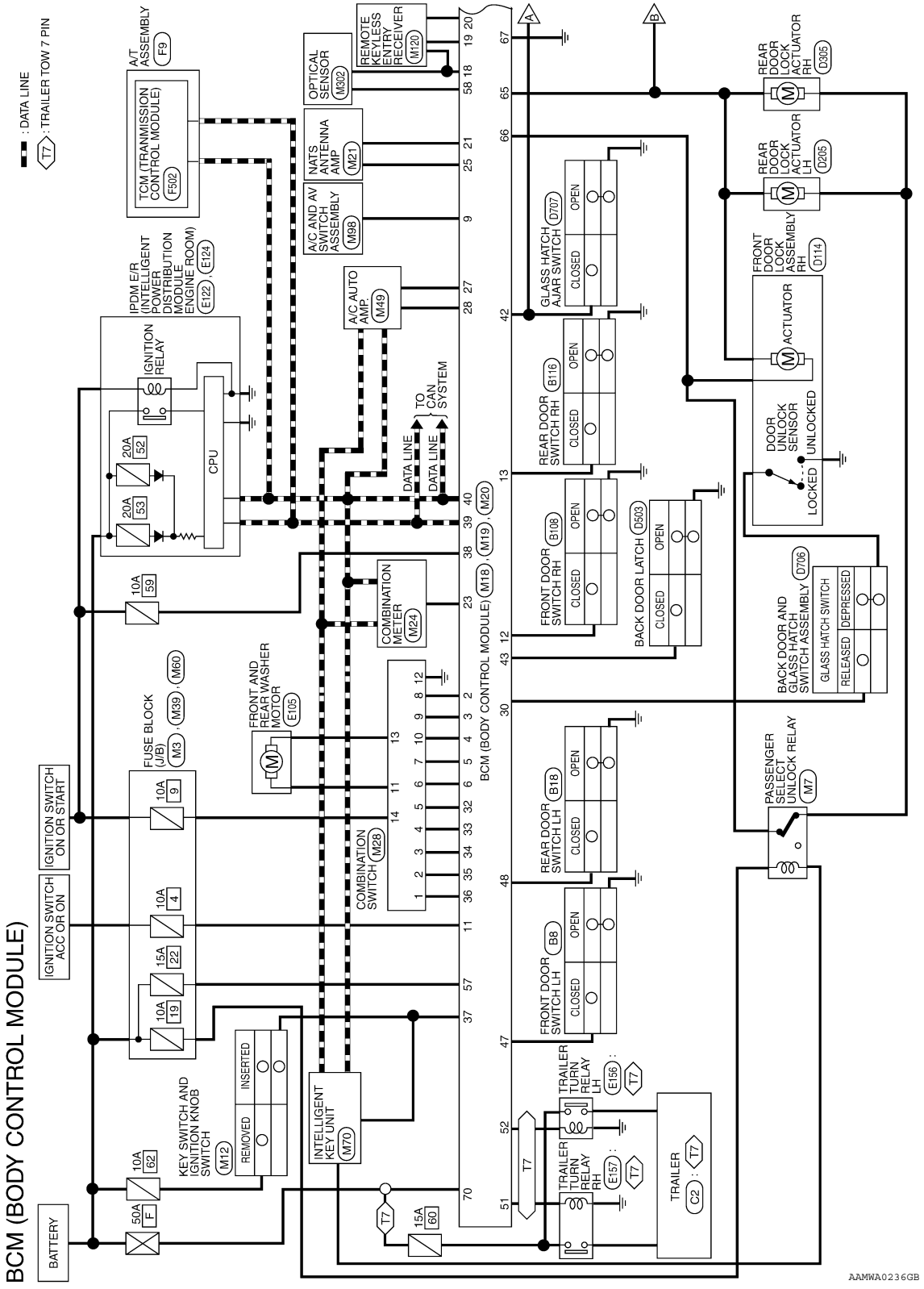
| Terminal | Wire color | Signal name | Signal input/ output | Measuring condition | | Reference value or waveform (Approx.) |
|---|---|---|---|---|---|---|
| | | | | Ignition switch | Operation or condition | |
| 28 | L/R | Front blower monitor | Input | ON | Front blower motor OFF | Battery voltage |
| | | | | | Front blower motor ON | 0V |
| 29 | W/B | Hazard switch | Input | OFF | ON | 0V |
| | | | | | OFF | 5V |
| 30 | Y/BR | Glass hatch switch | Input | OFF | Glass hatch switch released | 0 |
| | | | | | Glass hatch switch pressed | Battery |
| 32 | R/G | Combination switch output 5 | Output | ON | Lighting, turn, wiper OFF<br>Wiper dial position 4 |  <br>SKIA5291E |
| 33 | R/Y | Combination switch output 4 | Output | ON | Lighting, turn, wiper OFF<br>Wiper dial position 4 |  <br>SKIA5292E |
| 34 | L | Combination switch output 3 | Output | ON | Lighting, turn, wiper OFF<br>Wiper dial position 4 |  <br>SKIA5291E |
| 35 | O/B | Combination switch output 2 | Output | ON | Lighting, turn, wiper OFF<br>Wiper dial position 4 |  <br>SKIA5292E |
| 36 | R/W | Combination switch output 1 | | | | |
| 37 | B/R | Key switch and ignition knob switch | Input | OFF | Intelligent Key inserted | Battery voltage |
| | | | | | Intelligent Key inserted | 0V |
| 38 | W/L | Ignition switch (ON) | Input | ON | — | Battery voltage |
| 39 | L | CAN-H | — | — | — | — |
| 40 | P | CAN-L | — | — | — | — |
| 42 | GR | Glass hatch ajar switch | Input | ON | Glass hatch open | 0 |
| | | | | | Glass hatch closed | Battery |
| 43 | R/B | Back door latch (door ajar switch) | Input | OFF | ON (open) | 0V |
| | | | | | OFF (closed) | Battery voltage |

