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2014 Q40

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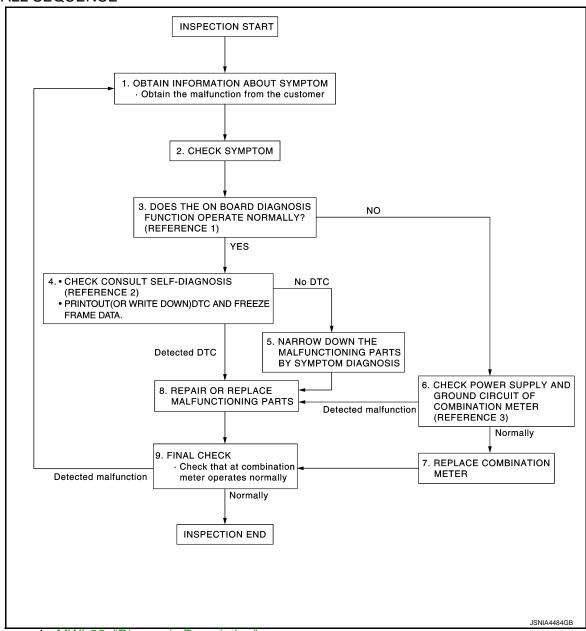
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BASIC INSPECTION

DIAGNOSIS AND REPAIR WORKFLOW

Work flow

OVERALL SEQUENCE



- Reference 1...MWI-36, "Diagnosis Description".
- Reference 2...MWI-103, "DTC Index".
- Reference 3...MWI-51, "COMBINATION METER: Diagnosis Procedure".

DETAILED FLOW

${f 1}$.OBTAIN INFORMATION ABOUT SYMPTOM

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

>> GO TO 2.

2.CHECK SYMPTOM

DIAGNOSIS AND REPAIR WORKFLOW < BASIC INSPECTION > • Check the symptom based on the information obtained from the customer. Check that any other malfunctions are present. Α >> GO TO 3. В 3.CHECK ON BOARD DIAGNOSIS OPERATION Check that the on board diagnosis function operates. Refer to MWI-36, "Diagnosis Description". Does the on board diagnosis function operate normally? YES >> GO TO 4. NO >> GO TO 6. 4. CHECK CONSULT SELF-DIAGNOSIS RESULTS D Connect CONSULT and perform self-diagnosis. Refer to MWI-103, "DTC Index". 2. When DTC is detected, follow the instructions below: Е Record DTC and Freeze Frame Data. Are self-diagnosis results normal? YES >> GO TO 5. F NO >> GO TO 8. ${f 5.}$ NARROW DOWN THE MALFUNCTIONING PARTS BY SYMPTOM DIAGNOSIS Perform symptom diagnosis and narrow down the malfunctioning parts. >> GO TO 7. 6.CHECK COMBINATION METER POWER SUPPLY AND GROUND CIRCUITS Н Inspect combination meter power supply and ground circuits. Refer to MWI-51, "COMBINATION METER: Diagnosis Procedure". Is inspection result OK? YES >> GO TO 7. NO >> GO TO 8. / .REPLACE COMBINATION METER Replace combination meter. >> GO TO 9. 8.REPAIR OR REPLACE MALFUNCTIONING PARTS Repair or replace the malfunctioning parts. NOTE: If DTC is displayed, erase DTC after repair or replace malfunctioning parts. M >> GO TO 9. 9. FINAL CHECK MWI

NO >> GO TO 1.

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Check that the combination meter operates normally.

Do they operate normally?

>> INSPECTION END

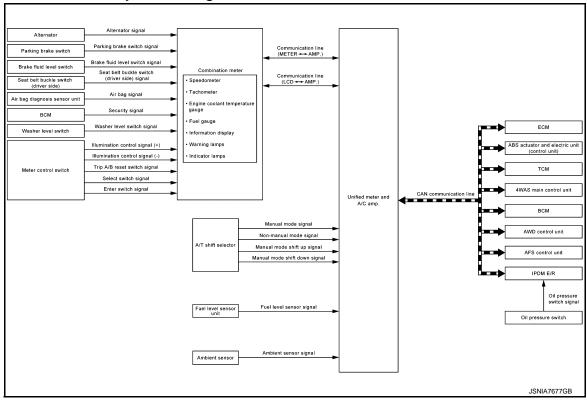
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SYSTEM DESCRIPTION

METER SYSTEM METER SYSTEM

METER SYSTEM: System Diagram

INFOID:0000000010990545



METER SYSTEM: System Description

INFOID:0000000010990546

COMBINATION METER

- The combination meter retrieves the information required for controlling the operations of the meters, indicator lamps/warning lamps and information display from the communication signals from the unified meter and A/C amp. and the signals from various switches and sensors.
- The combination meter incorporates a trip computer that displays warnings and messages on the information display according to the information received from various units.
- The combination meter incorporates a buzzer function that sounds an audible alarm with the integrated buzzer device. Refer to WCS-5, "WARNING CHIME SYSTEM: System Description" for further details.
- The combination meter integrates the meter circuit check function and the segment check function that checks the information display operation.

UNIFIED METER AND A/C AMP.

- Receives information required by the combination meter from various units via CAN communication line and transmits it to the combination meter with communication line.
- The unified meter and A/C amp. incorporates a power saving control function that reduces the power consumption according to the vehicle status. Refer to BCS-13, "System Description" for details.
- The unified meter and A/C amp. incorporates a diagnosis function that allows the technician to perform diagnoses with CONSULT.

< SYSTEM DESCRIPTION >

Unit	Communication line	Input from combination meter	Output to combination meter
Inified meter nd A/C amp.	Communication line (METER <-> AMP.)	Parking brake switch signal Washer level switch signal Meter day/night condition signal Illumination control switch signal Refuel status signal Low fuel warning lamp signal Odo data signal	Vehicle speed signal Turn indicator signal High beam request signal Front fog light request signal Engine speed signal Fuel level sensor signal Engine coolant temperature signal A/T CHECK indicator signal Oil pressure switch signal Door switch signal Buzzer output signal AFS OFF indicator lamp signal TPMS malfunction warning lamp signal AWD warning lamp signal VDC OFF indicator signal ABS warning lamp signal Brake warning lamp signal Malfunction indicator lamp signal Malfunction indicator lamp signal Master warning lamp signal Master warning signal AWD warning lamp signal Master warning lamp signal Moster warning lamp signal Position light request signal
	Communication line (LCD <-> AMP.)	 Average fuel consumption reset signal Travel time reset signal Possible driving distance reset signal Average vehicle speed reset signal Select switch signal Enter switch signal Trip A/B reset switch signal Ambient air temperature display signal 	Shift position signal Meter display signal Door switch signal Trunk switch signal Fuel level sensor signal Parking brake switch signal Washer level switch signal Charge warning signal Instantaneous fuel consumption display signal Ambient air temperature display signal Average fuel consumption display signal Average vehicle speed display signal Possible driving distance display signal Engine speed signal Vehicle speed signal Low tire pressure warning lamp signal Fuel filler cap warning display signal

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 unified meter and A/C amp. via BCM with the CAN communication line.
- IPDM E/R is equipped with the diagnosis function. It can perform the operation check of oil pressure warning lamp with the auto active test and the diagnosis with CONSULT.

METER CONTROL FUNCTION LIST

X: Applicable

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System		Description	Signal source	Via unified meter and A/C amp.
	Speedometer	Receives vehicle speed signal and indicates vehicle speed.	ABS actuator and electric unit (control unit)	Х
Tachometer Meter/gauge	Tachometer	Receives engine speed signal and indicates engine speed.	ECM	Х
wieten/gauge	Fuel gauge	Receives fuel level sensor signal and indicates fuel level.	Fuel level sensor unit	Х
	Engine coolant temperature gauge	Receives engine coolant temperature signal and indicates coolant temperature.	ECM	Х

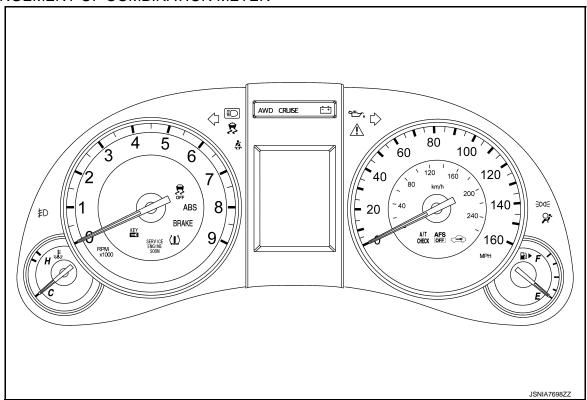
Revision: 2014 June **MWI-7** 2014 Q40

< SYSTEM DESCRIPTION >

	System	Description	Signal source	Via unified meter and A/C amp.
Warning lamp/	Oil pressure warning lamp	Receives oil pressure warning lamp signal and illuminates warning lamp.	IPDM E/R	Х
indicator lamp	Master warning	Illuminates according to warning output on information display.	-	Х
	Door open warning	Receives door switch signals and displays warning.	ВСМ	Х
	Trunk open warning	Receives trunk lid opener switch signal and displays warning.	BCM	X
	Parking brake re- lease warning	Receives parking brake switch signal and vehicle speed signal and displays warnings.	Parking brake switch ABS actuator and electric unit (control unit)	X
	Low fuel warning	Receives fuel gauge signal and displays warning if fuel level decreases to 15 ℓ (4 US gal, 3-1/4 Imp gal) or less.	Fuel level sensor unit	Х
	Low washer fluid warning	Receives washer level switch signal and displays warning.	Washer level switch	
	Low outside tempera- ture warning	Monitors ambient sensor signal and displays warning if ambient temperature decreases to 3°C (37°F) or less. (If enabled)	Ambient sensor	Х
	Low tire pressure warning	Receives low tire pressure warning lamp signal and displays warning.	ВСМ	Х
	Fuel filler cap warning	Receives fuel filler cap warning display signals and displays warning.	ECM	Х
Information display Instantaneou consumption	Instantanoous fuol	on received vehicle speed signals and fuel con-	ECM	Х
	consumption		ABS actuator and electric unit (control unit)	х
		Calculates average fuel consumption in a reset-	ECM	Х
	Average fuel consumption	to-reset interval based on received vehicle speed signals and fuel consumption monitor signal and displays it.	ABS actuator and electric unit (control unit)	Х
	Average vehicle speed	Calculates average vehicle speed in a reset-to-re- set interval based on received vehicle speed sig- nals and displays it.	ABS actuator and electric unit (control unit)	Х
	Travel time	Displays accumulated key switch ON time from reset to reset.	_	х
	Travel distance	Calculates accumulated travel distance in a reset- to-reset interval based on received vehicle speed signals and displays it.	ABS actuator and electric unit (control unit)	Х
	Possible driving dis-	The unified meter and A/C amp. calculates the possible driving distance according to the vehicle speed signal and the fuel level sensor unit re-	ABS actuator and electric unit (control unit)	Х
	tance	ceived with CAN communication line, and transmits it to the combination meter by means of communication line.	Fuel level sensor unit	Х
	Ambient air temperature	Corrects ambient air temperature value based on received ambient sensor signals and displays it.	Ambient sensor	х

< SYSTEM DESCRIPTION >

ARRANGEMENT OF COMBINATION METER



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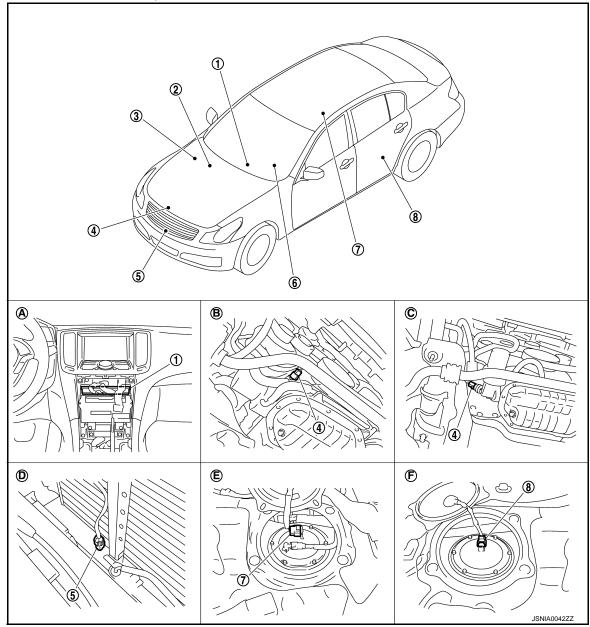
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METER SYSTEM: Component Parts Location

INFOID:0000000010990547



- 1. Unified meter and A/C amp.
- 4. Oil pressure switch
- 7. Fuel level sensor unit and fuel pump (main)
- A. Behind cluster lid C
- D. Condenser (front)

- 2. BCM
- 5. Ambient sensor
- 8. Fuel level sensor unit (sub)
- B. 2WD [oil pan (upper) RH side]
- E. Rear seat (lower right)

- 3. IPDM E/R
- 6. Combination meter
- C. AWD (oil filter bracket part)
- F. Rear seat (lower left)

METER SYSTEM: Component Description

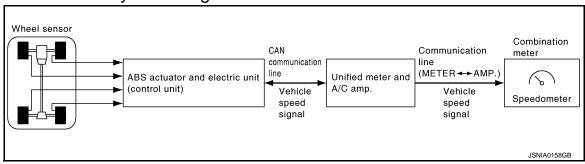
Unit	Description	
	Controls the following with the signals from the unified meter and A/C amp, switches and sensors.	
	Speedometer	Tachometer
Combination meter	Engine coolant temperature gauge	Fuel gauge
	Warning lamps	 Indicator lamps
	Information display	Warning chime

< SYSTEM DESCRIPTION >

Unit	Description		
Unified meter and A/C amp.	 The combination meter receives the necessary information from various units via CAN communication line and transmits them to the unified meter and A/C amp. with the communication line that connects both of them. Transmits the fuel gauge signal from the fuel gauge unit with the communication line that connects the unified meter and A/C amp. and the combination meter. Reads the signals from the A/T shift selector and transmits them to TCM with CAN communication line. 		
IPDM E/R	IPDM E/R reads the ON/OFF signals of the signal to the unified meter and A/C amp.	ne oil pressure switch and transmits the oil pressure switch via BCM with CAN communication line.	
Fuel level sensor unit	Refer to MWI-54, "Description".		
Oil pressure switch	Refer to MWI-60, "Description".		
	Transmits the following signals to the unified meter and A/C amp. with CAN communication line.		
ECM	Engine speed signal	 Engine coolant temperature signal 	
	Fuel consumption monitor signal	 Fuel filler cap warning display signal 	
ABS actuator and electric unit (control unit)	Transmits the vehicle speed signal to the	unified meter and A/C amp. with CAN communication line	
всм	 Transmits signals provided by various units to the unified meter and A/C amp. with CAN communication line. Transmits the security signal and low tire pressure warning lamp signal to the combination meter. 		
	Transmits the following signals to the unified meter and A/C amp.		
A/T shift selector	Manual mode signal	 Non-manual mode signal 	
	Manual mode shift up signal	 Manual mode shift down signal 	
TCM	Transmits shift position signal to the unified meter and A/C amp.		
Meter control switch	Refer to MWI-58, "Description".		
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-62, "Description".		

SPEEDOMETER

SPEEDOMETER: System Diagram



SPEEDOMETER: System Description

• The ABS actuator and electric unit (control unit) converts the pulse signal provided by the wheel sensor to a vehicle speed signal and transmits it to the unified meter and A/C amp. with CAN communication line.

• The unified meter and A/C amp. receives the vehicle speed signal from the ABS actuator and electric unit (control unit) with CAN communication line and transmits it to the combination meter by means of communication line.

• The combination meter indicates the vehicle speed according to the vehicle speed signal received from the unified meter and A/C amp. by means of communication line.

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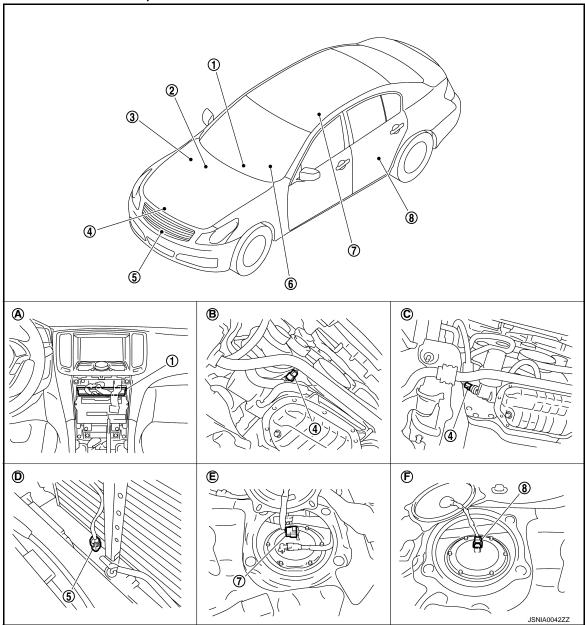
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Revision: 2014 June **MWI-11** 2014 Q40

SPEEDOMETER: Component Parts Location

INFOID:0000000010990551



- 1. Unified meter and A/C amp.
- 4. Oil pressure switch
- 7. Fuel level sensor unit and fuel pump (main)
- A. Behind cluster lid C
- D. Condenser (front)

- 2. BCM
- 5. Ambient sensor
- 8. Fuel level sensor unit (sub)
- B. 2WD [oil pan (upper) RH side]
- E. Rear seat (lower right)
- 3. IPDM E/R
- 6. Combination meter
- C. AWD (oil filter bracket part)
- F. Rear seat (lower left)

SPEEDOMETER : Component Description

Unit	Description
Combination meter	Indicates the vehicle speed according to the vehicle speed signal received from the unified meter and A/C amp. by means of communication line.
Unified meter and A/C amp.	Transmits the vehicle speed signal received from ABS actuator and electric unit (control unit) with CAN communication line to the combination meter by means of communication line.
ABS actuator and electric unit (control unit)	Transmits the vehicle speed signal to the unified meter and A/C amp. with CAN communication line.

< SYSTEM DESCRIPTION >

TACHOMETER

TACHOMETER: System Diagram

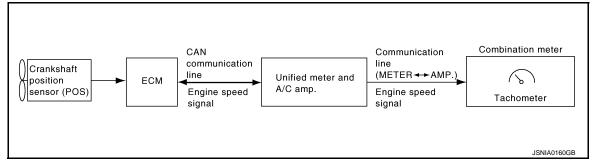
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TACHOMETER: System Description

- INFOID:0000000010990554
- ECM converts the pulse signal provided by the crankshaft position sensor to an engine speed signal and transmits it to the unified meter and A/C amp. with CAN communication line.
- Unified meter and A/C amp. transmits engine speed signal to combination meter with communication line.
- The unified meter and A/C amp. receives the engine speed signal from ECM with CAN communication line and transmits it to the combination meter by means of communication line.
- Combination meter converses engine speed signal to the angle signal, and commands to tachometer.

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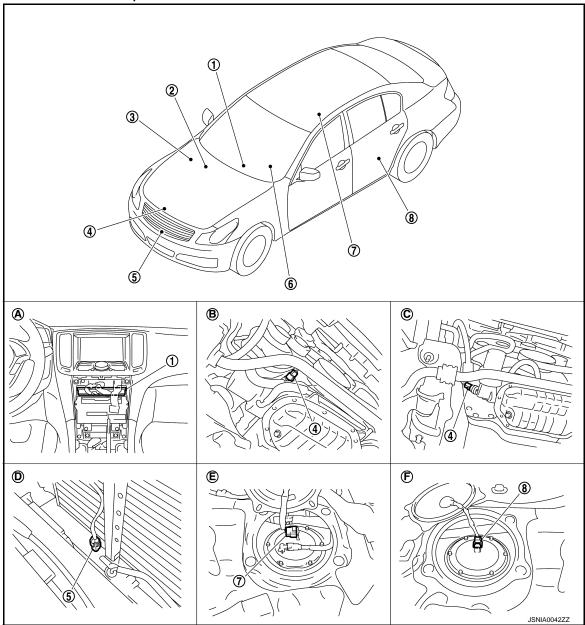
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TACHOMETER: Component Parts Location

INFOID:0000000010990555



- 1. Unified meter and A/C amp.
- 4. Oil pressure switch
- 7. Fuel level sensor unit and fuel pump (main)
- A. Behind cluster lid C
- D. Condenser (front)

- 2. BCM
- 5. Ambient sensor
- 8. Fuel level sensor unit (sub)
- B. 2WD [oil pan (upper) RH side]
- E. Rear seat (lower right)

- 3. IPDM E/R
- 6. Combination meter
- C. AWD (oil filter bracket part)
- F. Rear seat (lower left)

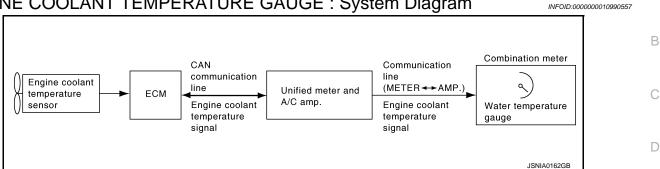
TACHOMETER: Component Description

Unit	Description
Combination meter	Indicates the engine speed according to the engine speed signal received from the unified meter and A/C amp. by means of communication line.
Unified meter and A/C amp.	Transmits the engine speed signal received from ECM with CAN communication line to the combination meter by means of communication line.
ECM	Transmits the engine speed signal to the unified meter and A/C amp. with CAN communication line.

< SYSTEM DESCRIPTION >

ENGINE COOLANT TEMPERATURE GAUGE

ENGINE COOLANT TEMPERATURE GAUGE: System Diagram



ENGINE COOLANT TEMPERATURE GAUGE: System Description

- Е INFOID:0000000010990558
- ECM converses a signal from engine coolant temperature sensor to engine coolant temperature signal, and transmits to unified meter and A/C amp. with CAN communication line.
- Unified meter and A/C amp. transmits engine coolant temperature signal to combination meter with commu-
- Combination meter converses engine coolant temperature signal to the angle signal, and commands to engine coolant temperature gauge.

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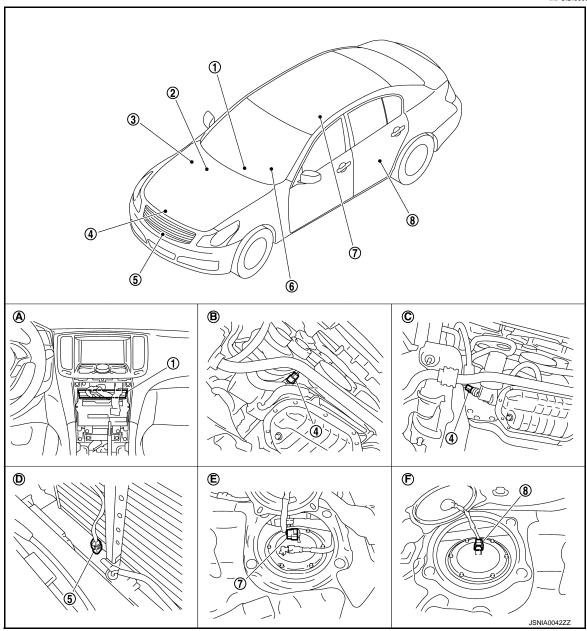
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ENGINE COOLANT TEMPERATURE GAUGE: Component Parts Location

VFOID:0000000010990559



- 1. Unified meter and A/C amp.
- 4. Oil pressure switch
- 7. Fuel level sensor unit and fuel pump (main)
- A. Behind cluster lid C
- D. Condenser (front)

- 2. BCM
- 5. Ambient sensor
- 8. Fuel level sensor unit (sub)
- B. 2WD [oil pan (upper) RH side]
- E. Rear seat (lower right)
- 3. IPDM E/R
- 6. Combination meter
- C. AWD (oil filter bracket part)
- F. Rear seat (lower left)

ENGINE COOLANT TEMPERATURE GAUGE : Component Description

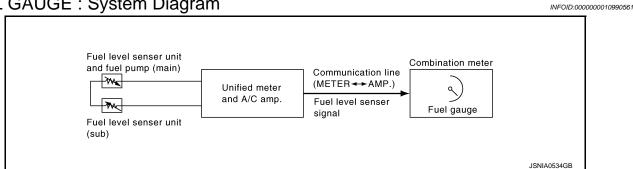
Unit	Description	
Combination meter	Indicates the water temperature gauge according to the engine coolant temperature signal received from the unified meter and A/C amp. by means of communication line.	

< SYSTEM DESCRIPTION >

Unit	Description
Unified meter and A/C amp.	Transmits the engine coolant temperature signal received from ECM with CAN communication line to the combination meter by means of communication line.
ECM	Transmits the engine coolant temperature signal to the unified meter and A/C amp. with CAN communication line.

