SECTION MWI
METER, WARNING LAMP & INDICATOR

CONTENTS

PRECAUTION

PRECAUTIONS

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

INFOID:0000000012519097

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

WARNING:

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

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

WARNING:

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

Precaution for Work

INFOID:0000000012519098

- When removing or disassembling each component, be careful not to damage or deform it. If a component may be subject to interference, be sure to protect it with a shop cloth.
- When removing (disengaging) components with a screwdriver or similar tool, be sure to wrap the component with a shop cloth or vinyl tape to protect it.
- Protect the removed parts with a shop cloth and prevent them from being dropped.
- Replace a deformed or damaged clip.
- If a part is specified as a non-reusable part, always replace it with a new one.
- Be sure to tighten bolts and nuts securely to the specified torque.
- After installation is complete, be sure to check that each part works properly.
- Follow the steps below to clean components:

- Water soluble dirt:

- Dip a soft cloth into lukewarm water, wring the water out of the cloth and wipe the dirty area.
- Then rub with a soft, dry cloth.

- Oily dirt:

- Dip a soft cloth into lukewarm water with mild detergent (concentration: within 2 to 3%) and wipe the dirty area.
- Then dip a cloth into fresh water, wring the water out of the cloth and wipe the detergent off.
- Then rub with a soft, dry cloth.

- Do not use organic solvent such as thinner, benzene, alcohol or gasoline.
- For genuine leather seats, use a genuine leather seat cleaner.

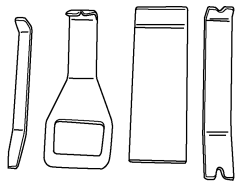
PREPARATION

PREPARATION

Special Service Tool

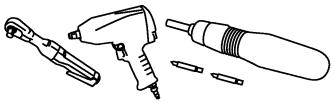
INFOID:0000000012519099

The actual shape of the tools may differ from those illustrated here.

Tool number (TechMate No.) Tool name	Description
— (J-46534) Trim Tool Set  AWJIA0483ZZ	Removing trim components

