SECTION MWI
METER, WARNING LAMP & INDICATOR

CONTENTS

PRECAUTION

PRECAUTIONS

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

INFOID:0000000010275768

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. 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:

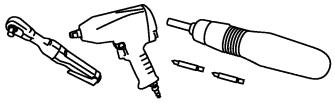
- **When working near the Airbag Diagnosis Sensor Unit or other Airbag System sensors with the Ignition ON or engine running, DO NOT use air or electric power tools or strike near the sensor(s) with a hammer. Heavy vibration could activate the sensor(s) and deploy the air bag(s), possibly causing serious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

PREPARATION

PREPARATION

Commercial Service Tools

INFOID:0000000010275771

Tool name	Description
Power tool  PIIB1407E	Loosening nuts, screws and bolts

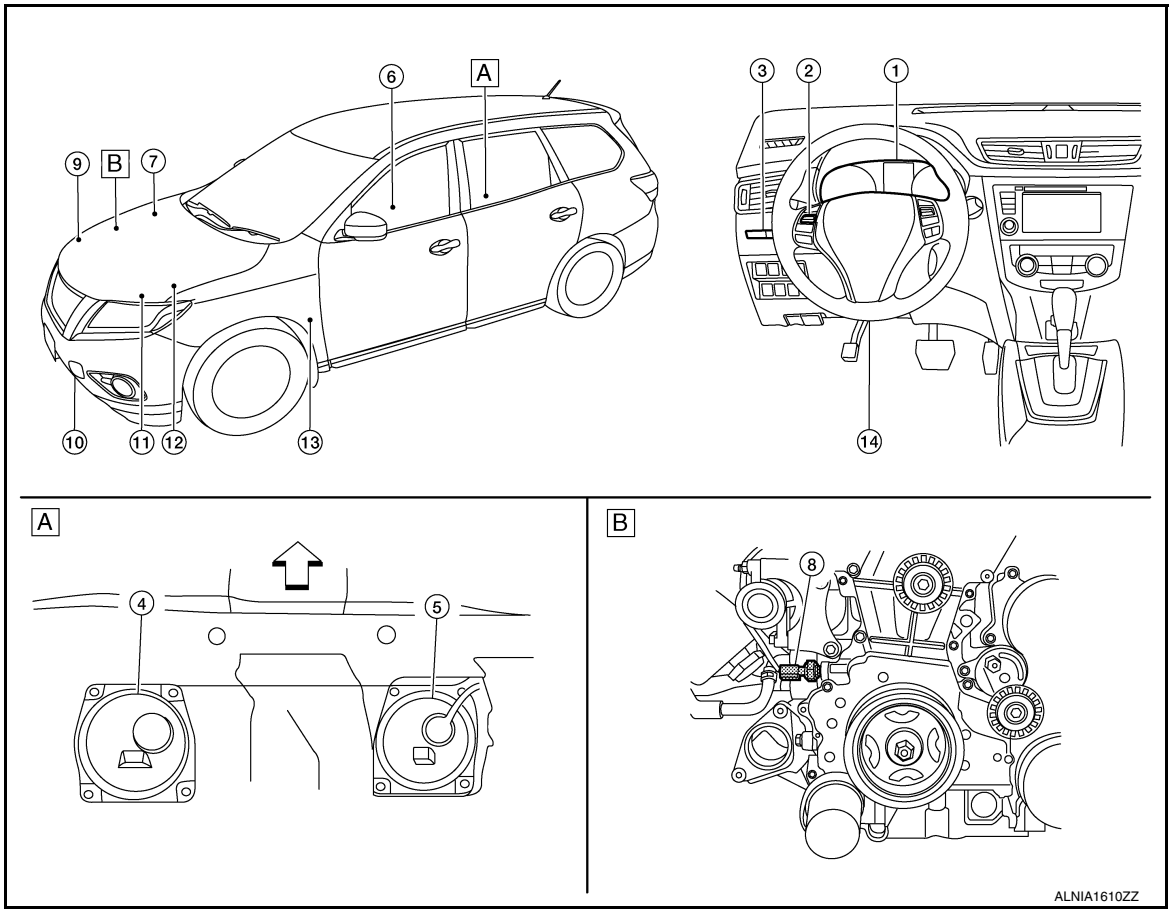
SYSTEM DESCRIPTION

COMPONENT PARTS

METER SYSTEM

METER SYSTEM : Component Parts Location

INFOID:0000000010336183



⇦ Vehicle front

A. View of the fuel pump and fuel level sensor inspection hole covers with the rear seat removed.

B. View of front engine assembly

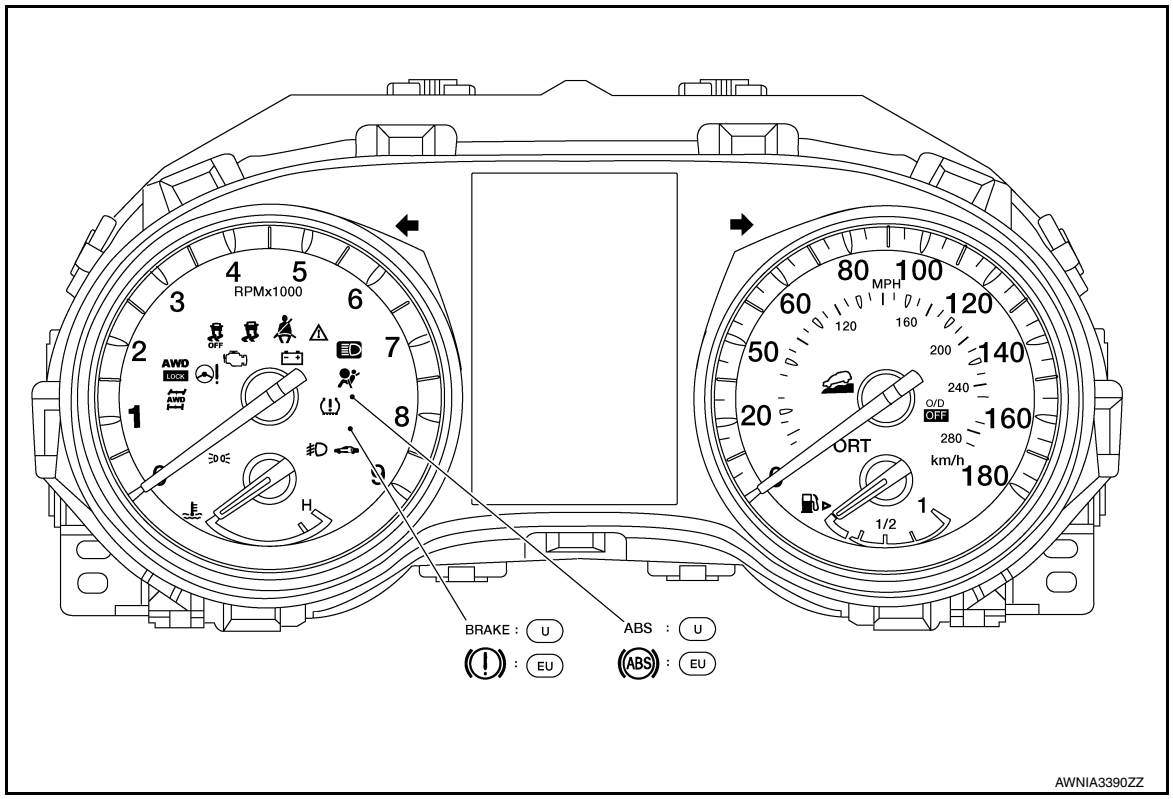
No.	Component	Function
1.	Combination meter	Refer to MWI-8, "METER SYSTEM : System Description".
2.	Steering switch	Refer to MWI-18, "Switch Name and Function".
3.	Meter control switch	Refer to MWI-18, "Switch Name and Function".
4.	Fuel level sensor unit (sub)	Transmits the fuel level sensor signal to the combination meter.
5.	Fuel level sensor unit (main)	Transmits the fuel level sensor signal to the combination meter.
6.	Seat belt buckle switch LH	Transmits the seat belt buckle switch signal LH to the combination meter.
7.	ABS actuator and electric unit (control unit)	• Transmits each signal to the combination meter via CAN communication. Refer to MWI-8, "METER SYSTEM : System Description". • Refer to BRC-8, "Component Parts Location" for detailed installation location.

No.	Component	Function
8.	Engine oil pressure sensor	Transmits the engine oil pressure sensor signal to the ECM.
9.	Washer fluid level switch	• Transmits the washer fluid level switch signal to the combination meter. • Refer to WW-6, "Component Parts Location" for detailed installation location.
10.	Ambient sensor	• Transmits the ambient sensor signal to the combination meter.
11.	ECM	• Transmits each signal to the combination meter via CAN communication. Refer to MWI-8, "METER SYSTEM : System Description". • Refer to EC-14, "Component Parts Location" for detailed installation location.
12.	TCM	• Transmits each signal to the combination meter via CAN communication. Refer to MWI-8, "METER SYSTEM : System Description". • Refer to TM-12, "CVT CONTROL SYSTEM : Component Parts Location" for detailed installation location.
13.	BCM	• Transmits each signal to the combination meter via CAN communication. Refer to MWI-8, "METER SYSTEM : System Description". • Refer to BCS-7, "BODY CONTROL SYSTEM : Component Parts Location" (with Intelligent Key system) or BCS-79, "BODY CONTROL SYSTEM : Component Parts Location" (without Intelligent Key system) for detailed installation location.
14.	Parking brake switch	Transmits the parking brake switch signal to the combination meter.

METER SYSTEM : Design

INFOID:0000000010336184

ARRANGEMENT OF COMBINATION METER

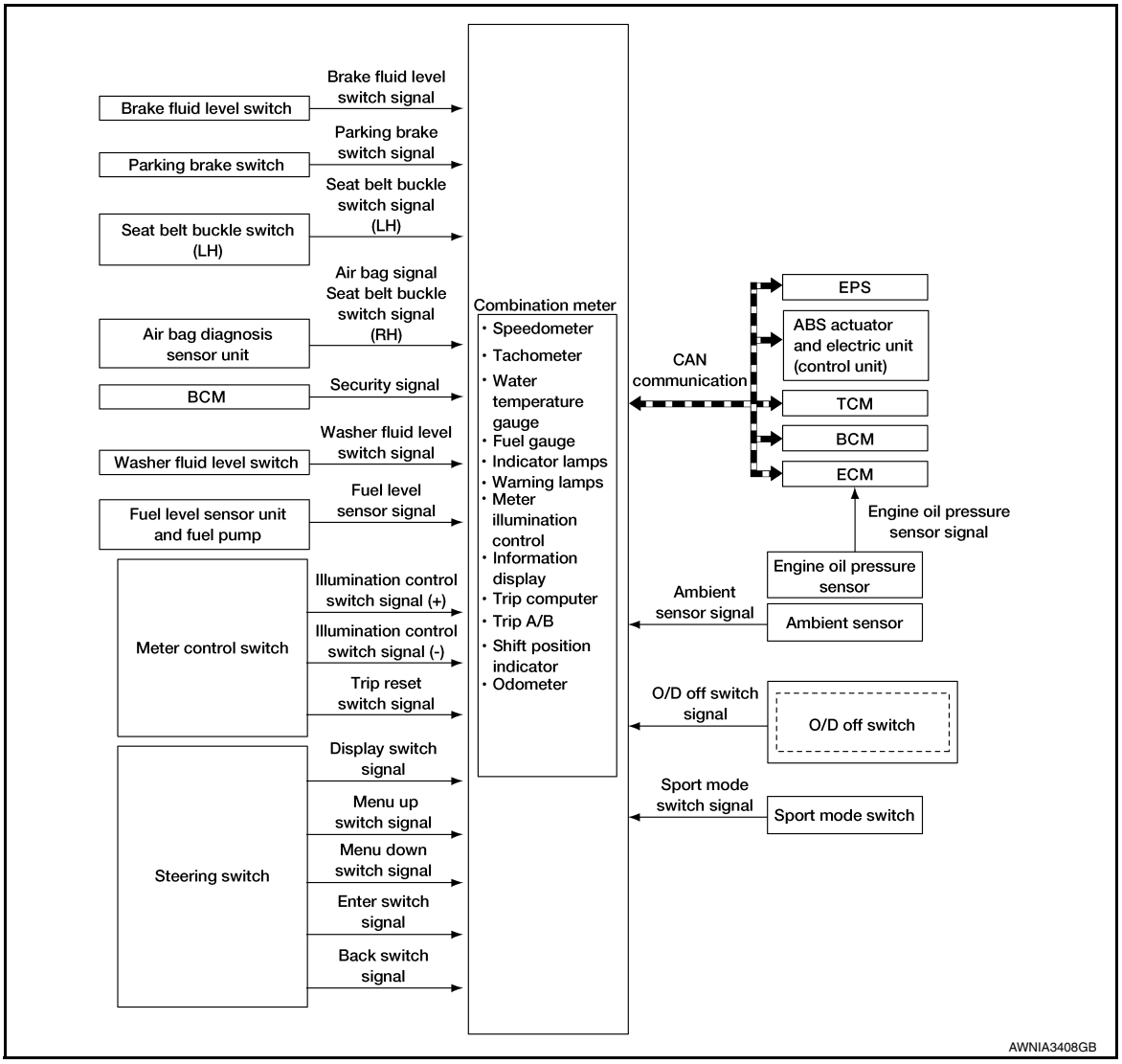


U: USA EU: Except USA

SYSTEM
METER SYSTEM
METER SYSTEM : System Description

INFOID:0000000010336188

SYSTEM DIAGRAM



Combination Meter Input Signal (CAN Communication Signal)

Transmit unit	Signal name
ABS actuator and electric unit (control unit)	Vehicle speed signal
	ABS warning lamp signal
	VDC warning lamp signal
	VDC OFF indicator lamp signal
	Brake warning lamp signal

Transmit unit	Signal name
BCM	Dimmer signal
	Position light request signal
	Door switch signal
	Front fog light request signal
	High beam request signal
	Meter display signal
	Sleep wake up signal
	Buzzer output signal
	Tire pressure data signal
	Key ID signal
	Turn indicator signal
	TPMS malfunction warning lamp signal
	Starter relay status signal
	Low tire pressure warning lamp signal
	Turn indicator signal
TCM	Shift position signal
	CVT warning lamp signal
ECM	Engine speed signal
	ASCD status signal
	Engine coolant temperature signal
	Fuel consumption monitor signal
	Malfunctioning indicator lamp signal
	Engine status signal
	Engine oil pressure sensor signal
	Fuel filler cap warning display signal
AWD control unit	AWD warning lamp signal

DESCRIPTION

Combination Meter

- The combination meter controls the following items according to the signals received from each unit via CAN communication and the signals from switches and sensors.

- Measuring instruments
- Speedometer
- Tachometer
- Engine coolant temperature gauge
- Fuel gauge
- Warning lamps
- Indicator lamps
- Meter illumination control
- Meter effect function
- Information display

- The combination meter incorporates a buzzer function that sounds an audible alarm with the integrated buzzer. Refer to WCS-6, "WARNING CHIME SYSTEM : System Description" for further details.
- The combination meter includes an on board diagnosis function.
- The combination meter can be diagnosed with CONSULT.

METER CONTROL FUNCTION LIST

System		Description	Reference
Measuring instruments	Speedometer	Indicates vehicle speed.	MWI-11, "SPEEDOMETER : System Description"
	Tachometer	Indicates engine speed.	MWI-12, "TACHOMETER : System Description"
	Engine coolant temperature gauge	Indicates engine coolant temperature.	MWI-12, "ENGINE COOLANT TEMPERATURE GAUGE : System Description"
	Fuel gauge	Indicates fuel level.	MWI-12, "FUEL GAUGE : System Description"
Information display		The Information display displays status, according to system malfunction or vehicle condition.	MWI-15, "INFORMATION DISPLAY : System Description"
Meter illumination control	Meter illumination control function	Switches back and forth between daytime mode and nighttime mode, according to a light switch position.	MWI-13, "METER ILLUMINATION CONTROL : System Description"
	Back light illumination control function	The operation of the illumination control switch allows the brightness adjustment of meter illumination.	
Meter effect function	Engine-start effect function	Controls pointers of combination meter, back light illumination and information display at engine start to produce illumination effects.	MWI-13, "METER EFFECT FUNCTION : System Description"
	Driver welcome function	Controls meter illumination to produce illumination effects when getting in the vehicle.	

METER SYSTEM : Fail-safe

INFOID:0000000010336461

The combination meter activates the fail-safe control if the CAN communication lines between each unit are malfunctioning.

Function		Specifications
Speedometer		Reset to zero by suspending communication.
Tachometer		
Engine coolant temperature gauge		
Meter illumination control		When suspending communication, changes to nighttime mode.
Buzzer		Turned off by suspending communication.

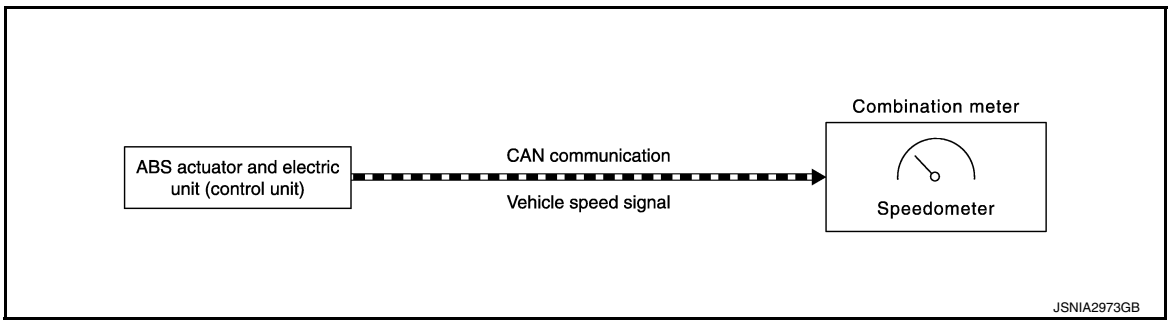
Function		Specifications
Information display	Current fuel consumption	• When reception time of an abnormal signal is 2 seconds or less, the last received datum is used for calculation to indicate the result. • When reception time of an abnormal signal is more than 2 seconds, the last result calculated during normal condition is indicated.
	Average fuel consumption	
	Average vehicle speed	
	Range (Distance to empty)	
	Driving distance	An indicated value is maintained at communications blackout.
	Door open warning	The display turns OFF by suspending communication.
	Lift gate open warning	
	Low tire pressure warning	
	Parking brake release warning	
	Fuel filler cap warning	
	Oil pressure warning	
	CVT warning	
	BSW/LDW warning	
	Odo/trip meter	An indicated value is maintained at communications blackout.
	Shift position indicator	The indicator turns OFF by suspending communication.
Warning lamp/indicator lamp	ABS warning lamp	Turned on by suspending communication.
	Brake warning lamp	
	EPS warning lamp	
	VDC warning lamp	
	AWD warning lamp	
	Malfunction indicator lamp	
	VDC OFF indicator lamp	Turned off by suspending communication.
	SPORT mode indicator lamp	
	AWD LOCK indicator lamp	
	High beam indicator lamp	
	Turn signal indicator lamp	
	Position lamp indicator lamp	
	OD OFF indicator lamp	
	BSW indicator lamp	
	LDW indicator lamp	
	Low tire pressure warning lamp	After blinking for 1 minute, the lamp remains ON.

