SECTION MWI
METER, WARNING LAMP & INDICATOR

CONTENTS

BASIC INSPECTION

DIAGNOSIS AND REPAIR WORKFLOW

Work Flow

INFOID:0000000001691232

DETAILED FLOW

1.CONFIRM SYMPTOM

Confirm symptom or customer complaint.

>> GO TO 2

2.CHECK SELF-DIAGNOSIS OPERATION OF COMBINATION METER

Perform self-diagnosis of combination meter. Refer to MWI-24, "Diagnosis Description".

Does self-diagnosis mode operate?

YES >> GO TO 3
NO >> Check power supply and ground circuit of combination meter. Refer to MWI-30, "COMBINATION METER : Diagnosis Procedure". Then, GO TO 4

3.CHECK COMBINATION METER (CONSULT-III)

Select “METER/M&A” on CONSULT-III and perform “SELF-DIAGNOSIS” of combination meter. Refer to MWI-25, "CONSULT-III Function (METER/M&A)".

Self-diagnostic results content

No malfunction detected>>Repair or replace the cause of symptom. Then, GO TO 4
Malfunction detected>>Refer to MWI-62, "DTC Index". Then, GO TO 4

4.CONFIRM OPERATION

Does the combination meter operate normally?

YES or NO

YES >> Inspection End.
NO >> GO TO 1

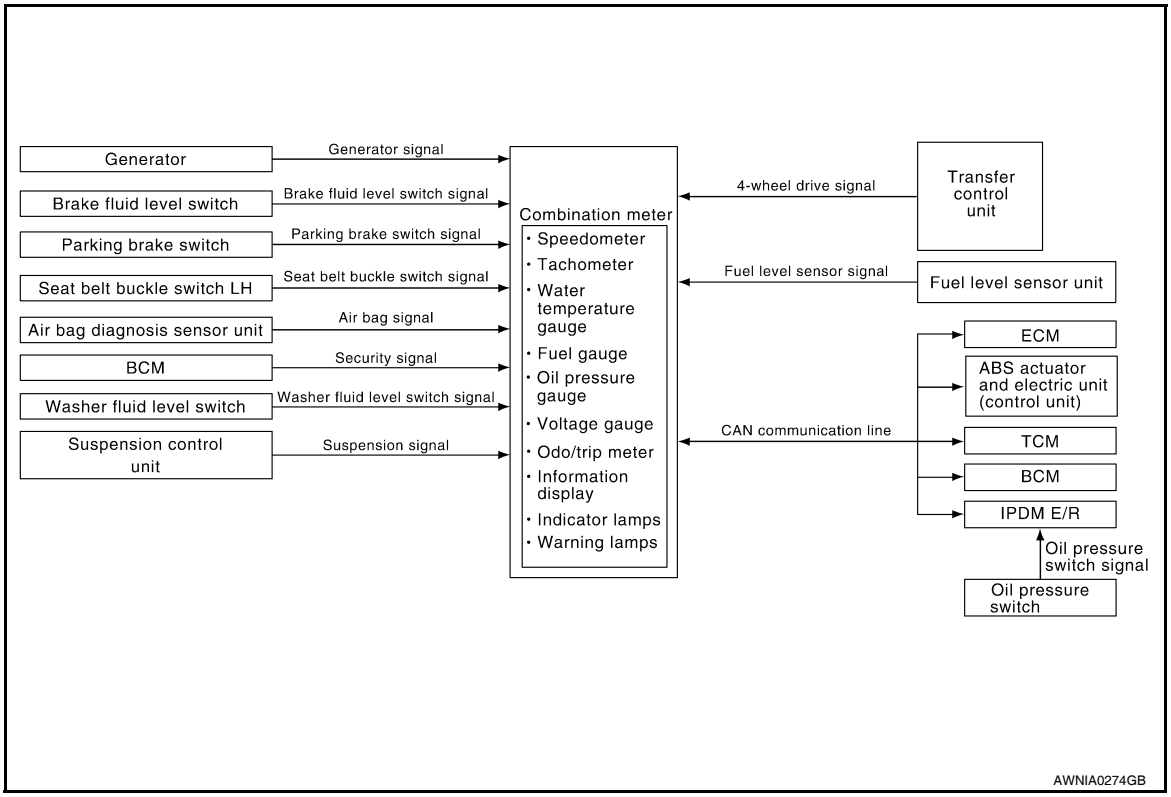
FUNCTION DIAGNOSIS

METER SYSTEM

METER SYSTEM

METER SYSTEM : System Diagram

INFOID:0000000001691233



METER SYSTEM : System Description

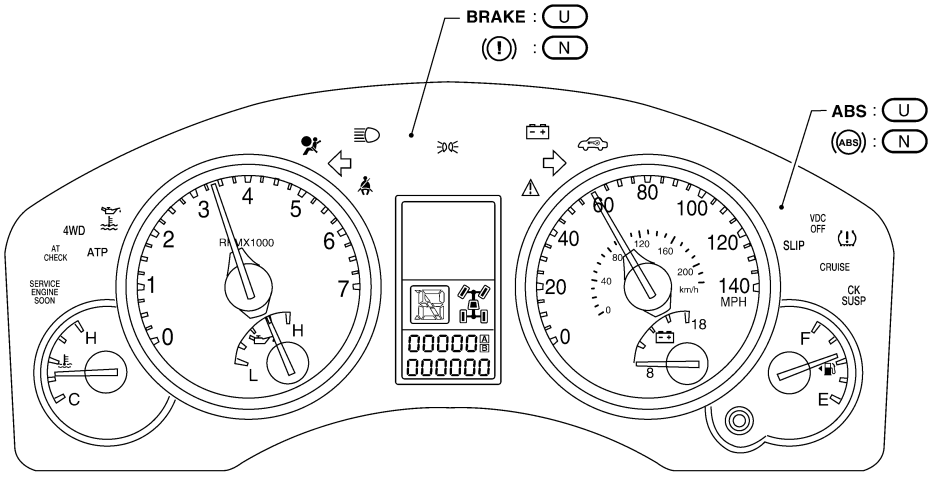
INFOID:0000000001691234

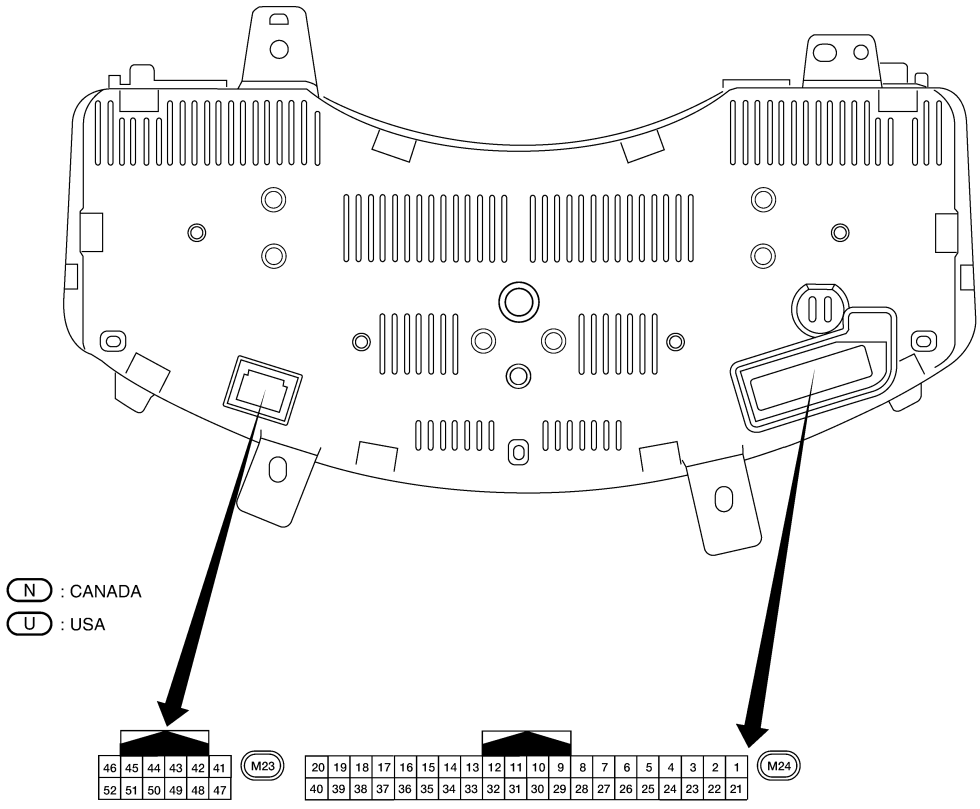
COMBINATION METER

- Speedometer, odo/trip meter, tachometer, fuel gauge, engine coolant temperature gauge, engine oil pressure gauge, voltage gauge and information display are controlled by the unified meter control unit, which is built into the combination meter.
- Warning and indicator lamps are controlled by the unified meter control unit and by components connected directly to the combination meter.
- Digital meter is adopted for odo/trip meter.*
  *The record of the odometer is kept even if the battery cable is disconnected. The record of the trip meter is erased when the battery cable is disconnected.
- Odo/trip meter segments can be checked in diagnosis mode.
- Meter/gauge can be checked in diagnosis mode.

METER SYSTEM : Arrangement of Combination Meter

INFOID:0000000001691235





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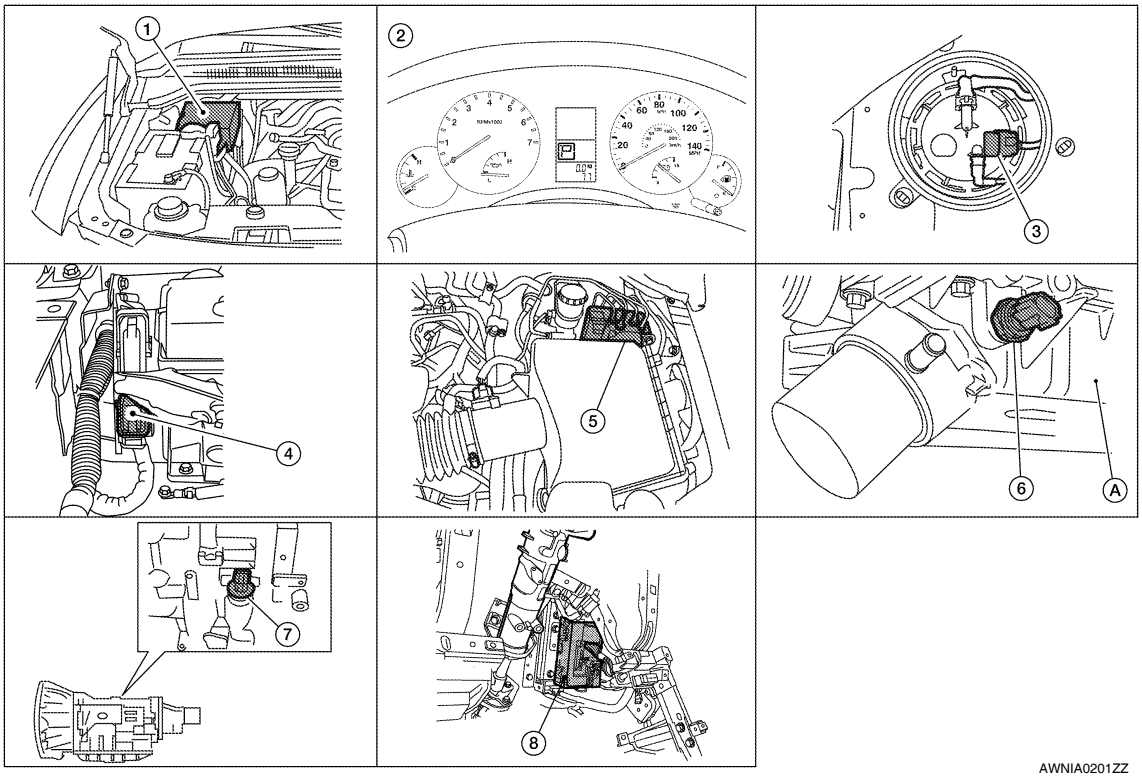
METER SYSTEM : Component Parts Location

INFOID:0000000001691236



AWNIA0201ZZ

1. IPDM E/R E122, E124
2. Combination meter M23, M24
3. Fuel level sensor unit and fuel pump C5 (view with inspection hole cover removed)
4. ECM E16 (view with battery removed)
5. ABS actuator and electric unit (control unit) E125
6. Oil pressure switch F4
   A: Oil pan (upper)
7. A/T assembly F9
8. BCM M18, M19 (view with instrument lower panel LH removed)

METER SYSTEM : Component Description

INFOID:0000000001691237

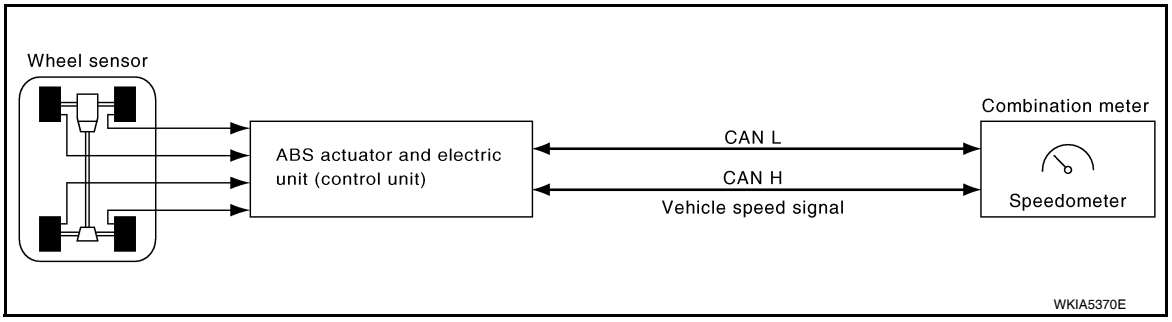
Unit	Description
Combination meter	Controls the following with the signals received from each unit via CAN communication and the signals from switches and sensors. • Speedometer • Tachometer • Engine coolant temperature gauge • Fuel gauge • Engine oil pressure gauge • Odo/trip meter • Voltage gauge • Indicator lamps • Warning lamps • Warning chime • Information display
IPDM E/R	IPDM E/R reads the ON/OFF signals of the oil pressure switch and transmits the oil pressure switch signal to the combination meter via BCM with CAN communication line.
Fuel level sensor unit	Refer to MWI-33, "Description".
Oil pressure switch	Refer to MWI-35, "Description".
ECM	Transmits the following signals to the combination meter with CAN communication line. • Engine speed signal • Engine coolant temperature signal • Fuel consumption monitor signal

Unit	Description
ABS actuator and electric unit (control unit)	Transmits the vehicle speed signal to the combination meter with CAN communication line.
BCM	• Transmits signals provided by various units to the combination meter with CAN communication line. • Transmits the security signal to the combination meter.
TCM	• Transmits shift position signal to the combination meter with CAN communication line. • Transmits A/T oil temperature signal to the combination meter with CAN communication line.
Washer level switch	Transmits the washer level signal to the combination meter.
Brake fluid level switch	Transmits the brake fluid level switch signal to the combination meter.
Parking brake switch	Refer to MWI-36, "Description".

SPEEDOMETER

SPEEDOMETER : System Diagram

INFOID:0000000001691238



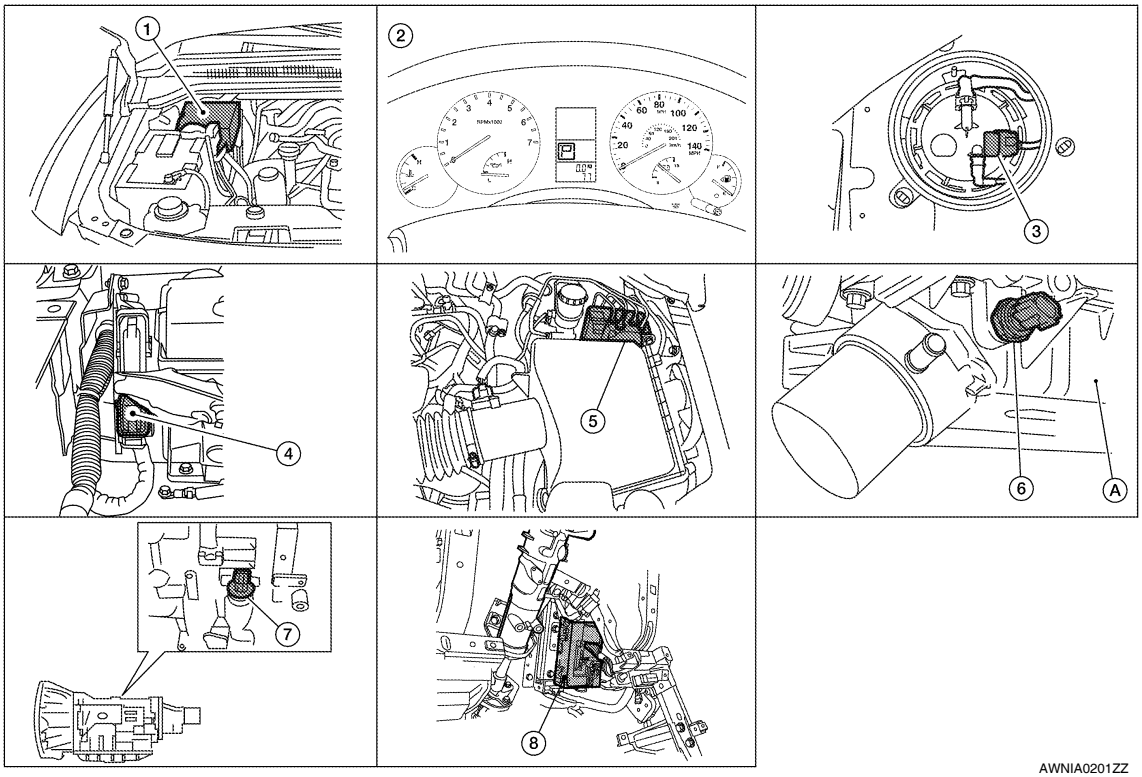
SPEEDOMETER : System Description

INFOID:0000000001691239

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

SPEEDOMETER : Component Parts Location

INFOID:0000000001696366



AWNIA0201ZZ

1. IPDM E/R E122, E124
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4. ECM E16 (view with battery removed)
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6. Oil pressure switch F4
   A: Oil pan (upper)
7. A/T assembly F9
8. BCM M18, M19 (view with instrument lower panel LH removed)

SPEEDOMETER : Component Description

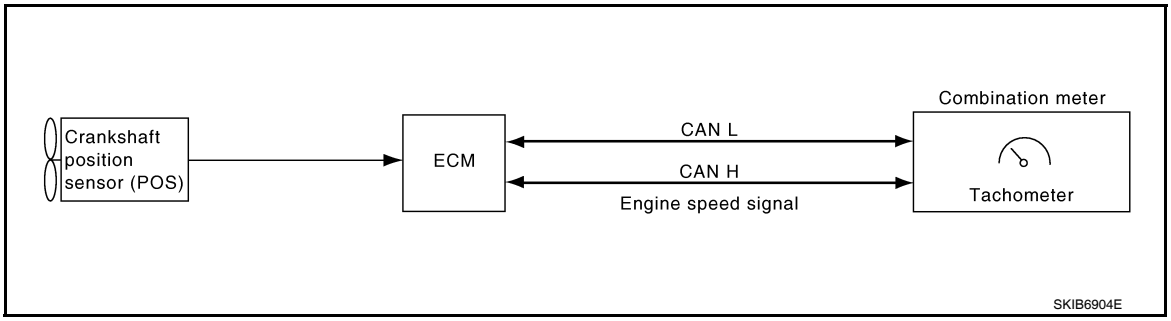
INFOID:0000000001691241

Unit	Description
Combination meter	Indicates the vehicle speed according to the vehicle speed signal received from ABS actuator and electric unit (control unit) via CAN communication.
ABS actuator and electric unit (control unit)	Transmits the vehicle speed signal to the combination meter with CAN communication line.

