

# MWI

## SECTION

### METER, WARNING LAMP & INDICATOR

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# PRECAUTIONS

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## PRECAUTION

### PRECAUTIONS

#### Precaution for Technicians Using Medical Electric

INFOID:000000007071904

##### OPERATION PROHIBITION

###### **WARNING:**

- Parts with strong magnet is used in this vehicle.
- Technicians using a medical electric device such as pacemaker must never perform operation on the vehicle, as magnetic field can affect the device function by approaching to such parts.

##### NORMAL CHARGE PRECAUTION

###### **WARNING:**

- If a technician uses a medical electric device such as an implantable cardiac pacemaker or an implantable cardioverter defibrillator, the possible effects on the devices must be checked with the device manufacturer before starting the charge operation.
- As radiated electromagnetic wave generated by on board charger at normal charge operation may effect medical electric devices, a technician using a medical electric device such as implantable cardiac pacemaker or an implantable cardioverter defibrillator must not enter the vehicle compartment (including luggage room) during normal charge operation.

##### Precaution at telematics system operation

###### **WARNING:**

- If a technician uses implantable cardiac pacemaker or implantable cardioverter defibrillator (ICD), avoid the device implanted part from approaching within approximately 220 mm (8.66 in) from interior/exterior antenna.
- The electromagnetic wave of TCU might affect the function of the implantable cardiac pacemaker or the implantable cardioverter defibrillator (ICD), when using the service, etc.
- If a technician uses other medical electric devices than implantable cardiac pacemaker or implantable cardioverter defibrillator(ICD), the electromagnetic wave of TCU might affect the function of the device. The possible effects on the devices must be checked with the device manufacturer before TCU use.

##### Precaution at intelligent key system operation

###### **WARNING:**

- If a technician uses implantable cardiac pacemaker or implantable cardioverter defibrillator (ICD), avoid the device implanted part from approaching within approximately 220 mm (8.66 in) from interior/exterior antenna.
- The electromagnetic wave of intelligent key might affect the function of the implantable cardiac pacemaker or the implantable cardioverter defibrillator (ICD), at door operation, at each request switch operation, or at engine starting.
- If a technician uses other medical electric devices than implantable cardiac pacemaker or implantable cardioverter defibrillator (ICD), the electromagnetic wave of intelligent key might affect the function of the device. The possible effects on the devices must be checked with the device manufacturer before intelligent key use.

#### Point to Be Checked Before Starting Maintenance Work

INFOID:000000007079450

The high voltage system may starts automatically. It is required to check that the timer air conditioner and timer charge (during EVSE connection) are not set before starting maintenance work.

###### **NOTE:**

If the timer air conditioner or timer charge (during EVSE connection) is set, the high voltage system starts automatically even when the power switch is in OFF state.

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

INFOID:000000006969764

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

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# PRECAUTIONS

## < PRECAUTION >

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 power switch ON, 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 power switch OFF, disconnect the 12V battery, and wait at least 3 minutes before performing any service.

## Precaution for Removing 12V Battery

INFOID:000000006932678

When removing the 12V battery, turn ON/OFF the power switch and check that the charging status indicator does not blink. The 12V battery must be removed within one hour after checking the indicator lamp.

### **NOTE:**

- The automatic 12V battery charge control may start even when the power switch is in OFF state.
- The automatic 12V battery charge control does not start within approximately one hour when the power switch is turned ON/OFF.

# PREPARATION

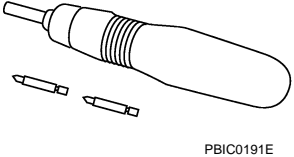
< PREPARATION >

## PREPARATION

### PREPARATION

#### Commercial Service Tools

INFOID:000000006932679

Tool name	Description
<p>Power tool</p>  <p>PBIC0191E</p>	<p>Loosening screws</p>

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# COMPONENT PARTS

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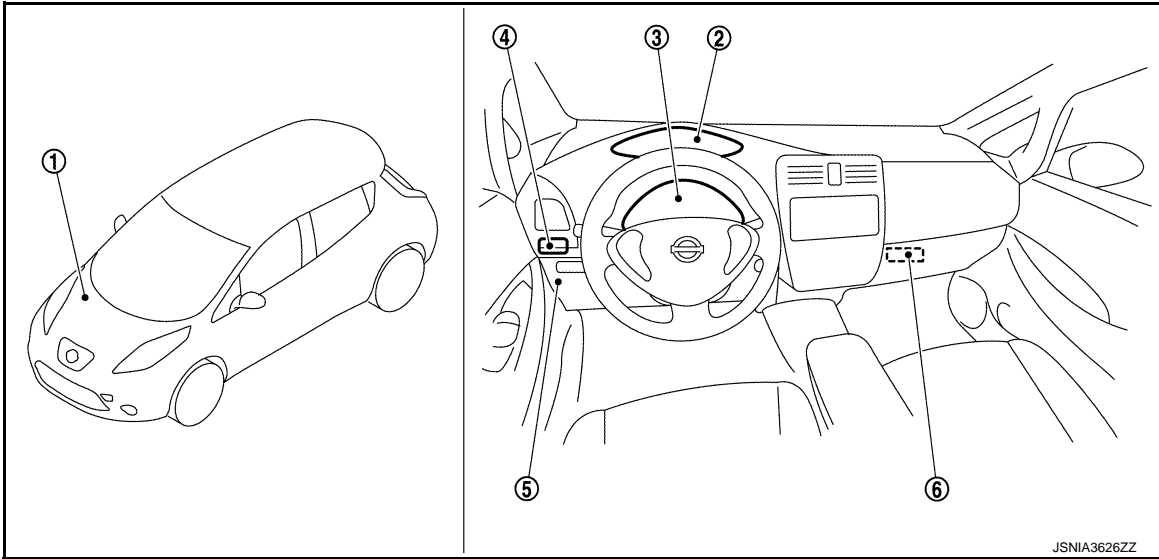
## SYSTEM DESCRIPTION

### COMPONENT PARTS

#### METER SYSTEM

#### METER SYSTEM : Component Parts Location

INFOID:000000006959368



JSNIA3626ZZ

	Component	Description
1.	ABS actuator and electric unit (control unit)	Transmits the vehicle speed signal to the combination meter via CAN communication. Refer to <a href="#">BRC-9, "Component Parts Location"</a> for detailed installation location.
2.	Upper meter	Refer to <a href="#">MWI-6, "METER SYSTEM : Upper Meter"</a> .
3.	Combination meter	Refer to <a href="#">MWI-6, "METER SYSTEM : Combination Meter"</a> .
4.	Meter control switch	Refer to <a href="#">MWI-7, "METER SYSTEM : Meter Control Switch"</a> .
5.	BCM	For the signals transmitted to the combination meter via CAN communication, refer to <a href="#">MWI-8, "METER SYSTEM : System Description"</a> . Refer to <a href="#">BCS-5, "BODY CONTROL SYSTEM : Component Parts Location"</a> for detailed installation location.
6.	VCM	For the signals transmitted to the combination meter via CAN communication, refer to <a href="#">MWI-8, "METER SYSTEM : System Description"</a> . Refer to <a href="#">EVC-14, "Component Parts Location"</a> for detailed installation location.

#### METER SYSTEM : Upper Meter

INFOID:000000006959369

- The upper meter controls the following items according to the signals received via communications from the combination meter.
  - Speedometer
  - Eco indicator (Instant ECO indicator, ECO tree)
  - Clock
  - Outside air temperature display
  - Master warning lamps
  - Turn indicators
- Power is supplied from the combination meter.

#### METER SYSTEM : Combination Meter

INFOID:000000006959370

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

- Power meter
- Li-ion battery temperature gauge
- Li-ion battery capacity level gauge
- Li-ion battery available charge gauge

# COMPONENT PARTS

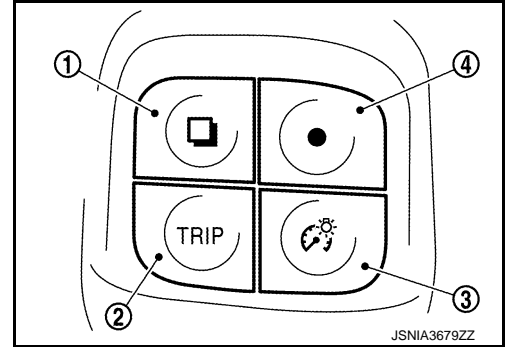
## < SYSTEM DESCRIPTION >




- Driving range display
- Indicator lamps
- Warning lamps
- Meter illumination control
- Meter effect function
- Information display

## METER SYSTEM : Meter Control Switch

INFOID:000000006959371

- The meter control switch is located on the side ventilator grille LH.
- The meter control switch can be used to control the combination meter functions listed below and to change the display of vehicle information.



Switch name	Description
 switch (1) (Enter switch)	<ul style="list-style-type: none"> <li>• The information display screen can be switched.</li> <li>• The item indicated on the information display can be confirmed.</li> </ul>
Trip reset switch (2)	<ul style="list-style-type: none"> <li>• The trip meter can be switched between A and B.</li> <li>• Trip meter A/B can be reset by pressing and holding the trip reset switch.</li> </ul>
 switch (3) (Illumination control switch)	An illuminance level of the back light of the combination meter and upper meter can be adjusted.
 switch (4) (Select switch)	When plural items are shown on the information display, a selected item can be changed to the other item.

- Transmits the following signals to the combination meter.
  - Enter switch signal
  - Select switch signal
  - Trip reset switch signal
  - Illumination control switch signal

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# SYSTEM

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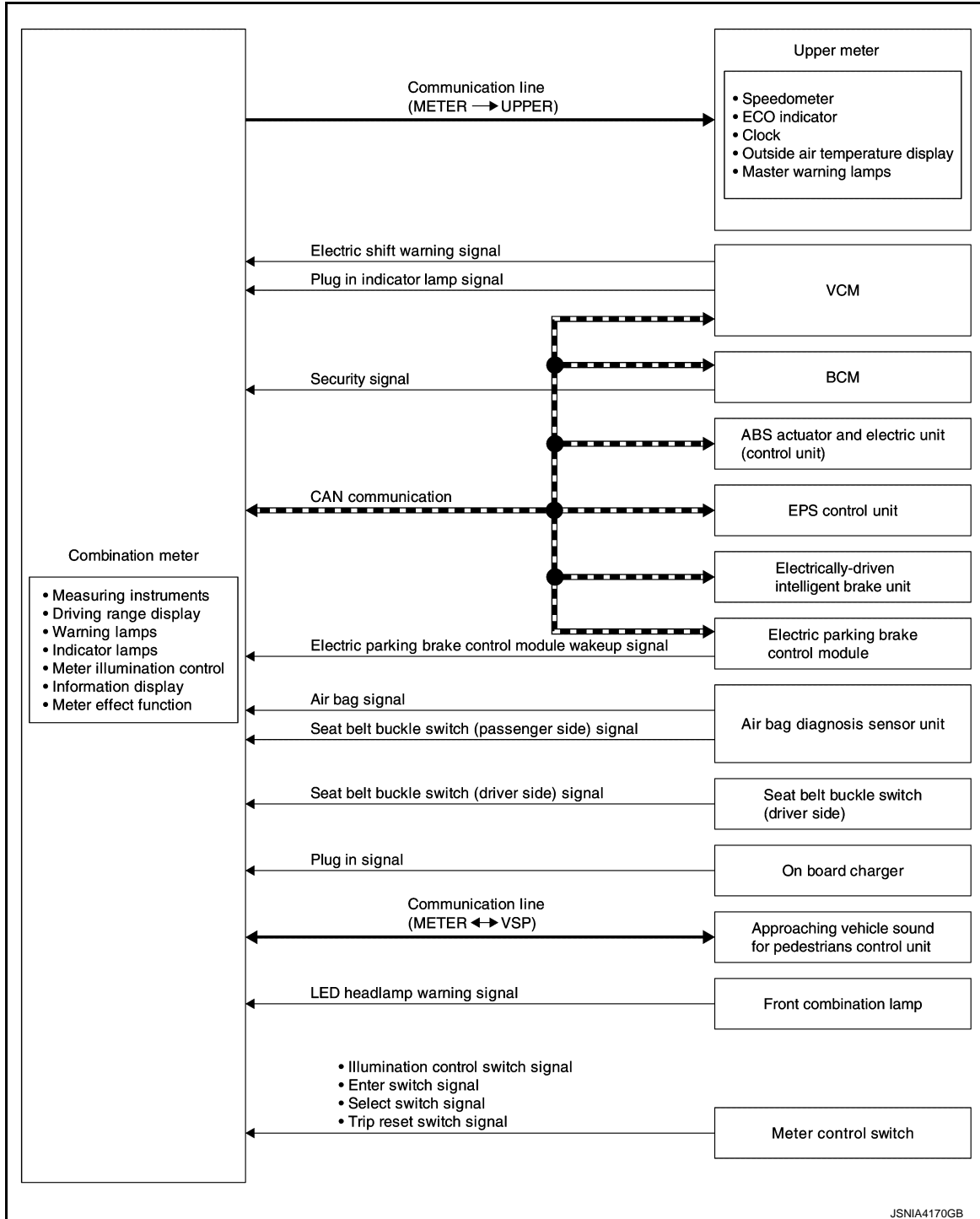
## SYSTEM

### METER SYSTEM

### METER SYSTEM : System Description

INFOID:000000006959372

### SYSTEM DIAGRAM



Combination Meter Input Signal (CAN Communication)



# SYSTEM

## < SYSTEM DESCRIPTION >

Transmit unit	Signal name	
ABS actuator and electric unit (control unit)	Vehicle speed signal	A
	ABS warning lamp signal	B
	Brake warning lamp signal	
	VDC OFF switch signal	C
	VDC warning lamp signal	
VCM	Current motor power signal	
	Maximum motor output power signal	
	Maximum regenerable power signal	D
	Li-ion battery temperature signal	
	Li-ion battery capacity signal	E
	Li-ion battery available charge signal	
	Instant ECO indicator signal	
	ECO tree signal	F
	Ambient sensor signal	
	Low battery charge warning lamp request signal	G
	Power limitation indicator lamp request signal	
	EV system warning lamp request signal	
	READY to drive indicator lamp request signal	H
	ASCD status signal	
	Remaining time to charge completion (200 V) signal	I
	Remaining time to charge completion (100 V) signal	
	Electricity consumption signal	
	A/C consumption signal	J
	Others consumption signal	
	Plug in warning display signal	
	Electric shift warning lamp signal	K
	Electric shift warning message signal	
	Power limitation cause signal	L
	12-volt battery charge warning lamp request signal	
	Vehicle stop and parking brake operation request signal	
	Next charge time signal	M
	Next departure time signal	
Next pre-A/C time signal	MWI	
Driving range signal		
Driving range flashing request signal		
Driving range request signal	O	
Shift position signal		
BCM	Door switch signal	P
	Meter display signal	
	Low tire pressure warning lamp signal	
	TPMS warning lamp signal	
	Dimmer signal	
EPS control unit	Buzzer output signal	
	EPS warning lamp signal	

# SYSTEM

## < SYSTEM DESCRIPTION >

Transmit unit	Signal name
Electric parking brake control module	Electric parking brake indicator lamp signal
	Master warning signal
Electrically-driven intelligent brake unit	Brake system warning lamp signal

### Combination Meter Output Signal (CAN Communication)

Reception unit	Signal name
BCM	Seat belt buckle switch (driver side)

### Combination Meter Output Signal (Communication line)

Reception unit	Signal name
Upper meter	Vehicle speed signal
	Instant ECO indicator signal
	ECO tree signal
	Outside air temperature signal
	Master warning signal
	Illumination control signal
	Meter effect signal
	On board diagnosis signal
	Clock signal
Approaching vehicle sound for pedestrians control unit	Turn indicator signal
	READY to drive indicator lamp signal
	Power switch signal
	Vehicle speed signal
	Sound set request signal
	Sound signal
	Shift position signal
Reverse warning buzzer signal	

## DESCRIPTION

### Combination Meter

- The combination meter receives necessary signals from each unit, switch, and sensor to control the following functions.
  - Measuring instruments
  - Driving range display
  - Warning lamps
  - Indicator lamps
  - Meter illumination control
  - Meter effect function
  - Information display
- The combination meter receives the signals needed for control of the upper meter from the units, switches, and sensors, and it sends them via the communication line.
- The combination meter incorporates a buzzer function that sounds an audible alarm with the integrated buzzer device. Refer to [WCS-5, "Combination Meter"](#) for further details.
- The combination meter includes an on board diagnosis function.
- The combination meter can be diagnosed with CONSULT.

### Upper Meter

- The upper meter controls the following items based on the signals received from the combination meter via the communication line.
  - Measuring instruments
  - Outside air temperature display

# SYSTEM

## < SYSTEM DESCRIPTION >

- Master warning lamps
- Meter illumination control
- Meter effect function
- Clock
- Turn indicator lamps
- The upper meter includes an on board diagnosis function.

## LIST OF COMMUNICATIONS SIGNALS SENT BETWEEN COMBINATION METER AND UPPER METER

Communication line	Signal name	Application
Meter → upper	Vehicle speed signal	Speedometer
	Instant ECO indicator signal	Instant ECO indicator
	ECO tree signal	ECO tree
	Outside air temperature signal	Outside air temperature display
	Master warning signal	Master warning lamps
	Meter effect signal	Meter effect
	Illumination control signal	Meter illumination
	Clock signal	Clock
	Turn indicator signal	Turn indicator lamps
	On board diagnosis signal	On board diagnosis function

## METER CONTROL FUNCTION LIST

### Combination Meter Function List

System	Description	Reference	
Measuring instruments	Power meter	Indicates the power levels listed below. <ul style="list-style-type: none"> <li>• Current motor power</li> <li>• Maximum motor output power</li> <li>• Maximum regenerable power</li> </ul>	<a href="#">MWI-18. "POWER METER : System Description"</a>
	Li-ion battery temperature gauge	Indicates Li-ion battery temperature.	<a href="#">MWI-20. "LI-ION BATTERY TEMPERATURE GAUGE : System Description"</a>
	Li-ion battery capacity level gauge	Indicates Li-ion battery capacity level.	<a href="#">MWI-22. "LI-ION BATTERY CAPACITY LEVEL GAUGE : System Description"</a>
	Li-ion battery available charge gauge	Indicates Li-ion battery available charge.	<a href="#">MWI-23. "LI-ION BATTERY AVAILABLE CHARGE GAUGE : System Description"</a>
Driving range display	Displays driving range.	<a href="#">MWI-26. "DRIVING RANGE DISPLAY : System Description"</a>	
Meter illumination control	Meter illumination control function	Controls the illumination of the combination meter and upper meter.	<a href="#">MWI-31. "METER ILLUMINATION CONTROL : System Description"</a>

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## < SYSTEM DESCRIPTION >

System		Description	Reference	
Meter effect function	READY effect function	When the vehicle status is READY to drive, the segments and illumination are controlled to produce this effect. <b>NOTE:</b> The READY effect sound is controlled by the approaching vehicle sound for pedestrians control unit. Refer to <a href="#">VSP-11. "START UP SOUND SYSTEM : System Description"</a> .	<a href="#">MWI-32. "METER EFFECT FUNCTION : System Description"</a>	
Information display	Odo/trip meter	Displays mileage.	<a href="#">MWI-33. "INFORMATION DISPLAY : System Description"</a>	
	Selector indicator	Displays shift position.		
	Trip computer	Current electricity consumption		Displays current electricity consumption.
		Average electricity consumption		Displays average electricity consumption.
		Average vehicle speed		Displays average vehicle speed.
		Travel time		Displays travel time.
		Travel distance		Displays mileage.
	Timer status reminder display	Displays the timer settings information.		
Charging time display	Displays the estimated full charging time (80 % or 100 % charging time) from the current time.			
ASCD status display	Displays the ASCD status			

# SYSTEM

## < SYSTEM DESCRIPTION >

System		Description	Reference	
Information display	Interrupt indication	Push start display	Displays push start information.	
		Remove charge connector warning display	Displayed if the power switch is pressed when the charge connector is connected.	
		Door open warning display	Displayed when any door is open.	
		Electric shift warning display	Displayed when there is a malfunction in the electric shift system.	
		Li-ion battery low charge warning display	Displayed when the Li-ion battery remaining energy is low.	
		Power limitation warning display	Displayed when drive power output is being limited.	
		Electric parking brake warning display	Displayed when there is a malfunction in the electric parking brake system.	
		Light remainder warning display	Displayed when the light reminder display conditions are met.	
		Check tire pressure warning	Displayed when the tire pressure warning display conditions are met.	
		DC/DC converter warning display	Displayed when there is a malfunction in the DC/DC converter.	
		Intelligent Key system warning display	Displayed when there is a malfunction in the Intelligent Key system.	
		Alarms	Drive alert	Causes an interrupt when exceeding a randomly set time.
			Outside temp	Causes an interrupt when the low outside temperature reaches below 3°C (37°F).
		Maintenance	Tire	Causes an interrupt when exceeding a randomly set distance.
			Other 1	Causes an interrupt when exceeding a randomly set distance.
			Other 2	Causes an interrupt when exceeding a randomly set distance.
			Other 3	Causes an interrupt when exceeding a randomly set distance.
		Meter illumination level		Indicates the brightness of the meter illumination in stages.

MWI-33. "INFORMATION DISPLAY : System Description"

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System		Description	Reference	
Information display	Warning check display	Door open warning display	Can be checked on the warning check screen when the door open warning is displayed as an interrupt display.	
		Electric shift warning display	Can be checked on the warning check screen when the electric shift warning is displayed as an interrupt display.	
		Power limitation warning display	Can be checked on the warning check screen when the power limitation warning is displayed as an interrupt display.	
		Electric parking brake warning display	Can be checked on the warning check screen when the electric parking brake warning is displayed as an interrupt display.	
		Li-ion battery low charge warning display	Can be checked on the warning check screen when the Li-ion battery low charge warning is displayed as an interrupt display.	
		Take away warning display (Push start display)	Can be checked on the warning check screen when the take away warning is displayed as an interrupt display.	
		Intelligent Key system warning display	Can be checked on the warning check screen when the Intelligent Key system warning is displayed as an interrupt display.	
	Setting	Clock	Set clock	Allows the user to set the time.
			24/12 Hr	Allows the user to set the 12-hour or 24-hour display.
		Alarms	Drive alert	Allows the user to set the display time for the driving time alarm.
			Outside temp	Allows the user to set whether or not to display the outside temp alarm.
		Maintenance	Tire	Allows the user to set the replacement distance for the tire warning.
			Other 1	Allows the user to set the replacement distance for other warnings.
Other 2	Allows the user to set the replacement distance for other warnings.			
Units	Temperature	Allows the user to set the units for the outside air temperature.		
	Speed	Allows the user to set the units for the vehicle speed and electricity consumption.		
Language		Allows the user to set the language for the information display		
Effects		Allows the user to set the start up sound of the approaching vehicle sound for pedestrians.		
Factory		Allows the user to reset all settings other than the odometer.		