SPEEDOMETER

SPEEDOMETER : System Description

INFOID:0000000010336191

SYSTEM DIAGRAM



DESCRIPTION

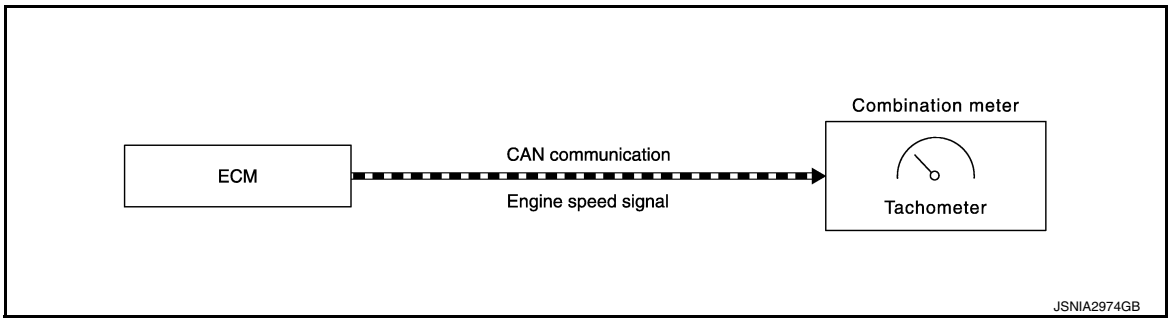
The ABS actuator and electric unit (control unit) receives each wheel speed sensor signal and provides a vehicle speed signal to the combination meter via CAN communication lines.

TACHOMETER

TACHOMETER : System Description

INFOID:0000000010336192

SYSTEM DIAGRAM



DESCRIPTION

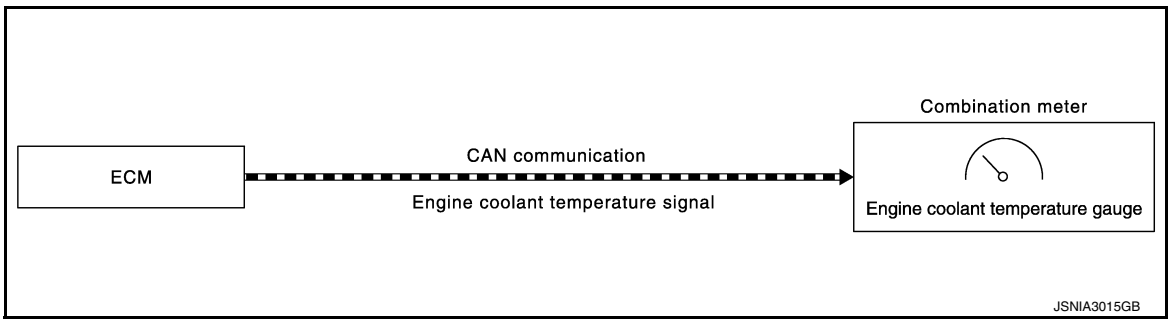
The crank position sensor sends a crankshaft position signal to the ECM. The ECM provides an engine speed signal to the combination meter via CAN communication lines. The tachometer indicates engine speed in revolutions per minute (rpm).

ENGINE COOLANT TEMPERATURE GAUGE

ENGINE COOLANT TEMPERATURE GAUGE : System Description

INFOID:0000000010336193

SYSTEM DIAGRAM



DESCRIPTION

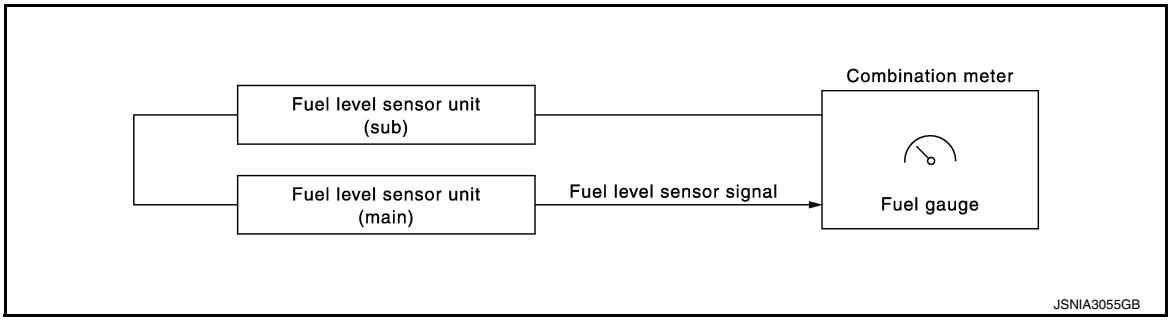
The engine coolant temperature sensor sends an engine coolant temperature signal to the ECM. The ECM provides an engine coolant temperature signal to the combination meter via CAN communication lines. The engine coolant temperature gauge indicates the engine coolant temperature.

FUEL GAUGE

FUEL GAUGE : System Description

INFOID:0000000010336194

SYSTEM DIAGRAM



DESCRIPTION

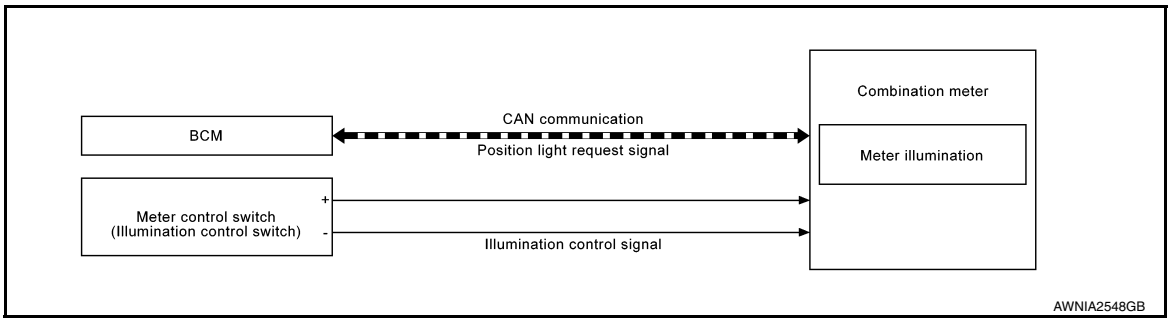
The fuel level sensor unit sends a variable resistor signal to the combination meter. The fuel gauge indicates the approximate fuel level in the fuel tank.

METER ILLUMINATION CONTROL

METER ILLUMINATION CONTROL : System Description

INFOID:0000000010336218

SYSTEM DIAGRAM



DESCRIPTION

Meter Illumination Control Function

The operation of the illumination control switch changes brightness of the meter illumination.

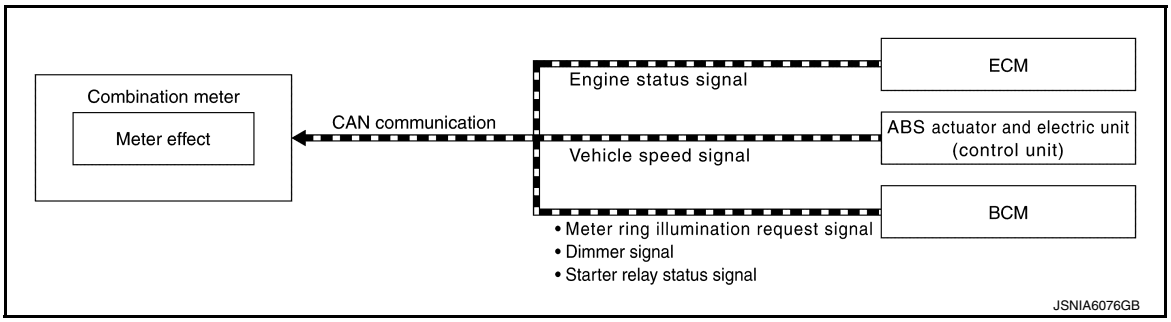
Meter illumination	The number of adjustable steps
Daytime	21 step
Nighttime	21 step

METER EFFECT FUNCTION

METER EFFECT FUNCTION : System Description

INFOID:0000000010336219

SYSTEM DIAGRAM



ENGINE-START EFFECT FUNCTION

When recognizing an engine start, the combination meter controls the following items for producing the effect:

- Speedometer
- Tachometer
- Engine coolant temperature gauge
- Fuel gauge
- Meter illumination

Meter and Illumination Operations During Engine-start Effect

The combination meter controls the following items during the engine-start effect.

Control item	Operation
Speedometer	Sweeps the pointer.
Tachometer	Sweeps the pointer.
Engine coolant temperature gauge	Stops the pointer.
Fuel gauge	Stops the pointer.

Control item		Operation
Meter illumination	Pointers	Turns on the illumination at the effect level.
	Information display	Turns on the illumination at the normal brightness level.
	Other than those above	Increases the brightness to the effect level in stages.

NOTE:
The pointers are stopped and illumination is turned off while cranking the engine.

Engine Start Judgement
The combination meter judges “engine-start” and activates the engine-start effect only once when the following operational conditions are all satisfied.

Condition	
Ignition switch	ON position
Vehicle speed	Less than 0.6 MPH (1 km/h)
Engine state	Other than the time of cranking the engine
	500 rpm or more
Information display (SETTING)	The setting of “EFFECT” is “ON.”

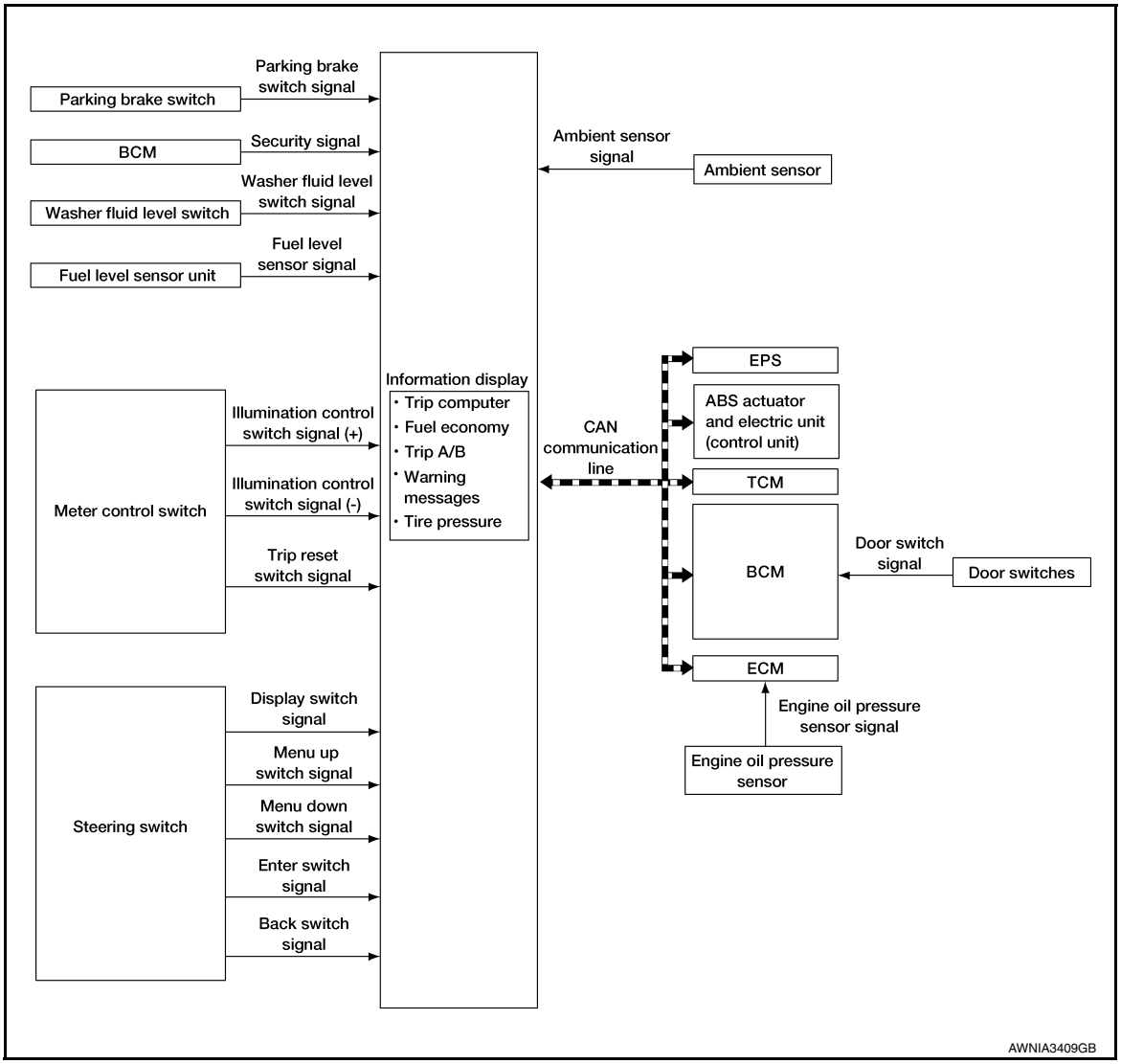
NOTE:
Engine-start effect exits when any of the above operational conditions is cancelled during the engine-start effect.

INFORMATION DISPLAY

INFORMATION DISPLAY : System Description

INFOID:0000000010336220

SYSTEM DIAGRAM



FUNCTION

The information display can indicate the following items:

- Outside air temperature
- Trip computer
- Intelligent Key operation information
- CVT shift position indicator
- Odometer
- Warning/Indication messages (door open, lift gate open, low oil pressure, CVT, AWD, I-Key, low fuel, low washer fluid, release parking brake, low tire pressure and loose fuel cap).

OUTSIDE AIR TEMPERATURE INDICATION

The combination meter receives the ambient sensor signal and displays the ambient temperature in the information display.

LOOSE FUEL CAP MESSAGE

The LOOSE FUEL CAP message will display in the information display when the fuel-filler cap is not tightened correctly. The message will turn off as soon as the ECM detects the fuel-filler cap is properly tightened. The ECM provides a loose fuel cap signal to the combination meter via CAN communication lines.

LOW TIRE PRESSURE WARNING

This warning appears when the BCM detects low inflation pressure or a system malfunction. The BCM sends a signal to the combination meter via CAN communication to illuminate the low tire pressure warning lamp. In addition, a warning message will be displayed in the vehicle information display.

DOOR OPEN WARNING

This warning appears when the ignition switch is ON and the door is open. The BCM receives a door switch signal from the door open door switch. The BCM sends the door switch signal to the combination meter via CAN communication lines.

LIFTGATE OPEN WARNING

This warning appears when the ignition switch is ON and the liftgate is opened. The BCM receives a back door switch signal from the back door switch. The BCM sends the door switch signal to the combination meter via CAN communication lines.

LOW FUEL WARNING

This warning appears when the fuel level in the fuel tank is low.

LOW WINDSHIELD WASHER FLUID WARNING

When the windshield washer fluid level is low, the washer fluid level switch provides a ground signal to the combination meter and the warning is displayed. Once fluid is added, the switch opens and the warning is no longer displayed.

RELEASE PARKING BRAKE WARNING

When the parking brake is applied, the parking brake switch provides a ground signal to the combination meter. When the vehicle speed is greater than 4 MPH (7 km/h), the message is displayed and the warning chime sounds.

SHIFT POSITION INDICATOR

The combination meter activates the shift position indicator and manual mode information based on signals received from TCM via CAN communication.

LOW OIL PRESSURE WARNING

The low oil pressure warning appears in the information display when the combination meter receives a low engine oil pressure signal from the ECM via CAN communication.

WARNING CHECK INDICATION

The combination meter can cause an interrupt on the information display to indicate a warning, based on signals received from each unit and switch.

Refer to Owner's Manual for additional information display items.

COMPASS

COMPASS : Description

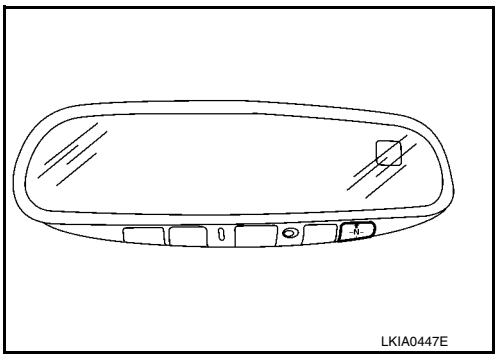
INFOID:0000000010336459

DESCRIPTION

With the ignition switch in the ON position, and the mode or (N) switch ON, the compass display will indicate the direction the vehicle is heading.

Vehicle direction is displayed as follows:

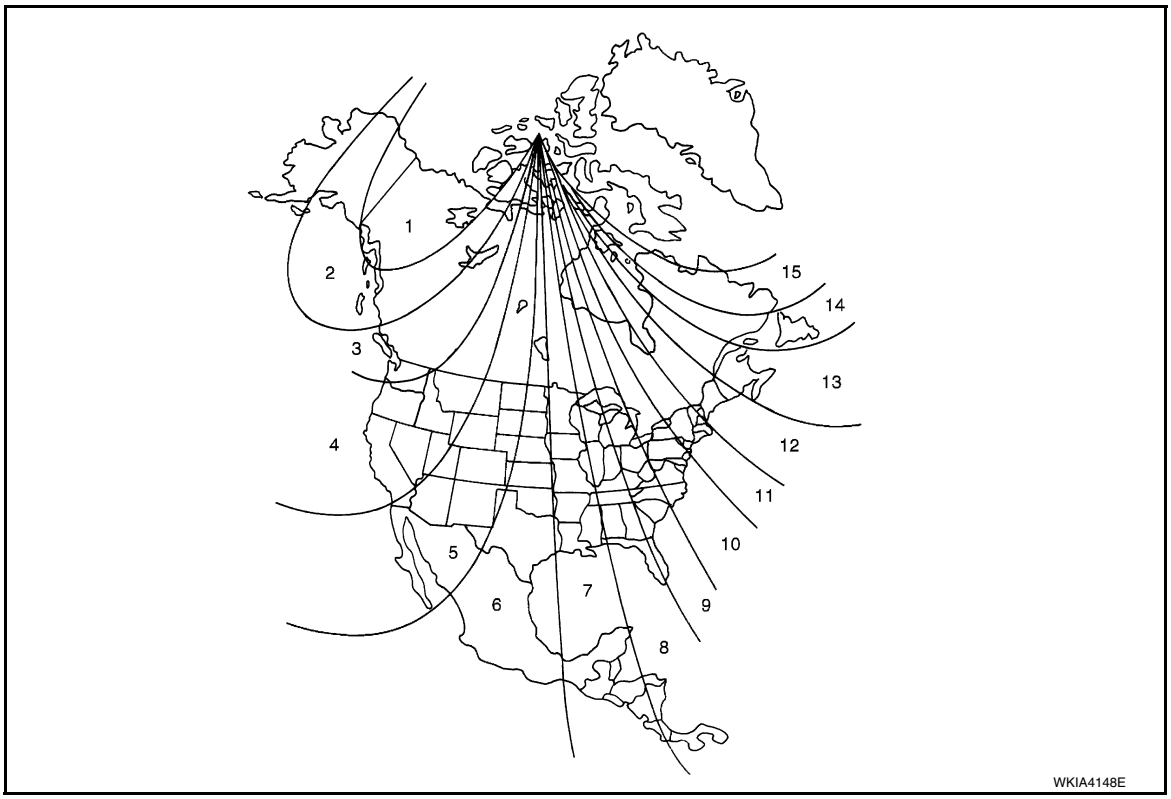
- N: north
- E: east
- S: south
- W: west



ZONE VARIATION SETTING PROCEDURE

The difference between magnetic north and geographical north can sometimes be great enough to cause false compass readings. This difference is known as variance. In order for the compass to operate properly (accurately) in a particular zone, the zone variation must be calibrated using the following procedure.