TACHOMETER

TACHOMETER : System Diagram

INFOID:0000000001691242



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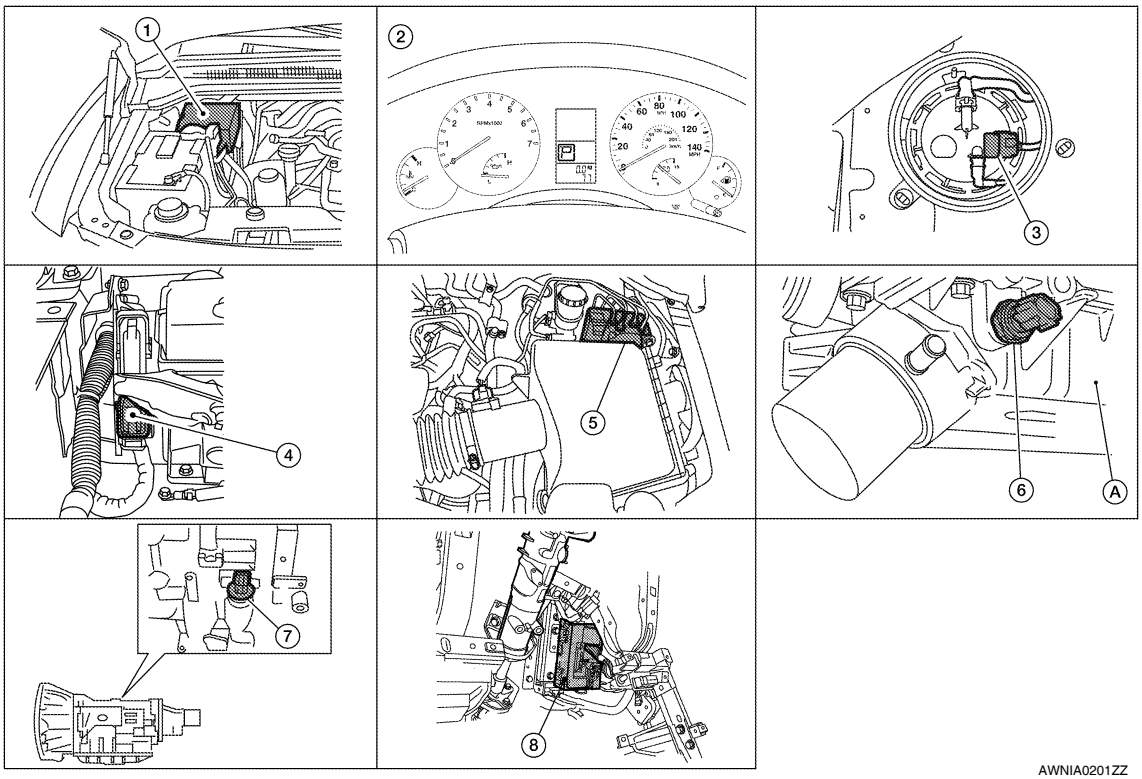
TACHOMETER : System Description

INFOID:0000000001691243

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

TACHOMETER : Component Parts Location

INFOID:0000000001696367



AWNIA0201ZZ

1. IPDM E/R E122, E124
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4. ECM E16 (view with battery removed)
5. ABS actuator and electric unit (control unit) E125
6. Oil pressure switch F4
   A: Oil pan (upper)
7. A/T assembly F9
8. BCM M18, M19 (view with instrument lower panel LH removed)

TACHOMETER : Component Description

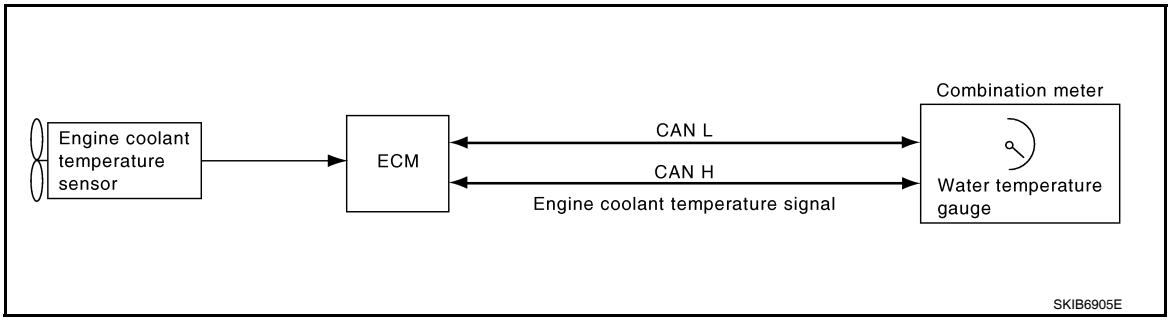
INFOID:0000000001691245

Unit	Description
Combination meter	Indicates the engine speed in RPM according to the engine speed signal received from ECM via CAN communication.
ECM	Transmits the engine speed signal to the combination meter with CAN communication line.

ENGINE COOLANT TEMPERATURE GAUGE

ENGINE COOLANT TEMPERATURE GAUGE : System Diagram

INFOID:0000000001691246



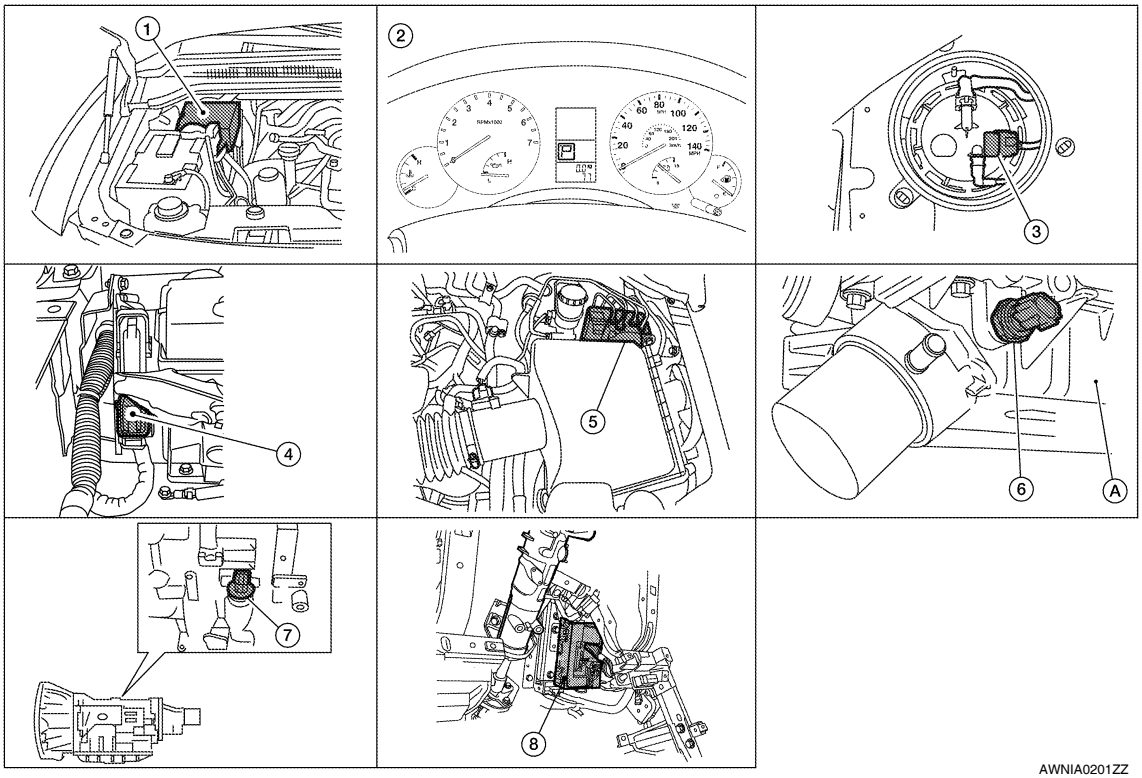
ENGINE COOLANT TEMPERATURE GAUGE : System Description

INFOID:0000000001691247

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

ENGINE COOLANT TEMPERATURE GAUGE : Component Parts Location

INFOID:0000000001696368



1. IPDM E/R E122, E124
2. Combination meter M23, M24
3. Fuel level sensor unit and fuel pump C5 (view with inspection hole cover removed)
4. ECM E16 (view with battery removed)
5. ABS actuator and electric unit (control unit) E125
6. Oil pressure switch F4
   A: Oil pan (upper)
7. A/T assembly F9
8. BCM M18, M19 (view with instrument lower panel LH removed)

ENGINE COOLANT TEMPERATURE GAUGE : Component Description

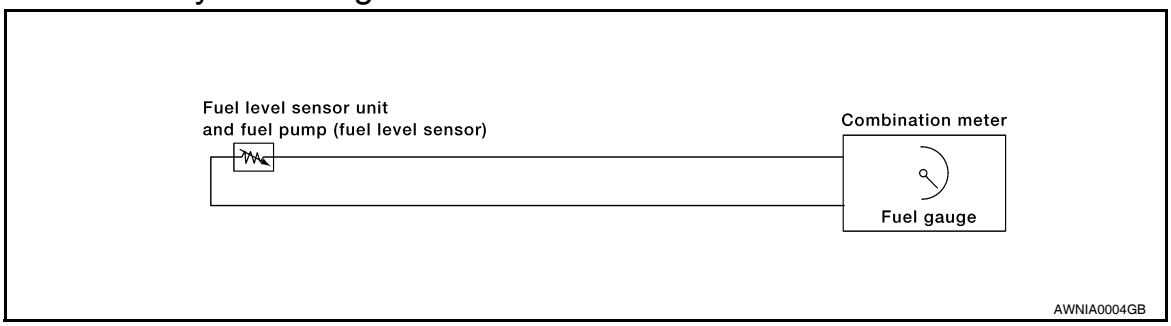
INFOID:0000000001691249

Unit	Description
Combination meter	Indicates the engine coolant temperature according to the engine coolant temperature signal received from ECM via CAN communication.
ECM	Transmits the engine coolant temperature signal to the combination meter via CAN communication.

FUEL GAUGE

FUEL GAUGE : System Diagram

INFOID:0000000001691250



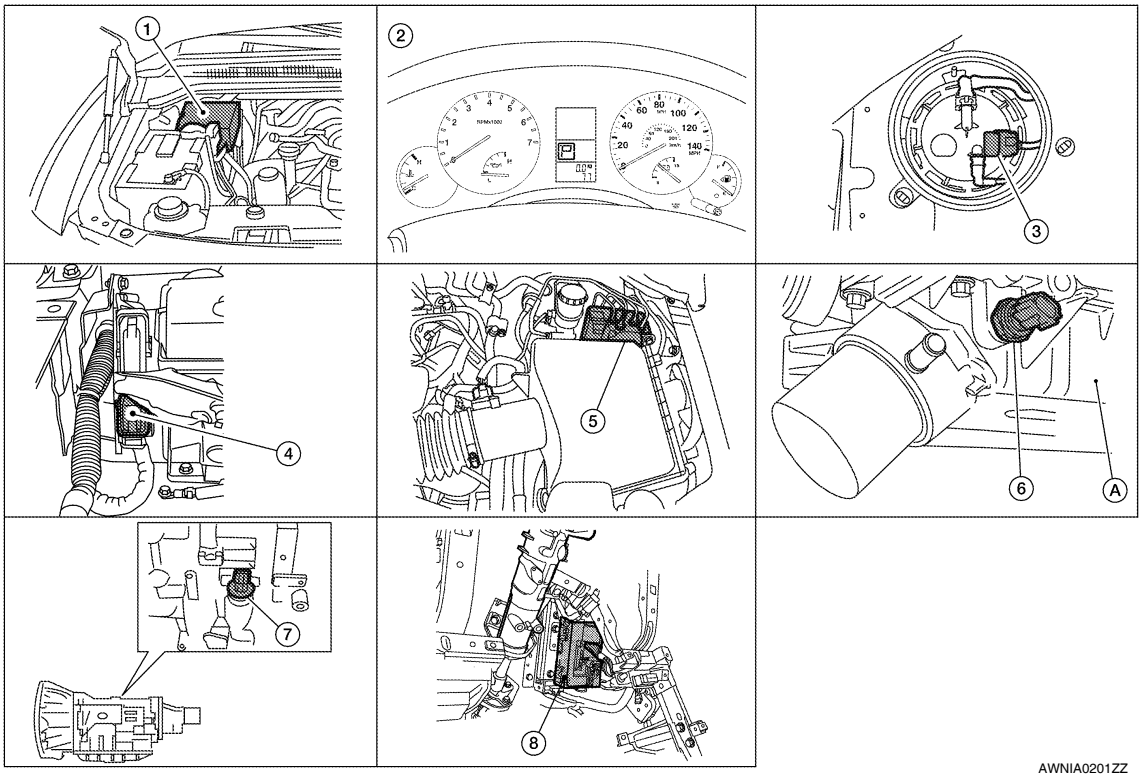
FUEL GAUGE : System Description

INFOID:0000000001691251

The fuel gauge indicates the approximate fuel level in the fuel tank.
The fuel gauge is regulated by the unified meter control unit and a variable resistor signal supplied by the fuel level sensor unit.

FUEL GAUGE : Component Parts Location

INFOID:0000000001696369



1. IPDM E/R E122, E124
2. Combination meter M23, M24
3. Fuel level sensor unit and fuel pump C5 (view with inspection hole cover removed)
4. ECM E16 (view with battery removed)
5. ABS actuator and electric unit (control unit) E125
6. Oil pressure switch F4 A: Oil pan (upper)
7. A/T assembly F9
8. BCM M18, M19 (view with instrument lower panel LH removed)

FUEL GAUGE : Component Description

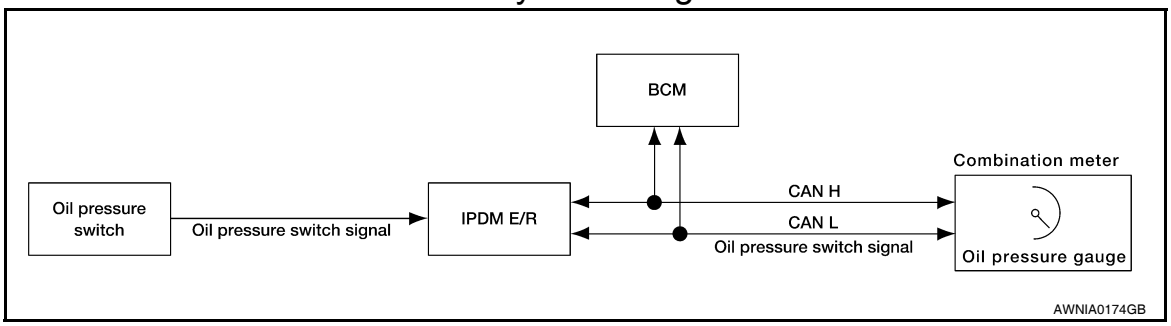
INFOID:0000000001691253

Unit	Description
Combination meter	Indicates the fuel level according to the fuel level sensor signal received from the fuel level sensor unit.
Fuel level sensor unit	Refer to MWI-33, "Description".

ENGINE OIL PRESSURE GAUGE

ENGINE OIL PRESSURE GAUGE : System Diagram

INFOID:0000000001691254



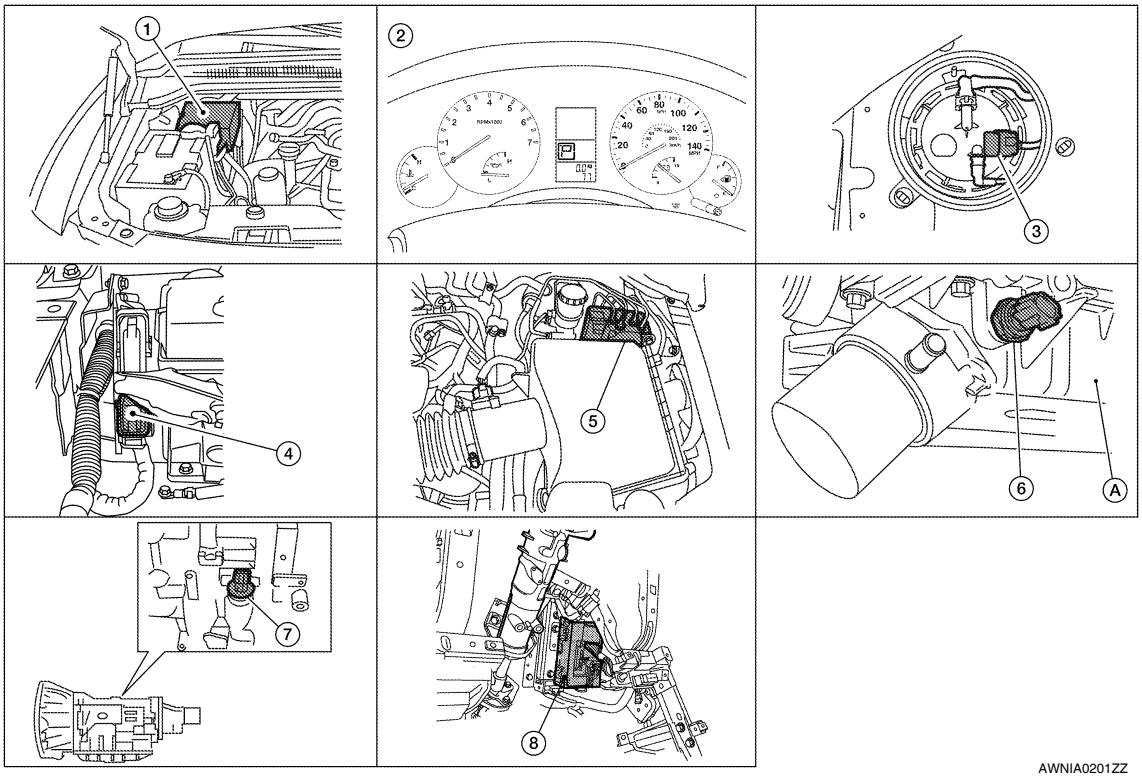
ENGINE OIL PRESSURE GAUGE : System Description

INFOID:0000000001691255

The engine oil pressure gauge indicates whether the engine oil pressure is low or normal.
The oil pressure gauge is controlled by the IPDM E/R. The IPDM E/R reads the ON/OFF signals from the oil pressure switch and transmits the oil pressure switch signal to the combination meter via BCM with the CAN communication line. The oil pressure gauge displays a low or normal indication according to the oil pressure switch signal received via CAN communication.

ENGINE OIL PRESSURE GAUGE : Component Parts Location

INFOID:0000000001696370



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1. IPDM E/R E122, E124
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4. ECM E16 (view with battery removed)
5. ABS actuator and electric unit (control unit) E125
6. Oil pressure switch F4
   A: Oil pan (upper)
7. A/T assembly F9
8. BCM M18, M19 (view with instrument lower panel LH removed)

ENGINE OIL PRESSURE GAUGE : Component Description

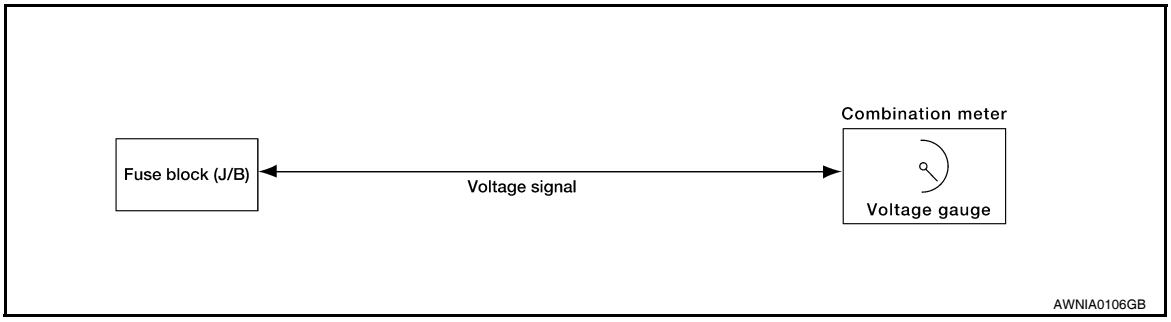
INFOID:0000000001691257

Unit	Description
Combination meter	Indicates the engine oil pressure (low/normal) according to the oil pressure switch signal received from BCM with CAN communication line.
IPDM E/R	Reads the ON/OFF signals from the oil pressure switch and transmits the oil pressure switch signal to the combination meter via BCM with the CAN communication line.
Oil pressure switch	Refer to MWI-35, "Description".
BCM	Transmits the oil pressure switch signal received from IPDM E/R via CAN communication to the combination meter via CAN communication.

