SECTION MWI
METER, WARNING LAMP & INDICATOR

CONTENTS

BASIC INSPECTION

DIAGNOSIS AND REPAIR WORKFLOW

Work Flow

INFOID:0000000006146335

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-26, "Diagnosis Description".

Does self-diagnosis mode operate?

YES >> GO TO 3
NO >> Check power supply and ground circuit of combination meter. Refer to MWI-32, "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-27, "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-43, "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

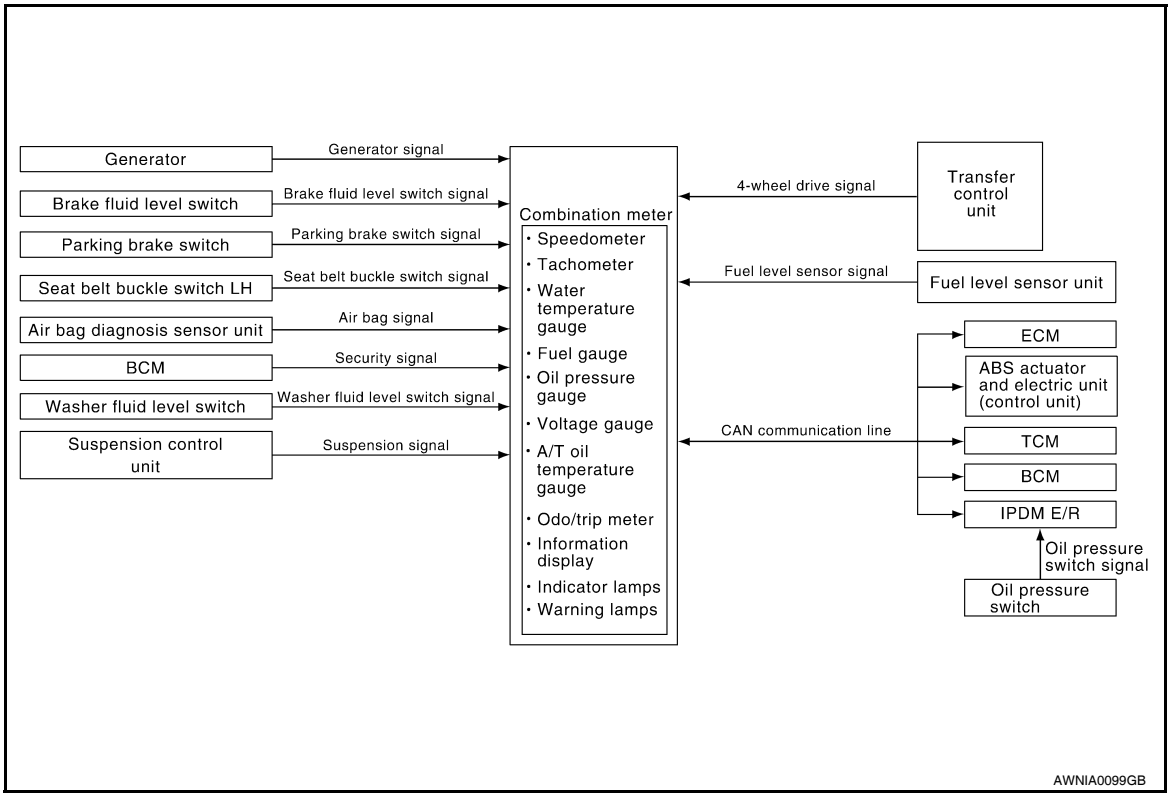
SYSTEM DESCRIPTION

METER SYSTEM

METER SYSTEM

METER SYSTEM : System Diagram

INFOID:0000000006146336



METER SYSTEM : System Description

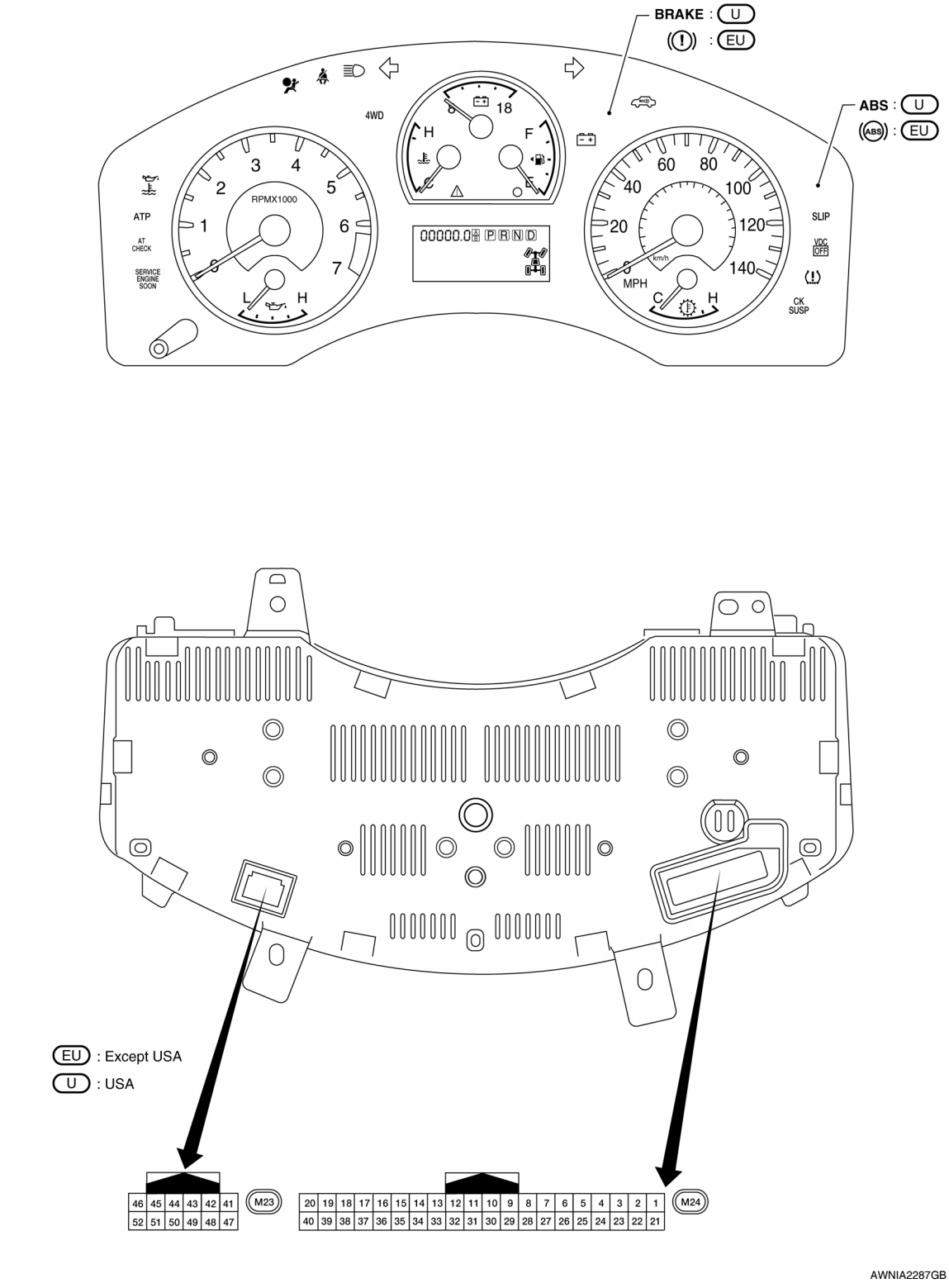
INFOID:0000000006146337

COMBINATION METER

- Speedometer, odo/trip meter, tachometer, fuel gauge, engine coolant temperature gauge, engine oil pressure gauge, voltage gauge, A/T oil temperature 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:0000000006146338



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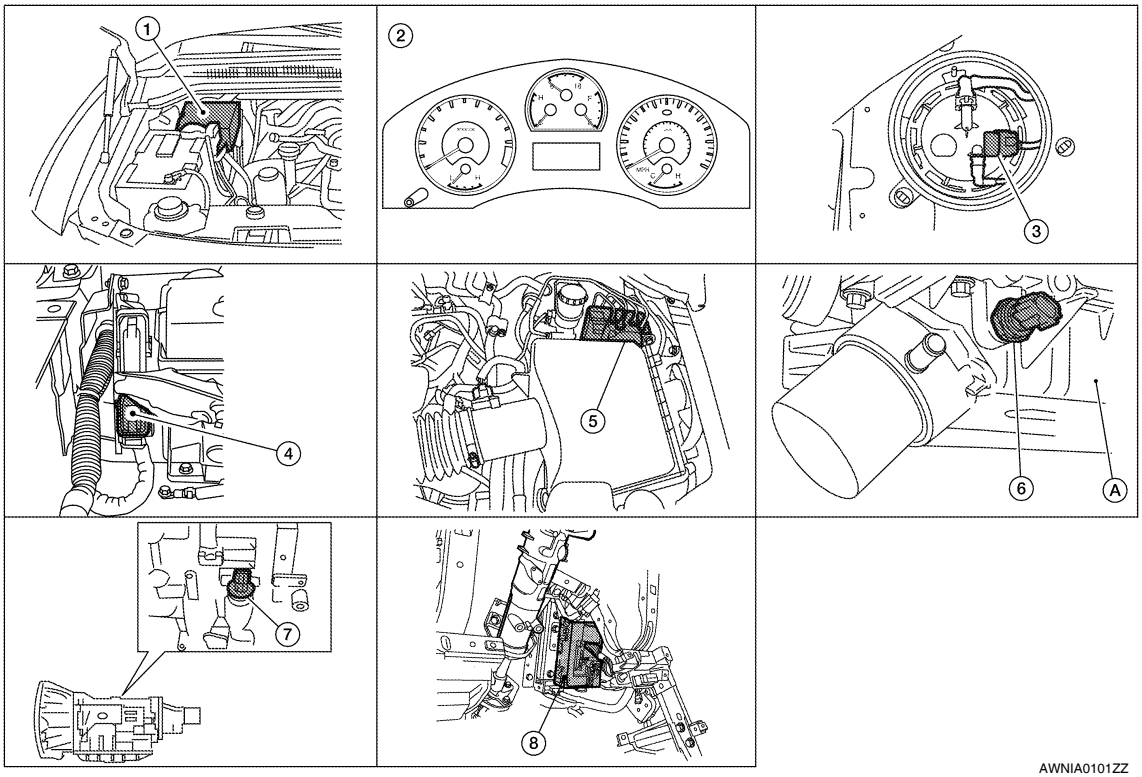
METER SYSTEM : Component Parts Location

INFOID:0000000006146339



AWNIA0101ZZ

1. IPDM E/R E122, E124
2. Combination meter M23, M24
3. Fuel level sensor unit and fuel pump C5
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:0000000006146340

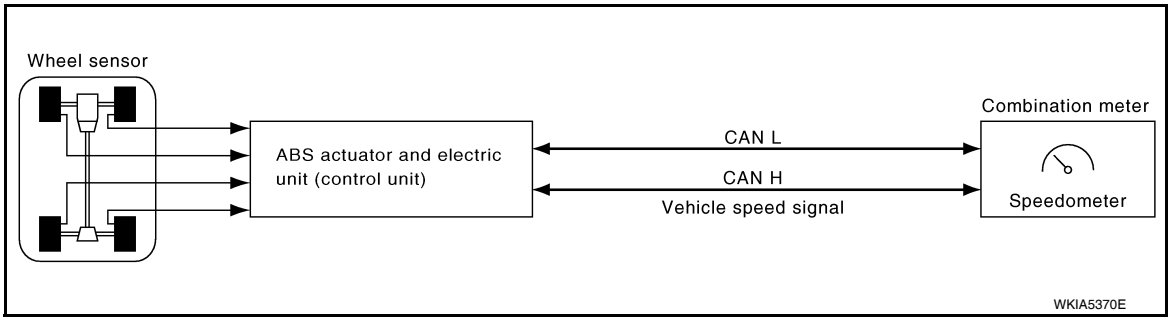
Unit	Description
Combination meter	Controls the following with the signals received from each unit via CAN communication and the signals from switches and sensors. • Speedometer • Tachometer • Engine coolant temperature gauge • Fuel gauge • Engine oil pressure gauge • A/T oil temperature gauge • Voltage gauge • Odo/trip meter • Warning lamps • Indicator lamps • Information display • Warning chime
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-36, "Description".
Oil pressure switch	Refer to MWI-38, "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-39, "Description".

SPEEDOMETER

SPEEDOMETER : System Diagram

INFOID:0000000006146341



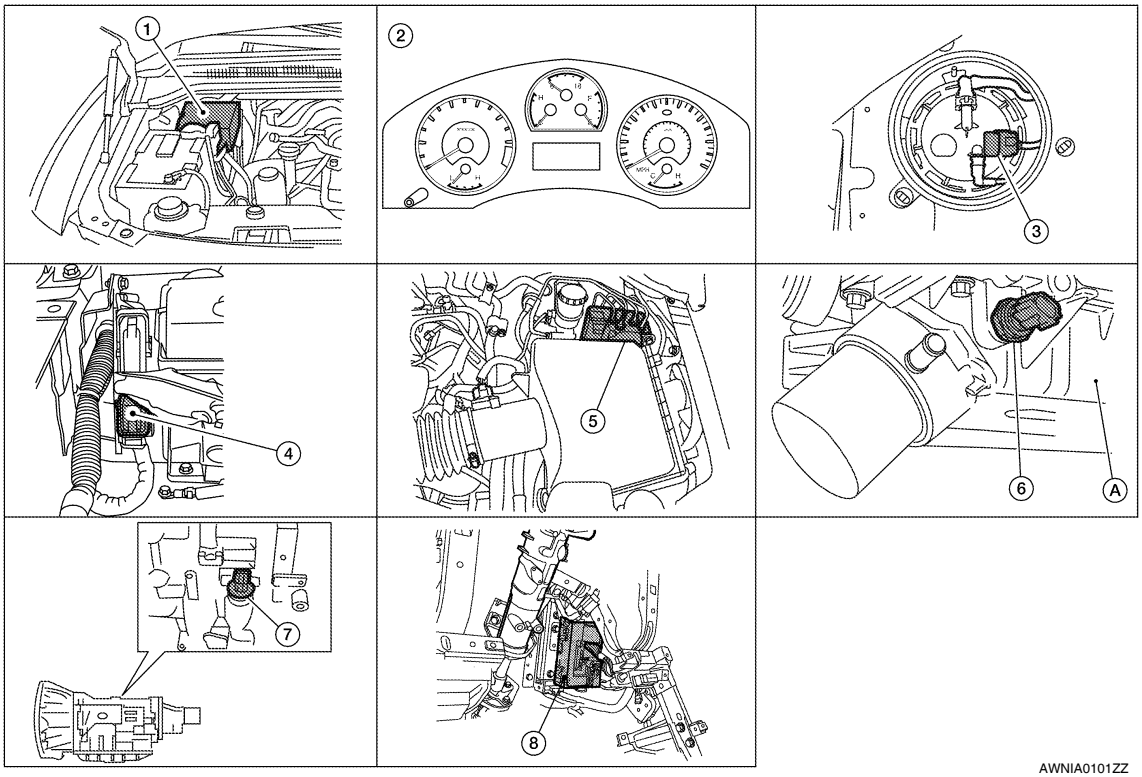
SPEEDOMETER : System Description

INFOID:0000000006146342

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:0000000006146343



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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

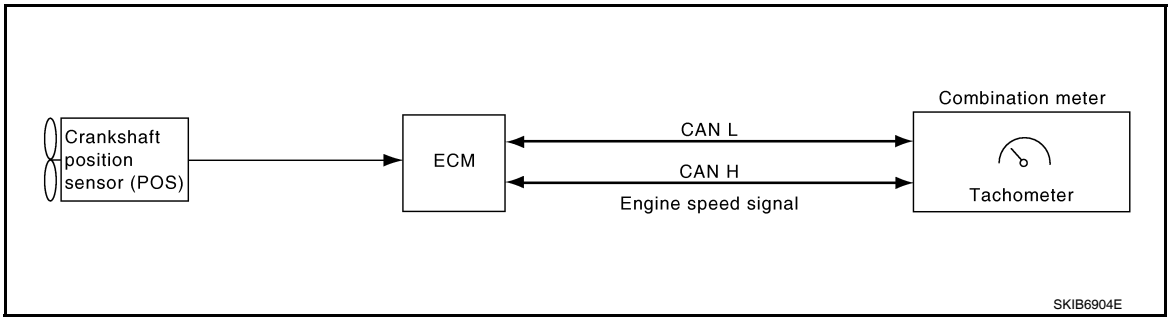
INFOID:0000000006146344

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:0000000006146345



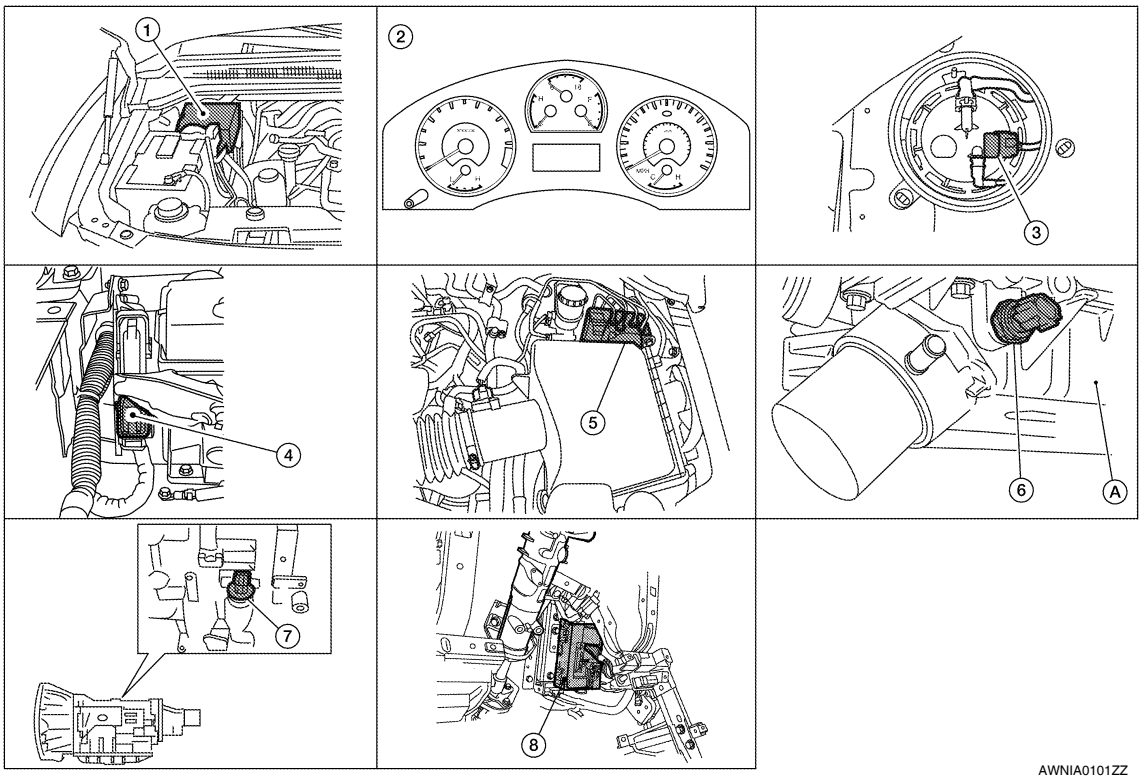
TACHOMETER : System Description

INFOID:0000000006146346

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:0000000006146347



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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)

TACHOMETER : Component Description

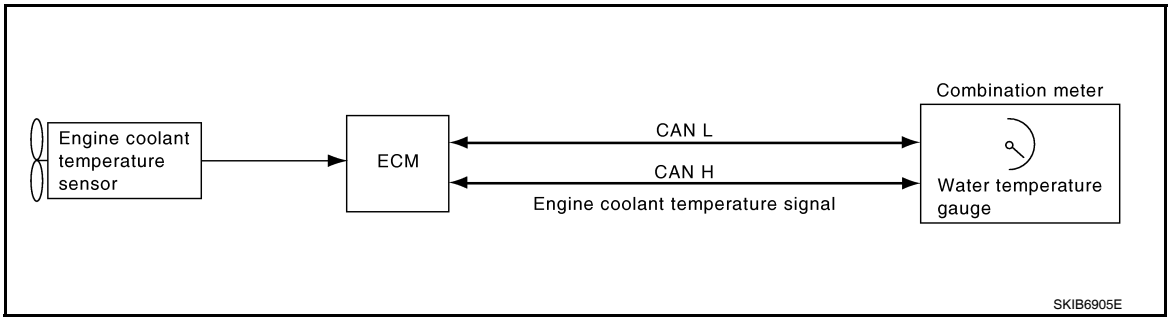
INFOID:0000000006146348

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:0000000006146349



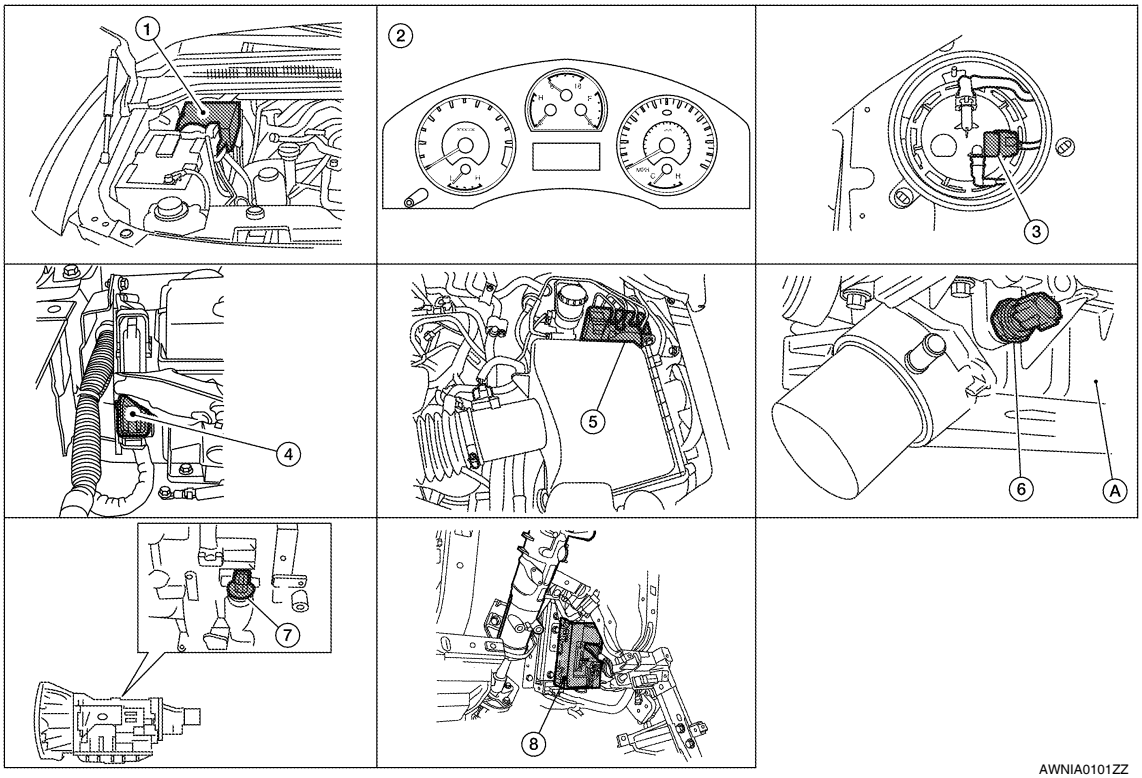
ENGINE COOLANT TEMPERATURE GAUGE : System Description