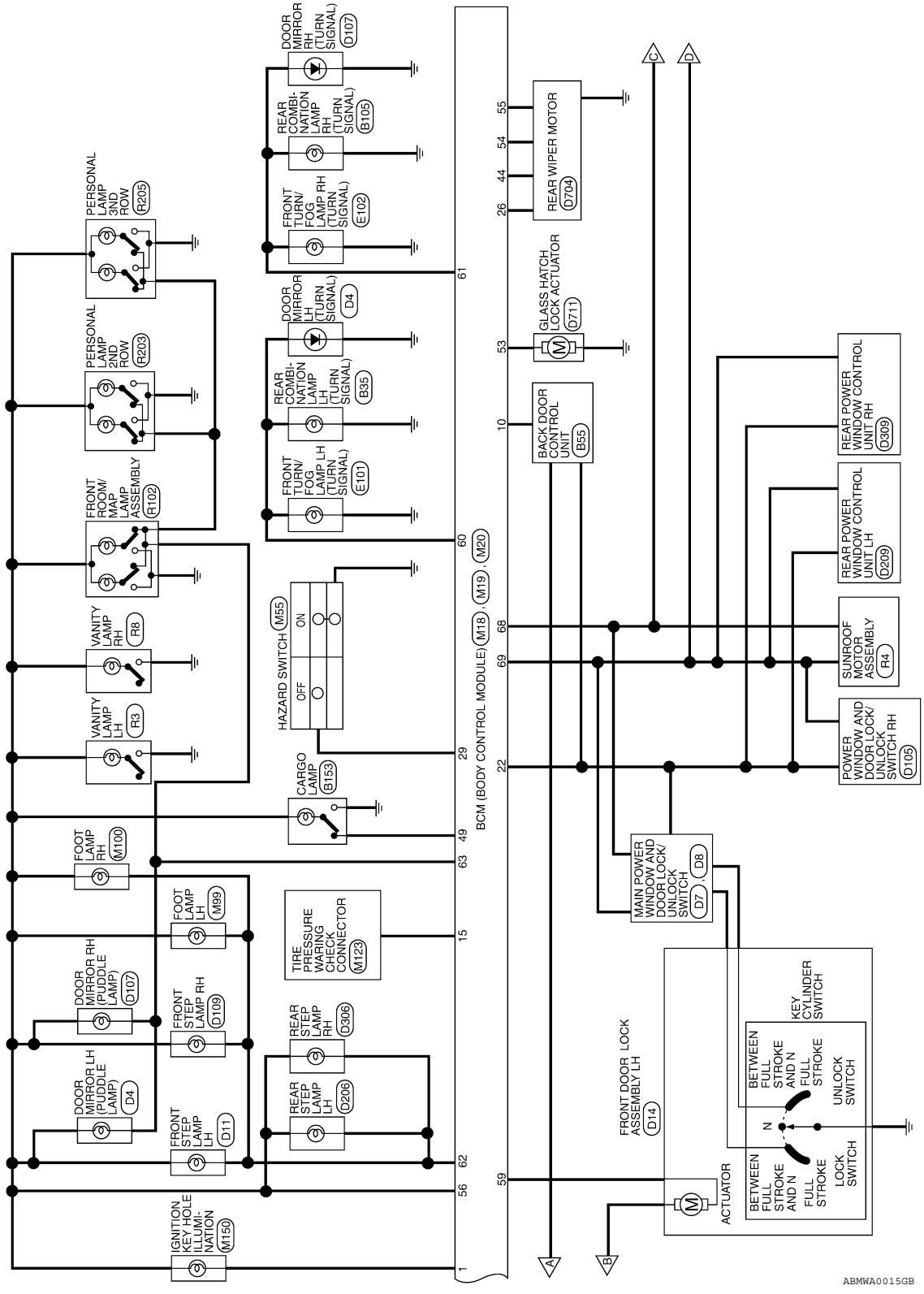
| Terminal | Wire color | Signal name | Signal input/ output | Measuring condition | | Reference value or waveform (Approx.) |
|---|---|---|---|---|---|---|
| | | | | Ignition switch | Operation or condition | |
| 44 | O | Rear wiper auto stop switch 1 | Input | ON | Rise up position (rear wiper arm on stopper) | 0V |
| | | | | | A Position (full clockwise stop position) | Battery voltage |
| | | | | | Forward sweep (counterclockwise direction) | Fluctuating |
| | | | | | B Position (full counterclockwise stop position) | 0V |
| | | | | | Reverse sweep (clockwise direction) | Fluctuating |
| 47 | SB | Front door switch LH | Input | OFF | ON (open) | 0V |
| | | | | | OFF (closed) | Battery voltage |
| 48 | R/Y | Rear door switch LH | Input | OFF | ON (open) | 0V |
| | | | | | OFF (closed) | Battery voltage |
| 49 | R | Cargo lamp | Output | OFF | Any door open (ON) | 0V |
| | | | | | All doors closed (OFF) | Battery voltage |
| 51 | G/Y | Trailer turn signal (right) | Output | ON | Turn right ON |  SKIA3009J |
| 52 | G/B | Trailer turn signal (left) | Output | ON | Turn left ON |  SKIA3009J |
| 53 | L/W | Glass hatch lock actuator | Output | OFF | Glass hatch switch released | 0 |
| | | | | | Glass hatch switch pressed | Battery |
| 54 | Y | Rear wiper output circuit 2 | Input | ON | Rise up position (rear wiper arm on stopper) | 0V |
| | | | | | A Position (full clockwise stop position) | 0V |
| | | | | | Forward sweep (counterclockwise direction) | 0V |
| | | | | | B Position (full counterclockwise stop position) | Battery voltage |
| | | | | | Reverse sweep (clockwise direction) | Battery voltage |
| 55 | SB | Rear wiper output circuit 1 | Output | ON | OFF | 0 |
| | | | | | ON | Battery voltage |
| 56 | R/G | Battery saver output | Output | OFF | 30 minutes after ignition switch is turned OFF | 0V |
| | | | | ON | — | Battery voltage |
| 57 | Y/R | Battery power supply | Input | OFF | — | Battery voltage |