Commercial Service Tools

INFOID:0000000012519100

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

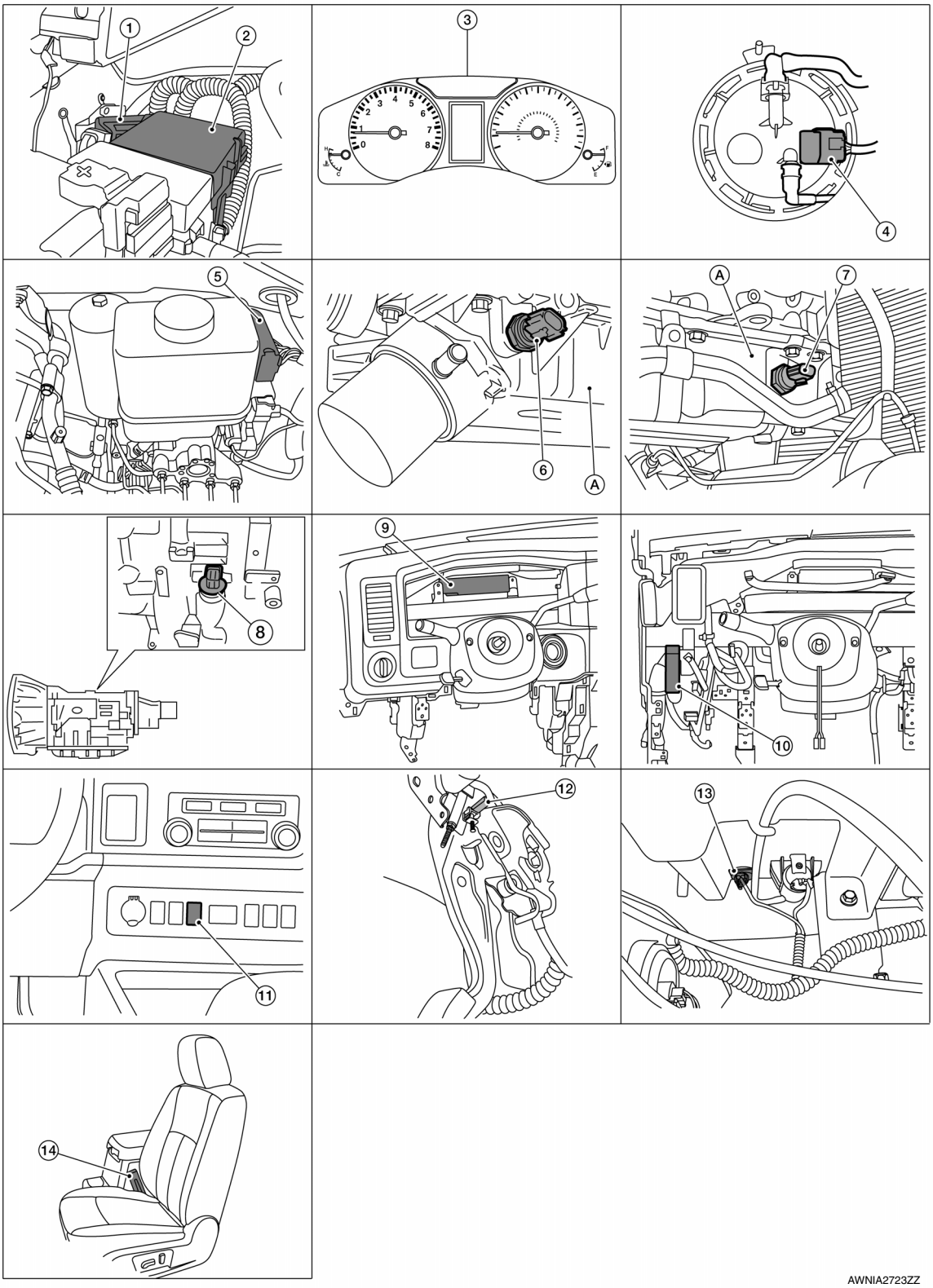
SYSTEM DESCRIPTION

COMPONENT PARTS

METER SYSTEM

METER SYSTEM : Component Parts Location

INFOID:0000000012519101



AWNIA2723ZZ

1. ECM
2. IPDM E/R
3. Combination meter
4. Fuel level sensor unit and fuel pump (view with fuel tank removed)
5. ABS actuator and electric unit (control unit)
6. Oil pressure switch (with VK56DE) A: Oil pan (upper)
7. Oil pressure switch (with VQ40DE) A: Oil pan
8. A/T assembly
9. BCM (view with combination meter and steering wheel removed)
10. Low tire pressure warning control unit (view with instrument panel lower LH removed)
11. Tow mode switch (if equipped)
12. Parking brake switch
13. Washer fluid level switch (if equipped)
14. Seat belt buckle switch LH (RH similar)