[MWI-33. "INFORMATION DISPLAY : System Description"](#)

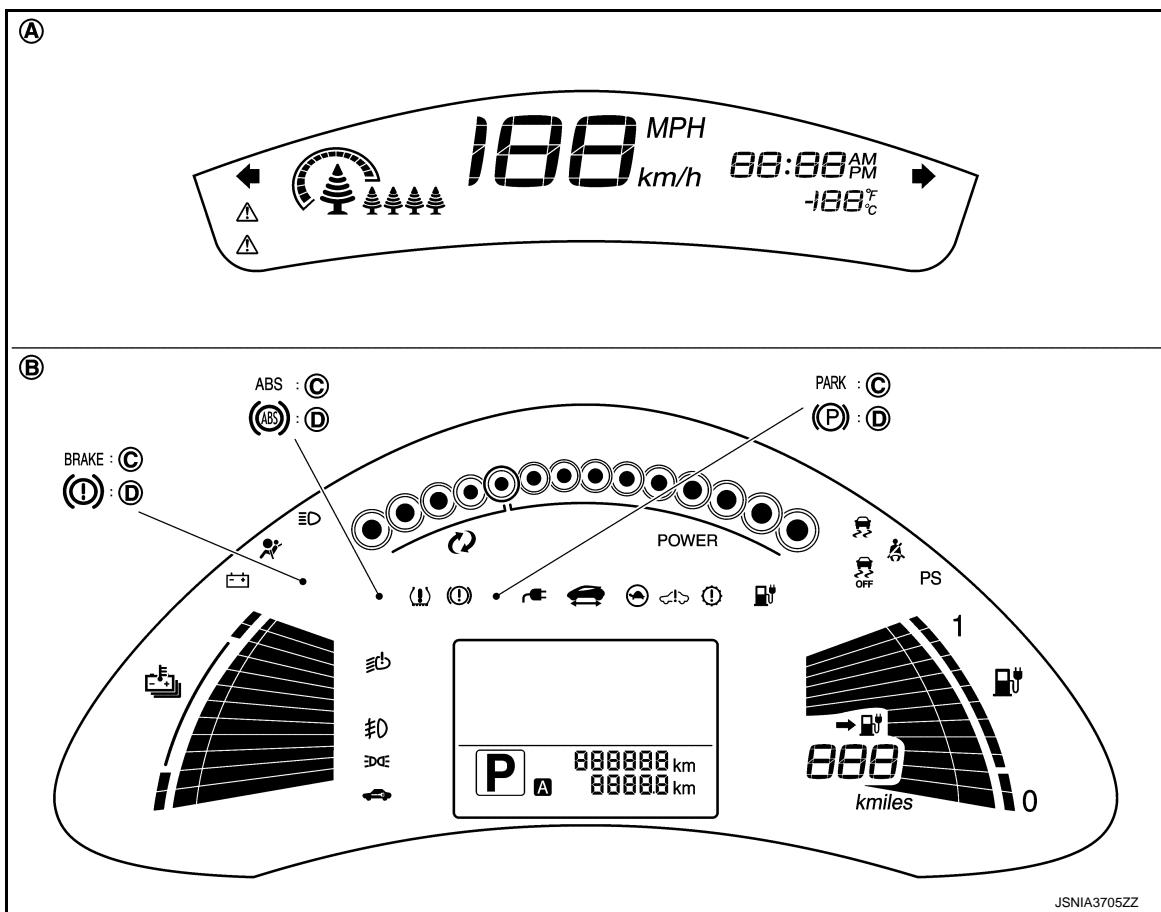
### Upper Meter Function List

# SYSTEM

## < SYSTEM DESCRIPTION >

System	Description	Reference
Measuring instruments	Speedometer	Indicates vehicle speed.
	ECO indicator	Indicates ECO drive level.
Outside air temperature	Displays the outside air temperature.	
Warning lamp	Master warning lamps	The master warning lamps turn ON according to the illumination status of the combination meter warning lamps and indicator lamps.
Clock	Displays the time.	—

## ARRANGEMENT OF COMBINATION METER



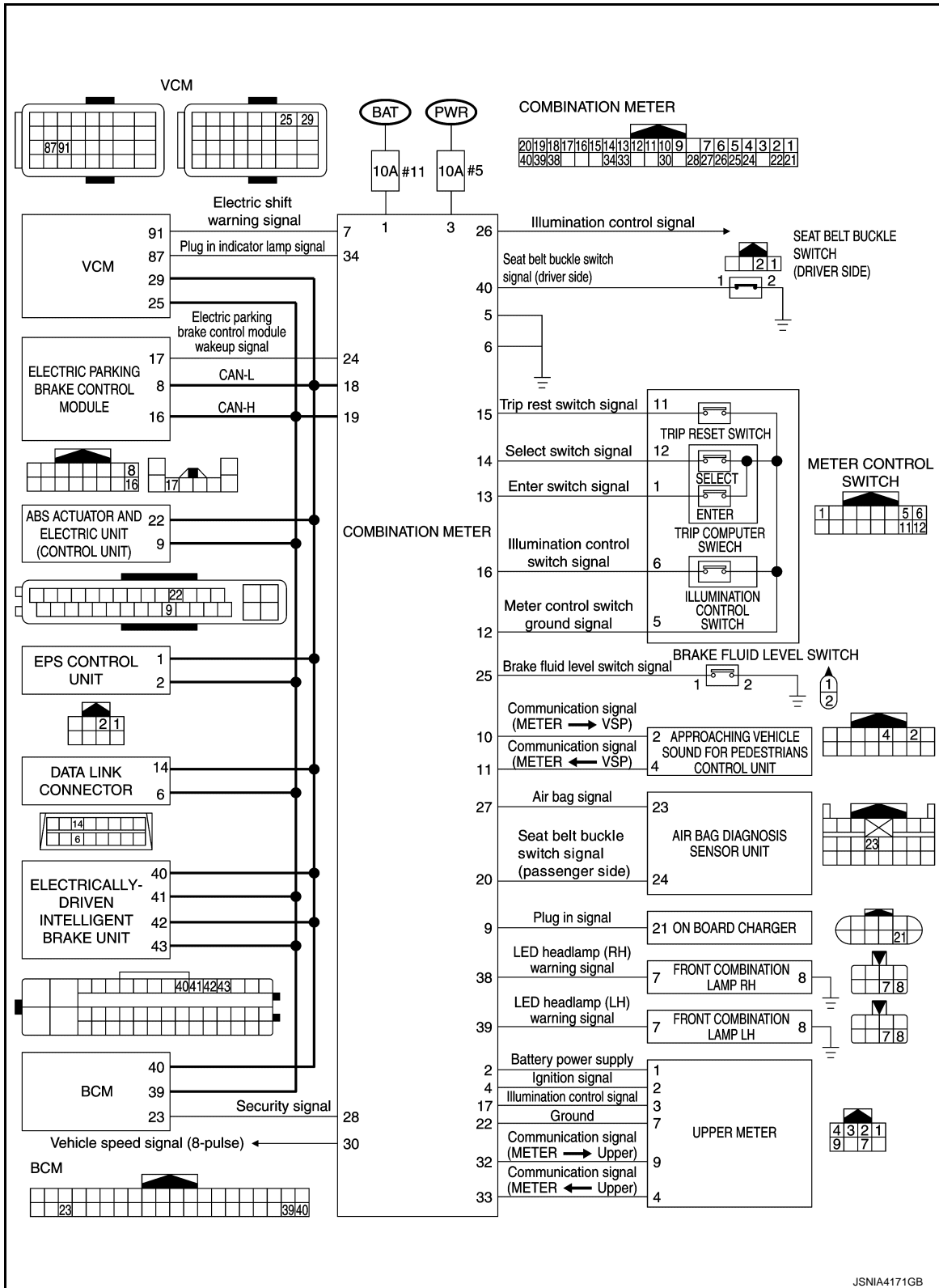
- A. Upper meter
- B. Combination meter
- C. For U.S.A.
- D. For Canada

# SYSTEM

< SYSTEM DESCRIPTION >

## METER SYSTEM : Circuit Diagram

INFOID:000000006959373



JSNIA4171GB

## METER SYSTEM : Fail-Safe

INFOID:000000006959374

### FAIL-SAFE

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



# SYSTEM

## < SYSTEM DESCRIPTION >

Function		Specifications	
Speedometer		The display turns OFF by suspending communication.	A
Power meter			B
Li-ion battery temperature gauge			C
Li-ion battery capacity level gauge			
Li-ion battery available charge gauge			
Eco indicator			
Driving range display		The display turns “--” by suspending communication.	D
Outside air temperature display		The last result calculated during normal condition is indicated.	D
Illumination control		When suspending communication, changes to nighttime mode.	
Information display	Odo/trip meter	An indicated value is maintained at communications blackout.	E
	Selector indicator	The display turns OFF by suspending communication.	
	Li-ion low battery charge warning display	The display turns ON by suspending communication.	F
	Electric shift warning display		
	Electric parking brake warning display		
	Other than the above	The display turns OFF by suspending communication.	G
Buzzer		The buzzer turns OFF by suspending communication.	
Warning lamp/indicator lamp	ABS warning lamp	The lamp turns ON by suspending communication.	H
	VDC warning lamp		
	Brake warning lamp		
	Front fog lamp indicator lamp		I
	Brake system warning lamp		
	EPS warning lamp		J
	Low battery charge warning lamp		
	Electric shift warning lamp		
	TPMS warning lamp		K
	Electric parking brake indicator lamp	When suspending communication, blinking.	
	High beam indicator lamp	The lamp turns OFF by suspending communication.	L
	Turn signal indicator lamp		
	VDC OFF indicator lamp		
	Tail lamp indicator lamp		M
	READY to drive indicator lamp		
12-volt battery charge warning lamp			
Power limitation indicator lamp		MWI	
EV system warning lamp			

## SPEEDOMETER

O

P

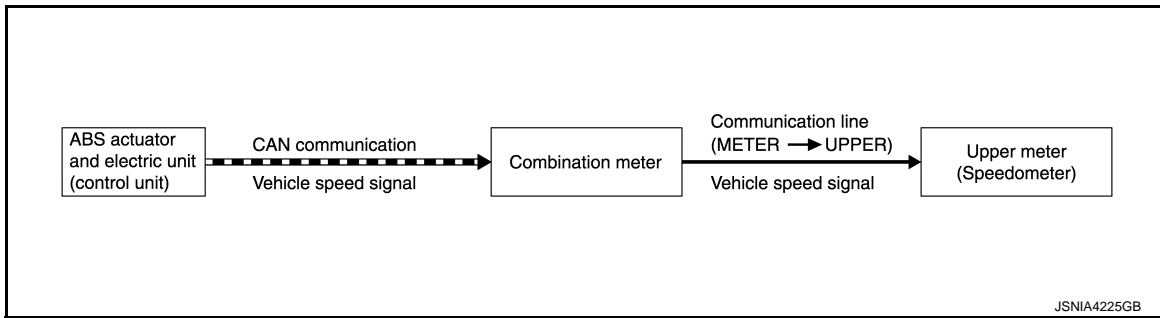
# SYSTEM

< SYSTEM DESCRIPTION >

## SPEEDOMETER : System Description

INFOID:000000006959375

### SYSTEM DIAGRAM



### DESCRIPTION

- ABS actuator and electric unit (control unit) transmits a vehicle speed signal to the combination meter via CAN communication.
- The combination meter receives the vehicle speed signal from the ABS actuator and electric unit (control unit) with CAN communication line and transmits it to the upper meter by means of communication line.
- The upper meter indicates the vehicle speed according to the vehicle speed signal received from the combination meter by means of communication line

### SIGNAL PATH

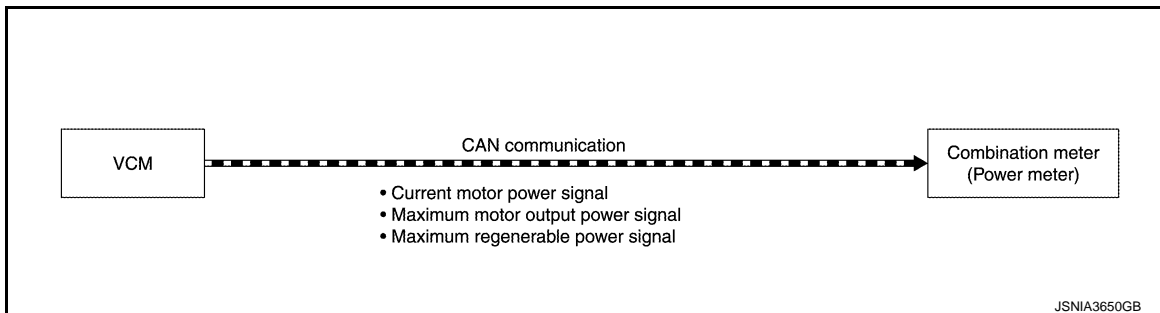
Signal name	Signal source
Vehicle speed signal	ABS actuator and electric unit (control unit) $\xrightarrow{\text{CAN}}$ Combination meter $\xrightarrow{\text{COMM}}$ Upper meter

## POWER METER

### POWER METER : System Description

INFOID:000000006959376

### SYSTEM DIAGRAM




### DESCRIPTION

- The following power levels can be checked on the power meter of the combination meter.
  - Current motor power
  - Maximum motor output power
  - Maximum regenerable power
- VCM sends the signals below to the combination meter via CAN communication.
  - Current motor power signal.
  - Maximum motor output power signal.
  - Maximum regenerable power signal.
- Based on the signals received via CAN communication from VCM, the combination meter displays the power levels on the power meter.

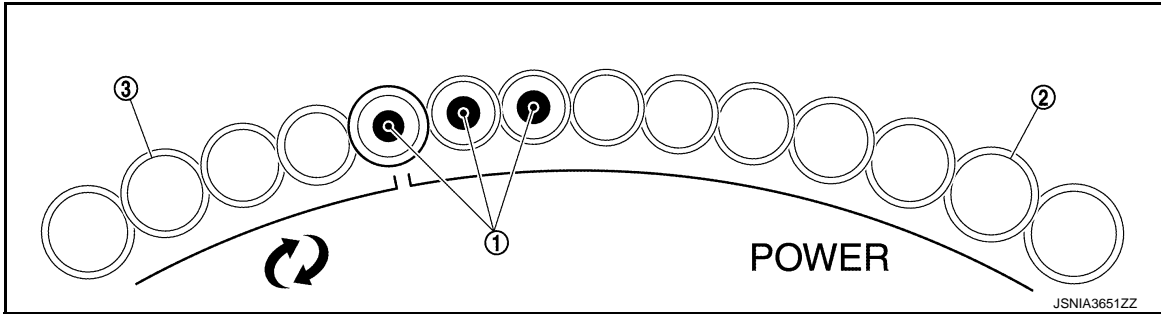
### SIGNAL PATH

# SYSTEM

## < SYSTEM DESCRIPTION >

Signal name	Signal source
Current motor power signal.	VCM  Combination meter
Maximum motor output power signal.	
Maximum regenerable power signal.	

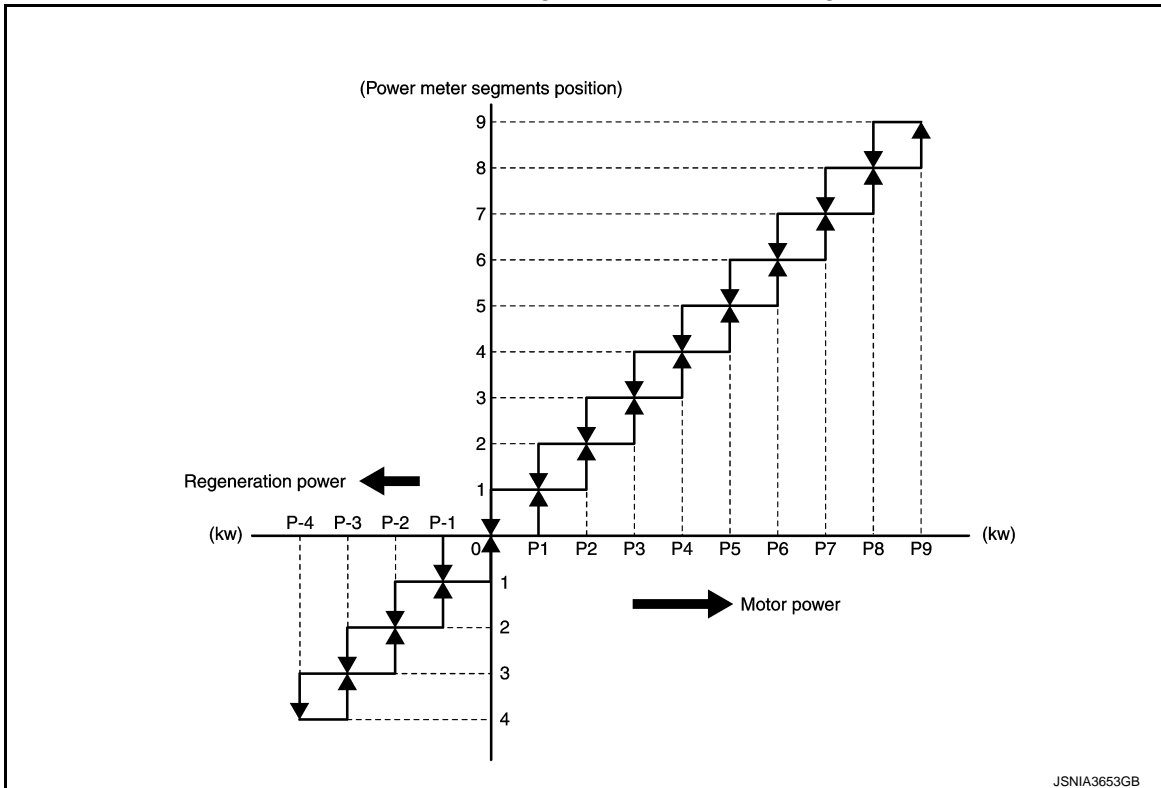
## LIST OF POWER METER FUNCTIONS



Function	Description	Signal name
1. Current motor power	Indicates the currently motor power or regeneration power.	Current motor power signal.
2. Maximum motor output power	Indicates the maximum motor power which can be output at that time.	Maximum motor output power signal.
3. Maximum regeneration power	Indicates the maximum regeneration power which can be output at that time.	Maximum regenerable power signal.

## TIMING CHART

Power meter segments ON/OFF timing



# SYSTEM

## < SYSTEM DESCRIPTION >

Power meter segments ON/OFF parameters

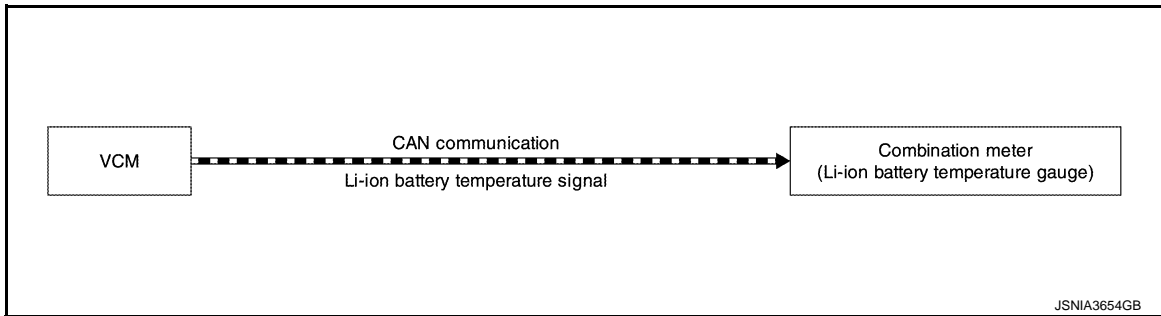
Segments		Power (kw)	—
9	Motor power	72	P9
8		64	P8
7		56	P7
6		48	P6
5		40	P5
4		32	P4
3		24	P3
2		16	P2
1		8	P1
0	—	0	0
1	Regeneration power	6	P-1
2		12	P-2
3		18	P-3
4		24	P-4

## LI-ION BATTERY TEMPERATURE GAUGE

### LI-ION BATTERY TEMPERATURE GAUGE : System Description

INFOID:000000006959377


#### SYSTEM DIAGRAM



#### DESCRIPTION

- VCM transmits a Li-ion battery temperature signal to the combination meter via CAN communication.
- The combination meter indicates the Li-ion battery temperature to the Li-ion battery temperature gauge according to the Li-ion battery temperature signal received via CAN communication.

#### SIGNAL PATH

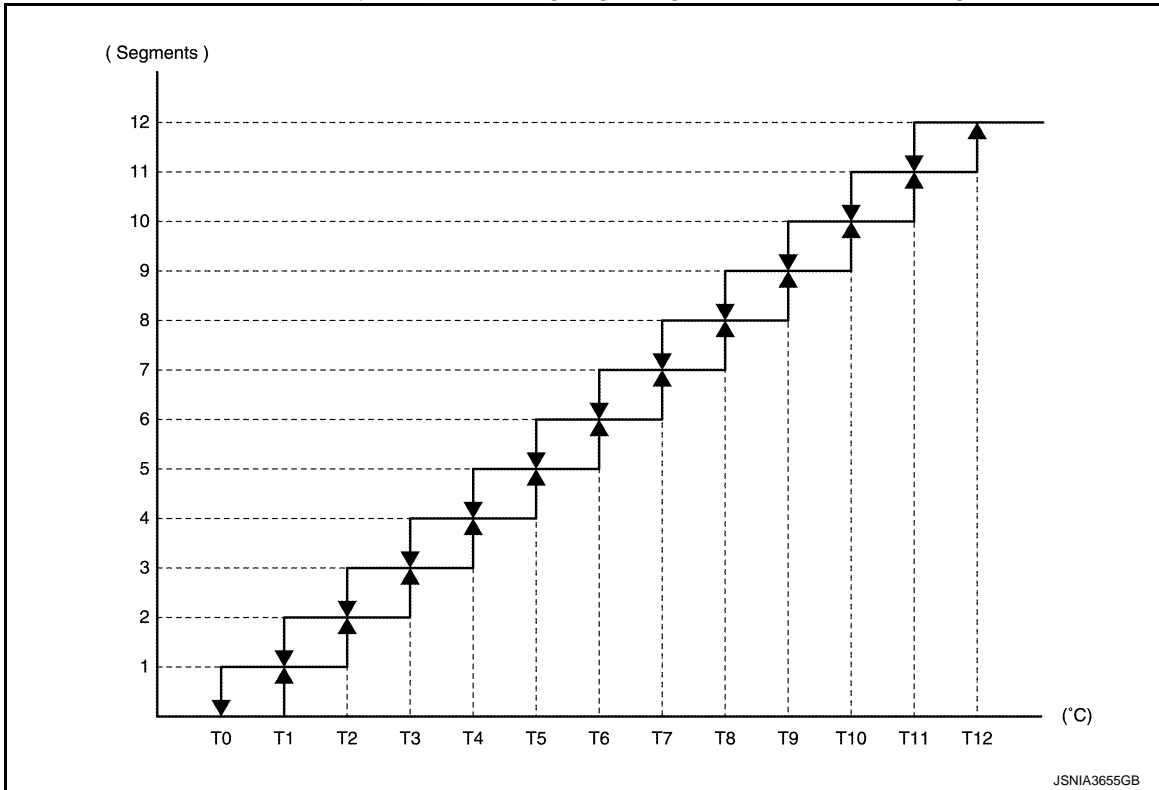
Signal name	Signal source
Li-ion battery temperature signal.	VCM  Combination meter

#### TIMING CHART

# SYSTEM

## < SYSTEM DESCRIPTION >

### Li-ion battery temperature gauge segments ON/OFF timing



Li-ion battery temperature gauge segments ON/OFF parameters

Segments	Temperature [°C(°F)]					—
	Deterioration: 100 %	Deterioration: 95 %	Deterioration: 90 %	Deterioration: 85 %	Deterioration: 80 %	
12	60 (140)	←	←	←	←	T12
11	57.5 (135.5)	←	←	←	←	T11
10	55 (131)	←	←	←	←	T10
9	52.5 (126.5)	←	←	←	←	T9
8	50 (122)	←	←	←	←	T8
7	36.8 (98.2)	37 (98.6)	37.4 (99.3)	37.9 (100.2)	38.5 (101.3)	T7
6	23.5 (74.3)	24 (75.2)	24.8 (76.6)	25.8 (78.4)	27 (80.6)	T6
5	10.3 (50.5)	11 (51.8)	12.1 (53.8)	13.6 (56.5)	15.5 (59.9)	T5
4	-3 (26.6)	-2 (28.4)	-0.5 (31.1)	1.5 (34.7)	4 (39.2)	T4
3	-6 (21.2)	-5 (23)	-3.5 (25.7)	-1.5 (29.3)	1 (33.8)	T3
2	-9 (15.8)	-8 (17.6)	-6.5 (20.3)	-4.5 (23.9)	-2 (28.4)	T2
1	-12 (10.4)	-11 (12.2)	-9.5 (14.9)	-7.5 (18.5)	-5 (23)	T1
0	-15 (5)	-14 (6.8)	-12.5 (9.5)	-10.5 (13.1)	-8 (17.6)	T0

**NOTE:**

The ON/OFF timing of the Li-ion battery temperature gauge segments differs depending on the deterioration status of the Li-ion battery.

### LI-ION BATTERY CAPACITY LEVEL GAUGE

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

MWI

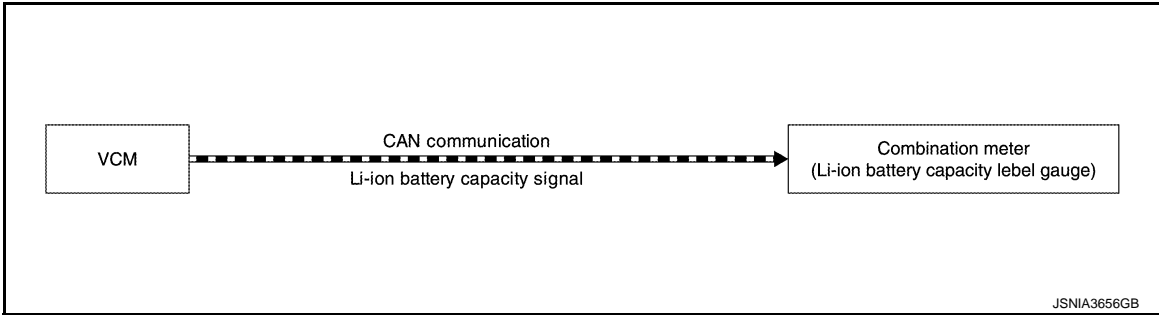
# SYSTEM

< SYSTEM DESCRIPTION >

## LI-ION BATTERY CAPACITY LEVEL GAUGE : System Description

INFOID:000000006959378

### SYSTEM DIAGRAM




### DESCRIPTION

- VCM transmits a Li-ion battery capacity signal to the combination meter via CAN communication.
- The combination meter indicates the Li-ion battery capacity to the Li-ion battery capacity level gauge according to the Li-ion battery capacity signal received via CAN communication.

#### NOTE:

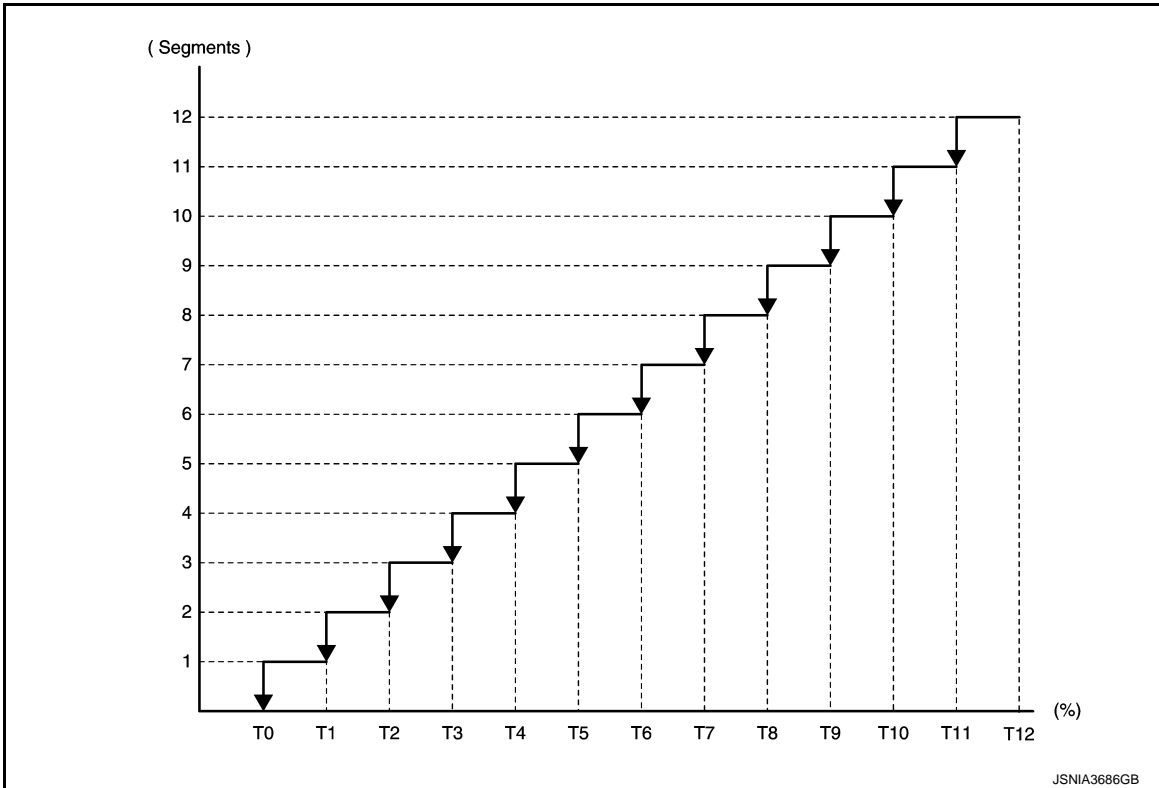
When the Li-ion battery deteriorates, its capacity decreases.