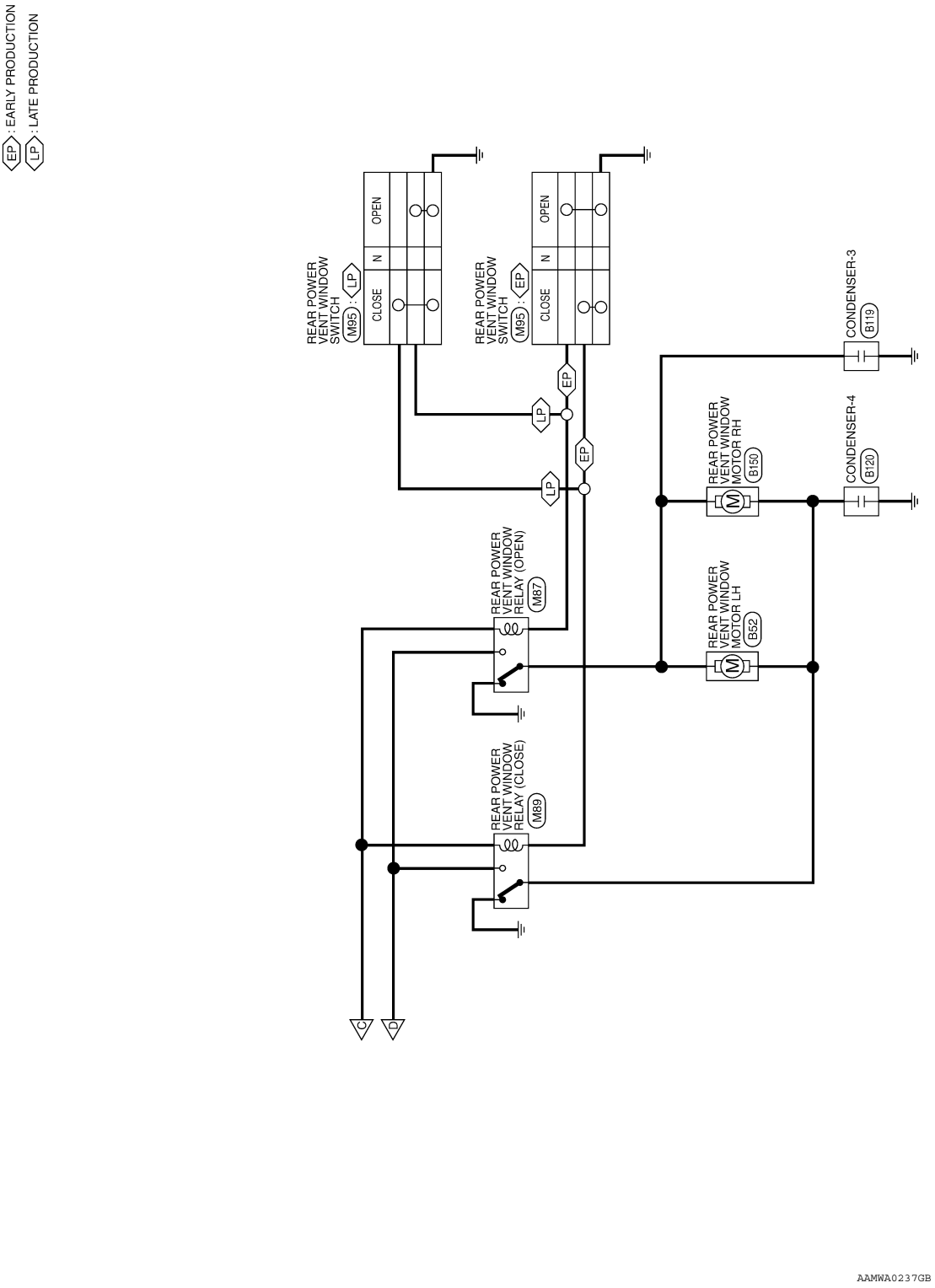
| Terminal | Wire color | Signal name | Signal input/ output | Measuring condition | | Reference value or waveform (Approx.) |
|---|---|---|---|---|---|---|
| | | | | Ignition switch | Operation or condition | |
| 58 | W/R | Optical sensor | Input | ON | When optical sensor is illuminated | 3.1V or more |
| | | | | | When optical sensor is not illuminated | 0.6V or less |
| 59 | G | Front door lock assembly LH actuator (unlock) | Output | OFF | OFF (neutral) | 0V |
| | | | | | ON (unlock) | Battery voltage |
| 60 | G/B | Turn signal (left) | Output | ON | Turn left ON |  SKIA3009J |
| 61 | G/Y | Turn signal (right) | Output | ON | Turn right ON |  SKIA3009J |
| 62 | R/W | Step lamp LH and RH | Output | OFF | ON (any door open) | 0V |
| | | | | | OFF (all doors closed) | Battery voltage |
| 63 | L | Interior room/map lamp | Output | OFF | Any door switch: ON (open) | 0V |
| | | | | | Any door switch: OFF (closed) | Battery voltage |
| 65 | V | All door lock actuators (lock) | Output | OFF | OFF (neutral) | 0V |
| | | | | | ON (lock) | Battery voltage |
| 66 | G/Y | Front door lock actuator RH, rear door lock actuators LH/RH and back door lock actuator (unlock) | Output | OFF | OFF (neutral) | 0V |
| | | | | | ON (unlock) | Battery voltage |
| 67 | B | Ground | Input | ON | — | 0V |
| 68 | W/L | Power window power supply (RAP) | Output | — | Ignition switch ON | Battery voltage |
| | | | | | Within 45 seconds after ignition switch OFF | Battery voltage |
| | | | | | More than 45 seconds after ignition switch OFF | 0V |
| | | | | | When front door LH or RH is open or power window timer operates | 0V |
| 69 | W/R | Power window power supply | Output | — | — | Battery voltage |
| 70 | W/B | Battery power supply | Input | OFF | — | Battery voltage |

