SECTION MWI
METER, WARNING LAMP & INDICATOR

CONTENTS

PRECAUTION

PRECAUTIONS

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

INFOID:0000000010289396

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.**

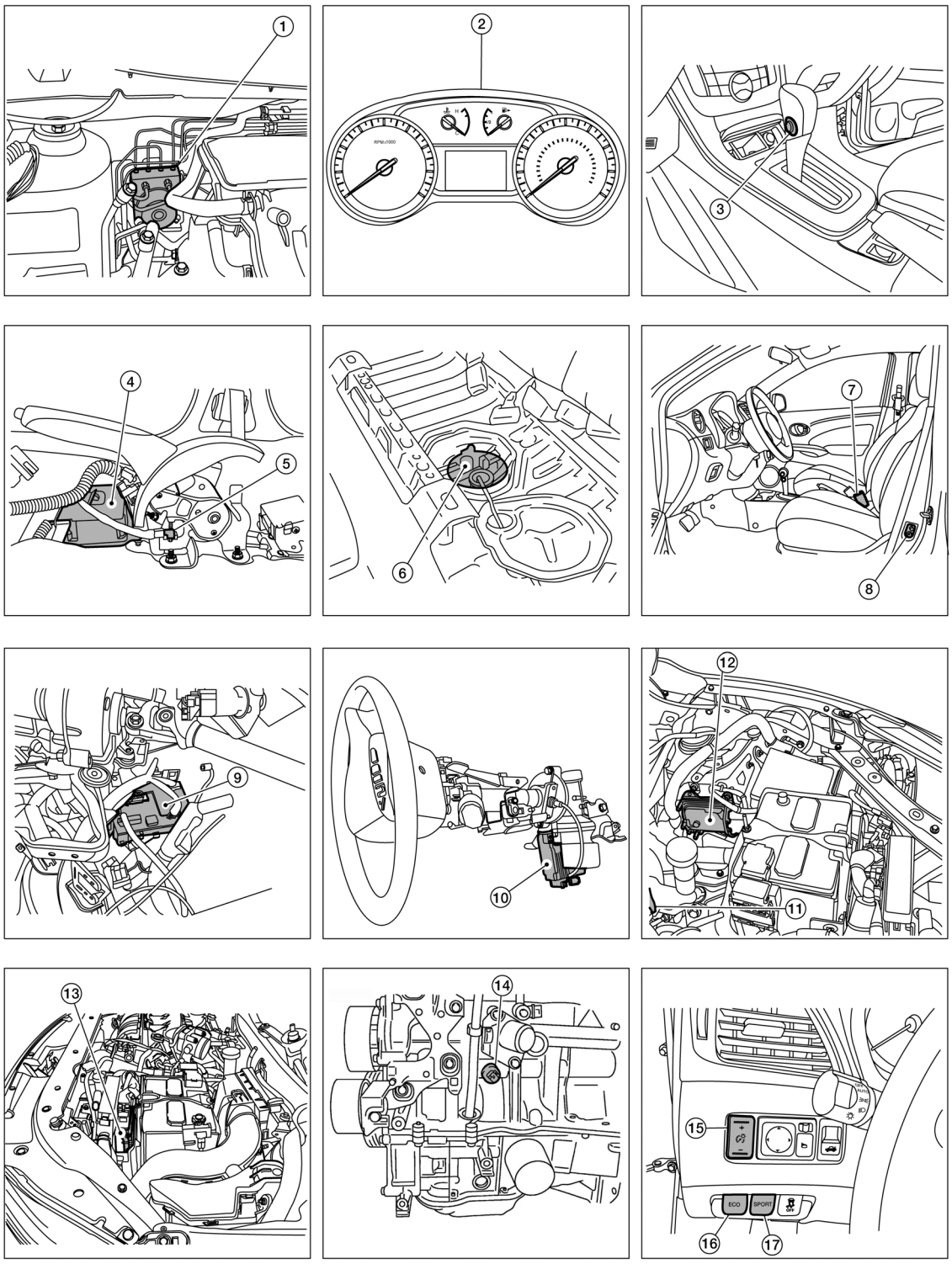
SYSTEM DESCRIPTION

COMPONENT PARTS

METER SYSTEM

METER SYSTEM : Component Parts Location

INFOID:0000000009758231



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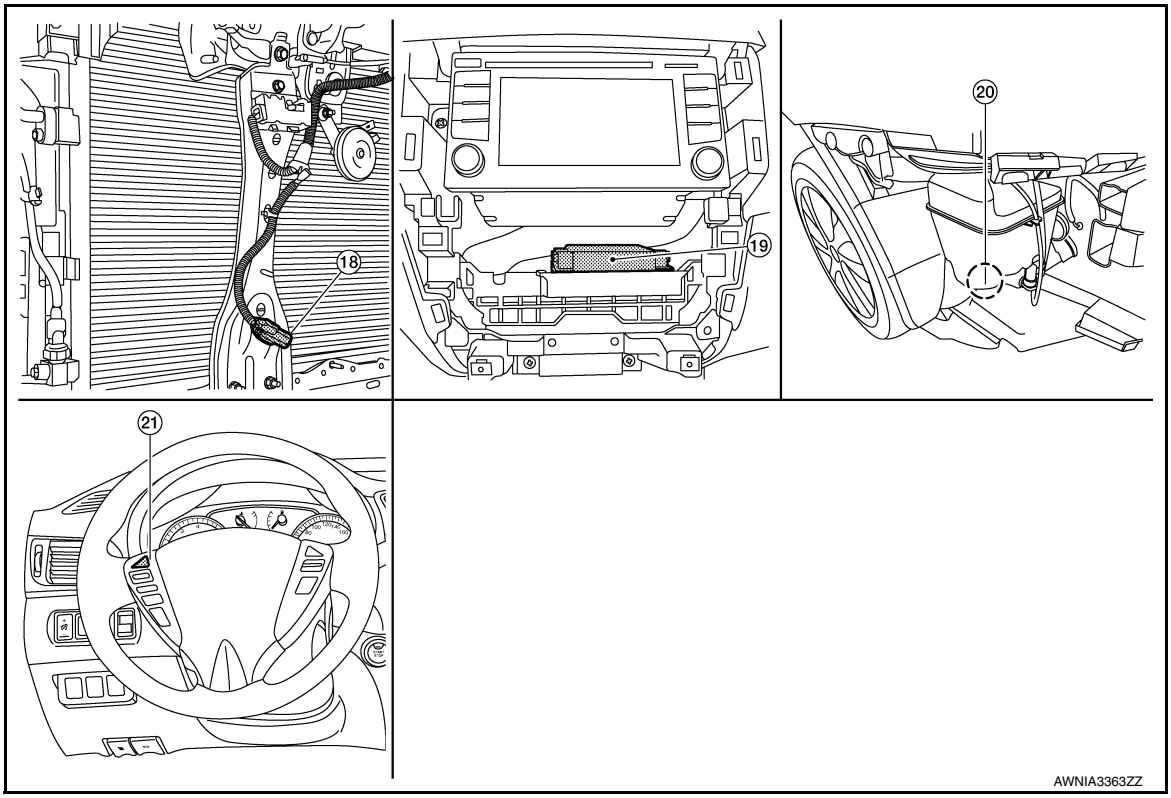


1. ABS actuator and electric unit (control unit)
2. Combination meter
3. CVT shift selector (with CVT) (O/D OFF switch)
4. Air bag diagnosis sensor unit (view with center console assembly removed)
5. Parking brake switch (view with center console removed)
6. Fuel level sensor unit and fuel pump (view with fuel pump inspection cover removed)
7. Seat belt buckle switch LH (RH similar)
8. Front door switch LH (RH similar)
9. BCM (view with instrument panel removed)
10. Power steering control module (view with steering column assembly removed)
11. Brake fluid level switch
12. TCM (with CVT)
13. ECM
14. Engine oil pressure sensor
15. Illumination control switch
16. ECO mode switch (with CVT)
17. Sport mode switch (with CVT)
18. Ambient sensor
19. A/C auto amp. (with auto A/C) (view with A/C switch assembly removed)
20. Washer fluid level switch (view with front fascia removed)
21. Steering switch

METER SYSTEM : Component Description

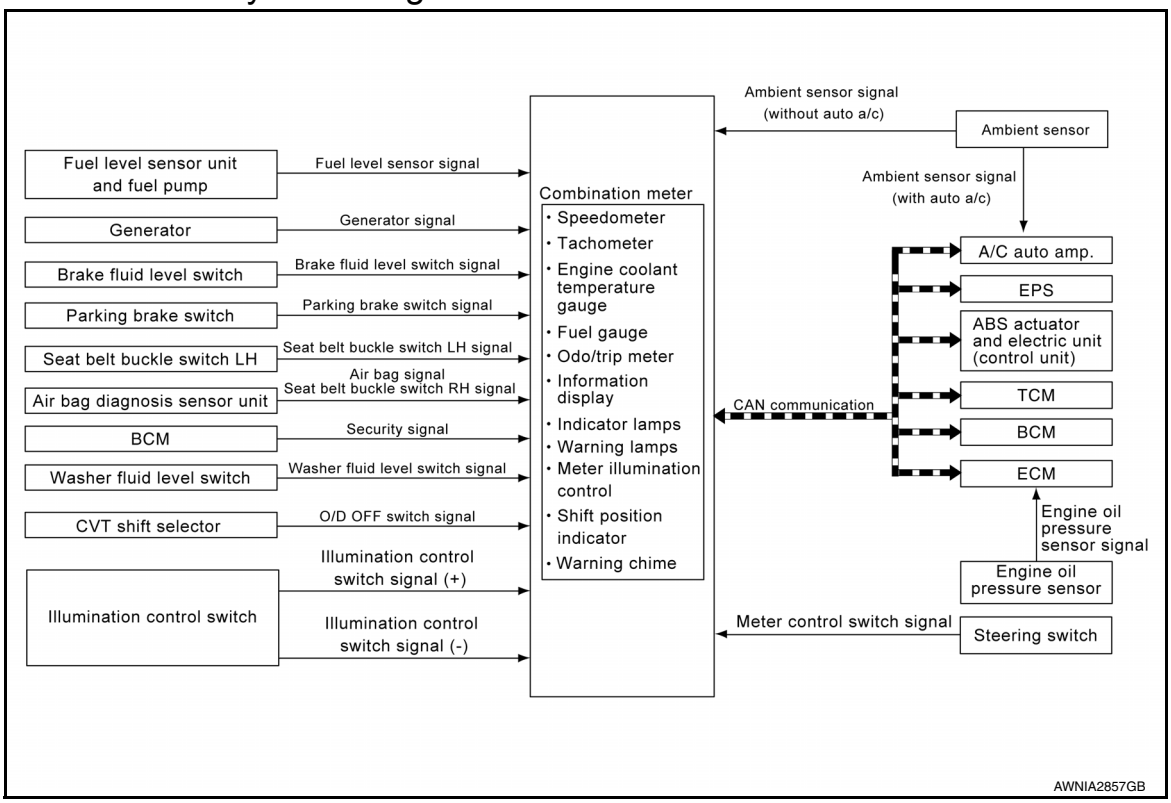
INFOID:0000000009758232

Unit	Description
Combination meter	Controls the following with the signals received from each unit via CAN communication and the signals from switches and sensors: • Speedometer • Tachometer • Engine coolant temperature gauge • Fuel gauge • Warning lamps • Indicator lamps • Meter illumination control • Information display
Steering switch	Transmits the meter control switch signal to the combination meter.

Unit	Description
Illumination control switch	Transmits the following signals to the combination meter: • Illumination control switch signal (+) • Illumination control switch signal (−)
ECM	Transmits the following signals to the combination meter via CAN communication: • Engine speed signal • Engine coolant temperature signal • Engine oil pressure warning signal • Fuel consumption monitor signal
ABS actuator and electric unit (control unit)	Transmits the vehicle speed signal to the combination meter via CAN communication.
Power steering control module	Transmits the EPS signal to the combination meter via CAN communication.
BCM	Transmits the following signals to the combination meter via CAN communication: • Position light request signal • Low tire pressure warning lamp signal • Door switch signal • Trunk lamp switch signal
TCM	Receives the O/D OFF switch signal from the combination meter via CAN communication. Transmits the following signals to the combination meter via CAN communication: • O/D OFF indicator request signal • CVT shift selector position signal
CVT shift selector switch (O/D OFF switch)	Transmits the O/D OFF switch signal to the combination meter
Fuel level sensor unit	Transmits the fuel level sensor signal to the combination meter.
Seat belt buckle switch LH (RH similar)	Transmits the seat belt buckle switch LH signal to the combination meter.
Air bag diagnosis sensor unit	Transmits the following signals to the combination meter: • Seat belt buckle switch RH signal • Air bag warning indicator
Engine oil pressure sensor	Transmits the engine oil pressure sensor signal to the ECM.
Ambient sensor	Transmits the ambient sensor signal to the combination meter (without auto a/c).
	Transmits the ambient sensor signal to the A/C auto amp. (with auto a/c).
A/C auto amp.	• Receives the ambient sensor signal from the ambient sensor (with auto a/c). • Transmits the ambient sensor signal to the combination meter via CAN communication.
Parking brake switch	Transmits the parking brake switch signal to the combination meter.
Washer fluid level switch	Transmits the washer fluid level switch signal to the combination meter.
Brake fluid level switch	Transmits the brake fluid level switch signal to the combination meter.

SYSTEM
METER SYSTEM
METER SYSTEM : System Diagram

INFOID:0000000009758233



METER SYSTEM : System Description

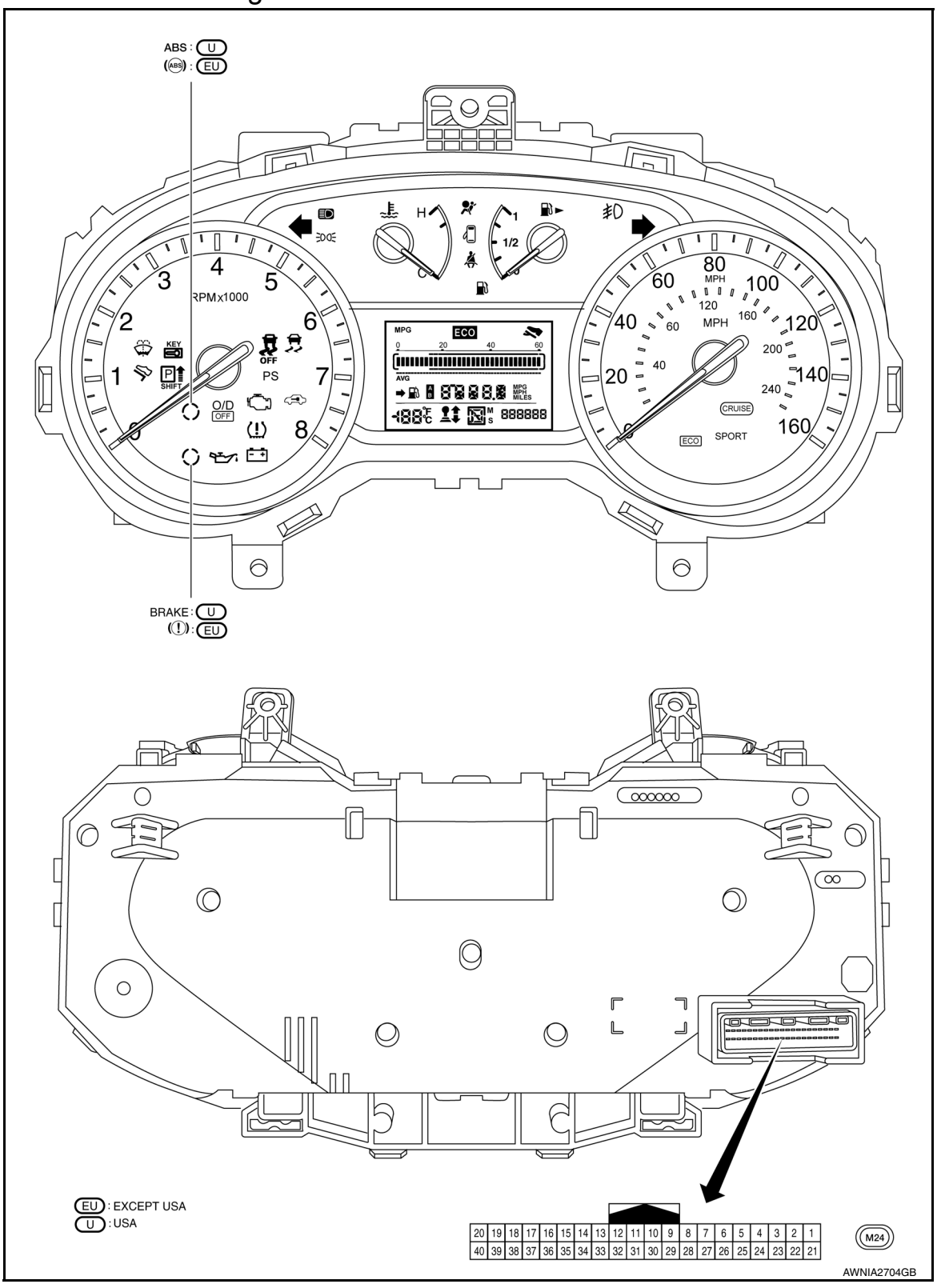
INFOID:0000000009758234

COMBINATION METER

- The combination meter receives signals from switches, sensors and modules to control the following functions:
  - Speedometer/tachometer
  - Warning lamps
  - Indicator lamps
  - Meter illumination control
  - Information display
- The combination meter has an integrated buzzer that is activated when it receives a signal from the BCM via CAN communication. 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 SYSTEM : Arrangement of Combination Meter

INFOID:0000000009758235



METER SYSTEM : Fail-Safe

INFOID:0000000009758236

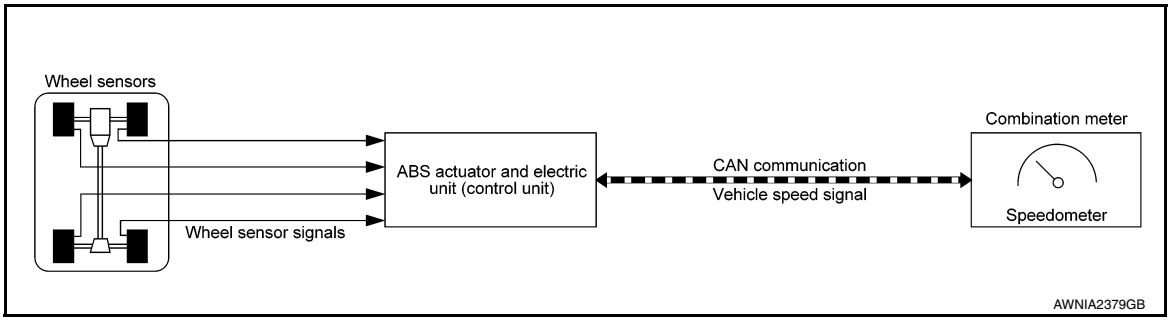
The combination meter activates the fail-safe control if CAN communication with each unit is malfunctioning.