VOLTAGE GAUGE

VOLTAGE GAUGE : System Diagram

INFOID:0000000001691262



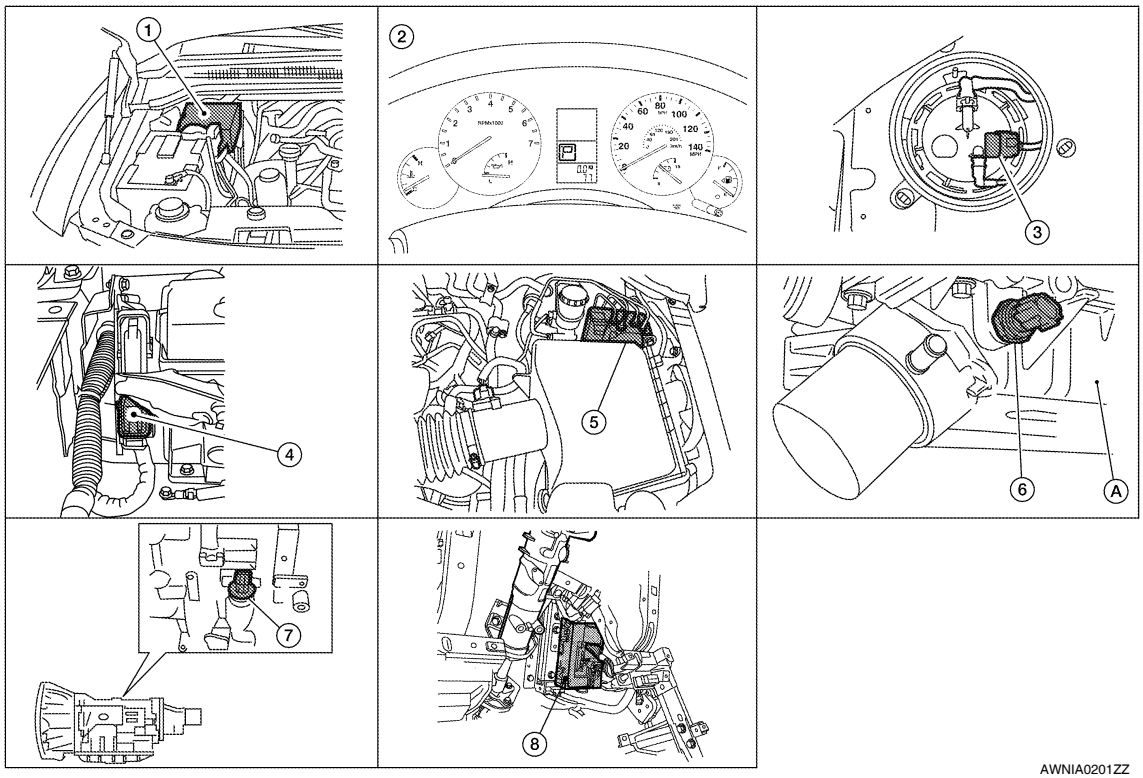
VOLTAGE GAUGE : System Description

INFOID:0000000001691263

The voltage gauge indicates the battery/charging system voltage.
The voltage gauge is regulated by the unified meter control unit.

VOLTAGE GAUGE : Component Parts Location

INFOID:0000000001696373



1. IPDM E/R E122, E124
2. Combination meter M23, M24
3. Fuel level sensor unit and fuel pump C5 (view with inspection hole cover removed)
4. ECM E16 (view with battery removed)
5. ABS actuator and electric unit (control unit) E125
6. Oil pressure switch F4
   A: Oil pan (upper)
7. A/T assembly F9
8. BCM M18, M19 (view with instrument lower panel LH removed)

VOLTAGE GAUGE : Component Description

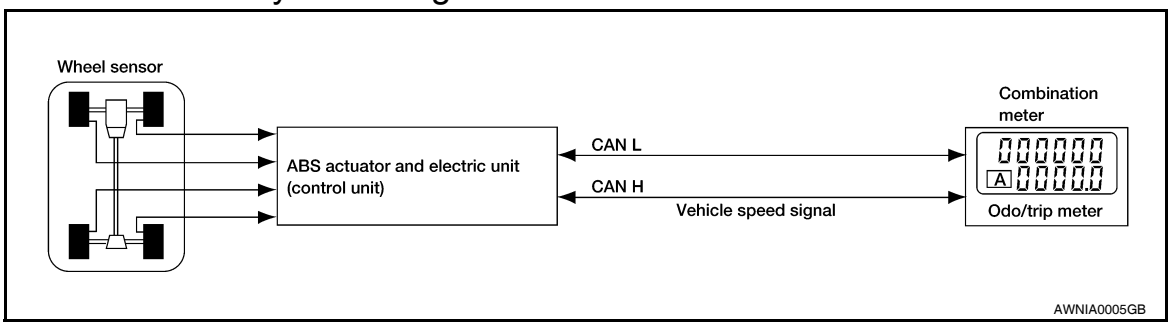
INFOID:0000000001691265

Unit	Description
Combination meter	Indicates the battery voltage according to the voltage signal received from the fuse block (J/B).
Fuse block (J/B)	Transmits the battery voltage signal to the combination meter.

ODO/TRIP METER

ODO/TRIP METER : System Diagram

INFOID:0000000001691266



ODO/TRIP METER : System Description

INFOID:0000000001691267

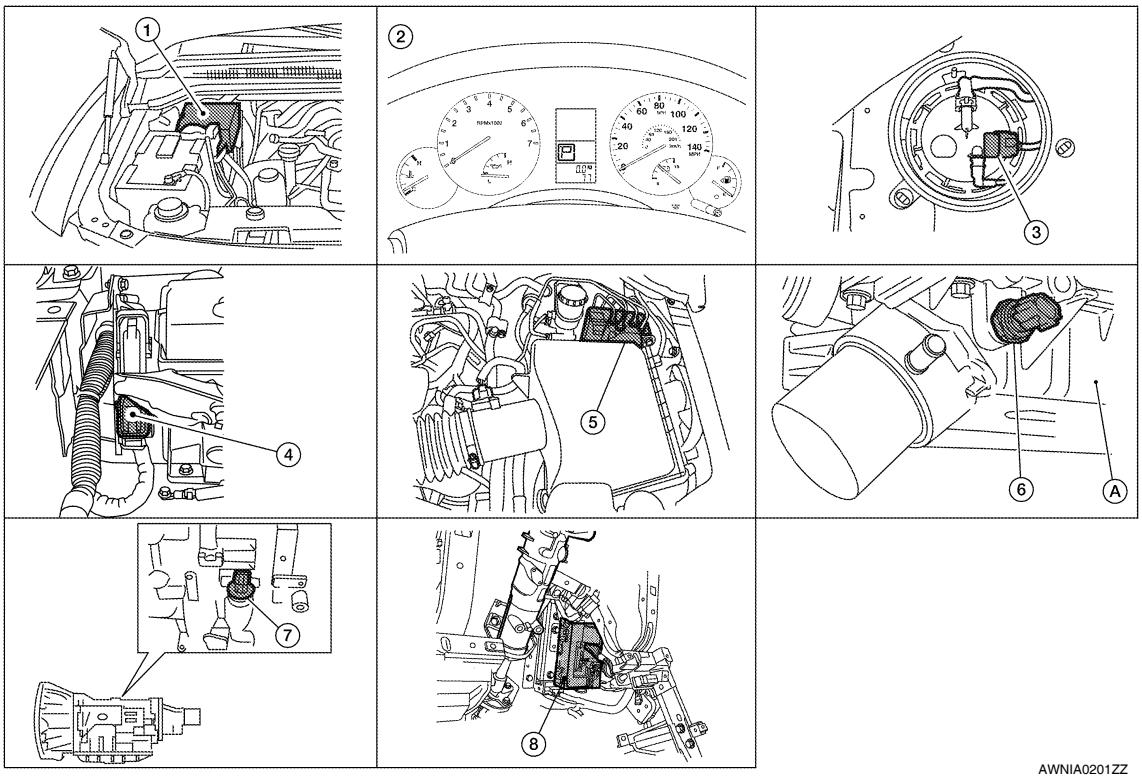
The vehicle speed signal and the memory signals from the meter memory circuit are processed by the combination meter and the mileage is displayed.

HOW TO CHANGE THE DISPLAY FOR ODO/TRIP METER

Refer to Owner's Manual for odo/trip meter operating instructions.

ODO/TRIP METER : Component Parts Location

INFOID:0000000001696374



1. IPDM E/R E122, E124
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6. Oil pressure switch F4
   A: Oil pan (upper)
7. A/T assembly F9
8. BCM M18, M19 (view with instrument lower panel LH removed)

ODO/TRIP METER : Component Description

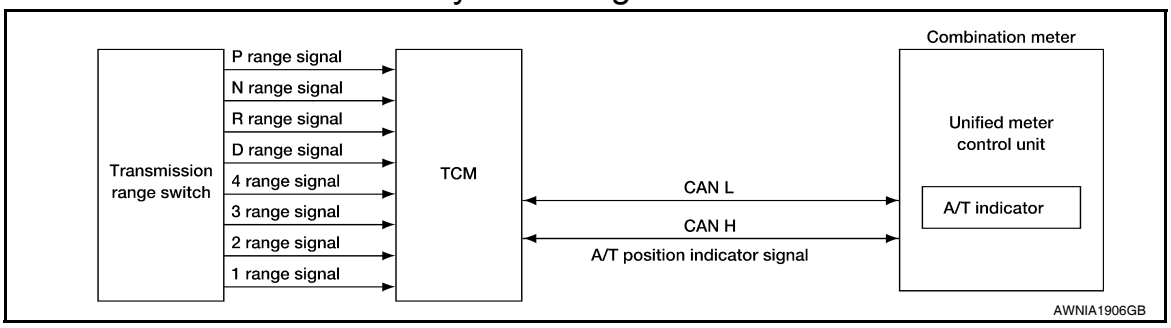
INFOID:0000000001691269

Unit	Description
Combination meter	Converts the vehicle speed signal received from the ABS actuator and electric unit (control unit) via CAN communication to mileage, and it displays the accumulated mileage to the odo/trip meter.
ABS actuator and electric unit (control unit)	Transmits the vehicle speed signal to the combination meter via CAN communication.

SHIFT POSITION INDICATOR

SHIFT POSITION INDICATOR : System Diagram

INFOID:0000000001691270



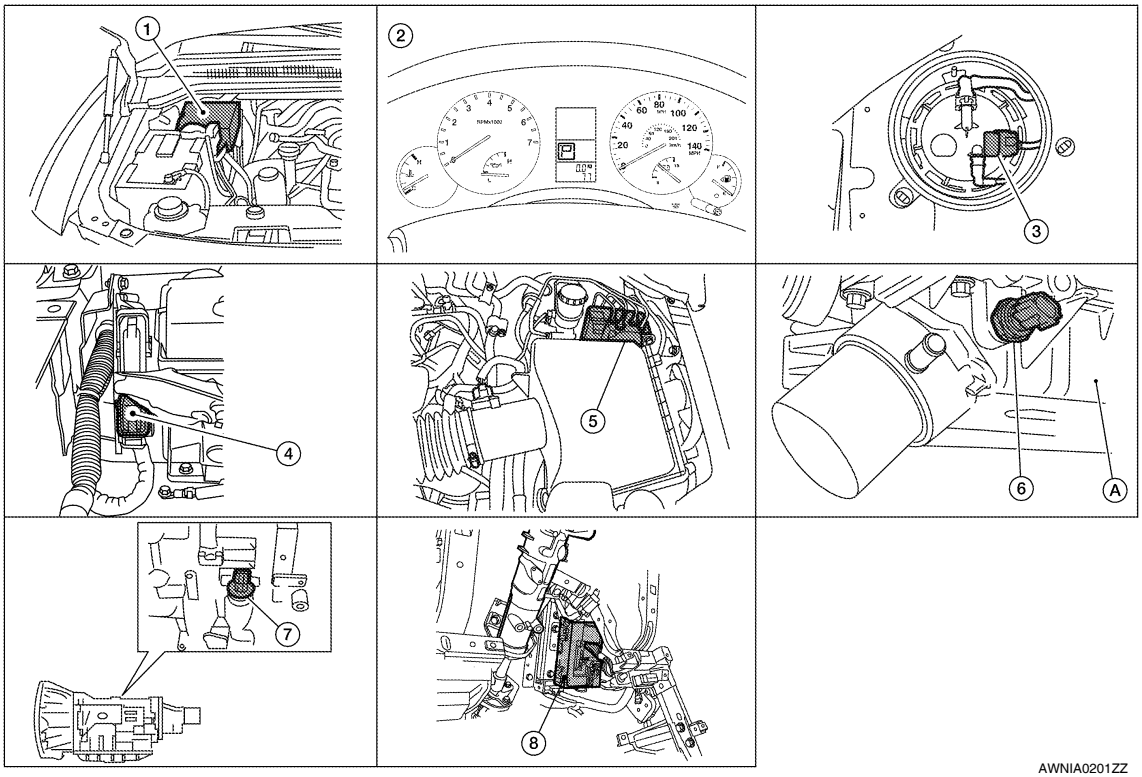
SHIFT POSITION INDICATOR : System Description

INFOID:0000000001691271

The TCM receives A/T indicator signals from the transmission range switch. The TCM then sends A/T position indicator signals to the combination meter via CAN communication lines. The combination meter indicates the received shift position.

SHIFT POSITION INDICATOR : Component Parts Location

INFOID:0000000001696375



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   A: Oil pan (upper)
7. A/T assembly F9
8. BCM M18, M19 (view with instrument lower panel LH removed)

SHIFT POSITION INDICATOR : Component Description

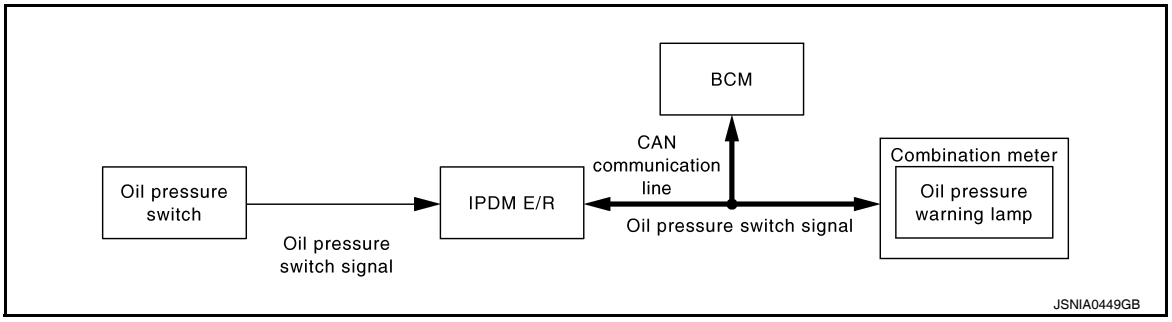
INFOID:0000000001691273

Unit	Description
Combination meter	Displays the shift position on the information display using shift position signal received from TCM.
TCM	Transmits the shift position signal to the combination meter via CAN communication.

WARNING LAMPS/INDICATOR LAMPS

WARNING LAMPS/INDICATOR LAMPS : System Diagram

INFOID:0000000001691274



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WARNING LAMPS/INDICATOR LAMPS : System Description

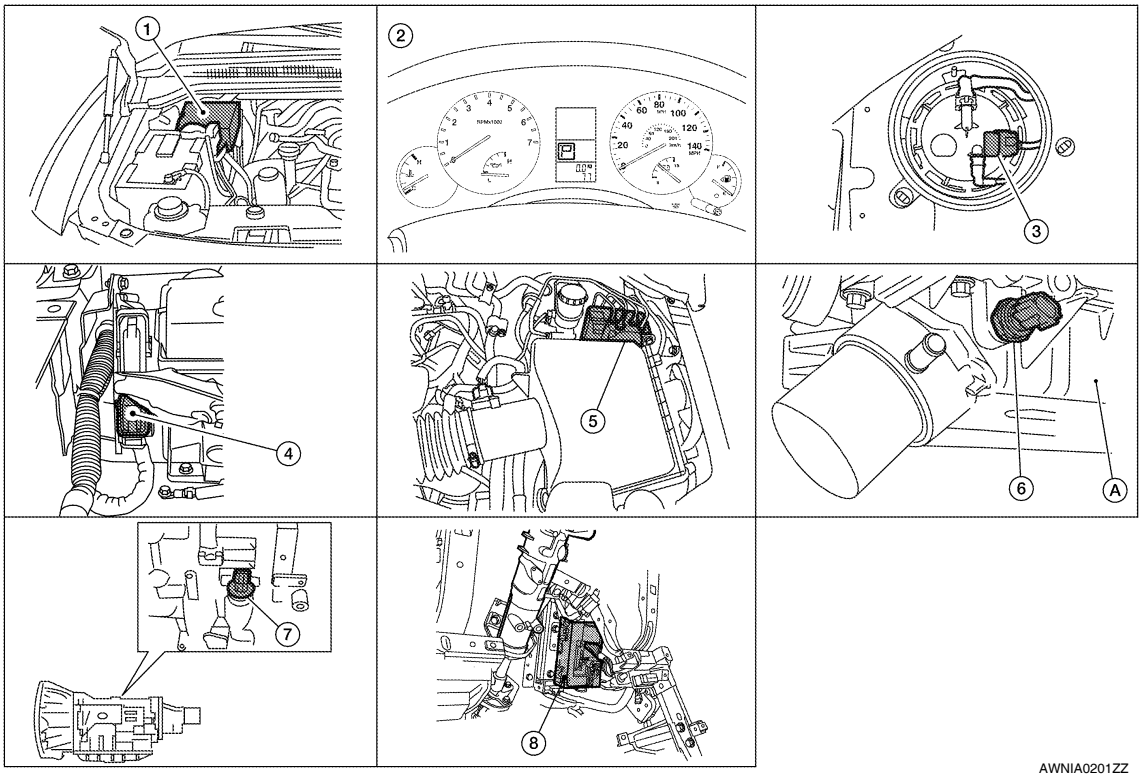
INFOID:0000000001691275

OIL PRESSURE WARNING LAMP

- IPDM E/R reads the ON/OFF signals from the oil pressure switch and transmits the oil pressure switch signal to the combination meter via BCM with the CAN communication line.
- The combination meter turns the oil pressure warning lamp ON/OFF according to the oil pressure switch signal received via CAN communication.

