

MWI

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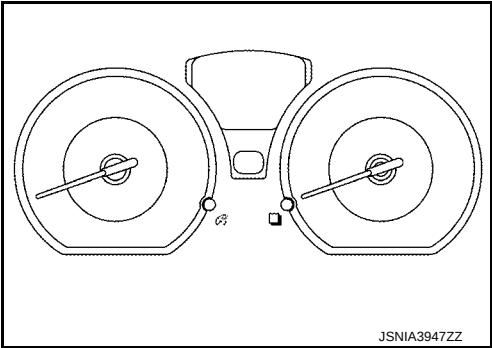
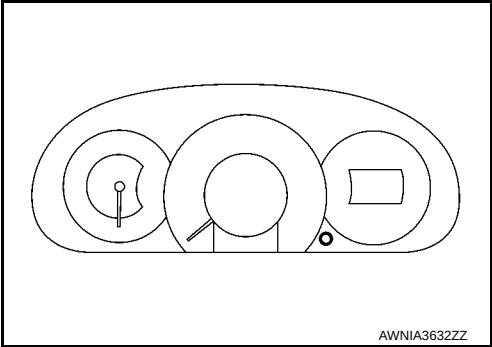
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HOW TO USE THIS MANUAL

APPLICATION NOTICE

Information

INFOID:0000000012432538

Service information	Design of combination meter	
TYPE A		 JSNIA3947ZZ
TYPE B		 AWNIA3632ZZ

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PRECAUTION

PRECAUTIONS

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

INFOID:0000000012432539

The Supplemental Restraint System such as "AIR BAG" and "SEAT BELT PRE-TENSIONER", used along with a front seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. Information necessary to service the system safely is included in the SR and SB section of this Service Manual.

WARNING:

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

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

WARNING:

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

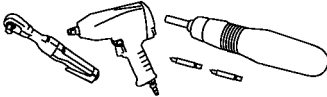
< PREPARATION >

PREPARATION

PREPARATION

Commercial Service Tools

INFOID:0000000012432540

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

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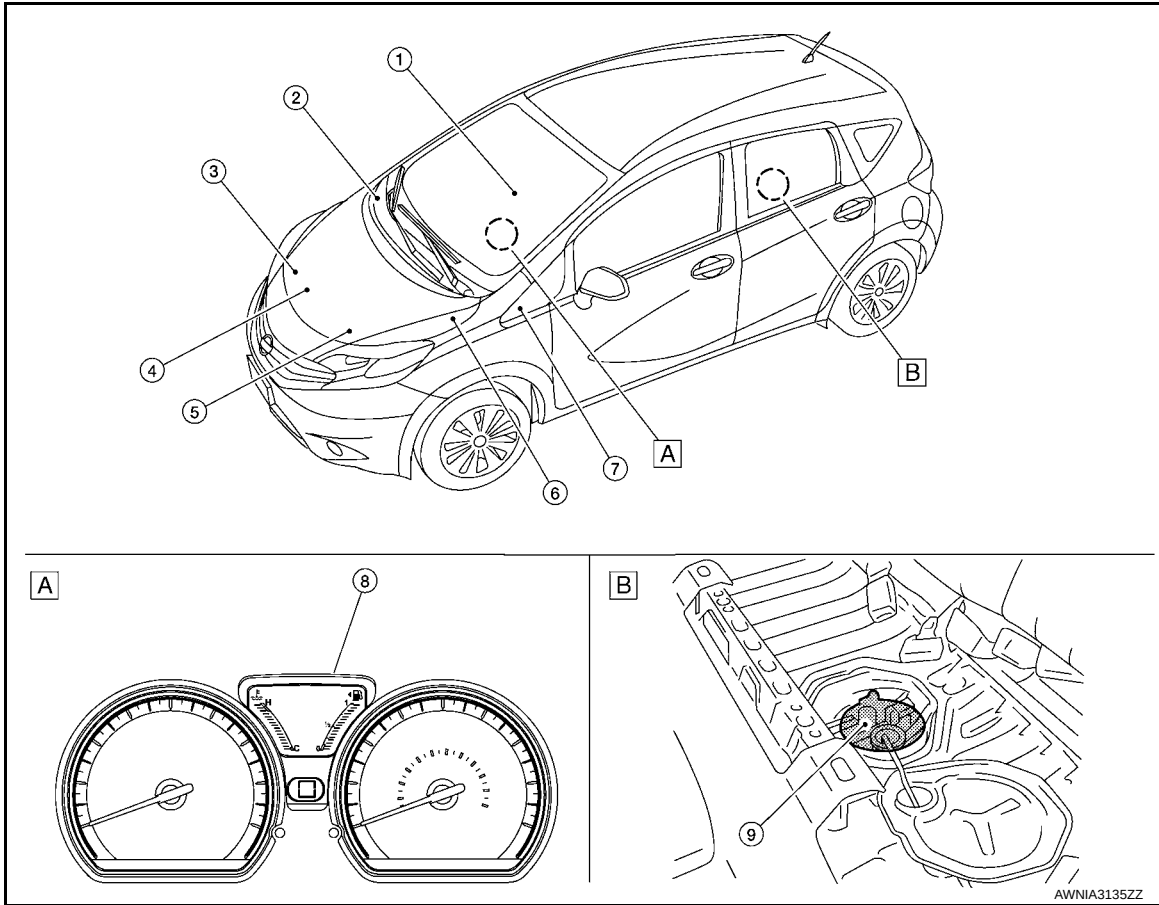
SYSTEM DESCRIPTION

COMPONENT PARTS

METER SYSTEM

METER SYSTEM : Component Parts Location

INFOID:0000000012432541



A. Combination meter

B. View with rear lower seat cushion and inspection hole cover removed.

No.	Component	Function
1.	Parking brake switch	Transmits the parking brake switch signal to the combination meter.
2.	ABS actuator and electric unit (control unit)	Transmits the vehicle speed signal to the combination meter via CAN communication. Refer to BRC-7, "Component Parts Location" for detailed installation location.
3.	Washer fluid level switch	Transmits the washer fluid level switch signal to the combination meter (for Canada). Refer to WW-6, "Component Parts Location" for detailed installation location.
4.	Engine oil pressure sensor	Transmits the engine oil pressure sensor signal to the ECM. Refer to EM-93, "Exploded View" for detailed installation location.
5.	TCM	Transmits the shift position signal to the combination meter via CAN communication (with CVT). Refer to TM-61, "CVT CONTROL SYSTEM : Component Parts Location" for detailed installation location.

COMPONENT PARTS

< SYSTEM DESCRIPTION >

[TYPE A]

No.	Component	Function
6.	ECM	Transmits the following signals to the combination meter via CAN communication: • Engine speed signal • Engine coolant temperature signal • Fuel consumption monitor signal • Engine oil pressure sensor signal Refer to EC-14, "ENGINE CONTROL SYSTEM : Component Parts Location" for detailed installation location.
7.	BCM	Transmits the following signals to the combination meter via CAN communication: • Door switch signal • Buzzer signal Refer to BCS-137, "Removal and Installation" for detailed installation location.
8.	Combination meter	Refer to MWI-9, "METER SYSTEM : Combination Meter" .
9.	Fuel level sensor unit and fuel pump (fuel level sensor)	Transmits the fuel level sensor signal to the combination meter.

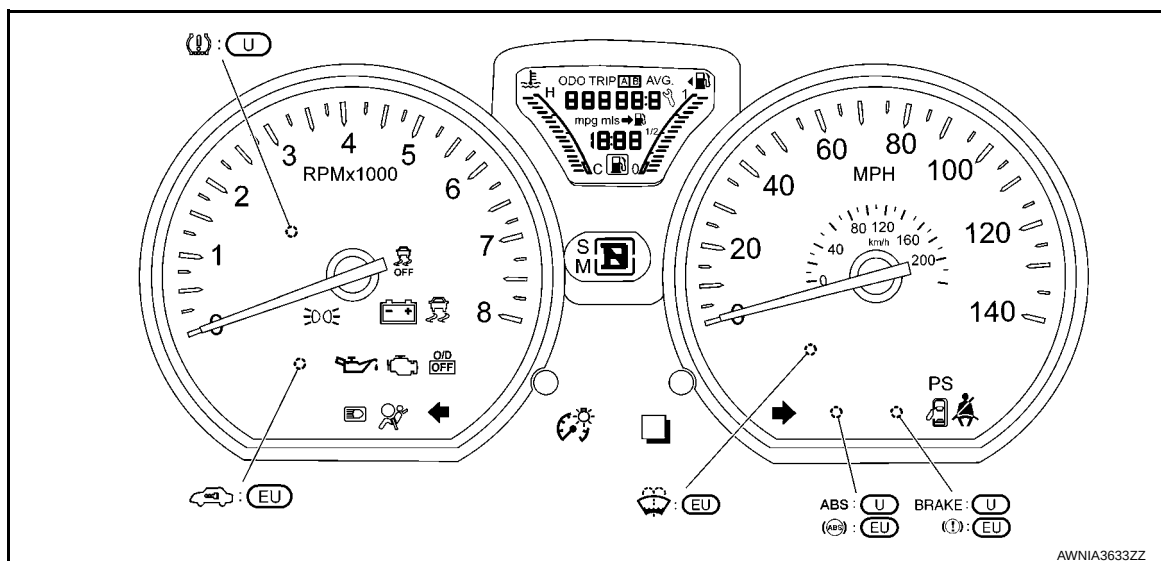
METER SYSTEM : Combination Meter

INFOID:0000000012432542

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

- Measuring instruments
- Indicator lamps
- Warning lamps
- Meter illumination control
- Information display

ARRANGEMENT OF COMBINATION METER



U: USA

EU: Except USA

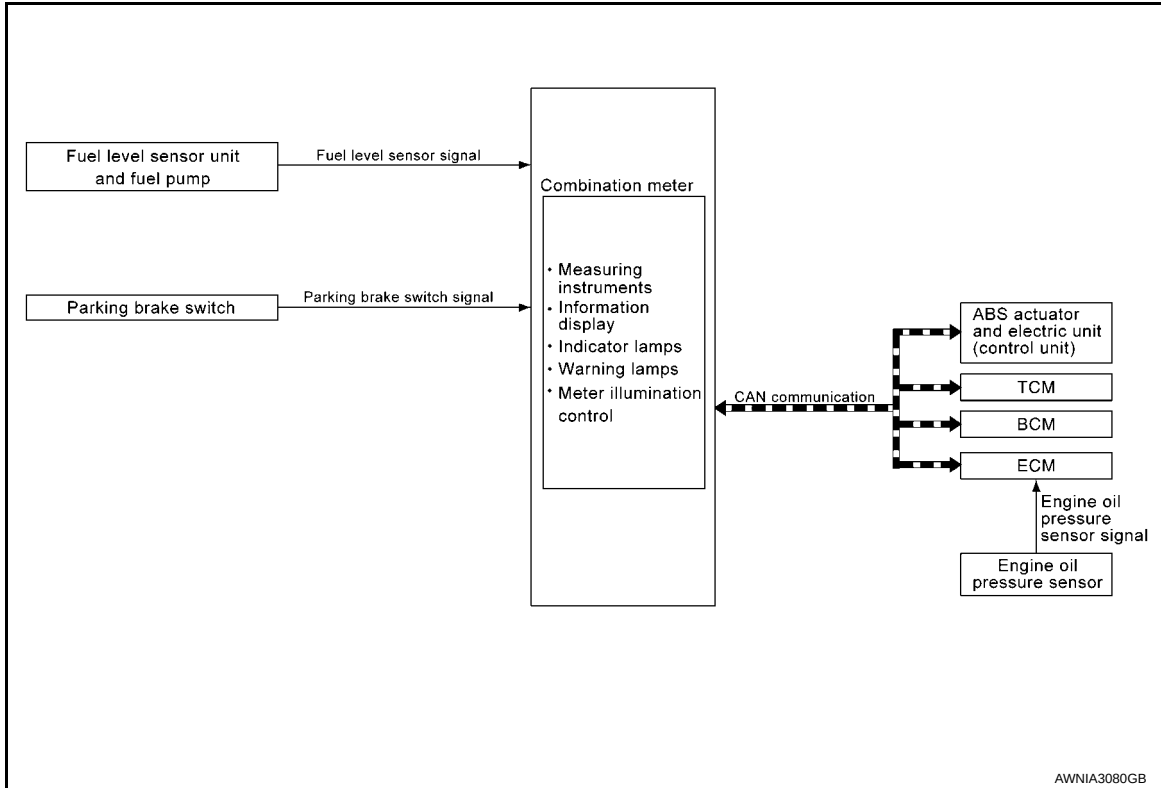
SYSTEM

METER SYSTEM

METER SYSTEM : System Description

INFOID:000000012432543

SYSTEM DIAGRAM



COMBINATION METER INPUT SIGNAL (CAN COMMUNICATION SIGNAL)

Transmit unit	Signal name
ABS actuator and electric unit (control unit)	Vehicle speed signal
BCM	Door switch signal
	Buzzer signal
TCM	Shift position signal
ECM	Engine speed signal
	Engine coolant temperature signal
	Engine oil pressure signal
	Fuel consumption signal
	Loose fuel cap signal

DESCRIPTION

Combination Meter

- The combination meter receives necessary signals from each unit, switch, and sensor to control the following functions.
 - Measuring instruments
 - Warning lamps
 - Indicator lamps
 - Meter illumination control
 - Information display
- The combination meter incorporates a buzzer function that sounds an audible alarm with the integrated buzzer device. Refer to [WCS-7. "WARNING CHIME SYSTEM : System Description"](#) for further details.

SYSTEM

< SYSTEM DESCRIPTION >

[TYPE A]

- The combination meter includes an on board diagnosis function.
- The combination meter can be diagnosed with CONSULT.

METER CONTROL FUNCTION LIST

System		Description	Reference
Measuring instruments	Speedometer	Indicates vehicle speed.	MWI-12, "SPEEDOMETER : System Description"
	Tachometer	Indicates engine speed.	MWI-12, "TACHOMETER : System Description"
Shift position indicator		Indicates shift position.	MWI-13, "SHIFT POSITION INDICATOR : System Description"
Warning lamp/indicator lamp	Engine oil pressure warning lamp	The warning lamp turns ON or turns OFF, according to engine hydraulic pressure.	MWI-13, "OIL PRESSURE WARNING LAMP : System Description"
Meter illumination control	Meter illumination control function	Controls the back light of combination meter.	MWI-13, "METER ILLUMINATION CONTROL : System Description"
Information display	Odo/trip meter	Indicates mileage.	MWI-14, "INFORMATION DISPLAY : System Description"
	Engine coolant temperature gauge	Indicates engine coolant temperature.	
	Fuel gauge	Indicates fuel level.	
	Loose fuel cap warning	Indicates loose fuel cap.	
	Low fuel warning	Indicates fuel level.	
	Trip computer	Instant fuel consumption	
		Average fuel consumption	
		Distance to empty	
		Travel distance	

METER SYSTEM : Fail-safe

INFOID:0000000012432544

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

Function			Specifications
Speedometer			Reset to zero by suspending communication.
Tachometer			
Illumination control			When suspending communication, changes to nighttime mode.
Shift position indicator			When suspending communication, not indicate.
Information display	Trip computer	Current fuel consumption	• When reception time of an abnormal signal is 2 seconds or less, the last received datum is used for calculation to indicate the result. • When reception time of an abnormal signal is more than two seconds, the last result calculated during normal condition is indicated.
		Average fuel consumption	
		Distance to empty	
	Engine coolant temperature gauge		Reset to zero by suspending communication.
	Odo/trip meter		An indicated value is maintained at communications blackout.
Buzzer			The buzzer turns OFF by suspending communication.

SYSTEM

< SYSTEM DESCRIPTION >

[TYPE A]

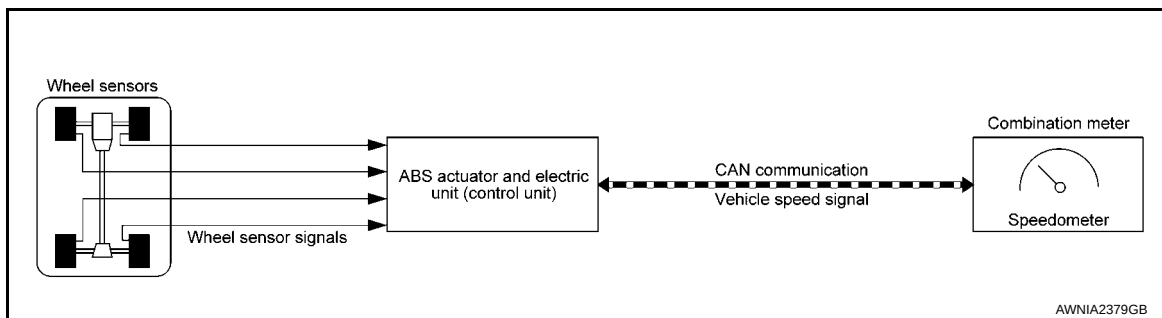
Function	Specifications
Warning lamp/indicator lamp	
ABS warning lamp	The lamp turns ON by suspending communication.
Slip indicator lamp	
Malfunction indicator lamp (MIL)	
VDC OFF indicator lamp	
EPS warning lamp	
Brake warning lamp	The lamp turns OFF by suspending communication.
High beam indicator lamp	
Turn signal indicator lamp	
Door warning lamp	
Light indicator lamp	
Engine oil pressure warning lamp	
O/D OFF indicator lamp	

SPEEDOMETER

SPEEDOMETER : System Description

INFOID:0000000012432545

SYSTEM DIAGRAM



DESCRIPTION

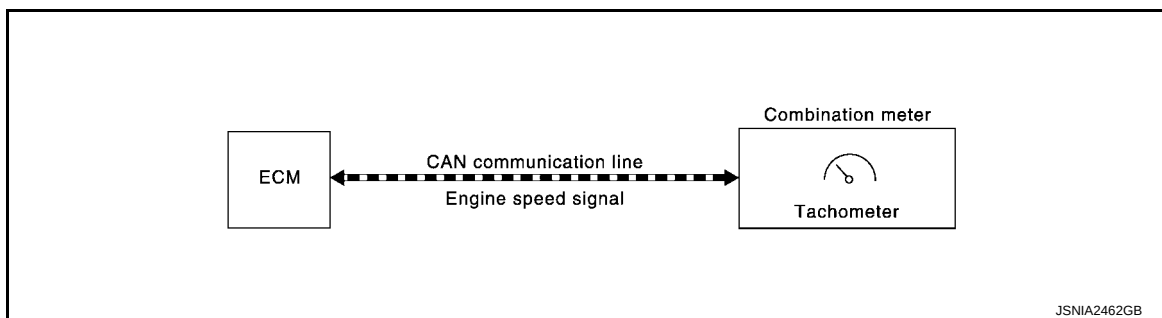
The ABS actuator and electric unit (control unit) receives each wheel speed sensor signal and provides a vehicle speed signal to the combination meter via CAN communication.

TACHOMETER

TACHOMETER : System Description

INFOID:0000000012432546

SYSTEM DIAGRAM



DESCRIPTION

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

SHIFT POSITION INDICATOR

SYSTEM

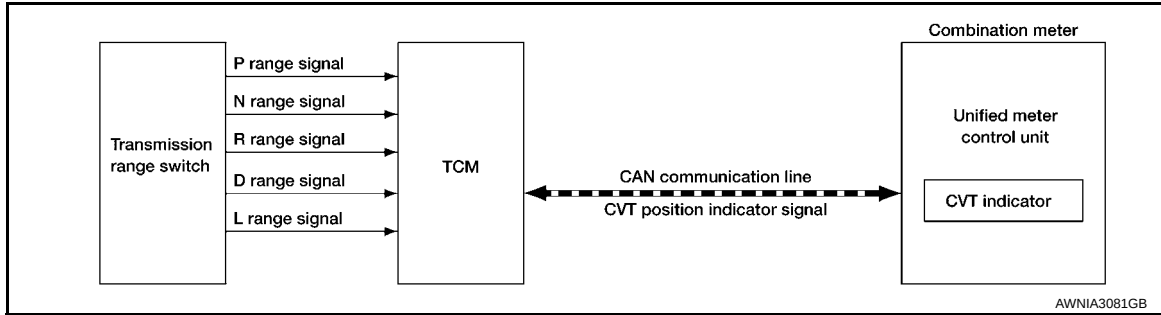
< SYSTEM DESCRIPTION >

[TYPE A]

SHIFT POSITION INDICATOR : System Description

INFOID:000000012432547

SYSTEM DIAGRAM



DESCRIPTION

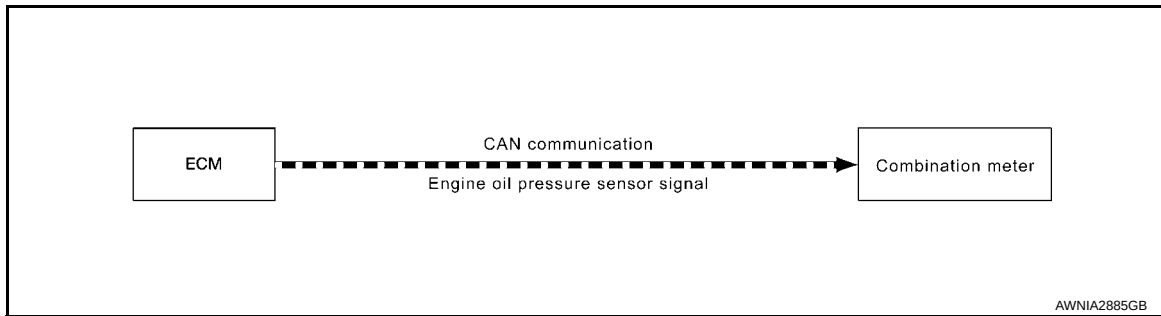
The combination meter receives the shift position signal from TCM via CAN communication, and displays the position of the shift indicator.

OIL PRESSURE WARNING LAMP

OIL PRESSURE WARNING LAMP : System Description

INFOID:000000012432548

SYSTEM DIAGRAM



DESCRIPTION

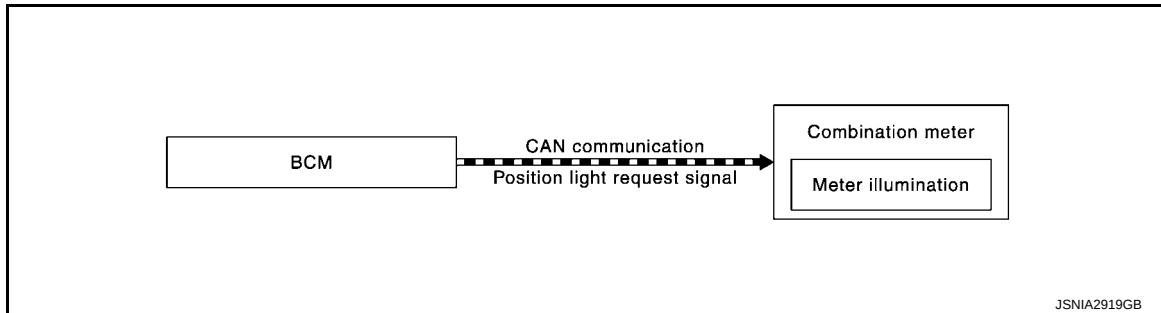
The combination meter turns the engine oil pressure warning lamp ON when receiving a signal from the ECM via CAN communication.

METER ILLUMINATION CONTROL

METER ILLUMINATION CONTROL : System Description

INFOID:000000012432549

SYSTEM DIAGRAM



DESCRIPTION

- Combination meter controls meter illumination, based on the following signal.
- Position light request signal
- The combination meter turns ON meter illumination when the following conditions are satisfied.

Condition	
Combination switch (Lighting switch)	1st or 2nd position

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< SYSTEM DESCRIPTION >

- The combination meter turns OFF meter illumination when the following conditions are satisfied.

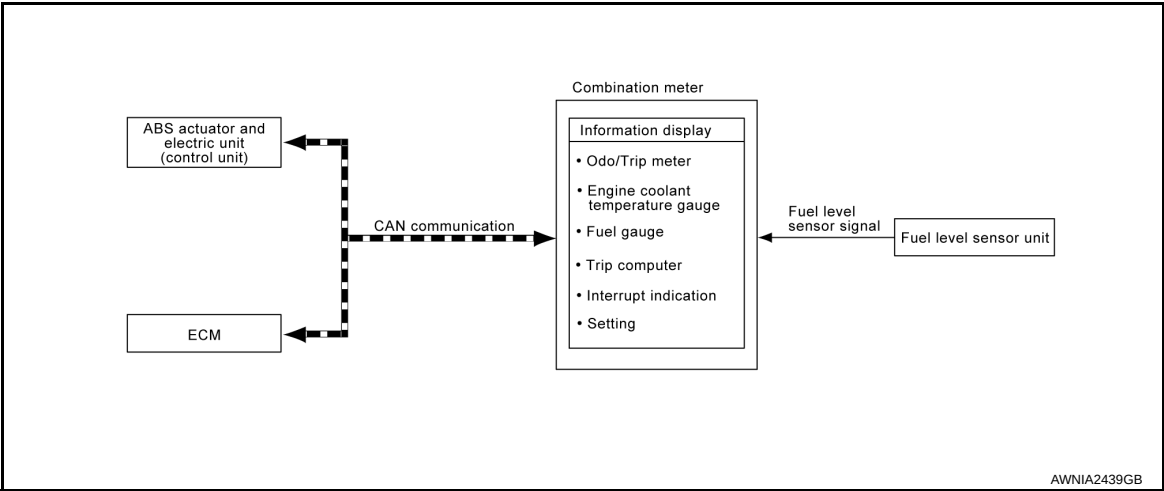
Condition	
Combination switch (Lighting switch)	OFF

INFORMATION DISPLAY

INFORMATION DISPLAY : System Description

INFOID:0000000012432550

SYSTEM DIAGRAM



DESCRIPTION

- The combination meter receives signals from switches, sensors and modules for operating the following functions on the information display.
 - Odo/trip meter
 - Engine coolant temperature gauge
 - Fuel gauge
 - Trip computer
 - Interrupt indication
 - Meter illumination level
 - Low fuel warning
 - Loose fuel cap warning

ODO/TRIP METER

The combination meter calculates mileage using the vehicle speed signal from the ABS actuator and electric unit (control unit) and displays the mileage on the information display.