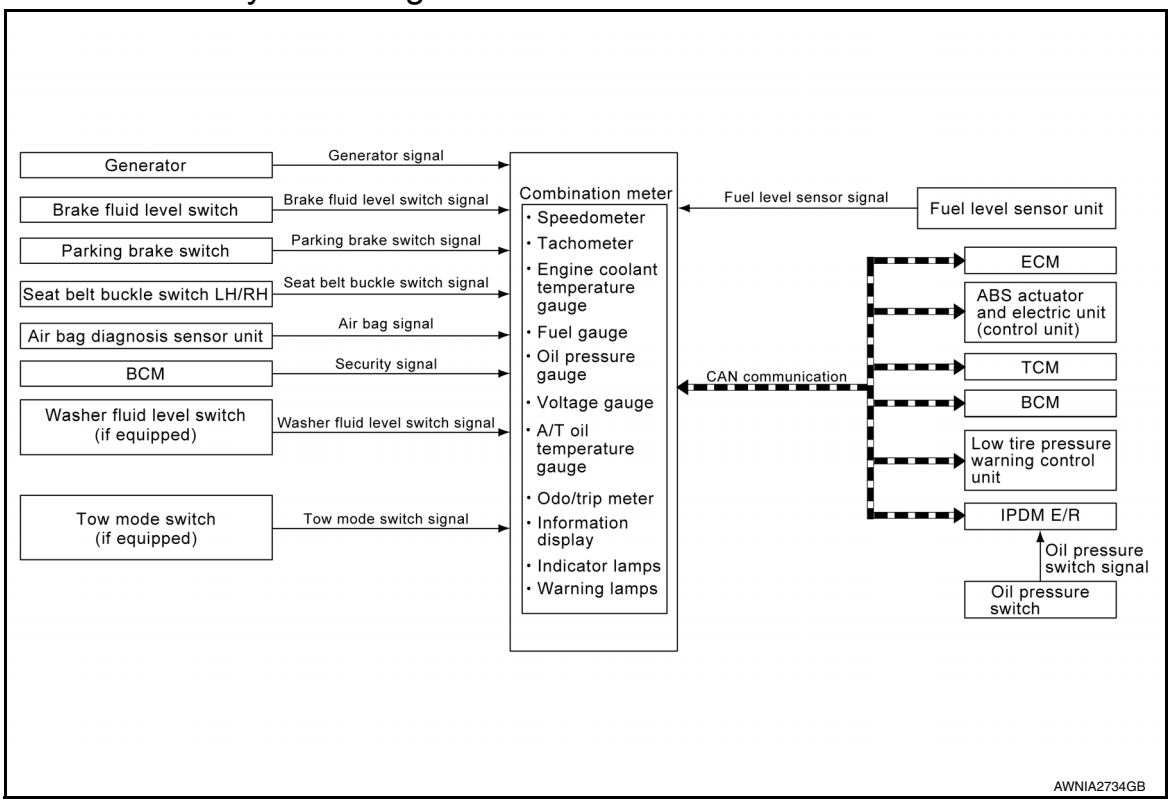
METER SYSTEM : Component Description

INFOID:0000000012519102

Unit	Description
Combination meter	Controls the following with the signals received from each unit via CAN communication and the signals from switches and sensors: • Speedometer • Tachometer • Engine coolant temperature gauge • Fuel gauge • Engine oil pressure gauge • A/T oil temperature gauge • Voltage gauge • Odo/trip meter • Warning lamps • Indicator lamps • Information display • Warning chime
IPDM E/R	IPDM E/R reads the ON/OFF signals of the oil pressure switch and transmits the oil pressure switch signal to the combination meter via BCM with CAN communication line.
Fuel level sensor unit	Refer to MWI-54, "Description".
Oil pressure switch	Refer to MWI-56, "Description".
ECM	Transmits the following signals to the combination meter with CAN communication line: • Engine speed signal • Engine coolant temperature signal • Fuel consumption monitor signal
ABS actuator and electric unit (control unit)	Transmits the vehicle speed signal to the combination meter with CAN communication line.
BCM	• Transmits signals provided by various units to the combination meter with CAN communication line. • Transmits the security signal to the combination meter.
A/T assembly	• Transmits shift position signal to the combination meter with CAN communication line. • Transmits A/T oil temperature signal to the combination meter with CAN communication line.
Washer fluid level switch (if equipped)	Transmits the washer fluid level signal to the combination meter.
Parking brake switch	Refer to MWI-58, "Description".
Low tire pressure warning control unit	Refer to WT-6, "Low Tire Pressure Warning Control Unit".
Tow mode switch (if equipped)	Transmits the tow mode switch signal to the combination meter.
Seat belt buckle switch LH/RH	Transmits the seat belt buckle switch signal to the combination meter.
Ambient temperature sensor	Refer to HAC-122, "FRONT MANUAL AIR CONDITIONING SYSTEM : Component Description" (Manual A/C) or HAC-11, "FRONT AUTOMATIC AIR CONDITIONING SYSTEM : Component Description" (Auto A/C).

