# **SECTION MATER, WARNING LAMP & INDICATOR**

# CONTENTS

### **REGULAR GRADE**

BASIC INSPECTION4
DIAGNOSIS AND REPAIR WORKFLOW
SYSTEM DESCRIPTION6
METER SYSTEM6
METER SYSTEM
SPEEDOMETER       11         SPEEDOMETER : System Diagram       11         SPEEDOMETER : System Description       11         SPEEDOMETER : Component Parts Location       12         SPEEDOMETER : Component Description       12
TACHOMETER12TACHOMETER : System Diagram13TACHOMETER : System Description13TACHOMETER : Component Parts Location13TACHOMETER : Component Description14
ENGINE COOLANT TEMPERATURE GAUGE14ENGINE COOLANT TEMPERATURE GAUGE :14ENGINE COOLANT TEMPERATURE GAUGE :14ENGINE COOLANT TEMPERATURE GAUGE :14ENGINE COOLANT TEMPERATURE GAUGE :15Component Parts Location
FUEL GAUGE       15         FUEL GAUGE : System Diagram       16         FUEL GAUGE : System Description       16         FUEL GAUGE : Component Parts Location       16

FUEL GAUGE : Component Description17	F
ODO/TRIP METER	G
SHIFT POSITION INDICATOR18	
SHIFT POSITION INDICATOR : System Diagram19 SHIFT POSITION INDICATOR : System Descrip- tion	I
SHIFT POSITION INDICATOR : Component	
Parts Location	J
OIL PRESSURE WARNING LAMP	
OIL PRESSURE WARNING LAMP : System Dia-	Κ
gram21 OIL PRESSURE WARNING LAMP : System De- scription21	L
OIL PRESSURE WARNING LAMP : Component	
Parts Location	M
UP-SHIFT INDICATOR22	
UP-SHIFT INDICATOR : System Diagram23 UP-SHIFT INDICATOR : System Description23 UP-SHIFT INDICATOR : Component Parts Loca-	ΜW
tion23	0
UP-SHIFT INDICATOR : Component Description24	
METER ILLUMINATION CONTROL24 METER ILLUMINATION CONTROL : System Di-	Ρ
agram	
scription24 METER ILLUMINATION CONTROL : Component	
Parts Location25	

D

Е

METER ILLUMINATION CONTROL : Component Description	. 25
METER EFFECT FUNCTION	
METER EFFECT FUNCTION : System Diagram	. 26
METER EFFECT FUNCTION : System Descrip-	
tion	26
	. 20
METER EFFECT FUNCTION : Component Parts	
Location	. 26
METER EFFECT FUNCTION : Component De-	
scription	27
	••
INFORMATION DISPLAY	. 27
INFORMATION DISPLAY : System Diagram	
INFORMATION DISPLAY : System Description	. 27
INFORMATION DISPLAY : Component Parts Lo-	
cation	. 30
INFORMATION DISPLAY : Component Descrip-	
tion	31
	. 01
TRIPLE METER	21
TRIPLE METER : System Diagram	
TRIPLE METER : System Description	
TRIPLE METER : Component Parts Location	. 32
TRIPLE METER : Component Description	. 32
····· ··-· - ···· - ···· - ···· + ····	
DIAGNOSIS SYSTEM (METER)	. 33
Diagnosis Description	
	. 33
CONSULT Function (METER/M&A)	. 34
DTC/CIRCUIT DIAGNOSIS	. 38
U1000 CAN COMM CIRCUIT	. 38
	. 38
U1000 CAN COMM CIRCUIT	<b>. 38</b> . 38
U1000 CAN COMM CIRCUIT Description DTC Logic	<b>. 38</b> . 38 . 38
U1000 CAN COMM CIRCUIT	<b>. 38</b> . 38 . 38
U1000 CAN COMM CIRCUIT Description DTC Logic Diagnosis Procedure	<b>. 38</b> . 38 . 38 . 38
U1000 CAN COMM CIRCUIT Description DTC Logic Diagnosis Procedure U1010 CONTROL UNIT (CAN)	. 38 . 38 . 38 . 38 . 38
U1000 CAN COMM CIRCUIT Description DTC Logic Diagnosis Procedure U1010 CONTROL UNIT (CAN) Description	. 38 . 38 . 38 . 38 . 38 . 39
U1000 CAN COMM CIRCUIT Description DTC Logic Diagnosis Procedure U1010 CONTROL UNIT (CAN) Description DTC Logic	. 38 . 38 . 38 . 38 . 38 . 39 . 39 . 39
U1000 CAN COMM CIRCUIT Description DTC Logic Diagnosis Procedure U1010 CONTROL UNIT (CAN) Description	. 38 . 38 . 38 . 38 . 38 . 39 . 39 . 39
U1000 CAN COMM CIRCUIT Description DTC Logic Diagnosis Procedure U1010 CONTROL UNIT (CAN) Description DTC Logic Diagnosis Procedure	. 38 . 38 . 38 . 38 . 39 . 39 . 39 . 39
U1000 CAN COMM CIRCUIT Description DTC Logic Diagnosis Procedure U1010 CONTROL UNIT (CAN) Description DTC Logic	. 38 . 38 . 38 . 38 . 39 . 39 . 39 . 39
U1000 CAN COMM CIRCUIT Description DTC Logic Diagnosis Procedure U1010 CONTROL UNIT (CAN) Description DTC Logic Diagnosis Procedure B2201 COMMUNICATION ERROR 1	. 38 . 38 . 38 . 38 . 39 . 39 . 39 . 39 . 39
U1000 CAN COMM CIRCUIT Description DTC Logic Diagnosis Procedure U1010 CONTROL UNIT (CAN) Description DTC Logic Diagnosis Procedure B2201 COMMUNICATION ERROR 1 Description	. 38 . 38 . 38 . 38 . 39 . 39 . 39 . 39 . 39 . 39 . 40
U1000 CAN COMM CIRCUIT Description DTC Logic Diagnosis Procedure U1010 CONTROL UNIT (CAN) Description DTC Logic Diagnosis Procedure B2201 COMMUNICATION ERROR 1 DTC Logic	. 38 . 38 . 38 . 38 . 39 . 39 . 39 . 39 . 39 . 40 . 40
U1000 CAN COMM CIRCUIT Description DTC Logic Diagnosis Procedure U1010 CONTROL UNIT (CAN) Description DTC Logic Diagnosis Procedure B2201 COMMUNICATION ERROR 1 Description	. 38 . 38 . 38 . 38 . 39 . 39 . 39 . 39 . 39 . 40 . 40
U1000 CAN COMM CIRCUIT Description DTC Logic Diagnosis Procedure U1010 CONTROL UNIT (CAN) Description DTC Logic Diagnosis Procedure B2201 COMMUNICATION ERROR 1 DTC Logic DTC Logic DTC Logic DTC Logic DTC Logic DTC Logic	. 38 . 38 . 38 . 38 . 39 . 39 . 39 . 39 . 39 . 39 . 39 . 40 . 40 . 40
U1000 CAN COMM CIRCUIT Description DTC Logic Diagnosis Procedure U1010 CONTROL UNIT (CAN) Description DTC Logic Diagnosis Procedure B2201 COMMUNICATION ERROR 1 Description DTC Logic DTC Logic Diagnosis Procedure B2205 VEHICLE SPEED	. 38 . 38 . 38 . 38 . 39 . 39 . 39 . 39 . 40 . 40 . 40 . 40
U1000 CAN COMM CIRCUIT Description DTC Logic Diagnosis Procedure U1010 CONTROL UNIT (CAN) Description DTC Logic Diagnosis Procedure B2201 COMMUNICATION ERROR 1 DTC Logic DTC Logic DTC Logic DTC Logic DTC Logic DTC Logic	. 38 . 38 . 38 . 38 . 39 . 39 . 39 . 39 . 40 . 40 . 40 . 40
U1000 CAN COMM CIRCUIT Description DTC Logic Diagnosis Procedure U1010 CONTROL UNIT (CAN) Description DTC Logic Diagnosis Procedure B2201 COMMUNICATION ERROR 1 Description DTC Logic Diagnosis Procedure Diagnosis Procedure Description DTC Logic Diagnosis Procedure	• 38 · 38 · 38 · 38 · 38 · 39 · 39 · 39 · 40 · 40 · 40 · 40 · 40 · 40 · 40 · 40
U1000 CAN COMM CIRCUIT Description DTC Logic Diagnosis Procedure U1010 CONTROL UNIT (CAN) Description DTC Logic Diagnosis Procedure B2201 COMMUNICATION ERROR 1 DTC Logic DTC Logic Diagnosis Procedure Diagnosis Procedure DTC Logic Diagnosis Procedure	. 38 . 38 . 38 . 39 . 39 . 39 . 40 . 40 . 40 . 40 . 40 . 42 . 42 . 42
U1000 CAN COMM CIRCUIT Description DTC Logic Diagnosis Procedure U1010 CONTROL UNIT (CAN) Description DTC Logic Diagnosis Procedure B2201 COMMUNICATION ERROR 1 Description DTC Logic Diagnosis Procedure Diagnosis Procedure Description DTC Logic Diagnosis Procedure	. 38 . 38 . 38 . 39 . 39 . 39 . 40 . 40 . 40 . 40 . 40 . 42 . 42 . 42
U1000 CAN COMM CIRCUIT Description DTC Logic Diagnosis Procedure U1010 CONTROL UNIT (CAN) Description DTC Logic Diagnosis Procedure B2201 COMMUNICATION ERROR 1 DESCRIPTION DTC Logic Diagnosis Procedure Diagnosis Procedure Diagnosis Procedure Diagnosis Procedure Description DTC Logic DESCRIPTION DESCRIPTION DESCRIPTION DESCRIPTION DESCRIPTION DESCRIPTION DESCRIPTION DESCRIPTION DIAGNOSIS PROCED DIAGNOSIS PROCED DIAGNOSIS PROCED DIAGNOSIS PROCED	. 38 . 38 . 38 . 39 . 39 . 39 . 39 . 40 . 40 . 40 . 40 . 40 . 42 . 42 . 42 . 42
U1000 CAN COMM CIRCUIT Description DTC Logic Diagnosis Procedure U1010 CONTROL UNIT (CAN) Description DTC Logic Diagnosis Procedure B2201 COMMUNICATION ERROR 1 DTC Logic Diagnosis Procedure B2205 VEHICLE SPEED Description DTC Logic Diagnosis Procedure B2205 VEHICLE SPEED Diagnosis Procedure B2267 ENGINE SPEED	. 38 . 38 . 38 . 39 . 39 . 39 . 40 . 40 . 40 . 40 . 42 . 42 . 42 . 42 . 42 . 42 . 42
U1000 CAN COMM CIRCUIT Description DTC Logic Diagnosis Procedure U1010 CONTROL UNIT (CAN) Description DTC Logic Diagnosis Procedure B2201 COMMUNICATION ERROR 1 DTC Logic DTC Logic Diagnosis Procedure B2205 VEHICLE SPEED Description DTC Logic DTC Logic Diagnosis Procedure B2267 ENGINE SPEED Description	. 38 . 38 . 38 . 39 . 39 . 39 . 40 . 40 . 40 . 40 . 40 . 40 . 40 . 42 . 42 . 42 . 42 . 42 . 42 . 42
U1000 CAN COMM CIRCUIT Description DTC Logic Diagnosis Procedure U1010 CONTROL UNIT (CAN) Description DTC Logic Diagnosis Procedure B2201 COMMUNICATION ERROR 1 DTC Logic DTC Logic Diagnosis Procedure B2205 VEHICLE SPEED Description DTC Logic DTC Logic DTC Logic DTC Logic DTC Logic DTC Logic DTC Logic DTC Logic DTC Logic	. 38 . 38 . 38 . 39 . 39 . 39 . 40 . 40 . 40 . 40 . 40 . 40 . 42 . 42 . 42 . 42 . 42 . 42 . 42 . 43 . 43
U1000 CAN COMM CIRCUIT Description DTC Logic Diagnosis Procedure U1010 CONTROL UNIT (CAN) Description DTC Logic Diagnosis Procedure B2201 COMMUNICATION ERROR 1 DTC Logic DTC Logic Diagnosis Procedure B2205 VEHICLE SPEED Description DTC Logic DTC Logic Diagnosis Procedure B2267 ENGINE SPEED Description	. 38 . 38 . 38 . 39 . 39 . 39 . 40 . 40 . 40 . 40 . 40 . 40 . 42 . 42 . 42 . 42 . 42 . 42 . 42 . 43 . 43
U1000 CAN COMM CIRCUIT	. 38 . 38 . 38 . 39 . 39 . 39 . 40 . 40 . 40 . 40 . 40 . 40 . 40 . 42 . 42
U1000 CAN COMM CIRCUIT Description DTC Logic Diagnosis Procedure U1010 CONTROL UNIT (CAN) Description DTC Logic Diagnosis Procedure B2201 COMMUNICATION ERROR 1 Description DTC Logic Diagnosis Procedure B2205 VEHICLE SPEED Description DTC Logic Diagnosis Procedure B2267 ENGINE SPEED Description DTC Logic Diagnosis Procedure B2267 ENGINE SPEED Description DTC Logic Diagnosis Procedure B2268 WATER TEMP	. 38 . 38 . 38 . 39 . 39 . 39 . 40 . 40 . 40 . 40 . 40 . 40 . 40 . 42 . 42 . 42 . 42 . 42 . 42 . 42 . 43 . 43 . 43 . 44
U1000 CAN COMM CIRCUIT	. 38 . 38 . 38 . 39 . 39 . 39 . 40 . 40 . 40 . 40 . 40 . 40 . 40 . 42 . 42 . 42 . 42 . 42 . 42 . 42 . 43 . 43 . 43 . 44
U1000 CAN COMM CIRCUIT Description DTC Logic Diagnosis Procedure U1010 CONTROL UNIT (CAN) Description DTC Logic Diagnosis Procedure B2201 COMMUNICATION ERROR 1 Description DTC Logic Diagnosis Procedure B2205 VEHICLE SPEED Description DTC Logic Diagnosis Procedure B2267 ENGINE SPEED Description DTC Logic Diagnosis Procedure B2267 ENGINE SPEED Description DTC Logic Diagnosis Procedure Description DTC Logic Diagnosis Procedure Description DTC Logic Diagnosis Procedure Description DESCRIPTION DESCRIPTION DESCRIPTION DESCRIPTION DESCRIPTION DESCRIPTION DESCRIPTION	. 38 . 38 . 38 . 39 . 39 . 39 . 40 . 40 . 40 . 40 . 40 . 40 . 42 . 43 . 43 . 44
U1000 CAN COMM CIRCUIT Description DTC Logic Diagnosis Procedure U1010 CONTROL UNIT (CAN) Description DTC Logic Diagnosis Procedure B2201 COMMUNICATION ERROR 1 Description DTC Logic Diagnosis Procedure B2205 VEHICLE SPEED Description DTC Logic Diagnosis Procedure B2267 ENGINE SPEED Description DTC Logic Diagnosis Procedure B2267 ENGINE SPEED Description DTC Logic Diagnosis Procedure B2268 WATER TEMP	. 38 . 38 . 38 . 39 . 39 . 39 . 40 . 40 . 40 . 40 . 40 . 40 . 40 . 40 . 40 . 42 . 43 . 43 . 44 . 44

POWER SUPPLY AND GROUND CIRCUIT 45
COMBINATION METER
<b>TRIPLE METER</b> 45         TRIPLE METER : Diagnosis Procedure       45
IPDM E/R (INTELLIGENT POWER DISTRIBU- TION MODULE ENGINE ROOM)46IPDM E/R (INTELLIGENT POWER DISTRIBU- TION MODULE ENGINE ROOM) : Diagnosis Pro- cedure46
FUEL LEVEL SENSOR SIGNAL CIRCUIT 48Description48Component Function Check48Diagnosis Procedure49Component Inspection50
OIL PRESSURE SWITCH SIGNAL CIRCUIT 51 Description
PARKING BRAKE SWITCH SIGNAL CIR- CUITCUIT53Description53Diagnosis Procedure53Component Inspection53
WASHER LEVEL SWITCH SIGNAL CIRCUIT 54 Description
A/C AUTO AMP. CONNECTION RECOGNI- TION SIGNAL CIRCUIT
ECU DIAGNOSIS INFORMATION 57
COMBINATION METER57Reference Value57Wiring Diagram - METER -64Fail-Safe76DTC Index77
IPDM E/R (INTELLIGENT POWER DISTRI-
BUTION MODULE ENGINE ROOM)         79           Reference Value         79           Wiring Diagram - IPDM E/R -         86           Fail-safe         89           DTC Index         91
SYMPTOM DIAGNOSIS
THE FUEL GAUGE INDICATOR DOES NOT OPERATE92

Description ......92

Diagnosis Procedure92
THE OIL PRESSURE WARNING LAMP DOES NOT TURN ON
THE OIL PRESSURE WARNING LAMP         DOES NOT TURN OFF         Description         94         Diagnosis Procedure         94
THE PARKING BRAKE RELEASE WARNING CONTINUES DISPLAYING, OR DOES NOT DISPLAY
THE LOW WASHER FLUID WARNING CON- TINUES DISPLAYING, or DOES NOT DIS-         PLAY       96         Description       96         Diagnosis Procedure       96
THE DOOR OPEN WARNING CONTINUES DISPLAYING, OR DOES NOT DISPLAY97 Description
THE AMBIENT TEMPERATURE DISPLAY IS         INCORRECT       98         Description       98         Diagnosis Procedure       98
NORMAL OPERATING CONDITION99
INFORMATION DISPLAY99 INFORMATION DISPLAY : Description
PRECAUTION100

PRECAUTIONS100	
EXCEPT FOR MEXICO       100         EXCEPT FOR MEXICO : Precautions for Supplemental Restraint System (SRS) "AIR BAG" and       100         "SEAT BELT PRE-TENSIONER"       100         EXCEPT FOR MEXICO : Precaution for Battery       100         EXCEPT FOR MEXICO : Precautions for Removing Battery Terminal       100	В
FOR MEXICO       101         FOR MEXICO : Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT         PRE-TENSIONER"       101         FOR MEXICO : Precaution for Battery Service       101         FOR MEXICO : Precautions for Removing Battery       101         FOR MEXICO : Precautions for Removing Battery       101	D
PREPARATION102	F
PREPARATION	G
	Н
COMBINATION METER103Exploded View103Removal and Installation103Disassembly and Assembly104	
TRIPLE METER106Exploded View106Removal and Installation106Disassembly and Assembly106Nismo 370Z	J
SPEC CHANGE INFORMATION 108	٢١
COMBINATION METER	L

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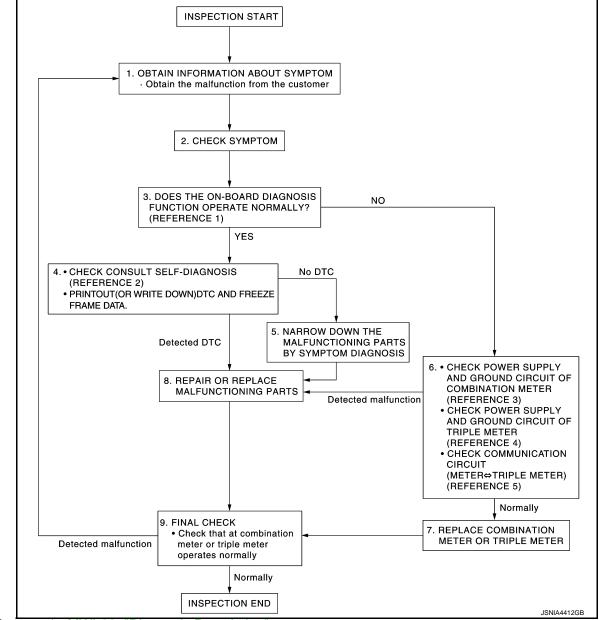
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# BASIC INSPECTION DIAGNOSIS AND REPAIR WORKFLOW

# Work flow

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- Reference 1...<u>MWI-33</u>, "Diagnosis Description".
- Reference 2…<u>MWI-77, "DTC Index"</u>.
- Reference 3…<u>MWI-45, "COMBINATION METER : Diagnosis Procedure"</u>.
- Reference 4…<u>MWI-45, "TRIPLE METER : Diagnosis Procedure"</u>.
- Reference 5…<u>MWI-40, "Diagnosis Procedure"</u>.

DETAILED FLOW

# **1.**OBTAIN INFORMATION ABOUT SYMPTOM

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

# **DIAGNOSIS AND REPAIR WORKFLOW**

< BASIC INSPECTION > [REGULAR GRADE]	
	ı
2. СНЕСК ЅҮМРТОМ	/
<ul> <li>Check the symptom based on the information obtained from the customer.</li> <li>Check that any other malfunctions are present.</li> </ul>	
>> GO TO 3.	E
3. CHECK ON BOARD DIAGNOSIS OPERATION	
Check that the on board diagnosis function operates. Refer to <u>MWI-33</u> , "Diagnosis Description".	(
Does the on board diagnosis function operate normally?	
YES >> GO TO 4. NO >> GO TO 6.	[
4. CHECK CONSULT SELF-DIAGNOSIS RESULTS	
1. Connect CONSULT and perform self-diagnosis. Refer to <u>MWI-77, "DTC Index"</u> .	E
<ol> <li>When DTC is detected, follow the instructions below:</li> <li>Record DTC and Freeze Frame Data.</li> </ol>	
<u>Are self-diagnosis results normal?</u>	F
YES >> GO TO 5. NO >> GO TO 8.	
5. NARROW DOWN THE MALFUNCTIONING PARTS BY SYMPTOM DIAGNOSIS	(
Perform symptom diagnosis and narrow down the malfunctioning parts.	
>> GO TO 8.	I
6. CHECK POWER SUPPLY AND GROUND CIRCUITS OR COMMUNICATION CIRCUIT	
Check combination meter power supply and ground circuits. Refer to <u>MWI-45. "COMBINATION METER :</u>	
<ul> <li><u>Diagnosis Procedure</u>".</li> <li>Check triple meter power supply and ground circuits. Refer to <u>MWI-45, "TRIPLE METER : Diagnosis Proce-</u></li> </ul>	
dure".	,
Check communication circuits. Refer to <u>MWI-40, "Diagnosis Procedure"</u> .	
Is inspection result OK?	
YES >> GO TO 7. NO >> GO TO 8.	
7.REPLACE COMBINATION METER OR TRIPLE METER	
Replace combination meter or triple meter.	
>> GO TO 9.	
8. REPAIR OR REPLACE MALFUNCTIONING PARTS	
Repair or replace the malfunctioning parts.	M
<b>NOTE:</b> If DTC is displayed, erase DTC after repair or replace malfunctioning parts.	IV
>> GO TO 9. 9.FINAL CHECK	(
Check that the combination meter and the triple meter operates normally.	
Do they operate normally?	
YES >> INSPECTION END	

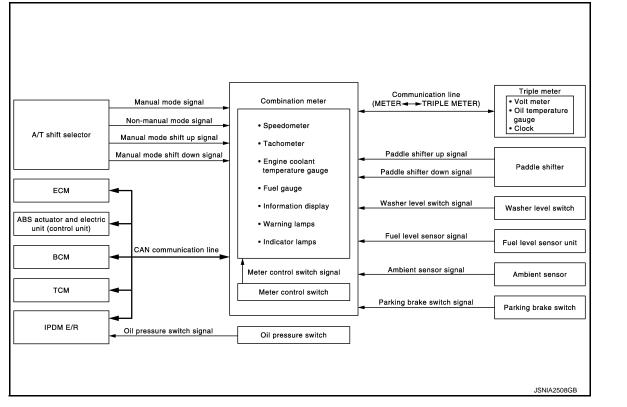
NO >> GO TO 1.

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# SYSTEM DESCRIPTION > SYSTEM DESCRIPTION METER SYSTEM

METER SYSTEM

# METER SYSTEM : System Diagram



# **METER SYSTEM : System Description**

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### COMBINATION METER

- The combination meter receives the information required to control the operation of each gauge, indicator/ warning lamp, triple meter, and information display via CAN communication from each unit, each switch, and sensor.
- The combination meter incorporates a trip computer that displays, warnings and messages on the information display according to the information received from various units.
- The combination meter incorporates a buzzer function that sounds an audible alarm with the integrated buzzer device. Refer to <u>WCS-5, "WARNING CHIME SYSTEM : System Description"</u> for further details.
- The combination meter integrates the meter circuit check function and the segment check function that checks the information display operation.

### IPDM E/R

- IPDM E/R reads the ON/OFF signals of the oil pressure switch and transmits the oil pressure switch signal to the combination meter via BCM with the CAN communication line.
- IPDM E/R is equipped with the diagnosis function. It can perform the operation check of oil pressure warning lamp with the auto active test and the diagnosis with CONSULT.