## Wiring Diagram

INFOID:0000000003776423



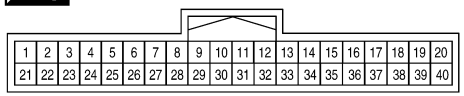

BCM (BODY CONTROL MODULE) (M18), (M19), (M20)
HAZARD SWITCH (M55)
OFF
ON
PERSONAL LAMP 3ND ROW (R205)
PERSONAL LAMP 2ND ROW (R203)
FRONT ROOM/ MAP LAMP ASSEMBLY (R102)
VANITY LAMP RH (R8)
VANITY LAMP LH (R3)
CARGO LAMP (B153)
FOOT LAMP RH (M100)
FOOT LAMP LH (M99)
DOOR MIRROR RH (PUDDLE LAMP) (D107)
DOOR MIRROR LH (PUDDLE LAMP) (D4)
FRONT STEP LAMP RH (D109)
FRONT STEP LAMP LH (D11)
REAR STEP LAMP RH (D306)
REAR STEP LAMP LH (D206)
TIRE PRESSURE WARING CHECK CONNECTOR (M123)
IGNITION KEY HOLE ILLUMI-NATION (M150)
DOOR MIRROR RH (TURN SIGNAL) (D107)
REAR COMBI-NATION LAMP RH (TURN SIGNAL) (B105)
FRONT TURN/ FOG LAMP RH (TURN SIGNAL) (E102)
DOOR MIRROR LH (TURN SIGNAL) (D4)
REAR COMBI-NATION LAMP LH (TURN SIGNAL) (B35)
FRONT TURN/ FOG LAMP LH (TURN SIGNAL) (E101)
REAR WIPER MOTOR (D704)
GLASS HATCH LOCK ACTUATOR (D711)
BACK DOOR CONTROL UNIT (B55)
REAR POWER WINDOW CONTROL UNIT RH (D309)
REAR POWER WINDOW CONTROL UNIT LH (D209)
SUNROOF MOTOR ASSEMBLY (R4)
POWER WINDOW AND DOOR LOCK/ UNLOCK SWITCH RH (D105)
MAIN POWER WINDOW AND DOOR LOCK/ UNLOCK SWITCH (D7), (D8)
FRONT DOOR LOCK ASSEMBLY LH (D14)
ACTUATOR
KEY CYLINDER SWITCH
BETWEEN FULL STROKE AND N
FULL STROKE
UNLOCK SWITCH
LOCK SWITCH
N
ABMWA0015GB