### SIGNAL PATH

Signal name	Signal source
Li-ion battery capacity signal.	VCM  Combination meter

### TIMING CHART

Li-ion battery capacity level gauge segments OFF timing



# SYSTEM

## < SYSTEM DESCRIPTION >

Li-ion battery capacity level gauge segments OFF parameters

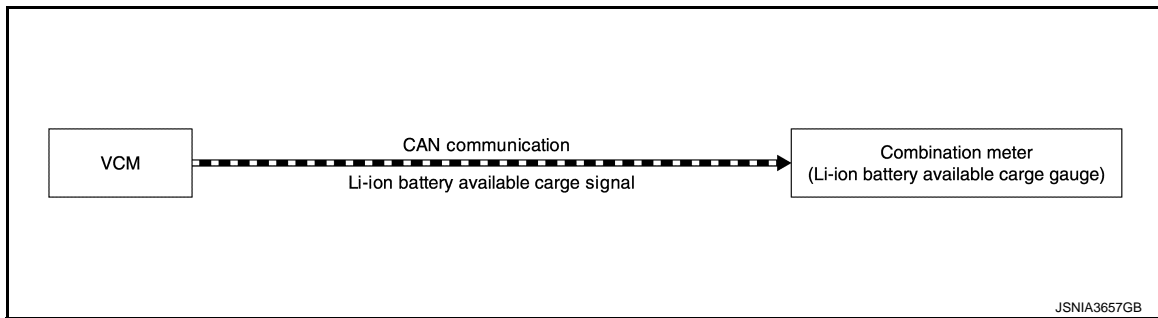
Segments	Retained capacity (%)	—	Note
12	85 or more	T12	—
11	85	T11	Value at which segment 12 turns OFF
10	78.75	T10	Value at which segment 11 turns OFF
9	72.5	T9	Value at which segment 10 turns OFF
8	66.25	T8	Value at which segment 9 turns OFF
7	60	T7	Value at which segment 8 turns OFF
6	53.75	T6	Value at which segment 7 turns OFF
5	47.5	T5	Value at which segment 6 turns OFF
4	41.25	T4	Value at which segment 5 turns OFF
3	35	T3	Value at which segment 4 turns OFF
2	28.75	T2	Value at which segment 3 turns OFF
1	22.5	T1	Value at which segment 2 turns OFF
0	16.25	T0	Value at which segment 1 turns OFF

## LI-ION BATTERY AVAILABLE CHARGE GAUGE

### LI-ION BATTERY AVAILABLE CHARGE GAUGE : System Description

INFOID:000000006959379

#### SYSTEM DIAGRAM



#### DESCRIPTION

- VCM transmits a Li-ion battery available charge signal to the combination meter via CAN communication.
- The combination meter indicates the Li-ion battery available charge to the Li-ion battery available charge gauge according to the Li-ion battery available charge signal received via CAN communication.

#### NOTE:

- The available charge of the Li-ion battery is indicated as a percentage of its full capacity.
- When the Li-ion battery temperature changes, the Li-ion battery capacity also changes. As a result, the display of the Li-ion battery available charge gauge may change.

#### SIGNAL PATH

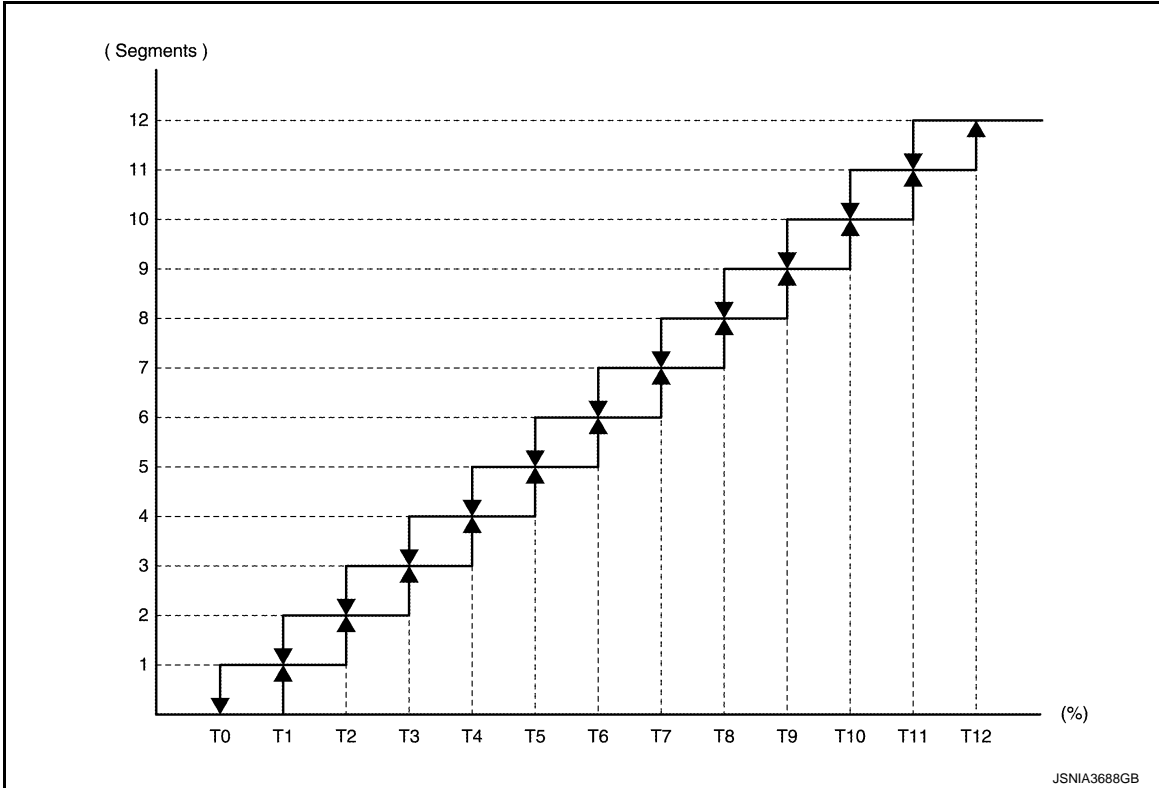
Signal name	Signal source
Li- ion battery available charge signal.	VCM  Combination meter

#### TIMING CHART

# SYSTEM

## < SYSTEM DESCRIPTION >

### Li-ion battery available charge gauge segments ON/OFF timing



### Li-ion battery available charge gauge segments ON/OFF parameters

Segments	Li-ion battery available charge (%)			
	ON timing	—	OFF timing	—
12	96	T12	—	T12
11	88	T11	92	T11
10	80	T10	84	T10
9	72	T9	76	T9
8	64	T8	68	T8
7	56	T7	60	T7
6	48	T6	52	T6
5	40	T5	44	T5
4	32	T4	36	T4
3	24	T3	28	T3
2	16	T2	20	T2
1	8	T1	12	T1
0	0	T0	4	T0

## ECO INDICATOR



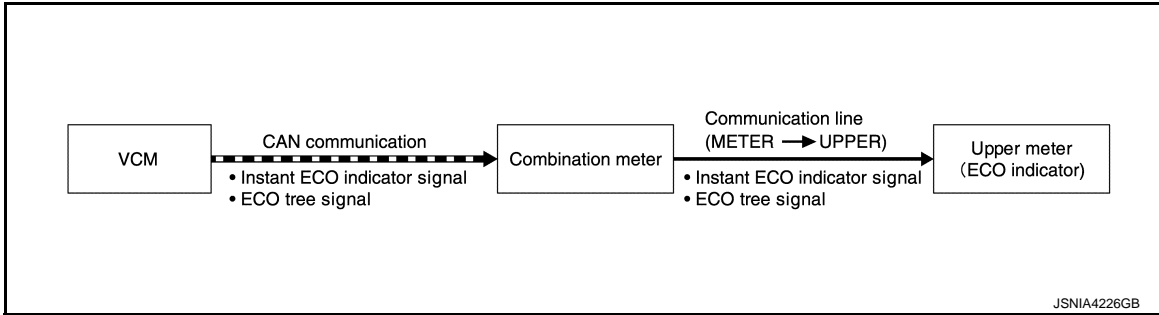
# SYSTEM

< SYSTEM DESCRIPTION >

## ECO INDICATOR : System Description

INFOID:000000006959380

### SYSTEM DIAGRAM



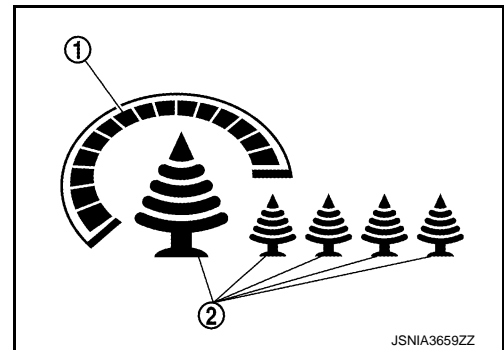
### DESCRIPTION

- The following ECO drive levels can be checked on the ECO indicator of upper meter.
  - Instant ECO drive level
  - Cumulative ECO drive level
- VCM sends the signals below to the combination meter via CAN communication.
  - Instant ECO indicator signal.
  - ECO tree signal.
- The combination meter sends the signals it received via CAN communication from VCM to the upper meter.
- Based on the signals received via the communication line, the upper meter indicates the ECO drive level on the ECO indicator.

### SIGNAL PATH

Signal name	Signal source
Instant ECO indicator signal.	VCM $\xrightarrow{\text{CAN}}$ Combination meter $\xrightarrow{\text{COMM}}$ Upper meter
ECO tree signal.	

### LIST OF ECO INDICATOR FUNCTIONS



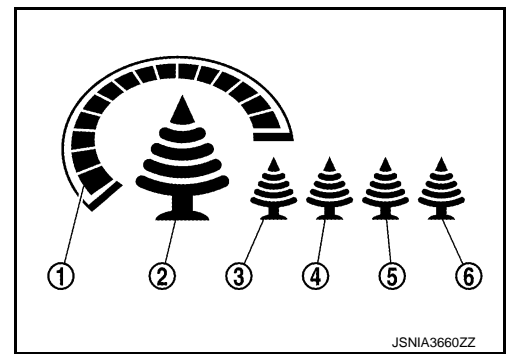
	Function	Description	Signal name
1.	Instant ECO indicator	Indicates the instantaneous ECO drive level based on the driving conditions.	Instant ECO indicator signal.
2.	ECO tree	Totals the instantaneous ECO drive levels and indicates the cumulative ECO drive level during driving (from power switch READY to OFF).	ECO tree signal.

### ECO TREE GROWTH PATTERN

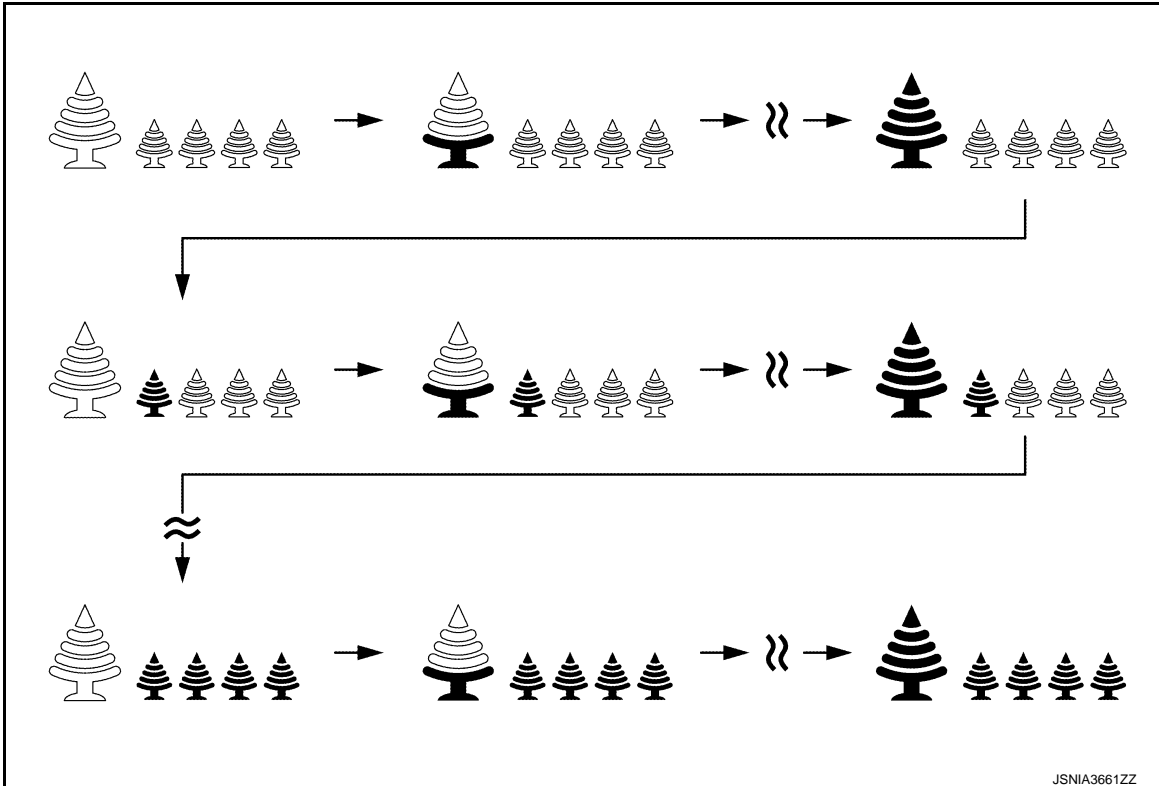
# SYSTEM

## < SYSTEM DESCRIPTION >

- The cumulative instant ECO indicator (1) results are displayed in the ECO tree (2).
- When all ECO tree (2) segments are ON, ECO tree (3) turns ON (all segments) and ECO tree (2) turns OFF.
- The cumulative instant ECO indicator (1) results are again displayed in the ECO tree (2).
- When all ECO tree (2) segments are ON, ECO tree (4), ECO tree (5), and ECO tree (6) turn ON in sequence.



## Flow of ECO Tree Growth

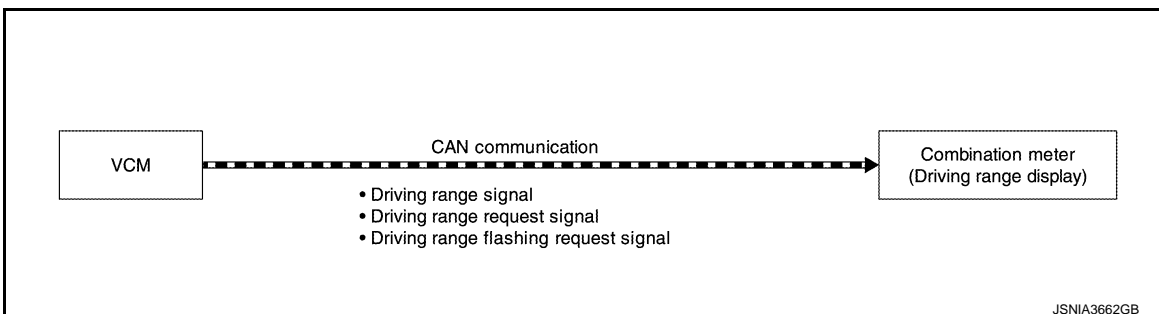


## DRIVING RANGE DISPLAY

### DRIVING RANGE DISPLAY : System Description

INFOID:000000006959381

## SYSTEM DIAGRAM



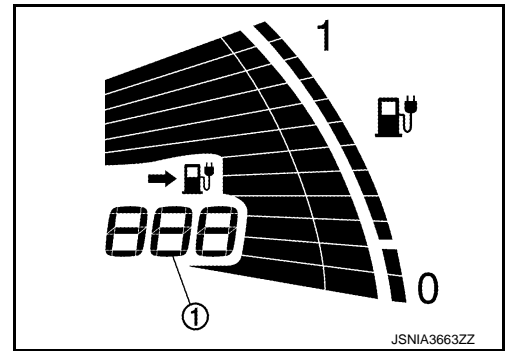
## DESCRIPTION

- VCM sends the signals below to the combination meter via CAN communication.
  - Driving range signal
  - Driving range request signal
  - Driving range flashing request signal

# SYSTEM

## < SYSTEM DESCRIPTION >

- Based on the signals received via CAN communication from VCM, the combination meter displays the driving range on the driving range display (1).



### Driving Range Display Pattern

Driving range display status	DESCRIPTION	Signal source
Driving range display	Displays the driving range.	Driving range signal
Driving range blinking	When the low battery charge warning lamp is ON (when the battery remaining energy is 4 kWh or less)	Driving range blinking request signal
"---" display	When the batter remaining energy is 2 kWh or less.	Driving range request signal

### NOTE:

- If the power switch is turned from OFF to READY, the value that is last received is displayed.
- The driving range is updated approximately every 100 m (0.06 mile) of driving.

### SIGNAL PATH

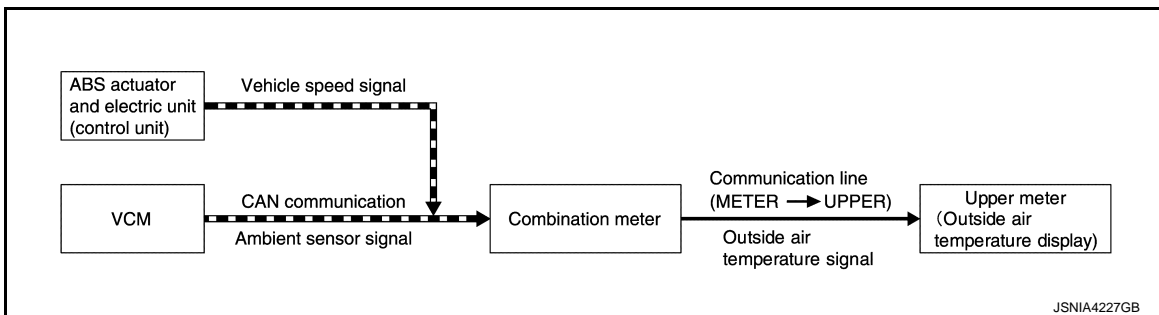
Signal name	Signal source
Driving range signal	VCM $\xrightarrow{\text{CAN}}$ Combination meter
Driving range flashing request signal	
Driving range request signal	

## OUTSIDE AIR TEMPERATURE DISPLAY

### OUTSIDE AIR TEMPERATURE DISPLAY : System Description

INFOID:000000006959382

### SYSTEM DIAGRAM



### DESCRIPTION

- VCM transmits a ambient sensor signal to the combination meter via CAN communication.
- ABS actuator and electric unit (control unit) transmits a vehicle speed signal to the combination meter via CAN communication.
- The combination meter calculates the outside air temperature based on the signals received from VCM and ABS actuator and electric unit (control unit) via CAN communication.
- The combination meter sends the calculated outside air temperature signal to the upper meter via the communications line.

# SYSTEM




## < SYSTEM DESCRIPTION >

- The upper meter indicates the outside air temperature according to the outside air temperature signal received from the combination meter by means of communication line

### NOTE:

- The indicated temperature is corrected based on an ignition signal, ambient temperature detected by the ambient sensor, and vehicle speed signal. The indicated temperature is not raised under vehicle speed less than 20 km/h (12 MPH).
- 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 outside air temperature display.
- Depending on motor heat or heat on the road surfaces, an ambient temperature may be indicated higher than actual one

### SIGNAL PATH

Signal name	Signal source
Vehicle speed signal	ABS actuator and electric unit (control unit)  Combination meter
Ambient sensor signal	VCM  Combination meter
Outside air temperature signal	Combination meter  Upper meter

### MASTER WARNING LAMP

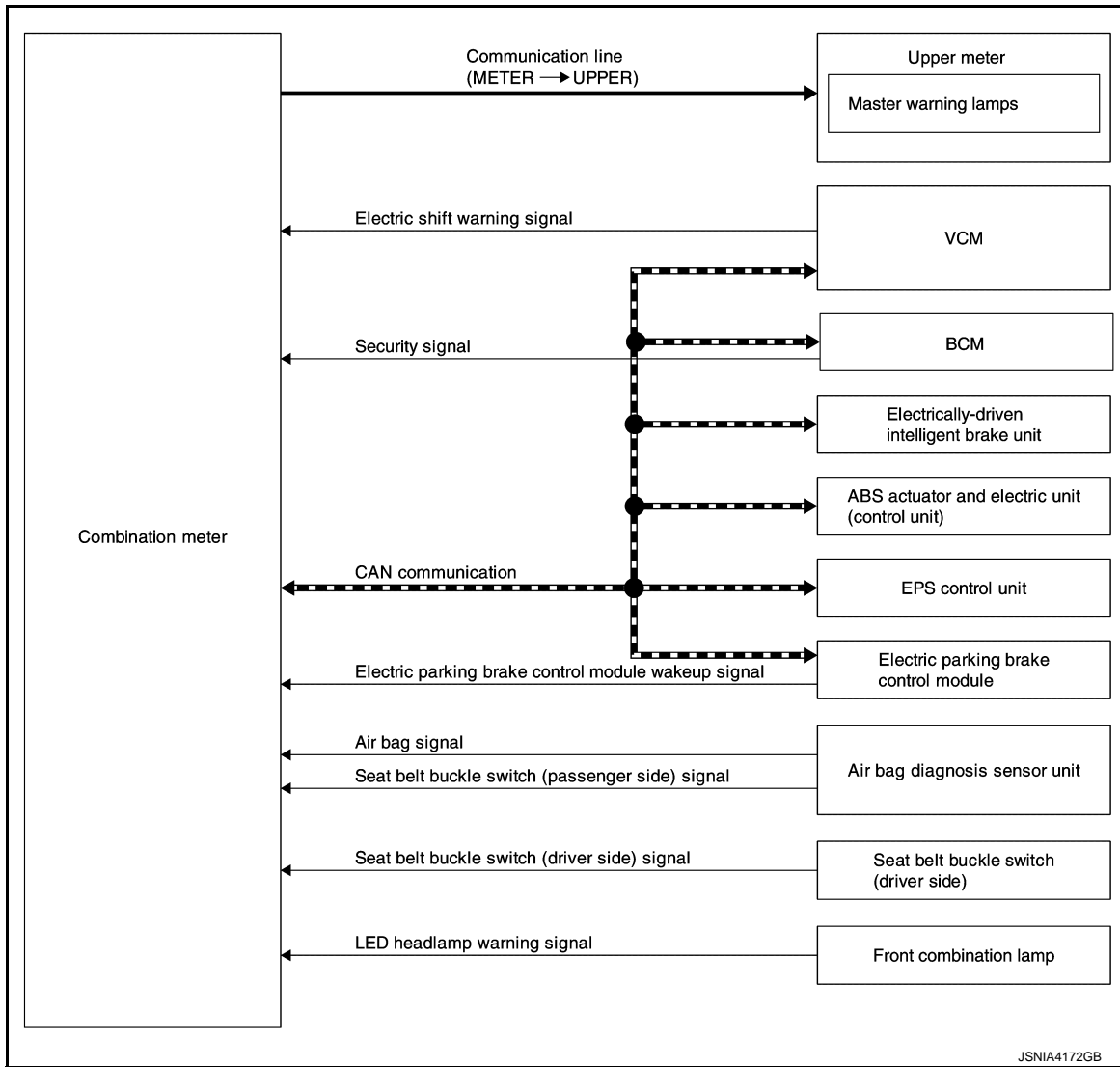
# SYSTEM

< SYSTEM DESCRIPTION >

## MASTER WARNING LAMP : System Description

INFOID:000000006971175

### SYSTEM DIAGRAM



Combination Meter Input Signal (CAN Communication)

Transmit unit	Signal name
ABS actuator and electric unit (control unit)	ABS warning lamp signal
	Brake warning lamp signal
	VDC OFF switch signal
	VDC warning lamp signal
VCM	Low battery charge warning lamp signal
	12-volt battery charge warning lamp request signal
	Power limitation indicator lamp request signal
	Power limitation cause signal
	Electric shift warning lamp signal
	Electric shift warning message signal
	EV system warning lamp signal
Vehicle stop and parking brake operation request display signal	
EPS control unit	EPS warning lamp signal

# SYSTEM

## < SYSTEM DESCRIPTION >

Transmit unit	Signal name
Electric parking brake control module	Electric parking brake indicator lamp signal
	Master warning signal
Electrically-driven intelligent brake unit	Brake system warning lamp signal
BCM	Door switch signal
	Meter display signal

### Combination Meter Output Signal (Communication Line)

Reception unit	Signal name
Upper meter	Master warning signal

## DESCRIPTION

- The master warning lamp (red) and master warning lamp (yellow) turn ON/OFF in coordination with the combination meter warning lamp or warning information display.
- The master warning lamp (red) turns ON/OFF in coordination with the warnings listed below.
  - Brake warning lamp
  - Seat belt warning lamp
  - 12-volt battery charge warning lamp
  - Air bag warning lamp
  - Security warning lamp
  - Electric parking brake indicator lamp
  - Electric shift warning lamp
- The master warning lamp (red) turns ON/OFF in coordination with the information displays listed below.
  - Door open warning display (while driving)
  - Electric parking brake warning display (“Parking brake not available”)
  - Electric shift warning display (“When park apply parking brake”)
  - DC/DC converter warning display (“Stop vehicle”)
  - DC/DC converter warning display (“Apply parking brake”)
- The master warning lamp (yellow) turns ON/OFF in coordination with the warnings listed below.
  - ABS warning lamp
  - VDC OFF indicator
  - VDC warning lamp
  - EPS warning lamp
  - Brake system warning lamp
  - Power limitation indicator
  - Low battery charge warning lamp
  - EV system warning lamp
  - Headlamp warning lamp
- The master warning lamp (yellow) turns ON/OFF in coordination with the information displays listed below.
  - Door open warning display (while not driving)
  - Electric shift warning display (“T/M system malfunction visit dealer”, “Check position of shift lever”)
  - Li-ion battery low charge warning display
  - Power limitation warning display
  - Electric parking brake warning display (“Visit dealer”, “Release parking brake”, “Press brake pedal”)
  - Intelligent Key system warning

## METER ILLUMINATION CONTROL

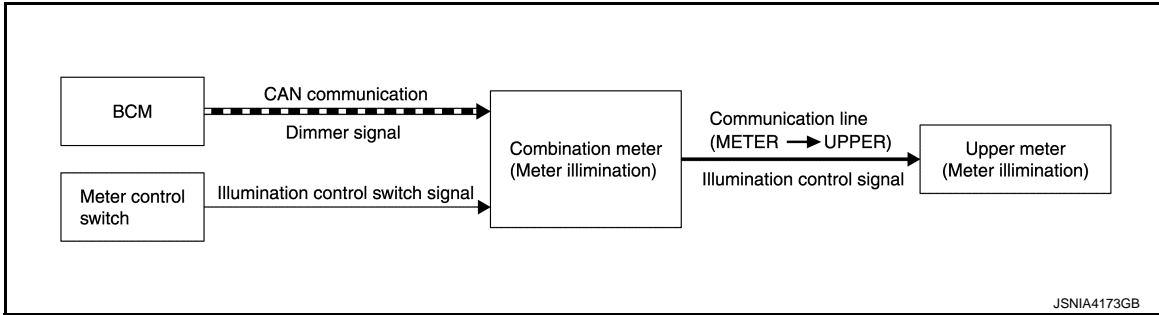
# SYSTEM

< SYSTEM DESCRIPTION >

## METER ILLUMINATION CONTROL : System Description

INFOID:000000006971245

### SYSTEM DIAGRAM



### DESCRIPTION

- Combination meter controls meter illumination, based on the following signal.
  - Dimmer signal
  - Illumination control switch signal
- The combination meter and upper meter switches mode between Daytime mode and Nighttime mode, according to the following conditions.