### METER CONTROL FUNCTION LIST

### < SYSTEM DESCRIPTION >

# [REGULAR GRADE]

System		Description	Signal source
	Speedometer	Receives vehicle speed signal and indicates vehicle speed.	ABS actuator and electric unit (control unit) $\Rightarrow$ Combination meter
Meter/gauge	Tachometer	Receives engine speed signal and indicates engine speed.	$\begin{array}{l} \text{ECM} \Rightarrow \text{Combination} \\ \text{meter} \end{array}$
	Fuel gauge	Receives fuel level sensor signal and indicates fuel level.	Fuel level sensor unit $\Rightarrow$ Combination meter
	Engine coolant tem- perature gauge	Receives engine coolant temperature signal and indicates coolant temperature.	$\begin{array}{l} \text{ECM} \Rightarrow \text{Combination} \\ \text{meter} \end{array}$
	Oil pressure warning lamp	Receives oil pressure warning lamp signal and illuminates warning lamp.	IPDM E/R $\Rightarrow$ BCM $\Rightarrow$ Combination meter
Warning lamp/ indicator lamp	Up-shift indicator lamp	Receives engine speed signal and indicates up-shift indicator lamp.	$\begin{array}{l} \text{ECM} \Rightarrow \text{Combination} \\ \text{meter} \end{array}$
	Master warning lamp	Illuminates according to warning output on information display.	

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# < SYSTEM DESCRIPTION >

# [REGULAR GRADE]

System		Description	Signal source
	Door open warning	Receives door switch signals and displays warning.	$\begin{array}{l} \text{BCM} \Rightarrow \text{Combination} \\ \text{meter} \end{array}$
	Parking brake re	De seive a adris a basta suitab sins d'an duabista se suitab sins d'an d	Parking brake switch $\Rightarrow$ Combination meter
	Parking brake re- lease warning	Receives parking brake switch signal and vehicle speed signal and displays warnings.	ABS actuator and electric unit (control unit) $\Rightarrow$ Combination meter
	Low fuel warning	Receives fuel gauge signal and displays warning if fuel level decreases to approx.13 $\ell$ (3-3/8 US gal, 2-7/8 Imp gal) or less.	Fuel level sensor unit $\Rightarrow$ Combination meter
	Low washer fluid warning	Receives washer level switch signal and displays warning.	Washer level switch $\Rightarrow$ Combination meter
	Low outside tempera- ture warning	Monitors ambient sensor signal and displays warning if ambient temperature decreases to 3°C (37°F) or less. (If enabled)	Ambient sensor $\Rightarrow$ Combination meter
	Fuel filler cap warning	Receives fuel filler cap warning display signal and displays warning.	$\begin{array}{l} \text{ECM} \Rightarrow \text{Combination} \\ \text{meter} \end{array}$
		Calculates instantaneous fuel consumption based on received ve-	$\begin{array}{l} \text{ECM} \Rightarrow \text{Combination} \\ \text{meter} \end{array}$
Information	Instantaneous fuel consumption	hicle speed signals and fuel consumption monitor signal and dis- plays it.	ABS actuator and elec- tric unit (control unit) $\Rightarrow$ Combination meter
display		Calculates average fuel consumption in a reset-to-reset interval	$\begin{array}{l} \text{ECM} \Rightarrow \text{Combination} \\ \text{meter} \end{array}$
	Average fuel con- sumption based on received vehicle speed signals and fuel consumption monitor signal and displays it.		ABS actuator and elec- tric unit (control unit) $\Rightarrow$ Combination meter
	Average vehicle speed	Calculates average vehicle speed in a reset-to-reset interval based on received vehicle speed signals and displays it.	ABS actuator and electric unit (control unit) $\Rightarrow$ Combination meter
	Travel time	Displays accumulated key switch ON time from reset to reset.	_
		Calculates accumulated travel distance in a reset-to-reset interval based on received vehicle speed signals and displays it.	ABS actuator and elec- tric unit (control unit) $\Rightarrow$ Combination meter
	Possible driving dis- tance	Calculates possible driving distance based on received fuel con- sumption monitor signal, vehicle speed signals and fuel level sen- sor signal and displays it.	ABS actuator and elec- tric unit (control unit) $\Rightarrow$ Combination meter
			$\begin{array}{l} \text{ECM} \Rightarrow \text{Combination} \\ \text{meter} \end{array}$
			Fuel level sensor unit $\Rightarrow$ Combination meter
	Ambient air tempera- ture	Corrects ambient air temperature value based on received ambient sensor signals and displays it.	Ambient sensor $\Rightarrow$ Combination meter
	Volt meter	Receives ignition signal and indicates battery voltage.	Ignition power supply $\Rightarrow$ Triple meter
Triple meter	Oil temperature gauge	Receives oil temperature signal and indicates engine oil tempera- ture.	$\begin{array}{l} \text{ECM} \Rightarrow \text{Combination} \\ \text{meter} \Rightarrow \text{Triple meter} \end{array}$
	Clock	Receives clock signal and displays the time on clock.	Combination meter $\Rightarrow$ Triple meter

### < SYSTEM DESCRIPTION >

### [REGULAR GRADE]

### ARRANGEMENT OF COMBINATION METER AND TRIPLE METER А BRAKE : (A) (!):B В С ( ) $\bigcirc$ (¢\$ 0 Ø CRUISE Ľ 3 80 MPH Ä D ΛĊ SEF//ICE 2 9 \ 160 <u>^</u> ′0ŧ 200 60 160 RPM x1000 12 AT DD - + 40 m/h**180**-Ε $\mathbf{b}$ Ģ 0 <u>(1)</u> 20 <u>\_</u>L ~ н 0 F ABS : (A) м : С s : Ď (es) : **B** G F 260 11 v 14 220 12 Å ي 300 10 ⊡ 16 Н 180 JSNIA3796ZZ

A. For USA

B. Except for USA

C. A/T models

D. With SynchroRev Match mode (S-MODE) models

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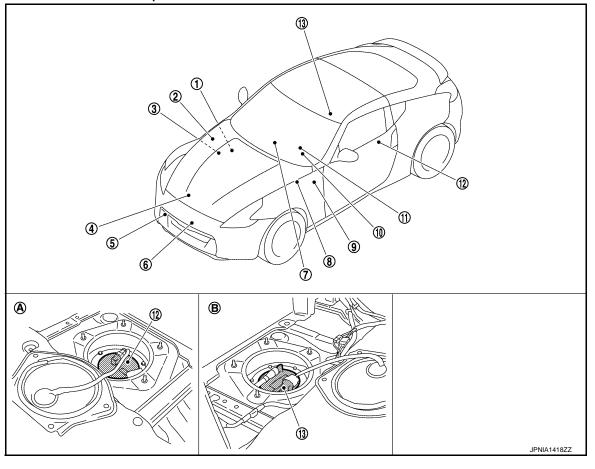
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### < SYSTEM DESCRIPTION >

# **METER SYSTEM : Component Parts Location**

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[REGULAR GRADE]



### BCM

- 1. Refer to <u>BCS-10, "Component Parts</u> 2. <u>Location"</u>.
- 4. Oil pressure switch Refer to <u>EM-83, "Exploded View"</u>.
- 7. Triple meter
- 10. Combination meter
- 13. Fuel level sensor unit and fuel pump (main)
- A. Rear parcel shelf cover LH (bottom) B. Rear parcel shelf cover RH (bottom)

IPDM E/R Refer to <u>PCS-5</u>, "Component Parts

8.

<u>Location</u>".5. Washer level switch

ABS actuator and electric unit (control unit) Refer to <u>BRC-12, "Component Parts</u>

- <u>Location</u>". 11. Parking brake switch
- ECM Refer t

3.

9.

- Refer to <u>EC-40, "Component Parts</u> <u>Location"</u>.
- 6. Ambient sensor

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- Refer to <u>TM-153, "Component Parts</u> Location".
- 12. Fuel level sensor unit (sub)

# **METER SYSTEM : Component Description**

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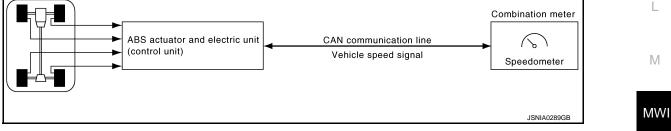
Unit	Description	
	Controls the following with the signals received from each unit via CAN communication and the signals from switches and sensors.	
<b>-</b>	Speedometer	Tachometer
Combination meter	Engine coolant temperature gauge	Fuel gauge
	Warning lamps	Indicator lamps
	Information display	Triple meter

### < SYSTEM DESCRIPTION >

Unit	Description		
	Indicate the following with the signals receive the signal from ignition power supply.	ed from combination meter via communication line and	
Triple meter	Volt meter	Oil temperature gauge	
	• Clock		
IPDM E/R	IPDM E/R reads the ON/OFF signals of the oil pressure switch and transmits the oil pressure switch signal to the combination meter via BCM with CAN communication line.		
Fuel level sensor unit	Refer to MWI-48, "Description".		
Oil pressure switch	Refer to MWI-51, "Description".		
	Transmits the following signals to the combin	nation meter with CAN communication line.	
	Engine speed signal	Engine coolant temperature signal	
ECM	Fuel consumption monitor signal	Oil temperature signal	
	<ul> <li>Shift position signal [with SyncroRev matc mode (S-MODE) models]</li> </ul>	h • Fuel filler cap warning display signal	
ABS actuator and electric unit (control unit)	Transmits the vehicle speed signal to the co	mbination meter with CAN communication line.	
BCM	Transmits signals provided by various units to the combination meter with CAN communication line.		
	Transmits the following signal to the combination	ation meter.	
A/T shift selector	Manual mode signal	Non-manual mode signal	
	Manual mode shift up signal	Manual mode shift down signal	
Paddle shifter	Transmits paddle shifter up signal and paddle shifter down signal to the combination meter.		
ТСМ	Transmits the shift position signal to the combination meter with CAN communication line.		
Washer level switch	Transmits the washer level signal to the combination meter.		
Ambient sensor	Transmits the ambient sensor signal to the c	Transmits the ambient sensor signal to the combination meter.	
Brake fluid level switch	Transmits the brake fluid level switch signal to the combination meter.		
Parking brake switch	Refer to MWI-53, "Description".		

# SPEEDOMETER

# SPEEDOMETER : System Diagram



# SPEEDOMETER : System Description

- The ABS actuator and electric unit (control unit) converts the rectangular wave signal provided by the wheel sensor to a vehicle speed signal and transmits it to the combination meter via CAN communication.
- The combination meter indicates the vehicle speed to the speedometer according to the vehicle speed signal received via CAN communication.

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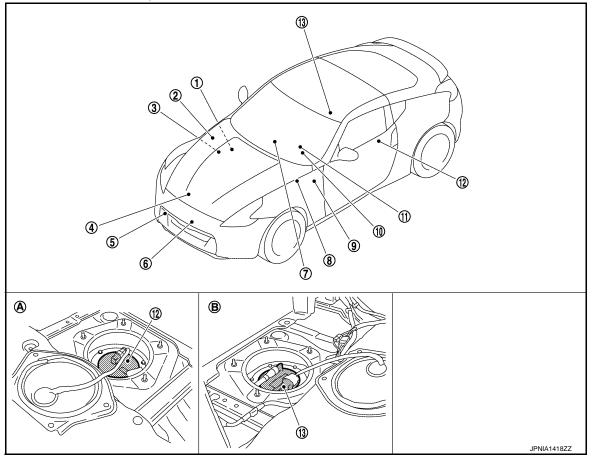
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### < SYSTEM DESCRIPTION >

# **SPEEDOMETER : Component Parts Location**

INFOID:000000010838279

[REGULAR GRADE]



### BCM

- Refer to <u>BCS-10, "Component Parts</u> 2. 1. Location".
- Oil pressure switch 4. Refer to EM-83, "Exploded View".
- 7. Triple meter
- 10. Combination meter
- Fuel level sensor unit and fuel pump 13. (main)
- A. Rear parcel shelf cover LH (bottom) B. Rear parcel shelf cover RH (bottom)

IPDM E/R Refer to PCS-5, "Component Parts

8.

Location". Washer level switch 5.

ABS actuator and electric unit (control unit) Refer to BRC-12, "Component Parts

- 9. Location".
- 11. Parking brake switch

### ECM

3.

- Refer to EC-40, "Component Parts Location".
- Ambient sensor 6.

### тсм

- Refer to TM-153, "Component Parts Location".
- 12. Fuel level sensor unit (sub)

**SPEEDOMETER : Component Description** 

INFOID:000000010838280

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

# TACHOMETER

# [REGULAR GRADE]

INFOID:000000010838282

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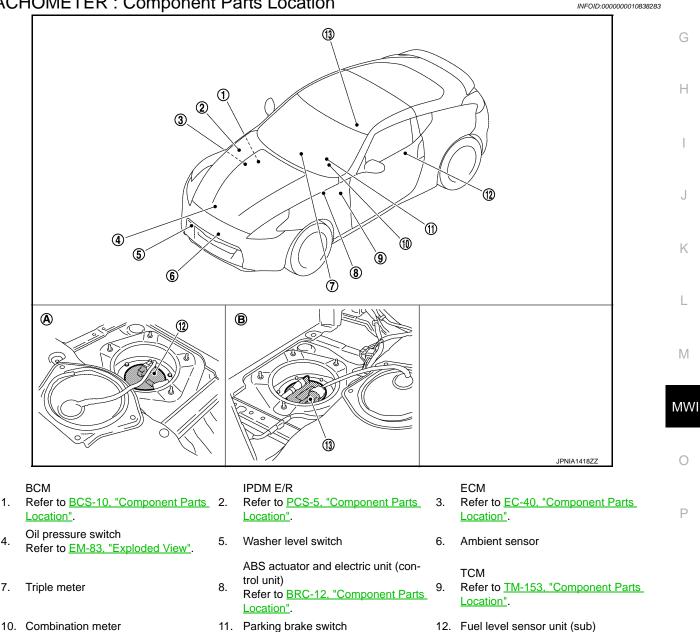
### **TACHOMETER : System Diagram** INFOID:000000010838281 А Combination meter Crankshaft CAN communication line $\langle \rangle$ position ECM sensor (POS) Engine speed signal Tachometer JSNIA0290GE D

# **TACHOMETER : System Description**

< SYSTEM DESCRIPTION >

- ECM converts the pulse signal provided by the crankshaft position sensor to an engine speed signal and transmits it to the combination meter with CAN communication line.
- The combination meter indicates the engine speed to the tachometer according to the engine speed signal received via CAN communication.

# TACHOMETER : Component Parts Location



Revision: 2014 September

1.

4.

7.

**MWI-13** 

### < SYSTEM DESCRIPTION >

Fuel level sensor unit and fuel pump

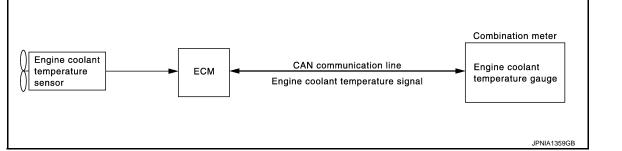
- 13. (main)
- A. Rear parcel shelf cover LH (bottom) B. Rear parcel shelf cover RH (bottom)

# **TACHOMETER : Component Description**

INFOID:000000010838284

[REGULAR GRADE]

Unit	Description	
Combination meter	Indicates the engine speed to the tachometer according to the engine spece ECM via CAN communication.	ed signal received from
ECM	Transmits the engine speed signal to the combination meter with CAN co	ommunication line.
ENGINE COOLANT	TEMPERATURE GAUGE	
ENGINE COOLANT T	EMPERATURE GAUGE : System Diagram	INFCID:000000010838285



# ENGINE COOLANT TEMPERATURE GAUGE : System Description

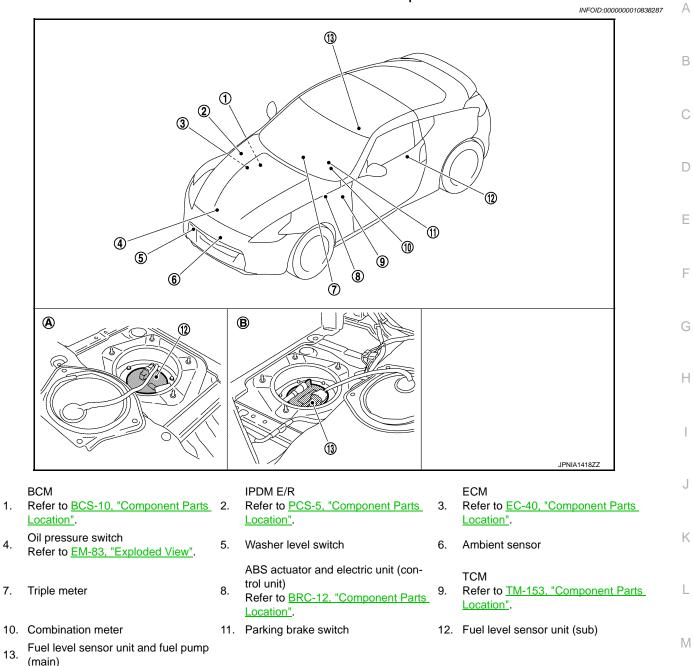
INFOID:000000010838286

- ECM reads the engine coolant temperature signal from the engine coolant temperature sensor and transmits the signal to the combination meter via CAN communication.
- The combination meter indicates the engine coolant temperature to the engine coolant temperature gauge according to the engine coolant temperature signal received via CAN communication.

### < SYSTEM DESCRIPTION >

### [REGULAR GRADE]

# ENGINE COOLANT TEMPERATURE GAUGE : Component Parts Location



- A. Rear parcel shelf cover LH (bottom) B. Rear parcel shelf cover RH (bottom)

### **ENGINE COOLANT TEMPERATURE GAUGE : Component Description** INFOID:000000010838288

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

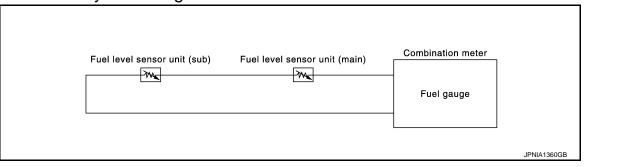
FUEL GAUGE

### < SYSTEM DESCRIPTION >

# [REGULAR GRADE]

INFOID:000000010838289

# FUEL GAUGE : System Diagram



# FUEL GAUGE : System Description

INFOID:000000010838290

### CONTROL OUTLINE

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

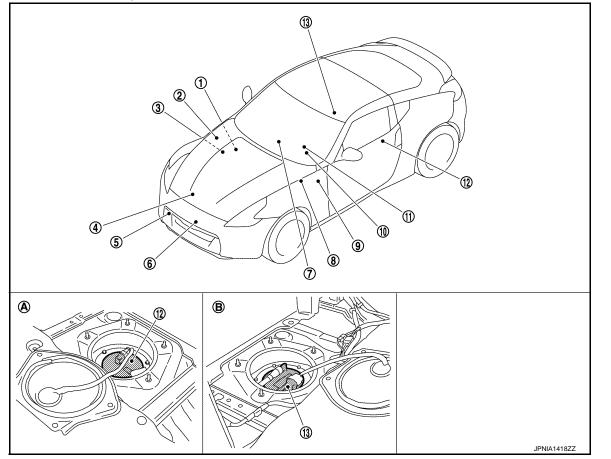
### **REFUEL CONTROL**

The combination meter accelerates the fuel gauge segment if the all conditions listed below are met, or the ignition switch is ON from OFF.

- Ignition switch is ON position.
- The vehicle is not moving.
- The fuel level change by 15  $\ell$  (4 US gal, 3-1/4 lmp gal) or more.

# FUEL GAUGE : Component Parts Location

INFOID:000000010838291



### < SYSTEM DESCRIPTION >

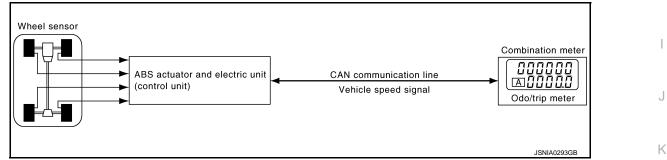
### [REGULAR GRADE]

1.	BCM Refer to <u>BCS-10. "Component Parts</u> <u>Location"</u> .	2.	IPDM E/R Refer to <u>PCS-5, "Component Parts</u> Location".	3.	ECM Refer to <u>EC-40, "Component Parts</u> Location".	А
4.	Oil pressure switch Refer to <u>EM-83, "Exploded View"</u> .	5.	Washer level switch	6.	Ambient sensor	В
7.	Triple meter	8.	ABS actuator and electric unit (con- trol unit) Refer to <u>BRC-12, "Component Parts</u> <u>Location"</u> .	9.	TCM Refer to <u>TM-153, "Component Parts</u> Location".	С
10.	Combination meter	11.	Parking brake switch	12.	Fuel level sensor unit (sub)	
13.	Fuel level sensor unit and fuel pump (main)					D
Α.	Rear parcel shelf cover LH (bottom)	В.	Rear parcel shelf cover RH (bottom)			
FUE	L GAUGE : Component	De	scription		INFOID:000000010838292	Е
	Unit		Descriptio	on		F

Unit	Description	F
Combination meter	Indicates the fuel gauge according to the fuel level sensor signal received from the fuel level sensor unit.	
Fuel level sensor unit	Refer to <u>MWI-48, "Description"</u> .	G

# ODO/TRIP METER

# ODO/TRIP METER : System Diagram



# **ODO/TRIP METER : System Description**

- The ABS actuator and electric unit (control unit) reads the rectangular wave signal provided by the wheel sensor and transmits the vehicle speed signal to the combination meter via CAN communication.
- The combination meter converts the vehicle speed signal received via CAN communication to mileage, and it displays the accumulated mileage to the odo/trip meter.

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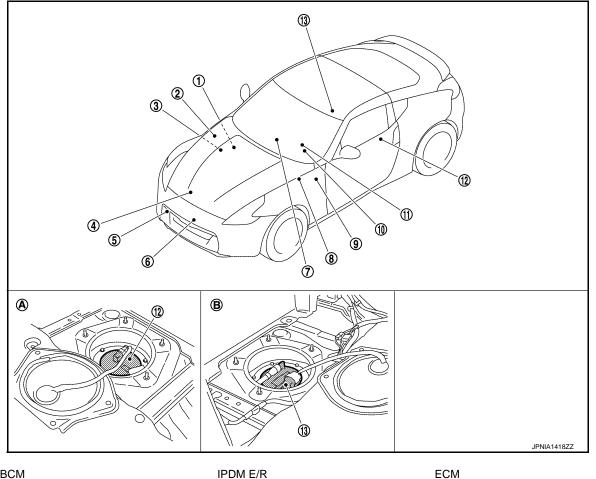
Ρ

### < SYSTEM DESCRIPTION >

# **ODO/TRIP METER : Component Parts Location**

INFOID:000000010838295

[REGULAR GRADE]



### BCM

- Refer to BCS-10, "Component Parts 2. 1. Location".
- Oil pressure switch 4. Refer to EM-83, "Exploded View".
- 7. Triple meter
- 10. Combination meter
- Fuel level sensor unit and fuel pump 13. (main)
- A. Rear parcel shelf cover LH (bottom) B. Rear parcel shelf cover RH (bottom)

IPDM E/R

8.

- Refer to PCS-5, "Component Parts 3. Location".
- Washer level switch 5.

ABS actuator and electric unit (control unit)

- 9. Refer to BRC-12, "Component Parts Location".
- 11. Parking brake switch

- Refer to EC-40, "Component Parts Location".
- Ambient sensor 6.

### тсм

- Refer to TM-153, "Component Parts Location".
- 12. Fuel level sensor unit (sub)

**ODO/TRIP METER : Component Description** 

INFOID:000000010838296

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

# SHIFT POSITION INDICATOR

Revision: 2014 September

### < SYSTEM DESCRIPTION >

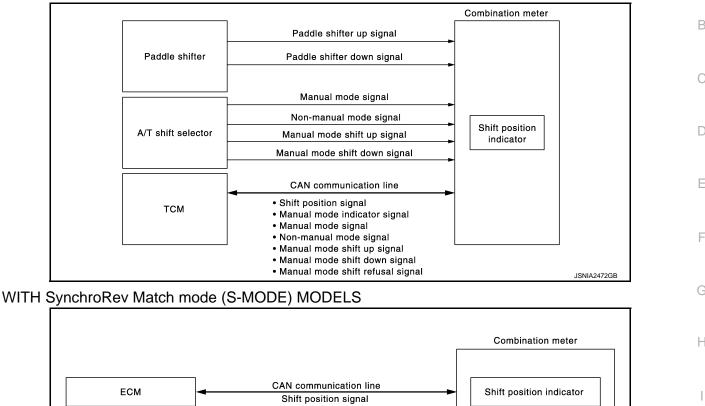
# SHIFT POSITION INDICATOR : System Diagram

# INFOID:000000010838297

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### A/T MODELS



# SHIFT POSITION INDICATOR : System Description

### A/T MODELS

### Manual Mode

When operated with A/T shift selector

- The combination meter receives the manual mode signal, manual mode shift up signal, and manual mode shift down signal from A/T shift selector and transmits them to TCM via CAN communication.
- TCM recognizes the manual mode operation status according to the manual mode signal, manual mode shift up signal, and manual mode shift down signal received via CAN communication and transmits the shift position signal to the combination meter via CAN communication.
- The combination meter indicates shift position according to the shift position signal via CAN communication.

When operated with paddle shifter

- The combination meter receives the manual mode signal from A/T shift selector, paddle shifter up signal and paddle shifter down signal from paddle shifter and transmits them to TCM via CAN communication.
- TCM recognizes the manual mode operation status according to the manual mode signal, manual mode shift up signal, and manual mode shift down signal received via CAN communication and transmits the shift position signal to the combination meter via CAN communication.
- The combination meter indicates shift position according to the shift position signal via CAN communication.

