

WCS

SECTION

WARNING CHIME SYSTEM

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PRECAUTIONS

< PRECAUTION >

PRECAUTION

PRECAUTIONS

Precaution for Technicians Using Medical Electric

INFOID:000000007632578

OPERATION PROHIBITION

WARNING:

- Parts with strong magnet is used in this vehicle.
- Technicians using a medical electric device such as pacemaker must never perform operation on the vehicle, as magnetic field can affect the device function by approaching to such parts.

NORMAL CHARGE PRECAUTION

WARNING:

- If a technician uses a medical electric device such as an implantable cardiac pacemaker or an implantable cardioverter defibrillator, the possible effects on the devices must be checked with the device manufacturer before starting the charge operation.
- As radiated electromagnetic wave generated by on board charger at normal charge operation may effect medical electric devices, a technician using a medical electric device such as implantable cardiac pacemaker or an implantable cardioverter defibrillator must not enter the vehicle compartment (including luggage room) during normal charge operation.

PRECAUTION AT TELEMATICS SYSTEM OPERATION

WARNING:

- If a technician uses implantable cardiac pacemaker or implantable cardioverter defibrillator (ICD), avoid the device implanted part from approaching within approximately 220 mm (8.66 in) from interior/exterior antenna.
- The electromagnetic wave of TCU might affect the function of the implantable cardiac pacemaker or the implantable cardioverter defibrillator (ICD), when using the service, etc.
- If a technician uses other medical electric devices than implantable cardiac pacemaker or implantable cardioverter defibrillator (ICD), the electromagnetic wave of TCU might affect the function of the device. The possible effects on the devices must be checked with the device manufacturer before TCU use.

PRECAUTION AT INTELLIGENT KEY SYSTEM OPERATION

WARNING:

- If a technician uses implantable cardiac pacemaker or implantable cardioverter defibrillator (ICD), avoid the device implanted part from approaching within approximately 220 mm (8.66 in) from interior/exterior antenna.
- The electromagnetic wave of Intelligent Key might affect the function of the implantable cardiac pacemaker or the implantable cardioverter defibrillator (ICD), at door operation, at each request switch operation, or at engine starting.
- If a technician uses other medical electric devices than implantable cardiac pacemaker or implantable cardioverter defibrillator (ICD), the electromagnetic wave of Intelligent Key might affect the function of the device. The possible effects on the devices must be checked with the device manufacturer before Intelligent Key use.

Point to Be Checked Before Starting Maintenance Work

INFOID:000000007632579

The high voltage system may starts automatically. It is required to check that the timer air conditioner and timer charge (during EVSE connection) are not set before starting maintenance work.

NOTE:

If the timer air conditioner or timer charge (during EVSE connection) is set, the high voltage system starts automatically even when the power switch is in OFF state.

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

INFOID:000000007632580

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

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PRECAUTIONS

< PRECAUTION >

system uses the seat belt switches to determine the front air bag deployment, and may only deploy one front air bag, depending on the severity of a collision and whether the front occupants are belted or unbelted. Information necessary to service the system safely is included in the "SRS AIR BAG" and "SEAT BELT" of this Service Manual.

WARNING:

Always observe the following items for preventing accidental activation.

- To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision that 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 "SRS AIR BAG".
- Never 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:

Always observe the following items for preventing accidental activation.

- When working near the Air Bag Diagnosis Sensor Unit or other Air Bag System sensors with the power switch ON, never 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 power switch OFF, disconnect the 12V battery, and wait at least 3 minutes before performing any service.

COMPONENT PARTS

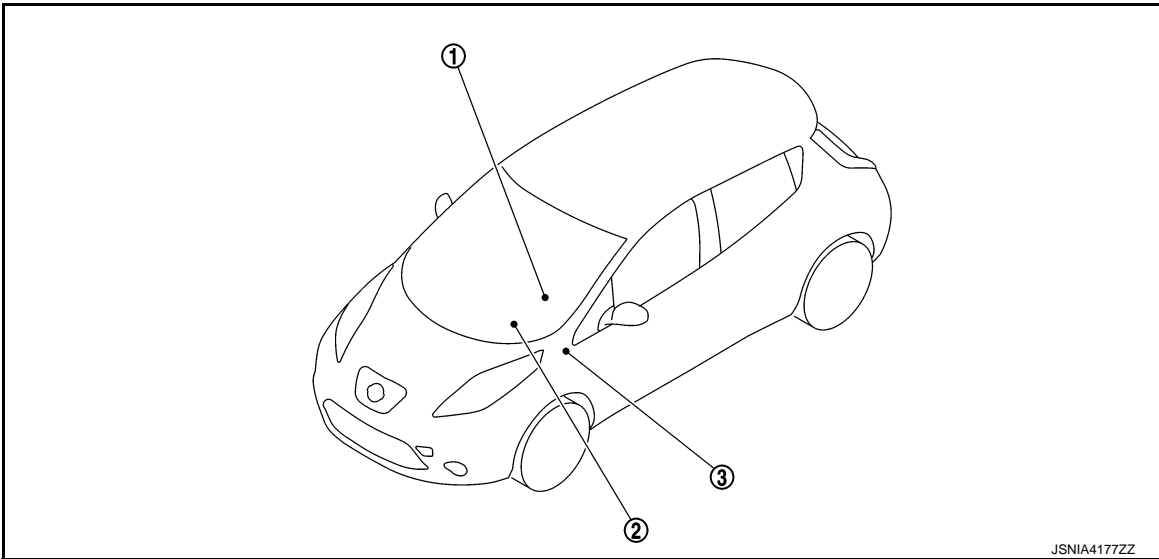
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SYSTEM DESCRIPTION

COMPONENT PARTS

Component Parts Location

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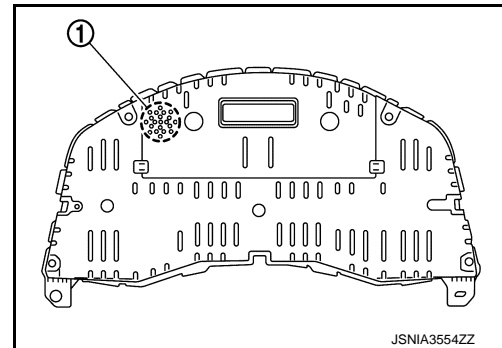
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No.	Component	Function
1.	Seat belt buckle switch (driver side)	Transmits the seat belt buckle switch signal (driver side) to the combination meter.
2.	Combination meter	Receives a buzzer output signal from the BCM with CAN communication line and sounds the buzzer.
3.	BCM	Based on the signals received from various units and switches, transmits the buzzer output signal to the combination meter via CAN communication. Refer to BCS-6. "BODY CONTROL SYSTEM : Component Parts Location" for detailed installation location.

Combination Meter

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The buzzer (1) for the warning chime system is integrated in the combination meter.



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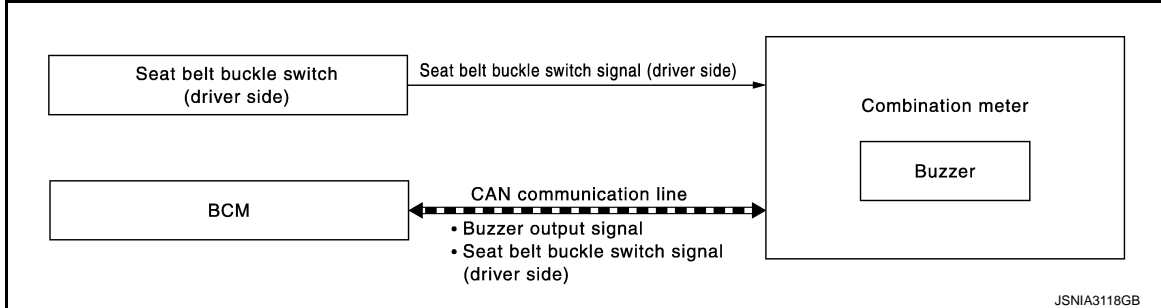
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WARNING CHIME SYSTEM

WARNING CHIME SYSTEM : System Description

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SYSTEM DIAGRAM



COMBINATION METER INPUT/OUTPUT SIGNAL (CAN COMMUNICATION SIGNAL)

Input signal

Signal name	Transmit unit
Buzzer output signal	BCM

Output signal

Signal name	Reception unit
Seat belt buckle switch signal (driver side)	BCM

BCM INPUT/OUTPUT SIGNAL (CAN COMMUNICATION SIGNAL)

Input signal

Signal name	Transmit unit
Seat belt buckle switch signal (driver side)	Combination meter

Output signal

Signal name	Reception unit
Buzzer output signal	Combination meter

COMBINATION METER

The combination meter sounds the alarm buzzer installed in the combination meter when receiving the buzzer output signal transmitted from each unit.

BCM

BCM receives signals from various units and transmits a buzzer output signal to the combination meter via CAN communication if it judges that the warning buzzer should be activated.

WARNING CHIME FUNCTION LIST

SYSTEM

< SYSTEM DESCRIPTION >

Warning functions	Outline	Warning judgment unit	Refer to
Light reminder warning chime	The warning chime sounds when the power switch is in LOCK, OFF or ACC position with the combination switch (lighting switch) in the 1st or 2nd position and the driver side door open.	BCM	WCS-9. "LIGHT RE-MINDER WARNING CHIME : System Description"
Front fog light reminder warning chime	The warning chime sounds when the power switch is turned to LOCK, OFF or ACC position from ON or READY position, with combination switch (lighting switch) is in AUTO position and the front fog lamp switch in ON position.	BCM	WCS-10. "FRONT FOG LIGHT RE-MINDER WARNING CHIME : System Description"
Seat belt warning chime	The warning chime sounds when the driver seat belt is unfastened with the power switch in ON or READY position.	BCM	WCS-11. "SEAT BELT WARNING CHIME : System Description"