Zone Variation Chart



1. Determine your location on the zone map.
2. Turn the ignition switch to the ON position.
3. Press and hold the (N) switch for about 5 seconds. The current zone number will appear in the display.
4. Press the mode or (N) switch repeatedly until the desired zone number appears in the display.

Once the desired zone number is displayed, stop pressing the mode or (N) switch and the display will show a compass direction after a few seconds.

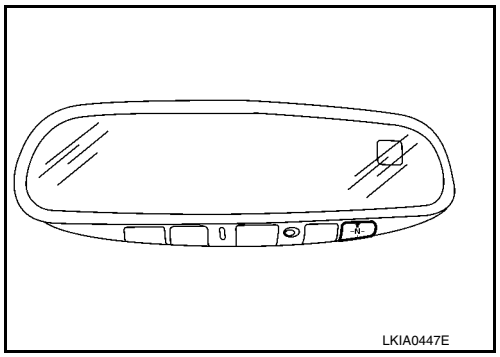
NOTE:
Use zone number 5 for Hawaii.

CALIBRATION PROCEDURE

The compass display is equipped with an automatic correction function. If the compass display reads “CAL” or the direction is not shown correctly, perform the correction procedure below.

1. Press and hold the (N) switch for about 10 seconds. The display will read “CAL”.
2. Drive the vehicle slowly in a circle, in an open, safe place. The initial calibration is completed in about 3 turns.

NOTE:
In places where the terrestrial magnetism is extremely disturbed, the initial correction may start automatically.

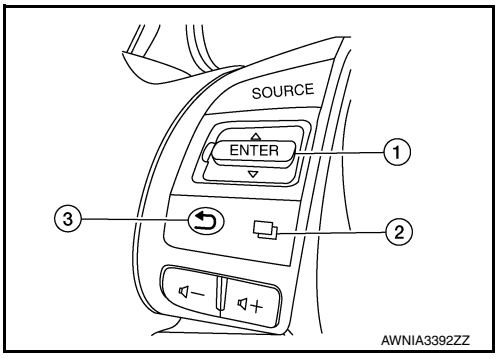


OPERATION

Switch Name and Function

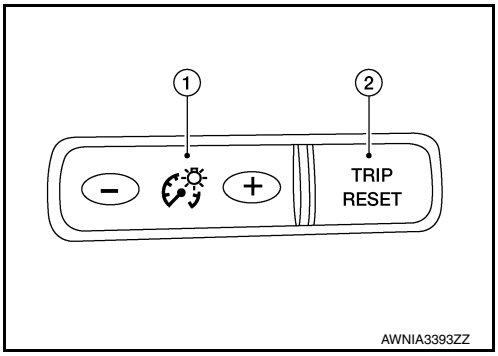
INFOID:0000000010336221

STEERING SWITCH



No.	Switch name	Operation	Description
1.	Enter/Up/Down switch	Press	The information display settings can be changed.
2.	Display switch		
3.	Back switch		

METER CONTROL SWITCH



No.	Switch name	Operation	Description
1.	Illumination control switch	Press	An illuminance level of the back light of the combination meter can be adjusted.
2.	Trip reset switch	Press	• The trip meter can be switched between A and B. • Trip meter A/B can be reset by pressing and holding the trip reset switch. • A trip computer value displayed on the information display can be reset by pressing and holding the trip reset switch for 1 second or more. • All trip computer values can be reset by pressing and holding the trip reset switch for 3 seconds or more.

DIAGNOSIS SYSTEM (COMBINATION METER)

Description

INFOID:0000000010336854

COMBINATION METER SELF-DIAGNOSIS MODE

The following meter functions can be checked during Combination Meter Self-Diagnosis Mode:
- Pointer sweep of speedometer, tachometer and gauges.
- Illumination of all LCD segments and color patterns for meter displays.
- Illumination of all lamps/LEDs that are controlled by the combination meter (regardless of switch status).

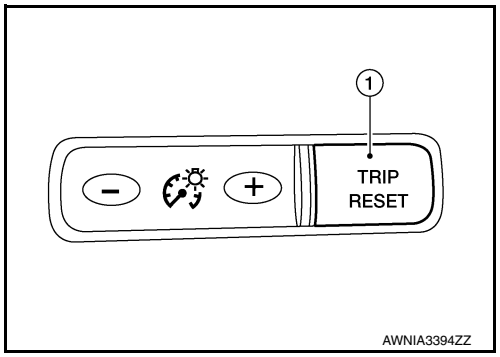
STARTING COMBINATION METER SELF-DIAGNOSIS MODE

NOTE:
- Check combination meter power supply and ground circuits if self-diagnosis mode does not start. Refer to MWI-59, "COMBINATION METER : Diagnosis Procedure". Replace combination meter if power supply and ground circuits are found to be normal and self-diagnosis mode does not start. Refer to MWI-82, "Removal and Installation".
- Combination meter self-diagnosis mode will function with the ignition switch in ON. Combination meter self-diagnosis mode will exit upon turning the ignition switch to OFF.

How to Initiate Self-Diagnosis Mode

1. Turn ignition switch OFF.
2. While pressing the trip reset switch (1), turn ignition switch ON.
3. Keep the trip reset switch for 1 seconds or more.
4. Press the trip reset switch at least 3 times. (Within 7 seconds after the ignition switch is turned ON.)
5. “Work instruction code” is indicated in the top portion of information display and self-diagnosis is started.
6. The mode switches in the order shown below each time the trip reset switch is pressed.

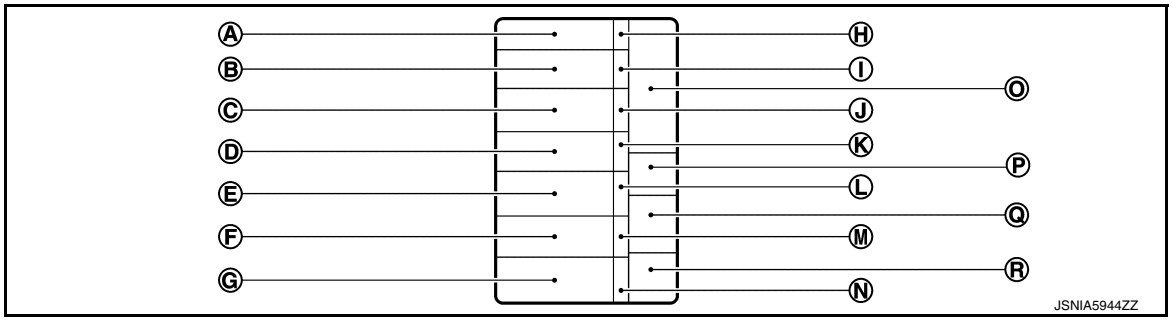
NOTE:
If the trip reset switch is not operated for 20 seconds or more, the self-diagnosis mode is automatically cancelled.



Test order	Test item	Description
1	Work instruction code	This item is displayed, but not used.
2	Part number	
3	Software code	
4	EEPROM code	
5	Hardware code	
6	P.C.B code	
7	Circuit check	The pointer of the following items moves from 0 to MAX twice. • Speedometer • Tachometer • Engine coolant temperature gauge • Fuel gauge **NOTE:** If any one of the pointers does not sweep, replace combination meter.
8	Color check*1	Performs the color check of the information display.

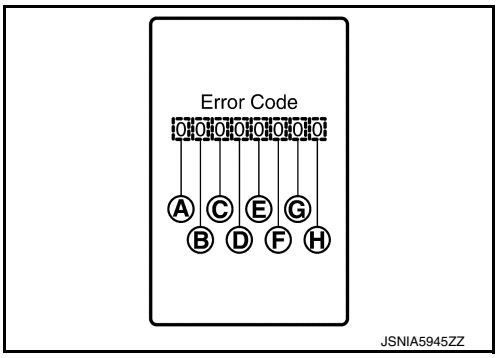
Test order	Test item	Description
9	error code*2	Displays the error code of the following items: • Speedometer • Tachometer • Engine coolant temperature gauge • Fuel gauge • Meter control switch
10	Warning/indicator lamp check	All warning/indicator lamp illuminate. **NOTE:** • When either one of them does not turn ON, replace combination meter. • SRS air bag warning lamp and security indicator lamp are not illuminate.

NOTE:
When the trip reset switch is pressed during the indication of Test order “10,” test item returns to Test order “2.”
*1: Color Check



Ⓐ Blue	Ⓑ Red	Ⓒ Pink
Ⓓ Green	Ⓔ Light blue	Ⓕ Yellow
Ⓖ White	Ⓗ White	Ⓘ Black
Ⓙ Light blue	Ⓚ Black	Ⓛ Pink
Ⓜ Black	Ⓝ Blue	Ⓞ Black
Ⓟ Dark blue	Ⓠ White	Ⓡ Blue

*2: Error Code



Item		Code	Description	Action to take/Reference
Ⓐ	Speedometer	0	Normal	—
		1	A vehicle speed signal cannot be received from ABS actuator and electric unit (control unit).	Perform “Self Diagnostic Result” of “ABS.” Refer to BRC-55, "DTC Index".
		2	A vehicle speed signal received from the ABS actuator and electric unit (control unit) is abnormal.	

Item		Code	Description	Action to take/Reference
Ⓑ	Tachometer	0	Normal	—
		1	An engine speed signal cannot be received from ECM.	Perform “Self Diagnostic Result” of “ECM.” Refer to EC-93, "DTC Index".
Ⓒ	Fuel gauge	0	Normal	—
		1	Fuel gauge circuit is short.	Refer to MWI-62, "Component Function Check".
		2	Fuel gauge circuit is open.	
Ⓓ	Engine coolant temperature gauge	0	Normal	—
		1	An engine coolant temperature signal cannot be received from ECM.	Perform “Self Diagnostic Result” of “ECM.” Refer to MWI-30, "DTC Index".
Ⓔ	Meter control switch	0	Normal	—
		1	When judging that the illumination control switch signal circuit is shorted for 5 minutes or more.	Refer to MWI-67, "Diagnosis Procedure".
		2	When judging that the trip reset switch signal circuit is shorted for 5 minutes or more.	
		3	When judging that the both switch signal circuit is shored for 5 minutes or more.	
Ⓕ	—	0	Displays “0” constantly.	—
Ⓖ	—	0	Displays “0” constantly.	—
Ⓗ	—	0	Displays “0” constantly.	—

How to Reset Error Code

Error codes stored in combination meter can be reset by following the instructions below:

1. Turn ignition switch OFF.
2. While pressing the trip reset switch, turn ignition switch ON.
3. Keep the trip reset switch for 1 seconds or more.
4. Press the trip reset switch at least 3 times. (Within 7 seconds after the ignition switch is turned ON.)
5. Turn ignition switch OFF.
6. Perform self-diagnosis and check that the error codes are reset.

CONSULT Function (METER/M&A)

INFOID:0000000010336855

APPLICATION ITEMS

CONSULT can display each diagnostic item using the diagnostic test modes shown.

METER/M&A Diagnosis mode	Description
SELF DIAGNOSTIC RESULT	Displays combination meter self-diagnosis results.
DATA MONITOR	Displays combination meter input/output data in real time.
WARNING HISTORY	Lighting history of the warning lamp and indicator lamp can be checked.
CAN DIAG SUPPORT MNTR	The result of transmit/receive diagnosis of CAN communication can be read.

SELF DIAG RESULT

Refer to MWI-30, "DTC Index".

DATA MONITOR

Display Item List

X: Applicable

Display item [Unit]	MAIN SIGNALS	Description
SPEED METER	X	Displays the value of vehicle speed signal.
SPEED OUTPUT [mph or km/h]	X	Vehicle speed signal value transmitted to other units via CAN communication.
ODO OUTPUT [mph or km/h]		Odometer signal value transmitted to other units via CAN communication.
TACHO METER [rpm]	X	Value of the engine speed signal received from ECM via CAN communication.
FUEL METER [L]	X	Fuel level indicated on combination meter.
W TEMP METER [°F] or [°C]	X	Displays the value of engine coolant temperature signal, which is input from ECM.
ABS W/L [On/Off]		Displays [On/Off] condition of ABS warning indicator.
VDC/TCS IND [On/Off]		Displays [On/Off] condition of VDC OFF indicator lamp.
SLIP IND [On/Off]		Displays [On/Off] condition of SLIP indicator lamp.
BRAKE W/L [On/Off]		Displays [On/Off] condition of brake warning indicator.
DOOR W/L [On/Off]		Displays [On/Off] condition of door or liftgate warning message in the information display.
HI-BEAM IND [On/Off]		Displays [On/Off] condition of high beam indicator.
TURN IND [On/Off]		Displays [On/Off] condition of turn indicator.
LIGHT IND [On/Off]		Displays [On/Off] condition of light indicator.
FR FOG IND [On/Off]		Displays [On/Off] condition of front fog lamp indicator.
OIL W/L [On/Off]		Displays [On/Off] condition of low oil pressure warning message in the information display.
O/D OFF IND [On/Off]		Displays [On/Off] condition of O/D OFF indicator.
DDS W/L [On/Off]		Displays [On/Off] condition of hill descent control warning indicator.
MIL [On/Off]		Displays [On/Off] condition of malfunction indicator.
SPORT IND [On/Off]		Displays [On/Off] condition of SPORT indicator.
CHAGE W/L [On/Off]		Displays [On/Off] condition of charge warning indicator.
4WD LOCK IND [On/Off]		Displays [On/Off] condition of AWD LOCK indicator lamp.
4WD W/L [On/Off]		Displays [On/Off] condition of AWD warning message in the information display.
FUEL W/L [On/Off]		Displays [On/Off] condition of low-fuel warning message.
WASHER W/L [On/Off]		Displays [On/Off] condition of low washer fluid warning message.

Display item [Unit]	MAIN SIGNALS	Description
AIR PRES W/L [On/Off]		Displays [On/Off] condition of tire pressure warning lamp.
KEY G/Y W/L [On/Off]		Displays [On/Off] condition of key green warning lamp.
EPS W/L [On/Off]		Displays [On/Off] condition of EPS warning indicator.
LCD		Displays the value of Intelligent Key system message indication.
SHIFT IND [P, R, N, D, L]		Displays shift selector position.
FUEL CAP W/L [On/Off]		Displays [On/Off] condition of loose fuel cap warning message.
O/D OFF SW [On/Off]		Displays [On/Off] condition of O/D Off switch.
PKB SW [On/Off]		Displays [On/Off] condition of parking brake switch.
BUCKLE SW [On/Off]		Displays [On/Off] condition of seat belt buckle switch LH.
PASS BUCKLE SW [On/Off]		Displays [On/Off] condition of seat belt buckle switch RH.
BRAKE OIL SW [On/Off]		Displays [On/Off] condition of brake fluid level switch.
DISTANCE [Mi] or [km]		Displays distance to empty.
OUTSIDE TEMP [°F or °C]		Displays the ambient air temperature which is input from the ambient sensor.
FUEL LOW SIG [On/Off]		Displays [On/Off] condition of low-fuel warning signal.
STRG SW INPUT [SW 1-SW 10, NOT INPUT]		Displays [SW 1-SW 10, NOT INPUT] condition of steering switches.
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.
BSW IND [On/Off]		Displays [On/Off] condition of blind spot warning indicator.
BSW W/L [On/Off]		Displays [On/Off] condition of blind spot warning message in the information display.

SPECIAL FUNCTION

Special menu

Display item	Description
W/L ON HISTORY	Lighting history of warning lamp and indicator lamp can be checked.

W/L ON HISTORY

- "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: No warning/indicator lamp history is stored.

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.

ECU DIAGNOSIS INFORMATION

COMBINATION METER

Reference Value

INFOID:0000000009799789

VALUES ON THE DIAGNOSIS TOOL

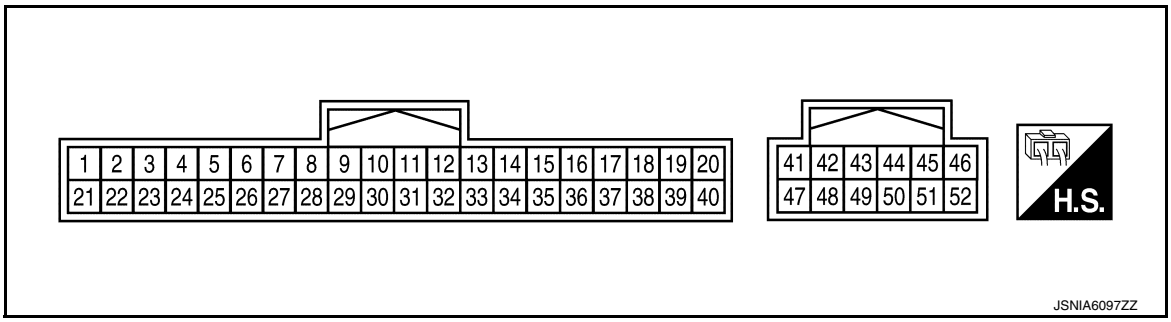
Monitor Item	Condition		Value/Status
SPEED METER [mph or km/h]	Ignition switch ON	While driving	Input value of vehicle speed signal (CAN communication signal)
SPEED OUTPUT [mph or km/h]	Ignition switch ON	While driving	Output value of vehicle speed signal (CAN communication signal)
ODO OUTPUT [mph or km/h]	Ignition switch ON	—	Output value of odometer signal (CAN communication signal)
TACHO METER [rpm]	Ignition switch ON	Engine running	Input value of engine speed signal (CAN communication signal)
FUEL METER [L]	Ignition switch ON	—	Input value of fuel level sensor signal
W TEMP METER [°F] or [°C]	Ignition switch ON	—	Input value of engine coolant temperature signal (CAN communication signal)
ABS W/L	Ignition switch ON	ABS warning lamp ON	On
		ABS warning lamp OFF	Off
VDC/TCS IND	Ignition switch ON	VDC OFF indicator lamp ON	On
		VDC OFF indicator lamp OFF	Off
SLIP IND	Ignition switch ON	VDC warning lamp ON	On
		VDC warning lamp OFF	Off
BRAKE W/L	Ignition switch ON	Brake warning lamp ON	On*1
		Brake warning lamp OFF	Off
DOOR W/L	Ignition switch ON	Door or lift gate open warning displayed	On
		Other than the above	Off
HI-BEAM IND	Ignition switch ON	High beam indicator lamp ON	On
		High beam indicator lamp OFF	Off
TURN IND	Ignition switch ON	Turn signal indicator lamp ON	On
		Turn signal indicator lamp OFF	Off
FR FOG IND	Ignition switch ON	Front fog lamp indicator lamp ON	On
		Front fog lamp indicator lamp OFF	Off
LIGHT IND	Ignition switch ON	Position lamp indicator lamp ON	On
		Position lamp indicator lamp OFF	Off
OIL W/L	Ignition switch ON	Engine oil pressure warning displayed	On
		Other than the above	Off
O/D OFF IND	Ignition switch ON	O/D OFF indicator lamp ON	On
		Other than the above	Off
DDS W/L	Ignition switch ON	Hill descent warning indicator ON	On
		Other than the above	Off
MIL	Ignition switch ON	Malfunction indicator lamp ON	On
		Malfunction indicator lamp OFF	Off