Shift refusal warning and alarm

- TCM sends a manual mode shift refusal signal to the combination meter via CAN communication when shiftup and shift-down can not be operated in manual mode.
- The combination meter blinks the shift position indicator and sounds a buzzer according to a manual mode shift refusal signal received via CAN communication.

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### < SYSTEM DESCRIPTION >

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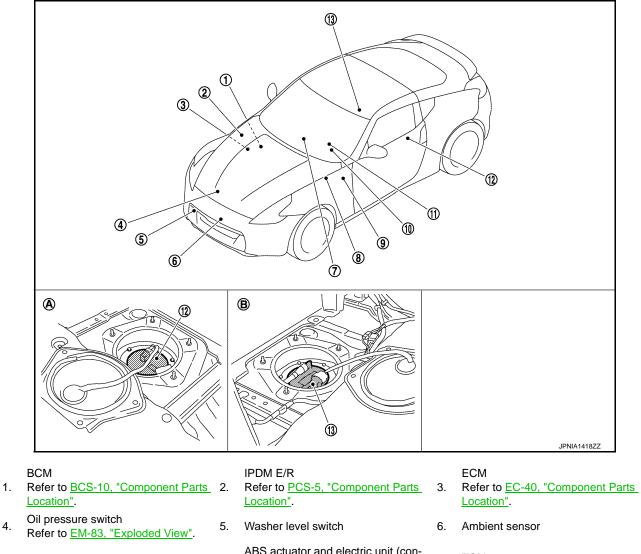
### Non-Manual Mode

- Combination meter inputs non-manual mode signal from A/T shift selector and transmits the signals to TCM with CAN communication line.
- TCM transmits shift position signal to combination meter with CAN communication.
- Combination meter indicates shift position when receiving shift position signal.

### WITH SynchroRev Match mode (S-MODE) MODELS

- ECM transmits the shift position signal to the combination meter via CAN communication.
- The combination meter indicates shift position according to the shift position signal received via CAN communication.

# SHIFT POSITION INDICATOR : Component Parts Location



7. Triple meter

4.

- 10. Combination meter
- Fuel level sensor unit and fuel pump 13. (main)
- Rear parcel shelf cover LH (bottom) Α.

ABS actuator and electric unit (control unit) 9. Refer to BRC-12, "Component Parts Location".

11. Parking brake switch

8.

B. Rear parcel shelf cover RH (bottom)

### TCM

Refer to TM-153, "Component Parts Location".

12. Fuel level sensor unit (sub)

### < SYSTEM DESCRIPTION >

# SHIFT POSITION INDICATOR : Component Description

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INFOID:000000010838301

INFOID:000000010838302

[REGULAR GRADE]

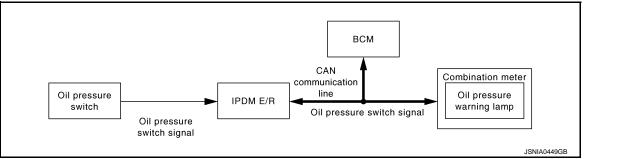
Unit	Description			
Combination meter	Displays the shift position on the shift position indicator with shift position signal received fr TCM <sup>*1</sup> or ECM <sup>*2</sup> via CAN communication.			
	Transmits the following signals to the c	ombination meter.		
A/T shift selector	Manual mode signal	Non-manual mode signal		
	Manual mode shift up signal	<ul> <li>Manual mode shift down signal</li> </ul>		
Paddle shifter	Transmits the paddle shifter up signal a	nd paddle shifter down signal to the combination meter.		
TCM <sup>*1</sup>	Transmits shift position signal and manual mode shift refusal signal to the combination met CAN communication.			
ECM <sup>*2</sup>	Transmits shift position signal to the combination meter with CAN communication.			

\*1: A/T models

\*2: With SynchroRev Match mode (S-MODE) models

# OIL PRESSURE WARNING LAMP

# OIL PRESSURE WARNING LAMP : System Diagram



# **OIL PRESSURE WARNING LAMP : System Description**

### OIL PRESSURE WARNING LAMP

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

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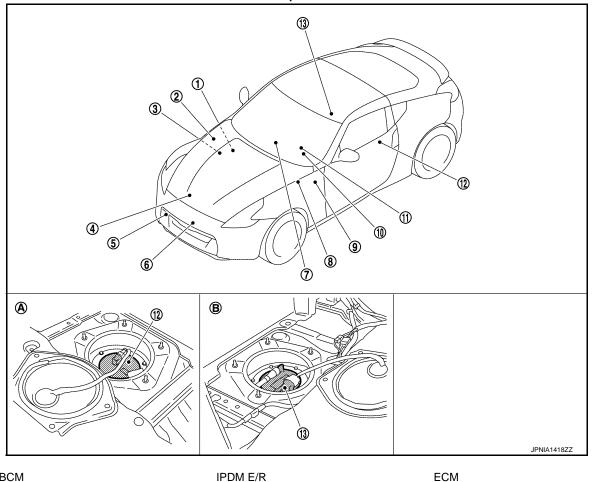


### < SYSTEM DESCRIPTION >

## [REGULAR GRADE]

# **OIL PRESSURE WARNING LAMP : Component Parts Location**

INFOID:000000010838303



### BCM

- Refer to BCS-10, "Component Parts 2. 1. Location".
- Oil pressure switch 4. Refer to EM-83, "Exploded View".
- 7. Triple meter
- 10. Combination meter Fuel level sensor unit and fuel pump
- 13. (main)
- A. Rear parcel shelf cover LH (bottom) B. Rear parcel shelf cover RH (bottom)

Refer to PCS-5, "Component Parts

ABS actuator and electric unit (con-

Refer to BRC-12, "Component Parts

Location".

trol unit)

Location".

11. Parking brake switch

Washer level switch

### ECM

3.

9.

- Refer to EC-40, "Component Parts Location".
- Ambient sensor 6.

### тсм

- Refer to TM-153, "Component Parts Location".
- 12. Fuel level sensor unit (sub)

# **OIL PRESSURE WARNING LAMP : Component Description**

5.

8.

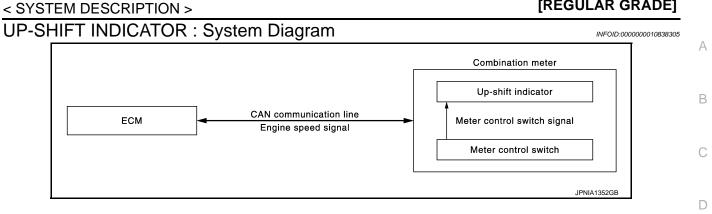
INFOID:000000010838304

Unit	Description			
Combination meter	Turns the oil pressure warning lamp ON/OFF according to the oil pressure switch signal received from BCM via CAN communication.			
IPDM E/R	Reads the ON/OFF signals from the oil pressure switch and transmits the oil pressure switch signal to the combination meter via BCM and CAN communication.			
Oil pressure switch	Refer to <u>MWI-51</u> , "Description".			
BCM Transmits the oil pressure switch signal received from IPDM E/R via CAN con combination meter via CAN communication.				

# **UP-SHIFT INDICATOR**

# [REGULAR GRADE]

INFOID:000000010838306



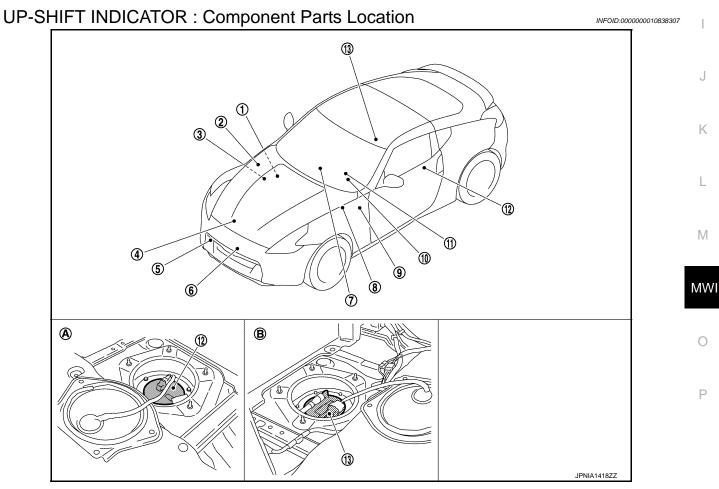
# **UP-SHIFT INDICATOR : System Description**

Ε Combination meter receives the engine speed signal from ECM via CAN communication line, and then turns up-shift indicator ON, OFF or blinking.

Combination meter turns up-shift indicator ON, OFF or Blinking under the following conditions

Up-shift indicator status	Engine speed	Setting range
ON	Set value <sup>*</sup> or more	No setting - 9,000 rpm
Blinking	From (Set value <sup>*</sup> minus 500 rpm)	_
OFF	(Set value <sup>*</sup> minus 600 rpm) or less	_

\*: Value set by the setting function in information display.



### < SYSTEM DESCRIPTION >

### [REGULAR GRADE]

1.	BCM Refer to <u>BCS-10, "Component Parts</u> <u>Location"</u> .	2.	IPDM E/R Refer to <u>PCS-5, "Component Parts</u> <u>Location"</u> .	3.	ECM Refer to <u>EC-40. "Component Parts</u> Location".
4.	Oil pressure switch Refer to <u>EM-83, "Exploded View"</u> .	5.	Washer level switch	6.	Ambient sensor
7.	Triple meter	8.	ABS actuator and electric unit (con- trol unit) Refer to <u>BRC-12, "Component Parts</u> <u>Location"</u> .	9.	TCM Refer to <u>TM-153, "Component Parts</u> <u>Location"</u> .
10.	Combination meter	11.	Parking brake switch	12.	Fuel level sensor unit (sub)
13.	Fuel level sensor unit and fuel pump (main)				
Α.	Rear parcel shelf cover LH (bottom)	В.	Rear parcel shelf cover RH (bottom)		

# UP-SHIFT INDICATOR : Component Description

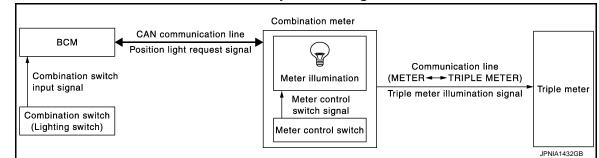
INFOID:000000010838308

Unit	Description
Combination meter	<ul> <li>Receives the engine speed signal from ECM via CAN communication line.</li> <li>Receives the meter control switch signal from meter control switch.</li> </ul>
ECM	Transmits the engine speed signal to the combination meter via CAN communication.

# METER ILLUMINATION CONTROL

# METER ILLUMINATION CONTROL : System Diagram

INFOID:0000000010838309



# METER ILLUMINATION CONTROL : System Description

INFOID:000000010838310

# SYSTEM DESCRIPTION

### **Combination Meter**

The combination meter controls the meter illumination and triple meter illumination by the meter control switch signal from the meter control switch and the position light request signal transmitted by the BCM via CAN communication.

### Triple Meter

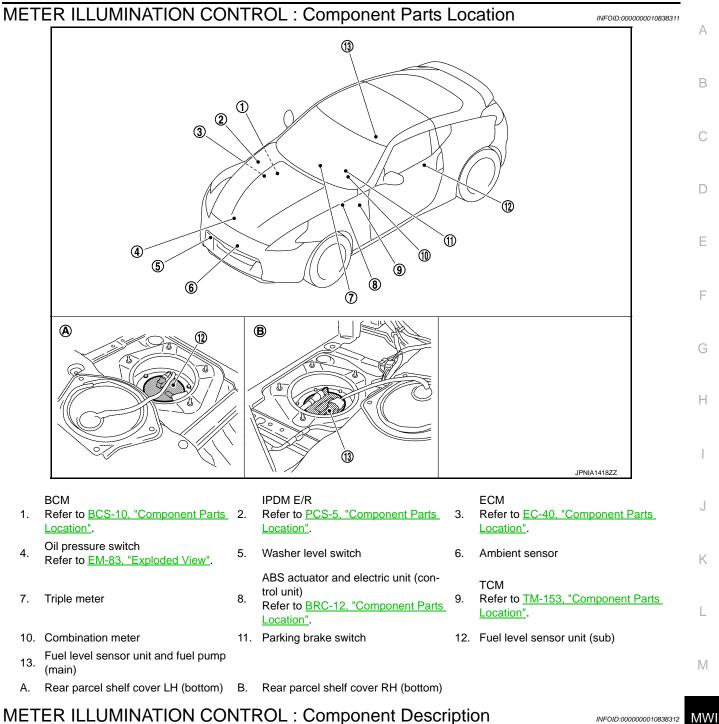
The triple meter illuminates the triple meter illumination by the triple meter illumination signal from the combination meter via communication line.

### Nighttime Mode

- Combination meter changes the meter illumination to the nighttime mode by the position light request signal from BCM via CAN communication.
- Meter illumination and triple meter illumination can be adjusted in 22 steps using the illumination control switch in nighttime mode.

### < SYSTEM DESCRIPTION >

### [REGULAR GRADE]



# **METER ILLUMINATION CONTROL : Component Description**

INFOID:000000010838312

Unit	Description	
Combination meter	Controls the meter illumination and triple meter illumination with the meter control switch signal from the meter control switch and the position light request signal from BCM via CAN communication.	
Triple meter	Receives the triple meter illumination signal from the combination meter via communication line.	
BCM	CM Transmits the position light request signal to the combination meter via CAN communication	

# METER EFFECT FUNCTION

### < SYSTEM DESCRIPTION >

### METER EFFECT FUNCTION : System Diagram ECM • Engine status signal · Engine speed signal CAN Communication line (METER ← TRIPLE METER) communication line Combination Triple BCM meter Meter effect signal meter Starter relay status signal ABS actuator and electric unit Vehicle speed signal (control unit) JPNIA1433GB

# METER EFFECT FUNCTION : System Description

### SYSTEM DESCRIPTION

### Engine-start Effect Function

- The combination meter receives engine speed signal and engine status signal from ECM, starter relay status signal from BCM, vehicle speed signal from ABS actuator and electric unit (control unit) via CAN communication.
- The triple meter receives meter effect signal from combination meter via communication line.
- After the end of cranking and recognition of engine revolution, the combination meter illuminates the meter light in stages and sweeps the needles of the speedometer, tachometer, volt meter and oil temperature gauge.

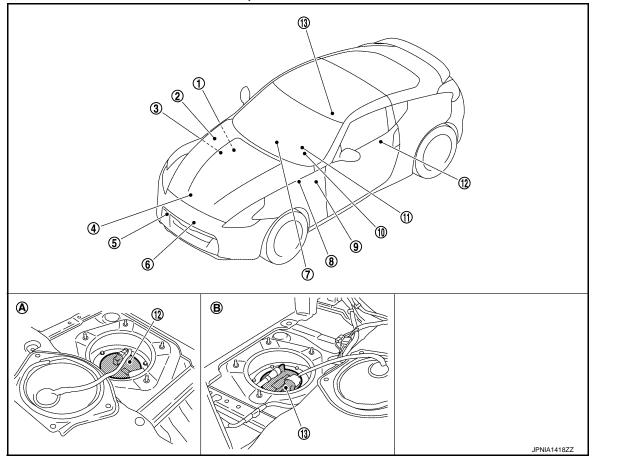
### NŎTĔ:

The engine-start effect function enables ON/OFF with an operation of information display.

**Cancel Condition** 

• When vehicle speed is more than 1 km/h (0.6 MPH).

# **METER EFFECT FUNCTION : Component Parts Location**



INFOID:000000010838313

INFOID:000000010838314

INFOID:000000010838315

### < SYSTEM DESCRIPTION >

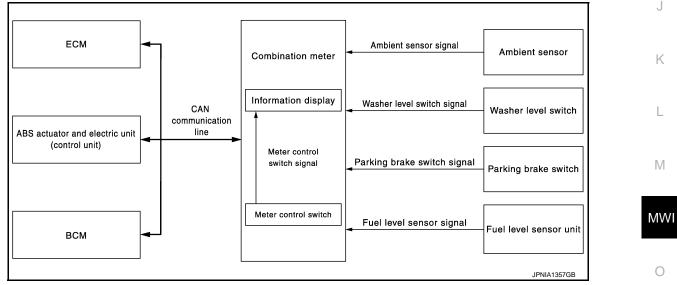
### [REGULAR GRADE]

1.	BCM Refer to <u>BCS-10, "Component Parts</u> <u>Location"</u> .	2.	IPDM E/R Refer to <u>PCS-5. "Component Parts</u> Location".	3.	ECM Refer to <u>EC-40. "Component Parts</u> Location".	A	
4.	Oil pressure switch Refer to <u>EM-83, "Exploded View"</u> .	5.	Washer level switch	6.	Ambient sensor	В	
7.	Triple meter	8.	ABS actuator and electric unit (con- trol unit) Refer to <u>BRC-12</u> , "Component Parts Location".	9.	TCM Refer to <u>TM-153, "Component Parts</u> <u>Location"</u> .	С	
10.	Combination meter	11.	Parking brake switch	12.	Fuel level sensor unit (sub)		
13.	Fuel level sensor unit and fuel pump (main)					D	
Α.	Rear parcel shelf cover LH (bottom)	В.	Rear parcel shelf cover RH (bottom)				
MET	ER EFFECT FUNCTION	1:(	Component Description		INFOID:000000010838316	Е	

Unit	Description				
Combination meter	<ul> <li>Receives signals from each unit with the CAN communication and performs meter effect.</li> <li>Transmits meter effect signal to the triple meter via communication line.</li> </ul>				
Triple meter	Receives signals from combination meter via communication line and performs meter effect.				
ECM	Transmits engine speed signal and engine status signal to the combination meter via CAN com- munication.				
BCM	Transmits starter relay status signal to the combination meter via CAN communication.				
ABS actuator and electric unit (control unit)	Transmits vehicle speed signal to the combination meter via CAN communication.				

# INFORMATION DISPLAY

# INFORMATION DISPLAY : System Diagram



# **INFORMATION DISPLAY : System Description**

### DESCRIPTION

- The combination meter receives the information required for controlling the operations of the information display from the various units via CAN communication.
- The combination meter incorporates a trip computer that displays the warning/information according to the information received from various units.

### PARKING BRAKE RELEASE WARNING

### **MWI-27**

INFOID:000000010838318

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INFOID:000000010838317

### < SYSTEM DESCRIPTION >

The combination meter indicates the parking brake release warning judged by the vehicle speed signal received from the ABS actuator and electric unit (control unit) via CAN communication and the parking brake switch signal from the parking brake switch.

### Warning Operation Condition

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

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

### LOW FUEL WARNING

The combination meter indicates the low fuel warning judged by the fuel level sensor signal received from the fuel level sensor unit.

Warning Operation Condition

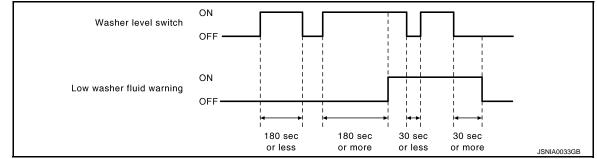
• Fuel level: Approx. 13 & (3-3/8 US gal, 2-7/8 Imp gal) or less

### LOW WASHER FLUID WARNING

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

Warning Operation Condition

• Indicates the warning when the washer level switch is ON for 180 seconds or more. Stops indicating the warning when the washer level switch is OFF for 30 seconds or more.



### DOOR OPEN WARNING

The combination meter indicates the door open warning judged by each door switch signal received from the BCM via CAN communication line.

### FUEL FILLER CAP WARNING

- The combination meter receives remaining fuel filler cap warning display signal from the ECM with CAN communication line.
- The combination meter indicates fuel filler cap warning when receiving remaining fuel filler cap warning display signal.
- The combination meter indicates fuel filler cap warning judged with the fuel filler cap warning display signal received from the ECM.

For details, refer to EC-135, "System Description".

### INSTANTANEOUS FUEL CONSUMPTION (MPG)

- The combination meter receives the fuel consumption monitor signal from the ECM and the vehicle speed signal from the ABS actuator and electric unit (control unit) via CAN communication.
- The combination meter calculates instantaneous fuel consumption according to the fuel consumption monitor signal and the vehicle speed signal received via CAN communication.

### AVERAGE FUEL CONSUMPTION (MPG)

- The combination meter receives the fuel consumption monitor signal from the ECM and the vehicle speed signal from the ABS actuator and electric unit (control unit) via CAN communication.
- The combination meter calculates the average fuel consumption according to the fuel consumption monitor signal and the vehicle speed signal received via CAN communication.
- The average fuel consumption displayed on the information display is uploaded in approximately 30-second intervals.

### NOTE:

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

### **MWI-28**

### < SYSTEM DESCRIPTION >

### AVERAGE VEHICLE SPEED (MPH) • The combination meter receives the vehicle speed signal from the ABS actuator and electric unit (control А unit) via CAN communication. Measures the time while the ignition switch is ON through the combination meter. The combination meter the average vehicle speed according to the above signals. В The average vehicle speed displayed on the information display is uploaded in approximately 30-second intervals. NOTE: —" is displayed for 30 seconds just after the reset operation or after the ignition switch is OFF $\rightarrow$ ON. It is displayed continuously until the vehicle drives approximately 500 m (0.31 mile). TRAVEL TIME (TIME) D Measures the time while the ignition switch is ON through the combination meter. TRAVEL DISTANCE (MILES) The combination meter receives the vehicle speed signal from the ABS actuator and electric unit (control F unit) via CAN communication. • The combination meter calculates the vehicle distance according to the vehicle speed signal. The vehicle distance is displayed. F POSSIBLE DRIVING DISTANCE (RANGE) The combination meter calculates possible driving distance according to the vehicle speed signal and fuel consumption monitor signal transmitted via CAN communication and the fuel level sensor signal transmitted from the fuel level sensor. NOTE: -" is displayed for 30 seconds after the ignition switch is OFF $\rightarrow$ ON. It is displayed continuously until the vehicle drives approximately 500 m (0.31 mile). Н The indicated values may not match each other when refueling with the ignition switch ON. Refer to <u>MWI-99</u>. "INFORMATION DISPLAY : Description". AMBIENT AIR TEMPERATURE The combination meter receives the ambient sensor signal from the ambient sensor. The combination meter calculates the ambient temperature according to the ambient sensor signal. The indicated temperature does not increase if the vehicle speed is less than 20 km/h (12 MPH). NOTE: • The ambient sensor input value that is displayed on "Data Monitor" of CONSULT is the value before the correction. It may not match the indicated temperature on the information display. Κ The ambient temperature may be indicated higher than the actual temperature, depending on heat in the engine, the road surface temperature, and so on. SETTING L Setting item list

Items		Setting range	Setting unit	Description	
	UP SHIFT	No setting - 9,000 rpm	100 rpm [500 rpm]*	The engine speed signal received from ECM via CAN communication, and the up-shift indicator can be set to ON/OFF	Μ
				depending on the engine speed.	MWI
ALERT	TIMER	No setting - 6 hours	30 minutes, [60 minutes]*	Time to rest is displayed on the informa- tion display if the vehicle reached the set travel distance.	
	ICY ON/OFF		_	Low outside temp is displayed on the in- formation display if the ambient tempera- ture is $3^{\circ}C$ ( $37^{\circ}F$ ) or less.	0

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### < SYSTEM DESCRIPTION >

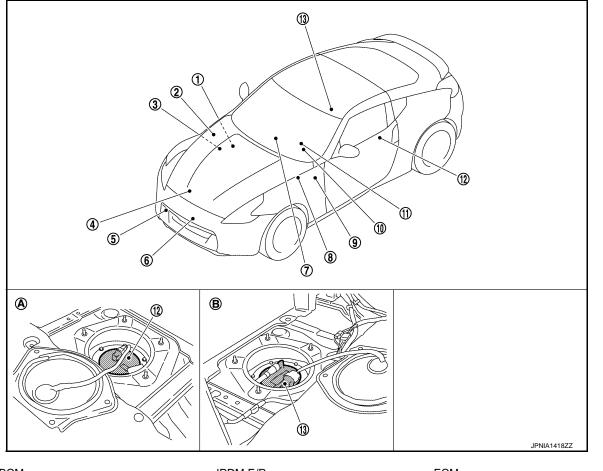
### [REGULAR GRADE]

Ite	ems	Setting range	Setting unit	Description
	OIL	No setting - 18,500 miles, (No setting - 30,000 km)	250 miles (500 km), [500 miles (1,000 km)]*	The engine oil replacement interval is dis- played on the information display if the ve- hicle reached the set distance.
MAINTENANCE	FILTER	No setting - 18,500 miles, (No setting - 30,000 km)	250 miles (500 km), [500 miles (1,000 km)]*	The oil filter replacement interval is dis- played on the information display if the ve- hicle reached the set distance.
MAINTENANCE	TIRE	No setting - 18,500 miles, (No setting - 30,000 km)	250 miles (500 km), [500 miles (1,000 km)]*	The tire replacement interval is displayed on the information display if the vehicle reached the set distance.
	OTHER	No setting - 18,500 miles, (No setting - 30,000 km)	250 miles (500 km), [500 miles (1,000 km)]*	The other replacement interval is dis- played on the information display if the ve- hicle reached the set distance.
	LANGUAGE	ENGLISH/FRANCAIS	—	The language setting can be changed.
OPTIONS	S EFFECTS ON/OFF		_	The engine-start effect function setting can be changed.
	UNIT	US/METRIC	—	The unit setting can be changed.
CLOCK	SETTING	1:00 - 12:59	Hour : Minutes	Can set the time of the clock.
	RESET	—	Reset	Minutes indication be comes zero.