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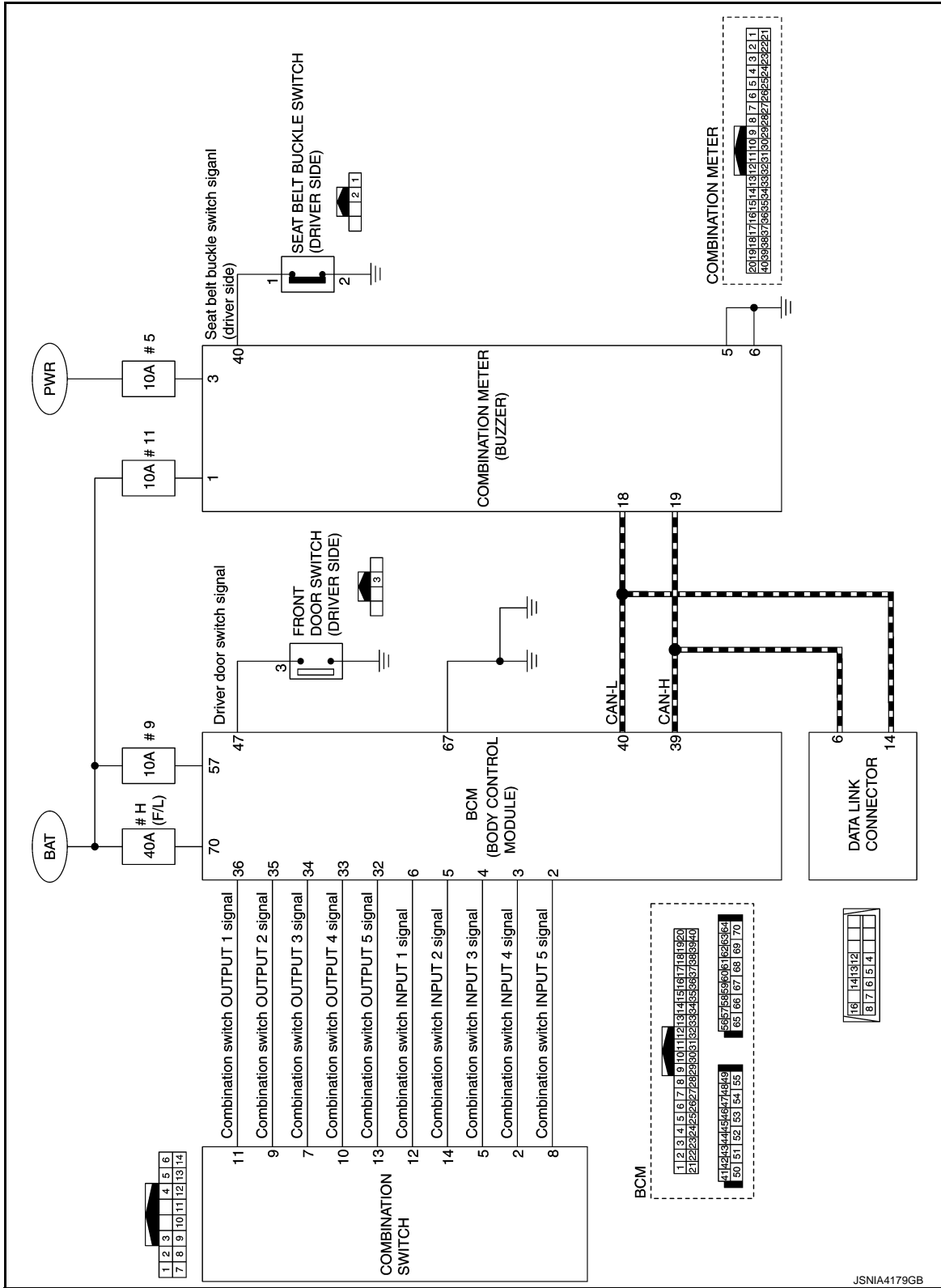
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WARNING CHIME SYSTEM : Circuit Diagram

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WARNING CHIME SYSTEM : Fail-Safe

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FAIL-SAFE

The combination meter activates the fail-safe control if CAN communication with each unit is malfunctioning.

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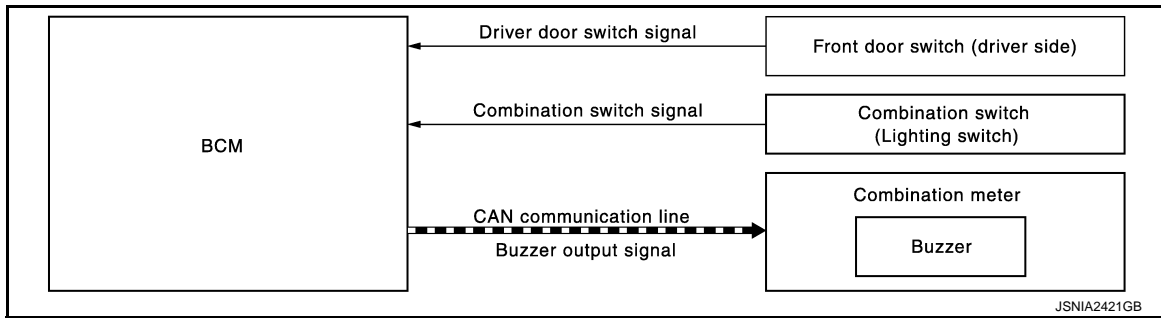
Function	Specifications
Buzzer	The buzzer turns OFF by suspending communication.

LIGHT REMINDER WARNING CHIME

LIGHT REMINDER WARNING CHIME : System Description

INFOID:000000007632586

SYSTEM DIAGRAM



WARNING CHIME OPERATION CONDITIONS

If all of the following conditions are fulfilled.

Operation conditions	
Power switch	LOCK, OFF or ACC position
Combination switch (Lighting switch)	1st or 2nd position
Driver side door	Open [front door switch (driver side) ON]

WARNING CHIME CANCEL CONDITIONS

Warning is canceled if any of the following conditions is fulfilled.

Operation conditions	
Power switch	ON or READY position
Combination switch (Lighting switch)	OFF or AUTO position
Driver side door	Close [front door switch (driver side) OFF]

SIGNAL PATH

1. BCM requires warning chime output to combination meter when it judges light reminder warning chime is necessary from signals below.

Signal name	Signal path
Power switch ON signal	—
Combination switch signal	Combination switch (Lighting switch) → BCM
Driver door switch signal	Front door switch (driver side) → BCM

2. Combination meter sounds integrated buzzer, following the warning chime output requirement (below signal) from BCM.

Signal name	Signal path
Buzzer output signal	BCM $\xrightarrow{\text{CAN}}$ Combination meter

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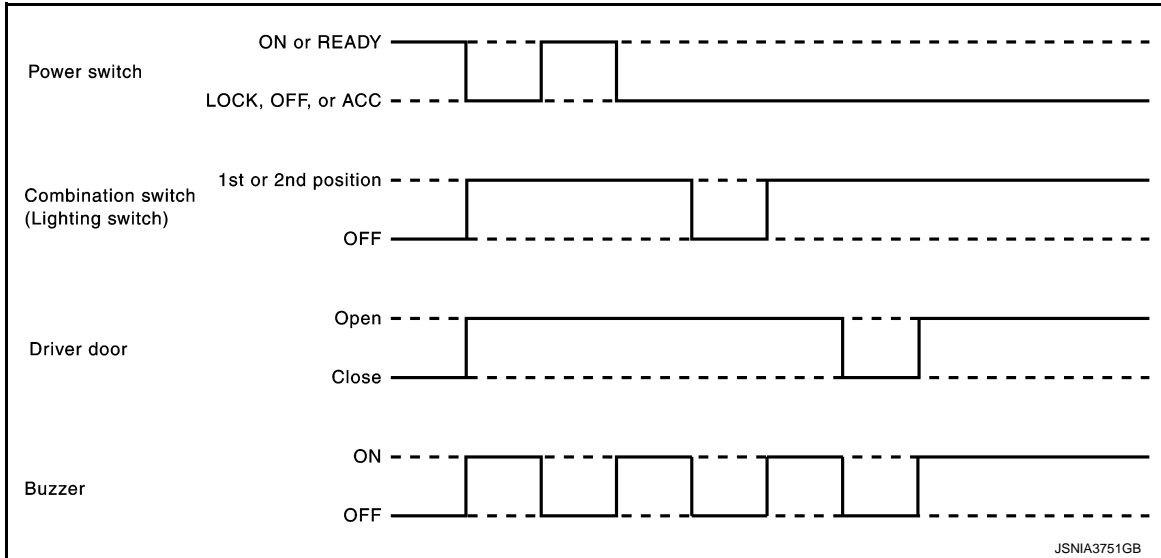
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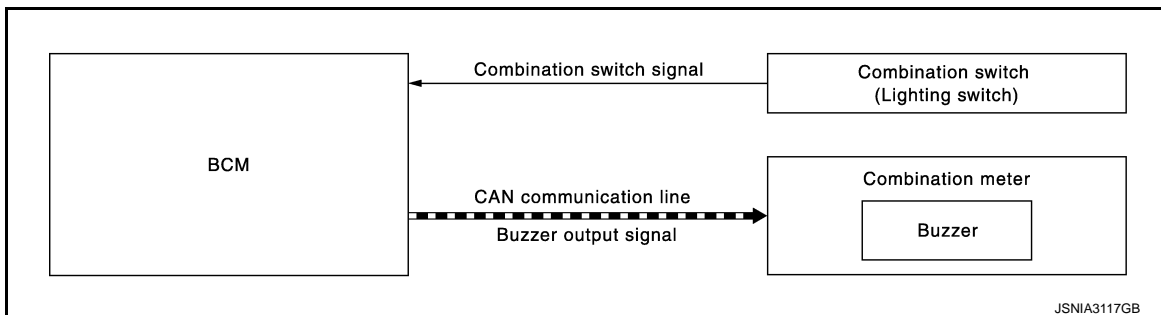
TIMING CHART



FRONT FOG LIGHT REMINDER WARNING CHIME

FRONT FOG LIGHT REMINDER WARNING CHIME : System Description INFOID:000000007632587

SYSTEM DIAGRAM



WARNING CHIME OPERATION CONDITIONS

Warning chime sounds for 2 seconds when the power switch is positioned at LOCK, OFF, or ACC if all the conditions described in the following table are satisfied.

Operation conditions	
Power switch	ON or READY position
Combination switch (Lighting switch)	AUTO position and front fog lamp switch ON position

SIGNAL PATH


1. BCM requires warning chime output to combination meter when it judges front fog light reminder warning chime is necessary from signals below.

Signal name	Signal path
Power switch ON signal	—
Combination switch signal	Combination switch (Lighting switch) → BCM

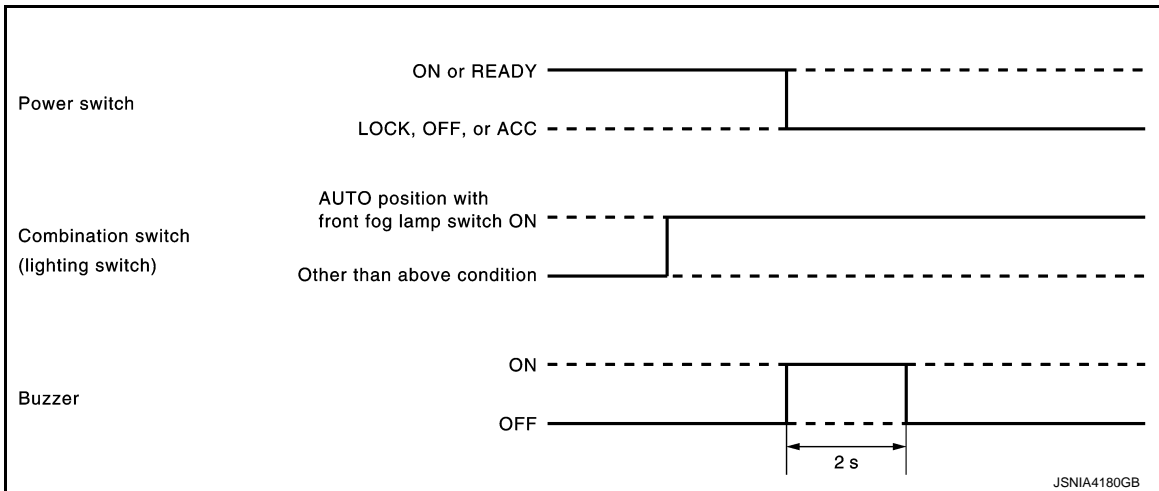
2. Combination meter sounds integrated buzzer, following the warning chime output requirement (below signal) from BCM.