WARNING LAMPS/INDICATOR LAMPS : Component Parts Location

INFOID:0000000001696376



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1. IPDM E/R E122, E124
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5. ABS actuator and electric unit (control unit) E125
6. Oil pressure switch F4
   A: Oil pan (upper)
7. A/T assembly F9
8. BCM M18, M19 (view with instrument lower panel LH removed)

WARNING LAMPS/INDICATOR LAMPS : Component Description

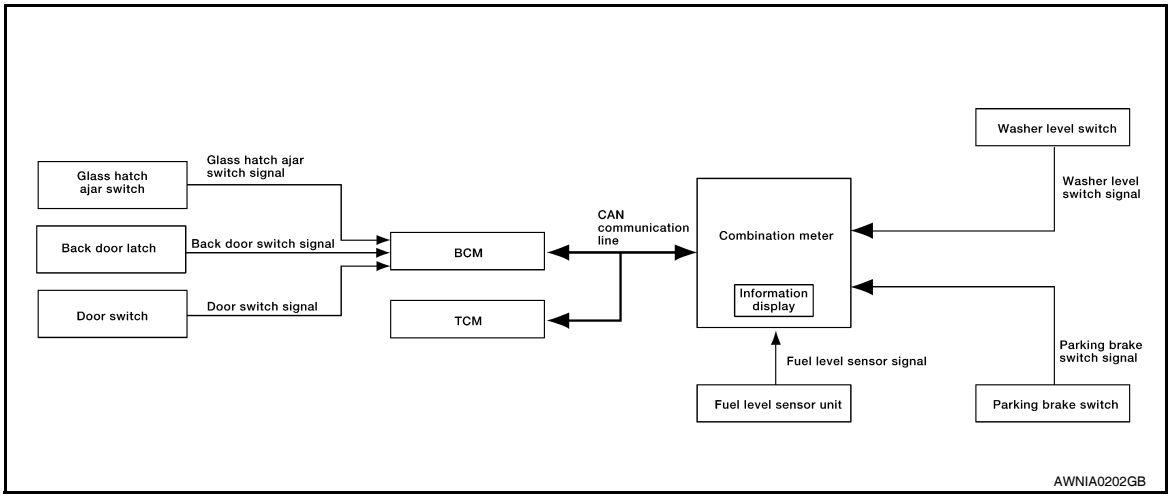
INFOID:0000000001691277

Unit	Description
Combination meter	Turns the oil pressure warning lamp ON/OFF according to the oil pressure switch signal received from BCM by means of communication.
IPDM E/R	Reads the ON/OFF signals from the oil pressure switch and transmits the oil pressure switch signal to the combination meter via BCM with the CAN communication line.
Oil pressure switch	Refer to MWI-35, "Description".
BCM	Transmits the oil pressure switch signal received from IPDM E/R via CAN communication to the combination meter via CAN communication.

INFORMATION DISPLAY

INFORMATION DISPLAY : System Diagram

INFOID:0000000001691278



INFORMATION DISPLAY : System Description

INFOID:0000000001691279

FUNCTION

The information display can indicate the following items.

- Intelligent Key operation information
- Maintenance information
- Warning/Indication messages (Door/liftgate/liftgate glass open, low fuel, low washer fluid, parking brake, A/T oil temp)

DOOR OPEN WARNING

This warning appears when the ignition switch is ON and the front door LH, front door RH, rear door LH, rear door RH, back door or glass hatch is opened. The BCM receives a door switch signal from the front door switch LH, front door switch RH, rear door switch LH, rear door switch RH, back door latch and glass hatch ajar switch. The BCM sends the door switch signal to the combination meter via CAN communication lines. Then, when the ignition switch is turned ON, the warning message is displayed.

LOW FUEL WARNING

This warning appears when the fuel level in the fuel tank is less than approximately 11.4 ℓ (3 US gal, 2.5 Imp gal). A variable resistor signal is supplied to the combination meter from the fuel level sensor unit to determine the amount of fuel in the fuel tank.

LOW WINDSHIELD WASHER FLUID WARNING

This warning appears when the windshield washer fluid level is low. When the windshield washer fluid level is low, the washer level switch provides a ground signal to the combination meter (unified meter control unit). Once fluid is added, the message will stay on for 30 seconds and then turn off.

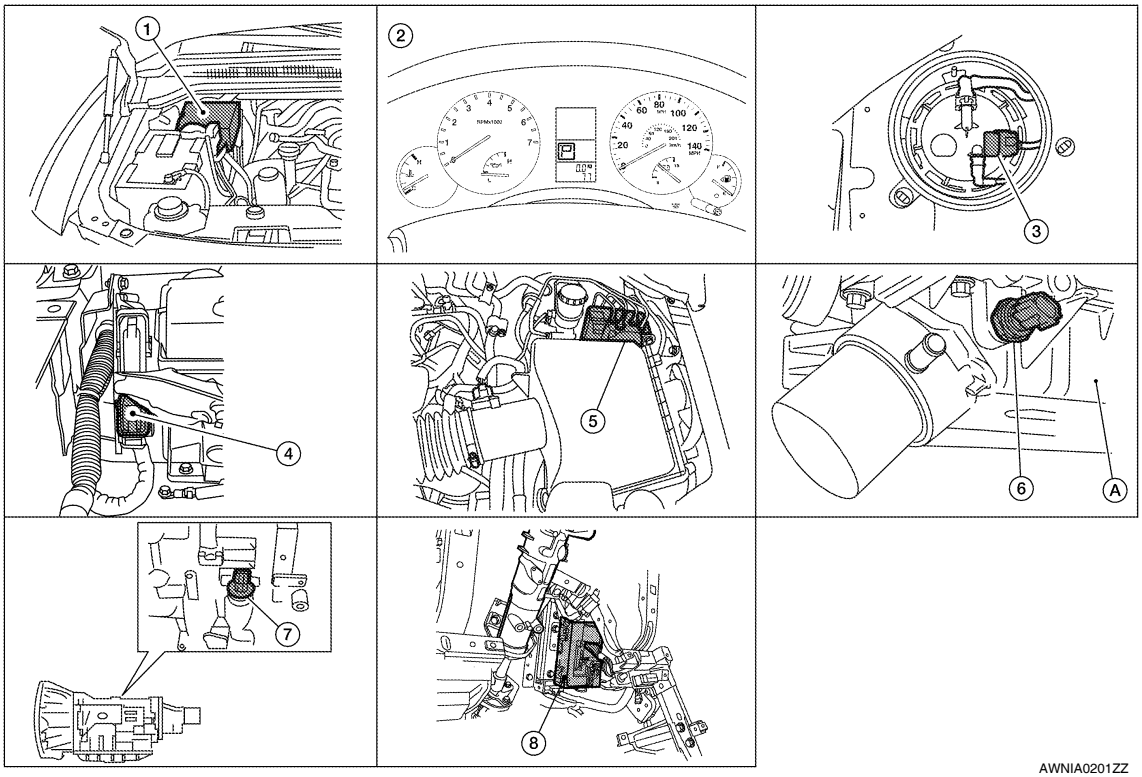
PARKING BRAKE INDICATOR

When the parking brake is applied, the parking brake switch provides a ground signal to the combination meter (unified meter control unit). Then, when the ignition switch is turned ON and vehicle speed is greater than 7 km/h (4 MPH), the message is displayed.

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

INFORMATION DISPLAY : Component Parts Location

INFOID:0000000001696377



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   A: Oil pan (upper)
7. A/T assembly F9
8. BCM M18, M19 (view with instrument lower panel LH removed)

INFORMATION DISPLAY : Component Description

INFOID:0000000001691281

Unit	Description
Combination meter	Controls the information display according to the signal received from each unit.
Fuel level sensor unit	Refer to MWI-33, "Description".
BCM	Transmits signals provided by various units to the combination meter via CAN communication line.
Washer level switch	Transmits the washer level signal to the combination meter.
Parking brake switch	Refer to MWI-36, "Description".
Door switch	Transmits the door switch signals to BCM.
Back door latch (door ajar switch)	Transmits the back door switch signal to BCM.
Glass hatch ajar switch	Transmits the glass hatch ajar switch signal to BCM.
TCM	Transmits A/T oil temperature signal to the combination meter with CAN communication line.

COMPASS

Description

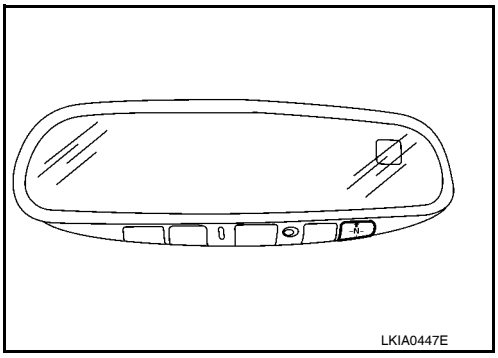
INFOID:0000000001691282

DESCRIPTION

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

Vehicle direction is displayed as follows:

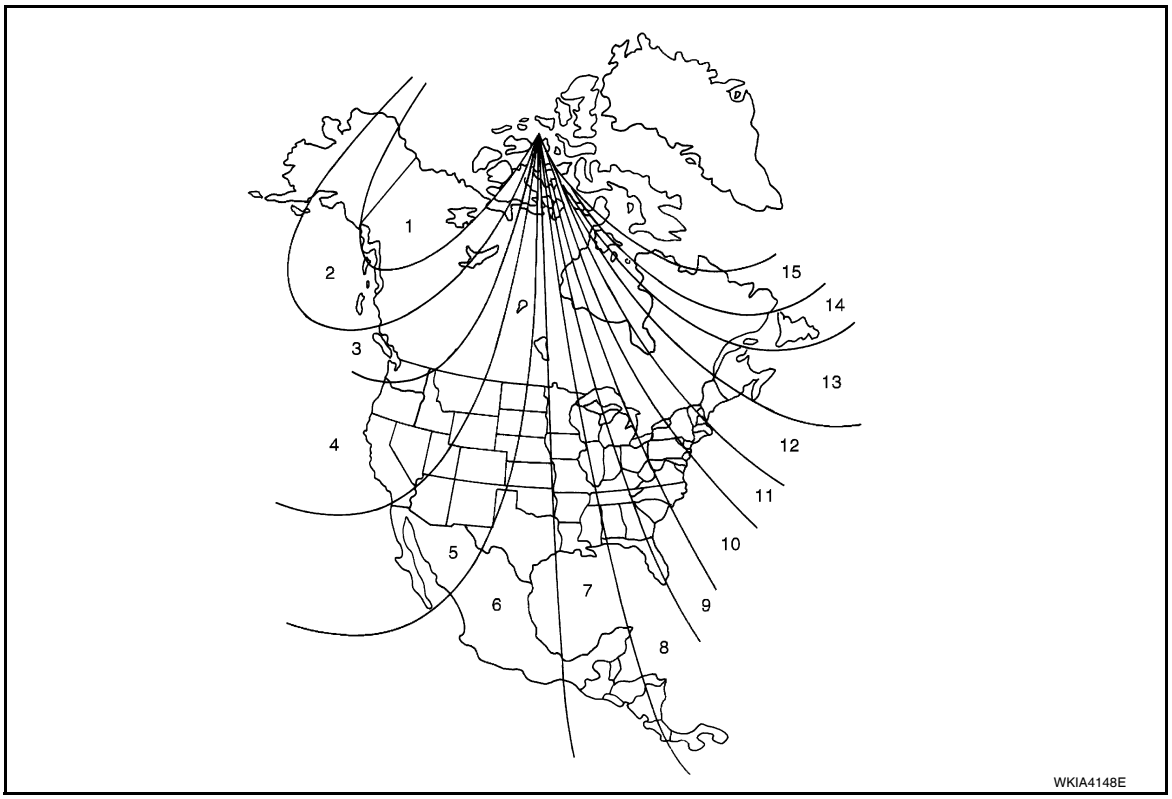
- N: north
- E: east
- S: south
- W: west



ZONE VARIATION SETTING PROCEDURE

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

Zone Variation Chart



1. Determine your location on the zone map.
2. Turn the ignition switch to the ON position.
3. Press and hold the mode (N) switch for about 8 seconds. The current zone number will appear in the display.
4. Press the mode (N) switch repeatedly until the desired zone number appears in the display.

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

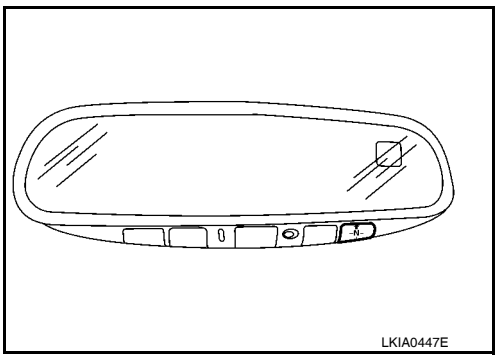
NOTE:

Use zone number 5 for Hawaii.

CALIBRATION PROCEDURE

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

1. Press and hold the mode (N) switch for about 10 seconds. The display will read “CAL”.
2. Drive the vehicle slowly in a circle, in an open, safe place. The initial calibration is completed in about 1.5 turns.



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

DIAGNOSIS SYSTEM (METER)

Diagnosis Description

INFOID:0000000001691283

SELF-DIAGNOSIS MODE

The following items can be checked during Combination Meter Self-Diagnosis Mode.

- Gauge sweep and present gauge values.
- Illuminates all odometer/trip meters and A/T indicator segments.
- Illuminates all micro controlled lamps/LEDs regardless of switch position.
- Displays estimated present battery voltage.
- Displays seat belt buckle switch LH status.

OPERATION PROCEDURE

NOTE:

- Once entered, combination meter self-diagnosis mode will function with the ignition switch in ON or START. Combination meter self-diagnosis mode will exit upon turning the ignition switch to OFF or ACC.
- If the diagnosis function is activated with trip A displayed, the mileage on trip A is reset to 0000.0. (Trip B operates the same way.)

To initiate combination meter self-diagnosis mode, refer to the following procedure.

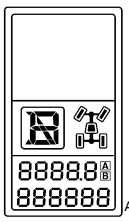
1. Turn the ignition switch ON, while pressing the odometer/trip meter switch for 5 - 8 seconds. When the diagnosis function is activated, the odometer/trip meter will display tESt.

NOTE:

Check combination meter power supply and ground circuit when self-diagnosis mode of combination meter does not start. Refer to MWI-30, "COMBINATION METER : Diagnosis Procedure". Replace combination meter if normal. Refer to MWI-76, "Removal and Installation".

COMBINATION METER SELF-DIAGNOSIS MODE FUNCTIONS

To interpret combination meter self-diagnosis mode functions, refer to the following table.

Event	Odometer Display	Description of Test/Data	Notes:
Odometer/trip meter A/B switch held from 5 to 8 seconds (or until released)	tESt		Initiating self-diagnosis mode
Switch released	GAGE	Performs sweep of all gauges, then displays present gauge values.	Gauges sweep within 10 seconds
Switch pressed	(All segments illuminated)	Lights all LCD segments. Compare with picture.	 AWNIA0203ZZ
Switch pressed	bulb	Illuminates all micro-controlled lamps/LEDs.	Part may not be configured for all lamps (functions) that turn on during test. This is normal.
Switch pressed	r XXXX, FAIL	Return to normal operation of all lamps/LEDs and displays “r XXXX”.	If a malfunction exists, “FAIL” will flash.
Switch pressed	nrXXXX	Displays Hex ROM rev as stored in NVM.	
Switch pressed	EE XX, FAIL	Displays “EE XX”.	If a malfunction exists, “FAIL” will flash.
Switch pressed	dtXXXX	Hex coding of final manufacturing test date.	

Event	Odometer Display	Description of Test/Data	Notes:
Switch pressed (3 times)	Sc1 XX through Epr XX	Displays 8 bit software configuration value in Hex format	
Switch pressed	1nF XX	Displays 8-bit market info value in Hex format.	$31 = USA $2A = Canada
Switch pressed (3 times)	cYL XX through tF	N/A	
Switch pressed	XXXXX	“Corrected” speed value in hundredths of MPH. Gauge indication may be slightly higher. This is normal.	Will display “-----” if message is not received. Will display “99999” if data received is invalid.
Switch pressed	XXXXX	“Corrected” speed value in hundredths of KPH. Gauge indication may be slightly different. This is normal.	Will display “-----” if message is not received. Will display “99999” if data received is invalid.
Switch pressed	t XXXX	Tachometer value in RPM. Gauge indication may be higher at higher RPM. This is normal.	Will display “-----” if message is not received.
Switch pressed	F1XXXX	Present fuel level A/D input. This input represents fuel sender input.	000-009 = Short circuit 010-254 = Normal range 255 = Open circuit
Switch pressed	F2XXX	Present FLPS.	010-254 = Normal range
Switch pressed	XXXC	Last temperature gauge input value in degrees C. Temperature gauge indicates present temperature per indication standard.	Will display “---”C if message is not received. Will display “999” if data received is invalid. High = 130 deg C Normal = 70 - 105 deg C Low = less than 50 deg C
Switch pressed	BAtXX.X	Estimated present battery voltage.	
Switch pressed	rES -X	Seat belt buckle switch LH status.	1= Buckled 0 = Unbuckled
Switch pressed (32 times)	PA -XX through PA1-XX	N/A	
Switch pressed	GAGE		Return to beginning of self-diagnosis cycle.

CONSULT-III Function (METER/M&A)

INFOID:0000000001691284

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

METER/M&A diagnosis mode	Description
SELF-DIAG RESULTS	Displays combination meter self-diagnosis results.
DATA MONITOR	Displays combination meter input/output data in real time.
CAN DIAG SUPPORT MNTR	The result of transmit/receive diagnosis of CAN communication can be read.

SELF-DIAG RESULTS

Display Item List

Refer to MWI-62, "DTC Index".

DATA MONITOR

Display Item List

X: Applicable

Display item [Unit]	MAIN SIGNALS	SELECTION FROM MENU	Description
SPEED METER [km/h] or [mph]	X	X	Displays the value of vehicle speed signal.
SPEED OUTPUT [km/h] or [mph]	X	X	Displays the value of vehicle speed signal, which is transmitted to each unit with CAN communication.
TACHO METER [rpm]	X	X	Displays the value of engine speed signal, which is input from ECM.
FUEL METER [lit.]	X	X	Displays the value, which processes a resistance signal from fuel gauge.
W TEMP METER [°C] or [°F]	X	X	Displays the value of engine coolant temperature signal, which is input from ECM.
ABS W/L [ON/OFF]		X	Displays [ON/OFF] condition of ABS warning lamp.
VDC/TCS IND [ON/OFF]		X	Displays [ON/OFF] condition of VDC OFF indicator lamp.
SLIP IND [ON/OFF]		X	Displays [ON/OFF] condition of SLIP indicator lamp.
BRAKE W/L [ON/OFF]		X	Displays [ON/OFF] condition of brake warning lamp.*
DOOR W/L [ON/OFF]		X	Displays [ON/OFF] condition of door warning lamp.
TRUNK W/L [ON/OFF]		X	Displays [ON/OFF] condition of glass hatch warning lamp.
HI-BEAM IND [ON/OFF]		X	Displays [ON/OFF] condition of high beam indicator.
TURN IND [ON/OFF]		X	Displays [ON/OFF] condition of turn indicator.
OIL W/L [ON/OFF]		X	Displays [ON/OFF] condition of oil pressure warning lamp.
C-ENG W/L [ON/OFF]		X	Displays [ON/OFF] condition of malfunction indicator lamp.
CRUISE IND [ON/OFF]		X	Displays [ON/OFF] condition of CRUISE indicator.
SET IND [ON/OFF]		X	Displays [ON/OFF] condition of SET indicator.
AT CHECK W/L [ON/OFF]		X	Displays [ON/OFF] condition of AT CHECK warning lamp.
FUEL W/L [ON/OFF]	X	X	Displays [ON/OFF] condition of low-fuel warning lamp.
AIR PRES W/L [ON/OFF]		X	Displays [ON/OFF] condition of tire pressure warning lamp.
KEY G W/L [ON/OFF]		X	Displays [ON/OFF] condition of key green warning lamp.
KEY R W/L [ON/OFF]		X	Displays [ON/OFF] condition of key red warning lamp.
KEY KNOB W/L [ON/OFF]		X	Displays [ON/OFF] condition of key knob warning lamp.
M RANGE SW [ON/OFF]	X	X	Displays [ON/OFF] condition of manual mode range switch.
NM RANGE SW [ON/OFF]	X	X	Displays [ON/OFF] condition of except for manual mode range switch.
AT SFT UP SW [ON/OFF]	X	X	Displays [ON/OFF] condition of A/T shift-up switch.
AT SFT DWN SW [ON/OFF]	X	X	Displays [ON/OFF] condition of A/T shift-down switch.
DISTANCE [km] or [mile]	X	X	Displays the value, which is calculated by vehicle speed signal, fuel gauge and fuel consumption from ECM.
BUZZER [ON/OFF]	X	X	Displays [ON/OFF] condition of buzzer.
BRAKE SW [ON/OFF]		X	Indicates [ON/OFF] condition of parking brake switch.
AT-M GEAR [1, 2, 3, 4, 5]	X	X	Indicates [1, 2, 3, 4, 5] condition of A/T manual mode gear position.
P RANGE IND [ON/OFF]	X	X	Indicates [ON/OFF] condition of A/T shift P range indicator.
R RANGE IND [ON/OFF]	X	X	Indicates [ON/OFF] condition of A/T shift R range indicator.
N RANGE IND [ON/OFF]	X	X	Indicates [ON/OFF] condition of A/T shift N range indicator.
D RANGE IND [ON/OFF]	X	X	Indicates [ON/OFF] condition of A/T shift D range indicator.
4 RANGE IND [ON/OFF]	X	X	Indicates [ON/OFF] condition of A/T shift 4 range indicator.
3 RANGE IND [ON/OFF]	X	X	Indicates [ON/OFF] condition of A/T shift 3 range indicator.
2 RANGE IND [ON/OFF]	X	X	Indicates [ON/OFF] condition of A/T shift 2 range indicator.
1 RANGE IND [ON/OFF]	X	X	Indicates [ON/OFF] condition of A/T shift 1range indicator.