ENGINE COOLANT TEMPERATURE GAUGE

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

FUEL GAUGE

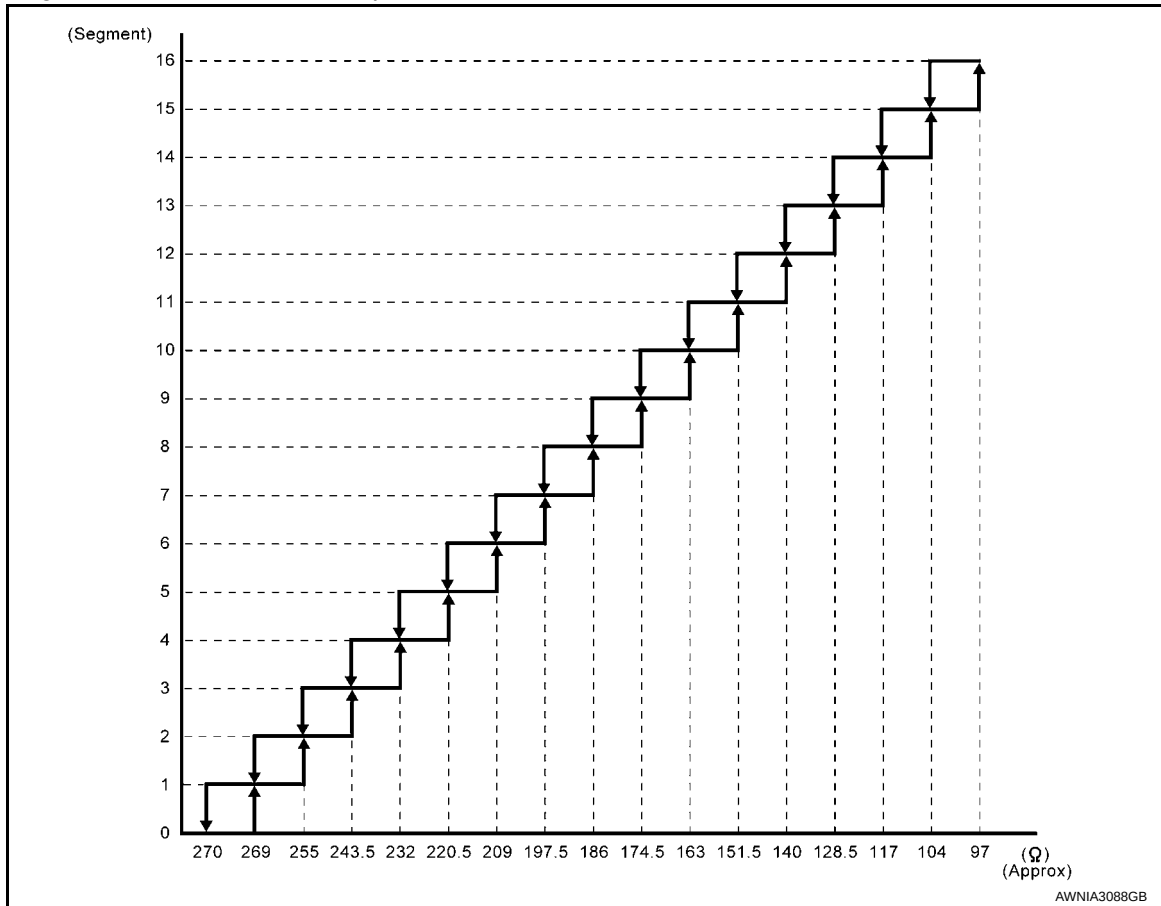
Control Outline

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

Refuel Control

The unit detects the driver is refueling the vehicle and accelerates the fuel gauge segment movement if the fuel level changes by 9 ℓ (2-3/8 US, 2 Imp gal) or more.

Lighting segment-resistance relationship



INTERRUPT INDICATION

Low Fuel Warning

The low fuel warning turns ON when the fuel level in the fuel tank reaches approximately 7.8 ℓ (2-1/8 US gal, 1-3/4 Imp gal).

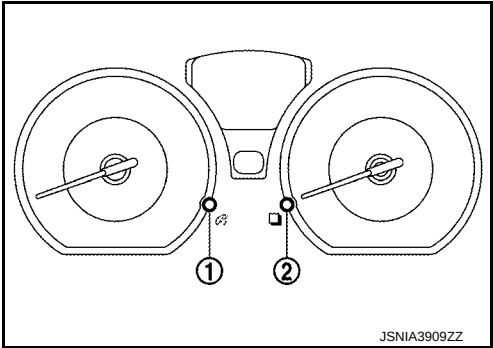
LOOSE FUEL CAP WARNING

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

OPERATION

Switch Name and Function

INFOID:0000000012432551



JSNIA3909ZZ

Switch name	Operation	Description
Illumination control switch (1)	Press	An illuminance level of the back light of the combination meter can be adjusted.
Meter control switch (2)		• The information display screen can be switched. • The trip meter can be switched between A and B. • Trip meter A/B can be reset by pressing and holding the meter control switch. • Time can be adjusted.

DIAGNOSIS SYSTEM (COMBINATION METER)

< SYSTEM DESCRIPTION >

[TYPE A]

DIAGNOSIS SYSTEM (COMBINATION METER)

On Board Diagnosis Function

INFOID:000000012432552

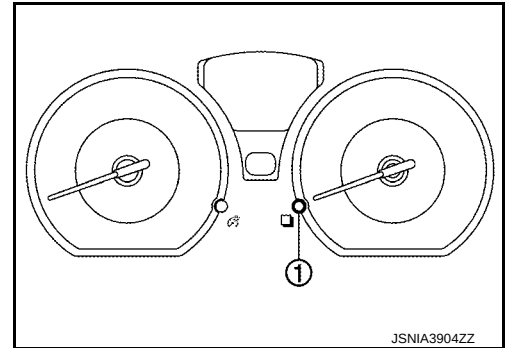
ON BOARD DIAGNOSIS ITEM

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

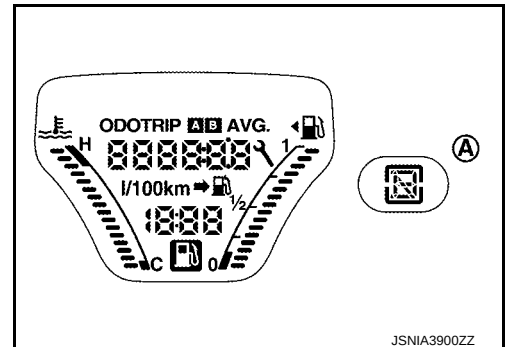
STARTING COMBINATION METER SELF-DIAGNOSIS MODE

METHOD OF STARTING

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



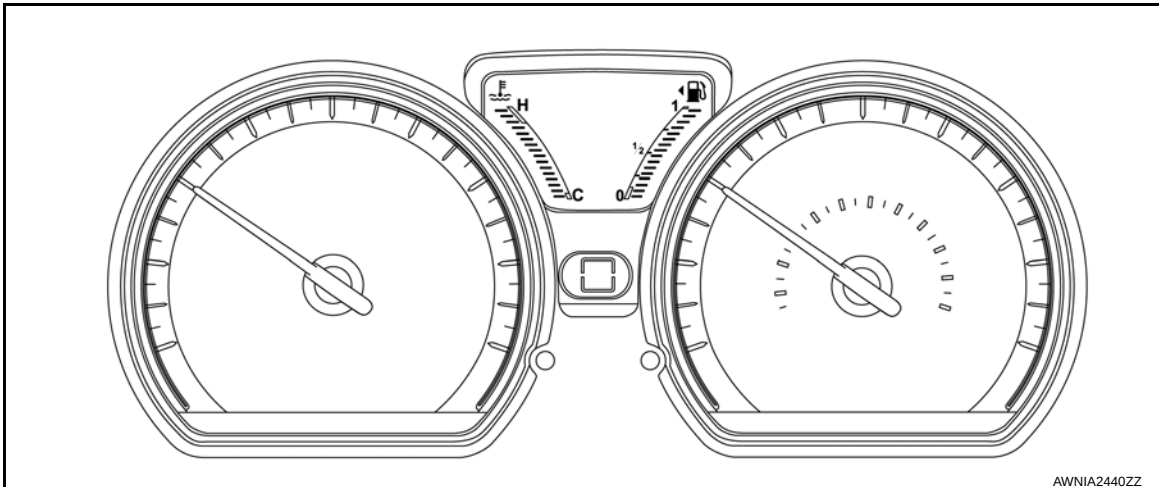
6. The combination meter is turned to self-diagnosis mode.
 - All segments of the information display and shift position indicator (A) for CVT models are displayed.



NOTE:

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

7. Each meter activates by pressing the meter control switch.



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DIAGNOSIS SYSTEM (COMBINATION METER)

< SYSTEM DESCRIPTION >

[TYPE A]

NOTE:

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

CONSULT Function (METER/M&A)

INFOID:0000000012432553

APPLICATION ITEMS

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

METER/M&A Diagnosis mode	Description
Self Diagnostic Result	The combination meter self-diagnosis results.
Data Monitor	Displays combination meter input/output data in real time.
Work support	Supports combination meter diagnosis.
ECU Identification	The combination meter part number is displayed.
Warning History	Lighting history of the warning lamp and indicator lamp can be checked.

SELF DIAG RESULT

Refer to [MWI-24, "DTC Index"](#).

DATA MONITOR

Display Item List

X: Applicable

Display item [Unit]	MAIN SIGNALS	Description
SPEED METER [mph] or [km/h]	X	Displays the value of vehicle speed signal.
SPEED OUTPUT [mph] or [km/h]	X	Displays the value of vehicle speed signal, which is transmitted to each unit with CAN communication.
ODO OUTPUT [Mi] or [km]		Displays odometer signal value transmitted to other units via CAN communication.
TACHO METER [rpm]	X	Displays the value of engine speed signal, which is input from ECM.
FUEL METER [L]	X	Displays the fuel level.
W TEMP METER [°F] or [°C]	X	Displays the value of engine coolant temperature signal, which is input from ECM.
ABS W/L [ON/OFF]		Displays [ON/OFF] condition of ABS warning indicator
VDC/TCS IND [ON/OFF]		Displays [ON/OFF] condition of VDC OFF indicator lamp.
SLIP IND [ON/OFF]		Displays [ON/OFF] condition of SLIP indicator lamp.
BRAKE W/L [ON/OFF]		Displays [ON/OFF] condition of brake warning indicator.
DOOR W/L [ON/OFF]		Displays [ON/OFF] condition of door warning indicator.
HI-BEAM IND [ON/OFF]		Displays [ON/OFF] condition of high beam indicator.
TURN IND [ON/OFF]		Displays [ON/OFF] condition of turn indicator.
LIGHT IND [ON/OFF]		Displays [ON/OFF] condition of light indicator.
OIL W/L [ON/OFF]		Displays [ON/OFF] condition of engine oil pressure warning indicator.

DIAGNOSIS SYSTEM (COMBINATION METER)

< SYSTEM DESCRIPTION >

[TYPE A]

Display item [Unit]	MAIN SIGNALS	Description
MIL [ON/OFF]		Displays [ON/OFF] condition of malfunction indicator.
CRUISE IND [Off]		Displays [ON/OFF] condition of CRUISE indicator.
O/D OFF IND [ON/OFF]		Displays [ON/OFF] condition of O/D OFF indicator.
FUEL W/L [ON/OFF]		Displays [ON/OFF] condition of low-fuel warning indicator.
AIR PRES W/L [ON/OFF]		Displays [ON/OFF] condition of tire pressure warning lamp.
EPS W/L [ON/OFF]		Displays [ON/OFF] condition of EPS indicator.
CHG SIG [On/Off]		Displays [ON/OFF] condition of charge warning indicator.
PASS BUCKLE SW [ON/OFF]		Status of seat belt buckle switch RH.
FUEL CAP W/L [Off]		Displays [ON/OFF] condition of loose fuel cap warning message.
PKB SW [ON/OFF]		Status of parking brake switch.
BUCKLE SW [ON/OFF]		Status of seat belt buckle switch LH.
BRAKE OIL SW [ON/OFF]		Status of brake fluid level switch.
DISTANCE [M] or [Mi]		Displays distance to empty.
FUEL LOW SIG [ON/OFF]		Displays [ON/OFF] condition of low-fuel warning signal.
BUZZER [ON/OFF]	X	Displays [ON/OFF] condition of buzzer.
TPMS PRESS L [ON/OFF]		Displays [ON/OFF] condition of check tire pressure warning message.

NOTE:

Some items are not available according to vehicle specification.

WORK SUPPORT

Work support item	Description
Fuel meter diagnosis(Analog pointer)	A possible malfunction can be narrowed down by following the displayed instructions.
Warning lamp diagnosis	

WARNING HISTORY

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

W/L ON HISTORY

- Stores histories when warning/indicator lamp is turned on.
- “W/L ON HISTORY” indicates the “TIME” when the warning/ indicator lamp is turned on.
- The “TIME” above is:
 - 0: The condition that the warning/indicator lamp has been turned on 1 or more times after starting the engine and waiting for 30 seconds.
 - 1 - 39: The number of times the engine was restarted after the 0 condition.

DIAGNOSIS SYSTEM (COMBINATION METER)

< SYSTEM DESCRIPTION >

[TYPE A]

- NO W/L ON HISTORY: Stores NO (0) turning on history of warning/indicator lamp.

NOTE:

- W/L ON HISTORY is not stored for approximately 30 seconds after the engine starts.
- Brake warning lamp does not store any history when the parking brake is applied or the brake fluid level gets low.

COMBINATION METER

< ECU DIAGNOSIS INFORMATION >

[TYPE A]

ECU DIAGNOSIS INFORMATION

COMBINATION METER

Reference Value

INFOID:0000000012432554

VALUES ON THE DIAGNOSIS TOOL

Monitor Item	Display content	Data monitor	
		Condition	Reference value in normal operation
SPEED METER [mph or km/h]	Speed meter operation	While driving	Vehicle speed matches speed meter
SPEED OUTPUT [mph or km/h]	Vehicle speed	While driving	The speed output signal value via CAN communication is approx. value of vehicle speed.
ODO OUTPUT [mi or km]	ODO meter operation	Driving	Distance driven
TACHO METER [rpm]	Tacho meter operation	Engine running	The tacho meter is approx. value of engine speed via CAN communication.
FUEL METER [L]	Fuel level	Ignition ON	Fuel level is approx. value of fuel gauge.
W TEMP METER [°F] or [°C]	Engine coolant temperature	Engine running	Input value of engine coolant temperature signal via CAN communication.
ABS W/L	ABS warning lamp	When ABS warning lamp is ON	On
		When ABS warning lamp is OFF	Off
VDC/TCS IND	VDC indicator lamp	When VDC indicator lamp is ON	On
		When VDC indicator lamp is OFF	OFF
SLIP IND	Slip indicator lamp	When SLIP indicator lamp is ON	On
		When SLIP indicator lamp is OFF	Off
BRAKE W/L	Brake warning lamp	When Brake warning lamp is ON	On*
		When Brake warning lamp is OFF	Off
DOOR W/L	Door open warning lamp	When Door warning lamp is ON	On
		When Door warning lamp is OFF	Off
HI-BEAM IND	HI-Beam indicator lamp	When High-beam indicator lamp is ON	On
		When High-beam indicator lamp is OFF	Off
TURN IND	Turn signal indicator	When Turn signal indicator lamp is ON	On
		When Turn signal indicator lamp is OFF	Off
LIGHT IND	Light indicator	When Tail lamp indicator lamp is ON	On
		When Tail lamp indicator lamp is OFF	Off
OIL W/L	Engine oil pressure warning light	When engine oil pressure warning lamp is ON	On
		When engine oil pressure warning lamp is OFF	Off
MIL	MIL warning lamp	When Malfunction indicator lamp (MIL) is ON	On
		When Malfunction indicator lamp (MIL) is OFF	Off
CRUISE IND	Cruise indicator lamp	When cruise indicator lamp is ON	On
		When cruise indicator lamp is OFF	Off

COMBINATION METER

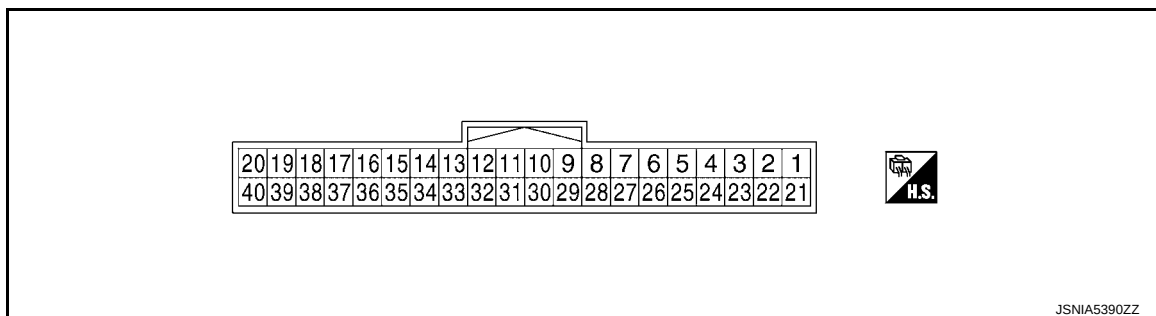
< ECU DIAGNOSIS INFORMATION >

[TYPE A]

Monitor Item	Display content	Data monitor	
		Condition	Reference value in normal operation
O/D OFF IND	O/D OFF indicator	When O/D OFF indicator lamp is OFF	Off
		When O/D OFF indicator lamp is ON	On
FUEL W/L	Low fuel warning	When low fuel warning is ON	On
		When low fuel warning is Off	Off
AIR PRES W/L	Tire pressure warning lamp operation	When tire pressure warning lamp is ON	ON
		When tire pressure warning lamp is OFF	Off
EPS W/L	EPS warning lamp	EPS warning lamp ON	On
		EPS warning lamp OFF	Off
CHG SIG	Charge warning lamp	Engine running	Off
PASS BUCKLE SW	Seat belt buckle switch RH	When seat belt buckle RH is unfastened	On
		When seat belt buckle RH is fastened	Off
FUEL CAP W/L	Loose fuel cap warning	Loose fuel filler cap warning is On	On
		Loose fuel filler cap warning is OFF	Off
PKB SW	Parking brake switch	When parking brake is active	On
		When parking brake is inactive	Off
BUCKLE SW	Seat belt buckle switch LH	When seat belt buckle LH is unfastened	On
		When seat belt buckle LH is fastened	Off
BRAKE OIL SW	Brake fluid level switch	When brake fluid level switch ON	On
		When brake fluid level switch OFF	Off
DISTANCE	Distance to empty	While driving	[mi or km]
FUEL LOW SIG	Low fuel warning	When low fuel warning is On	On
		When low fuel warning is Off	Off
BUZZER	Buzzer operation	When Buzzer is ON	On
		When Buzzer is OFF	Off
TPMS PRESS L	Low tire pressure warning	When check tire pressure warning message is On	On
		When check tire pressure warning message is OFF	Off

*: 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.

TERMINAL LAYOUT



PHYSICAL VALUES

COMBINATION METER

< ECU DIAGNOSIS INFORMATION >

[TYPE A]

Terminal No.	Wire color	Item	Condition		Reference value (V) (Approx.)
			Ignition switch	Operation or condition	
1	L	CAN high	—	—	—
2	P	CAN low	—	—	—
3	SB	2P/R	—	—	—
4	LG	8P/R	—	—	—
6	W	Fuel level sensor signal (+)	—	—	Refer to MWI-46, "Component Inspection" .
7	V	Air bag	—	—	—
8	P	O/D OFF switch	ON	O/D OFF switch pressed	0
				O/D OFF switch released	Battery voltage
9	V	Seat belt buckle switch LH	ON	Unfastened (ON)	0
				Fastened (OFF)	Battery voltage
10	SB	Parking Brake switch	ON	Parking brake is inactive	Battery voltage
				Parking brake is active	0
11	BR	Brake fluid level switch	ON	Brake fluid level low	0
				Brake fluid level normal	Battery voltage
13	B	Illumination control	—	—	—
15	R	Ignition switch ON or ACC	—	—	Battery voltage
17*1	V	Washer fluid level switch	ON	Washer fluid level low	0
				Washer fluid level normal	Battery voltage
18	GR	Security	—	—	—
21	B	Ground	—	—	0
22	B				
23	B				
24	GR	Fuel level sensor ground (-)	ON	—	0
27	R/W	Battery power supply	OFF	—	Battery voltage
28	GR	Ignition switch ON or START	ON	—	Battery voltage
29	G	Seat belt buckle switch RH	ON	Unfastened (ON)	0
				Fastened (OFF)	Battery voltage
38	Y	Generator	ON	Generator voltage low	0
				Generator voltage normal	Battery voltage

*1:For Canada

Fail-safe

INFOID:0000000012432555

MWI

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

Function	Specifications
Speedometer	Reset to zero by suspending communication.
Tachometer	
Illumination control	When suspending communication, changes to nighttime mode.
Shift position indicator	When suspending communication, not indicate.

COMBINATION METER

< ECU DIAGNOSIS INFORMATION >

[TYPE A]

Function			Specifications
Information display	Trip computer	Current fuel consumption	- When reception time of an abnormal signal is 2 seconds or less, the last received datum is used for calculation to indicate the result. - When reception time of an abnormal signal is more than two seconds, the last result calculated during normal condition is indicated.
		Average fuel consumption	
		Distance to empty	
	Engine coolant temperature gauge		Reset to zero by suspending communication.
	Odo/trip meter		An indicated value is maintained at communications blackout.
Buzzer			The buzzer turns OFF by suspending communication.
Warning lamp/indicator lamp	ABS warning lamp		The lamp turns ON by suspending communication.
	Slip indicator lamp		
	Malfunction indicator lamp (MIL)		
	VDC OFF indicator lamp		
	EPS warning lamp		
	Brake warning lamp		The lamp turns OFF by suspending communication.
	High beam indicator lamp		
	Turn signal indicator lamp		
	Door warning lamp		
	Light indicator lamp		
	Engine oil pressure warning lamp		
	O/D OFF indicator lamp		

DTC Index

INFOID:000000012432556

Display contents of CONSULT	Diagnostic item is detected when...	Refer to
CAN COMM CIRCUIT [U1000]	When combination meter is not transmitting or receiving CAN communication signal for 2 seconds or more.	MWI-38
CONTROL UNIT (CAN) [U1010]	When detecting error during the initial diagnosis of the CAN controller of combination meter.	MWI-39
VEHICLE SPEED [B2205]	The abnormal vehicle speed signal is input from the ABS actuator and electric unit (control unit) for 2 seconds or more.	MWI-40
ENGINE SPEED [B2267]	If ECM continuously transmits abnormal engine speed signals for 2 seconds or more.	MWI-41
WATER TEMP [B2268]	If ECM continuously transmits abnormal engine coolant temperature signals for 60 seconds or more.	MWI-42

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

[TYPE A]

BCM (BODY CONTROL MODULE)

List of ECU Reference

INFOID:0000000012432557

ECU	Reference
BCM	BCS-101, "Reference Value"
	BCS-115, "Fail-safe"
	BCS-115, "DTC Inspection Priority Chart"
	BCS-115, "DTC Index"