SYSTEM

< SYSTEM DESCRIPTION >

Signal name	Signal path
Buzzer output signal	BCM  Combination meter

TIMING CHART

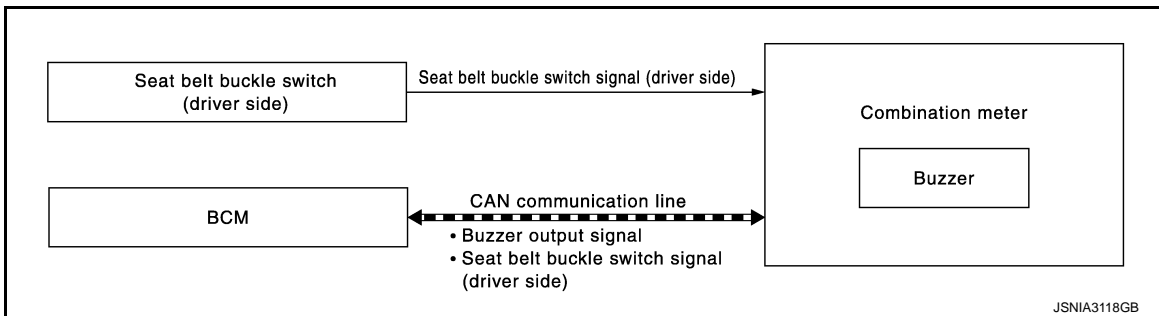


SEAT BELT WARNING CHIME

SEAT BELT WARNING CHIME : System Description

INFOID:000000007632588

SYSTEM DIAGRAM



WARNING OPERATION CONDITIONS

If all of the following conditions are fulfilled.

Operation conditions	
Power switch	ON or READY position
Driver seat belt	Unfastened [seat belt buckle switch (driver side) ON]

WARNING CANCEL CONDITIONS

Warning is canceled if any of the following conditions is fulfilled.

Operation conditions	
Power switch	LOCK, OFF, or ACC position
Driver seat belt	Fastened [seat belt buckle switch (driver side) OFF]
6 seconds after the start of warning sound	

SIGNAL PATH

1. BCM requires warning chime output to combination meter when it judges seat belt warning chime is necessary from signals below.

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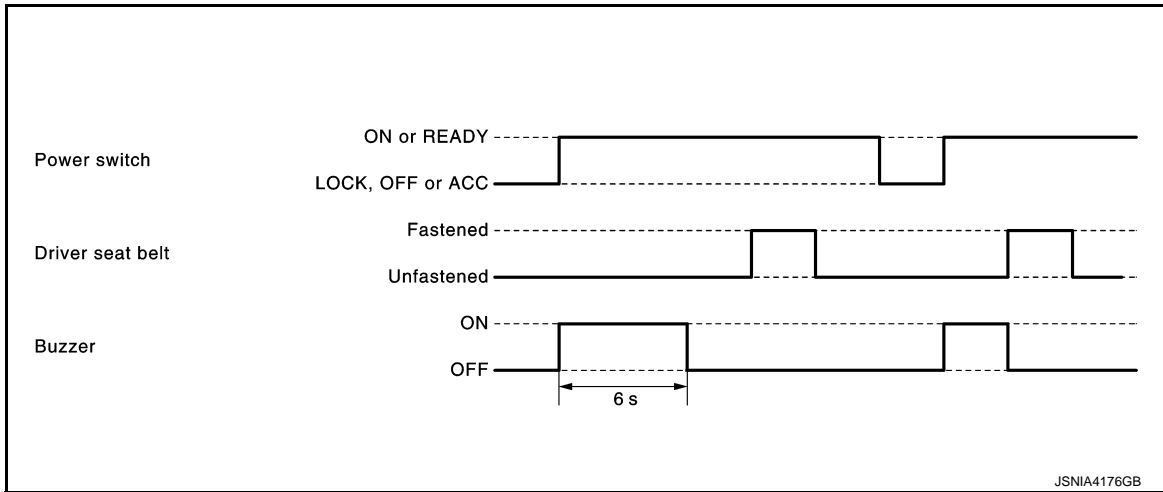
< SYSTEM DESCRIPTION >

Signal name	Signal path
Power switch ON signal	—
Seat belt buckle switch signal (driver side)	Seat belt buckle switch (driver side) → Combination meter CAN → BCM

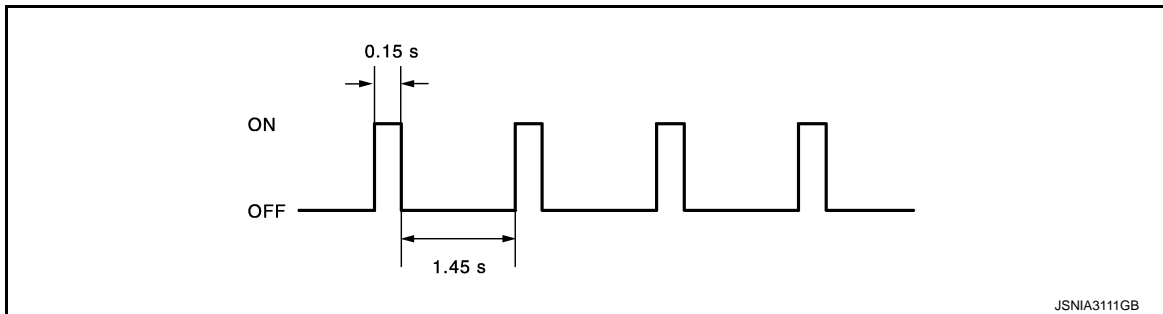
2. Combination meter sounds integrated buzzer, following the warning chime output requirement (below signal) from BCM.

Signal name	Signal path
Buzzer output signal	BCM CAN → Combination meter

TIMING CHART



SOUND SPECIFICATION



DIAGNOSIS SYSTEM (COMBINATION METER)

< SYSTEM DESCRIPTION >

DIAGNOSIS SYSTEM (COMBINATION METER)

CONSULT Function

INFOID:000000007828194

CONSULT APPLICATION ITEMS

CONSULT can perform the following diagnosis modes via CAN communication and the combination meter.

System	Diagnosis mode	Description
METER/M&A	Self Diagnostic Results	The combination meter checks the conditions and displays memorized errors.
	Data Monitor	Displays the combination meter input/output data in real time.
	W/L ON History	Lighting history of the warning lamp and indicator lamp can be checked.

SELF DIAG RESULT

Refer to [MWI-68, "DTC Index"](#).

DATA MONITOR

Display Item List

X: Applicable

Display item [Unit]	MAIN SIGNALS	Description
SPEED METER [km/h]	X	Value of vehicle speed signal received from ABS actuator and electric unit (control unit) via CAN communication. NOTE: 655.35 is displayed when the malfunction signal is received.
SPEED OUTPUT [km/h]	X	Vehicle speed signal value transmitted to other units via CAN communication. NOTE: 655.35 is displayed when the malfunction signal is received.
BUZZER [On/Off]	X	Buzzer status (in the combination meter) is detected from the buzzer output signal received from each unit via CAN communication and the warning output condition of the combination meter.
ODO OUTPUT [km/h or mph]		Odometer signal value transmitted to other units via CAN communication.
ABS W/L [On/Off]		Status of ABS warning lamp detected from ABS warning lamp signal is received from ABS actuator and electric unit (control unit) via CAN communication.
VDC/TCS IND [On/Off]		Status of VDC OFF indicator lamp detected from VDC OFF indicator lamp signal is received from ABS actuator and electric unit (control unit) via CAN communication.
SLIP IND [On/Off]		Status of VDC warning lamp detected from VDC warning lamp signal received from ABS actuator and electric unit (control unit) via CAN communication.
BRAKE W/L [On/Off]		Status of brake warning lamp detected from brake warning lamp signal is received from ABS actuator and electric unit (control unit) via CAN communication. NOTE: Displays "Off" if the brake warning lamp is illuminated when the valve check starts, the parking brake switch is turned ON or the brake fluid level switch is turned ON.
DOOR W/L [On/Off]		Status of door open warning detected from door switch signal received from BCM via CAN communication.
HI-BEAM IND [On/Off]		Status of high beam indicator lamp detected from high beam request signal is received from BCM via CAN communication.
TURN IND [On/Off]		Status of turn indicator lamp detected from turn indicator signal is received from BCM via CAN communication.
FR FOG IND [On/Off]		Status of front fog light indicator lamp detected from front fog light request signal is received from BCM via CAN communication.
RR FOG IND [Off]		This item is displayed, but cannot be monitored.
LIGHT IND [On/Off]		Status of tail lamp indicator lamp detected from position light request signal is received from BCM via CAN communication.

DIAGNOSIS SYSTEM (COMBINATION METER)

< SYSTEM DESCRIPTION >

Display item [Unit]	MAIN SIGNALS	Description
CRUISE IND [On/Off]		Status of CRUISE indicator detected from ASCD status signal is received from VCM via CAN communication.
SET IND [On/Off]		Status of SET indicator detected from ASCD status signal is received from ECM via CAN communication.
KEY G/Y W/L [On/Off]		Status of Intelligent Key system malfunction detected from meter display signal is received from BCM via CAN communication.
EPS W/L [On/Off]		Status of EPS warning lamp detected from EPS warning lamp signal is received from EPS control unit via CAN communication.
SLOW IND [On/Off]		Status of power limitation indicator detected from power limitation indication lamp request signal is received from VCM via CAN communication.
READY IND [On/Off]		Status of READY to drive indicator lamp detected from READY to drive indicator lamp request signal is received from VCM via CAN communication.
CHARG W/L [On/Off]		Status of 12-volt battery charge warning lamp detected from 12-volt battery charge warning lamp request signal is received from VCM via CAN communication.
LCD [B&PN, B&P I, ID NG, ROTAT, IN-SRT, BATT, NO KY, OUTKY,LK WN, KY>PSW, Off]		Status of Intelligent Key system warning judged from meter display signal received from BCM with CAN communication line.
SHIFT IND [P, R, N, D]		Status of shift indicator display judged based on the shift position signal received from VCM via CAN communication.
BUCKLE SW [On/Off]		Status of seat belt buckle switch (driver side).
BRAKE OIL SW [On/Off]		Status of brake fluid level switch.
ENTER SW [On/Off]		Status of enter switch.
SELECT SW [On/Off]		Status of select switch.
PASS BUCKLE SW [On/Off]		Status of seat belt buckle switch (passenger side).
LED LMP R OPEN [On/Off]		Status of front combination lamp RH judged based on LED headlamp (RH) warning signal input from front combination lamp RH.
LED LMP L OPEN [On/Off]		Status of front combination lamp LH judged based on LED headlamp (LH) warning signal input from front combination lamp LH.
CHG CONCT DET [On/Off]		Charge connector connection status judged based plug in signal input from on board charger.
ALL PWER MTER [kW]		Status of current power meter display, judged based on current motor power signal received from VCM via CAN communication.
TPMS PRESS L [On/Off]		Status of check low tire pressure warning detected from TPMS warning lamp signal received from BCM via CAN communication.
ASCD SPD BLINK [On/Off]		Blinking status of ASCD set vehicle speed judged by the ASCD status signal received from VCM via CAN communication.
ASCD STATUS [Off, ASCD, CRUISE, SL ON, SL SET]		Status of ASCD status display judged by the ASCD status signal received from VCM via CAN communication.
ASCD REQ SPD [km/h/Off]		ASCD set vehicle speed value judged by the ASCD status signal received from VCM via CAN communication.
BAT REMAIN [kWh]		Value of Li-ion battery available charge signal received from VCM via CAN communication.
BAT REMAIN LEV [LEV 1-12]		ON segment value of Li-ion battery available charge gauge received from VCM via CAN communication.