INFOID:0000000006146350

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:0000000006146351



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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)

ENGINE COOLANT TEMPERATURE GAUGE : Component Description

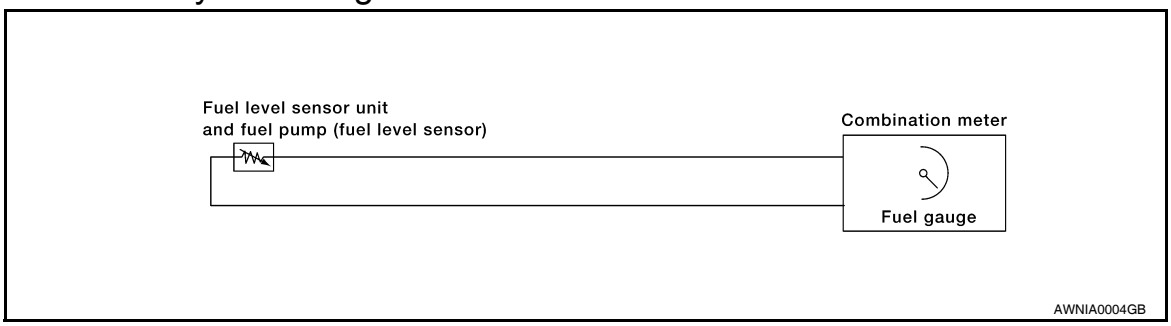
INFOID:0000000006146352

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:0000000006146353



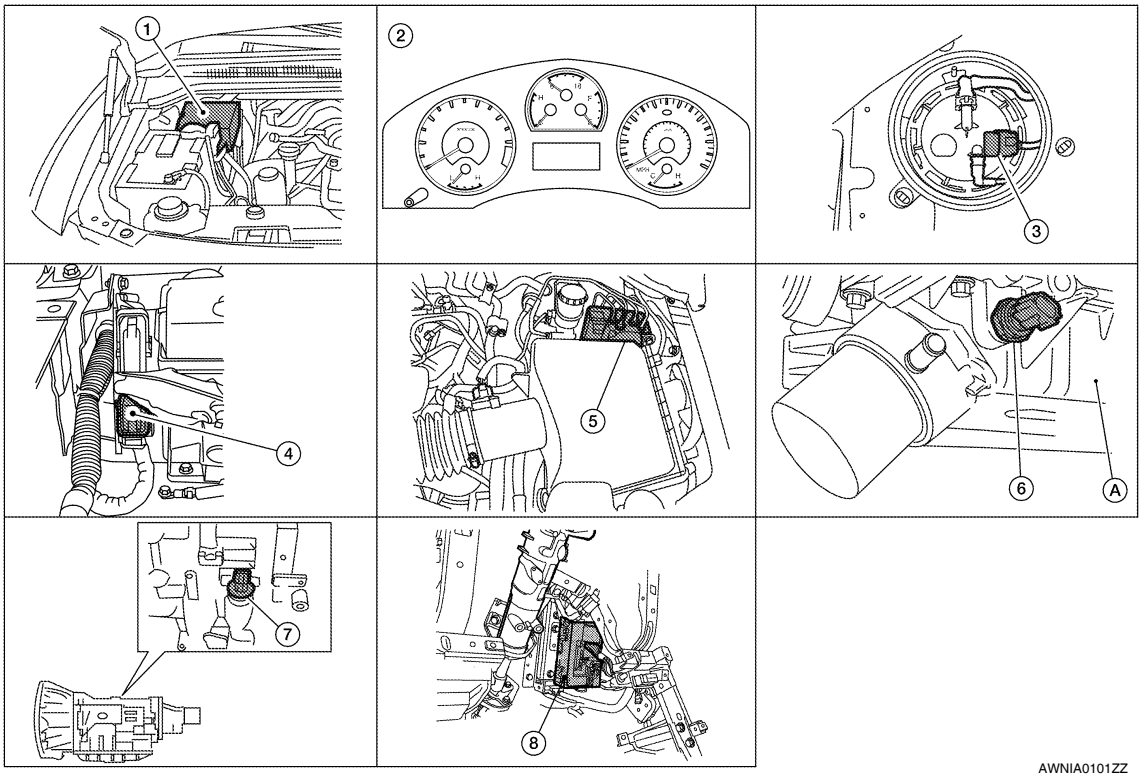
FUEL GAUGE : System Description

INFOID:0000000006146354

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:0000000006146355



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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)

FUEL GAUGE : Component Description

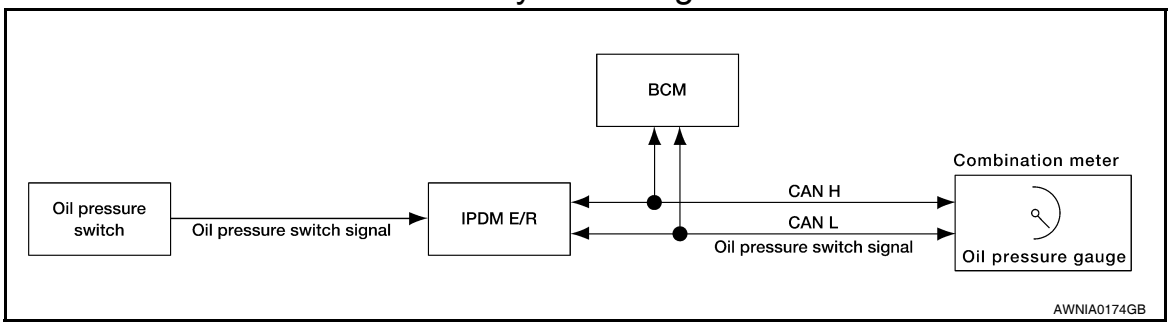
INFOID:0000000006146356

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-36, "Description".

ENGINE OIL PRESSURE GAUGE

ENGINE OIL PRESSURE GAUGE : System Diagram

INFOID:0000000006146357



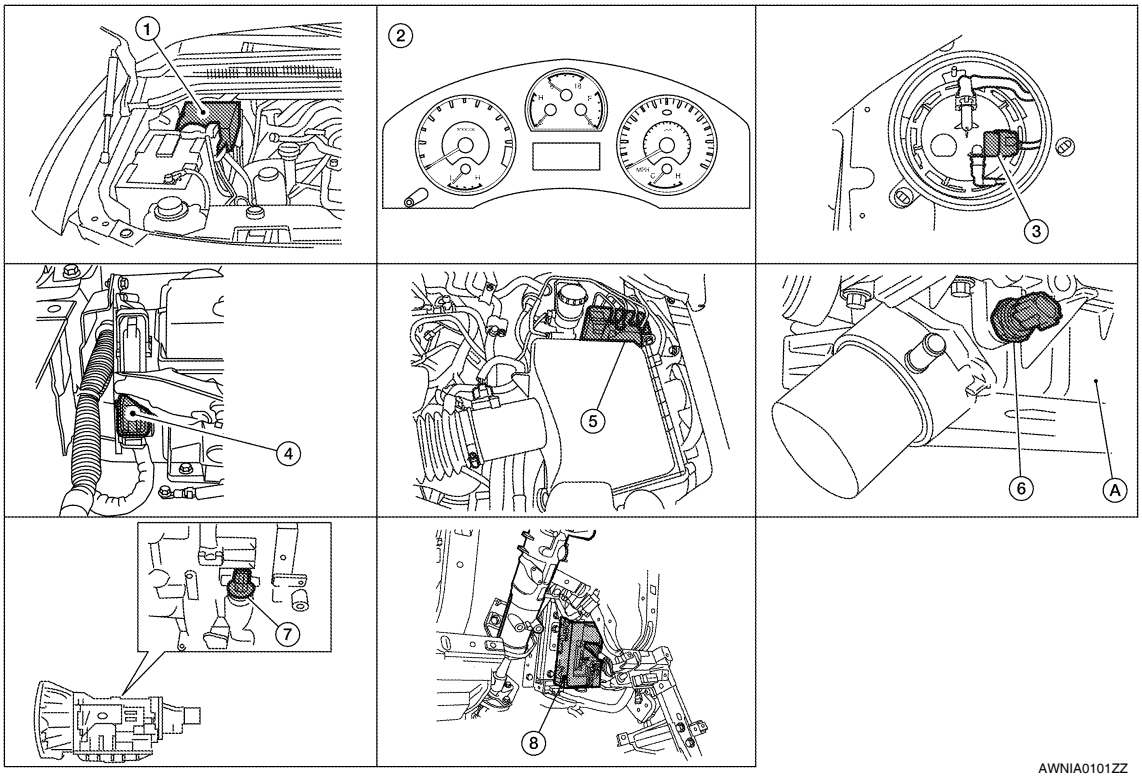
ENGINE OIL PRESSURE GAUGE : System Description

INFOID:0000000006146358

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:0000000006146359



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1. IPDM E/R E122, E124
2. Combination meter M23, M24
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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)

ENGINE OIL PRESSURE GAUGE : Component Description

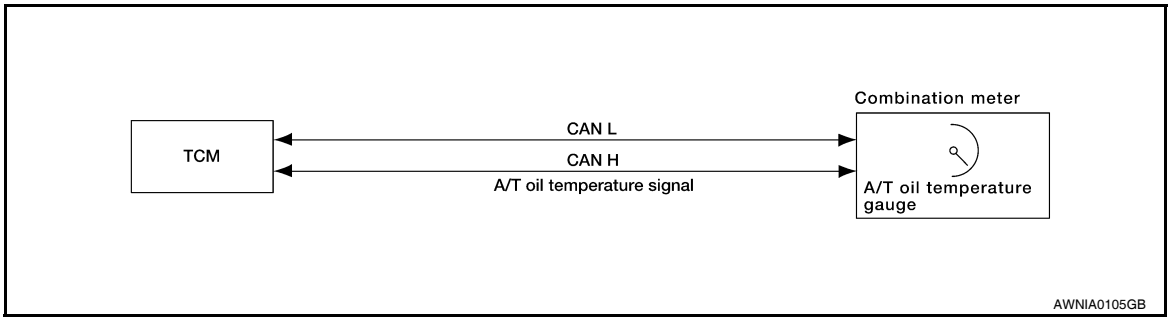
INFOID:0000000006146360

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-38, "Description".
BCM	Transmits the oil pressure switch signal received from IPDM E/R via CAN communication to the combination meter via CAN communication.

A/T OIL TEMPERATURE GAUGE

A/T OIL TEMPERATURE GAUGE : System Diagram

INFOID:0000000006146361



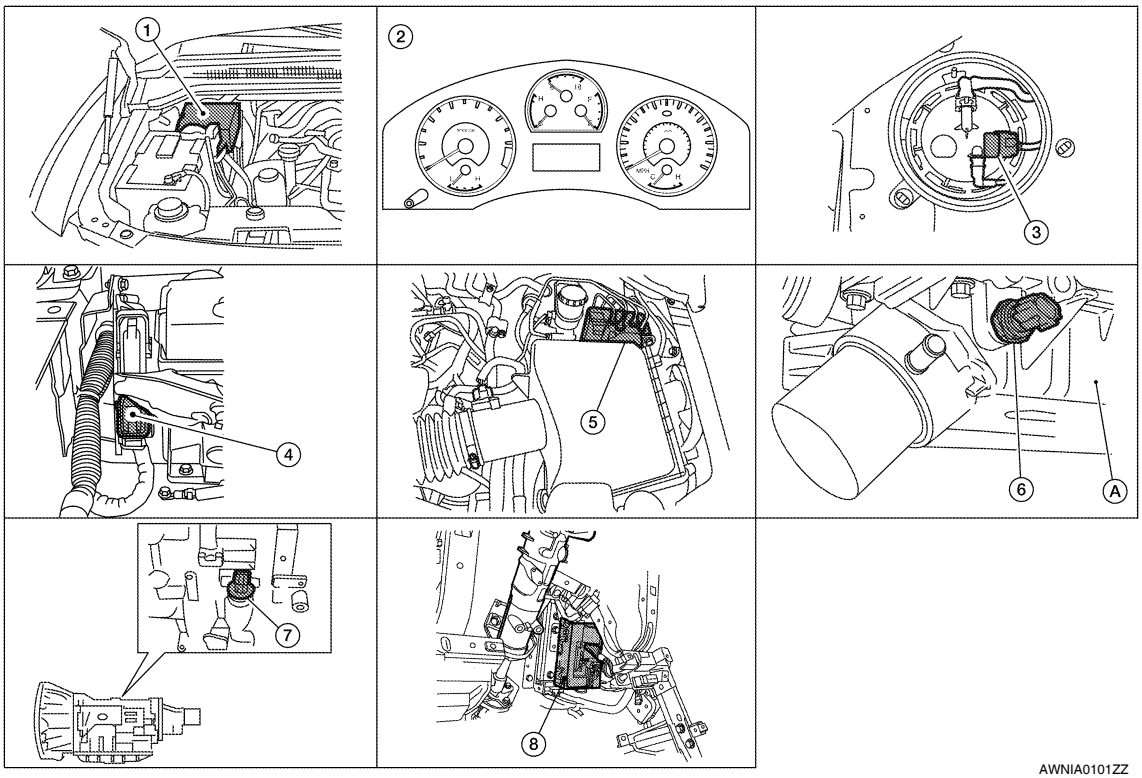
A/T OIL TEMPERATURE GAUGE : System Description

INFOID:0000000006146362

The A/T oil temperature gauge indicates the A/T fluid temperature.
The TCM (transmission control module) provides an A/T fluid temperature signal to combination meter via CAN communication lines.

A/T OIL TEMPERATURE GAUGE : Component Parts Location

INFOID:0000000006146363



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2. Combination meter M23, M24
3. Fuel level sensor unit and fuel pump C5
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)

A/T OIL TEMPERATURE GAUGE : Component Description

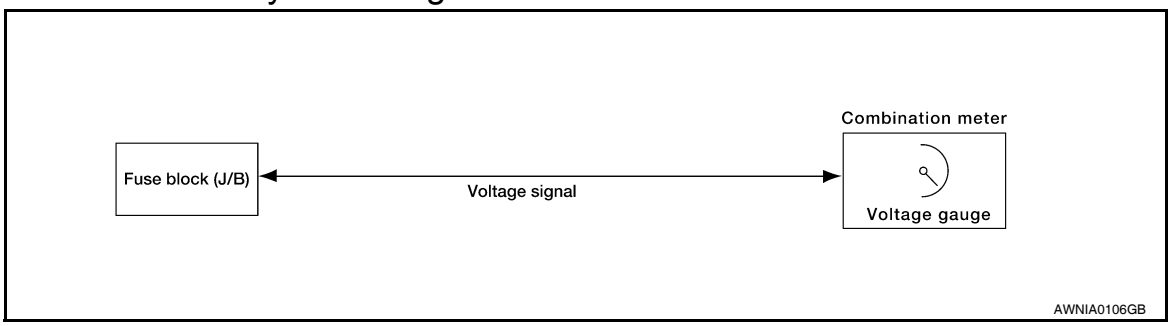
INFOID:0000000006146364

Unit	Description
Combination meter	Indicates the A/T oil temperature according to the A/T oil temperature signal received from TCM via CAN communication.
TCM	Transmits the A/T oil temperature signal to the combination meter via CAN communication.

VOLTAGE GAUGE

VOLTAGE GAUGE : System Diagram

INFOID:0000000006146365



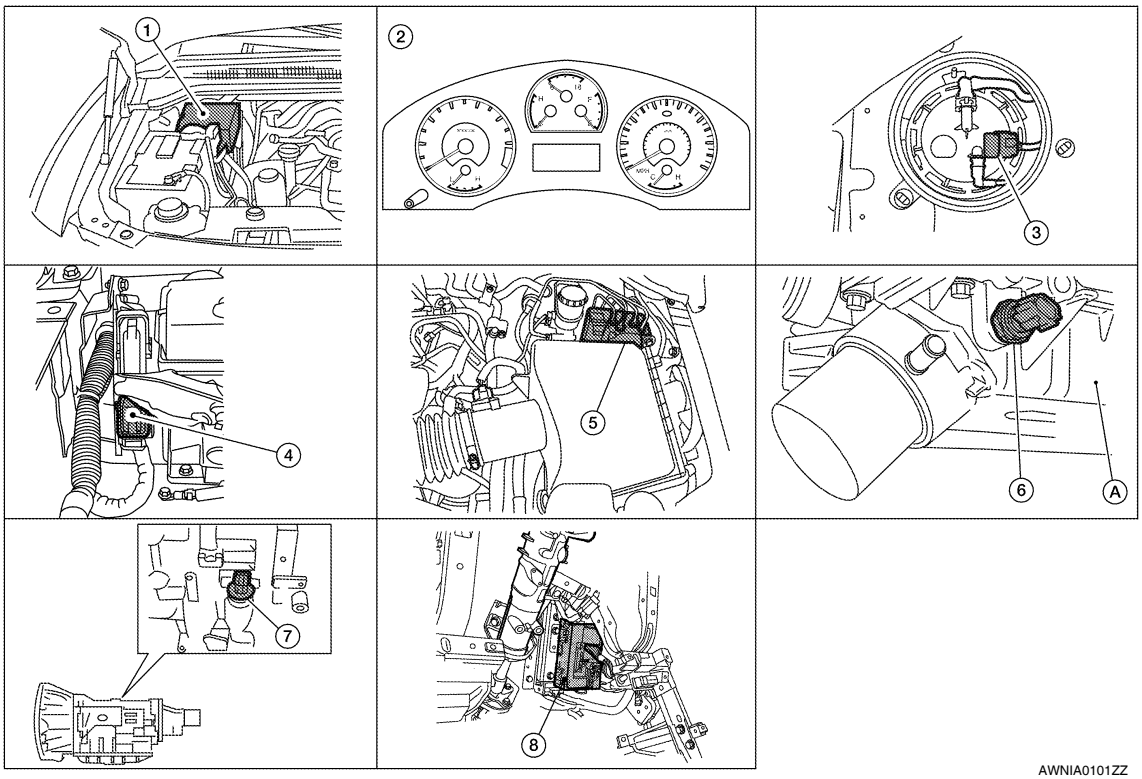
VOLTAGE GAUGE : System Description

INFOID:0000000006146366

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:0000000006146367



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

VOLTAGE GAUGE : Component Description

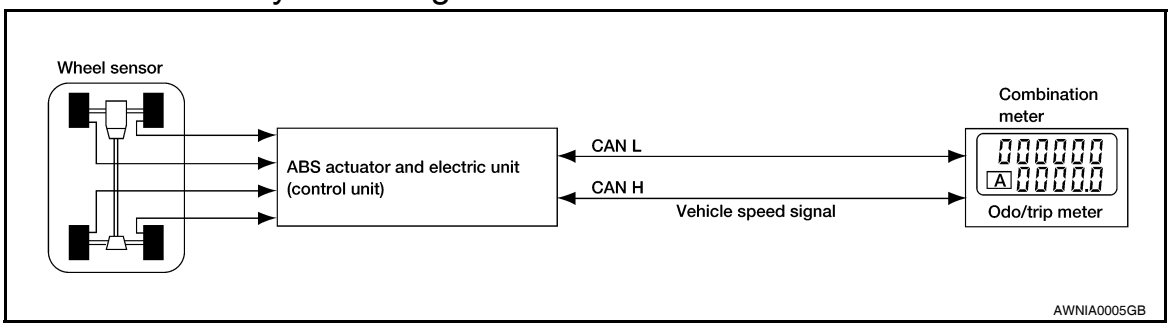
INFOID:0000000006146368

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:0000000006146369



ODO/TRIP METER : System Description

INFOID:0000000006146370

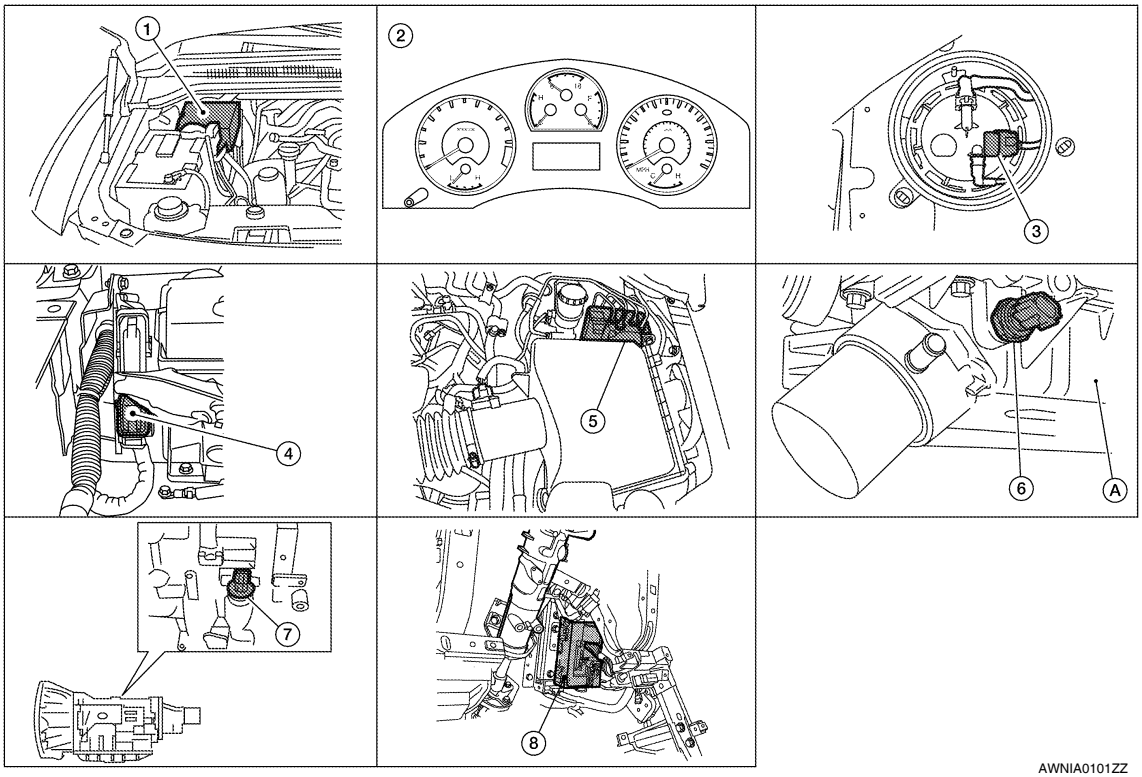
The vehicle speed signal and the memory signals from the meter memory circuit are processed by the combination meter and the mileage is displayed.