A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
P

MWI

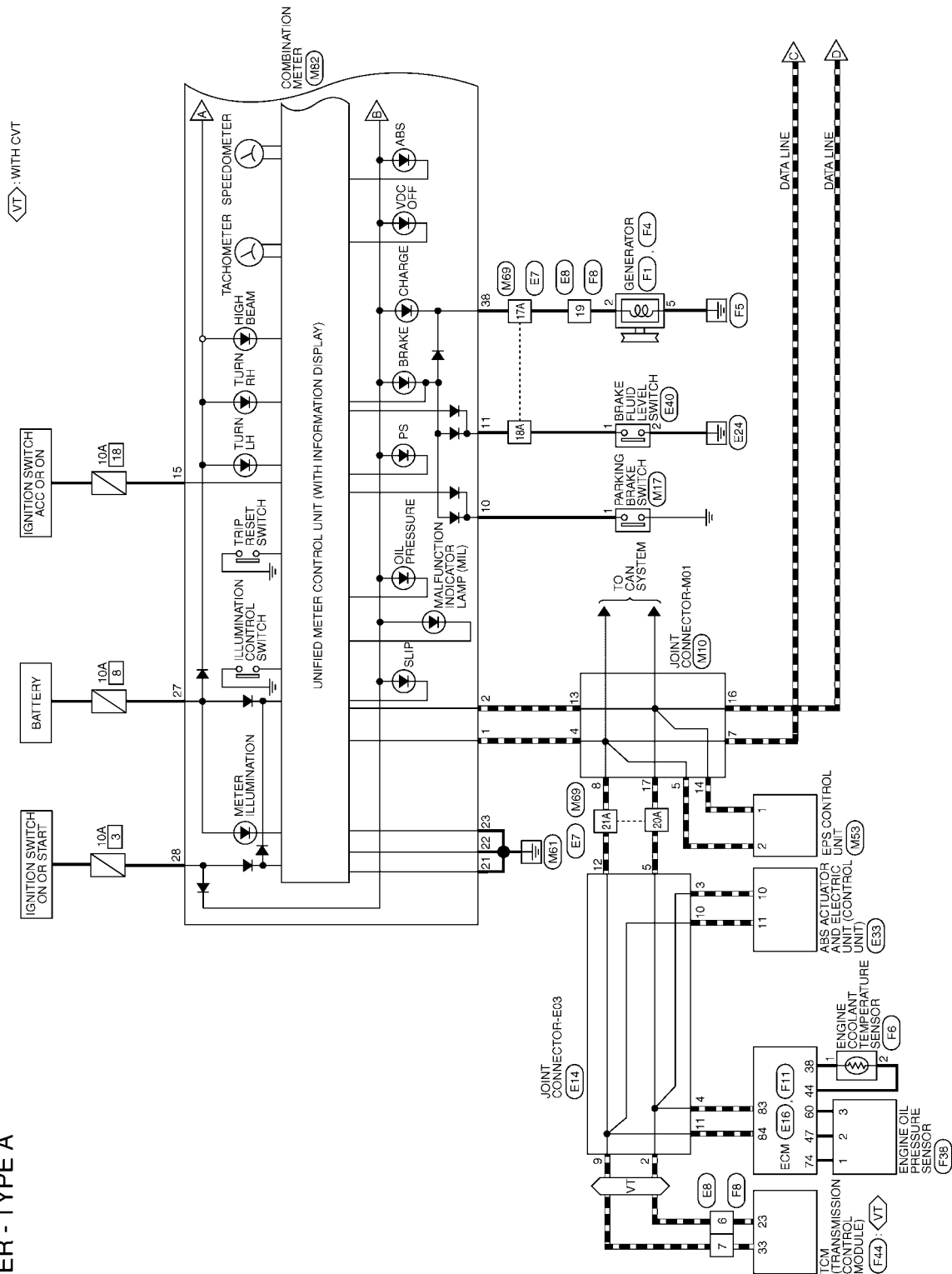
WIRING DIAGRAM

METER SYSTEM

Wiring Diagram

INFOID:000000012432558

METER - TYPE A

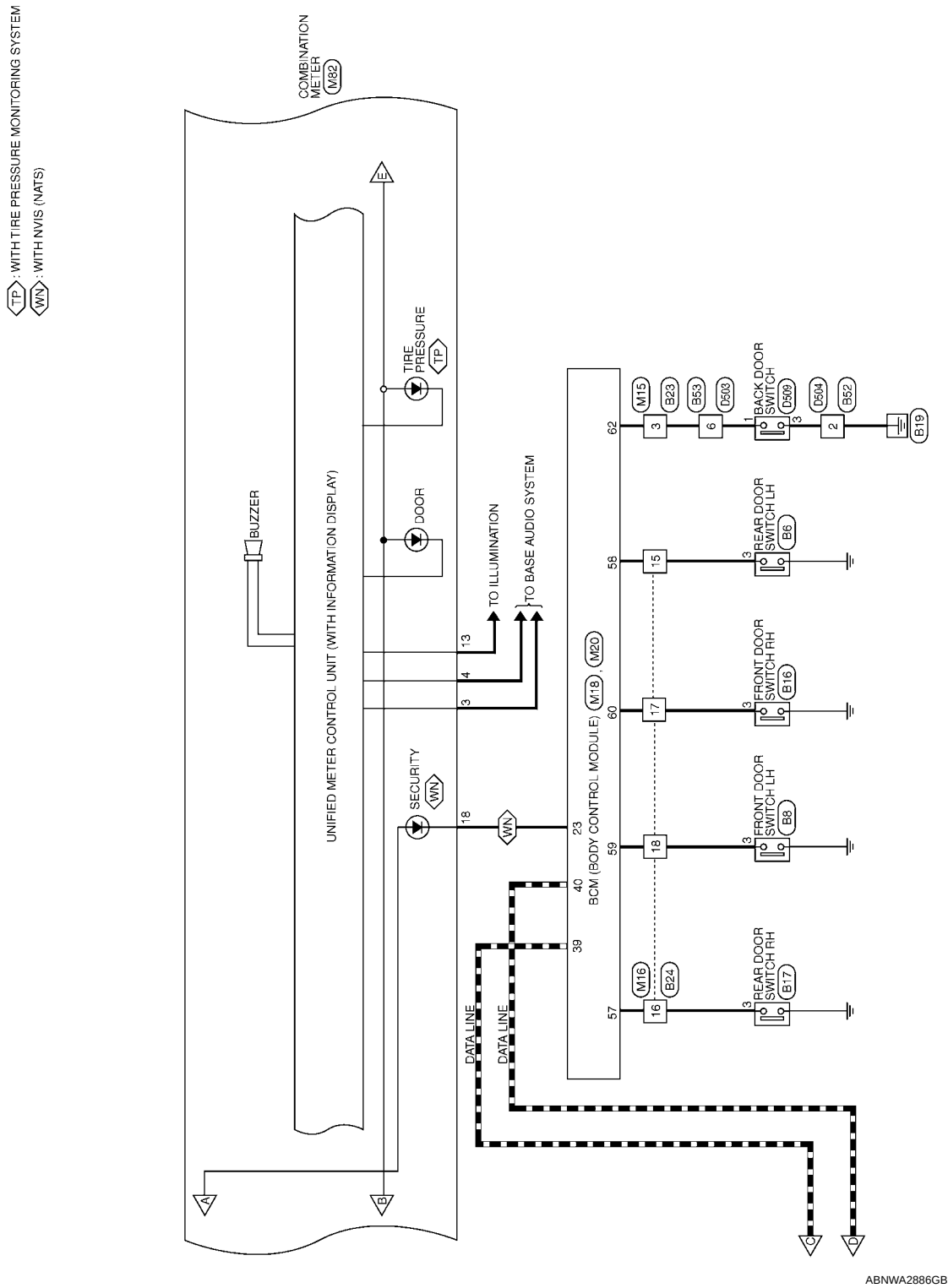


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METER SYSTEM

< WIRING DIAGRAM >

[TYPE A]

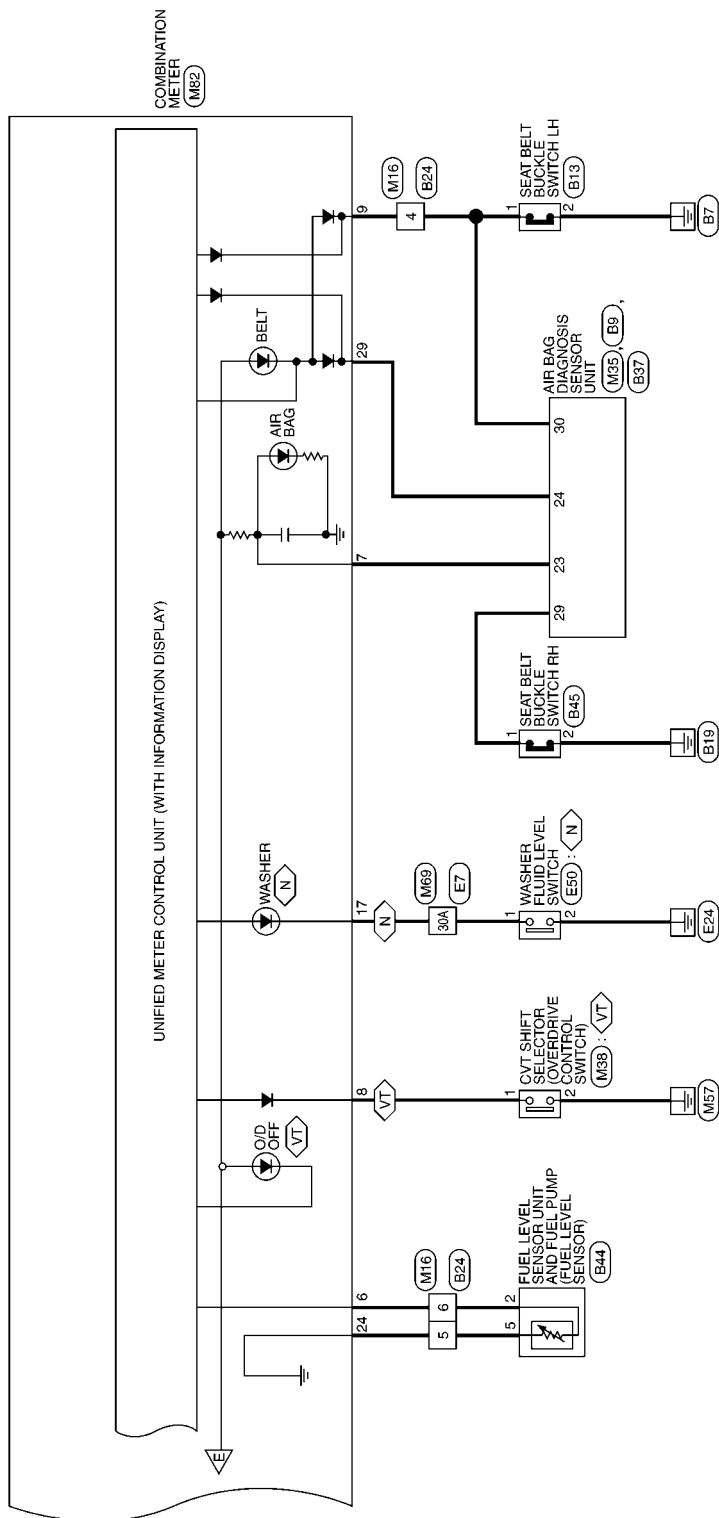


A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
P

MWI

[TYPE A]

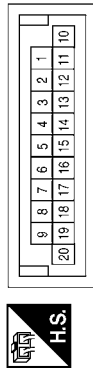
N : FOR CANADA
VT : WITH CVT



AANWA1199GB

METER CONNECTORS - TYPE A

Connector No.	M10
Connector Name	JOINT CONNECTOR-M01
Connector Color	BLUE



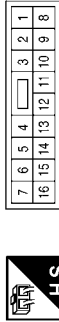
Terminal No.	Color of Wire	Signal Name
4	L	-
5	L	-
7	L	-
8	L	-
13	P	-
14	P	-
16	P	-
17	P	-

Connector No.	M17
Connector Name	PARKING BRAKE SWITCH
Connector Color	BLACK



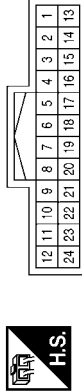
Terminal No.	Color of Wire	Signal Name
1	SB	-

Connector No.	M15
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
3	P	-

Connector No.	M16
Connector Name	WIRE TO WIRE
Connector Color	WHITE



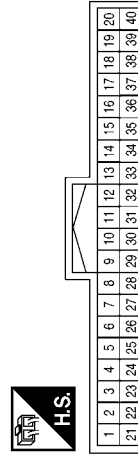
Terminal No.	Color of Wire	Signal Name
4	V	-
5	GR	-
6	W	-
15	W	-
16	BR	-
17	BG	-
18	SB	-

Connector No.	M20
Connector Name	BCM (BODY CONTROL MODULE) (WITHOUT INTELLIGENT KEY SYSTEM)
Connector Color	BLACK



Terminal No.	Color of Wire	Signal Name
57	BR	DOOR SW (RR)
58	W	DOOR SW (RL)
59	SB	DOOR SW (DR)
60	BG	DOOR SW (AS)
62	P	DOOR SW (BACK)

Connector No.	M18
Connector Name	BCM (BODY CONTROL MODULE) (WITHOUT INTELLIGENT KEY SYSTEM)
Connector Color	WHITE



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

ABNIA8040GB

METER SYSTEM

< WIRING DIAGRAM >

[TYPE A]

Connector No.	M53
Connector Name	EPS CONTROL UNIT
Connector Color	BLACK



1	2	3	4
5	6	7	8

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



1	2	3	4
5	6	7	8

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



8	9	7	6	2	5	4	3
19	52	54	23	24	22		
18	51	53	60	59	25		1

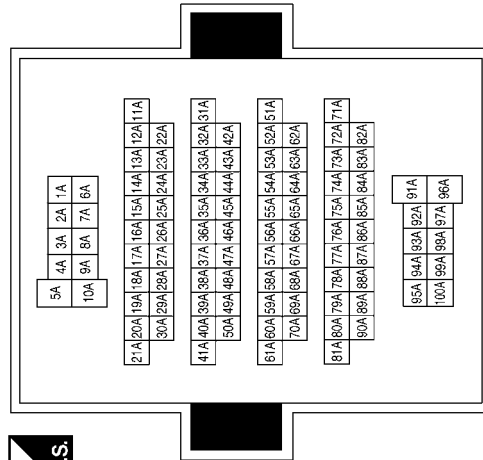
Terminal No.	Color of Wire	Signal Name
1	P	CAN-L
2	L	CAN-H

Terminal No.	Color of Wire	Signal Name
1	P	-
2	BW	-

Terminal No.	Color of Wire	Signal Name
23	V	AIRBAG W/L
24	G	SEATBELT REMINDER/TELLTALE LAMP B

Terminal No.	Color of Wire	Signal Name
17A	Y	-
18A	BR	-
20A	P	-
21A	L	-
30A	V	-

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



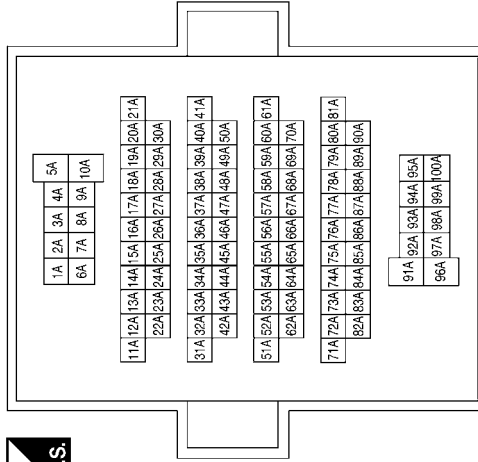
ABNIA8041GB

METER SYSTEM

< WIRING DIAGRAM >

[TYPE A]

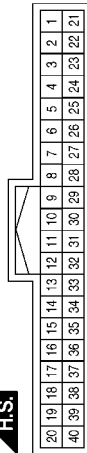
Connector No.	E7
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
17A	V	-
18A	LG	-
20A	P	-
21A	L	-
30A	R	-

Terminal No.	Color of Wire	Signal Name
20	-	-
21	B	GND (ILLUMINATION)
22	B	GND (POWER)
23	B	GND (CIRCUIT)
24	GR	FM GND
25	-	-
26	-	-
27	R/W	BAT
28	GR	IGN
29	G	AS BELT
30	-	-
31	-	-
32	-	-
33	-	-
34	-	-
35	-	-
36	-	-
37	-	-
38	Y	CHG
39	-	-
40	-	-

Connector No.	M82
Connector Name	COMBINATION METER (WITH TYPE A)
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
1	L	CAN-H
2	P	CAN-L
3	SB	2P/R
4	LG	8P/R
5	-	-
6	W	FM SIG
7	V	AIR BAG
8	P	O/D OFF
9	V	BELT
10	SB	PKB SW
11	BR	BRAKE OIL SW
12	-	-
13	B	OUTSIDE ILL OUTPUT/IDLE STOP IND SW
14	-	-
15	R	ACC SW
16	-	-
17	V	WASHER/STRG SW
18	GR	SECURITY
19	-	-

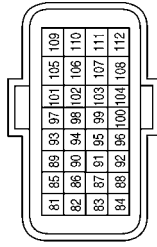
ABNIA8042GB

METER SYSTEM

< WIRING DIAGRAM >

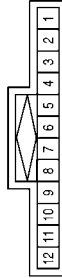
[TYPE A]

Connector No.	E16
Connector Name	ECM
Connector Color	BLACK



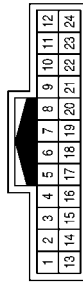
Terminal No.	Color of Wire	Signal Name
83	P	CAN-L
84	L	CAN-H

Connector No.	E14
Connector Name	JOINT CONNECTOR-E03
Connector Color	BLUE



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

Connector No.	E8
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
6	P	-
7	L	-
19	V	-

Connector No.	E50
Connector Name	WASHER FLUID LEVEL SWITCH
Connector Color	BROWN



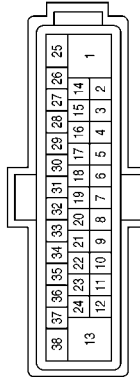
Terminal No.	Color of Wire	Signal Name
1	R	-
2	B	-

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



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

Connector No.	E33
Connector Name	ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)
Connector Color	BLACK



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

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METER SYSTEM

< WIRING DIAGRAM >

[TYPE A]

Connector No.	F6
Connector Name	ENGINE COOLANT TEMPERATURE SENSOR
Connector Color	GRAY



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

Connector No.	F4
Connector Name	GENERATOR
Connector Color	-



Terminal No.	Color of Wire	Signal Name
5	B/Y	-

Connector No.	F1
Connector Name	GENERATOR
Connector Color	BLACK



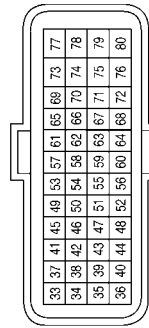
Terminal No.	Color of Wire	Signal Name
2	L/W	-

Connector No.	F38
Connector Name	ENGINE OIL PRESSURE SENSOR
Connector Color	BLACK



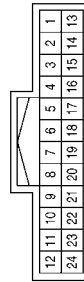
Terminal No.	Color of Wire	Signal Name
1	O	-
2	Y	-
3	L	-

Connector No.	F11
Connector Name	ECM
Connector Color	BROWN



Terminal No.	Color of Wire	Signal Name
38	LG	ENGINE COOLANT TEMPERATURE SENSOR
44	P	SENSOR GROUND (ECT SENSOR)
47	Y	ENGINE OIL PRESSURE SENSOR
60	L	SENSOR GROUND (EOP SENSOR)
74	O	SENSOR POWER SUPPLY (EOP SENSOR)

Connector No.	F8
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
6	P/L	-
7	L/G	-
19	L/W	-

ABNIA8043GB

METER SYSTEM

< WIRING DIAGRAM >

[TYPE A]

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



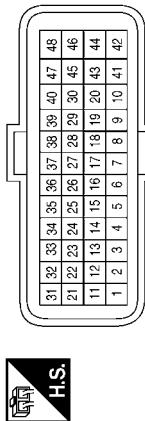
Terminal No.	3	Color of Wire	LG	Signal Name	—
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Connector No.	B6
Connector Name	REAR DOOR SWITCH LH
Connector Color	WHITE



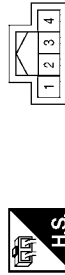
Terminal No.	3	Color of Wire	V	Signal Name	—
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Connector No.	F44
Connector Name	TCM (TRANSMISSION CONTROL MODULE)
Connector Color	BLACK



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

Connector No.	B16
Connector Name	FRONT DOOR SWITCH RH
Connector Color	WHITE



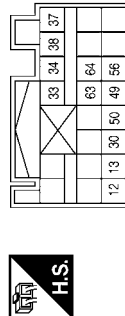
Terminal No.	3	Color of Wire	L	Signal Name	—
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Connector No.	B13
Connector Name	SEAT BELT BUCKLE SWITCH LH
Connector Color	WHITE



Terminal No.	1	Color of Wire	BG	Signal Name	—
	2		B		—

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



Terminal No.	30	Color of Wire	BG	Signal Name	LH SEAT BELT BUCKLE SWITCH (+)
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ABNIA8044GB

METER SYSTEM

< WIRING DIAGRAM >

[TYPE A]

Connector No.	B24
Connector Name	WIRE TO WIRE
Connector Color	WHITE



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

Terminal No.	Color of Wire	Signal Name
4	BG	-
5	P	-
6	R	-
15	V	-
16	R	-
17	L	-
18	LG	-

Connector No.	B23
Connector Name	WIRE TO WIRE
Connector Color	WHITE



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

Terminal No.	Color of Wire	Signal Name
3	P	-

Connector No.	B17
Connector Name	REAR DOOR SWITCH RH
Connector Color	WHITE



1	2	3	4
---	---	---	---

Terminal No.	Color of Wire	Signal Name
3	R	-

Connector No.	B45
Connector Name	SEAT BELT BUCKLE SWITCH RH
Connector Color	WHITE



3	2	1
---	---	---

Terminal No.	Color of Wire	Signal Name
1	BG	-
2	B	-

Connector No.	B44
Connector Name	FUEL LEVEL SENSOR UNIT AND FUEL PUMP
Connector Color	GRAY



1	2	3	4	5
---	---	---	---	---

Terminal No.	Color of Wire	Signal Name
2	R	-
5	P	-

Connector No.	B37
Connector Name	AIR BAG DIAGNOSIS SENSOR UNIT
Connector Color	YELLOW



35	36	31	32				
		26		61	62		
		55	47	48	29	11	10

Terminal No.	Color of Wire	Signal Name
29	BG	RH SEAT BELT BUCKLE SWITCH (+)

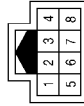
ABNIA8045GB

METER SYSTEM

< WIRING DIAGRAM >

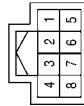
[TYPE A]

Connector No.	D503
Connector Name	WIRE TO WIRE
Connector Color	WHITE



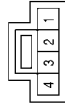
Terminal No.	6	Color of Wire	P	Signal Name	-
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Connector No.	B53
Connector Name	WIRE TO WIRE
Connector Color	WHITE



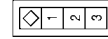
Terminal No.	6	Color of Wire	P	Signal Name	-
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Connector No.	B52
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	2	Color of Wire	B	Signal Name	-
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Connector No.	D509
Connector Name	BACK DOOR SWITCH
Connector Color	WHITE



Terminal No.	1	Color of Wire	P	Signal Name	-
	3	Color of Wire	B	Signal Name	-

Connector No.	D504
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	2	Color of Wire	B	Signal Name	-
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ABNIA7677GB

DIAGNOSIS AND REPAIR WORK FLOW

< BASIC INSPECTION >

[TYPE A]

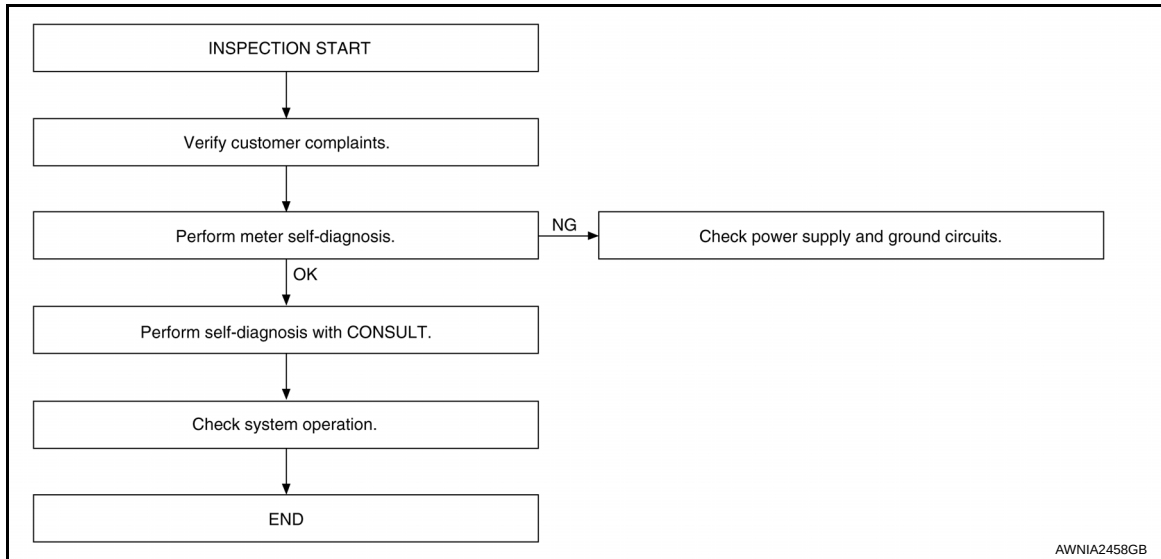
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORK FLOW

Work Flow

INFOID:0000000012432559

OVERALL SEQUENCE



DETAILED FLOW

1.CONFIRM SYMPTOM

Confirm symptom or customer complaint.

>> GO TO 2.

2.SELF-DIAGNOSIS OF COMBINATION METER

Perform self-diagnosis of combination meter. Refer to [MWI-17, "On Board Diagnosis Function"](#).

Is the inspection result normal?

YES >> GO TO 3.

NO >> If self-diagnosis will not start, check power supply and ground circuit of combination meter. Refer to [MWI-43, "COMBINATION METER : Diagnosis Procedure"](#). If power supply and ground circuits are OK, replace combination meter. Refer to [MWI-54, "Removal and Installation"](#).

3.CHECK COMBINATION METER WITH CONSULT

Select METER/M&A on CONSULT and perform self-diagnosis of combination meter. Refer to [MWI-18, "CONSULT Function \(METER/M&A\)"](#).

Is the inspection result normal?

YES >> Check symptom. GO TO 4.

NO >> Refer to [MWI-24, "DTC Index"](#).

4.CHECK SYSTEM OPERATION

Check the combination meter to verify that the repair has been completed successfully.

Is the inspection result normal?

YES >> Inspection End.

NO >> GO TO 1.

U1000 CAN COMM CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[TYPE A]

DTC/CIRCUIT DIAGNOSIS

U1000 CAN COMM CIRCUIT

DTC Logic

INFOID:0000000012432560

DTC DETECTION LOGIC

DTC	Display Item	Malfunction detected condition	Possible malfunction
U1000	CAN COMM CIRC [U1000]	When combination meter is not transmitting or receiving CAN communication signals for 2 seconds or more.	CAN communication system

Diagnosis Procedure

INFOID:0000000012432561

1.CHECK CAN COMMUNICATION

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

>> GO TO LAN system. Refer to [LAN-16, "Trouble Diagnosis Flow Chart"](#).

U1010 CONTROL UNIT (CAN)

< DTC/CIRCUIT DIAGNOSIS >

[TYPE A]

U1010 CONTROL UNIT (CAN)

Description

INFOID:0000000012432562

Initial diagnosis of combination meter.