Monitor Item	Condition		Value/Status
4WD W/L	Ignition switch ON	AWD warning displayed	On
		Other than the above	Off
4WD LOCK IND	Ignition switch ON	AWD LOCK indicator lamp ON	On
		Other than the above	Off
FUEL W/L	Ignition switch ON	Low fuel warning displayed	On
		Low fuel warning lamp OFF	Off
WASHER W/L	Ignition switch ON	Low washer fluid warning displayed	On
		Other than the above	Off
AIR PRES W/L	Ignition switch ON	Low tire pressure warning lamp ON	On
		Low tire pressure warning lamp OFF	Off
KEY G/Y W/L	Ignition switch ON	Intelligent Key system warning indication	On
		Other than the above	Off
EPS W/L	Ignition switch ON	Power steering warning lamp ON	On
		Power steering warning lamp OFF	Off
SPORT IND	Ignition switch ON	Sport mode indicator ON	On
		Sport mode indicator OFF	Off
CHAGE W/L	Ignition switch ON	Charge warning lamp ON	On
		Charge warning lamp OFF	Off
SHIFT IND	Ignition switch ON	Shift position indicator displayed	[P, R, N, D, L]
FUEL CAP W/L	Ignition switch ON	Fuel filler cap warning displayed	On
		Other than the above	Off
O/D OFF SW	Ignition switch ON	O/D off switch ON	On
		O/D off switch OFF	Off
PKB SW	Ignition switch ON	Parking brake switch ON	On
		Parking brake switch OFF	Off
BUCKLE SW	Ignition switch ON	Driver seat belt not fastened	On
		Driver seat belt fastened	Off
PASS BUCKLE SW	Ignition switch ON	Passenger seat belt not fastened	On
		Passenger seat belt fastened	Off
BRAKE OIL SW	Ignition switch ON	Brake fluid level switch ON	On
		Brake fluid level switch OFF	Off
DISTANCE [mi] or [km]	Ignition switch ON	—	Distance to empty
OUTSIDE TEMP [°F] or [°C]	Ignition switch ON	—	Displays the ambient air temperature which is input from the ambient sensor
FUEL LOW SIG	—	Low fuel level warning	On
		Except during low fuel level warning	Off
BUZZER	Ignition switch ON	Buzzer ON	On
		Buzzer OFF	Off
LCD	Ignition switch ON	Engine start information	B&P

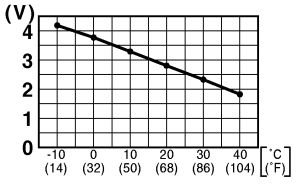
Monitor Item	Condition		Value/Status
STRG SW INPUT	Ignition switch ON	BACK switch is pressed	SW1
		MENU UP switch is pressed	SW2
		MENU DOWN switch is pressed	SW3
		Voice recognition switch is pressed	SW4
		MENU OK switch is pressed	SW5
		VOL DOWN switch is pressed	SW6
		VOL UP switch is pressed	SW7
		TEL switch is pressed	SW8
		Display back switch is pressed	SW9
		Display next switch is pressed	SW10
		Other than above	NO INPUT
BSW IND	Ignition switch ON	Blind spot warning lamp ON	On
		Blind spot warning lamp OFF	Off
BSW W/L	Ignition switch ON	Blind spot warning displayed	On
		Other than above	Off

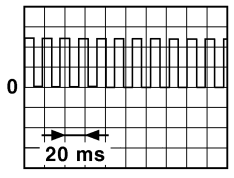
*: DDS (hill descent control)
NOTE:
Some items are not available according to vehicle specification.

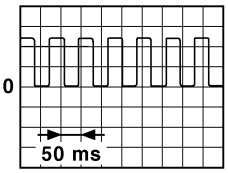
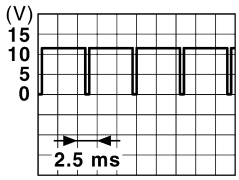
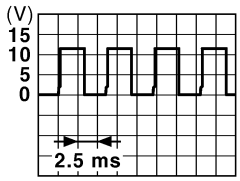
TERMINAL LAYOUT



PHYSICAL VALUES

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
1 (B)	Ground	Ground	—	—	—	0 V
7 (BG)	Ground	Security signal	Input	Ignition switch OFF	Security indicator ON	0 V
					Security indicator OFF	Battery voltage
10 (P)	Ground	O/D off switch	—	—	—	—
15 (L)	Ground	Ambient sensor signal	Input	Ignition switch ON	—	

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
17 (BG)	Ground	Meter control switch ground	—	—	—	0 V
18 (SB)	Ground	Trip/reset signal	Input	Ignition switch OFF or ON	Trip/Reset switch is pressed	0 V
					Other than the above	5.0 V
20 (Y)	Ground	Ambient sensor ground	—	—	—	0 V
21 (L)	Ground	Steering switch ground	—	—	—	0 V
22 (Y)	Ground	Steering switch output 1	—	—	—	—
23 (GR)	Ground	Steering switch output 2	—	—	—	—
24 (V)	Ground	Washer fluid level switch signal	Input	Ignition switch ON	Washer fluid level switch ON	0 V
					Washer fluid level switch OFF	Battery voltage
25 (V)	Ground	Brake fluid level switch signal	Input	Ignition switch ON	Brake fluid level low	0 V
					Brake fluid level normal	Battery voltage
26 (G)	Ground	Parking brake switch signal	Input	Ignition switch ON	Parking brake applied	0 V
					Parking brake released	Battery voltage
28 (Y)	Ground	Seat belt buckle switch signal LH	Input	Ignition switch ON	When driver seat belt is fastened.	Battery voltage
					When driver seat belt is unfastened.	0 V
29 (R)	Ground	Sport mode switch signal	—	—	—	—
36 (GR)	Ground	Illumination control switch signal (+)	Input	Ignition switch OFF or ON	When illumination control switch (+) is pressed	0 V
					Other than the above	5.0 V
37 (V)	Ground	Illumination control switch signal (-)	Input	Ignition switch OFF or ON	When illumination control switch (-) is pressed	0 V
					Other than the above	5.0 V
38 (G)	Ground	Vehicle speed signal (8-pulse)	Output	Ignition switch ON	Speedometer operated [When vehicle speed is approx. 25 MPH (40 km/h)]	**NOTE:** The maximum voltage varies depending on the specification (destination unit).  JSNIA0012GB

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
39 (W)	Ground	Vehicle speed signal (2-pulse)	Output	Ignition switch ON	Speedometer operated [When vehicle speed is approx. 25 MPH (40 km/h)]	**NOTE:** The maximum voltage varies depending on the specification (destination unit).  JSNIA0015GB
41 (L)	Ground	CAN-H	—	—	—	—
42 (P)	Ground	CAN-L	—	—	—	—
43 (W)	Ground	Illumination control signal	Output	Ignition switch ON	• Lighting switch 1st position • When meter illumination is minimum	 JSNIA5983GB
					• Lighting switch 1st position • When meter illumination is step 11	 JPNIA1686GB
					• Lighting switch 1st position • When meter illumination is maximum	0 V
44 (LA/B)	Ground	Fuel level sensor ground	—	Ignition switch ON	—	0 V
45 (LA/G)	Ground	Battery power supply	—	—	—	Battery voltage
46 (LA/BR)	Ground	Ignition signal	—	Ignition switch ON or START	—	Battery voltage
47 (SB)	Ground	M CAN-H	—	—	—	—
48 (LG)	Ground	M CAN-L	—	—	—	—
51 (LA/L)	Ground	Fuel level sensor signal	—	Ignition switch ON	Fuel gauge indication position —	Battery voltage
52 (B)	Ground	Ground	—	—	—	0 V

Fail-safe

INFOID:0000000009799790

The combination meter activates the fail-safe control if the CAN communication lines between each unit are malfunctioning.

Function		Specifications
Speedometer		Reset to zero by suspending communication.
Tachometer		
Engine coolant temperature gauge		
Meter illumination control		When suspending communication, changes to nighttime mode.
Buzzer		Turned off by suspending communication.
Information display	Current fuel consumption	• When reception time of an abnormal signal is 2 seconds or less, the last received datum is used for calculation to indicate the result. • When reception time of an abnormal signal is more than 2 seconds, the last result calculated during normal condition is indicated.
	Average fuel consumption	
	Average vehicle speed	
	Range (Distance to empty)	
	Driving distance	An indicated value is maintained at communications blackout.
	Door open warning	The display turns OFF by suspending communication.
	Lift gate open warning	
	Low tire pressure warning	
	Parking brake release warning	
	Fuel filler cap warning	
	Oil pressure warning	
	CVT warning	
	BSW/LDW warning	
	Odo/trip meter	An indicated value is maintained at communications blackout.
	Shift position indicator	The indicator turns OFF by suspending communication.
Warning lamp/indicator lamp	ABS warning lamp	Turned on by suspending communication.
	Brake warning lamp	
	EPS warning lamp	
	VDC warning lamp	
	AWD warning lamp	
	Malfunction indicator lamp	
	VDC OFF indicator lamp	Turned off by suspending communication.
	SPORT mode indicator lamp	
	AWD LOCK indicator lamp	
	High beam indicator lamp	
	Turn signal indicator lamp	
	Position lamp indicator lamp	
	OD OFF indicator lamp	
	BSW indicator lamp	
	LDW indicator lamp	
	Low tire pressure warning lamp	After blinking for 1 minute, the lamp remains ON.

DTC Index

INFOID:0000000009799791

Display contents of CONSULT	Diagnostic item is detected when...	Refer to
CAN COMM CIRCUIT [U1000]	Combination meter is not transmitting or receiving CAN communication signal for 2 seconds or more.	MWI-54
CONTROL UNIT (CAN) [U1010]	Detecting error during the initial diagnosis of CAN controller of combination meter.	MWI-55
VEHICLE SPEED [B2205]	The abnormal vehicle speed signal is input from ABS actuator and electric unit (control unit) for 2 seconds or more.	MWI-56
ENGINE SPEED [B2267]	ECM continuously transmits abnormal engine speed signals for 2 seconds or more.	MWI-57
WATER TEMP [B2268]	ECM continuously transmits abnormal engine coolant temperature signals for 60 seconds or more.	MWI-58

BCM (BODY CONTROL MODULE)

List of ECU Reference

INFOID:0000000010336838

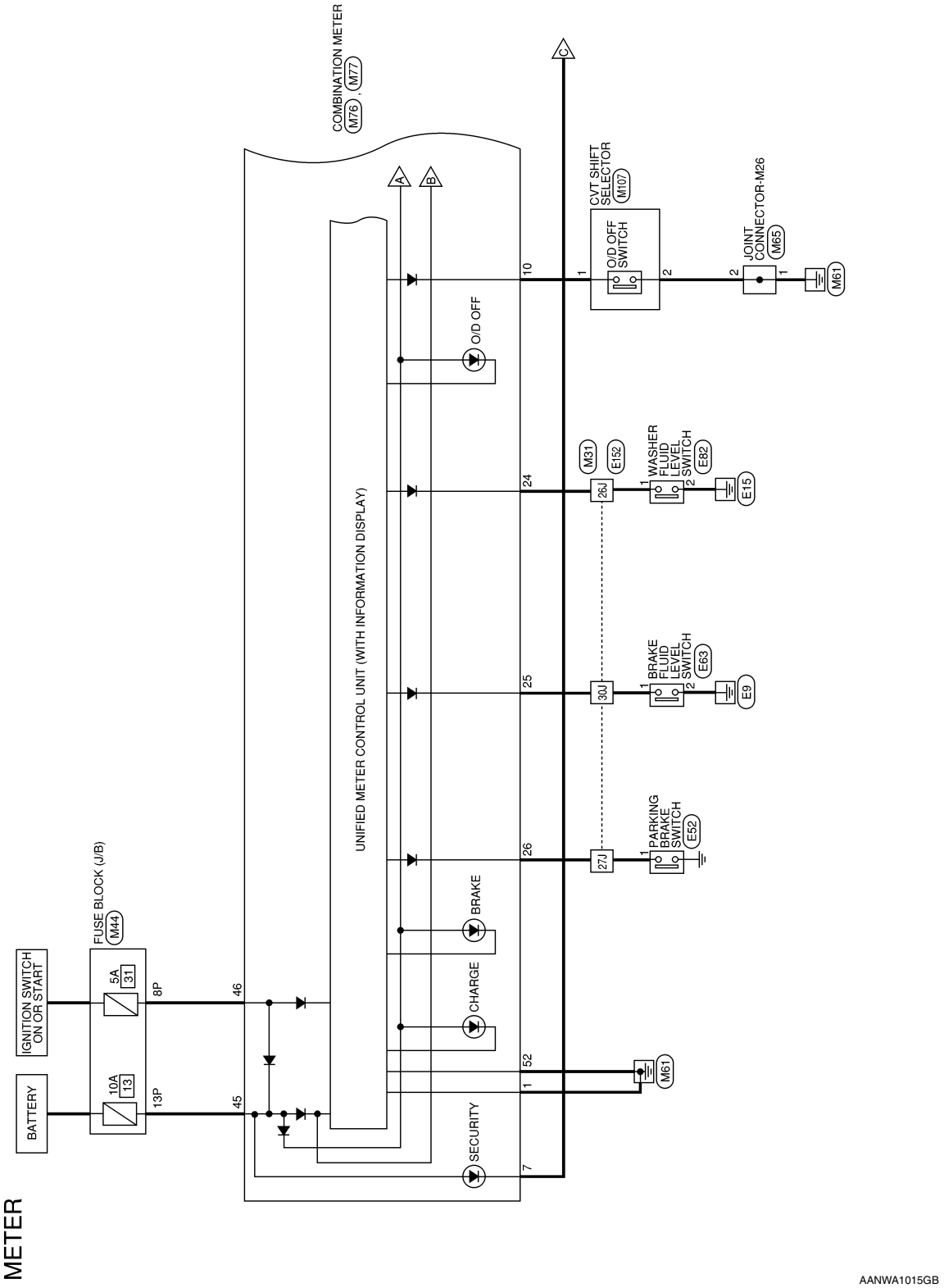
ECU	Reference
BCM (with Intelligent Key system)	BCS-28, "Reference Value"
	BCS-47, "Fail Safe"
	BCS-47, "DTC Inspection Priority Chart"
	BCS-48, "DTC Index"
BCM (without Intelligent Key system)	BCS-96, "Reference Value"
	BCS-107, "Fail Safe"
	BCS-107, "DTC Inspection Priority Chart"
	BCS-108, "DTC Index"