\* : Press and hold the switch (1 second or more).

# **INFORMATION DISPLAY : Component Parts Location**

INFOID:000000010838319



### BCM

- 1. Refer to <u>BCS-10, "Component Parts</u> 2. <u>Location"</u>.
- 4. Oil pressure switch Refer to <u>EM-83, "Exploded View"</u>.
- IPDM E/R Refer to <u>PCS-5, "Component Parts</u> Location".
- ECM 3. Refer to <u>EC-40, "Component Parts</u> <u>Location"</u>.

Ambient sensor

Washer level switch 6.

5.

### < SYSTEM DESCRIPTION >

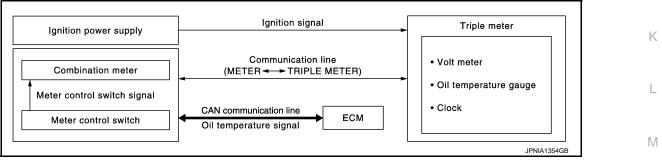
### [REGULAR GRADE]

7.	Triple meter	8.	ABS actuator and electric unit (con- trol unit) Refer to <u>BRC-12, "Component Parts</u> <u>Location"</u> .	9.	TCM Refer to <u>TM-153, "Component Parts</u> <u>Location"</u> .	A	
10.	Combination meter	11.	Parking brake switch	12.	Fuel level sensor unit (sub)	R	
13.	Fuel level sensor unit and fuel pump (main)					D	
Α.	Rear parcel shelf cover LH (bottom)	В.	Rear parcel shelf cover RH (bottom)			C	
INFC	INFORMATION DISPLAY : Component Description						

Unit	Description				
Combination meter	Controls the information display according to the signal received from each unit.				
Fuel level sensor unit	Refer to <u>MWI-48, "Description"</u> .				
	Transmits the following signals to the combination meter via CAN communication.				
ECM	Engine speed signal     Fuel filler cap warning display signal				
	Fuel consumption monitor signal				
ABS actuator and electric unit (control unit)	Transmits the vehicle speed signal to the combination meter via CAN communication.				
BCM	Transmits signals provided by various units to the combination meter via CAN communication.				
Washer level switch	Transmits the washer level signal to the combination meter.				
Parking brake switch	Refer to <u>MWI-53, "Description"</u> .				
Door switch	Transmits the door switch signals to BCM.				
Ambient sensor	Detects the ambient air temperature and transmits the ambient sensor signal to the combination meter.				

# **TRIPLE METER**

# TRIPLE METER : System Diagram



# **TRIPLE METER : System Description**

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### VOLT METER

Triple meter indicates the battery voltage on volt meter, when triple meter receives the ignition signal (from ignition power supply)

### OIL TEMPERATURE GAUGE

Triple meter receives the oil temperature signal from combination meter via communication line, and then indicates the engine oil temperature on oil temperature gauge.

### CLOCK

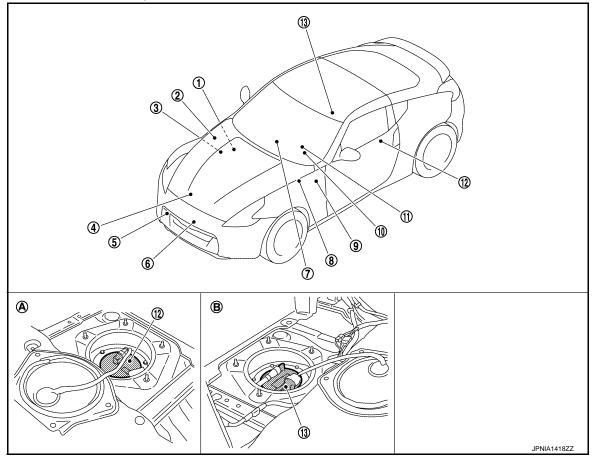
Triple meter receives the clock signal from combination meter, and then displays the time on clock.

### < SYSTEM DESCRIPTION >

# **TRIPLE METER : Component Parts Location**

INFOID:000000010838323

[REGULAR GRADE]



### BCM

- Refer to <u>BCS-10, "Component Parts</u> 2. 1. Location".
- Oil pressure switch 4. Refer to EM-83, "Exploded View".
- 7. Triple meter
- 10. Combination meter
- Fuel level sensor unit and fuel pump 13. (main)
- A. Rear parcel shelf cover LH (bottom) B. Rear parcel shelf cover RH (bottom)

IPDM E/R

Location".

trol unit)

Location".

11. Parking brake switch

5.

8.

Washer level switch

Refer to PCS-5, "Component Parts

ABS actuator and electric unit (con-

Refer to BRC-12, "Component Parts

### ECM

3.

9.

- Refer to EC-40, "Component Parts Location".
- Ambient sensor 6.

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- Refer to TM-153, "Component Parts Location".
- 12. Fuel level sensor unit (sub)

# **TRIPLE METER : Component Description**

INFOID:000000010838324

Unit	Description			
Triple meter	Controls the triple meter according to the signals received from combination meter.			
Combination meter	<ul> <li>Receives the oil temperature signal from ECM via CAN communication line, and then transmits the signal to triple meter via communication line (METER⇔TRIPLE METER).</li> <li>Receives the meter control switch signal from meter control switch, and then transmits those signals to triple meter via communication line (METER⇔TRIPLE METER).</li> </ul>			
ECM	Transmits the oil temperature signal to combination meter via CAN communication line.			

# **Diagnosis Description**

### SELF-DIAGNOSIS MODE

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

### OPERATION PROCEDURE

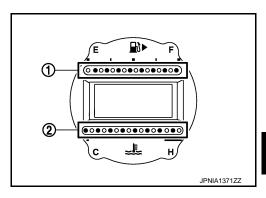
- 1. Turn ignition switch OFF.
- 2. While pressing the trip reset switch (1), turn ignition switch ON.
- 3. Make sure that the trip meter displays "0000.0". **NOTE:**

The fuel gauge (1) blink alternately.

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

- 4. Press the trip reset switch at least 3 times. (Within 7 seconds after the ignition switch is turned ON.)
- 5. The unified meter control unit is turned to self-diagnosis mode.
  - The segment dots of the information display LCD (1) blink alternately.
  - Speedometer, tachometer, volt meter, and oil temperature gauge return to zero respectively.
  - All the segments of clock, manual mode indicator, S-MODE indicator, odo/trip meter, and shift position indicator illuminate.

The engine coolant temperature gauge (2) blink alternately.



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.
- When turning the ignition switch ON, if the triple meter has a malfunction and the self-diagnosis mode for triple meter does not starts, check the power supply and ground circuit of the triple meter, and the communication line circuit (METER⇔TRIPLE METER). Replace triple meter if power supply and ground circuit and the communication line circuit (METER⇔TRIPLE METER) are normal.
- If any of the segments does not illuminate, replace the combination meter or the triple meter (only when the clock of a segment that does not illuminate).

[REGULAR GRADE]

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INFOID:000000010838325

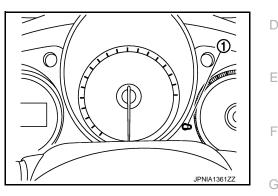
B

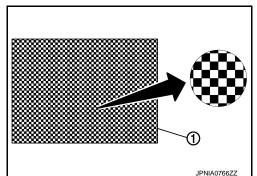
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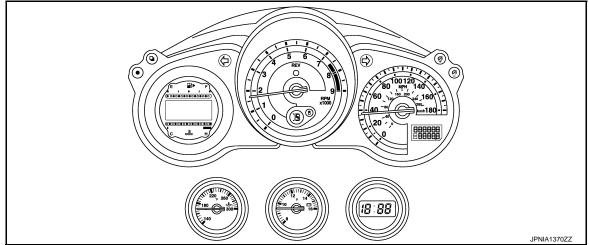
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### < SYSTEM DESCRIPTION >

6. Each meter activates by pressing the trip reset switch.



### NOTE:

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

# CONSULT Function (METER/M&A)

INFOID:000000010838326

### CONSULT APPLICATION ITEMS

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

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

# SELF DIAG RESULT

Refer to <u>MWI-77, "DTC Index"</u>.

### DATA MONITOR

### NOTE:

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

**Display Item List** 

X: Applicable

Display item [Unit]	MAIN SIGNALS	Description		
SPEED METER [km/h]	x	Value of vehicle speed signal received from ABS actuator and electric unit (control unit) via CAN communication. <b>NOTE:</b> 655.35 is displayed when the malfunction signal is received.		
SPEED OUTPUT [km/h]	Х	Vehicle speed signal value transmitted to other units via CAN communication. <b>NOTE:</b> 655.35 is displayed when the malfunction signal is received.		
ODO OUTPUT [km/h or mph]		Odometer signal value transmitted to other units via CAN communication.		
TACHO METER [rpm]	х	Value of the engine speed signal received from ECM via CAN communication. <b>NOTE:</b> 8191.875 is displayed when the malfunction signal is received.		
FUEL METER [L]	х	Fuel level indicated on combination meter.		

### < SYSTEM DESCRIPTION >

## [REGULAR GRADE]

Display item [Unit]	MAIN SIGNALS	Description
W TEMP METER [°C]	х	Value of engine coolant temperature signal is received from ECM via CAN com- munication. <b>NOTE:</b> 215 is displayed when the malfunction signal is input.
ABS W/L [On/Off]		Status of ABS warning lamp detected from ABS warning lamp signal is received from ABS actuator and electric unit (control unit) via CAN communication.
VDC/TCS IND [On/Off]		Status of VDC OFF indicator lamp detected from VDC OFF indicator lamp signal is received from ABS actuator and electric unit (control unit) via CAN communication.
SLIP IND [On/Off]		Status of VDC warning lamp detected from VDC warning lamp signal received from ABS actuator and electric unit (control unit) via CAN communication.
BRAKE W/L [On/Off]		Status of brake warning lamp detected from brake warning lamp signal is received from ABS actuator and electric unit (control unit) via CAN communication. <b>NOTE:</b> Displays "Off" if the brake warning lamp is illuminated when the valve check starts, the parking brake switch is turned ON or the brake fluid level switch is turned ON.
DOOR W/L [On/Off]		Status of door warning detected from door switch signal received from BCM via CAN communication.
TRUNK/GLAS-H [Off]		This item is displayed, but cannot be monitored.
HI-BEAM IND [On/Off]		Status of high beam indicator lamp detected from high beam request signal is re- ceived from BCM via CAN communication.
TURN IND [On/Off]		Status of turn indicator lamp detected from turn indicator signal is received from BCM via CAN communication.
RR FOG IND [On/Off]		Status of rear fog lamp indicator lamp detected from rear fog lamp status signal is received from BCM via CAN communication.
LIGHT IND [On/Off]		Status of light indicator lamp detected from position light request signal is received from BCM via CAN communication.
OIL W/L [On/Off]		Status of oil pressure warning lamp detected from oil pressure switch signal is re- ceived from BCM via CAN communication.
MIL [On/Off]		Status of malfunction indicator lamp detected from malfunctioning indicator lamp signal is received from ECM via CAN communication.
CRUISE IND [On/Off]		Status of CRUISE indicator lamp detected from CRUISE indicator lamp signal is received from ECM via CAN communication.
SET IND [Off]		This item is displayed, but cannot be monitored.
ATC/T-AMT W/L [On/Off]		A/T CHECK indicator lamp status judged by the transmission check warning lamp signal received from TCM via CAN communication.
FUEL W/L [On/Off]		Low-fuel warning lamp status detected by the identified fuel level.
WASHER W/L [On/Off]		Status of washer warning lamp judged from washer level switch input to combina- tion meter.
AIR PRES W/L [On/Off]		Status of low tire pressure warning lamp detected from tire pressure signal is re- ceived from BCM via CAN communication.
KEY G/Y W/L [On/Off]		Status of key warning lamp (yellow) detected from key warning signal is received from BCM via CAN communication.
MT SYNC REV IND [On/Off]		Status of S-MODE indicator judged from S-MODE indicator signal received from ECM with CAN communication line.
FUEL CAP W/L [On/Off]		Status of fuel filler cap warning judged from fuel filler cap warning display signal received from ECM with CAN communication line.
LCD [C&P N, C&P I, B&P N, B&P I, ID NG, ROTAT, SFT P, INSRT, BATT, NO KY, OUTKY, LK WN]		Displays status of Intelligent Key system warning detected from meter display sig- nal is received from BCM via CAN communication.

### < SYSTEM DESCRIPTION >

[REGULAR GRADE]

Display item [Unit]	MAIN SIGNALS	Description
SHIFT IND [P, R, N, D, L, M1, M2, M3, M4, M5, M6, M7]		<ul> <li>Status of shift position indicator detected from shift position signal and manual mode indicator signal is received from TCM via CAN communication. (A/T models)</li> <li>Status of shift position indicator detected from shift position signal is received from ECM via CAN communication. (with SynchroRev Match mode models)</li> </ul>
AT S MODE SW [Off]		This item is displayed, but cannot be monitored.
M RANGE SW [On/Off]		Status of manual mode switch.
NM RANGE SW [On/Off]		Status of non-manual mode switch.
AT SFT UP SW [On/Off]		Status of position select switch (up).
AT SFT DWN SW [On/Off]		Status of position select switch (down).
ST SFT UP SW [On/Off]		Status of paddle shifter up switch.
ST SFT DWN SW [On/Off]		Status of paddle shifter down switch.
SYNC MODE [On/Off]		This item is displayed, but cannot be monitored.
PKB SW [On/Off]		Status of parking brake switch.
BUCKLE SW [On/Off]		Status of seat belt buckle switch (driver side).
BRAKE OIL SW [On/Off]		Status of brake fluid level switch.
A/C AMP CONN [On/Off]		Status of A/C auto amp. connection recognition signal.
ENTER SW [On/Off]		Status of 📮 (ENTER) switch.
SELECT SW [On/Off]		Status of (SELECT) switch.
MT SYNC REV SW [On/Off]		Status of S-MODE switch.
DISTANCE [km]		Value of possible driving distance calculated by combination meter.
OUTSIDE TEMP [°C or °F]		Ambient air temperature value converted from ambient sensor signal received from ambient sensor. <b>NOTE:</b> This may not match with the temperature value indicated on the information display. (Because the information display value is a corrected value from the ambient sensor input value.)
FUEL LOW SIG [On/Off]		Status of fuel level low warning signal to output to AV control unit via CAN com- munication.
BUZZER [On/Off]	х	Buzzer status (in the combination meter) is detected from the buzzer output signal received from each unit via CAN communication and the warning output condition of the combination meter.

### NOTE:

Some items are not available according to vehicle specification.

### WARNING HISTORY

- Stores histories when warning/indicator lamp is turned on.
- "Warning History" indicates the "TIME" when the warning/ indicator lamp is turned on.

### **MWI-36**

### **DIAGNOSIS SYSTEM (METER)**

#### < SYSTEM DESCRIPTION >

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

#### NOTE:

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

Display	ltem
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Display item	Description		
ABS W/L	Lighting history of ABS warning lamp.		
VDC/TCS IND	Lighting history of VDC OFF indicator lamp.	E	
SLIP IND	Lighting history of VDC warning lamp.		
BRAKE W/L	Lighting history of brake warning lamp.		
DOOR W/L	Lighting history of door warning.	F	
OIL W/L	Lighting history of oil pressure warning lamp.		
C-ENG W/L	Lighting history of malfunction indicator lamp.	(-	
CRUISE IND	Lighting history of CRUISE indicator lamp.		
ATC/T-AMT W/L	Lighting history of A/T CHECK indicator lamp.		
FUEL W/L	Lighting history of low fuel level warning.		
WASHER W/L	Lighting history of low washer fluid warning		
AIR PRES W/L	Lighting history of low tire pressure warning lamp.		
KEY G/Y W/L	Lighting history of key warning lamp (yellow).		

#### NOTE:

In items displayed on the CONSULT screen, only those listed in the above table are used.

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## DTC/CIRCUIT DIAGNOSIS U1000 CAN COMM CIRCUIT

### Description

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CAN (Controller Area Network) is a serial communication system for real time application. It is an on-vehicle multiplex communication system with high data communication speed and excellent error detectability. Many electronic control units are equipped onto vehicles, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with two communication lines (CAN-H line, CAN-L line) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only. CAN Communication Signal Chart. Refer to LAN-26, "CAN Communication Signal Chart."

### **DTC Logic**

INFOID:000000010838328

### DTC DETECTION LOGIC

DTC	Display contents of CONSULT Diagnostic item is detected when		Probable malfunction location	
U1000	00 CAN COMM CIRCUIT When combination meter is not transmitting or receiving CAN communication signal for 2 seconds or more.		CAN communication system	

### Diagnosis Procedure

INFOID:000000010838329

### **1.**PERFORM SELF DIAGNOSTIC

1. Turn ignition switch ON and wait for 2 seconds or more.

2. Check "Self Diagnostic Result" of "METER/M&A".

Is "CAN COMM CIRCUIT" displayed?

- YES >> Refer to LAN-15, "Trouble Diagnosis Flow Chart".
- NO >> Refer to <u>GI-44, "Intermittent Incident"</u>.

### U1010 CONTROL UNIT (CAN)

# < DTC/CIRCUIT DIAGNOSIS >

# U1010 CONTROL UNIT (CAN)

### Description

Initial diagnosis of combination meter.

### DTC Logic

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[REGULAR GRADE]

#### DTC DETECTION LOGIC

DTC	DTC Display contents of CON- SULT Diagnostic item is detected when		Diadnostic item is detected when Pro		Probable malfunction location	
U1010	CONTROL UNIT (CAN)	If any malfunction is detected during initial di- agnosis of combination meter CAN controller	Combination meter			
Diagno	sis Procedure		INFOID:000000010838332	E		
1.REPL	ACE COMBINATION M	IETER		F		
When DT	C "U1010" is detected,	replace combination meter.				
	>> INSPECTION END			G		

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#### < DTC/CIRCUIT DIAGNOSIS >

### **B2201 COMMUNICATION ERROR 1**

#### Description

The communication line (METER <-> TRIPLE METER) is used to communicate signals between the combination meter and the triple meter in order to control the triple meter.

#### DTC Logic

INFOID:000000010838334

INFOID:000000010838333

#### DTC DETECTION LOGIC

DTC	Display contents of CONSULT Diagnostic item is detected when		Probable malfunction location
B2201			Communication line (METER⇔TRIPLE METER) circuit

### Diagnosis Procedure

INFOID:000000010838335

### 1.CHECK CONNECTOR

Check combination meter, triple meter and terminals (combination meter side, triple meter side, and harness side) for looseness or bent.

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair terminal or connector.

### 2. CHECK CONTINUITY COMMUNICATION CIRCUIT

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

Combina	ation meter	Triple meter		Continuity	
Connector	Terminal	Connector	Terminal	Continuity	
M53	9	M242	4	Existed	
WIJ5	10	11/242	5	LXISIEU	

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

Combina	tion meter		Continuity
Connector	Terminal	Ground	Continuity
M53	9	Ground	Not existed
10100	10		NOT EXISTED

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair harness or connector.

### $\mathbf{3}$ . CHECK COMBINATION METER OUTPUT VOLTAGE

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

### **B2201 COMMUNICATION ERROR 1**

#### < DTC/CIRCUIT DIAGNOSIS >

	Terminals			A
(+)				
Combination meter		()	Voltage (Approx.)	
Connector	Terminal	Ground		В
M53	10		5 V	
s the inspection resu				С
YES >> GO TO 4				0
	combination meter.			
-	METER OUTPUT VO	DLTAGE		D
. Turn ignition swi				
. Disconnect com	bination meter conne	ector.		E
. Connect triple m				
<ul> <li>Turn ignition swi</li> <li>Check voltage be</li> </ul>	tch ON. etween triple meter h	arness connector	and ground	
encon vonago o				F
	Terminals			
(+	+)		Voltage	
Triple		(-)	(Approx.)	G
Connector	Terminal	<b>a</b> i		
M242	4	Ground	5 V	F
NO >> Replace	triple meter.			۱ ل
				k
				L
				Ν
				М
				C

### **B2205 VEHICLE SPEED**

#### Description

Vehicle speed signal is transmitted from ABS actuator and electric unit (control unit) via CAN communication to combination meter.

### DTC Logic

INFOID:000000010838337

INFOID:000000010838336

#### DTC DETECTION LOGIC

DTC	DTC Display contents of CONSULT Diagnostic item is detected when		Probable malfunction location	
B2205	05         VEHICLE SPEED         An abnormal vehicle speed signal is input from ABS actuator and electric unit (control unit) for 2 seconds or more		<ul><li>Wheel sensor</li><li>ABS actuator and electric unit (control unit)</li></ul>	

### Diagnosis Procedure

INFOID:000000010838338

### **1.** PERFORM SELF-DIAGNOSIS OF ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)

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

>> Refer to <u>BRC-23, "CONSULT Function"</u>.

### **B2267 ENGINE SPEED**

### < DTC/CIRCUIT DIAGNOSIS >

### B2267 ENGINE SPEED

### Description

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

INFOID:000000010838340

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#### DTC DETECTION LOGIC

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

### **Diagnosis Procedure**

### **1.**PERFORM SELF-DIAGNOSIS OF ECM

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

>> Refer to EC-155, "CONSULT Function".

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### < DTC/CIRCUIT DIAGNOSIS >

### B2268 WATER TEMP

#### Description

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

### DTC Logic

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#### DTC DETECTION LOGIC

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

### **Diagnosis Procedure**

INFOID:000000010838344

### **1.**PERFORM SELF-DIAGNOSIS OF ECM

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

>> Refer to <u>EC-155, "CONSULT Function"</u>.

< DTC/CIRCUIT		ER SUPPLY A	ND GROUN		[REGULAR GRADE]
		GROUND C	IRCUIT		
COMBINATIO					А
COMBINATIO	ON METER : I	Diagnosis Pro	cedure		INFOID:000000010838345
<b>1.</b> CHECK FUSE	E				D
Check for blown	fuses.				С
	Power source	1		Fuse No.	
Batter	y (With front door sat	tellite sensor)		6	D
Battery	(Without front door s	atellite sensor)		11	
	Ignition switch ACC	or ON		19	
	Ignition switch ON or	START		4	E
2.CHECK POW	TO 2. ure to eliminate c ER SUPPLY CIR	ause of malfunctio CUIT on meter harness			F
	Terminals				
(·	+)	()	Ignition switch po	Voltago	Н
	tion meter	( )	Ignition switch po- sition	Voltage (Approx.)	
Connector	Terminal				
	1	Ground	Ground OFF	Ground OFF	
M53	15	-	ACC	Battery voltage	
	2	-	ON		J
3.CHECK GROU 1. Turn ignition 2. Disconnect c	TO 3. ck harness betwe UND CIRCUIT switch OFF. combination mete	en combination m r connector. nbination meter ha		and ground.	K L
Combina	tion meter				Μ
Connector	Terminal	Ground	Continuity		
M53	17 23	-	Existed		MW
	PECTION END air harness or cor	nector.			O
TRIPLE MET	ER : Diagnos	is Procedure			INFOID:000000010838346
<b>1.</b> CHECK FUSE	E				
Check for blown	fuses.				

### POWER SUPPLY AND GROUND CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

[REGULAR GRADE]

Power source	Fuse No.
Battery (With front door satellite sensor)	6
Battery (Without front door satellite sensor)	11
Ignition switch ON or START	4

Is the inspection result normal?

YES >> GO TO 2.

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

### 2. CHECK POWER SUPPLY CIRCUIT

Check voltage between combination meter harness connector and ground.

	Terminals			
	(+)	(-)	(-) Ignition switch po-	
Triple	Triple meter		sition	Voltage (Approx.)
Connector	Terminal	Ground		
M242	2	Ground	OFF	Pottony voltago
11/242	3		ON	Battery voltage

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check harness between triple meter and fuse.

 ${
m 3.}$ CHECK GROUND CIRCUIT

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

•	meter		Continuity	
Connector	Terminal	Ground	Continuity	
M242	1		Existed	

Is the inspection result normal?

YES >> INSPECTION END

NO >> Repair harness or connector.

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

#### IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) : Diagnosis Procedure INFOID:000000011324917

### **1.**CHECK FUSES AND FUSIBLE LINK

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

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

Is the fuse fusing?

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

NO >> GO TO 2.

2.check power supply circuit

Turn the ignition switch OFF. 1.

### POWER SUPPLY AND GROUND CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

#### 2. Disconnect IPDM E/R connector.

3. Check voltage between IPDM E/R harness connector and the ground.

	Terminals		
(+)		(_)	Voltage
IPDN	/I E/R	()	(Approx.)
Connector	Terminal	Ground	
E4			Battery voltage
Is the measure	ement value n	ormal?	
YES >> GO TO 3. NO >> Repair the harness or conne			1
-			tor.
3.CHECK GF	ROUND CIRC	UIT	
Check continu	ity between IF	DM E/R harn	ess connectors and
	,		

IPDM	IPDM E/R		Continuity	
Connector	Terminal	Ground	Continuity	
E5	12	Ground	Existed	-
E6	E6 41		LXISTED	
Does continui	ty exist?			-

YES >> INSPECTION END

NO >> Repair the harness or connector.