Function			Specifications
Speedometer			Reset to zero by suspending communication.
Tachometer			
Engine coolant temperature gauge			• When reception time of an abnormal signal is 60 seconds or less, the last value received. • When reception time of an abnormal signal is more than 60 seconds, reset to zero.
Illumination control			When suspending communication, changes to nighttime mode.
Information display	Trip computer	Current fuel consumption	The last result calculated during normal condition is indicated.
		Average fuel consumption	
		Average vehicle speed	
		Distance to empty	
		ECO pedal guide	The guide turns OFF by suspending communication.
	Warning/ Indicator	ECO mode indicator	The lamp turns OFF by suspending communication.
		Gear shift indicator	
		ECO pedal guide indicator	
	Shift position indicator		When suspending communication, not indicate.
	Odo/trip meter		An indicated value is maintained at communications blackout.
Buzzer			The buzzer turns OFF by suspending communication.
Warning lamp/indicator lamp	ABS warning lamp		The lamp turns ON by suspending communication.
	EPS warning lamp		
	Malfunction indicator lamp (MIL)		
	Brake warning lamp		
	High beam indicator lamp		The lamp turns OFF by suspending communication.
	Turn signal indicator lamp		
	Door warning lamp		
	Position lamp indicator lamp		
	Engine start operation indicator lamp		
	Shift P warning lamp		
	Front fog lamp indicator lamp		
	Rear fog lamp indicator lamp		
	Engine Oil pressure warning lamp		
	KEY warning lamp		
	CRUISE indicator lamp		
	SPORT indicator lamp		

SPEEDOMETER

SPEEDOMETER : System Diagram

INFOID:0000000009758237



SPEEDOMETER : System Description

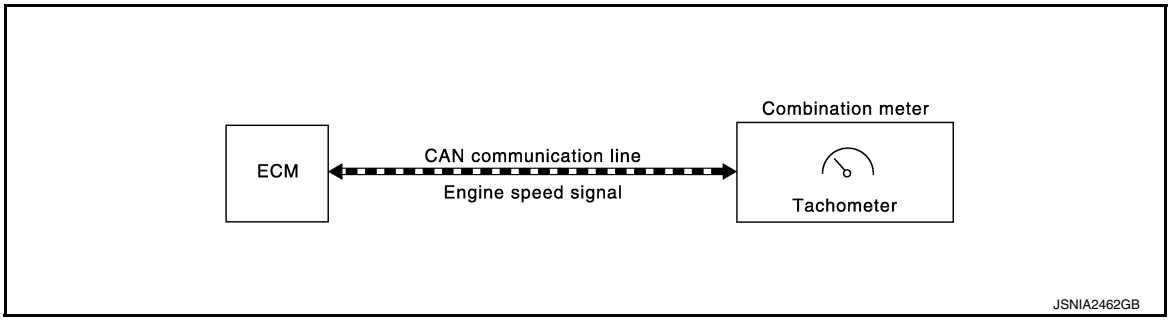
INFOID:0000000009758238

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.

TACHOMETER

TACHOMETER : System Diagram

INFOID:0000000009758239



TACHOMETER : System Description

INFOID:0000000009758240

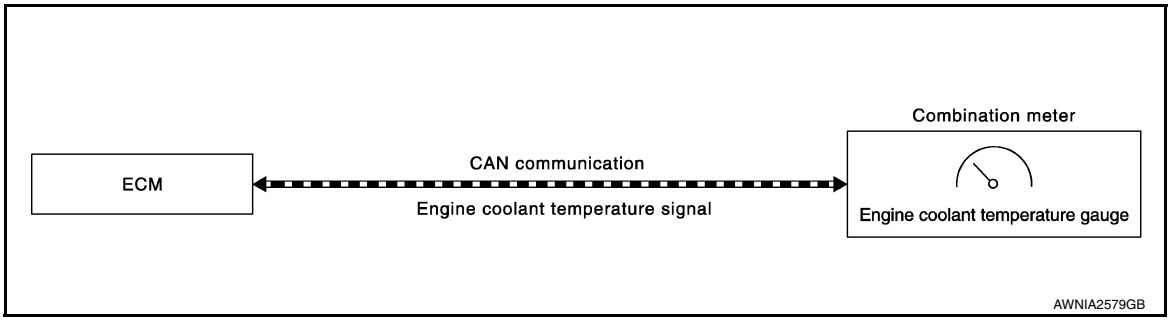
DESCRIPTION

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 Diagram

INFOID:0000000009758241



ENGINE COOLANT TEMPERATURE GAUGE : System Description

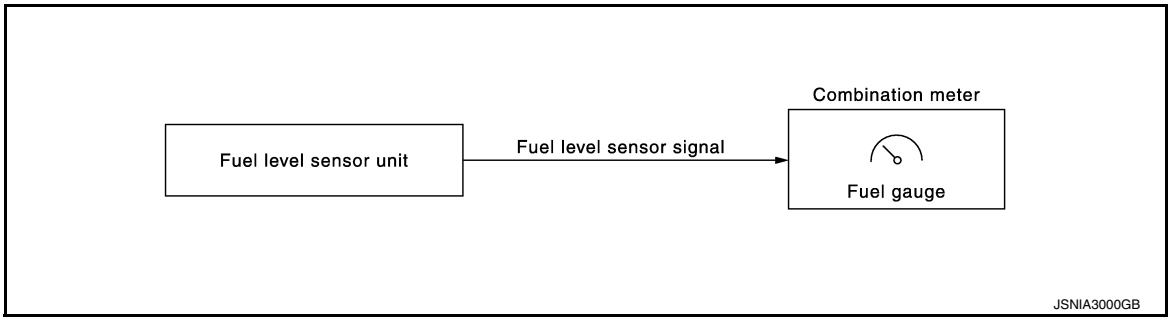
INFOID:0000000009758242

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 Diagram

INFOID:0000000009758243



FUEL GAUGE : System Description

INFOID:0000000009758244

DESCRIPTION

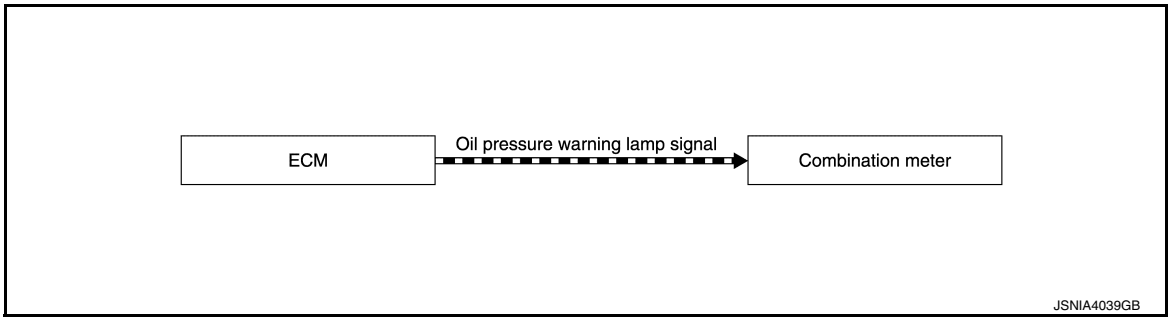
Control Outline
The combination meter reads the fuel level sensor signal from the fuel level sensor unit and indicates the fuel level to the fuel gauge.

OIL PRESSURE WARNING LAMP

OIL PRESSURE WARNING LAMP : System Diagram

INFOID:0000000009758245

SYSTEM DIAGRAM



OIL PRESSURE WARNING LAMP : System Description

INFOID:0000000009758246

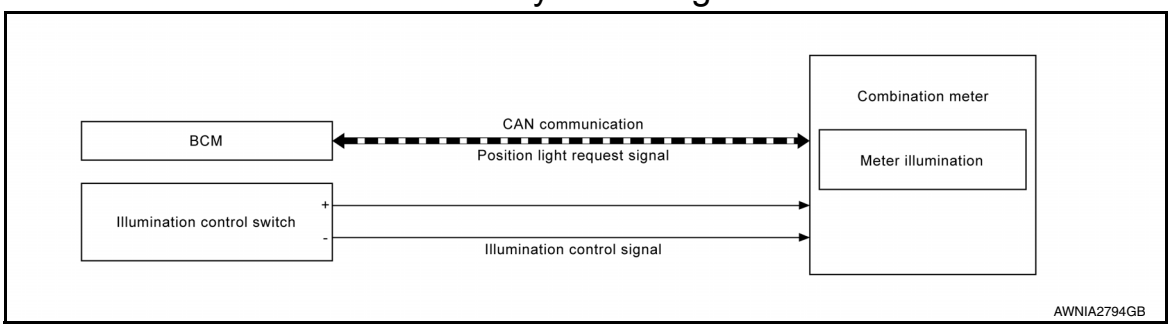
DESCRIPTION

The combination meter turns the oil pressure warning lamp ON when receiving a signal from the ECM via CAN communication.

METER ILLUMINATION CONTROL

METER ILLUMINATION CONTROL : System Diagram

INFOID:0000000009758247



METER ILLUMINATION CONTROL : System Description

INFOID:0000000009758248

METER ILLUMINATION CONTROL

Meter illumination control adjusts the brightness of the combination meter illumination using the illumination control switch.

METER ILLUMINATION CONTROL FUNCTION

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

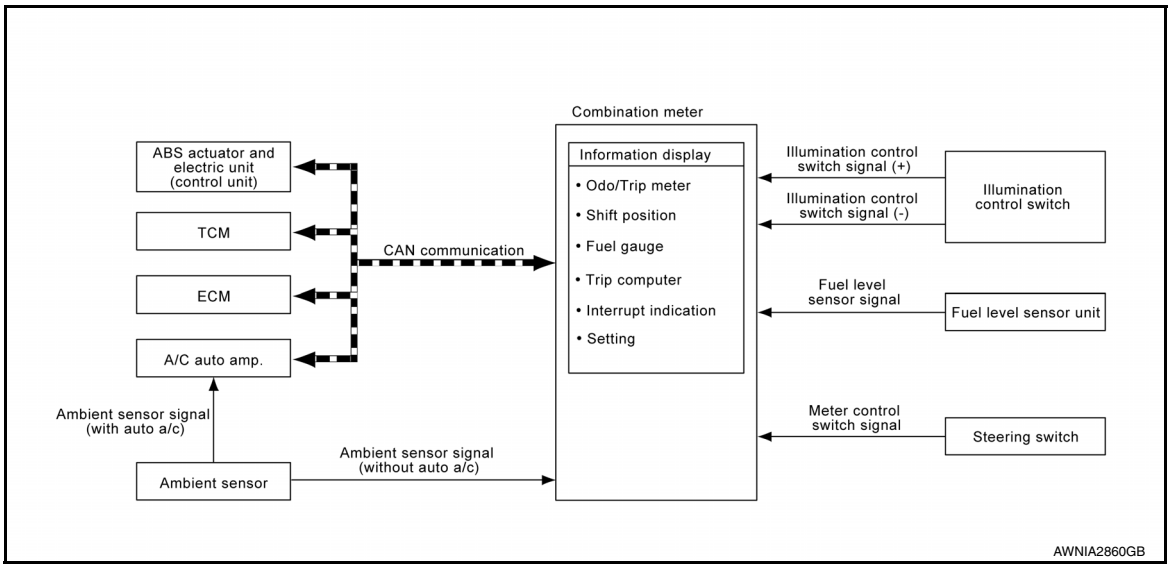
Meter illumination	The number of adjustable steps
Daytime	11 steps
Nighttime	11 steps

INFORMATION DISPLAY

INFORMATION DISPLAY : System Diagram

INFOID:0000000009758249

SYSTEM DIAGRAM



INFORMATION DISPLAY : System Description

INFOID:0000000009758250

DESCRIPTION

- The combination meter receives signals necessary for controlling the operation of the information display from each unit, sensor and switch.
- The combination meter incorporates a trip computer that displays the warning/information according to the information received from each unit, sensor and switch.
- The combination meter shows the following functions on the information display.

- Odo/trip meter
- Shift position indicator
- Outside air temperature
- Trip computer
- ECO Pedal Guide
- Warning/Indication messages (check tire pressure and loose fuel cap).

ODO/TRIP METER

The combination meter calculates mileage, based on the following signals and displays the mileage on the information display.

SHIFT POSITION INDICATOR

Displays the position of the shift selector based on signals received from TCM via CAN communication.

OUTSIDE AIR TEMPERATURE INDICATION

Displays the ambient temperature based on signals received from:

- The A/C auto amp. via CAN communication (with auto A/C).
- The ambient sensor (without auto A/C).

LOOSE FUEL CAP

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.

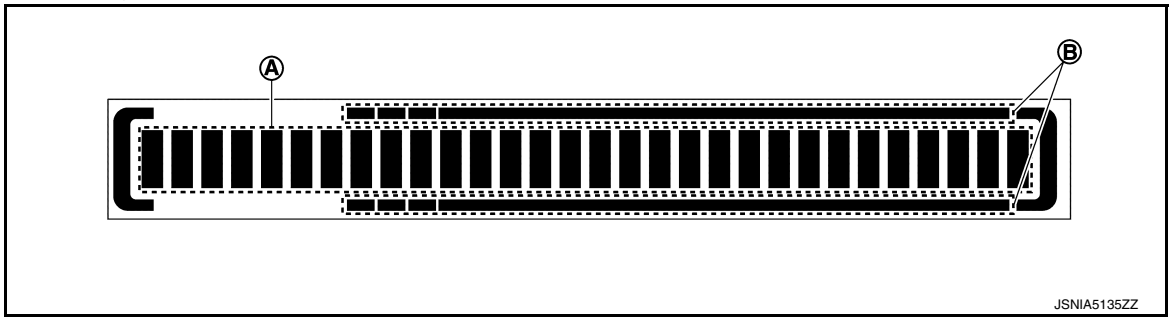
LOW TIRE PRESSURE WARNING

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.

TRIP COMPUTER

ECO Pedal Guide

The ECO pedal guide displays accelerator pedal angle Ⓐ and the guideline of ECO driving Ⓑ according to information recieved from the ECM via CAN communication.
When the Eco pedal guide bar is in the green range, it indicates that the vehicle is driven within range of economy drive.
If the Eco pedal guide bar is out of green range, it indicates that the accelerator pedal is depressed over the range of economy drive.