WIRING DIAGRAM

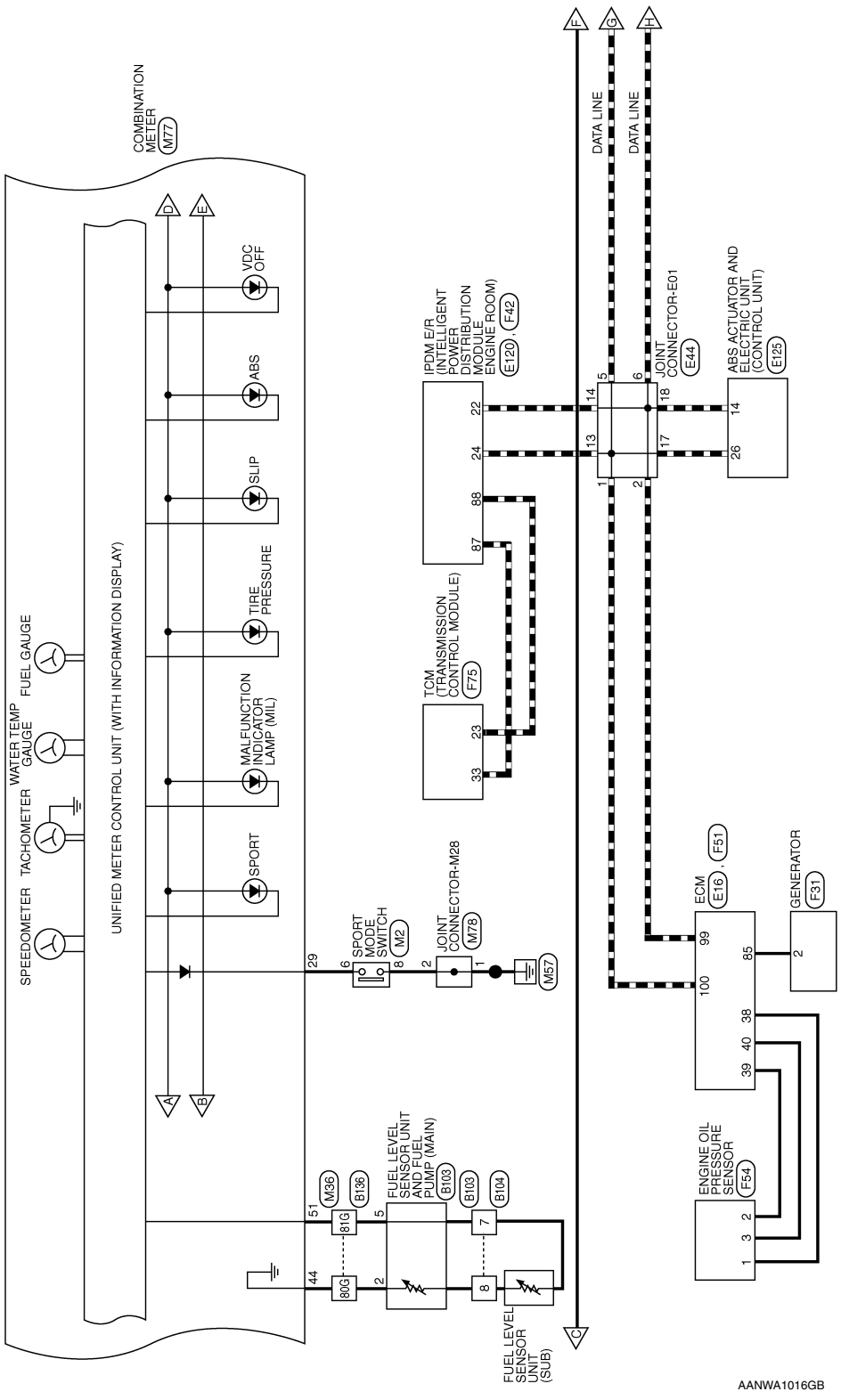
METER SYSTEM

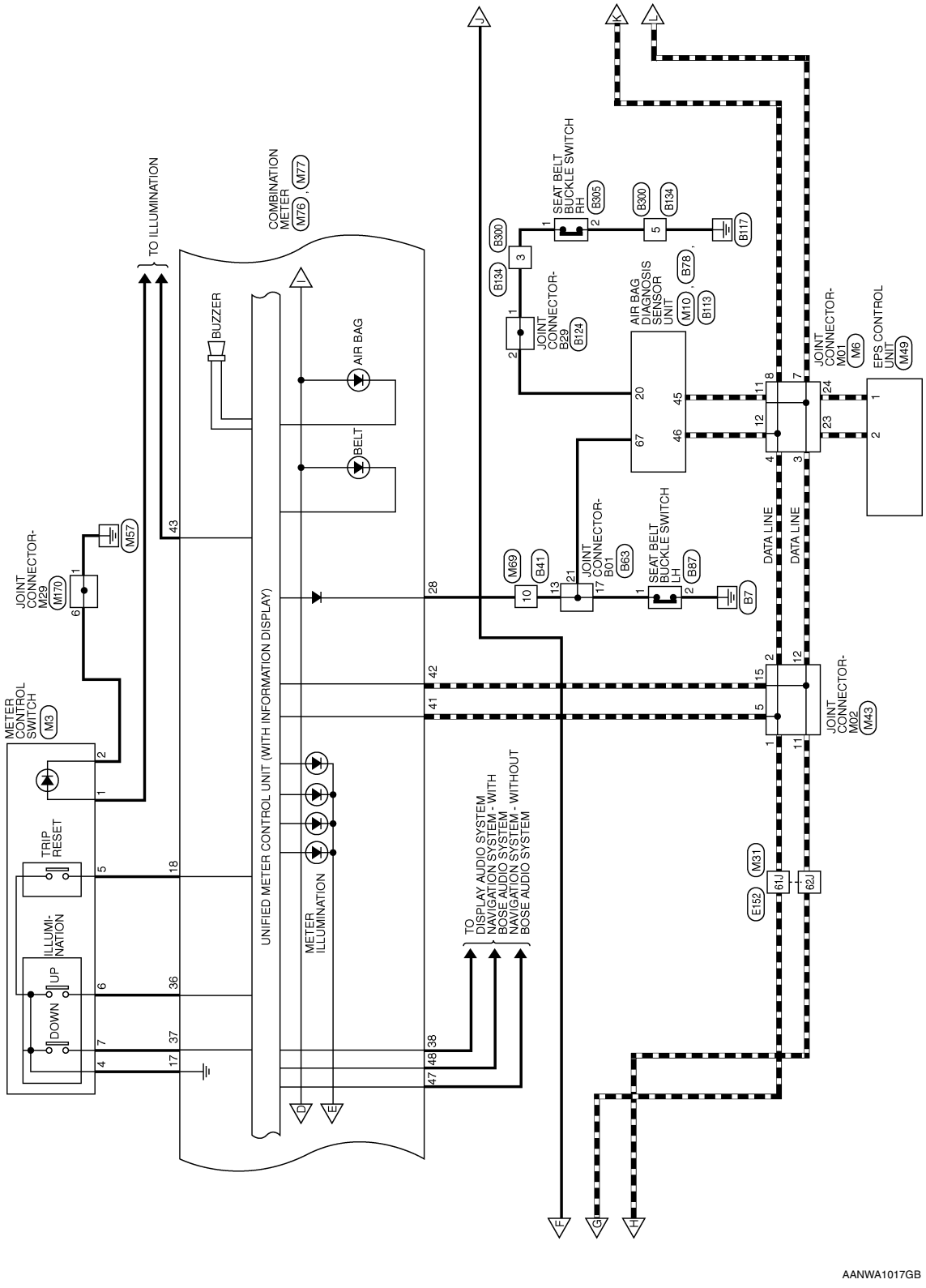
Wiring Diagram

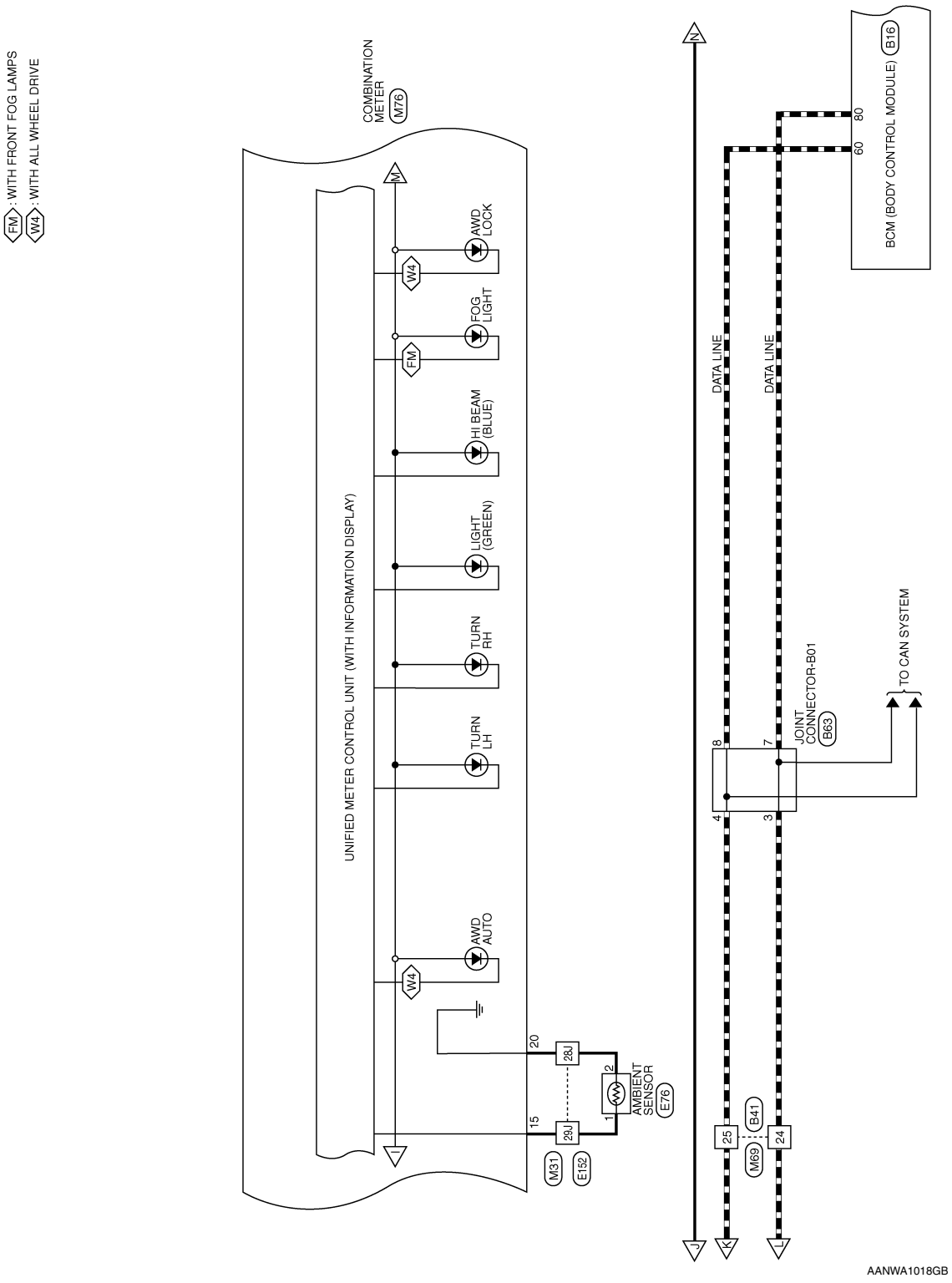
INFOID:0000000009799793

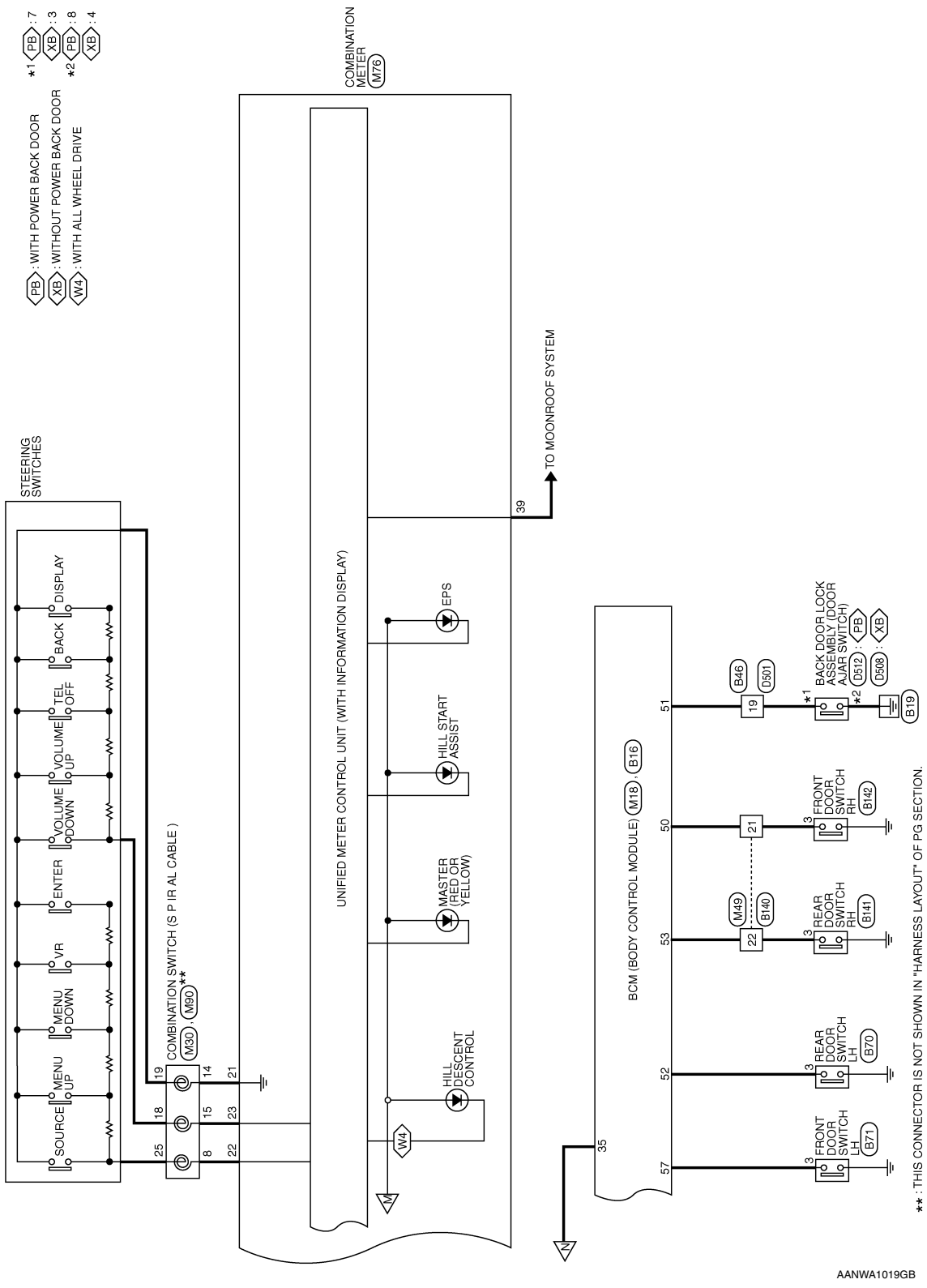


AANWA1015GB


COMBINATION METER (M77)
UNIFIED METER CONTROL UNIT (WITH INFORMATION DISPLAY)
SPEEDOMETER
TACHOMETER
WATER TEMP GAUGE
FUEL GAUGE
VDC OFF
ABS
SLIP
TIRE PRESSURE
MALFUNCTION INDICATOR LAMP (MIL)
SPORT
SPORT MODE SWITCH (M2)
JOINT CONNECTOR-M28 (M78)
M57
FUEL LEVEL SENSOR UNIT AND FUEL PUMP (MAIN) (B103)
FUEL LEVEL SENSOR UNIT (SUB) (B104)
M36
B136
81G
80G
DATA LINE
DATA LINE
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) (E120, F42)
TCM (TRANSMISSION CONTROL MODULE) (F75)
JOINT CONNECTOR-E01 (E44)
ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) (E125)
ECM (E16, F51)
GENERATOR (F31)
ENGINE OIL PRESSURE SENSOR (F54)
AANWA1016GB


TO ILLUMINATION
COMBINATION METER
M76, M77
BUZZER
AIR BAG
BELT
UNIFIED METER CONTROL UNIT (WITH INFORMATION DISPLAY)
METER ILLUMINATION
TO DISPLAY AUDIO SYSTEM
NAVIGATION SYSTEM - WITH
BOSE AUDIO SYSTEM
NAVIGATION SYSTEM - WITHOUT
BOSE AUDIO SYSTEM
METER CONTROL SWITCH M3
TRIP RESET
ILLUMI-NATION
UP
DOWN
JOINT CONNECTOR-M29 M170
M57
SEAT BELT BUCKLE SWITCH RH B305
B300
B134
B117
JOINT CONNECTOR-B29 B124
AIR BAG DIAGNOSIS SENSOR UNIT M10, B113
B78
JOINT CONNECTOR-M01 M6
EPS CONTROL UNIT M49
JOINT CONNECTOR-B01 B63
M69
B41
SEAT BELT BUCKLE SWITCH LH B87
B7
DATA LINE
DATA LINE
JOINT CONNECTOR-M02 M43
M31
E152
61J
62J
AANWA1017GB


FM : WITH FRONT FOG LAMPS
W4 : WITH ALL WHEEL DRIVE
COMBINATION METER
M76
UNIFIED METER CONTROL UNIT (WITH INFORMATION DISPLAY)
AWD LOCK
FOG LIGHT
HI BEAM (BLUE)
LIGHT (GREEN)
TURN RH
TURN LH
AWD AUTO
W4
FM
20
15
28J
2
1
AMBIENT SENSOR
E76
M31
E152
DATA LINE
DATA LINE
BCM (BODY CONTROL MODULE)
B16
80
60
JOINT CONNECTOR-B01
B63
8
7
4
3
TO CAN SYSTEM
25
24
B41
M69
AANWA1018GB


PB : WITH POWER BACK DOOR
XB : WITHOUT POWER BACK DOOR
W4 : WITH ALL WHEEL DRIVE
*1 PB : 7
XB : 3
*2 PB : 8
XB : 4
COMBINATION METER (M76)
STEERING SWITCHES
SOURCE
MENU UP
MENU DOWN
VR
ENTER
VOLUME DOWN
VOLUME UP
TEL OFF
BACK
DISPLAY
COMBINATION SWITCH (S P IR AL CABLE) (M30 : M90)**
UNIFIED METER CONTROL UNIT (WITH INFORMATION DISPLAY)
TO MOONROOF SYSTEM
EPS
HILL START ASSIST
MASTER (RED OR YELLOW)
HILL DESCENT CONTROL
W4
M
BCM (BODY CONTROL MODULE) (M18 : B16)
BACK DOOR LOCK ASSEMBLY (DOOR AJAR SWITCH)
*1 PB (D512) : XB (D508)
*2 B19
B46
D501
19
51
FRONT DOOR SWITCH PH
B142
21
50
REAR DOOR SWITCH PH
B141
M49
B140
22
53
REAR DOOR SWITCH LH
B70
52
FRONT DOOR SWITCH LH
B71
57
35
** : THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT" OF PG SECTION.
AANWA1019GB

METER CONNECTORS

Connector No.	M2
Connector Name	SPORT MODE SWITCH
Connector Color	BLUE

H.S.

Terminal No.	Color of Wire	Signal Name
1	G	–
4	GR	–
6	R	–
8	GR	–

Connector No.	M3
Connector Name	METER CONTROL SWITCH
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
1	R	–
2	B	–
3	–	–
4	BG	–
5	SB	–
6	GR	–
7	V	–
8	–	–

Connector No.	M6
Connector Name	JOINT CONNECTOR-M01
Connector Color	GRAY

H.S.

Terminal No.	Color of Wire	Signal Name
3	P	–
4	L	–
7	P	–
8	L	–
11	P	–
12	L	–
23	P	–
24	L	–

Connector No.	M10
Connector Name	AIR BAG DIAGNOSIS SENSOR UNIT
Connector Color	YELLOW

H.S.

Terminal No.	Color of Wire	Signal Name
45	P	CAN-H
46	L	CAN-L

Connector No.	M18
Connector Name	BCM (BODY CONTROL MODULE)
Connector Color	GRAY

H.S.

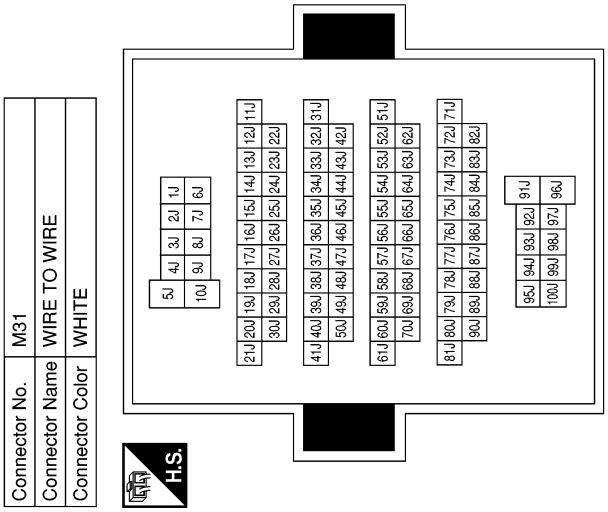
Terminal No.	Color of Wire	Signal Name
35	BG	SECURITY LED

Connector No.	M30
Connector Name	COMBINATION SWITCH (SPIRAL CABLE)
Connector Color	WHITE

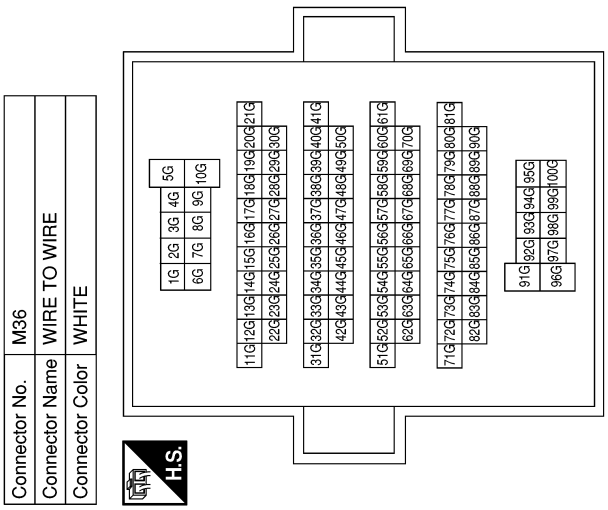
H.S.

Terminal No.	Color of Wire	Signal Name
8	Y	–
14	L	–
15	GR	–

AANIA2470GB



Terminal No.	Color of Wire	Signal Name
26J	BR	–
27J	G	–
28J	Y	–
29J	L	–
30J	V	–
61J	L	–
62J	P	–



Terminal No.	Color of Wire	Signal Name
80G	LA/B	–
81G	LA/L	–

AANIA2471GB

Connector No.	M43
Connector Name	JOINT CONNECTOR-M02
Connector Color	BLUE

H.S.

9	8	7	6	5	4	3	2	1
20	19	18	17	16	15	14	13	12	11	10
---	---	---	---	---	---	---	---	---	---	---

Terminal No.	Color of Wire	Signal Name
1	L	–
2	L	–
5	L	–
11	P	–
12	P	–
15	P	–

Connector No.	M44
Connector Name	FUSE BLOCK (J/B)
Connector Color	WHITE

H.S.

7P	6P	5P	4P		3P	2P	1P
16P	15P	14P	13P	12P	11P	10P	9P	8P
---	---	---	---	---	---	---	---	---

Terminal No.	Color of Wire	Signal Name
8P	LA/BR	–
13P	LA/G	–

Connector No.	M49
Connector Name	EPS CONTROL UNIT
Connector Color	WHITE

H.S.

4	3	2	1
8	7	6	5

Terminal No.	Color of Wire	Signal Name
1	P	CAN-L
2	L	CAN-H

Connector No.	M65
Connector Name	JOINT CONNECTOR-M26
Connector Color	WHITE

H.S.