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### FUEL LEVEL SENSOR SIGNAL CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

### FUEL LEVEL SENSOR SIGNAL CIRCUIT

#### Description

The fuel level sensor unit and fuel pump (main) and the fuel level sensor unit (sub) detect the fuel level in the fuel tank and transmit the fuel gauge signal to the combination meter.

#### **Component Function Check**

INFOID:000000010838349

INFOID:000000010838348

1. CHECK COMBINATION METER INPUT SIGNAL

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

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

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

Resistance (Ω) <sup>*</sup> (Approx.)	Fuel gauge indication position		
Less than 6.0	16/16 (Full)		
11.5	15/16		
17.0	14/16		
21.3	13/16		
25.5	12/16 (Three quarters)		
30.5	11/16		
35.5	10/16		
40.5	9/16		
45.5	8/16 (Half)		
50.8	7/16		
56.0	6/16		
61.0	5/16		
66.0	4/16 (A quarter)		
69.3	3/16		
72.5	2/16		
More than 76.3	1/16 (Empty)		

\*: The specification value that a combination meter judges the number of the segment lighting of the fuel gauge.

Is the inspection result normal?

YES >> GO TO 2.

NO >> Refer to <u>MWI-49</u>, "Diagnosis Procedure".

**2.**PERFORM COMPONENT FUNCTION CHECK (2)

Check the fuel level sensor unit and fuel pump (main) and/or fuel level sensor unit (sub). Refer to <u>MWI-50.</u> <u>"Component Inspection"</u>.

Is the inspection result normal?

YES >> INSPECTION END

### FUEL LEVEL SENSOR SIGNAL CIRCUIT

#### [REGULAR GRADE] < DTC/CIRCUIT DIAGNOSIS > NO >> Replace the fuel level sensor unit and fuel pump (main) and/or fuel level sensor unit (sub). Refer to FL-6, "Removal and Installation". А Diagnosis Procedure INFOID:000000010838350 1.CHECK FUEL LEVEL SENSOR CIRCUIT В 1. Turn ignition switch OFF. Disconnect combination meter connector and fuel level sensor unit (sub) connector. 2. Check continuity between combination meter harness connector and fuel level sensor unit (sub) harness 3 connector. D Fuel level sensor unit (sub) Combination meter Continuity Connector Terminal Connector Terminal M54 34 B21 1 Existed E Check continuity between combination meter harness connector and ground. 4. Combination meter Continuity Connector Terminal Ground M54 34 Not existed Is the inspection result normal? YES >> GO TO 2. NO >> Repair harness or connector. Н 2.CHECK FUEL LEVEL SENSOR UNIT (MAIN-SUB) CIRCUIT 1. Disconnect fuel level sensor unit and fuel pump (main) connector. 2. Check for continuity between the fuel level sensor unit (sub) harness connector and the fuel level sensor unit and fuel pump (main) harness connector. Fuel level sensor unit and fuel Fuel level sensor unit (sub) pump (main) Continuity Connector Connector Terminal Terminal B21 2 B22 2 Existed Check for continuity between the fuel level sensor unit (sub) harness connector and the ground. 3 Combination meter Continuity Connector Terminal Ground B21 2 Μ Not existed Is the inspection result normal? YES >> GO TO 3. MWI NO >> Repair harness or connector. 3.CHECK FUEL LEVEL SENSOR GROUND CIRCUIT Check continuity between fuel level sensor unit and fuel pump (main) harness connector and combination meter harness connector. Evel level as a second to all first Ρ

	(main)	Combina	tion meter	Continuity	
Connector	Terminal	Connector	Terminal		
B22	5	M53	24	Existed	

Is the inspection result normal?

YES >> Replace combination meter. Refer to <u>MWI-103, "Removal and Installation"</u>.

NO >> Repair harness or connector.

#### **MWI-49**

### FUEL LEVEL SENSOR SIGNAL CIRCUIT

### < DTC/CIRCUIT DIAGNOSIS >

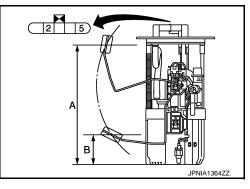
#### INFOID:000000010838351

# Component Inspection

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

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

Term	ninals		Basistanas (O)	
Fuel level sensor unit and fuel pump (main)		Condition	Resistance (Ω) (Approx.)	Height [mm (in)]
2	5	Full (A)	3	226 (8.90)
2	5	Empty (B)	80	39 (1.54)



Is inspection result OK?

YES >> GO TO 2.

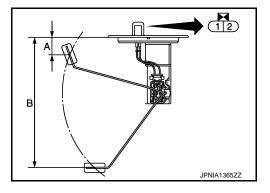
NO >> Replace fuel level sensor unit and fuel pump (main). Refer to <u>FL-6, "Removal and Installation"</u>.

### 2.CHECK FUEL LEVEL SENSOR UNIT (SUB)

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

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

Term	ninals		Resistance (Ω)	
	vel sen- it (sub)	Condition	(Approx.)	Height [mm (in)]
1	2	Full (A)	3	30 (1.18)
I	2	Empty (B)	41	238 (9.37)



#### Is inspection result OK?

YES >> INSPECTION END

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

#### 

		OIL PRES	SURE SW	VITCH SIGN	NAL CIRCUIT	
< DTC/CIRC		OSIS >				[REGULAR GRADE]
OIL PRE	SSURE S	SWITCH	SIGNAL	CIRCUIT		
Descriptio	n					INFOID:000000010838352
Detects the e	engine oil pre	ssure and tra	nsmits the oi	l pressure swit	ch signal to IPDM	E/R.
Componer					U	INFOID:000000010838353
1.снеск с						
					L W/L" monitor val	
						ue.
"OIL W	//L" n switch ON	: On				
-	running	: Off				
Ū	0					
>>	NSPECTION	END				
Diagnosis	Procedure	Э				INFOID:000000010838354
1.снеск с	UL PRESSUE	RE SWITCH	CIRCUIT			
	tion switch O					
2. Disconne	ect IPDM E/R	connector a		re switch conn		
3. Check co	ontinuity betw	ieen IPDM E	R harness co	onnector and o	Il pressure switch	harness connector.
	Tern	ninals				
(·	+)	(	-)	Continuity		
IPDN	/I E/R	Oil press	ure switch	Continuity		
Connector	Terminal	Connector	Terminal			
E7	75	F37	1	Existed		
4. Check co	ontinuity betw	/een IPDIVI E/	R narness co	onnector and g	round.	
	Terminals			-		
(·	+)	(–)	Continuity			
IPDN	И E/R		Continuity			
Connector	Terminal	Ground		-		
E7	75		Not existed	-		
Is the inspect YES >> I	NSPECTION					
-	Repair harnes		or.			
Componer	nt Inspecti	on				INFOID:000000010838355
1.снеск с						

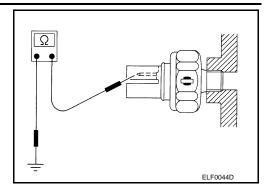
### **OIL PRESSURE SWITCH SIGNAL CIRCUIT**

#### < DTC/CIRCUIT DIAGNOSIS >

### [REGULAR GRADE]

#### Check continuity between oil pressure switch and ground.

Condition	Continuity
Engine stopped	Existed
Engine running	Not existed



Is the inspection result normal?

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

B = C / C · -		PARKIN	IG BRA	<b>AKE SWITCH SIGNAL</b>	CIRCUIT	
				GNAL CIRCUIT		[REGULAR GRADE]
				GNAL CIRCUIT		
Descriptio	on					INFOID:000000010838356
Transmits th	ne parking bi	rake switch	n signal to	the combination meter.		
Diagnosis	s Procedu	ire				INFOID:000000010838357
1.снеск	COMBINATI	ON METE	R INPUT	SIGNAL		
	e engine. the voltage b	between co	ombinatio	n meter harness connector an	d ground.	
	Terminals					
(	+)	(-)		Condition	Voltage	
Combina	tion meter			Condition	(Approx.)	
Connector	Terminal	Ground		T		
M54	26		Engine	When parking brake is applied	0 V	
	ction result r		idling	When parking brake is released	12 V	
NO >> 2.CHECK		RAKE SW	ITCH SIG	GNAL CIRCUIT		
2. Disconr		ation meter		or and parking brake switch co meter harness connector and		ke switch harness con-
	Termi	nals				
Combina	tion meter	Parking b	orake switch	Continuity		
Connector	Terminal	Connector	Termina	al		
M54	26	M68	1	Existed		
4. Check	continuity be	tween con	nbination	meter harness connector and	ground.	
	Terminals					
Combina	tion meter		Continu	ity		
•	Terminal	Ground				
Connector						
Connector M54	26		Not exis	ted		
M54 Is the inspe YES >>	26 <u>ction result r</u> INSPECTIC Repair harn	ON END		ted		
M54 Is the inspe YES >> NO >>	ction result r	ON END less or con		ted		INFOID:000000010838358
M54 Is the inspe YES >> NO >> Compone	<u>ction result r</u> INSPECTIC Repair harn	ON END less or con ction	nector.	ted		
M54 <u>Is the inspe</u> YES >> NO >> Compone <b>1.</b> CHECK	ction result r INSPECTIC Repair harn ent Inspec PARKING B	ON END less or con ction RAKE SW	inector. ITCH	ted		

### WASHER LEVEL SWITCH SIGNAL CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

### WASHER LEVEL SWITCH SIGNAL CIRCUIT

#### Description

Transmits the washer level switch signal to the combination meter.

#### **Diagnosis** Procedure

INFOID:000000010838360

INFOID:000000010838359

[REGULAR GRADE]

### 1. CHECK WASHER LEVEL SWITCH SIGNAL CIRCUIT

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

Combina	tion meter	Washer le	evel switch	Continuity
Connector	Terminal	Connector	Terminal	
M54	29	E32	1	Existed

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

	Terminals		
Combina	tion meter		Continuity
Connector	Terminal	Ground	
M54	29		Not existed

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair harness or connector.

### 2. CHECK WASHER LEVEL SWITCH GROUND CIRCUIT

Check continuity between washer level switch connector and ground.

Washer le	evel switch		Continuity
Connector	Terminal	Ground	
E32	2		Existed

Is the inspection result normal?

- YES >> INSPECTION END
- NO >> Repair harness or connector.

### Component Inspection

### **1.**CHECK WASHER LEVEL SWITCH

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

Terminals		Condition	Continuity
Washer le	evel switch	Condition	Continuity
1	2	Washer level switch ON	Existed
1	1 2	Washer level switch OFF	Not existed

Is the inspection result normal?

YES >> INSPECTION END

INFOID:000000010838361

Revision: 2014 September

**MWI-55** 

# WASHER LEVEL SWITCH SIGNAL CIRCUIT

### < DTC/CIRCUIT DIAGNOSIS >

- >> Replace washer level switch. Refer to WW-46, "Removal and Installation". NO
- С D Е F G Н J Κ L Μ MWI

[REGULAR GRADE]

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### A/C AUTO AMP. CONNECTION RECOGNITION SIGNAL CIRCUIT < DTC/CIRCUIT DIAGNOSIS > [REGULAR GRADE]

### A/C AUTO AMP. CONNECTION RECOGNITION SIGNAL CIRCUIT

### Description

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

#### Diagnosis Procedure

INFOID:000000010838363

INFOID:000000010838362

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

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

(+	)	(-)	Voltage
Combinati	on meter		(Approx.)
Connector	Terminal	Ground	
M53 19		1	5 V

Is the inspection result normal?

YES >> INSPECTION END

NO >> GO TO 2.

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

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

Combination meter		A/C auto amp.		Continuity	
Connector	Terminal	Connector	terminal	Continuity	
M53	19	M66	34	Existed	

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

Combina	tion meter		Continuity
Connector	Connector Terminal		Continuity
M53	19		Not existed

Is the inspection result normal?

YES >> INSPECTION END

NO >> Repair harness or connector.

#### Reference Value

#### VALUES ON THE DIAGNOSIS TOOL

#### NOTE:

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

Monitor Item		Condition	Value/Status	D
SPEED METER [km/h]	Ignition switch ON	While driving	Equivalent to speedometer reading <b>NOTE:</b> 655.35 is displayed when the malfunc- tion signal is received	E
SPEED OUTPUT [km/h]	Ignition switch ON	While driving	Equivalent to speedometer reading <b>NOTE:</b> 655.35 is displayed when the malfunc- tion signal is received	F
ODO OUTPUT [km/h or mph]	Ignition switch ON	_	Equivalent to odometer reading in combination meter	G
TACHO METER [rpm]	Ignition switch ON	While driving	Equivalent to tachometer reading <b>NOTE:</b> 8191.875 is displayed when the mal- function signal is received	Н
FUEL METER [L]	Ignition switch ON	_	Values according to fuel level	I
W TEMP METER [°C]	Ignition switch ON	_	Values according to engine coolant temperature <b>NOTE:</b> 215 is displayed when the malfunction signal is input	J
	Ignition switch	ABS warning lamp ON	On	17
ABS W/L	ON	ABS warning lamp OFF	Off	K
	Ignition switch	VDC OFF indicator lamp ON	On	
VDC/TCS IND	ŎN	VDC OFF indicator lamp OFF	Off	L
	Ignition switch	SLIP Indicator lamp ON	On	
SLIP IND	<b>ON</b>	SLIP indicator lamp OFF	Off	
	Ignition switch	Brake warning lamp ON	On	M
BRAKE W/L	ŎN	Brake warning lamp OFF	Off	
	Ignition switch	Door warning lamp ON	On	M٧
DOOR W/L	ŎN	Door warning lamp OFF	Off	
TRUNK/GLAS-H	Ignition switch ON	NOTE: This item is displayed, but cannot be moni- tored.	Off	0
	Ignition switch	High-beam indicator lamp ON	On	
HI-BEAM IND	ŎN	High-beam indicator lamp OFF	Off	Ρ
	Ignition switch	Turn signal indicator lamp ON	On	
TURN IND	ON	Turn signal indicator lamp OFF	Off	
	Ignition switch	Rear fog lamp indicator lamp ON	On	
RR FOG IND	<b>ON</b>	Rear fog lamp indicator lamp	Off	

INFOID:000000010838364

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#### < ECU DIAGNOSIS INFORMATION >

Monitor Item		Condition	Value/Status
LIGHT IND	Ignition switch	Tail lamp indicator lamp ON	On
	ON	Tail lamp indicator lamp OFF	Off
OIL W/L	Ignition switch	Oil pressure warning lamp ON	On
	ON	Oil pressure warning lamp OFF	Off
MIL	Ignition switch	Malfunction indicator lamp ON	On
	ON	Malfunction indicator lamp OFF	Off
	Ignition switch	Cruise indicator lamp ON	On
CRUISE IND	ON	Cruise indicator lamp OFF	Off
	Ignition switch	A/T CHECK indicator lamp ON	On
ATC/T-AMT W/L	ŌN	A/T CHECK indicator lamp OFF	Off
4WD W/L	Ignition switch ON	<b>NOTE:</b> This item is displayed, but cannot be moni- tored.	Off
4WD LOCK IND	Ignition switch ON	<b>NOTE:</b> This item is displayed, but cannot be moni- tored.	Off
	Ignition switch ON	Low-fuel warning displayed	On
FUEL W/L		Low-fuel warning not displayed	Off
WASHER W/L	Ignition switch ON	Washer warning displayed	On
WASHER W/E		Washer warning not displayed	Off
AIR PRES W/L	Ignition switch	Low tire pressure lamp ON	On
	ON	Low tire pressure lamp OFF	Off
KEY G/Y W/L	Ignition switch	KEY warning lamp (yellow) ON	On
KET G/T W/L	ON	KEY warning lamp (yellow) OFF	Off
KEY R W/L	Ignition switch ON	<b>NOTE:</b> This item is displayed, but cannot be moni- tored.	Off
KEY KNOB W/L	Ignition switch ON	<b>NOTE:</b> This item is displayed, but cannot be moni- tored.	Off
AFS OFF IND	Ignition switch ON	<b>NOTE:</b> This item is displayed, but cannot be moni- tored.	Off
	Ignition switch	S-MODE indicator ON	On
MT SYNC REV IND	<b>ON</b>	S-MODE indicator OFF	Off
	Ignition switch	Fuel filler cap warning displayed	On
FUEL CAP W/L	<b>ON</b>	Fuel filler cap warning not displayed	Off

#### < ECU DIAGNOSIS INFORMATION >

Monitor Item		Condition	Value/Status	_
	Ignition switch	Engine start information display (A/T mod- els)	B&P I	- A
	ÔN	Engine start information display (M/T mod- els)	C&P I	В
	Ignition switch	Engine start information display (A/T mod- els)	B&P N	_
	LOCK or ACC	Engine start information display (M/T models)	C&P N	C
	Ignition switch LOCK	Key ID warning display	ID NG	D
LCD	Ignition switch LOCK	Steering lock information display	ROTAT	
200	Ignition switch LOCK	P position warning display	SFT P	E
	Ignition switch LOCK	Intelligent Key insert information display	INSRT	F
	Ignition switch LOCK	Intelligent Key low battery warning display	BATT	
(       	Ignition switch ON	Take away warning display	NO KY	G
	Ignition switch LOCK	Key warning display	OUTKY	Н
	Ignition switch ON	ACC warning display	LK WN	
		Shift position indicator P display	Р	
		Shift position indicator R display	R	
	Ignition switch ON	Shift position indicator N display	Ν	
		Shift position indicator D display	D	J
		Shift position indicator L display	L	
SHIFT IND		Shift position indicator M1 display	M1	k
		Shift position indicator M2 display	M2	
		Shift position indicator M3 display	M3	
		Shift position indicator M4 display	M4	- L
		Shift position indicator M5 display	M5	_
		Shift position indicator M6 display	M6	N
		Shift position indicator M7 display	M7	_
AT S MODE SW	Ignition switch ON	NOTE: This item is displayed, but cannot be moni- tored.	Off	M١
	Ignition switch	Selector lever manual mode position	On	
M RANGE SW	ŎN	Other than the above	Off	C
	Ignition switch	Selector lever manual mode position	Off	_
NM RANGE SW	<b>ON</b>	Other than the above	On	
	Ignition switch	Selector lever + position	On	- P
AT SFT UP SW	ON	Other than the above	Off	_
	Ignition switch	Selector lever – position	On	_
AT SFT DWN SW	ON	Other than the above	Off	
	Ignition switch	Paddle shifter switch up operation	On	_
ST SFT UP SW	ON	Other than above	Off	_

#### < ECU DIAGNOSIS INFORMATION >

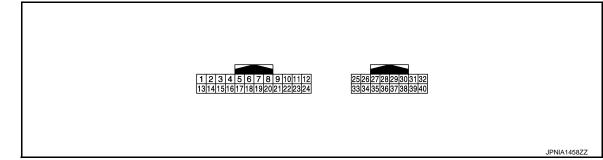
[REGULAR GRADE]

Monitor Item		Condition	Value/Status		
ST SFT DWN SW	Ignition switch	Paddle shifter switch down operation	On		
ST SFT DWN SW	ŌN	Other than above	Off		
PKB SW	Ignition switch	Parking brake switch ON	On		
PND SW	ON	Parking brake switch OFF	Off		
	Ignition switch	Seat belt not fastened	On		
BUCKLE SW	ŌN	Seat belt fastened	Off		
	Ignition switch	Brake fluid level switch ON	On		
BRAKE OIL SW	ŌN	Brake fluid level switch OFF	Off		
		Other than the following	On		
A/C AMP CONN	Ignition switch ON	Receives A/C auto amp. connection recog- nition signal	Off		
AMB POWER	Ignition switch ON	<b>NOTE:</b> This item is displayed, but cannot be monitored.	Off		
ENTER SW	Ignition switch	When 🖵 is pressed	On		
ENTER SW	ON	Other than the above	Off		
SELECT SW	Ignition switch	When  is pressed	On		
	ON	Other than the above	Off		
MT SYNC REV SW	Ignition switch	S-MODE switch ON	On		
WIT STING INEV SW	ON	S-MODE switch OFF	Off		
DISTANCE [km]	Ignition switch ON	_	Possible driving distance calculated by combination meter		
OUTSIDE TEMP [°C or °F]	Ignition switch ON	_	Equivalent to ambient temperature <b>NOTE:</b> This may not match the indicated value on the information display.		
	Ignition switch	Low fuel warning displayed	On		
FUEL LOW SIG	ŌN	Low fuel warning not displayed	Off		
	Ignition switch C	DN	On		
CRANKING SIG	At engine crank	ing	Off		
ST CNT SIG	Ignition switch C	DN	On		
51 CIVI 316	At engine crank	ing	Off		
BUZZER	Ignition switch	Buzzer ON	On		
DULLER	ON	Buzzer OFF	Off		

#### NOTE:

Some items are not available according to vehicle specification.

### TERMINAL LAYOUT



#### PHYSICAL VALUES

#### < ECU DIAGNOSIS INFORMATION >

Terminal No. (Wire color)		Description				Value	
+	_	Signal name	Input/ Output	Condition		(Approx.)	
1 (V)	Ground	Battery power supply	Input	Ignition switch OFF	_	Battery voltage	
2 (O)	Ground	Ignition signal	Input	Ignition switch ON	_	Battery voltage	
3 (L)	Ground	Vehicle speed signal (2-pulse)	Output	Ignition switch ON	Speedometer operated [When vehicle speed is ap- prox. 40 km/h (25 MPH)]	NOTE: The maximum voltage varies de- pending on the specification (destination unit).	
4 (Y) <sup>*1</sup> (V) <sup>*2</sup>	Ground	Vehicle speed signal (8-pulse)	Output	Ignition switch ON	Speedometer operated [When vehicle speed is ap- prox. 40 km/h (25 MPH)]	NOTE: The maximum voltage varies depending on the specification (destination unit).	
					<ul> <li>Lighting switch 1ST</li> <li>When meter illumination is maximum</li> </ul>	(V) 15 10 5 0 <i>x x y</i> <i>y y y y y y y y y y</i>	
5 (B)	Ground	Illumination control signal	Output	Ignition switch ON	<ul> <li>Lighting switch 1ST</li> <li>When meter illumination is step 12</li> </ul>	(V) 15 10 5 0 10 10 10 10 10 10 10 10 10	
					<ul> <li>Lighting switch 1ST</li> <li>When meter illumination is minimum</li> </ul>	10 V	
6 (R)	Ground	Roof status signal	Input	Ignition switch	Roof warning lamp ON	0 V	
(R)				ON	Roof warning lamp OFF	12 V	

# < ECU DIAGNOSIS INFORMATION >

Terminal No. (Wire color)		Description		Condition		Value	
+	_	Signal name	Input/ Output	Condition		(Approx.)	
9 (BR)	Ground	Communication signal (METER⇒TRIPLE METER)	Output	Ignition switch ON		(v) 6 2 0 1 2.5 ms JPNIA1425GB	
10 (L)	Ground	Communication signal (TRIPLE METER⇒METER)	Input	Ignition switch ON	_	(v) 6 2 0 2.5 ms JPNIA1426GB	
12	Ground	S-MODE switch signal	Input	Ignition switch	S-MODE switch operation	12 V	
(G)	Ground		input	ON	Other than the above	0 V	
15 (L)	Ground	ACC power supply	Input	Ignition switch ACC	_	Battery voltage	
16 (R)	Ground	Air bag signal	Input	Ignition switch ON	Air bag warning lamp ON Air bag warning lamp OFF	4 V 0 V	
17 (B)	Ground	Ground	_	Ignition switch ON	_	0 V	
18 (V)	Ground	Ambient sensor signal	Input	Ignition switch ON	Changes depending to am- bient temperature.	(V) 4 3 2 1 0 -10 (14) (32) (50) (68) (68) (104) ['C] JSNIA0014GB	
19 (G)	Ground	A/C auto amp. connection recognition signal	Input	Ignition switch ON	_	5 V	
20 (GR)	Ground	Ambient sensor ground	Input	Ignition switch ON	_	0 V	
21 (L)		CAN-H			_	_	
22 (P)	_	CAN-L			_	_	
23 (B)	Ground	Ground	_	Ignition switch ON	_	0 V	
24 (Y)	Ground	Fuel level sensor ground		Ignition switch ON	_	0 V	