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:0000000006146371



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

ODO/TRIP METER : Component Description

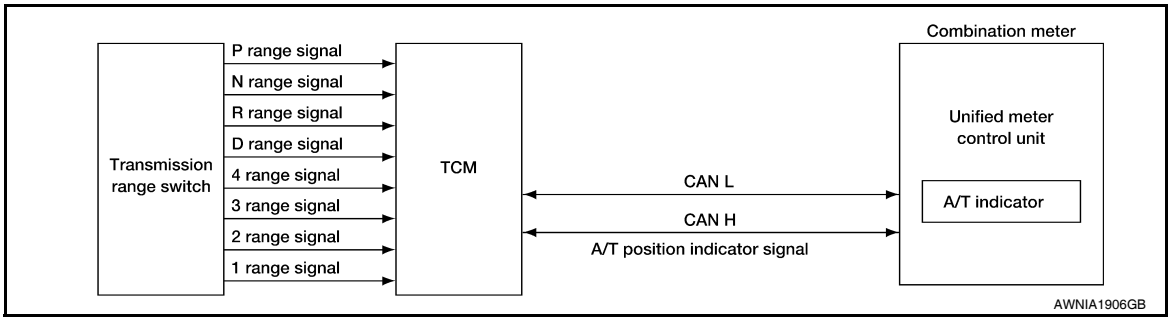
INFOID:0000000006146372

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:0000000006146373



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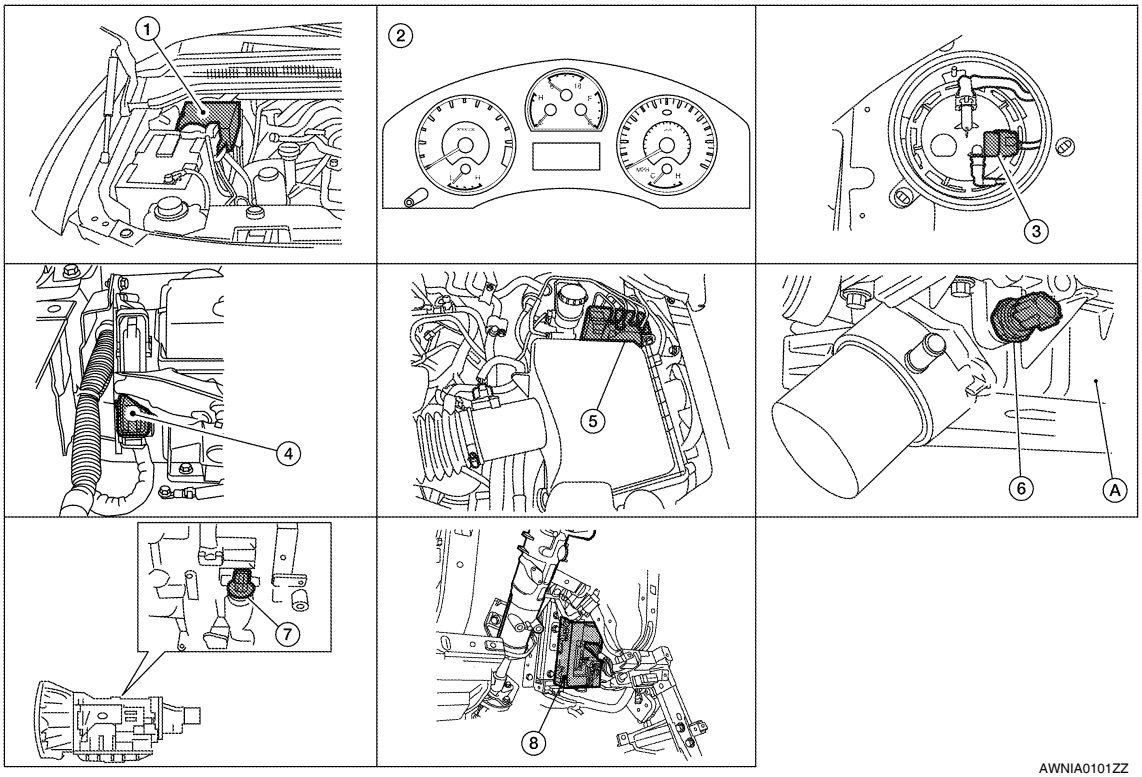
SHIFT POSITION INDICATOR : System Description

INFOID:0000000006146374

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:0000000006146375



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

SHIFT POSITION INDICATOR : Component Description

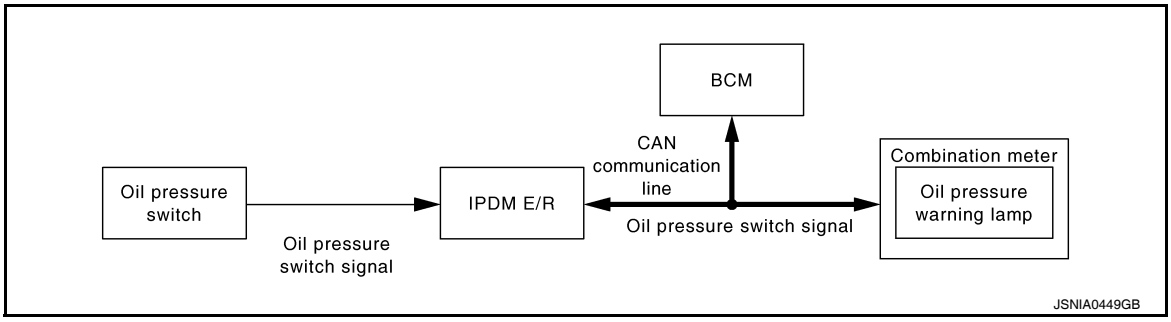
INFOID:0000000006146376

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:0000000006146377



WARNING LAMPS/INDICATOR LAMPS : System Description

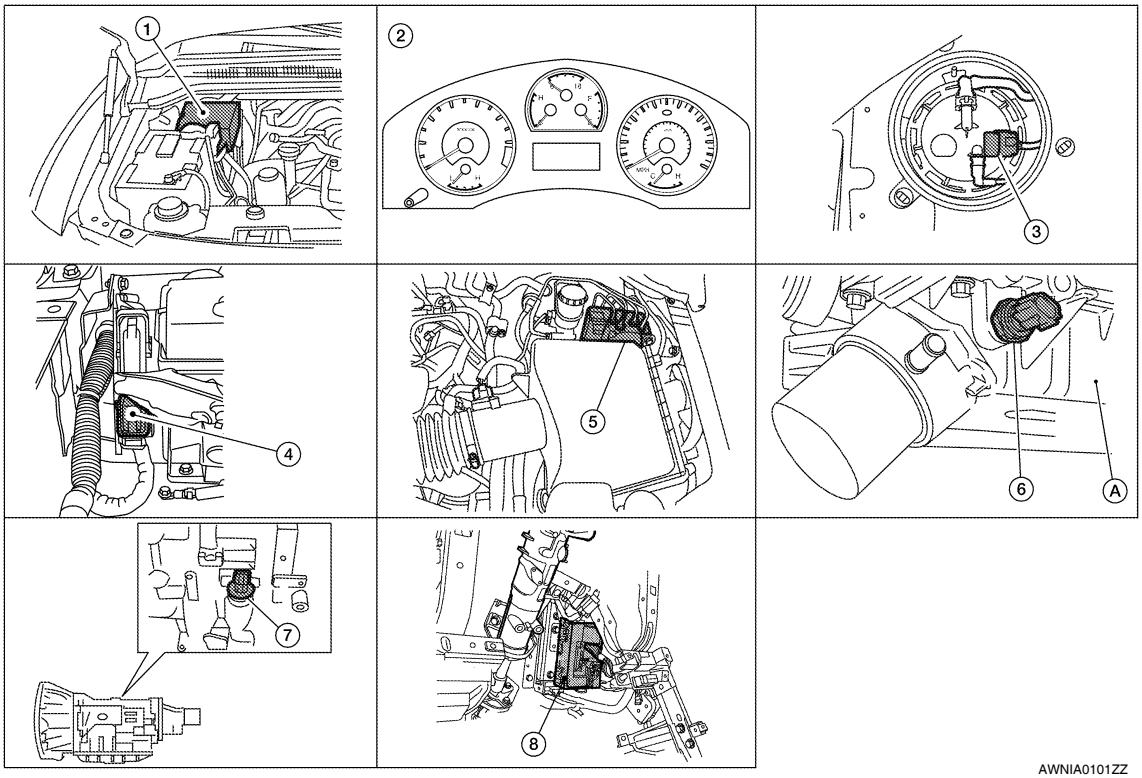
INFOID:0000000006146378

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:0000000006146379



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   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

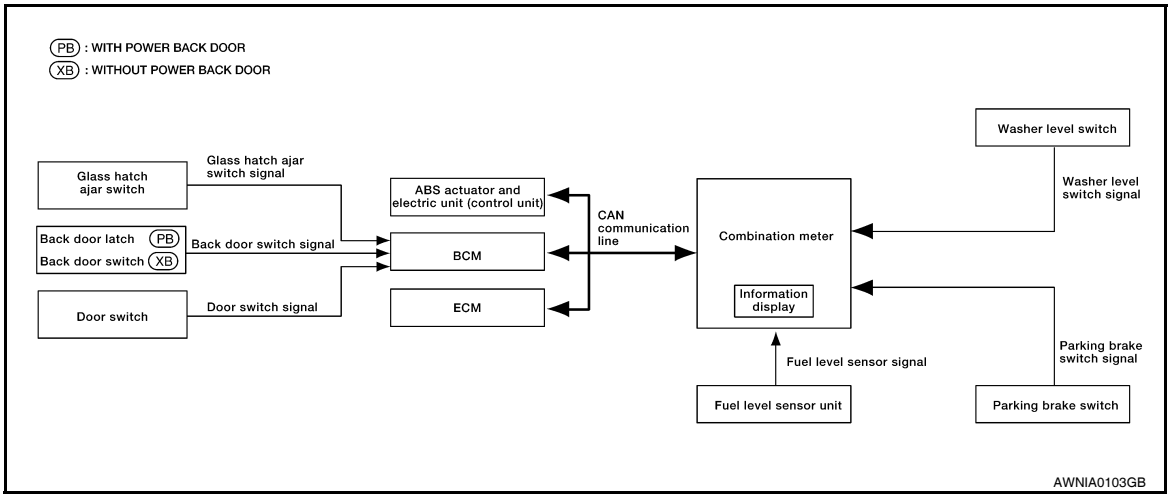
INFOID:0000000006146380

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-38, "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:0000000006146381



INFORMATION DISPLAY : System Description

INFOID:0000000006146382

FUNCTION

The information display can indicate the following items.

- Trip A/B
- Intelligent Key operation information (with Intelligent Key)
- Warning/Indication messages (Door open, liftgate open, liftgate glass open, low fuel, low washer fluid, parking brake, loose fuel cap, check tire pressure)

DOOR OPEN WARNING

This warning appears when the ignition switch is ON and the front door LH, front door RH, rear door LH or rear door RH is opened. The BCM receives a door switch signal from the front door switch LH, front door switch RH, rear door switch LH and rear door switch RH. 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.

LIFTGATE OPEN WARNING

This warning appears when the ignition switch is ON and the back door is opened. The BCM receives a door switch signal from the back door latch (with power back door) or back door switch (without power back door). 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.

LIFTGATE GLASS OPEN WARNING

This warning appears when the ignition switch is ON and the glass hatch is opened. The BCM receives a glass hatch switch signal from the glass hatch ajar switch. The BCM sends the glass hatch 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.

LOOSE FUEL CAP WARNING

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

CHECK TIRE PRESSURE WARNING

The CHECK TIRE PRESSURE indicator will display in the information display when BCM has detected a low tire pressure conditon.

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.

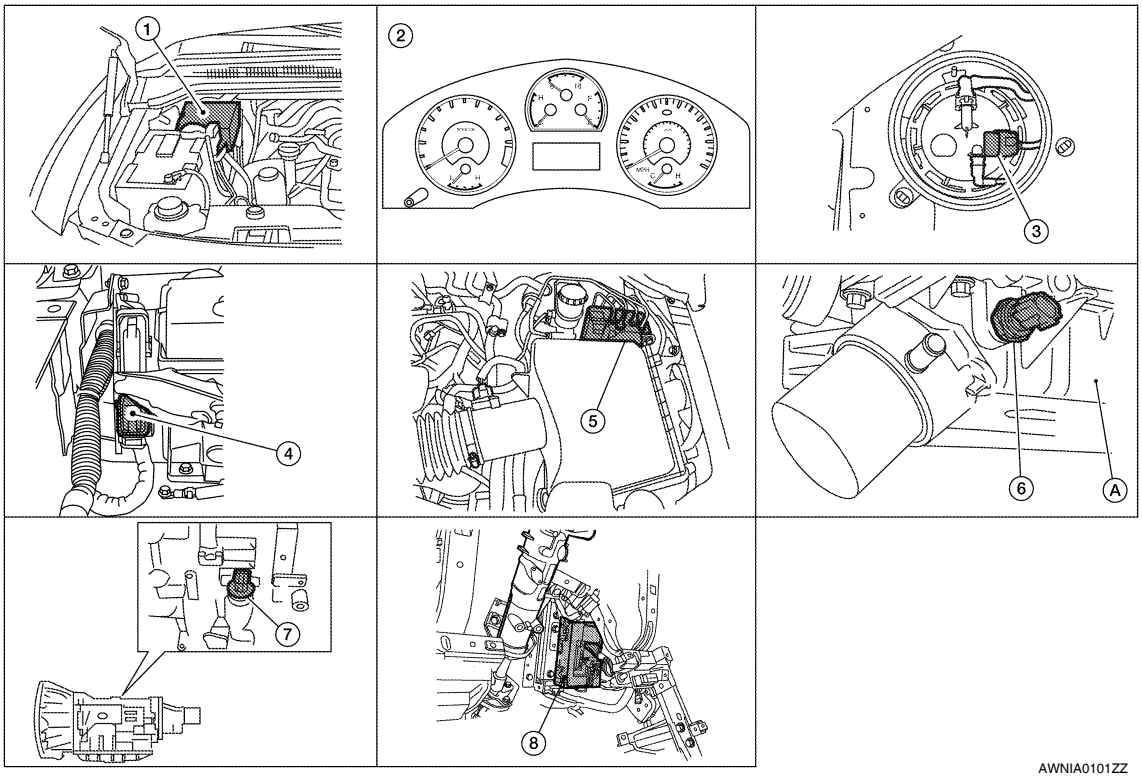
PARKING BRAKE INDICATOR

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:0000000006146383



AWNIA0101ZZ

1. IPDM E/R E122, E124
2. Combination meter M23, M24
3. Fuel level sensor unit and fuel pump C5
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)

INFORMATION DISPLAY : Component Description

INFOID:0000000006146384

Unit	Description
Combination meter	Controls the information display according to the signal received from each unit.
Fuel level sensor unit	Refer to MWI-36, "Description".
ECM	Transmits the following signals to the combination meter via CAN communication line. • Engine speed signal • Fuel consumption monitor signal • Loose fuel cap signal
ABS actuator and electric unit (control unit)	Transmits the vehicle speed signal to the combination meter via CAN communication line.
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-39, "Description".
Door switch	Transmits the door switch signals to BCM.
Back door switch (without power back door)	Transmits the back door switch signal to BCM.
Back door latch (door ajar switch) (with power back door)	
Glass hatch ajar switch	Transmits the glass hatch ajar switch signal to BCM.

COMPASS

Description

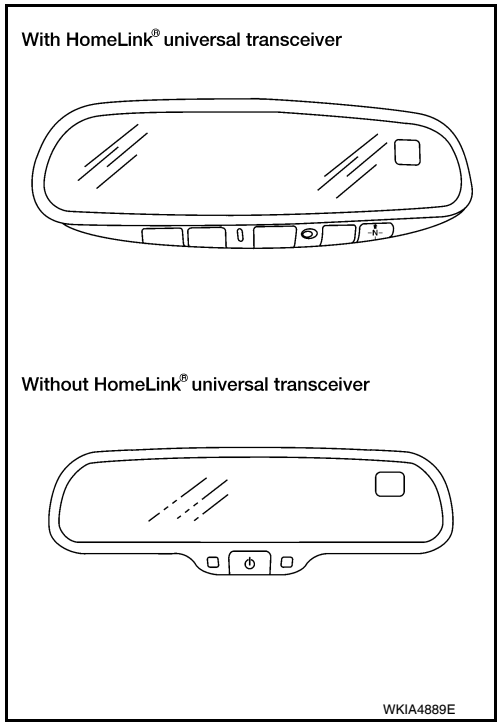
INFOID:0000000006146385

DESCRIPTION

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

Vehicle direction is displayed as follows:

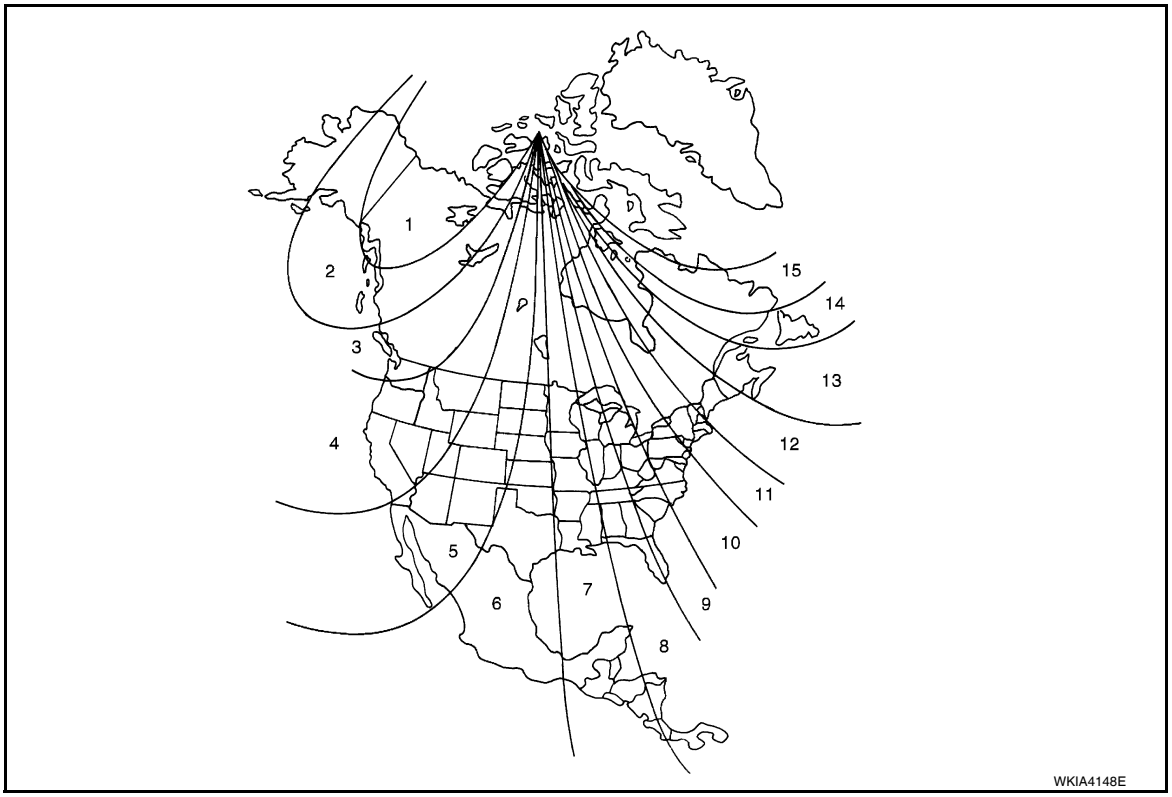
- N: north
- E: east
- S: south
- W: west



ZONE VARIATION SETTING PROCEDURE

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

Zone Variation Chart



1. Determine your location on the zone map.
2. Turn the ignition switch to the ON position.
3. Press and hold the (N) switch for about 8 seconds (with HomeLink universal transceiver) or the mode switch for about 11 seconds (without HomeLink universal transceiver). The current zone number will appear in the display.
4. Press the mode or (N) switch repeatedly until the desired zone number appears in the display.

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

NOTE:
Use zone number 5 for Hawaii.