Display item [Unit]	MAIN SIGNALS	SELECTION FROM MENU	Description
CRUISE W/L [ON/OFF]		X	Indicates [ON/OFF] condition of CRUISE warning lamp.
4WD LOCK SW [ON/OFF]		X	Indicates [ON/OFF] condition of 4WD lock switch.
4WD LOCK IND [ON/OFF]		X	Indicates [ON/OFF] condition of 4WD lock indicator.
SEAT BELT W/L [ON/OFF]		X	Indicates [ON/OFF] condition of seat belt warning lamp.
FR FOG IND [ON/OFF]		X	This item is not used for this model. “OFF” is always displayed.
RR FOG IND [ON/OFF]		X	This item is not used for this model. “OFF” is always displayed.
LIGHT IND [ON/OFF]		X	Indicates [ON/OFF] condition of light indicator.
PNP P SW [ON/OFF]	X	X	Indicates [ON/OFF] condition of transmission range P switch.
PNP N SW [ON/OFF]	X	X	Indicates [ON/OFF] condition of transmission range N switch.
4WD W/L [ON/OFF]		X	Indicates [ON/OFF] condition of 4WD warning lamp.

NOTE:

Some items are not available due to vehicle specification.

*: The monitor will indicate “OFF” even though the brake warning lamp is on if either of the following conditions exist.

- The parking brake is engaged
- The brake fluid level is low

COMPONENT DIAGNOSIS

DTC U1000 CAN COMMUNICATION

DTC Logic

INFOID:0000000001691285

DTC DETECTION LOGIC

DTC	CONSULT-III display	Detection condition
U1000	CAN COMM CIRC [U1000]	When combination meter is not receiving CAN communication signals for 2 seconds or more.

Diagnosis Procedure

INFOID:0000000001691286

Symptom: Displays “CAN COMM CIRC [U1000]” as a self-diagnosis result of combination meter.

1.CHECK CAN COMMUNICATION

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

>> Go to “LAN system”. Refer to LAN-14, "Trouble Diagnosis Flow Chart".

DTC B2205 VEHICLE SPEED CIRCUIT

Description

INFOID:0000000001691287

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

DTC Logic

INFOID:0000000001691288

DTC	CONSULT-III display	Detection condition
B2205	VEHICLE SPEED CIRC [B2205]	Malfunction is detected when an erroneous speed signal is received for 2 seconds or more.

Diagnosis Procedure

INFOID:0000000001691289

Symptom: Displays “VEHICLE SPEED CIRC [B2205]” as a self-diagnosis result of combination meter.

1.CHECK COMBINATION METER INPUT SIGNAL

1. Start engine and select “METER/M&A” on CONSULT-III.
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-24, "CONSULT-III Function (ABS)".

NO >> Replace combination meter. Refer to MWI-76, "Removal and Installation".

POWER SUPPLY AND GROUND CIRCUIT
COMBINATION METER

COMBINATION METER : Diagnosis Procedure

INFOID:0000000001691290

1.CHECK FUSES

Check for blown combination meter fuses.

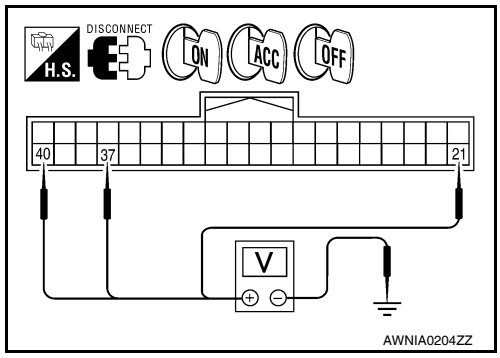
Unit	Power source	Fuse No.
Combination meter	Battery	19
	Ignition switch ON or START	14
	Ignition switch ACC or ON	4

Is the inspection result normal?

YES >> GO TO 2
NO >> If fuse is blown, be sure to eliminate cause of malfunction before installing new fuse.

2.POWER SUPPLY CIRCUIT CHECK

1. Disconnect combination meter connector M24.
2. Check voltage between combination meter harness connector M24 terminals 21, 37, 40 and ground.



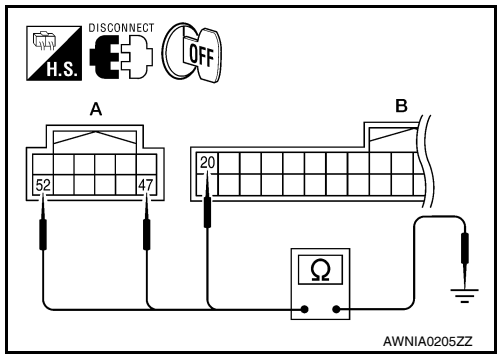
Terminals			Ignition switch position			
(+)		(–)	OFF	ACC	ON	START
Connector	Terminal					
M24	21	Ground	0V	0V	Battery voltage	Battery voltage
	37		0V	Battery voltage	Battery voltage	0V
	40		Battery voltage	Battery voltage	Battery voltage	Battery voltage

Is the inspection result normal?

YES >> GO TO 3
NO >> Check harness for open between combination meter and fuse.

3.GROUND CIRCUIT CHECK

1. Turn ignition switch OFF.
2. Disconnect combination meter connector M23.
3. Check continuity between combination meter harness connector M23 terminal 47, 52 and ground, and connector M24 terminal 20 and ground.



Terminals			Continuity
(+)		(–)	
Connector	Terminal		
A: M23	47	Ground	Yes
	52		
B: M24	20		

Is the inspection result normal?

YES >> Inspection End.
NO >> Check ground harness.

BCM (BODY CONTROL MODULE)

BCM (BODY CONTROL MODULE) : Diagnosis Procedure

INFOID:0000000001696511

1. CHECK FUSES AND FUSIBLE LINK

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

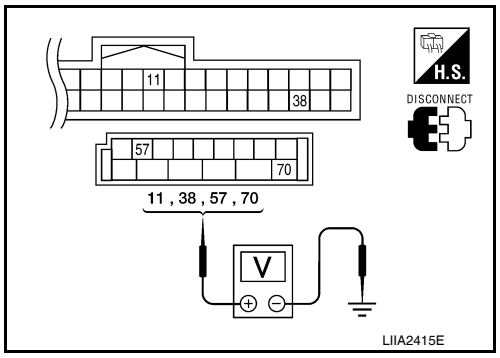
Terminal No.	Signal name	Fuses and fusible link No.
57	Battery power supply	22 (15A)
70		F (50A)
11	Ignition ACC or ON	4 (10A)
38	Ignition ON or START	59 (10A)

Is the fuse blown?

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

2. CHECK POWER SUPPLY CIRCUIT

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



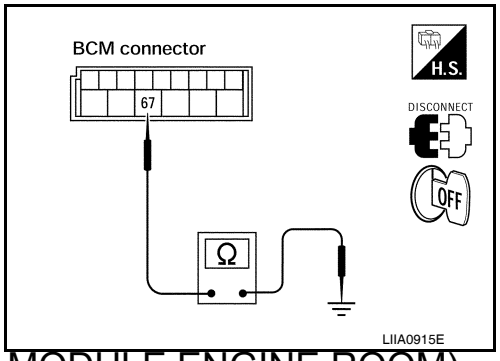
Connector	Terminals (+)	Terminals (-)	Power source	Condition	Voltage (V) (Approx.)
M18	11	Ground	ACC power supply	Ignition switch ACC or ON	Battery voltage
	38	Ground	Ignition power supply	Ignition switch ON or START	Battery voltage
M20	57	Ground	Battery power supply	Ignition switch OFF	Battery voltage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

Is the measurement value normal?

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

3. CHECK GROUND CIRCUIT

Check continuity between BCM harness connector and ground.



BCM		Ground	Continuity
Connector	Terminal		
M20	67		Yes

Does continuity exist?

YES >> INSPECTION END
NO >> Repair or replace harness.

IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)

IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) : Di-

agnosis Procedure

INFOID:0000000001696512

1. CHECK FUSES AND FUSIBLE LINK

Check that the following IPDM E/R fuses or fusible link are not blown.

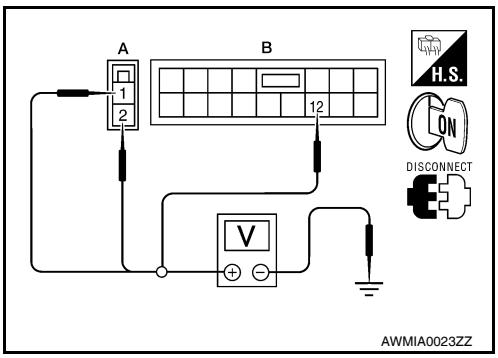
Terminal No.	Signal name	Fuses and fusible link No.
1	Battery	A, D
2	Battery	C
12	Ignition switch ON or START	59

Is the fuse blown?

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

2. CHECK BATTERY POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R.
3. Check voltage between IPDM E/R harness connectors and ground.



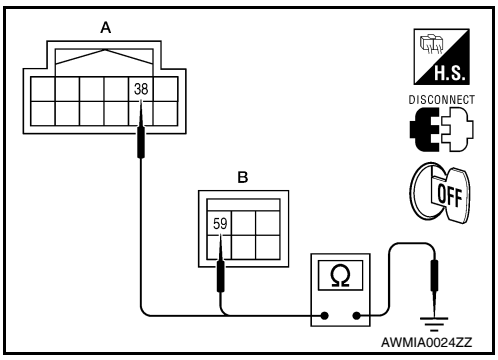
Terminals			Ignition switch position		
(+)		(−)	OFF	ON	START
Connector	Terminal				
E118 (A)	1	Ground	Battery voltage	Battery voltage	Battery voltage
	2		Battery voltage	Battery voltage	Battery voltage
E119 (B)	12		0V	Battery voltage	Battery voltage

Is the measurement value normal?

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

3. CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Check continuity between IPDM E/R harness connectors and ground.



IPDM E/R		Ground	Continuity
Connector	Terminal		
E122 (A)	38		Yes
E124 (B)	59		

Does continuity exist?

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

FUEL LEVEL SENSOR SIGNAL CIRCUIT

Description

INFOID:0000000001691293

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:0000000001691294

1.COMBINATION METER INPUT SIGNAL

1. Select “METER/M&A” on CONSULT-III.
2. Using “FUEL METER” of “DATA MONITOR”, compare the value of DATA MONITOR with fuel gauge pointer of combination meter.

Fuel gauge pointer	Reference value of data monitor [lit.]
Full	Approx. 93
3/4	Approx. 73
1/2	Approx. 52
1/4	Approx. 30
Empty	Approx. 11

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

YES >> Inspection End.
NO >> Replace combination meter. Refer to MWI-76, "Removal and Installation".

Diagnosis Procedure

INFOID:0000000001691295

1.CHECK HARNESS CONNECTOR

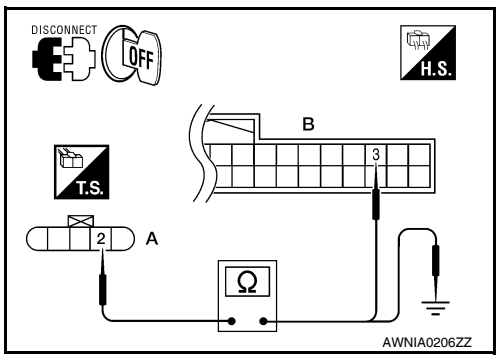
1. Turn ignition switch OFF.
2. Check combination meter and fuel level sensor unit terminals (meter-side and harness-side) for poor connection.

Is the inspection result normal?

YES >> GO TO 2
NO >> Repair or replace terminals or connectors.

2.CHECK FUEL LEVEL SENSOR UNIT CIRCUIT

1. Disconnect combination meter connector and fuel level sensor unit connector.
2. Check continuity between combination meter harness connector (B) and fuel level sensor unit and fuel pump harness connector (A).



A		B		Continuity
Connector	Terminal	Connector	Terminal	
C5	2	M24	3	Yes

3. Check continuity between fuel level sensor unit and fuel pump harness connector (A) and ground.

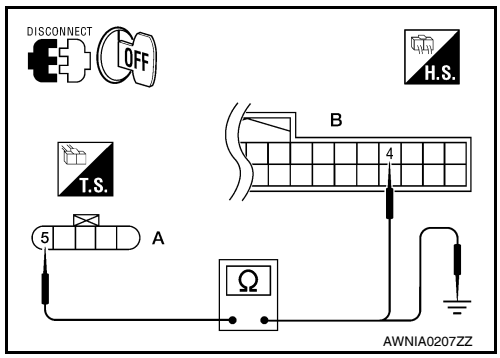
A		Ground	Continuity
Connector	Terminal		
C5	2		No

Is the inspection result normal?

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

3.CHECK FUEL LEVEL SENSOR UNIT GROUND CIRCUIT

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



A		B		Continuity
Connector	Terminal	Connector	Terminal	
C5	5	M24	4	Yes

2. Check continuity between fuel level sensor unit and fuel pump harness connector (A) and ground.

A		Ground	Continuity
Connector	Terminal		
C5	5		No

Is the inspection result normal?

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

4.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.

Component Inspection

INFOID:0000000001691296

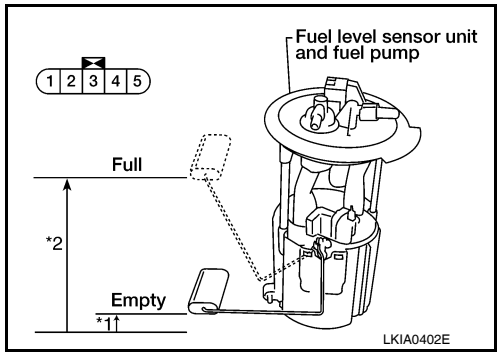
1.REMOVE FUEL LEVEL SENSOR UNIT

Remove the fuel level sensor unit. Refer to FL-7, "Removal and Installation".

>> GO TO 2

2.CHECK FUEL LEVEL SENSOR UNIT AND FUEL PUMP

Check the resistance between terminals 2 and 5.



Terminal			Float position mm (in)		Resistance value (Approx.)
2	5	*1	Empty	7.5 (0.3)	80Ω
		*2	Full	218.9 (8.6)	6Ω

*1 and *2: When float arm is in contact with stopper.

Is inspection result normal?

YES >> Inspection End.
NO >> Replace fuel level sensor unit and fuel pump. Refer to FL-7, "Removal and Installation".

OIL PRESSURE SWITCH SIGNAL CIRCUIT

Description

INFOID:0000000001691297

Detects the engine oil pressure and transmits the oil pressure switch signal to the IPDM E/R.

Component Function Check

INFOID:0000000001691298

1.COMBINATION METER INPUT SIGNAL

1. Select “METER/M&A” on CONSULT-III.
2. Monitor “OIL W/L” of “DATA MONITOR” while operating ignition switch.

OIL W/L

When ignition switch is in ON position (Engine stopped) : ON

When engine is running : OFF

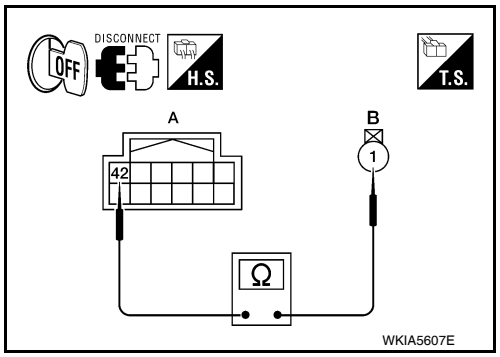
>> Inspection End.

Diagnosis Procedure

INFOID:0000000001691299

1.CHECK OIL PRESSURE SWITCH CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connector E122 and oil pressure switch connector F4.
3. Check continuity between IPDM E/R harness connector E122 (A) terminal 42 and oil pressure switch harness connector F4 (B) terminal 1.



Continuity should exist.

Is the inspection result normal?

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

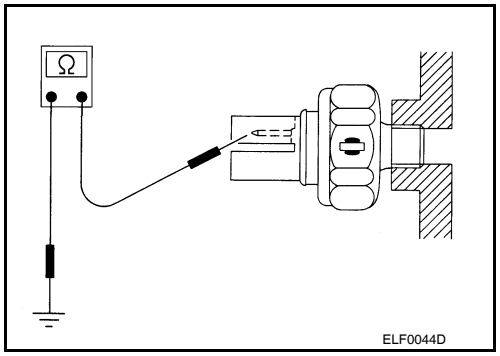
Component Inspection

INFOID:0000000001691300

1.CHECK OIL PRESSURE SWITCH

Check continuity between oil pressure switch and ground.

Condition	Oil pressure [kPa (kg/cm^2, psi)]	Continuity
Engine stopped	Less than 29 (0.3, 4)	Yes
Engine running	More than 29 (0.3, 4)	No



Is the inspection result normal?

YES >> Inspection End.
NO >> Replace the oil pressure switch.

PARKING BRAKE SWITCH SIGNAL CIRCUIT

Description

INFOID:0000000001691301

Transmits the parking brake switch signal to the combination meter.

Component Function Check

INFOID:0000000001691302

1.COMBINATION METER INPUT SIGNAL

1. Start engine.
2. Monitor “BRAKE” warning lamp while applying and releasing the parking brake.

BRAKE warning lamp
Parking brake applied : ON
Parking brake released : OFF

>> Inspection End.

Diagnosis Procedure

INFOID:0000000001691303

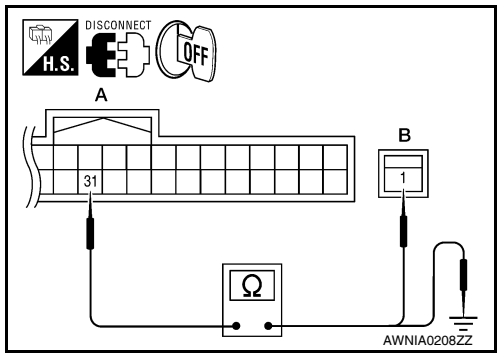
1.CHECK PARKING BRAKE SWITCH CIRCUIT

1. Disconnect combination meter connector and parking brake switch connector.
2. Check continuity between combination meter harness connector M24 (A) terminal 31 and parking brake switch harness connector M11 (B) terminal 1.

31 - 1 : Continuity should exist.

3. Check continuity between combination meter harness connector M24 (A) terminal 31 and ground.

31 - Ground : Continuity should not exist.



Is the inspection result normal?

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

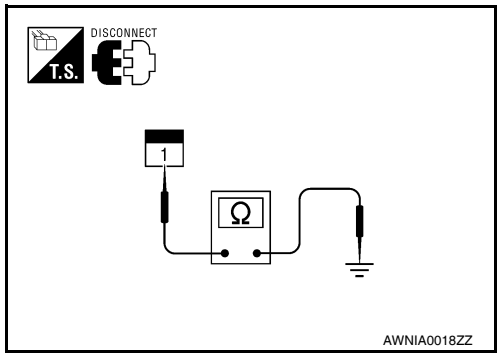
Component Inspection

INFOID:0000000001691304

1.CHECK PARKING BRAKE SWITCH

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

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



Is the inspection result normal?

YES >> Inspection End.
NO >> Replace parking brake switch.

WASHER LEVEL SWITCH SIGNAL CIRCUIT

Description

INFOID:0000000001691305

Transmits the washer level switch signal to the combination meter.