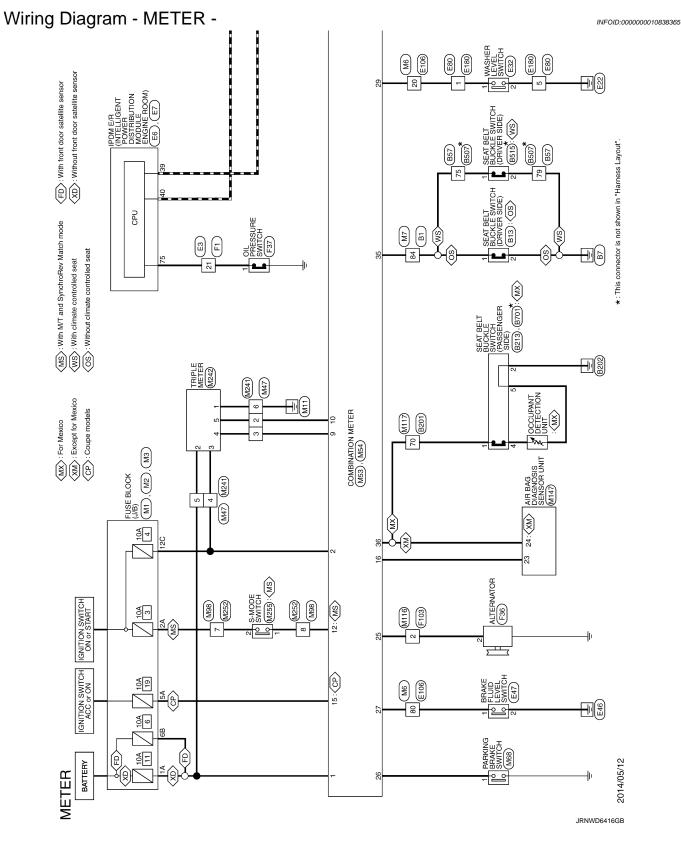
#### < ECU DIAGNOSIS INFORMATION >

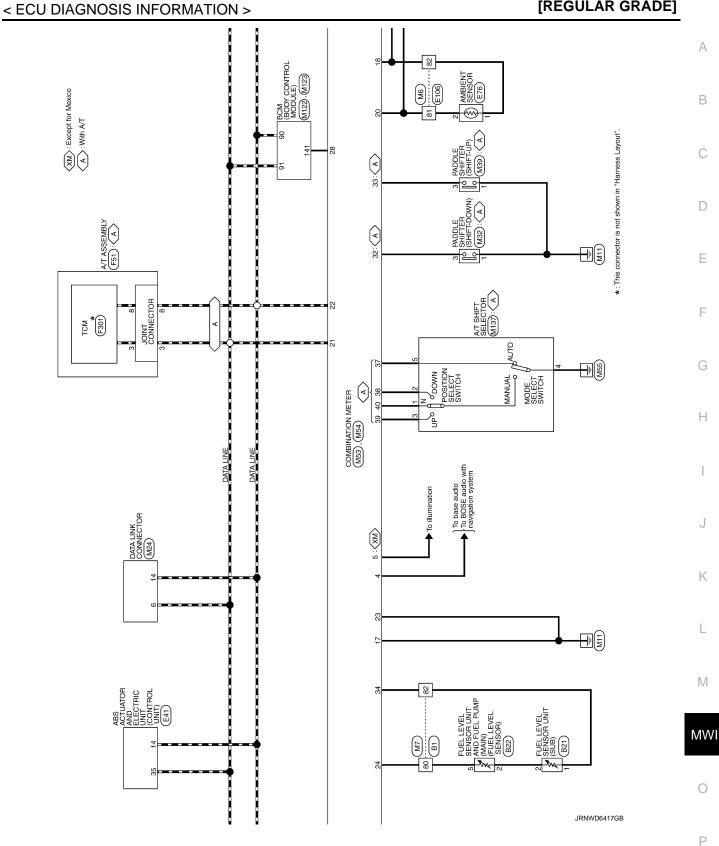
Terminal No. (Wire color)		Description		Condition		Value														
+	-	Signal name	Input/ Output	Condition		(Approx.)														
25	Ground	Alternator signal	Input	Ignition switch	Charge warning lamp ON	2 V														
(W)	Ground	Alternator signal	Input	ON	Charge warning lamp OFF	12 V														
26	Ground	Parking brake switch signal	Input	Engine	Parking brake is applied	0 V														
(O)	Cround	T anning brake ownorr signal	mput	idling	Parking brake is released	12 V														
27		Brake fluid level switch sig-		Ignition	Brake fluid level is normal	12 V														
(LG)	Ground	nal	Input	switch ON	Brake fluid level is less than LOW level	0 V														
28	Oneveral	O a suritu si su sl	la a st	Ignition	Security warning lamp ON	0 V														
(Y)	Ground	Security signal	Input	switch ON	Security warning lamp OFF	12 V														
29				Ignition	Washer level switch ON	0 V														
(GR)	Ground	Washer level switch signal	Input	switch ON	Washer level switch OFF	5 V														
32	Ground	Paddle shifter down signal	Input	Ignition switch	Paddle shifter down opera- tion	0 V														
(G)				ON	Other than the above	5 V														
33				Ignition	Paddle shifter up operation	0 V														
(O)	Ground	Paddle shifter up signal	Input	switch ON	Other than the above	5 V														
34 (BR)	Ground	Fuel level sensor signal	Input	lgnition switch ON	—	(V) 4 3 2 1 0 E 1/4 1/2 3/4 F JPNIA0740ZZ														
35	Oneverd	Seat belt buckle switch sig-	Input	Ignition	When driver seat belt is fas- tened.	12 V														
(L)	Ground	nal (driver side)		switch ON	When driver seat belt is un- fastened.	0 V														
36 (P) <sup>*1</sup>	Ground	Passenger seat belt warn-	Input	Ignition switch	<ul><li>When getting in the passenger seat.</li><li>When passenger seat belt is fastened.</li></ul>	12 V														
(P) <sup>1</sup> Ground (L) <sup>2</sup>	ing signal	ing signal	ing signal					ing signal				mput	ON	mput	Input	mput		<ul><li>When getting in the passenger seat.</li><li>When passenger seat belt is unfastened.</li></ul>	0 V	
37			Input	Ignition	Manual mode	12 V														
(G)	Ground	Non-manual mode signal		switch ON	Other than the above	0 V														
38	Ground	Manual mode shift down	Input	Ignition switch	Selector lever down opera- tion	0 V														
(V)		signal		ON	Other then the above	12 V														
39		Manual mode shift up sig-		Ignition	Selector lever up operation	0 V														
(L)	Ground	nal	Input	switch ON	Other then the above	12 V														
40				Ignition	Manual mode	0 V														
40 (W)	Ground	Manual mode signal	Input	switch ON	Other than the above	12 V														

#### < ECU DIAGNOSIS INFORMATION >

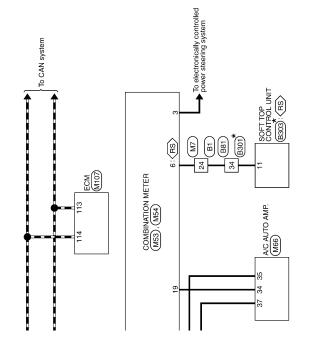
\*1 : Except for Mexico

\*2 : For Mexico





#### < ECU DIAGNOSIS INFORMATION >



\*: This connector is not shown in "Harness Layout".

JRNWD6418GB

Revision: 2014 September

RSA: Roadster models

#### < ECU DIAGNOSIS INFORMATION >

#### [REGULAR GRADE]

	А
Latercent or Additional Administration Signal Name [Specification]	В
	С
Connector Name Connector Name	D
ER SDE)	Е
B13     ABELT BLOKLE SWICH DRIVER SONT       SEXTRELT BLOKLE SWICH DRIVER SONT     ADDELT       ADDELT     ADDELT       ADDELT     - 1 Coupe models]       - 1     - 1 Coupe models]       - 1     - 1       B21     - 1       Signal Name [Specification]	F
Nine Color of Color o	G
Connector Connector 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Н
• [Roadster models]       • [Coupe models]         • [Coupe models]       • • • • • • • • • • • • • • • • • • •	I
	J
4         0         8           43         8         8           44         8         8           45         8         8           46         8         8           46         8         8           46         8         8           47         8         8           93         8         8           93         8         8           93         8         8           93         8         8           93         8         8           93         9         8           93         9         8           93         9         9           94         7         9           95         17         1           96         17         1           97         9         8           98         9         1           98         1         1           98         1         1           98         1         1           98         1         1           98         1         1           98	K
O WIE CSIG-TM4	L
	Μ
TEX second for the second sec	MWI

JRNWD6419GB

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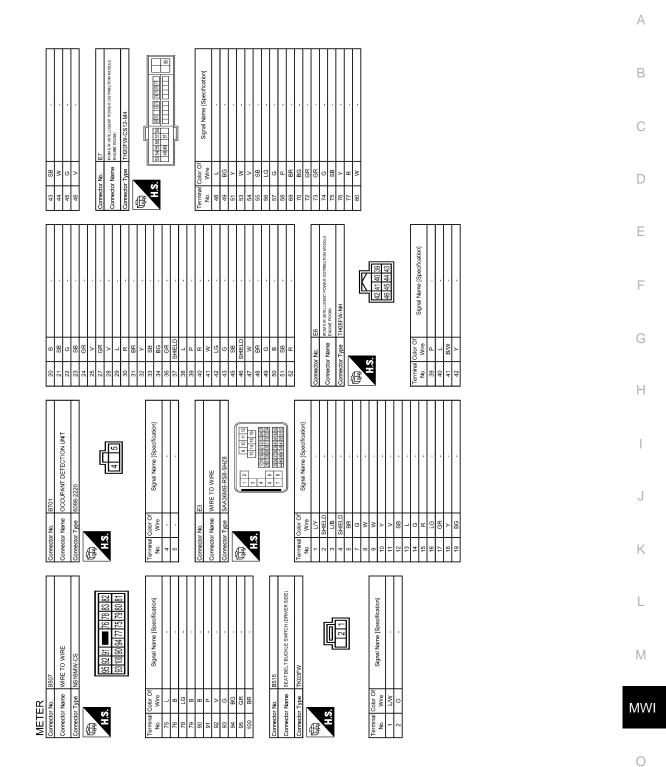
Ο

9         Y         ·           14         BR         ·           16         W         ·           17         DG         ·           28         ·         ·           37         DG         ·           38         BG         ·           38         SB         ·           36         SB         ·	Corrector No. 8333 Corrector Name SOFT TOP CONTROL UN T Corrector Type TH40FB.NH	In Color Of Wree         Signal N           Wree         Season-envolution           Wree         Resonance rooms under Resonance rooms unde	29         DG         GROUND           36         P         ROOF OPEN / CLOSE SWITCH (GND)
94         G         - [Roadster models]           94         GR         - [Coupe models]           95         GR         - [Coupe models]           97         LG         - [Coupe models]           98         W         - [Coupe models]           99         Y         - [Coupe models]           90         M         - [Coupe models]           91         - [Coupe models]         - [Coupe models]           92         Y         - [Coupe models]           93         Y         - [Coupe models]           94         - [Coupe models]         - [Toupe models]           90         Y         - [Coupe models]	Corrector No. B213 Connector Name SEAT BELT BUCKLE SWITCH (PASSENCER SDE) Connector Type AXOFW	Terminal No.     Color OI wree     Signal Name (Specification)       1     1     1       2     1     1       2     1     1       2     1     1       2     1     1       2     1     1       2     1     1       2     1     1       2     1     1       2     1     1       2     1     1       2     1     1       2     1     1       2     1     1       2     1     1       2     1     1	Terminal Color CI         Signal Name [Specification]           No.         Wrep         -           4         LG         -           5         L         -           8         O         -
- [Coupe models] - [Roudster models] 	- [Coup [Roads - [Roads		Coupe models     Conducter models     Roadster models     Coupe models     Coupe models     Coupe models     Coupe models
4         4         4         4         4         4         4         4         1         1         1         1         7 <th7< th=""> <th7< th=""> <th7< th=""> <th7< th=""></th7<></th7<></th7<></th7<>	8         9.4         4.8         1         9 <td></td> <td>76         B           76         76         8           77         77         8           92         10         8           93         8         8           93         &lt;</td> 8           93         <		76         B           76         76         8           77         77         8           92         10         8           93         8         8           93         <
METER Competent No. B81 Connector Name Write: TO Write Connector Type TH40FW-NH Connector Type TH40FW-NH Connector Type TH40FW-NH	Terminal         Color Of         Signal Name (Specification)           No.         Wire         Signal Name (Specification)           No.         Wire         -           6         BR         -           8         Y         -           9         BG         -           14         GR         -           15         SB         -           16         V         -           24         LG         -           24         LG         -	31         V           32         P         -         -           33         R         -         -         -           36         R         -         -         -         -           33         A         R         -         -         -         -           Connector Name         WRE TO WRE         Connector Name         -	Terminal Color Of A.     Signal Name [Specification]       2     R     -[Coupe models]       3     B     -[Roadster models]       3     Y     -[Coupe models]       4     G     -[Coupe models]

JRNWD6420GB

#### < ECU DIAGNOSIS INFORMATION >

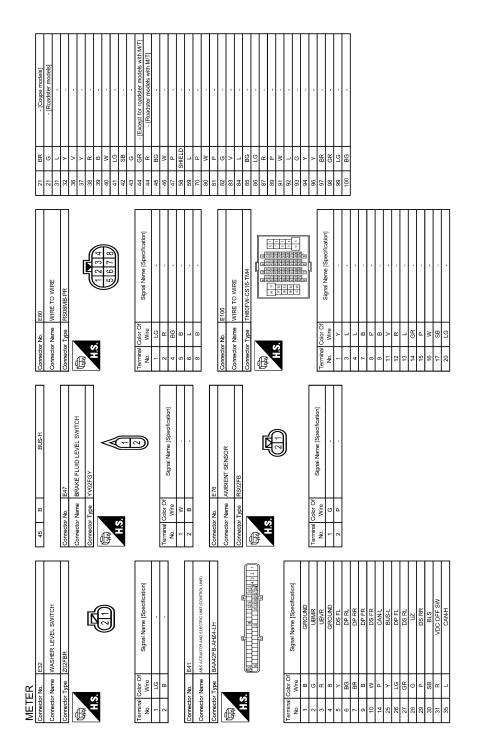
#### [REGULAR GRADE]



JRNWD6421GB

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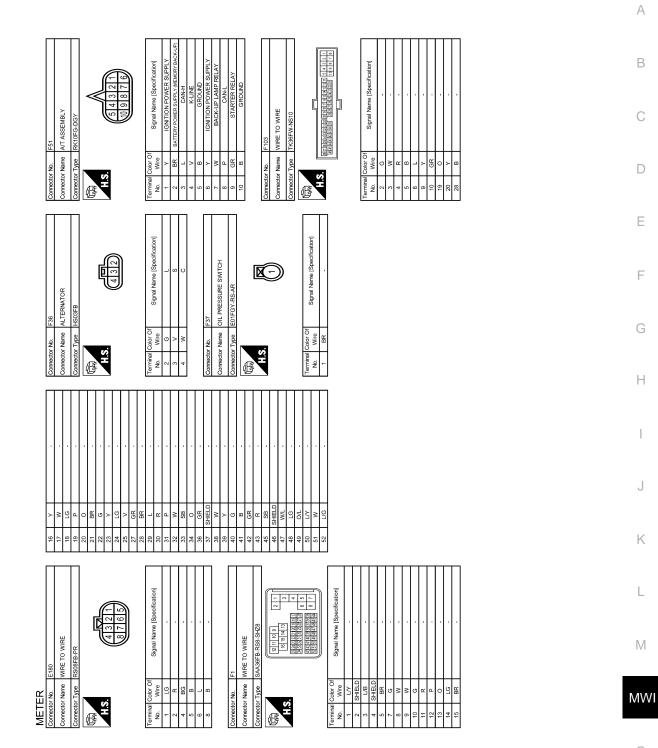
#### [REGULAR GRADE]



JRNWD6422GB

< ECU DIAGNOSIS INFORMATION >

### [REGULAR GRADE]

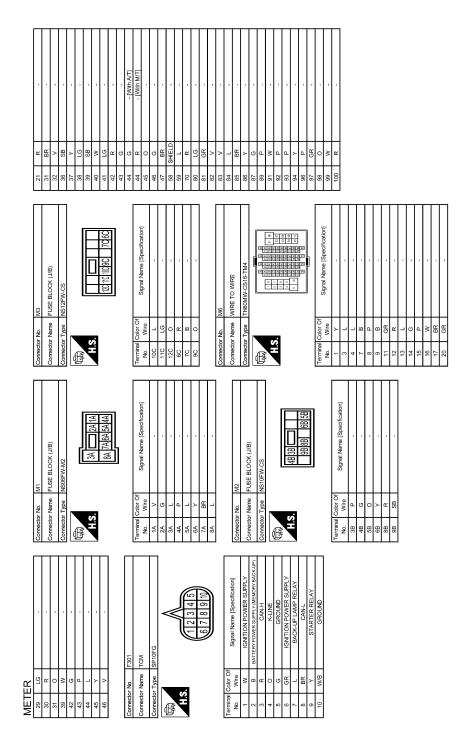


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JRNWD6423GB

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#### [REGULAR GRADE]



JRNWD6424GB

	А
SHIFTER (SHIFT-UP) Spara Name [Specification] O WIRE 	В
AM39 ADDL: MRE T	С
Connector No.     M33       Connector No.     M33       Connector No.     M47       Connector No.     Signal N.       Image: Signal No.     M47       Connector No.     Signal N.       Image: Signal No.     Signal N.       Image: Signal No.     Signal N.	D
TOR 56778 56778 1416 56778 1416 1416 1416 16 1416 16 1416 16 16 14 16 16 16 16 16 16 16 16 16 16	E
FFW         -	F
Connector Name         M34           Connector Name         Antr           Solution         Antr           Solution         Antr           Antr         Antr	G
	Н
- [Roadster models] - [Couper models] - [Couper models] - [Couper models] - [Couper models] - [Couper models] - [Roadster models]	I
	J
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	K
	L
M7         WIKE TO WIKE         THEOMANCESTETME         THEOMANCESTETME         Signal Name [Specification         Signal Name [Specification	Μ
METER           Connector Nu         MIT           Nu         Mine           Nu         Nu           Nu         Nu           Nu         Nu           Nu         Nu           Nu         Nu           Nu         Nu           Sign         Sign           Sign	MWI

JRNWD6425GB

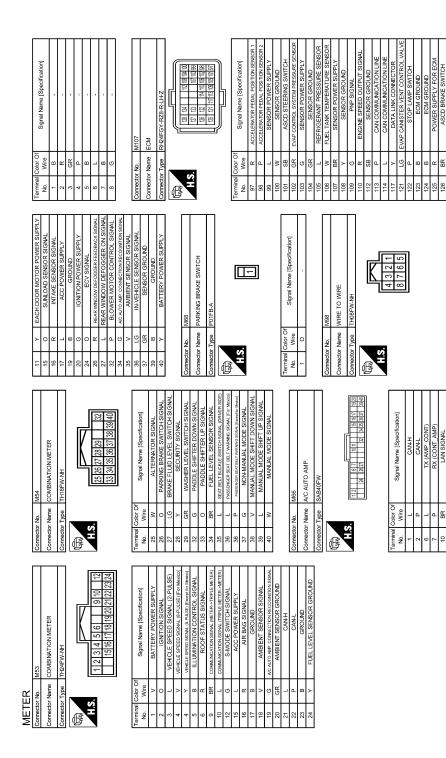
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# **COMBINATION METER**

#### < ECU DIAGNOSIS INFORMATION >

[REGULAR GRADE]



JRNWD6426GB

	A
MTS ANT AMP       ATS ANT AMP       CENT (FP) ADN       CENT (FP) ADN       MIS SW INPUT 5       MIS SW INPUT 5       ANH       CODE RECLEST SW       MODOR RECLEST SW       MINDOR RECLEST SW	В
N         N         N/IS         Entity           International         International         International         International           International         International         International         International         International           International         Interna         <	С
80         CR           82         N           82         N           83         GR           83         GR           84         V           91         L           91         L           91         L           91         L           91         L           92         V           93         L           94         V           95         V           96         N           101         Commedia Number           103         U           104         Commedia Number           111         S           113         N           113         N           114         S           113         N           114         N           113         N           114         N           113         N           113         N           114         N           115         N           116         S           1173         V	D
Determine the second	Е
Coupe 1     C	F
67         70         67         7           73         8         7         7           73         8         8         7           73         8         8         1           73         8         8         1           74         1         1         1         1           75         8         1         1         1           93         7         7         8         1           93         7         7         8         1           93         7         7         8         1         1           93         7         7         8         1         1         1           100         97         7         1	G
	Н
Vunce v.cs.16-TMA	I
M117 THE TO WIRE T	J
Connector Non         Connector Non           Connector Non         Connector Non           Connector Non         Connector Non           No.         Write           23         B           33         O           41         Y           11         Y           12         S           13         H           14         Y           15         S	К
UND I IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	L
ECM GROLND ECM GROLND ECM GROLND COM GROLND COM GROLND Signal Name [Specification] Signal Name [Specification] Content of the contraction Content of the contraction Content of the contraction Content of the content of the	M
	MWI
METER           127         1           123         1           123         1           123         1           123         1           123         1           123         1           123         1           123         1           123         1           123         1           123         1           123         1           123         1           123         1           123         1           123         1           124         1           125         1           123         1           124         1           125         1           126         1           127         1           128         1           129         1           129         1           129         1           129         1           129         1	

JRNWD6427GB

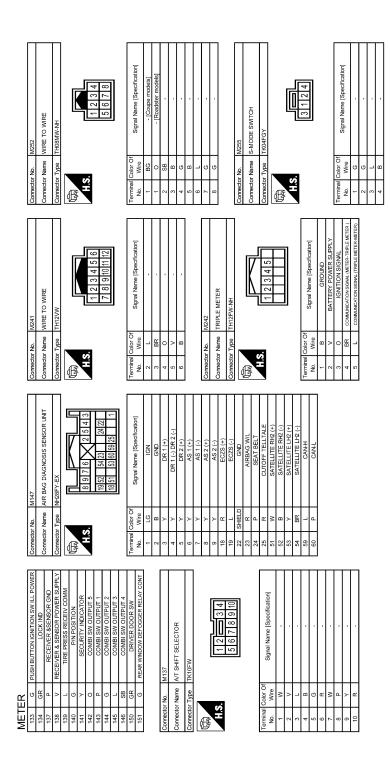
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## **COMBINATION METER**

#### < ECU DIAGNOSIS INFORMATION >

А



JRNWD6428GB

INFOID:000000010838366

# Fail-Safe FAIL-SAFE

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

**MWI-76** 

#### < ECU DIAGNOSIS INFORMATION >

#### [REGULAR GRADE]

	Function	Specifications		
Speedometer		Depart to more by even and in a communication		
Tachometer		Reset to zero by suspending communication.		
Engine coolant temperature gauge		The segment turns OFF by suspending communication.		
Fuel gauge		Indicates fuel level.		
Illumination control		When suspending communication, changes to nighttime mode.		
Shift position indicator				
S-MODE indicator		The segment turns OFF by suspending communication.		
Manual mode indicator				
	Door open warning			
	Parking brake release warning	The display turns OFF by suspending communication.		
	Fuel filler cap warning			
Information display	Instantaneous fuel warning	When reception time of an abnormal signal is 2 second		
	Average fuel consumption	<ul> <li>less, the last received datum is used for calculation to indi- cate the result.</li> </ul>		
	Average vehicle speed	<ul> <li>When reception time of an abnormal signal is more than tw seconds, the last result calculated during normal condition is indicated.</li> </ul>		
	Travel distance			
Buzzer		The buzzer turns OFF by suspending communication.		
	ABS warning lamp			
	VDC warning lamp	The lamp turne ON by suppording communication		
	Brake warning lamp	— The lamp turns ON by suspending communication.		
	Malfunction indicator lamp			
	Low tire pressure warning lamp	The lamp turns ON after flashing for 1 minute.		
	High beam indicator lamp			
Warning lamp/indicator lamp	Turn signal indicator lamp			
lamp	Light indicator lamp			
	Rear fog lamp indicator lamp			
	Oil pressure warning lamp	— The lamp turns OFF by suspending communication.		
	CRUISE indicator lamp			
	Key warning lamp			
	VDC OFF indicator lamp			

## DTC Index

INFOID:000000010838367

Display contents of CONSULT	Diagnostic item is detected when	Refer to	MWI
CAN COMM CIRCUIT [U1000]	When combination meter is not transmitting or receiving CAN communication signal for 2 seconds or more.	<u>MWI-38,</u> "Diagnosis Procedure"	0
CONTROL UNIT (CAN) [U1010]	When detecting error during the initial diagnosis of the CAN controller of combina- tion meter.	<u>MWI-39,</u> "Diagnosis Procedure"	Р
COMM ERROR 1 [B2201]	If a communication error is present in the communication line between combination meter and triple meter for 2 seconds or more.	<u>MWI-40,</u> "Diagnosis Procedure"	
VEHICLE SPEED [B2205]	The abnormal vehicle speed signal is input from the ABS actuator and electric unit (control unit) for 2 seconds or more.	<u>MWI-42,</u> "Diagnosis Procedure"	

#### < ECU DIAGNOSIS INFORMATION >

#### [REGULAR GRADE]

Display contents of CONSULT	Diagnostic item is detected when	Refer to
ENGINE SPEED [B2267]	If ECM continuously transmits abnormal engine speed signals for 2 seconds or more.	<u>MWI-43,</u> "Diagnosis Procedure"
WATER TEMP [B2268]	If ECM continuously transmits abnormal engine coolant temperature signals for 60 seconds or more.	<u>MWI-44,</u> "Diagnosis Procedure"

#### NOTE:

The details of TIME display are as follows.

• CRNT: The malfunctions that are detected now.