DIAGNOSIS SYSTEM (COMBINATION METER)

< SYSTEM DESCRIPTION >

Display item [Unit]	MAIN SIGNALS	Description	A
BAT CHG CAP LEV [LEV 1-12]		ON segment value of Li-ion battery capacity level gauge received from VCM via CAN communication.	A
BAT TEMP [°C]		Value of Li-ion battery temperature signal received from VCM via CAN communication.	B
POWER MAX [kW]		Value of maximum motor output power signal received from VCM via CAN communication.	C
REGENE MAX [kW]		Value of maximum regenerable power signal received from VCM via CAN communication.	D
ECO IND1 [0-15]		ON segment value of instant ECO indicator received from VCM via CAN communication.	D
ECO IND2 [OFF, seg11-seg15+seg24]		ON segment value of ECO tree received from VCM via CAN communication.	E
SFT W/L [On/Off]		Status of electric shift warning lamp judged based on electric shift warning lamp signal received from VCM via CAN communication.	F
REGENE W/L [On/Off]		Status of brake system warning lamp judged based on brake system warning lamp signal received from electrically-driven intelligent brake unit via CAN communication.	F
PKB W/L [On/Off]		Status of electric parking brake indicator judged based on electric parking brake indicator signal received from electric parking brake control model via CAN communication.	G
EV SYSTEM W/L [On/Off]		Status of EV system warning lamp judged based on EV system warning lamp request signal received from VCM via CAN communication.	H
SFT P W DSP [On/Off]		This item is displayed, but cannot be monitored.	I
SFT DSP [Off, PKB, SFT MALF, SFT POSI]		Status of electric shift warning display judged based on electric shift warning message signal received from VCM via CAN communication.	I
PUSH SW W DSP [On/Off]		Status of remove charge connector warning display judged based on plug in warning display signal received from VCM via CAN communication.	J
IMM CHG DSP [On/Off]		This item is displayed, but cannot be monitored.	K
POW LIMIT DSP [Off, BAT TMP, MOT TMP, BAT LEV L]		Status of power limitation warning display judged based on power limitation cause signal received from VCM via CAN communication.	K
PKB DSP1 [On/Off]		Status of electric parking brake warning display ("Visit dealer").	L
PKB DSP2 [On/Off]		Status of electric parking brake warning display ("Parking brake not available").	M
PKB DSP3 [On/Off]		Status of electric parking brake warning display ("Release parking brake").	M
PKB DSP4 [On/Off]		Status of electric parking brake warning display ("Press brake pedal").	WCS
100V CHG TIME [min]		Value of remaining time to charge completion (100 V) signal received from VCM via CAN communication.	O
200V CHG TIME [min]		Value of remaining time to charge completion (200 V) signal received from VCM via CAN communication.	O
CHARGE STATE [100V, 200V, QUICK CHG, OFF]		Charge status judged based on charge status signal received from VCM via CAN communication.	P
DCDC W DSP [OFF, STOP, CRUISE]		Status of DC/DC converter warning display judged based on vehicle stop and parking brake operation request display signal received from VCM via CAN communication.	
SFT SIG [On/Off]		Status of electric shift warning signal input from VCM.	

DIAGNOSIS SYSTEM (COMBINATION METER)

< SYSTEM DESCRIPTION >

Display item [Unit]	MAIN SIGNALS	Description
PKB SIG [On/Off]		Status of electric parking brake indicator judged based on electric parking brake control module wakeup signal input from electric parking brake control module.
DTE DIF [km]		Value of driving range difference signal received from VCM via CAN communication.
DTE INPUT [km]		Value of driving range signal received from VCM via CAN communication.
DTE 2ND W [On, BLINK, Off]		Status of driving range display (“-- --”) blinking, judged based on driving range flashing request signal received from VCM via CAN communication.
BAT LOW W/L [On/Off]		Status of low battery charge warning lamp judged based on low battery charge warning lamp request signal received from VCM via CAN communication.
ELE COMPR OFF [kW/h]		Value of A/C OFF average electricity consumption for driving range signal received from VCM via CAN communication.
ELE COMPR ON [kW/h]		Value of A/C ON average electricity consumption for driving range signal received from VCM via CAN communication.
DTE BLINK [On/Off]		Status of driving range display blinking, judged based on driving range flashing request signal received from VCM via CAN communication/

NOTE:

Some items are not available according to vehicle specification.

W/L ON HISTORY

- Stores histories when warning/indicator lamp is turned on.
- “W/L ON HISTORY” indicates the “TIME” when the warning/indicator lamp is turned on.
- The “TIME” above is:
 - 0: The condition that the warning/indicator lamp has been turned on 1 or more times after starting the engine and waiting for 30 seconds.
 - 1 - 39: The number of times the engine was restarted after the 0 condition.
 - NO W/L ON HISTORY: Stores NO (0) turning on history of warning/indicator lamp.

NOTE:

- W/L ON HISTORY is not stored for approximately 30 seconds after the engine starts.
- Brake warning lamp does not store any history when the parking brake is applied or the brake fluid level gets low.

Display Item

Display item	Description
ABS W/L	Lighting history of ABS warning lamp.
VDC/TCS IND	Lighting history of VDC OFF indicator lamp.
SLIP IND	Lighting history of VDC warning lamp.
BRAKE W/L	Lighting history of brake warning lamp.
DOOR W/L	Lighting history of door open warning.
CRUISE IND	Lighting history of CRUISE indicator.
SET IND	Lighting history of SET indicator.
AIR PRES W/L	Lighting history of low tire pressure warning lamp.
EPS W/L	Lighting history of EPS warning lamp.
CHAGE W/L	Lighting history of 12-volt battery charge warning lamp.
REGENE BRAKE W/L	Lighting history of brake system warning lamp.
SLOW	Lighting history of power limitation indicator.
LED LAMP W/L	Lighting history of headlamp warning lamp.
PBW W/L	Lighting history of electric parking brake indicator.

NOTE:

In items displayed on the CONSULT screen, only those listed in the above table are used.

DIAGNOSIS SYSTEM (BCM)

< SYSTEM DESCRIPTION >

DIAGNOSIS SYSTEM (BCM)

COMMON ITEM

COMMON ITEM : CONSULT Function (BCM - COMMON ITEM)

INFOID:000000007828195

APPLICATION ITEM

CONSULT performs the following functions via CAN communication with BCM.

Diagnosis mode	Function Description
Work Support	Changes the setting for each system function.
Self Diagnostic Result	Displays the diagnosis results judged by BCM.
CAN Diag Support Monitor	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	<ul style="list-style-type: none"> Read and save the vehicle specification. 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.

×: Applicable item

System	Sub system selection item	Diagnosis mode		
		Work Support	Data Monitor	Active Test
Door lock	DOOR LOCK	×	×	×
Rear window defogger	REAR DEFOGGER		×	×
Warning chime	BUZZER		×	×
Interior room lamp timer	INT LAMP	×	×	×
Exterior lamp	HEAD LAMP	×	×	×
Wiper and washer	WIPER	×	×	×
Turn signal and hazard warning lamps	FLASHER	×	×	×
—	AIR CONDITONER*		×	×
Intelligent Key system	INTELLIGENT KEY	×	×	×
Combination switch	COMB SW		×	
Body control system	BCM	×		
NVIS - NATS	IMMU	×	×	×
Interior room lamp battery saver	BATTERY SAVER	×	×	×
Back door open	TRUNK		×	
Theft warning alarm	THEFT ALM	×	×	×
RAP system	RETAINED PWR		×	
Signal buffer system	SIGNAL BUFFER		×	×
TPMS	AIR PRESSURE MONITOR	×	×	×

*: This item is displayed, but not used.

FREEZE FRAME DATA (FFD)

The BCM records the following vehicle condition at the time a particular DTC is detected, and displays on CONSULT.

DIAGNOSIS SYSTEM (BCM)

< SYSTEM DESCRIPTION >

CONSULT screen item	Indication/Unit	Description	
Vehicle Speed	km/h	Vehicle speed of the moment a particular DTC is detected	
Odo/Trip Meter	km	Total mileage (Odometer value) of the moment a particular DTC is detected	
Vehicle Condition	SLEEP>LOCK	Power supply position status of the moment a particular DTC is detected*	While turning BCM status from low power consumption mode to normal mode [Power supply position is OFF (LOCK)]
	SLEEP>OFF		While turning BCM status from low power consumption mode to normal mode [Power supply position is OFF (OFF)]
	LOCK>ACC		While turning power supply position from OFF (LOCK) to ACC
	ACC>ON		While turning power supply position from ACC to ON
	RUN>ACC		While turning power supply position from READY (RUN) to ACC (Except emergency stop operation)
	CRANK>RUN		While turning power supply position from READY (CRANK) to READY (RUN)
	RUN>URGENT		While turning power supply position from READY (RUN) to ACC (Emergency stop operation)
	ACC>OFF		While turning power supply position from ACC to OFF (OFF)
	OFF>LOCK		While turning power supply position from OFF (OFF) to OFF (LOCK)
	OFF>ACC		While turning power supply position from OFF (OFF) to ACC
	ON>CRANK		While turning power supply position from ON to READY (CRANK)
	OFF>SLEEP		While turning BCM status from normal mode [Power supply position is OFF (OFF)] to low power consumption mode
	LOCK>SLEEP		While turning BCM status from normal mode [Power supply position is OFF (LOCK)] to low power consumption mode
	LOCK		Power supply position is OFF (LOCK)
	OFF		Power supply position is OFF (OFF)
	ACC		Power supply position is ACC
	ON		Power supply position is ON
ENGINE RUN	Power supply position is READY (RUN)		
CRANKING	Power supply position is READY (CRANK)		
IGN Counter	0 - 39	<p>The number of times that power switch is turned ON after DTC is detected</p> <ul style="list-style-type: none"> • The number is 0 when a malfunction is detected now. • The number increases like 1 → 2 → 3...38 → 39 after returning to the normal condition whenever power switch OFF → ON. • The number is fixed to 39 until the self-diagnosis results are erased if it is over 39. 	

NOTE:

*: Refer to the following for details of the power supply position.

- OFF (OFF, LOCK): Power switch OFF
- ACC: Power switch ACC
- ON: Power switch ON
- READY (CRANK): Shifting to vehicle condition READY (Transmitting the READY signal from BCM to VCM)
- READY (RUN): Vehicle condition READY

Power supply position shifts to "OFF (LOCK)" from "OFF (OFF)", when power switch is in the OFF position, shift position is in the P position, and any of the following conditions are met.

- Closing door
- Opening door
- Door is locked using door request switch
- Door is locked using Intelligent Key

The power supply position shifts to "ACC" when the power switch (push switch) is pushed at "OFF (LOCK)".

BUZZER

DIAGNOSIS SYSTEM (BCM)

< SYSTEM DESCRIPTION >

BUZZER : CONSULT Function (BCM - BUZZER)

INFOID:000000007632591

CONSULT APPLICATION ITEMS

Test item	Diagnosis mode	Description
BUZZER	Data Monitor	Displays BCM input data in real time.
	Active Test	Operation of electrical loads can be checked by sending driving signal to them.