COMPASS

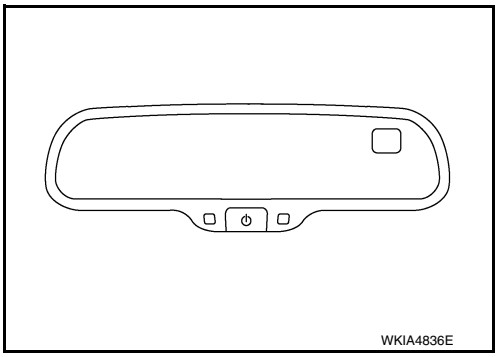
COMPASS : System Description

INFOID:0000000009758251

DESCRIPTION

With the ignition switch in the ON position, and the mode switch ON, the compass display will indicate the direction the vehicle is heading.
Vehicle direction is displayed as follows:

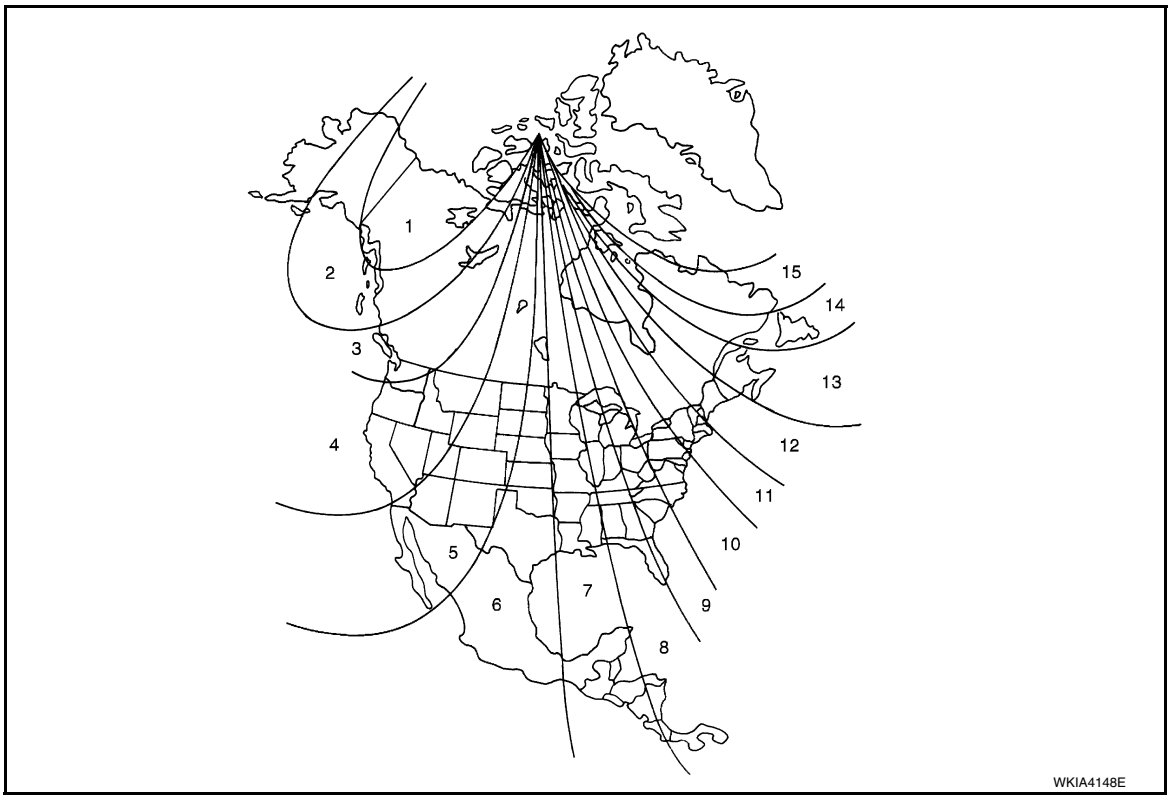
- N: north
- E: east
- S: south
- W: west



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 mode switch untill the current zone number appears in the display.
4. Press the mode switch repeatedly until the desired zone number appears in the display.

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

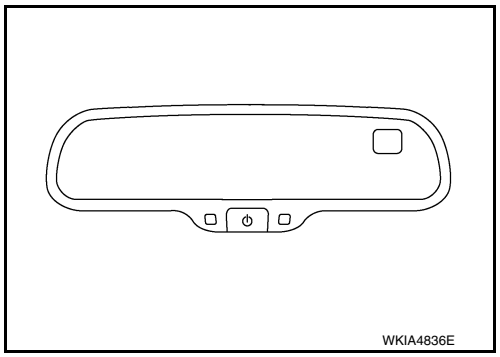
NOTE:
Use zone number 5 for Hawaii.

CALIBRATION PROCEDURE

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

1. Press and hold the mode switch untill the display reads “C”.
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.



DIAGNOSIS SYSTEM (COMBINATION METER)

Description

INFOID:0000000009758252

COMBINATION METER SELF-DIAGNOSIS MODE

The information display, speedometer and tachometer can be checked in self-diagnosis mode.

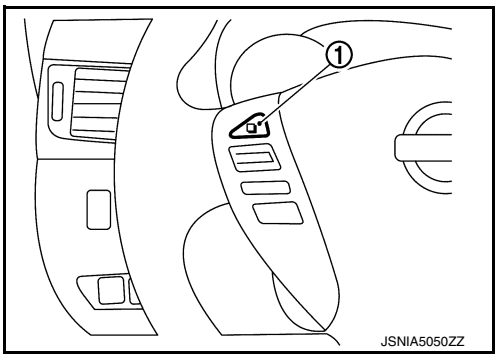
STARTING COMBINATION METER SELF-DIAGNOSIS MODE

NOTE:

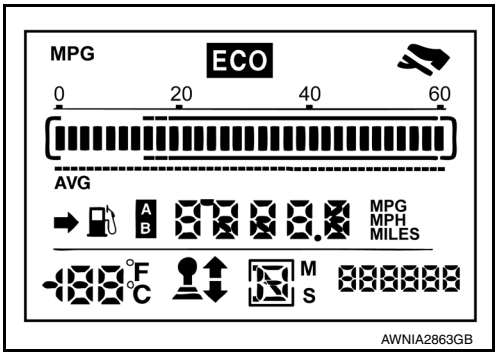
- Check combination meter power supply and ground circuits if self-diagnosis mode does not start. Refer to MWI-52, "COMBINATION METER : Diagnosis Procedure". Replace combination meter if power supply and ground circuits are found to be normal and self-diagnosis mode does not start. Refer to MWI-77, "Removal 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 steering switch ①, turn ignition switch ON.
3. If the diagnosis function is activated with “trip A” displayed, the mileage on “trip A” is reset to “0000.0”. (The same way for “trip B”.)



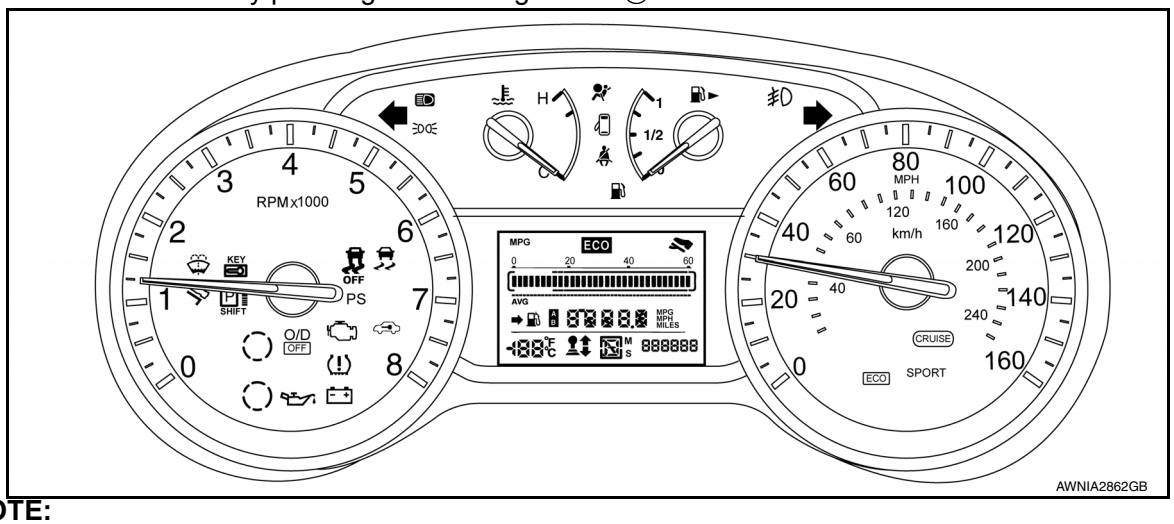
4. Make sure that the trip meter displays “0000.0”.
5. Press the steering switch ① at least 3 times. (Within 7 seconds after the ignition switch is turned ON.)
6. The combination meter is turned to self-diagnosis mode.
   - Speedometer, tachometer, engine coolant temperature gauge, fuel gauge, and return to zero, simultaneously.
   - All segments of the information display are displayed.



NOTE:

- Check the following items when the self-diagnosis mode of the combination meter does not start. Replace combination meter if the following items are normal.
  - Combination meter power supply and ground circuit.
  - Steering switch signal circuit and steering switch.
- If any of the dots are not displayed, replace combination meter.

7. Each meter activates by pressing the steering switch ①.



NOTE:
- If any of the meters or gauges is not activated, replace combination meter.
- The figure is reference.

CONSULT Function (METER/M&A)

INFOID:0000000009758253

APPLICATION ITEMS

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

System	Diagnosis mode	Description
METER/M&A	Self Diagnostic Result	The combination meter checks the conditions and displays memorized errors.
	Data Monitor	Displays the combination meter input/output data in real time.
	Work Support	Displays diagnosis procedure of each work item.
	Warning History	Lighting history of the warning lamp and indicator lamp can be checked.

SELF DIAG RESULT

Refer to MWI-26, "DTC Index".

DATA MONITOR

Display Item List

X: Applicable

Display item [Unit]	MAIN SIGNALS	Description
SPEED METER [km/h] or [mph]	X	Displays the value of vehicle speed signal.
SPEED OUTPUT [km/h] or [mph]	X	Displays the value of vehicle speed signal, which is transmitted to each unit with CAN communication.
ODO OUTPUT [km/h or mph]		Displays odometer signal value transmitted to other units via CAN communication.
TACHO METER [rpm]	X	Displays the value of engine speed signal, which is input from ECM.
FUEL METER [L]	X	Displays the fuel level.
W TEMP METER [°C] or [°F]	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
SLIP IND [ON/OFF]		Displays [ON/OFF] condition of SLIP indicator lamp.

Display item [Unit]	MAIN SIGNALS	Description
VDC/TCS IND [ON/OFF]		Displays [ON/OFF] condition of VDC OFF 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 warning indicator.
HI-BEAM IND [ON/OFF]		Displays [ON/OFF] condition of high beam indicator.
TURN IND [ON/OFF]		Displays [ON/OFF] condition of turn indicator.
FR FOG IND [On/Off]		Displays [ON/OFF] condition of front fog lamp indicator.
LIGHT IND [ON/OFF]		Displays [ON/OFF] condition of light indicator.
OIL W/L [ON/OFF]		Displays [ON/OFF] condition of oil pressure warning indicator.
MIL [ON/OFF]		Displays [ON/OFF] condition of malfunction indicator.
CRUISE IND [Off]		Displays [ON/OFF] condition of CRUISE indicator.
O/D OFF IND [ON/OFF]		Displays [ON/OFF] condition of O/D OFF indicator.
FUEL W/L [ON/OFF]		Displays [ON/OFF] condition of low-fuel warning indicator.
KEY G/Y W/L [On/Off]		Displays [ON/OFF] condition of KEY warning lamp (G/Y).
KEY KNOB W/L [On/Off]		Displays [ON/OFF] condition of shift P warning lamp.
O/D OFF SW [ON/OFF]		Displays [ON/OFF] condition of O/D OFF switch.
COMP F/B SIG [On/Off]		A/C compressor activation condition that ECM judges according to the engine coolant temperature and the acceleration degree.
BRAKE SW [ON/OFF]		Displays [ON/OFF] condition of brake switch.
EPS W/L [ON/OFF]		Displays [ON/OFF] condition of EPS indicator lamp.
ECO MODE IND [On/Off]		Displays [ON/OFF] condition of ECO mode indicator lamp.
LCD		Displays status of Intelligent Key system warning judged from meter display signal received from BCM with CAN communication line.
SHIFT IND [P, R, N, D, L]		Displays shift selector position.
FUEL CAP W/L [Off]		Displays [ON/OFF] condition of loose fuel cap warning message.
AIR PRES W/L [ON/OFF]		Displays [ON/OFF] condition of tire pressure warning lamp.
PKB SW [ON/OFF]		Status of parking brake switch.
BUCKLE SW [ON/OFF]		Status of seat belt buckle switch (LH).
PASS BUCKLE SW [ON/OFF]		Status of passenger seat belt buckle switch (RH).

Display item [Unit]	MAIN SIGNALS	Description
BRAKE OIL SW [ON/OFF]		Status of brake fluid level switch.
A/C AMP CONN [On/Off]		Status of A/C auto amp. connection recognition signal.
DISTANCE [km] or [Mi]		Displays distance to empty.
OUTSIDE TEMP [°C or °F]		Displays the ambient air temperature, which is input from ambient sensor.
BUZZER [ON/OFF]	X	Displays [ON/OFF] condition of buzzer.
SPORT MODE IND [On/Off]		Status of DS mode indicator detected from SPORT indicator signal is received from TCM via CAN communication.
ECO DRIVE NAVI [LEVEL 0 - 30]		Status of ECO pedal guide detected from ECO pedal guide signal received from ECM via CAN communication.

NOTE:

Some items are not available according to vehicle specification.

WARNING HISTORY

- Stores histories when warning/indicator lamp is turned on.
- “WARNING 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 WARNING HISTORY: Stores NO (0) turning on history of warning/indicator lamp.

NOTE:

- WARNING 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.

WORK SUPPORT

Work support item	Description
Turn signal buzzer diagnosis	A possible malfunction can be narrowed down by following displayed instructions.
Outside air temperature diagnosis	
Fuel meter diagnosis (Analog pointer)	
Warning/Indicator lamp diagnosis	

ECU DIAGNOSIS INFORMATION

COMBINATION METER

Reference Value

INFOID:0000000009758254

VALUES ON THE DIAGNOSIS TOOL

NOTE:

The following table includes information (items) inapplicable to this vehicle. For information (items) applicable to this vehicle, refer to CONSULT display items.