FUEL GAUGE

FUEL GAUGE: System Diagram



FUEL GAUGE: System Description

CONTROL OUTLINE

- The unified meter and A/C amp. reads the fuel level sensor signal from the fuel gauge unit and transmits it to the combination meter with the communication line.
- The combination meter indicates the fuel level on the fuel gauge according to the received fuel level sensor signal.

REFUEL CONTROL

The unit judges that the driver is refueling the vehicle and accelerates the fuel gauge needle movement if the fuel level changes by 15 ℓ (4 US gal, 3-3/10 Imp gal) or more.

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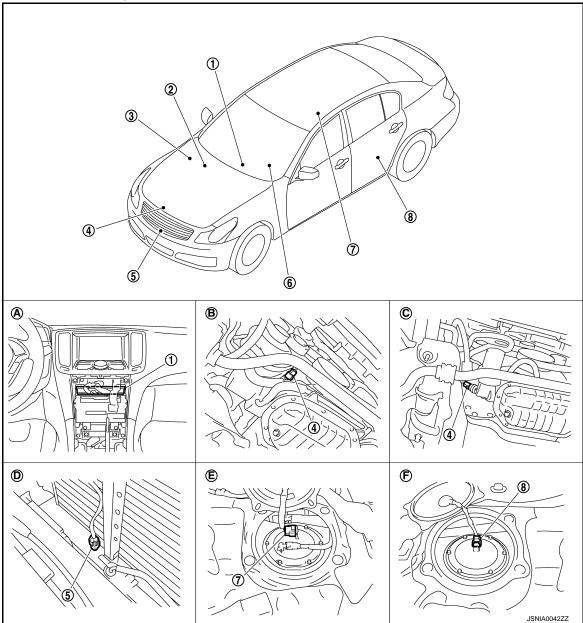
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FUEL GAUGE: Component Parts Location

INFOID:0000000010990563



- 1. Unified meter and A/C amp.
- 4. Oil pressure switch
- 7. Fuel level sensor unit and fuel pump (main)
- A. Behind cluster lid C
- D. Condenser (front)

- 2. BCM
- 5. Ambient sensor
- 8. Fuel level sensor unit (sub)
- B. 2WD [oil pan (upper) RH side]
- E. Rear seat (lower right)
- 3. IPDM E/R
- 6. Combination meter
- C. AWD (oil filter bracket part)
- F. Rear seat (lower left)

FUEL GAUGE : Component Description

Unit	Description	
Combination meter	Indicates the fuel gauge according to the fuel level sensor signal received from the unified meter and A/C amp. by means of communication line.	
Unified meter and A/C amp.	Transmits the fuel level sensor signal from the fuel level sensor unit to the combination meter by means of communication line.	
Fuel level sensor unit	Refer to MWI-58, "Description".	

ODO/TRIP METER

ODO/TRIP METER: System Diagram

INFOID:0000000010990565 Wheel sensor Combination CAN meter communication 000000 (A)00000 line ABS actuator and electric unit Unified meter and A/C amp. (control unit) Vehicle Vehicle Odo/trip meter speed speed . signal signal JSNIA0022GB

ODO/TRIP METER: System Description

- The unified meter and A/C amp. transmits the vehicle speed signal from ABS actuator and electric unit (control unit) to the combination meter.
- The combination meter calculates the vehicle distance according to the vehicle speed signal. The vehicle distance is displayed.

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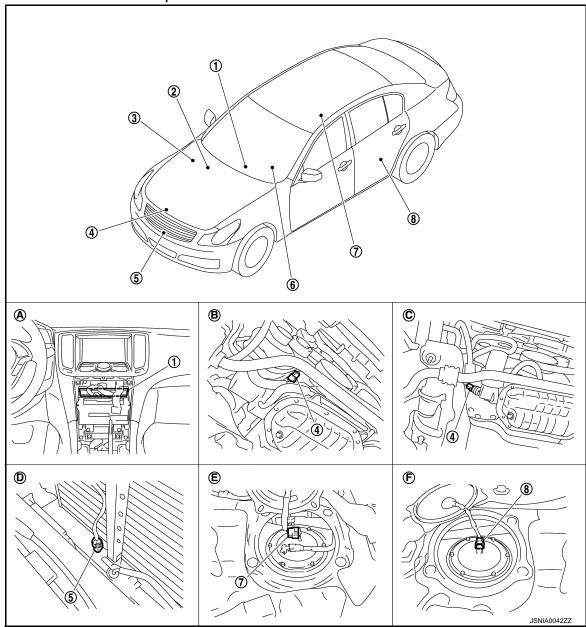
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ODO/TRIP METER: Component Parts Location

INFOID:0000000010990567



- 1. Unified meter and A/C amp.
- 4. Oil pressure switch
- 7. Fuel level sensor unit and fuel pump (main)
- A. Behind cluster lid C
- D. Condenser (front)

- 2. BCM
- 5. Ambient sensor
- B. Fuel level sensor unit (sub)
- B. 2WD [oil pan (upper) RH side]
- E. Rear seat (lower right)

- 3. IPDM E/R
- 6. Combination meter
- C. AWD (oil filter bracket part)
- F. Rear seat (lower left)

ODO/TRIP METER: Component Description

Unit	Description		
Combination meter	The combination meter calculates the vehicle distance according to the vehicle speed signal. The vehicle distance is displayed.		
Unified meter and A/C amp.	The unified meter and A/C amp. transmits the vehicle speed signal from ABS actuator and electric unit (control unit) to the combination meter.		
ABS actuator and electric unit (control unit)	Transmits the vehicle speed signal to the unified meter and A/C amp. with CAN communication line.		

SHIFT POSITION INDICATOR

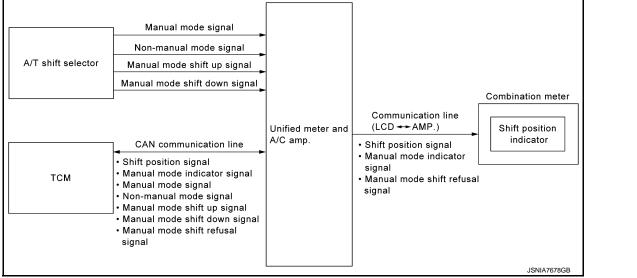
SHIFT POSITION INDICATOR: System Diagram

INFOID:0000000010990569

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SHIFT POSITION INDICATOR: System Description

INFOID:0000000010990570

Shift position is displayed in the information display LCD in the combination meter.

MANUAL MODE

- Unified meter and A/C amp. inputs manual mode signal and manual mode shift-up/down signal from A/T shift selector (manual mode switch), and transmits the signals to TCM with CAN communication line.
- TCM processes manual mode signal and manual mode shift-up/down signal, and transmits manual mode indicator signal and shift position signal to unified meter and A/C amp. with CAN communication line.
- Unified meter and A/C amp. transmits manual mode indicator signal and shift position signal to combination meter with the communication line.
- Combination meter indicates A/T gear position and manual mode indicator, when receiving manual mode indicator signal and shift position signal.
- TCM transmits a manual mode shift refusal signal to the unified meter and A/C amp. via CAN communication line when gear shifting cannot be performed in manual mode.
- The unified meter and A/C amp. transmits a manual mode shift refusal signal to the combination meter via communication line.
- The combination meter blinks the shift position indicator and sounds a buzzer when receiving a manual mode shift refusal signal.

NON-MANUAL MODE

- Unified meter and A/C amp. inputs non-manual mode signal from A/T shift selector (manual mode switch), and transmits the signals to TCM with CAN communication line.
- TCM transmits shift position signal to unified meter and A/C amp. with CAN communication line.
- Unified meter and A/C amp. transmits shift position signal to combination meter with the communication line.
- Combination meter indicates shift position when receiving shift position signal.

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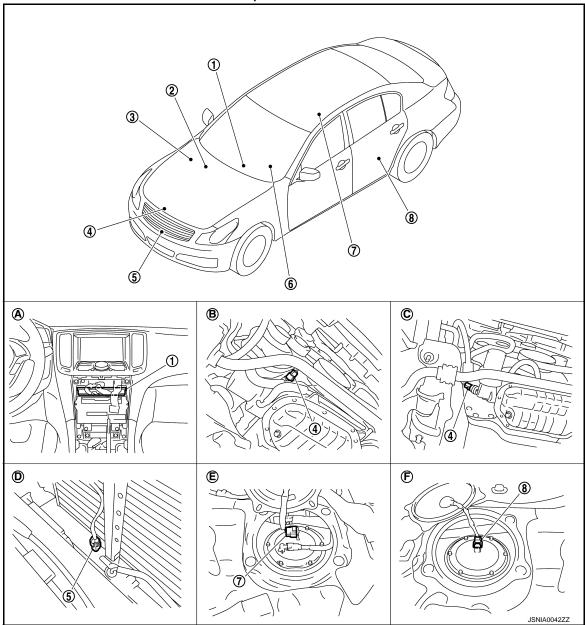
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Revision: 2014 June **MWI-21** 2014 Q40

SHIFT POSITION INDICATOR: Component Parts Location



- 1. Unified meter and A/C amp.
- 4. Oil pressure switch
- 7. Fuel level sensor unit and fuel pump (main)
- A. Behind cluster lid C
- D. Condenser (front)

- 2. BCM
- 5. Ambient sensor
- 8. Fuel level sensor unit (sub)
- B. 2WD [oil pan (upper) RH side]
- E. Rear seat (lower right)
- 3. IPDM E/R
- 6. Combination meter
- C. AWD (oil filter bracket part)
- F. Rear seat (lower left)

SHIFT POSITION INDICATOR: Component Description

INFOID:0000000010990572

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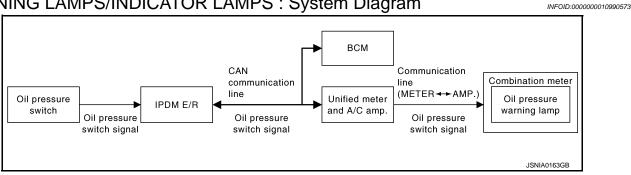
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Unit	Description		
Combination meter	 Displays the shift position on the information display with shift position signal and manual mode indicator signal received from unified meter and A/C amp. The combination meter blinks the shift position indicator and sounds a buzzer when received manual mode shift refusal signal from unified meter and A/C amp. 		
Unified meter and A/C amp.	Transmits the signals from the A/T shift selector to TCM with CAN communication line. Transmits shift position signal, manual mode indicator signal and manual mode shift refusal signal received from TCM with CAN communication line to the combination meter by means of communication line.		
	Transmits the following signals to the unified meter and A/C amp.		
A/T shift selector	Manual mode signal	 Non-manual mode signal 	
	Manual mode shift up signal	 Manual mode shift down signal 	
TCM	Transmits shift position signal, manual mode indicator signal and manual mode shift refusal signal to the unified meter and A/C amp.		

WARNING LAMPS/INDICATOR LAMPS

WARNING LAMPS/INDICATOR LAMPS: System Diagram



WARNING LAMPS/INDICATOR LAMPS: System Description

INFOID:0000000010990574

OIL PRESSURE WARNING LAMP

- IPDM E/R inputs oil pressure switch signal from oil pressure switch, and transmits the signal to unified meter and A/C amp. through BCM with CAN communication line.
- Unified meter and A/C amp. transmits oil pressure switch signal to combination meter with communication line.
- Let the combination meter turn oil pressure warning lamp ON with received oil pressure switch signal.

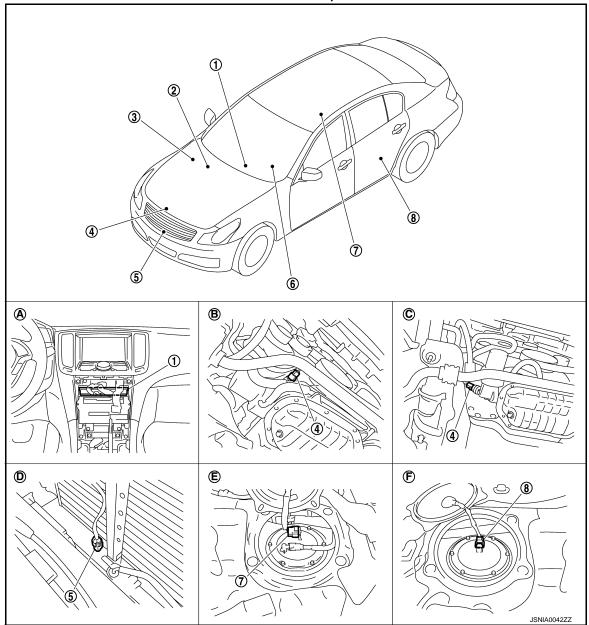
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MWI-23 Revision: 2014 June 2014 Q40

WARNING LAMPS/INDICATOR LAMPS : Component Parts Location

INFOID:000000001099057



- 1. Unified meter and A/C amp.
- 4. Oil pressure switch
- 7. Fuel level sensor unit and fuel pump (main)
- A. Behind cluster lid C
- D. Condenser (front)

- 2. BCM
- 5. Ambient sensor
- 8. Fuel level sensor unit (sub)
- o. I dol level series drift (sub)
- B. 2WD [oil pan (upper) RH side]
- E. Rear seat (lower right)

- 3. IPDM E/R
- 6. Combination meter
- C. AWD (oil filter bracket part)
- F. Rear seat (lower left)

WARNING LAMPS/INDICATOR LAMPS : Component Description

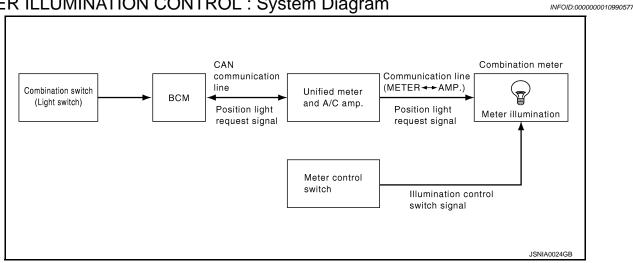
Unit	Description		
Combination meter	Turns the oil pressure warning lamp ON/OFF according to the oil pressure switch signal received from the unified meter and A/C amp. by means of communication line.		
Unified meter and A/C amp.	Transmits the oil pressure switch signal received from the IPDM E/R with BCM to the combination meter by means of communication line.		
IPDM E/R	IPDM E/R reads the ON/OFF signals from the oil pressure switch and transmits the oil pressure switch signal to the unified meter and A/C amp. via BCM with the CAN communication line.		

< SYSTEM DESCRIPTION >

Unit	Description	
Oil pressure switch	Refer to MWI-60, "Description".	
BCM	Transmits the oil pressure switch signal received from IPDM E/R via CAN communication to the unified meter and A/C amp. via CAN communication line.	

METER ILLUMINATION CONTROL

METER ILLUMINATION CONTROL: System Diagram



METER ILLUMINATION CONTROL: System Description

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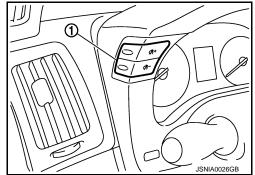
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SYSTEM DESCRIPTION

The combination meter controls the meter illumination by the illumination control switch signal from the meter control switch and the position light request signal transmitted by BCM with unified meter and A/C amp.

Daytime Mode

Meter illumination is adjusted to 5 steps by illumination control switch (1) in daytime mode.



Nighttime Mode

- · Combination meter is transferred to nighttime mode with position light request signal from BCM with CAN communication line.
- Meter illumination is adjusted to 22 steps by illumination control switch in nighttime.

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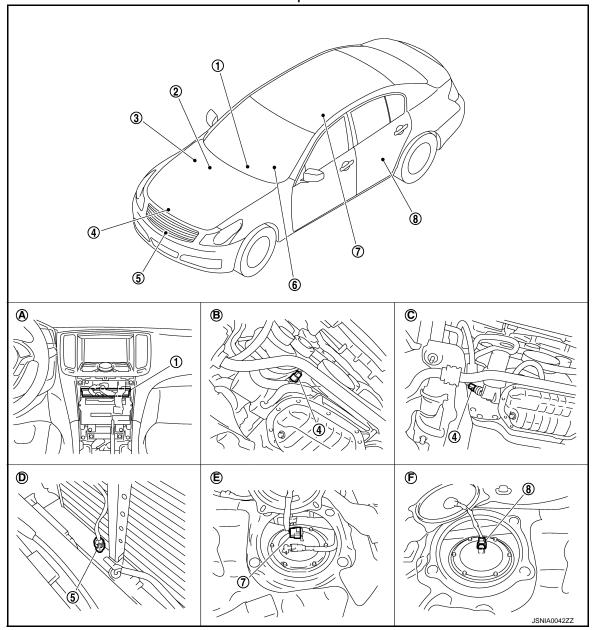
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MWI-25 Revision: 2014 June 2014 Q40

METER ILLUMINATION CONTROL: Component Parts Location

INFOID:0000000010990579



- 1. Unified meter and A/C amp.
- 4. Oil pressure switch
- 7. Fuel level sensor unit and fuel pump (main)
- A. Behind cluster lid C
- D. Condenser (front)

- 2. BCM
- 5. Ambient sensor
- 8. Fuel level sensor unit (sub)
- B. 2WD [oil pan (upper) RH side]
- E. Rear seat (lower right)

- 3. IPDM E/R
- 6. Combination meter
- C. AWD (oil filter bracket part)
- F. Rear seat (lower left)

METER ILLUMINATION CONTROL : Component Description

Unit	Description		
Combination meter	Controls the meter illumination with the illumination control switch signal from the meter control switch and the position light request signal from unified meter and A/C amp.		
Unified meter and A/C amp.	Transmits the position light request signal received from BCM via CAN communication to the combination meter by means of communication.		

< SYSTEM DESCRIPTION >

Unit	Description	
Meter control switch	Transmits the following signals to the comb	ination meter.
	Illumination control switch signal (+)	 Illumination control switch signal (–)

INFORMATION DISPLAY

INFORMATION DISPLAY: System Diagram

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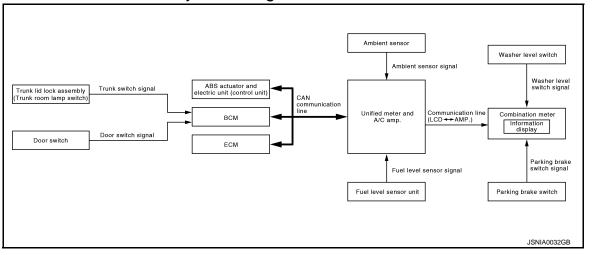
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INFORMATION DISPLAY: System Description

INFOID:0000000010990582

DESCRIPTION

- The combination meter retrieves the information required for controlling the operations of the information display from the communication signals from the unified meter and A/C amp., etc.
- The combination meter incorporates a trip computer that displays the warning / information according to the information received from various units.

PARKING BRAKE RELEASE WARNING

The combination meter indicates parking brake release warning judged with the vehicle speed signal received from the unified meter and A/C amp. by means of communication line and the parking brake switch signal from the parking brake switch.

Warning Operation Condition

Parking brake release warning is judged if all of the following conditions are fulfilled

- Vehicle speed is 7 km/h (4.3 MPH) or higher
- Parking brake switch ON

LOW FUEL WARNING

The combination meter indicates low fuel warning judged with the fuel level sensor signal received from the unified meter and A/C amp.

Warning Operation Condition

Fuel level: Approx. 15 ℓ (4 US gal, 3-1/4 Imp gal) or less

LOW WASHER FLUID WARNING

The combination meter indicates low washer fluid warning judged with the signal from the washer level switch.

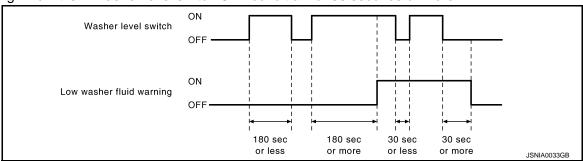
Warning Operation Condition

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< SYSTEM DESCRIPTION >

• Indicates the warning when it is in washer level switch ON condition for 180 seconds or more. Release the warning when it is in washer level switch OFF condition for 30 seconds or more.



LOW TIRE PRESSURE WARNING

- The unified meter and A/C amp. receives remaining low tire pressure warning lamp signal from the BCM with CAN communication line.
- The unified meter and A/C amp. transmits remaining low tire pressure warning lamp signal to the combination meter with communication line.
- The combination meter indicates low tire pressure warning when receiving remaining low tire pressure warning lamp signal.
- The combination meter indicates low tire pressure warning judged with the low tire pressure warning lamp signal received from the unified meter and A/C amp.

For details, refer to WT-8, "System Description".

FUEL FILLER CAP WARNING

- The unified meter and A/C amp. receives remaining fuel filler cap warning display signal from the ECM with CAN communication line.
- The unified meter and A/C amp. transmits remaining fuel filler cap warning display signal to the combination meter with communication line.
- The combination meter indicates fuel filler cap warning when receiving remaining fuel filler cap warning display signal.
- The combination meter indicates fuel filler cap warning judged with the fuel filler cap warning display signal received from the unified meter and A/C amp.

For details, refer to EC-103, "System Description".

DOOR/TRUNK OPEN WARNING

- The combination meter indicates door open warning judged with each door switch signal received from the unified meter and A/C amp. by means of communication line.
- The combination meter indicates trunk open warning judged with the trunk switch signal received from the unified meter and A/C amp. by means of communication line.

INSTANTANEOUS FUEL CONSUMPTION (MPG)

- The unified meter and A/C amp. receives the fuel consumption monitor signal from ECM and the vehicle speed signal from the ABS actuator and electric unit (control unit) with CAN communication line.
- The unified meter and A/C amp. calculates the instantaneous fuel consumption according to the fuel consumption monitor signal and the vehicle speed signal received with CAN communication line, and transmits it to the combination meter.

AVERAGE FUEL CONSUMPTION (MPG)

- The unified meter and A/C amp. receives the fuel consumption monitor signal from ECM and the vehicle speed signal from the ABS actuator and electric unit (control unit) with CAN communication line.
- The unified meter and A/C amp. calculates the average fuel consumption according to the fuel consumption monitor signal and the vehicle speed signal received with CAN communication line, and transmits it to the combination meter.
- The average fuel consumption displayed on the information display is uploaded at approximately 30-second intervals.

NOTE:

"----" is displayed for approximately 30 seconds just after the reset operation and after the ignition switch is OFF \rightarrow ON. It is displayed simultaneously until the vehicle drives approximately 500 m (0.31 mile).

AVERAGE VEHICLE SPEED (MPH)

• The unified meter and A/C amp. receives the vehicle speed signal from the ABS actuator and electric unit (control unit) via CAN communication line.

< SYSTEM DESCRIPTION >

- Measures the time during the ignition switch ON with the unified meter and A/C amp.
- The unified meter and A/C amp. calculates the average vehicle speed according to the above signals. These signals are transmitted to the combination meter with the communication line.
- The average vehicle speed displayed on the information display is uploaded at approximately 30-second intervals.

NOTE:

"----" is displayed for 30 seconds just after the reset operation and after the ignition switch is OFF \rightarrow ON. It is displayed simultaneously until the vehicle drives approximately 500 m (0.31 mile).

TRAVEL TIME (TIME)

Measures the time during the ignition switch ON with the unified meter and A/C amp, and transmits it to the combination meter by means of communication line.

TRAVEL DISTANCE (MILES)

- The unified meter and A/C amp. transmits the vehicle speed signal from ABS actuator and electric unit (control unit) to the combination meter.
- The combination meter calculates the vehicle distance according to the vehicle speed signal. The vehicle distance is displayed.

POSSIBLE DRIVING DISTANCE (RANGE)

The unified meter and A/C amp. calculates possible driving distance according to the vehicle speed signal transmitted through CAN communication and the fuel level sensor signal transmitted from the fuel level sensor. These signals are transmitted to the combination meter with the communication line.

NOTE:

- "——" is displayed for 30 seconds after the ignition switch is OFF → ON. It is displayed simultaneously until
 the vehicle drives approximately 500 m (0.31 mile).
- The indicated values may not match each other when filling the fuel with the ignition switch ON. Refer to MWI-127, "INFORMATION DISPLAY: Description".

AMBIENT AIR TEMPERATURE

- The unified meter and A/C amp. receives the ambient sensor signal from the ambient sensor.
- The unified meter and A/C amp. calculates the ambient temperature according to the ambient sensor signal, and transmits it to the combination meter.
- The indicated temperature does not increase if the vehicle speed is less than 20 km/h (12 MPH).

NOTE:

- The ambient sensor input value that is displayed on "Data Monitor" of CONSULT is the value before the correction. It may not match the indicated temperature on the information display.
- Ambient temperature may be indicated higher than an actual temperature, depending on heat in the engine, a road surface temperature, and so on.