Condition		Meter illumination	
Combination switch (lighting switch)	1ST or 2ND position	Outdoor: Bright*	Daytime mode
		Outdoor: Dark*	Nighttime mode
	AUTO POSITION	Outdoor: Bright*	Daytime mode
		Outdoor: Dark*	Nighttime mode
Off		Daytime mode	



\*: For further information, refer to [INL-14, "AUTO LIGHT ADJUSTMENT SYSTEM : System Description"](#).

- The operation of the illumination control switch allows the brightness adjustment of meter illumination.

Meter illumination	The number of adjustable steps
Daytime	12 step
Nighttime	12 step

### SIGNAL PATH

The combination meter controls the meter illumination based on the signals below.

Signal name	Signal source
Dimmer signal	BCM  Combination meter
Illumination control switch signal	Meter control switch  Combination meter

### METER EFFECT FUNCTION

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

MWI

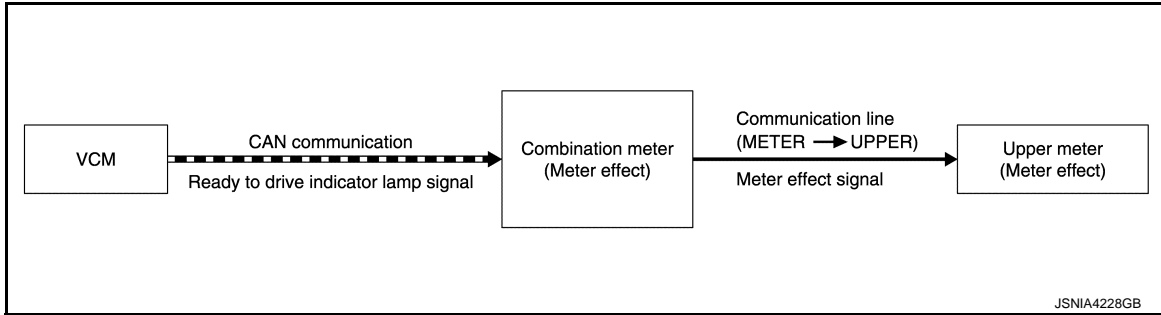
# SYSTEM

< SYSTEM DESCRIPTION >

## METER EFFECT FUNCTION : System Description

INFOID:000000006959386

### SYSTEM DIAGRAM



### DESCRIPTION

#### READY Effect Function

When the vehicle is REAFY to be driven, the combination meter controls the following to start the effect.

- Power meter
- Li-ion battery capacity level gauge
- Li-ion battery available charge gauge
- Li-ion battery temperature gauge
- Instant ECO indicator
- Information display illumination

#### Operation Of Gauges And Illuminations During READY Effect

During the READY effect, the combination meter controls the following items.

Control item	Operation
Power meter	Effect control is performed in the following sequence. 1. Segments are all turned ON, 1 segment at a time. 2. After all segments are ON, all segments turn OFF, 1 segment at a time. 3. After all segments are OFF, the segments turn ON according to the data that is input at that time.
Li-ion battery capacity level gauge	
Li-ion battery available charge gauge	
Li-ion battery temperature gauge	
Instant ECO indicator	
Information display illumination	Turns on the illumination at the effect level.

#### READY Effect Judgment

When all of the following conditions are met, the system judges that the READY effect is necessary and the effect is carried out exactly once.

Operational condition	
Power switch	READY
Vehicle speed	Less than 1 km/h (0.6 MPH)
READY to drive indicator	ON

#### NOTE:

If any of the above conditions is no longer met while the ready effect is in progress, the READY effect is stopped.

#### SIGNAL PATH



The combination meter controls the READY effect function based on the signals below.

Signal name	Signal source
Power switch signal	—



# SYSTEM

## < SYSTEM DESCRIPTION >

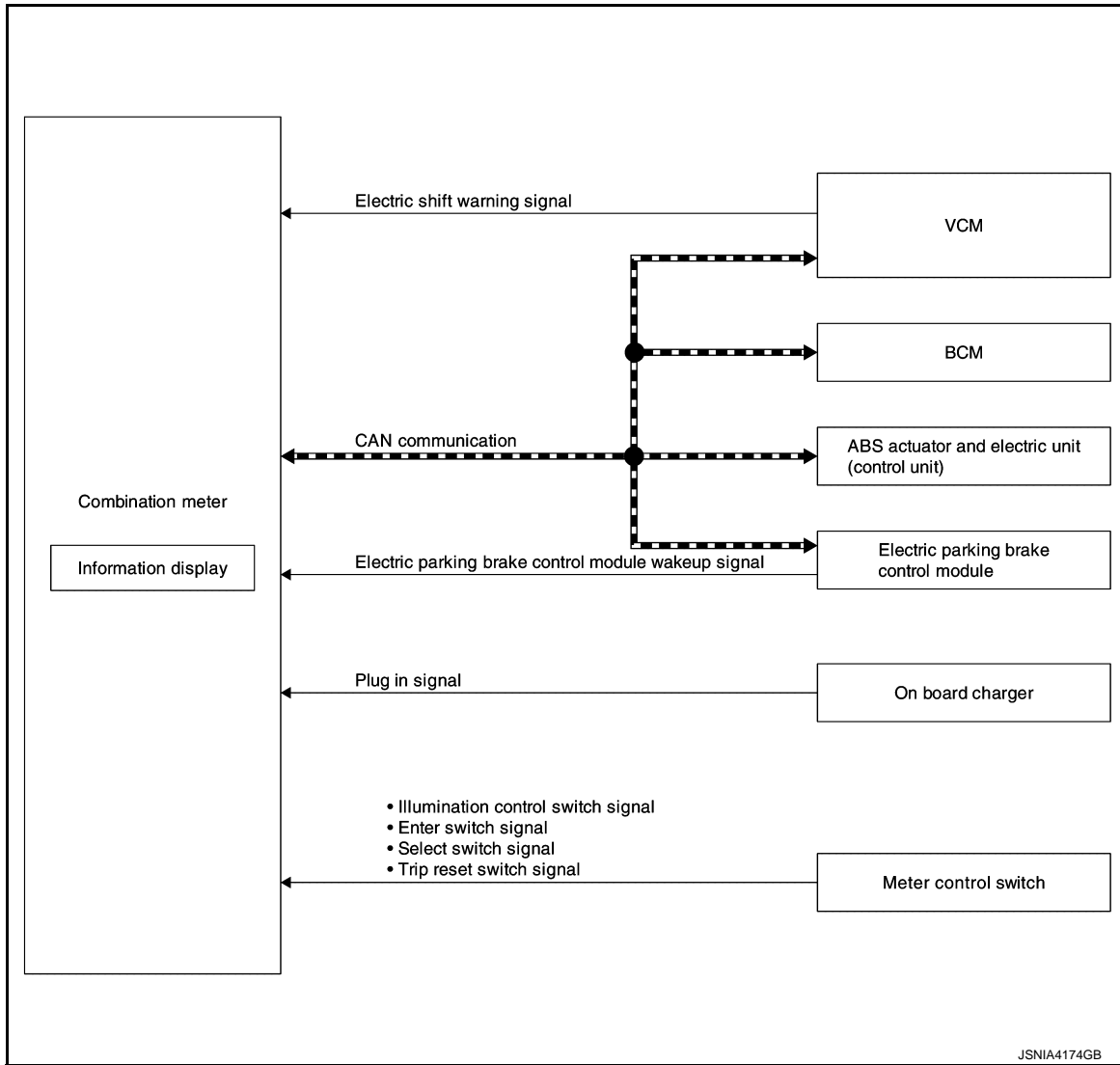
Signal name	Signal source
Vehicle speed signal	ABS actuator and electric unit (control unit)  Combination meter
READY to drive indicator lamp request signal	VCM  Combination meter

## INFORMATION DISPLAY

### INFORMATION DISPLAY : System Description

INFOID:000000006959387

## SYSTEM DIAGRAM



### Combination Meter Input Signal (CAN Communication)

Transmit unit	Signal name
ABS actuator and electric unit (control unit)	Vehicle speed signal

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



# SYSTEM

## < SYSTEM DESCRIPTION >

Transmit unit	Signal name
VCM	Ambient sensor signal
	ASCD status signal
	Remaining time to charge completion (200 V) signal
	Remaining time to charge completion (100 V) signal
	Electricity consumption signal
	A/C consumption signal
	Others consumption signal
	Plug in warning display signal
	Vehicle stop and parking brake operation request display signal
	Electric shift warning lamp signal
	Electric shift warning message signal
	Low battery charge warning lamp request signal
	Power limitation cause signal
	Next charge time signal
	Next departure time signal
	Next pre-A/C time signal
	Driving range signal
	Driving range flashing request signal
Driving range request signal	
Shift position signal	
BCM	Meter display signal
	Door switch signal
	Low tire pressure warning lamp signal
	Buzzer output signal
Electric parking brake control module	Electric parking brake indicator lamp signal

### DESCRIPTION

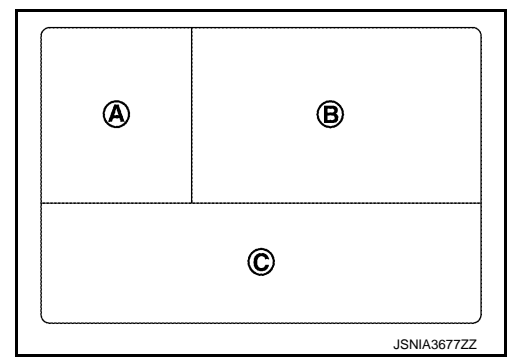
- The information display is an LCD positioned inside the combination meter. It is used to inform the driver of a variety of vehicle information.
- The combination meter receives the signals required to control the operation of the information display from each unit, switch, and sensor.
- Based on the received signals, the combination meter displays the following information on the information display.
  - Odo/trip meter
  - Selector indicator
  - Trip computer
  - Interrupt indication
  - Warning check indication
  - Setting
  - Timer status remained display
  - Charging time display
  - Meter illumination control
  - ASCD status display

# SYSTEM

## < SYSTEM DESCRIPTION >

- The information display screen is divided into sections (A) – (C), and the items displayed in each section are different.

Display	Display item
A	ASCD status display
B	Trip computer
	Interrupt indication
	Warning check indication
	Setting
	Timer status reminder display
	Charging time display
	Meter illumination control function
C	Odo/trip meter
	Selector indicator



A  
B  
C  
D  
E  
F

### NOTE:

If there are no items to display in display section (A), the items in display section (B) are displayed larger.

- Pressing the switch (enter switch) changes the item displayed in display section (B) in the following sequence.  
 “Charging time” ⇒ “Average electricity consumption/Current electricity consumption” ⇒ “Average vehicle speed” ⇒ “Travel Distance/Travel Time” ⇒ “Setting” ⇒ “Warning”

G  
H

### ASCD STATUS DISPLAY

Based on the signals listed below, the combination meter displays the ASCD status.

Signal name	Signal path
ASCD status signal	VCM  → Combination meter

I  
J

For details, refer to [EVC-46. "AUTOMATIC SPEED CONTROL DEVICE \(ASCD\) : System Description"](#).

### TRIP COMPUTER

Based on the signals received from each unit, switch, and sensor, the combination meter displays the items shown below.

- Current electricity consumption
- Average electricity consumption
- Average vehicle speed
- Travel distance
- Travel time

K  
L  
M

### Current Electricity Consumption

The combination meter calculates current electricity consumption based on the following signals, and the calculated value is displayed on the information display.

MWI

Signal name	Signal path
Power switch signal	—
Electricity consumption signal	VCM  → Combination meter
A/C consumption signal	
Others consumption signal	
Vehicle speed signal	ABS actuator and electric unit (control unit)  → Combination meter

O  
P

### NOTE:

- Current electricity consumption on the information display is updated approximately every 0.5 seconds.



# SYSTEM

## < SYSTEM DESCRIPTION >

- Current electricity consumption on the information display shows 0 kWh/km (0 kWh/miles) when vehicle speed is 0 km/h (0 MPH).

### Average Electricity Consumption

The combination meter calculates average electricity consumption based on the following signals, and the calculated value is displayed on the information display.


Signal name	Signal path
Power switch signal	—
Electricity consumption signal	VCM  Combination meter
A/C consumption signal	
Others consumption signal	
Vehicle speed signal	ABS actuator and electric unit (control unit)  Combination meter

### NOTE:

Average electricity consumption on the information display is updated approximately every 30 seconds.

### Average Vehicle Speed

The combination meter calculates average vehicle speed based on the following signals, and the calculated value is displayed on the information display.


Signal name	Signal path
Power switch signal	—
Vehicle speed signal	ABS actuator and electric unit (control unit)  Combination meter

### NOTE:

- Average vehicle speed on the information display is updated approximately every 30 seconds.
- Soon after a reset or when the power switch is turned READY right after battery removal and installation, “—” is displayed until after a 30 seconds.

### Travel Distance

The combination meter calculates mileage, based on the following signals and displays the mileage on the information display.


Signal name	Signal path
Power switch signal	—
Vehicle speed signal	ABS actuator and electric unit (control unit)  Combination meter

### Travel Time

The combination meter measures and displays travel time (power switch ON time).

## CHARGING TIME DISPLAY

Based on the signals below, the combination meter displays the charge time.

Signal name	Signal path
Remaining time to charge completion (200 V) signal	VCM  Combination meter
Remaining time to charge completion (100 V) signal	

## INTERRUPT INDICATION

- The combination meter displays an interrupt regarding a warning, alert, and maintenance on the information display, based on signals received from each unit and switch.
- When conditions are satisfied, the normal screen switches to a warning screen to display an interrupt.

### Interrupt Display Items



# SYSTEM

## < SYSTEM DESCRIPTION >

	Display item	
Display/warning	Push start display	A
	Remove charge connector warning display	B
	Door open warning display	
	Electric shift warning display	
	Li-ion battery low charge warning display	C
	Power limitation warning display	
	Electric parking brake warning display	D
	Light remainder warning display	
	Check tire pressure warning display	
	DC/DC converter warning display	E
Alarms	Intelligent Key system warning display	
	Driver alert	F
	Outside temp	
Maintenance	Tire	
	Other 1	G
	Other 2	
	Other 3	
Meter illumination level		H

### Push Start Display

- The combination meter judges showing/hiding of “push start display”, according to the signal below.

Signal name	Signal path	
Meter display signal	BCM  → Combination meter	J
Plug in signal	On board charger  → Combination meter	K


- For the display items and conditions, refer to [DLK-27, "WARNING FUNCTION : System Description"](#).
- When the charge connector is connected, the “plug in indicator” is displayed.

### Remove Charge Connector Warning Display

- If the power switch is operated and brake pedal is depressed while the charge connector is connected, the “remove charge connector warning” is displayed.
- When all of the conditions below are met, the “remove charge connector warning” is displayed.

Operating condition	
Charge connector	Connection
Power switch	ACC, ON or READY
Brake pedal	Depressed

- The combination meter judges showing/hiding of the “remove charge connector warning”, according to the signal below.

Signal name	Signal path	
Plug in warning display signal	VCM  → Combination meter	P

### Door Open Warning



- When all the following operating conditions are satisfied, the combination meter displays a “door open warning” on the information display by an interrupt.

# SYSTEM

## < SYSTEM DESCRIPTION >




Operating condition	
Power switch	ON
Door	Any door is open

- The combination meter judges showing/hiding of “door open warning”, according to the signal below.

Signal name	Signal path
Power switch signal	—
Door switch signal	Door switch  BCM  Combination meter


### Electric Shift Warning

- If a malfunction occurs in the electronic shift system, the “electric shift warning” is displayed.
- The combination meter judges showing/hiding of “electric shift warning”, according to the signal below.

Signal name	Signal path
Electric shift warning lamp signal	VCM  Combination meter
Electric shift warning message signal	
Electric shift warning signal	VCM  Combination meter
Electric parking brake control module wakeup signal	Electric parking brake control module  Combination meter


### Li-ion Battery Low Charge Warning

- When the battery remaining energy is 4 kWh or less, the “Li-ion battery low charge warning” is displayed. (low battery charge warning lamp turns ON and warning is displayed.)
- The combination meter judges showing/hiding of “Li-ion batter low charge warning”, according to the signal below.

Signal name	Signal path
Low battery charge warning lamp request signal	VCM  Combination meter



### Power Limitation Warning

- When drive power is 40 kW or less, the “power limitation display” is displayed.
- The combination meter judges showing/hiding of “power limitation display”, according to the signal below.

Signal name	Signal path
Power limitation cause signal	VCM  Combination meter

### Electric Parking Brake Warning

- If a malfunction occurs in the electric parking brake system, the “electric parking brake warning” is displayed.
- The combination meter judges showing/hiding of “electric parking brake warning”, according to the signal below.

Signal name	Signal path
Electric parking brake indicator lamp signal	Electric parking brake control module  Combination meter
Electric parking brake control module wakeup signal	Electric parking brake control module  Combination meter

- For the display items and conditions, refer to [PB-14, "System Description"](#).

### Light Reminder Warning

- When all of the following conditions are met, the combination meter displays the “light reminder warning”.

# SYSTEM


## < SYSTEM DESCRIPTION >

Operating condition	
Power switch	LOCK, OFF or ACC position
Combination switch (Lighting switch)	1st or 2nd position
Driver side door	Open [front door switch (driver side) ON]

- Based on the following signals, BCM judges “light reminder warning” and sends the buzzer output signal (light reminder warning) to the combination meter via CAN communications.


Signal name	Signal path
Power switch signal	—
Combination switch signal	Combination switch (Lighting switch) → BCM
Driver door switch signal	Front door switch (driver side) → BCM

- The combination meter judges showing/hiding of “light reminder warning”, according to the signal below.

Signal name	Signal path
Buzzer output signal (light reminder warning)	BCM  Combination meter


### Check Tire Pressure Warning

The combination meter judges showing/hiding of “check tire pressure warning”, according to the signal below.

Signal name	Signal path
Low tire pressure warning lamp signal	BCM  Combination meter


### DC/DC Converter Warning

- If a malfunction occurs in the DC/DC converter system, the “DC/DC converter warning” is displayed.
- The combination meter judges showing/hiding of “DC/DC converter warning”, according to the signal below.

Signal name	Signal path
Vehicle stop and parking brake operation request signal	VCM  combination meter

### Intelligent Key System Warning

- If a malfunction occurs in the Intelligent Key system, the “Intelligent Key system warning” is displayed.
- The combination meter judges showing/hiding of “Intelligent Key system warning”, according to the signal below.

Signal name	Signal path
Meter display signal	BCM  combination meter

### Driver alert (Alarms)

- When all the following operating conditions are satisfied, the combination meter displays a driver alert on the information display by an interrupt.

Operating condition	
Power switch	Switch-ON time

- The combination meter judges showing/hiding of “driver alert”, according to the signal below:

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

MWI

O

# SYSTEM

## < SYSTEM DESCRIPTION >

Signal name	Signal path
Power switch signal	—

### Outside temp (Alarms)

- When all the following operating conditions are satisfied, the combination meter displays a outside temp on the information display by an interrupt.

Operating condition	
Power switch	ON
Low outside air temperature	3 °C (37 °F) or less
information display	“ON” is selected in “SETTING”

- The combination meter judges showing/hiding of “outside temp”, according to the signals below:

Signal name	Signal path
Power switch signal	—
Ambient sensor signal	VCM  Combination meter

### Tire (Maintenance)

- When all the following operating conditions are satisfied, the combination meter displays a tire warning on the information display by an interrupt.

Operating condition	
Power switch	ON
Mileage	More than value set in “SETTING”

- The combination meter judges showing/hiding of “tire warning”, according to the signals below:

Signal name	Signal path
Power switch signal	—
Vehicle speed signal	ABS actuator and electric unit (control unit)  Combination meter

### Other 1, Other 2, Other 3 (Maintenance)

- When all the following operating conditions are satisfied, the combination meter displays a other warning on the information display by an interrupt.

Operating condition	
Power switch	ON
Mileage	More than value set in “SETTING”

- The combination meter judges showing/hiding of “other warning”, according to the signals below:

Signal name	Signal path
Power switch signal	—
Vehicle speed signal	ABS actuator and electric unit (control unit)  Combination meter


### Meter Illumination Level Indication

When receiving the following signals, the combination meter causes an interrupt on the information display to indicate an illumination level.





# SYSTEM

## < SYSTEM DESCRIPTION >

Signal name	Signal path	
Power switch signal	—	A
Illumination control switch signal	Meter control switch  Combination meter	B

### TIMER STATUS REMINDER DISPLAY

- The combination meter receives the next charge time signal, next departure time signal or next pre-A/C time signal when the power switch is READY and displays the timer charging after the power switch is turned OFF. C
- Pressing the  switch (enter switch) changes the displayed item in the following sequence. D  
Timer charging ON/OFF, timer A/C ON/OFF → Next charge start time / end time → Charging time → Timer A/C start time
- If no switches are operated for 10 seconds, the display screen turns OFF. E
- The combination meter judges showing/hiding of the “timer status reminder display” according to the signals below.

Signal name	Signal path	
Next charge time signal	VCM  → Combination meter	F
Next departure time signal		G
Next pre-A/C time signal		

### WARNING CHECK INDICATION

- The combination meter can cause an interrupt on the information display to indicate a warning, based on signals received from each unit and switch. H
- The indicated warning can be checked with “WARNING” during the satisfaction of an interrupt indication condition for each warning. I

#### Warning Display Items

- Door open warning J
- Electric shift warning
- Power limitation warning
- Li-ion battery low charge warning
- Electric parking brake warning K
- Take away warning (push start display)
- Intelligent Key system warning

### SETTING

Warning indication timing and time can be set.

#### Clock

Setting values for “Set clock”, and “24/12 Hr” can be adjusted to meet the user's needs. M

Setting item	
Set clock	Adjusting the time
24/12 Hr	12 h, 24h

MWI

#### Maintenance

Setting values for tire and other maintenance items can be adjusted to meet the user's needs. O

P

# SYSTEM

## < SYSTEM DESCRIPTION >

Setting item		Setting range
Maintenance	Tire	No setting, 500 km - 30,000 km (No setting, 250 mile - 18,500 mile)
	Other 1	No setting, 500 km - 30,000 km (No setting, 250 mile - 18,500 mile)
	Other 2	No setting, 500 km - 30,000 km (No setting, 250 mile - 18,500 mile)
	Other 3	No setting, 500 km - 30,000 km (No setting, 250 mile - 18,500 mile)

### Alarms

Setting values for “Driver Alert”, and “Outside Temp” can be adjusted to meet the user's needs.

Setting item		Setting range	Setting unit
Alarms	Drive Alert	No setting, 0.5 h - 6 h	0.5 h
	Outside Temp	ON/OFF	—

### Units

Setting values for “TEMPERATURE” and “SPEED” items can be adjusted to meet the user's needs.

Setting item	
TEMPERATURE	Deg C
	Deg F
SPEED	km/h, km/kWh
	MPH, mile/kWh

### Language

Setting values for “Language” items can be adjusted to meet the user's needs.

Setting item	
Language	English
	Francais
	Espanol

### Effects

Setting values for “Effects” items can be adjusted to meet the user's needs.

Setting item	
Effects	Sound 1
	Sound 2
	Sound 3
	OFF

For the effects function, refer to [VSP-11. "START UP SOUND SYSTEM : System Description"](#).

### Factory

Allows the user to reset all settings other than the odometer.


### Settings-reject Indication

- Regarding settings-reject indications, “SETTING CAN BE OPERATED WHEN STOPPED” is shown on the information display when indication conditions are satisfied.
- When reaching 5 km/h (3.1 MPH) after accelerating from a stopping condition, a settings-reject indication is displayed.
- When reaching less than 1 km/h (0.6 MPH) after decelerating from 5 km/h (3.1 MPH), a settings-reject indication is cancelled to allow settings.