EP : EARLY PRODUCTION
LP : LATE PRODUCTION
REAR POWER VENT WINDOW SWITCH (M95) : LP
REAR POWER VENT WINDOW SWITCH (M95) : EP
OPEN
N
CLOSE
EP
LP
REAR POWER VENT WINDOW RELAY (OPEN) M87
REAR POWER VENT WINDOW RELAY (CLOSE) M89
REAR POWER VENT WINDOW MOTOR RH B150
REAR POWER VENT WINDOW MOTOR LH B52
CONDENSER-3 B119
CONDENSER-4 B120
C
D
AAMWA0237GB

## BCM (BODY CONTROL MODULE) CONNECTORS

| Connector No. | M18 |
|---|---|
| Connector Name | BCM (BODY CONTROL MODULE) |
| Connector Color | WHITE |

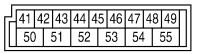
H.S.




| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 1 | BR/W | KEY RING OUTPUT |
| 2 | SB | INPUT 5 |
| 3 | G/Y | INPUT 4 |
| 4 | Y | INPUT 3 |
| 5 | G/B | INPUT 2 |
| 6 | V | INPUT 1 |
| 7 | – | – |
| 8 | – | – |
| 9 | GR/R | REAR DEFOGGER SW |
| 10 | G | IVCS INPUT |
| 11 | O | ACC SW |
| 12 | R/L | DOOR SW (AS) |
| 13 | GR | DOOR SW (RR) |
| 14 | – | – |
| 15 | L/W | TPMS (MODE TRIGGER SWITCH) |
| 16 | – | – |
| 17 | – | – |
| 18 | P | KEYLESS AND AUTO LIGHT SENSOR GND |
| 19 | V/W | KEYLESS TUNER POWER SUPPLY OUTPUT |
| 20 | G/W | KEYLESS TUNER SIGNAL |
| 21 | G | IMMOBILIZER ANTENNA SIGNAL (CLOCK) |
| 22 | W/V | ANTI-PINCH SERIAL LINK (RX, TX) |
| 23 | G/W | SECURITY INDICATOR OUTPUT |
| 24 | – | – |
| 25 | BR | IMMOBILIZER ANTENNA SIGNAL (RX,TX) |
| 26 | Y/L | REAR WIPER AUTO STOP SW2 |
| 27 | W/R | AIR CON SW |
| 28 | L/R | BLOWER FAN SW |
| 29 | W/B | HAZARD SW |
| 30 | Y/BR | GLASS HATCH OPENER |
| 31 | – | – |
| 32 | R/G | OUTPUT 5 |
| 33 | R/Y | OUTPUT 4 |
| 34 | L | OUTPUT 3 |
| 35 | O/B | OUTPUT 2 |
| 36 | R/W | OUTPUT 1 |
| 37 | B/R | KEY SW |
| 38 | W/L | IGN SW |
| 39 | L | CAN-H |
| 40 | P | CAN-L |

| Connector No. | M19 |
|---|---|
| Connector Name | BCM (BODY CONTROL MODULE) |
| Connector Color | WHITE |

H.S.




| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 41 | – | – |
| 42 | GR | GLASS HATCH SW |
| 43 | R/B | BACK DOOR SW |
| 44 | O | REAR WIPER AUTO STOP SW1 |
| 45 | – | – |
| 46 | – | – |
| 47 | SB | DOOR SW (DR) |
| 48 | R/Y | DOOR SW (RL) |
| 49 | R | LUGGAGE LAMP OUTPUT |
| 50 | – | – |
| 51 | G/Y | TREAILER FLASH OUTPUT (RIGHT) |
| 52 | G/B | TREAILER FLASH OUTPUT (LEFT) |
| 53 | L/W | GLASS ACTUATOR OUTPUT |
| 54 | Y | REAR WIPER MOTOR OUTPUT 2 |
| 55 | SB | REAR WIPER MOTOR OUTPUT 1 |