SETTING

Setting item list

Items		Setting range	Setting unit	Description
ALERT -	TIME TO REST	No setting - 6 hours	30 minutes, [60 minutes]*	Time to rest is displayed on the information display if the vehicle reached the set travel distance.
	ICY	ON/OFF	_	Low outside temp is displayed on the information display if the ambient temperature is 3°C (37°F) or less.
MAINTENANCE -	ENGINE OIL	No setting - 18,500 miles, (No setting - 30,000 km)	250 miles (500 km), [500 miles (1000 km)]*	The engine oil replacement interval is displayed on the information display if the vehicle reached the set distance.
	OIL FILTER	No setting - 18,500 miles, (No setting - 30,000 km)	250 miles (500 km), [500 miles (1000 km)]*	The oil filter replacement interval is displayed on the information display if the vehicle reached the set distance.
	TIRE	No setting - 18,500 miles, (No setting - 30,000 km)	250 miles (500 km), [500 miles (1000 km)]*	The tire replacement interval is displayed on the information display if the vehicle reached the set distance.
	OTHER	No setting - 18,500 miles, (No setting - 30,000 km)	250 miles (500 km), [500 miles (1000 km)]*	The other replacement interval is displayed on the information display if the vehicle reached the set distance.

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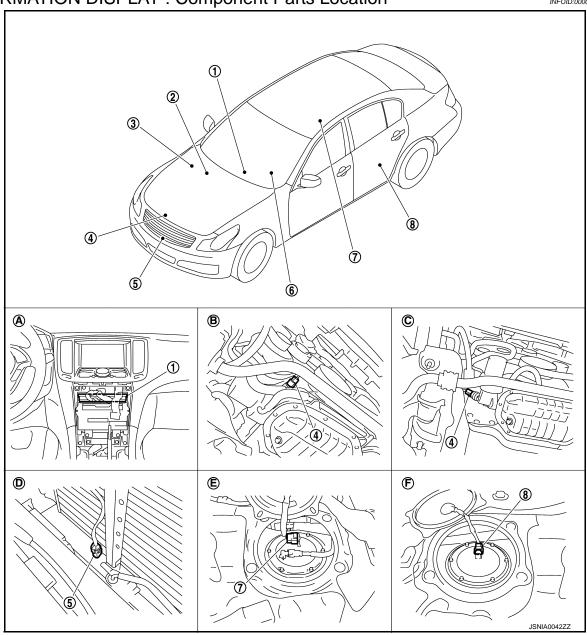
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Items		Setting range	Setting unit	Description
LANG	LANGUAGE	ENGLISH/FRANCAIS	_	Changing the language setting can be performed.
DISPLAT	UNIT	US/METRIC	_	Changing the unit setting can be performed.

^{*:} Press and hold the switch (1 second or more).

INFORMATION DISPLAY: Component Parts Location



- 1. Unified meter and A/C amp.
- 4. Oil pressure switch
- 7. Fuel level sensor unit and fuel pump (main)
- A. Behind cluster lid C
- D. Condenser (front)

- 2. BCM
- 5. Ambient sensor
- 8. Fuel level sensor unit (sub)
- B. 2WD [oil pan (upper) RH side]
- E. Rear seat (lower right)

- 3. IPDM E/R
- 6. Combination meter
- C. AWD (oil filter bracket part)
- F. Rear seat (lower left)

< SYSTEM DESCRIPTION >

INFORMATION DISPLAY : Component Description

INFOID:0000000010990584

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Unit	Description		
Combination meter	Controls the information display with the signals received from the unified meter and A/C amp. by means of communication and the signals from various switches and sensors.		
Unified meter and A/C amp.	Transmits signals received from various units to the combination meter by means of communication.		
Fuel level sensor unit	Refer to MWI-54, "Description".		
	Transmits the following signals to the unified meter and A/C amp. via CAN communication.		
ECM	Engine speed signal Fuel consumption monitor signal		
	Fuel filler cap warning display signal		
ABS actuator and electric unit (control unit)	Transmits the vehicle speed signal to the unified meter and A/C amp. via CAN communication.		
BCM	Transmits signals provided by various units to the unified meter and A/C amp. via CAN communication.		
Meter control switch	Transmits the following signals to the combination meter.		
Meter control switch	Enter switch signal Select switch signal		
Washer level switch	Transmits the washer level signal to the combination meter.		
Parking brake switch	Refer to MWI-62, "Description".		
Door switch	Transmits the door switch signals to BCM.		
Trunk room lamp switch	Transmits the trunk room lamp switch signal to BCM.		
Ambient sensor	Detects the ambient air temperature and transmits the ambient sensor signal to the unified meter and A/C amp.		

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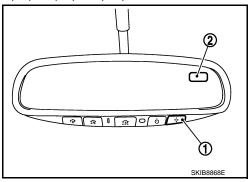
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COMPASS

Description INFOID:000000010990588

DESCRIPTION

- This electronic compass is able to display 8 primary directions: N, NE, E, SE, S, SW, W, NW.
- The compass switch (1) is used to operate the compass.



Switch Operation

Press	Compass is turned ON/OFF
Press and hold (for 3- 9 sec.)	Compass display (2) turns to zone variation change mode
Press and hold (for more than 9 sec.)	Compass display turns to calibration mode

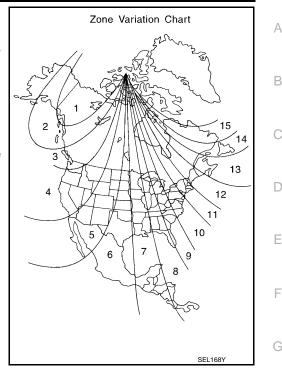
- All standard compasses determine direction relative to Magnetic North; however, this electronic compass is designed to display direction relative to True North.
- The difference between Magnetic North and True North varies from place to place across the surface of the earth.
- This electronic compass must be "told" approximately where it is on the earth's surface so that the Magnetic North reading can be properly converted into a True North display.
- To tell the electronic compass where it's at, the earth is separated into numbered "Zone Variances". The Zone Variance number in which the compass is to function must be entered into this electronic compass.
- Each zone is magnetically about 4.2° wide. Typically, anything under 22.5° total zone change is not noticed on the electronic compass display. However, over 22.5°, a reading may be off by one or more primary directions.
- On long trips, a vehicle may leave its original zone and enter one or more new zones. Generally, you do not
 need to reset the compass zone if you travel between 3 or 4 zones, such as business travel or vacation. The
 typical driver will not notice any difference on the display within 3 or 4 zones. However, if the vehicle is "permanently" moved to a new location, it is recommended that the compass zone be reset.

ZONE VARIATION SETTING PROCEDURE

COMPASS

< SYSTEM DESCRIPTION >

- 1. Press and hold the compass switch for 3 9 seconds.
- 2. The current zone setting appears on the compass display.
- Find the current geographical location number in the Zone Variation Chart.
- 4. Select the new zone number. (Press the compass switch until the new zone number appears on the compass display.)
- 5. After select the new zone number, the compass display will automatically shows a direction within a few seconds.
- Perform the following Calibration Procedure for more accurate indications.



CALIBRATION PROCEDURE

NOTE:

The compass calibrates itself under normal driving conditions. However, occasional circumstances may cause the compass to operate inaccurately. Example: Driving from rural (wide open) areas to crowded city areas, or if an aftermarket (i.e., non original equipment) antenna with a magnetic base is attached to the vehicle. Calibrate the mirror compass if the display shows only one direction or a limited number of directions.

NOTE:

- If "magnetic hats" are used in the dealership for vehicle identification, remove the hat from the vehicle before performing the following steps. Do not put the hat back on the vehicle after the procedure is completed.
- Drive the vehicle to an open level area; away from large metallic objects, structures, and overhead power lines.
- Turn off "non-essential" electrical accessories (rear window defrost, heater/air conditioning, wipers) and close the doors.
- 1. Verify the correct compass zone setting for the geographical location.
- 2. Press and hold the compass switch for more than 9 seconds.
- 3. "C" is displayed on the compass display, when calibration starts.
- 4. Drive slowly [less than 8 km/h (5 MPH)] in a circle until the "C / CAL" is replaced with primary headings (N, NE, E, SE, S, SW, W, or NW).

NOTE:

This will require driving at least 2 complete 360 degree circles; 3 complete circles may be required.

5. The compass calibration procedure is now complete. The compass should operate normally.

NOTE:

If at any time the compass continually displays the incorrect direction or the reading is erratic or locked, repeat the calibration procedure.

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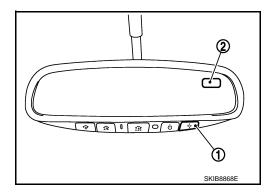
COMPASS

< SYSTEM DESCRIPTION >

Component Parts Location

INFOID:0000000010990586

1 : Compass switch2 : Compass display



Special Repair Requirement

INFOID:0000000010990587

1. PERFORM ZONE VARIATION SETTING

Perform the zone variation setting. Refer to MWI-32, "Description".

>> GO TO 2.

2.PERFORM CALIBRATION

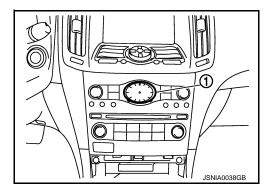
Perform the calibration. Refer to MWI-32, "Description".

>> Setting completion

CLOCK

Component Parts Location

1 : Clock



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DIAGNOSIS SYSTEM (METER)

< SYSTEM DESCRIPTION >

DIAGNOSIS SYSTEM (METER)

Diagnosis Description

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SELF-DIAGNOSIS MODE

- Information display LCD segment operation can be checked in self-diagnosis mode.
- Meters/gauges can be checked in self-diagnosis mode.

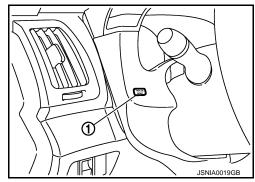
OPERATION PROCEDURE

1. Turn ignition switch ON, and switch the trip meter to "trip A" or "trip B".

NOTE:

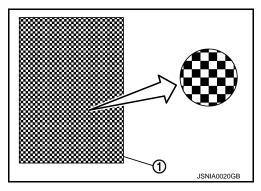
If the diagnosis function is activated with "trip A" displayed, the mileage on "trip A" is reset to "0000.0". (The same way for "trip B".)

- 2. Turn ignition switch OFF.
- 3. While pressing the trip A/B reset switch (1), turn ignition switch ON again.
- 4. Make sure that the trip meter displays "0000.0".
- Press the trip A/B reset switch at least 3 times. (Within 7 seconds after the ignition switch is turned ON.)



- 6. The unified meter control unit is turned to self-diagnosis mode.
 - Displays "888888" and "8888.8" in the information display LCD

 (1) for approximately 5 seconds and then blinks the segment dots of the information display LCD alternately.
 - Water temperature gauge and fuel gauge return to zero, and at the same time.



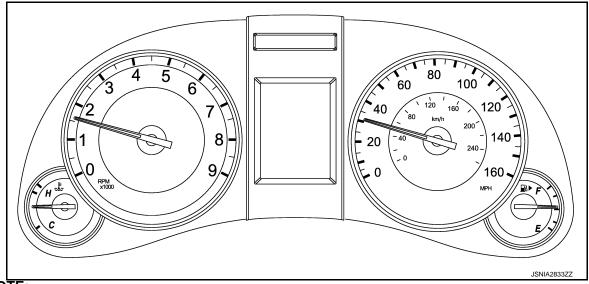
NOTE:

- Check combination meter power supply and ground circuit when self-diagnosis mode of combination meter does not start. Replace combination meter if normal.
- If any of the segments is not displayed, replace combination meter.

DIAGNOSIS SYSTEM (METER)

< SYSTEM DESCRIPTION >

7. Each meter activates during pressing trip A/B reset switch.



NOTE:

- If any of the meter and gages is not activated, replace combination meter.
- The figure is reference.

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< SYSTEM DESCRIPTION >

DIAGNOSIS SYSTEM (UNIFIED METER AND A/C AMP.)

CONSULT Function (METER/M&A)

INFOID:0000000010990590

CONSULT APPLICATION ITEMS

CONSULT can perform the following diagnosis modes with CAN communication with the unified meter and A/C amp.

System	Diagnosis mode	Description
	Self Diagnostic Result	Unified meter and A/C amp. checks the conditions and displays memorized error.
METER/M&A	Data Monitor	Displays unified meter and A/C amp. input/output data in real time.
	Ecu Identification	The unified meter and A/C amp. part number is displayed.

SELF DIAG RESULT

Refer to MWI-103, "DTC Index".

DATA MONITOR

NOTE:

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

Display Item List

X: Applicable

		7. Applicable	
Display item [Unit]	MAIN SIGNALS	Description	
SPEED METER [km/h]	Х	Value of vehicle speed signal received from ABS actuator and electric unit (control unit) with CAN communication line. NOTE: 655.35 is displayed when the malfunction signal is received.	
SPEED OUTPUT [km/h]	Х	Vehicle speed signal value transmitted to other units with CAN communication line. NOTE: 655.35 is displayed when the malfunction signal is received.	
ODO OUTPUT [km/h or mph]		Odometer signal value transmitted to other units with CAN communication line.	
TACHO METER [rpm]	Х	Value of the engine speed signal received from ECM with CAN communication line. NOTE: 8191.875 is displayed when the malfunction signal is received.	
FUEL METER [lit.]	Х	Fuel level indicated on combination meter.	
W TEMP METER [°C]	Х	Value of engine coolant temperature signal received from ECM with CAN comm nication line. NOTE: 215 is displayed when the malfunction signal is input.	
FUEL CAP W/L [On/Off]		Status of fuel filler cap warning display detected from fuel filler cap warning display signal received from ECM via CAN communication.	
ABS W/L [On/Off]		Status of ABS warning lamp judged from ABS warning lamp signal received from ABS actuator and electric unit (control unit) with CAN communication line.	
VDC/TCS IND [On/Off]		Status of VDC OFF indicator lamp judged from VDC OFF indicator lamp signal received from ABS actuator and electric unit (control unit) with CAN communication line.	
SLIP IND [On/Off]		Status of VDC warning lamp judged from VDC warning lamp signal received from ABS actuator and electric unit (control unit) with CAN communication line.	

< SYSTEM DESCRIPTION >

BRAKE W/L [On/Off] from ABS actuator a NOTE: Displays "Off" if the b		Description			
		Status of brake warning lamp judged from brake warning lamp signal received from ABS actuator and electric unit (control unit) with CAN communication line. NOTE: Displays "Off" if the brake warning lamp is illuminated when the valve check starts, the parking brake switch is turned ON or the brake fluid level switch is turned ON.			
DOOR W/L [On/Off]		Status of door warning judged from door switch signal received from BCM with CAN communication line.			
TRUNK/GLAS-H [On/Off]		Status of trunk warning judged from trunk switch signal received from BCM with CAN communication line.			
HI-BEAM IND [On/Off]		Status of high beam indicator lamp judged from high beam request signal received from BCM with CAN communication line.			
TURN IND [On/Off]		Status of turn indicator lamp judged from turn indicator signal received from BCM with CAN communication line.			
FR FOG IND [On/Off]		Status of front fog lamp indicator lamp judged from front fog light request signal received from BCM with CAN communication line.			
RR FOG IND [Off]		This item is displayed, but cannot be monitored.			
LIGHT IND [On/Off]		Status of tail lamp indicator lamp judged from position light request signal received from BCM with CAN communication line.			
OIL W/L [On/Off]		Status of oil pressure warning lamp judged from oil pressure switch signal received from IPDM E/R with CAN communication line.			
MIL [On/Off]		Status of malfunction indicator lamp judged from malfunctioning indicator lamp signal received from ECM with CAN communication line.			
GLOW IND [On/Off]		This item is displayed, but cannot be monitored.			
C-ENG2 W/L [On/Off]		This item is displayed, but cannot be monitored.			
CRUISE IND [On/Off]		Status of CRUISE indicator judged from ASCD status signal received from ECM with CAN communication line.			
SET IND [On/Off]		Status of set indicator judged from ASCD SET indicator signal received from ECM with CAN communication line.			
CRUISE W/L [On/Off]		Status of CRUISE warning lamp judged from ASCD status signal received from ECM with CAN communication line.			
BA W/L [Off]		This item is displayed, but cannot be monitored.			
ATC/T-AMT W/L [On/Off]		Status of A/T check warning lamp judged from A/T check indicator signal received from TCM with CAN communication line.			
4WD W/L [On/Off]		Status of AWD warning lamp judged from AWD warning lamp signal received from AWD control unit with CAN communication line.			
4WD LOCK IND [Off]		This item is displayed, but cannot be monitored.			
FUEL W/L [On/Off]		Low-fuel warning lamp status judged by the identified fuel level.			
WASHER W/L [On/Off]		Status of washer warning lamp judged from washer level switch input to combination meter.			
AIR PRES W/L [On/Off]		Status of low tire pressure warning lamp judged from TPMS malfunction warning lamp signal received from BCM with CAN communication line.			
KEY G/Y W/L [On/Off]		Status of key warning lamp (G/Y) judged from key warning signal received from BCM with CAN communication line.			
AFS OFF IND [On/Off]		Status of AFS OFF indicator lamp judged from AFS OFF indicator lamp signal received from AFS control unit with CAN communication line.			
4WAS/RAS W/L [Off]		This item is displayed, but cannot be monitored.			

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< SYSTEM DESCRIPTION >

Display item [Unit]	MAIN SIGNALS	Description
DDS W/L [On/Off]		This item is displayed, but cannot be monitored.
LANE W/L [On/Off]		This item is displayed, but cannot be monitored.
LDP IND [On/Off]		This item is displayed, but cannot be monitored.
LCD [B&P N, B&P I, ID NG, ROTAT, SFT P, INSRT, BATT, NO KY,OUTKY, LK WN, C&P N,C&P I]		Displays status of Intelligent Key system warning judged from meter display signal received from BCM with CAN communication line.
ACC TARGET [Off]		This item is displayed, but cannot be monitored.
ACC DISTANCE [Off]		This item is displayed, but cannot be monitored.
ACC OWN VHL [Off]		This item is displayed, but cannot be monitored.
ACC SET SPEED [Off]		This item is displayed, but cannot be monitored.
ACC UNIT [Off]		This item is displayed, but cannot be monitored.
O/D OFF SW [On/Off]		This item is displayed, but cannot be monitored.
SHIFT IND [P, R, N, D, M1, M2, M3, M4, M5, M6, M7]		Status of shift position indicator judged from shift position signal and manual mode indicator signal received from TCM with CAN communication line.
AT S MODE SW [On/Off]		Status of snow mode switch.
AT P MODE SW [On/Off]		This item is displayed, but cannot be monitored.
M RANGE SW [On/Off]		Status of manual mode switch.
NM RANGE SW [On/Off]		Status of not manual mode switch.
AT SFT UP SW [On/Off]		Status of manual mode shift up switch.
AT SFT DWN SW [On/Off]		Status of manual mode shift down switch.
ST SFT UP SW [Off]		This item is displayed, but cannot be monitored.
ST SFT DWN SW [Off]		This item is displayed, but cannot be monitored.
COMP FB SIG [On/Off]		A/C compressor activation condition that ECM judges according to the water temperature and the acceleration degree.
4WD LOCK SW [Off]		This item is displayed, but cannot be monitored.
PKB SW [On/Off]		Status of parking brake switch.
BUCKLE SW [On/Off]		Status of seat belt buckle switch.
BRAKE OIL SW [On/Off]		Status of brake fluid level switch.
DISTANCE [km]		Value of possible driving distance calculated by unified meter and A/C amp.

< SYSTEM DESCRIPTION >

Display item [Unit]	MAIN SIGNALS	Description
OUTSIDE TEMP [°C or °F]		Ambient air temperature value converted from ambient sensor signal received from ambient sensor. NOTE: This may not match with the temperature value indicated on the information display. (Because the information display value is a corrected value from the ambient sensor input value.)
FUEL LOW SIG [On/Off]		Status of fuel level low warning signal to output to AV control unit with CAN communication line.
BUZZER [On/Off]	Х	Buzzer status (in the combination meter) is judged with the buzzer output signal received from each unit with CAN communication line and the warning output condition of the combination meter.
ASCD REQ SPD [km/h/Off]		ASCD or speed limiter set vehicle speed value that is judged by the ASCD status signal received from ECM via CAN communication.
ASCD STATUS [Off, ASCD, CRUISE, SL ON,SL SET]		Display status of ASCD and speed limiter status display judged by the ASCD status signal received from ECM via CAN communication.
ASCD SPD BLNK [On/Off]		Blinking status of ASCD or speed limiter set vehicle speed that is judged by the ASCD status signal received from ECM via CAN communication.

NOTE:

Some items are not available according to vehicle specification.

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U1000 CAN COMM CIRCUIT

DTC/CIRCUIT DIAGNOSIS

U1000 CAN COMM CIRCUIT

Description INFOID:000000010990591

CAN (Controller Area Network) is a serial communication line for real time application. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Many electronic control units are equipped onto a vehicle, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with two communication lines (CAN-H line, CAN-L line) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.

CAN Communication Signal Chart. Refer to LAN-12, "How to Use CAN Communication Signal Chart".

DTC Logic

DTC DETECTION LOGIC

DTC	Display contents of CONSULT	Diagnostic item is detected when	Probable malfunction location
U1000	CAN COMM CIRCUIT	When unified meter and A/C amp. is not transmitting or receiving CAN communication signal for 2 seconds or more.	CAN communication system

Diagnosis Procedure

INFOID:0000000010990593

1.PERFORM SELF DIAGNOSTIC

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

Is "CAN COMM CIRCUIT" displayed?

YES >> Refer to LAN-13, "Trouble Diagnosis Flow Chart".

NO >> Refer to GI-41, "Intermittent Incident".

U1010 CONTROL UNIT (CAN)

< DTC/CIRCUIT DIAGNOSIS >

U1010 CONTROL UNIT (CAN)

Description INFOID:000000010990594

Initial diagnosis of unified meter and A/C amp.

DTC Logic

DTC DETECTION LOGIC

DTC	Display contents of CON- SULT	Diagnostic item is detected when	Probable malfunction location
U1010	CONTROL UNIT (CAN)	If any malfunction is detected during initial diagnosis of unified meter and A/C amp. CAN controller	Unified meter and A/C amp.

Diagnosis Procedure

INFOID:0000000010990596

1. REPLACE UNIFIED METER AND A/C AMP.

When DTC "U1010" is detected, replace unified meter and A/C amp.

>> INSPECTION END

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B2201 COMMUNICATION ERROR 1

< DTC/CIRCUIT DIAGNOSIS >

B2201 COMMUNICATION ERROR 1

Description INFOID:000000010990597

The communication line (LCD <-> AMP.) is used to communicate signals between the combination meter and the unified meter and A/C amp. in order to control the information display.

DTC Logic

DTC DETECTION LOGIC

DTC	Display contents of CONSULT	Diagnostic item is detected when	Probable malfunction location
B2201	COMM ERROR 1	If a communication error is present in the communication line (LCD <-> AMP.) for 2 seconds or more	Communication line (LCD <-> AMP.) circuit

Diagnosis Procedure

INFOID:0000000010990599

1. CHECK CONNECTOR

Check combination meter, unified meter and A/C amp. and terminals (combination meter side, unified meter and A/C amp. side, and harness side) for looseness or bent.

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair terminal or connector.

2. CHECK CONTINUITY COMMUNICATION CIRCUIT

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

Combination meter		Unified meter and A/C amp.		Continuity
Connector	Terminals	Connector	Terminals	Continuity
M53	24	M66	14	Existed
IVIOS	25	IVIOO	34	Existed

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

Combina	tion meter		Continuity
Connector	Terminals	Ground	Continuity
M53	24	Ground	Not existed
CCIVI	25		Not existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair harness or connector.

3.CHECK UNIFIED METER AND A/C AMP. OUTPUT VOLTAGE

- Connect unified meter and A/C amp. connector.
- 2. Turn ignition switch ON.
- 3. Check voltage between unified meter and A/C amp. harness connector terminal and ground.

B2201 COMMUNICATION ERROR 1

< DTC/CIRCUIT DIAGNOSIS >

Terminal			
(+)		Voltage
Unified meter	Unified meter and A/C amp.		(Approx.)
Connector	Terminal		
M66	14	Ground	12 V

Is the inspection result normal?

YES >> GO TO 4.

NO >> Replace unified meter and A/C amp.

4. CHECK COMBINATION METER OUTPUT VOLTAGE

- 1. Turn ignition switch OFF.
- 2. Disconnect unified meter and A/C amp. connector.
- 3. Connect combination meter connector.
- 4. Turn ignition switch ON.
- 5. Check voltage between combination meter harness connector terminal and ground.