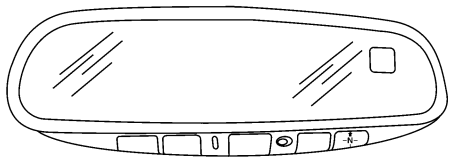
CALIBRATION PROCEDURE

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

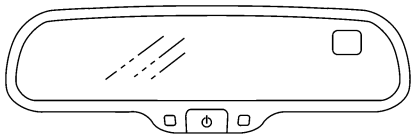
1. Press and hold the (N) switch for about 10 seconds (with HomeLink universal transceiver) or the mode switch for about 13 seconds (without HomeLink universal transceiver). The display will read “CAL”.
2. Drive the vehicle slowly in a circle, in an open, safe place. The initial calibration is completed in about 3 turns.

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

With HomeLink® universal transceiver



Without HomeLink® universal transceiver



WKIA4889E

DIAGNOSIS SYSTEM (METER)

Diagnosis Description

INFOID:0000000006146386

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.

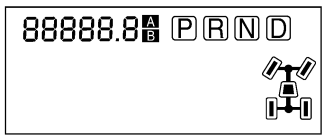
1. Turn the ignition switch ON, while pressing the odometer/trip meter switch for 5 - 8 seconds. When the diagnosis function is activated, the odometer/trip meter will display tESt.

NOTE:

Check combination meter power supply and ground circuit when self-diagnosis mode of combination meter does not start. Refer to MWI-32, "COMBINATION METER : Diagnosis Procedure". Replace combination meter if normal. Refer to MWI-97, "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.	 ALNIA0280ZZ
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	ot1 XX	Displays oil pressure tell-tale “” in Hex format.	
Switch pressed	ot0 XX	Displays oil pressure tell-tale “” in Hex format.	
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 (33 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:0000000006146387

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

METER/M&A diagnosis mode	Description
SELF DIAGNOSTIC RESULT	Displays combination meter self-diagnosis results.
DATA MONITOR	Displays combination meter input/output data in real time.
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-43, "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.
W TEMP METER [°C] or [°F]	X	X	Displays the value of engine coolant temperature signal, which is input from ECM.
FUEL METER [lit.]	X	X	Displays the value, which processes a resistance signal from fuel gauge.
DISTANCE [km] or [mile]	X	X	Displays the value, which is calculated by vehicle speed signal, fuel gauge and fuel consumption from ECM.
FUEL W/L [ON/OFF]	X	X	Displays [ON/OFF] condition of low-fuel warning lamp.
C-ENG W/L [ON/OFF]		X	Displays [ON/OFF] condition of malfunction indicator lamp.
AIR PRES W/L [ON/OFF]		X	Displays [ON/OFF] condition of tire pressure warning lamp.
SEAT BELT W/L [ON/OFF]		X	Indicates [ON/OFF] condition of seat belt warning lamp.
BUZZER [ON/OFF]	X	X	Displays [ON/OFF] condition of buzzer.
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.
VDC/TCS IND [ON/OFF]		X	Displays [ON/OFF] condition of VDC OFF indicator lamp.
ABS W/L [ON/OFF]		X	Displays [ON/OFF] condition of ABS warning 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.*
KEY G/Y 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.
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.

Display item [Unit]	MAIN SIGNALS	SELECTION FROM MENU	Description
1 RANGE IND [ON/OFF]	X	X	Indicates [ON/OFF] condition of A/T shift 1range indicator.
AT CHECK W/L [ON/OFF]		X	Displays [ON/OFF] condition of AT CHECK warning 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.
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.
FUEL CAP W/L [ON/OFF]		X	Displays [ON/OFF] condition of loose fuel cap indicator.
TPMS PRESS L [ON/OFF]		X	Displays [ON/OFF] condition of check tire pressure indicator.

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

DTC/CIRCUIT DIAGNOSIS

DTC U1000 CAN COMMUNICATION

DTC Logic

INFOID:0000000006146388

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:0000000006146389

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:0000000006146390

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

DTC Logic

INFOID:0000000006146391

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:0000000006146392

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-97, "Removal and Installation".

POWER SUPPLY AND GROUND CIRCUIT
COMBINATION METER
COMBINATION METER : Diagnosis Procedure

INFOID:0000000006146393

Regarding Wiring Diagram information, refer to MWI-64, "Wiring Diagram".

1.CHECK FUSES

Check for blown combination meter fuses.

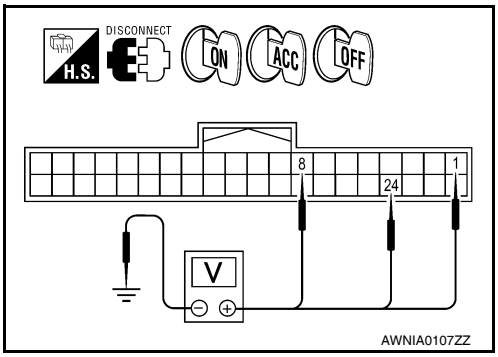
Unit	Power source	Fuse No.
Combination meter	Battery	3
	Ignition switch ON or START	14
	Ignition switch ACC or ON	4

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 1, 8, 24 and ground.



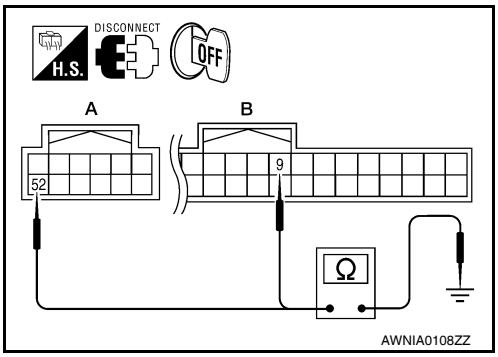
Terminals			Ignition switch position			
(+)		(–)	OFF	ACC	ON	START
Connector	Terminal					
M24	1	Ground	0V	Battery voltage	Battery voltage	0V
	8		Battery voltage	Battery voltage	Battery voltage	Battery voltage
	24		0V	0V	Battery voltage	Battery voltage

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 52 and ground, and connector M24 terminal 9 and ground.



Terminals			Continuity
(+)		(–)	
Connector	Terminal		
A: M23	52	Ground	Yes
B: M24	9		

Is the inspection result normal?

YES >> Inspection End.

NO >> Check ground harness.

BCM (BODY CONTROL MODULE)

BCM (BODY CONTROL MODULE) : Diagnosis Procedure

INFOID:0000000006625983

Regarding Wiring Diagram information, refer to BCS-48, "Wiring Diagram".

1. CHECK FUSES AND FUSIBLE LINK

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

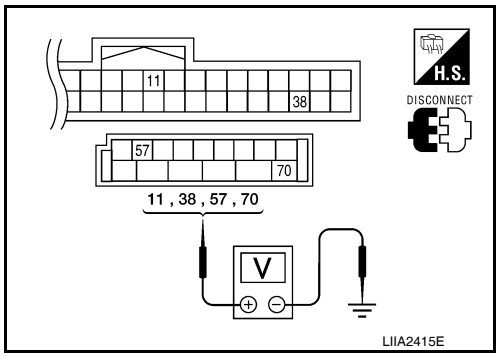
Terminal No.	Signal name	Fuses and fusible link No.
57	Battery power supply	22 (15A)
70		F (50A)
11	Ignition ACC or ON	4 (10A)
38	Ignition ON or START	59 (10A)

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

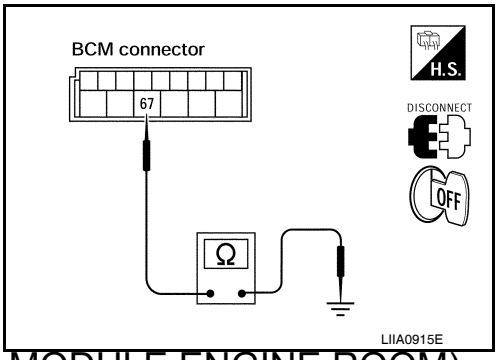
Is the measurement value normal?

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) : Diagnosis Procedure

INFOID:0000000006625984

Regarding Wiring Diagram information, refer to PCS-25, "Wiring Diagram".

1. CHECK FUSES AND FUSIBLE LINK

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

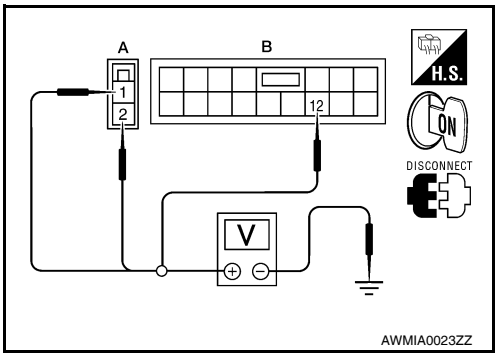
Terminal No.	Signal name	Fuses and fusible link No.
1	Battery	A, D
2	Battery	C
12	Ignition switch ON or START	59

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

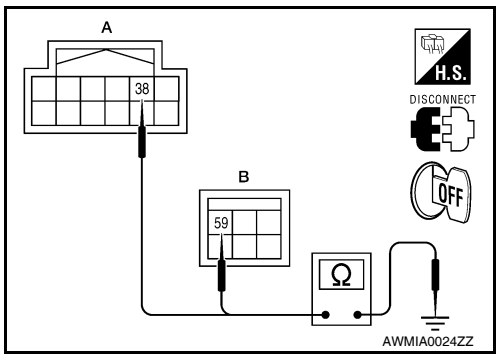
Is the measurement value normal?

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:0000000006146396

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:0000000006146397

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-97, "Removal and Installation".

Diagnosis Procedure

INFOID:0000000006146398

Regarding Wiring Diagram information, refer to MWI-64, "Wiring Diagram".

1.CHECK HARNESS CONNECTOR

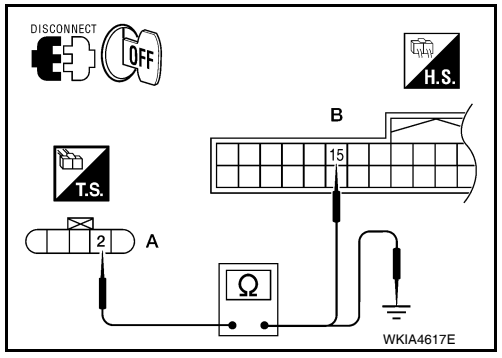
1. Turn ignition switch OFF.
2. Check combination meter and fuel level sensor unit terminals (meter-side and harness-side) for poor connection.

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	15	Yes

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

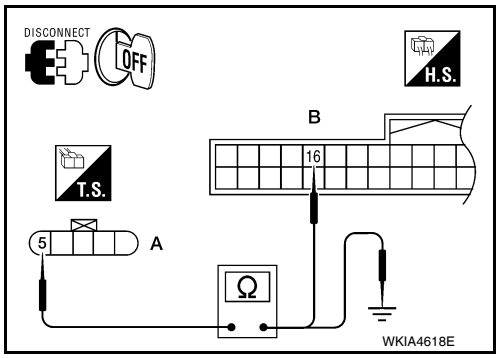
A		Ground	Continuity
Connector	Terminal		
C5	2		No

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	16	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:0000000006146399

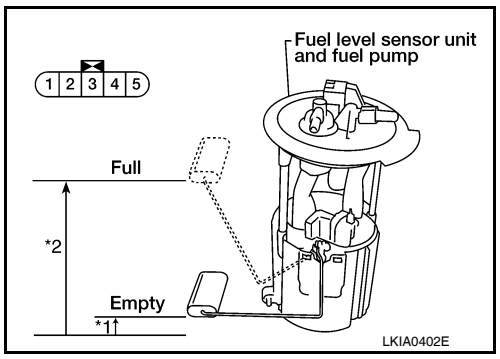
1.REMOVE FUEL LEVEL SENSOR UNIT

Remove the fuel level sensor unit. Refer to FL-12, "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-12, "Removal and Installation".

OIL PRESSURE SWITCH SIGNAL CIRCUIT

Description

INFOID:0000000006146400

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

Component Function Check

INFOID:0000000006146401

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.

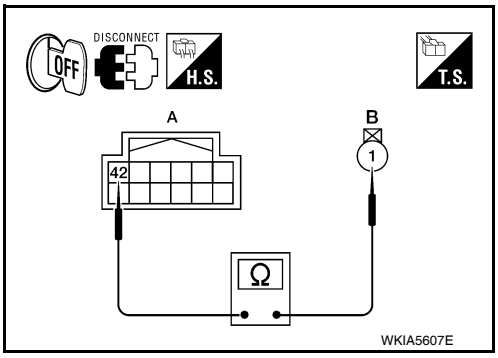
Diagnosis Procedure

INFOID:0000000006146402

Regarding Wiring Diagram information, refer to MWI-64, "Wiring Diagram".

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.

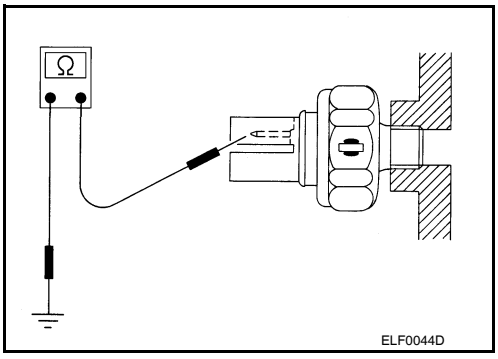
Component Inspection

INFOID:0000000006146403

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:0000000006146404

Transmits the parking brake switch signal to the combination meter.

Component Function Check

INFOID:0000000006146405

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:0000000006146406

Regarding Wiring Diagram information, refer to MWI-64, "Wiring Diagram".

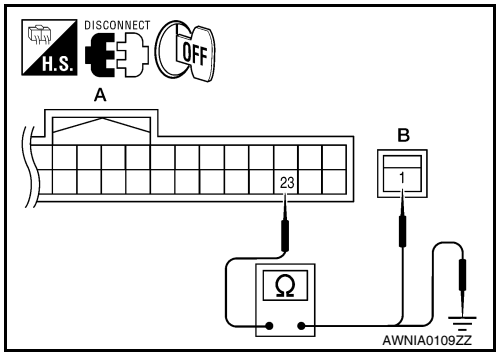
1.CHECK PARKING BRAKE SWITCH CIRCUIT

1. Disconnect combination meter connector and parking brake switch connector.
2. Check continuity between combination meter harness connector M24 (A) terminal 23 and parking brake switch harness connector M11 (B) terminal 1.

23 - 1 : Continuity should exist.

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

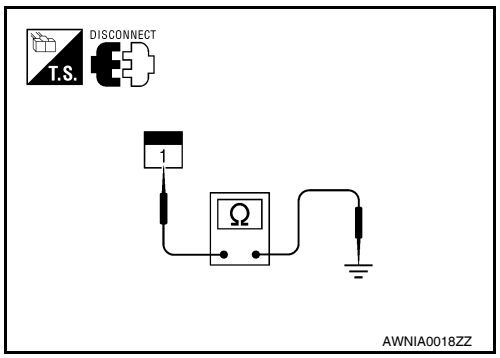
Component Inspection

INFOID:0000000006146407

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:0000000006146408

Transmits the washer level switch signal to the combination meter.

Diagnosis Procedure

INFOID:0000000006146409

Regarding Wiring Diagram information, refer to MWI-64, "Wiring Diagram".

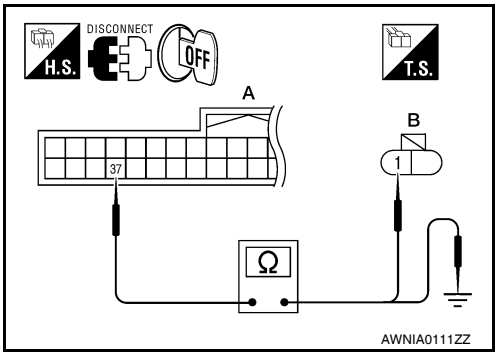
1.CHECK WASHER FLUID LEVEL SWITCH SIGNAL CIRCUIT

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 37 and washer fluid level switch harness connector E106 (B) terminal 1.

37 - 1 : Continuity should exist.

4. Check continuity between combination meter harness connector M24 (A) terminal 37 and ground.

37 - Ground : Continuity should not exist.



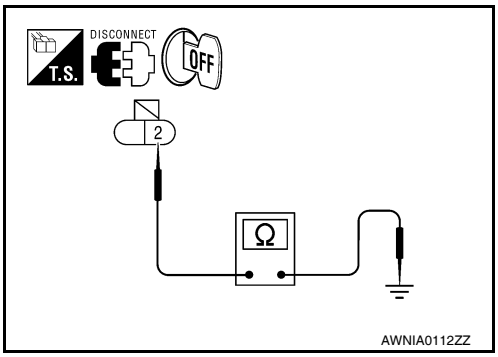
Is the inspection result normal?

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.

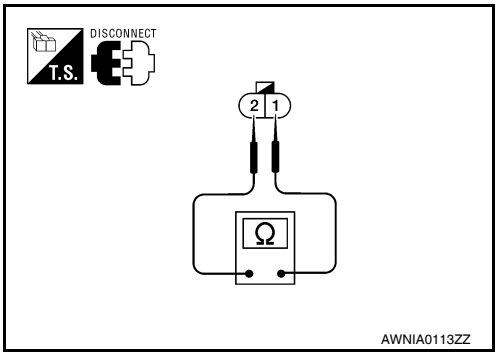
Component Inspection

INFOID:0000000006146410

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.

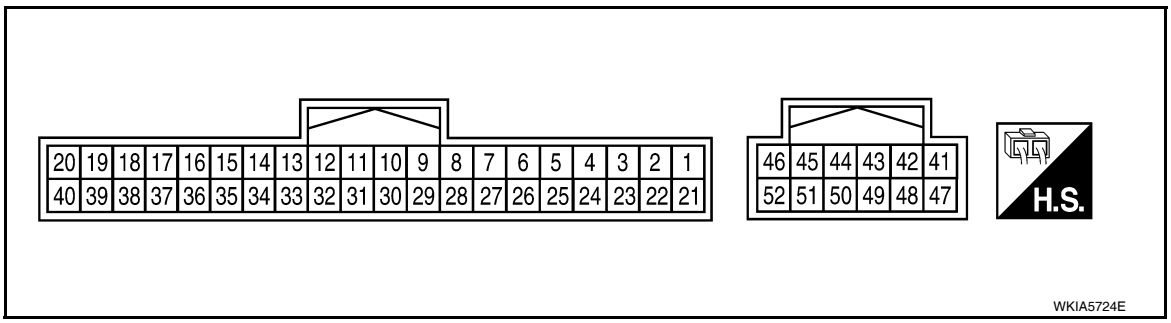
ECU DIAGNOSIS INFORMATION

COMBINATION METER

Reference Value

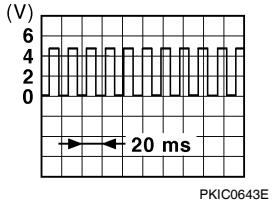
INFOID:0000000006146412

TERMINAL LAYOUT



PHYSICAL VALUES

Terminal	Wire color	Item	Condition		Reference value (V) (Approx.)
			Ignition switch	Operation or condition	
1	O	Ignition switch ACC or ON	—	—	Battery voltage
2	P	Air bag warning lamp input	ON	Air bag warning lamp ON	4
				Air bag warning lamp OFF	0
3	BR	CK SUSP warning lamp input	—	CK SUSP warning lamp ON	0
				CK SUSP warning lamp OFF	Battery voltage
8	P	Battery power supply	—	—	Battery voltage
9	B	Ground	—	—	0
11	L	CAN-H	—	—	—
12	P	CAN-L	—	—	—
15	Y/L	Fuel level sensor signal	—	—	Refer to MWI-12, "FUEL GAUGE : System Description".
16	B/P	Fuel level sensor ground	ON	—	0
17	R/G	Stop lamp switch	—	Brake pedal depressed	Battery voltage
				Brake pedal released	0
18	P/B	Brake fluid level switch	ON	Brake fluid level low	0
				Brake fluid level normal	Battery voltage
23	G	Parking brake switch	ON	Parking brake applied	0
				Parking brake released	Battery voltage
24	O/L	Ignition switch ON or START	ON	—	Battery voltage
27	O/B	Seat belt buckle switch LH	ON	Unfastened (ON)	0
				Fastened (OFF)	Battery voltage
28	G/O	Security indicator input	OFF	Security indicator ON	0
				Security indicator OFF	Battery voltage

Terminal	Wire color	Item	Condition		Reference value (V) (Approx.)
			Ignition switch	Operation or condition	
29	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
37	W/L	Washer fluid level switch	ON	Washer fluid level low	0
				Washer fluid level normal	Battery voltage
41	P/L	Seat belt buckle switch RH	ON	Unfastened (ON)	0
				Fastened (OFF)	Battery voltage
45	BR/W	Generator	ON	Generator voltage low	0
				Generator voltage normal	Battery voltage
50	BR	Illumination output	—	—	Refer to INL-9, "System Description".
52	B	Ground	—	—	0

Fail Safe

INFOID:0000000006146414

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.