SYSTEM
METER SYSTEM
METER SYSTEM : System Diagram

INFOID:0000000012519103



METER SYSTEM : System Description

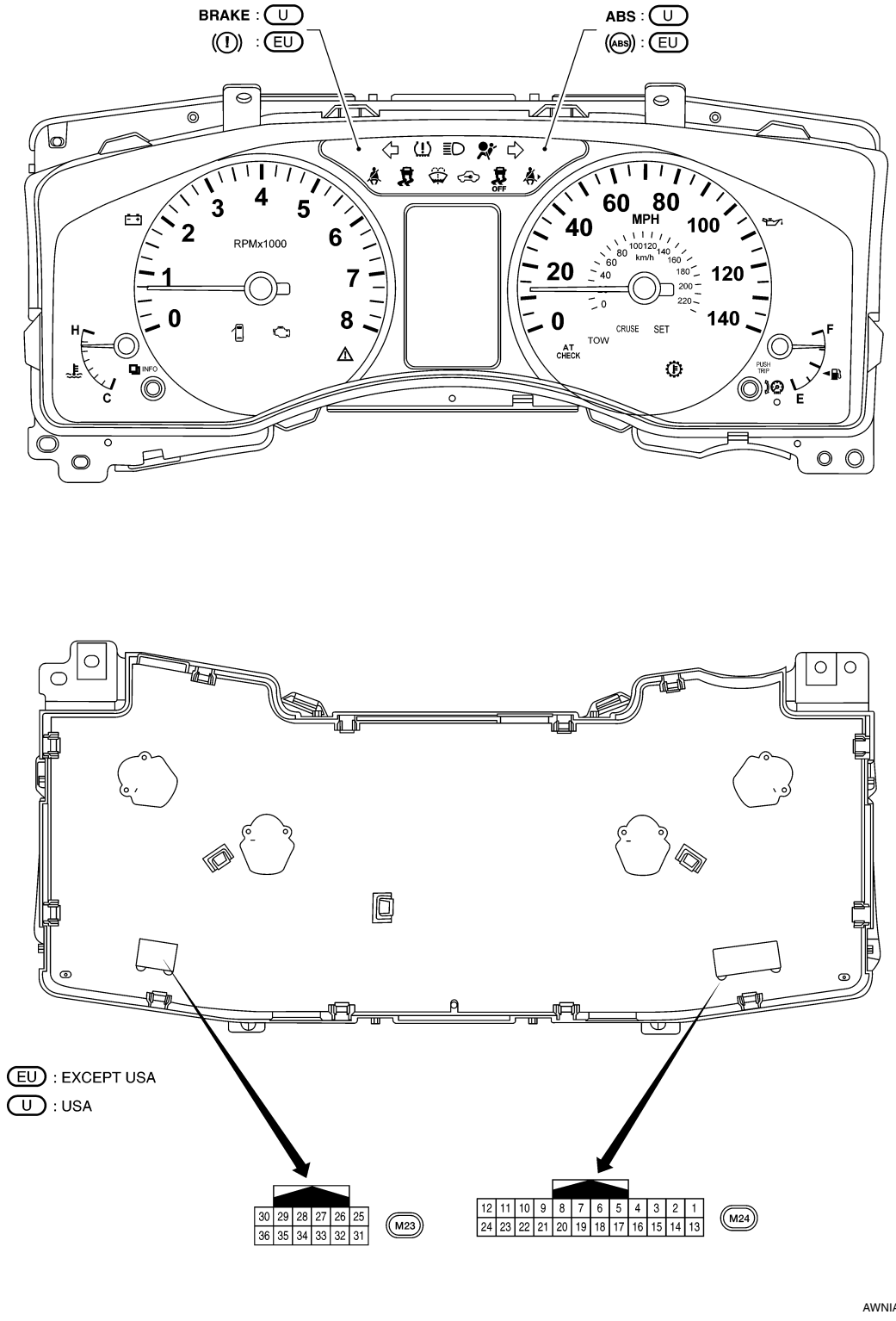
INFOID:0000000012519104

COMBINATION METER

- Speedometer, odo/trip meter, tachometer, fuel gauge, engine coolant temperature gauge, engine oil pressure gauge, voltage gauge, A/T oil temperature gauge and information display are controlled by the unified meter control unit, which is built into the combination meter.
- Warning and indicator lamps are controlled by the unified meter control unit and by components connected directly to the combination meter.
- Analog gauges and vehicle information display segments can be checked in Self-Diagnosis Mode.