DTC Logic

INFOID:0000000012432563

DTC DETECTION LOGIC

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

Diagnosis Procedure

INFOID:0000000012432564

1.REPLACE COMBINATION METER

When DTC U1010 is detected, replace combination meter. Refer to [MWI-54. "Removal and Installation"](#).

>> Inspection End.

B2205 VEHICLE SPEED

< DTC/CIRCUIT DIAGNOSIS >

[TYPE A]

B2205 VEHICLE SPEED

Description

INFOID:0000000012432565

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

DTC Logic

INFOID:0000000012432566

DTC DETECTION LOGIC

DTC	Display Item	Malfunction detected condition	Possible malfunction
B2205	VEHICLE SPEED CIRC [B2205]	Malfunction is detected when an erroneous speed signal is received for 2 seconds or more.	- Combination meter - ABS actuator and electric unit (control unit)

Diagnosis Procedure

INFOID:0000000012432567

1. CHECK COMBINATION METER INPUT SIGNAL

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

Is the inspection result normal?

- YES >> Perform ABS actuator and electric unit (control unit) self-diagnosis. Refer to [BRC-31, "CONSULT Function \(ABS\)"](#).
- NO >> Replace combination meter. Refer to [MWI-54, "Removal and Installation"](#).

B2267 ENGINE SPEED

< DTC/CIRCUIT DIAGNOSIS >

[TYPE A]

B2267 ENGINE SPEED

Description

INFOID:0000000012432568

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

DTC Logic

INFOID:0000000012432569

DTC DETECTION LOGIC

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

Diagnosis Procedure

INFOID:0000000012432570

1.PERFORM SELF-DIAGNOSIS OF ECM

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

>> Refer to [EC-60, "CONSULT Function"](#).

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B2268 WATER TEMP

< DTC/CIRCUIT DIAGNOSIS >

[TYPE A]

B2268 WATER TEMP

Description

INFOID:0000000012432571

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

DTC Logic

INFOID:0000000012432572

DTC DETECTION LOGIC

DTC	Display Item	Malfunction detected condition	Possible malfunction
B2268	WATER TEMP METER [B2268]	ECM continuously transmits abnormal engine coolant temperature signals for 60 seconds or more	• Engine coolant temperature sensor • ECM

Diagnosis Procedure

INFOID:0000000012432573

1.PERFORM SELF-DIAGNOSIS OF ECM

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

>> Refer to [EC-60. "CONSULT Function"](#).

POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[TYPE A]

POWER SUPPLY AND GROUND CIRCUIT COMBINATION METER

COMBINATION METER : Diagnosis Procedure

INFOID:0000000012432574

Regarding Wiring Diagram information, refer to [MWI-26, "Wiring Diagram"](#).

1. CHECK FUSE

Check that the following fuses are not blown.

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

Is the fuse blown?

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

2. POWER SUPPLY CIRCUIT CHECK

1. Disconnect combination meter connector.
2. Check voltage between combination meter harness connector M82, terminals 27, 28, 15 and ground.

Terminals			Ignition switch position			
(+)		(-)	OFF	ACC	ON	START
Connector	Terminal					
M82	27	Ground	Battery voltage	Battery voltage	Battery voltage	Battery voltage
	28		0V	0V	Battery voltage	Battery voltage
	15		0V	Battery voltage	Battery voltage	0V

Is the inspection result normal?

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

3. GROUND CIRCUIT CHECK

1. Turn ignition switch OFF.
2. Disconnect combination meter connector.
3. Check continuity between combination meter harness connector M82, terminals 21, 22, 23 and ground.

Terminals			Continuity
(+)		(-)	
Connector	Terminal		
M82	21	Ground	Yes
	22		
	23		

Is the inspection result normal?

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

BCM (BODY CONTROL MODULE)

POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[TYPE A]

BCM (BODY CONTROL MODULE) : Diagnosis Procedure

INFOID:000000012542950

Regarding Wiring Diagram information, refer to [BCS-117, "Wiring Diagram"](#).

1.CHECK FUSES AND FUSIBLE LINK

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

Terminal No.	Signal name	Fuses and fusible link No.
37	Battery power supply	8 (10A)
42		12 (10A)
50		G (40A)
11	Ignition switch ACC or ON	18 (10A)
38	Ignition switch ON or START	2 (10A)

Is the fuse blown?

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

NO >> GO TO 2.

2.CHECK POWER SUPPLY CIRCUIT

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

BCM		Ground	Ignition switch position		
Connector	Terminal	—	OFF	ACC	ON
M18	11		0 V	Battery voltage	Battery voltage
	37		Battery voltage		
	38		0 V	0 V	
M19	42		Battery voltage	Battery voltage	
	50				

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair harness or connector.

3.CHECK GROUND CIRCUIT

Check continuity between BCM connector and ground.

BCM		Ground	Continuity
Connector	Terminal		
M19	55	—	Yes

Is the inspection result normal?

YES >> Inspection End.

NO >> Repair harness or connector.

FUEL LEVEL SENSOR SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[TYPE A]

FUEL LEVEL SENSOR SIGNAL CIRCUIT

Description

INFOID:0000000012432576

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

Component Function Check

INFOID:0000000012432577

1.COMBINATION METER INPUT SIGNAL

1. Select METER/M&A on CONSULT.
2. Using FUEL METER of DATA MONITOR, compare the DATA MONITOR value with the fuel gauge position.

Fuel gauge indication position	Reference value of data monitor [L]
1	Approx. 39.8
3/4	Approx. 31.2
1/2	Approx. 20.8
1/4	Approx. 10.8
0	Approx. 2.9

Does monitor value match fuel gauge reading?

- YES >> Inspection End.
NO >> Replace combination meter. Refer to [MWI-54, "Removal and Installation"](#).

Diagnosis Procedure

INFOID:0000000012432578

Regarding Wiring Diagram information, refer to [MWI-26, "Wiring Diagram"](#).

1.CHECK HARNESS CONNECTOR

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

Is the inspection result normal?

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

2.CHECK FUEL LEVEL SENSOR UNIT CIRCUIT

1. Disconnect combination meter harness connector M82 and fuel level sensor unit and fuel pump harness connector B44.
2. Check continuity between combination meter harness connector M82 terminal 6 and fuel level sensor unit and fuel pump harness connector B44 terminal 2.

Connector	Terminal	Connector	Terminal	Continuity
M82	6	B44	2	Yes

3. Check continuity between fuel level sensor unit and fuel pump harness connector B44 terminal 2 and ground.

Connector	Terminal	Ground	Continuity
B44	2		No

Is the inspection result normal?

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

FUEL LEVEL SENSOR SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[TYPE A]

3.CHECK FUEL LEVEL SENSOR GROUND CIRCUIT

1. Disconnect ECM connector F11.
2. Check continuity between combination meter harness connector M82 terminal 24 and fuel level sensor unit and fuel pump harness connector B44 terminal 5.

Connector	Terminal	Connector	Terminal	Continuity
M82	24	B44	5	Yes

3. Check continuity between fuel level sensor unit and fuel pump harness connector B44 terminal 5 and ground.

Connector	Terminal	Ground	Continuity
B44	5		No

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair harness or connector.

4.CHECK INSTALLATION CONDITION

Check fuel level sensor unit installation, and verify the float arm does not interfere or bind with the internal components in the fuel tank.

Is the inspection result normal?

YES >> Inspection End.

NO >> Install the fuel level sensor unit properly.

Component Inspection

INFOID:0000000012432579

1.REMOVE FUEL LEVEL SENSOR UNIT

Remove the fuel level sensor unit. Refer to [FL-6, "Removal and Installation"](#).

>> GO TO 2.

2.CHECK FUEL LEVEL SENSOR UNIT

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

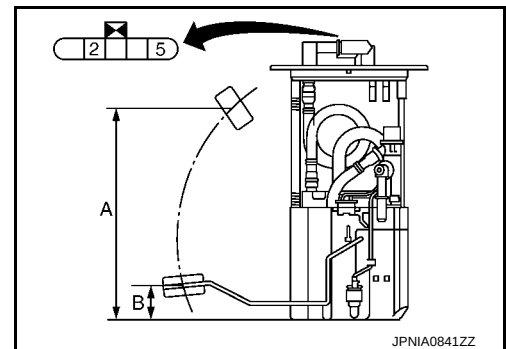
Terminals		Condition	Resistance (Ω) (Approx.)	Height [mm (in)]
Fuel level sensor unit				
2	5	Full* (A)	51	171.4 (6.75)
		Empty* (B)	283	18.5 (0.73)

*: When float rod is in contact with stopper.

Is inspection result OK?

YES >> Inspection End.

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



WASHER FLUID LEVEL SWITCH CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[TYPE A]

WASHER FLUID LEVEL SWITCH CIRCUIT

Description

INFOID:0000000012432580

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

Diagnosis Procedure

INFOID:0000000012432581

Regarding Wiring Diagram information, refer to [MWI-26, "Wiring Diagram"](#).

1.CHECK WASHER FLUID LEVEL SWITCH SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect combination meter connector and washer fluid level switch connector.
3. Check continuity between combination meter harness connector M82 terminal 17 and washer fluid level switch harness connector E50 terminal 1.

Connector	Terminal	Connector	Terminal	Continuity
M82	17	E50	1	Yes

4. Check continuity between combination meter harness connector M82 terminal 17 and ground.

Connector	Terminal	Ground	Continuity
M82	17		No

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace harness or connector.

2.CHECK WASHER FLUID LEVEL SWITCH GROUND CIRCUIT

Check continuity between washer fluid level switch harness connector E50 terminal 2 and ground.

Connector	Terminal	Ground	Continuity
E50	2		Yes

Is the inspection result normal?

YES >> Inspection End.

NO >> Repair or replace harness or connector.

Component Inspection

INFOID:0000000012432582

1.CHECK WASHER FLUID LEVEL SWITCH

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

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

Is the inspection result normal?

YES >> Inspection End.

NO >> Replace washer fluid level switch. Refer to [WW-59, "Removal and Installation"](#).

THE FUEL GAUGE INDICATOR DOES NOT OPERATE

< SYMPTOM DIAGNOSIS >

[TYPE A]

SYMPTOM DIAGNOSIS

THE FUEL GAUGE INDICATOR DOES NOT OPERATE

Description

INFOID:000000012432583

Fuel gauge will not indicate from a certain position.

Diagnosis Procedure

INFOID:000000012432584

1.CHECK COMBINATION METER INPUT SIGNAL

1. Select METER/M&A on CONSULT.
2. Using DATA MONITOR, compare the monitor value with the fuel gauge reading on the combination meter.
Refer to [MWI-45, "Component Function Check"](#).

Does monitor value match fuel gauge reading?

YES >> GO TO 2.

NO >> Replace combination meter. Refer to [MWI-54, "Removal and Installation"](#).

2.CHECK FUEL LEVEL SENSOR SIGNAL CIRCUIT

Check the fuel level sensor signal circuit. Refer to [MWI-45, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair harness or connector.

3.COMPONENT INSPECTION

Perform a component inspection on the fuel level sensor unit. Refer to [MWI-46, "Component Inspection"](#).

Is the inspection result normal?

YES >> GO TO 4.

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

4.CHECK FLOAT INTERFERENCE

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

Is the inspection result normal?

YES >> Replace combination meter. Refer to [MWI-54, "Removal and Installation"](#).

NO >> Repair or replace malfunctioning parts.

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THE OIL PRESSURE WARNING LAMP DOES NOT TURN ON

< SYMPTOM DIAGNOSIS >

[TYPE A]

THE OIL PRESSURE WARNING LAMP DOES NOT TURN ON

Description

INFOID:0000000012432585

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

Diagnosis Procedure

INFOID:0000000012432586

1.CHECK COMBINATION METER ENGINE OIL PRESSURE WARNING LIGHT

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

Component	Condition	CONSULT
Engine oil pressure warning light	Ignition ON	ON
	Ignition OFF	OFF

Is the inspection result normal?

- YES >> Inspection End.
- NO >> Replace combination meter. Refer to [MWI-54. "Removal and Installation"](#).

THE OIL PRESSURE WARNING LAMP DOES NOT TURN OFF

< SYMPTOM DIAGNOSIS >

[TYPE A]

THE OIL PRESSURE WARNING LAMP DOES NOT TURN OFF

Description

INFOID:0000000012432587

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

Diagnosis Procedure

INFOID:0000000012432588

1. CHECK COMBINATION METER INPUT SIGNAL

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

Component	Condition	CONSULT
Engine oil pressure warning light	Engine running	OFF

Is the inspection result normal?

- YES >> Replace combination meter. Refer to [MWI-54, "Removal and Installation"](#).
- NO >> Perform ECM self-diagnosis. Refer to [EC-60, "CONSULT Function"](#).

THE DOOR OPEN WARNING CONTINUES DISPLAYING, OR DOES NOT DISPLAY

< SYMPTOM DIAGNOSIS >

[TYPE A]

THE DOOR OPEN WARNING CONTINUES DISPLAYING, OR DOES NOT DISPLAY

Description

INFOID:0000000012432589

- 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:0000000012432590

1.CHECK BCM INPUT SIGNAL

Check the BCM input signal. Refer to [DLK-232, "Component Function Check"](#).

Is the inspection result normal?

YES >> GO TO 2.

NO >> GO TO 3.

2.CHECK COMBINATION METER INPUT SIGNAL

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

Monitor item	Condition	Status
DOOR W/L	Door open	ON
	Door closed	OFF

Is the inspection result normal?

YES >> Replace combination meter. Refer to [MWI-54, "Removal and Installation"](#).

NO >> Replace BCM. Refer to [BCS-137, "Removal and Installation"](#).

3.CHECK DOOR SWITCH SIGNAL CIRCUIT

Check the door switch signal circuit. Refer to [DLK-232, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace harness or connector.

4.CHECK DOOR SWITCH

Check the door switch. Refer to [DLK-234, "Component Inspection"](#).

Is the inspection result normal?

YES >> Replace combination meter. Refer to [MWI-54, "Removal and Installation"](#).

NO >> Replace applicable door switch. Refer to [DLK-308, "Removal and Installation"](#).

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

< SYMPTOM DIAGNOSIS >

[TYPE A]

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

Description

INFOID:0000000012432591

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

Diagnosis Procedure

INFOID:0000000012432592

1.CHECK PARKING BRAKE WARNING LAMP OPERATION

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

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

Is the inspection result normal?

- YES >> Replace combination meter. Refer to [MWI-54, "Removal and Installation"](#).
NO >> GO TO 2.

2.CHECK PARKING BRAKE SWITCH

Check the parking brake switch. Refer to [WCS-43, "TYPE A : Component Inspection"](#).

Is the inspection result normal?

- YES >> GO TO 3.
NO >> Replace parking brake switch. Refer to [PB-9, "Removal and Installation"](#).

3.CHECK PARKING BRAKE SWITCH SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Check the parking brake switch signal circuit. Refer to [WCS-42, "TYPE A : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES >> Replace combination meter. Refer to [MWI-54, "Removal and Installation"](#).
NO >> Repair or replace harness or connector.

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

< SYMPTOM DIAGNOSIS >

[TYPE A]

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

Description

INFOID:0000000012432593

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

Diagnosis Procedure

INFOID:0000000012432594

1.CHECK WASHER FLUID LEVEL SWITCH

Check the washer fluid level switch. Refer to [MWI-47. "Component Inspection"](#).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace washer fluid level switch. Refer to [WW-59. "Removal and Installation"](#).

2.CHECK WASHER FLUID LEVEL SWITCH SIGNAL CIRCUIT

Check the washer fluid level switch signal circuit. Refer to [MWI-47. "Diagnosis Procedure"](#).

Is the inspection result normal?

YES >> Replace combination meter. Refer to [MWI-54. "Removal and Installation"](#).

NO >> Repair or replace harness or connector.

REMOVAL AND INSTALLATION

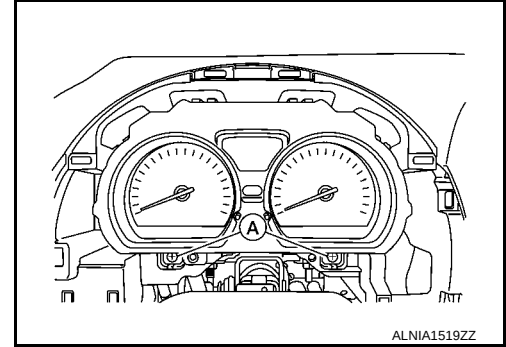
COMBINATION METER

Removal and Installation

INFOID:000000012432595

REMOVAL

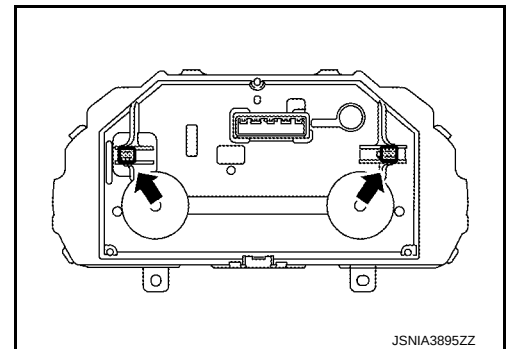
1. Disconnect negative battery terminal. Refer to [PG-70, "Removal and Installation \(Battery\)"](#).
2. Remove cluster lid A. Refer to [IP-21, "Removal and Installation"](#).
3. Remove combination meter screws (A).



4. Pull the combination meter straight out to release clips.

NOTE:

Back side of the combination meter shown for clip position (←) clarity.



5. Disconnect the harness connector from the combination meter.

INSTALLATION

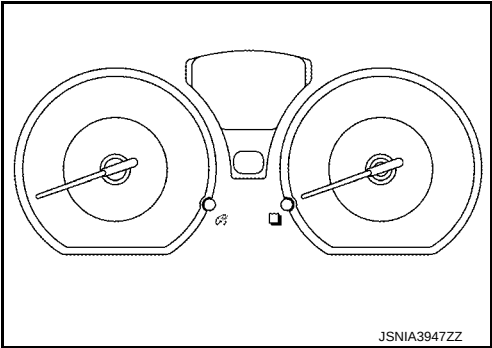
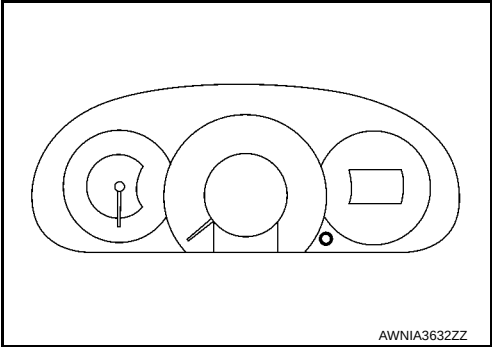
Installation is in the reverse order of removal.

HOW TO USE THIS MANUAL

APPLICATION NOTICE

Information

INFOID:0000000012432596

Service information	Design of combination meter	
TYPE A		 JSNIA3947ZZ
TYPE B		 AWNIA3632ZZ

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PRECAUTION

PRECAUTIONS

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

INFOID:0000000012432597

The Supplemental Restraint System such as "AIR BAG" and "SEAT BELT PRE-TENSIONER", used along with a front seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. Information necessary to service the system safely is included in the SR and SB section of this Service Manual.

WARNING:

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

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

WARNING:

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

PREPARATION

< PREPARATION >

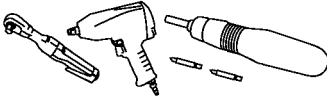
[TYPE B]

PREPARATION

PREPARATION

Commercial Service Tools

INFOID:0000000012432598

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

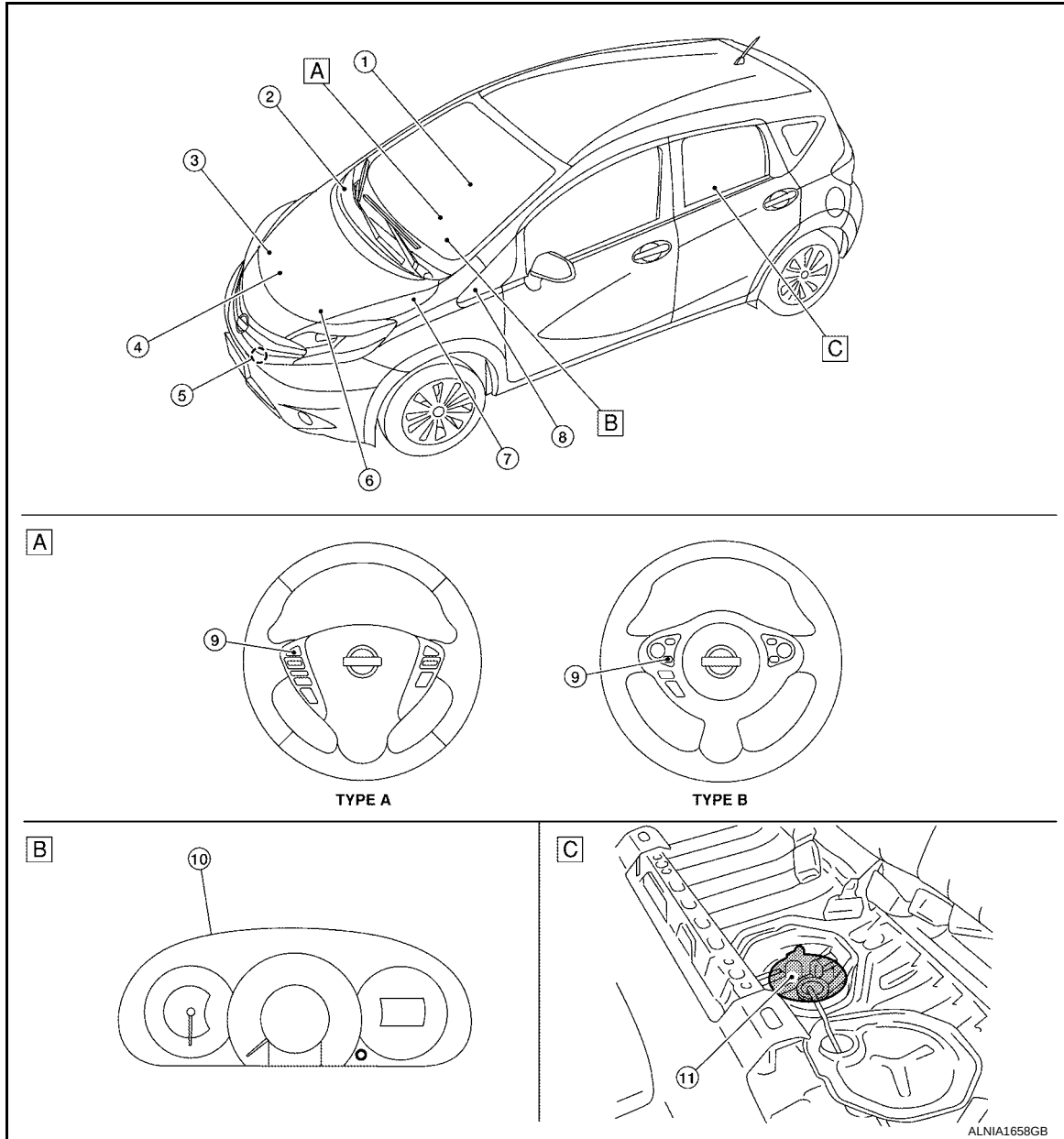
SYSTEM DESCRIPTION

COMPONENT PARTS

METER SYSTEM

METER SYSTEM : Component Parts Location

INFOID:0000000012432599



A. Steering wheel

B. Combination meter

C. View with rear lower seat cushion pad and inspection hole cover removed.

No.	Component	Function
1.	Parking brake switch	Transmits the parking brake switch signal to the combination meter.
2.	ABS actuator and electric unit (control unit)	Transmits the vehicle speed signal to the combination meter via CAN communication. Refer to BRC-7, "Component Parts Location" for detailed installation location.

COMPONENT PARTS

< SYSTEM DESCRIPTION >

[TYPE B]

No.	Component	Function
3.	Washer fluid level switch	Transmits the washer fluid level switch signal to the combination meter (for Canada). Refer to WW-6, "Component Parts Location" for detailed installation location.
4.	Engine oil pressure sensor	Transmits the engine oil pressure sensor signal to the ECM. Refer to EM-93, "Exploded View" for detailed installation location.
5.	Ambient sensor	Transmits the ambient sensor signal to the combination meter.
6.	TCM	Transmits the shift position signal to the combination meter via CAN communication (with CVT). Refer to TM-61, "CVT CONTROL SYSTEM : Component Parts Location" for detailed installation location.
7.	ECM	Transmits the following signals to the combination meter via CAN communication: • Engine speed signal • Engine coolant temperature signal • Fuel consumption monitor signal • Engine oil pressure sensor signal Refer to EC-14, "ENGINE CONTROL SYSTEM : Component Parts Location" for detailed installation location.
8.	BCM	Transmits the following signals to the combination meter via CAN communication: • Door switch signal • Buzzer signal Refer to BCS-6, "BODY CONTROL SYSTEM : Component Parts Location" (with Intelligent Key system) or BCS-77, "BODY CONTROL SYSTEM : Component Parts Location" (without Intelligent Key system) for detailed installation location.
9.	Steering wheel audio control switches (meter control switch)	Transmits the meter control switch signal to the combination meter.
10.	Combination meter	Refer to MWI-59, "METER SYSTEM : Combination Meter" .
11.	Fuel level sensor unit and fuel pump (fuel level sensor)	Transmits the fuel level sensor signal to the combination meter.