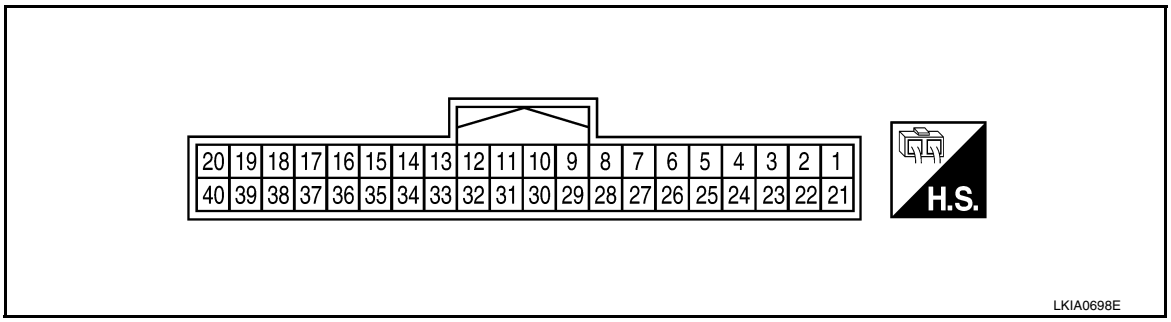
Monitor Item	Condition		Value/Status
SPEED METER [mph or km/h]	Ignition switch ON	While driving	Input value of vehicle speed signal (CAN communication signal)
SPEED OUTPUT [mph or km/h]	Ignition switch ON	While driving	Output value of vehicle speed signal (CAN communication signal)
ODO OUTPUT [mph or 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 [°C or °F]	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
BRAKE W/L	Ignition switch ON	Brake warning lamp ON	On
		Brake warning lamp OFF	Off
DOOR W/L	Ignition switch ON	Door warning lamp ON	On
		Door warning lamp OFF	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 lamp ON	On
		Engine oil pressure warning lamp OFF	Off
MIL	Ignition switch ON	Malfunction indicator lamp ON	On
		Malfunction indicator lamp OFF	Off
CRUISE IND	Ignition switch ON	CRUISE indicator lamp ON	On
		CRUISE indicator lamp OFF	Off
SPORT IND	Ignition switch ON	SPORT indicator lamp ON	On
		SPORT indicator lamp OFF	Off
FUEL W/L	Ignition switch ON	Low fuel warning lamp ON	On
		Low fuel warning lamp OFF	Off

Monitor Item	Condition		Value/Status
KEY G/Y W/L	Ignition switch ON	During Intelligent Key system malfunction indication	On
		Other than the above	Off
KEY KNOB W/L	Ignition switch ON	Shift P warning lamp ON	On
		Shift P warning lamp OFF	Off
EPS W/L	Ignition switch ON	EPS warning lamp ON	On
		EPS warning lamp OFF	Off
ECO MODE IND	Ignition switch ON	ECO mode indicator ON	On
		ECO mode indicator OFF	Off
LCD	Ignition switch LOCK or ACC	Engine start operation indicator lamp ON (CVT models)	B&P N
	Ignition switch ON	Engine start operation indicator lamp ON (CVT models)	B&P I
	Ignition switch LOCK or ACC	Engine start operation indicator lamp ON (M/T models)	C&P N
	Ignition switch ON	Engine start operation indicator lamp ON (M/T models)	C&P I
	Ignition switch LOCK	During shift P warning lamp indication	SFT P
	Ignition switch LOCK	During Intelligent Key low battery warning indication	BATT
	Ignition switch ON	During take away warning indication	NO KY
	Ignition switch ON	During ACC warning indication	LK WN
SHIFT IND	Ignition switch ON	Shift position indicator P display	P
		Shift position indicator R display	R
		Shift position indicator N display	N
		Shift position indicator D display	D
		Shift position indicator L display	L
O/D OFF SW	Ignition switch ON	O/D OFF switch ON	On
		O/D OFF switch OFF	Off
COMP F/B SIG	Ignition switch ON	A/C compressor activation condition	On
		Other than the above	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
BRAKE OIL SW	Ignition switch ON	Brake fluid level switch ON	On
		Brake fluid level switch OFF	Off
A/C AMP CONN	Ignition switch ON	Receives A/C auto amp. connection recognition signal	On
		Other than the following	Off
PASS BUCKLE SW	Ignition switch ON	Passenger seat belt not fastened	On
		Passenger seat belt fastened	Off
DISTANCE [mi or km]	Ignition switch ON	—	Distance to empty calculated by combination meter

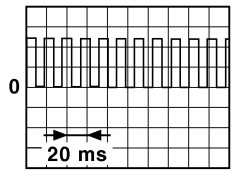
Monitor Item	Condition		Value/Status
OUTSIDE TEMP [°C or °F]	Ignition switch ON	—	Displays the ambient air temperature which is input from the ambient sensor
BUZZER	Ignition switch ON	Buzzer ON	On
		Buzzer OFF	Off
SPORT MODE IND	Ignition switch ON	DS mode indicator ON	On
		DS mode indicator OFF	Off
ECO DRIVE NAVI	Ignition switch ON	ECO pedal guide segment illuminate: 1/30	LEVEL0
		ECO pedal guide segment illuminate: 30/30	LEVEL1
		ECO pedal guide segment illuminate: 0/30	LEVEL2
		ECO pedal guide segment illuminate: 2/30	LEVEL3
		ECO pedal guide segment illuminate: 3/30	LEVEL4
		ECO pedal guide segment illuminate: 4/30	LEVEL5
		ECO pedal guide segment illuminate: 5/30	LEVEL6
		ECO pedal guide segment illuminate: 6/30	LEVEL7
		ECO pedal guide segment illuminate: 7/30	LEVEL8
		ECO pedal guide segment illuminate: 8/30	LEVEL9
		ECO pedal guide segment illuminate: 9/30	LEVEL10
		ECO pedal guide segment illuminate: 10/30	LEVEL11
		ECO pedal guide segment illuminate: 11/30	LEVEL12
		ECO pedal guide segment illuminate: 12/30	LEVEL13
		ECO pedal guide segment illuminate: 13/30	LEVEL14
		ECO pedal guide segment illuminate: 14/30	LEVEL15
		ECO pedal guide segment illuminate: 15/30	LEVEL16
		ECO pedal guide segment illuminate: 16/30	LEVEL17
		ECO pedal guide segment illuminate: 17/30	LEVEL18
		ECO pedal guide segment illuminate: 18/30	LEVEL19
		ECO pedal guide segment illuminate: 19/30	LEVEL20
		ECO pedal guide segment illuminate: 20/30	LEVEL21
		ECO pedal guide segment illuminate: 21/30	LEVEL22
		ECO pedal guide segment illuminate: 22/30	LEVEL23
		ECO pedal guide segment illuminate: 23/30	LEVEL24
		ECO pedal guide segment illuminate: 24/30	LEVEL25
		ECO pedal guide segment illuminate: 25/30	LEVEL26
		ECO pedal guide segment illuminate: 26/30	LEVEL27
		ECO pedal guide segment illuminate: 27/30	LEVEL28
		ECO pedal guide segment illuminate: 28/30	LEVEL29
		ECO pedal guide segment illuminate:29/30	LEVEL30

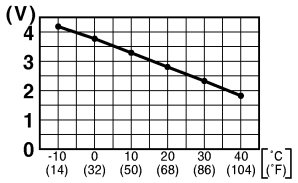
NOTE:
Some items are not available according to vehicle specification.

TERMINAL LAYOUT



PHYSICAL VALUES

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
1 (L)	—	CAN-H	—	—	—	—
2 (P)	—	CAN-L	—	—	—	—
4 (Y)	Ground	Vehicle speed signal (8-pulse)	Output	Ignition switch ON	Speedometer operated [When vehicle speed is approx. 40 km/h (25 MPH)]	**NOTE:** The maximum voltage varies depending on the specification (destination unit).  JSNIA0012GB
6 (G)	Ground	Fuel level sensor signal	Input	Ignition switch ON	—	—
7 (SB)		Air bag signal	Input	—	—	—
8 (W)	Ground	O/D OFF switch signal	Input	Ignition switch ON	While pressing the O/D OFF switch.	0 V
					Other than the above	5 V
9 (L)	Ground	Seat belt buckle switch signal LH (driver seat)	Input	Ignition switch ON	When driver seat belt is fastened.	5 V
					When driver seat belt is unfastened.	0 V
10 (SB)	Ground	Parking brake switch signal	Input	Ignition switch ON	Parking brake applied.	0 V
					Parking brake released.	5 V
11 (G)	Ground	Brake fluid level switch signal	Input	Ignition switch ON	Brake fluid level is normal	5 V
					Brake fluid level low	0 V
12 (LG)	Ground	Meter control switch signal	Input	Ignition switch ON	When ❑ switch is pressed	0 V
					Other than the above	5 V
13 (B)	Ground	Illumination control output signal	—	Ignition switch ON	—	—

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
15 (LG)	Ground	ACC power supply	Input	Ignition switch ACC	—	Battery voltage
17 (O)	Ground	Washer level switch signal	Input	Ignition switch OFF	Washer level switch ON	0 V
					Washer level switch OFF	12 V
18 (Y)	Ground	Security signal	Input	Ignition switch OFF	Security indicator lamp ON	0 V
					Security indicator lamp OFF	12 V
19 (V)	Ground	Ambient sensor signal (without auto A/C)	Input	Ignition switch ON	Changes depending to ambient temperature.	 JSNIA0014GB
20 (R)	Ground	Ambient sensor ground (without auto A/C)	—	Ignition switch ON	—	0 V
21 (B)	Ground	Ground	—	Ignition switch ON	—	0 V
22 (B)	Ground		—	Ignition switch ON	—	0 V
23 (B)	Ground		—	Ignition switch ON	—	0 V
24 (O)	Ground	Fuel level sensor ground	—	Ignition switch ON	—	0 V
25 (GR)	Ground	ECO mode switch signal	Input	Ignition switch ON	ECO mode switch is pressed	0 V
					Other than the above	5 V
27 (LG)	Ground	Battery power supply	Input	Ignition switch OFF	—	Battery voltage
28 (GR)	Ground	Ignition signal	Input	Ignition switch ON	—	Battery voltage
29 (V)	Ground	Seat belt buckle switch RH	Input	Ignition switch ON	Unfastened	0 V
					Fastened	12 V
31 (GR)	Ground	Outside temperature sensor	Input	Ignition switch ON	—	5 V
32 (P)	Ground	AC PD cut	Input	Ignition switch ON	Signal ON	0 V
					Signal OFF	5 V
33 (R)	Ground	Illumination control switch signal (+)	Input	Ignition switch ON	Illumination control switch down is pressed	0 V
					Other than the above	5 V

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
34 (Y)	Ground	Illumination control switch signal (–)	Input	Ignition switch ON	Illumination control switch up is pressed	0 V
					Other than the above	5 V
38 (L)	Ground	Alternator signal	Input	Ignition switch ON	Charge warning lamp ON	1.8 V
					Charge warning lamp OFF	12 V
39 (W)	Ground	Sport mode switch signal	Input	Ignition switch ON	Press the sport mode switch	0 V
					Other than the above	5 V

Fail-Safe

INFOID:0000000009758255

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

Function			Specifications
Speedometer			Reset to zero by suspending communication.
Tachometer			
Engine coolant temperature gauge			• When reception time of an abnormal signal is 60 seconds or less, the last value received. • When reception time of an abnormal signal is more than 60 seconds, reset to zero.
Illumination control			When suspending communication, changes to nighttime mode.
Information display	Trip computer	Current fuel consumption	The last result calculated during normal condition is indicated.
		Average fuel consumption	
		Average vehicle speed	
		Distance to empty	
		ECO pedal guide	The guide turns OFF by suspending communication.
	Warning/ Indicator	ECO mode indicator	The lamp turns OFF by suspending communication.
		Gear shift indicator	
		ECO pedal guide indicator	
	Shift position indicator		When suspending communication, not indicate.
	Odo/trip meter		An indicated value is maintained at communications blackout.
Buzzer			The buzzer turns OFF by suspending communication.

Function		Specifications
Warning lamp/indicator lamp	ABS warning lamp	The lamp turns ON by suspending communication.
	EPS warning lamp	
	Malfunction indicator lamp (MIL)	
	Brake warning lamp	
	High beam indicator lamp	The lamp turns OFF by suspending communication.
	Turn signal indicator lamp	
	Door warning lamp	
	Position lamp indicator lamp	
	Engine start operation indicator lamp	
	Shift P warning lamp	
	Front fog lamp indicator lamp	
	Rear fog lamp indicator lamp	
	Engine Oil pressure warning lamp	
	KEY warning lamp	
	CRUISE indicator lamp	
	SPORT indicator lamp	

DTC Index

INFOID:0000000009758256

Display contents of CONSULT	Diagnostic item is detected when...	Refer to
CAN COMM CIRCUIT [U1000]	When combination meter is not transmitting or receiving CAN communication signal for 2 seconds or more.	MWI-47, "Diagnosis Procedure"
CONTROL UNIT (CAN) [U1010]	When detecting error during the initial diagnosis of the CAN controller of combination meter.	MWI-48, "Diagnosis Procedure"
VEHICLE SPEED [B2205]	The abnormal vehicle speed signal is input from the ABS actuator and electric unit (control unit) for 2 seconds or more.	MWI-49, "Diagnosis Procedure"
ENGINE SPEED [B2267]	If ECM continuously transmits abnormal engine speed signals for 2 seconds or more.	MWI-50, "Diagnosis Procedure"
WATER TEMP [B2268]	If ECM continuously transmits abnormal engine coolant temperature signals for 60 seconds or more.	MWI-51, "Diagnosis Procedure"

BCM (BODY CONTROL MODULE)

List of ECU Reference

INFOID:0000000009758257

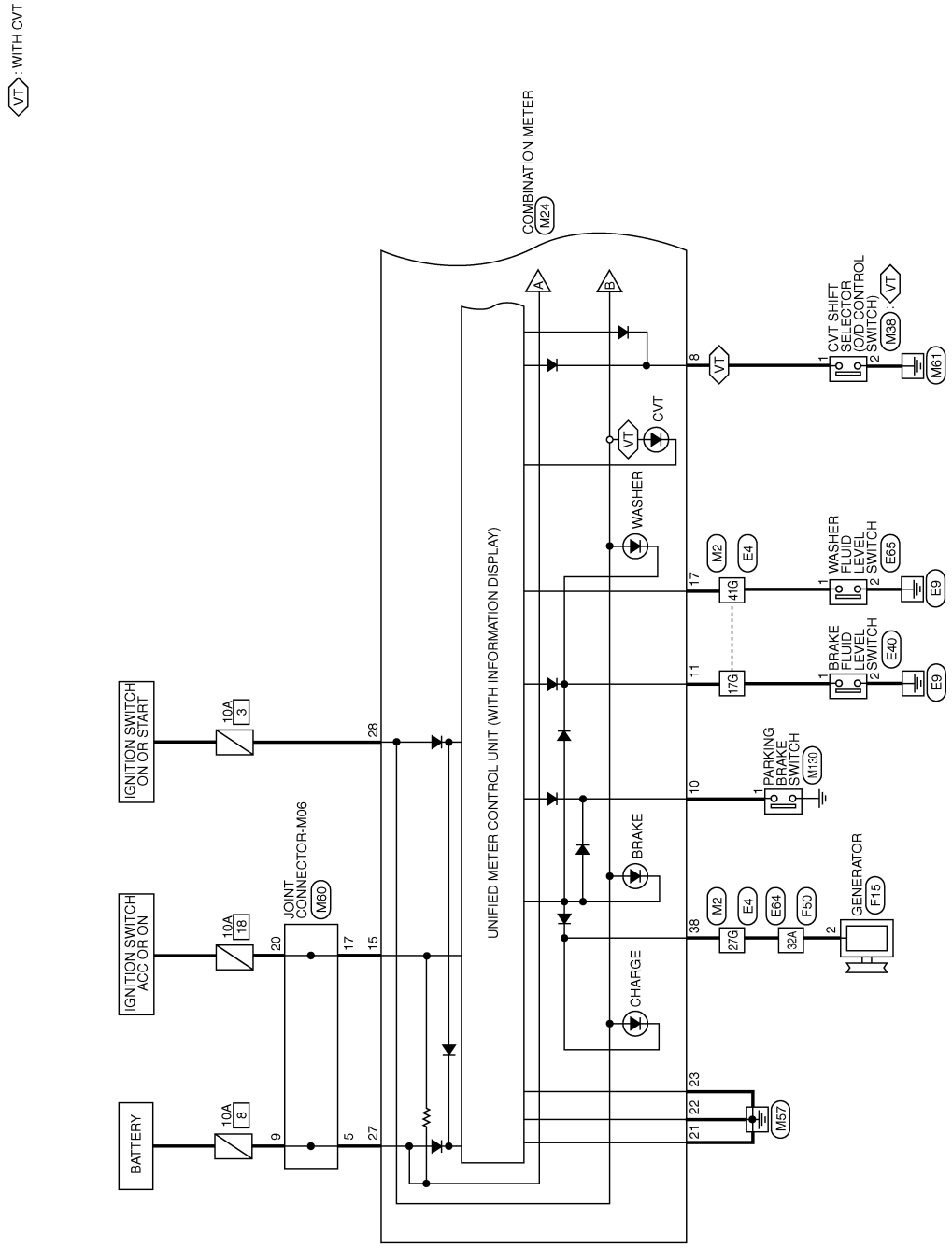
ECU	Reference
BCM (with Intelligent Key)	BCS-29, "Reference Value"
	BCS-46, "Fail-safe"
	BCS-48, "DTC Inspection Priority Chart"
	BCS-49, "DTC Index"
BCM (without Intelligent Key)	BCS-97, "Reference Value"
	BCS-108, "Fail-safe"
	BCS-108, "DTC Inspection Priority Chart"
	BCS-109, "DTC Index"