METER SYSTEM : Arrangement of Combination Meter

INFOID:0000000012519105

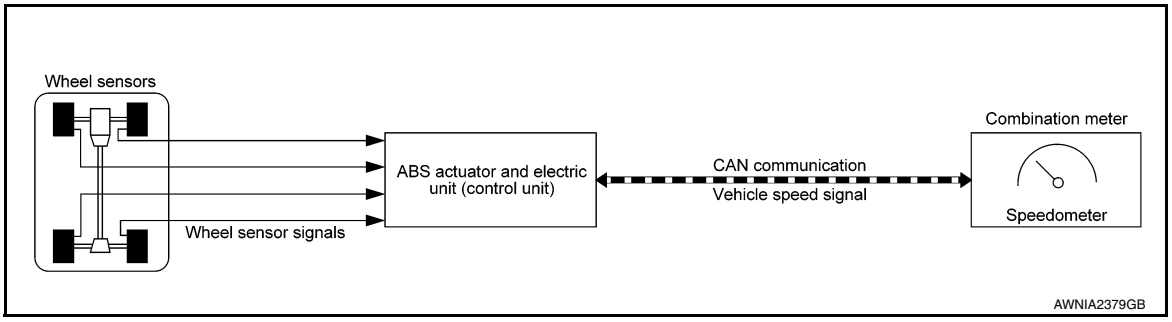


AWNIA3947GB

SPEEDOMETER

SPEEDOMETER : System Diagram

INFOID:0000000012519106



SPEEDOMETER : System Description

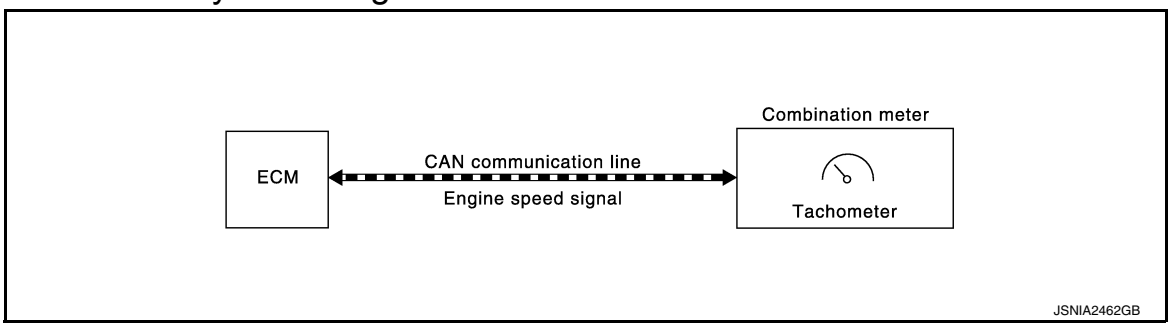
INFOID:0000000012519107

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

TACHOMETER

TACHOMETER : System Diagram

INFOID:0000000012519108



TACHOMETER : System Description

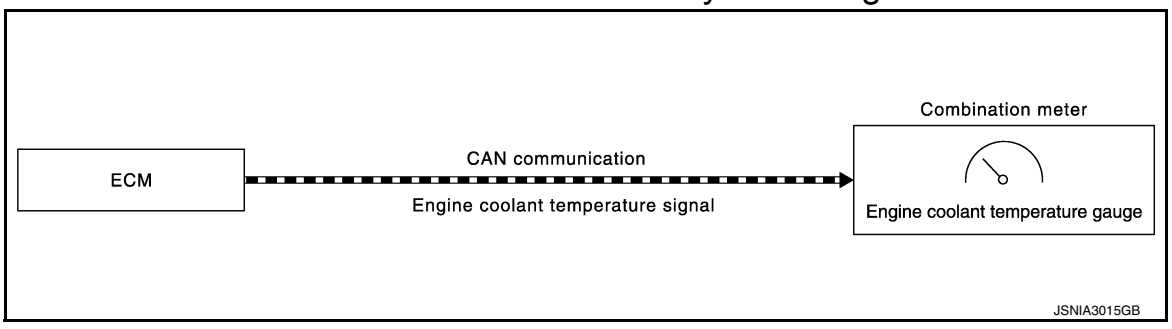
INFOID:0000000012519109

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

ENGINE COOLANT TEMPERATURE GAUGE

ENGINE COOLANT TEMPERATURE GAUGE : System Diagram

INFOID:0000000012519110



ENGINE COOLANT TEMPERATURE GAUGE : System Description

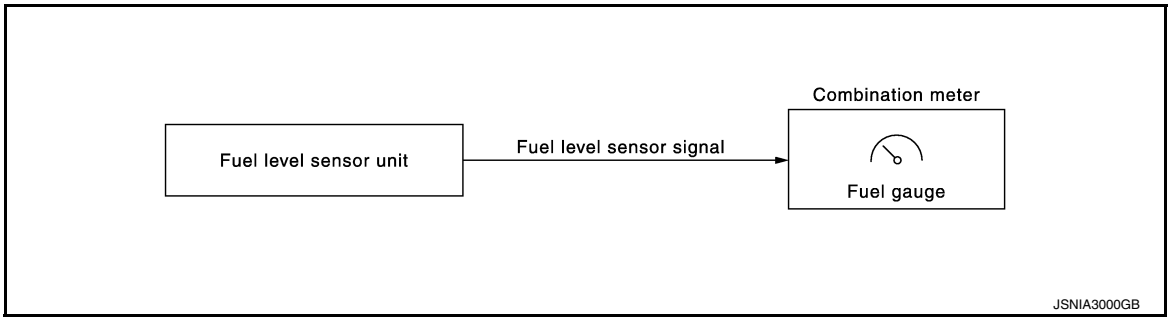
INFOID:0000000012519111

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

FUEL GAUGE

FUEL GAUGE : System Diagram

INFOID:0000000012519112



FUEL GAUGE : System Description

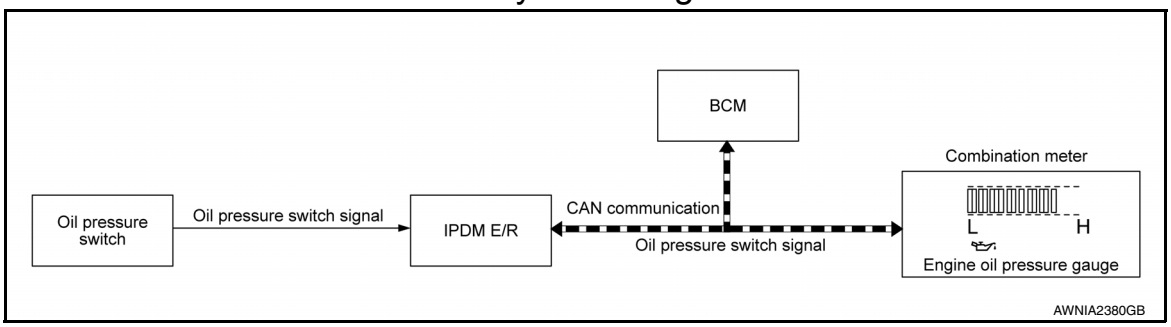
INFOID:0000000012519113

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

ENGINE OIL PRESSURE GAUGE

ENGINE OIL PRESSURE GAUGE : System Diagram

INFOID:0000000012519114



ENGINE OIL PRESSURE GAUGE : System Description

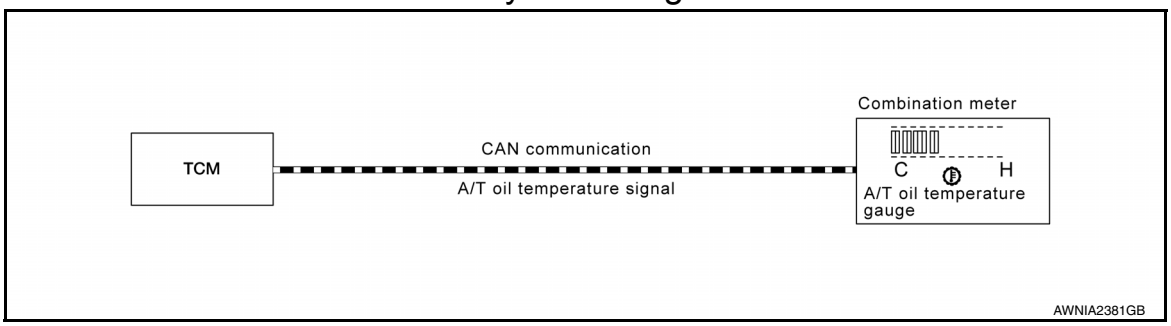
INFOID:0000000012519115

The IPDM E/R reads the ON/OFF signals from the oil pressure switch and transmits the oil pressure switch signal to the combination meter via the BCM through CAN communication lines. The digital oil pressure gauge will only display either a low or normal oil pressure level.