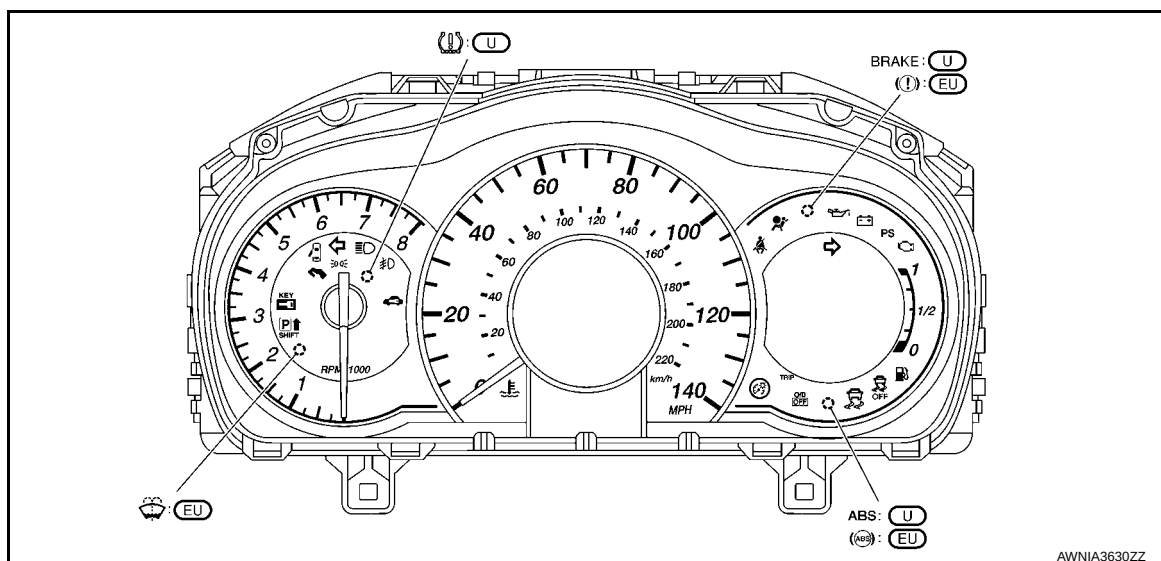
METER SYSTEM : Combination Meter

INFOID:0000000012432600

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

- Measuring instruments
- Indicator lamps
- Warning lamps
- Meter illumination control
- Information display

ARRANGEMENT OF COMBINATION METER



COMPONENT PARTS

< SYSTEM DESCRIPTION >

[TYPE B]

U: USA

EU: Except USA

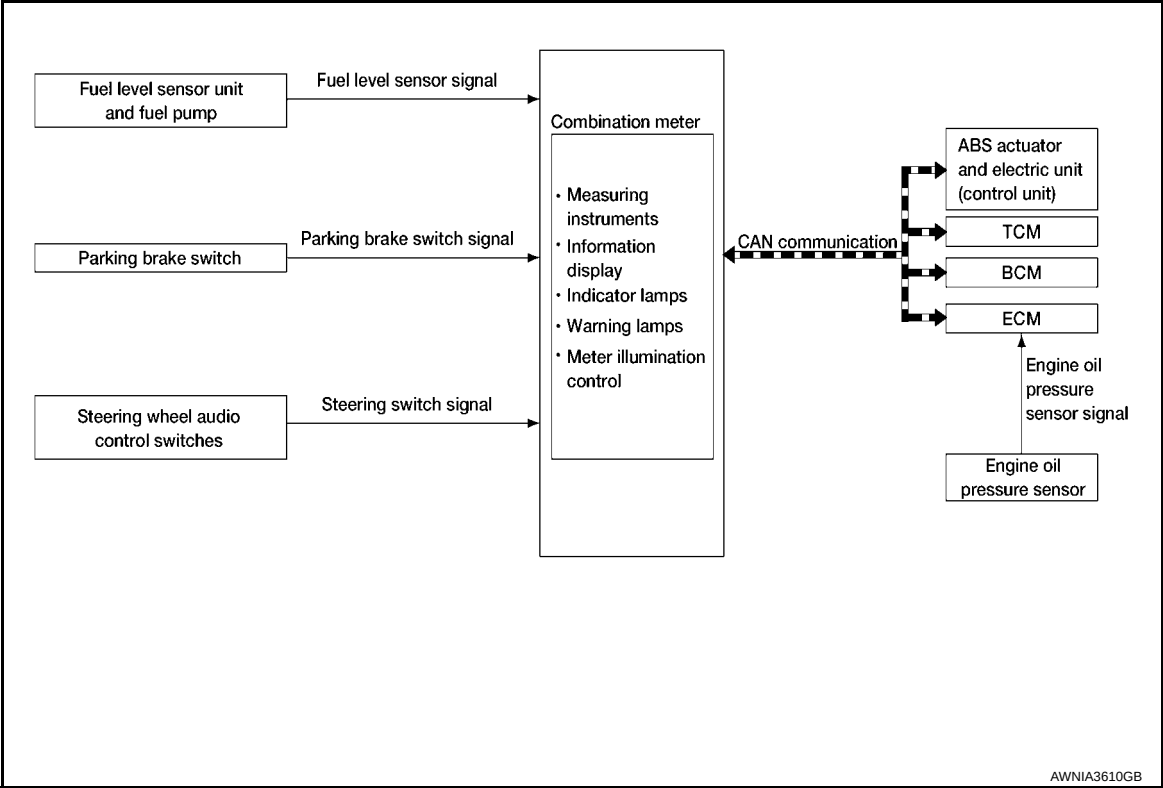
cardiagn.com

SYSTEM
METER SYSTEM

METER SYSTEM : System Description

INFOID:0000000012432601

SYSTEM DIAGRAM



COMBINATION METER INPUT SIGNAL (CAN COMMUNICATION SIGNAL)

Transmit unit	Signal name
ABS actuator and electric unit (control unit)	Vehicle speed signal
BCM	Door switch signal
	Buzzer signal
TCM	Shift position signal
ECM	Engine speed signal
	Engine coolant temperature signal
	Engine oil pressure signal
	Fuel consumption signal
	Loose fuel cap signal

DESCRIPTION

Combination Meter

- The combination meter receives necessary signals from each unit, switch, and sensor to control the following functions.
 - Measuring instruments
 - Warning lamps
 - Indicator lamps
 - Meter illumination control
 - Information display
- The combination meter incorporates a buzzer function that sounds an audible alarm with the integrated buzzer device. Refer to [WCS-7. "WARNING CHIME SYSTEM : System Description"](#) for further details.

SYSTEM

< SYSTEM DESCRIPTION >

[TYPE B]

- The combination meter includes an on board diagnosis function.
- The combination meter can be diagnosed with CONSULT.

METER CONTROL FUNCTION LIST

System		Description	Reference
Measuring instruments	Speedometer	Indicates vehicle speed.	MWI-63, "SPEEDOMETER : System Description"
	Tachometer	Indicates engine speed.	MWI-64, "TACHOMETER : System Description"
Shift position indicator		Indicates shift position.	MWI-64, "SHIFT POSITION INDICATOR : System Description"
Warning lamp/indicator lamp	Engine oil pressure warning lamp	The warning lamp turns ON or turns OFF, according to engine hydraulic pressure.	MWI-65, "OIL PRESSURE WARNING LAMP : System Description"
	High water temperature warning lamp	Turns ON when engine coolant reaches high temperature.	MWI-64, "HIGH WATER TEMPERATURE WARNING LAMP : System Description"
Meter illumination control	Meter illumination control function	Controls the back light of combination meter.	MWI-66, "METER ILLUMINATION CONTROL : System Description"
Information display	Odo/trip meter		Indicates mileage.
	Fuel gauge		Indicates fuel level.
	Loose fuel cap warning		Indicates loose fuel cap.
	Ambient temperature		Indicates outside air temperature.
	Trip computer	Instant fuel consumption	Displays current fuel consumption.
		Average fuel consumption	Displays average fuel consumption.
		Distance to empty	Displays distance to empty.
		Travel distance	Displays mileage.

METER SYSTEM : Fail-safe

INFOID:0000000012432602

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

Function	Specifications
Speedometer	Reset to zero by suspending communication.
Tachometer	
Illumination control	When suspending communication, changes to nighttime mode.
Shift position indicator	When suspending communication, not indicate.

SYSTEM

< SYSTEM DESCRIPTION >

[TYPE B]

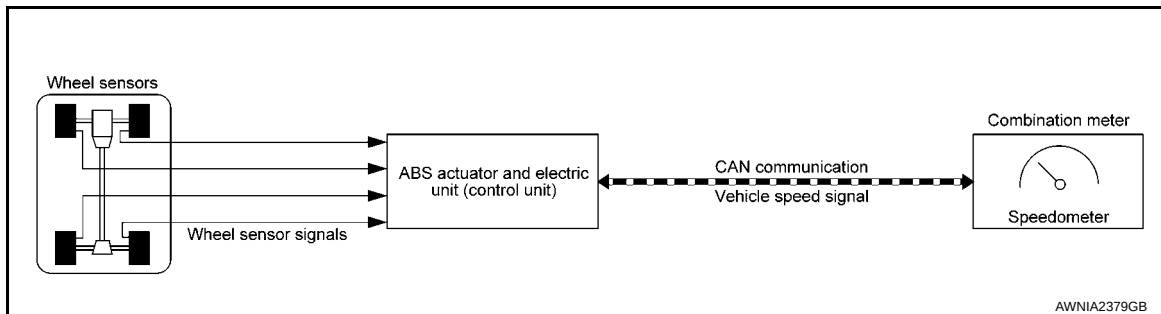
Function			Specifications
Information display	Trip computer	Current fuel consumption	- When reception time of an abnormal signal is 2 seconds or less, the last received datum is used for calculation to indicate the result. - When reception time of an abnormal signal is more than two seconds, the last result calculated during normal condition is indicated.
		Average fuel consumption	
		Distance to empty	
	Odo/trip meter		An indicated value is maintained at communications blackout.
Buzzer			The buzzer turns OFF by suspending communication.
Warning lamp/indicator lamp	ABS warning lamp		The lamp turns ON by suspending communication.
	Slip indicator lamp		
	Malfunction indicator lamp (MIL)		
	VDC OFF indicator lamp		
	EPS warning lamp		
	Brake warning lamp		
	High beam indicator lamp		The lamp turns OFF by suspending communication.
	Turn signal indicator lamp		
	Door warning lamp		
	Light indicator lamp		
	Engine oil pressure warning lamp		
	High water temperature warning lamp		
	Key warning lamp		
	O/D OFF indicator lamp		
	Shift P warning lamp		
	Engine start operation indicator lamp		

SPEEDOMETER

SPEEDOMETER : System Description

INFOID:0000000012432603

SYSTEM DIAGRAM



DESCRIPTION

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

TACHOMETER

SYSTEM

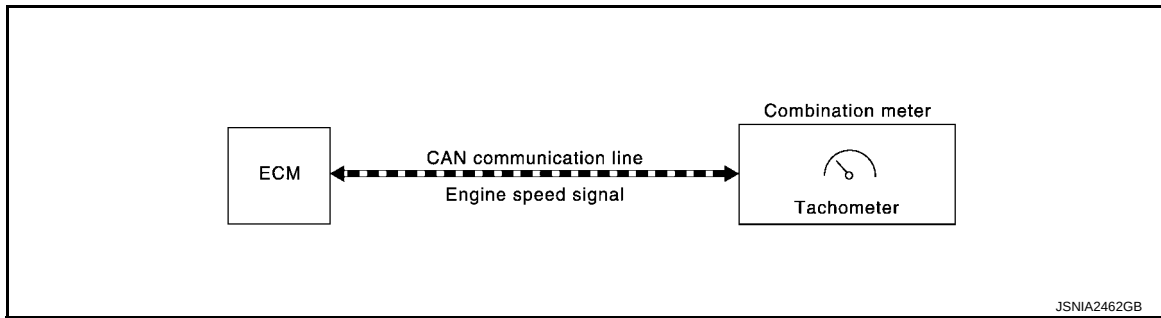
< SYSTEM DESCRIPTION >

[TYPE B]

TACHOMETER : System Description

INFOID:0000000012432604

SYSTEM DIAGRAM



DESCRIPTION

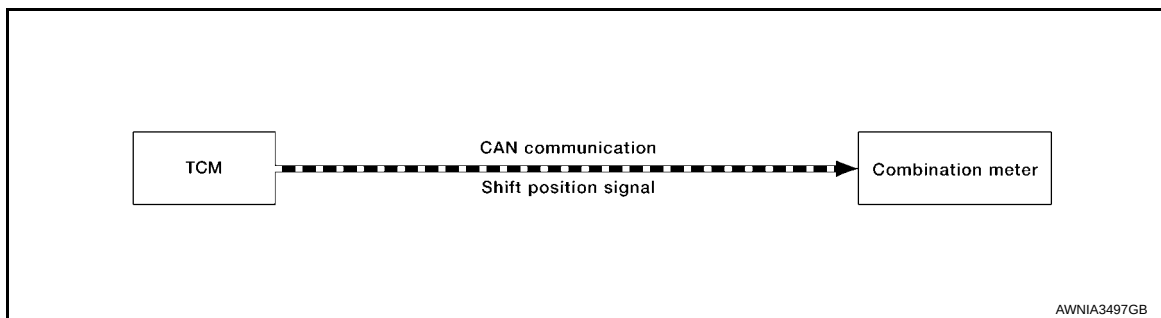
The crank position sensor sends a crankshaft position signal to the ECM. The ECM provides an engine speed signal to the combination meter via CAN communication lines. The tachometer indicates engine speed in revolutions per minute (rpm).

SHIFT POSITION INDICATOR

SHIFT POSITION INDICATOR : System Description

INFOID:0000000012432605

SYSTEM DIAGRAM



DESCRIPTION

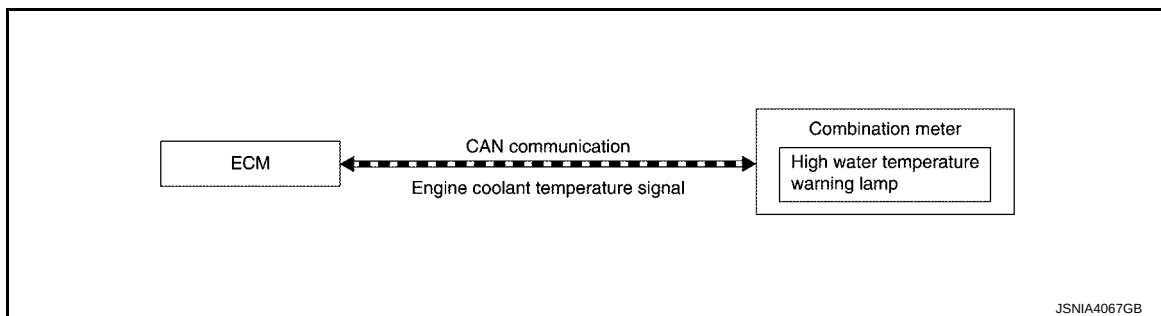
The combination meter receives the shift position signal from TCM via CAN communication, and displays the position of the shift indicator.

HIGH WATER TEMPERATURE WARNING LAMP

HIGH WATER TEMPERATURE WARNING LAMP : System Description

INFOID:0000000012432606

SYSTEM DIAGRAM



DESCRIPTION

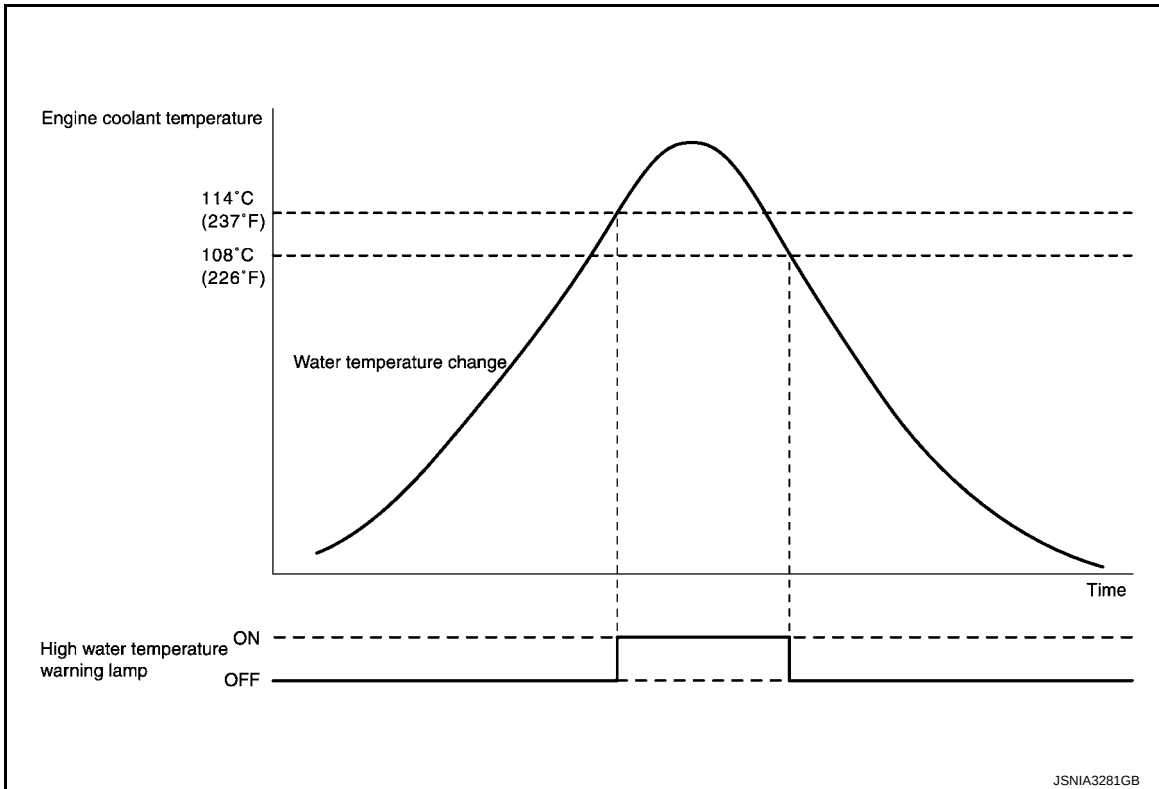
The ECM monitors the engine coolant temperature from the engine coolant temperature sensor. When the coolant temperature is above the specified value, the ECM sends a CAN communication signal to the combination meter turning on the high temperature warning lamp.

SYSTEM

< SYSTEM DESCRIPTION >

[TYPE B]

Timing Chart

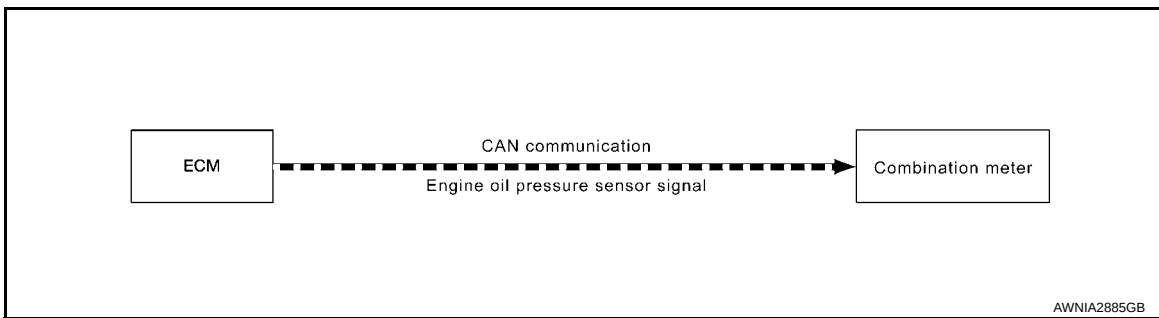


OIL PRESSURE WARNING LAMP

OIL PRESSURE WARNING LAMP : System Description

INFOID:0000000012432607

SYSTEM DIAGRAM



DESCRIPTION

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

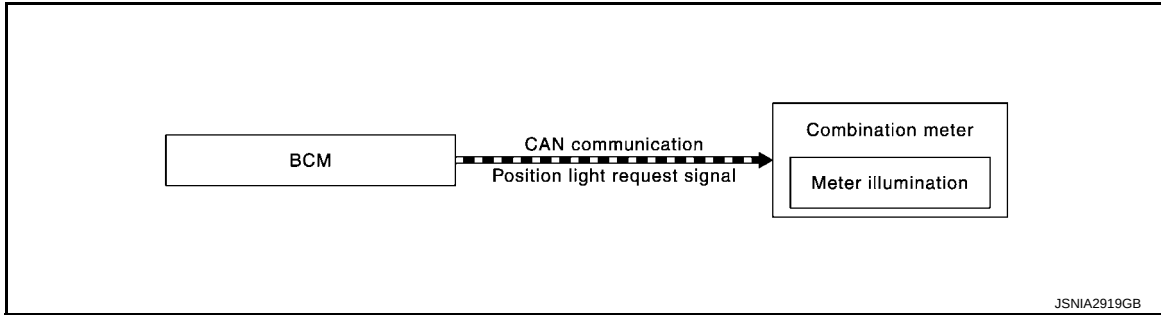
METER ILLUMINATION CONTROL

MWI

METER ILLUMINATION CONTROL : System Description

INFOID:000000012432608

SYSTEM DIAGRAM



DESCRIPTION

- Combination meter controls meter illumination, based on the following signal.
- Position light request signal
- The combination meter turns ON meter illumination when the following conditions are satisfied.

Condition	
Combination switch (Lighting switch)	1st or 2nd position

- The combination meter turns OFF meter illumination when the following conditions are satisfied.

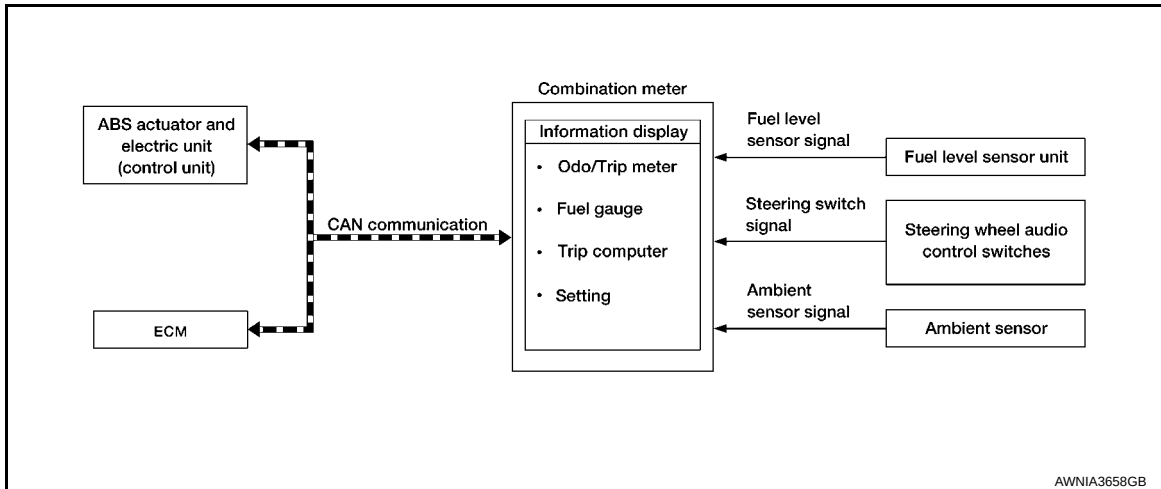
Condition	
Combination switch (Lighting switch)	OFF

INFORMATION DISPLAY

INFORMATION DISPLAY : System Description

INFOID:000000012432609

SYSTEM DIAGRAM



DESCRIPTION

- The combination meter receives signals from switches, sensors and modules for operating the following functions on the information display.
- Odo/trip meter
- Fuel gauge
- Trip computer
- Interrupt indication
- Meter illumination level
- Low fuel warning
- Outside air temperature

< SYSTEM DESCRIPTION >

- Loose fuel cap warning

ODO/TRIP METER

The combination meter calculates mileage using the vehicle speed signal from the ABS actuator and electric unit (control unit) and displays the mileage on the information display.

FUEL GAUGE

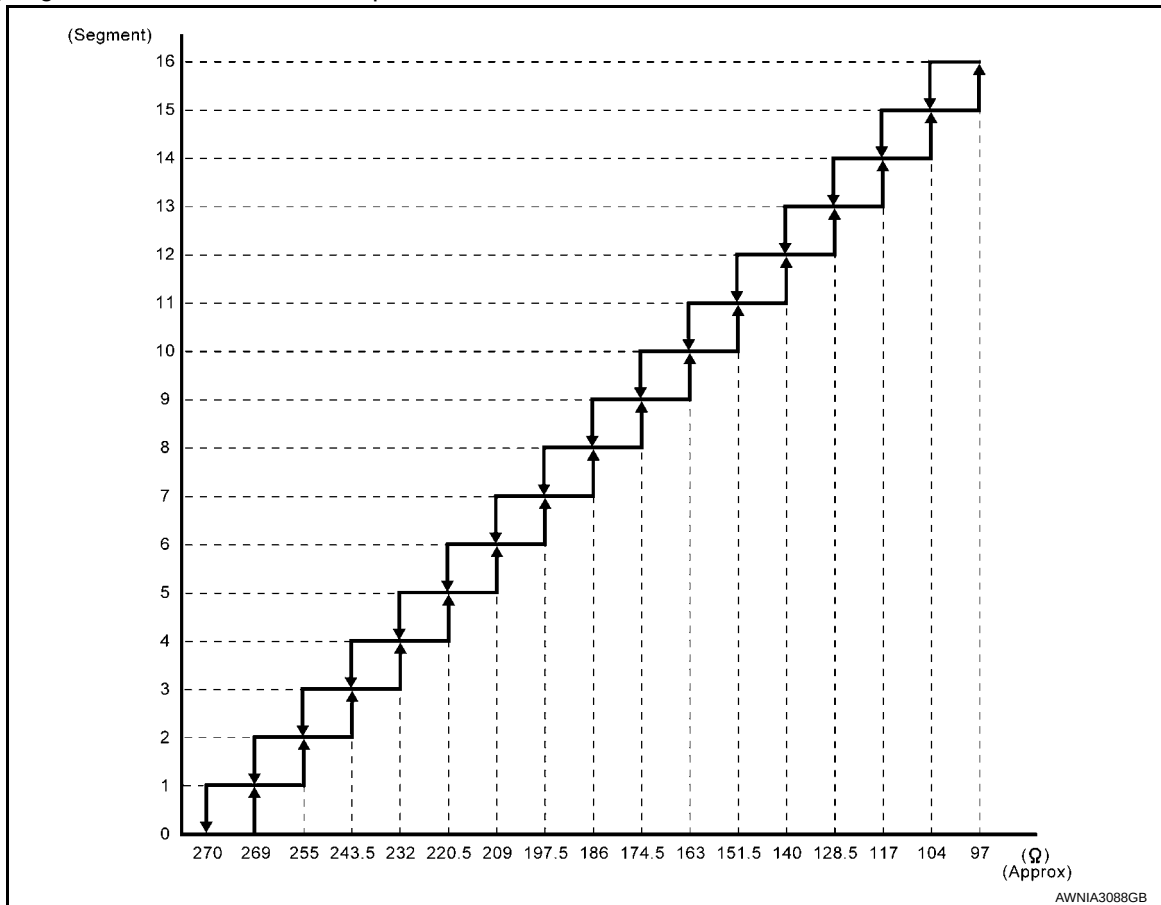
Control Outline

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

Refuel Control

The unit detects the driver is refueling the vehicle and accelerates the fuel gauge segment movement if the fuel level changes by 9 ℓ (2-3/8 US, 2 Imp gal) or more.