WIRING DIAGRAM

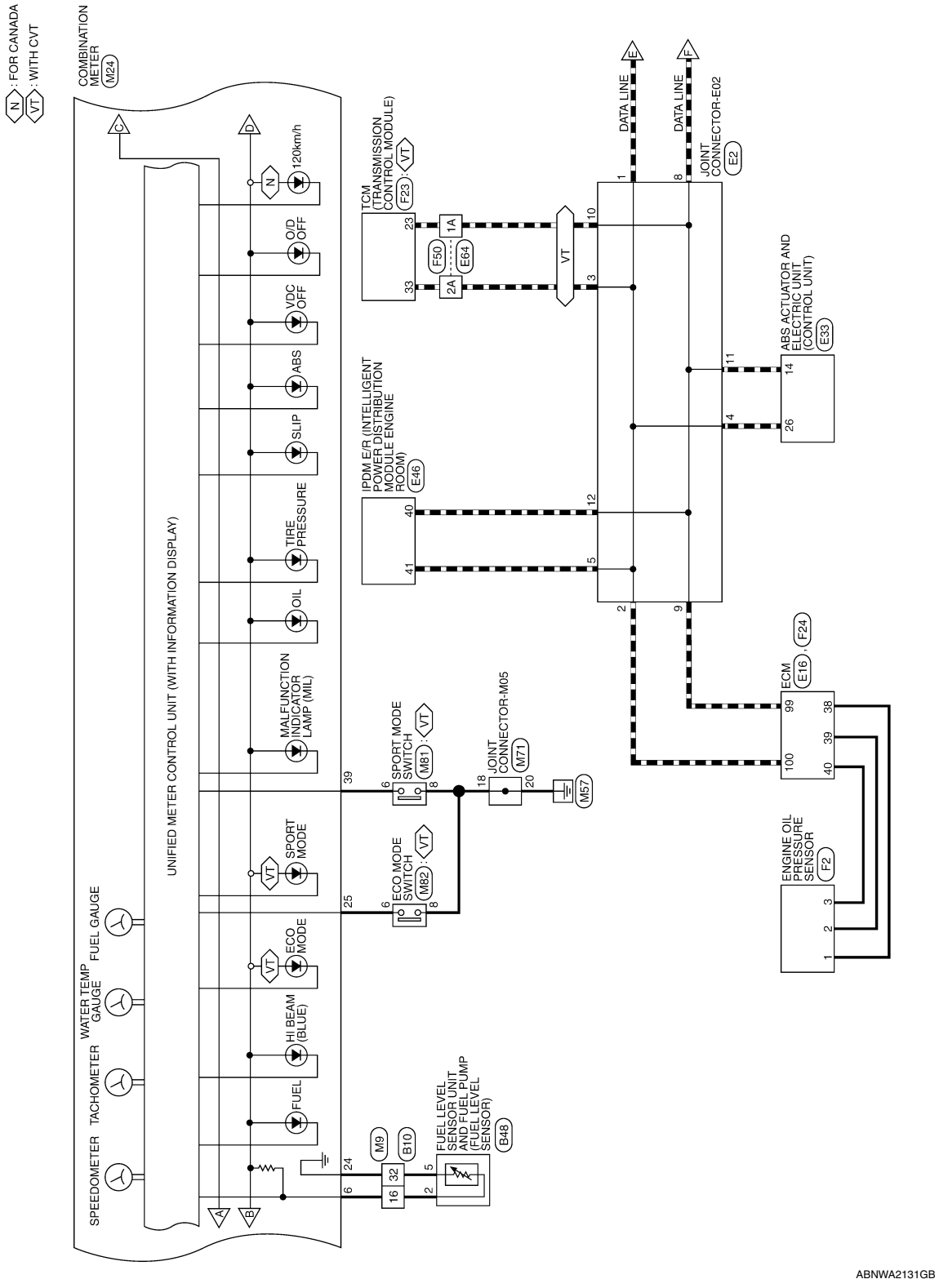
METER SYSTEM

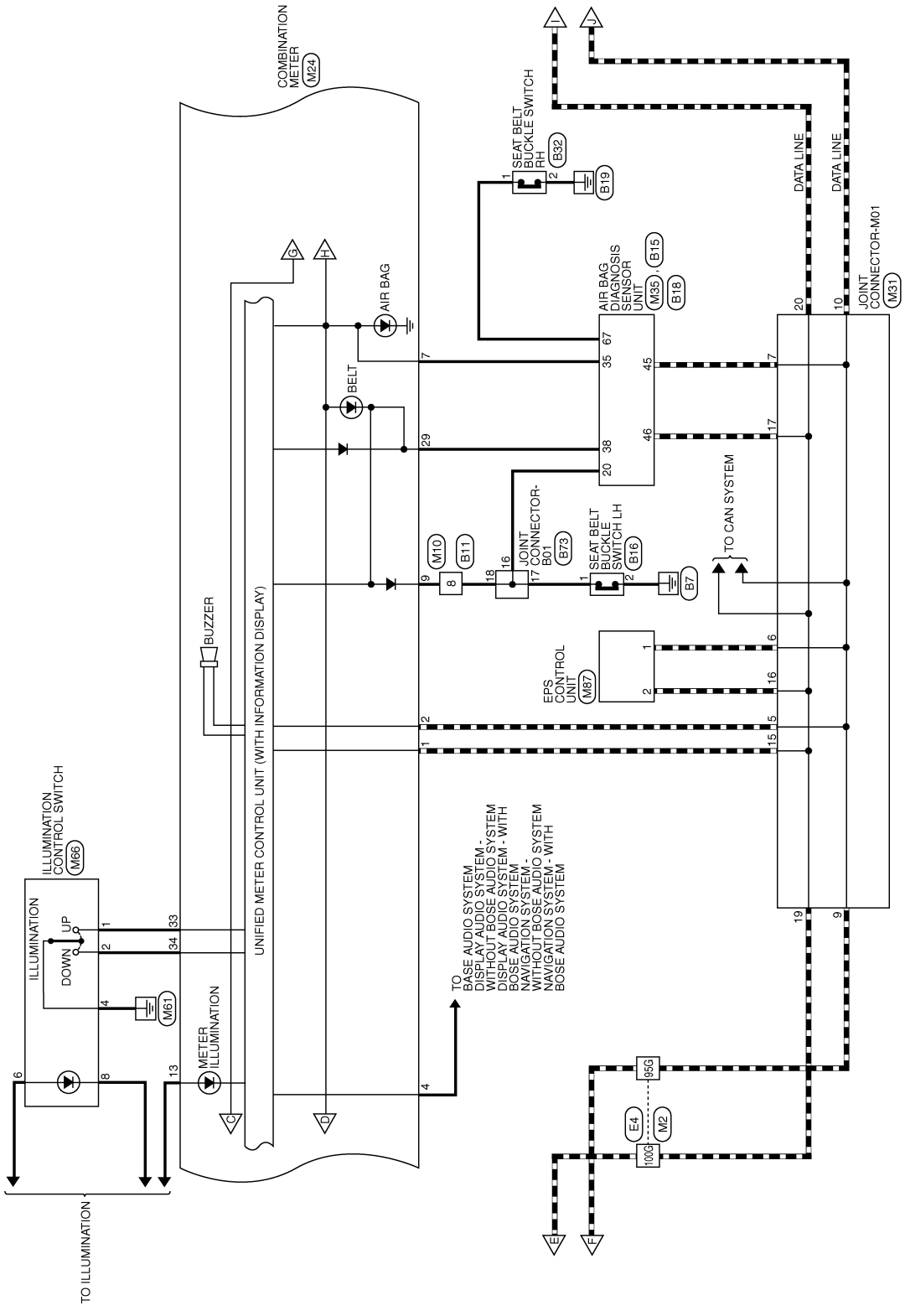
Wiring Diagram

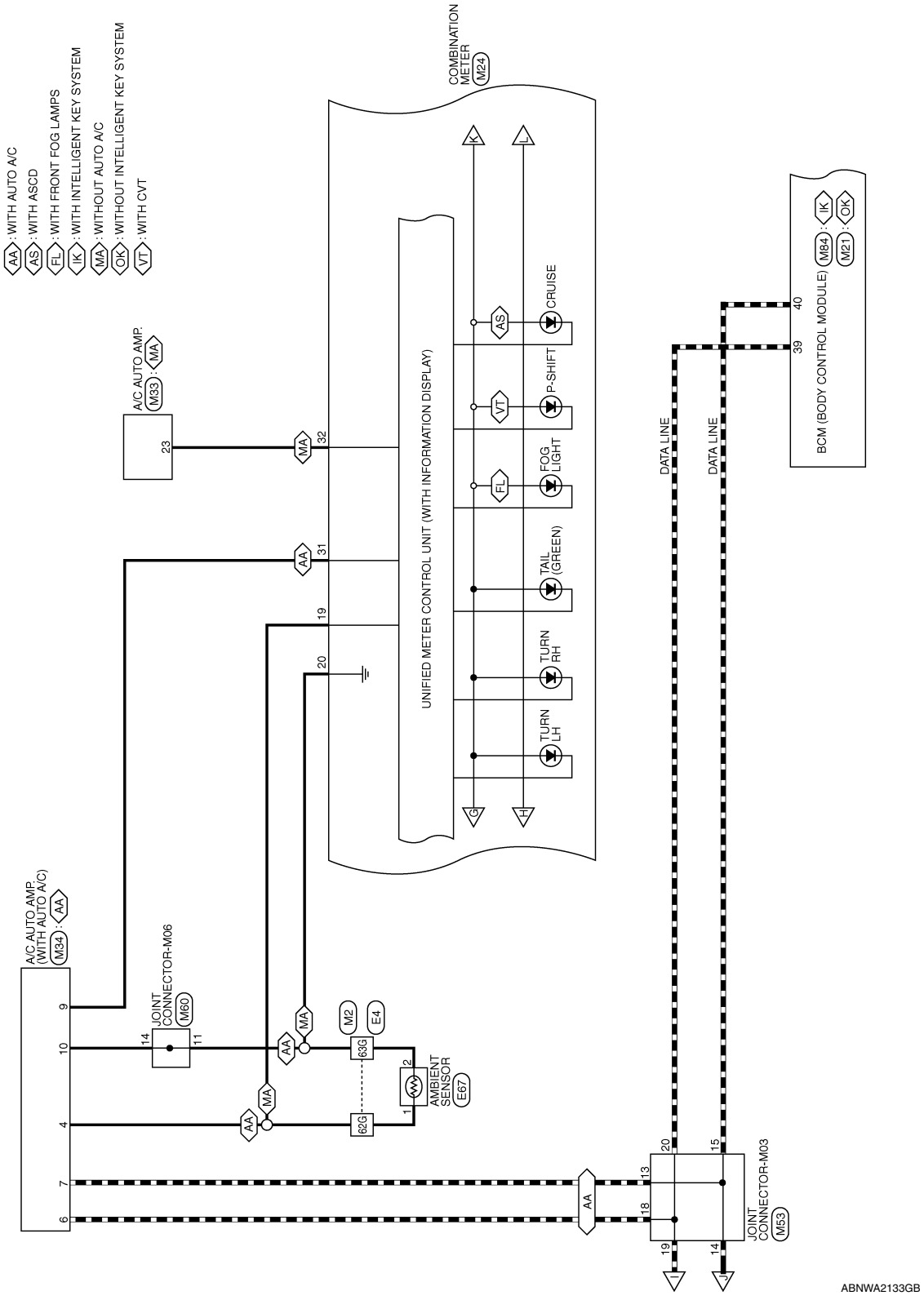
INFOID:0000000009758258

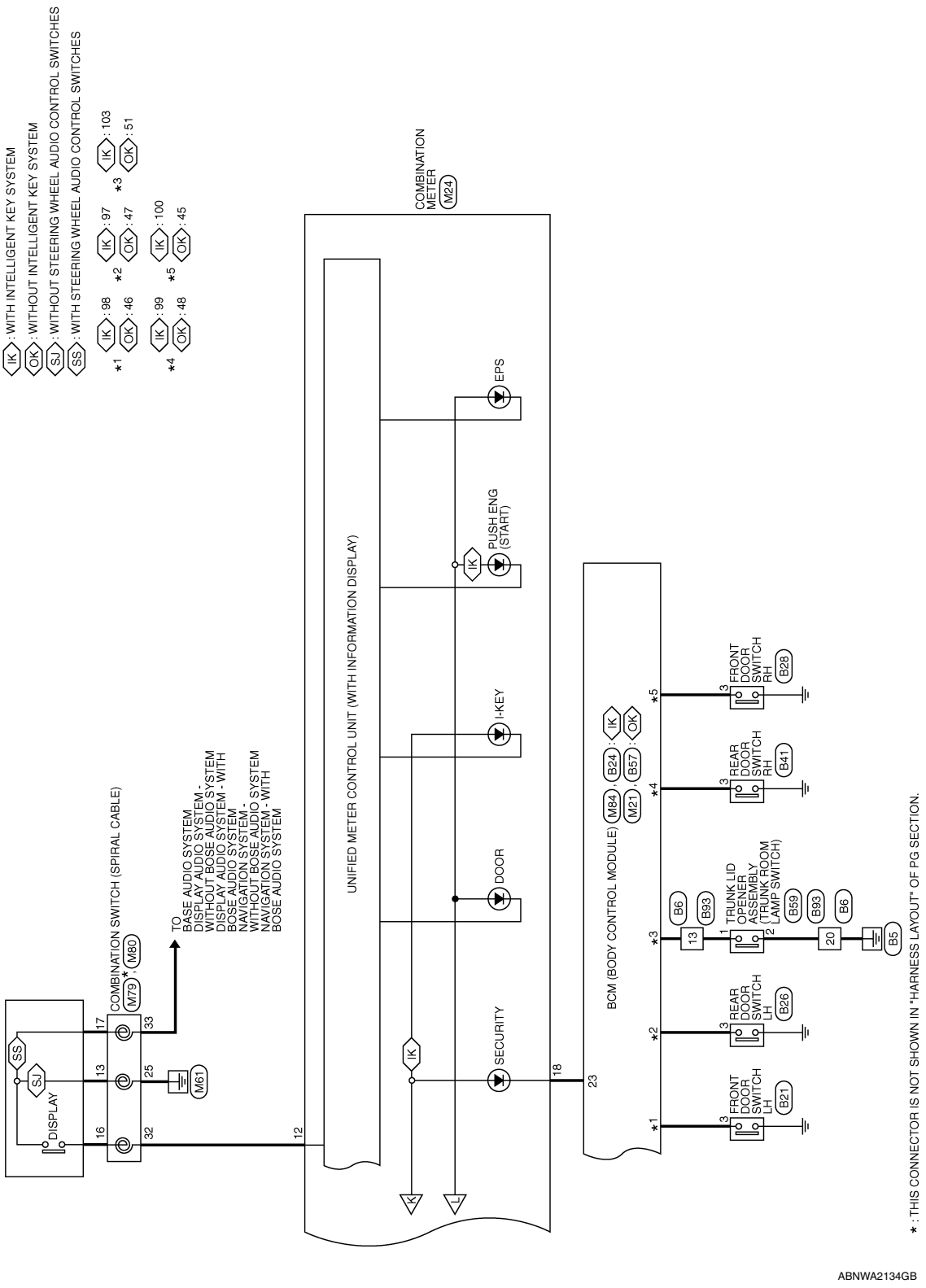


ABNWA2130GB


N : FOR CANADA
VT : WITH CVT
COMBINATION METER (M24)
UNIFIED METER CONTROL UNIT (WITH INFORMATION DISPLAY)
SPEEDOMETER
TACHOMETER
WATER TEMP GAUGE
FUEL GAUGE
120km/h
O/D OFF
VDC OFF
ABS
SLIP
TIRE PRESSURE
OIL
MALFUNCTION INDICATOR LAMP (MIL)
SPORT MODE
ECO MODE
HI BEAM (BLUE)
FUEL
SPORT MODE SWITCH (M81)
ECO MODE SWITCH (M82)
JOINT CONNECTOR-M05 (M71)
M57
FUEL LEVEL SENSOR UNIT AND FUEL PUMP (FUEL LEVEL SENSOR) (B48)
M9
B10
TCM (TRANSMISSION CONTROL MODULE) (F23)
F50
E64
1A
2A
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) (E46)
DATA LINE
DATA LINE
JOINT CONNECTOR-E02 (E2)
ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) (E33)
ECM (E16), (F24)
ENGINE OIL PRESSURE SENSOR (F2)
ABNWA2131GB


COMBINATION METER M24
UNIFIED METER CONTROL UNIT (WITH INFORMATION DISPLAY)
BUZZER
METER ILLUMINATION
AIR BAG
BELT
SEAT BELT BUCKLE SWITCH RH B32
B19
AIR BAG DIAGNOSIS SENSOR UNIT M35 B15 B18
SEAT BELT BUCKLE SWITCH LH B16
B7
JOINT CONNECTOR-B01 B73
M10 B11
EPS CONTROL UNIT M87
TO CAN SYSTEM
DATA LINE
DATA LINE
JOINT CONNECTOR-M01 M31
ILLUMINATION CONTROL SWITCH M66
ILLUMINATION
UP
DOWN
M61
TO ILLUMINATION
TO BASE AUDIO SYSTEM
DISPLAY AUDIO SYSTEM - WITHOUT BOSE AUDIO SYSTEM
DISPLAY AUDIO SYSTEM - WITH BOSE AUDIO SYSTEM
NAVIGATION SYSTEM - WITHOUT BOSE AUDIO SYSTEM
NAVIGATION SYSTEM - WITH BOSE AUDIO SYSTEM
E4 M2
95G
100G
ABNWA2132GB


AA : WITH AUTO A/C
AS : WITH ASCD
FL : WITH FRONT FOG LAMPS
IK : WITH INTELLIGENT KEY SYSTEM
MA : WITHOUT AUTO A/C
OK : WITHOUT INTELLIGENT KEY SYSTEM
VT : WITH CVT
COMBINATION METER (M24)
UNIFIED METER CONTROL UNIT (WITH INFORMATION DISPLAY)
CRUISE
P-SHIFT
FOG LIGHT
TAIL (GREEN)
TURN RH
TURN LH
A/C AUTO AMP. (M33) : MA
A/C AUTO AMP. (WITH AUTO A/C) (M34) : AA
JOINT CONNECTOR-M06 (M60)
AMBIENT SENSOR (E67)
DATA LINE
DATA LINE
BCM (BODY CONTROL MODULE) (M84) : IK (M21) : OK
JOINT CONNECTOR-M03 (M53)
ABNWA2133GB

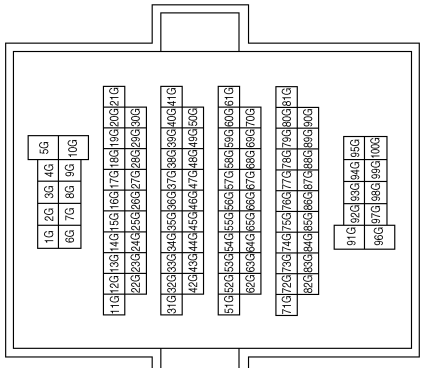


ABNWA2134GB

METER CONNECTORS

Connector No.	M2
Connector Name	WIRE TO WIRE
Connector Color	WHITE

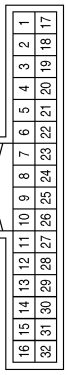
H.S.