DATA MONITOR

Display item [Unit]	Description
PUSH SW [On/Off]	Status of push-button power switch judged by BCM.
UNLK SEN-DR [On/Off]	Status of unlock sensor judged by BCM.
VEH SPEED 1 [km/h]	Value of vehicle speed signal received from combination meter with CAN communication line.
TAIL LAMP SW [On/Off]	Status of lighting switch judged by BCM using the combination switch readout function.
FR FOG SW [On/Off]	Status of front fog lamp switch judged by BCM using the combination switch readout function.
DOOR SW-DR [On/Off]	Status of driver side door switch judged by BCM.
CDL LOCK SW [On/Off]	Status of door lock unlock switch judged by BCM.

ACTIVE TEST

Display item [Unit]	Description
SEAT BELT WARN TEST	The seat belt warning chime operation can be checked by operating the relevant function (On/Off).
ID REGIST WARNING	The ID regist warning chime operation can be checked by operating the relevant function (On/Off).
LIGHT WARN ALM	The light warning chime operation can be checked by operating the relevant function (On/Off).

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

WCS

COMBINATION METER

< ECU DIAGNOSIS INFORMATION >

ECU DIAGNOSIS INFORMATION

COMBINATION METER

Reference Value

INFOID:000000007828196

VALUES ON THE DIAGNOSIS TOOL

Monitor item	Condition		Value/Status
SPEED METER [km/h]	Power switch ON	While driving	Input value of vehicle speed signal (CAN communication signal) NOTE: 655.35 is displayed when the malfunction signal is received
SPEED OUTPUT [km/h]	Power switch ON	While driving	Output value of vehicle speed signal (CAN communication signal) NOTE: 655.35 is displayed when the malfunction signal is received
BUZZER	Power switch ON	Buzzer ON	On
		Buzzer OFF	Off
ODO OUTPUT [km/h or mph]	Power switch ON	—	Output value of odometer signal (CAN communication signal)
ABS W/L	Power switch ON	ABS warning lamp ON	On
		ABS warning lamp OFF	Off
VDC/TCS IND	Power switch ON	VDC OFF indicator lamp ON	On
		VDC OFF indicator lamp OFF	Off
SLIP IND	Power switch ON	VDC warning lamp ON	On
		VDC warning lamp OFF	Off
BRAKE W/L	Power switch ON	Brake warning lamp ON	On
		Brake warning lamp OFF	Off
DOOR W/L	Power switch ON	Door open warning ON	On
		Door open warning OFF	Off
HI-BEAM IND	Power switch ON	High-beam indicator lamp ON	On
		High-beam indicator lamp OFF	Off
TURN IND	Power switch ON	Turn indicator lamp ON	On
		Turn indicator lamp OFF	Off
FR FOG IND	Power switch ON	Front fog lamp indicator lamp ON	On
		Front fog lamp indicator lamp OFF	Off
RR FOG IND	Power switch ON	NOTE: This item is displayed, but cannot be monitored	Off
LIGHT IND	Power switch ON	Tail lamp indicator lamp ON	On
		Tail lamp indicator lamp OFF	Off
CRUISE IND	Power switch ON	CRUISE indicator ON	On
		CRUISE indicator OFF	Off
SET IND	Power switch ON	SET indicator ON	On
		SET indicator OFF	Off
KEY G/Y W/L	Power switch ON	During Intelligent Key warning malfunction indication	On
		Other than the above	Off

COMBINATION METER

< ECU DIAGNOSIS INFORMATION >

Monitor item	Condition		Value/Status	
EPS W/L	Power switch ON	EPS warning lamp ON	On	A
		EPS warning lamp OFF	Off	
SLOW IND	Power switch ON	Power limitation indicator lamp ON	On	B
		Power limitation indicator lamp OFF	Off	
READY IND	Power switch ON	READY to drive indicator lamp ON	On	C
		READY to drive indicator lamp OFF	Off	
CHAGE W/L	Power switch ON	12-volt battery charge warning lamp ON	On	D
		12-volt battery charge warning lamp OFF	Off	
LCD	Power switch ON	During engine start information indication	B&P I	E
	Power switch ACC	During engine start information indication	B&P N	F
	Power switch LOCK	During key ID warning indication	ID NG	G
	Power switch LOCK	During steering lock information indication	ROTAT	H
	Power switch LOCK	During P position warning indication	SFT P	I
	Power switch LOCK	During Intelligent Key insert information indication	INSRT	J
	Power switch LOCK	During Intelligent Key low battery warning indication	BATT	K
	Power switch ON	During take away warning indication	NO KY	L
	Power switch LOCK	During key warning indication	OUTKY	M
	Power switch ON	During ACC warning indication	LK WN	
	Power switch LOCK	During key ID verification information indication	KY>PSW	
	Power switch ON	Other than above	Off	
	SHIFT IND	Power switch ON	During the indication of "P" by shift position indicator	P
During the indication of "R" by shift position indicator			R	
During the indication of "N" by shift position indicator			N	
During the indication of "D" by shift position indicator			D	WCS
BUCKLE SW	Power switch ON	Driver seat belt not fastened	On	O
		Driver seat belt fastened	Off	
BRAKE OIL SW	Power switch ON	Brake fluid level switch ON	On	P
		Brake fluid level switch OFF	Off	
PASS BUCKLE SW	Power switch ON	Passenger seat belt not fastened	On	
		Passenger seat belt fastened	Off	
ENTER SW	Power switch ON	When enter switch is pressed	On	
		Other than above	Off	

COMBINATION METER

< ECU DIAGNOSIS INFORMATION >

Monitor item	Condition		Value/Status
SELECT SW	Power switch ON	When select switch is pressed	On
		Other than above	Off
LED LMP R OPEN	Power switch ON	Front combination lamp RH malfunction	On
		Front combination lamp RH normal	Off
LED LMP L OPEN	Power switch ON	Front combination lamp LH malfunction	On
		Front combination lamp LH normal	Off
CHG CONCT DET	Power switch ON	Charge connector connected	On
		Charge connector not connected	Off
ALL PWER MTER [kW]	Power switch ON	While driving	Input value of current power signal
TPMS PRESS L	Power switch ON	During check tire pressure warning indication	On
		Other than the above	Off
ASCDC STATUS	Power switch ON	ASCDC and speed limiter system OFF	Off
		ASCDC system ON	ON
		ASCDC set vehicle speed	CRUISE
		Speed limiter system ON	SL ON
		Speed limiter set vehicle speed	SL SET
ASCDC SPD BLNK	Power switch ON	Set vehicle speed indicator blinking	On
		Set vehicle speed indicator not blinking	Off
ASCDC REQ SPD [km/h or Off]	Power switch ON	While driving	Same value as ASCDC set vehicle speed.
BAT REMAIN [kWh]	Power switch ON	—	Input value of Li-ion battery available charge signal
BAT REMAIN LEV	Power switch ON	1 segment of Li-ion battery available charge gauge illuminates	LV.1
		2 segments of Li-ion battery available charge gauge illuminate	LV.2
		3 segments of Li-ion battery available charge gauge illuminate	LV.3
		4 segments of Li-ion battery available charge gauge illuminate	LV.4
		5 segments of Li-ion battery available charge gauge illuminate	LV.5
		6 segments of Li-ion battery available charge gauge illuminate	LV.6
		7 segments of Li-ion battery available charge gauge illuminate	LV.7
		8 segments of Li-ion battery available charge gauge illuminate	LV.8
		9 segments of Li-ion battery available charge gauge illuminate	LV.9
		10 segments of Li-ion battery available charge gauge illuminate	LV.10
		11 segments of Li-ion battery available charge gauge illuminate	LV.11
		12 segments of Li-ion battery available charge gauge illuminate	LV.12

COMBINATION METER

< ECU DIAGNOSIS INFORMATION >

Monitor item	Condition		Value/Status	
BAT CHG CAP LEV	Power switch ON	1 segment of Li-ion battery capacity level gauge illuminates	LV.1	A
		2 segments of Li-ion battery capacity level gauge illuminate	LV.2	B
		3 segments of Li-ion battery capacity level gauge illuminate	LV.3	
		4 segments of Li-ion battery capacity level gauge illuminate	LV.4	C
		5 segments of Li-ion battery capacity level gauge illuminate	LV.5	D
		6 segments of Li-ion battery capacity level gauge illuminate	LV.6	
		7 segments of Li-ion battery capacity level gauge illuminate	LV.7	E
		8 segments of Li-ion battery capacity level gauge illuminate	LV.8	F
		9 segments of Li-ion battery capacity level gauge illuminate	LV.9	
		10 segments of Li-ion battery capacity level gauge illuminate	LV.10	G
		11 segments of Li-ion battery capacity level gauge illuminate	LV.11	H
		12 segments of Li-ion battery capacity level gauge illuminate	LV.12	
BAT TEMP [°C]	Power switch ON	—	Input value of Li-ion battery temperature signal	I
POWER MAX [kW]	Power switch ON	While driving	Input value of maximum motor output power signal	J
REGENE MAX [kW]	Power switch ON	While driving	Input value of maximum regenerable power signal	K

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COMBINATION METER

< ECU DIAGNOSIS INFORMATION >

Monitor item	Condition		Value/Status
ECO IND1	Power switch ON	1 segment of Instant ECO indicator illuminates	1
		2 segments of Instant ECO indicator illuminate	2
		3 segments of Instant ECO indicator illuminate	3
		4 segments of Instant ECO indicator illuminate	4
		5 segments of Instant ECO indicator illuminate	5
		6 segments of Instant ECO indicator illuminate	6
		7 segments of Instant ECO indicator illuminate	7
		8 segments of Instant ECO indicator illuminate	8
		9 segments of Instant ECO indicator illuminate	9
		10 segments of Instant ECO indicator illuminate	10
		11 segments of Instant ECO indicator illuminate	11
		12 segments of Instant ECO indicator illuminate	12
		13 segments of Instant ECO indicator illuminate	13
		14 segments of Instant ECO indicator illuminate	14
		15 segments of Instant ECO indicator illuminate	15
	Other than the above	0	
ECO IND2	Power switch ON	—	Displays number of ON segments of ECO tree*
SFT W/L	Power switch ON	Electric shift warning lamp ON	On
		Electric shift warning lamp OFF	Off
REGENE W/L	Power switch ON	Brake system warning lamp ON	On
		Brake system warning lamp OFF	Off
PKB W/L	Power switch ON	Electric parking brake indicator ON	On
		Electric parking brake indicator OFF	Off
EV SYSTEM W/L	Power switch ON	EV system warning lamp ON	On
		EV system warning lamp OFF	Off
SFT P W DSP	Power switch ON	NOTE: This item is displayed, but cannot be monitored	Off
SFT DSP	Power switch ON	During electric shift warning (“when parked apply parking brake”) indication	PKB
		During electric shift warning (“T/M system malfunction visit dealer”) indication	SIFT MALF
		During electric shift warning (“check position of shift lever”) indication	SFT POSI
		Other than the above	Off