8	7	6	5	4	3	2	1

Terminal No.	Color of Wire	Signal Name
1	B	–
2	B	–

Connector No.	M69
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17

Terminal No.	Color of Wire	Signal Name
10	Y	–
24	P	–
25	L	–

AANIA2472GB

Connector No.	M76
Connector Name	COMBINATION METER
Connector Color	WHITE

H.S.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40

Terminal No.	Color of Wire	Signal Name
1	B	GND1
2	–	–
3	–	–
4	–	–
6	–	–
7	BG	SECURITY
8	–	–
9	–	–
10	P	TOW MODE SW

Terminal No.	Color of Wire	Signal Name
11	–	–
12	–	–
13	–	–
15	L	OUTSIDE TEMP SENSOR
16	–	–
17	BG	SATELLITE SW GND
18	SB	TRIP RESET SW
19	–	–
20	Y	OUTSIDE TEMP GND
21	L	STRG SW GND
22	Y	STRG SW INPUT1
23	GR	STRG SW INPUT2
24	BR	WASHER SW
25	V	BRAKE OIL SW

Terminal No.	Color of Wire	Signal Name
26	G	PKB SW
27	–	–
28	Y	DR BELT SW
29	R	O/D OFF SW
30	–	–
31	–	–
32	–	–
33	–	–
34	–	–
35	–	–
36	GR	ILL UP SW
37	V	ILL DOWN SW
38	G	8P/R OUT
39	W	2P/R OUT
40	–	–

Connector No.	M77
Connector Name	COMBINATION METER
Connector Color	WHITE

H.S.

41	42	43	44	45	46
47	48	49	50	51	52

Terminal No.	Color of Wire	Signal Name
41	L	CAN-H
42	P	CAN-L
43	W	ILLUMINATION OUTPUT

Terminal No.	Color of Wire	Signal Name
44	LA/B	FUEL SENSOR GND
45	LA/G	BAT
46	LA/BR	IGN
47	SB	M CAN-H
48	LG	M CAN-L
49	–	–
50	–	–
51	LA/L	FUEL SENSOR
52	B	GND2

Connector No.	M78
Connector Name	JOINT CONNECTOR-M28
Connector Color	WHITE

H.S.

8	7	6	5	4	3	2	1

Terminal No.	Color of Wire	Signal Name
1	GR	–
2	GR	–

AANIA2473GB

Connector No.	M90
Connector Name	COMBINATION SWITCH (SPIRAL CABLE)
Connector Color	WHITE

H.S.

22	21	20	19	18	17
28	27	26	25	24	23

Terminal No.	Color of Wire	Signal Name
18	GR	–
19	L	–
25	Y	–

Connector No.	M107
Connector Name	CVT SHIFT SELECTOR
Connector Color	WHITE

H.S.

8	7	6	5	4	3	2	1	9
16	15	14	13	12	11	10		

Terminal No.	Color of Wire	Signal Name
1	P	–
2	B	–

Connector No.	M170
Connector Name	JOINT CONNECTOR-M29
Connector Color	WHITE

H.S.

8	7	6	5	4	3	2	1

Terminal No.	Color of Wire	Signal Name
1	B	–
6	B	–

Connector No.	E16
Connector Name	ECM
Connector Color	BLACK

H.S.

97	101	105	109	113	117	121	125
98	102	106	110	114	118	122	126
99	103	107	111	115	119	123	127
100	104	108	112	116	120	124	128

Terminal No.	Color of Wire	Signal Name
99	P	CAN-L
100	L	CAN-H

Connector No.	E44
Connector Name	JOINT CONNECTOR-E01
Connector Color	WHITE

H.S.

4	3	2	1
8	7	6	5
12	11	10	9
16	15	14	13
20	19	18	17
24	23	22	21
28	27	26	25

Terminal No.	Color of Wire	Signal Name
1	L	–
2	P	–
5	L	–

Terminal No.	Color of Wire	Signal Name
6	P	–
13	L	–
14	P	–
17	L	–
18	P	–

AANIA2474GB

Connector No.	E52
Connector Name	PARKING BRAKE SWITCH
Connector Color	BLACK

H.S.

Terminal No.	Color of Wire	Signal Name
1	G	–

Connector No.	E82
Connector Name	WASHER FLUID LEVEL SWITCH
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
1	BR	–
2	B	–

Connector No.	E63
Connector Name	BRAKE FLUID LEVEL SWITCH
Connector Color	BLACK

H.S.

Terminal No.	Color of Wire	Signal Name
1	V	–
2	BR	–

Connector No.	E120
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Color	GRAY

H.S.

Terminal No.	Color of Wire	Signal Name
22	P	CAN-L
24	L	CAN-H

Connector No.	E76
Connector Name	AMBIENT SENSOR
Connector Color	BLACK

H.S.

Terminal No.	Color of Wire	Signal Name
1	L	–
2	R	–

Connector No.	E125
Connector Name	ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)
Connector Color	BLACK

H.S.

Terminal No.	Color of Wire	Signal Name
14	P	CAN-L
26	L	CAN-H

AANIA2475GB

Connector No.	E152
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

1J	2J	3J	4J	5J
6J	7J	8J	9J	10J

11J	12J	13J	14J	15J	16J	17J	18J	19J	20J	21J
22J	23J	24J	25J	26J	27J	28J	29J	30J		

31J	32J	33J	34J	35J	36J	37J	38J	39J	40J	41J
42J	43J	44J	45J	46J	47J	48J	49J	50J		

51J	52J	53J	54J	55J	56J	57J	58J	59J	60J	61J
62J	63J	64J	65J	66J	67J	68J	69J	70J		

71J	72J	73J	74J	75J	76J	77J	78J	79J	80J	81J
82J	83J	84J	85J	86J	87J	88J	89J	90J		

91J	92J	93J	94J	95J
96J	97J	98J	99J	100J

Terminal No.	Color of Wire	Signal Name
26J	BR	–
27J	G	–
28J	R	–
29J	L	–
30J	V	–
61J	L	–
62J	P	–

Connector No.	F31
Connector Name	GENERATOR
Connector Color	BLACK

H.S.

1	2

Terminal No.	Color of Wire	Signal Name
2	G	–

Connector No.	F42
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Color	BLACK

H.S.

98	97	96	95	94	93	92	91	90	89	88	87
110	109	108	107	106	105	104	103	102	101	100	99

Terminal No.	Color of Wire	Signal Name
87	L	CAN-H
88	P	CAN-L

Connector No.	F51
Connector Name	ECM
Connector Color	BLACK

H.S.

1	5	9	13	17	21	25	29	33	37	41	45
2	6	10	14	18	22	26	30	34	38	42	46
3	7	11	15	19	23	27	31	35	39	43	47
4	8	12	16	20	24	28	32	36	40	44	48

Terminal No.	Color of Wire	Signal Name
38	SB	GND OILPRES
39	P	OILPRES
40	W	AVCC2 OILPRES

Connector No.	F52
Connector Name	ECM
Connector Color	BROWN

H.S.

49	53	57	61	65	69	73	77	81	85	89	93
50	54	58	62	66	70	74	78	82	86	90	94
51	55	59	63	67	71	75	79	83	87	91	95
52	56	60	64	68	72	76	80	84	88	92	96

Terminal No.	Color of Wire	Signal Name
85	G	LIN

AANIA2476GB

Connector No.	F54
Connector Name	ENGINE OIL PRESSURE SENSOR
Connector Color	BLACK

H.S.

Terminal No.	Color of Wire	Signal Name
1	SB	–
2	P	–
3	W	–

Connector No.	F75
Connector Name	TCM (TRANSMISSION CONTROL MODULE)
Connector Color	BLACK

H.S.

Terminal No.	Color of Wire	Signal Name
23	P	CAN-L
33	L	CAN-H

Connector No.	B16
Connector Name	BCM (BODY CONTROL MODULE)
Connector Color	GREEN

H.S.

Terminal No.	Color of Wire	Signal Name
50	W	RR DOOR SW
51	LG	TGATE SW
52	R	RL DOOR SW
53	SB	AS DOOR2 SW
57	SB	DR DOOR2 SW
60	L	CAN-H
80	P	CAN-L

Connector No.	B41
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
10	LA/Y	–
24	P	–
25	L	–

Connector No.	B46
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
19	LG	–

Connector No.	B49
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
6	SB	–
10	W	–

AANIA2477GB

Connector No.	B63
Connector Name	JOINT CONNECTOR-B01
Connector Color	GRAY

H.S.

Terminal No.	Color of Wire	Signal Name
3	P	–
4	L	–
7	P	–
8	L	–
13	LA/Y	–
17	LA/Y	–
21	SB	–

Connector No.	B70
Connector Name	REAR DOOR SWITCH LH
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
3	R	–

Connector No.	B71
Connector Name	FRONT DOOR SW LH
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
3	SB	–

Connector No.	B78
Connector Name	AIR BAG DIAGNOSIS SENSOR UNIT
Connector Color	YELLOW

H.S.

Terminal No.	Color of Wire	Signal Name
67	SB	BUCKLE SW FR LH

Connector No.	B87
Connector Name	SEAT BELT BUCKLE SWITCH LH
Connector Color	WHITE

H.S.

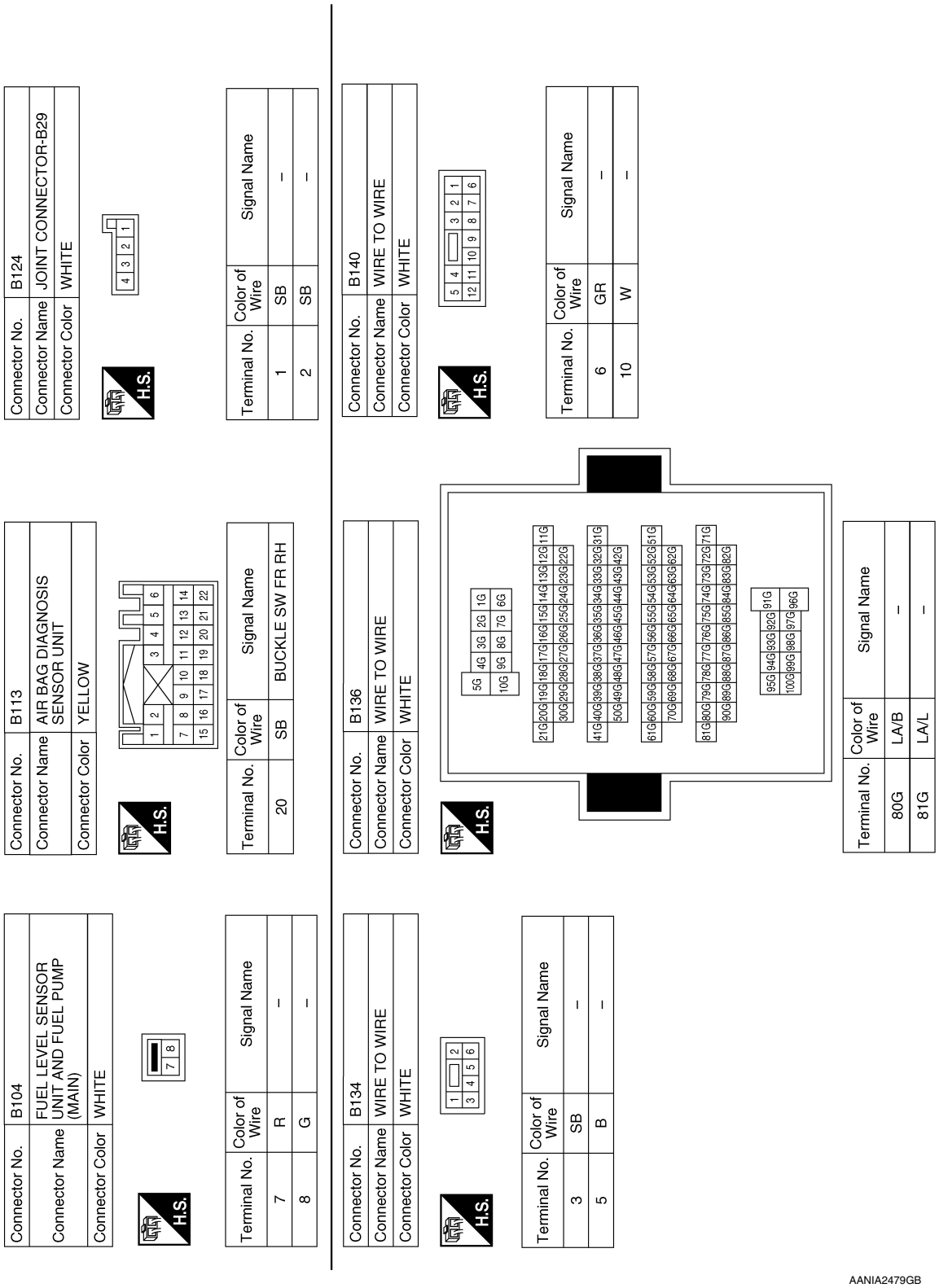
Terminal No.	Color of Wire	Signal Name
1	LA/Y	–
2	B	–

Connector No.	B103
Connector Name	FUEL LEVEL SENSOR AND FUEL PUMP (FUEL SENSOR)
Connector Color	GRAY

H.S.

Terminal No.	Color of Wire	Signal Name
2	LA/B	–
5	LA/L	–

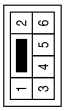
AANIA2478GB



AANIA2479GB

Connector No.	B300
Connector Name	WIRE TO WIRE
Connector Color	WHITE

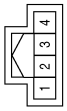
H.S.



Terminal No.	Color of Wire	Signal Name
3	SB	–
5	B	–

Connector No.	B142
Connector Name	FRONT DOOR SWITCH RH
Connector Color	WHITE

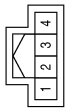
H.S.



Terminal No.	Color of Wire	Signal Name
3	W	–

Connector No.	B141
Connector Name	REAR DOOR SWITCH RH
Connector Color	WHITE

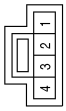
H.S.



Terminal No.	Color of Wire	Signal Name
3	GR	–

Connector No.	D508
Connector Name	BACK DOOR LOCK ASSEMBLY (DOOR AJAR SWITCH) (WITHOUT POWER BACK DOOR)
Connector Color	WHITE

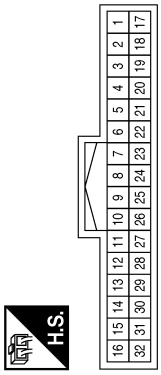
H.S.



Terminal No.	Color of Wire	Signal Name
3	W	–
4	GR	–

Connector No.	D501
Connector Name	WIRE TO WIRE
Connector Color	WHITE

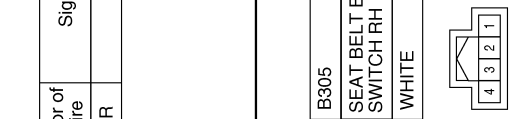
H.S.



Terminal No.	Color of Wire	Signal Name
19	W	–

Connector No.	B305
Connector Name	SEAT BELT BUCKLE SWITCH RH
Connector Color	WHITE

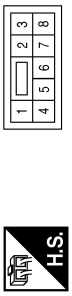
H.S.



Terminal No.	Color of Wire	Signal Name
1	SB	–
2	B	–

AANIA2480GB

Connector No.	D512
Connector Name	BACK DOOR LOCK ASSEMBLY (DOOR AJAR SWITCH) (WITH POWER BACK DOOR)
Connector Color	WHITE



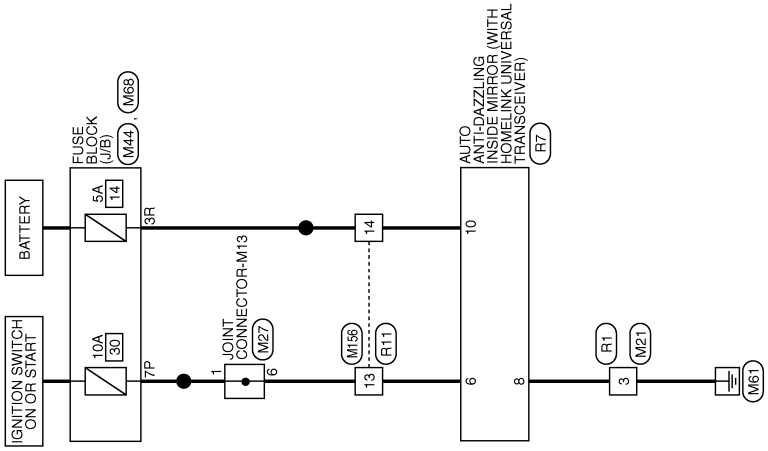
Terminal No.	Color of Wire	Signal Name
7	W	–
8	GR	–

AANIA2619GB

COMPASS

Wiring Diagram

INFOID:0000000009799794



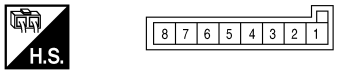
AANWA1020GB

COMPASS CONNECTORS

Connector No.	M21
Connector Name	WIRE TO WIRE
Connector Color	WHITE

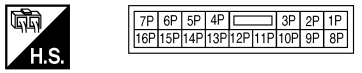
Terminal No.	Color of Wire	Signal Name
3	B	–

Connector No.	M27
Connector Name	JOINT CONNECTOR-M13
Connector Color	WHITE



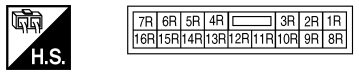
Terminal No.	Color of Wire	Signal Name
1	SB	–
6	SB	–

Connector No.	M44
Connector Name	FUSE BLOCK (J/B)
Connector Color	WHITE



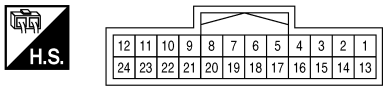
Terminal No.	Color of Wire	Signal Name
7P	Y	–

Connector No.	M68
Connector Name	FUSE BLOCK (J/B)
Connector Color	BROWN



Terminal No.	Color of Wire	Signal Name
3R	V	–

Connector No.	M156
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
13	SB	–
14	GR	–

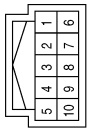
Connector No.	R1
Connector Name	WIRE TO WIRE
Connector Color	WHITE

Terminal No.	Color of Wire	Signal Name
3	B	–

AANIA2455GB

Connector No.	R7
Connector Name	AUTO ANTI-DAZZLING INSIDE MIRROR (WITH HOMELINK UNIVERSAL TRANSCEIVER)
Connector Color	BLACK

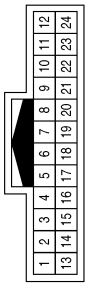
H.S.



Terminal No.	Color of Wire	Signal Name
6	SB	–
8	B	–
10	P	–

Connector No.	R11
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.