Terminal No.	Color of Wire	Signal Name
17G	G	–
27G	L	–
41G	O	–
62G	V	–
63G	R	–
95G	P	–
100G	L	–

Connector No.	M9
Connector Name	WIRE TO WIRE
Connector Color	WHITE

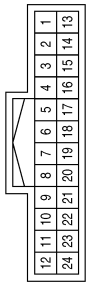
H.S.



Terminal No.	Color of Wire	Signal Name
16	G	–
32	O	–

Connector No.	M10
Connector Name	WIRE TO WIRE
Connector Color	WHITE

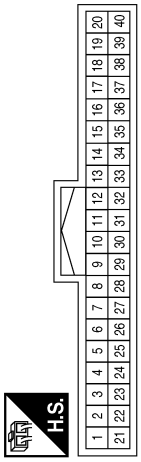
H.S.



Terminal No.	Color of Wire	Signal Name
8	L	–

Connector No.	M21
Connector Name	BCM (BODY CONTROL MODULE) (WITHOUT INTELLIGENT KEY SYSTEM)
Connector Color	WHITE

H.S.



Terminal No.	Color of Wire	Signal Name
23	Y	SECURITY INDICATOR OUTPUT
39	L	CAN-H
40	P	CAN-L

ABNIA5815GB

Connector No.	M24
Connector Name	COMBINATION METER
Connector Color	WHITE

H.S.

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

Terminal No.	Color of Wire	Signal Name
1	L	CAN-H
2	P	CAN-L
3	–	–
4	Y	8P/R OUTPUT
5	–	–
6	G	FUEL M SIG
7	SB	AIRBAG WARN
8	W	NOT M MODE SW O/D OFF

Terminal No.	Color of Wire	Signal Name
9	L	DR BUCKLE SW
10	SB	PKB SW
11	G	BRAKE OIL SW
12	LG	ODO TRIP SW
13	B	ILL CONT OUTPUT
14	–	–
15	LG	ACC
16	–	–
17	O	WASHER SW
18	Y	SECURITY
19	V	OUTSIDE TEMP SENS SIG
20	R	OUTSIDE TEMP SENS GND
21	B	GND (ILL)
22	B	GND2 (POWER)
23	B	GND3 (CIRCUIT)
24	O	FUEL M GND
25	GR	ECO MODE SW

Terminal No.	Color of Wire	Signal Name
26	–	–
27	LG	BAT
28	GR	IGN
29	V	AS BUCKLE SW
30	–	–
31	GR	OUTSIDE TEM SENS PWR
32	P	A/C PD CUT
33	R	ILL CONT SW +
34	Y	ILL CONT SW -
35	–	–
36	–	–
37	–	–
38	L	CHG
39	W	SPORTS MODE SW
40	–	–

Connector No.	M31
Connector Name	JOINT CONNECTOR-M01
Connector Color	GRAY

H.S.

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

Terminal No.	Color of Wire	Signal Name
5	P	–
6	P	–
7	P	–
9	P	–
10	P	–

Terminal No.	Color of Wire	Signal Name
15	L	–
16	L	–
17	L	–
19	L	–
20	L	–

Connector No.	M33
Connector Name	A/C AUTO AMP. (WITHOUT AUTO A/C)
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
23	P	PD CUT

ABNIA5816GB

Connector No.	M38
Connector Name	CVT SHIFT SELECTOR
Connector Color	WHITE

H.S.

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

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

Connector No.	M35
Connector Name	AIR BAG DIAGNOSIS SENSOR UNIT
Connector Color	YELLOW

H.S.

23	24	25	26		27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50

Terminal No.	Color of Wire	Signal Name
35	SB	AWL
38	V	SBR
45	P	CAN-L
46	L	CAN-H

Connector No.	M34
Connector Name	A/C AUTO AMP. (WITH AUTO A/C)
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
4	GR	AMB S
6	L	CAN-H
7	P	CAN-L
9	GR	METER 5V
10	L	S GND

Connector No.	M66
Connector Name	ILLUMINATION CONTROL SWITCH
Connector Color	WHITE

H.S.

4	3	2	1
8	7	6	5

Terminal No.	Color of Wire	Signal Name
1	R	–
2	Y	–
4	B	–
6	O	–
8	B	–

Connector No.	M60
Connector Name	JOINT CONNECTOR-M06
Connector Color	BLUE

H.S.

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

Terminal No.	Color of Wire	Signal Name
5	LG	–
9	W	–
11	R	–
14	L	–
17	LG	–
20	L	–

Connector No.	M53
Connector Name	JOINT CONNECTOR-M03
Connector Color	PINK

H.S.

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

Terminal No.	Color of Wire	Signal Name
13	P	–
14	P	–
15	P	–
18	L	–
19	L	–
20	L	–

ABNIA5817GB

Connector No.	M71
Connector Name	JOINT CONNECTOR-M05
Connector Color	PINK

H.S.

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

Terminal No.	Color of Wire	Signal Name
18	B	–
20	B	–

Connector No.	M79
Connector Name	COMBINATION SWITCH (SPIRAL CABLE)
Connector Color	GRAY

H.S.

20	19	18	17	16	15	14	13

Terminal No.	Color of Wire	Signal Name
13	R	–
16	L	–
17	BR	–

Connector No.	M80
Connector Name	COMBINATION SWITCH (SPIRAL CABLE)
Connector Color	GRAY

H.S.

25	24	31	32
27	21	22	33

Terminal No.	Color of Wire	Signal Name
25	B	–
32	LG	–
33	V	–

Connector No.	M81
Connector Name	SPORTS MODE SWITCH
Connector Color	BLUE

H.S.

4	3	2	1
8	7	6	5

Terminal No.	Color of Wire	Signal Name
6	W	–
8	B	–

Connector No.	M82
Connector Name	ECO MODE SWITCH
Connector Color	GRAY

H.S.

4	3	2	1
8	7	6	5

Terminal No.	Color of Wire	Signal Name
6	GR	–
8	B	–

Connector No.	M84
Connector Name	BCM (BODY CONTROL MODULE) (WITH INTELLIGENT KEY SYSTEM)
Connector Color	BLACK

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
23	W	SECURITY INDICATOR OUTPUT
39	L	CAN-H
40	P	CAN-L

ABNIA5818GB

Connector No.	M87
Connector Name	EPS CONTROL UNIT
Connector Color	WHITE

H.S.

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

Connector No.	M130
Connector Name	PARKING BRAKE SWITCH
Connector Color	BLACK

H.S.

Terminal No.	Color of Wire	Signal Name
1	SB	–

Connector No.	E2
Connector Name	JOINT CONNECTOR-E02
Connector Color	BLUE

H.S.

Terminal No.	Color of Wire	Signal Name
1	L	–
2	L	–
3	L	–
4	L	–
5	L	–
8	P	–
9	P	–
10	P	–
11	P	–
12	P	–

Connector No.	E4
Connector Name	WIRE TO WIRE
Connector Color	WHITE

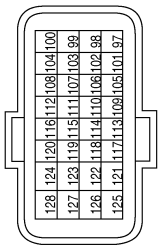
H.S.

Terminal No.	Color of Wire	Signal Name
17G	LG	–
27G	Y	–
41G	L	–
62G	V	–
63G	LG	–
95G	P	–
100G	L	–

ABNIA5819GB

Connector No.	E16
Connector Name	ECM
Connector Color	GRAY

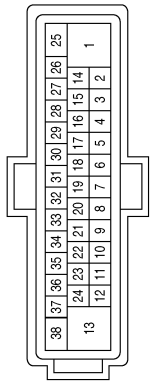
H.S.



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

Connector No.	E33
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

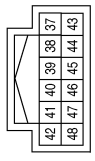
Connector No.	E40
Connector Name	BRAKE FLUID LEVEL SWITCH
Connector Color	BLACK

H.S.

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

Connector No.	E46
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE (ENGINE ROOM)
Connector Color	WHITE

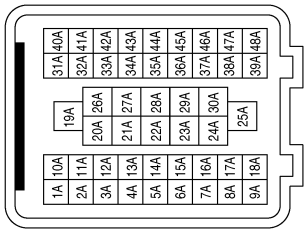
H.S.



Terminal No.	Color of Wire	Signal Name
40	P	CAN-L
41	L	CAN-H

Connector No.	E64
Connector Name	WIRE TO WIRE
Connector Color	BLACK

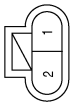
H.S.



Terminal No.	Color of Wire	Signal Name
1A	P	–
2A	L	–
32A	Y	–

Connector No.	E65
Connector Name	WASHER FLUID LEVEL SWITCH
Connector Color	BROWN

H.S.



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

ABNIA5824GB

Connector No.	E67
Connector Name	AMBIENT SENSOR
Connector Color	BLACK

H.S.

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

Connector No.	F23
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.	F2
Connector Name	ENGINE OIL PRESSURE SENSOR
Connector Color	BLACK

H.S.

Terminal No.	Color of Wire	Signal Name
1	W	–
2	G	–
3	R	–

Connector No.	F24
Connector Name	ECM
Connector Color	BLACK

H.S.

Terminal No.	Color of Wire	Signal Name
38	W	SENSOR GROUND
39	G	ENGINE OIL PRESSURE SENSOR
40	R	SENSOR POWER SUPPLY

Connector No.	F15
Connector Name	GENERATOR
Connector Color	BLACK

H.S.

Terminal No.	Color of Wire	Signal Name
2	LG	–

Connector No.	F50
Connector Name	WIRE TO WIRE
Connector Color	BLACK

H.S.

Terminal No.	Color of Wire	Signal Name
1A	P	–
2A	L	–
32A	LG	–

ABNIA5825GB

Connector No.	B11
Connector Name	WIRE TO WIRE
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

Terminal No.	Color of Wire	Signal Name
8	LG	–

Connector No.	B10
Connector Name	WIRE TO WIRE
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

Terminal No.	Color of Wire	Signal Name
16	BR	–
32	L	–

Connector No.	B18
Connector Name	AIR BAG DIAGNOSIS SENSOR UNIT
Connector Color	YELLOW

H.S.

51	52	53	54	55	56
57	58	59	60	61	62	63	64
65	66	67	68	69	70	71	72

Terminal No.	Color of Wire	Signal Name
67	LG	RH BUCKLE SW +

Connector No.	B16
Connector Name	SEAT BELT BUCKLE SWITCH LH
Connector Color	WHITE

H.S.

4	3	2	1

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

Connector No.	B6
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

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

Terminal No.	Color of Wire	Signal Name
13	V	–
20	B	–

Connector No.	B15
Connector Name	AIR BAG DIAGNOSIS SENSOR UNIT
Connector Color	YELLOW

H.S.

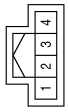
1	2		3	4	5	6
7	8	9	10	11	12	13	14
15	16	17	18	19	20	21	22

Terminal No.	Color of Wire	Signal Name
20	V	LH BUCKLE SW+

ABNIA5820GB

Connector No.	B21
Connector Name	FRONT DOOR SWITCH LH
Connector Color	WHITE

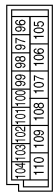
H.S.



Terminal No.	Color of Wire	Signal Name
3	Y	–

Connector No.	B24
Connector Name	BCM (BODY CONTROL MODULE) (WITH INTELLIGENT KEY SYSTEM)
Connector Color	BLACK

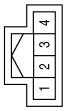
H.S.



Terminal No.	Color of Wire	Signal Name
97	GR	DOOR SW (RL)
98	Y	DOOR SW (DR)
99	P	DOOR SW (RR)
100	R	DOOR SW (AS)
103	V	TRUNK/GLASS HATCH SW

Connector No.	B26
Connector Name	REAR DOOR SWITCH LH
Connector Color	WHITE

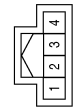
H.S.



Terminal No.	Color of Wire	Signal Name
3	GR	–

Connector No.	B28
Connector Name	FRONT DOOR SWITCH RH
Connector Color	WHITE

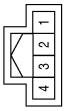
H.S.



Terminal No.	Color of Wire	Signal Name
3	R	–

Connector No.	B32
Connector Name	SEAT BELT BUCKLE SWITCH RH
Connector Color	WHITE

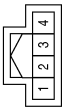
H.S.



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

Connector No.	B41
Connector Name	REAR DOOR SWITCH RH
Connector Color	WHITE

H.S.



Terminal No.	Color of Wire	Signal Name
3	P	–

ABNIA5821GB

Connector No.	B48
Connector Name	FUEL LEVEL SENSOR UNIT AND FUEL PUMP
Connector Color	GRAY

H.S.

1 2 3 4 5

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

Connector No.	B57
Connector Name	BCM (BODY CONTROL MODULE) (WITHOUT INTELLIGENT KEY SYSTEM)
Connector Color	BLACK

H.S.

49 48 47 46 45 44 43 42 41
55 54 53 52 51 50

Terminal No.	Color of Wire	Signal Name
45	R	DOOR SW (AS)
46	Y	DOOR SW (DR)
47	GR	DOOR SW (RL)
48	P	DOOR SW (RR)
51	V	TRUNK SW

Connector No.	B59
Connector Name	TRUNK LID OPENER ASSEMBLY
Connector Color	WHITE

H.S.

1 2 3

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

Connector No.	B73
Connector Name	JOINT CONNECTOR-B01
Connector Color	BLACK

H.S.