Function		Specifications
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	
	Malfunction indicator lamp	
	Master warning lamp	
	Air bag warning lamp	
	High beam indicator	
	Turn signal indicator lamp	
	Intelligent Key system warning 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:0000000006146415

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. 3, located in the fuse block (J/B)] is disconnected.**	MWI-30
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-31

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:0000000006625991

VALUES ON THE DIAGNOSIS TOOL

Monitor Item	Condition	Value/Status
ACC ON SW	Ignition switch OFF or ON	Off
	Ignition switch ACC	On
AIR COND SW	A/C switch OFF	Off
	A/C switch ON	On
AIR PRESS FL	Front left tire air pressure value	kPa, kg/cm^2, psi
AIR PRESS FR	Front right tire air pressure value	kPa, kg/cm^2, psi
AIR PRESS RL	Rear left tire air pressure value	kPa, kg/cm^2, psi
AIR PRESS RR	Rear right tire air pressure value	kPa, kg/cm^2, psi
AUTO LIGHT SW	Lighting switch OFF	Off
	Lighting switch AUTO	On
BACK DOOR SW	Back door closed	Off
	Back door opened	On
BRAKE SW	Brake pedal released	Off
	Brake pedal applied	On
BUCKLE SW	Seat belt buckle unfastened	Off
	Seat belt buckle fastened	On
BUZZER	Buzzer in combination meter OFF	Off
	Buzzer in combination meter ON	On
CARGO LAMP SW	Cargo lamp switch OFF	Off
	Cargo lamp switch ON	On
CDL LOCK SW	Door lock/unlock switch does not operate	Off
	Press door lock/unlock switch to the LOCK side	On
CDL UNLOCK SW	Door lock/unlock switch does not operate	Off
	Press door lock/unlock switch to the UNLOCK side	On
DOOR SW-AS	Front door RH closed	Off
	Front door RH opened	On
DOOR SW-DR	Front door LH closed	Off
	Front door LH opened	On
DOOR SW-RL	Rear door LH closed	Off
	Rear door LH opened	On
DOOR SW-RR	Rear door RH closed	Off
	Rear door RH opened	On
FAN ON SIG	Blower motor fan switch OFF	Off
	Blower motor fan switch ON	On
FR FOG SW	Front fog lamp switch OFF	Off
	Front fog lamp switch ON	On
FR WASHER SW	Front washer switch OFF	Off
	Front washer switch ON	On

Monitor Item	Condition	Value/Status
FR WIPER LOW	Front wiper switch OFF	Off
	Front wiper switch LO	On
FR WIPER HI	Front wiper switch OFF	Off
	Front wiper switch HI	On
FR WIPER INT	Front wiper switch OFF	Off
	Front wiper switch INT	On
FR WIPER STOP	Any position other than front wiper stop position	Off
	Front wiper stop position	On
HAZARD SW	When hazard switch is not pressed	Off
	When hazard switch is pressed	On
HEAD LAMP SW1	Headlamp switch OFF	Off
	Headlamp switch 1st	On
HEAD LAMP SW2	Headlamp switch OFF	Off
	Headlamp switch 1st	On
HI BEAM SW	High beam switch OFF	Off
	High beam switch HI	On
ID REGST FL1	ID registration of front left tire incomplete	YET
	ID registration of front left tire complete	DONE
ID REGST FR1	ID registration of front right tire incomplete	YET
	ID registration of front right tire complete	DONE
ID REGST RL1	ID registration of rear left tire incomplete	YET
	ID registration of rear left tire complete	DONE
ID REGST RR1	ID registration of rear right tire incomplete	YET
	ID registration of rear right tire complete	DONE
IGN ON SW	Ignition switch OFF or ACC	Off
	Ignition switch ON	On
IGN SW CAN	Ignition switch OFF or ACC	Off
	Ignition switch ON	On
INT VOLUME	Wiper intermittent dial is in a dial position 1 - 7	1 - 7
I-KEY LOCK[1]	LOCK button of Intelligent Key is not pressed	Off
	LOCK button of Intelligent Key is pressed	On
I-KEY PANIC[1]	PANIC button of Intelligent Key is not pressed	Off
	PANIC button of Intelligent Key is pressed	On
I-KEY PW DWN[1]	UNLOCK button of Intelligent Key is not pressed	Off
	UNLOCK button of Intelligent Key is pressed for greater than 3 seconds and driver's window operating in DOWN direction	On
I-KEY UNLOCK[1]	UNLOCK button of Intelligent Key is not pressed	Off
	UNLOCK button of Intelligent Key is pressed	On
KEY CYL LK-SW	Door key cylinder LOCK position	Off
	Door key cylinder other than LOCK position	On
KEY CYL UN-SW	Door key cylinder UNLOCK position	Off
	Door key cylinder other than UNLOCK position	On
KEY ON SW	Mechanical key is removed from key cylinder	Off
	Mechanical key is inserted to key cylinder	On

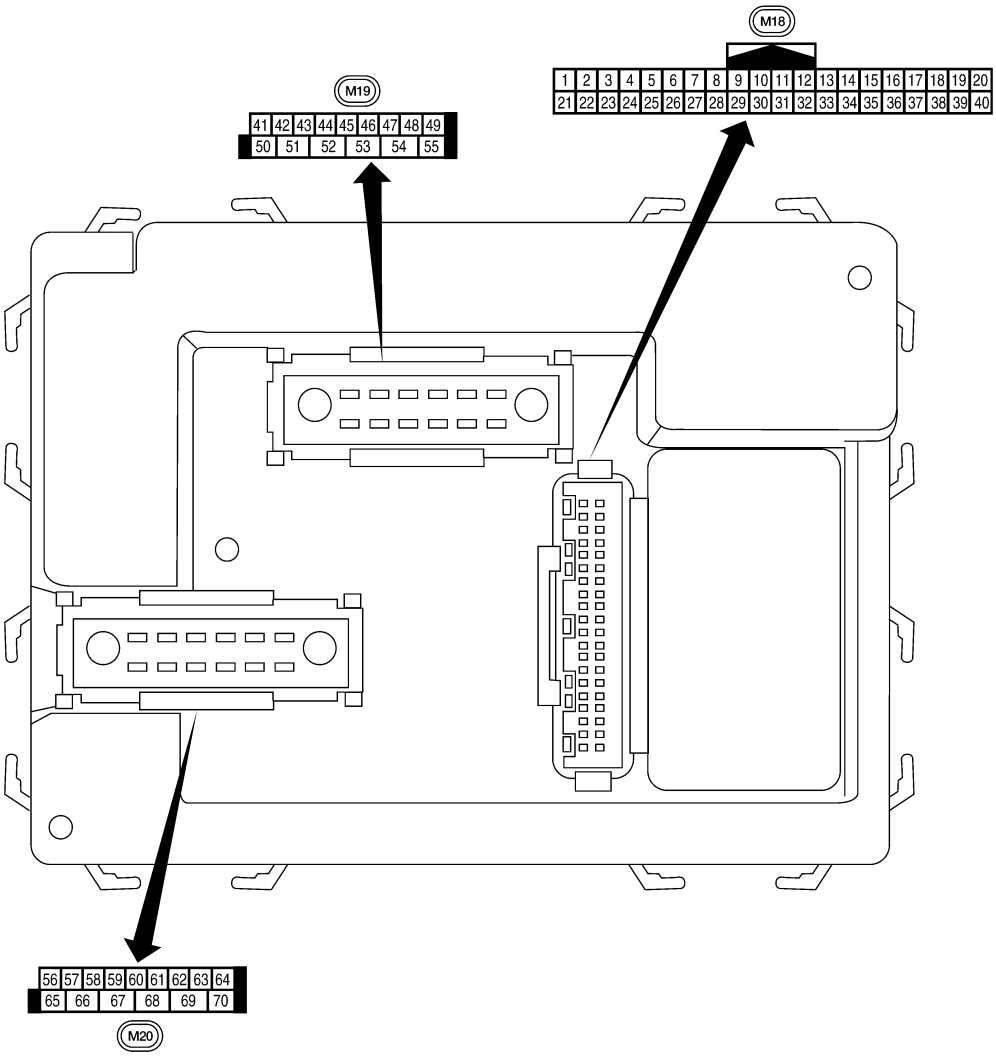
Monitor Item	Condition	Value/Status
KEYLESS LOCK[2]	LOCK button of key fob is not pressed	Off
	LOCK button of key fob is pressed	On
KEYLESS PANIC[2]	PANIC button of key fob is not pressed	Off
	PANIC button of key fob is pressed	On
KEYLESS UNLOCK[2]	UNLOCK button of key fob is not pressed	Off
	UNLOCK button of key fob is pressed	On
LIGHT SW 1ST	Lighting switch OFF	Off
	Lighting switch 1st	On
OIL PRESS SW	• Ignition switch OFF or ACC • Engine running	Off
	Ignition switch ON	On
OPTICAL SENSOR	Bright outside of the vehicle	Close to 5V
	Dark outside of the vehicle	Close to 0V
PASSING SW	Other than lighting switch PASS	Off
	Lighting switch PASS	On
PUSH SW[1]	Return to ignition switch to LOCK position	Off
	Press ignition switch	On
REAR DEF SW	Rear window defogger switch OFF	Off
	Rear window defogger switch ON	On
RR WASHER SW	Rear washer switch OFF	Off
	Rear washer switch ON	On
RR WIPER INT	Rear wiper switch OFF	Off
	Rear wiper switch INT	On
RR WIPER ON	Rear wiper switch OFF	Off
	Rear wiper switch ON	On
RR WIPER STOP	Rear wiper stop position	Off
	Other than rear wiper stop position	On
RR WIPER STP2	Rear wiper stop position	Off
	Other than rear wiper stop position	On
TURN SIGNAL L	Turn signal switch OFF	Off
	Turn signal switch LH	On
TURN SIGNAL R	Turn signal switch OFF	Off
	Turn signal switch RH	On
VEHICLE SPEED	While driving	Equivalent to speedometer reading
WARNING LAMP	Low tire pressure warning lamp in combination meter OFF	Off
	Low tire pressure warning lamp in combination meter ON	On

1: With Intelligent Key

2: With remote keyless entry system

Terminal Layout

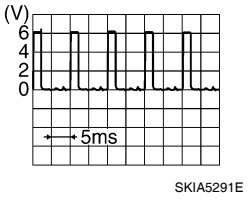
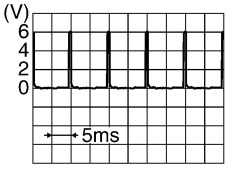
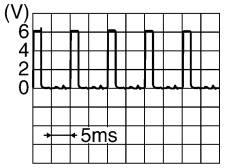
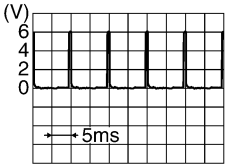
INFOID:0000000006625992

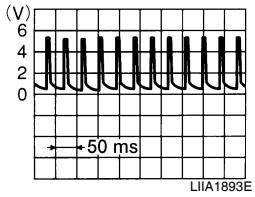
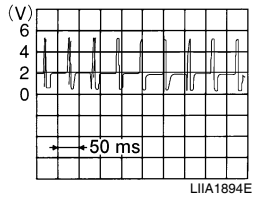
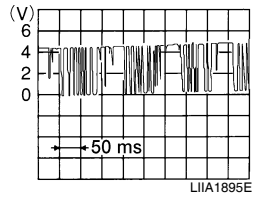
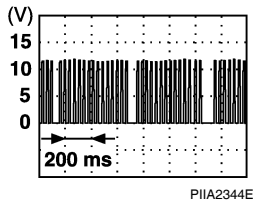


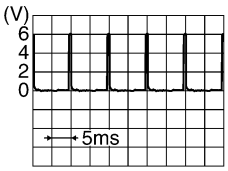
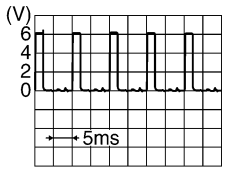
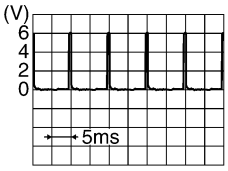
LIIA2443E

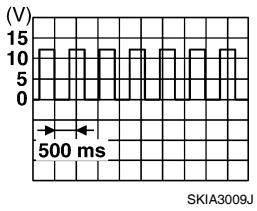
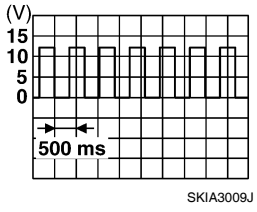
Physical Values

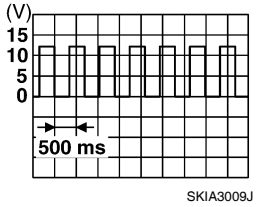
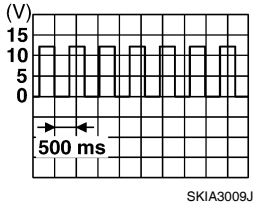
INFOID:0000000006625993

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

Terminal	Wire color	Signal name	Signal input/ output	Measuring condition		Reference value or waveform (Approx.)
				Ignition switch	Operation or condition	
19	V/W	Remote keyless entry receiver (power supply)	Output	OFF	Ignition switch OFF	 LIIA1893E
20	G/W	Remote keyless entry receiver (signal)	Input	OFF	Stand-by (keyfob buttons released)	 LIIA1894E
					When remote keyless entry receiver receives signal from keyfob (keyfob buttons pressed)	 LIIA1895E
21	G	NATS antenna amp.	Input	OFF → ON	Ignition switch (OFF → ON)	Just after turning ignition switch ON: Pointer of tester should move for approx. 1 second, then return to battery voltage.
22	W/V	BUS	—	—	Ignition switch ON or power window timer operates	 PIIA2344E
23	G/O	Security indicator lamp	Output	OFF	Goes OFF → illuminates (Every 2.4 seconds)	Battery voltage → 0V
25	BR	NATS antenna amp.	Input	OFF → ON	Ignition switch (OFF → ON)	Just after turning ignition switch ON: Pointer of tester should move for approx. 1 second, then return to battery voltage.
26	Y/L	Rear wiper auto stop switch 2	Input	ON	Rise up position (rear wiper arm on stopper)	0V
					A Position (full clockwise stop position)	0V
					Forward sweep (counterclockwise direction)	Fluctuating
					B Position (full counterclockwise stop position)	Battery voltage
					Reverse sweep (clockwise direction)	Fluctuating
27	W/R	Compressor ON signal	Input	ON	A/C switch OFF	5V
					A/C switch ON	0V

Terminal	Wire color	Signal name	Signal input/ output	Measuring condition		Reference value or waveform (Approx.)
				Ignition switch	Operation or condition	
28	L/R	Front blower monitor	Input	ON	Front blower motor OFF	Battery voltage
					Front blower motor ON	0V
29	W/B	Hazard switch	Input	OFF	ON	0V
					OFF	5V
32	R/G	Combination switch output 5	Output	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5291E
33	R/Y	Combination switch output 4	Output	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5292E
34	L	Combination switch output 3	Output	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5291E
35	O/B	Combination switch output 2	Output	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5292E
36	R/W	Combination switch output 1				
37[1]	B/R	Key switch and ignition knob switch	Input	OFF	Intelligent Key inserted	Battery voltage
					Intelligent Key inserted	0V
37[2]	B/R	Key switch and key lock solenoid	Input	OFF	Key inserted	Battery voltage
					Key inserted	0V
38	W/L	Ignition switch (ON)	Input	ON	—	Battery voltage
39	L	CAN-H	—	—	—	—
40	P	CAN-L	—	—	—	—
42	GR	Glass hatch ajar switch	Input	ON	Glass hatch open	0
					Glass hatch closed	Battery
43	R/B	Back door switch (without power back door) or back door latch (door ajar switch) (with power back door)	Input	OFF	ON (open)	0V
					OFF (closed)	Battery voltage

Terminal	Wire color	Signal name	Signal input/ output	Measuring condition		Reference value or waveform (Approx.)
				Ignition switch	Operation or condition	
44	O	Rear wiper auto stop switch 1	Input	ON	Rise up position (rear wiper arm on stopper)	0V
					A Position (full clockwise stop position)	Battery voltage
					Forward sweep (counterclockwise direction)	Fluctuating
					B Position (full counterclockwise stop position)	0V
					Reverse sweep (clockwise direction)	Fluctuating
47	SB	Front door switch LH	Input	OFF	ON (open)	0V
					OFF (closed)	Battery voltage
48	R/Y	Rear door switch LH	Input	OFF	ON (open)	0V
					OFF (closed)	Battery voltage
49	R	Cargo lamp	Output	OFF	Any door open (ON)	0V
					All doors closed (OFF)	Battery voltage
51	G/Y	Trailer turn signal (right)	Output	ON	Turn right ON	 SKIA3009J
52	G/B	Trailer turn signal (left)	Output	ON	Turn left ON	 SKIA3009J
54	Y	Rear wiper output circuit 2	Input	ON	Rise up position (rear wiper arm on stopper)	0V
					A Position (full clockwise stop position)	0V
					Forward sweep (counterclockwise direction)	0V
					B Position (full counterclockwise stop position)	Battery voltage
					Reverse sweep (clockwise direction)	Battery voltage
55	SB	Rear wiper output circuit 1	Output	ON	OFF	0
					ON	Battery voltage
56	R/G	Battery saver output	Output	OFF	15 minutes after ignition switch is turned OFF	0V
				ON	—	Battery voltage
57	Y/R	Battery power supply	Input	OFF	—	Battery voltage

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

1: With Intelligent Key system

2: With remote keyless entry system

Fail Safe

INFOID:0000000006625994

Fail-safe index

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

Display contents of CONSULT	Fail-safe	Cancellation
U1000: CAN COMM CIRCUIT	Inhibit engine cranking	When the BCM re-establishes communication with the other modules.

DTC Inspection Priority Chart

INFOID:0000000006625995

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

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

DTC Index

INFOID:0000000006625996

NOTE:

Details of time display

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

CONSULT display	Fail-safe	Intelligent Key warning lamp ON	Tire pressure monitor warning lamp ON	Reference page
No DTC is detected. further testing may be required.	—	—	—	—
U1000: CAN COMM CIRCUIT	—	—	—	BCS-29

CONSULT display	Fail-safe	Intelligent Key warning lamp ON	Tire pressure monitor warning lamp ON	Reference page
B2013: STRG COMM 1	—	—	—	SEC-30
B2190: NATS ANTENNA AMP	—	—	—	SEC-33 (with I-Key), SEC-139 (without I-Key)
B2191: DIFFERENCE OF KEY	—	—	—	SEC-36 (with I-Key), SEC-142 (without I-Key)
B2192: ID DISCORD BCM-ECM	—	—	—	SEC-37 (with I-Key), SEC-143 (without I-Key)
B2193: CHAIN OF BCM-ECM	—	—	—	SEC-39 (with I-Key), SEC-145 (without I-Key)
B2552: INTELLIGENT KEY	—	—	—	SEC-41
B2590: NATS MALFUNCTION	—	—	—	SEC-42
C1708: [NO DATA] FL	—	—	—	WT-14
C1709: [NO DATA] FR	—	—	—	WT-16
C1710: [NO DATA] RR	—	—	—	WT-16
C1711: [NO DATA] RL	—	—	—	WT-16
C1712: [CHECKSUM ERR] FL	—	—	—	WT-16
C1713: [CHECKSUM ERR] FR	—	—	—	WT-16
C1714: [CHECKSUM ERR] RR	—	—	—	WT-16
C1715: [CHECKSUM ERR] RL	—	—	—	WT-16
C1716: [PRESSDATA ERR] FL	—	—	—	WT-18
C1717: [PRESSDATA ERR] FR	—	—	—	WT-16
C1718: [PRESSDATA ERR] RR	—	—	—	WT-16
C1719: [PRESSDATA ERR] RL	—	—	—	WT-16
C1720: [CODE ERR] FL	—	—	—	WT-16
C1721: [CODE ERR] FR	—	—	—	WT-16
C1722: [CODE ERR] RR	—	—	—	WT-16
C1723: [CODE ERR] RL	—	—	—	WT-16
C1724: [BATT VOLT LOW] FL	—	—	—	WT-16
C1725: [BATT VOLT LOW] FR	—	—	—	WT-16
C1726: [BATT VOLT LOW] RR	—	—	—	WT-16
C1727: [BATT VOLT LOW] RL	—	—	—	WT-16
C1729: VHCL SPEED SIG ERR	—	—	—	WT-19
C1735: IGN_CIRCUIT_OPEN	—	—	—	—

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

Reference Value

INFOID:0000000006625997

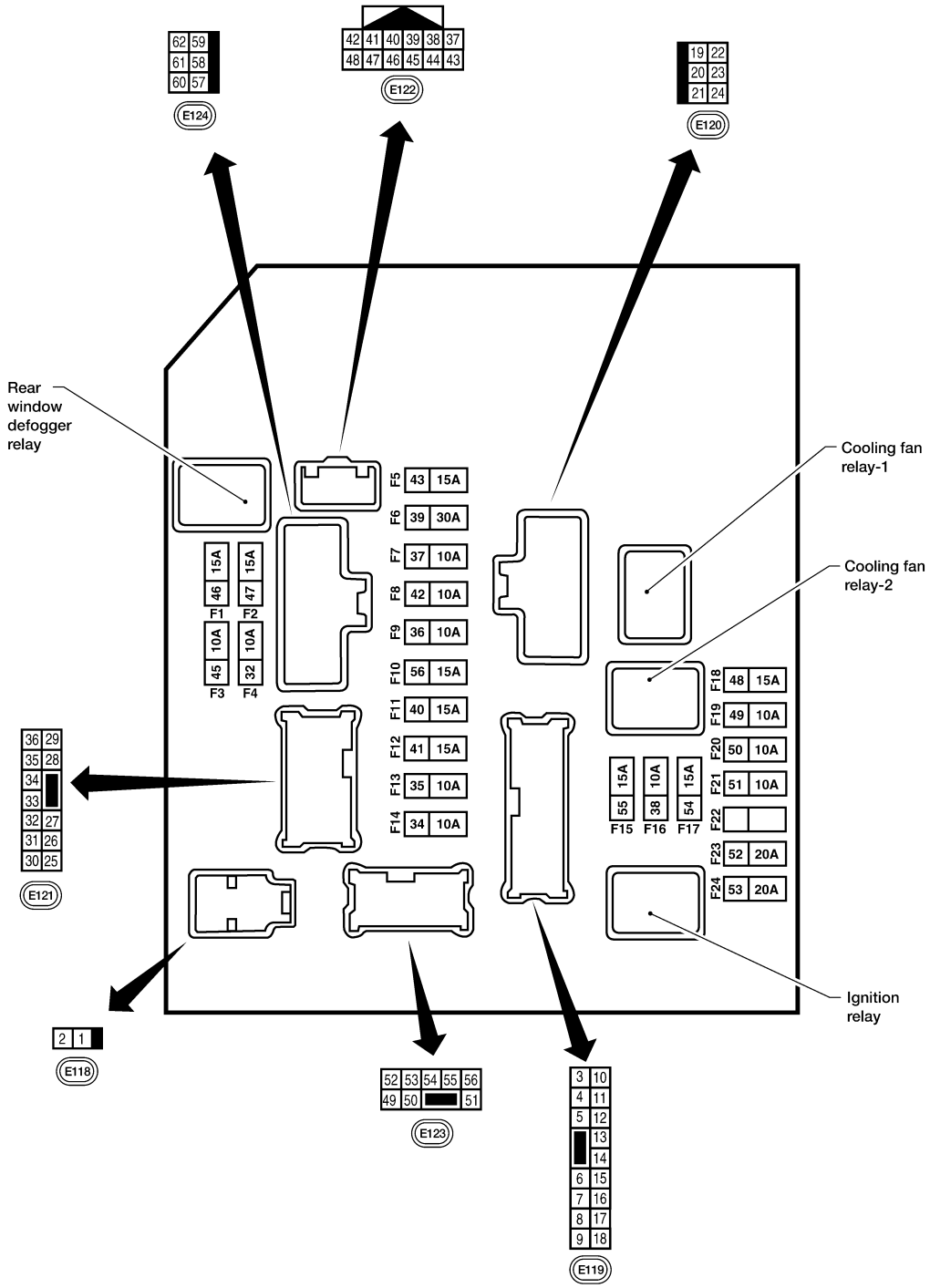
VALUES ON THE DIAGNOSIS TOOL

Monitor Item	Condition		Value/Status
MOTOR FAN REQ	Engine idle speed	Changes depending on engine coolant temperature, air conditioner operation status, vehicle speed, etc.	1, 2, 3, 4
A/C COMP REQ	A/C switch OFF		Off
	A/C switch ON		On
TAIL&CLR REQ	Lighting switch OFF		Off
	Lighting switch 1ST, 2ND, HI or AUTO (Light is illuminated)		On
HL LO REQ	Lighting switch OFF		Off
	Lighting switch 2ND HI or AUTO (Light is illuminated)		On
HL HI REQ	Lighting switch OFF		Off
	Lighting switch HI		On
FR FOG REQ	Lighting switch 2ND or AUTO (Light is illuminated)	Front fog lamp switch OFF	Off
		• Front fog lamp switch ON • Daytime light activated (Canada only)	On
FR WIP REQ	Ignition switch ON	Front wiper switch OFF	Stop
		Front wiper switch INT	1LOW
		Front wiper switch LO	Low
		Front wiper switch HI	Hi
WIP AUTO STOP	Ignition switch ON	Front wiper stop position	STOP P
		Any position other than front wiper stop position	ACT P
WIP PROT	Ignition switch ON	Front wiper operates normally	Off
		Front wiper stops at fail-safe operation	BLOCK
ST RLY REQ	Ignition switch OFF or ACC		Off
	Ignition switch START		On
IGN RLY	Ignition switch OFF or ACC		Off
	Ignition switch ON		On
RR DEF REQ	Rear defogger switch OFF		Off
	Rear defogger switch ON		On
OIL P SW	Ignition switch OFF, ACC or engine running		Open
	Ignition switch ON		Close
DTRL REQ	Not operated		Off
	Daytime Running Lights ON		On
THFT HRN REQ	Not operated		Off
	• Panic alarm is activated • Horn is activated with VEHICLE SECURITY (THEFT WARNING) SYSTEM		On