'	Terminal		
(+)		Voltage
Combination meter		(-)	(Approx.)
Connector	Connector Terminal		
M53	25	Ground	5 V

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace combination meter.

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B2202 COMMUNICATION ERROR 2

< DTC/CIRCUIT DIAGNOSIS >

B2202 COMMUNICATION ERROR 2

Description INFOID:000000010990600

The communication line (METER <-> AMP.) is used to communicate signals between the combination meter and the unified meter and A/C amp. in order to control the combination meter.

DTC Logic

DTC DETECTION LOGIC

DTC	Display contents of CONSULT	Diagnostic item is detected when	Probable malfunction location
B2202	If a communication error is present in to communication line (METER <-> AMP, seconds or more		Communication line (METER <-> AMP.) circuit

INFOID:0000000010990602

Diagnosis Procedure

1. CHECK CONNECTOR

Check combination meter, unified meter and A/C amp. and terminals (combination meter side, unified meter and A/C amp. side, and harness side) for looseness or bent.

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair terminal or connector.

2.check continuity communication circuit

- 1. Turn ignition switch OFF.
- Disconnect combination meter connector and unified meter and A/C amp. connector.
- Check continuity between combination meter harness connector terminal and unified meter and A/C amp. harness connector terminal.

Combination meter		Unified meter and A/C amp.		Continuity
Connector	Terminals	Connector Terminals		Continuity
M53	2	M66	27	Existed
IVIOS	3	IVIOO	7	LXISIEU

Check continuity between combination meter harness connector terminal and ground.

Combination meter			Continuity
Connector	Terminals	Ground	Continuity
M53	2	Glound	Not existed
IVIOS	3		Not existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair harness or connector.

3.CHECK UNIFIED METER AND A/C AMP. OUTPUT VOLTAGE

- Connect unified meter and A/C amp. connector.
- 2. Turn ignition switch ON.
- 3. Check voltage between unified meter and A/C amp. harness connector terminal and ground.

B2202 COMMUNICATION ERROR 2

< DTC/CIRCUIT DIAGNOSIS >

	Terminal		
(+)		Voltage
Unified meter and A/C amp.		(-)	(Approx.)
Connector Terminal			
M66	27	Ground	5 V

Is the inspection result normal?

YES >> GO TO 4.

NO >> Replace unified meter and A/C amp.

4. CHECK COMBINATION METER OUTPUT VOLTAGE

- 1. Turn ignition switch OFF.
- 2. Disconnect unified meter and A/C amp. connector.
- 3. Connect combination meter connector.
- 4. Turn ignition switch ON.
- 5. Check voltage between combination meter harness connector terminal and ground.

	Terminal		
(+)	(-)	Voltage (Approx.)
Combina	tion meter		
Connector Terminal			
M53	3	Ground	5 V

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace combination meter.

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B2205 VEHICLE SPEED

< DTC/CIRCUIT DIAGNOSIS >

B2205 VEHICLE SPEED

Description INFOID:000000010990603

Vehicle speed signal is transmitted from ABS actuator and electric unit (control unit) via CAN communication to unified meter and A/C amp.

DTC Logic

DTC DETECTION LOGIC

DTC	Display contents of CONSULT	Diagnostic item is detected when	Probable malfunction location
B2205	VEHICLE SPEED	If the abnormal vehicle speed signal is input from ABS actuator and electric unit (control unit) for 2 seconds or more	Wheel sensor ABS actuator and electric unit (control unit)

Diagnosis Procedure

INFOID:0000000010990605

$1.\mathsf{perform}$ self-diagnosis of abs actuator and electric unit (control unit)

Perform "Self Diagnostic Result" of ABS actuator and electric unit (control unit), and repair or replace malfunctioning parts.

>> Refer to BRC-26, "CONSULT Function".

B2267 ENGINE SPEED

< DTC/CIRCUIT DIAGNOSIS >

B2267 ENGINE SPEED

Description INFOID:000000010990606

The engine speed signal is transmitted from ECM to the unified meter and A/C amp. with CAN communication.

DTC Logic

DTC DETECTION LOGIC

DTC	Display contents of CONSULT	Diagnostic item is detected when	Probable malfunction location
B2267	ENGINE SPEED	If ECM continuously transmits abnormal engine speed signals for 2 seconds or more	Crankshaft position sensor (POS)ECM

Diagnosis Procedure

INFOID:0000000010990608

1.PERFORM SELF-DIAGNOSIS OF ECM

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

>> Refer to EC-138, "CONSULT Function".

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B2268 WATER TEMP

< DTC/CIRCUIT DIAGNOSIS >

B2268 WATER TEMP

Description INFOID:000000010990609

The engine coolant temperature signal is transmitted from ECM to the unified meter and A/C amp. via CAN communication.

DTC Logic

DTC DETECTION LOGIC

DTC	Display contents of CONSULT	Diagnostic item is detected when	Probable malfunction location
B2268	WATER TEMP	If ECM continuously transmits abnormal engine coolant temperature signals for 60 seconds or more	Engine coolant temperature sensor ECM

Diagnosis Procedure

INFOID:0000000010990611

1. PERFORM SELF-DIAGNOSIS OF ECM

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

>> Refer to EC-138, "CONSULT Function".

POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

POWER SUPPLY AND GROUND CIRCUIT COMBINATION METER

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COMBINATION METER : Diagnosis Procedure

INFOID:0000000010990612

1.CHECK FUSE

Check for blown fuses.

Power source	Fuse No.	
Battery	11	
Ignition switch ON or START	4	

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Is the inspection result normal?

YES >> GO TO 2.

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

2. CHECK POWER SUPPLY CIRCUIT

Check voltage between combination meter harness connector terminal and ground.

	Terminals			
(+)		Ignition switch	Voltage (Approx.)
Combination meter		(-)	Igrillion switch	(Approx.)
Connector	Terminals			
M53	1	Ground	OFF	Battery voltage
IVIOS	21	Ground	ON	

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check harness between combination meter and fuse.

3. CHECK GROUND CIRCUIT

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

Combina	tion meter		Continuity	
Connector Terminals			Continuity	
	5	Ground	Existed	
M53	15			
	22			

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Is the inspection result normal?

YES >> INSPECTION END

NO >> Repair harness or connector.

UNIFIED METER AND A/C AMP.

UNIFIED METER AND A/C AMP. : Diagnosis Procedure

INFOID:0000000010990613

1.CHECK FUSE

Check for blown fuses.

Power source	Fuse No.
Battery	11

POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

Power source	Fuse No.
Ignition switch ACC or ON	19
Ignition switch ON or START	3

Is the inspection result normal?

YES >> GO TO 2.

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

2. CHECK POWER SUPPLY CIRCUIT

Check voltage between unified meter and A/C amp. harness connector terminal and ground.

Terminals				
(+)		Ignition switch Volt	
Unified meter	and A/C amp.	(–) Ignition switch		(Approx.)
Connector	Terminals			
	54		OFF	
M67	41	Ground	ACC	Battery voltage
	53		ON	

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check harness between unified meter and A/C amp. and fuse.

3. CHECK GROUND CIRCUIT

- 1. Turn ignition switch OFF.
- 2. Disconnect unified meter and A/C amp. connector.
- 3. Check continuity between unified meter and A/C amp. harness connector terminal and ground.

Unified meter	and A/C amp.		Continuity	
Connector Terminals		Ground	Continuity	
M67	55	Glound	Existed	
WOT	71		Lxisted	

Is the inspection result normal?

YES >> INSPECTION END

NO >> Repair harness or connector.

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

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

1. CHECK FUSES AND FUSIBLE LINK

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

Signal name	Fuses and fusible link No.	
Battery power supply	С	
	50	
	51	

Is the fuse fusing?

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

NO >> GO TO 2.

2. CHECK POWER SUPPLY CIRCUIT

POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

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

Terminals			
(+)	(-) Voltage	
IPDI	M E/R	(-)	(Approx.)
Connector	Terminal		
E4	1	Ground	Battery voltage
L4	2		Battery Voltage

Is the measurement value normal?

YES >> GO TO 3.

NO >> Repair the harness or connector.

3. CHECK GROUND CIRCUIT

Check continuity between IPDM E/R harness connectors and the ground.

IPDM I	E/R		Continuity
Connector	Terminal	Ground	Continuity
E5	12		Existed
E6	41		Existed

Does continuity exist?

YES >> INSPECTION END

NO >> Repair the harness or connector.

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< DTC/CIRCUIT DIAGNOSIS >

FUEL LEVEL SENSOR SIGNAL CIRCUIT

Description INFOID:000000010990615

The fuel level sensor unit and fuel pump (main) and the fuel level sensor unit (sub) detect the fuel level in the fuel tank and transmit the fuel gauge signal to the unified meter and A/C amp.

Component Function Check

INFOID:0000000010990616

${f 1}$.PERFORM SELF-DIAGNOSIS OF UNIFIED METER AND A/C AMP.

Perform "Self Diagnosis" of unified meter and A/C amp. with CONSULT.

Is any DTC detected?

YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to MWI-103, "DTC Index".

NO >> GO TO 2.

2.PERFORM COMPONENT FUNCTION CHECK (1)

- 1. Turn ignition switch OFF.
- Disconnect fuel level sensor unit and fuel pump (main) connector and fuel level sensor unit (sub) connector.
- 3. Connect variable resistor between harness connector terminals located on the vehicle side of the fuel level sensor unit and fuel pump (main) and fuel level sensor unit (sub).

Fuel level sensor unit and fuel pump (main)		Fuel level sensor unit (sub)	
Connector	Terminal	Connector	Terminal
B22	5	B21	1

Set variable resistor according to the resistance value shown in the following table and turn ignition switch ON.

Resistance $(\Omega)^*$ (Approx.)	Fuel gauge indication position (Approx.)
Less than 6.0	Full
25.5	3/4
45.5	2/4
66.0	1/4
More than 80.0	0

^{*:} Reference resistance values used when the combination meter judges the indication position of the fuel gauge.

Is the inspection result normal?

YES >> GO TO 3.

NO >> GO TO 4.

3. PERFORM COMPONENT FUNCTION CHECK (2)

Check the fuel level sensor unit and fuel pump (main) and/or fuel level sensor unit (sub). Refer to MWI-56. "Component Inspection".

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace fuel level sensor unit and fuel pump (main) and/or fuel level sensor unit (sub). Refer to FL-6, "Removal and Installation".

f 4.CHECK DATA MONITOR OF UNIFIED METER AND A/C AMP.

Select "FUEL METER" that is the data monitor item of "METER/M&A". Apply resistance according to the table below and check the monitor value.

< DTC/CIRCUIT DIAGNOSIS >

Except for Mexico			
Resistance (Ω) (Approx.)	Reference value of data monitor [L] (Approx.)		
Less than 6.0	75		
25.5	58		
45.5	41		
66.0	22		
More than 80.0	11		

For Mexico

Resistance (Ω) (Approx.)	Reference value of data monitor [L] (Approx.)
Less than 6.0	75
25.5	58
45.5	41
66.0	20
More than 80.0	8

Is the inspection result normal?

YES >> Replace combination meter. Refer to MWI-130, "Removal and Installation".

NO >> Refer to MWI-55, "Diagnosis Procedure".

Diagnosis Procedure

1. CHECK FUEL LEVEL SENSOR CIRCUIT

- 1. Turn ignition switch OFF.
- 2. Disconnect unified meter and A/C amp. connector and fuel level sensor unit (sub) connector.
- 3. Check continuity between unified meter and A/C amp. harness connector and fuel level sensor unit (sub) harness connector.

Unified meter	Unified meter and A/C amp. Fuel level sensor unit (sub)		Fuel level sensor unit (sub)	
Connector	Terminal	Connector Terminal		Continuity
M67	42	B21	1	Existed

4. Check continuity between unified meter and A/C amp. harness connector and ground.

Unified meter	and A/C amp.		Continuity
Connector	Terminal	Ground	Continuity
M67	42		Not existed

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair harness or connector.

2.CHECK FUEL LEVEL SENSOR UNIT (MAIN-SUB) CIRCUIT

- 1. Disconnect fuel level sensor unit and fuel pump (main) connector.
- Check for continuity between the fuel level sensor unit (sub) harness connector and the fuel level sensor unit and fuel pump (main) harness connector.

Fuel level ser	nsor unit (sub)	Fuel level sensor unit	and fuel pump (main)	Continuity
Connector	Terminal	Connector	Terminal	Continuity
B21	2	B22	2	Existed

3. Check for continuity between the fuel level sensor unit (sub) harness connector and the ground.

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< DTC/CIRCUIT DIAGNOSIS >

Fuel level ser	Fuel level sensor unit (sub)		Continuity
Connector	Terminal	Ground	Continuity
B21	2		Not existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair harness or connector.

3.check fuel level sensor ground circuit

1. Check continuity between fuel level sensor unit and fuel pump (main) harness connector and unified meter and A/C amp. harness connector.

Fuel level sensor unit and fuel pump (main)		Unified meter and A/C amp.		Continuity
Connector	Terminal	Connector	Terminal	Continuity
B22	5	M67	58	Existed

Check for continuity between the fuel level sensor unit and fuel pump (main) harness connector and the ground.

Fuel level sensor unit and fuel pump (main)			Continuity
Connector	Terminal	Ground	Continuity
B22	5		Not existed

Is the inspection result normal?

YES >> Replace unified meter and A/C amp. Refer to MWI-132, "Removal and Installation".

NO >> Repair harness or connector.

Component Inspection

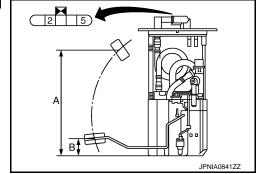
INFOID:0000000010990618

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

1. Remove fuel level sensor unit and fuel pump (main). Refer to FL-6, "Removal and Installation".

2. Check the resistance between fuel level sensor unit and fuel pump (main).

Fuel level sensor unit and fuel pump (main) Terminal		Condition	Resistance (Approx.)
2	5	Full (A)	3 Ω
	3	Full (A) Empty (B)	82 Ω



Standard float position

Standard float position [mm (in)]*		
Full (A) Approx. 202 (7.95)		
Empty (B)	Approx. 37 (1.46)	

^{*:} When float rod is contact with stopper.

Is the inspection result normal?

YES >> GO TO 2.

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

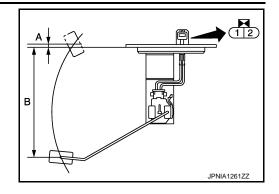
2.CHECK FUEL LEVEL SENSOR UNIT (SUB)

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

< DTC/CIRCUIT DIAGNOSIS >

2. Inspect the resistance of fuel level sensor unit (sub).

Fuel level ser	uel level sensor unit (sub)		Resistance
Terr	ninal		(Approx.)
1	2	Full (A)	3 Ω
ı	2	Full (A) Empty (B)	43 Ω



Standard float position

Standard float position $[mm (in)]^*$		
Full (A)	Approx. 4 (0.16)	
Empty (B)	Approx. 174 (6.85)	

^{*:} When float rod is contact with stopper.

Is the inspection result normal?

YES >> INSPECTION END.

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

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METER CONTROL SWITCH SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

METER CONTROL SWITCH SIGNAL CIRCUIT

Description INFOID.000000010990619

Transmits the following signals to the combination meter.

- 6% (Illumination control) switch signal (+) 6% (Illumination control) switch signal (-)
- Trip A/B reset switch signal
 (select) switch signal
- \square (enter) switch is pressed

Diagnosis Procedure

INFOID:0000000010990620

1. CHECK METER CONTROL SWITCH INPUT SIGNAL

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

Terminal No.	Condition	Voltage (Approx.)
36 - 16	When (select) switch is pressed	0 V
30 - 10	Other than the above	5 V
37 - 16	When 🗖 (enter) switch is pressed	0 V
00	Other than the above	5 V
38 - 16	When trip A/B reset switch is pressed	0 V
Other than the above		5 V
39 - 16	When 📆 (illumination control) switch is pressed	0 V
	Other than the above	5 V
40 - 16	When 👣 (illumination control) switch is pressed	0 V
	Other than the above	5 V

Is the inspection result normal?

YES >> INSPECTION END

NO >> GO TO 2.

2.check meter control switch signal circuit

- 1. Turn the ignition switch OFF.
- 2. Disconnect the combination meter and meter control switch connectors.
- 3. Check continuity between combination meter harness connector terminal and meter control switch harness connector terminal.

Combination meter Meter control switch		Continuity		
Connector	Terminals	Connector	Terminals	Continuity
	16		7	
	36		2	
M53	37	M54	1	Existed
	39		10	Existed
	40		9	
	38		5	

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

METER CONTROL SWITCH SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

Combinat	tion meter		Continuity
Connector	Terminals		Continuity
	36		
	37	Ground	
M53	39		Not existed
	40		
	38		

Is the inspection result normal?

YES >> INSPECTION END

NO >> Repair harness or connector.

Component Inspection

1. CHECK METER CONTROL SWITCH UNIT

- 1. Turn the ignition switch OFF.
- 2. Disconnect the meter control switch connector.
- 3. Check continuity of the meter control switch.

Connector	Termi	nal No.	Operation and status	Continuity
	2	7	When (select) switch is pressed	Existed
	_	'	Other than the above Not existed	
	1	7	When \Box (enter) switch is pressed	Existed
			Other than the above	Not existed
	5	7	When trip A/B reset switch is pressed	Existed
M54	3	Other than the above	Not existed	
	10	7	When 👫 (illumination control) switch is pressed	Existed
			Other than the above	Not existed
		When 🔥 (illumination control) switch is pressed	Existed	
			Other than the above	Not existed

Is the inspection result OK?

YES >> INSPECTION END

NO >> Replace the meter control switch.

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Revision: 2014 June **MWI-59** 2014 Q40

OIL PRESSURE SWITCH SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

OIL PRESSURE SWITCH SIGNAL CIRCUIT

Description INFOID:000000010990622

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

Component Function Check

INFOID:0000000010990623

1. CHECK UNIFIED METER AND A/C AMP. INPUT SIGNAL

- Connect the CONSULT.
- 2. Select the "Data Monitor" for the "METER/M&A" and check the "OIL W/L" monitor value.

"OIL W/L"

Ignition switch ON : On Engine running : Off

>> INSPECTION END

Diagnosis Procedure

INFOID:0000000010990624

1. CHECK OIL PRESSURE SWITCH CIRCUIT

- 1. Turn ignition switch OFF.
- 2. Disconnect IPDM E/R connector and oil pressure switch connector.
- Check continuity between IPDM E/R harness connector terminal and oil pressure switch harness connector terminal.

IPDI	M E/R	Oil press	Continuity	
Connector	Terminal	Connector Terminal		
E7	75	F37	1	Existed

4. Check continuity between IPDM E/R harness connector terminal and ground.

IPDI	M E/R		Continuity
Connector	Terminal	Ground	
E7	75		Not existed

Is the inspection result normal?

YES >> INSPECTION END

NO >> Repair harness or connector.

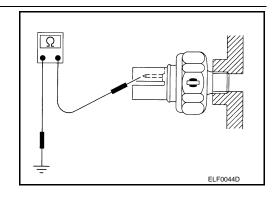
Component Inspection

INFOID:0000000010990625

1. CHECK OIL PRESSURE SWITCH

Check continuity between oil pressure switch and ground.

Condition	Continuity
Engine stopped	Existed
Engine running	Not existed



Is the inspection result normal?

OIL PRESSURE SWITCH SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

YES	>> INSPECTION END	
NO	>> Replace the oil pressure switch.	

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PARKING BRAKE SWITCH SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

PARKING BRAKE SWITCH SIGNAL CIRCUIT

Description

Transmits the parking brake switch signal to the combination meter.

Component Function Check

INFOID:0000000010990627

1. CHECK UNIFIED METER AND A/C AMP. INPUT SIGNAL

- 1. Connect the CONSULT.
- 2. Select the "Data Monitor" for the "METER/M&A" and check the "PKB SW" monitor value.

"PKB SW"

Parking brake is applied : On Parking brake is released : Off

>> INSPECTION END

Diagnosis Procedure

INFOID:0000000010990628

1. CHECK COMBINATION METER INPUT SIGNAL

- Turn ignition switch ON.
- 2. Check the voltage and waveform between combination meter harness connector terminal and ground.

Terminal					
(+)			Condition	Voltage	
Combina	tion meter	(-)	Condition	(Approx.)	
Connector	Terminal				
			Parking brake applied	0 V	
M53	27	Ground	Parking brake released	(V) 8 4 0 10 ms JSNIA0007GB	

Is the inspection result normal?

YES >> INSPECTION END

NO >> GO TO 2.

2.CHECK PARKING BRAKE SWITCH SIGNAL CIRCUIT

- Turn ignition switch OFF.
- 2. Disconnect combination meter connector and parking brake switch connector.
- Check continuity between combination meter harness connector terminal and parking brake switch harness connector terminal.

Combina	tion meter	Parking b	Continuity	
Connector	Terminal	Connector	Terminal	Continuity
M53	27	E107	1	Existed

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

PARKING BRAKE SWITCH SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

< DTC/CIRCU	III DIAGNOSIS	>		
Combina	ation meter			А
Connector	Terminal	Ground	Continuity	
M53	27		Not existed	В
	on result normal?			
	SPECTION END epair harness or o			С
Component	Inspection			INFOID:000000010990630
1.CHECK PAI	RKING BRAKE S	SWITCH		D
		efer to BRC-80, "Compon	ent Inspection".	
-	on result normal?			Е
	SPECTION END eplace parking bra			
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WASHER LEVEL SWITCH SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

WASHER LEVEL SWITCH SIGNAL CIRCUIT

Description INFOID:000000010990631

Transmits the washer level switch signal to the combination meter.

Diagnosis Procedure

INFOID:0000000010990632

1. CHECK WASHER LEVEL SWITCH SIGNAL CIRCUIT

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

Combina	tion meter	Washer le	Continuity	
Connector	Terminal	Connector	Terminal	Continuity
M53	31	E32	1	Existed

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

Combina	tion meter		Continuity
Connector	Terminal	Ground	Continuity
M53	31		Not existed

Is the inspection result normal?

YES >> INSPECTION END

NO >> Repair harness or connector.

Component Inspection

INFOID:0000000010990633

1. CHECK WASHER LEVEL SWITCH

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

Terr	minal	Washer level switch	Continuity
1	1 2	ON	Existed
	2	OFF	Not existed

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace washer level switch. Refer to WW-96, "Removal and Installation".

COMPASS

Wiring Diagram - COMPASS -

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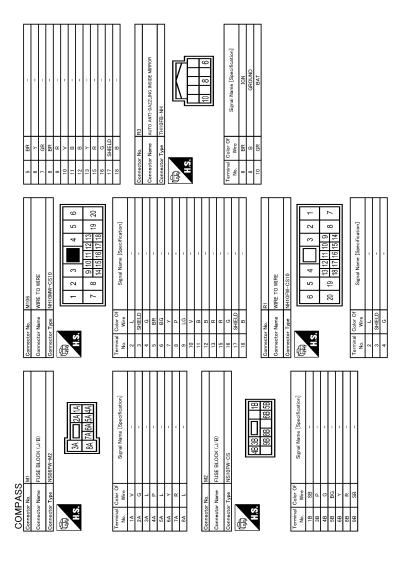
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CLOCK

Wiring Diagram - CLOCK -

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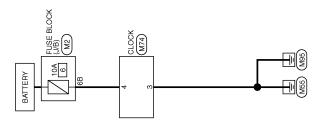
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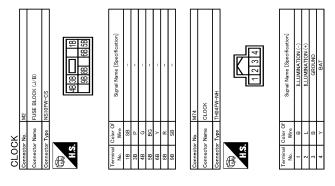
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COMBINATION METER

< ECU DIAGNOSIS INFORMATION >

ECU DIAGNOSIS INFORMATION

COMBINATION METER

Reference Value

VALUES ON THE DIAGNOSIS TOOL

Refer to MWI-84, "Reference Value".