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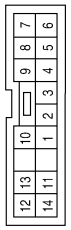
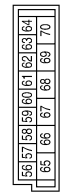
| | |
|---|---|
| Connector No. | M28 |
| Connector Name | COMBINATION SWITCH |
| Connector Color | WHITE |




| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 1 | R/W | INPUT 1 |
| 2 | O/B | INPUT 2 |
| 3 | L | INPUT 3 |
| 4 | R/Y | INPUT 4 |
| 5 | R/G | INPUT 5 |
| 6 | V | OUTPUT 1 |
| 7 | G/B | OUTPUT 2 |
| 8 | SB | OUTPUT 5 |
| 9 | G/Y | OUTPUT 4 |
| 10 | Y | OUTPUT 3 |
| 11 | V/W | WASHER MOTOR |
| 12 | B | GND |
| 13 | W/R | WASHER MOTOR |
| 14 | R/L | IGN |

| | |
|---|---|
| Connector No. | M20 |
| Connector Name | BCM (BODY CONTROL MODULE) |
| Connector Color | BLACK |




| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 56 | R/G | BATTERY SAVER OUTPUT |
| 57 | Y/R | BAT (FUSE) |
| 58 | W/R | AUTO LIGHT SENSOR INPUT 2 |
| 59 | G | DOOR UNLOCK OUTPUT (DR) |
| 60 | G/B | FLASHER OUTPUT (LEFT) |
| 61 | G/Y | FLASHER OUTPUT (RIGHT) |
| 62 | R/W | STEP LAMP OUTPUT |
| 63 | L | ROOM LAMP |
| 64 | – | – |
| 65 | V | OOR LOCK OUTPUT (ALL) |
| 66 | G/Y | DOOR UNLOCK OUTPUT (OTHER) |
| 67 | B | GND (POWER) |
| 68 | W/L | POWER WINDOW POWER SUPPLY (RAP) |
| 69 | W/R | POWER WINDOW POWER SUPPLY (BAT) |
| 70 | W/B | BATT (F/L) |

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## Fail Safe

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### Fail-safe index

BCM performs fail-safe control when any DTC listed below is detected.

| Display contents of CONSULT | Fail-safe | Cancellation |
|---|---|---|
| U1000: CAN COMM CIRCUIT | Inhibit engine cranking | When the BCM re-establishes communication with the other modules. |
| U1010: CONTROL UNIT (CAN) | Inhibit engine cranking | When the BCM re-start communicating with the other modules. |

## DTC Inspection Priority Chart

INFOID:0000000003776424

If some DTCs are displayed at the same time, perform inspections one by one based on the following priority chart.

| Priority | DTC |
|---|---|
| 1 | • U1000: CAN COMM CIRCUIT<br>• U1010: CONTROL UNIT (CAN) |
| 2 | • B2190: NATS ANTENNA AMP<br>• B2191: DIFFERENCE OF KEY<br>• B2192: ID DISCORD BCM-ECM<br>• B2193: CHAIN OF BCM-ECM<br>• B2013: STRG COMM 1<br>• B2552: INTELLIGENT KEY<br>• B2590: NATS MALFUNCTION |
| 3 | • C1729: VHCL SPEED SIG ERR<br>• C1735: IGNITION SIGNAL |
| 4 | • C1704: LOW PRESSURE FL<br>• C1705: LOW PRESSURE FR<br>• C1706: LOW PRESSURE RR<br>• C1707: LOW PRESSURE RL<br>• C1708: [NO DATA] FL<br>• C1709: [NO DATA] FR<br>• C1710: [NO DATA] RR<br>• C1711: [NO DATA] RL<br>• C1712: [CHECKSUM ERR] FL<br>• C1713: [CHECKSUM ERR] FR<br>• C1714: [CHECKSUM ERR] RR<br>• C1715: [CHECKSUM ERR] RL<br>• C1716: [PRESSDATA ERR] FL<br>• C1717: [PRESSDATA ERR] FR<br>• C1718: [PRESSDATA ERR] RR<br>• C1719: [PRESSDATA ERR] RL<br>• C1720: [CODE ERR] FL<br>• C1721: [CODE ERR] FR<br>• C1722: [CODE ERR] RR<br>• C1723: [CODE ERR] RL<br>• C1724: [BATT VOLT LOW] FL<br>• C1725: [BATT VOLT LOW] FR<br>• C1726: [BATT VOLT LOW] RR<br>• C1727: [BATT VOLT LOW] RL |

## DTC Index

INFOID:0000000003776425

**NOTE:**

Details of time display

- CRNT: Displays when there is a malfunction now or after returning to the normal condition until turning ignition switch OFF → ON again.
- 1 - 39: Displayed if any previous malfunction is present when current condition is normal. It increases like 1 → 2 → 3...38 → 39 after returning to the normal condition whenever ignition switch OFF → ON. The counter remains at 39 even if the number of cycles exceeds it. It is counted from 1 again when turning ignition switch OFF → ON after returning to the normal condition if the malfunction is detected again.