Terminal No.	Color of Wire	Signal Name
13	SB	–
14	P	–

AANIA2456GB

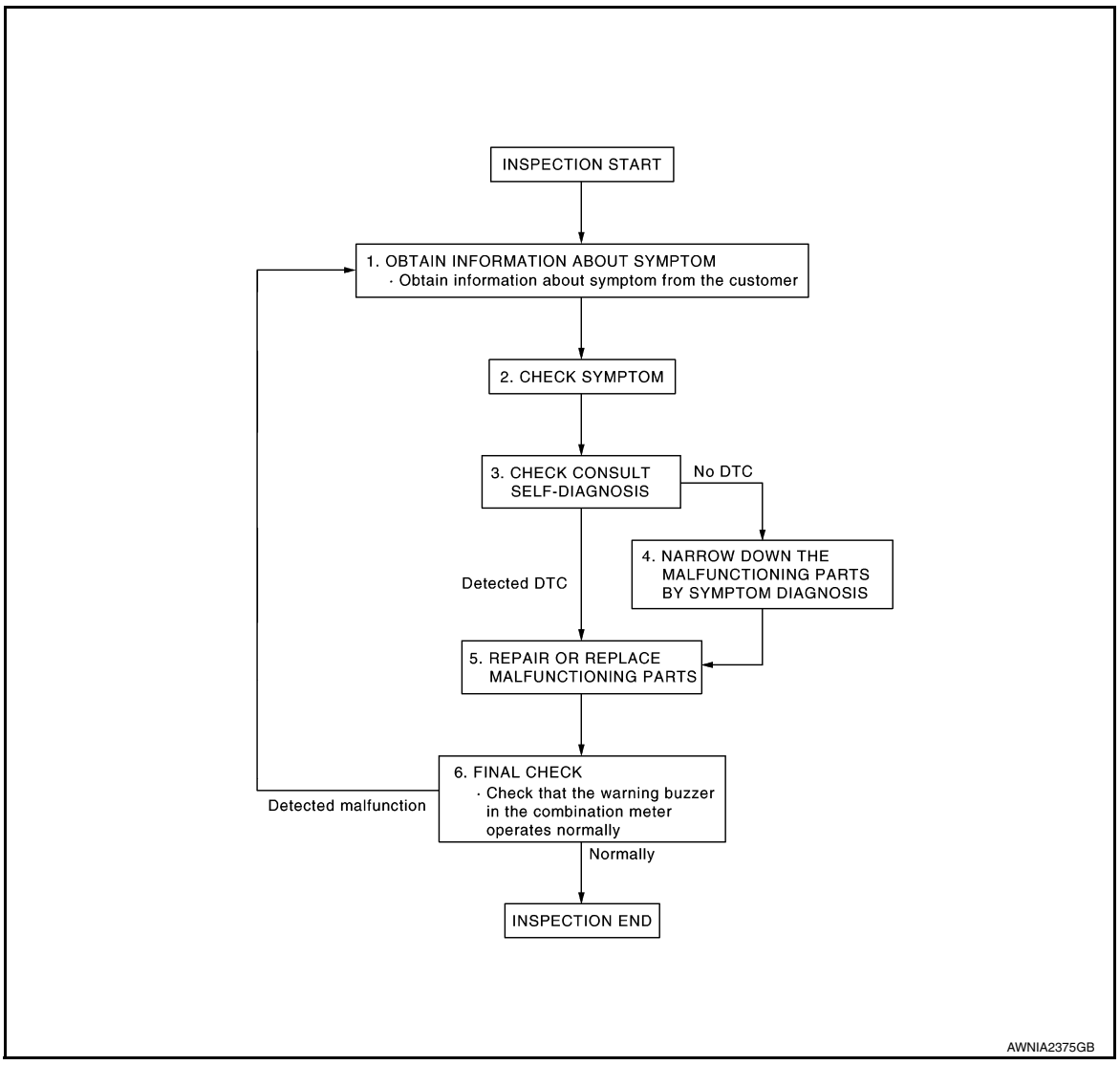
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORK FLOW

Work flow

INFOID:0000000010336460

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

Connect CONSULT and perform "self-diagnosis". Refer to MWI-30, "DTC Index".

Are self-diagnosis results normal?

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

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.

DTC/CIRCUIT DIAGNOSIS

U1000 CAN COMM CIRCUIT

DTC Logic

INFOID:0000000010336416

DTC DETECTION LOGIC

DTC	CONSULT	Detection Condition	Possible Cause
U1000	CAN COMM CIRC [U1000]	When combination meter is not transmitting or receiving CAN communication signals for 2 seconds or more.	CAN communication system

Diagnosis Procedure

INFOID:0000000010336417

1.PERFORM SELF DIAGNOSTIC

1. Turn ignition switch ON and wait 2 seconds or more.
2. Check “Self Diagnostic Result” of “METER/M&A”.

Is DTC "U1000" displayed?

YES >> Refer to LAN-17, "Trouble Diagnosis Flow Chart".
NO >> Refer to GI-41, "Intermittent Incident".

U1010 CONTROL UNIT (CAN)

Description

INFOID:0000000009799801

Initial diagnosis of combination meter.

DTC Logic

INFOID:0000000010336419

DTC DETECTION LOGIC

DTC	CONSULT	Detection Condition	Possible Cause
U1010	CONTROL UNIT (CAN) [U1010]	When detecting error during the initial diagnosis of the CAN controller of combination meter.	Combination meter

Diagnosis Procedure

INFOID:0000000010336420

1.REPLACE COMBINATION METER

When DTC "U1010" is detected, replace combination meter.

>> Replace combination meter. Refer to MWI-82, "Removal and Installation".

B2205 VEHICLE SPEED

Description

INFOID:0000000009799804

Vehicle speed signal is transmitted from ABS actuator and electric unit (control unit) via CAN communication line to combination meter.

DTC Logic

INFOID:0000000010336421

DTC DETECTION LOGIC

DTC	CONSULT	Detection Condition	Possible Cause
B2205	VEHICLE SPEED CIRC [B2205]	Malfunction is detected when an erroneous speed signal is received for 2 seconds or more.	• Combination meter • ABS actuator and electric unit (control unit)

Diagnosis Procedure

INFOID:0000000010336422

1.CHECK COMBINATION METER INPUT SIGNAL

1. Start engine and select “METER/M&A” on CONSULT.
2. Using ”SPEED METER” on ”Data Monitor”, compare the value of Data Monitor with speedometer pointer of combination meter. Speedometer and Data Monitor indications should be close.

Is the inspection result normal?

YES >> Perform “Self Diagnostic Result” of “ABS” Refer to BRC-44, "CONSULT Function".
NO >> Replace combination meter. Refer to MWI-82, "Removal and Installation".

B2267 ENGINE SPEED

Description

INFOID:0000000009799807

The engine speed signal is transmitted from ECM to the combination meter with CAN communication.

DTC Logic

INFOID:0000000010336423

DTC DETECTION LOGIC

DTC	CONSULT	Detection Condition	Possible Cause
B2267	TACHO METER [B2267]	ECM continuously transmits abnormal engine speed signals for 2 seconds or more.	• Crankshaft position sensor (POS) • ECM

Diagnosis Procedure

INFOID:0000000010336424

1.PERFORM SELF-DIAGNOSIS OF ECM

Perform "Self-Diagnostic Result" of "ECM", and repair or replace malfunctioning parts.

>> Refer to EC-93, "DTC Index".

B2268 WATER TEMP

Description

INFOID:0000000009799810

The engine coolant temperature signal is transmitted from ECM to the combination meter via CAN communication.

DTC Logic

INFOID:0000000009799811

DTC DETECTION LOGIC

DTC	CONSULT	Detection Condition	Possible Cause
B2268	WATER TEMP [B2268]	ECM continuously transmits abnormal engine coolant temperature signals for 60 seconds or more.	• Engine coolant temperature sensor • ECM

Diagnosis Procedure

INFOID:0000000009799812

1.PERFORM SELF DIAGNOSIS OF ECM

Perform "Self Diagnostic Result" of "ECM", and repair or replace malfunctioning parts.

>> Refer to EC-93, "DTC Index".

POWER SUPPLY AND GROUND CIRCUIT
COMBINATION METER

COMBINATION METER : Diagnosis Procedure

INFOID:0000000010336425

Regarding Wiring Diagram information, refer to MWI-32, "Wiring Diagram".

1.CHECK FUSES

Check that the following fuses are not blown.

Unit	Power source	Fuse No.
Combination meter	Battery	13
	Ignition switch ON or START	31

Is the fuse blown?

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

2.POWER SUPPLY CIRCUIT CHECK

1. Disconnect combination meter connector.
2. Check voltage between combination meter harness connector M77 terminals 45, 46 and ground.

Terminals			Ignition switch position		
(+)		(–)	OFF	ON	START
Connector	Terminal				
M77	45	Ground	Battery voltage	Battery voltage	Battery voltage
	46		0V	Battery voltage	Battery voltage

Is the inspection result normal?

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

3.GROUND CIRCUIT CHECK

1. Turn ignition switch OFF.
2. Check continuity between combination meter harness connector and ground.

Terminals			Continuity
(+)		(–)	
Connector	Terminal		
M76	1	Ground	Yes
M77	52		

Is the inspection result normal?

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

BCM (BODY CONTROL SYSTEM) (WITH INTELLIGENT KEY SYSTEM)

BCM (BODY CONTROL SYSTEM) (WITH INTELLIGENT KEY SYSTEM) : Diagnosis Procedure

INFOID:0000000010336841

Regarding Wiring Diagram information, refer to BCS-50, "Wiring Diagram".

1. CHECK FUSE

Check that the following fuse is not blown.

Terminal No.	Signal name	Fuse No.
161	BCM power supply	7 (10A)

Is the fuse blown?

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

2. CHECK POWER SUPPLY CIRCUIT

1. Disconnect BCM connector M20.
2. Check voltage between BCM connector M20 and ground.

BCM		Ground	Voltage (Approx.)
Connector	Terminal		
M20	161	—	Battery voltage

Is the inspection result normal?

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

3. CHECK GROUND CIRCUIT

Check continuity between BCM connector M20 and ground.

BCM		Ground	Continuity
Connector	Terminal		
M20	170	—	Yes
	171		

Is the inspection result normal?

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

BCM (BODY CONTROL SYSTEM) (WITHOUT INTELLIGENT KEY SYSTEM)

BCM (BODY CONTROL SYSTEM) (WITHOUT INTELLIGENT KEY SYSTEM) : Diagnosis Procedure

INFOID:0000000010336842

Regarding Wiring Diagram information, refer to BCS-110, "Wiring Diagram".

1. CHECK FUSE

Check that the following fuse is not blown.

Terminal No.	Signal name	Fuse No.
161	BCM power supply	7 (10A)

Is the fuse blown?

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

2. CHECK POWER SUPPLY CIRCUIT

1. Disconnect BCM connector M20.

2. Check voltage between BCM connector M20 and ground.

BCM		Ground	Voltage (Approx.)
Connector	Terminal		
M20	161	—	Battery voltage

Is the inspection result normal?

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

3. CHECK GROUND CIRCUIT

Check continuity between BCM connector M20 and ground.

BCM		Ground	Continuity
Connector	Terminal		
M20	170	—	Yes
	171		

Is the inspection result normal?

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

FUEL LEVEL SENSOR SIGNAL CIRCUIT

Component Function Check

INFOID:0000000009799814

1.COMBINATION METER INPUT SIGNAL

1. Select "METER/M&A" on "CONSULT".
2. Using "FUEL METER" of "Data Monitor", compare the value of "Data Monitor" with fuel gauge pointer of combination meter.

Fuel gauge pointer	Fuel tank volume [L] (Approx.)
Full	55
3/4	41.2
1/2	27.5
1/4	13.7
Empty	0.0

Does the data monitor value approximately match the fuel gauge indication?

YES >> Inspection End.
NO >> Replace combination meter. Refer to MWI-82, "Removal and Installation".

Diagnosis Procedure

INFOID:0000000009799815

1.CHECK FUEL LEVEL SENSOR UNIT AND FUEL PUMP (FUEL LEVEL SENSOR) CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect combination meter connector and fuel level sensor unit and fuel pump (fuel level sensor) connector.
3. Check continuity between combination meter harness connector and fuel level sensor unit and fuel pump (fuel level sensor) harness connector.

Combination meter		Fuel level sensor unit and fuel pump (fuel level sensor)		Continuity
Connector	Terminal	Connector	Terminal	
M77	51	B103	5	Yes

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

Combination meter		Ground	Continuity
Connector	Terminal		
M77	51		No

Is the inspection result normal?

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

2.CHECK FUEL LEVEL SENSOR UNIT AND FUEL PUMP (FUEL LEVEL SENSOR) GROUND CIRCUIT

Check continuity between fuel level sensor unit and fuel pump (fuel level sensor) harness connector and combination meter harness connector.

Fuel level sensor unit and fuel pump (fuel level sensor)		Combination meter		Continuity
Connector	Terminal	Connector	Terminal	
B103	2	M77	44	Yes

Is the inspection result normal?

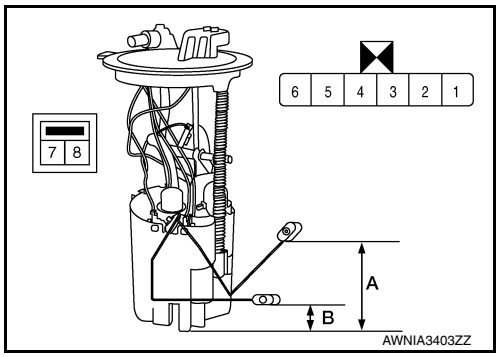
YES >> Replace combination meter. Refer to MWI-82, "Removal and Installation".
NO >> Repair harness or connector.

Component Inspection

INFOID:0000000009799816

1. CHECK FUEL LEVEL SENSOR UNIT AND FUEL PUMP (FUEL LEVEL SENSOR)

1. Remove the fuel level sensor unit and fuel pump (fuel level sensor). Refer to FL-6, "Removal and Installation".
2. Check the resistance between fuel level sensor unit and fuel pump (fuel level sensor).



Terminals		Condition	Resistance (Ω) (Approx.)	Height [mm (in)]
Fuel level sensor unit and fuel pump (fuel level sensor)				
2	8	Full* (A)	45	171.4 (6.7)
		Empty* (B)	141	20.5 (0.8)
5	7	—	0	—

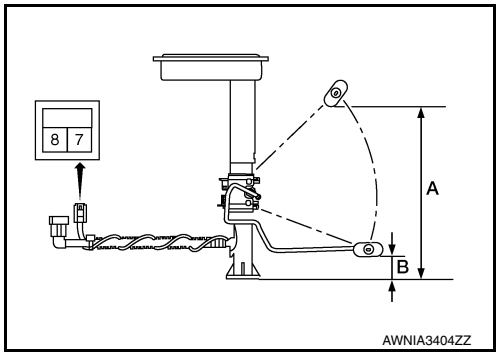
*: When float rod is contact with stopper.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Replace fuel level sensor unit and fuel pump (fuel level sensor). Refer to FL-6, "Removal and Installation".

2. CHECK FUEL LEVEL SENSOR UNIT (SUB)

1. Remove the fuel level sensor unit (sub). Refer to FL-6, "Removal and Installation".
2. Check the resistance between fuel level sensor unit (sub).



Terminals		Condition	Resistance (Ω) (Approx.)	Height [mm (in)]
Fuel level sensor unit (sub)				
7	8	Full* (A)	6.0	194.1 (7.6)
		Empty* (B)	141	18 (0.7)

*: When float rod is contact with stopper.

Is the inspection result normal?

YES >> Inspection End.
NO >> Replace fuel level sensor unit (sub). Refer to FL-6, "Removal and Installation".

PARKING BRAKE SWITCH SIGNAL CIRCUIT

Description

INFOID:0000000010336429

Transmits the parking brake switch signal to the combination meter.

Component Function Check

INFOID:0000000010336430

1.COMBINATION METER INPUT SIGNAL

1. Start engine.
2. Check "PKB SW" in "Data Monitor" while applying and releasing the parking brake.

Monitor item	Condition	Status
PKB SW	Parking brake applied	On
	Parking brake released	Off

Is the inspection result normal?

YES >> Inspection End.
NO >> Refer to MWI-64, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000010336431

Regarding Wiring Diagram information, refer to MWI-32, "Wiring Diagram".

1.CHECK PARKING BRAKE SWITCH CIRCUIT

1. Disconnect combination meter harness connector M76 and parking brake switch harness connector E52.
2. Check continuity between combination meter harness connector M76 terminal 26 and parking brake switch harness connector E52 terminal 1.

Combination meter		Parking brake switch		Continuity
Connector	Terminal	Connector	Terminal	
M76	26	E52	1	Yes

3. Check continuity between combination meter harness connector M76 terminal 26 and ground.

Combination meter		Ground	Continuity
Connector	Terminal		
M76	26		No

Is the inspection result normal?

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

Component Inspection

INFOID:0000000010336432

1.CHECK PARKING BRAKE SWITCH

Check continuity between parking brake switch terminal 1 and switch case ground.

Component	Terminal	Condition	Continuity
Parking brake switch	1	Parking brake applied	Yes
		Parking brake released	No

Is the inspection result normal?

YES >> Inspection End.
NO >> Replace parking brake switch. Refer to PB-7, "Exploded View".

AMBIENT SENSOR SIGNAL CIRCUIT

Description

INFOID:0000000010336454

It detects outside air temperature and converts it into a resistance value which is then input into the combination meter.

Diagnosis Procedure

INFOID:0000000010336455

Regarding Wiring Diagram information, refer to MWI-32, "Wiring Diagram".

1.CHECK AMBIENT SENSOR SIGNAL CIRCUIT

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

Combination meter		Ambient sensor		Continuity
Connector	Terminal	Connector	Terminal	
M76	15	E76	1	Yes

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

Combination meter		Ground	Continuity
Connector	Terminal		
M76	15		No

Is the inspection result normal?

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

2.CHECK AMBIENT SENSOR SIGNAL GROUND CIRCUIT

Check continuity between combination meter harness connector and ambient sensor harness connector.

Combination meter		Ambient sensor		Continuity
Connector	Terminal	Connector	Terminal	
M76	20	E76	2	Yes

Is the inspection result normal?

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

Component Inspection

INFOID:0000000010336456

1.CHECK AMBIENT SENSOR

1. Turn ignition switch OFF.
2. Disconnect ambient sensor connector.
3. Check resistance between ambient sensor terminals.

Terminal		Condition	Resistance: kΩ
		Temperature: °C (°F)	
1	2	−15 (5)	12.73
		−10 (14)	9.92
		−5 (23)	7.80
		0 (32)	6.19
		5 (41)	4.95
		10 (50)	3.99
		15 (59)	3.24
		20 (68)	2.65
		25 (77)	2.19
		30 (86)	1.81
		35 (95)	1.51
		40 (104)	1.27
		45 (113)	1.07

Is the inspection result normal?

YES >> Inspection End.
NO >> Replace ambient sensor. Refer to HAC-104, "Removal and Installation".

METER CONTROL SWITCH SIGNAL CIRCUIT

Diagnosis Procedure

INFOID:0000000010336450

Regarding Wiring Diagram information, refer to MWI-32, "Wiring Diagram".

1.CHECK METER CONTROL SWITCH SIGNAL

1. Turn ignition switch ON.
2. Check voltage between the following terminals of the meter control switch harness connector M3.

Meter control switch			Condition	Voltage (Approx.)
Connector	Terminals (+)	Terminals (–)		
M3	7	4	When illumination control switch (–) is pressed	0 V
			Other than the above	5 V
	5		When trip reset switch is pressed	0 V
			Other than the above	5 V
	6		When illumination control switch (+) is pressed	0 V
			Other than the above	5 V

Is the inspection result normal?

YES >> Inspection End.
NO >> GO TO 2.

2.CHECK METER CONTROL SWITCH HARNESS

1. Turn ignition switch OFF.
2. Disconnect combination meter harness connector M77 and meter control switch harness connector M3.
3. Check continuity between combination meter harness connector M77 and meter control switch harness connector M3.

Combination meter		Meter control switch		Continuity
Connector	Terminal	Connector	Terminal	
M77	18	M3	5	Yes
	37		7	
	36		6	
	17		4	

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

Combination meter			Continuity
Connector	Terminal		
M77	18	Ground	No
	37		
	36		
	17		

Is the inspection result normal?

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

Component Inspection

INFOID:0000000010336451

1.CHECK METER CONTROL SWITCH

1. Turn ignition switch OFF.
2. Disconnect meter control switch connector.
3. Check meter control switch.

Meter control switch		Condition	Continuity
Terminals			
7	4	When illumination control switch (–) is pressed	Yes
		Other than the above	No
5		When trip reset switch is pressed	Yes
		Other than the above	No
6		When illumination control switch (+) is pressed	Yes
		Other than the above	No

Is the inspection result normal?

YES >> Inspection End.
NO >> Replace meter control switch. Refer to MWI-83, "Removal and Installation".