TERMINAL LAYOUT

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

 21 | 22 | 23 | 24 | 25 | | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | | 36 | 37 | 38 | 39 | 40 |

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PHYSICAL VALUES

	nal No. e color)	Description			Condition	Value	
+	_	Signal name	Input/ Output		Condition	(Approx.)	
1 (V)	Ground	Battery power supply	Input	Ignition switch OFF	_	Battery voltage	
2 (LG)	Ground	Communication signal (METER→ AMP.)	Output	Ignition switch ON	_	(V) 6 4 2 0 ■ 200 µs JSNIA0027GB	
3 (GR)	Ground	Communication signal (AMP.→ METER)	Input	Ignition switch ON	_	(V) 6 4 2 0 200 µs JSNIA0027GB	
5 (B)	Ground	Ground	_	Ignition switch ON	_	0 V	
6	Ground	Alternator signal	Innut	Ignition switch	Charge warning lamp ON	0 V	
(W)	Giouila	ON Charge warning lamp			Charge warning lamp OFF	12 V	
7	Ground	Air bag signal	Input	Ignition switch	Air bag warning lamp ON	4 V	
(LG)	Giodila	All bag signal Imput Switch ON Air b	nal Input	3 - 3 - 1	Air bag warning lamp OFF	0 V	
10	Ground	Security signal	Input	Ignition switch	Security warning lamp ON	0 V	
(W)	Giouila	Security Signal	Input	OFF	Security warning lamp OFF	12 V	

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COMBINATION METER

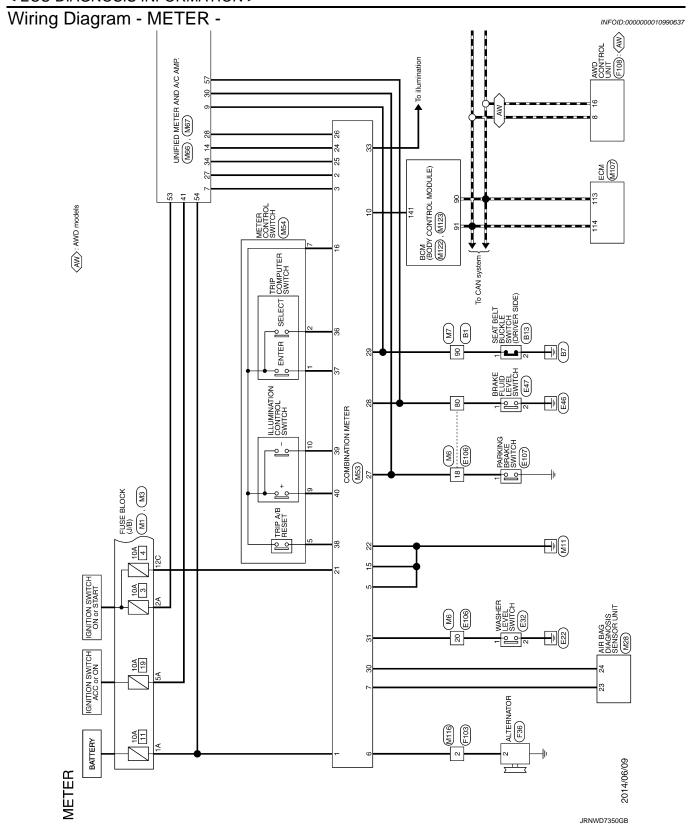
< ECU DIAGNOSIS INFORMATION >

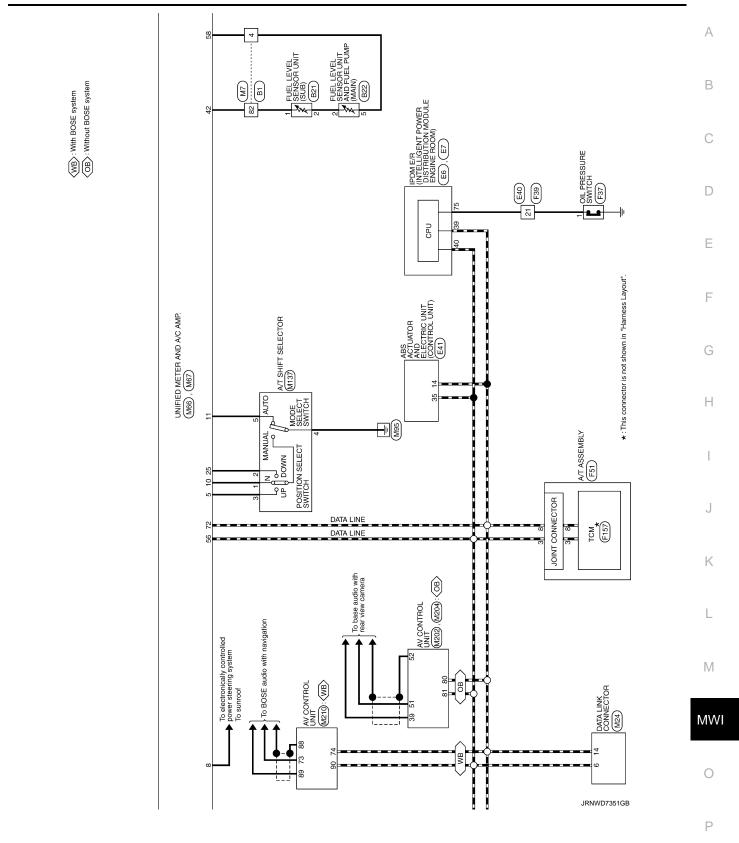
Terminal No. (Wire color)		Description		Condition		Value
+	_	Signal name	Input/ Output		(Approx.)	
15 (B)	Ground	Ground	_	Ignition switch ON	_	0 V
16 (BR)	Ground	Meter control switch ground	_	Ignition switch ON	_	0 V
21 (G)	Ground	Ignition signal	Input	Ignition switch ON	_	12 V
22 (B)	Ground	Ground	_	Ignition switch ON	_	0 V
24 (BR)	Ground	Communication signal (LCD→ AMP.)	Output	Ignition switch ON	_	(V) 15 10 5 400 µs JSNIA0028GB
25 (Y)	Ground	Communication signal (AMP.→ LCD)	Input	Ignition switch ON	_	(V) 6 4 2 0 4 2 0 4 3 JSNIA0027GB
26 (R)	Ground	Vehicle speed signal (8-pulse)	Input	Ignition switch ON	Speedometer operated [When vehicle speed is ap- prox. 40 km/h (25 MPH)]	NOTE: The maximum voltage varies depending on the specification (destination unit).
					Parking brake ON	0 V
27 (P)	Ground	Parking brake switch signal	Input	Ignition switch ON	Parking brake OFF	(V) 8 4 0 10 ms JSNIA0007GB

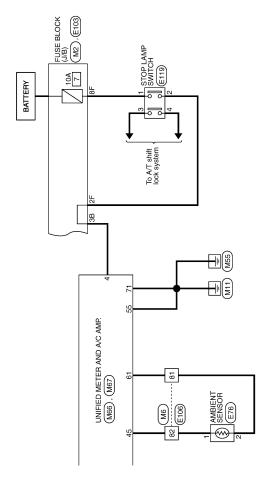
COMBINATION METER

< ECU DIAGNOSIS INFORMATION >

Terminal No. (Wire color)		Description		O - m alisti - m		Value	
+	_	Signal name	Input/ Output	Condition		(Approx.)	
28 (SB)	Ground	Brake fluid level switch signal	Input	Ignition switch ON	Brake fluid level is normal.	(V) 10 0 10 ms JSNIA0008GB	
					The brake fluid level is low- er than the low level	0 V	
29 (P)	Ground	Seat belt buckle switch signal (driver side)	Input	Ignition switch ON	When driver seat belt is fastened	12 V	
					When driver seat belt is un- fastened	0 V	
30 (G)	Ground	Seat belt buckle switch signal (passenger side)	Input	Ignition switch ON	When getting in the passenger seat When passenger seat belt is fastened	12 V	
					When getting in the passenger seatWhen passenger seat belt is unfastened	0 V	
31 (L)	Ground	Washer level switch signal	Input	Ignition switch ON	Washer level switch ON	0 V	
					Washer level switch OFF	5 V	
33 (R)	Ground	Illumination control signal	Output	Ignition switch ON	Lighting switch ON, then operate the illumination control switch.	NOTE: When brightness level is midway (V) 10 0 2 ms JSNIA0010GB	
36 (LG)	16 (BR)	Select switch signal	Input	Ignition switch ON	When is pressed	0 V	
					Other than the above	5 V	
37 (Y)	16 (BR)	Enter switch signal	Input	Ignition switch ON	When is pressed Other than the above	0 V 5 V	
38 (G)	16	Trip A/B reset switch signal	Input	Ignition switch ON	When trip A/B reset switch is pressed	0 V	
	(BR)				Other than the above	5 V	
39 (P)	16 (BR)	Illumination control switch signal (–)	Input	Ignition switch ON	When 📆 switch is pressed	0 V	
					Other than the above	5 V	
40 (BG)	16 (BR)	Illumination control switch signal (+)	Input	Ignition switch	When 🔥 + switch is pressed	0 V	
(-0)	(=. \)	- 3		ON	Other than the above	5 V	







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Connector No.	e e	Connector Type YV02FGY	E S		Terminal Color Of Signal Name [Specification]	$^{+}$	2 B -	- 1	- 1	Connector Name AMBIENT SENSOR	Connector Type RS02FB	1	divin)		Terminal Color Of School 1		0 0	-													
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Commettor No. M3 Commettor Name PUSE BLOCK (J/B) Commettor Type MS12PW-CS Commettor Type MS12PW-CS TAX	Terminal Color Of Signal Name [Specification] No. Wire No.		Terminal Color Of Signal Name (Specification) 1. Wice 1. BG 2. G 2. C 3. T 4. W 4. C
10 SHIELD GROUND 10 Connector No. M1 Connector Name FUSE BLOCK (L/B) Connector Type NSOISTW-M2 CONNECTOR CONNECTOR	1	City Name (1/18) (1/8) (Terminal Color Of Signal Name (Specification) 18
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March Marc	Mary	t	-	2	3		•	+	AI TERNATOR SIGNAL
Mine To Wife Mine	Mile TO WIRE	+		3 8				+	ACIENTAL ON SIGNAL
Wife TO Wife Wife TO Wife TO Wife Wife TO Wife Wife TO Wife TO Wife TO Wife Wife TO Wife	Water TO WRIET 19 19 19 19 19 19 19 1	+		8	١		8 9 7 6 2 5 4	+	AIN DAG SIGNAL
15 15 15 15 15 15 15 15	19 19 19 19 19 19 19 19	4	-	28	>	_		-	SECURITY SIGNAL
Wife TO Wife Wife TO	Marker Town Wile Marker Cistle - Marker			59	>		53	_	GROUND
Wife TO WIRE 12 SS 12 SS 13 SS 13 SS 13 SS 13 SS 14 SS 14 SS 15 SS	With TO WRE 12 State 13 State 14 State 15 Sta			7.1	>		27	H	METER CONTROL SWITCH GROUND
Wife TO WRE To WR	WIRE TO WIRE 173 \$5.8	on actor No	M7	72	۵	-	53 60 59	H	III GND
Wifter OWNE	Wife O Wife Wife O Wif		Т	73	g,	-		H	III GND
The DAMPL-CS LG - TAMP The Control of Co	The DAMP CS G - The Color The DAMP CS The DAMP	nnector Name		7.4	>		Color Of	+	
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1	1	miecco iype	DISCO MINIOSI II	5 8	: :		+	+	TOWNED STORY
Section Sect	1	A		79	ž			+	GROUND
	S	Į.	SI S	84	P	-		-	COMMUNICATION SIGNAL (LCD-AMP.)
88	86 8 8 9	Į	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	82	BG		3 ×	25 ∀	COMMUNICATION SIGNAL (AMPLCD)
83	C C C C C C C C C C	į	2 2 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	98	SB		>	L	VEHICLE SPEED SIGNAL (8-PULSE)
88 GR C C C C C C C C C C C C C C C C C C	88 0 C C C C C C C C C C C C C C C C C C		88 X F F 80 8 80 9 80 9 80 8 80 8 80 8 80 8	6	ď		>	╀	DADDING DOAKE CMITCH CIONAL
88 CR	S C C C C C C C C C		2 2 2 2	ò	,		-	+	PARAING DRANE SWILL SIGNAL
90 P	90 P		2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	88	SR	=	Y	-	BRAKE FLUID LEVEL SWITCH
90 P	90 P			68	٦	1	7 Y		SEAT BELT BUCKLE SW SIGNAL (DRIVER SIDE)
10 X T T T T T T T T T	1			96	۵		>	H	SEAT BELT BUCKLE SMTCH SIGNAL (PASSENGER SIDE)
80 C C C C C C C C C C C C C C C C C C C	18 SS			8	ŀ		- >	+	WASHED LEVEL SARTOH STORAL
BC - 18 SB - 33 R - 35	BG 18 SB 33 R 36 LG			26	1		-	+	WASHER LEVEL SWITCH SIGNAL
BG 19 V - 36 LG	BG - 36 LG			93	۵	_	SB	_	ILLUMINATION CONTROL SIGNAL
				92	BG	-	^		SELECT SWITCH SIGNAL
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METER										
37 Y	. ENTER SWITCH SIGNAL	10	W MANUAL MODE SIGNAL	Connector No.	or No.	M107	Connector No.	Ш	M116	
38	TRIP A/B RESET SWITCH SIGNAL	- 1	G NON-MANUAL MODE SIGNAL RP COMMINICATION SIGNAL (CD-AMP)	Connect	Connector Name	ECM	Connect	Connector Name	WIRE TO WIRE	
╀	+	╀	╀	Connect	Connector Type	RH24FGY-RZ8-R-LH-Z	Connector Type	Т	TK36MW-NS10	
\cdot	1	${\mathbb H}$	V MANUAL MODE SHIFT DOWN SIGNAL	Œ			Œ	1		
Connector No.	M54	Н	Н	Ŧ	,	128 124 112 108 104 100	E			
Connector Name	METER CONTROL SWITCH	$^{+}$	H	Ž		127 128	į	_	1.2.3.4.5 (11以13以15日) 日本日本 (11) 日本 (11	
Connector Type	e TH12FW-NH	38 34	P COMMUNICATION SIGNAL (AMPLCD) P BLOWER MOTOR CONTROL SIGNAL			121 117 113 109 105		1		
Œ										
T.	 / _	Connector No.	M67	Terminal	I Color Of	5 5 6	Terminal	Color Of	5	
ė.	12345	Connector Name	me UNIFIED METER AND A/C AMP.	N	Wire	Signal Name [Specification]	ģ	Wire	oignal Name [opecification]	
	7 0 0 10	T. respective	TU22DW-NU	6 8	r c	ACCELERATOR PEDAL POSITION SENSOR I	7 0	ž á		
		Collifector	٦.	8 8	-	SENSOR POWER SLIPPLY	9	2 0		
		Œ		100	*	SENSOR GROUND	ın		1	
lai	r Of Simon Minano [Sanaistandian]	Ę		101	SB	ASCD STEERING SWITCH	6	α	1	
No. Wire		2	82 82 82 82 82 82 82 82 82 82 82 82 82 8	102	TC	EVAP CONTROL SYSTEM PRESSURE SENSOR	10	а	-	
-			24 69 69	103	GR	SENSOR POWER SUPPLY	19	BG		
2 LG	1		00	104	>	SENSOR GROUND	50	≻	1	
3 B	-			105	_	REFRIGERANT PRESSURE SENSOR	28	8		
4 R	-			106	W	FUEL TANK TEMPERATURE SENSOR	59	ΓG	1	
5 G	_	la.	Color Of Simal Nama [Spacification]	107	GR	SENSOR POWER SUPPLY	31	W	_	
7 BR		No. W	Wire	108	٨	SENSOR GROUND	33	В	_	
8 GR		41	L ACC POWER SUPPLY	109	D	PNP SWITCH	34	В	-	
\dashv		\dashv	ď	110	œ	ENGINE SPEED OUTPUT SIGNAL	35	٦		
10 P	-	\dashv	BR INTAKE SENSOR SIGNAL	112	>	SENSOR GROUND	36	۵		
		44	LG IN-VEHICLE SENSOR SIGNAL	113	۵	CAN COMMUNICATION LINE	37	œ	1	
		42	V AMBIENT SENSOR SIGNAL	114	_	CAN COMMUNICATION LINE	88	SB		
Connector No.	M66	+		117	>	DATA LINK CONNECTOR	43	۵	1	
Connector Name	LONIFIED METER AND A/C AMP.	+		121	ΓG	EVAP CANISTER VENT CONTROL VALVE	44	_	1	
	TI SOUTH MILE	+	SB BATTERY POWER SUPPLY	122	a. c	STOP LAMP SWITCH	42	> 8		
colliector 19be	1	000		22	٥	ECM GROUND	ş	9		
Œ		╀	LG BRAKE FLUID LEVEL SWITCH	125	02	POWER SUPPLY FOR ECM				
		╀	Ĺ	126	Æ	ASCD BRAKE SWITCH				
Ž E	13 0 0 0 0 1 1 1 1 1	H	GR INTAKE SENSOR GROUND	127	æ	ECM GROUND				
	9	09	W IN-VEHICLE SENSOR GROUND	128	В	ECM GROUND				
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		\dashv								
Terminal Color Of	r Of Signal Name [Specification]	69	P A/C LAN SIGNAL							
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	Connector Nume	
Connector Name Art Skill's SELECTOR Connector Type THIZPW-NH TAS 1 2 3 4 5 7 8 9 10 [1]	Terminal Color Of Signal Name [Spacefication] Nice of Nice	
Commetor Nuc. M123 Commetor Type TH40FC-NH	Terrinal Color Of Signal Name [Sacerlication] No. No.	
METER Connector No. M122 Connector Type THOTB-NH Connector Type THOTB-NH T	Terminal Color O	

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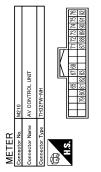
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JRNWD7401GB

Fail-safe

FAIL-SAFE

Combination meter performs fail-safe operation when unified meter and A/C amp. communication is malfunction.

Solution for communication error between the unified meter and A/C amp. and combination meter.

< ECU DIAGNOSIS INFORMATION >

	Function	Specifications						
Speedometer								
Tachometer		React to zero by augmending communication						
Fuel gauge		Reset to zero by suspending communication.						
Engine coolant temperatur	re gauge							
	Door open warning							
	Parking brake release warning	The display turns off by suspending communication.						
	Low tire pressure warning	The display turns on by suspending communication.						
	Fuel filler cap warning							
Information display	Instantaneous fuel warning	When reception time of an abnormal signal is 2 seconds or						
	Average fuel consumption	less, the last received datum is used for calculation to indicate the result.						
	Average vehicle speed	When reception time of an abnormal signal is more than two						
	Travel distance	seconds, the last result calculated during normal condition is indicated.						
Illumination control		When suspending communication, change to nighttime mode.						
Buzzer		The buzzer turns off by suspending communication.						
	ABS warning lamp							
	Brake warning lamp	The lamp turns on by suspending communication.						
	CRUISE warning lamp	The lamp turns on by suspending communication.						
	Malfunction indicator lamp							
	High beam indicator							
	Turn signal indicator lamp							
	Oil pressure warning lamp							
	A/T CHECK warning lamp							
Warning lamp/indicator lamp	VDC warning lamp							
I ⁻ -	VDC OFF indicator lamp							
	AWD warning lamp	The lamp turns off by suspending communication.						
	Low tire pressure warning lamp							
	Key warning lamp							
	AFS OFF indicator lamp							
	Master warning lamp							
	Tail lamp indicator lamp							
	Front fog lamp indicator lamp							

DTC Index

Refer to MWI-103, "DTC Index".

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< ECU DIAGNOSIS INFORMATION >

UNIFIED METER AND A/C AMP.

Reference Value

VALUES ON THE DIAGNOSIS TOOL

NOTE:

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

CONSULT MONITOR ITEM

Monitor Item		Condition	Value/Status			
SPEED METER [km/h]	Ignition switch ON	While driving	Equivalent to speedometer reading NOTE: 655.35 is displayed when the malfunction signal is received			
SPEED OUTPUT [km/h]	Ignition switch ON	While driving	Equivalent to speedometer reading NOTE: 655.35 is displayed when the malfunction signal is received			
ODO OUTPUT [km/h] or [mph]	Ignition switch ON	_	Equivalent to odometer reading in combination meter			
TACHO METER [rpm]	Ignition switch ON	While driving	Equivalent to tachometer reading NOTE: 8191.875 is displayed when the malfunction signal is received			
FUEL METER [lit.]	Ignition switch ON	_	Values according to fuel level			
W TEMP METER [°C]	Ignition switch ON	_	Values according to engine coolant temperature NOTE: 215 is displayed when the malfunction signal is input			
FUEL CAP W/L	Ignition switch	Fuel filler cap warning display ON	On			
FUEL CAP W/L	ON	Fuel filler cap warning display OFF	Off			
ABS W/L	Ignition switch	ABS warning lamp ON	On			
ABO W/L	ON	ABS warning lamp OFF	Off			
VDC/TCS IND	Ignition switch	VDC OFF indicator lamp ON	On			
156/166 1115	ON	VDC OFF indicator lamp OFF	Off			
SLIP IND	Ignition switch	VDC warning lamp ON	On			
	ON	VDC warning lamp OFF	Off			
BRAKE W/L	Ignition switch	Brake warning lamp ON	On			
	ON	Brake warning lamp OFF	Off			
DOOR W/L	Ignition switch	Door warning displayed	On			
	ON	Door warning not displayed	Off			
TRUNK/GLAS-H	Ignition switch	Trunk warning displayed	On			
	ON	Trunk warning not displayed	Off			
HI-BEAM IND	Ignition switch	Hi-beam indicator lamp ON	On			
	ON	Hi-beam indicator lamp OFF	Off			
TURN IND	Ignition switch	Turn indicator lamp ON	On			
	ON	Turn indicator lamp OFF	Off			
FR FOG IND	Ignition switch	Front fog lamp indicator lamp ON	On			
	ON	Front fog lamp indicator lamp OFF	Off			

Monitor Item		Condition	Value/Status	
RR FOG IND	Ignition switch ON	NOTE: This item is displayed, but cannot be monitored.	Off	- А
LICHTIND	Ignition switch	Tail lamp indicator lamp ON	On	В
LIGHT IND	ON	Tail lamp indicator lamp OFF	Off	_
OH MAI	Ignition switch	Oil pressure warning lamp ON	On	_
OIL W/L	ŎN	Oil pressure warning lamp OFF	Off	_ 0
	Ignition switch	Malfunction warning lamp ON	On	_
MIL	ŎN	Malfunction warning lamp OFF	Off	D
GLOW IND	Ignition switch ON	NOTE: This item is displayed, but cannot be monitored.	Off	E
C-ENG2 W/L	Ignition switch ON	NOTE: This item is displayed, but cannot be monitored.	Off	F
CDI IISE IND	Ignition switch	Cruise indicator displayed	On	- '
CRUISE IND	ON	Cruise indicator not displayed	Off	_
SET IND	Ignition switch	Set indicator lamp ON	On	G
SET IND	ON	Set indicator lamp OFF	Off	_
CRUISE W/L	Ignition switch	Cruise warning lamp ON	On	Ц
CRUISE W/L	ON	Cruise warning lamp OFF	Off	- 11
BA W/L	Ignition switch ON	NOTE: This item is displayed, but cannot be monitored.	Off	-
ATC/T-AMT W/L	Ignition switch	A/T check warning lamp ON	On	_
ATC/T-AWIT W/L	ON	A/T check warning lamp OFF	Off	J
4WD W/L	Ignition switch	AWD warning lamp ON	On	_
4VVD VV/L	ŎN	AWD warning lamp OFF	Off	_
4WD LOCK IND	Ignition switch ON	NOTE: This item is displayed, but cannot be monitored.	Off	K
	Ignition switch	Low-fuel warning displayed	On	L
FUEL W/L	ON	Low-fuel warning not displayed	Off	_
WASHER W/L	Ignition switch	Washer warning displayed	On	
WASHER W/L	ON	Washer warning not displayed	Off	- M
AIR PRES W/L	Ignition switch	Low tire pressure lamp ON	On	
AIR FRES W/L	ON	Low tire pressure lamp OFF	Off	MWI
KEY G/Y W/L	Ignition switch	Key warning lamp ON	On	
NLI G/I W/L	ON	Key warning lamp OFF	Off	_
AFS OFF IND	Ignition switch	AFS OFF indicator lamp ON	On	0
ALO OLI IND	ON	AFS OFF indicator lamp OFF	Off	_
4WAS/RAS W/L	Ignition switch ON	NOTE: This item is displayed, but cannot be monitored.	Off	Р
DDS W/L	Ignition switch ON	NOTE: This item is displayed, but cannot be monitored.	Off	

Monitor Item		Condition	Value/Status
LANE W/L	Ignition switch ON	NOTE: This item is displayed, but cannot be monitored.	Off
LDP IND	Ignition switch ON	NOTE: This item is displayed, but cannot be monitored.	Off
	Ignition switch ON	Engine start information display	B&P I
	Ignition switch ACC	Engine start information display	B&P N
	Ignition switch LOCK	Key ID warning display	ID NG
	Ignition switch LOCK	Steering lock information display	ROTAT
LCD	Ignition switch LOCK	P position warning display	SFT P
LCD	Ignition switch LOCK	Intelligent Key insert information display	INSRT
	Ignition switch LOCK	Intelligent Key low battery warning display	BATT
	Ignition switch ON	Take away warning display	NO KY
	Ignition switch LOCK	Key warning display	OUTKY
	Ignition switch ON	ACC warning display	LK WN
ACC TARGET	Ignition switch ON	NOTE: This item is displayed, but cannot be monitored.	Off
ACC DISTANCE	Ignition switch ON	NOTE: This item is displayed, but cannot be monitored.	Off
ACC OWN VHL	Ignition switch ON	NOTE: This item is displayed, but cannot be monitored.	Off
ACC SET SPEED	Ignition switch ON	NOTE: This item is displayed, but cannot be monitored.	Off
ACC UNIT	Ignition switch ON	NOTE: This item is displayed, but cannot be monitored.	Off
O/D OFF SW	Ignition switch ON	NOTE: This item is displayed, but cannot be monitored.	Off

Monitor Item		Condition	Value/Status	
		Shift position indicator P display	Р	
		Shift position indicator R display	R	
		Shift position indicator N display	N	
		Shift position indicator D display	D	
		Shift position indicator M1 display	M1	
SHIFT IND	Ignition switch ON	Shift position indicator M2 display	M2	
	ON	Shift position indicator M3 display	M3	
		Shift position indicator M4 display	M4	
		Shift position indicator M5 display	M5	
		Shift position indicator M6 display	M6	
		Shift position indicator M7 display	M7	
	Ignition switch	Snow mode switch ON	On	
AT S MODE SW	ON	Snow mode switch OFF	Off	
AT P MODE SW	Ignition switch	NOTE: This item is displayed, but cannot be moni-	Off	
	014	tored.		
M RANGE SW	Ignition switch	Selector lever manual mode position	On	
	ON	Other than the above	Off	
NM RANGE SW	Ignition switch	Selector lever manual mode position	Off	
WINTO HAGE OVV	ON	Other than the above	On	
AT SFT UP SW	Ignition switch	Selector lever + position	On	
AT SET OF SW	ON	Other than the above	Off	
AT SFT DWN SW	Ignition switch	Selector lever – position	On	
AT SEE DWIN SW	ON	Other than the above	Off	
ST SFT UP SW	Ignition switch ON	NOTE: This item is displayed, but cannot be monitored.	Off	
ST SFT DWN SW	Ignition switch ON	NOTE: This item is displayed, but cannot be monitored.	Off	
00115 5/5 010	Ignition switch	A/C compressor activation condition	On	
COMP F/B SIG	ŎN	A/C compressor deactivation condition	Off	
4WD LOCK SW	Ignition switch ON	NOTE: This item is displayed, but cannot be monitored.	Off	
	Ignition switch	Parking brake switch ON	On	
PKB SW	ON	Parking brake switch OFF	Off	Λ
	Ignition switch	Seat belt not fastened	On	
BUCKLE SW	ON	Seat belt fastened	Off	
	Ignition switch	Brake fluid level switch ON	On	
BRAKE OIL SW	ON	Brake fluid level switch OFF	Off	
DISTANCE [km]	Ignition switch ON	_	Possible driving distance calculated by unified meter and A/C amp.	
OUTSIDE TEMP [°C] or [°F]	Ignition switch ON	_	Equivalent to ambient temperature NOTE: This may not match the indicated value on the information display.	