Monitor Item	Condition	Value/Status
HORN CHIRP	Not operated	Off
	Door locking with keyfob or Intelligent Key (if equipped) (horn chirp mode)	On

Terminal Layout

INFOID:0000000006625998



AAMIA0386GB

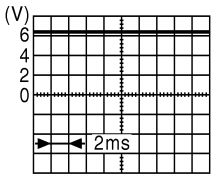
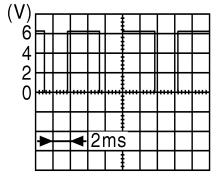
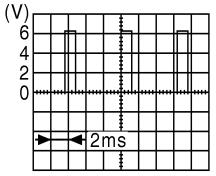
NOTE:
Numbers preceded by an "F" represent the fuse numbers imprinted on the IPDM E/R. The other numbers represent the fuse numbers as they appear in the wiring diagrams.

Physical Values

INFOID:0000000006625999

PHYSICAL VALUES

Terminal	Wire color	Signal name	Signal input/ output	Measuring condition		Reference value (Approx.)
				Ignition switch	Operation or condition	
1	B/Y	Battery power supply	Input	OFF	—	Battery voltage
2	R	Battery power supply	Input	OFF	—	Battery voltage
3	BR	ECM relay	Output	—	Ignition switch ON or START	Battery voltage
					Ignition switch OFF or ACC	0V
4	W/L	ECM relay	Output	—	Ignition switch ON or START	Battery voltage
					Ignition switch OFF or ACC	0V
6	L	Throttle control motor relay	Output	—	Ignition switch ON or START	Battery voltage
					Ignition switch OFF or ACC	0V
7	W/B	ECM relay control	Input	—	Ignition switch ON or START	0V
					Ignition switch OFF or ACC	Battery voltage
8	R/B	Fuse 54	Output	—	Ignition switch ON or START	Battery voltage
					Ignition switch OFF or ACC	0V
10	G	Fuse 45 (Canada only)	Output	ON	Daytime light system active	0V
					Daytime light system inactive	Battery voltage
11	Y/B	A/C compressor	Output	ON or START	A/C switch ON or defrost A/C switch	Battery voltage
					A/C switch OFF or defrost A/C switch	0V
12	L/W	Ignition switch supplied power	Input	—	OFF or ACC	0V
					ON or START	Battery voltage
13	B/Y	Fuel pump relay	Output	—	Ignition switch ON or START	Battery voltage
					Ignition switch OFF or ACC	0V
14	Y/R	Fuse 49	Output	—	Ignition switch ON or START	Battery voltage
					Ignition switch OFF or ACC	0V
15	LG/B	Fuse 50	Output	—	Ignition switch ON or START	Battery voltage
					Ignition switch OFF or ACC	0V
16	G	Fuse 51	Output	—	Ignition switch ON or START	Battery voltage
					Ignition switch OFF or ACC	0V
17	W	Fuse 55	Output	—	Ignition switch ON or START	Battery voltage
					Ignition switch OFF or ACC	0V
19	W/R	Starter motor	Output	START	—	Battery voltage
21	BR	Ignition switch supplied power	Input	—	OFF or ACC	0V
					START	Battery voltage
22	G	Battery power supply	Output	OFF	—	Battery voltage
23	GR/W	Door mirror defogger output signal	Output	—	When rear defogger switch is ON	Battery voltage
					When raker defogger switch is OFF	0V

Terminal	Wire color	Signal name	Signal input/ output	Measuring condition			Reference value (Approx.)
				Ignition switch	Operation or condition		
24	L	Cooling fan relay	Output	—	Conditions correct for cooling fan operation		Battery voltage
					Conditions not correct for cooling fan operation		0V
27	W/B	Fuse 38 (With trailer tow)	Output	—	Ignition switch ON or START		Battery voltage
					Ignition switch OFF or ACC		0V
30	W	Fuse 53	Output	—	Ignition switch ON or START		Battery voltage
					Ignition switch OFF or ACC		0V
32	L	Wiper low speed signal	Output	ON or START	Wiper switch	OFF	Battery voltage
						LO or INT	0V
35	L/B	Wiper high speed signal	Output	ON or START	Wiper switch	OFF, LO, INT	Battery voltage
						HI	0V
37	Y	Power generation command signal	Output	—	Ignition switch ON		 JPMIA0001GB 6.3 V
					40% is set on "Active test," "ALTERNATOR DUTY" of "ENGINE"		 JPMIA0002GB 3.8 V
					40% is set on "Active test," "ALTERNATOR DUTY" of "ENGINE"		 JPMIA0003GB 1.4 V
38	B	Ground	Input	—	—		0V
39	L	CAN-H	—	ON	—		—
40	P	CAN-L	—	ON	—		—
42	GR	Oil pressure switch	Input	—	Engine running		Battery voltage
					Engine stopped		0V
43	L/Y	Wiper auto stop signal	Input	ON or START	Wiper switch	OFF, LO, INT	Battery voltage
44	BR	Daytime light relay control (Canada only)	Input	ON	Daytime light system active		0V
					Daytime light system inactive		Battery voltage

Terminal	Wire color	Signal name	Signal input/ output	Measuring condition			Reference value (Approx.)
				Ignition switch	Operation or condition		
45	G/W	Horn relay control	Input	ON	When door locks are operated using keyfob or Intelligent Key (if equipped) (OFF → ON)*		Battery voltage → 0V
46	GR	Fuel pump relay control	Input	—	Ignition switch ON or START		0V
					Ignition switch OFF or ACC		Battery voltage
47	O	Throttle control motor relay control	Input	—	Ignition switch ON or START		0V
					Ignition switch OFF or ACC		Battery voltage
48	B/R	Starter relay (inhibit switch)	Input	ON or START	Selector lever in "P" or "N"		0V
					Selector lever any other position		Battery voltage
49	R/L	Trailer tow relay (With trailer tow) Illumination (Without trailer tow)	Output	ON	Lighting switch must be in the 1st position	OFF	0V
						ON	Battery voltage
50	W/R	Front fog lamp (LH)	Output	ON or START	Lighting switch must be in the 2nd position (LOW beam is ON) and the front fog lamp switch	OFF	0V
						ON	Battery voltage
51	W/R	Front fog lamp (RH)	Output	ON or START	Lighting switch must be in the 2nd position (LOW beam is ON) and the front fog lamp switch	OFF	0V
						ON	Battery voltage
52	L	LH low beam headlamp	Output	—	Lighting switch in 2nd position		Battery voltage
54	R/Y	RH low beam headlamp	Output	—	Lighting switch in 2nd position		Battery voltage
55	G	LH high beam headlamp	Output	—	Lighting switch in 2nd position and placed in HIGH or PASS position		Battery voltage
56	Y (With DTRL)	RH high beam headlamp	Output	—	Lighting switch in 2nd position and placed in HIGH or PASS position		Battery voltage
56	L/W (Without DTRL)	RH high beam headlamp	Output	—	Lighting switch in 2nd position and placed in HIGH or PASS position		Battery voltage
57	R/L	Parking, license, and tail lamp	Output	ON	Lighting switch 1st position	OFF	0V
						ON	Battery voltage
59	B	Ground	Input	—	—		0V
60	B/W	Rear window defogger relay	Output	ON or START	Rear defogger switch ON		Battery voltage
					Rear defogger switch OFF		0V
61	BR	Fuse 32 (With trailer tow)	Output	OFF	—		Battery voltage

*: When horn reminder is ON

Fail Safe

INFOID:0000000006626000

CAN COMMUNICATION CONTROL

When CAN communication with ECM and BCM is impossible, IPDM E/R performs fail-safe control. After CAN communication recovers normally, it also returns to normal control.

If No CAN Communication Is Available With ECM

Control part	Fail-safe in operation
Cooling fan	• Turns ON the cooling fan relay when the ignition switch is turned ON • Turns OFF the cooling fan relay when the ignition switch is turned OFF

If No CAN Communication Is Available With BCM

Control part	Fail-safe in operation
Headlamp	• Turns ON the headlamp low relay when the ignition switch is turned ON • Turns OFF the headlamp low relay when the ignition switch is turned OFF • Headlamp high LH/RH relays OFF
• Parking lamps • License plate lamps • Tail lamps	• Turns ON the tail lamp relay when the ignition switch is turned ON • Turns OFF the tail lamp relay when the ignition switch is turned OFF
Front wiper	• The status just before activation of fail-safe control is maintained until the ignition switch is turned OFF while the front wiper is operating at LO or HI speed. • The wiper is operated at LO speed until the ignition switch is turned OFF if the fail-safe control is activated while the front wiper is set in the INT mode and the front wiper motor is operating.
Rear window defogger	Rear window defogger relay OFF
A/C compressor	A/C relay OFF
Front fog lamps	Front fog lamp relay OFF

IGNITION RELAY MALFUNCTION DETECTION FUNCTION

- IPDM E/R monitors the voltage at the contact circuit and excitation coil circuit of the ignition relay inside it.
- IPDM E/R judges the ignition relay error if the voltage differs between the contact circuit and the excitation coil circuit.
- If the ignition relay cannot turn OFF due to contact seizure, it activates the tail lamp relay for 10 minutes to alert the user to the ignition relay malfunction when the ignition switch is turned OFF.

Ignition switch	Ignition relay	Tail lamp relay
ON	ON	—
OFF	OFF	—

NOTE:

The tail lamp turns OFF when the ignition switch is turned ON.

FRONT WIPER CONTROL

IPDM E/R detects front wiper stop position by a front wiper auto stop signal.
When a front wiper auto stop signal is in the conditions listed below, IPDM E/R stops power supply to wiper after repeating a front wiper 10 second activation and 20 second stop five times.

Ignition switch	Front wiper switch	Auto stop signal
ON	OFF	Front wiper stop position signal cannot be input 10 seconds.
	ON	The signal does not change for 10 seconds.

NOTE:

This operation status can be confirmed on the IPDM E/R “DATA MONITOR” that displays “Block” for the item “WIP PROT” while the wiper is stopped.

STARTER MOTOR PROTECTION FUNCTION

IPDM E/R turns OFF the starter control relay to protect the starter motor when the starter control relay remains active for 90 seconds.

DTC Index

INFOID:0000000006626001

CONSULT-III display	Fail-safe	TIME[NOTE]		Refer to
No DTC is detected. further testing may be required.	—	—	—	—
U1000: CAN COMM CIRCUIT	×	CRNT	1 – 39	PCS-16

NOTE:

The details of TIME display are as follows.

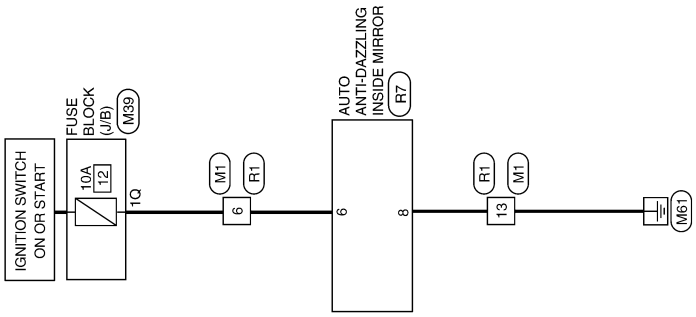
- CRNT: The malfunctions that are detected now
- 1 - 39: The number is indicated when it is normal at present and a malfunction was detected in the past. It increases like 0 → 1 → 2 · · · 38 → 39 after returning to the normal condition whenever IGN OFF → ON. It is fixed to 39 until the self-diagnosis results are erased if it is over 39. It returns to 0 when a malfunction is detected again in the process.

WIRING DIAGRAM

COMPASS

Wiring Diagram

INFOID:0000000006418291



COMPASS

ABNWA0989GB

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

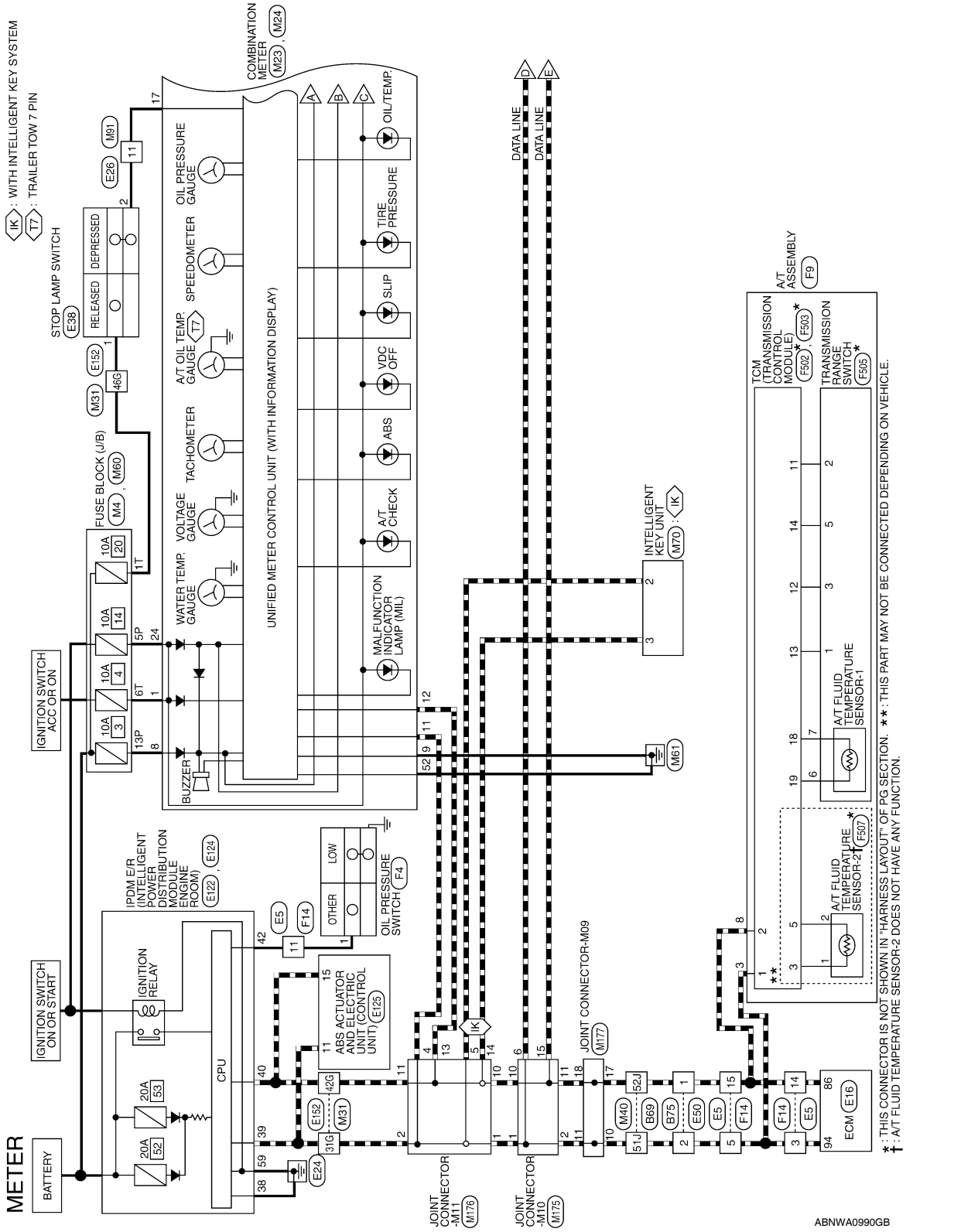
Terminal No.	Color of Wire	Signal Name
6	G/R	IGN
8	B	GND