Lighting segment-resistance relationship



INTERRUPT INDICATION

Low Fuel Warning

The low fuel warning turns ON when the fuel level in the fuel tank reaches approximately 7.3 ℓ (1-7/8 US gal, 1-5/8 Imp gal).

OUTSIDE AIR TEMPERATURE INDICATION

Displays the outside temperature based on the signal received from the ambient sensor.

LOOSE FUEL CAP WARNING

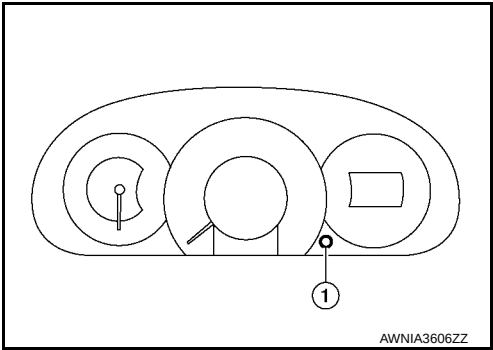
The LOOSE FUEL CAP message will display in the information display when the fuel-filler cap is not tightened correctly. The message will turn off as soon as the ECM detects the fuel-filler cap is properly tightened. The ECM provides a loose fuel cap signal to the combination meter via CAN communication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

OPERATION

Switch Name and Function

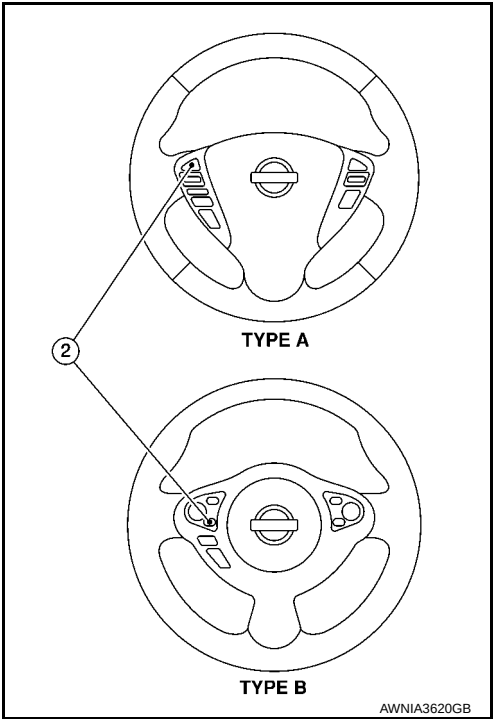
INFOID:000000012432610

ILLUMINATION CONTROL SWITCH/TRIP ODOMETER RESET SWITCH



Switch name	Operation	Description
Illumination control switch (1)	Turn	An illuminance level of the back light of the combination meter can be adjusted.
Trip odometer reset switch (1)	Press	• The information display screen can be switched. • The trip meter can be switched between A and B. • Trip meter A/B can be reset by pressing and holding the trip reset switch. • Time can be adjusted.

STEERING WHEEL AUDIO CONTROL SWITCH (METER CONTROL SWITCH)



Switch name	Operation	Description
Steering wheel audio control switch (meter control switch) (2)	Press	• Trip computer modes can be selected. • Trip computer value displayed can be reset by pressing and holding the meter control switch for 1 second or more. • All trip computer values displayed can be reset by pressing and holding the meter control switch for 3 seconds or more.

DIAGNOSIS SYSTEM (COMBINATION METER)

< SYSTEM DESCRIPTION >

[TYPE B]

DIAGNOSIS SYSTEM (COMBINATION METER)

On Board Diagnosis Function

INFOID:0000000012432611

ON BOARD DIAGNOSIS

The following meter functions can be checked during Combination Meter Self-Diagnosis Mode:

- Pointer sweep of speedometer, tachometer and gauges.
- Illumination of all lamps/LEDs that are controlled by the combination meter (regardless of switch status).
- Error code

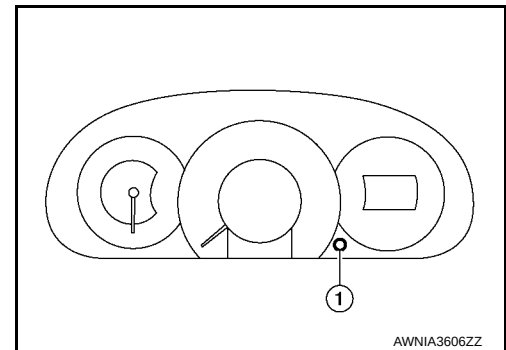
STARTING COMBINATION METER SELF-DIAGNOSIS MODE

NOTE:

- Check combination meter power supply and ground circuits if self-diagnosis mode does not start. Refer to [MWI-98, "COMBINATION METER : Diagnosis Procedure"](#). Replace combination meter if power supply and ground circuits are found to be normal and self-diagnosis mode does not start. Refer to [MWI-115, "Removal and Installation"](#).
- Combination meter self-diagnosis mode will function with the ignition switch in ON. Combination meter self-diagnosis mode will exit upon turning the ignition switch to OFF.

METHOD OF STARTING

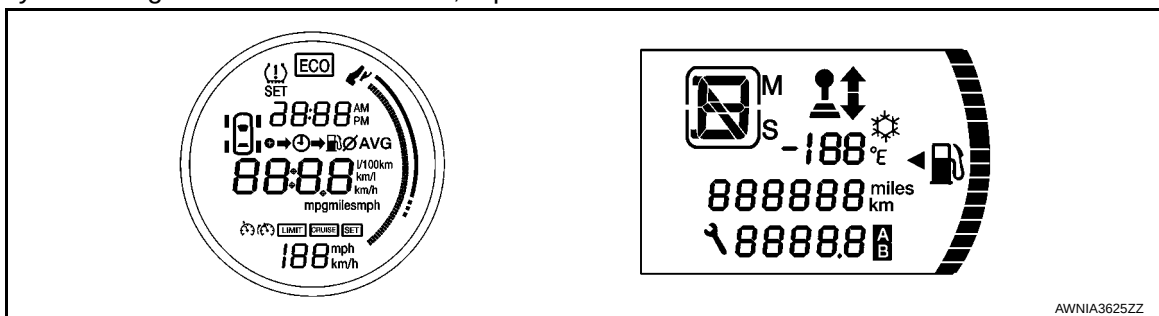
1. Turn ignition switch to OFF.
2. While pressing the trip reset switch (1), turn the ignition switch ON.
3. Press the trip reset switch at least 3 times. (Within 7 seconds after the ignition switch is turned ON.)



4. All LCD segments turn ON.

NOTE:

If any of the segments are not activated, replace the combination meter.



5. The mode switches in the order shown below each time the trip reset switch is pressed.

NOTE:

- If the trip reset switch is not operated for 20 seconds or more, the self-diagnosis mode is automatically cancelled.
- When the trip reset switch is pressed during the indication of Test order "10," test item returns to Test order "2."

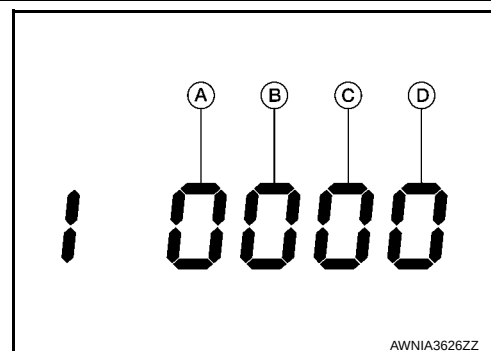
DIAGNOSIS SYSTEM (COMBINATION METER)

< SYSTEM DESCRIPTION >

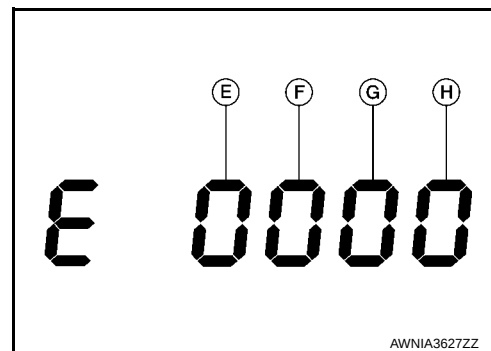
[TYPE B]

Test order	Test item	Description
1	Work instruction code	This item is displayed, but not used.
2	Part number	
3	Software code	
4	EEPROM code	
5	Hardware code	
6	P.C.B code	
7	Circuit check	The pointer of the following items moves from 0 to MAX twice. • Speedometer • Tachometer NOTE: If any one of the pointers does not sweep, replace combination meter.
8	Error code A-D ^{*1}	Displays the error code of the following items: • High water temperature indicator • Fuel gauge • Tachometer • Speedometer
9	Error code E-H ^{*2}	Displays the error code of the following item: • Meter control switch
10	All warning/indicator lamp illuminate. NOTE: • When either one of them does not turn ON, replace combination meter.	

*1: Error code A-D



*2: Error code E-H



Item	Code	Description	Action to take/Reference
Ⓐ High water temperature indicator signal	0	Normal	—
	1	An engine coolant temperature signal cannot be received from ECM.	Perform "Self Diagnostic Result" of "ECM." Refer to EC-87, "DTC Index" .
Ⓑ Fuel gauge	0	Normal	—
	1	Fuel gauge circuit is shorted.	Refer to MWI-101, "Diagnosis Procedure" .
	2	Fuel gauge circuit is open.	

DIAGNOSIS SYSTEM (COMBINATION METER)

< SYSTEM DESCRIPTION >

[TYPE B]

Item	Code	Description	Action to take/Reference
Ⓒ Tachometer	0	Normal	—
	1	An engine speed signal cannot be received from ECM.	Perform "Self Diagnostic Result" of "ECM." Refer to EC-87, "DTC Index" .
Ⓓ Speedometer	0	Normal	—
	1	A vehicle speed signal cannot be received from ABS actuator and electric unit (control unit).	Perform "Self Diagnostic Result" of "ABS." Refer to BRC-43, "DTC Index" .
	2	A vehicle speed signal received from the ABS actuator and electric unit (control unit) is abnormal.	
Ⓔ —	0	Displays "0" constantly.	—
Ⓕ —	0	Displays "0" constantly.	—
Ⓖ —	0	Displays "0" constantly.	—
Ⓗ Trip odometer reset switch	0	Normal	—
	2	When judging that the trip odometer reset switch signal circuit is short-circuited for 5 minutes or more.	Replace combination meter. Refer to MWI-115, "Removal and Installation" .

CONSULT Function (METER/M&A)

INFOID:0000000012432612

APPLICATION ITEMS

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

METER/M&A Diagnosis mode	Description
Self Diagnostic Result	The combination meter self-diagnosis results.
Data Monitor	Displays combination meter input/output data in real time.
Work support	Supports combination meter diagnosis.
ECU Identification	The combination meter part number is displayed.
Warning History	Lighting history of the warning lamp and indicator lamp can be checked.

SELF DIAG RESULT

Refer to [MWI-77, "DTC Index"](#).

DATA MONITOR

Display Item List

X: Applicable

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

DIAGNOSIS SYSTEM (COMBINATION METER)

< SYSTEM DESCRIPTION >

[TYPE B]

Display item [Unit]	MAIN SIGNALS	Description
VDC/TCS IND [ON/OFF]		Displays [ON/OFF] condition of VDC OFF indicator lamp.
SLIP IND [ON/OFF]		Displays [ON/OFF] condition of SLIP indicator lamp.
BRAKE W/L [On/Off]		Displays [ON/OFF] condition of brake warning indicator.
DOOR W/L [On/Off]		Displays [ON/OFF] condition of door warning indicator.
HI-BEAM IND [On/Off]		Displays [ON/OFF] condition of high beam indicator.
TURN IND [On/Off]		Displays [ON/OFF] condition of turn indicator.
LIGHT IND [On/Off]		Displays [ON/OFF] condition of light indicator.
OIL W/L [On/Off]		Displays [ON/OFF] condition of engine oil pressure warning indicator.
MIL [On/Off]		Displays [ON/OFF] condition of malfunction indicator.
CRUISE IND [Off]		Displays [ON/OFF] condition of CRUISE indicator.
O/D OFF IND [On/Off]		Displays [ON/OFF] condition of O/D OFF indicator.
FUEL W/L [On/Off]		Displays [ON/OFF] condition of low-fuel warning indicator.
PASS BUCKLE SW [On/Off]		Status of seat belt buckle switch RH.
AIR PRES W/L [ON/OFF]		Displays [ON/OFF] condition of tire pressure warning lamp.
KEY G/Y W/L [ON/OFF]		Displays [ON/OFF] condition of key warning lamp.
EPS W/L [On/Off]		Displays [ON/OFF] condition of EPS indicator.
FUEL CAP W/L [Off]		Displays [ON/OFF] condition of loose fuel cap warning message.
PKB SW [On/Off]		Status of parking brake switch.
BUCKLE SW [On/Off]		Status of seat belt buckle switch (LH).
BRAKE OIL SW [On/Off]		Status of brake fluid level switch.
CHG SIG [On/Off]		Displays [ON/OFF] condition of charge warning indicator.
DISTANCE [km] or [Mi]		Displays distance to empty.
OUTSIDE TEMP [°F] or [°C]		Displays the ambient temperature, which is input from ambient sensor.
FUEL LOW SIG [ON/OFF]		Displays [ON/OFF] condition of low-fuel warning signal.
BUZZER [On/Off]	X	Displays [ON/OFF] condition of buzzer.

DIAGNOSIS SYSTEM (COMBINATION METER)

< SYSTEM DESCRIPTION >

[TYPE B]

Display item [Unit]	MAIN SIGNALS	Description
FR FOG IND [On/Off]		Displays [ON/OFF] condition of front fog lamp indicator.
TPMS PRESS L [On/Off]		Displays [ON/OFF] condition of check tire pressure warning message.

NOTE:

Some items are not available according to vehicle specification.

WORK SUPPORT

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

WARNING HISTORY

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

W/L ON HISTORY

- Stores histories when warning/indicator lamp is turned on.
- "W/L ON HISTORY" indicates the "TIME" when the warning/ indicator lamp is turned on.
- The "TIME" above is:
 - 0: The condition that the warning/indicator lamp has been turned on 1 or more times after starting the engine and waiting for 30 seconds.
 - 1 - 39: The number of times the engine was restarted after the 0 condition.
 - NO W/L ON HISTORY: Stores NO (0) turning on history of warning/indicator lamp.

NOTE:

- W/L ON HISTORY is not stored for approximately 30 seconds after the engine starts.
- Brake warning lamp does not store any history when the parking brake is applied or the brake fluid level gets low.

COMBINATION METER

< ECU DIAGNOSIS INFORMATION >

[TYPE B]

ECU DIAGNOSIS INFORMATION

COMBINATION METER

Reference Value

INFOID:000000012432613

VALUES ON THE DIAGNOSIS TOOL

Monitor Item	Display content	Data monitor	
		Condition	Reference value in normal operation
SPEED METER [mph or km/h]	Speed meter operation	While driving	Vehicle speed matches speed meter
SPEED OUTPUT [mph or km/h]	Vehicle speed	While driving	The speed output signal value via CAN communication is approx. value of vehicle speed.
ODO OUTPUT [mph or km/h]	ODO meter operation	Driving	Distance driven
TACHO METER [rpm]	Tacho meter operation	Engine running	The tacho meter is approx. value of engine speed via CAN communication.
FUEL METER [L]	Fuel level	Ignition ON	Fuel level is approx. value of fuel gauge.
W TEMP METER [°F] or [°C]	Engine coolant temperature	Engine running	Input value of engine coolant temperature signal via CAN communication.
ABS W/L	ABS warning lamp	When ABS warning lamp is ON	On
		When ABS warning lamp is OFF	Off
VDC/TCS IND	VDC indicator lamp	When VDC indicator lamp is ON	On
		When VDC indicator lamp is OFF	OFF
SLIP IND	Slip indicator lamp	When SLIP indicator lamp is ON	On
		When SLIP indicator lamp is OFF	Off
BRAKE W/L	Brake warning lamp	When Brake warning lamp is ON	On*
		When Brake warning lamp is OFF	Off
DOOR W/L	Door open warning lamp	When Door warning lamp is ON	On
		When Door warning lamp is OFF	Off
HI-BEAM IND	HI-Beam indicator lamp	When High-beam indicator lamp is ON	On
		When High-beam indicator lamp is OFF	Off
TURN IND	Turn signal indicator	When Turn signal indicator lamp is ON	On
		When Turn signal indicator lamp is OFF	Off
LIGHT IND	Light indicator	When Tail lamp indicator lamp is ON	On
		When Tail lamp indicator lamp is OFF	Off
FR FOG IND	Front fog lamp indicator	Front fog lamp indicator lamp ON	On
		Front fog lamp indicator lamp OFF	Off
OIL W/L	Engine oil pressure warning light	When engine oil pressure warning lamp is ON	On
		When engine oil pressure warning lamp is OFF	Off
MIL	MIL warning lamp	When Malfunction indicator lamp (MIL) is ON	On
		When Malfunction indicator lamp (MIL) is OFF	Off

COMBINATION METER

< ECU DIAGNOSIS INFORMATION >

[TYPE B]

Monitor Item	Display content	Data monitor	
		Condition	Reference value in normal operation
CRUISE IND	Cruise indicator lamp	When cruise indicator lamp is ON.	ON
		When cruise indicator lamp is OFF.	Off
O/D OFF IND	O/D OFF indicator	When O/D OFF indicator lamp is OFF.	Off
		When O/D OFF indicator lamp is ON.	On
FUEL W/L	Low fuel warning	When low fuel warning is ON	On
		When low fuel warning is Off	Off
AIR PRES W/L	Tire pressure warning lamp operation	When tire pressure warning lamp is ON	ON
		When tire pressure warning lamp is OFF	Off
EPS W/L	EPS warning lamp	EPS warning lamp ON	On
		EPS warning lamp OFF	Off
KEY G/Y W/L	Key warning lamp	When key warning lamp is ON	On
		When key warning lamp is OFF	Off
CHG SIG	Charge warning lamp	Engine running	Off
PASS BUCKLE SW	Seat belt buckle switch RH	When seat belt buckle RH is unfastened	On
		When seat belt buckle RH is fastened	Off
FUEL CAP W/L	Loose fuel cap warning	Loose fuel filler cap warning is ON	On
		Loose fuel filler cap warning is OFF	Off
PKB SW	Parking brake switch	When parking brake is active	On
		When parking brake is inactive	Off
BUCKLE SW	Seat belt buckle switch LH	When seat belt buckle is unfastened LH.	On
		When seat belt buckle is fastened LH.	Off
BRAKE OIL SW	Brake fluid level switch	When brake fluid level switch ON	On
		When brake fluid level switch OFF	Off
OUTSIDE TEMP [°F] or [°C]	Outside temperature	Ignition ON	Displays the ambient air temperature which is input from the ambient sensor.
DISTANCE	Distance to empty	While driving	[mph or km/h]
FUEL LOW SIG	Low fuel warning	When low fuel warning is On	On
		When low fuel warning is Off	Off
BUZZER	Buzzer operation	When Buzzer is ON	On
		When Buzzer is OFF	Off
TPMS PRESS L	Low tire pressure warning	When check tire pressure warning message is On	On
		When check tire pressure warning message is OFF	Off

*: 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.

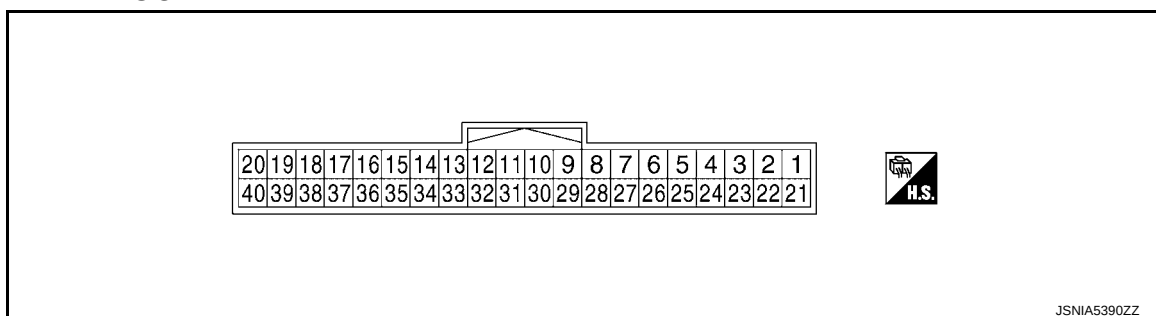
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COMBINATION METER

< ECU DIAGNOSIS INFORMATION >

[TYPE B]

TERMINAL LAYOUT



PHYSICAL VALUES

Terminal No.	Wire color	Item	Condition		Reference value (V) (Approx.)
			Ignition switch	Operation or condition	
1	L	CAN high	—	—	—
2	P	CAN low	—	—	—
4	LG	8P/R	—	—	—
6	W	Fuel level sensor signal (+)	—	—	Refer to MWI-102, "Component Inspection" .
7	V	Air bag	—	—	—
8	P	O/D OFF switch	ON	O/D OFF switch pressed	0
				O/D OFF switch released	Battery voltage
9	V	Seat belt buckle switch LH	ON	Unfastened (ON)	0
				Fastened (OFF)	Battery voltage
10	SB	Parking Brake switch	ON	Parking brake is inactive	Battery voltage
				Parking brake is active	0
11	BR	Brake fluid level switch	ON	Brake fluid level low	0
				Brake fluid level normal	Battery voltage
15	R	Ignition switch ON or ACC	—	—	Battery voltage
16	B	Illumination control switch (-)	—	—	—
17*1	V	Washer fluid level switch	ON	Washer fluid level low	0
				Washer fluid level normal	Battery voltage
18	GR	Security	—	—	—
19	V	Ambient sensor signal (+)	ON	—	—
20	R	Ambient sensor ground (-)	—	—	0
21	B	Ground	—	—	0
22	B				
23	B				
24	GR	Fuel level sensor ground (-)	ON	—	0
27	R/W	Battery power supply	OFF	—	Battery voltage
28	GR	Ignition switch ON or START	ON	—	Battery voltage
29	G	Seat belt buckle switch RH	ON	Unfastened (ON)	0
				Fastened (OFF)	Battery voltage
36	LG	Steering switch (meter control switch)	—	—	—
38	Y	Generator	ON	Generator voltage low	0
				Generator voltage normal	Battery voltage

COMBINATION METER

< ECU DIAGNOSIS INFORMATION >

[TYPE B]

*1:For Canada

Fail-safe

INFOID:0000000012432614

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

Function			Specifications
Speedometer			Reset to zero by suspending communication.
Tachometer			
Illumination control			When suspending communication, changes to nighttime mode.
Shift position indicator			When suspending communication, not indicate.
Information display	Trip computer	Current fuel consumption	- When reception time of an abnormal signal is 2 seconds or less, the last received datum is used for calculation to indicate the result. - When reception time of an abnormal signal is more than two seconds, the last result calculated during normal condition is indicated.
		Average fuel consumption	
		Distance to empty	
	Odo/trip meter		An indicated value is maintained at communications blackout.
Buzzer			The buzzer turns OFF by suspending communication.
Warning lamp/indicator lamp	ABS warning lamp		The lamp turns ON by suspending communication.
	Slip indicator lamp		
	Malfunction indicator lamp (MIL)		
	VDC OFF indicator lamp		
	EPS warning lamp		
	Brake warning lamp		The lamp turns OFF by suspending communication.
	High beam indicator lamp		
	Turn signal indicator lamp		
	Door warning lamp		
	Light indicator lamp		
	Engine oil pressure warning lamp		
	High water temperature warning lamp		
	Key warning lamp		
	O/D OFF indicator lamp		
	Shift P warning lamp		
	Engine start operation indicator lamp		

DTC Index

INFOID:0000000012432615

Display contents of CONSULT	Diagnostic item is detected when...	Refer to
CAN COMM CIRCUIT [U1000]	When combination meter is not transmitting or receiving CAN communication signal for 2 seconds or more.	MWI-93
CONTROL UNIT (CAN) [U1010]	When detecting error during the initial diagnosis of the CAN controller of combination meter.	MWI-94
VEHICLE SPEED [B2205]	The abnormal vehicle speed signal is input from the ABS actuator and electric unit (control unit) for 2 seconds or more.	MWI-95
ENGINE SPEED [B2267]	If ECM continuously transmits abnormal engine speed signals for 2 seconds or more.	MWI-96
WATER TEMP [B2268]	If ECM continuously transmits abnormal engine coolant temperature signals for 60 seconds or more.	MWI-97