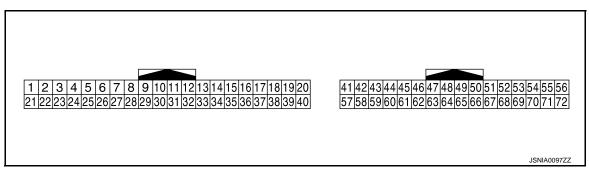
< ECU DIAGNOSIS INFORMATION >

Monitor Item		Condition	Value/Status
FUEL LOW SIG	Ignition switch	Low-fuel warning displayed	On
FUEL LOW SIG	ON	Low-fuel warning not displayed	Off
BUZZER	Ignition switch	Buzzer ON	On
DUZZER	ON	Buzzer OFF	Off
ASCD REQ SPD	Ignition switch ON	While driving	Same value as ASCD or speed limiter set vehicle speed
		ASCD and speed limiter system OFF	Off
		ASCD system ON	ASCD
ASCD STATUS	Ignition switch ON	ASCD set vehicle speed	CRUISE
		Speed limiter system ON	SL ON
		Speed limiter set vehicle speed	SL SET
ASCD SPD BLNK	Ignition switch	Set vehicle speed indicator blinking	On
ASOU SPU BLINK	ON	Set vehicle speed indicator not blinking	Off

NOTE:

Some items are not available according to vehicle specification.

TERMINAL LAYOUT



PHYSICAL VALUES

	nal No. color)	Description			Condition	Value
+	_	Signal name	Input/ Output		Condition	(Approx.)
4		·		Ignition	Brake pedal is depressed	12 V
(G)	Ground	Stop lamp switch signal	Input	switch OFF	Other than the above	0 V
5		Manual mode shift up sig-		Ignition	Selector lever UP operation	0 V
(L)	Ground	nal	Input	switch ON	Other than the above	12 V
7 (GR)	Ground	Communication signal (AMP. → METER)	Output	Ignition switch ON	_	(V) 6 4 2 0 + 1 ms SKIA3362E

	inal No. e color)	Description			Condition	Value
+	_	Signal name	Input/ Output		Condition	(Approx.)
8 (L)	Ground	Vehicle speed signal output (2-pulse)	Output	Ignition switch ON	Speedometer operated [When vehicle speed is ap- prox. 40 km/h (25 MPH)]	NOTE: The maximum voltage varies depending on the specification (destination unit).
9		Seat belt buckle switch sig-		Ignition	When seat belt is fastened	12 V
(SB)	Ground	nal (driver side)	Input	switch ON	When seat belt is not fas- tened	0 V
10	Ground	Manual mode signal	Input	Ignition switch	Selector lever DS position	0 V
(W)	2.50110			ON	Other than the above	12 V
11	Ground	Not manual mode signal	Input	Ignition switch	Selector lever DS position	12 V
(G)	Stourid	. 13t manda mode signal	трис	ON	Other than the above	0 V
14 (BR)	Ground	Communication signal (LCD → AMP.)	Input	Ignition switch ON	_	(V) 15 10 5 10 10 10 10 10 10 10 10 10 10 10 10 10
23 (Y)	Ground	A/T snow switch signal	Input	Ignition switch ON	Snow mode switch ON Snow mode switch OFF	12 V 0 V
25	Ground	Manual mode shift down	Input	Ignition switch	Selector lever down operation	0 V
(V)		signal	·	ON	Other than the above	12 V
27 (LG)	Ground	Communication signal (METER → AMP.)	Input	Ignition switch ON	_	(V) 6 4 2 0 **** 1ms SKIA3361E
28 (R)	Ground	Vehicle speed signal (8-pulse)	Output	Ignition switch ON	Speedometer operated [When vehicle speed is ap- prox. 40 km/h (25 MPH)]	NOTE: The maximum voltage varies depending on the specification (destination unit).

	nal No. color)	Description			Condition	Value
+	_	Signal name	Input/ Output		Condition	(Approx.)
					Parking brake ON	0 V
30 (V)	Ground	Parking brake switch signal	Input	Ignition switch ON	Parking brake OFF	(V) 8 4 0 10 ms JSNIA0007GB
34 (Y)	Ground	Communication signal (AMP. → LCD)	Output	Ignition switch ON	_	(V) 6 4 2 0 200 µs JSNIA0027GB
41 (L)	Ground	ACC power supply	Input	Ignition switch ACC	_	Battery voltage
42 (BR)	Ground	Fuel level sensor signal	Input	Ignition switch ON	_	(V) 4 3 2 1 0 E 1/4 1/2 3/4 F JSNIA0013GB
45 (V)	Ground	Ambient sensor signal	Input	_	_	(V) 4 3 2 1 0 -10 0 10 20 30 40 [°C] (14) (32) (50) (68) (86) (104) [°F] JSNIA0014GB
53 (W)	Ground	Ignition power supply	Input	Ignition switch ON	_	Battery voltage
54 (SB)	Ground	Battery power supply	Input	Ignition switch OFF	_	Battery voltage
55 (B)	Ground	Ground	_	Ignition switch ON	_	0 V
56 (L)	Ground	CAN-H	_	_	_	_

< ECU DIAGNOSIS INFORMATION >

	nal No. e color)	Description			Condition	Value
+	_	Signal name	Input/ Output		Condition	(Approx.)
57 (LG)	Ground	Brake fluid level switch signal	Input	Ignition switch ON	Brake fluid level is normal.	(V) 10 0 10 ms JSNIA0008GB
					The brake fluid level is low- er than the low level	0 V
58 (Y)	Ground	Fuel level sensor ground	_	Ignition switch ON	_	0 V
61 (B)	Ground	Ambient sensor ground	_	Ignition switch ON	_	0 V
71 (GR)	Ground	Ground	_	Ignition switch ON	_	0 V
72 (P)	Ground	CAN-L	_	_	_	_

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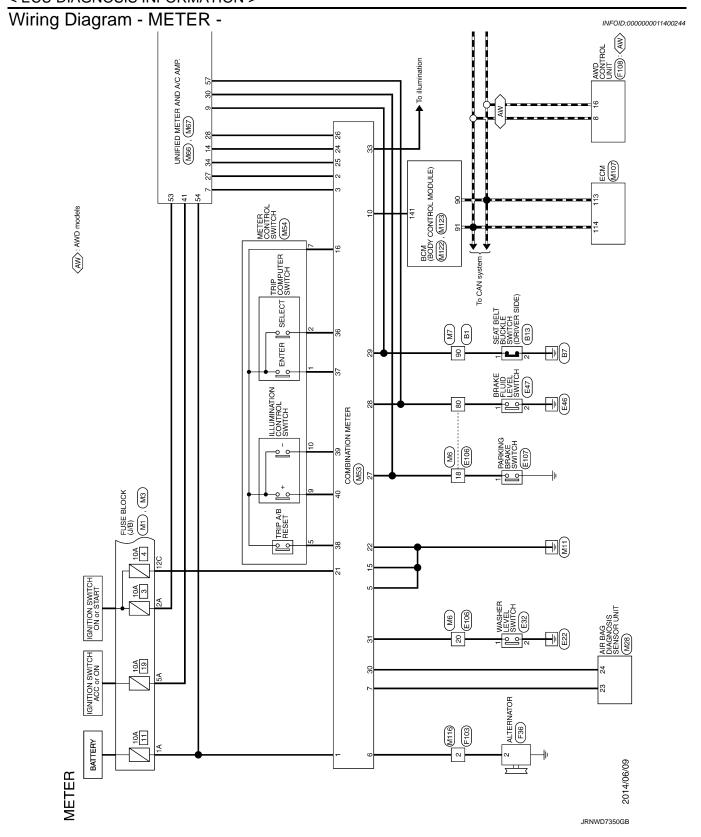
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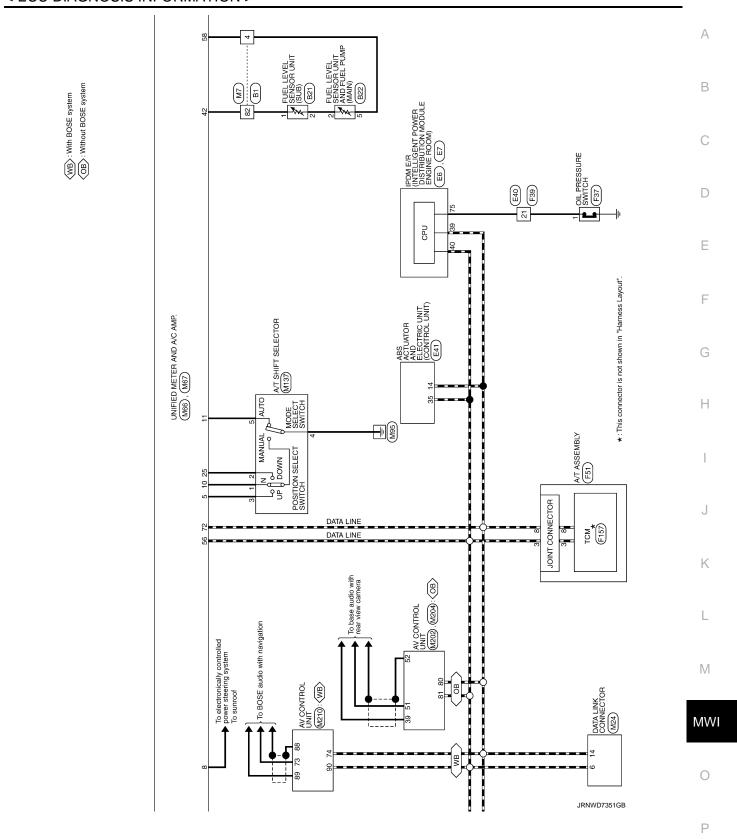
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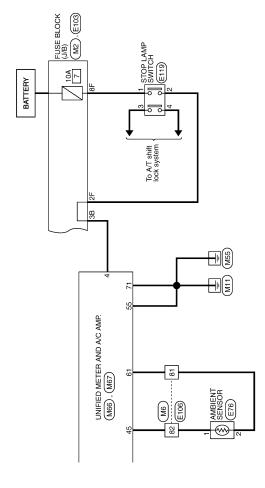
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ME	METER					
Conne	Connector No.	B1	74 L –	nal C	Connector No. E7	
Conne	Connector Name	WIRE TO WIRE			Connector Name PDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE BROINE PROM)	
	Occupant Time	TUODOM-CS12-TM4	m >	m 3	Т	
	and I she	7	+	┨	٦.	
	E S		2 ≫ ∝ 6	Connector No. B22	(1) (1) (1) (1) (1) (1) (1) (1) (1) (1)	
	1		Н	Connector Name FIEL LEVEL SENSOR LWT AND FIEL PUMP (MARY) Connector Type E05FGY-RS	44 51 11 11 1 1 80	
		8	92 BR – – – – – – – – – – – – – – – – – –			
Terminal No.	tal Color Of Wire	Of Signal Name [Specification]	Н	H.S.	Terminal Color Of Signal Name [Specification]	
[-	GR			(1 345)	48 L	
2	g	1	Connector No. B13		49 BG -	
e	- > - -		Connector Name SEAT BELT BUCKLE SWITCH (DRIVER SIDE)		51 Y	
9	- &	1	Connector Type A03FW	Terminal Color Of	╀	
00	*	,			Н	
6	97 2	1		0.0	56 BR -	
25	> %		H.S.	0 >	200	
26	╁	1		- > -	╁	
27	*	-	1	1	Н	
28	Н			-[Н	
31	\neg			Connector No. E6	75 SB -	
32	SB		I erminal Color Of Signal Name [Specification]	Connector Name ROOM)	76 Y 87	
38	┰	1 1	t	Connector Type THOSEM-NH	+	
35	: 18		2 B		1	
36	Н					
37	SHIELD	Q	- 1	v	Connector No. E32	
38	+	'	т	42 41 40 39	Connector Name WASHER LEVEL SWITCH	
39	- B		Connector Name FUEL LEVEL SENSOR UNIT (SUB)	46 45 44 43	Connector Type 202FBB	
14	╀		Connector Type E02FGY-RS	01 11 01 01	7	
42	SHELD	- Q	1			
43	Н	-		ler O	٤	
44	ŋ	1	v	Wire		
45	┰	-		39 - P		
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28	┞	-		9	Terminal Color Of	
59	Н	1		10		
71	BG	1		45 V -	1 LG -	
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Connector No. E103	Connector Name FUSE BLOCK (J/B)	Connector Type NS16FW-CS	H.S. [FF 4F 17] 12F 1F]	9F 8F	Terminal Color Of Signal Name [Specification]	+	Н		36	-		- 1		Connector Type TH80FW-CS16-TM4	₹.	E 20 20 20 20 20 20 20 20 20 20 20 20 20					lar		- CE	50 00	╀	- ^ L	- B	+	12 R	14 GB	H	Н	+	18 BG =
Connector No. E47	Connector Name BRAKE FLUID LEVEL SWITCH	Connector Type YV02FGY	H.S.	- -	Terminal Color Of Signal Name [Specification]	+	2 B -	[- 1	Connector Name AMBIENT SENSOR	Connector Type RS02FB	€.						lal	1	2 - 2														
42 LG	\vdash	H	47 W 48 BR 60 C	S S S S	Connector No. E41	Connector Name ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)	Connector Type BAA42FB-AH24-LH	香	HS	(18) (19) (19) (19) (19) (19) (19) (19) (19			lar	No. Wire		3 BG LIBVR	9		6 BG DP RL		10 W DS FR	>	a :	25 Y BUS-L	GR	5	д 3	SB	31 R VDC OFF SW	1 00				
MEIEK Connector No. 1E40	e e	Connector Type SAA36MB-RS8-SHZ8	1 2 9 10 ft 12 H.S. H.S. 13 14 15 16	4	Terminal Color Of Signal Name [Specification]	+	2 SHIELD -	3 L/B -	5 BR	- M 8	\dashv	- 10 - 10	H	13 L –	+	10 86	╁	Н	20 B -	22 W	H	4	+	2/ uk	╀	30 R	31 BR –	+	33 G = -	T°	Ħ	Н	+	41 W

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ŀ	21 BR =	22 6	+	57 57 57 57 57 57 57 57 57 57 57 57 57 5	+	2/ GR	- PK	+	30 R	31 P	- N	+	SB	34 BR – [AWD models]	c	0	0	ż	38 W	4	40 G -	41 B -	42 GR -	43 R -	45 0 -	46 SHIELD -	47 W/L -	H	- T/O 4	H	H	H	1		Connector No. F51		Connector Name A/T ASSEMBLY	Connector Type RK10FG-DGY									Terminal Color Of	Wire	>	- 4	-	+	┨														$\left\{ \right.$	\dashv	\dashv	\dashv	4	4	\dashv	4	4	- ^ *	_	_	4	4	4	4	\dashv	4	\dashv	$^{+}$	$^{+}$	$^{+}$	4	\dashv	_	_	L	L	L	L	^^	-	,							r	α	c			-		· ·	>											
		Connector Name OIL PRESSURE SWITCH		Connector Type EUTrut-RS-AR	₫.		XX			•				Terminal Color Of			- DK			Connector No. F39	Ownerson Money LO WIDE	Collicator Marile Mark 10 Mark	Connector Type SAA36FB-RS8-SHZ8	,	12 11 10 9 2 1	16 15 14 13		34 35 35 35 35 35 35 35 35 35 35 35 35 35	[43] 42[41] 40[38[38[37] 38[38]	[52] 51] 51] 43] 43] 43] 44] 44] 44] 44] 44] 44] 44		Terminal Color Of	No. Wire Signal Name [Specification]	-	2 SHELD -	3 1/8	SHIELD		- 2	8 W	- M 6		_	12 P -	13 L -	14 LG -		H	>			20 00	╛														1	┙	┙	┙	_	_	┙			- 0 0	_						┙	┙	┙	┙	┙	┙	┙	┙	┙	┙	┙	┙	┙	┙	┙	┙	┙			L	L	L	L		,		_	<u> </u>	<u> </u>	-		5	2		<	ŀ	ł	_	<u>_</u>	>	>		0
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1	Connec	Connector No.	F108	10	10 SHIELD	GROUND	Connector No.	lo. M/3
5	Connec	Connector Name	AWD CONTROL UNIT				Connector Name	lame FUSE BLOCK (J/B)
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-	Connec	Connector Type	I H16FW=NH	Connector No.	Τ	MI	Connector Type	ype NS12FW-CS
GR	ą£	•		Connecto	Connector Name	FUSE BLOCK (J/B)	₫.	
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Connector Name WIRE TO WIRE			9 10 11 13 15 16	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \		34 7 24 14		5 50 50 51
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Connector Type TR30FW-NSTU	F	20.1				8A /A 0A 5A 4A	50	
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	7	g	IGN	1.4	>	1	9	- 88
	∞	_	CAN-H	2A	g	1	70	- 8
	6	0	AWD SOL BAT	3A	_		8C	- A
Color Of Since Manager	10	В	GROUND	44	۵.		96	BG -
Wire Signal Name Lopecincation	Ξ	в	GROUND	5A	_			
- 5	13	PI	FLUID TEMP (+)	6A	>			
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	16	Ь	CAN-L	8A	_	-	Connector Name	wille TO WIRE
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-					ſ		Connector Type	ype TH80MW-CS16-TM4
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- 0	Connec	Sonnector Name	WOL	Connecto	Connector Name	FLISE BLOCK (J/B)	唐	
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88	Connec	Connector Type	SP10FG	Connector Type	or Type	NS10FW-CS		2 (d) 2 (d) 3 (d) 2 (d) 3 (d) 4 (d) 4 (d) 6 (d) 7 (d) 8 (d)
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- 5	-	SHIELD	VIGN	18	SB	-	7	
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	9	SHIELD	CAN-H	48	g	_	11	۰ -
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< ECU DIAGNOSIS INFORMATION >

METER Mete	ı	22 SAUCLU	חופ	+	2	-	52 G	H	- a	BR	- L	- d 09	$\left\{ \right.$			Connector No M53	Τ	Compared Name COMPINATION METER		Connector Type SAR40FW	add I abo	Q)	ATT)			01 01 01 01 01 01 01 01 01 01 01 01 01 0	[2] 24 [24 [25] [25] [25] [2] [2] [23] [23] [23] [23] [23] [23]					No. Wire Signal Name [Specification]	> Iddits dawed sattle	\ \ \	+	_		6 W ALTERNATOR SIGNAL	<u> </u>	W OF CHAIN	= 0	ю :	BR METE	GR	8	В	L	8	BB COMMUNICAT	5 >	<i>></i>	В	27 P PARKING BRAKE SWITCH SIGNAL	SB	PISFAT		G SEAT	31 L WASHER LEVEL SWITCH SIGNAL	œ	36 I G SELECT SMITCH SIGNAL
The control of the				Time	lype	4			71		7 5 7	4 0 0 /				Color Of	5 1	Wire	97 -	a	20 (1	m	7		c	8 8	95	†	┨			Γ	Ι		Т	٦				8 9 7 6 🗙 2 5 4		23	52 60 50	00 00 00		Color Of	Wire	- 51			- P	4 Y	× 2	٨	>	- 3	*	>	as.	3 >
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METER										
37 Y ENTER SWITCH SIGNAL	10	W	MANUAL MODE SIGNAL	Connector No.		M107	Connector No.		M116	
38 G TRIP A/B RESET SWITCH SIGNAL	= :	5 E	NON-MANUAL MODE SIGNAL	Connector Name		ECM	Connector Name		WIRE TO WIRE	
1 G	<u>*</u> g	<u>ځ</u> >	A/T SNOW SWITCH SIGNAL	Connector Type	Т	BH94EGV-B78-B-I H-7	Connector Tune	Т	TK36MW-NS10	
200	2 2	- ;	MANUAL MODE SUITT DOMA STORY	COLLEGE	٦	2 II V 0 7 II V	200	7	COOMY 15010	
	27	> 2	COMMUNICATION SIGNAL (METER-AMP.)	E			E			
Connector No. M54	28	æ	VEHICLE SPEED SIGNAL (8-PULSE)	1		-	Ę			
Connector Name METER CONTROL SWITCH	30	>	PARKING BRAKE SWITCH SIGNAL	5		123	2	_		
Т	34	> a	COMMUNICATION SIGNAL (AMPLCD)			126 122 114 110 106 100 98			5 7 8 9 10 (2)22(23/23/25/25/25) (39/29/14/24/49/29)	
Connector Type THIZTW-NH	99	1	BLOWER MOTOR CONTROL SIGNAL							
	Connector No.	or No.	M67	Terminal	Color Of		Terminal	Ferminal Color Of		
13.	Connect	Connector Name	INITIED METER AND 4/C AMP	No.	Wire	Signal Name [Specification]	No.	Wire	Signal Name [Specification]	
F				97	ď	ACCELERATOR PEDAL POSITION SENSOR 1	2	٨	1	
7 8 9 10	Connect	Connector Type	TH32FW-NH	98	۵.	ACCELERATOR PEDAL POSITION SENSOR 2	3	BG	_	
	þ			66	_	SENSOR POWER SUPPLY	4	а	1	
	B			100	>	SENSOR GROUND	ß		1	
<u></u>	Ę			101	SB	ASCD STEERING SWITCH	6	œ	1	
No. Wire	¥	9	47 42 43 44 45 46	102	57	EVAP CONTROL SYSTEM PRESSURE SENSOR	10	œ	ı	
			u	103	GR	SENSOR POWER SUPPLY	19	BG	1	
2 LG -			00	104	^	SENSOR GROUND	20	>	-	
3 B				105	۰	REFRIGERANT PRESSURE SENSOR	28	80	1	
4 R				106	W	FUEL TANK TEMPERATURE SENSOR	59	97	-	
- g	Terminal	I Color Of	Contract of the second	107	S.	SENSOR POWER SUPPLY	31	×	ı	
7 BR –	No.	Wire	olgnar ivame [opecification]	108	>	SENSOR GROUND	33	œ	I	
8 GR	14	L	ACC POWER SUPPLY	109	5	PNP SWITCH	34	8	1	
- BG 6	45	BR	FUEL LEVEL SENSOR SIGNAL	110	œ	ENGINE SPEED OUTPUT SIGNAL	35	7	ı	
10 P	43	BR	INTAKE SENSOR SIGNAL	112	>	SENSOR GROUND	36	۵	ı	
	44	97	IN-VEHICLE SENSOR SIGNAL	113	Ь	CAN COMMUNICATION LINE	37	н	-	
	45	>	AMBIENT SENSOR SIGNAL	114	_	CAN COMMUNICATION LINE	38	SB	1	
Connector No. M66	46	>	SUNLOAD SENSOR SIGNAL	117	>	DATA LINK CONNECTOR	43	а	-	
Connector Name IINIFIED METER AND A / C AMP	23	۸	IGNITION POWER SUPPLY	121	FG	EVAP CANISTER VENT CONTROL VALVE	44	L		
7	54	SB	BATTERY POWER SUPPLY	122	۵	STOP LAMP SWITCH	45	>		
Connector Type TH40FW-NH	22	8	GROUND	123	В	ECM GROUND	46	SB		
¢	99	_	CAN-H	124	В	ECM GROUND				
B	22	ΓC	BRAKE FLUID LEVEL SWITCH	125	ď	POWER SUPPLY FOR ECM				
	28	٨	FUEL LEVEL SENSOR GROUND	126	BR	ASCD BRAKE SWITCH				
11 11 11 11 11 11 11 11 11 11 11 11 11	29	GR	INTAKE SENSOR GROUND	127	8	ECM GROUND				
2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	09	W	IN-VEHICLE SENSOR GROUND	128	В	ECM GROUND				
	19	В	AMBIENT SENSOR GROUND							
	62	SB	SUNLOAD SENSOR GROUND							
	65	BG	ECV SIGNAL							
lal	69	Ь	A/C LAN SIGNAL							
No. Wire	70	œ	EACH DOOR MOTOR POWER SUPPLY							
4 G STOP LAMP SWITCH SIGNAL	11	g	GROUND							
\dashv	72	۵	CAN-L							
7 GR COMMUNICATION SIGNAL (AMPMETER)										
+										
9 SB SEAT BELT BUCKLE SWITCH SIGNAL (DRIVER SIDE)										