A/T OIL TEMPERATURE GAUGE

A/T OIL TEMPERATURE GAUGE : System Diagram

INFOID:0000000012519116



A/T OIL TEMPERATURE GAUGE : System Description

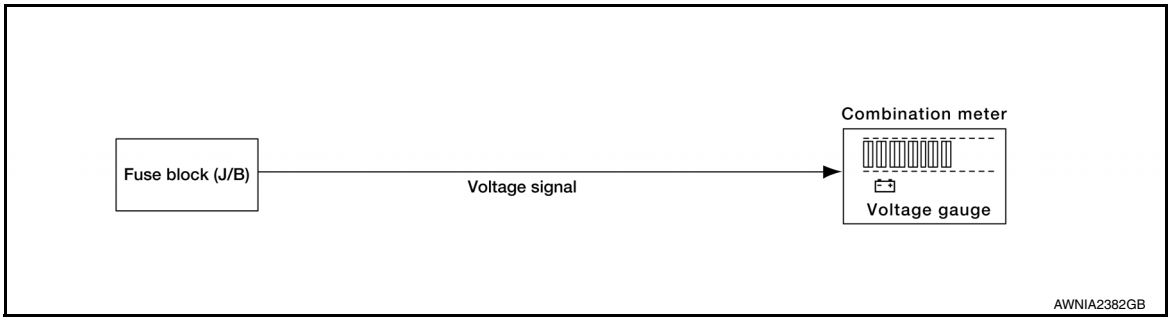
INFOID:0000000012519117

The TCM (transmission control module) provides an A/T fluid temperature signal to combination meter via CAN communication lines. The digital A/T oil temperature gauge will only indicate an A/T fluid temperature of either cold or hot.

VOLTAGE GAUGE

VOLTAGE GAUGE : System Diagram

INFOID:0000000012519118



VOLTAGE GAUGE : System Description

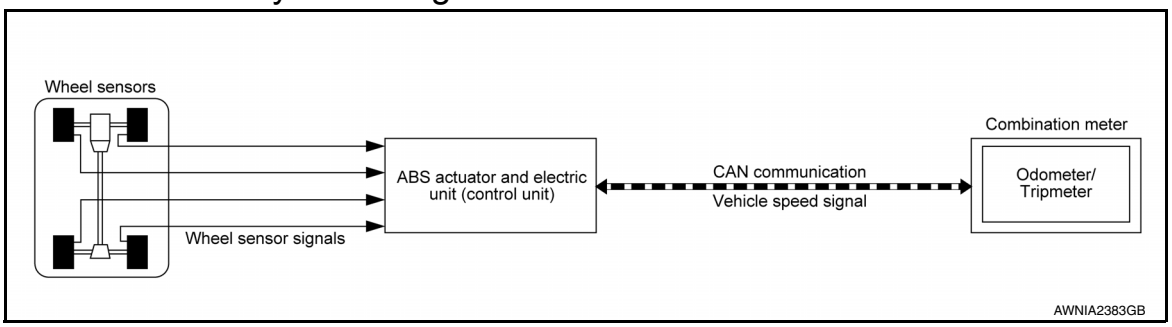
INFOID:0000000012519119

The digital voltage gauge indicates the battery/charging system voltage. The digital voltage gauge is regulated by the unified meter control unit.

ODO/TRIP METER

ODO/TRIP METER : System Diagram

INFOID:0000000012519120



ODO/TRIP METER : System Description

INFOID:0000000012519121

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

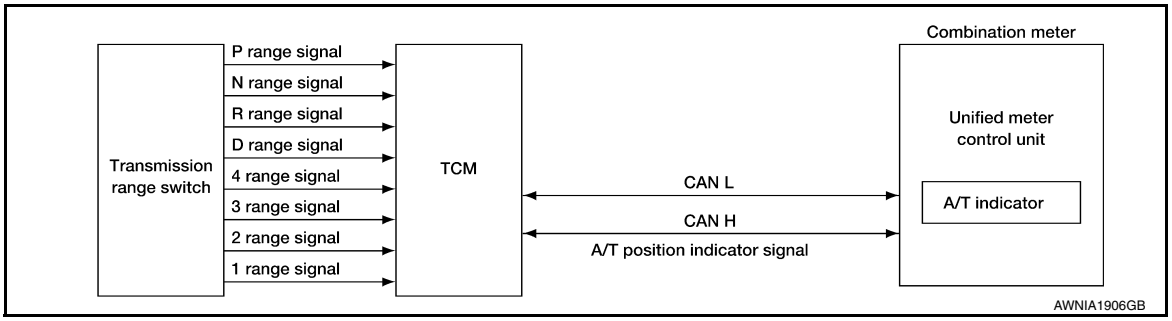
HOW TO CHANGE THE DISPLAY FOR ODO/TRIP METER

Refer to Owner's Manual for odo/trip meter operating instructions.