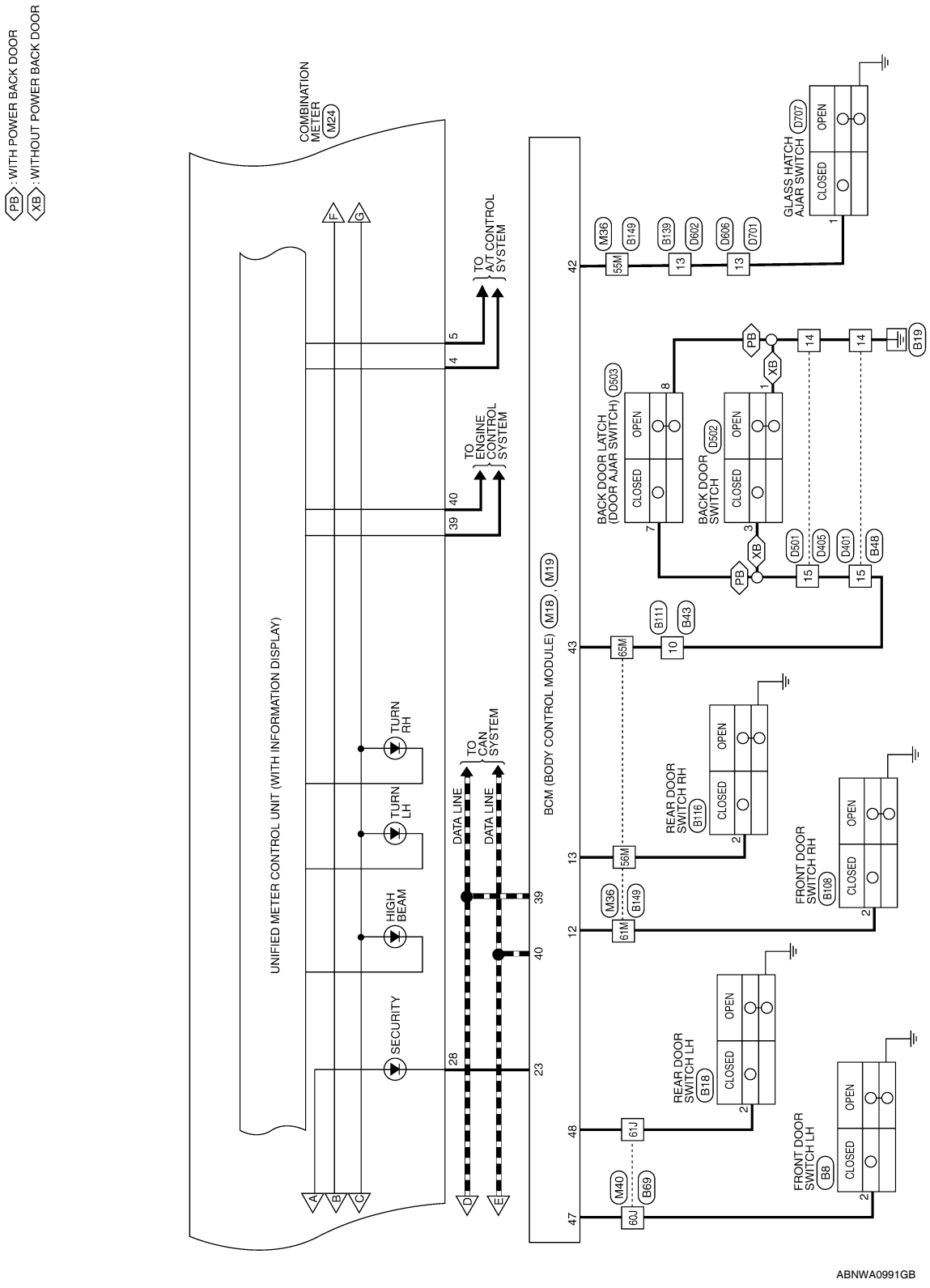
ABNIA0170GB

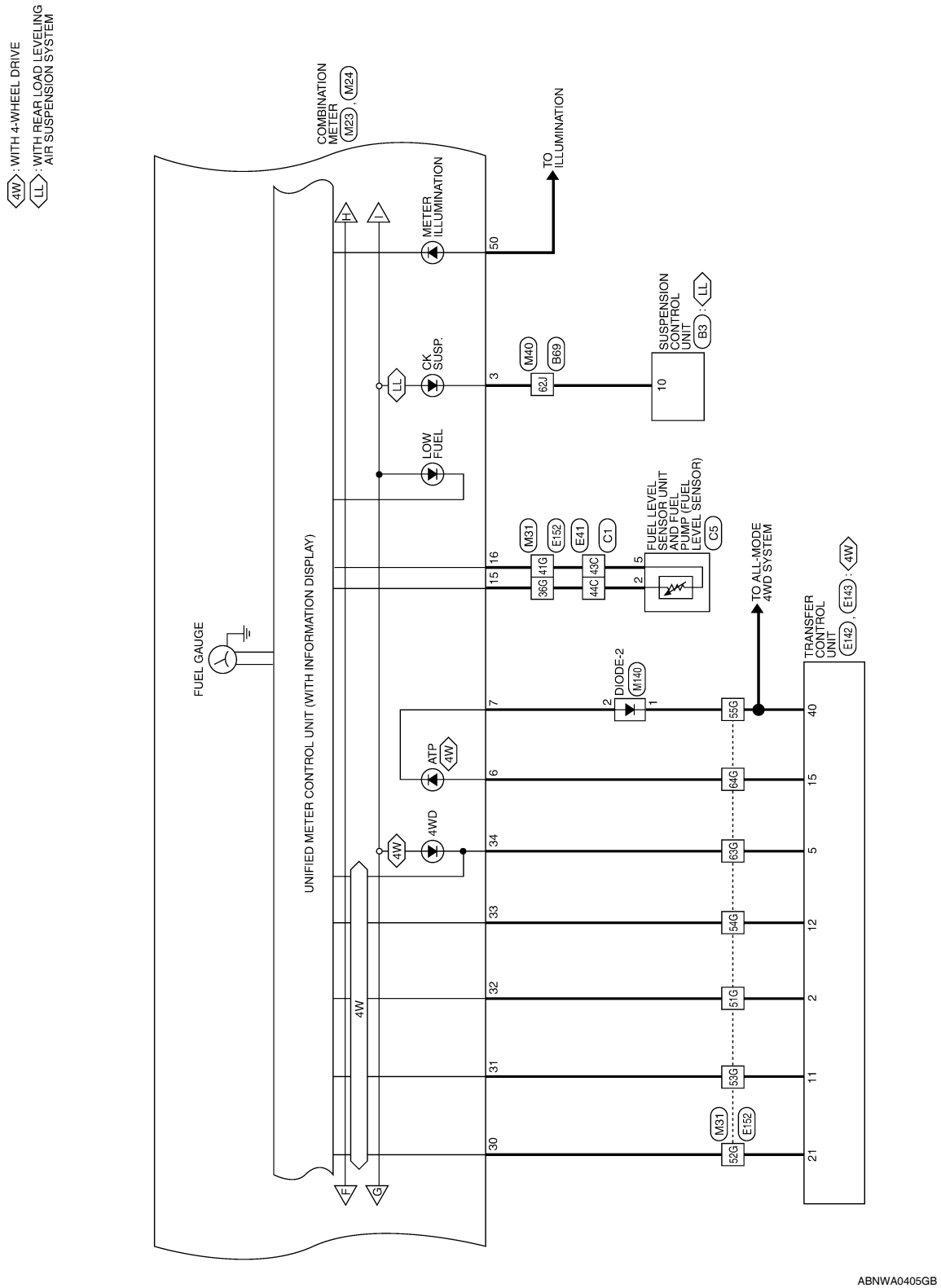
METER

Wiring Diagram

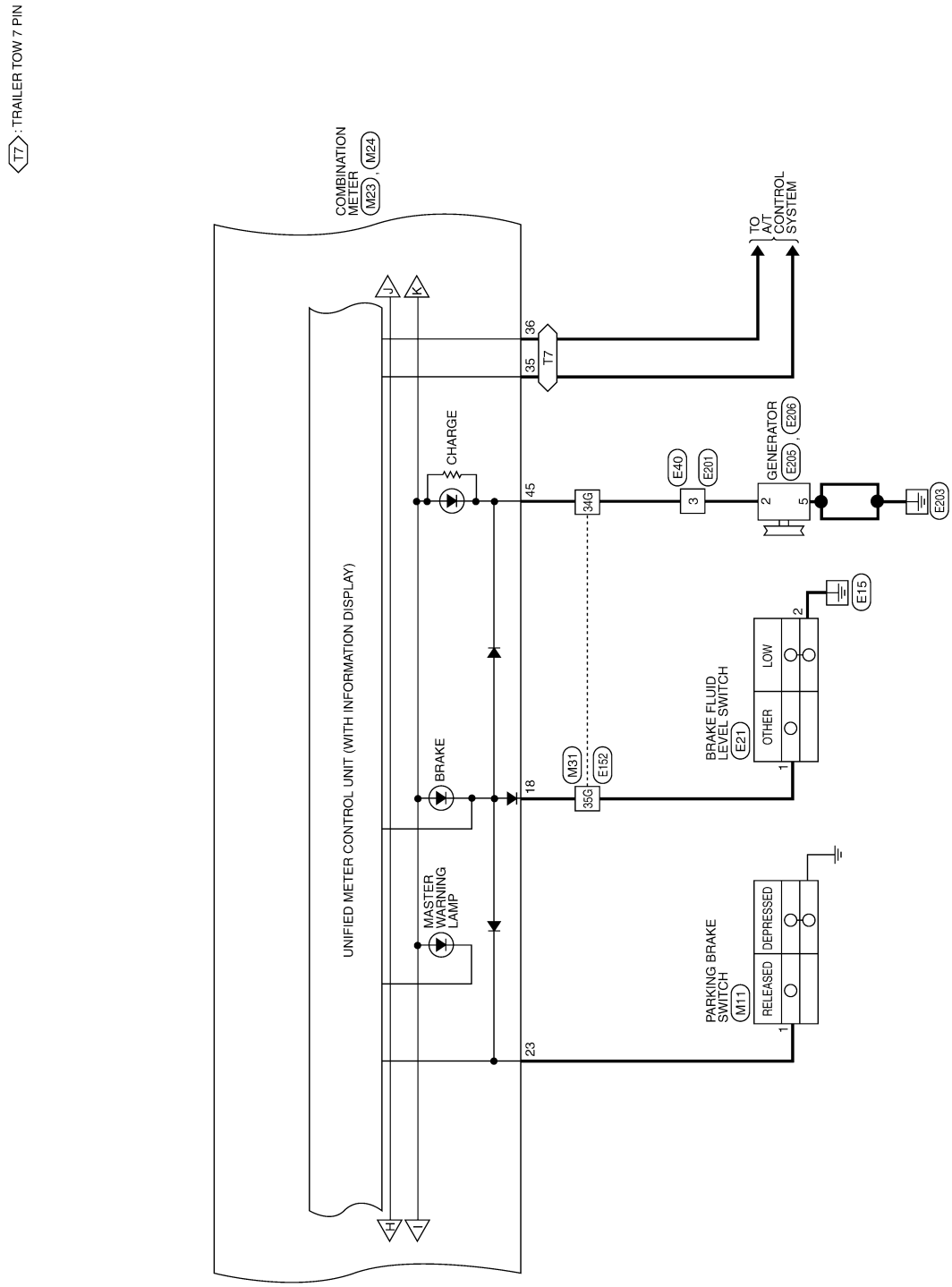
INFOID:0000000006418290



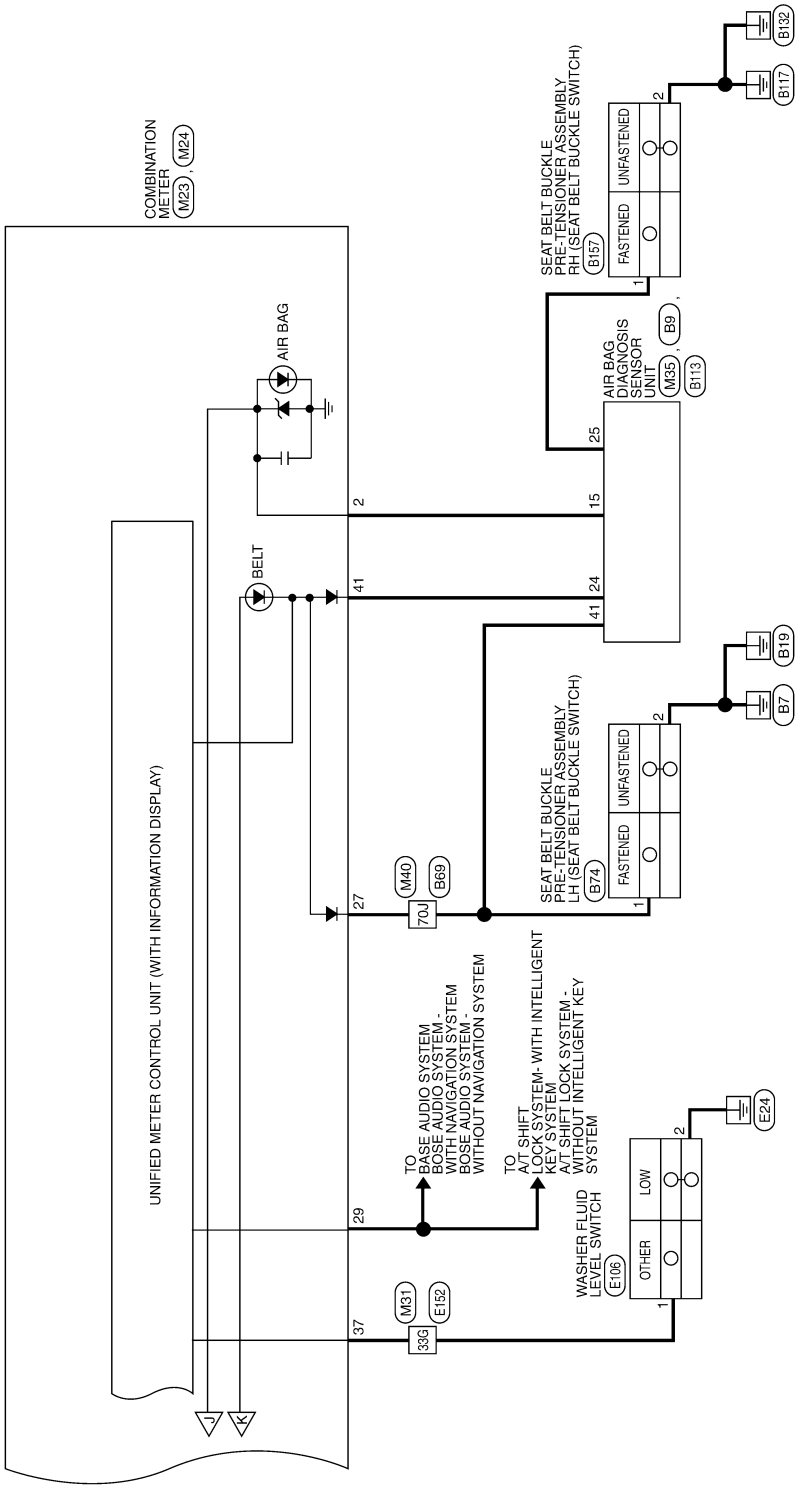

PB : WITH POWER BACK DOOR
XB : WITHOUT POWER BACK DOOR
COMBINATION METER (M24)
UNIFIED METER CONTROL UNIT (WITH INFORMATION DISPLAY)
TURN RH
TURN LH
HIGH BEAM
SECURITY
DATA LINE
DATA LINE
TO CAN SYSTEM
TO ENGINE CONTROL SYSTEM
TO A/T CONTROL SYSTEM
BCM (BODY CONTROL MODULE) (M18), (M19)
GLASS HATCH AJAR SWITCH D707
BACK DOOR LATCH (DOOR AJAR SWITCH) D503
BACK DOOR SWITCH D502
REAR DOOR SWITCH RH B116
REAR DOOR SWITCH LH B18
FRONT DOOR SWITCH RH B108
FRONT DOOR SWITCH LH B8
OPEN
CLOSED
ABNWA0991GB



ABNWA0405GB



ABNWA0993GB

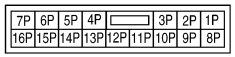


ABNWA0994GB

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	–
13P	P	–

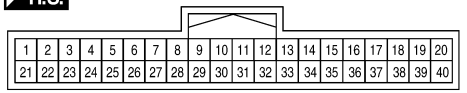
Connector No.	M11
Connector Name	PARKING BRAKE SWITCH
Connector Color	BLACK

H.S.

Terminal No.	Color of Wire	Signal Name
1	G	–

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

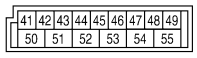
H.S.



Terminal No.	Color of Wire	Signal Name
12	R/L	DOOR SW (AS)
13	GR	DOOR SW (RR)
23	G/O	SECURITY INDICATOR OUTPUT
39	L	CAN-H
40	P	CAN-L

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

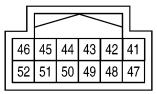
H.S.



Terminal No.	Color of Wire	Signal Name
42	GR	GLASS HATCH SW
43	R/B	BACK DOOR SW
47	SB	DOOR SW (DR)
48	R/Y	DOOR SW (RL)

Connector No.	M23
Connector Name	COMBINATION METER
Connector Color	WHITE

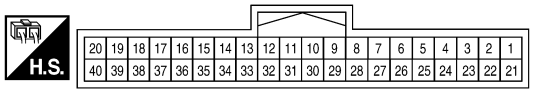
H.S.



Terminal No.	Color of Wire	Signal Name
41	P/L	PASS SEAT BELT
42	–	–
43	–	–
44	–	–
45	BR/W	CHARGE IN
46	–	–
47	–	–
48	–	–
49	–	–
50	BR	ILL LED CON OUTPUT
51	–	–
52	B	ILL GND

ABNIA1277GB

Connector No.	M24
Connector Name	COMBINATION METER
Connector Color	WHITE

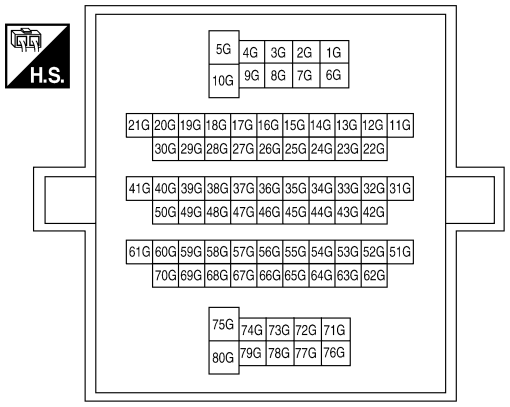


Terminal No.	Color of Wire	Signal Name
1	O	ACCESSORY
2	P	AIR BAG
3	BR	AIR LEVELIZER
4	Y/G	AT 1 RANGE
5	SB	AT 4 RANGE
6	L/B	ATP+
7	R/B	ATP-
8	P	BATTERY
9	B	GND
10	–	–

Terminal No.	Color of Wire	Signal Name
11	L	CAN-H
12	P	CAN-L
13	–	–
14	–	–
15	Y/L	FUEL IN
16	B/P	ANALOG GND
17	R/G	BRAKE PEDAL
18	P/B	BRAKE FLUID
19	–	–
20	–	–
21	–	–
22	–	–
23	G	PARK BRAKE
24	O/L	RUN/START
25	–	–
26	–	–

Terminal No.	Color of Wire	Signal Name
27	O/B	SEATBELT
28	G/O	SECURITY
29	W/R	SPEED OUT
30	BR	TF AUTO
31	L	TF LOCK
32	B/W	TF 2WD
33	W/G	TF 4LO
34	W/B	TF 4WD
35	LG/R	TOW MODE
36	Y/V	TOW MODE LAMP
37	W/L	WASHER FLUID
38	–	–
39	B/R	PN ATCU
40	GR/R	PN REVERSE

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

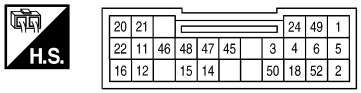


ABNIA2461GB

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	–

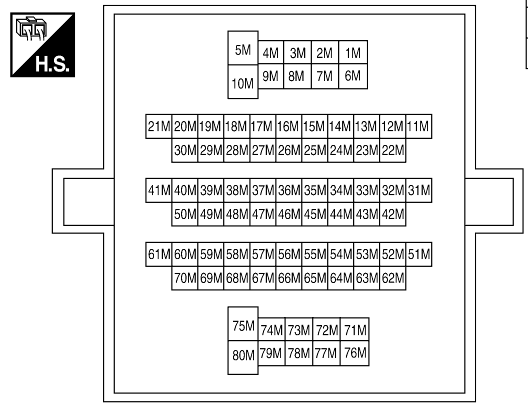
Terminal No.	Color of Wire	Signal Name
63G	W/B	–
64G	L/B	–

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



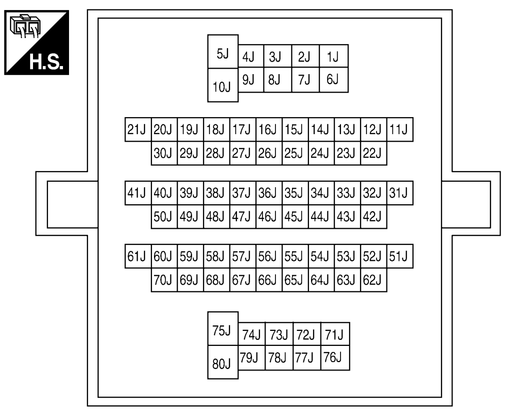
Terminal No.	Color of Wire	Signal Name
15	P	WARN LAMP
24	P/L	SEATBELT MINDER

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



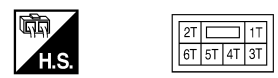
Terminal No.	Color of Wire	Signal Name
55M	GR	–
56M	GR	–
61M	R/L	–
65M	R/B	–

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



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

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



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

ABNIA2462GB

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

H.S.

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

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

H.S.

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

Connector No.	M177
Connector Name	JOINT CONNECTOR-M09
Connector Color	GREEN

H.S.

Terminal No.	Color of Wire	Signal Name
10	L	–
11	L	–
17	P	–
18	P	–

Connector No.	M70
Connector Name	INTELLIGENT KEY UNIT
Connector Color	WHITE

H.S.

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

Connector No.	M176
Connector Name	JOINT CONNECTOR-M11
Connector Color	BLUE

H.S.

Terminal No.	Color of Wire	Signal Name
1	L	–
2	L	–
4	L	–
5	L	–
10	P	–
11	P	–
13	P	–
14	P	–

Connector No.	M175
Connector Name	JOINT CONNECTOR-M10
Connector Color	BLUE

H.S.

Terminal No.	Color of Wire	Signal Name
1	L	–
2	L	–
6	L	–
10	P	–
11	P	–
15	P	–

ABNIA2463GB

Connector No.	E5
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

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

Connector No.	E16
Connector Name	ECM
Connector Color	BLACK

H.S.

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.

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

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.	E38
Connector Name	STOP LAMP SWITCH
Connector Color	BLACK

H.S.

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

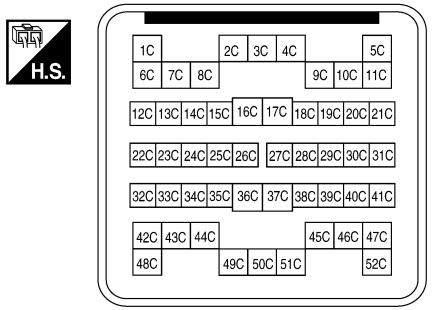
Connector No.	E40
Connector Name	WIRE TO WIRE
Connector Color	BLACK

H.S.

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

ABNIA2464GB

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

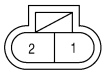


Terminal No.	Color of Wire	Signal Name
43C	B/P	–
44C	Y/L	–

Connector No.	E50
Connector Name	WIRE TO WIRE
Connector Color	BROWN

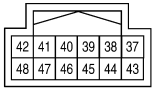
Terminal No.	Color of Wire	Signal Name
1	P	–
2	L	–

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



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

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

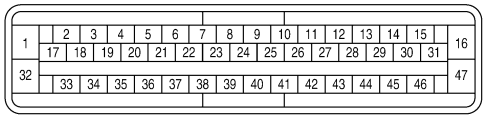


Terminal No.	Color of Wire	Signal Name
38	B	GND (SIGNAL)
39	L	CAN-H
40	P	CAN-L
42	GR	OIL PRESSURE SW

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 (POWER)

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

ABNIA2465GB

Connector No.	E142
Connector Name	TRANSFER CONTROL UNIT
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
2	B/W	2WD IND
5	W/B	ETS FAIL
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

H.S.

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

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

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

H.S.

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

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

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

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

71G	72G	73G	74G	75G
76G	77G	78G	79G	80G

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	–
63G	W/B	–
64G	L/B	–

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

H.S.

3	2	1

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

ABNIA2466GB

Connector No.	E205
Connector Name	GENERATOR
Connector Color	BLACK

H.S.

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

Connector No.	E206
Connector Name	GENERATOR
Connector Color	–

H.S.

Terminal No.	Color of Wire	Signal Name
5	B	–

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

H.S.

Terminal No.	Color of Wire	Signal Name
1	GR	–

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

H.S.

Terminal No.	Color of Wire	Signal Name
3	L	–
8	P	–

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

H.S.

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.

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+

ABNIA2467GB

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	RANGE SW 4
12	GR	RANGE SW 2
13	BR	RANGE SW 1
14	L	RANGE SW 3
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	–

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

H.S.

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

Terminal No.	Color of Wire	Signal Name
10	BR	WARNING LAMP OUTPUT

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

H.S.

1 2 3 4 5

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

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

H.S.

5C 4C 3C 2C 1C
11C 10C 9C 8C 7C 6C
21C 20C 19C 18C 17C 16C 15C 14C 13C 12C
31C 30C 29C 28C 27C 26C 25C 24C 23C 22C
41C 40C 39C 38C 37C 36C 35C 34C 33C 32C
47C 46C 45C 44C 43C 42C
52C 51C 50C 49C 48C

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

ABNIA2468GB

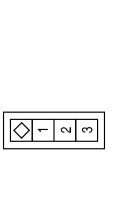
Connector No.	B8
Connector Name	FRONT DOOR SWITCH LH
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
2	SB	–

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

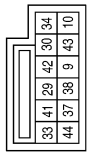
H.S.