COMBINATION METER

< ECU DIAGNOSIS INFORMATION >

Monitor item	Condition		Value/Status	
PUSH SW W DSP	Power switch ON	During remove charge connector warning indication	On	A
		Other than the above	Off	B
IMM CHG DSP	Power switch ON	NOTE: This item is displayed, but cannot be monitored	Off	C
POW LIMIT DSP	Power switch ON	During power limitation warning (when Li-ion battery temperature is low) indication	BAT TMP	D
		During power limitation warning (when motor temperature is over heat) indication	MOT TMP	E
		During power limitation warning (when Li-ion battery remaining energy is low) indication	BAT LEV L	F
		During power limitation warning (other) indication	OTHER	G
		Other than the above	Off	H
PKB DSP1	Power switch ON	During electric parking brake warning ("visit dealer") indication	On	I
		Other than the above	Off	J
PKB DSP2	Power switch ON	During electric parking brake warning ("parking brake not available") indication	On	K
		Other than the above	Off	L
PKB DSP3	Power switch ON	During electric parking brake warning ("release parking brake") indication	On	M
		Other than the above	Off	
PKB DSP4	Power switch ON	During electric parking brake warning ("press brake pedal") indication	On	
		Other than the above	Off	
100V CHG TIME	Power switch ON	—	Displays 100 V charging time.	
200V CHG TIME	Power switch ON	—	Displays 200 V charging time.	
CHARGE STATE	Power switch ON	100 V charging	100 V	
		200 V charging	200 V	
		In Quick Charging	QICK CHG	
		Other than the above	Off	
DCDC W DSP	Power switch ON	During DC/DC converter warning ("stop vehicle") indication	STOP	
		During DC/DC converter warning ("apply parking brake") indication	CRUISE	WCS
		Other than the above	Off	
SFT SIG	Power switch ON	Electric shift warning lamp ON	On	O
		Electric shift warning lamp OFF	Off	
PKB SIG	Power switch ON	Electric parking brake ON	On	P
		Electric parking brake OFF	Off	
DTE DIF [km]	Power switch ON	—	Input value of driving range difference signal	
DTE INPUT [km]	Power switch ON	—	Input value of driving range signal	

COMBINATION METER

< ECU DIAGNOSIS INFORMATION >

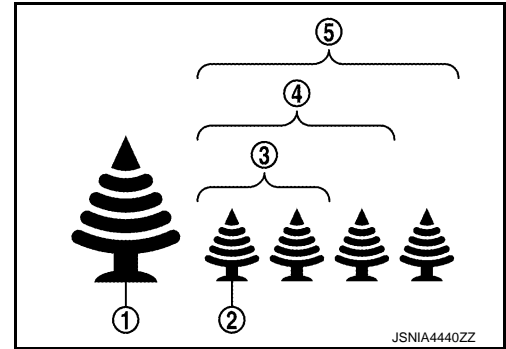
Monitor item	Condition		Value/Status
DTE 2ND W	Power switch ON	Driving range display “--” display	On
		Driving range display “--” blinking	BLINK
		Other than the above	Off
BAT LOW W/L	Power switch ON	Low battery charge warning lamp ON	On
		Low battery charge warning lamp OFF	Off
ELE COMPR OFF [km]	Power switch ON	—	Input value of A/C OFF average electricity consumption for driving range signal
ELE COMPR ON [km]	Power switch ON	—	Input value of A/C ON average electricity consumption for driving range signal
DTE BLINK	Power switch ON	Driving range display blinking	On
		Other than the above	Off

NOTE:

Some items are not available according to vehicle specification.

*: “ECO IND2” displays the items in the Status column of the following table.

Displays number of ON segments of ECO tree	Status
1 segment of ECO tree (1) illuminates	SEG11
2 segments of ECO tree (1) illuminate	SEG12
3 segments of ECO tree (1) illuminate	SEG13
4 segments of ECO tree (1) illuminate	SEG14
5 segments of ECO tree (1) illuminate	SEG15
ECO tree (2) illuminates	SEG21
<ul style="list-style-type: none"> • ECO tree (2) illuminates • 1 segments of ECO tree (1) illuminate 	SEG11+SEG21
<ul style="list-style-type: none"> • ECO tree (2) illuminates • 2 segments of ECO tree (1) illuminate 	SEG12+SEG21
<ul style="list-style-type: none"> • ECO tree (2) illuminates • 3 segments of ECO tree (1) illuminate 	SEG13+SEG21
<ul style="list-style-type: none"> • ECO tree (2) illuminates • 4 segments of ECO tree (1) illuminate 	SEG14+SEG21
<ul style="list-style-type: none"> • ECO tree (2) illuminates • 5 segments of ECO tree (1) illuminate 	SEG15+SEG21
ECO tree (3) illuminates	SEG22
<ul style="list-style-type: none"> • ECO tree (3) illuminates • 1 segment of ECO tree (1) illuminate 	SEG11+SEG22
<ul style="list-style-type: none"> • ECO tree (3) illuminates • 2 segments of ECO tree (1) illuminate 	SEG12+SEG22
<ul style="list-style-type: none"> • ECO tree (3) illuminates • 3 segments of ECO tree (1) illuminate 	SEG13+SEG22
<ul style="list-style-type: none"> • ECO tree (3) illuminates • 4 segments of ECO tree (1) illuminate 	SEG14+SEG22
<ul style="list-style-type: none"> • ECO tree (3) illuminates • 5 segments of ECO tree (1) illuminate 	SEG15+SEG22
ECO tree (4) illuminates	SEG23
<ul style="list-style-type: none"> • ECO tree (4) illuminates • 1 segment of ECO tree (1) illuminate 	SEG11+SEG23
<ul style="list-style-type: none"> • ECO tree (4) illuminates • 2 segments of ECO tree (1) illuminate 	SEG12+SEG23

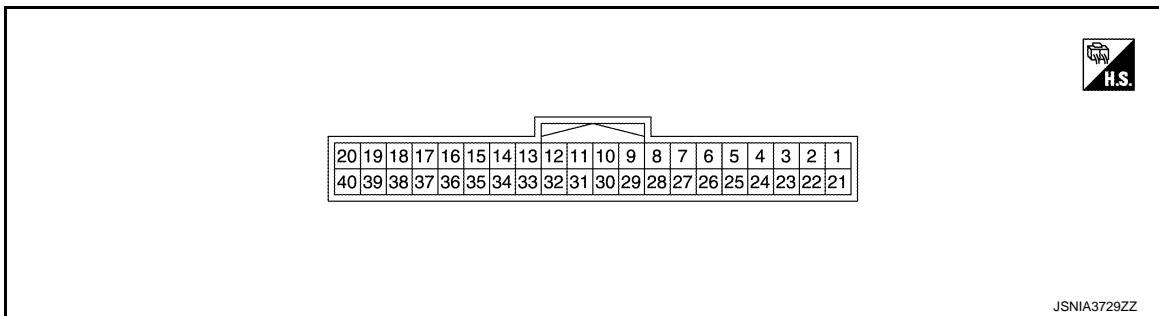


COMBINATION METER

< ECU DIAGNOSIS INFORMATION >

Displays number of ON segments of ECO tree	Status
<ul style="list-style-type: none"> ECO tree (4) illuminates 3 segments of ECO tree (1) illuminate 	SEG13+SEG23
<ul style="list-style-type: none"> ECO tree (4) illuminates 4 segments of ECO tree (1) illuminate 	SEG14+SEG23
<ul style="list-style-type: none"> ECO tree (4) illuminates 5 segments of ECO tree (1) illuminate 	SEG15+SEG23
ECO tree (5) illuminates	SEG24
<ul style="list-style-type: none"> ECO tree (5) illuminates 1 segment of ECO tree (1) illuminate 	SEG11+SEG24
<ul style="list-style-type: none"> ECO tree (5) illuminates 2 segments of ECO tree (1) illuminate 	SEG12+SEG24
<ul style="list-style-type: none"> ECO tree (5) illuminates 3 segments of ECO tree (1) illuminate 	SEG13+SEG24
<ul style="list-style-type: none"> ECO tree (5) illuminates 4 segments of ECO tree (1) illuminate 	SEG14+SEG24
<ul style="list-style-type: none"> ECO tree (5) illuminates 5 segments of ECO tree (1) illuminate 	SEG15+SEG24
Other than the above	Off

TERMINAL LAYOUT

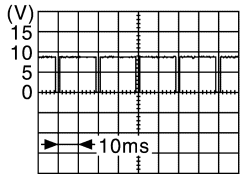
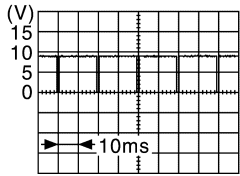





PHYSICAL VALUES

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	-	Signal name	Input/ Output			
1 (LG)	Ground	Battery power supply	Input	Power switch OFF	—	Battery voltage
2 (R)	Ground	Battery power supply (for upper meter)	Output	Power switch OFF	—	Battery voltage
3 (GR)	Ground	Power switch supply	Input	Power switch ON	—	Battery voltage
4 (BR)	Ground	Power switch supply (for upper meter)	Output	Power switch ON	—	Battery voltage
5 (B)	Ground	Ground	—	Power switch ON	—	0 V
6 (B)	Ground	Ground	—	Power switch ON	—	0 V

COMBINATION METER

< ECU DIAGNOSIS INFORMATION >

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	-	Signal name	Input/ Output			
7 (V)	Ground	Electric shift warning signal	Input	Power switch ON	Electric shift warning lamp ON	0 V
					Electric shift warning lamp OFF	12 V
8 (Y)	Ground	Washer level switch signal	Input	Ignition switch ON	Washer level switch ON	0 V
					Washer level switch OFF	5 V or more
9 (G)	Ground	Plug in signal	Input	Power switch ON	Charge connector connected	0 V
					Charge connector not connected	12 V
10 (GR)	Ground	Communication signal (METER → VSP)	Output	Power switch ON	—	NOTE: Reference waveform  <small>JSMIA0536GB</small>
11 (P)	Ground	Communication signal (VSP → METER)	Input	Power switch ON	—	NOTE: Reference waveform  <small>JSMIA0537GB</small>
13 (LG)	12 (V)	Enter switch signal	Input	Power switch ON	When  switch (enter switch) is pressed	0 V
					Other than the above	5 V
14 (W)	12 (V)	Select switch signal	Input	Power switch ON	When  switch (select switch) is pressed	0 V
					Other than the above	5 V
15 (BR)	12 (V)	Trip reset switch signal	Input	Power switch ON	When trip reset switch is pressed	0 V
					Other than the above	5 V
16 (BR)	12 (V)	Illumination control switch signal	Input	Power switch ON	When  switch (illumination control switch) is pressed	0 V
					Other than the above	5 V

COMBINATION METER

< ECU DIAGNOSIS INFORMATION >

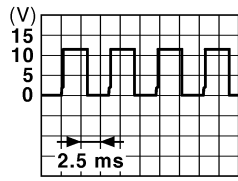
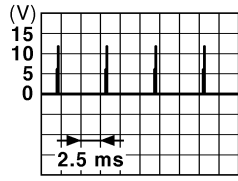
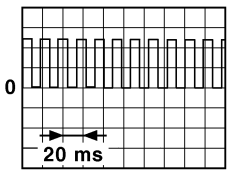
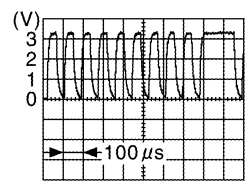
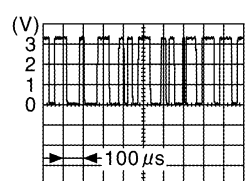
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	-	Signal name	Input/ Output			
17 (V)	Ground	Illumination control signal (for upper meter)	Output	Power switch ON	<ul style="list-style-type: none"> Lighting switch 1ST position When meter illumination is maximum 	
					<ul style="list-style-type: none"> Lighting switch 1ST position When meter illumination is step 6 	
					<ul style="list-style-type: none"> Lighting switch 1ST position When meter illumination is minimum 	0 V
18 (P)	—	CAN-L	—	—	—	—
19 (L)	—	CAN-H	—	—	—	—
20 (LG)	Ground	Seat belt buckle switch signal (passenger side)	Input	Power switch ON	<ul style="list-style-type: none"> When getting in the passenger seat When passenger seat belt is fastened 	12 V
					<ul style="list-style-type: none"> When getting in the passenger seat When passenger seat belt is unfastened 	0 V
22 (GR)	Ground	Ground (for upper meter)	—	Power switch ON	—	0 V
24 (BR)	Ground	Electric parking brake control module wakeup signal	Input	Power switch ON	Electric parking brake applied	0 V
					Electric parking brake released	12 V
25 (SB)	Ground	Brake fluid level switch signal	Input	Power switch ON	Brake fluid level is normal	12 V
					The brake fluid level is lower than the low level	0 V