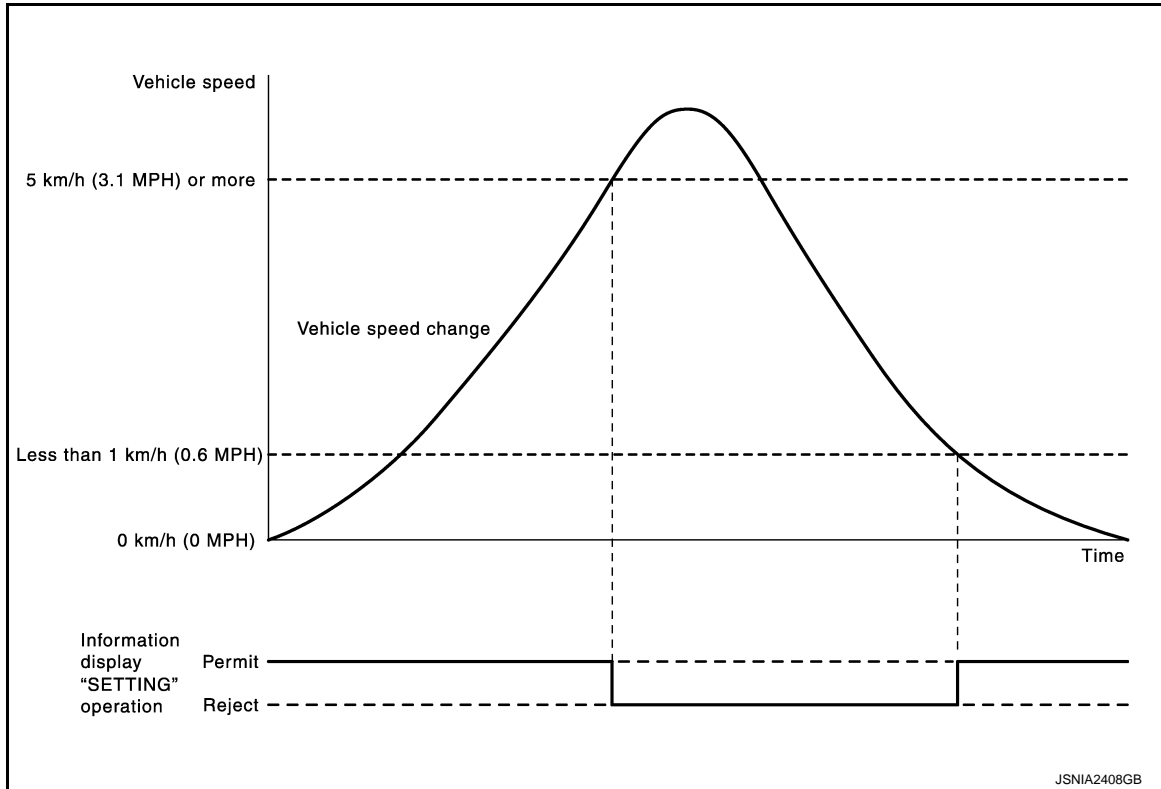
# SYSTEM

## < SYSTEM DESCRIPTION >

- The combination meter judges a vehicle condition based on the following signals and displays a settings-reject indication on the information display.


Signal name	Signal path
Power signal	—
Vehicle speed signal	ABS actuator and electric unit (control unit)  Combination meter

## TIMING CHART




## ODO/TRIP METER

The combination meter calculates mileage, based on the following signals and displays the mileage on the information display.

Signal name	Signal path
Power switch signal	—
Vehicle speed signal	ABS actuator and electric unit (control unit)  Combination meter

## SELECTOR INDICATOR

The combination meter displays the shift position based on the signals below.

Signal name	Signal path
Power switch signal	—
Shift position signal	VCM  Combination meter

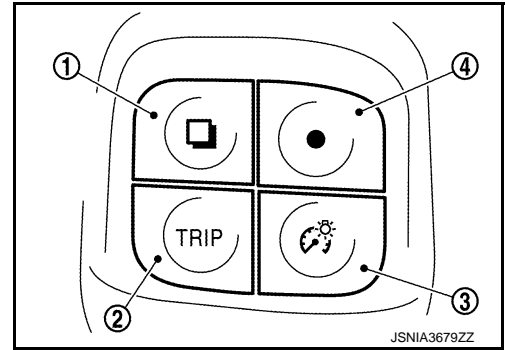
# OPERATION




< SYSTEM DESCRIPTION >

## OPERATION

### Switch Name and Function

INFOID:000000006959388



Switch name	Operation	Description
<div style="display: flex; align-items: center;"> <div style="margin-right: 10px;">  </div> <div>switch (1) (Enter switch)</div> </div>	Press	<ul style="list-style-type: none"> <li>The information display screen can be switched.</li> <li>The item indicated on the information display can be confirmed.</li> </ul>
Trip reset switch (2)		<ul style="list-style-type: none"> <li>The trip meter can be switched between A and B.</li> <li>Trip meter A/B can be reset by pressing and holding the trip reset switch.</li> </ul>
<div style="display: flex; align-items: center;"> <div style="margin-right: 10px;">  </div> <div>switch (3) (Illumination control switch)</div> </div>		An illuminance level of the back light of the combination meter can be adjusted.
<div style="display: flex; align-items: center;"> <div style="margin-right: 10px;">  </div> <div>switch (4) (Select switch)</div> </div>		When plural items are shown on the information display, a selected item can be changed to the other item.

# DIAGNOSIS SYSTEM (COMBINATION METER)

< SYSTEM DESCRIPTION >

## DIAGNOSIS SYSTEM (COMBINATION METER)

### On Board Diagnosis Function

INFOID:000000006959389

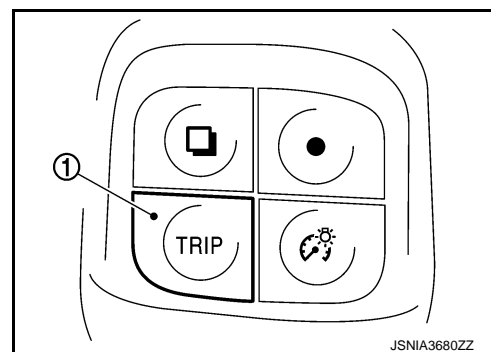
#### ON BOARD DIAGNOSIS ITEM

The combination meter and upper meter allows the following diagnosis items with the on-board diagnosis function.

	Diagnosis item
LCD (liquid crystal display) check	<ul style="list-style-type: none"><li>• Speedometer</li><li>• Power meter</li><li>• Li-ion battery temperature gauge</li><li>• Li-ion battery capacity level gauge</li><li>• Li-ion battery available charge gauge</li><li>• Eco indicator</li><li>• Driving range display</li><li>• Outside air temperature display</li><li>• Clock display</li><li>• Information display</li></ul>

#### METHOD OF STARTING

1. Power switch OFF.
2. Turn the power switch ON while holding down the trip reset switch (1).



3. 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. Make sure that the trip meter displays “0000.0”.
5. Press the trip reset switch at least 3 times (within 7 seconds after power ON).
6. The combination meter and upper meter is turned to self-diagnosis mode.
  - The following items are OFF.
    - Speedometer
    - Power meter
    - Li-ion battery temperature gauge
    - Li-ion battery capacity level gauge
    - Li-ion battery available charge gauge
    - Eco indicator
    - Driving range display
    - Outside air temperature display
    - Clock display
    - Information display

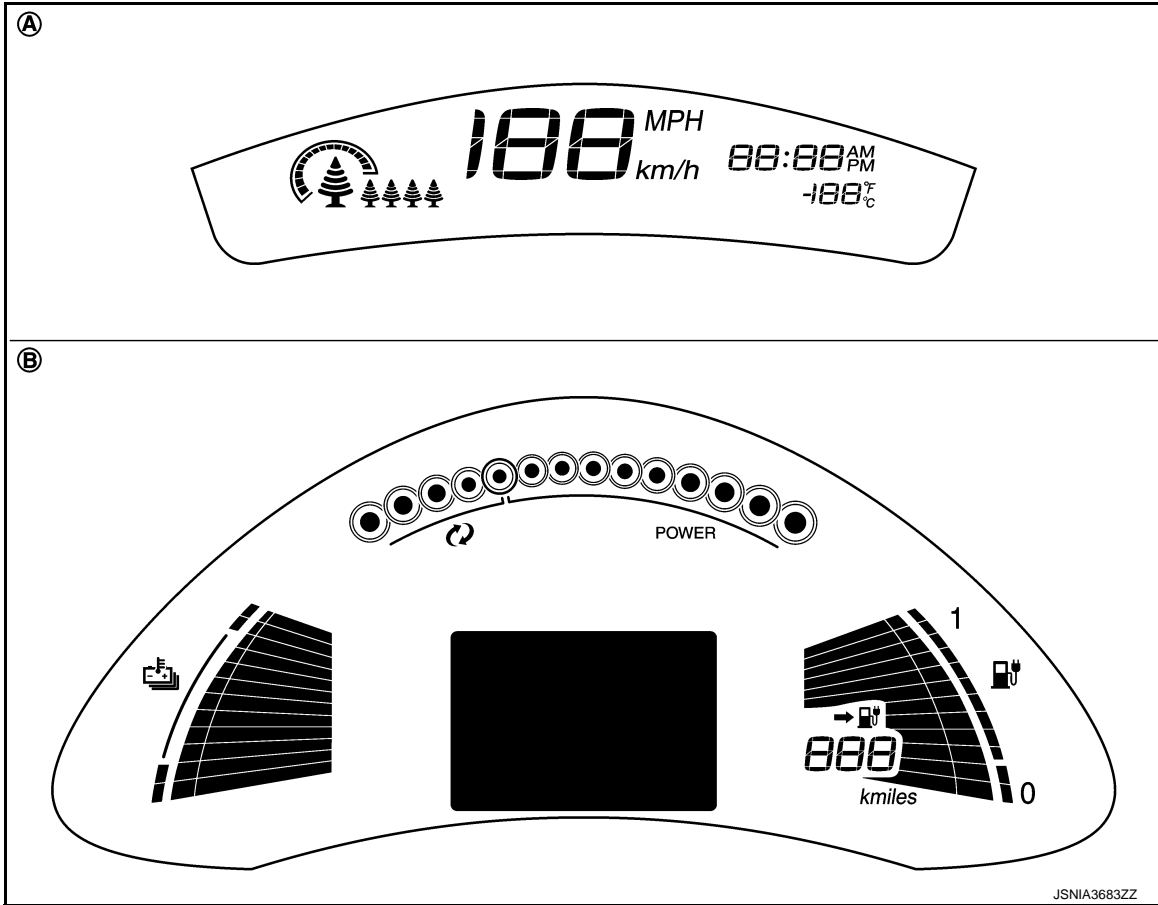
#### NOTE:

- Check combination meter power supply and ground circuit when the self-diagnosis mode of the combination meter does not start. Replace combination meter if power supply and ground circuit are normal.
- If the upper meter self-diagnosis mode does not start, check the upper meter power, ground circuit, and communications line (METER↔UPPER).

# DIAGNOSIS SYSTEM (COMBINATION METER)

## < SYSTEM DESCRIPTION >

7. The segments and information display turn ON while the trip reset switch is depressed.



### NOTE:

- If there is a segment that does not turn ON, replace the combination meter or upper meter.
- If the information display does not turn ON, replace the combination meter.

## CONSULT Function

INFOID:000000006959390

### CONSULT APPLICATION ITEMS

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

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

### SELF DIAG RESULT

Refer to [MWI-61, "DTC Index"](#).

### DATA MONITOR

#### 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]	X	Vehicle speed signal value transmitted to other units via CAN communication. <b>NOTE:</b> 655.35 is displayed when the malfunction signal is received.

## DIAGNOSIS SYSTEM (COMBINATION METER)

### < SYSTEM DESCRIPTION >

Display item [Unit]	MAIN SIGNALS	Description
BUZZER [On/Off]	X	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.
ODO OUTPUT [km/h or mph]		Odometer signal value transmitted to other units via CAN communication.
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 open warning detected from door switch signal received from BCM via CAN communication.
HI-BEAM IND [On/Off]		Status of high beam indicator lamp detected from high beam request signal is received 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.
FR FOG IND [On/Off]		Status of front fog light indicator lamp detected from front fog light request signal is received from BCM via CAN communication.
RR FOG IND [Off]		This item is displayed, but cannot be monitored.
LIGHT IND [On/Off]		Status of tail lamp indicator lamp detected from position light request signal is received from BCM via CAN communication.
CRUISE IND [On/Off]		Status of CRUISE indicator detected from ASCD status signal is received from VCM via CAN communication.
SET IND [On/Off]		Status of SET indicator detected from ASCD status signal is received from ECM via CAN communication.
KEY G/Y W/L [On/Off]		Status of Intelligent Key system malfunction detected from meter display signal is received from BCM via CAN communication.
EPS W/L [On/Off]		Status of EPS warning lamp detected from EPS warning lamp signal is received from EPS control unit via CAN communication.
SLOW IND [On/Off]		Status of power limitation indicator detected from power limitation indication lamp request signal is received from VCM via CAN communication.
READY IND [On/Off]		Status of READY to drive indicator lamp detected from READY to drive indicator lamp request signal is received from VCM via CAN communication.
CHARG W/L [On/Off]		Status of 12-volt battery charge warning lamp detected from 12-volt battery charge warning lamp request signal is received from VCM via CAN communication.
LCD [B&PN, B&P I, ID NG, ROTAT, IN-SRT, BATT, NO KY, OUTKY,LK WN]		Status of Intelligent Key system warning judged from meter display signal received from BCM with CAN communication line.
SHIFT IND [P, R, N, D]		Status of selector indicator display judged based on the shift position signal received from VCM via CAN communication.
BUCKLE SW [On/Off]		Status of seat belt buckle switch (driver side).
BRAKE OIL SW [On/Off]		Status of brake fluid level switch.

A

B

C

D

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F

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J

K

L

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MWI

O

P

# DIAGNOSIS SYSTEM (COMBINATION METER)

## < SYSTEM DESCRIPTION >

Display item [Unit]	MAIN SIGNALS	Description
ENTER SW [On/Off]		Status of enter switch.
SELECT SW [On/Off]		Status of select switch.
PASS BUCKLE SW [On/Off]		Status of seat belt buckle switch (passenger side).
LED LMP R OPEN [On/Off]		Status of front combination lamp RH judged based on LED headlamp (RH) warning signal input from front combination lamp RH.
LED LMP L OPEN [On/Off]		Status of front combination lamp LH judged based on LED headlamp (LH) warning signal input from front combination lamp LH.
CHG CONECT DET [On/Off]		Charge connector connection status judged based plug in signal input from on board charger.
ALL PWER MTER [kw]		Status of current power meter display, judged based on current motor power signal received from VCM via CAN communication.
TPMS PRESS L [On/Off]		Status of check low tire pressure warning detected from TPMS warning lamp signal received from BCM via CAN communication.
ASCD SPD BLINK [On/Off]		Blinking status of ASCD set vehicle speed judged by the ASCD status signal received from VCM via CAN communication.
ASCD STATUS [Off, ASCD, CRUISE, SL ON, SL SET]		Status of ASCD status display judged by the ASCD status signal received from VCM via CAN communication.
ASCD REQ SPD [km/h/Off]		ASCD set vehicle speed value judged by the ASCD status signal received from VCM via CAN communication.
BAT REMAIN [kwh]		Value of Li-ion battery available charge signal received from VCM via CAN communication.
BAT REMAIN LEV [LEV 1-31]		ON segment value of Li-ion battery available charge gauge received from VCM via CAN communication.
BAT CHG CAP LEV [LEV 1-31]		ON segment value of Li-ion battery capacity level gauge received from VCM via CAN communication.
BAT TEMP [°C]		Value of Li-ion battery temperature signal received from VCM via CAN communication.
POWER MAX [kw]		Value of maximum motor output power signal received from VCM via CAN communication.
REGENE MAX [kw]		Value of maximum regenerable power signal received from VCM via CAN communication.
ECO IND1 [0-15]		ON segment value of instant ECO indicator received from VCM via CAN communication.
ECO IND2 [OFF, seg11-seg15+seg24]		ON segment value of ECO tree received from VCM via CAN communication.
SFT W/L [On/Off]		Status of electric shift warning lamp judged based on electric shift warning lamp signal received from VCM via CAN communication.
REGENE W/L [On/Off]		Status of brake system warning lamp judged based on brake system warning lamp signal received from electrically-driven intelligent brake unit via CAN communication.
PKB W/L [On/Off]		Status of electric parking brake indicator judged based on electric parking brake indicator signal received from electric parking brake control model via CAN communication.
EV SYSTEM W/L [On/Off]		Status of EV system warning lamp judged based on EV system warning lamp request signal received from VCM via CAN communication.
SFT P W DSP [On/Off]		This item is displayed, but cannot be monitored.
SFT DSP [Off, PKB, SFT MALF, SFT POSI]		Status of electric shift warning display judged based on electric shift warning message signal received from VCM via CAN communication.



# DIAGNOSIS SYSTEM (COMBINATION METER)

## < SYSTEM DESCRIPTION >

Display item [Unit]	MAIN SIGNALS	Description
PUSH SW W DSP [On/Off]		Status of remove charge connector warning display judged based on plug in warning display signal received from VCM via CAN communication.
IMM CHG DISP [On/Off]		This item is displayed, but cannot be monitored.
POW LIMIT DSP [Off, BAT TMP, MOT TMP, BAT LEVEL]		Status of power limitation warning display judged based on power limitation cause signal received from VCM via CAN communication.
PKB DSP1 [On/Off]		Status of electric parking brake warning display ("Visit dealer").
PKB DSP2 [On/Off]		Status of electric parking brake warning display ("Parking brake not available").
PKB DSP3 [On/Off]		Status of electric parking brake warning display ("Release parking brake").
PKB DSP4 [On/Off]		Status of electric parking brake warning display ("Press brake pedal").
100V CHG TIME [min]		Value of remaining time to charge completion (100 V) signal received from VCM via CAN communication.
200V CHG TIME [min]		Value of remaining time to charge completion (200 V) signal received from VCM via CAN communication.
CHARGE STATE [100V, 200V, QUICK CHG, OFF]		Charge status judged based on charge status signal received from VCM via CAN communication.
DCDC W DSP [OFF, STOP, CRUISE]		Status of DC/DC converter warning display judged based on vehicle stop and parking brake operation request display signal received from VCM via CAN communication.
SFT SIG [On/Off]		Status of electric shift warning signal input from VCM.
PKB SIG [On/Off]		Status of electric parking brake indicator judged based on electric parking brake control module wakeup signal input from electric parking brake control module.
DTE DEF [km]		Value of driving range difference signal received from VCM via CAN communication.
DTE INPUT [km]		Value of driving range signal received from VCM via CAN communication.
DTE 2ND W [On, BLINK, Off]		Status of driving range display ("--") blinking, judged based on driving range flashing request signal received from VCM via CAN communication.
BAT LOW W/L [On/Off]		Status of low battery charge warning lamp judged based on low battery charge warning lamp request signal received from VCM via CAN communication.
ELE COMPR OFF [kw/h]		Value of A/C OFF average electricity consumption for driving range signal received from VCM via CAN communication.
ELE COMPR ON [kw/h]		Value of A/C ON average electricity consumption for driving range signal received from VCM via CAN communication.
DTE BLINK [On/Off]		Status of driving range display blinking, judged based on driving range flashing request signal received from VCM via CAN communication/

**NOTE:**

Some items are not available according to vehicle specification.

### W/L ON HISTORY

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

**NOTE:**

## DIAGNOSIS SYSTEM (COMBINATION METER)

### < SYSTEM DESCRIPTION >

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

#### Display Item

Display item	Description
ABS W/L	Lighting history of ABS warning lamp.
VDC/TCS IND	Lighting history of VDC OFF indicator lamp.
SLIP IND	Lighting history of VDC warning lamp.
BRAKE W/L	Lighting history of brake warning lamp.
DOOR W/L	Lighting history of door open warning.
TRUNK/GLAS-H	This item is displayed, but cannot be monitored.
OIL W/L	This item is displayed, but cannot be monitored.
C-ENG W/L	This item is displayed, but cannot be monitored.
C-ENG2 W/L	This item is displayed, but cannot be monitored.
CRUISE IND	Lighting history of CRUISE indicator.
SET IND	Lighting history of SET indicator.
CRUISE W/L	This item is displayed, but cannot be monitored.
BA W/L	This item is displayed, but cannot be monitored.
O/D OFF IND	This item is displayed, but cannot be monitored.
ATC/T-AMT W/L	This item is displayed, but cannot be monitored.
ATF TEMP W/L	This item is displayed, but cannot be monitored.
CVT IND	This item is displayed, but cannot be monitored.
SPORT IND	This item is displayed, but cannot be monitored.
4WD W/L	This item is displayed, but cannot be monitored.
FUEL W/L	This item is displayed, but cannot be monitored.
WASHER W/L	This item is displayed, but cannot be monitored.
AIR PRES W/L	Lighting history of low tire pressure warning lamp.
KEY G/Y W/L	This item is displayed, but cannot be monitored.
KEY R W/L	This item is displayed, but cannot be monitored.
KEY KNOB W/L	This item is displayed, but cannot be monitored.
EPS W/L	Lighting history of EPS warning lamp.
e-4WD	This item is displayed, but cannot be monitored.
AFS OFF IND	This item is displayed, but cannot be monitored.
4WAS/RAS W/L	This item is displayed, but cannot be monitored.
HDC W/L	This item is displayed, but cannot be monitored.
SYS FAIL W/L	This item is displayed, but cannot be monitored.
SFT POSI W/L	This item is displayed, but cannot be monitored.
HV BAT W/L	This item is displayed, but cannot be monitored.
HEV BRAKE W/L	This item is displayed, but cannot be monitored.
SFT OPER W/L	This item is displayed, but cannot be monitored.
LANE W/L	This item is displayed, but cannot be monitored.
CHAGE W/L	Lighting history of 12-volt battery charge warning lamp.
OIL LEV LOW	This item is displayed, but cannot be monitored.
DPF W/L	This item is displayed, but cannot be monitored.
TRAILER IND	This item is displayed, but cannot be monitored.