STEERING SWITCH

Description

INFOID:0000000010336433

When one of the steering switches is pushed, the resistance in the steering switch changes the signal to identify which button is controlling the information display.

Diagnosis Procedure

INFOID:0000000010336434

Regarding Wiring Diagram information, refer to MWI-32, "Wiring Diagram".

1.CHECK STEERING SWITCH CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect combination meter harness connector M76 and spiral cable harness connector M30.
3. Check continuity between combination meter harness connector M76 and spiral cable harness connector M30.

Combination meter		Spiral cable		Continuity
Connector	Terminal	Connector	Terminal	
M76	21	M30	14	Yes
	22		8	
	23		15	

4. Check continuity between combination meter harness connector M76 and ground.

Combination meter		Ground	Continuity
Connector	Terminal		
M76	21		No
	22		
	23		

Is the inspection result normal?

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

Component Inspection

INFOID:0000000010336435

1.CHECK STEERING SWITCH RESISTANCE

Check resistance between the following steering switch terminals.

Terminal		Signal name	Condition	Resistance (Ω) (Approx.)
18	19	Display	Depress DISP switch.	2023
		Back	Depress ⮌ switch.	723
25		Enter	Depress ENTER switch.	2023
		Menu Up	Depress △ switch.	121
		Menu Down	Depress ▽ switch.	321

Is the inspection result normal?

YES >> GO TO 2.
NO >> Replace steering wheel switch. Refer to AV-65, "Removal and Installation".

2.CHECK SPIRAL CABLE

Check continuity between the following spiral cable terminals.

Terminals		Continuity
18	15	Yes
25	8	
19	14	

Is the inspection result normal?

YES >> Inspection End.
NO >> Replace spiral cable. Refer to SR-15, "Removal and Installation".

WASHER LEVEL SWITCH SIGNAL CIRCUIT

Description

INFOID:0000000010336426

Transmits the washer fluid level switch signal to the combination meter.

Diagnosis Procedure

INFOID:0000000010336427

Regarding Wiring Diagram information, refer to MWI-32, "Wiring Diagram".

1.CHECK WASHER FLUID LEVEL SWITCH SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect combination meter harness connector M76 and washer fluid level switch harness connector E82.
3. Check continuity between combination meter harness connector M76 and washer fluid level switch harness connector E82.

Combination meter		Washer fluid level switch		Continuity
Connector	Terminal	Connector	Terminal	
M76	24	E82	1	Yes

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

Combination meter		Ground	Continuity
Connector	Terminal		
M76	24		No

Is the inspection result normal?

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

2.CHECK WASHER FLUID LEVEL SWITCH GROUND CIRCUIT

Check continuity between washer fluid level switch connector and ground.

Washer fluid level switch		Ground	Continuity
Connector	Terminal		
E82	2		Yes

Is the inspection result normal?

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

Component Inspection

INFOID:0000000010336428

1.CHECK WASHER FLUID LEVEL SWITCH

1. Turn ignition switch OFF.
2. Disconnect washer fluid level switch connector.
3. Check washer fluid level switch.

Washer fluid level switch		Condition	Continuity
Terminals			
1	2	Washer fluid level switch ON	Yes
		Washer fluid level switch OFF	No

Is the inspection result normal?

YES >> Inspection End.
NO >> Replace washer fluid level switch. Refer to WW-58, "Removal and Installation".

SYMPTOM DIAGNOSIS

THE FUEL GAUGE DOES NOT MOVE

Description

INFOID:0000000009799823

Fuel gauge does not move from a certain position.

Diagnosis Procedure

INFOID:0000000009799824

1. CONDUCTING THE COMBINATION METER SELF-DIAGNOSIS MODE

Perform the self-diagnosis mode of combination meter, and then check that the fuel gauge operates normally. Refer to MWI-19, "Description".

Is the inspection result normal?

YES >> GO TO 2.
NO >> Replace combination meter. Refer to MWI-82, "Removal and Installation".

2. CHECK FLOAT INTERFERENCE

Check that the float arm interferes with or binds to other components in the fuel tank.

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair or replace malfunctioning part.

3. CHECK FUEL LEVEL SENSOR SIGNAL CIRCUIT

Check the fuel level sensor signal circuit. Refer to MWI-62, "Component Function Check".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-41, "Intermittent Incident".
NO >> Repair or replace malfunctioning parts.

THE OIL PRESSURE WARNING CONTINUES DISPLAYING, OR DOES NOT DISPLAY

Description

INFOID:0000000010336436

- The low oil pressure warning message stays on when oil pressure is normal.
- The low oil pressure warning message stays off when oil pressure is low.

Diagnosis Procedure

INFOID:0000000010336437

1.CHECK COMBINATION METER INPUT

1. Start the engine and select “METER/M&A” on CONSULT.
2. Observe “OIL W/L” in “Data Monitor” and the operation of the low oil pressure warning message in the information display.

Monitor Item	Condition	CONSULT
OIL W/L	Engine running	OFF

Is the inspection result normal?

YES >> Perform “Self Diagnosis” of “ECM”. Refer to EC-67, "CONSULT Function".
NO >> Replace combination meter. Refer to MWI-82, "Removal and Installation".

THE PARKING BRAKE RELEASE WARNING CONTINUES DISPLAYING, OR DOES NOT DISPLAY

Description

INFOID:0000000010336438

- The parking brake warning is displayed during vehicle travel even though the parking brake is released.
- The parking brake warning is not displayed even though driving the vehicle with the parking brake applied.

Diagnosis Procedure

INFOID:0000000010336439

1.CHECK PARKING BRAKE WARNING LAMP OPERATION

1. Start engine.
2. Check the operation of the brake warning lamp while operating the parking brake.

Condition	Warning lamp status
Parking brake applied	ON
Parking brake released	OFF

Is the inspection result normal?

YES >> Replace combination meter. Refer to MWI-82, "Removal and Installation".
NO >> GO TO 2.

2.CHECK PARKING BRAKE SWITCH SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Check the parking brake switch signal circuit. Refer to MWI-64, "Diagnosis Procedure".

Is the inspection result normal?

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

3.CHECK PARKING BRAKE SWITCH UNIT

Check the parking brake switch. Refer to MWI-64, "Component Inspection".

Is the inspection result normal?

YES >> Replace combination meter. Refer to MWI-82, "Removal and Installation".
NO >> Replace parking brake switch. Refer to PB-7, "Exploded View".

THE LOW WASHER FLUID WARNING CONTINUES DISPLAYING, OR DOES NOT DISPLAY

Description

INFOID:0000000010336440

- The warning is still displayed even after washer fluid is added.
- The warning is not displayed even though the washer tank is empty.

Diagnosis Procedure

INFOID:0000000010336441

1.CHECK WASHER FLUID LEVEL SWITCH SIGNAL CIRCUIT

Check the washer fluid level switch signal circuit. Refer to MWI-71, "Diagnosis Procedure".

Is the inspection result normal?

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

2.CHECK WASHER FLUID LEVEL SWITCH UNIT

Check the washer fluid level switch. Refer to MWI-71, "Component Inspection".

Is the inspection result normal?

YES >> Replace combination meter. Refer to MWI-82, "Removal and Installation".
NO >> Replace washer fluid level switch. Refer to WW-58, "Removal and Installation".

THE DOOR OPEN WARNING CONTINUES DISPLAYING, OR DOES NOT DISPLAY

Description

INFOID:0000000010336442

- The door open warning is displayed even though all of the doors are closed.
- The door open warning is not displayed even though a door is ajar.

Diagnosis Procedure

INFOID:0000000010336443

1.CHECK BCM INPUT SIGNAL

Check the BCM input signal. Refer to DLK-149, "Component Function Check" (with Intelligent Key system) or DLK-319, "Component Function Check" (without Intelligent Key system).

Is the inspection result normal?

YES >> GO TO 2.
NO >> GO TO 3.

2.CHECK COMBINATION METER INPUT SIGNAL

Select the "METER/M&A" "Data Monitor" and check the "DOOR W/L" monitor value while opening and closing the door.

Monitor item	Condition	Status
DOOR W/L	Door open	On
	Door closed	Off

Is the inspection result normal?

YES >> Replace combination meter. Refer to MWI-82, "Removal and Installation".
NO >> Replace BCM. Refer to BCS-75, "Removal and Installation" (with Intelligent Key system) or BCS-135, "Removal and Installation" (without Intelligent Key system).

3.CHECK DOOR SWITCH SIGNAL CIRCUIT

Check the door switch signal circuit. Refer to DLK-149, "Diagnosis Procedure" (with Intelligent Key system) or DLK-319, "Diagnosis Procedure" (without Intelligent Key system).

Is the inspection result normal?

YES >> GO TO 4.
NO >> Repair or replace harness or connector.

4.CHECK DOOR SWITCH

Check the door switch. Refer to DLK-150, "Component Inspection" (with Intelligent Key system) or DLK-320, "Component Inspection" (without Intelligent Key system).

Is the inspection result normal?

YES >> Replace combination meter. Refer to MWI-82, "Removal and Installation".
NO >> Replace applicable door switch. Refer to DLK-269, "Removal and Installation" (with Intelligent Key system) or DLK-385, "Removal and Installation" (without Intelligent Key system).

THE LIFTGATE OPEN WARNING CONTINUES DISPLAYING, OR DOES NOT DISPLAY

Description

INFOID:0000000010336444

- The liftgate open warning is displayed continuously even though the liftgate is closed.
- The liftgate open warning is not displayed even though the liftgate is open.

Diagnosis Procedure

INFOID:0000000010336445

1.CHECK BCM INPUT SIGNAL

Check the BCM input signal. Refer to DLK-149, "Component Function Check" (with Intelligent Key system) or DLK-319, "Component Function Check" (without Intelligent Key system).

Is the inspection result normal?

YES >> GO TO 2.
NO >> GO TO 3.

2.CHECK COMBINATION METER INPUT SIGNAL

Select the "METER/M&A" "Data Monitor" and check the "DOOR W/L" monitor value while opening and closing the back door.

Monitor item	Condition	Status
DOOR W/L	Back door open	On
	Back door closed	Off

Is the inspection result normal?

YES >> Replace combination meter. Refer to MWI-82, "Removal and Installation".
NO >> Replace BCM. Refer to BCS-75, "Removal and Installation" (with Intelligent Key system) or BCS-135, "Removal and Installation" (without Intelligent Key system).

3.CHECK BACK DOOR SWITCH SIGNAL CIRCUIT

Check the back door switch signal circuit. Refer to DLK-151, "Diagnosis Procedure (With Automatic Back Door)" or DLK-152, "Diagnosis Procedure (Without Automatic Back Door)".

Is the inspection result normal?

YES >> GO TO 4.
NO >> Repair or replace harness or connector.

4.CHECK BACK DOOR SWITCH

Check the back door switch. Refer to DLK-153, "Component Inspection (With Automatic Back Door)" or DLK-154, "Component Inspection (Without Automatic Back Door)".

Is the inspection result normal?

YES >> Replace combination meter. Refer to MWI-82, "Removal and Installation".
NO >> Replace back door switch. Refer to DLK-263, "DOOR LOCK : Removal and Installation".

THE METER CONTROL SWITCH IS INOPERATIVE

Description

INFOID:0000000010336452

The meter control switches are inoperative when pressed.

Diagnosis Procedure

INFOID:0000000010336453

1.CHECK METER CONTROL SWITCH SIGNAL

Check the meter control switch signal. Refer to MWI-67, "Diagnosis Procedure".

Is the inspection result normal?

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

2.CHECK METER CONTROL SWITCH

Check the meter control switch. Refer to MWI-68, "Component Inspection".

Is the inspection result normal?

YES >> Replace combination meter. Refer to MWI-82, "Removal and Installation".
NO >> Replace meter control switch. Refer to MWI-83, "Removal and Installation".

THE STEERING SWITCHES ARE INOPERATIVE

Description

INFOID:0000000010336446

One or more of the steering switches to control the information display are inoperative.

Diagnosis Procedure

INFOID:0000000010336447

1.CHECK STEERING SWITCH CIRCUIT

Check steering switch circuit. Refer to MWI-69, "Diagnosis Procedure".

Is the inspection result normal?

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

2.CHECK STEERING SWITCH RESISTANCE

Check steering switch resistance. Refer to MWI-69, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 3.
NO >> Replace steering switch. Refer to AV-65, "Removal and Installation".

3.CHECK SPIRAL CABLE

Check spiral cable for continuity. Refer to MWI-69, "Component Inspection".

Is the inspection result normal?

YES >> Replace combination meter. Refer to MWI-82, "Removal and Installation".
NO >> Replace spiral cable. Refer to SR-15, "Removal and Installation".

THE AMBIENT TEMPERATURE DISPLAY IS INCORRECT

Description

INFOID:0000000010336457

- The displayed outside air temperature is higher than the actual temperature.
- The displayed outside air temperature is lower than the actual temperature.
- Outside air temperature is not indicated.

Diagnosis Procedure

INFOID:0000000010336458

1.CHECK AMBIENT SENSOR SIGNAL CIRCUIT

Check the ambient sensor signal circuit. Refer to MWI-65, "Diagnosis Procedure".

Is the inspection result normal?

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

2.CHECK AMBIENT SENSOR

Check the ambient sensor. Refer to MWI-65, "Component Inspection".

Is the inspection result normal?

YES >> Replace combination meter. Refer to MWI-82, "Removal and Installation".
NO >> Replace ambient sensor. Refer to HAC-104, "Removal and Installation".

REMOVAL AND INSTALLATION

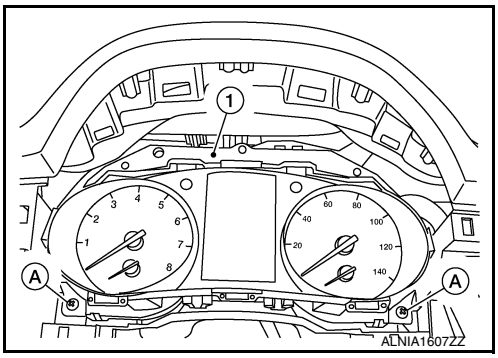
COMBINATION METER

Removal and Installation

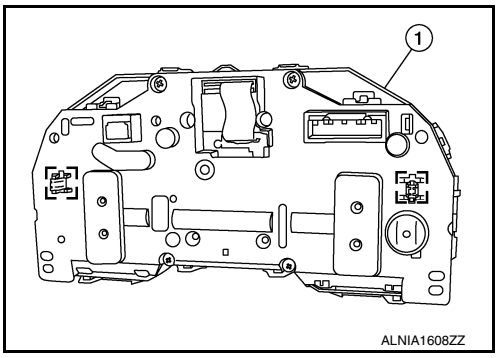
INFOID:0000000009799833

REMOVAL

1. Disconnect the negative battery terminal. Refer to PG-77, "Removal and Installation".
2. Remove the cluster lid A. Refer to IP-20, "Removal and Installation".
3. Remove screws (A), from the combination meter (1).



4. Release the clips and remove the combination meter (1) from the instrument panel.
   : Clips
5. Disconnect the harness connectors from the combination meter and remove.



INSTALLATION

Installation is in the reverse order of removal.

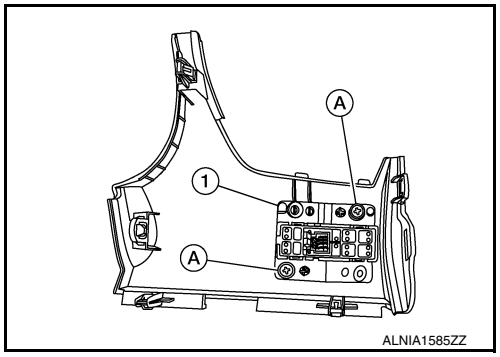
METER CONTROL SWITCH

Removal and Installation

INFOID:0000000010256120

REMOVAL

1. Remove the instrument finisher (A). Refer to IP-14, "Exploded View".
2. Remove the screws (A) and the meter control switch (1).



INSTALLATION

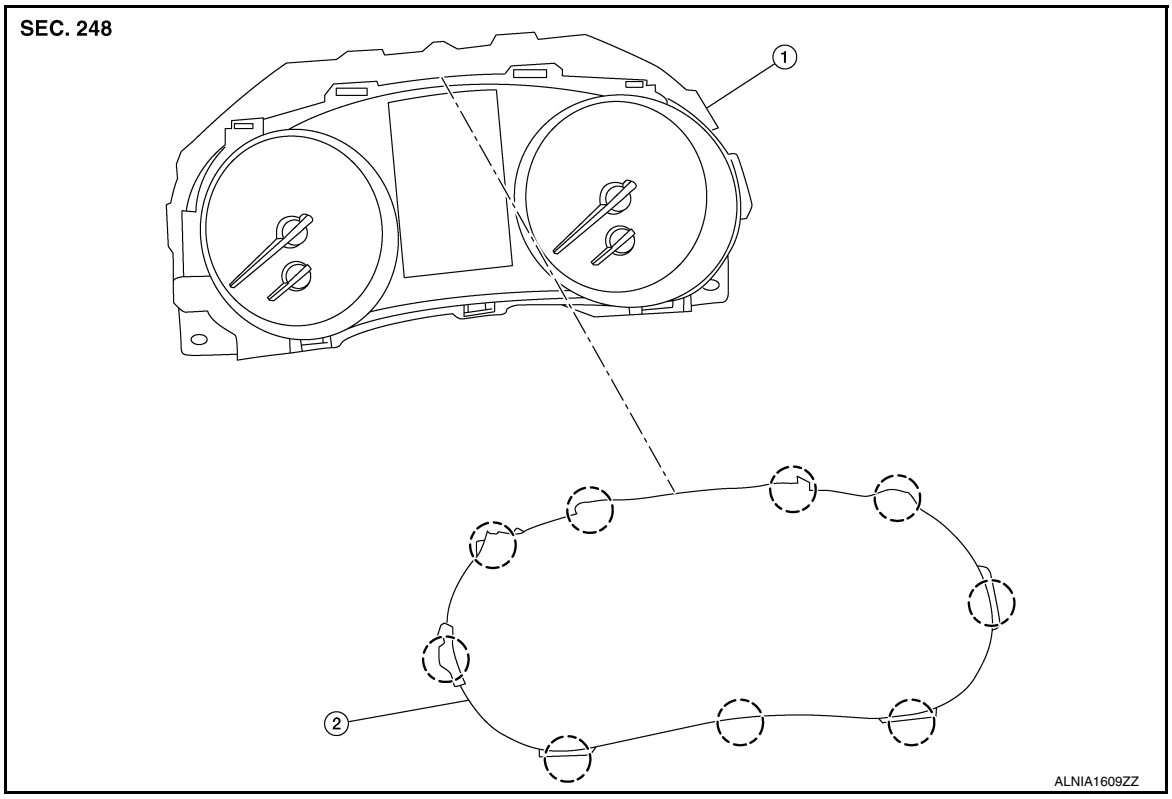
Installation is in the reverse order of removal.

UNIT DISASSEMBLY AND ASSEMBLY

COMBINATION METER

Exploded View

INFOID:0000000010282437



1. Combination meter
2. Combination meter lens
Pawl

Disassembly and Assembly

INFOID:0000000010282438

CAUTION:

- **Do not touch the display, pointer, inside of combination meter or the printed area of the dial during disassembly or assembly.**
- **Keep away from magnetic sources.**
- **Do not damage the combination meter lens.**

DISASSEMBLY

1. Remove the combination meter. Refer to MWI-82, "Removal and Installation".
2. Release pawls and remove the combination meter lens.

ASSEMBLY

Assembly is in the reverse order of disassembly.