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

[TYPE B]

BCM (BODY CONTROL MODULE)

List of ECU Reference

INFOID:0000000012432616

ECU	Reference
BCM (with Intelligent Key system)	BCS-30, "Reference Value"
	BCS-48, "Fail-safe"
	BCS-49, "DTC Inspection Priority Chart"
	BCS-50, "DTC Index"
BCM (without Intelligent Key system)	BCS-101, "Reference Value"
	BCS-115, "Fail-safe"
	BCS-115, "DTC Inspection Priority Chart"
	BCS-115, "DTC Index"

METER SYSTEM

< WIRING DIAGRAM >

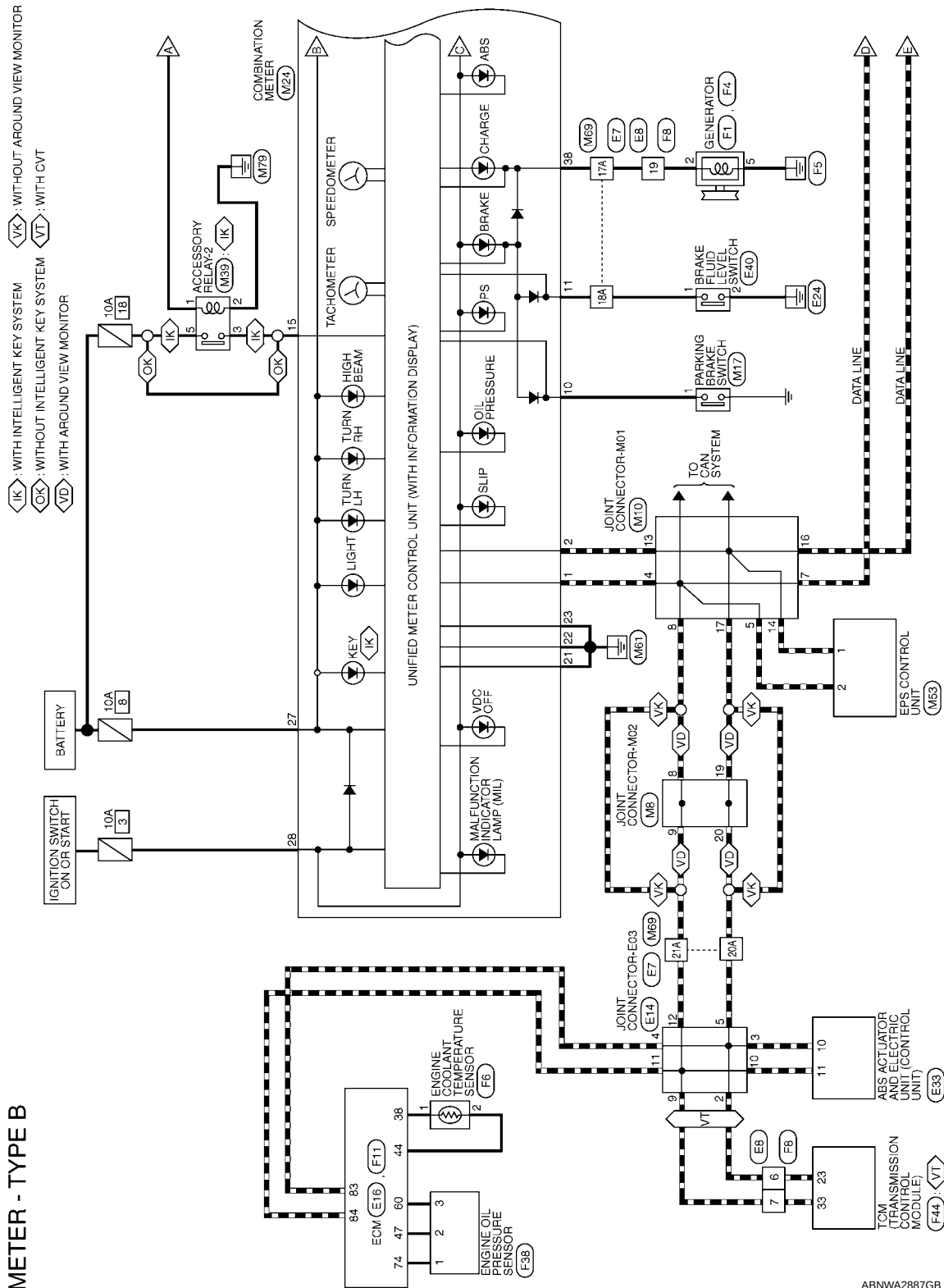
[TYPE B]

WIRING DIAGRAM

METER SYSTEM

Wiring Diagram

INFOID:000000012432617

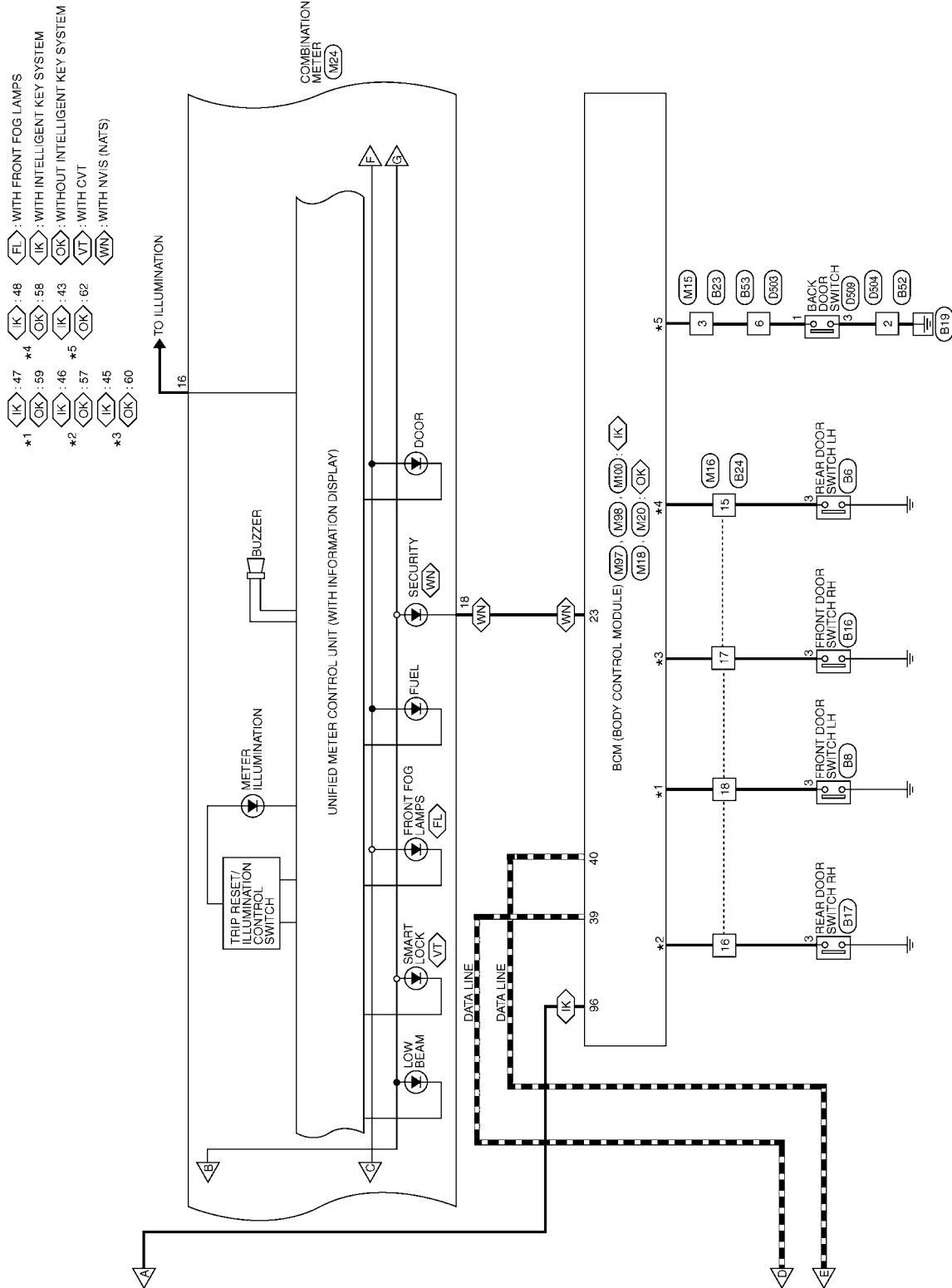


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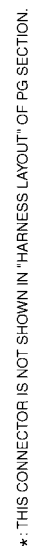
METER SYSTEM

< WIRING DIAGRAM >

[TYPE B]



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METER CONNECTORS - TYPE B

Connector No.	M8
Connector Name	JOINT CONNECTOR-M02
Connector Color	GREEN

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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Terminal No.	Color of Wire	Signal Name
8	L	-
9	L	-
19	P	-
20	P	-

Connector No.	M10
Connector Name	JOINT CONNECTOR-M01
Connector Color	BLUE

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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Terminal No.	Color of Wire	Signal Name
4	L	-
5	L	-
7	L	-
8	L	-
13	P	-
14	P	-
16	P	-
17	P	-

Connector No.	M15
Connector Name	WIRE TO WIRE
Connector Color	WHITE

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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Terminal No.	Color of Wire	Signal Name
3	P	-

Connector No.	M16
Connector Name	WIRE TO WIRE
Connector Color	WHITE

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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Terminal No.	Color of Wire	Signal Name
4	V	-
5	GR	-
6	W	-
15	W	-
16	BR	-
17	BG	-
18	SB	-

Connector No.	M17
Connector Name	PARKING BRAKE SWITCH
Connector Color	BLACK

1



Terminal No.	Color of Wire	Signal Name
1	SB	-

Connector No.	M18
Connector Name	BCM (BODY CONTROL MODULE) (WITHOUT INTELLIGENT KEY SYSTEM)
Connector Color	BLACK



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

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METER SYSTEM

< WIRING DIAGRAM >

[TYPE B]

Terminal No.	Color of Wire	Signal Name
19	V	OUTSIDE AIR TEMP SENSOR (SIG)
20	R	OUTSIDE AIR TEMP SENSOR (GND)
21	B	GND (ILL)
22	B	GND (POWER)
23	B	GND (CIRCUIT)
24	GR	FUEL SENDER UNIT (GND)
25	-	-
26	-	-
27	R/W	BAT
28	GR	IGN
29	G	PASSENGER SEAT BELT
30	-	-
31	-	-
32	-	-
33	-	-
34	-	-
35	-	-
36	LG	SATELLITE SW
37	-	-
38	Y	CHARGE SIGNAL W/BRAKE BULB CHECK
39	-	-
40	-	-

Connector No.	M24
Connector Name	COMBINATION METER (WITH TYPE B)
Connector Color	WHITE



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

Terminal No.	Color of Wire	Signal Name
1	L	CAN-H
2	P	CAN-L
3	-	-
4	LG	SPEED 8 P/R OUTPUT
5	-	-
6	W	FUEL SENDER UNIT (SIG)
7	V	AIR BAG WARNING LIGHT
8	P	O/D OFF SW
9	V	SEAT BELT BUCKLE SW
10	SB	PKB SW
11	BR	BRAKE OIL SW
12	-	-
13	-	-
14	-	-
15	R	ACC
16	B	ILLUMINATION CONTROL OUTPUT
17	V	LOW WASHER/STRG SW
18	GR	SECURITY IND

Connector No.	M20
Connector Name	BCM (BODY CONTROL MODULE) (WITHOUT INTELLIGENT KEY SYSTEM)
Connector Color	BLACK



56	57	58	59	60	61	62	63	64
65	66	67	68	69	70			

Terminal No.	Color of Wire	Signal Name
57	BR	DOOR SW (RR)
58	W	DOOR SW (RL)
59	SB	DOOR SW (DR)
59	SB	DOOR SW (DR)
60	BG	DOOR SW (AS)
62	P	DOOR SW (BACK)

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METER SYSTEM

< WIRING DIAGRAM >

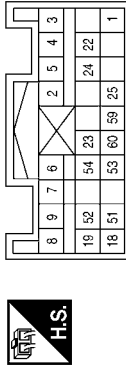
[TYPE B]

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



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

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



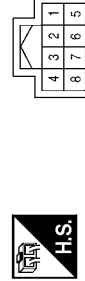
Terminal No.	Color of Wire	Signal Name
23	V	AIRBAG W/L

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



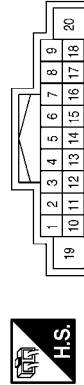
Terminal No.	Color of Wire	Signal Name
32	LG	-
33	G	-(WITH NAVIGATION AND DISPLAY AUDIO SYSTEM)

Connector No.	M53
Connector Name	EPS CONTROL UNIT
Connector Color	BLACK



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

Connector No.	M45
Connector Name	AUDIO UNIT (WITH DISPLAY AUDIO SYSTEM)
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
15	G	STRG SW GND

Connector No.	M39
Connector Name	ACCESSORY RELAY-2 (WITH INTELLIGENT KEY SYSTEM)
Connector Color	BLUE



Terminal No.	Color of Wire	Signal Name
1	SB	-
2	B	-
3	L	-
5	BG	-

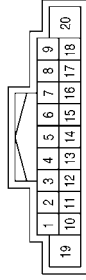
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METER SYSTEM

< WIRING DIAGRAM >

[TYPE B]

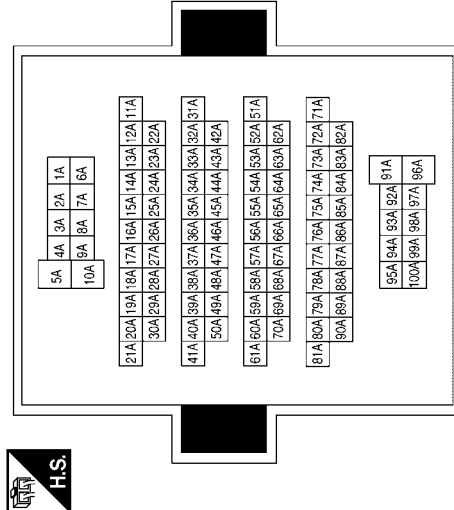
Connector No.	M70
Connector Name	AV CONTROL UNIT (WITH NAVIGATION SYSTEM)
Connector Color	WHITE



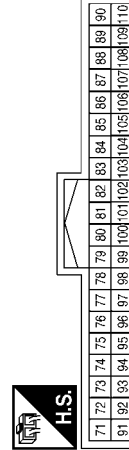
Terminal No.	Color of Wire	Signal Name
15	G	STRG SW GND

Terminal No.	Color of Wire	Signal Name
17A	Y	-
18A	BR	-
20A	P	-
21A	L	-
25A	R	-
26A	V	-
30A	V	-

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

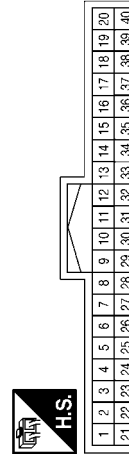


Connector No.	M98
Connector Name	BCM (BODY CONTROL MODULE) (WITH INTELLIGENT KEY SYSTEM)
Connector Color	WHITE



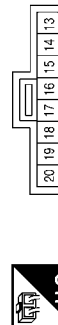
Terminal No.	Color of Wire	Signal Name
96	SB	ACC RELAY OUTPUT

Connector No.	M97
Connector Name	BCM (BODY CONTROL MODULE) (WITH INTELLIGENT KEY SYSTEM)
Connector Color	BLACK



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

Connector No.	M88
Connector Name	COMBINATION SWITCH (SPIRAL CABLE)
Connector Color	GRAY



Terminal No.	Color of Wire	Signal Name
16	V	-
17	BR	-

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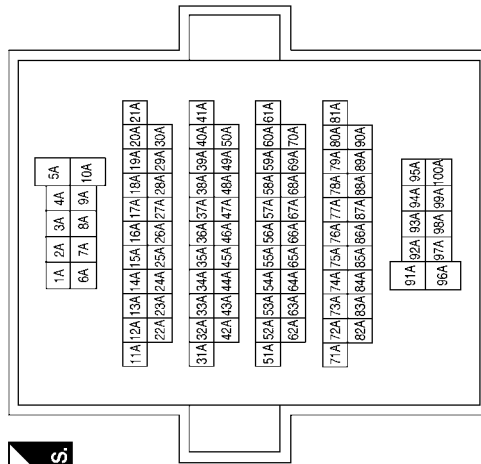
METER SYSTEM

< WIRING DIAGRAM >

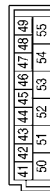
[TYPE B]

Terminal No.	Color of Wire	Signal Name
17A	V	-
18A	LG	-
20A	P	-
21A	L	-
25A	LG	-
26A	V	-
30A	R	-

Connector No.	E7
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Connector No.	M100
Connector Name	BCM (BODY CONTROL MODULE) (WITH INTELLIGENT KEY SYSTEM)
Connector Color	BLACK



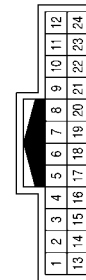
Terminal No.	Color of Wire	Signal Name
43	P	DOOR SW BACK
45	BG	DOOR SW (AS)
46	BR	DOOR SW (RR)
47	SB	DOOR SW (DR)
48	W	DOOR SW (RL)

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

Connector No.	E14
Connector Name	JOINT CONNECTOR-E03
Connector Color	BLUE



Connector No.	E8
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
6	P	-
7	L	-
19	V	-

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METER SYSTEM

< WIRING DIAGRAM >

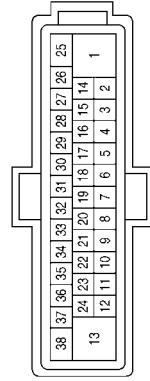
[TYPE B]

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



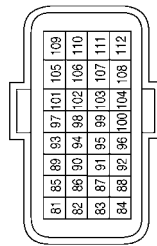
Terminal No.	Color of Wire	Signal Name
1	LG	-
2	B	-

Connector No.	E33
Connector Name	ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)
Connector Color	BLACK



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

Connector No.	E16
Connector Name	ECM
Connector Color	BLACK



Terminal No.	Color of Wire	Signal Name
83	P	CAN-L
84	L	CAN-H

Connector No.	F1
Connector Name	GENERATOR
Connector Color	BLACK



Terminal No.	Color of Wire	Signal Name
2	LW	-

Connector No.	E69
Connector Name	AMBIENT SENSOR
Connector Color	BLACK



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

Connector No.	E50
Connector Name	WASHER FLUID LEVEL SWITCH
Connector Color	BROWN



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

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METER SYSTEM

< WIRING DIAGRAM >

[TYPE B]

Connector No.	F4
Connector Name	GENERATOR
Connector Color	—



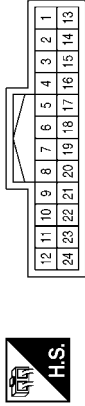
Terminal No.	Color of Wire	Signal Name
5	B/Y	—

Connector No.	F6
Connector Name	ENGINE COOLANT TEMPERATURE SENSOR
Connector Color	GRAY



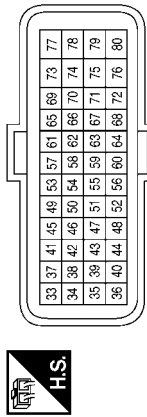
Terminal No.	Color of Wire	Signal Name
1	LG/B	—
2	P	—

Connector No.	F8
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
6	P/L	—
7	L/G	—
19	L/W	—

Connector No.	F11
Connector Name	ECM
Connector Color	BROWN

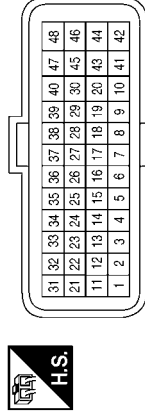


Connector No.	F38
Connector Name	ENGINE OIL PRESSURE SENSOR
Connector Color	BLACK



Terminal No.	Color of Wire	Signal Name
38	LG/B	ENGINE COOLANT TEMPERATURE SENSOR
44	P	SENSOR GROUND (ECT SENSOR)
47	Y	ENGINE OIL PRESSURE SENSOR
60	L	SENSOR GROUND (EOP SENSOR)
74	O	SENSOR POWER SUPPLY (EOP SENSOR)

Connector No.	F44
Connector Name	TCM (TRANSMISSION CONTROL MODULE)
Connector Color	BLACK



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

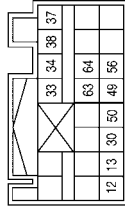
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METER SYSTEM

< WIRING DIAGRAM >

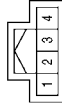
[TYPE B]

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



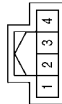
Terminal No.	Color of Wire	Signal Name
30	BG	LH SEAT BELT BUCKLE SWITCH(+)

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



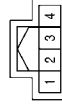
Terminal No.	Color of Wire	Signal Name
3	LG	-

Connector No.	B6
Connector Name	REAR DOOR SWITCH LH
Connector Color	WHITE



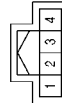
Terminal No.	Color of Wire	Signal Name
3	V	-

Connector No.	B17
Connector Name	REAR DOOR SWITCH RH
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
3	R	-

Connector No.	B16
Connector Name	FRONT DOOR SWITCH RH
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
3	L	-

Connector No.	B13
Connector Name	SEAT BELT BUCKLE SWITCH LH
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
1	BG	-
2	B	-

ABNIA8053GB

METER SYSTEM

< WIRING DIAGRAM >

[TYPE B]

Connector No.	B37
Connector Name	AIR BAG DIAGNOSIS SENSOR UNIT
Connector Color	YELLOW



35	36	31	32
26	61	62	
55	47	48	29
11	10		

Terminal No.	Color of Wire	Signal Name
29	BG	RH SEAT BELT BUCKLE SWITCH+

Connector No.	B24
Connector Name	WIRE TO WIRE
Connector Color	WHITE



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

Terminal No.	Color of Wire	Signal Name
4	BG	-
5	P	-
6	R	-
15	V	-
16	R	-
17	L	-
18	LG	-

Connector No.	B23
Connector Name	WIRE TO WIRE
Connector Color	WHITE



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

Terminal No.	Color of Wire	Signal Name
3	P	-

Connector No.	B52
Connector Name	WIRE TO WIRE
Connector Color	WHITE



4	3	2	1
---	---	---	---

Connector No.	B45
Connector Name	SEAT BELT BUCKLE SWITCH RH
Connector Color	WHITE



3	2	1
---	---	---

Terminal No.	Color of Wire	Signal Name
2	B	-

Connector No.	B44
Connector Name	FUEL LEVEL SENSOR UNIT AND FUEL PUMP
Connector Color	GRAY



1	2	3	4	5
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Terminal No.	Color of Wire	Signal Name
2	R	-
5	P	-

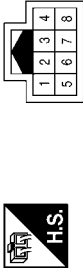
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Connector No.	D504
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	2	Color of Wire	B	Signal Name	-
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Connector No.	D503
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	6	Color of Wire	P	Signal Name	-
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Connector No.	B53
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	6	Color of Wire	P	Signal Name	-
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Connector No.	D509
Connector Name	BACK DOOR SWITCH
Connector Color	WHITE



Terminal No.	1	Color of Wire	P	Signal Name	-
	3	Color of Wire	B	Signal Name	-

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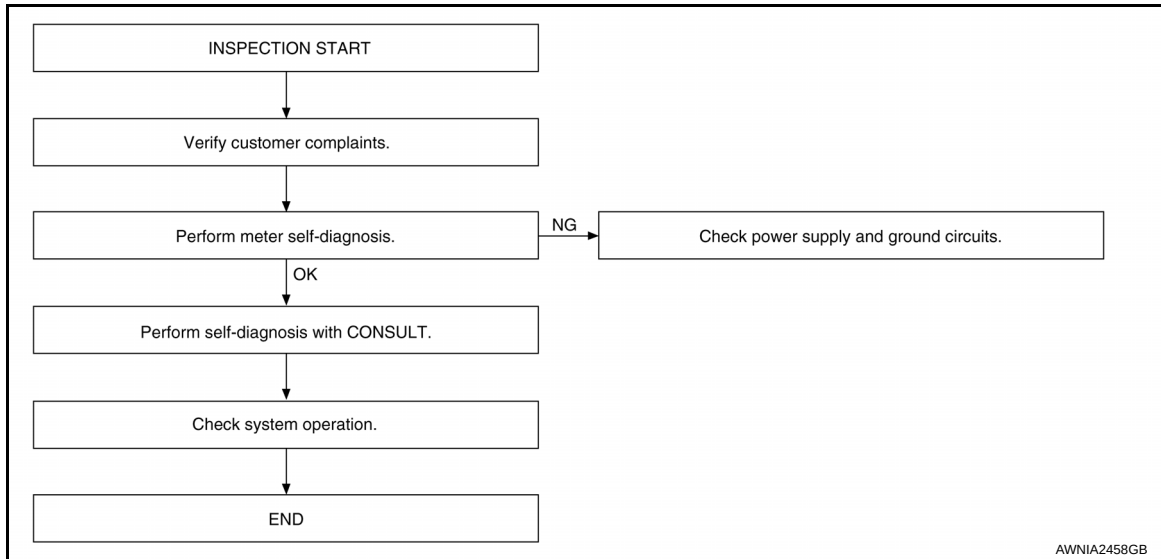
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORK FLOW

Work Flow

INFOID:000000012432618

OVERALL SEQUENCE



DETAILED FLOW

1.CONFIRM SYMPTOM

Confirm symptom or customer complaint.

>> GO TO 2.