# DIAGNOSIS SYSTEM (COMBINATION METER)

## < SYSTEM DESCRIPTION >

Display item	Description	
RUN FLAT W/L	This item is displayed, but cannot be monitored.	A
E-SUS W/L	This item is displayed, but cannot be monitored.	
LAUNCH CNT W/L	This item is displayed, but cannot be monitored.	B
BSW W/L	This item is displayed, but cannot be monitored.	
FILTER W/L	This item is displayed, but cannot be monitored.	
BRAKE PAD W/L	This item is displayed, but cannot be monitored.	C
REGENE BRAKE W/L	Lighting history of brake system warning lamp.	
SLOW	Lighting history of power limitation indicator.	D
LED LAMP W/L	Lighting history of headlamp warning lamp.	
PBW W/L	Lighting history of electric parking brake indicator.	E

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# COMBINATION METER

< ECU DIAGNOSIS INFORMATION >

## ECU DIAGNOSIS INFORMATION

### COMBINATION METER

Reference Value

INFOID:000000006959391

VALUES ON THE DIAGNOSIS TOOL

Monitor item	Condition		Value/Status
SPEED METER [km/h]	Power switch ON	While driving	Input value of vehicle speed signal (CAN communication signal) <b>NOTE:</b> 655.35 is displayed when the malfunction signal is received
SPEED OUTPUT [km/h]	Power switch ON	While driving	Output value of vehicle speed signal (CAN communication signal) <b>NOTE:</b> 655.35 is displayed when the malfunction signal is received
BUZZER	Power switch ON	Buzzer ON	On
		Buzzer OFF	Off
ODO OUTPUT [km/h or mph]	Power switch ON	—	Output value of odometer signal (CAN communication signal)
ABS W/L	Power switch ON	ABS warning lamp ON	On
		ABS warning lamp OFF	Off
VDC/TCS IND	Power switch ON	VDC OFF indicator lamp ON	On
		VDC OFF indicator lamp OFF	Off
SLIP IND	Power switch ON	VDC warning lamp ON	On
		VDC warning lamp OFF	Off
BRAKE W/L	Power switch ON	Brake warning lamp ON	On
		Brake warning lamp OFF	Off
DOOR W/L	Power switch ON	Door open warning ON	On
		Door open warning OFF	Off
HI-BEAM IND	Power switch ON	High-beam indicator lamp ON	On
		High-beam indicator lamp OFF	Off
TURN IND	Power switch ON	Turn indicator lamp ON	On
		Turn indicator lamp OFF	Off
FR FOG IND	Power switch ON	Front fog lamp indicator lamp ON	On
		Front fog lamp indicator lamp OFF	Off
RR FOG IND	Power switch ON	<b>NOTE:</b> This item is displayed, but cannot be moni- tored	Off
LIGHT IND	Power switch ON	Tail lamp indicator lamp ON	On
		Tail lamp indicator lamp OFF	Off
CRUISE IND	Power switch ON	CRUISE indicator ON	On
		CRUISE indicator OFF	Off
SET IND	Power switch ON	SET indicator ON	On
		SET indicator OFF	Off
KEY G/Y W/L	Power switch ON	During Intelligent Key warning malfunction indication	On
		Other than the above	Off

# COMBINATION METER

## < ECU DIAGNOSIS INFORMATION >

Monitor item	Condition		Value/Status	
EPS W/L	Power switch ON	EPS warning lamp ON	On	A
		EPS warning lamp OFF	Off	
SLOW IND	Power switch ON	Power limitation indicator lamp ON	On	B
		Power limitation indicator lamp OFF	Off	
READY IND	Power switch ON	READY to drive indicator lamp ON	On	C
		READY to drive indicator lamp OFF	Off	
CHAGE W/L	Power switch ON	12-volt battery charge warning lamp ON	On	D
		12-volt battery charge warning lamp OFF	Off	
LCD	Power switch ON	During engine start information indication	B&P I	E
	Power switch ACC	During engine start information indication	B&P N	F
	Power switch LOCK	During key ID warning indication	ID NG	G
	Power switch LOCK	During steering lock information indication	ROTAT	H
	Power switch LOCK	During P position warning indication	SFT P	I
	Power switch LOCK	During Intelligent Key insert information indication	INSRT	J
	Power switch LOCK	During Intelligent Key low battery warning indication	BATT	K
	Power switch ON	During take away warning indication	NO KY	L
	Power switch LOCK	During key warning indication	OUTKY	M
	Power switch ON	During ACC warning indication	LK WN	
SHIFT IND	Power switch ON	During the indication of "P" by shift position indicator	P	
		During the indication of "R" by shift position indicator	R	
		During the indication of "N" by shift position indicator	N	
		During the indication of "D" by shift position indicator	D	
BUCKLE SW	Power switch ON	Driver seat belt not fastened	On	MWI
		Driver seat belt fastened	Off	
BRAKE OIL SW	Power switch ON	Brake fluid level switch ON	On	
		Brake fluid level switch OFF	Off	
PASS BUCKLE SW	Power switch ON	Passenger seat belt not fastened	On	O
		Passenger seat belt fastened	Off	
ENTER SW	Power switch ON	When enter switch is pressed	On	P
		Other than above	Off	
SELECT SW	Power switch ON	When select switch is pressed	On	
		Other than above	Off	
LED LMP R OPEN	Power switch ON	Front combination lamp RH malfunction	On	
		Front combination lamp RH normal	Off	

# COMBINATION METER

## < ECU DIAGNOSIS INFORMATION >

Monitor item	Condition		Value/Status
LED LMP L OPEN	Power switch ON	Front combination lamp LH malfunction	On
		Front combination lamp LH normal	Off
CHG CONECT DET	Power switch ON	Charge connector connected	On
		Charge connector not connected	Off
ALL PWER MTER [kw]	Power switch ON	While driving	Input value of current power signal
TPMS PRESS L	Power switch ON	During check tire pressure warning indication	On
		Other than the above	Off
ASCD STATUS	Power switch ON	ASCD and speed limiter system OFF	Off
		ASCD system ON	ON
		ASCD set vehicle speed	CRUISE
		Speed limiter system ON	SL ON
		Speed limiter set vehicle speed	SL SET
ASCD SPD BLNK	Power switch ON	Set vehicle speed indicator blinking	On
		Set vehicle speed indicator not blinking	Off
ASCD REQ SPD [km/h or Off]	Power switch ON	While driving	Same value as ASCD set vehicle speed.
BAT REMIN [kwh]	Power switch ON	—	Input value of Li-ion battery available charge signal
BAT REMIN LEV [LEV 1-31]	Power switch ON	—	Displays number of ON segments of Li-ion battery available charge gauge.
BAT CHG CAP LEV [LEV 1-31]	Power switch ON	—	Displays number of ON segments of Li-ion battery capacity level gauge.
BAT TEMP [°C]	Power switch ON	—	Input value of Li-ion battery temperature signal
POWER MAX [kw]	Power switch ON	While driving	Input value of maximum motor output power signal
REGENE MAX [kw]	Power switch ON	While driving	Input value of maximum regenerable power signal
ECO IND1 [0-15]	Power switch ON	—	Displays number of ON segments of instant ECO indicator.
ECO IND2 [Off,seg11-seg15+seg24]	Power switch ON	—	Displays number of ON segments of ECO tree.
SFT W/L	Power switch ON	Electric shift warning lamp ON	On
		Electric shift warning lamp OFF	Off
REGENE W/L	Power switch ON	Brake system warning lamp ON	On
		Brake system warning lamp OFF	Off
PKB W/L	Power switch ON	Electric parking brake indicator ON	On
		Electric parking brake indicator OFF	Off
EV SYSTEM W/L	Power switch ON	EV system warning lamp ON	On
		EV system warning lamp OFF	Off
SFT P W DSP	Power switch ON	<b>NOTE:</b> This item is displayed, but cannot be monitored	Off

# COMBINATION METER

## < ECU DIAGNOSIS INFORMATION >

Monitor item	Condition		Value/Status	
SFT DSP	Power switch ON	During electric shift warning (“when parked apply parking brake”) indication	PKB	A
		During electric shift warning (“T/M system malfunction visit dealer”) indication	SIFT MALF	B
		During electric shift warning (“check position of shift lever”) indication	SFT POSI	
		Other than the above	Off	C
PUSH SW W DSP	Power switch ON	During remove charge connector warning indication	On	D
		Other than the above	Off	
IMM CHG DISP	Power switch ON	<b>NOTE:</b> This item is displayed, but cannot be monitored	Off	E
POW LIMIT DISP	Power switch ON	During power limitation warning (when Li-ion battery temperature is low) indication	BAT TMP	F
		During power limitation warning (when motor temperature is over heat) indication	MOT TMP	
		During power limitation warning (when Li-ion battery remaining energy is low) indication	BAT LEV L	G
		During power limitation warning (other) indication	OTHER	H
		Other than the above	Off	
PKB DISP1	Power switch ON	During electric parking brake warning (“visit dealer”) indication	On	I
		Other than the above	Off	
PKB DISP2	Power switch ON	During electric parking brake warning (“parking brake not available”) indication	On	J
		Other than the above	Off	
PKB DISP3	Power switch ON	During electric parking brake warning (“release parking brake”) indication	On	K
		Other than the above	Off	
PKB DISP4	Power switch ON	During electric parking brake warning (“press brake pedal”) indication	On	L
		Other than the above	Off	
100V CHG TIME	Power switch ON	—	Displays 100 V charging time.	M
200V CHG TIME	Power switch ON	—	Displays 200 V charging time.	MWI
CHARGE STATUS	Power switch ON	100 V charging	100 V	
		200 V charging	200 V	
		In Quick Charging	QICK CHG	O
		Other than the above	Off	
DCDC W DISP	Power switch ON	During DC/DC converter warning (“stop vehicle”) indication	STOP	P
		During DC/DC converter warning (“apply parking brake”) indication	CRUISE	
		Other than the above	Off	
SFT SIG	Power switch ON	Electric shift warning lamp ON	On	
		Electric shift warning lamp OFF	Off	

# COMBINATION METER

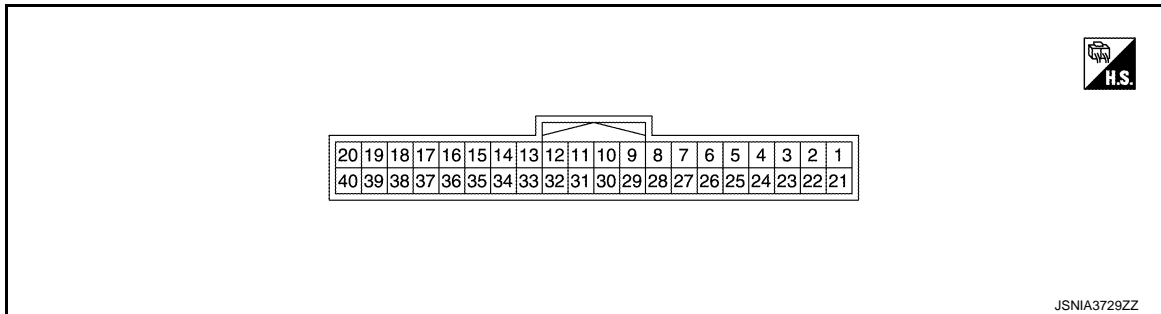
## < ECU DIAGNOSIS INFORMATION >

Monitor item	Condition		Value/Status
PKB SIG	Power switch ON	Electric parking brake ON	On
		Electric parking brake OFF	Off
DTE DEF [km]	Power switch ON	—	Input value of driving range difference signal
DTE INPUT [km]	Power switch ON	—	Input value of driving range signal
DTE 2ND W	Power switch ON	Driving range display “— — —” display	On
		Driving range display “— — —” blinking	BLINK
		Other than the above	Off
BAT LOW W/L	Power switch ON	Low battery charge warning lamp ON	On
		Low battery charge warning lamp OFF	Off
ELE COMPR OFF [km]	Power switch ON	—	Input value of A/C OFF average electricity consumption for driving range signal
ELE COMPR ON [km]	Power switch ON	—	Input value of A/C ON average electricity consumption for driving range signal
DTE BLINK	Power switch ON	Driving range display blinking	On
		Other than the above	Off

**NOTE:**

Some items are not available according to vehicle specification.

### TERMINAL LAYOUT



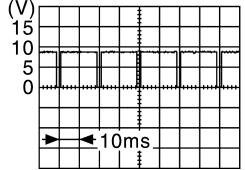
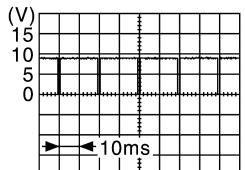



### PHYSICAL VALUES

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	-	Signal name	Input/ Output			
1 (LG)	Ground	Battery power supply	Input	Power switch OFF	—	Battery voltage
2 (R)	Ground	Battery power supply (for upper meter)	Output	Power switch OFF	—	Battery voltage
3 (GR)	Ground	Power switch supply	Input	Power switch ON	—	Battery voltage
4 (BR)	Ground	Power switch supply (for upper meter)	Output	Power switch ON	—	Battery voltage
5 (B)	Ground	Ground	—	Power switch ON	—	0 V



# COMBINATION METER

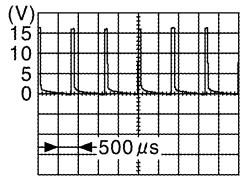
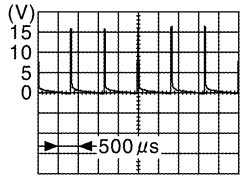
## < ECU DIAGNOSIS INFORMATION >

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	-	Signal name	Input/ Output			
6 (B)	Ground	Ground	—	Power switch ON	—	0 V
7 (V)	Ground	Electric shift warning signal	Input	Power switch ON	Electric shift warning lamp ON	0 V
					Electric shift warning lamp OFF	12 V
9 (G)	Ground	Plug in signal	Input	Power switch ON	Charge connector connect- ed	0 V
					Charge connector not con- nected	12 V
10 (L)	Ground	Communication signal (METER → VSP)	Output	Power switch ON	—	<p><b>NOTE:</b> Reference waveform</p>  <p style="text-align: right; font-size: small;">JSMIA0536GB</p>
11 (P)	Ground	Communication signal (VSP → METER)	Input	Power switch ON	—	<p><b>NOTE:</b> Reference waveform</p>  <p style="text-align: right; font-size: small;">JSMIA0537GB</p>
13 (LG)	12 (V)	Enter switch signal	Input	Power switch ON	When  switch (enter switch) is pressed	0 V
					Other than the above	5 V
14 (W)	12 (V)	Select switch signal	Input	Power switch ON	When  switch (select switch) is pressed	0 V
					Other than the above	5 V
15 (BR)	12 (V)	Trip reset switch signal	Input	Power switch ON	When trip reset switch is pressed	0 V
					Other than the above	5 V
16 (BR)	12 (V)	Illumination control switch signal	Input	Power switch ON	When  switch (illumina- tion control switch) is pressed	0 V
					Other than the above	5 V

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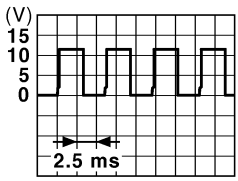
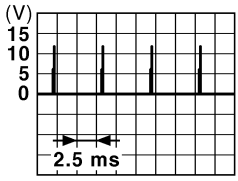
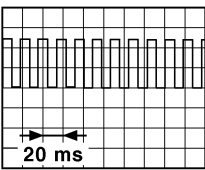
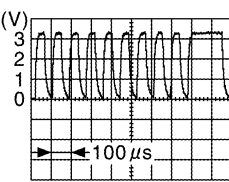
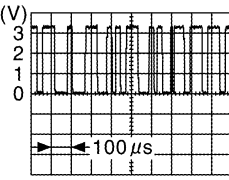
# COMBINATION METER

## < ECU DIAGNOSIS INFORMATION >

Terminal No. (Wire color)		Description		Condition	Value (Approx.)	
+	-	Signal name	Input/ Output			
17 (V)	Ground	Illumination control signal (for upper meter)	Output	Power switch ON	<ul style="list-style-type: none"> <li>Lighting switch 1ST position</li> <li>When meter illumination is maximum</li> </ul>  <p style="text-align: right; font-size: small;">JSNIA3745GB</p>	
					<ul style="list-style-type: none"> <li>Lighting switch 1ST position</li> <li>When meter illumination is step 6</li> </ul>  <p style="text-align: right; font-size: small;">JSNIA3746GB</p>	
					<ul style="list-style-type: none"> <li>Lighting switch 1ST position</li> <li>When meter illumination is minimum</li> </ul>	0 V
18 (P)	—	CAN-L	—	—	—	
19 (L)	—	CAN-H	—	—	—	
20 (V)	Ground	Seat belt buckle switch signal (passenger side)	Input	Power switch ON	<ul style="list-style-type: none"> <li>When getting in the passenger seat</li> <li>When passenger seat belt is fastened</li> </ul>	12 V
					<ul style="list-style-type: none"> <li>When getting in the passenger seat</li> <li>When passenger seat belt is unfastened</li> </ul>	0 V
22 (GR)	Ground	Ground (for upper meter)	—	Power switch ON	—	0 V
24 (BR)	Ground	Electric parking brake control module wakeup signal	Input	Power switch ON	Electric parking brake applied	0 V
					Electric parking brake released	12 V
25 (SB)	Ground	Brake fluid level switch signal	Input	Power switch ON	Brake fluid level is normal	12 V
					The brake fluid level is lower than the low level	0 V

# COMBINATION METER

## < ECU DIAGNOSIS INFORMATION >

Terminal No. (Wire color)		Description		Condition	Value (Approx.)
+	-	Signal name	Input/ Output		
26 (B)	Ground	Illumination control signal	Output	Power switch ON	12 V
				Power switch ON	 <p style="text-align: right; font-size: small;">JPNIA1686GB</p>
				Power switch ON	 <p style="text-align: right; font-size: small;">JPNIA1687GB</p>
27 (R)	Ground	Air bag signal	Input	Power switch ON	Air bag warning lamp ON 12 V Air bag warning lamp OFF 0 V
28 (R)	Ground	Security signal	Input	Power switch ON	Security indicator lamp ON 0 V Security indicator lamp OFF 12 V
				Power switch ON	Security indicator lamp OFF 12 V
30 (GR)	Ground	Vehicle speed signal (8-pulse)	Output	Power switch ON	Speedometer operated [When vehicle speed is approx. 40 km/h (25 MPH)]  <div style="display: flex; align-items: center;"> <div style="margin-right: 5px;">NOTE:</div> <div>The maximum voltage varies depending on the specification (destination unit).</div> </div>  <p style="text-align: right; font-size: small;">JSNIA0012GB</p>
32 (W)	Ground	Communication signal (METER → UPPER)	Output	Power switch ON	—  <div style="display: flex; align-items: center;"> <div style="margin-right: 5px;">NOTE:</div> <div>Reference waveform</div> </div>  <p style="text-align: right; font-size: small;">JSNIA3767GB</p>
33 (LG)	Ground	Communication signal (UPPER → METER)	Input	Power switch ON	—  <div style="display: flex; align-items: center;"> <div style="margin-right: 5px;">NOTE:</div> <div>Reference waveform</div> </div>  <p style="text-align: right; font-size: small;">JSNIA3768GB</p>

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# COMBINATION METER

## < ECU DIAGNOSIS INFORMATION >

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	-	Signal name	Input/ Output			
34 (L)	Ground	Plug in indicator lamp signal	Input	Power switch ON	Plug in indicator lamp ON	0 V
					Plug in indicator lamp OFF	12 V
38 (V)	Ground	LED headlamp (RH) warning signal	Input	Power switch ON	Front combination lamp RH malfunction	12 V
					Front combination lamp RH normal	0 V
39 (LG)	Ground	LED headlamp (LH) warning signal	Input	Power switch ON	Front combination lamp LH malfunction	12 V
					Front combination lamp LH normal	0 V
40 (Y)	Ground	Seat belt buckle switch signal (driver side)	Input	Power switch ON	When driver seat belt is fastened	12 V
					When driver seat belt is unfastened	0 V

## Fail-Safe

INFOID:000000006959392

### FAIL-SAFE

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

Function		Specifications
Speedometer		The display turns OFF by suspending communication.
Power meter		
Li-ion battery temperature gauge		
Li-ion battery capacity level gauge		
Li-ion battery available charge gauge		
Eco indicator		
Driving range display		The display turns "--" by suspending communication.
Outside air temperature display		The last result calculated during normal condition is indicated.
Illumination control		When suspending communication, changes to nighttime mode.
Information display	Odo/trip meter	An indicated value is maintained at communications blackout.
	Selector indicator	The display turns OFF by suspending communication.
	Li-ion low battery charge warning display	The display turns ON by suspending communication.
	Electric shift warning display	
	Electric parking brake warning display	
Other than the above	The display turns OFF by suspending communication.	
Buzzer		The buzzer turns OFF by suspending communication.

# COMBINATION METER

## < ECU DIAGNOSIS INFORMATION >

	Function	Specifications	
Warning lamp/indicator lamp	ABS warning lamp	The lamp turns ON by suspending communication.	A
	VDC warning lamp		B
	Brake warning lamp		C
	Front fog lamp indicator lamp		D
	Brake system warning lamp		
	EPS warning lamp		
	Low battery charge warning lamp		
	Electric shift warning lamp		
	TPMS warning lamp		
	Electric parking brake indicator lamp	When suspending communication, blinking.	E
	High beam indicator lamp	The lamp turns OFF by suspending communication.	F
	Turn signal indicator lamp		G
	VDC OFF indicator lamp		
	Tail lamp indicator lamp		
	READY to drive indicator lamp		
	12-volt battery charge warning lamp		
Power limitation indicator lamp			
EV system warning lamp		H	

## DTC Index

INFOID:000000006959393

Display contents of CONSULT	Diagnostic item is detected when...	Refer to	
CAN COMM CIRCUIT [U1000]	When combination meter is not transmitting or receiving CAN communication signal for 2 seconds or more.	<a href="#">MWI-74</a>	I
CONTROL UNIT (CAN) [U1010]	When detecting error during the initial diagnosis of the CAN controller of combination meter.	<a href="#">MWI-75</a>	J
VEHICLE SPEED [B2205]	The abnormal vehicle speed signal is input from the ABS actuator and electric unit (control unit) for 2 seconds or more.	<a href="#">MWI-76</a>	K
SHIFT SIGNAL [B232A]	When an electric shift warning signal received from VCM does not become active within 3 seconds after power switch ON.	<a href="#">MWI-77</a>	L
PARKING BRAKE SIGNAL [B232B]	When an electric parking brake control module wakeup signal received from the electric parking brake control module remains out of sync with an electric parking brake indicator lamp signal continuously for 2 seconds or more	<a href="#">MWI-79</a>	M

MWI

# UPPER METER

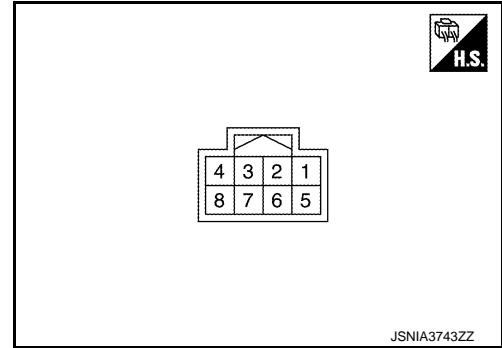
< ECU DIAGNOSIS INFORMATION >

## UPPER METER

Reference Value

INFOID:000000006959394

TERMINAL LAYOUT

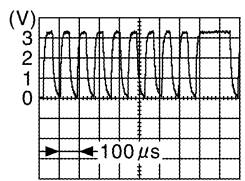


## PHYSICAL VALUES

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	-	Signal name	Input/ Output			
1 (R)	Ground	Battery power supply	Input	Power switch OFF	—	Battery voltage
2 (BR)	Ground	Power switch supply	Input	Power switch ON	—	Battery voltage
3 (V)	Ground	Illumination control signal (for upper meter)	Input	Power switch ON	<ul style="list-style-type: none"> <li>Lighting switch 1ST position</li> <li>When meter illumination is maximum</li> </ul>	
					<ul style="list-style-type: none"> <li>Lighting switch 1ST position</li> <li>When meter illumination is step 6</li> </ul>	
					<ul style="list-style-type: none"> <li>Lighting switch 1ST position</li> <li>When meter illumination is minimum</li> </ul>	0 V
4 (LG)	Ground	Communication signal (UPPER → METER)	Output	Power switch ON	—	<p><b>NOTE:</b> Reference waveform</p>

# UPPER METER

## < ECU DIAGNOSIS INFORMATION >

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	-	Signal name	Input/ Output			
7 (GR)	Ground	Ground	—	Power switch ON	—	0 V
9 (W)	Ground	Communication signal (METER → UPPER)	Output	Power switch ON	—	<p><b>NOTE:</b> Reference waveform</p>  <p style="text-align: right; font-size: small;">JSNIA3767GB</p>

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MWI

# METER SYSTEM

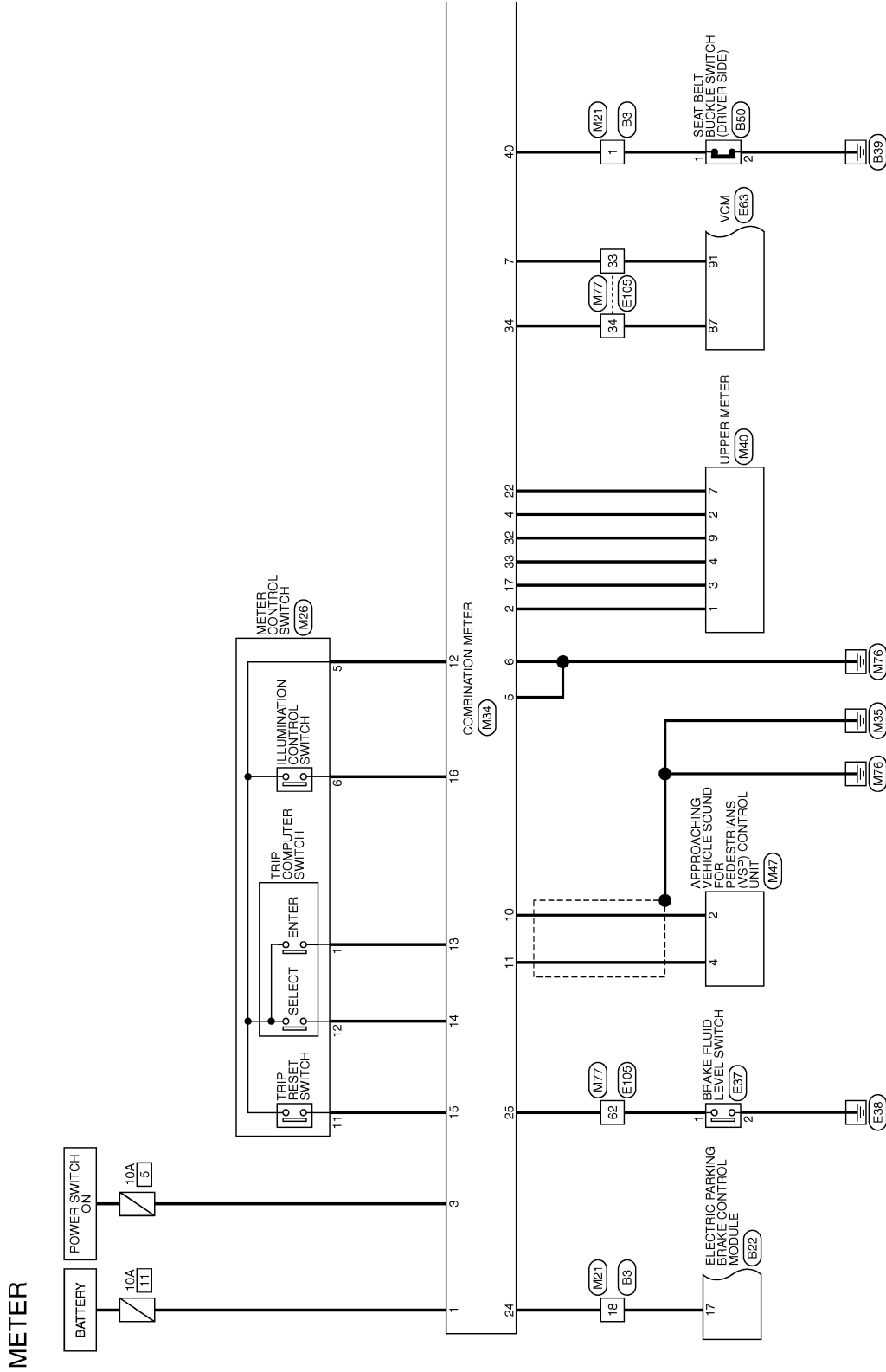
< WIRING DIAGRAM >

## WIRING DIAGRAM

### METER SYSTEM

Wiring Diagram

INFOID:000000006959395



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

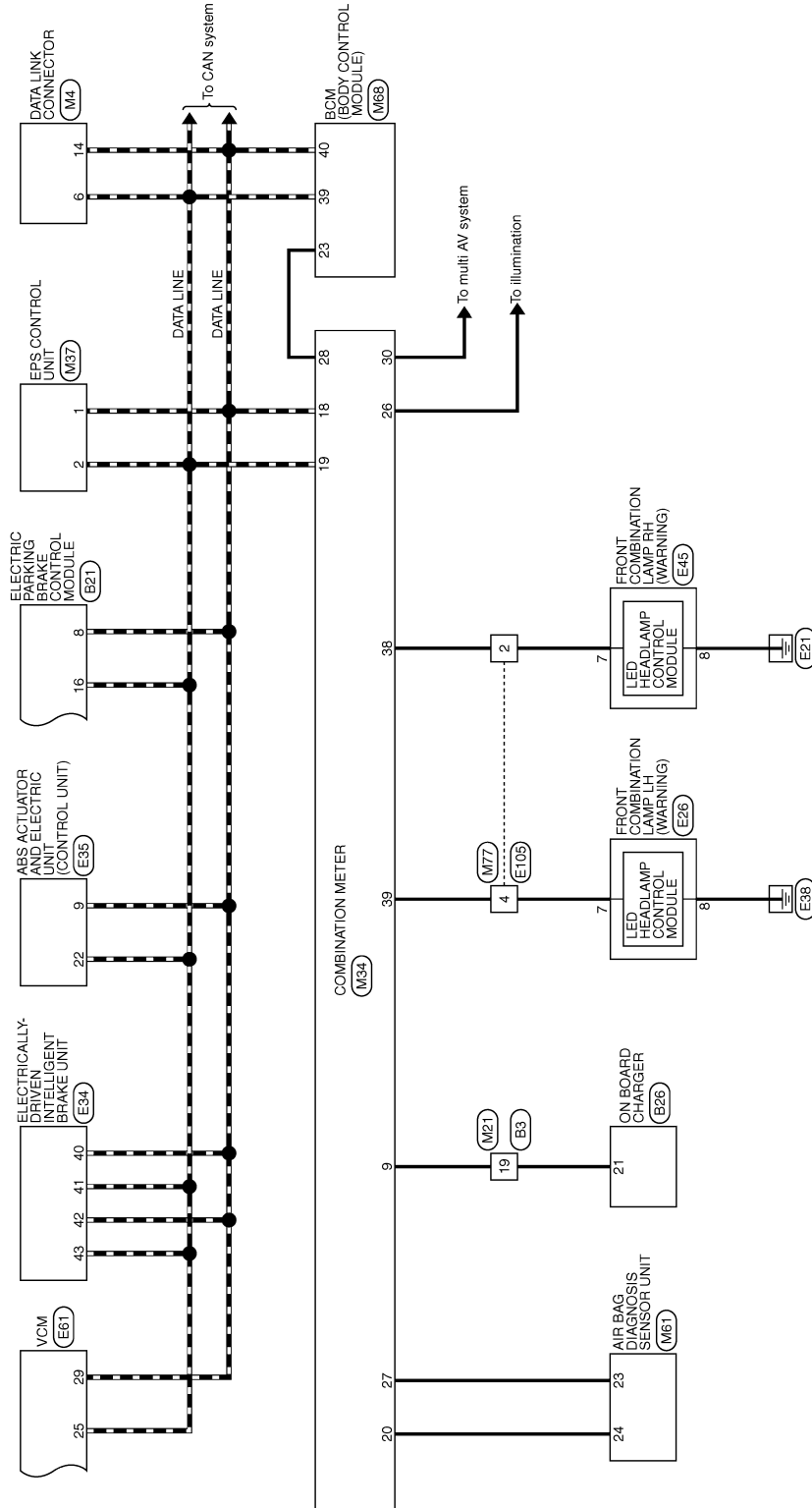
2010/10/29

JCNWA3655GB



# METER SYSTEM

< WIRING DIAGRAM >



JCNWA3656GB

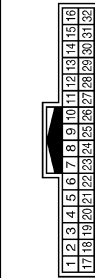
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# METER SYSTEM