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

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	BUCKLE SW LH

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

H.S.

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

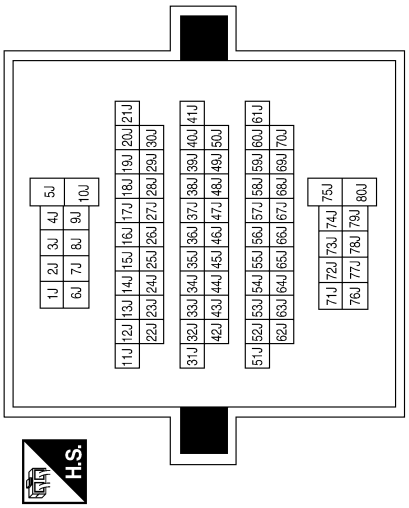
Connector No.	B18
Connector Name	REAR DOOR SWITCH LH
Connector Color	WHITE

H.S.

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

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	–

ABNIA2469GB

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

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

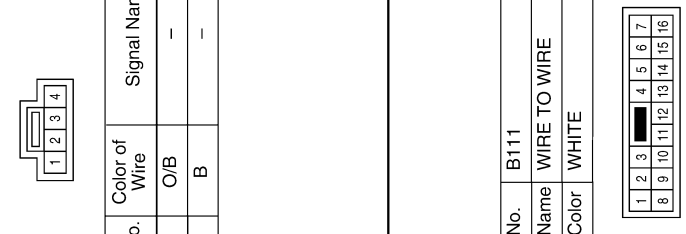
Connector No.	B75
Connector Name	WIRE TO WIRE
Connector Color	BROWN

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

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

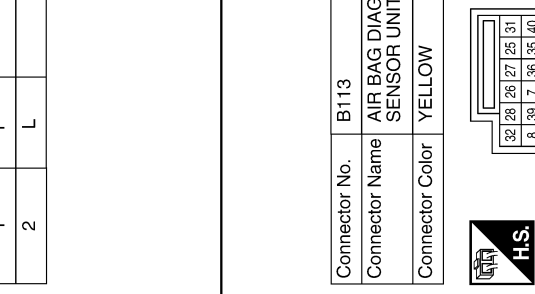
Terminal No.	Color of Wire	Signal Name
2	R/L	–

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



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

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

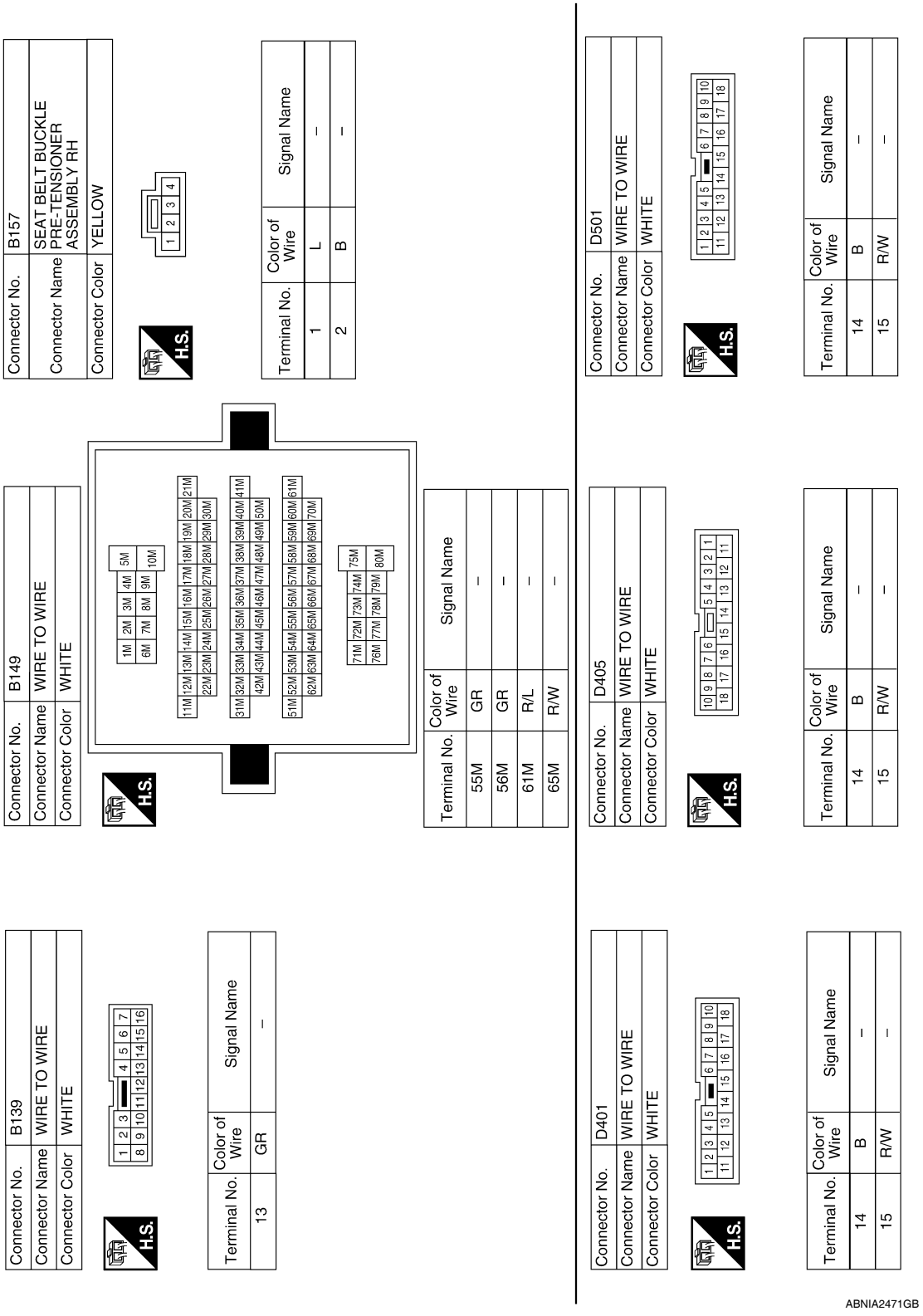


Terminal No.	Color of Wire	Signal Name
25	L	BUCKLE SW RH

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

Terminal No.	Color of Wire	Signal Name
2	GR	–

ABNIA2470GB



ABNIA2471GB

Connector No.	D502
Connector Name	BACK DOOR SWITCH
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
1	B	–
3	R/W	–

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

H.S.

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

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

H.S.

Terminal No.	Color of Wire	Signal Name
13	GR	–

Connector No.	D606
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
13	GR	–

Connector No.	D701
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
13	GR	–

Connector No.	D707
Connector Name	GLASS HATCH AJAR SWITCH
Connector Color	BLACK

H.S.

Terminal No.	Color of Wire	Signal Name
1	GR	–

ABNIA2472GB

SYMPTOM DIAGNOSIS

THE FUEL GAUGE POINTER DOES NOT MOVE

Description

INFOID:0000000006146429

Fuel gauge needle will not move from a certain position.

Diagnosis Procedure

INFOID:0000000006146430

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-36, "Component Function Check".

Does monitor value match fuel gauge reading?

YES >> GO TO 2
NO >> Replace combination meter. Refer to MWI-97, "Removal and Installation".

2.CHECK FUEL LEVEL SENSOR SIGNAL CIRCUIT

Check the fuel level sensor signal circuit. Refer to MWI-36, "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-37, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 4
NO >> Replace fuel level sensor unit. Refer to FL-12, "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-97, "Removal and Installation".
NO >> Repair or replace malfunctioning parts.

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

Description

INFOID:0000000006146431

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

Diagnosis Procedure

INFOID:0000000006146432

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-37, "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:0000000006146433

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

Diagnosis Procedure

INFOID:0000000006146434

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-97, "Removal and Installation".

2.CHECK OIL PRESSURE SWITCH SIGNAL CIRCUIT

Check the oil pressure switch signal circuit. Refer to MWI-38, "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-38, "Component Inspection".

Is the inspection result normal?

YES >> Replace IPDM E/R. Refer to PCS-31, "Removal and Installation of IPDM E/R".
NO >> Replace oil pressure switch.

THE OIL PRESSURE WARNING LAMP DOES NOT TURN OFF

Description

INFOID:0000000006146435

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

Diagnosis Procedure

INFOID:0000000006146436

Regarding Wiring Diagram information, refer to MWI-64, "Wiring Diagram".

1.CHECK OIL PRESSURE WARNING LAMP

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

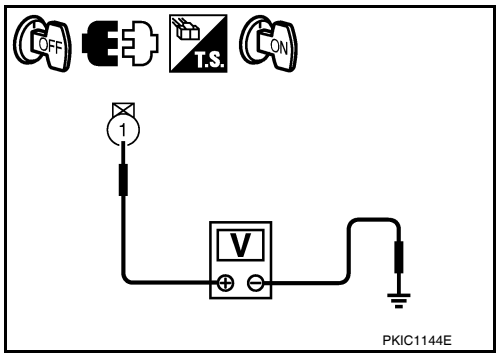
Is oil pressure warning lamp illuminated?

YES >> GO TO 2
NO >> Replace combination meter. Refer to MWI-97, "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-38, "Component Inspection".

Is the inspection result normal?

YES >> Replace IPDM E/R. Refer to PCS-31, "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-38, "Diagnosis Procedure".

Is the inspection result normal?

YES >> Replace IPDM E/R. Refer to PCS-31, "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:0000000006146437

- 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:0000000006146438

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-97, "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-39, "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-39, "Component Inspection".

Is the inspection result normal?

YES >> Replace combination meter. Refer to MWI-97, "Removal and Installation".
NO >> Replace parking brake switch.

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

Description

INFOID:0000000006146439

- 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:0000000006146440

1.CHECK WASHER FLUID LEVEL SWITCH SIGNAL CIRCUIT

Check the washer fluid level switch signal circuit. Refer to MWI-40, "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-40, "Component Inspection".

Is the inspection result normal?

YES >> Replace combination meter. Refer to MWI-97, "Removal and Installation".
NO >> Replace washer level switch.

THE DOOR OPEN WARNING CONTINUES DISPLAYING, OR DOES NOT DISPLAY

Description

INFOID:0000000006146441

- 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:0000000006146442

1.CHECK COMBINATION METER INPUT SIGNAL

1. Select “METER/M&A” on CONSULT-III.
2. Monitor “DOOR W/L” of “DATA MONITOR” while opening and closing doors.

DOOR W/L	
Front door LH open	: ON
Front door LH closed	: OFF
Front door RH open	: ON
Front door RH closed	: OFF
Rear door LH open	: ON
Rear door LH closed	: OFF
Rear door RH open	: ON
Rear door RH closed	: OFF

Is the inspection result normal?

YES >> Replace combination meter. Refer to MWI-97, "Removal and Installation".
NO >> GO TO 2

2.CHECK BCM INPUT SIGNAL

1. Select “BCM” on CONSULT-III.
2. Monitor “DOOR SW DR”, “DOOR SW AS”, “DOOR SW RL” and “DOOR SW RR” of “DATA MONITOR” while opening and closing doors.

When doors are open	
DOOR SW DR	: ON
DOOR SW AS	: ON
DOOR SW RL	: ON
DOOR SW RR	: ON

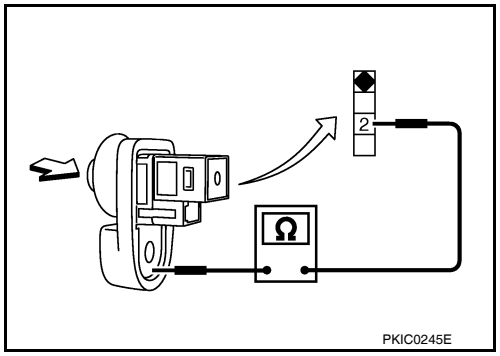
When doors are closed	
DOOR SW DR	: OFF
DOOR SW AS	: OFF
DOOR SW RL	: OFF
DOOR SW RR	: OFF

Is the inspection result normal?

YES >> Replace BCM. Refer to BCS-56, "Removal and Installation".
NO >> GO TO 3

3.CHECK DOOR SWITCHES

1. Disconnect door switches.
2. Check continuity between door switch (front LH), (front RH), (rear LH) and (rear RH) terminal 2 and exposed metal of switch while pressing and releasing switch.



When door switch is released : Continuity should exist

When door switch is pushed : Continuity should not exist

Is the inspection result normal?

YES >> Repair open or short in circuit between BCM and door switch.

NO >> Replace door switch.

THE LIFTGATE OPEN WARNING CONTINUES DISPLAYING, OR DOES NOT DISPLAY

Description

INFOID:0000000006146443

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

Diagnosis Procedure

INFOID:0000000006146444

Regarding Wiring Diagram information, refer to MWI-64, "Wiring Diagram".

1.CHECK BCM INPUT SIGNAL

1. Select “BCM” on CONSULT-III.
2. Monitor “BACK DOOR SW” of “DATA MONITOR” while opening and closing the back door.

When back door is open
BACK DOOR SW : ON

When back door is closed
BACK DOOR SW : OFF

Is the inspection result normal?

YES >> GO TO 2
NO >> GO TO 4

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-46, "DTC Index".

3.CHECK SELF-DIAGNOSIS OF COMBINATION METER

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

Is the inspection result normal?

YES >> Replace combination meter. Refer to MWI-97, "Removal and Installation".
NO >> Refer to MWI-43, "DTC Index".

4.CHECK BACK DOOR SWITCH CIRCUIT

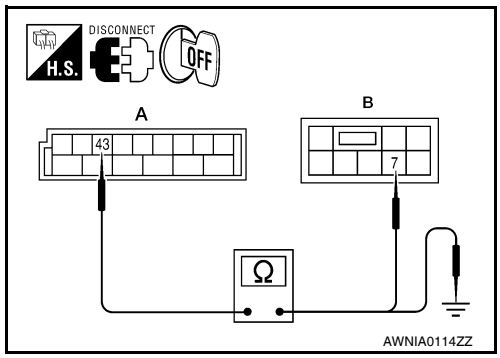
With Power Back Door

1. Turn ignition switch OFF.
2. Disconnect BCM connector M19 and back door latch connector D503.
3. Check continuity between BCM harness connector M19 (A) terminal 43 and back door latch harness connector D503 (B) terminal 7.

43 - 7 : Continuity should exist.

4. Check continuity between BCM harness connector M19 (A) terminal 43 and ground.

43 - Ground : Continuity should not exist.



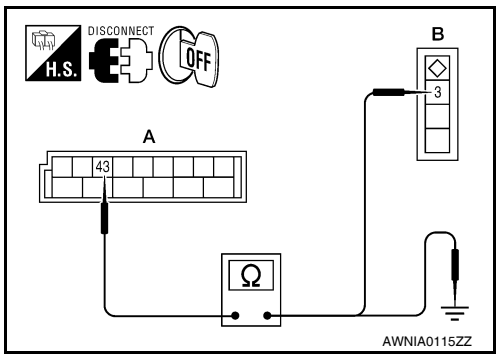
Without Power Back Door

1. Turn ignition switch OFF.
2. Disconnect BCM connector M19 and back door switch connector D502.
3. Check continuity between BCM harness connector M19 (A) terminal 43 and back door switch harness connector D502 (B) terminal 3.

43 - 3 : Continuity should exist.

4. Check continuity between BCM harness connector M19 (A) terminal 43 and ground.

43 - Ground : Continuity should not exist.



Is the inspection result normal?

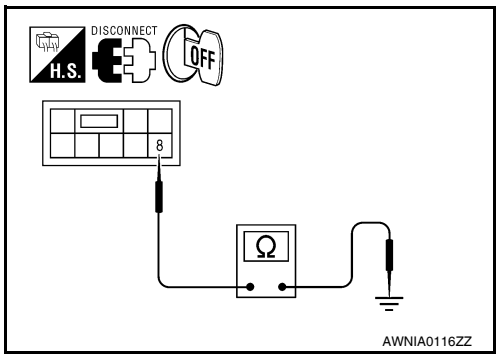
YES >> GO TO 5
NO >> Repair harness or connector.

5.CHECK SWITCH GROUND CIRCUIT

With Power Back Door

Check continuity between back door latch harness connector D503 terminal 8 and ground.

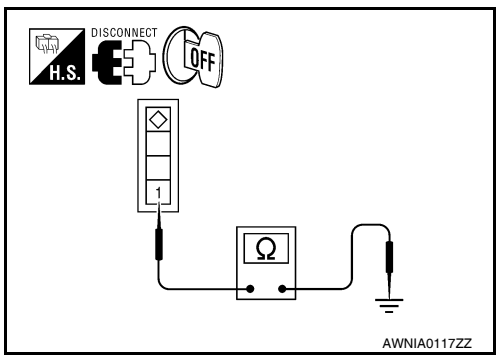
8 - Ground : Continuity should exist.



Without Power Back Door

Check continuity between back door switch harness connector D502 terminal 1 and ground.

1 - Ground : Continuity should exist.



Is the inspection result normal?

YES >> Replace back door latch (with power back door) or back door switch (without power back door).
NO >> Repair harness or connector.

THE LIFTGATE GLASS OPEN WARNING CONTINUES DISPLAYING, OR DOES NOT DISPLAY

Description

INFOID:0000000006146445

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

Diagnosis Procedure

INFOID:0000000006146446

Regarding Wiring Diagram information, refer to MWI-64, "Wiring Diagram".

1.CHECK COMBINATION METER INPUT SIGNAL

1. Select “METER/M&A” on CONSULT-III.
2. Monitor “TRUNK W/L” of “DATA MONITOR” while opening and closing the glass hatch.

When glass hatch is open

TRUNK W/L : ON

When glass hatch is closed

TRUNK W/L : OFF

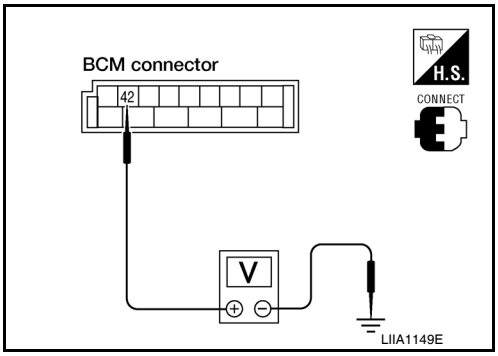
Is the inspection result normal?

YES >> Replace combination meter. Refer to MWI-97, "Removal and Installation".

NO >> GO TO 2

2.CHECK GLASS HATCH AJAR SWITCH INPUT SIGNAL

Check voltage between BCM connector M19 terminal 42 and ground.



Connector	Item	Terminals		Condition	Voltage (V) (Approx.)
		(+)	(–)		
M19	BCM	42	Ground	Open ↓ Closed	0 ↓ Battery voltage

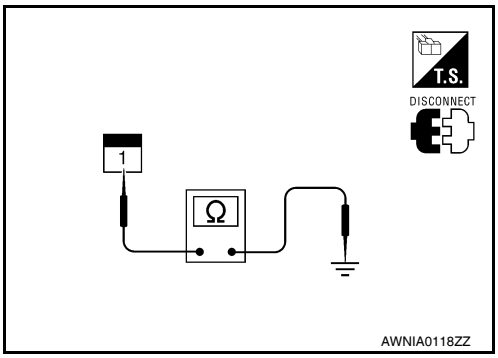
Is the inspection result normal?

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

NO >> GO TO 3

3.CHECK GLASS HATCH AJAR SWITCH

1. Disconnect glass hatch ajar switch connector D707.
2. Check continuity between glass hatch ajar switch terminal and ground.



	Terminals	Condition	Continuity
Glass hatch ajar switch	1 – Ground	Open	Yes
		Closed	No

Is the inspection result normal?

YES >> Repair or replace harness between BCM and glass hatch ajar switch.

NO >> Replace glass hatch ajar switch.

NORMAL OPERATING CONDITION
COMPASS

COMPASS : Description

INFOID:0000000006146447

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-24, "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-24, "Description".

PRECAUTION

PRECAUTIONS

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

INFOID:0000000006146448

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:0000000006146449

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.

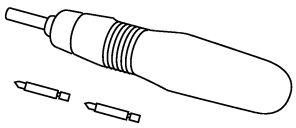
5. When the repair work is completed, return the ignition switch to the ″LOCK″ position before connecting the battery cables. (At this time, the steering lock mechanism will engage.)
6. Perform a self-diagnosis check of all control units using CONSULT-III.

PREPARATION

PREPARATION

Commercial Service Tools

INFOID:0000000006649025

Tool name	Description
Power tool  PBIC0191E	Loosening bolts and nuts

REMOVAL AND INSTALLATION

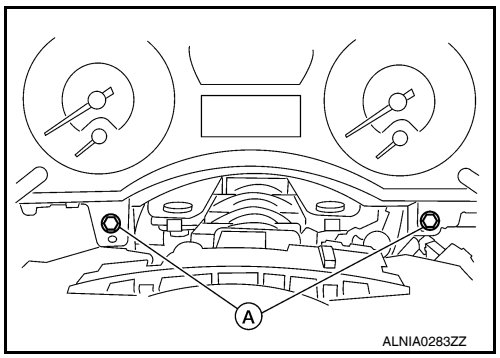
COMBINATION METER

Removal and Installation

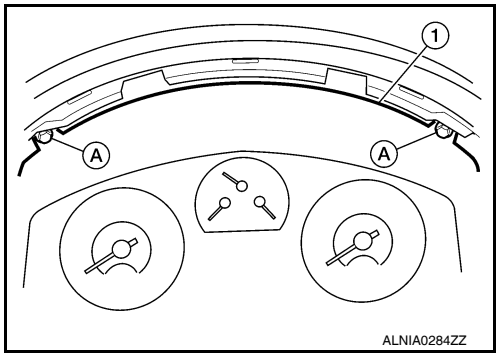
INFOID:0000000006146450

REMOVAL

1. Disconnect battery negative terminal.
2. Remove the cluster lid A. Refer to IP-15, "Removal and Installation".
3. Remove the combination meter lower screws (A), using power tool.



4. Remove the combination meter upper screws (A) using power tool, and pull out the combination meter (1).
5. Disconnect the combination meter connectors, and remove the combination meter (1).



INSTALLATION

Installation is in the reverse order of removal.