2.SELF-DIAGNOSIS OF COMBINATION METER

Perform self-diagnosis of combination meter. Refer to [MWI-69, "On Board Diagnosis Function"](#).

Is the inspection result normal?

YES >> GO TO 3.

NO >> If self-diagnosis will not start, check power supply and ground circuit of combination meter. Refer to [MWI-98, "COMBINATION METER : Diagnosis Procedure"](#). If power supply and ground circuits are OK, replace combination meter. Refer to [MWI-115, "Removal and Installation"](#).

3.CHECK COMBINATION METER WITH CONSULT

Select METER/M&A on CONSULT and perform self-diagnosis of combination meter. Refer to [MWI-71, "CONSULT Function \(METER/M&A\)"](#).

Is the inspection result normal?

YES >> Check symptom. GO TO 4.

NO >> Refer to [MWI-77, "DTC Index"](#).

4.CHECK SYSTEM OPERATION

Check the combination meter to verify that the repair has been completed successfully.

Is the inspection result normal?

YES >> Inspection End.

NO >> GO TO 1.

U1000 CAN COMM CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[TYPE B]

DTC/CIRCUIT DIAGNOSIS

U1000 CAN COMM CIRCUIT

DTC Logic

INFOID:0000000012432619

DTC DETECTION LOGIC

DTC	Display Item	Malfunction detected condition	Possible malfunction
U1000	CAN COMM CIRC [U1000]	When combination meter is not transmitting or receiving CAN communication signals for 2 seconds or more.	CAN communication system

Diagnosis Procedure

INFOID:0000000012432620

1.CHECK CAN COMMUNICATION

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

>> GO TO LAN system. Refer to [LAN-16. "Trouble Diagnosis Flow Chart"](#).

U1010 CONTROL UNIT (CAN)

< DTC/CIRCUIT DIAGNOSIS >

[TYPE B]

U1010 CONTROL UNIT (CAN)

Description

INFOID:0000000012432621

Initial diagnosis of combination meter.

DTC Logic

INFOID:0000000012432622

DTC DETECTION LOGIC

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

Diagnosis Procedure

INFOID:0000000012432623

1. REPLACE COMBINATION METER

When DTC U1010 is detected, replace combination meter. Refer to [MWI-115, "Removal and Installation"](#).

>> Inspection End.

B2205 VEHICLE SPEED

< DTC/CIRCUIT DIAGNOSIS >

[TYPE B]

B2205 VEHICLE SPEED

Description

INFOID:0000000012432624

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

DTC Logic

INFOID:0000000012432625

DTC DETECTION LOGIC

DTC	Display Item	Malfunction detected condition	Possible malfunction
B2205	VEHICLE SPEED CIRC [B2205]	Malfunction is detected when an erroneous speed signal is received for 2 seconds or more.	- Combination meter - ABS actuator and electric unit (control unit)

Diagnosis Procedure

INFOID:0000000012432626

1. CHECK COMBINATION METER INPUT SIGNAL

- Start engine and select METER/M&A on CONSULT.
- Using SPEED METER on DATA MONITOR, compare the value of DATA MONITOR with speedometer pointer of combination meter. Speedometer and DATA MONITOR indications should be close.

Is the inspection result normal?

- YES >> Perform ABS actuator and electric unit (control unit) self-diagnosis. Refer to [BRC-31, "CONSULT Function \(ABS\)"](#).
- NO >> Replace combination meter. Refer to [MWI-115, "Removal and Installation"](#).

B2267 ENGINE SPEED

< DTC/CIRCUIT DIAGNOSIS >

[TYPE B]

B2267 ENGINE SPEED

Description

INFOID:0000000012432627

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

DTC Logic

INFOID:0000000012432628

DTC DETECTION LOGIC

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

Diagnosis Procedure

INFOID:0000000012432629

1.PERFORM SELF-DIAGNOSIS OF ECM

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

>> Refer to [EC-60, "CONSULT Function"](#).

B2268 WATER TEMP

< DTC/CIRCUIT DIAGNOSIS >

[TYPE B]

B2268 WATER TEMP

Description

INFOID:0000000012432630

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

DTC Logic

INFOID:0000000012432631

DTC DETECTION LOGIC

DTC	Display Item	Malfunction detected condition	Possible malfunction
B2268	WATER TEMP METER [B2268]	ECM continuously transmits abnormal engine coolant temperature signals for 60 seconds or more	• Engine coolant temperature sensor • ECM

Diagnosis Procedure

INFOID:0000000012432632

1.PERFORM SELF-DIAGNOSIS OF ECM

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

>> Refer to [EC-60. "CONSULT Function"](#).

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POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[TYPE B]

POWER SUPPLY AND GROUND CIRCUIT COMBINATION METER

COMBINATION METER : Diagnosis Procedure

INFOID:0000000012432633

Regarding Wiring Diagram information, refer to [MWI-79. "Wiring Diagram"](#).

1. CHECK FUSE

Check that the following fuses are not blown.

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

Is the fuse blown?

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

2. POWER SUPPLY CIRCUIT CHECK

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

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

Is the inspection result normal?

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

3. GROUND CIRCUIT CHECK

1. Turn ignition switch OFF.
2. Disconnect combination meter connector.
3. Check continuity between combination meter harness connector M24, terminals 21, 22, 23 and ground.

Terminals			Continuity
(+)		(-)	
Connector	Terminal		
M24	21	Ground	Yes
	22		
	23		

Is the inspection result normal?

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

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

BCM (BODY CONTROL SYSTEM) (WITHOUT INTELLIGENT KEY SYSTEM) : Diag-

POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[TYPE B]

Diagnosis Procedure

INFOID:0000000012542966

Regarding Wiring Diagram information, refer to [BCS-117, "Wiring Diagram"](#).

1. CHECK FUSES AND FUSIBLE LINK

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

Terminal No.	Signal name	Fuses and fusible link No.
37	Battery power supply	8 (10A)
42		12 (10A)
50		G (40A)
11	Ignition switch ACC or ON	18 (10A)
38	Ignition switch ON or START	2 (10A)

Is the fuse blown?

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

NO >> GO TO 2.

2. CHECK POWER SUPPLY CIRCUIT

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

BCM		Ground	Ignition switch position		
Connector	Terminal	—	OFF	ACC	ON
M18	11		0 V	Battery voltage	Battery voltage
	37		Battery voltage		
	38		0 V		
M19	42		Battery voltage	Battery voltage	
	50				

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair harness or connector.

3. CHECK GROUND CIRCUIT

Check continuity between BCM connector and ground.

BCM		Ground	Continuity
Connector	Terminal		
M19	55	—	Yes

Is the inspection result normal?

YES >> Inspection End.

NO >> Repair harness or connector.

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

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

INFOID:0000000012542967

Regarding Wiring Diagram information, refer to [BCS-52, "Wiring Diagram"](#).

POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[TYPE B]

1.CHECK FUSES AND FUSIBLE LINK

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

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

Is the fuse blown?

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

NO >> GO TO 2.

2.CHECK POWER SUPPLY CIRCUIT

1. Disconnect BCM connector M99.
2. Check voltage between BCM connector M99 and ground.

BCM		Ground	Voltage
Connector	Terminal		
M99	57	—	Battery voltage
	70		

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair harness or connector.

3.CHECK GROUND CIRCUIT

Check continuity between BCM connector M99 and ground.

BCM		Ground	Continuity
Connector	Terminal		
M99	67	—	Yes

Is the inspection result normal?

YES >> Inspection End.

NO >> Repair harness or connector.

FUEL LEVEL SENSOR SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[TYPE B]

FUEL LEVEL SENSOR SIGNAL CIRCUIT

Description

INFOID:0000000012432636

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

Component Function Check

INFOID:0000000012432637

1.COMBINATION METER INPUT SIGNAL

1. Select METER/M&A on CONSULT.
2. Using FUEL METER of DATA MONITOR, compare the DATA MONITOR value with the fuel gauge position.

Fuel gauge indication position	Reference value of data monitor [L]
1	Approx. 39.7
3/4	Approx. 32.9
1/2	Approx. 22.7
1/4	Approx. 11.9
0	Approx. 2.7

Does monitor value match fuel gauge reading?

- YES >> Inspection End.
NO >> Replace combination meter. Refer to [MWI-115, "Removal and Installation"](#).

Diagnosis Procedure

INFOID:0000000012432638

Regarding Wiring Diagram information, refer to [MWI-79, "Wiring Diagram"](#).

1.CHECK HARNESS CONNECTOR

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

Is the inspection result normal?

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

2.CHECK FUEL LEVEL SENSOR UNIT CIRCUIT

1. Disconnect combination meter harness connector M24 and fuel level sensor unit and fuel pump harness connector B44.
2. Check continuity between combination meter harness connector M24 terminal 6 and fuel level sensor unit and fuel pump harness connector B44 terminal 2.

Connector	Terminal	Connector	Terminal	Continuity
M24	6	B44	2	Yes

3. Check continuity between fuel level sensor unit and fuel pump harness connector B44 terminal 2 and ground.

Connector	Terminal	Ground	Continuity
B44	2		No

Is the inspection result normal?

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

FUEL LEVEL SENSOR SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[TYPE B]

3.CHECK FUEL LEVEL SENSOR GROUND CIRCUIT

1. Disconnect ECM connector F11
2. Check continuity between combination meter harness connector M24 terminal 24 and fuel level sensor unit and fuel pump harness connector B44 terminal 5.

Connector	Terminal	Connector	Terminal	Continuity
M24	24	B44	5	Yes

3. Check continuity between fuel level sensor unit and fuel pump harness connector B44 terminal 5 and ground.

Connector	Terminal	Ground	Continuity
B44	5		No

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair harness or connector.

4.CHECK INSTALLATION CONDITION

Check fuel level sensor unit installation, and verify the float arm does not interfere or bind with the internal components in the fuel tank.

Is the inspection result normal?

YES >> Inspection End.

NO >> Install the fuel level sensor unit properly.

Component Inspection

INFOID:0000000012432639

1.REMOVE FUEL LEVEL SENSOR UNIT

Remove the fuel level sensor unit. Refer to [FL-6, "Removal and Installation"](#).

>> GO TO 2.

2.CHECK FUEL LEVEL SENSOR UNIT

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

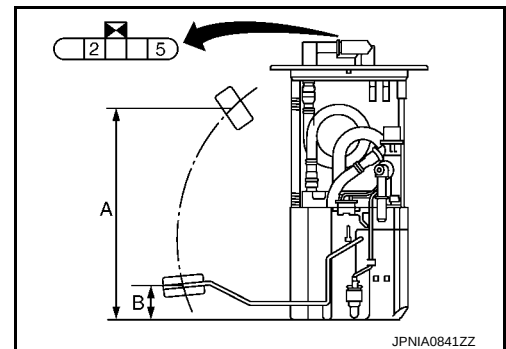
Terminals		Condition	Resistance (Ω) (Approx.)	Height [mm (in)]
Fuel level sensor unit				
2	5	Full* (A)	51	168.2 (6.62)
		Empty* (B)	283	17.5 (0.69)

*: When float rod is in contact with stopper.

Is inspection result OK?

YES >> Inspection End.

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



STEERING SWITCH

< DTC/CIRCUIT DIAGNOSIS >

[TYPE B]

STEERING SWITCH

Diagnosis Procedure

INFOID:000000012432640

Regarding Wiring Diagram information, refer to [MWI-79, "Wiring Diagram"](#).

1.CHECK STEERING SWITCH

1. Turn ignition switch OFF.
2. Disconnect combination switch (spiral cable) connector M88.
3. Check for continuity between the terminals of combination switch connector M88.

Combination switch (spiral cable) connector M88		Condition	Continuity
Terminal	Terminal		
16	17	When steering switch is pressed.	Yes
		Other than above.	No

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace steering switches. Refer to [AV-58, "Removal and Installation"](#).

2.CHECK COMBINATION SWITCH (SPIRAL CABLE)

Check continuity between combination switch (spiral cable) connectors M88 and M30.

Combination switch (spiral cable)				Continuity
Connector	Terminal	Connector	Terminal	
M88	16	M30	32	Yes
	17		33	

Is the inspection result normal?

YES >> • Display audio system: Refer to [AV-104, "Diagnosis Procedure"](#).

• Navigation system: Refer to [AV-224, "Diagnosis Procedure"](#).

NO >> Replace combination switch (spiral cable). Refer to [SR-16, "Removal and Installation"](#).

AMBIENT SENSOR SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[TYPE B]

AMBIENT SENSOR SIGNAL CIRCUIT

Description

INFOID:000000012432641

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

Diagnosis Procedure

INFOID:000000012432642

Regarding Wiring Diagram information, refer to [MWI-79, "Wiring Diagram"](#).

1.CHECK AMBIENT SENSOR POWER SUPPLY

1. Turn ignition switch OFF.
2. Disconnect ambient sensor connector.
3. Turn ignition switch ON.
4. Check voltage between ambient sensor harness connector and ground.

+		–	Voltage (Approx.)
Ambient sensor			
Connector	Terminal		
E69	1	Ground	5 V

Is the inspection result normal?

YES >> GO TO 3.

NO >> GO TO 2.

2.CHECK AMBIENT SENSOR POWER SUPPLY FOR OPEN OR SHORT

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

Combination meter		Ambient sensor		Continuity
Connector	Terminal	Connector	Terminal	
M24	19	E69	1	Yes

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

Combination meter		Ground	Continuity
Connector	Terminal		
M24	19		No

Is the inspection result normal?

YES >> Replace combination meter. Refer to [MWI-115, "Removal and Installation"](#).

NO >> Repair or replace harness or connector.

3.CHECK AMBIENT SENSOR GROUND CIRCUIT

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

Combination meter		Ambient sensor		Continuity
Connector	Terminal	Connector	Terminal	
M24	20	E69	2	Yes

Is the inspection result normal?

YES >> Inspection End.

NO >> Repair or replace harness or connector.

AMBIENT SENSOR SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[TYPE B]

Component Inspection

INFOID:000000012432643

1.CHECK AMBIENT SENSOR

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

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

Is the inspection result normal?

- YES >> Inspection End.
NO >> Replace ambient sensor. Refer to [MWI-116, "Removal and Installation"](#).

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WASHER FLUID LEVEL SWITCH CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[TYPE B]

WASHER FLUID LEVEL SWITCH CIRCUIT

Description

INFOID:000000012432644

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

Diagnosis Procedure

INFOID:000000012432645

Regarding Wiring Diagram information, refer to [MWI-79, "Wiring Diagram"](#).

1.CHECK WASHER FLUID LEVEL SWITCH SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect combination meter connector and washer fluid level switch connector.
3. Check continuity between combination meter harness connector M24 terminal 17 and washer fluid level switch harness connector E50 terminal 1.

Connector	Terminal	Connector	Terminal	Continuity
M24	17	E50	1	Yes

4. Check continuity between combination meter harness connector M24 terminal 17 and ground.

Connector	Terminal	Ground	Continuity
M24	17		No

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace harness or connector.

2.CHECK WASHER FLUID LEVEL SWITCH GROUND CIRCUIT

Check continuity between washer fluid level switch harness connector E50 terminal 2 and ground.

Connector	Terminal	Ground	Continuity
E50	2		Yes

Is the inspection result normal?

YES >> Inspection End.

NO >> Repair or replace harness or connector.

Component Inspection

INFOID:000000012432646

1.CHECK WASHER FLUID LEVEL SWITCH

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

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

Is the inspection result normal?

YES >> Inspection End.

NO >> Replace washer fluid level switch. Refer to [WW-59, "Removal and Installation"](#).

THE FUEL GAUGE INDICATOR DOES NOT OPERATE

< SYMPTOM DIAGNOSIS >

[TYPE B]

SYMPTOM DIAGNOSIS

THE FUEL GAUGE INDICATOR DOES NOT OPERATE

Description

INFOID:0000000012432647

Fuel gauge will not indicate from a certain position.

Diagnosis Procedure

INFOID:0000000012432648

1.CHECK COMBINATION METER INPUT SIGNAL

1. Select METER/M&A on CONSULT.
2. Using DATA MONITOR, compare the monitor value with the fuel gauge reading on the combination meter.
Refer to [MWI-101. "Component Function Check"](#).

Does monitor value match fuel gauge reading?

YES >> GO TO 2.

NO >> Replace combination meter. Refer to [MWI-115. "Removal and Installation"](#).

2.CHECK FUEL LEVEL SENSOR SIGNAL CIRCUIT

Check the fuel level sensor signal circuit. Refer to [MWI-101. "Diagnosis Procedure"](#).

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair harness or connector.

3.COMPONENT INSPECTION

Perform a component inspection on the fuel level sensor unit. Refer to [MWI-102. "Component Inspection"](#).

Is the inspection result normal?

YES >> GO TO 4.

NO >> Replace fuel level sensor unit. Refer to [FL-6. "Removal and Installation"](#).

4.CHECK FLOAT INTERFERENCE

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

Is the inspection result normal?

YES >> Replace combination meter. Refer to [MWI-115. "Removal and Installation"](#).

NO >> Repair or replace malfunctioning parts.

THE OIL PRESSURE WARNING LAMP DOES NOT TURN ON

< SYMPTOM DIAGNOSIS >

[TYPE B]

THE OIL PRESSURE WARNING LAMP DOES NOT TURN ON

Description

INFOID:0000000012432649

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

Diagnosis Procedure

INFOID:0000000012432650

1. CHECK COMBINATION METER ENGINE OIL PRESSURE WARNING LIGHT

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

Component	Condition	CONSULT
Engine oil pressure warning light	Ignition ON	ON
	Ignition OFF	OFF

Is the inspection result normal?

- YES >> Inspection End.
NO >> Replace combination meter. Refer to [MWI-115, "Removal and Installation"](#).

THE OIL PRESSURE WARNING LAMP DOES NOT TURN OFF

< SYMPTOM DIAGNOSIS >

[TYPE B]

THE OIL PRESSURE WARNING LAMP DOES NOT TURN OFF

Description

INFOID:0000000012432651

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

Diagnosis Procedure

INFOID:0000000012432652

1.CHECK COMBINATION METER INPUT SIGNAL

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

Component	Condition	CONSULT
Engine oil pressure warning light	Engine running	OFF

Is the inspection result normal?

- YES >> Replace combination meter. Refer to [MWI-115, "Removal and Installation"](#).
NO >> Perform ECM self-diagnosis. Refer to [EC-60, "CONSULT Function"](#).

THE DOOR OPEN WARNING CONTINUES DISPLAYING, OR DOES NOT DISPLAY

< SYMPTOM DIAGNOSIS >

[TYPE B]

THE DOOR OPEN WARNING CONTINUES DISPLAYING, OR DOES NOT DISPLAY

Description

INFOID:0000000012432653

- 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:0000000012432654

1.CHECK BCM INPUT SIGNAL

Check the BCM input signal. Refer to [DLK-98, "Component Function Check"](#) (with Intelligent Key system) or [DLK-232, "Component Function Check"](#) (without Intelligent Key system).

Is the inspection result normal?

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

2.CHECK COMBINATION METER INPUT SIGNAL

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

Monitor item	Condition	Status
DOOR W/L	Door open	ON
	Door closed	OFF

Is the inspection result normal?

- YES >> Replace combination meter. Refer to [MWI-115, "Removal and Installation"](#).
- NO >> Replace BCM. Refer to [BCS-74, "Removal and Installation"](#) (with Intelligent Key system) or [BCS-137, "Removal and Installation"](#) (without Intelligent Key system).

3.CHECK DOOR SWITCH SIGNAL CIRCUIT

Check the door switch signal circuit. Refer to [DLK-98, "Diagnosis Procedure"](#) (with Intelligent Key system) or [DLK-232, "Diagnosis Procedure"](#) (without Intelligent Key system).

Is the inspection result normal?

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

4.CHECK DOOR SWITCH

Check the door switch. Refer to [DLK-99, "Component Inspection"](#) (with Intelligent Key system) or [DLK-234, "Component Inspection"](#) (without Intelligent Key system).

Is the inspection result normal?

- YES >> Replace combination meter. Refer to [MWI-115, "Removal and Installation"](#).
- NO >> Replace applicable door switch. Refer to [DLK-181, "Removal and Installation"](#) (with Intelligent Key system) or [DLK-308, "Removal and Installation"](#) (without Intelligent Key system).

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

< SYMPTOM DIAGNOSIS >

[TYPE B]

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

Description

INFOID:0000000012432655

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

Diagnosis Procedure

INFOID:0000000012432656

1.CHECK PARKING BRAKE WARNING LAMP OPERATION

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

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

Is the inspection result normal?

- YES >> Replace combination meter. Refer to [MWI-115, "Removal and Installation"](#).
NO >> GO TO 2.

2.CHECK PARKING BRAKE SWITCH

Check the parking brake switch. Refer to [WCS-44, "TYPE B : Component Inspection"](#).

Is the inspection result normal?

- YES >> GO TO 3.
NO >> Replace parking brake switch. Refer to [PB-6, "Exploded View"](#).

3.CHECK PARKING BRAKE SWITCH SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Check the parking brake switch signal circuit. Refer to [WCS-43, "TYPE B : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES >> Replace combination meter. Refer to [MWI-115, "Removal and Installation"](#).
NO >> Repair or replace harness or connector.

THE STEERING SWITCH (METER CONTROL SWITCH) IS INOPERATIVE

< SYMPTOM DIAGNOSIS >

[TYPE B]

THE STEERING SWITCH (METER CONTROL SWITCH) IS INOPERATIVE

Description

INFOID:0000000012432657

The steering switch (meter control switch) is inoperative.

Diagnosis Procedure

INFOID:0000000012432658

1.CHECK STEERING SWITCH (METER CONTROL SWITCH)

Check the steering switch (meter control switch). Refer to [MWI-103, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES >> GO TO 2.

NG >> Replace steering switch. Refer to [AV-58, "Removal and Installation"](#).

2.CHECK STEERING SWITCH (METER CONTROL SWITCH) SIGNAL CIRCUIT

Check the steering switch (meter control switch) signal circuit. Refer to [MWI-103, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES >> Replace combination meter. Refer to [MWI-115, "Removal and Installation"](#).

NO >> Repair harness or connector.

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THE AMBIENT TEMPERATURE DISPLAY IS INCORRECT

< SYMPTOM DIAGNOSIS >

[TYPE B]

THE AMBIENT TEMPERATURE DISPLAY IS INCORRECT

Description

INFOID:0000000012432659

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

Diagnosis Procedure

INFOID:0000000012432660

1.CHECK AMBIENT SENSOR SIGNAL CIRCUIT

Check the ambient sensor signal circuit. Refer to [MWI-104, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace harness or connector.

2.CHECK AMBIENT SENSOR

Check the ambient sensor. Refer to [MWI-105, "Component Inspection"](#).

Is the inspection result normal?

YES >> Replace combination meter. Refer to [MWI-115, "Removal and Installation"](#).

NO >> Replace ambient sensor. Refer to [MWI-116, "Removal and Installation"](#).

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

< SYMPTOM DIAGNOSIS >

[TYPE B]

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

Description

INFOID:0000000012432661

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

Diagnosis Procedure

INFOID:0000000012432662

1.CHECK WASHER FLUID LEVEL SWITCH

Check the washer fluid level switch. Refer to [MWI-106. "Component Inspection"](#).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace washer fluid level switch. Refer to [WW-59. "Removal and Installation"](#).

2.CHECK WASHER FLUID LEVEL SWITCH SIGNAL CIRCUIT

Check the washer fluid level switch signal circuit. Refer to [MWI-106. "Diagnosis Procedure"](#).

Is the inspection result normal?

YES >> Replace combination meter. Refer to [MWI-115. "Removal and Installation"](#).

NO >> Repair or replace harness or connector.

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COMBINATION METER

< REMOVAL AND INSTALLATION >

[TYPE B]

REMOVAL AND INSTALLATION

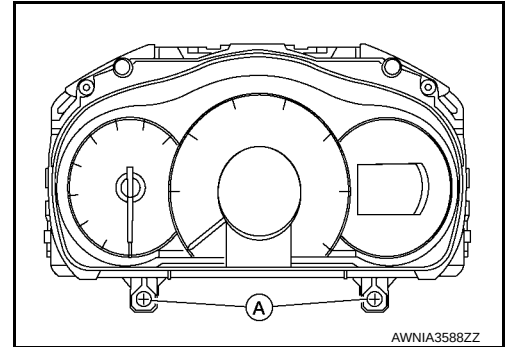
COMBINATION METER

Removal and Installation

INFOID:0000000012432663

REMOVAL

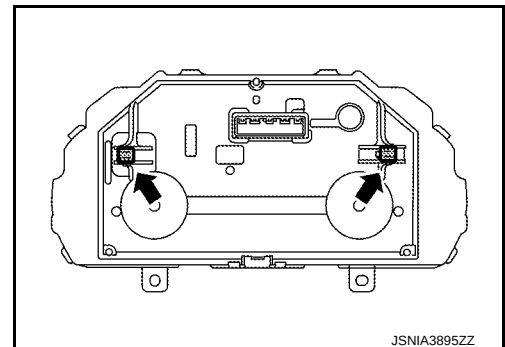
1. Disconnect negative battery terminal. Refer to [PG-72, "Removal and Installation"](#).
2. Remove cluster lid A. Refer to [IP-21, "Removal and Installation"](#).
3. Remove combination meter screws (A).



4. Pull the combination meter straight out to release clips.

NOTE:

Back side of the combination meter shown for clip position (←) clarity.



5. Disconnect the harness connector from the combination meter.

INSTALLATION

Installation is in the reverse order of removal.

AMBIENT SENSOR

Removal and Installation

INFOID:0000000012432664

REMOVAL

1. Remove the core support cover clips, then remove the core support cover.
2. Disconnect the harness connector from the ambient sensor.
3. Release the ambient sensor clip, then remove the ambient sensor.

INSTALLATION

Installation is in the reverse order of removal.