< WIRING DIAGRAM >

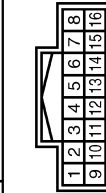
## METER

Connector No.	B3
Connector Name	WIRE TO WIRE
Connector Type	TH22MW-NH



Terminal No.	Color of Wire	Signal Name [Specification]
1	R	-
3	SHIELD	-
4	B	-
5	W	-
6	R	-
11	G	-
15	L	-
16	G	-
18	L	-
19	BR	-
20	V	-
22	B	-
27	L	-
31	L	-
32	P	-

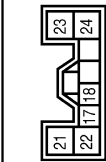
Connector No.	B21
Connector Name	ELECTRIC PARKING BRAKE CONTROL MODULE
Connector Type	TH18FV-NH



Terminal No.	Color of Wire	Signal Name [Specification]
1	W	TENSION SENSOR1 SIGNAL
2	LG	TENSION SENSOR POWER SUPPLY
3	R	TENSION SENSOR2 SIGNAL
5	GR	POWER SWITCH ON
7	V	CONTROL MODULE BATTERY
8	P	CAN-H
9	L	RELEASE SW SIGNAL

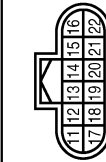
10	W	ANALOG SW POWER SUPPLY
11	B	TENSION SENSOR GND
12	Y	ANALOG SW GND
13	SB	BRAKE SW SIGNAL
16	L	SHIELD GND CAN-H

Connector No.	B22
Connector Name	ELECTRIC PARKING BRAKE CONTROL MODULE
Connector Type	TB04FV-TM4



Terminal No.	Color of Wire	Signal Name [Specification]
17	L	ELECTRIC PARKING BRAKE CONTROL MODULE WAKEUP SIGNAL
18	P	PARKING BRAKE SW INDICATOR SIGNAL
21	L	MOTOR POWER SUPPLY (+)
22	R	PARKING BRAKE ACTUATOR BATTERY
23	G	MOTOR POWER SUPPLY (-)
24	B	GND

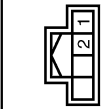
Connector No.	B25
Connector Name	ON BOARD CHARGER
Connector Type	RH12FB



Terminal No.	Color of Wire	Signal Name [Specification]
11	Y	BATTERY POWER SUPPLY
12	W	BATTERY POWER SUPPLY
13	V	POWER ON POWER SUPPLY
14	P	NORMAL CHARGE RELAY +
15	LG	NORMAL CHARGE RELAY -
16	L	QUICK CHARGE RELAY +
17	SB	QUICK CHARGE RELAY -
18	GR	EV ACTIVATION REQUEST SIGNAL

19	L	EV SYSTEM CAN-H
20	G	EV SYSTEM CAN-L
21	BR	PLUG IN SIGNAL
22	B	GROUND

Connector No.	B50
Connector Name	SEAT BELT BUCKLE SWITCH (DRIVER SIDE)
Connector Type	TH04FV-NH



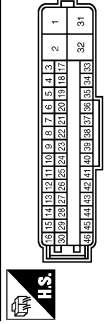
Terminal No.	Color of Wire	Signal Name [Specification]
1	R	-
2	B	-

Connector No.	B26
Connector Name	FRONT COMBINATION LAMP LH
Connector Type	RS08FGY-PR



Terminal No.	Color of Wire	Signal Name [Specification]
1	G	-
2	O	-
3	Y	-
4	B/W	-
5	GR	-
6	L	-
7	LG	-
8	B/W	-

Connector No.	E34
Connector Name	ELECTRICALLY-DRIVEN INTELLIGENT BRAKE UNIT
Connector Type	SAZ42FB-SJZ4-S



Terminal No.	Color of Wire	Signal Name [Specification]
1	R	MOTOR BATTERY
2	R	MOTOR BATTERY
5	L/O	STROKE SENSOR GND
7	W	PRESS SENSOR SIGNAL
8	O	BRAKE POWER SUPPLY BACKUP UNIT WAKEUP SIGNAL
10	W	BRAKE POWER SUPPLY BACKUP COMM.
11	V	CONTROL MODULE BATTERY
13	SB	STOP LAMP SW SIGNAL
19	W/L	STROKE SENSOR POWER SUPPLY
21	B	PRESS SENSOR POWER SUPPLY
22	W	BUZZER SIGNAL
24	B	BRAKE COMM
25	R	BUZZER POWER SUPPLY
26	V	POWER SWITCH ON
31	B	GND
32	W	BRAKE POWER SUPPLY BACKUP UNIT BACKUP SIGNAL
35	L/Y	STROKE SENSOR1 SIGNAL
37	G	STROKE SENSOR2 SIGNAL
38	R	PRESS SENSOR GND
40	P	CAN2-L
41	L	CAN-H
42	P	CAN1-L
43	L	CAN1-H

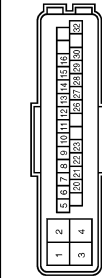
JCNWA3657GB

# METER SYSTEM

< WIRING DIAGRAM >

## METER

Connector No.	E63
Connector Name	ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)
Connector Type	RH28FB-NU4-DH



Terminal No.	Color of Wire	Signal Name [Specification]
1	G	MOTOR BATTERY
2	R	VALVE BATTERY
3	B	GND
4	B	GND
5	P	ESP OFF SW SIGNAL
8	O	BRAKE SW SIGNAL
9	L/O	PRESS SENSOR SIGNAL
8	SB	STOP LAMP SW SIGNAL
9	P	CAN-L
10	W/L	PRESS SENSOR POWER SUPPLY
11	BR	RR RH WHEEL SENSOR POWER SUPPLY
12	W	FR RH WHEEL SENSOR SIGNAL
13	G	G SENSOR POWER SUPPLY
14	B	G SENSOR SIGNAL (-)
15	LG	RR RH WHEEL SENSOR SIGNAL
16	V	POWER SWITCH ON
20	B	BRAKE COMM
21	B	FR RH WHEEL SENSOR POWER SUPPLY
22	L	CAN-H
23	R	FR LH WHEEL SENSOR POWER SUPPLY
26	B	RR LH WHEEL SENSOR POWER SUPPLY
27	Y	FR LH WHEEL SENSOR SIGNAL
28	R	G SENSOR GND
29	Y	G SENSOR SIGNAL (-)
30	G	RR LH WHEEL SENSOR SIGNAL
32	L/O	PRESS SENSOR GND

Connector No.	E37
Connector Name	BRAKE FLUID LEVEL SWITCH
Connector Type	YV2ZFGY



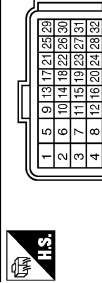
Terminal No.	Color of Wire	Signal Name [Specification]
1	BR	-
2	B/W	-

Connector No.	E45
Connector Name	FRONT COMBINATION LAMP RH
Connector Type	RS0BFGY-PR



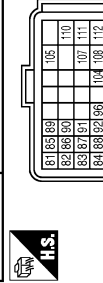
Terminal No.	Color of Wire	Signal Name [Specification]
1	Y	-
2	O	-
3	G	-
4	B/Y	-
5	BR	-
6	P	-
7	R	-
8	B/Y	-

Connector No.	E61
Connector Name	VCM
Connector Type	RH24FGY-RZ8-R-RH



Terminal No.	Color of Wire	Signal Name [Specification]
1	G	POWER ON POWER SUPPLY
4	B/R	GROUND
5	SB	A/C RELAY
6	R	BATTERY POWER SUPPLY
7	W	SSOFF RELAY
8	B/R	GROUND
9	L	EV SYSTEM CAN-H
13	G	EV SYSTEM CAN-L
15	O	ASCD BRAKE SWITCH SIGNAL
18	SB	STOP LAMP SW SIGNAL
21	R	POWER ON POWER SUPPLY
23	P	HIGH VOLTAGE CABLE INTERLOCK
25	L	CAN-H
26	Y	WATER PUMP 2 SIGNAL
28	W	WATER PUMP 1 SIGNAL
29	P	CAN-L

Connector No.	E63
Connector Name	VCM
Connector Type	RH24FB-RZ8-L-RH



Terminal No.	Color of Wire	Signal Name [Specification]
81	GR	K-LINE
84	LG	EV SYSTEM ACTIVATION REQUEST SIGNAL
85	P	CHARGING STATUS INDICATOR 2
86	V	CHARGING STATUS INDICATOR 1
87	L	PLUG IN INDICATOR LAMP
88	Y	AVSFP CONTROL SIGNAL

89	V	IMMEDIATE CHARGING SWITCH
90	W	STARTER RELAY CONT
91	O	ELECTRIC SHIFT WARNING SIGNAL
92	G	CHARGING STATUS INDICATOR 3
96	GR	EV SYSTEM ACTIVATION REQUEST SIGNAL
104	SB	ASCD STEERING SWITCH
105	L/O	PRE-CHARGE RELAY
107	W/L	SYSTEM MAIN RELAY 1
108	BR	ASCD STEERING SWICH GROUND
110	L/Y	SYSTEM MAIN RELAY 2
111	B/R	GROUND
112	B/R	GROUND

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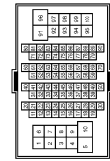
JCNWA3658GB

# METER SYSTEM

< WIRING DIAGRAM >

## METER

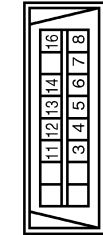
Connector No.	E105
Connector Name	WIRE TO WIRE
Connector Type	TH30MW-CS1E-TM4



Terminal No.	Color of Wire	Signal Name [Specification]
1	BR	-
2	R	-
3	GR	-
4	LG	-
6	W	-
7	V	-
8	P	-
9	G	-
10	R	-
11	O	-
12	W	-
13	B	-
14	Y	-
15	BR	-
16	LG	-
17	L	-
19	G	-
20	V	-
21	P	-
22	LG	-
23	GR	-
24	L	-
25	B	-
26	SB	-
27	B	-
29	BR	-
30	W	-
31	V	-
32	LG	-
33	O	-
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35	BR	-
38	SB	-
39	GR	-
40	Y	-
41	R	-
42	W	-
43	SB	-

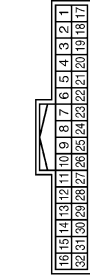
44	GR	-
45	G	-
46	P	-
47	LG	-
48	V	-
49	G	-
50	L	-
51	W	-
54	P	-
55	O	-
56	Y	-
57	P	-
58	LG	-
60	LG	-
61	GR	-
62	BR	-
64	R	-
65	L	-
66	G	-
67	V	-
68	W	-
69	SB	-
71	Y	-
72	L	-
73	R	-
74	L	-
75	V	-
76	P	-
80	O	-
81	L	-
82	SB	-
83	G	-
84	BR	-
85	LG	-
86	GR	-
88	B	-
89	W	-
90	SHIELD	-
92	Y	-
93	W	-
94	R	-
95	V	-
96	P	-
97	G	-
98	SB	-
99	O	-

Connector No.	M4
Connector Name	DATA LINK CONNECTOR
Connector Type	BD16FW



Terminal No.	Color of Wire	Signal Name [Specification]
3	LG	-
4	B	-
5	B	-
6	L	-
7	GR	-
8	G	-
11	SB	-
12	G	-
13	L	-
14	P	-
16	Y	-

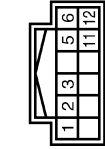
Connector No.	M21
Connector Name	WIRE TO WIRE
Connector Type	TH32FW-NH



Terminal No.	Color of Wire	Signal Name [Specification]
1	W	-
3	SHIELD	-
4	B	-
5	W	-
6	R	-
11	G	-
15	L	-
16	G	-
18	BR	-
19	G	-
20	V	-

22	B	-
27	L	-
31	L	-
32	P	-

Connector No.	M26
Connector Name	METER CONTROL SWITCH
Connector Type	TH12FW-NH



Terminal No.	Color of Wire	Signal Name [Specification]
1	LG	-
2	B	-
3	R	-
5	V	-
6	BR	-
11	BR	-
12	W	-

JCNWA3659GB

# METER SYSTEM

< WIRING DIAGRAM >

## METER

Connector No.	M34
Connector Name	COMBINATION METER
Connector Type	TH40PV-NH



1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
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Terminal No.	Color of Wire	Signal Name [Specification]
1	LG	BATTERY POWER SUPPLY
2	R	BATTERY POWER SUPPLY (FOR UPPER METER)
3	GR	POWER SWITCH SUPPLY
4	BR	POWER SWITCH SUPPLY (FOR UPPER METER)
5	B	GROUND
6	B	GROUND
7	V	ELECTRIC SHIFT WARNING SIGNAL
8	G	PLUG IN SIGNAL
9	L	COMMUNICATION SIGNAL (METER → VSP)
10	P	COMMUNICATION SIGNAL (VSP → METER)
11	V	METER CONTROL SWITCH GROUND
12	LG	ENTER SWITCH SIGNAL
13	W	SELECT SWITCH SIGNAL
14	W	TRIP RESET SWITCH SIGNAL
15	BR	ILLUMINATION CONTROL SWITCH SIGNAL
16	BR	ILLUMINATION CONTROL SIGNAL (FOR UPPER METER)
17	V	ILLUMINATION CONTROL SIGNAL (FOR UPPER METER)
18	P	CAN-L
19	L	CAN-H
20	V	SEAT BELT BUCKLE SWITCH SIGNAL (PASSENGER SIDE)
22	GR	GROUND (FOR UPPER METER)
24	BR	ELECTRIC PARKING BRAKE CONTROL MODULE WARNING SIGNAL
25	SB	BRAKE FLUID LEVEL SWITCH SIGNAL
26	B	ILLUMINATION CONTROL SIGNAL
27	R	AIR BAG SIGNAL
28	R	SECURITY SIGNAL
30	GR	VEHICLE SPEED SIGNAL (8-PULSE)
32	W	COMMUNICATION SIGNAL (METER → UPPER)
33	LG	COMMUNICATION SIGNAL (UPPER → METER)
34	L	PLUG IN INDICATOR LAMP SIGNAL
38	V	LED HEADLAMP (RH) WARNING SIGNAL
39	LG	LED HEADLAMP (LH) WARNING SIGNAL
40	Y	SEAT BELT BUCKLE SWITCH SIGNAL (DRIVER SIDE)

Connector No.	M37
Connector Name	EPS CONTROL UNIT
Connector Type	TH06FY-NH



4	2	1
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Terminal No.	Color of Wire	Signal Name [Specification]
1	P	CAN-L
2	L	CAN-H
4	V	POWER SUPPLY (POWER SWITCH)

Connector No.	M40
Connector Name	UPPER METER
Connector Type	TH06FY-NH



4	3	2	1
9	7		

Terminal No.	Color of Wire	Signal Name [Specification]
1	R	BATTERY POWER SUPPLY
2	BR	POWER SWITCH SUPPLY
3	V	ILLUMINATION CONTROL SIGNAL
4	LG	COMMUNICATION SIGNAL (UPPER → METER)
7	GR	GROUND
9	W	COMMUNICATION SIGNAL (METER → UPPER)

Connector No.	M47
Connector Name	REPRODUCTION VEHICLE SOUND FOR REENTRANS (VSP)
Connector Type	TH16FH-NH



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

Terminal No.	Color of Wire	Signal Name [Specification]
1	B	GROUND
2	L	COMMUNICATION SIGNAL (METER → VSP)
3	SB	POWER SWITCH SIGNAL
4	P	COMMUNICATION SIGNAL (VSP → METER)
5	G	VSP OFF SWITCH SIGNAL
6	Y	CHARGE PULSE SIGNAL
7	L	VSP SPEAKER SIGNAL (-)
8	Y	VSP SPEAKER SIGNAL (+)
10	GR	K-LINE (CONSULT)
11	R	POWER SWITCH SUPPLY
12	SB	STOP LAMP SWITCH SIGNAL
13	L	BATTERY POWER SUPPLY
14	LG	VSP OFF INDICATOR SIGNAL
15	R	STRAT UP SOUND SPEAKER SIGNAL (-)
16	W	STRAT UP SOUND SPEAKER SIGNAL (+)

Connector No.	M61
Connector Name	AIR BAG DIAGNOSIS SENSOR UNIT
Connector Type	NH26FY-EX



8	9	7	6	2	5	4	3
19	62	54	23	28	27	24	22
18	51	53	60	69	25	57	1

Terminal No.	Color of Wire	Signal Name [Specification]
1	BR	IGN
2	B	GNB
3	Y	DR 1 (+)
4	GR	DR 1 (-) DRZ (-)
5	Y/V	DR 2 (+)
6	Y/G	ASI (+)
7	Y/B	ASI (-)

8	Y/L	ASZ (+)
9	Y/V	ASZ (-)
18	R	EZSS (-)
19	W	EZSS (+)
22	SHIELD	SHIELD
23	R	AIR BAG W/L
24	LG	SEAT BELT W/L
25	R	CUTOFF TELLTALE
51	Y	FMVSS SENS RH+
52	BR	FMVSS SENS RH-
53	G	FMVSS SENS LH+
54	R	FMVSS SENS LH-
59	L	CAN-H
60	P	CAN-L

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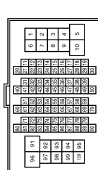
# METER SYSTEM

< WIRING DIAGRAM >

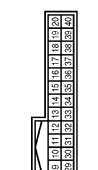
Terminal No.	Color of Wire	Signal Name [Specification]	Terminal No.	Color of Wire	Signal Name [Specification]
1	GR		1	GR	
2	L	COMBI SW INPUT 5	2	V	
3	GR	COMBI SW INPUT 4	3	GR	
4	BR	COMBI SW INPUT 3	4	LG	
5	G	COMBI SW INPUT 2	6	W	
6	V	COMBI SW INPUT 1	7	V	
7	GR	KEY CYL UNLK SW	8	P	
8	R	KEY CYL LOCK SW	9	SB	
9	BR	STOP LAMP SW 1	10	L	
12	Y	DOOR LK & UNLK SW LOCK	11	LG	
13	BR	DOOR LK & UNLK SW UNLOCK	12	W	
14	G	OPTICAL SENS	13	R	
15	W	REAR WINDOW DEF SW	14	Y	
16	R	DIMMER	15	R	
17	Y	OPTICAL SENS FWR SPLY	16	GR	
18	V	SENS/RECEIV GND	17	BR	
21	P	NATS ANTENNA AMP.	19	G	
23	R	SECURITY IND LAMP CONT	20	G	
25	LG	NATS ANTENNA AMP.	21	P	
29	P	HAZARD SW	22	LG	
30	L	BK DOOR OPENER SW	23	GR	
31	W	DR DOOR UNLK SENS	24	L	
32	LG	COMBI SW OUTPUT 5	25	V	
33	V	COMBI SW OUTPUT 4	26	W	
34	W	COMBI SW OUTPUT 3	27	L	
35	R	COMBI SW OUTPUT 2	29	V	
36	P	COMBI SW OUTPUT 1	30	W	
37	W	P POSITION	31	SB	
38	SB	RECEIVER COMM	32	LG	
39	L	CAN-H	33	V	
40	P	CAN-L	34	L	
			35	SB	
			38	LG	
			39	GR	
			40	Y	
			41	R	
			42	W	
			43	SB	

Connector No.	M77
Connector Name	WIRE TO WIRE
Connector Type	TH8CFW-CS16-TM4

Connector No.	M68
Connector Name	BCM BODY CONTROL MODULE
Connector Type	TH8CFB-IN1



JCNWA3661GB

# DIAGNOSIS AND REPAIR WORKFLOW (METER SYSTEM)

< BASIC INSPECTION >

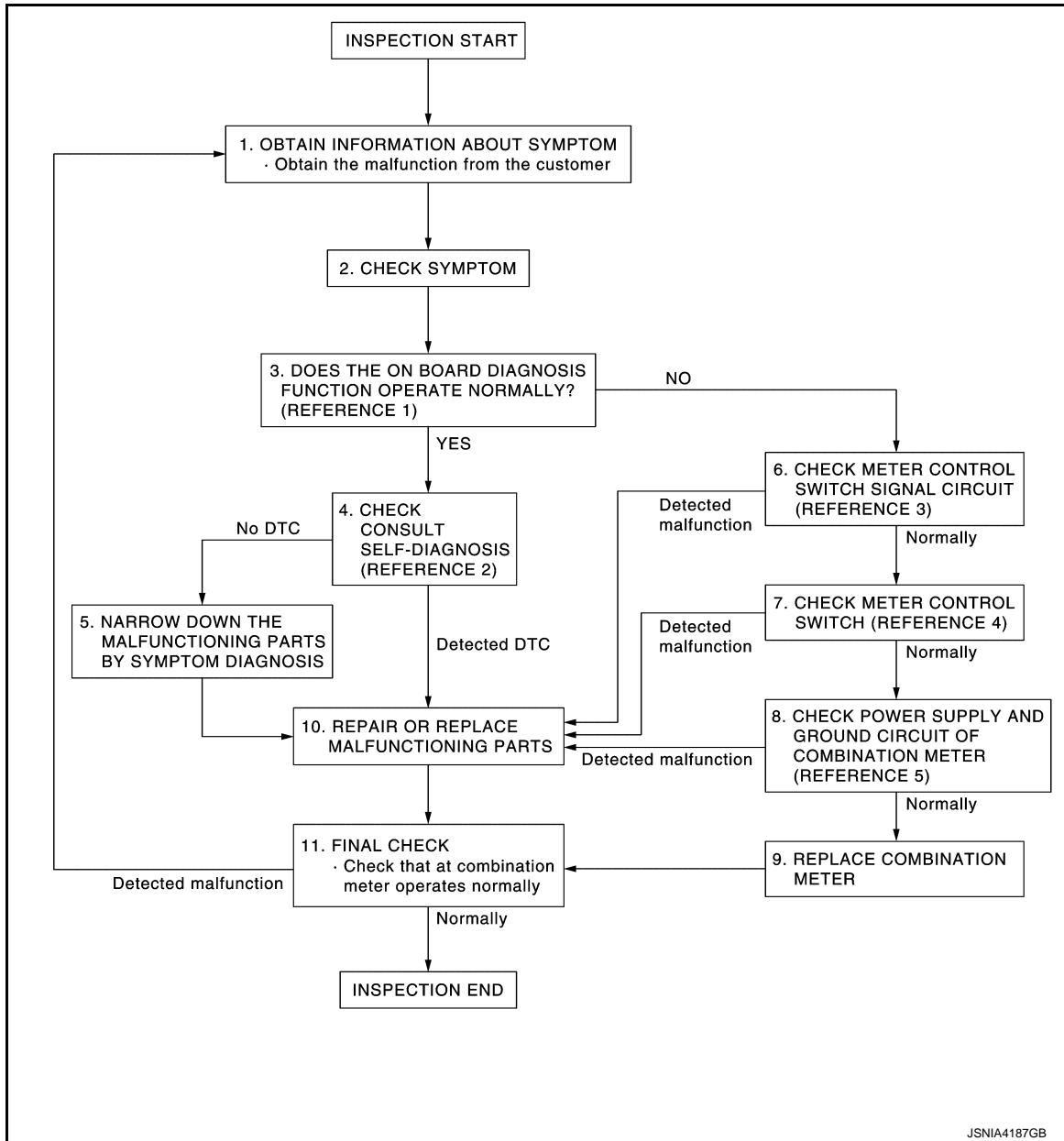
## BASIC INSPECTION

### DIAGNOSIS AND REPAIR WORKFLOW (METER SYSTEM)

Work flow

INFOID:000000006959396

#### OVERALL SEQUENCE



- Reference 1...[MWI-45, "On Board Diagnosis Function"](#).
- Reference 2...[MWI-61, "DTC Index"](#).
- Reference 3...[MWI-83, "Diagnosis Procedure"](#).
- Reference 4...[MWI-84, "Component Inspection"](#).
- Reference 5...[MWI-81, "COMBINATION METER : Diagnosis Procedure"](#).