| CONSULT display | Fail-safe | Intelligent Key warning lamp ON | Tire pressure monitor warning lamp ON | Reference page |
|---|---|---|---|---|
| No DTC is detected. further testing may be required. | — | — | — | — |
| U1000: CAN COMM CIRCUIT | — | — | — | BCS-30 |
| U1010: CONTROL UNIT (CAN) | — | — | — | BCS-31 |
| B2190: NATS ANTENNA AMP | — | — | — | SEC-27 |
| B2191: DIFFERENCE OF KEY | — | — | — | SEC-30 |
| B2192: ID DISCORD BCM-ECM | — | — | — | SEC-31 |
| B2193: CHAIN OF BCM-ECM | — | — | — | SEC-33 |
| B2552: INTELLIGENT KEY | — | — | — | SEC-35 |
| B2590: NATS MALFUNCTION | — | — | — | SEC-36 |
| C1704: LOW PRESSURE FL | — | — | — | WT-26 |
| C1705: LOW PRESSURE FR | — | — | — | WT-26 |
| C1706: LOW PRESSURE RR | — | — | — | WT-26 |
| C1707: LOW PRESSURE RL | — | — | — | WT-26 |
| C1708: [NO DATA] FL | — | — | — | WT-14 |
| C1709: [NO DATA] FR | — | — | — | WT-14 |
| C1710: [NO DATA] RR | — | — | — | WT-14 |
| C1711: [NO DATA] RL | — | — | — | WT-14 |
| C1712: [CHECKSUM ERR] FL | — | — | — | WT-16 |
| C1713: [CHECKSUM ERR] FR | — | — | — | WT-16 |
| C1714: [CHECKSUM ERR] RR | — | — | — | WT-16 |
| C1715: [CHECKSUM ERR] RL | — | — | — | WT-16 |
| C1716: [PRESSDATA ERR] FL | — | — | — | WT-18 |
| C1717: [PRESSDATA ERR] FR | — | — | — | WT-18 |
| C1718: [PRESSDATA ERR] RR | — | — | — | WT-18 |
| C1719: [PRESSDATA ERR] RL | — | — | — | WT-18 |
| C1720: [CODE ERR] FL | — | — | — | WT-16 |
| C1721: [CODE ERR] FR | — | — | — | WT-16 |
| C1722: [CODE ERR] RR | — | — | — | WT-16 |
| C1723: [CODE ERR] RL | — | — | — | WT-16 |
| C1724: [BATT VOLT LOW] FL | — | — | — | WT-16 |
| C1725: [BATT VOLT LOW] FR | — | — | — | WT-16 |
| C1726: [BATT VOLT LOW] RR | — | — | — | WT-16 |
| C1727: [BATT VOLT LOW] RL | — | — | — | WT-16 |
| C1729: VHCL SPEED SIG ERR | — | — | — | WT-19 |
| C1735: IGNITION SIGNAL | — | — | — | — |

# SYMPTOM DIAGNOSIS

## COMBINATION SWITCH SYSTEM SYMPTOMS

### Symptom Table

INFOID:0000000003776426

1. Perform the data monitor of CONSULT-III to check for any malfunctioning item.
2. Check the malfunction combinations.

Malfunction item: ×

| Data monitor item | | | | | | | | | | | | | | | | | Malfunction combination |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TURN SIGNAL R | TURN SIGNAL L | HI BEAM SW | HEADLAMP SW 1 | HEADLAMP SW 2 | TAIL LAMP SW | PASSING SW | AUTO LIGHT SW | FR FOG SW | FR WIPER HI | FR WIPER LOW | FR WIPER INT | FR WASHER SW | INT VOLUME | RR WIPER ON | RR WIPER INT | RR WASHER SW | |
| × | × | | | | | | | | | × | | × | | | | | A |
| | | | × | | | × | | | × | | × | | | | | | B |
| | | × | | × | | | | | | | | | × | | | × | C |
| | | | | | × | | × | | | | | | × | | × | | D |
| | | | | | | | | × | | | | | × | × | | | E |
| | | | | | | | | | × | | | | × | | × | | F |
| | | | | | | | | | | | | × | × | × | | × | G |
| | | | | | | | × | | | × | × | | | | | | H |
| | × | | | × | | × | | × | | | | | | | | | I |
| × | | × | × | | × | | | | | | | | | | | | J |
| Combinations other than those above | | | | | | | | | | | | | | | | | K |
| All Items | | | | | | | | | | | | | | | | | L |
| If only one item is detected or the item is not applicable to the combinations A to L | | | | | | | | | | | | | | | | | M |