- PAST: The malfunctions was detected in the past. IGN counter is displayed on FFD (Freeze Frame data).
- 1 39: The number is indicated when it is normal at present and a malfunction was detected in the past. It increases like 0 → 1 → 2 … 38 → 39 after returning to the normal condition whenever IGN OFF → ON. It is fixed to 39 until the self-diagnosis results are erased if it is over 39. It returns to 0 when a malfunction is detected again in the process.

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

< ECU DIAGNOSIS INFORMATION >

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

#### Reference Value

INFOID:000000011324920

А

В

[REGULAR GRADE]

#### VALUES ON THE DIAGNOSIS TOOL

#### NOTE:

The following table includes information (items) inapplicable to this vehicle. For information (items) applicable <sup>C</sup> to this vehicle, refer to CONSULT display items.

CONSULT MONITOR ITEM

Monitor Item		Condition	Value/Status	D		
RAD FAN REQ	Engine idle speed	Changes depending on engine cool- ant temperature, air conditioner oper- ation status, vehicle speed, etc.	0 - 100 %	E		
		A/C switch OFF	Off	-		
AC COMP REQ	Engine running	A/C switch ON (Compressor is operating)	On	F		
TAIL&CLR REQ	Lighting switch OFF		Off	-		
RIEQUER REQ	Lighting switch 1ST, 2ND, HI c	or AUTO (Light is illuminated)	On	G		
	Lighting switch OFF		Off	G		
HL LO REQ	Lighting switch 2ND HI or AUT	O (Light is illuminated)	0-	-		
	Daytime running light system i	s operated (With daytime running light system)	On	Н		
	Lighting switch OFF		Off	-		
HL HI REQ	Lighting switch HI		On	-		
	Daytime running light system i	s not operated	Off	-		
FR FOG REQ	Daytime running light system i	Daytime running light system is operated				
	Ignition switch ON	Front wiper switch OFF	Stop	J		
		Front wiper switch INT	1LOW			
FR WIP REQ		Front wiper switch LO	Low			
		Front wiper switch HI	Hi	K		
		Front wiper stop position	STOP P	_		
WIP AUTO STOP	Ignition switch ON	Any position other than front wiper stop position	ACT P	L		
		Front wiper operates normally	Off			
WIP PROT	Ignition switch ON	Front wiper stops at fail-safe opera- tion	BLOCK	M		
	Ignition switch OFF or ACC		Off	-		
IGN RLY1 -REQ	Ignition switch ON		On	MW		
	Ignition switch OFF or ACC	Off	-			
IGN RLY	Ignition switch ON		On	-		
	Release the push-button ignition	on switch	Off	0		
PUSH SW	Press the push-button ignition	On	-			
	Ignition switch ON	Selector lever in any position other than P or N (A/T models)	Off	Ρ		
		Release clutch pedal (M/T models)				
INTER/NP SW	Ignition switch ON	Selector lever in P or N position (A/T models)	On	-		
		Depress clutch pedal (M/T models)				

#### IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) < ECU DIAGNOSIS INFORMATION > [REGULAR GRADE]

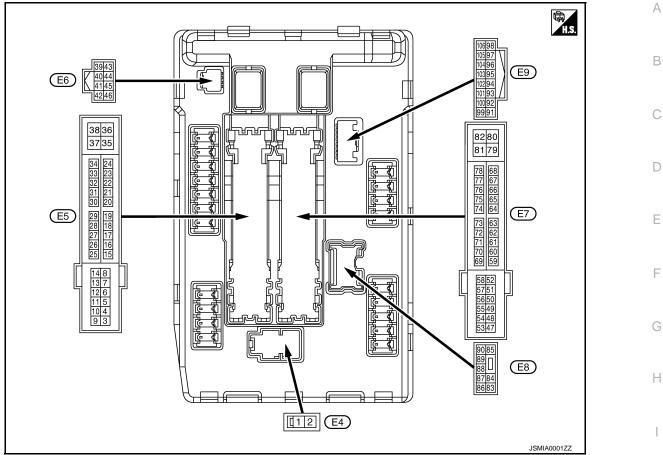
Monitor Item	Cor	dition	Value/Status		
ST RLY CONT	Ignition switch ON	Off			
ST REF CONT	At engine cranking		On		
	Ignition switch ON		Off		
IHBT RLY -REQ	At engine cranking		On		
	Ignition switch ON		Off		
	At engine cranking		$INHI\:ON\toST\:ON$		
ST/INHI RLY		ntrol relay cannot be recognized by the the starter relay is ON and the starter	UNKWN		
DETENT SW	Ignition switch ON	Ignition switch ON       • Press the selector button with selector lever in P position         • Selector lever in any position other than P			
	Release the selector button with selector <b>NOTE:</b> Fixed On for M/T models	On			
S/L RLY -REQ	NOTE: The item is indicated, but not monitore	NOTE: The item is indicated, but not monitored.			
S/L STATE	NOTE: The item is indicated, but not monitore	UNLOCK			
DTRL REQ	NOTE: The item is indicated, but not monitore	Off			
OIL P SW	Ignition switch OFF, ACC or engine ru	inning	Open		
OIL P SW	Ignition switch ON		Close		
HOOD SW	Close the hood		Off		
HOOD 3W	Open the hood		On		
HL WASHER REQ	NOTE: The item is indicated, but not monitore	Off			
	Not operation		Off		
THFT HRN REQ	<ul><li>Panic alarm is activated</li><li>Horn is activated with VEHICLE SE</li></ul>	On			
	Not operating		Off		
HORN CHIRP	Door locking with Intelligent Key (horr	n chirp mode)	On		
CRNRNG LMP REQ	NOTE: The item is indicated, but not monitore	ed.	Off		

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

< ECU DIAGNOSIS INFORMATION >

[REGULAR GRADE]

#### **TERMINAL LAYOUT**



#### PHYSICAL VALUES

	inal No.	Description				Value		
(Wire +	e color) –	Signal name	Input/ Output		Condition	(Approx.)	K	
1 (W)	Ground	Battery power supply	Input	Ignition switch O	FF	Battery voltage		
2 (L)	Ground	Battery power supply	Input	Ignition switch O	FF	Battery voltage	— L	
4	Oneveral	Front win end O	Outrout	Ignition switch	Front wiper switch OFF	0 V		
(V)	Ground	Front wiper LO	Output	<b>ON</b>	Front wiper switch LO	Battery voltage	M	
5	Ground	Front wiper HI	Output	Ignition switch	Front wiper switch OFF	0 V		
(L)	Ground			ON	Front wiper switch HI	Battery voltage	MWI	
7		Illuminations			Ignition switch	Lighting switch OFF	0 V	
(R) <sup>*3</sup> (V) <sup>*4</sup>	Ground	Tail, license plate lamps & illuminations	Output	Output ON	Lighting switch 1ST	Battery voltage	0	
12 (B/W)	Ground	Ground	—	Ignition switch O	N	0 V		
13				Approximately 1 second or more after turn- ing the ignition switch ON		0 V	Ρ	
(Y)	Ground	Fuel pump power sup- ply	Output	<ul> <li>Approximately 1 second after turning the ignition switch ON</li> <li>Engine running</li> </ul>		Battery voltage		

J

# IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) < ECU DIAGNOSIS INFORMATION > [REGULAR GRADE]

	inal No.	Description				Value	
(Wire +	e color) _	Signal name	Input/ Output		Condition	(Approx.)	
					Front wiper stop position	0 V	
16 (LG)	Ground	Front wiper auto stop	Input	Ignition switch ON	Any position other than front wiper stop position	Battery voltage	
19	Cround	Ignition relay power	Output	Ignition switch OF	F	0 V	
(W)	Ground	supply	Output	Ignition switch Of	N	Battery voltage	
25	Ground	Ignition relay power	Output	Ignition switch OF	F	0 V	
(G)	Clound	supply	Output	Ignition switch Of	N	Battery voltage	
27	Ground	Ignition relay monitor	Input	Ignition switch OF	FF or ACC	Battery voltage	
(Y)	Cround	Ignition relay monitor	mput	Ignition switch Of	N	0 V	
28	Ground	Push-button ignition	Input	Press the push-b	utton ignition switch	0 V	
(L)	Cround	switch	mput	Release the push	-button ignition switch	Battery voltage	
				A/T models	Selector lever in any po- sition other than P or N (Ignition switch ON)	0 V	
30 (GR)	Ground	Starter relay control	Input		Selector lever P or N (Ig- nition switch ON)	Battery voltage	
					M/T medale	Release the clutch pedal	0 V
				M/T models	Depress the clutch pedal	Battery voltage	
36 (G)	Ground	Battery power supply	Input	Ignition switch OFF		Battery voltage	
39 (P)	_	CAN-L	Input/ Output	-		_	
40 (L)	—	CAN-H	Input/ Output	_		_	
41 (B/W)	Ground	Ground	_	Ignition switch Of	N	0 V	
42	Ground	Cooling fan relay con-	Input	Ignition switch OF	FF or ACC	0 V	
(Y)	Cround	trol	mput	Ignition switch Of	N	0.7 V	
43 <sup>*1</sup> (SB)	Ground	A/T shift selector (Detention switch)	Input	Ignition switch ON	<ul> <li>Press the selector button (selector lever P)</li> <li>Selector lever in any position other than P</li> </ul>	Battery voltage	
					Release the selector button (selector lever P)	0 V	
44	Ground	Horn relay control	Input	The horn is deact	livated	Battery voltage	
(W)	Cround		input	The horn is active	ated	0 V	
45	Ground	Anti theft horn relay	Input	The horn is deactivated		Battery voltage	
(G)	C.Guild	control		The horn is activa	ated	0 V	
				A/T models	Selector lever in any po- sition other than P or N (Ignition switch ON)	0 V	
46 (V)	Ground	Starter relay control	Input		Selector lever P or N (Ignition switch ON)	Battery voltage	
				M/T models	Release the clutch pedal	0 V	
					Depress the clutch pedal	Battery voltage	

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

#### < ECU DIAGNOSIS INFORMATION >

[REGULAR GRADE]

	inal No.	Description					
(Wire +	e color) –	Signal name	Input/ Output		Condition	Value (Approx.)	A
					A/C switch OFF	0 V	B
48 (L)	Ground	A/C relay power supply	Output	Engine running	A/C switch ON (A/C compressor is op- erating)	Battery voltage	— В
49		ECM relay power sup-		Ignition switch OF (More than a few tion switch OFF)	F seconds after turning igni-	0 V	C
(BG)	Ground	ply	Output	<ul> <li>Ignition switch</li> <li>Ignition switch (For a few second switch OFF)</li> </ul>		Battery voltage	D
51	Onested	Ignition relay power	Quitaut	Ignition switch Of	F	0 V	
(Y)	Ground	supply	Output	Ignition switch Of	N	Battery voltage	
53		ECM relay power sup-		Ignition switch OF (More than a few tion switch OFF)	FF seconds after turning igni-	0 V	F
(W)	Ground	ply	Output	<ul> <li>Ignition switch</li> <li>Ignition switch (For a few second switch OFF)</li> </ul>		Battery voltage	G
54	Ground	The state of the s	Output	Ignition switch OF (More than a few tion switch OFF)	FF seconds after turning igni-	0 V	— H
54 (V)		Throttle control motor relay power supply		<ul> <li>Ignition switch</li> <li>Ignition switch (For a few second switch OFF)</li> </ul>		Battery voltage	
55 (SB)	Ground	ECM power supply	Output	Ignition switch Of	F	Battery voltage	J
56	Ground	Ignition relay power	Output	Ignition switch Of	F	0 V	K
(LG)	Ground	supply	Output	Ignition switch Of	N	Battery voltage	
57	Ground	Ignition relay power	Quitout	Ignition switch Of	F	0 V	_
(G)	Ground	supply	Output	Ignition switch Of	N	Battery voltage	L
58 <sup>*1</sup>	Ground	Ignition relay power	Output	Ignition switch Of	F	0 V	
(P)	Ground	supply	Output	Ignition switch Of	N	Battery voltage	M
69				Ignition switch OF (More than a few tion switch OFF)	F seconds after turning igni-	Battery voltage	
(BR)	Ground	ECM relay control	Output	<ul> <li>Ignition switch ON</li> <li>Ignition switch OFF (For a few seconds after turning ignition switch OFF)</li> </ul>		0 - 1.5 V	 
70 (BG)	Ground	Throttle control motor relay control	Output	Ignition switch $ON \rightarrow OFF$		0 -1.0 V ↓ Battery voltage ↓ 0 V	Ρ
				Ignition switch Of	N	0 - 1.0 V	

#### **IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)** [REGULAR GRADE]

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< ECU DIAGNOSIS INFORMATION > Terminal No. Description Value (Wire color) Condition Input/ (Approx.) Signal name \_ Output Selector lever in any po-0 V sition other than P or N (Ignition switch ON) A/T models 72 Selector lever P or N (Ig-Ground Starter relay control Input Battery voltage (GR) nition switch ON) 0 V Release the clutch pedal M/T models Depress the clutch pedal Battery voltage 0 V Ignition switch OFF 73<sup>\*2</sup> Ignition relay power Ground Output supply (GR) Ignition switch ON Battery voltage Ignition switch OFF 0 V Ignition relay power 74 Ground Output (G) supply Ignition switch ON Battery voltage 0 V Engine stopped 75 Ignition switch Ground Oil pressure switch Input (SB) ON Battery voltage Engine running (V)Ignition switch ON 76 (Y)

						□ □ □ □ ↓ ↓ □ □ □ □ □ □ □ □ □ □ □ □ □ □
76 (Y)	Ground	Power generation com- mand signal	Output	40% is set on "ACTIVE TEST", "ALTERNA- put TOR DUTY" of "ENGINE"		(V) 6 4 2 0 ► € 2ms ↓ JPMIA0002GB 3.8 V
				80% is set on "A TOR DUTY" of "I	CTIVE TEST", "ALTERNA- ENGINE"	(V) 6 2 0 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
77 (R)	Ground	Fuel pump relay control	Output	<ul> <li>Approximately 1 second after turning the ignition switch ON</li> <li>Engine running</li> </ul>		0 - 1.0 V
(K)				Approximately 1 ing the ignition s	second or more after turn- witch ON	Battery voltage
80 (W)	Ground	Starter motor	Output	At engine cranking		Battery voltage
83	Ground	Headlamp LO (RH)	Output	Ignition switch	Lighting switch OFF	0 V
(R)	Giound		Output	ON	Lighting switch 2ND	Battery voltage
84	Ground	Headlamp LO (LH)	Output	Ignition switch	Lighting switch OFF	0 V
(P)	Ground		Culput	ON	Lighting switch 2ND	Battery voltage
Revisio	on: 2014	September		MWI-84		2015 370Z

#### IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) ECU DIAGNOSIS INFORMATION > [REGULAR GRADE]

< ECU DIAGNOSIS INFORMATION >					
<b>T</b>					

Terminal No. (Wire color)		Description				Value	
(VVire +	e color)	Signal name	Input/ Output		Condition	(Approx.)	A
86 (BG)	Ground	Daytime running light (RH)	Output	Daytime running ed	light system is not operat-	0 V	В
(66)	(BG)	(141)		Daytime running light system is operated		Battery voltage	_
87 (R)	Ground	Daytime running light (LH)	Output	Daytime running ed	light system is not operat-	0 V	С
(13)				Daytime running	light system is operated	Battery voltage	_
88 (G)	Ground	Washer pump power supply	Output	Ignition switch O	N	Battery voltage	D
89				Ignition switch	Lighting switch OFF	0 V	-
(BR)	Ground	Headlamp HI (RH)	Output	ON	<ul><li>Lighting switch HI</li><li>Lighting switch PASS</li></ul>	Battery voltage	E
				leveltine eveltele	Lighting switch OFF	0 V	_
90 (LG)	Ground	Headlamp HI (LH)	Output	Ignition switch ON	<ul><li>Lighting switch HI</li><li>Lighting switch PASS</li></ul>	Battery voltage	F
91	Ground	Darking Jomp (DH)	Output	Ignition switch	Lighting switch OFF	0 V	_
(P)	Ground	und Parking lamp (RH)	Output	<b>ON</b>	Lighting switch 1ST	Battery voltage	G
92	Ground	Parking lamp (LH)	) Output	Dutput Ignition switch ON Lighting switch OFF	Lighting switch OFF	0 V	-
(BG)	Ground				Lighting switch 1ST	Battery voltage	– – H
97 (V)	Ground	Cooling fan control	Output	Engine idling		0 - 5 V	- 11
104	Ground	d Hood switch	loout	Close the hood		Battery voltage	-
(LG)	Ground		Input	Open the hood		0 V	

\*1: A/T models only

\*2: M/T models only

\*3: Coupe models

\*4: Roadster models

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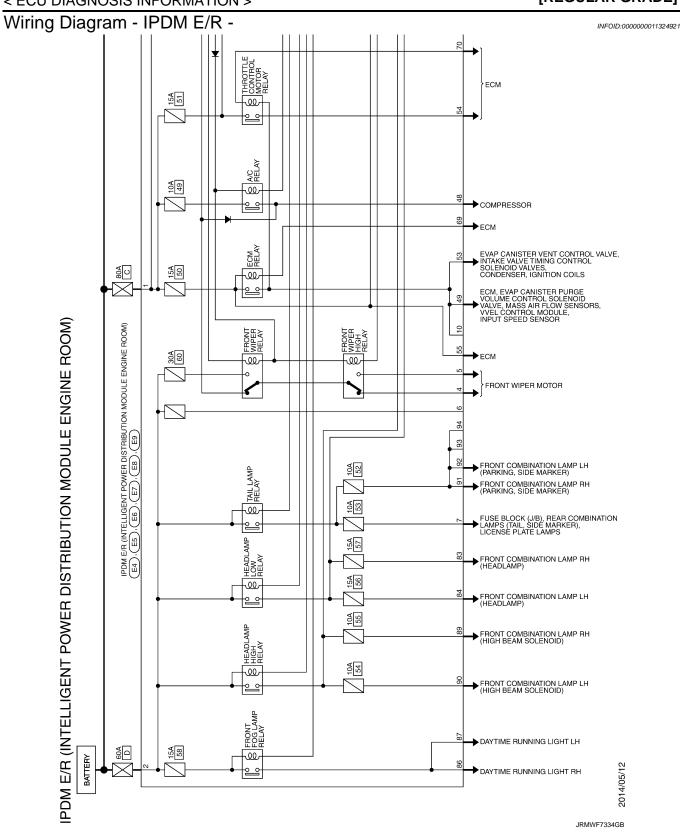
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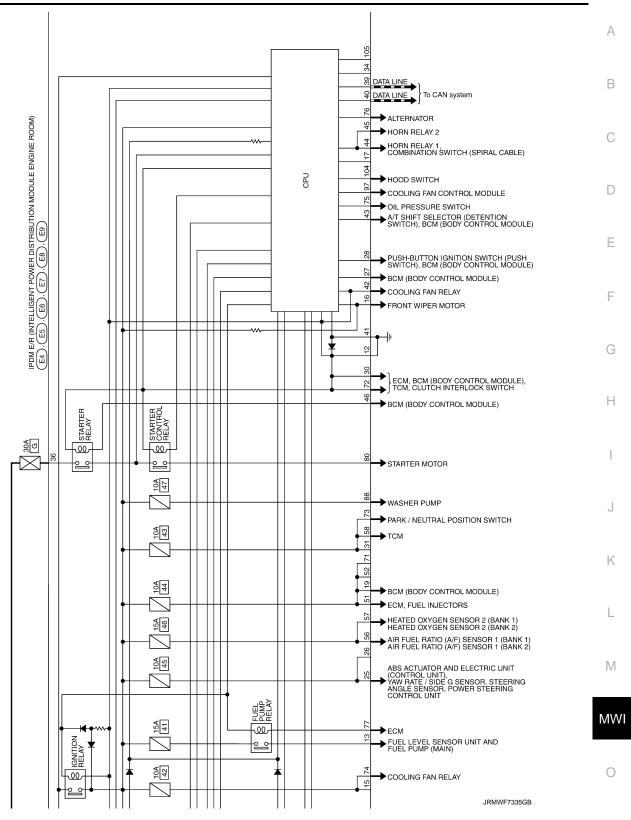
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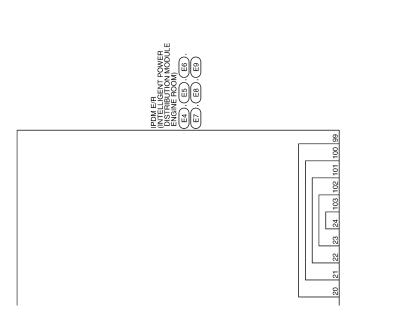
#### IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) < ECU DIAGNOSIS INFORMATION > [REGULAR GRADE]



#### IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) < ECU DIAGNOSIS INFORMATION > [REGULAR GRADE]

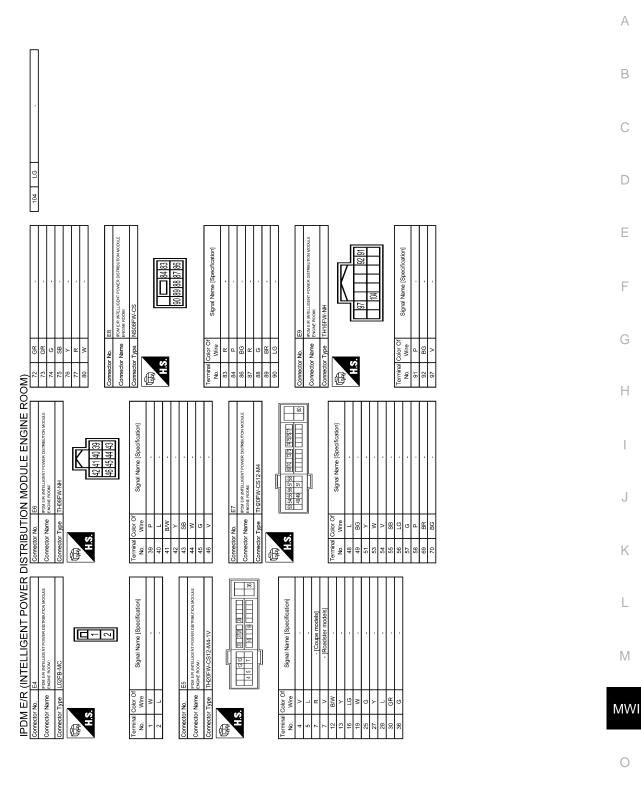


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JRMWF7336GB

#### IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) < ECU DIAGNOSIS INFORMATION > [REGULAR GRADE]



JRMWF7337GB

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Fail-safe

CAN COMMUNICATION CONTROL

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

If No CAN Communication Is Available With ECM

INFOID:000000011324922

#### **IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)** [REGULAR GRADE]

#### < ECU DIAGNOSIS INFORMATION >

Control part	Fail-safe operation
Cooling fan	<ul> <li>Outputs the pulse duty signal (PWM signal) 100% when the ignition switch is turned ON</li> <li>Outputs the pulse duty signal (PWM signal) 0% when the ignition switch is turned OFF</li> </ul>
A/C compressor	A/C relay OFF

Outputs the power generation command signal (PWM signal) 0%

#### If No CAN Communication Is Available With BCM

Alternator

Control part	Fail-safe operation	
Headlamp	<ul> <li>Turns ON the headlamp low relay when the ignition switch is turned ON</li> <li>Turns OFF the headlamp low relay when the ignition switch is turned OFF</li> <li>Headlamp high relay OFF</li> </ul>	
<ul> <li>Parking lamps</li> <li>Side maker lamp</li> <li>License plate lamps</li> <li>Illuminations</li> <li>Tail lamps</li> </ul>	<ul> <li>Turns ON the tail lamp relay and the daytime running light relay<sup>*1</sup> when the ignition switch is turned ON</li> <li>Turns OFF the tail lamp relay and the daytime running light relay<sup>*1</sup> when the ignition switch is turned OFF</li> </ul>	
Front wiper	<ul> <li>The status just before activation of fail-safe control is maintained until the ignition switch is turned OFF while the front wiper is operating at LO or HI speed.</li> <li>The wiper is operated at LO speed until the ignition switch is turned OFF if the fail-safe control is activated while the front wiper is set in the AUTO mode and the front wiper motor is operating.</li> </ul>	
Horn	Horn relay OFF	
Ignition relay	The status just before activation of fail-safe is maintained.	
Starter motor	Starter control relay OFF	

\*: With daytime running light system

#### **IGNITION RELAY MALFUNCTION DETECTION FUNCTION**

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

Voltage	judgment		
Ignition relay contact side	Ignition relay excitation coil side	IPDM E/R judgment	Operation
ON	ON	Ignition relay ON normal	—
OFF	OFF	Ignition relay OFF normal	
ON	OFF	Ignition relay ON stuck	<ul> <li>Detects DTC "B2098: IGN RELAY ON"</li> <li>Turns ON the tail lamp relay and the daytime running light relay<sup>*</sup> for 10 minutes</li> </ul>
OFF	ON	Ignition relay OFF stuck	Detects DTC "B2099: IGN RELAY OFF"

\*: With daytime running light system

#### FRONT WIPER CONTROL

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

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

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

< ECU DIAGNOSIS INFORMATION >

[REGULAR GRADE]