#### 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.

>> GO TO 2.

# DIAGNOSIS AND REPAIR WORKFLOW (METER SYSTEM)

< BASIC INSPECTION >

---

## 2. CHECK SYMPTOM

---

- Check the symptom based on the information obtained from the customer.
- Check that any other malfunctions are present.

>> GO TO 3.

## 3. CHECK ON BOARD DIAGNOSIS OPERATION

---

Check that the on board diagnosis function operates. Refer to [MWI-45, "On Board Diagnosis Function"](#).

Does the on board diagnosis function operate normally?

YES >> GO TO 4.

NO >> GO TO 6.

## 4. CHECK CONSULT SELF-DIAGNOSIS RESULTS

---

Connect CONSULT and perform self-diagnosis. Refer to [MWI-61, "DTC Index"](#).

Are self-diagnosis results normal?

YES >> GO TO 5.

NO >> GO TO 10.

## 5. NARROW DOWN THE MALFUNCTIONING PARTS BY SYMPTOM DIAGNOSIS

---

Perform symptom diagnosis and narrow down the malfunctioning parts.

>> GO TO 10.

## 6. CHECK METER CONTROL SWITCH SIGNAL CIRCUIT

---

Check meter control switch signal circuit. Refer to [MWI-83, "Diagnosis Procedure"](#).

Is inspection result OK?

YES >> GO TO 7.

NO >> GO TO 10.

## 7. CHECK METER CONTROL SWITCH

---

Check meter control switch. Refer to [MWI-84, "Component Inspection"](#).

Is inspection result OK?

YES >> GO TO 8.

NO >> GO TO 10.

## 8. CHECK COMBINATION METER POWER SUPPLY AND GROUND CIRCUITS

---

Check combination meter power supply and ground circuits. Refer to [MWI-81, "COMBINATION METER : Diagnosis Procedure"](#).

Is inspection result OK?

YES >> GO TO 9.

NO >> GO TO 10.

## 9. REPLACE COMBINATION METER

---

Replace combination meter.

>> GO TO 11.

## 10. REPAIR OR REPLACE MALFUNCTIONING PARTS

---

Repair or replace the malfunctioning parts.

### NOTE:

If DTC is displayed, erase DTC after repair or replace malfunctioning parts.

>> GO TO 11.

## 11. FINAL CHECK

---

Check that the combination meter operates normally.



# DIAGNOSIS AND REPAIR WORKFLOW (METER SYSTEM)

< BASIC INSPECTION >

---

Do they operate normally?

YES >> INSPECTION END

NO >> GO TO 1.

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# U1000 CAN COMM CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

## DTC/CIRCUIT DIAGNOSIS

### U1000 CAN COMM CIRCUIT

#### Description

INFOID:000000006959397

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-33, "CAN COMMUNICATION SYSTEM : CAN Communication Signal Chart"](#).

#### DTC Logic

INFOID:000000006959398

#### DTC DETECTION LOGIC

DTC	Display contents of CONSULT	Diagnostic item is detected when...	Probable malfunction location
U1000	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:000000006959399

#### 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 [GI-51, "Intermittent Incident"](#).

# U1010 CONTROL UNIT (CAN)

< DTC/CIRCUIT DIAGNOSIS >

## U1010 CONTROL UNIT (CAN)

### Description

INFOID:000000006959400

Initial diagnosis of combination meter.

### DTC Logic

INFOID:000000006959401

### DTC DETECTION LOGIC

DTC	Display contents of CONSULT	Diagnostic item is detected when...	Probable malfunction location
U1010	CONTROL UNIT (CAN)	When detecting error during the initial diagnosis of the CAN controller of combination meter.	Combination meter

### Diagnosis Procedure

INFOID:000000006959402

#### 1. REPLACE COMBINATION METER

When DTC "U1010" is detected, replace combination meter.

>> INSPECTION END

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## B2205 VEHICLE SPEED

< DTC/CIRCUIT DIAGNOSIS >

### B2205 VEHICLE SPEED

#### Description

INFOID:000000006959403

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

#### DTC Logic

INFOID:000000006959404

#### DTC DETECTION LOGIC

DTC	Display contents of CONSULT	Diagnostic item is detected when...	Probable malfunction location
B2205	VEHICLE SPEED	An abnormal vehicle speed signal is input from ABS actuator and electric unit (control unit) for 2 seconds or more	<ul style="list-style-type: none"><li>• Wheel sensor</li><li>• ABS actuator and electric unit (control unit)</li></ul>

#### Diagnosis Procedure

INFOID:000000006959405

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

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

>> Refer to [BRC-38. "CONSULT Function"](#).

# B232A SHIFT SIGNAL

< DTC/CIRCUIT DIAGNOSIS >

## B232A SHIFT SIGNAL

### Description

INFOID:000000006959406

VCM outputs the electric shift warning signal to the combination meter.

### DTC Logic

INFOID:000000006959407

### DTC DETECTION LOGIC

DTC	Display contents of CONSULT	Diagnostic item is detected when...	Probable malfunction location
B233A	SHIFT SIGNAL	When an electric shift warning signal received from VCM does not become active within 3 seconds after power switch ON.	<ul style="list-style-type: none"> <li>Electric shift warning signal circuit</li> <li>VCM</li> </ul>

### Component Function Check

INFOID:000000006959408

#### 1.CHECK COMBINATION METER INPUT SIGNAL

Select the "Data Monitor" for the "METER/M&A" and check the "SFT SIG" monitor value.

"SFT SIG"

Electric shift warning lamp ON : On

Electric shift warning lamp OFF : Off

>> INSPECTION END

### Diagnosis Procedure

INFOID:000000006959409

#### 1.CHECK COMBINATION METER INPUT SIGNAL

1. Power switch ON.
2. Check continuity between combination meter harness connector and ground.

Terminals		Condition	Voltage (Approx.)
(+)	(-)		
Combination meter			
Connector	Terminal		
		Electric shift warning lamp OFF	12 V
M34	7		

Is the inspection result normal?

YES >> INSPECTION END

NO >> GO TO 2.

#### 2.CHECK ELECTRIC SHIFT WARNING SIGNAL CIRCUIT

1. Power switch OFF.
2. Disconnect combination meter connector and VCM connector.
3. Check voltage between combination meter harness connector and VCM harness connector.

Terminals				Continuity
Combination meter		VCM		
Connector	Terminal	Connector	Terminal	
M34	7	E63	91	Existed

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

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## B232A SHIFT SIGNAL

### < DTC/CIRCUIT DIAGNOSIS >

---

Combination meter		Ground	Continuity
Connector	Terminal		
M34	7		Not existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair harness or connector.

### **3.**PERFORM SELF-DIAGNOSIS OF VCM

---

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

>> Refer to [EVC-51, "CONSULT Function"](#).

# B232B PARKING BRAKE SIGNAL

< DTC/CIRCUIT DIAGNOSIS >

## B232B PARKING BRAKE SIGNAL

### Description

INFOID:000000006959410

- The electric parking brake control module transmits the electric parking brake control module wakeup signal to the combination meter.
- The electric parking brake control module transmits the electric parking brake indicator signal to the combination meter via CAN communication.

### DTC Logic

INFOID:000000006959411

### DTC DETECTION LOGIC

DTC	Display contents of CONSULT	Diagnostic item is detected when...	Probable malfunction location
B232B	PARKING BRAKE SIGNAL	When an electric parking brake control module wakeup signal received from the electric parking brake control module remains out of sync with an electric parking brake indicator lamp signal continuously for 2 seconds or more.	<ul style="list-style-type: none"> <li>• Electric parking brake control module</li> <li>• Electric parking brake control module wakeup signal circuit</li> </ul>

### Component Function Check

INFOID:000000006959412

#### 1. CHECK COMBINATION METER INPUT SIGNAL

Select the "Data Monitor" for the "METER/M&A" and check the "PKB SIG" monitor value.

"PKB SIG"

Electric parking brake ON : On

Electric parking brake OFF : Off

>> INSPECTION END

### Diagnosis Procedure

INFOID:000000006959413

#### 1. CHECK COMBINATION METER INPUT SIGNAL

1. Power switch ON.
2. Check voltage between combination meter harness connector and ground.

Terminals		Condition	Voltage (Approx.)
(+)	(-)		
Combination meter		Electric parking brake ON	0 V
Connector	Terminal		
M34	24		
		Electric parking brake OFF	12 V
Ground			

Is the inspection result normal?

YES >> INSPECTION END

NO >> GO TO 2.

#### 2. CHECK ELECTRIC PARKING BRAKE CONTROL MODULE WAKEUP SIGNAL CIRCUIT

1. Power switch OFF.
2. Disconnect combination meter connector and electric parking brake control module connector.
3. Check continuity between combination meter harness connector and electric parking brake control module harness connector.

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## B232B PARKING BRAKE SIGNAL

### < DTC/CIRCUIT DIAGNOSIS >

---

Terminals				Continuity
Combination meter		Electric parking brake control module		
Connector	Terminal	Connector	Terminal	
M34	24	B22	17	Existed

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

Combination meter		Ground	Continuity
Connector	Terminal		
M34	24		Not existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair harness or connector.

### 3. PERFORM SELF-DIAGNOSIS OF ELECTRIC PARKING BRAKE CONTROL MODULE

---

Perform "Self Diagnosis Result" of "EHS/PKB", and repair or replace malfunctioning parts.

>> Refer to [PB-24, "CONSULT Function"](#).



# POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

## POWER SUPPLY AND GROUND CIRCUIT COMBINATION METER

### COMBINATION METER : Diagnosis Procedure

INFOID:000000006959414

#### 1.CHECK FUSE

Check for blown fuses.

Power source	Fuse No.
Battery	11
Power switch ON	5

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		Power switch position	Voltage (Approx.)
(+)	(-)		
Combination meter		OFF	Battery voltage
Connector	Terminal		
M34	1		
	3		
Ground		ON	

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check harness between combination meter and fuse.

#### 3.CHECK GROUND CIRCUIT

1. Power switch OFF.
2. Disconnect combination meter connector.
3. Check continuity between combination meter harness connector and ground.

Combination meter		Ground	Continuity
Connector	Terminal		
M34	5		Existed
	6		

Is the inspection result normal?

YES >> INSPECTION END

NO >> Repair harness or connector.

#### UPPER METER

### UPPER METER : Diagnosis Procedure

INFOID:000000006959415

#### 1.CHECK POWER SUPPLY CIRCUIT

Check voltage between upper meter harness connector and ground.

# POWER SUPPLY AND GROUND CIRCUIT

## < DTC/CIRCUIT DIAGNOSIS >

Terminals		Power switch position	Voltage (Approx.)
(+)	(-)		
Upper meter		OFF	Battery voltage
Connector	Terminal		
M40	1		
	2	ON	

Is the inspection result normal?

YES >> GO TO 2.

NO >> Check harness between triple meter and fuse.

## 2. CHECK GROUND CIRCUIT

1. Power switch OFF.
2. Disconnect upper meter connector.
3. Check continuity between upper meter harness connector and ground.

Upper meter		Ground	Continuity
Connector	Terminal		
M40	7		Existed

Is the inspection result normal?

YES >> INSPECTION END

NO >> Repair harness or connector.

# METER CONTROL SWITCH SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >




## METER CONTROL SWITCH SIGNAL CIRCUIT

### Diagnosis Procedure

INFOID:000000006959416

#### 1. CHECK COMBINATION METER INPUT SIGNAL

1. Power switch ON.
2. Measure voltage between the following terminals of the combination meter.

Combination meter		Condition	Voltage (Approx.)
Connector	Terminals		
	(+)      (-)		
M34	13	When  switch (enter switch) is pressed	0 V
		Other than the above	5 V
	14	When  switch (select switch) is pressed	0 V
		Other than the above	5 V
	15	When trip reset switch is pressed	0 V
		Other than the above	5 V
	16	When  switch (illumination control switch) is pressed	0 V
		Other than the above	5 V

Is the inspection result normal?

YES >> INSPECTION END

NO >> GO TO 2.

#### 2. CHECK METER CONTROL SWITCH SIGNAL CIRCUIT

1. Power switch OFF.
2. Disconnect combination meter connector and meter control switch connector.
3. Check continuity between combination meter harness connector and meter control switch harness connector.

Terminals				Continuity
Combination meter		Meter control switch		
Connector	Terminal	Connector	Terminal	
M34	12	M26	5	Existed
	13		1	
	14		12	
	15		11	
	16		6	

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

Combination meter		Ground	Continuity
Connector	Terminal		
M34	12	Ground	Not existed
	13		
	14		
	15		
	16		

Is the inspection result normal?

# METER CONTROL SWITCH SIGNAL CIRCUIT

## < DTC/CIRCUIT DIAGNOSIS >




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

### Component Inspection

INFOID:000000006959417

#### 1. CHECK METER CONTROL SWITCH

1. Power switch OFF.
2. Disconnect meter control switch connector.
3. Check meter control switch.

Terminals		Condition	Continuity
Meter control switch			
1	5	When  switch (enter switch) is pressed	Existed
		Other than the above	Not existed
6		When  switch (illumination control switch) is pressed	Existed
		Other than the above	Not existed
11		When trip reset switch is pressed	Existed
		Other than the above	Not existed
12		When  switch (select switch) is pressed	Existed
		Other than the above	Not existed

#### Is the inspection result normal?

YES >> INSPECTION END  
NO >> Replace meter control switch. Refer to [MWI-91, "Removal and Installation"](#).

# THE METER CONTROL SWITCH IS INOPERATIVE

< SYMPTOM DIAGNOSIS >

## SYMPTOM DIAGNOSIS

### THE METER CONTROL SWITCH IS INOPERATIVE

#### Description

INFOID:000000006959418

If any of the following malfunctions is found for the meter control switch operation.

- All switches are inoperative
- The specified switch cannot be operated

#### Diagnosis Procedure

INFOID:000000006959419

#### 1.CHECK METER CONTROL SWITCH SIGNAL CIRCUIT

Check the meter control switch signal circuit. Refer to [MWI-83, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair harness or connector.

#### 2.CHECK METER CONTROL SWITCH

Perform a unit check for the meter control switch. Refer to [MWI-84, "Component Inspection"](#).

Is the inspection result normal?

YES >> Replace combination meter. Refer to [MWI-89, "Removal and Installation"](#).

NG >> Replace meter control switch. Refer to [MWI-91, "Removal and Installation"](#).

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# THE DOOR OPEN WARNING CONTINUES DISPLAYING, OR DOES NOT DISPLAY

< SYMPTOM DIAGNOSIS >

## THE DOOR OPEN WARNING CONTINUES DISPLAYING, OR DOES NOT DISPLAY

### Description

INFOID:000000006959420

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

### Diagnosis Procedure

INFOID:000000006959421

#### 1. CHECK BCM INPUT/OUTPUT SIGNAL

Connect CONSULT and check the BCM input signals. Refer to [DLK-92. "Component Function Check"](#).

Is the inspection result normal?

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

#### 2. CHECK COMBINATION METER INPUT SIGNAL

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

"DOOR W/L"

Door open	: On
Door closed	: Off

Is the inspection result normal?

- YES >> Replace combination meter. Refer to [MWI-89. "Removal and Installation"](#).
- NO >> Replace BCM. Refer to [BCS-76. "Removal and Installation"](#).

#### 3. CHECK DOOR SWITCH SIGNAL CIRCUIT

Check the door switch signal circuit. Refer to [DLK-92. "Diagnosis Procedure"](#).

Is the inspection result normal?

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

#### 4. CHECK DOOR SWITCH

Perform a unit check for the door switch. Refer to [DLK-93. "Component Inspection"](#).

Is the inspection result normal?

- YES >> Replace combination meter. Refer to [MWI-89. "Removal and Installation"](#).
- NO >> Replace applicable door switch. Refer to [BCS-76. "Removal and Installation"](#).

# THE OUTSIDE AIR TEMPERATURE DISPLAY IS INCORRECT

< SYMPTOM DIAGNOSIS >

## THE OUTSIDE AIR TEMPERATURE DISPLAY IS INCORRECT

### Description

INFOID:000000006959424

- 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:000000006959425

#### NOTE:

Check that the symptom is not applicable to the normal operating condition before starting diagnosis. Refer to [MWI-88, "INFORMATION DISPLAY : Description"](#).

#### 1.CHECK AMBIENT SENSOR SIGNAL CIRCUIT

Check the ambient sensor signal circuit. Refer to [HAC-64, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair harness or connector.

#### 2.CHECK AMBIENT SENSOR

Perform the part check for the ambient sensor. Refer to [HAC-66, "Component Inspection"](#).

Is the inspection result normal?

YES >> Replace combination meter. Refer to [MWI-89, "Removal and Installation"](#).

NO >> Replace ambient sensor. Refer to [HAC-135, "Removal and Installation"](#).

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## NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

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### NORMAL OPERATING CONDITION INFORMATION DISPLAY

INFORMATION DISPLAY : Description

INFOID:000000006959426

#### OUTSIDE AIR TEMPERATURE

The displayed outside air temperature display may differ from the actual temperature because it is a corrected value calculated from the outside air temperature sensor signal by the combination meter. Refer to [MWI-27, "OUTSIDE AIR TEMPERATURE DISPLAY : System Description"](#) for details on the correction process.



# COMBINATION METER

< REMOVAL AND INSTALLATION >

## REMOVAL AND INSTALLATION

### COMBINATION METER

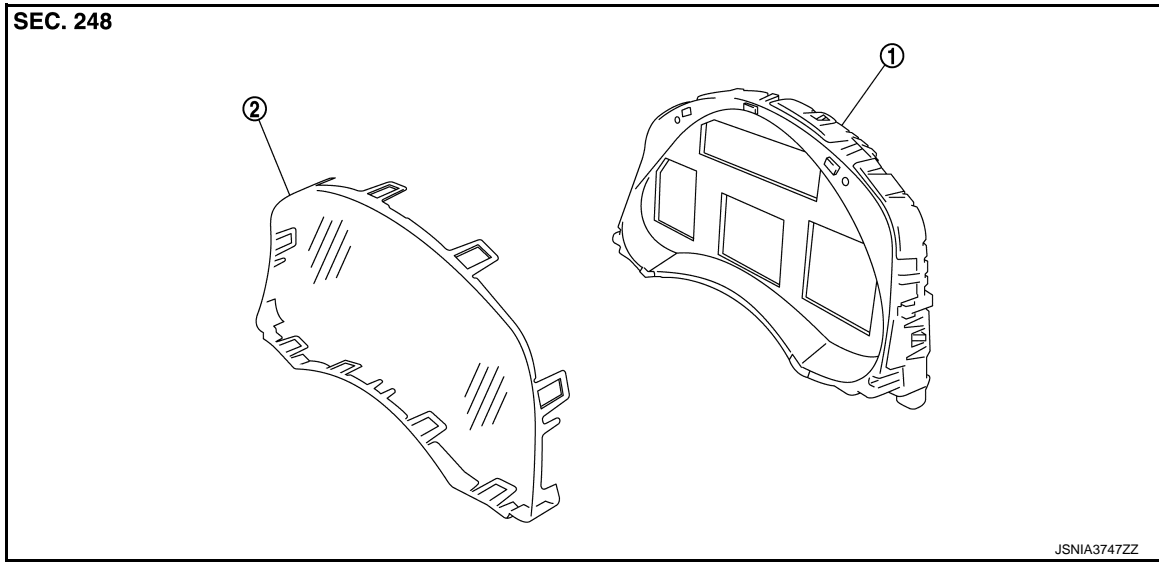
#### Exploded View

INFOID:000000006959427

#### REMOVAL

Refer to [IP-12. "Exploded View"](#).

#### DISASSEMBLY



1. Unified meter control unit
2. Front cover

#### Removal and Installation

INFOID:000000006959428

#### REMOVAL

1. Remove the upper meter. Refer to [MWI-90. "Removal and Installation"](#).
2. Remove the cluster lid A. Refer to [IP-13. "Removal and Installation"](#).
3. Remove screws and connector, and then remove combination meter.

#### INSTALLATION

Install in the reverse order of removal.

#### Disassembly and Assembly

INFOID:000000006959429

#### DISASSEMBLY

Disengage the tabs to separate front cover.

#### ASSEMBLY

Assemble in the reverse order of disassembly.

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# UPPER METER

< REMOVAL AND INSTALLATION >

## UPPER METER

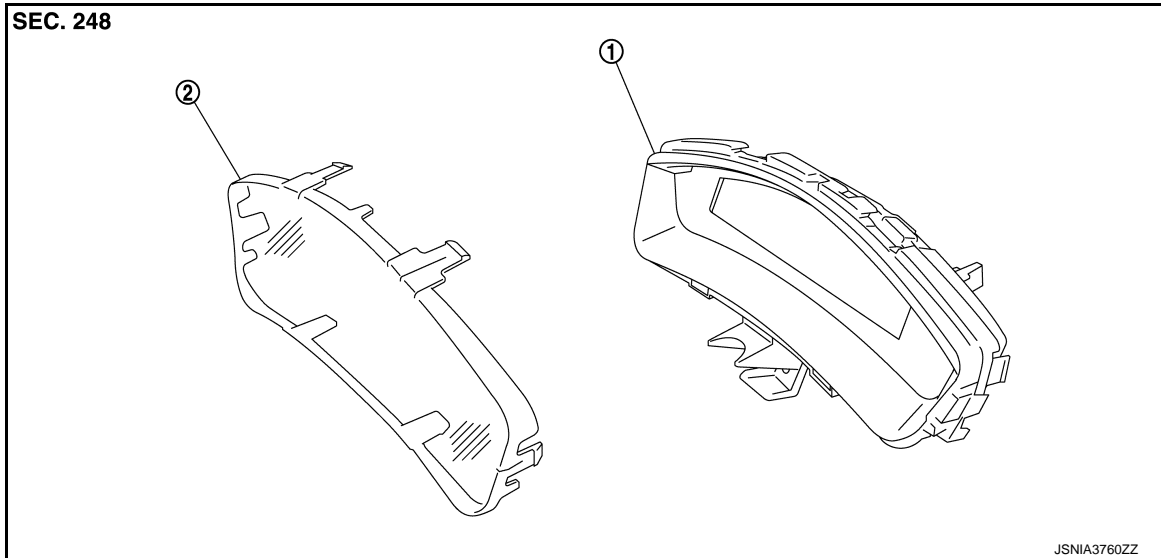
### Exploded View

INFOID:000000006959430

#### REMOVAL

Refer to [IP-12. "Exploded View"](#).

#### DISASSEMBLY



1. Unified meter control unit

2. Front cover

### Removal and Installation

INFOID:000000006959431

#### REMOVAL

1. Remove the cluster lid finisher. Refer to [IP-13. "Removal and Installation"](#).
2. Remove screws and connector, and then remove upper meter.

#### INSTALLATION

Install in the reverse order of removal.

### Disassembly and Assembly

INFOID:000000006959432

#### DISASSEMBLY

Disengage the tabs to separate front cover.

#### ASSEMBLY

Assemble in the reverse order of disassembly.

# METER CONTROL SWITCH

< REMOVAL AND INSTALLATION >

## METER CONTROL SWITCH

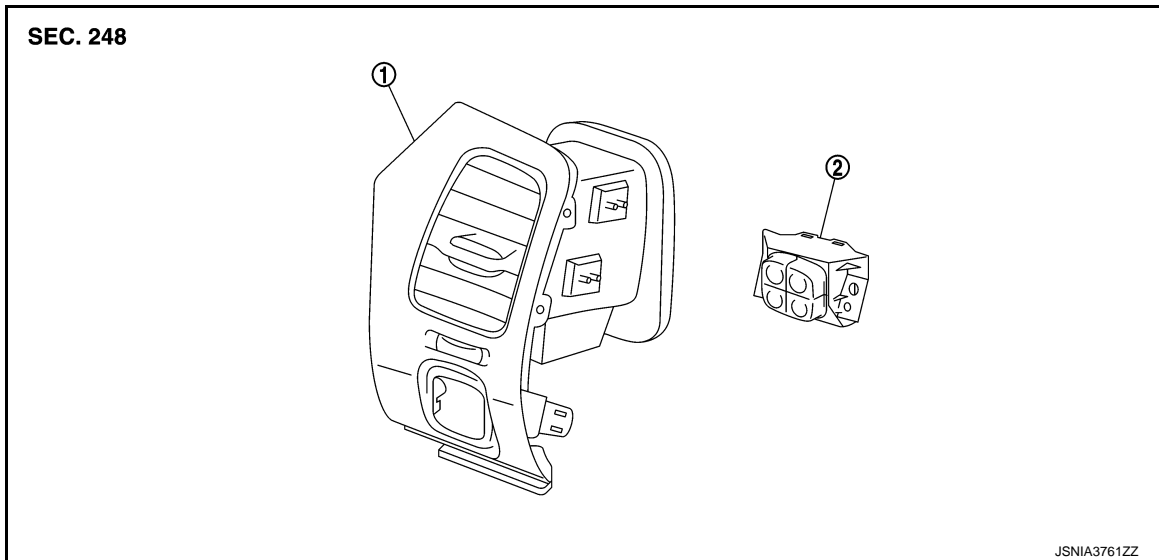
### Exploded View

INFOID:000000006959433

#### REMOVAL

Refer to [IP-12. "Exploded View"](#).

#### DISASSEMBLY



1. Side ventilator grille LH
2. Meter control switch

### Removal and Installation

INFOID:000000006959434

#### REMOVAL

1. Remove side ventilator grille LH. Refer to [IP-13. "Removal and Installation"](#).
2. Remove connector.
3. Remove screws, and then remove meter control switch.

#### INSTALLATION

Install in the reverse order of removal.

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