3. Identify the malfunctioning part from the agreed combination and repair or replace the part.

| Malfunction combination | Malfunctioning part | Repair or replace |
|---|---|---|
| A | Combination switch INPUT 1 circuit | Inspect the combination switch input circuit applicable to the malfunctioning part. Refer to BCS-33, "Diagnosis Procedure". |
| B | Combination switch INPUT 2 circuit | |
| C | Combination switch INPUT 3 circuit | |
| D | Combination switch INPUT 4 circuit | |
| E | Combination switch INPUT 5 circuit | |
| F | Combination switch OUTPUT 1 circuit | Inspect the combination switch output circuit applicable to the malfunctioning part. Refer to BCS-35, "Diagnosis Procedure". |
| G | Combination switch OUTPUT 2 circuit | |
| H | Combination switch OUTPUT 3 circuit | |
| I | Combination switch OUTPUT 4 circuit | |
| J | Combination switch OUTPUT 5 circuit | |
| K | Light and turn signal switch or front wiper and washer switch | Refer to BCS-36, "Description". |
| L | BCM | Replace BCM. Refer to BCS-56, "Removal and Installation". |
| M | Light and turn signal switch or front wiper and washer switch | Replace the switch that cannot be operated. |

# PRECAUTION

## PRECAUTIONS

### Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER"

INFOID:0000000005851887

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 SR 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 SR 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.**

#### PRECAUTIONS WHEN USING POWER TOOLS (AIR OR ELECTRIC) AND HAMMERS

**WARNING:**

- **When working near the Airbag Diagnosis Sensor Unit or other Airbag System sensors with the Ignition ON or engine running, DO NOT use air or electric power tools or strike near the sensor(s) with a hammer. Heavy vibration could activate the sensor(s) and deploy the air bag(s), possibly causing serious injury.**
- **When using air or electric power tools or hammers, always switch the Ignition OFF, disconnect the battery, and wait at least 3 minutes before performing any service.**

### Precaution Necessary for Steering Wheel Rotation After Battery Disconnect

INFOID:0000000005851888

**NOTE:**

- This Procedure is applied only to models with Intelligent Key system and NATS (NISSAN ANTI-THEFT SYSTEM).
- Remove and install all control units after disconnecting both battery cables with the ignition knob in the ″LOCK″ position.
- Always use CONSULT-III to perform self-diagnosis as a part of each function inspection after finishing work. If DTC is detected, perform trouble diagnosis according to self-diagnostic results.

For models equipped with the Intelligent Key system and NATS, an electrically controlled steering lock mechanism is adopted on the key cylinder.
For this reason, if the battery is disconnected or if the battery is discharged, the steering wheel will lock and steering wheel rotation will become impossible.
If steering wheel rotation is required when battery power is interrupted, follow the procedure below before starting the repair operation.

#### OPERATION PROCEDURE

1. Connect both battery cables.
   **NOTE:**
   Supply power using jumper cables if battery is discharged.
2. Use the Intelligent Key or mechanical key to turn the ignition switch to the ″ACC″ position. At this time, the steering lock will be released.
3. Disconnect both battery cables. The steering lock will remain released and the steering wheel can be rotated.
4. Perform the necessary repair operation.

5. When the repair work is completed, return the ignition switch to the ″LOCK″ position before connecting the battery cables. (At this time, the steering lock mechanism will engage.)
6. Perform a self-diagnosis check of all control units using CONSULT-III.

# ON-VEHICLE REPAIR

## BCM (BODY CONTROL MODULE)

### Removal and Installation

INFOID:0000000003776427

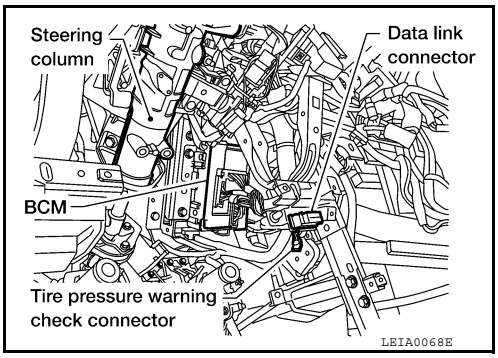
BCM

Removal

**NOTE:**

If possible, before removing BCM, retrieve current BCM configuration to use for reference when configuring brand-new BCM after installation. Refer to WT-6, "ID Registration Procedure".

1. Disconnect the battery negative terminal.
2. Remove the lower knee protector. Refer to IP-12, "Exploded View".
3. Remove the screw and release the BCM.
4. Disconnect the connectors and then remove the BCM.




Installation

Installation is in the reverse order of removal.

**NOTE:**

- When replacing BCM, it must be configured. Refer to BCS-4, "CONFIGURATION : Special Repair Requirement".
- When replacing BCM, perform initialization of NATS system and registration of all NATS ignition key IDs. Refer to SEC-6, "ECM RE-COMMUNICATING FUNCTION : Special Repair Requirement".
- When replacing BCM, perform ID registration procedure of low tire pressure warning system. Refer to WT-6, "ID Registration Procedure".