Diagnosis Procedure

INFOID:0000000001691306

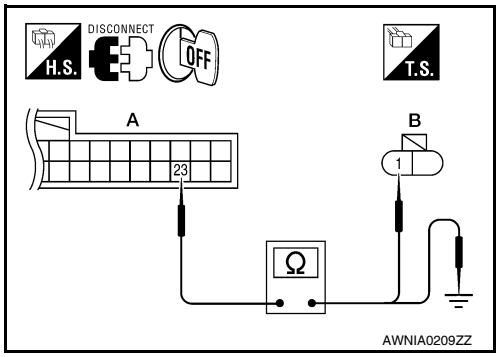
1.CHECK WASHER FLUID LEVEL SWITCH SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect combination meter connector and washer fluid level switch connector.
3. Check continuity between combination meter harness connector M24 (A) terminal 23 and washer fluid level switch harness connector E106 (B) terminal 1.

23 - 1 : Continuity should exist.

4. Check continuity between combination meter harness connector M24 (A) terminal 23 and ground.

23 - Ground : Continuity should not exist.



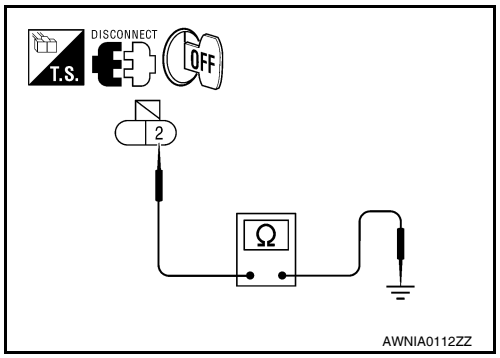
Is the inspection result normal?

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

2.CHECK WASHER FLUID LEVEL SWITCH GROUND CIRCUIT

Check continuity between washer fluid level switch harness connector E106 terminal 2 and ground.

2 - Ground : Continuity should exist.



Is the inspection result normal?

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

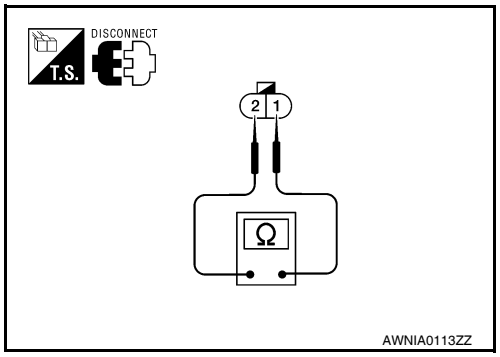
Component Inspection

INFOID:0000000001691307

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
	Other	No



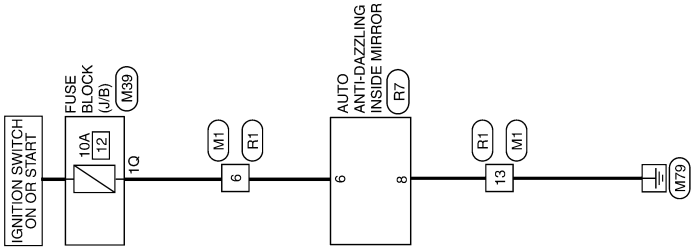
Is the inspection result normal?

YES >> Inspection End.
NO >> Replace washer fluid level switch.

COMPASS

Wiring Diagram

INFOID:0000000001691308



COMPASS

ALNWA0133GB

COMPASS CONNECTORS

Connector No.	M1
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

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

Terminal No.	Color of Wire	Signal Name
6	G/R	–
13	B	–

Connector No.	M39
Connector Name	FUSE BLOCK (J/B)
Connector Color	WHITE

H.S.

3Q		2Q	1Q
8Q	7Q	6Q	5Q	4Q

Terminal No.	Color of Wire	Signal Name
1Q	G/R	–

Connector No.	R1
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

Terminal No.	Color of Wire	Signal Name
6	G/R	–
13	B	–

Connector No.	R7
Connector Name	AUTO ANTI-DAZZLING INSIDE MIRROR
Connector Color	GRAY

H.S.

5	4	3	2	1
10	9	8	7	6

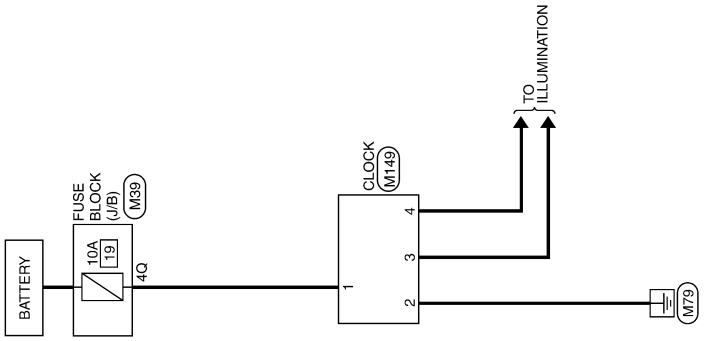
Terminal No.	Color of Wire	Signal Name
6	G/R	–
8	B	–

ALNIA0687GB

CLOCK

Wiring Diagram

INFOID:0000000001696401



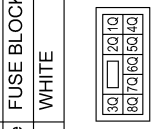
CLOCK

ALNWA0134GB

CLOCK CONNECTORS

Connector No.	M39
Connector Name	FUSE BLOCK (J/B)
Connector Color	WHITE

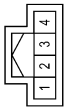
H.S.



Terminal No.	Color of Wire	Signal Name
4Q	Y/R	–

Connector No.	M149
Connector Name	CLOCK
Connector Color	WHITE

H.S.



Terminal No.	Color of Wire	Signal Name
1	Y/R	B
2	B	GND
3	R/L	ILL+
4	BR	ILL-

ALNIA0688GB

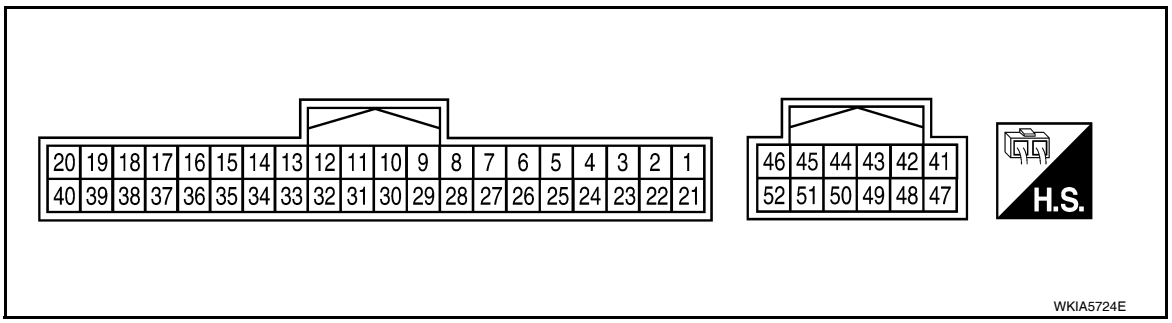
ECU DIAGNOSIS

COMBINATION METER

Reference Value

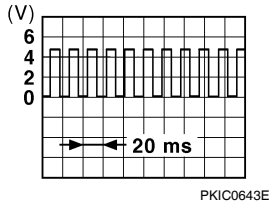
INFOID:0000000001691309

TERMINAL LAYOUT



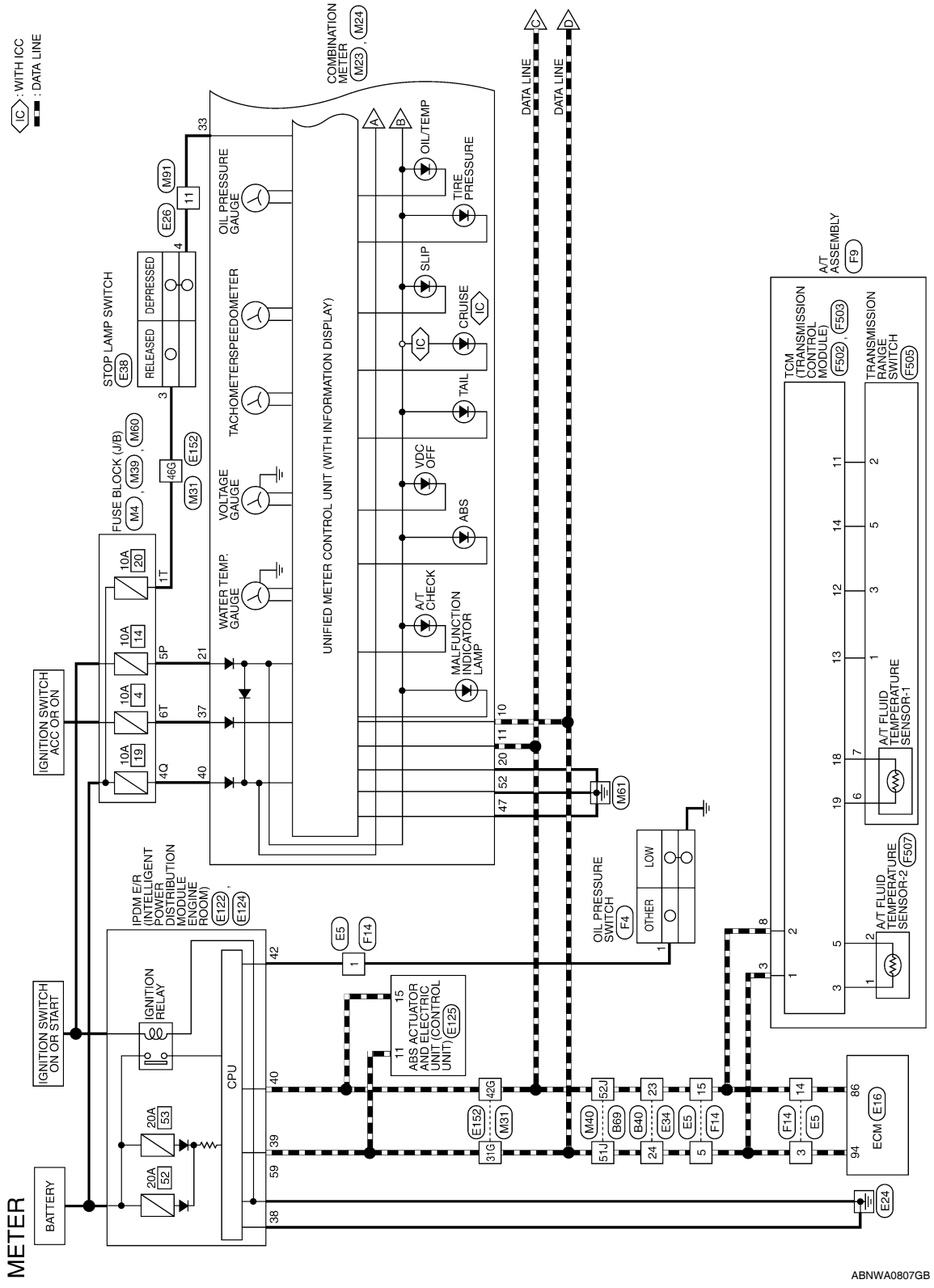
PHYSICAL VALUES

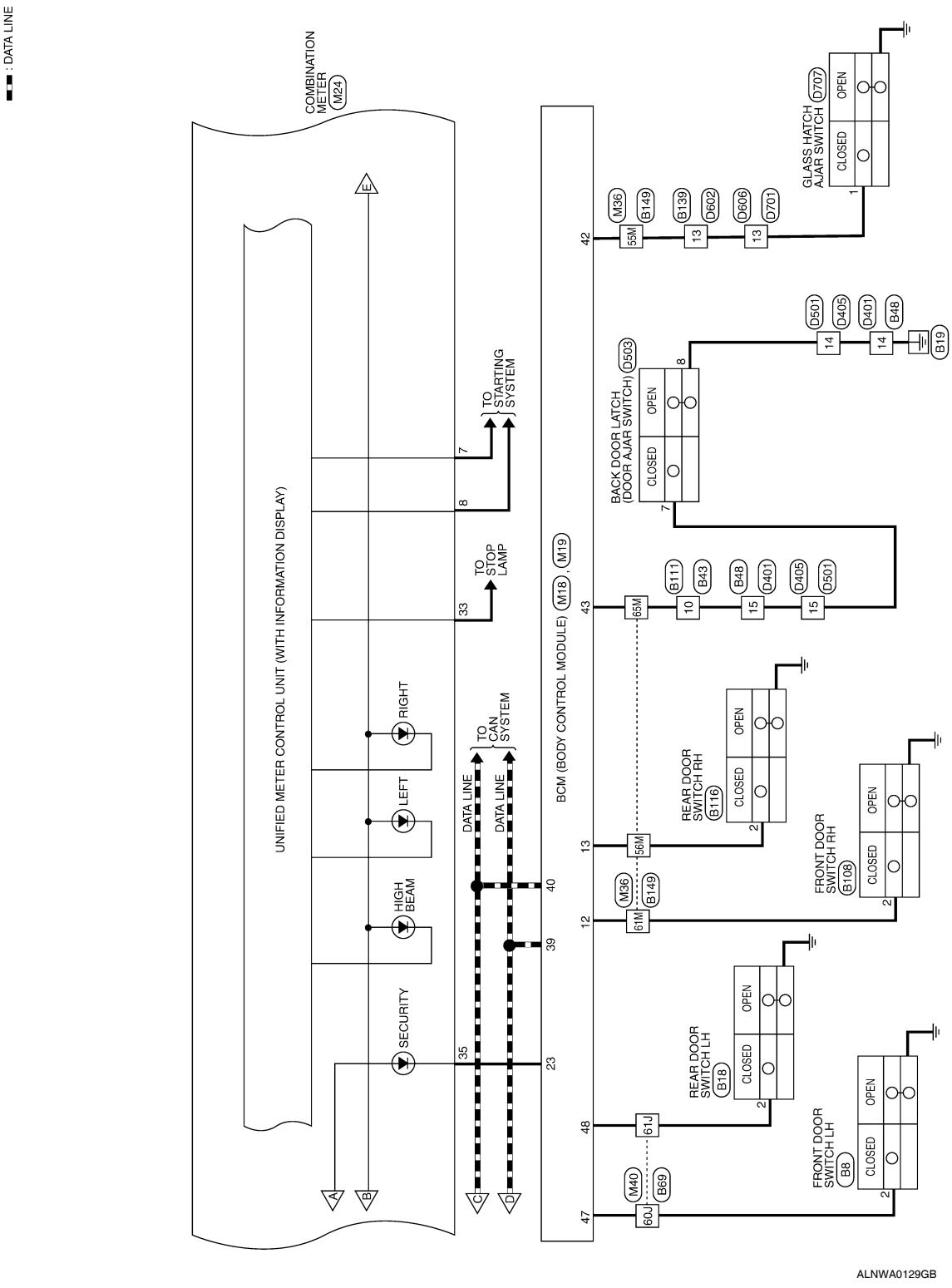
Terminal	Wire color	Item	Condition		Reference value (V) (Approx.)
			Ignition switch	Operation or condition	
3	Y/L	Fuel level sensor signal	—	—	Refer to MWI-12, "FUEL GAUGE : System Description".
4	B/P	Fuel level sensor ground	ON	—	0
6	BR/W	Generator	ON	Generator voltage low	0
				Generator voltage normal	Battery voltage
10	L	CAN-H	—	—	—
11	P	CAN-L	—	—	—
13	P	Air bag warning lamp input	ON	Air bag warning lamp ON	4
				Air bag warning lamp OFF	0
15	BR	CK SUSP warning lamp input	—	CK SUSP warning lamp ON	0
				CK SUSP warning lamp OFF	Battery voltage
20	B	Ground	—	—	0
21	O/L	Ignition switch ON or START	ON	—	Battery voltage
23	W/L	Washer fluid level switch	ON	Washer fluid level low	0
				Washer fluid level normal	Battery voltage
24	O/B	Seat belt buckle switch LH	ON	Unfastened (ON)	0
				Fastened (OFF)	Battery voltage
25	P/L	Seat belt buckle switch RH	ON	Unfastened (ON)	0
				Fastened (OFF)	Battery voltage
31	G	Parking brake switch	ON	Parking brake applied	0
				Parking brake released	Battery voltage
32	P/B	Brake fluid level switch	ON	Brake fluid level low	0
				Brake fluid level normal	Battery voltage
33	R/G	Stop lamp switch	—	Brake pedal depressed	Battery voltage
				Brake pedal released	0

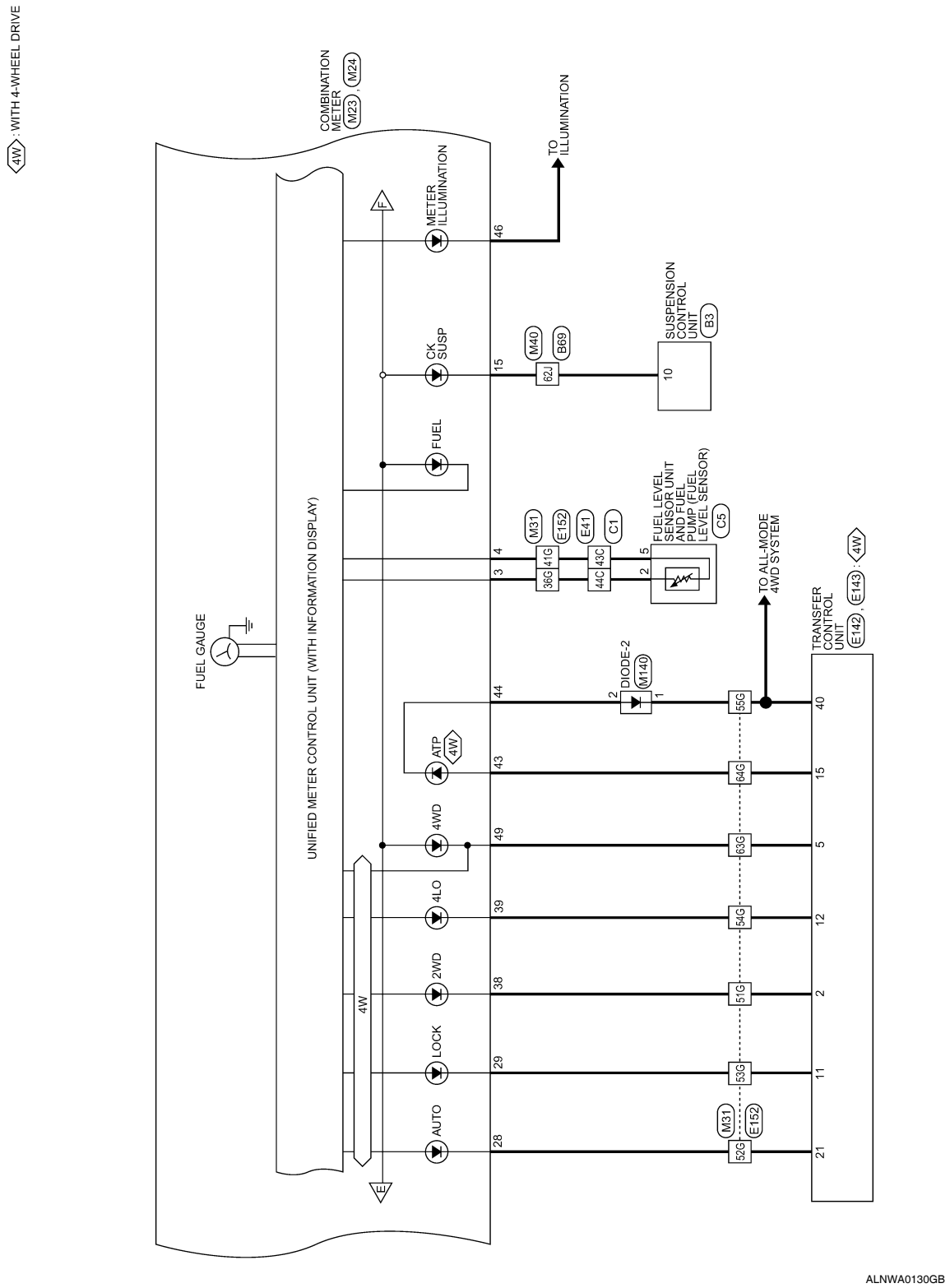
Terminal	Wire color	Item	Condition		Reference value (V) (Approx.)
			Ignition switch	Operation or condition	
35	G/O	Security indicator input	OFF	Security indicator ON	0
				Security indicator OFF	Battery voltage
37	O	Ignition switch ACC or ON	—	—	Battery voltage
40	Y/R	Battery power supply	—	—	Battery voltage
46	BR	Illumination output	—	—	Refer to INL-9, "System Description".
47	B	Ground	—	—	0
50	W/R	Vehicle speed signal output (8-pulse)	ON	Speedometer operated [When vehicle speed is approx. 40 km/h (25 MPH)]	**NOTE:** Maximum voltage may be 12V due to specifications (connected units).  PKIC0643E
52	B	Ground	—	—	0