SHIFT POSITION INDICATOR

SHIFT POSITION INDICATOR : System Diagram

INFOID:0000000012519122



SHIFT POSITION INDICATOR : System Description

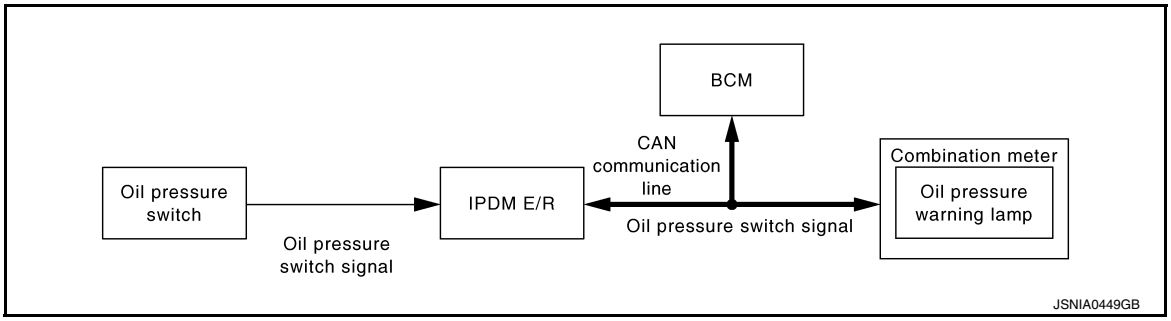
INFOID:0000000012519123

The TCM receives A/T indicator signals from the transmission range switch. The TCM then sends A/T position indicator signals to the combination meter via CAN communication lines. The combination meter indicates the received shift position.

WARNING LAMPS/INDICATOR LAMPS

WARNING LAMPS/INDICATOR LAMPS : System Diagram

INFOID:0000000012519124



WARNING LAMPS/INDICATOR LAMPS : System Description

INFOID:0000000012519125

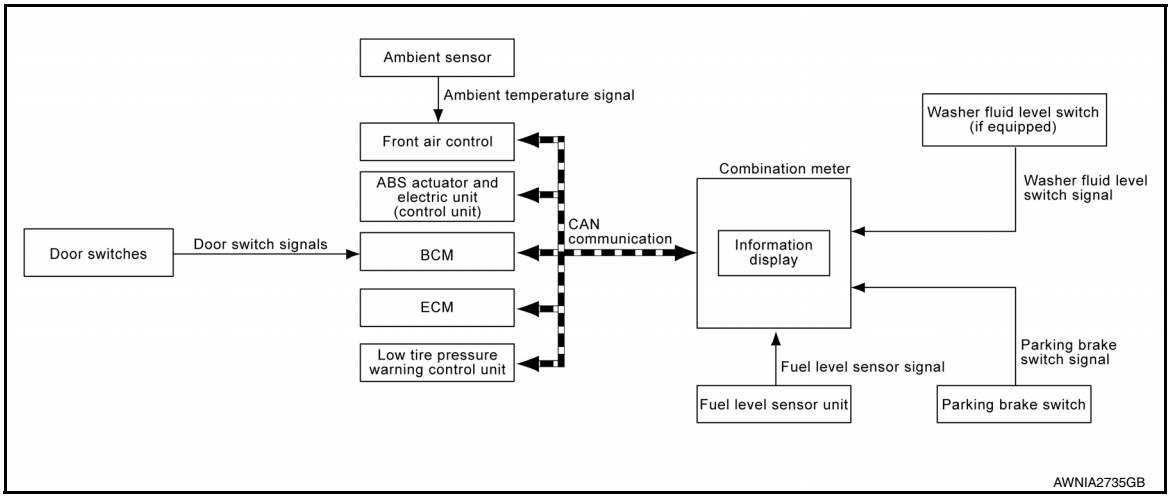
OIL PRESSURE WARNING LAMP

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

INFORMATION DISPLAY

INFORMATION DISPLAY : System Diagram

INFOID:0000000012519126



INFORMATION DISPLAY : System Description

INFOID:0000000012519127

FUNCTION

The information display can indicate the following items:

- Trip A/B
- Outside air temperature
- Warning/Indication messages (Door open, low fuel, low washer fluid (if equipped), parking brake, loose fuel cap, check tire pressure)

DOOR OPEN WARNING

This warning appears when the ignition switch is ON and any of the doors are opened. The BCM receives a door switch signal from the door switch with the open door. The BCM sends the door switch signal to the combination meter via CAN communication lines. The door open warning message is displayed.

LOW FUEL WARNING

A variable resistor signal is supplied to the combination meter from the fuel level sensor unit to determine the amount of fuel in the fuel tank. The combination meter turns on the low fuel warning message.