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WCS

COMBINATION METER

< ECU DIAGNOSIS INFORMATION >

Terminal No. (Wire color)		Description		Condition	Value (Approx.)	
+	-	Signal name	Input/ Output			
26 (B)	Ground	Illumination control signal	Output	Power switch ON	<ul style="list-style-type: none"> Lighting switch 1ST position When meter illumination is maximum <p style="text-align: center;">12 V</p>	
					<ul style="list-style-type: none"> Lighting switch 1ST position When meter illumination is step 6  <p style="text-align: right; font-size: small;">JPNIA1686GB</p>	
					<ul style="list-style-type: none"> Lighting switch 1ST position When meter illumination is minimum  <p style="text-align: right; font-size: small;">JPNIA1687GB</p>	
27 (R)	Ground	Air bag signal	Input	Power switch ON	<ul style="list-style-type: none"> Air bag warning lamp ON <p style="text-align: center;">12 V</p> <ul style="list-style-type: none"> Air bag warning lamp OFF <p style="text-align: center;">0 V</p>	
28 (R)	Ground	Security signal	Input	Power switch ON	Security indicator lamp ON	0 V
					Security indicator lamp OFF	12 V
30 (GR)	Ground	Vehicle speed signal (8-pulse)	Output	Power switch ON	Speedometer operated [When vehicle speed is approx. 40 km/h (25 MPH)]	NOTE: The maximum voltage varies depending on the specification (destination unit).  <p style="text-align: right; font-size: small;">JSNIA0012GB</p>
32 (W)	Ground	Communication signal (METER → UPPER)	Output	Power switch ON	—	NOTE: Reference waveform  <p style="text-align: right; font-size: small;">JSNIA3767GB</p>
33 (LG)	Ground	Clock signal	Input	Power switch ON	—	NOTE: Reference waveform  <p style="text-align: right; font-size: small;">JSNIA3768GB</p>

COMBINATION METER

< ECU DIAGNOSIS INFORMATION >

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	-	Signal name	Input/ Output			
34 (L)	Ground	Plug in indicator lamp signal	Input	Power switch ON	Plug in indicator lamp ON	0 V
					Plug in indicator lamp OFF	12 V
38 (V)	Ground	LED headlamp (RH) warning signal	Input	Power switch ON	Front combination lamp RH malfunction	12 V
					Front combination lamp RH normal	0 V
39 (LG)	Ground	LED headlamp (LH) warning signal	Input	Power switch ON	Front combination lamp LH malfunction	12 V
					Front combination lamp LH normal	0 V
40 (Y)	Ground	Seat belt buckle switch signal (driver side)	Input	Power switch ON	When driver seat belt is fastened	12 V
					When driver seat belt is unfastened	0 V

Fail-Safe

INFOID:000000007632593

FAIL-SAFE

The combination meter activates the fail-safe control if CAN communication with each unit is malfunctioning.

Function	Specifications
Buzzer	The buzzer turns OFF by suspending communication.

DTC Index

INFOID:000000007632594

Display contents of CONSULT	Diagnostic item is detected when...	Refer to
CAN COMM CIRCUIT [U1000]	When combination meter is not transmitting or receiving CAN communication signal for 2 seconds or more.	MWI-76
CONTROL UNIT (CAN) [U1010]	When detecting error during the initial diagnosis of the CAN controller of combination meter.	MWI-77
VEHICLE SPEED [B2205]	The abnormal vehicle speed signal is input from the ABS actuator and electric unit (control unit) for 2 seconds or more.	MWI-78
SHIFT SIGNAL [B232A]	When an electric shift warning signal received from VCM does not become active within 3 seconds after power switch ON.	MWI-79
PARKING BRAKE SIGNAL [B232B]	When an electric parking brake control module wakeup signal received from the electric parking brake control module remains out of sync with an electric parking brake indicator lamp signal continuously for 2 seconds or more	MWI-81

WCS

BCM

< ECU DIAGNOSIS INFORMATION >

BCM

List of ECU Reference

INFOID:000000007632595

ECU	Reference
BCM	BCS-34, "Reference Value"
	BCS-54, "Fail-safe"
	BCS-55, "DTC Inspection Priority Chart"
	BCS-56, "DTC Index"

WARNING CHIME SYSTEM


< WIRING DIAGRAM >

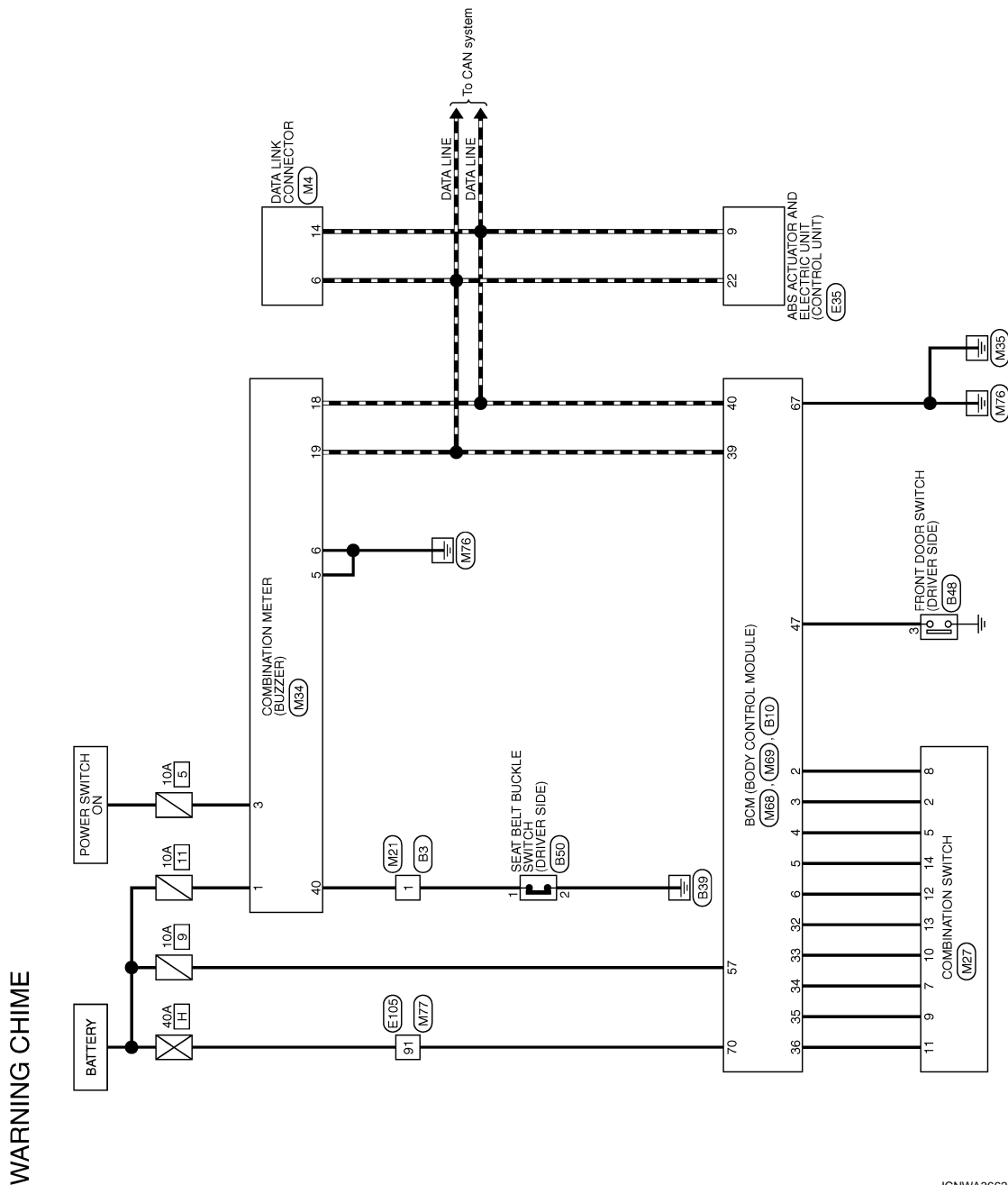
WIRING DIAGRAM

WARNING CHIME SYSTEM

Wiring Diagram

INFOID:000000007632596

For connector terminal arrangements, harness layouts, and alphabets in a  (option abbreviation; if not described in wiring diagram), refer to [GI-12. "Connector Information"](#).



2010/10/29

JCNWA3662GB

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WCS

DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

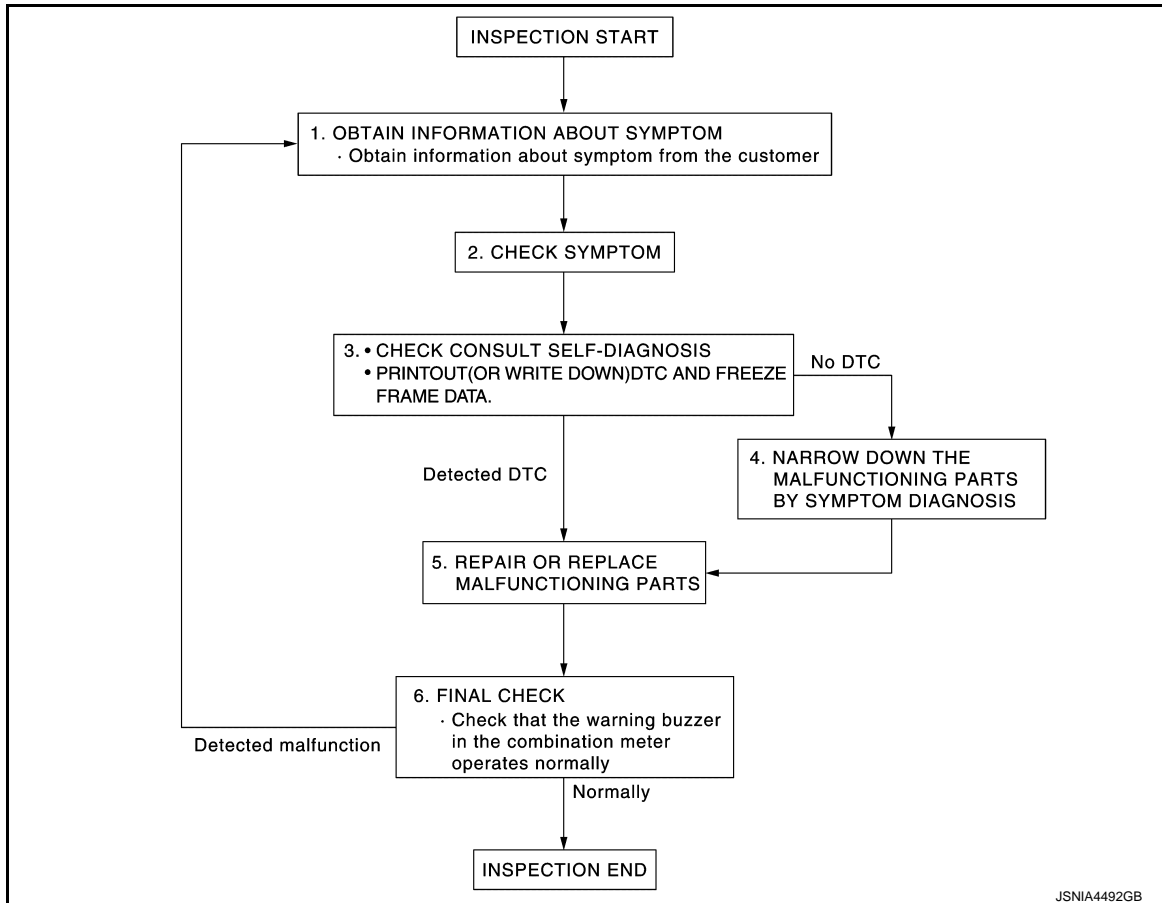
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORKFLOW

Work Flow

INFOID:000000007632597

OVERALL SEQUENCE



DETAILED FLOW

1.OBTAIN INFORMATION ABOUT SYMPTOM

Interview the customer to obtain as much information as possible about the conditions and environment under which the malfunction occurred.