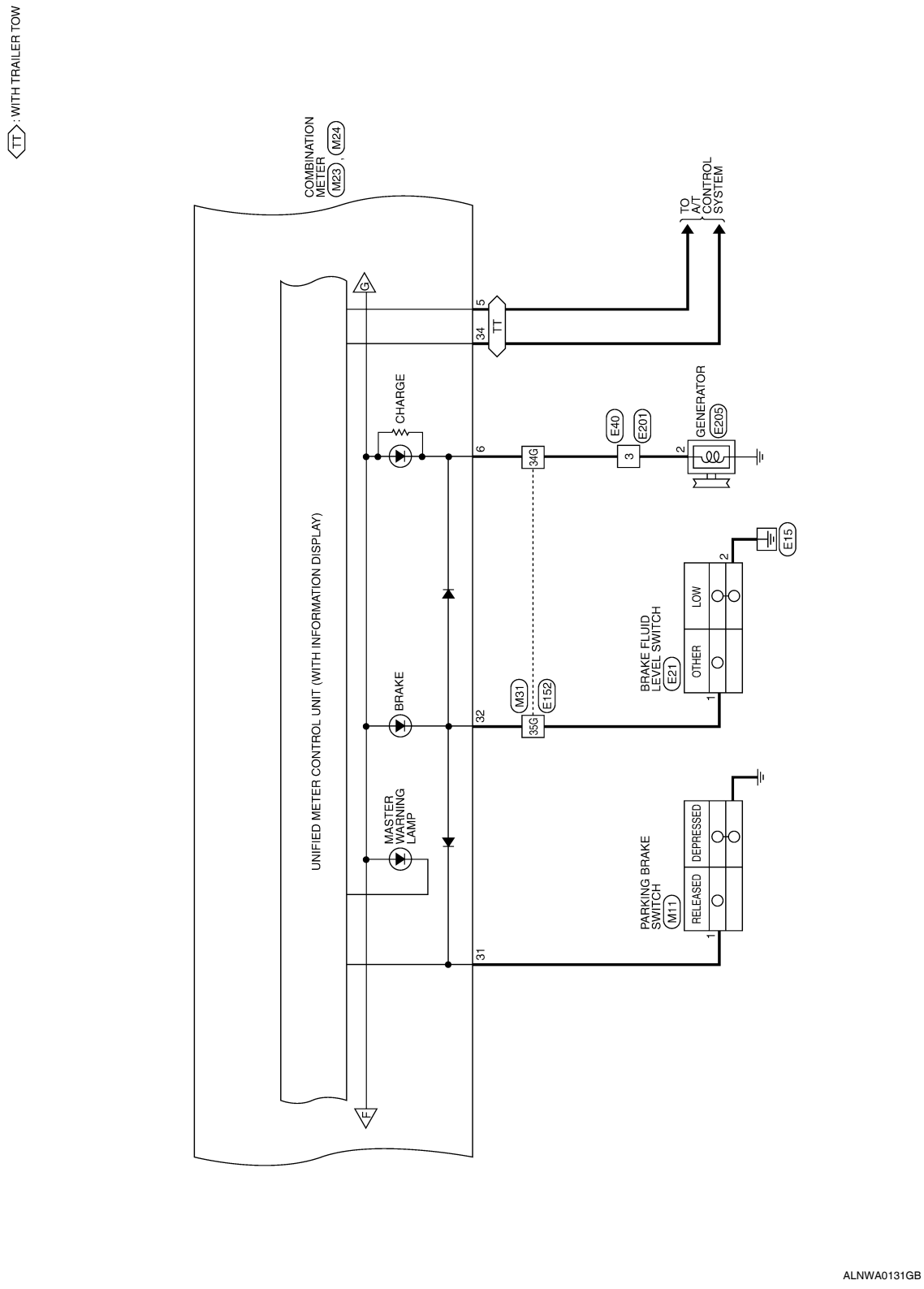
Wiring Diagram

INFOID:0000000001691310

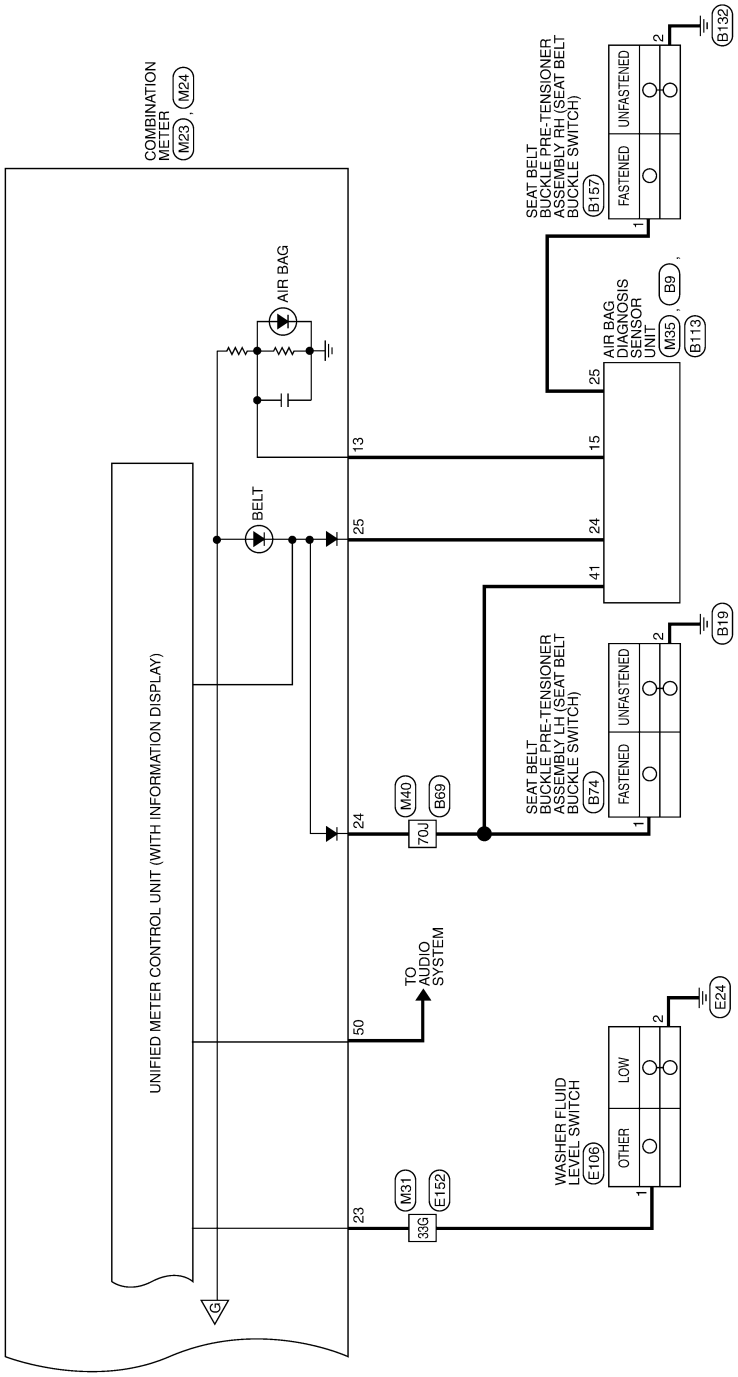



: DATA LINE
COMBINATION METER (M24)
UNIFIED METER CONTROL UNIT (WITH INFORMATION DISPLAY)
BCM (BODY CONTROL MODULE) (M18), (M19)
RIGHT
LEFT
HIGH BEAM
SECURITY
DATA LINE
DATA LINE
TO CAN SYSTEM
TO STARTING SYSTEM
TO STOP LAMP
GLASS HATCH AJAR SWITCH D707
BACK DOOR LATCH (DOOR AJAR SWITCH) D503
REAR DOOR SWITCH RH B116
FRONT DOOR SWITCH RH B108
REAR DOOR SWITCH LH B18
FRONT DOOR SWITCH LH B8
OPEN
CLOSED
ALNWA0129GB


4W : WITH 4-WHEEL DRIVE
COMBINATION METER M23, M24
TO ILLUMINATION
METER ILLUMINATION
CK SUSP
SUSPENSION CONTROL UNIT B3
FUEL
FUEL LEVEL SENSOR UNIT AND FUEL PUMP (FUEL LEVEL SENSOR) C5
TO ALL-MODE 4WD SYSTEM
TRANSFER CONTROL UNIT E142, E143
FUEL GAUGE
UNIFIED METER CONTROL UNIT (WITH INFORMATION DISPLAY)
DIODE-2 M140
ATP 4W
4WD
4LO
2WD
LOCK
AUTO
4W
F
E
ALNWA0130GB



ALNWA0131GB

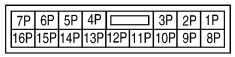


ALNWA0132GB

METER CONNECTORS

Connector No.	M4
Connector Name	FUSE BLOCK (J/B)
Connector Color	WHITE

H.S.



Terminal No.	Color of Wire	Signal Name
5P	O/L	–

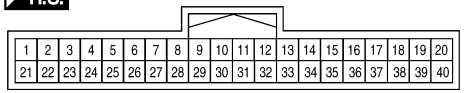
Connector No.	M11
Connector Name	PARKING BRAKE SWITCH
Connector Color	BLACK

H.S.

Terminal No.	Color of Wire	Signal Name
1	G	–

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

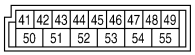
H.S.



Terminal No.	Color of Wire	Signal Name
12	R/L	DOOR_SW_AS
13	GR	DOOR_SW_RR
23	G/O	SECURITY_INDI_ OUTPUT
39	L	CAN-H
40	P	CAN-L

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

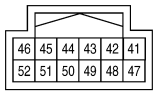
H.S.



Terminal No.	Color of Wire	Signal Name
42	GR	GLASS_HATCH_AJAR
43	RB	BACK_DOOR_SW
47	SB	DOOR_SW_DR
48	R/Y	DOOR_SW_RL

Connector No.	M23
Connector Name	COMBINATION METER
Connector Color	WHITE

H.S.



Terminal No.	Color of Wire	Signal Name
43	L/B	ATP+
44	R/B	ATP-
46	BR	–
47	B	–
49	W/B	4WD
50	W/R	SPEED_8P
52	B	–

ALNIA0676GB

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
3	Y/L	FUEL SEN
4	B/P	–
5	Y/V	TOW_IND
6	BR/W	–
7	GR/R	–
8	B/R	–
10	L	CAN-H

Terminal No.	Color of Wire	Signal Name
11	P	CAN-L
13	P	AIR_BAG_IND
15	BR	–
20	B	–
21	O/L	–
23	W/L	WASH_IND
24	O/B	BELT_IND
25	P/L	BELT_IND
28	BR	AUTO
29	L	LOCK/4H
31	G	–

Terminal No.	Color of Wire	Signal Name
32	P/B	–
33	R/G	–
34	LG/R	TOW_SW_STATUS
35	G/O	SECURITY_IND
37	O	–
38	B/W	2WD
39	W/G	4LD
40	Y/R	–

Connector No.	M31
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
31G	L	–
33G	W/L	–
34G	BR/W	–
35G	P/B	–
36G	Y/L	–
41G	B/P	–
42G	P	–
46G	R/Y	–
51G	B/W	–
52G	BR	–
53G	L	–
54G	W/G	–
55G	L/Y	–

Terminal No.	Color of Wire	Signal Name
63G	W/B	–
64G	L/B	–

ABNIA2306GB

Terminal No.	Color of Wire	Signal Name
55M	GR	–
56M	GR	–
61M	R/L	–
65M	R/B	–

Connector No.	M36
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
51J	L	–
52J	P	–
60J	SB	–
61J	R/Y	–
62J	B/R	–
70J	O/B	–

Connector No.	M40
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

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

H.S.

Terminal No.	Color of Wire	Signal Name
15	P	WARN-LAMP
24	P/L	SEAT BELT-MINDER

Connector No.	M39
Connector Name	FUSE BLOCK (J/B)
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
4Q	Y/R	–

ALNIA0678GB

Connector No.	M60
Connector Name	FUSE BLOCK (J/B)
Connector Color	WHITE

H.S.

2T		1T
6T	5T	4T	3T

Terminal No.	Color of Wire	Signal Name
1T	R/Y	–
6T	O	–

Connector No.	M91
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

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

Terminal No.	Color of Wire	Signal Name
11	R/G	–

Connector No.	M140
Connector Name	DIODE-2
Connector Color	BLACK

H.S.

1	2

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

Connector No.	E5
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
1	G/R	–
3	L	–
5	L	–
14	P	–
15	P	–

Connector No.	E16
Connector Name	ECM
Connector Color	BLACK

H.S.

106	107	108	109	110	111	112	113		119	120	121
98	99	100	101	102	103	104	105		117	118	
90	91	92	93	94	95	96	97		114	115	116
82	83	84	85	86	87	88	89				

Terminal No.	Color of Wire	Signal Name
86	P	CAN-L
94	L	CAN-H

Connector No.	E21
Connector Name	BRAKE FLUID LEVEL SWITCH
Connector Color	GRAY

H.S.

1	2

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

ABNIA2307GB

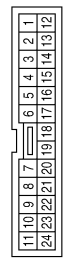
Connector No.	E38
Connector Name	STOP LAMP SWITCH
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
3	R/Y	–
4	R/G	–

Connector No.	E34
Connector Name	WIRE TO WIRE
Connector Color	WHITE

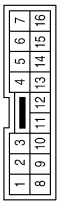
H.S.



Terminal No.	Color of Wire	Signal Name
23	P	–
24	L	–

Connector No.	E26
Connector Name	WIRE TO WIRE
Connector Color	WHITE

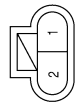
H.S.



Terminal No.	Color of Wire	Signal Name
11	R/G	–

Connector No.	E106
Connector Name	WASHER FLUID LEVEL SWITCH
Connector Color	BROWN

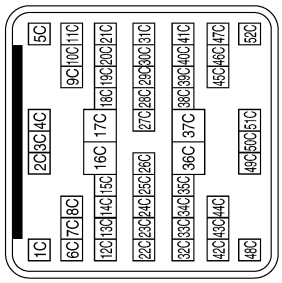
H.S.



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

Connector No.	E41
Connector Name	WIRE TO WIRE
Connector Color	GRAY

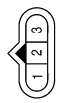
H.S.



Terminal No.	Color of Wire	Signal Name
43C	B/P	–
44C	Y/L	–

Connector No.	E40
Connector Name	WIRE TO WIRE
Connector Color	BLACK

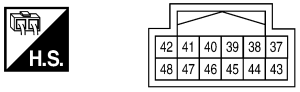
H.S.



Terminal No.	Color of Wire	Signal Name
3	BR/W	–

ABNIA2308GB

Connector No.	E122
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Color	WHITE

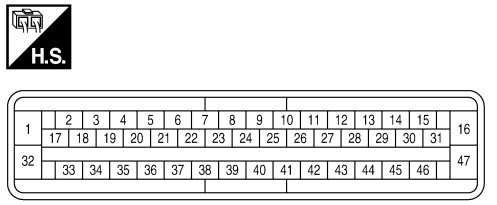


Terminal No.	Color of Wire	Signal Name
38	B	GND (SIG)
39	L	CAN-H
40	P	CAN-L
42	GR	OIL_PRES_SW

Connector No.	E124
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Color	BLACK

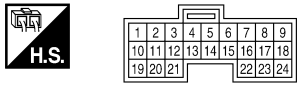
Terminal No.	Color of Wire	Signal Name
59	B	GND (PWR)

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



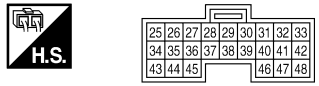
Terminal No.	Color of Wire	Signal Name
11	L	CAN-H
15	P	CAN-L

Connector No.	E142
Connector Name	TRANSFER CONTROL UNIT
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
2	B/W	2WD IND
5	W/B	4WD FAIL IND
11	L	LOCK IND
12	W/G	4LO IND
15	L/B	ATP-IND
21	BR	AUTO IND

Connector No.	E143
Connector Name	TRANSFER CONTROL UNIT
Connector Color	GRAY



Terminal No.	Color of Wire	Signal Name
40	L	ATP SW

ABNIA2309GB

Terminal No.	Color of Wire	Signal Name
63G	W/B	–
64G	L/B	–

Terminal No.	Color of Wire	Signal Name
31G	L	–
33G	W/L	–
34G	BR/W	–
35G	P/B	–
36G	Y/L	–
41G	B/P	–
42G	P	–
46G	R/Y	–
51G	B/W	–
52G	BR	–
53G	L	–
54G	W/G	–
55G	L/Y	–

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

H.S.

Connector No.	E205
Connector Name	GENERATOR
Connector Color	BLACK

H.S.

Terminal No.	Color of Wire	Signal Name
2	BR/W	–

Connector No.	E201
Connector Name	WIRE TO WIRE
Connector Color	BLACK

H.S.

Terminal No.	Color of Wire	Signal Name
3	BR/W	–

Connector No.	F4
Connector Name	OIL PRESSURE SWITCH
Connector Color	GRAY

H.S.

Terminal No.	Color of Wire	Signal Name
1	GR	–

ABNIA2310GB

Connector No.	F9
Connector Name	A/T ASSEMBLY
Connector Color	GREEN

H.S.

5	4	3	2	1
10	9	8	7	6

Terminal No.	Color of Wire	Signal Name
3	L	CAN-H
8	P	CAN-L

Connector No.	F14
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

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

Terminal No.	Color of Wire	Signal Name
1	GR	–
3	L	–
5	L	–
14	P	–
15	P	–

Connector No.	F502
Connector Name	TCM (TRANSMISSION CONTROL MODULE)
Connector Color	GRAY

H.S.

10	9	8	7	6	5	4	3	2	1

Terminal No.	Color of Wire	Signal Name
1	BR	CAN-H
2	L/Y	CAN-L
3	W/Y	ATF SENS 2-
5	W/R	ATF SENS 2+

Connector No.	F503
Connector Name	TCM (TRANSMISSION CONTROL MODULE)
Connector Color	GREEN

H.S.

20	19	18	17	16	15	14	13	12	11

Terminal No.	Color of Wire	Signal Name
11	W	INH-SW4
12	GR	INH-SW2
13	BR	INH-SW1
14	L	INH-SW3
18	O	ATF SENS 1-
19	G	ATF SENS 1+

Connector No.	F505
Connector Name	TRANSMISSION RANGE SWITCH
Connector Color	GRAY

H.S.

10	9	8	7	6	5	4	3	2	1

Terminal No.	Color of Wire	Signal Name
1	BR	S1
2	W	S4
3	GR	S2
5	L	S3
6	G	–
7	O	–

Connector No.	F507
Connector Name	A/T FLUID TEMPERATURE SENSOR-2
Connector Color	WHITE

H.S.

2	1

Terminal No.	Color of Wire	Signal Name
1	W/Y	–
2	W/R	–

ABNIA2295GB

Connector No.	C1
Connector Name	WIRE TO WIRE
Connector Color	GRAY

H.S.

Terminal No.	Color of Wire	Signal Name
43C	B/P	–
44C	Y/L	–

Connector No.	C5
Connector Name	FUEL LEVEL SENSOR UNIT AND FUEL PUMP
Connector Color	GRAY

H.S.

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

Connector No.	B3
Connector Name	SUSPENSION CONTROL UNIT
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
10	BR	–

Connector No.	B8
Connector Name	FRONT DOOR SWITCH LH
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
2	SB	–

Connector No.	B9
Connector Name	AIR BAG DIAGNOSIS SENSOR UNIT
Connector Color	YELLOW

H.S.