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46 Y COMPOSITE IMAGE GIAD	Connector Nume AV CONTROL UNIT	
Connector No. M137 Connector Name Art Sulf7 SELECTOR Connector Type TH12PV-N41 TAS 1 2 3 4 5 7 8 9 10 [1]	Terminal Color Of New Signal Name [Specification] New 1	
Connector No. M123 Connector Name BGM (BODY CONTROL MODULE) Connector Type TH40FG-NH HS TEST TEST TEST TEST TEST TEST TEST TE	Terminal Color Of Signal Name [Specification] New Wave Wave OPTICAL SINSOR 118 SB STOP LAMP SW 1 118 SB STOP LAMP SW 1 118 SB STOP LAMP SW 1 1 1 1 1 1 1 1 1	
METER Connector Name BOM (BODY CONTROL MODULE) Connector Type TH407B-NH Connector Type TH407B-NH MS PIN BIN BIN BIN BIN BIN BIN BIN BIN BIN B	Terminal Color Of Signal Name [Specification] 12	

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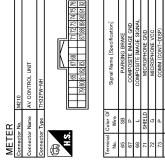
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Signal Name (Specification) PARRIANGE BRANCE COMPOSITE MAGE GRUD G	Color Of National Color Of N
AV COMM (H)	BS :
CAN-H	L
COMM (DISP-CONT)	L
SHIELD	SHIELD
MICROPHONE SIGNAL	R
SHIELD	SHIELD
VEHICLE SPEED (8-PULSE)	В
REVERSE	BG
IGNITION	9
ILLUMINATION	٦
AV COMM (L)	LG
AV COMM (L)	LG
CAN-L	Р
COMM (CONT-DISP)	Ь
MICROPHONE VCC	g
MICROPHONE GND	SHIELD
COMPOSITE IMAGE SIGNAL	٦
COMPOSITE IMAGE GND	Ь
PARKING BRAKE	SB
Signal Name [Specification]	

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Fail-safe

FAIL-SAFE

Combination meter performs fail-safe operation when unified meter and A/C amp. communication is malfunction.

Solution for communication error between the unified meter and A/C amp. and combination meter.

< ECU DIAGNOSIS INFORMATION >

	Function	Specifications		
Speedometer				
Tachometer		Boots and the second second		
Fuel gauge		Reset to zero by suspending communication.		
Engine coolant temperatur	re gauge			
	Door open warning			
	Parking brake release warning	The display turns off by suspending communication.		
	Low tire pressure warning	— The display turns on by suspending communication.		
	Fuel filler cap warning			
Information display	Instantaneous fuel warning	When reception time of an abnormal signal is 2 seconds or		
	Average fuel consumption	less, the last received datum is used for calculation to indicate the result.		
	Average vehicle speed	When reception time of an abnormal signal is more than two		
	Travel distance	seconds, the last result calculated during normal condition is indicated.		
Illumination control		When suspending communication, change to nighttime mode.		
Buzzer		The buzzer turns off by suspending communication.		
	ABS warning lamp			
	Brake warning lamp	The lamp turns on by suspending communication.		
	CRUISE warning lamp			
	Malfunction indicator lamp			
	High beam indicator			
	Turn signal indicator lamp			
	Oil pressure warning lamp			
	A/T CHECK warning lamp			
Warning lamp/indicator lamp	VDC warning lamp			
·~···b	VDC OFF indicator lamp			
	AWD warning lamp	The lamp turns off by suspending communication.		
	Low tire pressure warning lamp			
	Key warning lamp			
	AFS OFF indicator lamp			
	Master warning lamp			
	Tail lamp indicator lamp			
	Front fog lamp indicator lamp			

DTC Index

Display contents of CON- SULT	Time	Diagnostic item is detected when	Refer to
CAN COMM CIRCUIT [U1000]	CRNT, 1 - 39	When unified meter and A/C amp. is not transmitting or receiving CAN communication signal for 2 seconds or more.	MWI-42, "Diagnosis Procedure"
CONTROL UNIT (CAN) [U1010]	CRNT, 1 - 39	When detecting error during the initial diagnosis of CAN controller of unified meter and A/C amp.	MWI-43, "Diagnosis Procedure"
COMM ERROR 1 [B2201]	CRNT, 1 - 39	If a communication error is present in the communication line between unified meter and A/C amp. and combination meter for 2 seconds or more.	MWI-44, "Diagnosis Procedure"

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Display contents of CON- SULT	Time	Diagnostic item is detected when	Refer to
COMM ERROR 2 [B2202]	CRNT, 1 - 39	If a communication error is present in the communication line between unified meter and A/C amp. and combination meter for 2 seconds or more.	MWI-46, "Diagnosis Procedure"
VEHICLE SPEED [B2205]	CRNT, 1 - 39	The abnormal vehicle speed signal is input from ABS actuator and electric unit (control unit) for 2 seconds or more.	MWI-48, "Diagnosis Procedure"
ENGINE SPEED [B2267]	CRNT, 1 - 39	If ECM continuously transmits abnormal engine speed signals for 2 seconds or more.	MWI-49, "Diagnosis Procedure"
WATER TEMP [B2268]	CRNT, 1 - 39	If ECM continuously transmits abnormal engine coolant temperature signals for 60 seconds or more.	MWI-50, "Diagnosis Procedure"

< ECU DIAGNOSIS INFORMATION >

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

Reference Value

VALUES ON THE DIAGNOSIS TOOL

NOTE:

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

Monitor Item	(Condition	Value/Status		
RAD FAN REQ	Engine idle speed	Changes depending on engine coolant temperature, air conditioner operation status, vehicle speed, etc.	0 - 100 %		
		A/C switch OFF	Off		
AC COMP REQ	Engine running	A/C switch ON (Compressor is operating)	On		
TAIL OCLD DEC	Lighting switch OFF	Off			
TAIL&CLR REQ	Lighting switch 1ST, 2ND, HI or A	On			
LII LO DEO	Lighting switch OFF		Off		
HL LO REQ	Lighting switch 2ND HI or AUTO	On			
III III DEO	Lighting switch OFF		Off		
HL HI REQ	Lighting switch HI	Lighting switch HI			
ED FOC DEC	Lighting switch 2ND or	Front fog lamp switch OFF	Off		
FR FOG REQ	AUTO (Light is illuminated)	Front fog lamp switch ON	On		
		Front wiper switch OFF	Stop		
ED MID DEO	Ignition switch ON	Front wiper switch INT	1LOW		
FR WIP REQ		Front wiper switch LO	Low		
		Front wiper switch HI	Hi		
		Front wiper stop position	STOP P		
WIP AUTO STOP	Ignition switch ON	Any position other than front wiper stop position	ACT P		
		Front wiper operates normally	Off		
WIP PROT	Ignition switch ON	Front wiper stops at fail-safe operation	BLOCK		
ION DIVA DEO	Ignition switch OFF or ACC	Off			
IGN RLY1 -REQ	Ignition switch ON	On			
ION DLV	Ignition switch OFF or ACC	Off			
IGN RLY	Ignition switch ON	On			
PUSH SW	Release the push-button ignition	Off			
FUSH SW	Press the push-button ignition sv	On			
INTER/NP SW	Ignition switch ON	Selector lever in any position other than P or N	Off		
	Ignition switch ON	On			
ST RLY CONT	Ignition switch ON	Off			
STRET CONT	At engine cranking	On			
IHBT RLY -REQ	Ignition switch ON		Off		
וווטו ערני -עבע	At engine cranking	On			

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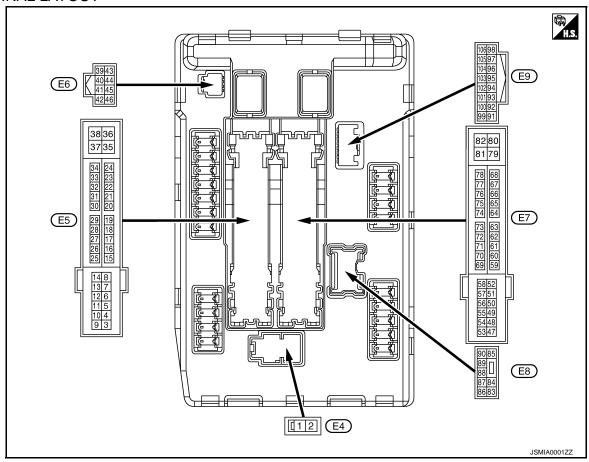
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Monitor Item		Value/Status				
	Ignition switch ON	Off				
	At engine cranking		INHI ON \rightarrow ST ON			
ST/INHI RLY	The status of starter relay or stathe battery voltage malfunction starter control relay is OFF	UNKWN				
DETENT SW	 Press the selector button with selector lever in P position Selector lever in any position other than P 		Off			
	Release the selector button wi	On				
S/L RLY -REQ	NOTE: The item is indicated, but not n	nonitored.	Off			
S/L STATE	NOTE: The item is indicated, but not n	nonitored.	UNLOCK			
DTRL REQ	NOTE: The item is indicated, but not not not not not not not not not no	nonitored.	Off			
OIL P SW	Ignition switch OFF, ACC or er	Open				
OIL P SW	Ignition switch ON	Close				
HOOD SW	Close the hood		Off			
HOOD SW	Open the hood		On			
HL WASHER REQ	NOTE: The item is indicated, but not not not not not not not not not no	Off				
	Not operation	Off				
THFT HRN REQ	Panic alarm is activated Horn is activated with VEHIC TEM	On				
HORN CHIRP	Not operating	Off				
HUKIN UHIKP	Door locking with Intelligent Ke	Door locking with Intelligent Key (horn chirp mode)				
CRNRNG LMP REQ	NOTE: The item is indicated, but not n	ut not monitored.				

< ECU DIAGNOSIS INFORMATION >

TERMINAL LAYOUT



PHYSICAL VALUES

	nal No.	Description		Condition		Value
(Wire color)		Signal name	Input/ Output			Value (Approx.)
1 (W)	Ground	Battery power supply	Input	Ignition switch C	DFF	Battery voltage
2 (L)	Ground	Battery power supply	Input	Ignition switch OFF		Battery voltage
4	Craund	Front win or I O	0	Ignition switch	Front wiper switch OFF	0 V
(V)	Ground	Front wiper LO	Output	ON	Front wiper switch LO	Battery voltage
5	5 (L) Ground Front wiper HI	Output	Output Ignition switch	Front wiper switch OFF	0 V	
(L)		Front wiper ni	Output	ON	Front wiper switch HI	Battery voltage
7	Craund	Tail, license plate	Outrot	Output Ignition switch	Lighting switch OFF	0 V
(P)	Ground	lamps & interior lamps	Output	ON	Lighting switch 1ST	Battery voltage
12 (B/W)	Ground	Ground	_	Ignition switch ON		0 V
13	ing the ignition s		second or more after turn- switch ON	0 V		
(Y)	Ground	Fuel pump power sup- ply	Output	Approximately ignition switchEngine running		Battery voltage
16				Ignition switch	Front wiper stop position	0 V
(LG)	Ground	Front wiper auto stop	Input	ON	Any position other than front wiper stop position	Battery voltage

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Terminal No. (Wire color)		Description				Value
+ (VVire	e color)	Signal name	Input/ Output		Condition	(Approx.)
19	Ground	Ignition relay power	Output	Ignition switch OFF		0 V
(R)	Ground	supply	Output	Ignition switch ON		Battery voltage
25	Ground	Ignition relay power	Output	Ignition switch OFF		0 V
(G)	Cround	supply	Output	Ignition switch C	N	Battery voltage
27	Ground	Ignition relay monitor	Input	Ignition switch C	OFF or ACC	Battery voltage
(BG)	0.00	igililion rollay illorilion		Ignition switch C	DN	0 V
28	Ground	Push-button ignition	Input	•	button ignition switch	0 V
(L)		switch			sh-button ignition switch	Battery voltage
30 (GR)	Ground	Starter relay control	Input	N (Ignition switc	,	0 V
				Selector lever P or N (Ignition switch ON)		Battery voltage
36 (G)	Ground	Battery power supply	Input	Ignition switch OFF		Battery voltage
39 (P)	_	CAN-L	Input/ Output		_	_
40 (L)	_	CAN-H	Input/ Output		_	_
41 (B/W)	Ground	Ground	_	Ignition switch C	DN	0 V
42	Ground	Cooling fan relay con-	Input	Ignition switch C	OFF or ACC	0 V
(GR)	Ground	trol	при	Ignition switch C	ON	0.7 V
43 (G)	Ground	A/T shift selector (Detention switch)	Input	Ignition switch	Press the selector button (selector lever P) Selector lever in any position other than P	Battery voltage
					Release the selector but- ton (selector lever P)	0 V
44	0	Ham relevine start		The horn is dead	ctivated	Battery voltage
(LG)	Ground	Horn relay control	Input	The horn is activ	vated	0 V
45	Ground	Anti theft horn relay	Innut	The horn is dead	ctivated	Battery voltage
(V)	Ground	control	Input	The horn is active	vated	0 V
				Selector lever in any position other than P or N (Ignition switch ON)		0 V
46 (SB)	Ground	Starter relay control	Input	Selector lever P or N (Ignition switch ON)		Battery voltage
(30)				Release the clutch pedal		0 V
				Depress the clut	tch pedal	Battery voltage
					A/C switch OFF	0 V
48 (L)	Ground	A/C relay power supply	Output	Engine running	A/C switch ON (A/C compressor is operating)	Battery voltage
40				Ignition switch C (More than a few tion switch OFF)	v seconds after turning igni-	0 V
49 (BG)	Ground	ECM relay power sup- ply	Output	Ignition switch ON Ignition switch OFF (For a few seconds after turning ignition switch OFF)		Battery voltage

< ECU DIAGNOSIS INFORMATION >

	inal No.	Description				Value
+	e color)	Signal name	Input/ Output		Condition	(Approx.)
51	0	Ignition relay power	0	Ignition switch C)FF	0 V
(Y)	Ground	supply	Output	Ignition switch C	DN .	Battery voltage
5 2		ECM relev power sup		Ignition switch C (More than a fev tion switch OFF)	v seconds after turning igni-	0 V
53 (W) Ground		ECM relay power sup- ply	Output	 Ignition switch Ignition switch (For a few sec switch OFF) 		Battery voltage
<i>E</i> 4				Ignition switch C (More than a fev tion switch OFF)	v seconds after turning igni-	0 V
54 (P)	Ground	Throttle control motor relay power supply	Output	 Ignition switch Ignition switch (For a few sec switch OFF) 		Battery voltage
55 (SB)	Ground	ECM power supply	Output	Ignition switch OFF		Battery voltage
56	Ground	Ignition relay power	Output	Ignition switch C)FF	0 V
(BR)	Giodila	supply			N	Battery voltage
57	Ground	Ignition relay power	Output	Ignition switch OFF		0 V
(G)	Giodila	supply	Output	Ignition switch ON		Battery voltage
58	Ground	Ignition relay power	Output	Ignition switch C)FF	0 V
(GR)	Giodila	supply	Output	Ignition switch C	N	Battery voltage
69				Ignition switch C (More than a few tion switch OFF)	v seconds after turning igni-	Battery voltage
(BR)	Ground	ECM relay control	Output	 Ignition switch ON Ignition switch OFF (For a few seconds after turning ignition switch OFF) 		0 - 1.5 V
						0 -1.0 V
70 (BG)	Ground	Throttle control motor relay control	Output			Battery voltage
						0 V
				Ignition switch C		0 - 1.0 V
74 (G)	Ground	Ignition relay power supply	Output	Ignition switch C		0 V
(6)		ου μμιγ		Ignition switch C		Battery voltage
75 (SB)	Ground	Oil pressure switch	Input	Ignition switch	Engine stopped	0 V
(SB)			•	ON	Engine running	Battery voltage

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< ECU DIAGNOSIS INFORMATION >

	inal No.	Description				Value
+	e color)	Signal name	Input/ Output		Condition	(Approx.)
				Ignition switch ON 40% is set on "ACTIVE TEST", "ALTERNATOR DUTY" of "ENGINE" 80% is set on "ACTIVE TEST", "ALTERNATOR DUTY" of "ENGINE"		(V) 6 4 2 0 → 2ms JPMIA0001GB 6.3 V
76 (Y)	Ground	Power generation command signal	Output			(V) 6 4 2 0 → 2ms JPMIA0002GB 3.8 V
						(V) 6 4 2 0 2 ms JPMIA0003GB
77 (R)	Ground	Fuel pump relay con-	Output	 Approximately 1 second after turning the ignition switch ON Engine running 		0 - 1.0 V
(K)		lioi		Approximately 1 ing the ignition s	second or more after turn- switch ON	Battery voltage
80 (W)	Ground	Starter motor	Output	At engine crank	ing	Battery voltage
83 (R)	Ground	Headlamp LO (RH)	Output	Ignition switch ON	Lighting switch OFF Lighting switch 2ND	0 V Battery voltage
84	Ground	Headlamp LO (LH)	Output	Ignition switch	Lighting switch OFF	0 V
(V)				ON	Lighting switch 2ND Front fog lamp switch OFF	Battery voltage 0 V
86 (W)	Ground	Front fog lamp (RH)	Output	Lighting switch 2ND	Front fog lamp switch ON	Battery voltage
87 (L)	Ground	Front fog lamp (LH)	Output	Lighting switch 2ND	Front fog lamp switch OFF	0 V
88 (G)	Ground	Washer pump power supply	Output	Ignition switch ON		Battery voltage Battery voltage
					Lighting switch OFF	0 V
89 (BR)	Ground	Headlamp HI (RH)	Output	Ignition switch ON	Lighting switch HI Lighting switch PASS	Battery voltage
90	Ground	Headlamp HI (LH)	Output	Ignition switch	Lighting switch OFF • Lighting switch HI	0 V
(P)		Out		ON	Lighting switch PASS	Battery voltage

< ECU DIAGNOSIS INFORMATION >

	inal No.	Description		Condition		Value (Approx.)
(Wire color)		Signal name	Input/ Output			
91	Ground	Parking Jama (PU)	Output	Ignition switch	Lighting switch OFF	0 V
(G)	Ground	Parking lamp (RH)	Output	ON	Lighting switch 1ST	Battery voltage
92	Ground	Darking Jamp /LU)	Ignition switch		Lighting switch OFF	0 V
(BG)	Ground	Parking lamp (LH)	Output	ON	Lighting switch 1ST	Battery voltage
97 (V)	Ground	Cooling fan control	Output	Engine idling		0 - 5 V
104	Ground	Hood switch	Input	Close the hood		Battery voltage
(LG)	Giodila	d Hood switch Input		Open the hood		0 V

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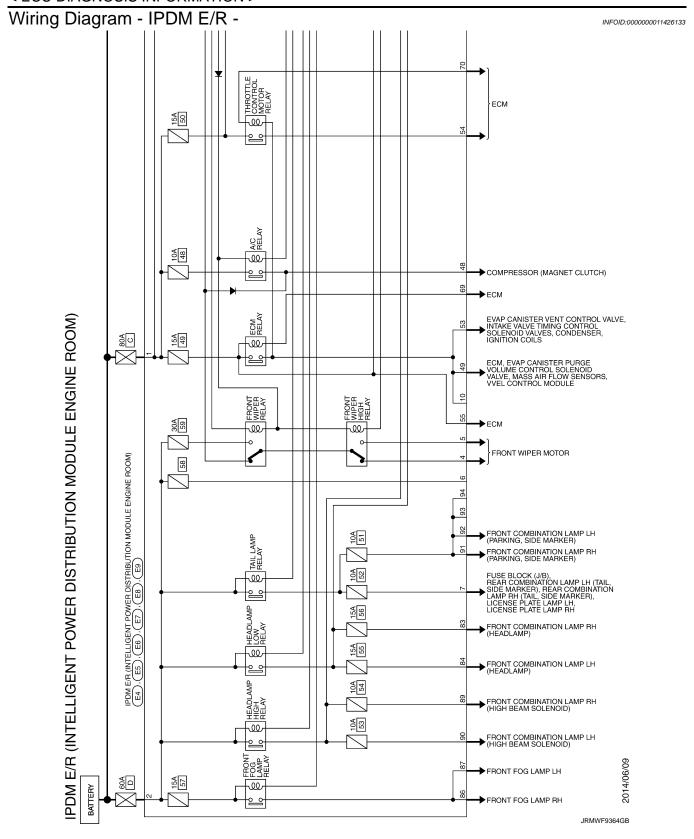
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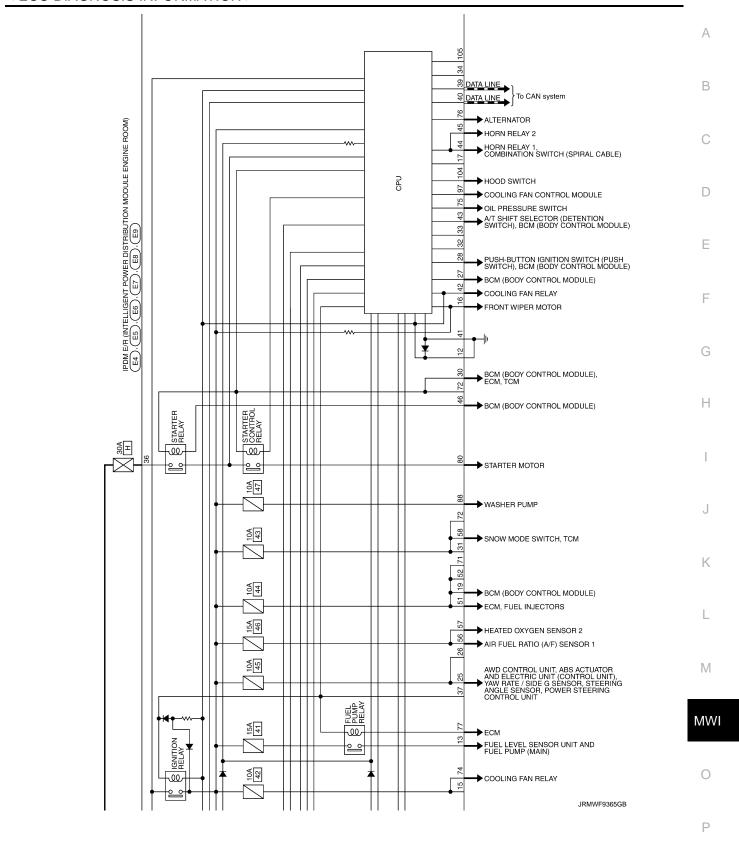
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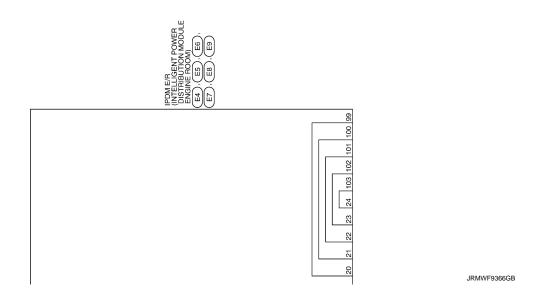
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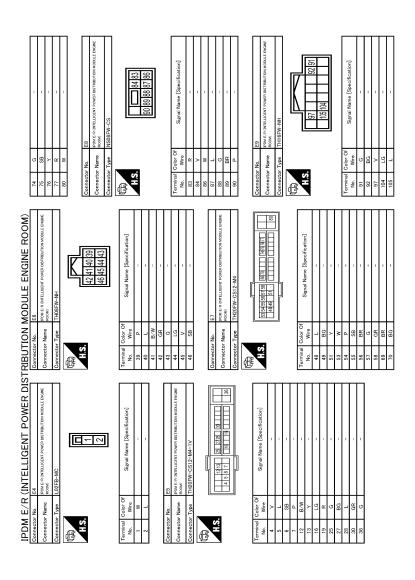
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Fail-safe

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

< ECU DIAGNOSIS INFORMATION >

Control part	Fail-safe operation	
 Outputs the pulse duty signal (PWM signal) 100% when the ignition switch is ON Outputs the pulse duty signal (PWM signal) 0% when the ignition switch is tur 		
A/C compressor	A/C relay OFF	
Alternator	Outputs the power generation command signal (PWM signal) 0%	

If No CAN Communication Is Available With BCM

Control part	Fail-safe 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 relay OFF
Parking lampsSide maker lampLicense plate lampsIlluminationsTail 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.
Horn	Horn relay OFF
Ignition relay	The status just before activation of fail-safe is maintained.
Starter motor	Starter control 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.