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

Terminal No.	Color of Wire	Signal Name
16	V	–
17	R	–
18	LG	–

Connector No.	B93
Connector Name	WIRE TO WIRE
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

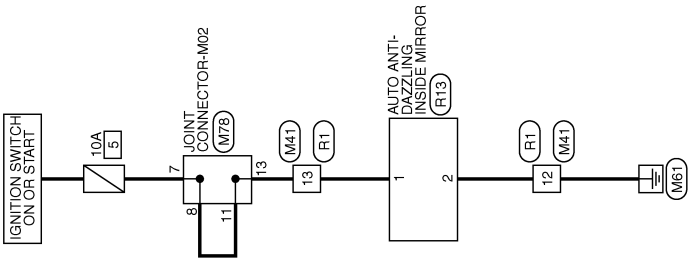
Terminal No.	Color of Wire	Signal Name
13	R	–
20	B	–

ABNIA5822GB

COMPASS

Wiring Diagram

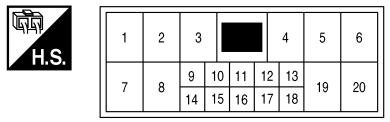
INFOID:0000000009758259



ABNWA2116GB

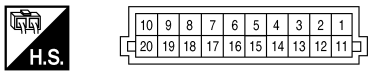
COMPASS CONNECTORS

Connector No.	M41
Connector Name	WIRE TO WIRE
Connector Color	WHITE



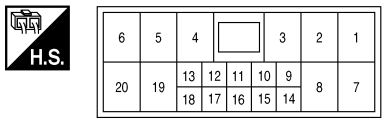
Terminal No.	Color of Wire	Signal Name
12	B	–
13	GR	–

Connector No.	M78
Connector Name	JOINT CONNECTOR-M02
Connector Color	PINK



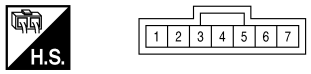
Terminal No.	Color of Wire	Signal Name
7	G	–
8	LG	–
11	LG	–
13	GR	–

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



Terminal No.	Color of Wire	Signal Name
12	B	–
13	BR	–

Connector No.	R13
Connector Name	AUTO ANTI-DAZZLING INSIDE MIRROR
Connector Color	BLACK



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

ABNIA5772GB

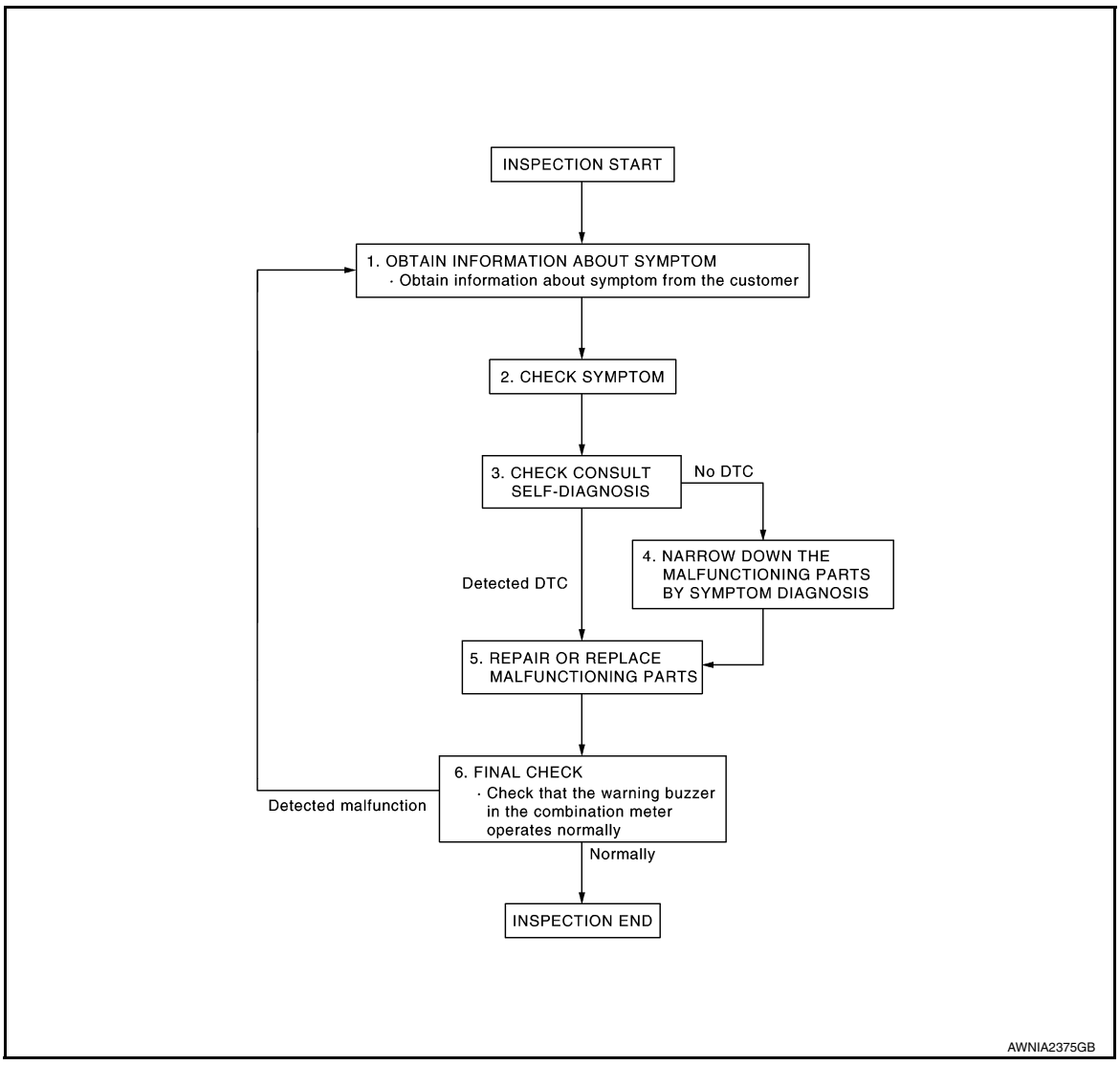
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORKFLOW

Work flow

INFOID:0000000010295996

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-26, "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:0000000009758261

DTC DETECTION LOGIC

DTC	CONSULT	Detection condition	Possible malfunction location
U1000	CAN COMM CIRC [U1000]	When combination meter is not receiving CAN communication signals for 2 seconds or more.	Combination meter

Diagnosis Procedure

INFOID:0000000009758262

1.CHECK CAN COMMUNICATION

Select SELF-DIAG RESULTS mode for METER/M&A with CONSULT.

>> GO TO LAN system. Refer to LAN-16, "Trouble Diagnosis Flow Chart".

U1010 CONTROL UNIT (CAN)

Description

INFOID:0000000009758263

Initial diagnosis of combination meter.

DTC Logic

INFOID:0000000009758264

DTC DETECTION LOGIC

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

Diagnosis Procedure

INFOID:0000000009758265

1.REPLACE COMBINATION METER

When DTC U1010 is detected, replace combination meter. Refer to MWI-77, "Removal and Installation".

>> Inspection End.

B2205 VEHICLE SPEED

Description

INFOID:0000000009758266

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

DTC Logic

INFOID:0000000009758267

DTC DETECTION LOGIC

DTC	CONSULT	Detection condition	Possible malfunction location
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:0000000009758268

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 ABS actuator and electric unit (control unit) self-diagnosis. Refer to BRC-31, "CONSULT Function (ABS)".

NO >> Replace combination meter. Refer to MWI-77, "Removal and Installation".

B2267 ENGINE SPEED

Description

INFOID:0000000009758269

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

DTC Logic

INFOID:0000000009758270

DTC DETECTION LOGIC

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

Diagnosis Procedure

INFOID:0000000009758271

1.PERFORM SELF-DIAGNOSIS OF ECM

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

>> Refer to EC-66, "CONSULT Function".

B2268 WATER TEMP

Description

INFOID:0000000009758272

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

DTC Logic

INFOID:0000000009758273

DTC DETECTION LOGIC

DTC	CONSULT	Detection condition	Probable malfunction location
B2268	WATER TEMP METER [B2268]	ECM continuously transmits abnormal engine coolant temperature signals for 60 seconds or more	• Engine coolant temperature sensor • ECM

Diagnosis Procedure

INFOID:0000000009758274

1.PERFORM SELF-DIAGNOSIS OF ECM

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

>> Refer to EC-66, "CONSULT Function".

POWER SUPPLY AND GROUND CIRCUIT
COMBINATION METER

COMBINATION METER : Diagnosis Procedure

INFOID:0000000009758275

Regarding Wiring Diagram information, refer to MWI-28, "Wiring Diagram".

1.CHECK FUSES

Check that the following fuses are not blown.

Unit	Power source	Fuse No.
Combination meter	Battery	8
	Ignition switch ON or ACC	18
	Ignition switch ON or START	3

Is the fuse blown?

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

2.POWER SUPPLY CIRCUIT CHECK

Check voltage between combination meter harness connector M24 terminals 15, 27, 28 and ground.

Terminals			Ignition switch position			
(+)		(–)	OFF	ACC	ON	START
Connector	Terminal					
M24	27	Ground	Battery voltage	Battery voltage	Battery voltage	Battery voltage
	15		0V	Battery voltage	Battery voltage	0V
	28		0V	0V	Battery voltage	Battery voltage

Is the inspection result normal?

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

3.CHECK GROUND CIRCUIT

Check continuity between combination meter harness connector M24 terminals 21, 22, 23 and ground.

Combination meter		Ground	Continuity
Connector	Terminal		
M24	21		Yes
	22		
	23		

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:0000000010288788

Regarding Wiring Diagram information, refer to BCS-51, "Wiring Diagram".

1.CHECK FUSES AND FUSIBLE LINK

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

Terminal No.	Signal name	Fuses and fusible link No.
88	Battery power supply	12 (10A)
90		G (40A)

Is the fuse blown?

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

2.CHECK POWER SUPPLY CIRCUIT

1. Disconnect BCM connector M85.
2. Check voltage between BCM connector M85 and ground.

BCM		Ground	Voltage
Connector	Terminal		
M85	88	—	Battery voltage
	90		

Is the inspection result normal?

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

3.CHECK GROUND CIRCUIT

Check continuity between BCM connector M85 and ground.

BCM		Ground	Continuity
Connector	Terminal		
M85	93	—	Yes

Is the inspection result normal?

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

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

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

INFOID:0000000010288789

Regarding Wiring Diagram information, refer to BCS-111, "Wiring Diagram".

1.CHECK FUSES AND FUSIBLE LINK

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

Terminal No.	Signal name	Fuses and fusible link No.
63	Battery power supply	12 (10A)
70		G (40A)
11	Ignition switch ACC or ON	18 (10A)

Is the fuse blown?

YES >> Replace the blown fuse or fusible link after repairing the affected circuit.

NO >> GO TO 2.

2.CHECK POWER SUPPLY CIRCUIT

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

BCM		Ground	Ignition switch position		
Connector	Terminal		OFF	ACC	ON
M20	63		Battery voltage	Battery voltage	Battery voltage
	70				
M21	11	—	0 V	Battery voltage	Battery voltage

Is the inspection result normal?

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

3.CHECK GROUND CIRCUIT

Check continuity between BCM connector and ground.

BCM		Ground	Continuity
Connector	Terminal		
M20	65	—	Yes

Is the inspection result normal?

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

STEERING SWITCH (METER CONTROL SWITCH) SIGNAL CIRCUIT

Diagnosis Procedure

INFOID:0000000009758278

Regarding Wiring Diagram information, refer to MWI-28, "Wiring Diagram".

1.CHECK COMBINATION METER INPUT SIGNAL

1. Turn ignition switch ON.
2. Measure voltage between the following terminals of the combination meter.

Terminals			Condition	Voltage (Approx.)
Combination meter		(–)		
Connector	(+)			
M24	12	Ground	When meter 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 STEERING SWITCH SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect combination meter connector M24 and combination switch connector M80.
3. Check continuity between combination meter harness connector and steering switch harness connector.

Combination meter		Combination switch		Continuity
Connector	Terminal	Connector	Terminal	
M24	12	M80	32	Yes

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

Combination meter		Ground	Continuity
Connector	Terminal		
M24	12		No

Is the inspection result normal?

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

Component Inspection

INFOID:0000000009758279

1.CHECK STEERING SWITCH

Check continuity between spiral cable terminals.

Terminals			Condition	Continuity
Steering switch (with audio steering switches)	17	16	When steering switch is pressed	Yes
			Other than the above	No
Steering switch (without audio steering switches)	13	16	When steering switch is pressed	Yes
			Other than the above	No

Is the inspection result normal?

YES >> Inspection End.
NO >> Replace steering switch. Refer to ST-10, "Removal and Installation".

ILLUMINATION CONTROL SWITCH SIGNAL CIRCUIT

Diagnosis Procedure

INFOID:0000000009758280

Regarding Wiring Diagram information, refer to MWI-28, "Wiring Diagram".

1.CHECK COMBINATION METER INPUT SIGNAL

1. Turn ignition switch ON.
2. Check voltage between the following terminals of the illumination control switch.

Illumination control switch		Ground	Condition	Voltage (Approx.)
Connector	Terminals			
M66	1	Ground	When illumination control switch (+) is pressed	0 V
			Other than the above	5 V
	2		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 ILLUMINATION CONTROL SWITCH SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect combination meter connector M24 and illumination control switch connector M66.
3. Check continuity between combination meter harness connector and illumination control switch harness connector.

Combination meter		Illumination control switch		Continuity
Connector	Terminal	Connector	Terminal	
M24	33	M66	1	Yes
	34		2	

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

Combination meter		Ground	Continuity
Connector	Terminal		
M24	33		No
	34		

Is the inspection result normal?

YES >> Check illumination control switch. Refer to MWI-56, "Component Inspection".
NO >> Repair or replace harness or connector.

Component Inspection

INFOID:0000000009758281

1.CHECK ILLUMINATION CONTROL SWITCH

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

Terminals		Condition	Continuity
Illumination control switch			
1	4	When illumination control switch (+) is pressed	Yes
		Other than the above	No
2		When illumination control switch (–) is pressed	Yes
		Other than the above	No

Is the inspection result normal?

YES >> Inspection End.
NO >> Replace illumination control switch. Refer to MWI-80, "Removal and Installation".

FUEL LEVEL SENSOR SIGNAL CIRCUIT

Description

INFOID:0000000009758282

The fuel level sensor unit and fuel pump detects the approximate fuel level in the fuel tank and transmits the fuel level signal to the combination meter.

Component Function Check

INFOID:0000000009758283

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	47.2
3/4	38.4
1/2	26
1/4	13.9
Empty	0.0

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

YES >> Inspection End.
NO >> Replace combination meter. Refer to MWI-77, "Removal and Installation".

Diagnosis Procedure

INFOID:0000000009758284

Regarding Wiring Diagram information, refer to MWI-28, "Wiring Diagram".

1.CHECK FUEL LEVEL SENSOR CIRCUIT

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

Combination meter		Fuel level sensor unit		Continuity
Connector	Terminal	Connector	Terminal	
M24	6	B48	2	Yes

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

Combination meter		Ground	Continuity
Connector	Terminal		
M24	6		No

Is the inspection result normal?

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

2.CHECK FUEL LEVEL SENSOR GROUND CIRCUIT

1. Check continuity between fuel level sensor unit harness connector and combination meter harness connector.

Fuel level sensor unit		Combination meter		Continuity
Connector	Terminal	Connector	Terminal	
B48	5	M24	24	Yes

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

Combination meter		Ground	Continuity
Connector	Terminal		
M24	24		Yes

Is the inspection result normal?

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

3.CHECK INSTALLATION CONDITION

Check fuel level sensor unit installation, and check whether the float arm interferes or binds with any of the internal components in the fuel tank.

Is the inspection result normal?

YES >> Inspection End.
NO >> Install the fuel level sensor unit properly. Refer to FL-6, "Removal and Installation".

Component Inspection

INFOID:0000000009758285

1.REMOVE FUEL LEVEL SENSOR UNIT

Remove the fuel level sensor unit. Refer to FL-6, "Removal and Installation".

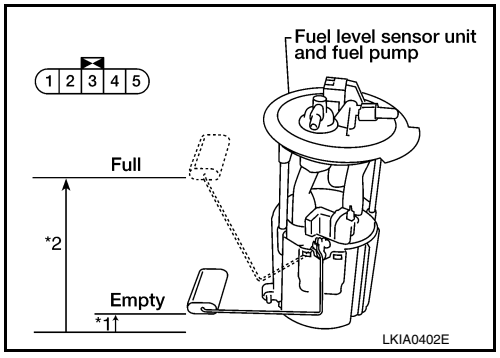
>> GO TO 2.

2.CHECK FUEL LEVEL SENSOR UNIT

Check the resistance between fuel level sensor unit and fuel pump.

Terminals		Condition	Resistance (Ω) (Approx.)	Height [mm (in)]
Fuel level sensor unit				
2	5	Full* (2)	51	151.0 (5.9)
		Empty* (1)	278	13.8 (0.5)

*: When float rod is in contact with stopper.



Is inspection result OK?

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

PARKING BRAKE SWITCH SIGNAL CIRCUIT

Component Function Check

INFOID:0000000009758286

1.CHECK PARKING BRAKE SWITCH OPERATION

Check that brake warning lamp in combination meter turns ON/OFF when parking brake is actuated.

Is the inspection result normal?

YES >> Inspection End.
NO >> Proceed to diagnosis procedure. Refer to MWI-60, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000009758287

Regarding Wiring Diagram information, refer to MWI-28, "Wiring Diagram".

1.CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect combination meter and parking brake switch connectors.
3. Check connectors and terminals for deformation, disconnection, looseness or damage.

Is the inspection result normal?

YES >> GO TO 2
NO >> Repair or replace as necessary.

2.CHECK PARKING BRAKE SWITCH

Check parking brake switch. Refer to MWI-61, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 3.
NO >> Replace parking brake switch. Refer to PB-7, "Exploded View".

3.CHECK PARKING BRAKE SWITCH SIGNAL

With CONSULT.

1. Connect combination meter connector and parking brake switch connectors.
2. Turn ignition switch ON.
3. In “DATA MONITOR” select “PARK BRAKE SW” and check parking brake switch signal.

Condition	DATA MONITOR
Actuate parking brake	On
Release parking brake	Off

Is the inspection result normal?

YES >> Refer to MWI-45, "Work flow".
NO >> GO TO 4.