>> GO TO 2.

2.CHECK SYMPTOM

- Check the symptom based on the information obtained from the customer.
- Check if any other malfunctions are present.

>> GO TO 3.

3.CHECK CONSULT SELF-DIAGNOSIS RESULTS

1. Connect CONSULT and perform self-diagnosis. Refer to [MWI-68. "DTC Index"](#).
2. When DTC is detected, follow the instructions below:
 - Record DTC and Freeze Frame Data.

Are self-diagnosis results normal?

- YES >> GO TO 4.
- NO >> GO TO 5.

DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

4. NARROW DOWN MALFUNCTIONING PARTS BY SYMPTOM DIAGNOSIS

Perform symptom diagnosis and narrow down the malfunctioning parts.

>> GO TO 5.

5. REPAIR OR REPLACE MALFUNCTIONING PARTS

Repair or replace malfunctioning parts.

NOTE:

If DTC is displayed, erase DTC after repairing or replacing malfunctioning parts.

>> GO TO 6.

6. FINAL CHECK

Check that the warning buzzer in the combination meter operates normally.

Does it operate normally?

YES >> INSPECTION END

NO >> GO TO 1.

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WCS

POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

DTC/CIRCUIT DIAGNOSIS

POWER SUPPLY AND GROUND CIRCUIT COMBINATION METER

COMBINATION METER : Diagnosis Procedure

INFOID:000000007632598

1. CHECK FUSE

Check for blown fuses.

Power source	Fuse No.
Battery	11
Power switch ON	5

Is the inspection result normal?

YES >> GO TO 2.

NO >> Be sure to eliminate cause of malfunction before installing new fuse.

2. CHECK POWER SUPPLY CIRCUIT

Check voltage between combination meter harness connector and ground.

Terminals		Power switch position	Voltage (Approx.)
(+)	(-)		
Combination meter		OFF	Battery voltage
Connector	Terminal		
M34	1		
	3		
Ground		ON	

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check harness between combination meter and fuse.

3. CHECK GROUND CIRCUIT

1. Power switch OFF.
2. Disconnect combination meter connector.
3. Check continuity between combination meter harness connector and ground.

Combination meter		Ground	Continuity
Connector	Terminal		
M34	5		Existed
	6		

Is the inspection result normal?

YES >> INSPECTION END

NO >> Repair harness or connector.

METER BUZZER CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

METER BUZZER CIRCUIT

Component Function Check

INFOID:000000007632599

1.CHECK OPERATION OF METER BUZZER

1. Select "BUZZER" of "BCM" on CONSULT.
2. Perform "LIGHT WARN ALM" of "Active Test".

Does meter buzzer beep?

- YES >> INSPECTION END
NO >> GO TO 2.

2.CHECK COMBINATION METER INPUT SIGNAL

Select the "Data Monitor" for the "METER/M&A" and check the "BUZZER" monitor value.

BUZZER
Under the condition of buzzer input : On
Except above : Off

Is the inspection result normal?

- YES >> Replace combination meter. Refer to [MWI-96. "Removal and Installation"](#).
NO >> Replace BCM. Refer to [BCS-77. "Removal and Installation"](#).

Diagnosis Procedure

INFOID:000000007632600

1.CHECK POWER SUPPLY OF COMBINATION METER

Check power supply of combination meter. Refer to [MWI-83. "COMBINATION METER : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES >> INSPECTION END
NO >> Repair power supply circuit of combination meter.

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WCS

SEAT BELT BUCKLE SWITCH SIGNAL CIRCUIT (DRIVER SIDE)

< DTC/CIRCUIT DIAGNOSIS >

SEAT BELT BUCKLE SWITCH SIGNAL CIRCUIT (DRIVER SIDE)

Component Function Check

INFOID:000000007632601

1. CHECK COMBINATION METER INPUT SIGNAL

Select the "Data Monitor" for the "METER/M&A" and check the "BUCKLE SW" monitor value.

BUCKLE SW
When driver seat belt is fastened : Off
When driver seat belt is unfastened : On

>> INSPECTION END

Diagnosis Procedure

INFOID:000000007632602

1. CHECK COMBINATION METER INPUT SIGNAL

1. Turn power switch ON.
2. Check voltage between combination meter harness connector and ground.

Terminals		Condition	Voltage (Approx.)
(+)	(-)		
Combination meter			
Connector	Terminal	When driver seat belt is fastened	12 V
M34	40		
		When driver seat belt is unfastened	0 V

Is the inspection result normal?

- YES >> Replace combination meter. Refer to [MWI-96. "Removal and Installation"](#).
NO >> GO TO 2.

2. CHECK SEAT BELT BUCKLE SWITCH CIRCUIT

1. Turn power switch OFF.
2. Disconnect combination meter connector and seat belt buckle switch (driver side) connector.
3. Check continuity between combination meter harness connector and seat belt buckle switch (driver side) harness connector.

Combination meter		Seat belt buckle switch (driver side)		Continuity
Connector	Terminal	Connector	Terminal	
M34	40	B50	1	Existed

4. Check harness continuity between combination meter harness connector and ground.

Combination meter		Ground	Continuity
Connector	Terminal		
M34	40		Not existed

Is the inspection result normal?

- YES >> GO TO 3.
NO >> Repair harness or connector.

3. CHECK SEAT BELT BUCKLE SWITCH GROUND CIRCUIT

Check harness continuity between seat belt buckle switch (driver side) harness connector and ground.

SEAT BELT BUCKLE SWITCH SIGNAL CIRCUIT (DRIVER SIDE)

< DTC/CIRCUIT DIAGNOSIS >

Seat belt buckle switch (driver side)		Ground	Continuity
Connector	Terminal		
B50	2		Existed

Is the inspection result normal?

- YES >> INSPECTION END
NO >> Repair harness or connector.

Component Inspection

INFOID:000000007632603

1. CHECK SEAT BELT BUCKLE SWITCH (DRIVER SIDE)

1. Turn power switch OFF.
2. Disconnect the seat belt buckle switch (driver side) connector.
3. Check continuity between terminals.

Terminal		Condition	Continuity
1	2	When driver seat belt is fastened	Not existed
		When driver seat belt is unfastened	Existed

Is the inspection result normal?

- YES >> INSPECTION END
NO >> Replace seat belt buckle (driver side). Refer to [SB-13, "SEAT BELT BUCKLE : Removal and Installation"](#).

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WCS

THE LIGHT REMINDER WARNING DOES NOT SOUND

< SYMPTOM DIAGNOSIS >

SYMPTOM DIAGNOSIS

THE LIGHT REMINDER WARNING DOES NOT SOUND

Description

INFOID:000000007632604

Light reminder warning chime does not sound even though headlamp is illuminated.

Diagnosis Procedure

INFOID:000000007632605

1. CHECK COMBINATION SWITCH (LIGHTING SWITCH) OPERATION

Check that the headlamps operate normally by operating the combination switch (lighting switch).

Do they operate normally?

YES >> GO TO 2.

NO >> Refer to [EXL-79, "WITHOUT DAYTIME RUNNING LIGHT SYSTEM : Symptom Table"](#).

2. CHECK DRIVER DOOR SWITCH SIGNAL CIRCUIT

Perform the check for the driver door switch signal circuit. Refer to [DLK-87, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair harness or connector.

3. CHECK DRIVER DOOR SWITCH

Perform a unit check for the driver door switch. Refer to [DLK-88, "Component Inspection"](#).

Is the inspection result normal?

YES >> Replace BCM. Refer to [BCS-77, "Removal and Installation"](#).

NO >> Replace driver door switch. Refer to [DLK-182, "Removal and Installation"](#).

THE SEAT BELT WARNING CONTINUES SOUNDING, OR DOES NOT SOUND

< SYMPTOM DIAGNOSIS >

THE SEAT BELT WARNING CONTINUES SOUNDING, OR DOES NOT SOUND

Description

INFOID:000000007632606

- Seat belt reminder warning does not sound.
- Seat belt reminder warning sounds continuously.

Diagnosis Procedure

INFOID:000000007632607

1. CHECK SEAT BELT WARNING LAMP

1. Turn power switch ON.
2. Check the operation of the seat belt warning lamp in the combination meter.

Driver seat belt fastened : OFF
Driver seat belt unfastened : ON

Is the inspection result normal?

- YES >> GO TO 2.
NO >> GO TO 4.

2. CHECK BCM OUTPUT SIGNAL

Check if the seat belt warning chime is activated by performing BCM active test. Refer to [WCS-19, "BUZZER : CONSULT Function \(BCM - BUZZER\)"](#).

Is the inspection result normal?

- YES >> INSPECTION END
NO >> GO TO 3.

3. CHECK COMBINATION METER INPUT SIGNAL

Check if buzzer switches to proper condition (On/Off) on data monitor of combination meter. Refer to [MWI-51, "CONSULT Function"](#).

Buzzer active condition : On
Buzzer non-active condition : Off

Is the inspection result normal?

- YES >> Replace combination meter. Refer to [MWI-96, "Removal and Installation"](#).
NO >> Replace BCM. Refer to [BCS-77, "Removal and Installation"](#).

4. CHECK SEAT BELT BUCKLE SWITCH (DRIVER SIDE) CIRCUIT

Perform the check for the seat belt buckle switch (driver side) circuit. Refer to [WCS-38, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES >> GO TO 5.
NO >> Repair harness or connector.

5. CHECK SEAT BELT BUCKLE SWITCH (DRIVER SIDE)

Perform a unit check for the seat belt buckle switch (driver side). Refer to [WCS-39, "Component Inspection"](#).

Is the inspection result normal?

- YES >> Replace combination meter. Refer to [MWI-96, "Removal and Installation"](#).
NO >> Replace driver seat belt buckle. Refer to [SB-13, "SEAT BELT BUCKLE : Removal and Installation"](#).