Voltage	judgment			
Ignition relay contact side	Ignition relay excitation coil side	IPDM E/R judgment	Operation	
ON	ON	Ignition relay ON normal	_	
OFF	OFF	Ignition relay OFF normal	_	
ON	OFF	Ignition relay ON stuck	Detects DTC "B2098: IGN RELAY ON CIRC" Turns ON the tail lamp relay for 10 minutes	
OFF	ON	Ignition relay OFF stuck	Detects DTC "B2099: IGN RELAY OFF CIRC"	

FRONT WIPER CONTROL

IPDM E/R detects front wiper stop position by a front wiper stop position signal.

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

Ignition switch	Front wiper switch	Front wiper stop position signal	
ON	OFF	The front wiper stop position signal (stop position) cannot be input for 10 seconds.	
	ON	The front wiper stop position 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.

< ECU DIAGNOSIS INFORMATION >

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.

INFOID:0000000011426135

NOTE:

DTC Index

- The details of time display are as follows.
- CRNT: A malfunction is detected now.
- PAST: A malfunction was detected in the past.
- IGN counter is displayed on FFD (Freeze Frame data).
- The number is 0 when is detected now.
- The number increases like 1 \rightarrow 2 \cdots 38 \rightarrow 39 after returning to the normal condition whenever IGN OFF \rightarrow ON.
- The number is fixed to 39 until the self-diagnosis results are erased if it is over 39.

		×: Applicable
CONSULT display	Fail-safe	Refer to
No DTC is detected. further testing may be required.	_	_
U1000: CAN COMM CIRCUIT	×	PCS-14
B2098: IGN RELAY ON CIRC	×	PCS-15
B2099: IGN RELAY OFF CIRC	_	PCS-17
B210B: STR CONT RLY ON CIRC	_	<u>SEC-77</u>
B210C: STR CONT RLY OFF CIRC	_	<u>SEC-78</u>
B210D: STARTER RLY ON CIRC	_	<u>SEC-80</u>
B210E: STARTER RLY OFF CIRC	_	<u>SEC-82</u>
B210F: INTRLCK/PNP SW ON	_	<u>SEC-84</u>
B2110: INTRLCK/PNP SW OFF	_	<u>SEC-86</u>

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THE FUEL GAUGE POINTER DOES NOT MOVE

< SYMPTOM DIAGNOSIS >

SYMPTOM DIAGNOSIS

THE FUEL GAUGE POINTER DOES NOT MOVE

Description INFOID:000000010990648

Fuel gauge needle will not move from a certain position.

Diagnosis Procedure

INFOID:0000000010990649

1. CONDUCTING THE COMBINATION METER SELF-DIAGNOSIS MODE

Perform the self-diagnosis mode of combination meter, and then check that the fuel gauge operates normally. Refer to MWI-36, "Diagnosis Description".

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace combination meter. Refer to MWI-130, "Removal and Installation".

2. CHECK FLOAT INTERFERENCE

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

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace malfunctioning part.

3.CHECK FUEL LEVEL SENSOR SIGNAL CIRCUIT

Check the fuel level sensor signal circuit. Refer to MWI-54, "Component Function Check".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-41, "Intermittent Incident".

NO >> Repair or replace malfunctioning parts.

THE METER CONTROL SWITCH IS INOPERATIVE

< SYMPTOM DIAGNOSIS >

THE METER CONTROL SWITCH IS INOPERATIVE Α Description INFOID:0000000010990650 If any of the following malfunctions is found for the meter control switch operation. В All switches are inoperative. The specified switch cannot be operated. Diagnosis Procedure INFOID:0000000010990651 1. CHECK METER CONTROL SWITCH SIGNAL CIRCUIT Check the meter control switch signal circuit. Refer to MWI-58, "Diagnosis Procedure". D Is the inspection result normal? YFS >> GO TO 2. Е NO >> Repair harness or connector. 2.CHECK METER CONTROL SWITCH UNIT Perform a unit check for the meter control switch. Refer to MWI-59, "Component Inspection". F Is the inspection result normal? YES >> Replace combination meter. NG >> Replace meter control switch. Н K M

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THE OIL PRESSURE WARNING LAMP DOES NOT TURN ON

< SYMPTOM DIAGNOSIS >

THE OIL PRESSURE WARNING LAMP DOES NOT TURN ON

Description INFOID:000000010990652

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

Diagnosis Procedure

INFOID:0000000010990653

1. CHECK OIL PRESSURE WARNING LAMP

Perform auto active test. Refer to MWI-36, "Diagnosis Description".

Is oil pressure warning lamp illuminated?

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

2.check oil pressure switch signal circuit

Check the oil pressure switch signal circuit. Refer to MWI-60, "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-60, "Component Inspection".

Is the inspection result normal?

YES >> Replace IPDM E/R.

NO >> Replace oil pressure switch.

4. CHECK UNIFIED METER AND A/C AMP. INPUT SIGNAL

Connect CONSULT and perform an input signal check for the unified meter and A/C amp.

Is the inspection result normal?

YES >> Replace combination meter.

NO >> Replace BCM. Refer to BCS-90, "Removal and Installation".

THE OIL PRESSURE WARNING LAMP DOES NOT TURN OFF

< SYMPTOM DIAGNOSIS >

THE OIL PRESSURE WARNING LAMP DOES NOT TURN OFF Α Description INFOID:0000000010990654 The oil pressure warning lamp remains illuminated while the engine is running (normal oil pressure). В Diagnosis Procedure INFOID:0000000010990655 1. CHECK OIL PRESSURE WARNING LAMP Perform auto active test. Refer to MWI-36, "Diagnosis Description". Is oil pressure warning lamp illuminated? D YES >> GO TO 2. NO >> GO TO 5. 2.CHECK IPDM E/R OUTPUT VOLTAGE Е Disconnect the oil pressure switch connector. 2. Turn ignition switch ON. Check voltage between the oil pressure switch harness connector terminal 1 and ground. 3. F **Terminal** Voltage (+) (Approx.) Oil pressure switch (-)**Terminal** Connector F37 Ground 12 V Is the inspection result normal? YES >> GO TO 3. NO >> GO TO 4. 3.CHECK OIL PRESSURE SWITCH UNIT Perform a unit check for the oil pressure switch. Refer to MWI-60, "Component Inspection". Is the inspection result normal? YES >> Replace IPDM E/R. Refer to PCS-34, "Removal and Installation". K NO >> Replace oil pressure switch. f 4.CHECK OIL PRESSURE SWITCH SIGNAL CIRCUIT Check the oil pressure switch signal circuit. Refer to MWI-60, "Diagnosis Procedure". Is the inspection result normal? YES >> GO TO 5. M NO >> Repair harness or connector. ${f 5.}$ CHECK UNIFIED METER AND A/C AMP. INPUT SIGNAL Connect CONSULT and perform an input signal check for the unified meter and A/C amp. Refer to MWI-60, MWI "Component Function Check". Is the inspection result normal? YES >> Replace combination meter. NO >> Replace BCM. Refer to BCS-90, "Removal and Installation". Р

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

< SYMPTOM DIAGNOSIS >

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

Description

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

INFOID:0000000010990657

Diagnosis Procedure

1. CHECK PARKING BRAKE WARNING LAMP OPERATION

- Start engine.
- 2. Check the operation of the parking brake warning lamp when operating the parking brake.

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

Is the inspection result normal?

YES >> Replace combination meter.

NO >> GO TO 2.

2.check parking brake switch signal circuit

- 1. Turn ignition switch OFF.
- Check the parking brake switch signal circuit. Refer to <u>MWI-62</u>. "<u>Diagnosis Procedure</u>".

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-63, "Component Inspection".

Is the inspection result normal?

YES >> Replace combination meter.

NO >> Replace parking brake switch.

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

< SYMPTOM DIAGNOSIS >

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

Description INFOID:0000000010990658

- 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

1. CHECK WASHER LEVEL SWITCH SIGNAL CIRCUIT

Check the washer level switch signal circuit. Refer to MWI-64, "Diagnosis Procedure".

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair harness or connector.

2.CHECK WASHER LEVEL SWITCH UNIT

Perform a unit check for the washer level switch. Refer to MWI-64, "Component Inspection".

Is the inspection result normal?

YES >> Replace combination meter.

NO >> Replace washer level switch. Refer to WW-96, "Removal and Installation".

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THE DOOR OPEN WARNING CONTINUES DISPLAYING, OR DOES NOT DISPLAY

< SYMPTOM DIAGNOSIS >

THE DOOR OPEN WARNING CONTINUES DISPLAYING, OR DOES NOT DISPLAY

Description INFOID:000000010990660

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

Diagnosis Procedure

INFOID:0000000010990661

1. CHECK BCM INPUT/OUTPUT SIGNAL

Connect CONSULT and check the BCM input signals. Refer to <u>DLK-66, "Component Function Check"</u>. <u>Is the inspection result normal?</u>

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

2.CHECK UNIFIED METER AND A/C AMP. INPUT SIGNAL

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

"DOOR W/L"

Door open : On Door closed : Off

Is the inspection result normal?

YES >> Replace combination meter.

NO >> Replace BCM. Refer to BCS-90, "Removal and Installation".

3.CHECK DOOR SWITCH SIGNAL CIRCUIT

Check the door switch signal circuit. Refer to DLK-66, "Diagnosis Procedure".

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair harness or connector.

4. CHECK DOOR SWITCH UNIT

Perform a unit check for the door switch. Refer to DLK-68, "Component Inspection".

Is the inspection result normal?

YES >> Replace combination meter.

NO >> Replace applicable door switch. Refer to DLK-257, "Removal and Installation".

THE TRUNK OPEN WARNING CONTINUES DISPLAYING, OR DOES NOT DISPLAY

< SYMPTOM DIAGNOSIS >

THE TRUNK OPEN WARNING CONTINUES DISPLAYING, OR DOES NOT DISPLAY Description INFOID:0000000010990662 В The trunk ajar warning is displayed continuously even though the trunk lid is closed. • The trunk ajar warning is not displayed even though the trunk lid is open. Diagnosis Procedure INFOID:0000000010990663 1. CHECK BCM INPUT/OUTPUT SIGNAL D Connect CONSULT and check the BCM input signals. Refer to DLK-78, "Component Function Check". Is the inspection result normal? YES >> GO TO 2. Е NO >> GO TO 3. 2.CHECK UNIFIED METER AND A/C AMP. INPUT SIGNAL Select the "Data Monitor" for the "METER/M&A" and check the "TRUNK/GLAS-H" monitor value. "TRUNK/GLAS-H" Trunk lid open : On Trunk lid closed : Off Is the inspection result normal? Н YES >> Replace combination meter. NO >> Replace BCM. 3.CHECK TRUNK ROOM LAMP SWITCH SIGNAL CIRCUIT Check the trunk lid opener switch signal circuit. Refer to DLK-78, "Diagnosis Procedure". Is the inspection result normal? YES >> GO TO 4. NO >> Repair harness or connector. 4. CHECK TRUNK LOOM LAMP SWITCH UNIT Perform a unit check for the trunk room lamp switch. Refer to DLK-79, "Component Inspection". Is the inspection result normal? YES >> Replace combination meter. L NO >> Replace trunk lid lock. Refer to DLK-254, "TRUNK LID LOCK: Removal and Installation". M

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THE AMBIENT TEMPERATURE DISPLAY IS INCORRECT

< SYMPTOM DIAGNOSIS >

THE AMBIENT TEMPERATURE DISPLAY IS INCORRECT

Description INFOID:000000010990664

- The displayed ambient air temperature is higher than the actual temperature.
- The displayed ambient air temperature is lower than the actual temperature.

Diagnosis Procedure

INFOID:0000000010990665

NOTE:

Check that the symptom is not applicable to the normal operating condition before starting diagnosis. Refer to MWI-127, "INFORMATION DISPLAY: Description".

1. CHECK AMBIENT SENSOR SIGNAL CIRCUIT

Check the ambient sensor signal circuit. Refer to HAC-59, "Diagnosis Procedure".

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair harness or connector.

2.CHECK AMBIENT SENSOR UNIT

Perform a unit check for the ambient sensor. Refer to HAC-60, "Component Inspection".

Is the inspection result normal?

YES >> Replace unified meter and A/C amp.

NO >> Replace ambient sensor. Refer to HAC-110, "Removal and Installation".

NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

NORMAL OPERATING CONDITION COMPASS

INFOID:0000000010990666

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COMPASS : Description

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 shows the wrong direction.			
Compass does not change direction appears "Locked".	Compass is not calibrated. Incorrect zone variance setting.	Perform Calibration. Refer to MWI-32, "De-	`
Compass does not show all the directions, one or more is missing.	bridges, subways, concentrations of metal, carwashes, etc.) Compass was calibrated incorrectly or in the presence of a strong magnetic field.	scription".	
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-32, "Description".	

INFORMATION DISPLAY

INFORMATION DISPLAY: Description

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AMBIENT AIR TEMPERATURE

The displayed ambient air temperature on the information display may differ from the actual temperature because it is a corrected value calculated from the ambient sensor signal by the unified meter and A/C amp. Refer to MWI-27, "INFORMATION DISPLAY: System Description" for details on the correction process.

POSSIBLE DRIVING DISTANCE

The calculated possible driving distance may differ from the actual distance to empty if the refueling amount is approximately 15 ℓ (4 US gal, 3-3/10 Imp gal) or less. This is because the refuel control (moves the fuel gauge needle quicker than normal judging that the driver is refueling the vehicle) is not performed in such a case.

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PRECAUTION

PRECAUTIONS

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

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 "SRS AIR BAG" and "SEAT BELT" of this Service Manual.

WARNING:

Always observe the following items for preventing accidental activation.

- To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision that would result in air bag inflation, all maintenance must be performed by an authorized NISSAN/INFINITI dealer.
- Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system. For removal of Spiral Cable and Air Bag Module, see "SRS AIR BAG".
- Never use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.

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

WARNING:

Always observe the following items for preventing accidental activation.

- When working near the Air Bag Diagnosis Sensor Unit or other Air Bag System sensors with the
 ignition ON or engine running, never use air or electric power tools or strike near the sensor(s) with
 a hammer. Heavy vibration could activate the sensor(s) and deploy the air bag(s), possibly causing
 serious injury.
- When using air or electric power tools or hammers, always switch the ignition OFF, disconnect the battery, and wait at least 3 minutes before performing any service.

Precautions for Removing Battery Terminal

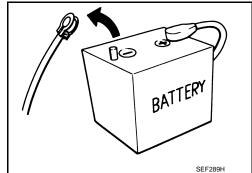
 When removing the 12V battery terminal, turn OFF the ignition switch and wait at least 30 seconds.

NOTE:

ECU may be active for several tens of seconds after the ignition switch is turned OFF. If the battery terminal is removed before ECU stops, then a DTC detection error or ECU data corruption may occur.

For vehicles with the 2-batteries, be sure to connect the main battery and the sub battery before turning ON the ignition switch.
 NOTE:

If the ignition switch is turned ON with any one of the terminals of main battery and sub battery disconnected, then DTC may be detected.



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After installing the 12V battery, always check "Self Diagnosis Result" of all ECUs and erase DTC.
 NOTE:

The removal of 12V battery may cause a DTC detection error.

PREPARATION

< PREPARATION >

PREPARATION

PREPARATION

Commercial Service Tools

Tool name		Description
Power tool	PBIC0191E	Loosening screws

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REMOVAL AND INSTALLATION

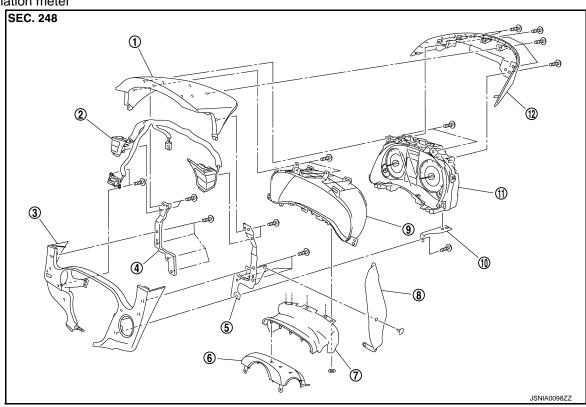
COMBINATION METER

Exploded View

REMOVAL

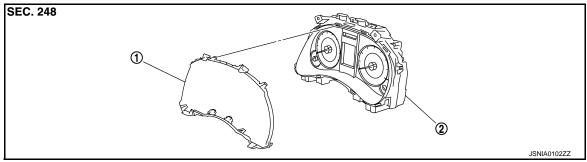
Cluster lid A Assembly Refer to IP-12, "Exploded View".

Combination meter



- 1. Cluster lid A
- 4. Bracket (LH)
- 7. Steering column blind
- 10. Combination meter stay
- 2. Meter control switch
- 5. Bracket (RH)
- 8. Blind
- 11. Combination meter
- 3. Cluster lid A under cover
- 6. Steering column cover upper
- 9. Meter housing
- 12. Cluster lid A cover

DISASSEMBLY



1. Front cover

2. Unified meter control unit

Removal and Installation

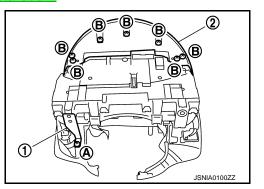
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REMOVAL

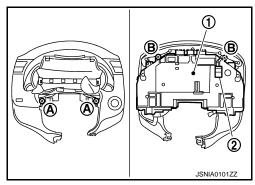
COMBINATION METER

< REMOVAL AND INSTALLATION >

- Remove cluster lid A assembly. Refer to IP-13, "Removal and Installation".
- 2. Remove screw (A) and remove combination meter stay (1).
- Remove screws (B) and remove cluster lid A cover (2). 3.



- 4. Remove screws (A), (B) and remove combination meter (1).
- 5. Remove meter control switch connector (2) from combination meter (1).



INSTALLATION

Install in the reverse order of removal.

Disassembly and Assembly

DISASSEMBLY

Disengage the tabs to separate front cover.

ASSEMBLY

Assemble in the reverse order of disassembly.

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UNIFIED METER AND A/C AMP.

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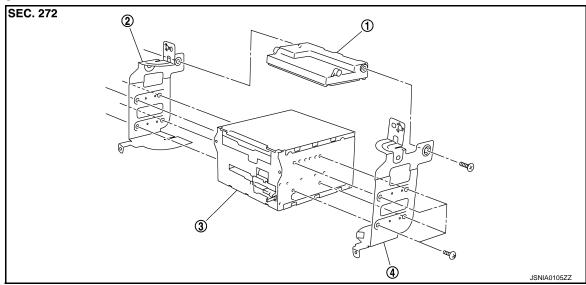
UNIFIED METER AND A/C AMP.

Exploded View

REMOVAL

Refer to IP-12, "Exploded View".

DISASSEMBLY



- 1. Unified meter and A/C amp.
- 2. Bracket (LH)

3. AV control unit

4. Bracket (RH)

Removal and Installation

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REMOVAL

- Remove the display unit. Refer to <u>AV-108, "Removal and Installation"</u> (BASE AUDIO WITH REAR VIEW CAMERA) or <u>AV-251, "Removal and Installation"</u> (BOSE AUDIO WITH NAVIGATION).
- 2. Remove the unified meter and A/C amp and AV control unit as an assembly.
- 3. Remove the bracket screws and remove the unified meter and A/C amp.

INSTALLATION

Install in the reverse order of removal.

NOTE:

- Unified meter and A/C amp. screws are different from other screws. Never confuse them when installing.
- Since AV control unit connector and unified meter and A/C amp. connector have the same from, be careful not insert them wrongly.

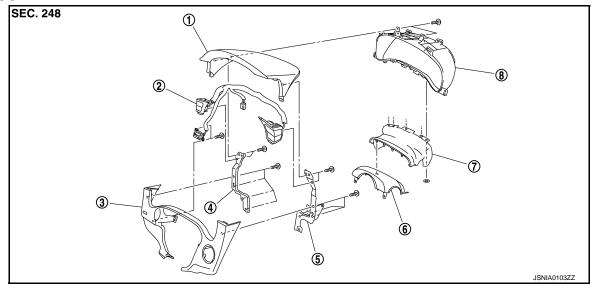
METER CONTROL SWITCH

Exploded View

REMOVAL

Refer to IP-12, "Exploded View".

DISASSEMBLY



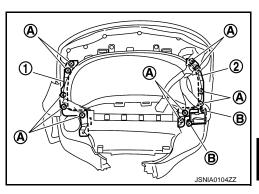
- 1. Cluster lid A
- 4. Bracket (LH)
- 7. Steering column blind
- 2. Meter control switch
- 5. Bracket (RH)
- 8. Meter housing

- B. Cluster lid A under cover
- 6. Steering column cover upper

Removal and Installation

REMOVAL

- 1. Remove combination meter.
- 2. Remove screws (A) and remove bracket RH (1), LH (2).
- 3. Remove screws (B) and remove meter control switch.



INSTALLATION

Install in the reverse order of removal.

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COMPASS

< REMOVAL AND INSTALLATION >

COMPASS

Exploded View

Refer to MIR-18, "Exploded View".

Removal and Installation

Refer to MIR-18, "Removal and Installation".

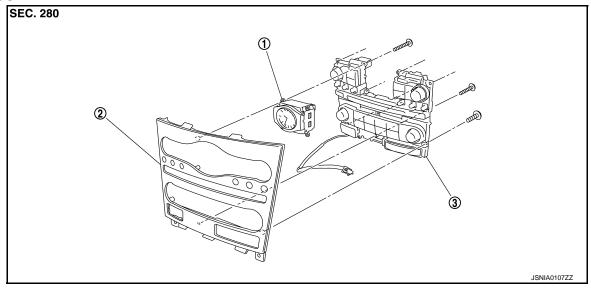
CLOCK

Exploded View

REMOVAL

Refer to IP-12, "Exploded View".

DISASSEMBLY



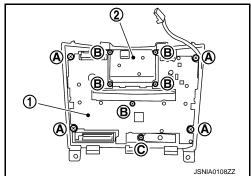
1. Clock 2. Cluster lid C 3. Preset switch

Removal and Installation

REMOVAL

Remove cluster lid C assembly. Refer to <u>IP-13, "Removal and Installation"</u>.

- 2. Remove screws (A), (B), (C) and remove clock (2) in conjunction with preset switch (1) from cluster lid C.
- 3. Disengage the tabs to separate clock.



INSTALLATION

Install in the reverse order of removal.

NOTE:

Never confuse screws when installing.

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