4.CHECK PARKING BRAKE SWITCH CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect combination meter and parking brake switch connectors.
3. Check continuity between combination meter connector M24 terminal 10 and parking brake switch connector M130 terminal 1.

Combination meter		Parking brake switch		Continuity
Connector	Terminal	Connector	Terminal	
M24	10	M130	1	Yes

4. Check continuity between combination meter connector and ground.

Combination meter		—	Continuity
Connector	Terminal		
M24	10	Ground	No

Is the inspection result normal?

YES >> Replace combination meter. Refer to MWI-77, "Removal and Installation".
NO >> Repair or replace malfunctioning components.

Component Inspection

INFOID:0000000009758288

1.CHECK PARKING BRAKE SWITCH

1. Turn ignition switch OFF.
2. Disconnect parking brake switch connector.
3. Check continuity between parking brake switch terminal 1 and ground.

Parking brake switch terminal	—	Condition	Continuity
1	Ground	Parking brake actuated	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:0000000009758289

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

Diagnosis Procedure

INFOID:0000000009758290

Regarding Wiring Diagram information, refer to MWI-28, "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	
M24	19	E67	1	Yes

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

Combination meter		Ground	Continuity
Connector	Terminal		
M24	19		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	
M24	20	E67	2	Yes

Is the inspection result normal?

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

Component Inspection

INFOID:0000000009758291

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-106, "Removal and Installation".

A/C AUTO AMP. CONNECTION RECOGNITION SIGNAL CIRCUIT

Description

INFOID:0000000009758292

A/C auto amp. transmits the A/C auto amp. connection recognition signal to the combination meter.

Diagnosis Procedure (With Manual A/C)

INFOID:0000000010295727

Regarding Wiring Diagram information, refer to MWI-28, "Wiring Diagram".

1.CHECK A/C AUTO AMP. CONNECTION RECOGNITION SIGNAL

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

(+)		(–)	Voltage (Approx.)
Combination meter		Ground	5 V
Connector	Terminal		
M24	32		

Is the inspection result normal?

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

2.CHECK A/C AUTO AMP. CONNECTION RECOGNITION SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect combination meter connector and A/C auto amp. connector.
3. Check continuity between combination meter harness connector and A/C auto amp. harness connector.

Combination meter		A/C auto amp.		Continuity
Connector	Terminal	Connector	terminal	
M24	32	M33	23	Yes

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

Combination meter		Ground	Continuity
Connector	Terminal		
M24	32		No

Is the inspection result normal?

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

WASHER FLUID LEVEL SWITCH CIRCUIT

Description

INFOID:0000000009758294

Transmits the washer level switch signal to the combination meter.

Diagnosis Procedure

INFOID:0000000009758295

Regarding Wiring Diagram information, refer to MWI-28, "Wiring Diagram".

1.CHECK WASHER LEVEL SWITCH SIGNAL CIRCUIT

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

Terminals				Continuity
Combination meter		Washer fluid level switch		
Connector	Terminal	Connector	Terminal	
M24	17	E65	1	Yes

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

Terminals			Continuity
Combination meter		Ground	
Connector	Terminal		
M24	17		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.

Terminals			Continuity
Washer level switch		Ground	
Connector	Terminal		
E65	2		Yes

Is the inspection result normal?

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

Component Inspection

INFOID:0000000009758296

1.CHECK WASHER FLUID LEVEL SWITCH

Check continuity between washer fluid level switch terminals 1 and 2.

Terminal	Washer fluid level	Continuity
1 - 2	Low	Yes
	High	No

Is the inspection result normal?

YES >> Inspection End.
NO >> Replace washer fluid level switch.Refer to WW-53, "Removal and Installation".

SYMPTOM DIAGNOSIS

THE FUEL GAUGE INDICATOR DOES NOT OPERATE

Description

INFOID:0000000009758297

Fuel gauge will not indicate from a certain position.

Diagnosis Procedure

INFOID:0000000009758298

1.CHECK FUEL LEVEL SENSOR SIGNAL CIRCUIT

Check the fuel level sensor signal circuit. Refer to MWI-58, "Diagnosis Procedure".

Is the inspection result normal?

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

2.COMPONENT INSPECTION

Perform components inspection for the fuel level sensor unit and combination meter. Refer to MWI-59, "Component Inspection".

Is the inspection result normal?

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

3.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 >> Replace fuel level sensor unit. Refer to FL-6, "Removal and Installation".
NO >> Repair or replace malfunctioning parts.

THE STEERING SWITCH (METER CONTROL SWITCH) IS INOPERATIVE

Description

INFOID:0000000009758299

If any of the following malfunctions is found for the steering switch (meter control switch) operation.
- All switches are inoperative
- The specified switch cannot be operated

Diagnosis Procedure

INFOID:0000000009758300

1.CHECK STEERING SWITCH SIGNAL CIRCUIT

Check the steering switch signal circuit. Refer to MWI-55, "Diagnosis Procedure".

Is the inspection result normal?

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

2.CHECK STEERING SWITCH (METER CONTROL SWITCH)

Check the steering switch. Refer to MWI-55, "Component Inspection".

Is the inspection result normal?

YES >> Replace combination meter. Refer to MWI-77, "Removal and Installation".
NG >> Replace steering switch. Refer to MWI-79, "Removal and Installation".

THE ILLUMINATION CONTROL SWITCH IS INOPERATIVE

Description

INFOID:0000000009758301

If any of the following malfunctions is found for the illumination control switch operation.
- All switches are inoperative
- The specified switch cannot be operated

Diagnosis Procedure

INFOID:0000000009758302

1.CHECK ILLUMINATION CONTROL SWITCH SIGNAL CIRCUIT

Check the illumination control switch signal circuit. Refer to MWI-56, "Diagnosis Procedure".

Is the inspection result normal?

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

2.CHECK ILLUMINATION CONTROL SWITCH

Check the illumination control switch. Refer to MWI-56, "Component Inspection".

Is the inspection result normal?

YES >> Replace combination meter. Refer to MWI-77, "Removal and Installation".
NG >> Replace illumination control switch. Refer to MWI-80, "Removal and Installation".

THE OIL PRESSURE WARNING LAMP DOES NOT TURN ON

Description

INFOID:0000000009758303

The oil pressure warning lamp stays off when the ignition switch is turned ON.

Diagnosis Procedure

INFOID:0000000009758304

1.CHECK COMBINATION METER OIL PRESSURE WARNING LIGHT

1. Select METER/M&A on CONSULT.
2. Observe OIL W/L DATA MONITOR while operating the ignition switch.

Component	Condition	CONSULT
Oil pressure warning light	Ignition ON	ON
	Ignition OFF	OFF

Is the inspection result normal?

YES >> Inspection End.
NO >> Replace combination meter. Refer to MWI-77, "Removal and Installation".

THE OIL PRESSURE WARNING LAMP DOES NOT TURN OFF

Description

INFOID:0000000009758305

The oil pressure warning lamp remains illuminated while the engine is running (normal oil pressure).

Diagnosis Procedure

INFOID:0000000009758306

1.CHECK COMBINATION METER INPUT SIGNAL

1. Start the engine and select METER/M&A on CONSULT.
2. Observe OIL W/L DATA MONITOR and the operation of the oil pressure warning lamp on the combination meter.

Component	Condition	CONSULT
Oil pressure warning light	Engine running	OFF

Is the inspection result normal?

YES >> Perform ECM self-diagnosis. Refer to EC-66, "CONSULT Function".
NO >> Replace combination meter. Refer to MWI-77, "Removal and Installation".

THE DOOR OPEN WARNING CONTINUES DISPLAYING, OR DOES NOT DISPLAY

Description

INFOID:0000000009758307

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

Diagnosis Procedure

INFOID:0000000009758308

1.CHECK BCM INPUT SIGNAL

Check the BCM input signal. Refer to DLK-102, "Component Function Check" (with Intelligent Key) or DLK-253, "Component Function Check" (without Intelligent Key).

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 doors.

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-77, "Removal and Installation".
NO >> Replace BCM. Refer to BCS-73, "Removal and Installation" (with Intelligent Key) or BCS-126, "Removal and Installation" (without Intelligent Key).

3.CHECK DOOR SWITCH SIGNAL CIRCUIT

Check the door switch signal circuit. Refer to DLK-102, "Diagnosis Procedure" (with Intelligent Key) or DLK-253, "Diagnosis Procedure" (without Intelligent Key).

Is the inspection result normal?

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

4.CHECK DOOR SWITCH

Perform a unit check for the door switch. Refer to DLK-103, "Component Inspection" (with Intelligent Key) or DLK-255, "Component Inspection" (without Intelligent Key).

Is the inspection result normal?

YES >> Replace combination meter. Refer to MWI-77, "Removal and Installation".
NO >> Replace applicable door switch. Refer to DLK-194, "Removal and Installation" (with Intelligent Key) or DLK-341, "Removal and Installation" (without Intelligent Key).

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

Description

INFOID:0000000009758309

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

Diagnosis Procedure

INFOID:0000000009758310

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-77, "Removal and Installation".
NO >> GO TO 2.

2.CHECK PARKING BRAKE SWITCH

Check the parking brake switch. Refer to MWI-61, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 3.
NO >> Replace parking brake switch.

3.CHECK PARKING BRAKE SWITCH SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Check the parking brake switch signal circuit. Refer to MWI-60, "Diagnosis Procedure".

Is the inspection result normal?

YES >> Replace combination meter. Refer to MWI-77, "Removal and Installation".
NO >> Repair or replace harness or connector.

THE AMBIENT TEMPERATURE DISPLAY IS INCORRECT

Description

INFOID:0000000009758311

- 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:0000000009758312

1.CHECK AMBIENT SENSOR SIGNAL CIRCUIT

Check the ambient sensor signal circuit. Refer to HAC-63, "Diagnosis Procedure" (with auto A/C) or MWI-62, "Diagnosis Procedure" (without auto A/C).

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-62, "Component Inspection".

Is the inspection result normal?

YES >> Replace combination meter. Refer to MWI-77, "Removal and Installation".
NO >> Replace ambient sensor. Refer to HAC-106, "Removal and Installation".

THE LOW WASHER FLUID WARNING LAMP DOES NOT TURN ON OR OFF

Description

INFOID:0000000009758313

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

Diagnosis Procedure

INFOID:0000000009758314

1.CHECK WASHER FLUID LEVEL SWITCH SIGNAL CIRCUIT

Check the washer fluid level switch 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 WASHER FLUID LEVEL SWITCH

Check for the washer fluid level switch. Refer to MWI-65, "Component Inspection".

Is the inspection result normal?

YES >> Replace combination meter. Refer to MWI-77, "Removal and Installation"
NO >> Replace washer fluid level switch. Refer to WW-53, "Removal and Installation".

NORMAL OPERATING CONDITION
COMPASS

COMPASS : Description

INFOID:0000000010288795

COMPASS

- The electronic compass is highly protected from changes in most magnetic fields. However, some large changes in magnetic fields can affect it. Some examples are (but not limited to): high tension power lines, large steel buildings, subways, steel bridges, automatic car washes, large piles of scrap metal, etc. While this does not happen very often, it is possible.
- During normal operation, the Compass Mirror will continuously update the compass calibration to adjust for gradual changes in the vehicle's magnetic "remnant" field. If the vehicle is subjected to high magnetic influences, the compass may appear to indicate false headings, become locked, or appear that it is unable to be calibrated. If this occurs, perform the calibration procedure.
- If at any time the compass continually displays the incorrect direction or the reading is erratic or locked, verify the correct zone variance.

Symptom Chart

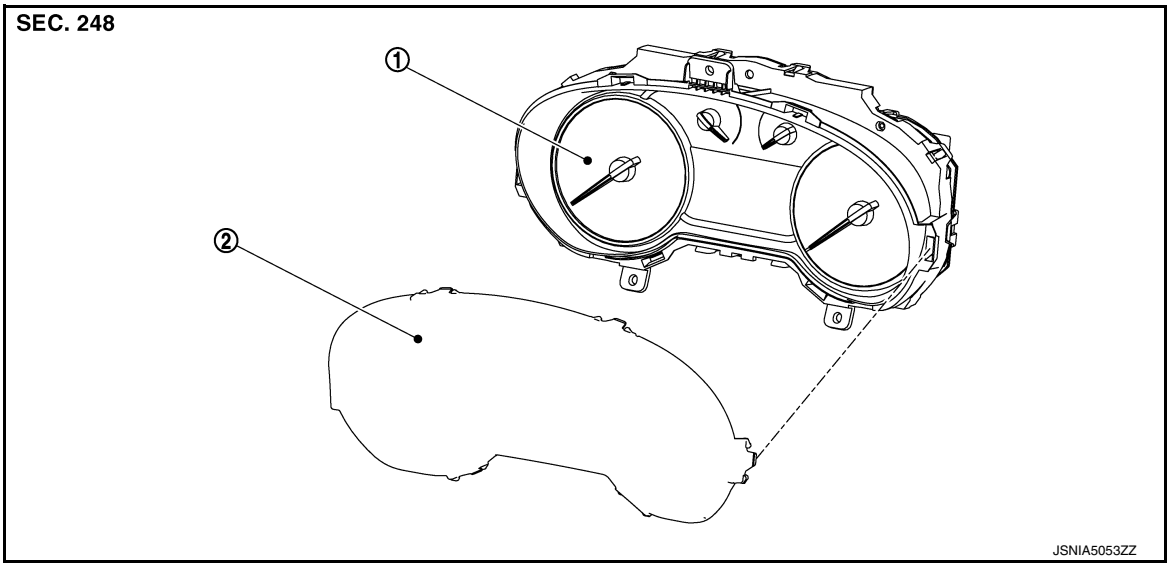
Symptom	Cause	Solution / Reference
The compass display reads "C".	• Compass is not calibrated. • Incorrect zone variance setting. • Large change in magnetic field (Steel bridges, subways, concentrations of metal, car washes, etc.) • Compass was calibrated incorrectly or in the presence of a strong magnetic field.	Perform Calibration. Refer to MWI-14, "COMPASS : System Description".
Compass shows the wrong direction.		
Compass does not change direction appears "Locked".		
Compass does not show all the directions, one or more is missing.		
The compass was calibrated but it "loses" calibration.		
On long trips the compass shows the wrong direction.		Perform Zone Variation Setting if correct reading is desired in that location. Refer to MWI-14, "COMPASS : System Description".

REMOVAL AND INSTALLATION

COMBINATION METER

Exploded View

INFOID:0000000009758315



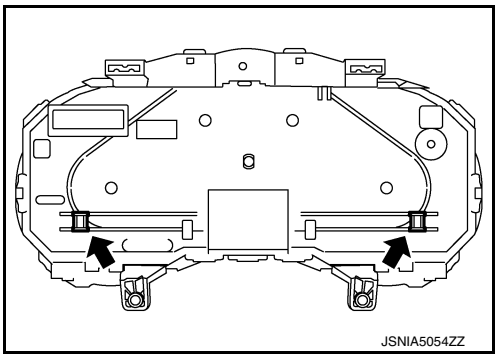
1. Combination meter
2. Front cover

Removal and Installation

INFOID:0000000009758316

REMOVAL

1. Remove cluster lid A. Refer to IP-19, "Removal and Installation".
2. Remove the screws from the combination meter.
3. Remove the combination meter.



4. Disconnect the combination meter harness connector and remove.

INSTALLATION

Installation is in the reverse order of removal.

Disassembly and Assembly

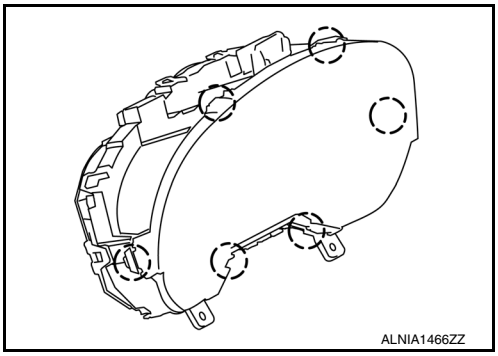
INFOID:0000000009758317

DISASSEMBLY

CAUTION:

- **Do not touch the display, pointer, the inside of front cover and the printed area of the dial during the work.**
- **Keep away from magnetic sources.**

1. Release the pawls and remove the front cover.
   ◌: Pawl



ASSEMBLY

Assembly is in the reverse order of disassembly.

CAUTION:

- **Do not touch the display, pointer, the inside of front cover and the printed area of the dial during the work.**
- **Keep away from magnetic sources.**

STEERING SWITCH

Removal and Installation

INFOID:0000000009758318

For removal and installation of the steering switch, refer to AV-62, "Removal and Installation".

ILLUMINATION CONTROL SWITCH

Removal and Installation

INFOID:0000000009758319

For removal and installation of the illumination control switch refer to INL-57, "Removal and Installation".