Ignition switch	Front wiper switch	Front wiper stop position signal
ON	OFF	The front wiper stop position signal (stop position) cannot be input for 10 seconds.
UN	ON	The front wiper stop position signal does not change for 10 seconds.
<b>NOTE:</b> This operation status can be conf "WIP PROT" while the wiper is sto		nitor" that displays "BLOCK" for the item
STARTER MOTOR PROTECTI IPDM E/R turns OFF the starter co active for 90 seconds.		tor when the starter control relay remains
DTC Index		INFOID:00000001132492
<ul> <li>The details of time display are as</li> </ul>		
<ul> <li>CRNT: A malfunction is detected</li> <li>PAST: A malfunction was detected</li> <li>IGN counter is displayed on FFD</li> <li>The number is 0 when is detected</li> </ul>	ed in the past. (Freeze Frame data). d now. 2 … 38 $\rightarrow$ 39 after returning to the	
<ul> <li>CRNT: A malfunction is detected</li> <li>PAST: A malfunction was detected</li> <li>IGN counter is displayed on FFD</li> <li>The number is 0 when is detected</li> <li>The number increases like 1 → 1 ON.</li> </ul>	ed in the past. (Freeze Frame data). d now. 2 … 38 $\rightarrow$ 39 after returning to the	t if it is over 39. ×: Applicable
<ul> <li>CRNT: A malfunction is detected</li> <li>PAST: A malfunction was detected</li> <li>IGN counter is displayed on FFD</li> <li>The number is 0 when is detected</li> <li>The number increases like 1 → 100 ON.</li> <li>The number is fixed to 39 until the</li> </ul>	ed in the past. (Freeze Frame data). Ind now. 2 … 38 $\rightarrow$ 39 after returning to the ne self-diagnosis results are erased	t if it is over 39. ×: Applicable
<ul> <li>CRNT: A malfunction is detected</li> <li>PAST: A malfunction was detected</li> <li>IGN counter is displayed on FFD</li> <li>The number is 0 when is detected</li> <li>The number increases like 1 → 1 ON.</li> <li>The number is fixed to 39 until the</li> </ul> CONSULT display No DTC is detected. further testing	ed in the past. (Freeze Frame data). Ind now. 2 … 38 $\rightarrow$ 39 after returning to the ne self-diagnosis results are erased	t if it is over 39. ×: Applicable
<ul> <li>CRNT: A malfunction is detected</li> <li>PAST: A malfunction was detected</li> <li>IGN counter is displayed on FFD</li> <li>The number is 0 when is detected</li> <li>The number increases like 1 → 1 ON.</li> <li>The number is fixed to 39 until the</li> <li>CONSULT display</li> <li>No DTC is detected.</li> <li>further testing</li> <li>may be required.</li> </ul>	ed in the past. 9 (Freeze Frame data). 9 d now. 2 ··· 38 → 39 after returning to the 9 ne self-diagnosis results are erased Fail-sa —	fe Contraction of the second s
<ul> <li>CRNT: A malfunction is detected</li> <li>PAST: A malfunction was detected</li> <li>IGN counter is displayed on FFD</li> <li>The number is 0 when is detected</li> <li>The number increases like 1 → 1 ON.</li> <li>The number is fixed to 39 until the</li> <li>CONSULT display</li> <li>No DTC is detected.</li> <li>further testing</li> <li>may be required.</li> <li>U1000: CAN COMM CIRCUIT</li> </ul>	ed in the past. (Freeze Frame data). ed now. 2 38 $\rightarrow$ 39 after returning to the ne self-diagnosis results are erased Fail-sa  ×	d if it is over 39. fe Refer to PCS-15
<ul> <li>CRNT: A malfunction is detected</li> <li>PAST: A malfunction was detected</li> <li>IGN counter is displayed on FFD</li> <li>The number is 0 when is detected</li> <li>The number increases like 1 → 1 ON.</li> <li>The number is fixed to 39 until the</li> <li>CONSULT display</li> <li>No DTC is detected.</li> <li>further testing</li> <li>may be required.</li> <li>U1000: CAN COMM CIRCUIT</li> <li>B2098: IGN RELAY ON CIRC</li> </ul>	ed in the past. (Freeze Frame data). ed now. 2 38 $\rightarrow$ 39 after returning to the ne self-diagnosis results are erased Fail-sa  ×	t if it is over 39.  Fe   Refer to   PCS-15 PCS-16
<ul> <li>CRNT: A malfunction is detected</li> <li>PAST: A malfunction was detected</li> <li>IGN counter is displayed on FFD</li> <li>The number is 0 when is detected</li> <li>The number increases like 1 → 1 ON.</li> <li>The number is fixed to 39 until the</li> <li>CONSULT display</li> <li>No DTC is detected.</li> <li>further testing</li> <li>may be required.</li> <li>U1000: CAN COMM CIRCUIT</li> <li>B2098: IGN RELAY OFF CIRC</li> </ul>	ed in the past. 9 (Freeze Frame data). 10 d now. 2 38 $\rightarrow$ 39 after returning to the 10 he self-diagnosis results are erased 11 Fail-sa 12 Kall-sa 13 Kall-sa 14 K	fe Refer to PCS-15 PCS-16 PCS-18
<ul> <li>CRNT: A malfunction is detected</li> <li>PAST: A malfunction was detected</li> <li>IGN counter is displayed on FFD</li> <li>The number is 0 when is detected</li> <li>The number increases like 1 → 1 ON.</li> <li>The number is fixed to 39 until the</li> <li>CONSULT display</li> <li>No DTC is detected.</li> <li>further testing</li> <li>may be required.</li> <li>U1000: CAN COMM CIRCUIT</li> <li>B2098: IGN RELAY ON CIRC</li> <li>B210B: STR CONT RLY ON CIRC</li> </ul>	ed in the past. (Freeze Frame data). ed now. 2 38 $\rightarrow$ 39 after returning to the ne self-diagnosis results are erased Fail-sa Fail-sa  ×  	t if it is over 39. (fe Refer to
<ul> <li>CRNT: A malfunction is detected</li> <li>PAST: A malfunction was detected</li> <li>IGN counter is displayed on FFD</li> <li>The number is 0 when is detected</li> <li>The number increases like 1 → 1 ON.</li> <li>The number is fixed to 39 until the CONSULT display</li> <li>No DTC is detected. further testing may be required.</li> <li>U1000: CAN COMM CIRCUIT</li> <li>B2098: IGN RELAY ON CIRC</li> <li>B2099: IGN RELAY OFF CIRC</li> <li>B210E: STR CONT RLY OFF CIRC</li> </ul>	ed in the past. (Freeze Frame data). ed now. 2 38 $\rightarrow$ 39 after returning to the ne self-diagnosis results are erased Fail-sa Fail-sa  ×  	fe Refer to PCS-15 PCS-16 PCS-18 SEC-81 SEC-82
<ul> <li>CRNT: A malfunction is detected</li> <li>PAST: A malfunction was detected</li> <li>IGN counter is displayed on FFD</li> <li>The number is 0 when is detected</li> <li>The number increases like 1 → 1 ON.</li> <li>The number is fixed to 39 until the</li> <li>CONSULT display</li> <li>No DTC is detected.</li> <li>further testing</li> <li>may be required.</li> <li>U1000: CAN COMM CIRCUIT</li> <li>B2098: IGN RELAY ON CIRC</li> <li>B210B: STR CONT RLY ON CIRC</li> <li>B210C: STR CONT RLY OFF CIRC</li> <li>B210D: STARTER RLY ON CIRC</li> </ul>	ed in the past. (Freeze Frame data). ed now. 2 38 $\rightarrow$ 39 after returning to the ne self-diagnosis results are erased Fail-sa Fail-sa  ×  	t if it is over 39. (fe Refer to

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#### THE FUEL GAUGE INDICATOR DOES NOT OPERATE

#### < SYMPTOM DIAGNOSIS >

# SYMPTOM DIAGNOSIS

## THE FUEL GAUGE INDICATOR DOES NOT OPERATE

Description

INFOID:0000000010838372

[REGULAR GRADE]

Fuel gauge will not indicate from a certain position.

**Diagnosis Procedure** 

INFOID:000000010838373

**1.**CONDUCTING THE COMBINATION METER SELF-DIAGNOSIS MODE

Perform the self-diagnosis mode of combination meter, and then check that the fuel gauge operates normally. Refer to <u>MWI-33</u>, "Diagnosis Description".

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace combination meter. Refer to <u>MWI-103</u>, "Removal and Installation".

2. CHECK FLOAT INTERFERENCE

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

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace malfunctioning parts.

3. CHECK FUEL LEVEL SENSOR SIGNAL CIRCUIT

Check the fuel level sensor signal circuit. Refer to <u>MWI-48, "Component Function Check"</u>. Is the inspection result normal?

YES >> Check intermittent incident. Refer to <u>GI-44, "Intermittent Incident"</u>.

NO >> Repair or replace malfunctioning parts.

#### THE OIL PRESSURE WARNING LAMP DOES NOT TURN ON [REGULAR GRADE] < SYMPTOM DIAGNOSIS > THE OIL PRESSURE WARNING LAMP DOES NOT TURN ON А Description INFOID:000000010838374 The oil pressure warning lamp stays off when the ignition switch is turned ON. В **Diagnosis** Procedure INFOID:000000010838375 1.CHECK OIL PRESSURE WARNING LAMP Perform auto active test. Refer to PCS-10, "Diagnosis Description". Is oil pressure warning lamp blinking? D YES >> GO TO 2. NO >> GO TO 4. 2.CHECK OIL PRESSURE SWITCH SIGNAL CIRCUIT Е Check the oil pressure switch signal circuit. Refer to MWI-51, "Diagnosis Procedure". Is the inspection result normal? F YES >> GO TO 3. NO >> Repair harness or connector. 3.CHECK OIL PRESSURE SWITCH Perform a unit check for the oil pressure switch. Refer to MWI-51, "Component Inspection". Is the inspection result normal? YFS >> Replace IPDM E/R. Н NO >> Replace oil pressure switch. 4.CHECK COMBINATION METER INPUT SIGNAL Connect CONSULT and perform an input signal check for the combination meter. Refer to MWI-51, "Component Function Check". Is the inspection result normal? YES >> Replace combination meter. >> Replace IPDM E/R. Refer to PCS-37, "Removal and Installation". NO Κ

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#### THE OIL PRESSURE WARNING LAMP DOES NOT TURN OFF

#### < SYMPTOM DIAGNOSIS >

## THE OIL PRESSURE WARNING LAMP DOES NOT TURN OFF

#### Description

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

#### Diagnosis Procedure

INFOID:000000010838377

INFOID:000000010838376

[REGULAR GRADE]

**1.**CHECK OIL PRESSURE WARNING LAMP

Perform auto active test. Refer to PCS-10, "Diagnosis Description".

Is oil pressure warning lamp blinking?

YES >> GO TO 2.

NO >> GO TO 5.

2. CHECK IPDM E/R OUTPUT VOLTAGE

1. Turn ignition switch OFF.

2. Disconnect the oil pressure switch connector.

3. Turn ignition switch ON.

4. Check voltage between the oil pressure switch harness connector terminal and ground.

	Terminals		
(1	+)	(-)	Voltage
Oil press	ure switch		(Approx.)
Connector	Terminal	Ground	
F37	1		12 V

Is the inspection result normal?

YES >> GO TO 3.

NO >> GO TO 4.

3.CHECK OIL PRESSURE SWITCH

Perform a unit check for the oil pressure switch. Refer to <u>MWI-51, "Component Inspection"</u>.

Is the inspection result normal?

YES >> Replace IPDM E/R. Refer to <u>PCS-37, "Removal and Installation"</u>.

NO >> Replace oil pressure switch.

4. CHECK OIL PRESSURE SWITCH SIGNAL CIRCUIT

Check the oil pressure switch signal circuit. Refer to <u>MWI-51, "Diagnosis Procedure"</u>.

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair harness or connector.

 $\mathbf{5.}$ CHECK COMBINATION METER INPUT SIGNAL

Connect CONSULT and perform an input signal check for the combination meter. Refer to <u>MWI-51, "Compo-</u> nent Function Check".

Is the inspection result normal?

YES >> Replace combination meter.

NO >> Replace IPDM E/R. Refer to <u>PCS-37, "Removal and Installation"</u>.

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

#### [REGULAR GRADE] < SYMPTOM DIAGNOSIS > THE PARKING BRAKE RELEASE WARNING CONTINUES DISPLAYING, OR DOES NOT DISPLAY Description INFOID:000000010838378 The parking brake warning is displayed during vehicle travel even though the parking brake is released. The parking brake warning is not displayed even though driving the vehicle with the parking brake applied. Diagnosis Procedure INFOID:000000010838379 1.CHECK PARKING BRAKE WARNING LAMP OPERATION 1. Start the engine. Check the operation of the parking brake warning lamp when operating the parking brake. 2. Condition Warning lamp status When parking brake is applied ON OFF When parking brake is released

F Is the inspection result normal? YES >> Replace combination meter. NO >> GO TO 2. **2.**CHECK PARKING BRAKE SWITCH SIGNAL CIRCUIT 1. Turn ignition switch OFF. Н 2. Check the parking brake switch signal circuit. Refer to <u>MWI-53</u>, "Diagnosis Procedure". Is the inspection result normal? YES >> GO TO 3. >> Repair harness or connector. NG **3.**CHECK PARKING BRAKE SWITCH Perform a unit check for the parking brake switch. Refer to BRC-77, "Component Inspection". Is the inspection result normal? YES >> Replace combination meter. Κ NO >> Replace parking brake switch.

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

< SYMPTOM DIAGNOSIS >

[REGULAR GRADE]

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

#### Description

INFOID:000000010838380

- 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:000000010838381

1. CHECK WASHER LEVEL SWITCH SIGNAL CIRCUIT

Check the washer level switch signal circuit. Refer to MWI-54, "Diagnosis Procedure".

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair harness or connector.

2. CHECK WASHER LEVEL SWITCH

Perform a unit check for the washer level switch. Refer to <u>MWI-54, "Component Inspection"</u>.

Is the inspection result normal?

YES >> Replace combination meter.

NO >> Replace washer level switch. Refer to <u>WW-46. "Removal and Installation"</u>.

# THE DOOR OPEN WARNING CONTINUES DISPLAYING, OR DOES NOT DIS-

PLAY	
< SYMPTOM DIAGNOSIS > [REGULAR GRADE]	
THE DOOR OPEN WARNING CONTINUES DISPLAYING, OR DOES NOT DISPLAY	А
Description	В
<ul> <li>The door ajar warning is displayed even though all of the doors are closed.</li> <li>The door ajar warning is not displayed even though a door is ajar.</li> </ul>	
Diagnosis Procedure	С
1.CHECK BCM INPUT/OUTPUT SIGNAL	
Connect CONSULT and check the BCM input signals. Refer to <u>DLK-89, "Component Function Check"</u> (coupe) or <u>DLK-288, "Component Function Check"</u> (roadster).	D
Is the inspection result normal? YES >> GO TO 2.	Е
NO >> GO TO 3.	
2.CHECK COMBINATION METER INPUT SIGNAL	F
Select the "Data Monitor" for the "METER/M&A" and check the "DOOR W/L" monitor value.	
"DOOR W/L"	G
Door open : On Door closed : Off	
Is the inspection result normal?	Н
YES >> Replace combination meter.	
NO >> Replace BCM. Refer to <u>BCS-106, "Removal and Installation"</u> . <b>3.</b> CHECK DOOR SWITCH SIGNAL CIRCUIT	I
Check the door switch signal circuit. Refer to <u>DLK-89, "Diagnosis Procedure"</u> (coupe) or <u>DLK-288, "Diagnosis</u>	
<u>Procedure</u> (roadster).	Л
Is the inspection result normal?	
YES >> GO TO 4. NO >> Repair harness or connector.	K
4. CHECK DOOR SWITCH	rx.
Perform a unit check for the door switch. Refer to <u>DLK-90</u> , "Component Inspection" (coupe) or <u>DLK-289</u> ,	I
<u>"Component Inspection"</u> (roadster). Is the inspection result normal?	L
YES >> Replace combination meter.	
NO >> Replace applicable door switch. Refer to <u>DLK-198. "Removal and Installation"</u> (coupe) or <u>DLK-401, "Removal and Installation"</u> (roadster).	Μ
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#### THE AMBIENT TEMPERATURE DISPLAY IS INCORRECT

#### < SYMPTOM DIAGNOSIS >

#### THE AMBIENT TEMPERATURE DISPLAY IS INCORRECT

#### Description

INFOID:000000010838384

[REGULAR GRADE]

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

#### **Diagnosis Procedure**

INFOID:000000010838385

#### NOTE:

Check that the symptom is not applicable to the normal operating condition before starting diagnosis. Refer to <u>MWI-99</u>, "INFORMATION DISPLAY : Description".

**1.**CHECK AMBIENT SENSOR SIGNAL CIRCUIT

Check the ambient sensor signal circuit. Refer to <u>HAC-30</u>, "Diagnosis Procedure" (without 7 inch display) or <u>HAC-121</u>, "Diagnosis Procedure" (with 7 inch display).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair harness or connector.

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

Check the A/C auto amp. connection recognition signal circuit. Refer to <u>MWI-56, "Diagnosis Procedure"</u>. <u>Is the inspection result normal?</u>

YES >> GO TO 3.

NO >> Repair harness or connector.

**3.**CHECK AMBIENT SENSOR

Perform the part check for the ambient sensor. Refer to <u>HAC-31, "Component Inspection"</u> (without 7 inch display) or <u>HAC-122, "Component Inspection"</u> (with 7 inch display).

Is the inspection result normal?

YES >> Replace combination meter.

NO >> Replace ambient sensor. Refer to <u>HAC-87, "Removal and Installation"</u> (without 7 inch display) or <u>HAC-177, "Removal and Installation"</u> (with 7 inch display).

## < SYMPTOM DIAGNOSIS > NORMAL OPERATING CONDITION INFORMATION DISPLAY

**INFORMATION DISPLAY : Description** 

#### AMBIENT AIR TEMPERATURE

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

#### POSSIBLE DRIVING DISTANCE

The calculated possible driving distance may differ from the actual distance to empty if the refueling amount is approximately 15  $\ell$  (4 US gal, 3-1/4 Imp gal) or less. This is because the refuel control (moves the fuel gauge needle quicker than normal judging that the driver is refueling the vehicle) is not performing.

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[REGULAR GRADE]

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# < PRECAUTION > PRECAUTION PRECAUTIONS EXCEPT FOR MEXICO

#### EXCEPT FOR MEXICO : Precautions for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER"

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

#### WARNING:

Always observe the following items for preventing accidental activation.

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

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

#### WARNING:

Always observe the following items for preventing accidental activation.

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

#### EXCEPT FOR MEXICO : Precaution for Battery Service

INFOID:000000010838388

Before disconnecting the battery, lower both the driver and passenger windows. This will prevent any interference between the window edge and the vehicle when the door is opened/closed. During normal operation, the window slightly raises and lowers automatically to prevent any window to vehicle interference. The automatic window function will not work with the battery disconnected.

EXCEPT FOR MEXICO : Precautions for Removing Battery Terminal

INFOID:000000011313542

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

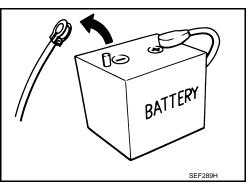
NOTE:

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

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

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

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



#### PRECAUTIONS

#### FOR MEXICO

< PRECAUTION >

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

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

#### WARNING:

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

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

#### WARNING:

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

#### FOR MEXICO : Precaution for Battery Service

Before disconnecting the battery, lower both the driver and passenger windows. This will prevent any interference between the window edge and the vehicle when the door is opened/closed. During normal operation, the window slightly raises and lowers automatically to prevent any window to vehicle interference. The automatic window function will not work with the battery disconnected.

#### FOR MEXICO : Precautions for Removing Battery Terminal

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

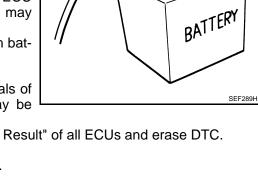
ECU may be active for several tens of seconds after the ignition switch is turned OFF. If the battery terminal is removed before ECU stops, then a DTC detection error or ECU data corruption may occur.

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

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

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

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



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# < PREPARATION > PREPARATION

#### PREPARATION

#### **Commercial Service Tools**

INFOID:000000010838391

Tool name		Description
Power tool	PBIC0191E	Loosening screws

# < REMOVAL AND INSTALLATION > REMOVAL AND INSTALLATION COMBINATION METER

#### **Exploded View**

#### REMOVAL

Refer to IP-13, "Exploded View".

#### DISASSEMBLY

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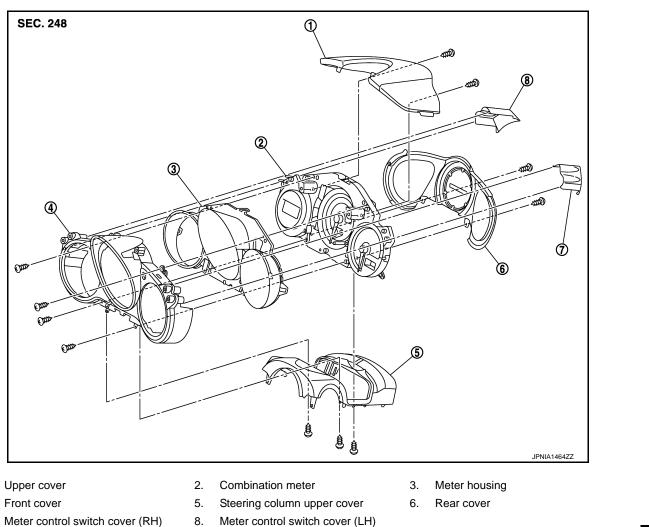
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#### Removal and Installation

#### REMOVAL

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1. Remove the steering column lower cover. Refer to <u>IP-14, "Removal and Installation"</u>.

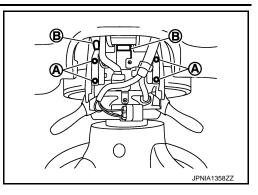
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#### < REMOVAL AND INSTALLATION >

2. Remove bolts (A) and clip (B), and remove combination meter.

#### [REGULAR GRADE]



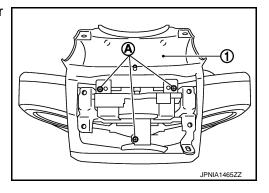
INSTALLATION Install in the reverse order of removal.

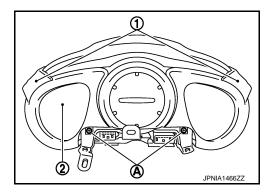
**Disassembly and Assembly** 

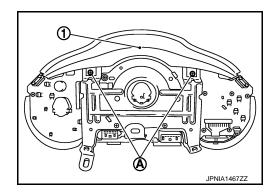
#### DISASSEMBLY

1. Remove screws (A) and remove steering column upper cover (1).

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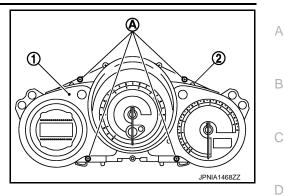
- 2. Disengage pawl and remove meter control switch cover (1).
- 3. Remove screws (A) and remove rear cover (2).

4. Remove screws (A) and remove upper cover (1).

#### < REMOVAL AND INSTALLATION >

#### [REGULAR GRADE]

- 5. Remove screws (A) and remove front cover (1).
- 6. Disengage the tabs and then remove meter housing (2).



ASSEMBLY

Assemble in the reverse order of disassembly.



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#### TRIPLE METER

#### < REMOVAL AND INSTALLATION >

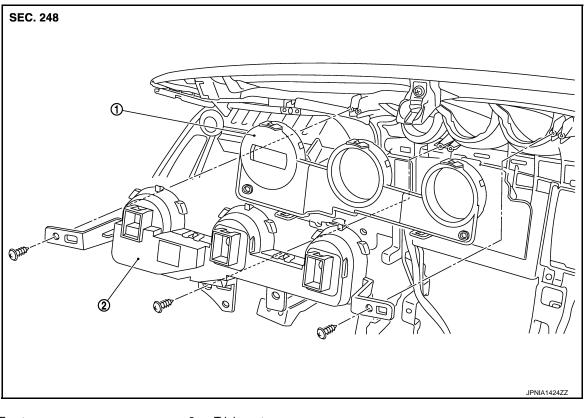
#### TRIPLE METER

**Exploded View** 

#### REMOVAL

INFOID:000000010838395

[REGULAR GRADE]



1. Front cover

2. Triple meter

Removal and Installation

INFOID:000000010838396

#### REMOVAL

- 1. Remove instrument panel assembly and remove triple meter cover. Refer to <u>IP-14, "Removal and Installa-</u> tion".
- 2. Remove screws (A) and remove triple meter (1).

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INSTALLATION Install in the reverse order of removal.

Disassembly and Assembly

DISASSEMBLY Disengage the tabs to separate front cover. ASSEMBLY

Revision: 2014 September

#### **MWI-106**

INFOID:000000010838397

#### < REMOVAL AND INSTALLATION >

Assemble in the reverse order of disassembly.

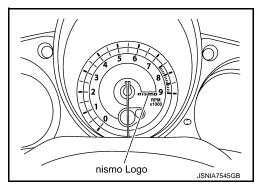
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# SPEC CHANGE INFORMATION COMBINATION METER

#### **Combination Meters**

Dedicated vehicular combination meter design changed, equipped with nismo logo.



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