Terminal No.	Color of Wire	Signal Name
41	O/B	–

Connector No.	B18
Connector Name	REAR DOOR SWITCH LH
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
2	R/Y	–

ABNIA2311GB

Connector No.	B40
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
23	P	–
24	L	–

Connector No.	B43
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

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

Terminal No.	Color of Wire	Signal Name
10	R/W	–

Connector No.	B48
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

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

Terminal No.	Color of Wire	Signal Name
14	B	–
15	R/W	–

Connector No.	B69
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
51J	L	–
52J	P	–
60J	SB	–
61J	R/Y	–
62J	BR	–
70J	O/B	–

Connector No.	B74
Connector Name	SEAT BELT BUCKLE PRE-TENSIONER ASSEMBLY LH (SEAT BELT BUCKLE SWITCH)
Connector Color	YELLOW

H.S.

1	2	3	4

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

ABNIA2312GB

Connector No.	B108
Connector Name	FRONT DOOR SWITCH RH
Connector Color	WHITE

H.S.

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

Connector No.	B111
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
10	R/W	–

Connector No.	B113
Connector Name	AIR BAG DIAGNOSIS SENSOR UNIT
Connector Color	YELLOW

H.S.

Terminal No.	Color of Wire	Signal Name
25	L	BUCKLE_SW_RH

Connector No.	B116
Connector Name	REAR DOOR SWITCH RH
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
2	GR	–

Connector No.	B139
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
13	GR	–

Connector No.	B149
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

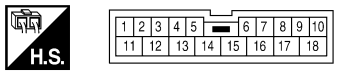
Terminal No.	Color of Wire	Signal Name
55M	GR	–
56M	GR	–
61M	R/L	–
65M	R/B	–

ABNIA2313GB

Connector No.	B157
Connector Name	SEAT BELT BUCKLE PRE-TENSIONER ASSEMBLY RH (SEAT BELT BUCKLE SWITCH)
Connector Color	YELLOW

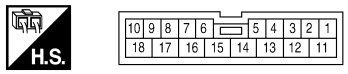
Terminal No.	Color of Wire	Signal Name
1	L	–
2	B	–

Connector No.	D401
Connector Name	WIRE TO WIRE
Connector Color	WHITE



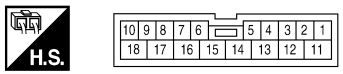
Terminal No.	Color of Wire	Signal Name
14	B	–
15	R/W	–

Connector No.	D405
Connector Name	WIRE TO WIRE
Connector Color	WHITE



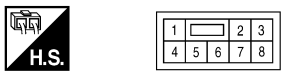
Terminal No.	Color of Wire	Signal Name
14	B	–
15	R/W	–

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



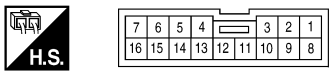
Terminal No.	Color of Wire	Signal Name
14	B	–
15	R/W	–

Connector No.	D503
Connector Name	BACK DOOR LATCH
Connector Color	WHITE



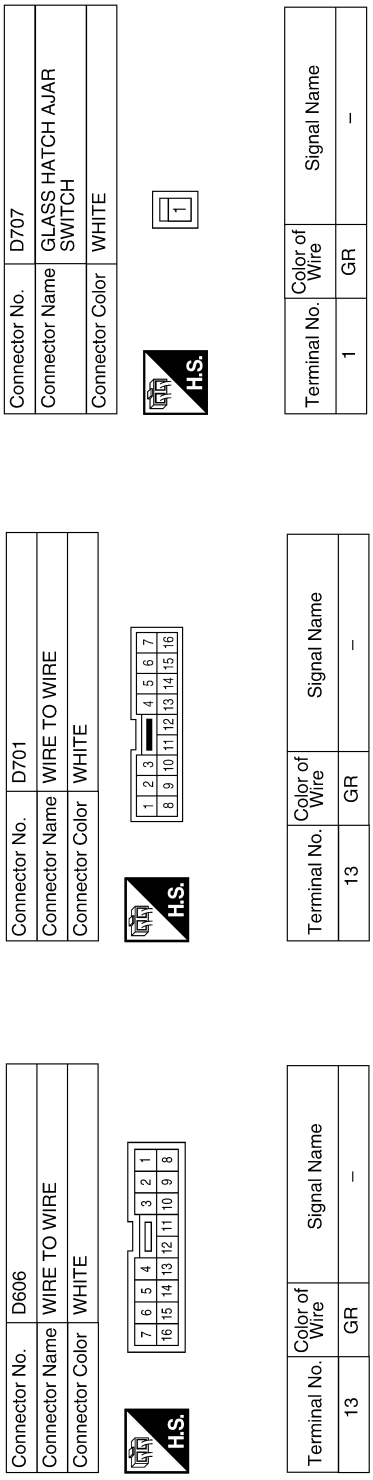
Terminal No.	Color of Wire	Signal Name
7	R/W	–
8	B	–

Connector No.	D602
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
13	GR	–

ABNIA2314GB



ABNIA2315GB

Fail Safe

INFOID:0000000001691311

The combination meter performs a fail-safe operation for the functions listed below when communication is lost.

Function		Specifications
Speedometer		Zero indication.
Tachometer		
Fuel gauge		
Engine coolant temperature gauge		
Engine oil pressure gauge		
Voltage gauge		
A/T oil temperature gauge		
Illumination control	Meter illumination	Change to nighttime mode when communication is lost.
Segment LCD	Odometer	Freeze current indication.
	A/T position	Display turns off.
Buzzer		Buzzer turns off.
Warning lamp/indicator lamp	ABS warning lamp	Lamp turns on when communication is lost.
	Brake warning lamp	
	VDC OFF indicator lamp	
	SLIP indicator lamp	
	A/T CHECK warning lamp	Lamp turns off when communication is lost.
	Oil pressure/coolant temperature warning lamp	
	Light indicator	
	Malfunction indicator lamp	
	Master warning lamp	
	Air bag warning lamp	
	High beam indicator	
	Turn signal indicator lamp	
	CRUISE indicator lamp	
	Driver and passenger seat belt warning lamp	Lamp turns off when disconnected.
	Charge warning lamp	
	Security indicator lamp	
	4WD indicator lamp	
	ATP indicator lamp	
	CK SUSP warning lamp	
	Low tire pressure warning lamp	Lamp will flash every second for 1 minute and then stay on continuously thereafter.

DTC Index

INFOID:0000000001691312

CONSULT-III display	Malfunction	Reference page
CAN COMM CIRC [U1000]	Malfunction is detected in CAN communication. **CAUTION:** **Even when there is no malfunction on CAN communication system, malfunction may be misinterpreted when battery has low voltage (when maintaining 7 - 8 V for about 2 seconds) or 10A fuse [No. 19, located in the fuse block (J/B)] is disconnected.**	MWI-28
VEHICLE SPEED CIRC [B2205]	Malfunction is detected when an erroneous speed signal is input. **CAUTION:** **Even when there is no malfunction on speed signal system, malfunction may be misinterpreted when battery has low voltage (when maintaining 7 - 8 V for about 2 seconds).**	MWI-29

NOTE:
"TIME" indicates the following.
- 0: Indicates that a malfunction is detected at present.
- 1-63: Indicates that a malfunction was detected in the past. (Displays number of ignition switch OFF → ON cycles after malfunction is detected. Self-diagnosis result is erased when "63" is exceeded.)

BCM (BODY CONTROL MODULE)

Reference Value

INFOID:0000000001696513

Refer to BCS-38, "Reference Value".

Terminal Layout

INFOID:0000000001696514

Refer to BCS-40, "Terminal Layout".

Physical Values

INFOID:0000000001696515

Refer to BCS-40, "Physical Values".

Wiring Diagram

INFOID:0000000001696516

Refer to BCS-46, "Wiring Diagram".

DTC Inspection Priority Chart

INFOID:0000000001696517

Refer to BCS-50, "DTC Inspection Priority Chart".

DTC Index

INFOID:0000000001696518

Refer to BCS-50, "DTC Index".

IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)

Reference Value

INFOID:0000000001696519

Refer to PCS-19, "Reference Value".

Terminal Layout

INFOID:0000000001696520

Refer to PCS-21, "Terminal Layout".

Physical Values

INFOID:0000000001696521

Refer to PCS-21, "Physical Values".

Wiring Diagram

INFOID:0000000001696522

Refer to PCS-26, "Wiring Diagram".

Fail Safe

INFOID:0000000001696523

Refer to PCS-29, "Fail Safe".

DTC Index

INFOID:0000000001696524

Refer to PCS-31, "DTC Index".

SYMPTOM DIAGNOSIS

THE FUEL GAUGE POINTER DOES NOT MOVE

Description

INFOID:0000000001691325

Fuel gauge needle will not move from a certain position.

Diagnosis Procedure

INFOID:0000000001691326

1.CHECK COMBINATION METER INPUT SIGNAL

1. Select “METER/M&A” on CONSULT-III.
2. Using “FUEL METER” of “DATA MONITOR”, compare the monitor value with the fuel gauge reading on the combination meter. Refer to MWI-33, "Component Function Check".

Does monitor value match fuel gauge reading?

YES >> GO TO 2
NO >> Replace combination meter. Refer to MWI-76, "Removal and Installation".

2.CHECK FUEL LEVEL SENSOR SIGNAL CIRCUIT

Check the fuel level sensor signal circuit. Refer to MWI-33, "Diagnosis Procedure".

Is the inspection result normal?

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

3.CHECK FUEL LEVEL SENSOR UNIT

Perform a unit check for the fuel level sensor unit. Refer to MWI-34, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 4
NO >> Replace fuel level sensor unit. Refer to FL-7, "Removal and Installation".

4.CHECK FLOAT INTERFERENCE

Check that the float arm does not interfere or bind with any of the components in the fuel tank.

Is the inspection result normal?

YES >> Replace combination meter. Refer to MWI-76, "Removal and Installation".
NO >> Repair or replace malfunctioning parts.

THE FUEL GAUGE POINTER DOES NOT MOVE TO "F" WHEN REFUELING

Description

INFOID:0000000001691327

The fuel gauge needle will not move to “F” position when refueling.

Diagnosis Procedure

INFOID:0000000001691328

1.OBSERVE FUEL GAUGE

Does it take a long time for the pointer to move to FULL position?

YES or NO

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

2.IDENTIFY FUELING CONDITION

Was the vehicle fueled with the ignition switch ON?

YES or NO

YES >> Be sure to fuel the vehicle with the ignition switch OFF. Otherwise, it will take a long time to move to FULL position because of the characteristic of the fuel gauge.
NO >> GO TO 3

3.OBSERVE VEHICLE POSITION

Is the vehicle parked on an incline?

YES or NO

YES >> Check the fuel level indication with vehicle on a level surface.
NO >> GO TO 4

4.OBSERVE FUEL GAUGE POINTER

During driving, does the fuel gauge pointer move gradually toward EMPTY position?

YES or NO

YES >> Check the components. Refer to MWI-34, "Component Inspection".
NO >> The float arm may interfere or bind with any of the components in the fuel tank.

THE OIL PRESSURE WARNING LAMP DOES NOT TURN ON

Description

INFOID:0000000001691329

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

Diagnosis Procedure

INFOID:0000000001691330

1.CHECK OIL PRESSURE WARNING LAMP

Perform IPDM E/R auto active test. Refer to PCS-12, "Diagnosis Description".

Is oil pressure warning lamp illuminated?

YES >> GO TO 2
NO >> Replace combination meter. Refer to MWI-76, "Removal and Installation".

2.CHECK OIL PRESSURE SWITCH SIGNAL CIRCUIT

Check the oil pressure switch signal circuit. Refer to MWI-35, "Diagnosis Procedure".

Is the inspection result normal?

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

3.CHECK OIL PRESSURE SWITCH UNIT

Perform a unit check for the oil pressure switch. Refer to MWI-35, "Component Inspection".

Is the inspection result normal?

YES >> Replace IPDM E/R. Refer to PCS-34, "Removal and Installation of IPDM E/R".
NO >> Replace oil pressure switch.

THE OIL PRESSURE WARNING LAMP DOES NOT TURN OFF

Description

INFOID:0000000001691331

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

Diagnosis Procedure

INFOID:0000000001691332

1.CHECK OIL PRESSURE WARNING LAMP

Perform IPDM E/R auto active test. Refer to PCS-12, "Diagnosis Description".

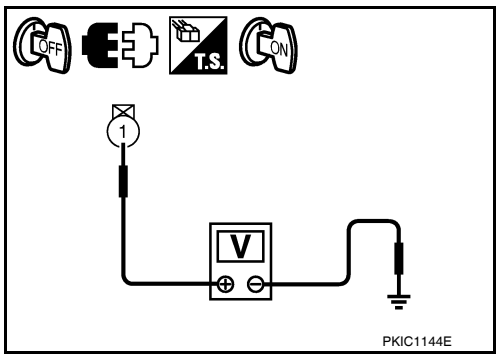
Is oil pressure warning lamp illuminated?

YES >> GO TO 2
NO >> Replace combination meter. Refer to MWI-76, "Removal and Installation".

2.CHECK IPDM E/R OUTPUT VOLTAGE

1. Turn ignition switch OFF.
2. Disconnect the oil pressure switch connector.
3. Turn ignition switch ON.
4. Check voltage between the oil pressure switch harness connector F4 terminal 1 and ground.

1 – Ground : Approx. 12V



Is the inspection result normal?

YES >> GO TO 3
NO >> GO TO 4

3.CHECK OIL PRESSURE SWITCH

Perform a unit check for the oil pressure switch. Refer to MWI-35, "Component Inspection".

Is the inspection result normal?

YES >> Replace IPDM E/R. Refer to PCS-34, "Removal and Installation of IPDM E/R".
NO >> Replace oil pressure switch.

4.CHECK OIL PRESSURE SWITCH SIGNAL CIRCUIT

Check the oil pressure switch signal circuit. Refer to MWI-35, "Diagnosis Procedure".

Is the inspection result normal?

YES >> Replace IPDM E/R. Refer to PCS-34, "Removal and Installation of IPDM E/R".
NO >> Repair harness or connector.

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

Description

INFOID:0000000001691333

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

Diagnosis Procedure

INFOID:0000000001691334

1.CHECK PARKING BRAKE WARNING LAMP OPERATION

1. Start engine.
2. Monitor “BRAKE” warning lamp while applying and releasing the parking brake.

BRAKE warning lamp
Parking brake applied : ON
Parking brake released : OFF

Is the inspection result normal?

YES >> Replace combination meter. Refer to MWI-76, "Removal and Installation".
NO >> GO TO 2

2.CHECK PARKING BRAKE SWITCH SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Check the parking brake switch signal circuit. Refer to MWI-36, "Diagnosis Procedure".

Is the inspection result normal?

YES >> GO TO 3
NG >> Repair harness or connector.

3.CHECK PARKING BRAKE SWITCH UNIT

Perform a unit check for the parking brake switch. Refer to MWI-36, "Component Inspection".

Is the inspection result normal?

YES >> Replace combination meter. Refer to MWI-76, "Removal and Installation".
NO >> Replace parking brake switch.

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

Description

INFOID:0000000001691335

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

Diagnosis Procedure

INFOID:0000000001691336

1.CHECK WASHER FLUID LEVEL SWITCH SIGNAL CIRCUIT

Check the washer fluid level switch signal circuit. Refer to MWI-37, "Diagnosis Procedure".

Is the inspection result normal?

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

2.CHECK WASHER FLUID LEVEL SWITCH UNIT

Perform a unit check for the washer fluid level switch. Refer to MWI-37, "Component Inspection".

Is the inspection result normal?

YES >> Replace combination meter. Refer to MWI-76, "Removal and Installation".
NO >> Replace washer level switch.

THE DOOR OPEN WARNING CONTINUES DISPLAYING, OR DOES NOT DISPLAY

Description

INFOID:0000000001691337

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

Diagnosis Procedure

INFOID:0000000001691338

1.CHECK SELF-DIAGNOSIS OF COMBINATION METER

Select “METER/M&A” on CONSULT-III and perform “SELF-DIAGNOSIS”.

Is the inspection result normal?

YES >> GO TO 2
NO >> Refer to MWI-62, "DTC Index".

2.CHECK SELF-DIAGNOSIS OF BCM

Select “BCM” on CONSULT-III and perform “SELF-DIAGNOSIS”.

Is the inspection result normal?

YES >> GO TO 3
NO >> Refer to BCS-50, "DTC Index".

3.CHECK DOOR SWITCH SIGNAL CIRCUIT

Check the door switch signal circuit. Refer to DLK-67, "Diagnosis Procedure".

Is the inspection result normal?

YES >> GO TO 4
NO >> Repair or replace malfunctioning parts.

4.CHECK GLASS HATCH AJAR SWITCH SIGNAL CIRCUIT

Check the glass hatch ajar switch signal circuit. Refer to DLK-125, "Diagnosis Procedure".

Is the inspection result normal?

YES >> Replace combination meter. Refer to MWI-76, "Removal and Installation".
NO >> Repair or replace malfunctioning parts.

NORMAL OPERATING CONDITION
COMPASS

COMPASS : Description

INFOID:0000000001691343

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-22, "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-22, "Description".

PRECAUTION

PRECAUTIONS

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

INFOID:0000000004894341

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

WARNING:

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

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

WARNING:

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

Precaution Necessary for Steering Wheel Rotation After Battery Disconnect

INFOID:0000000004894342

NOTE:

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

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

OPERATION PROCEDURE

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

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

ON-VEHICLE REPAIR

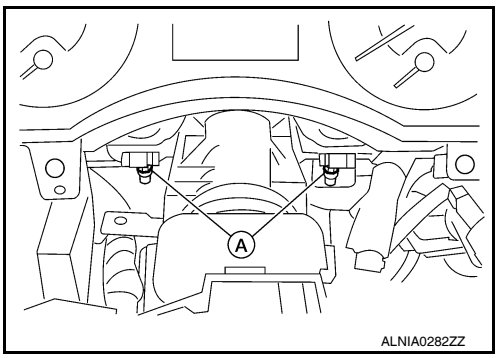
COMBINATION METER

Removal and Installation

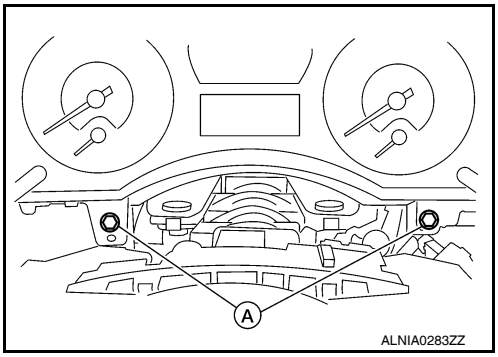
INFOID:0000000001609807

REMOVAL

1. Disconnect battery negative terminal.
2. Remove the cluster lid A. Refer to IP-14, "Removal and Installation".
3. Remove the steering column nuts (A), using power tool, then lower steering column to allow for enough clearance to remove combination meter.



4. Remove the combination meter lower screws (A), using power tool.



5. Remove the combination meter upper screws, using power tool, and pull out the combination meter.
6. Disconnect the combination meter connectors, and remove the combination meter.

INSTALLATION

Installation is in the reverse order of removal.

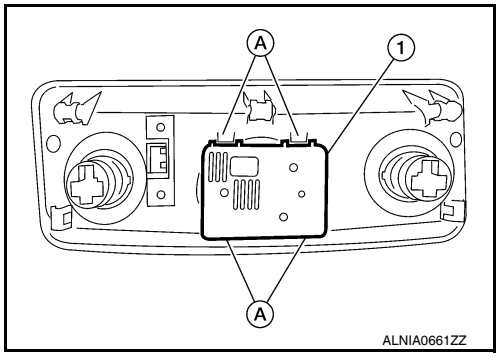
CLOCK

Removal and Installation

INFOID:0000000001609810

REMOVAL

1. Remove the cluster lid C lower. Refer to IP-15, "Removal and Installation".
2. Detach the clock (1) from the tabs (A) and remove clock (1).



INSTALLATION

Installation is in the reverse order of removal.