LOOSE FUEL CAP WARNING

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

CHECK TIRE PRESSURE WARNING

The CHECK TIRE PRESSURE warning message will display in the information display when low tire pressure warning control unit has detected a low tire pressure condition.

OUTSIDE AIR TEMPERATURE DISPLAY

The ambient temperature sensor sends an ambient temperature signal to the front air control. The front air control sends a signal to the combination meter via CAN communication lines. The outside air temperature is displayed.

PARKING BRAKE WARNING

When the parking brake is applied, the parking brake switch provides a ground signal to the combination meter (unified meter control unit). Then, when the ignition switch is turned ON and vehicle speed is greater than 7 km/h (4 MPH), the message is displayed and the warning chime sounds.

Refer to Owner's Manual for additional information display items.

COMPASS

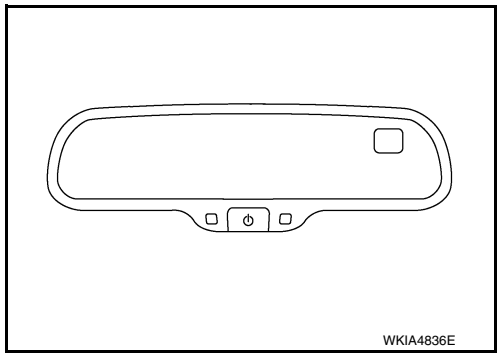
COMPASS : System Description

INFOID:0000000012519128

DESCRIPTION

With the ignition switch in the ON position, and the mode switch ON, the compass display will indicate the direction the vehicle is heading. Vehicle direction is displayed as follows:

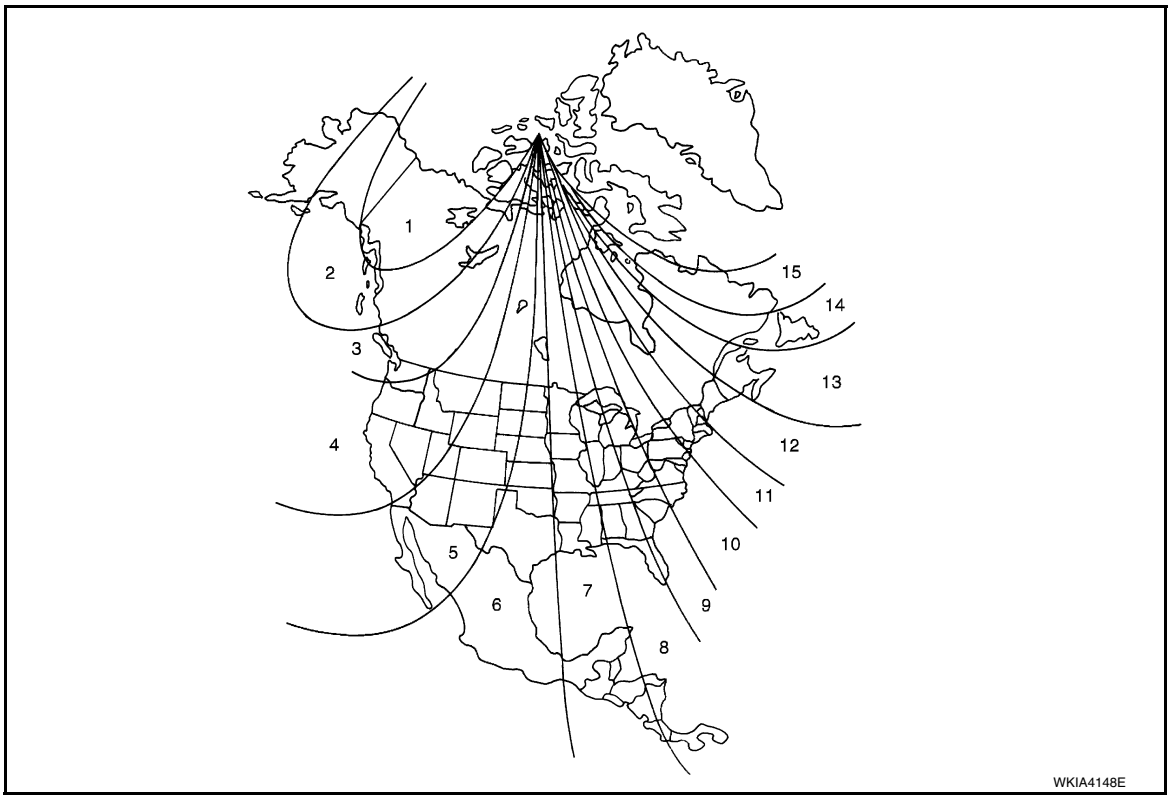
- N: north
- E: east
- S: south
- W: west



ZONE VARIATION SETTING PROCEDURE

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

Zone Variation Chart



1. Determine your location on the zone map.
2. Turn the ignition switch to the ON position.
3. Press and hold the mode switch until the current zone number appears in the display.
4. Press the mode switch repeatedly until the desired zone number appears in the display.

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

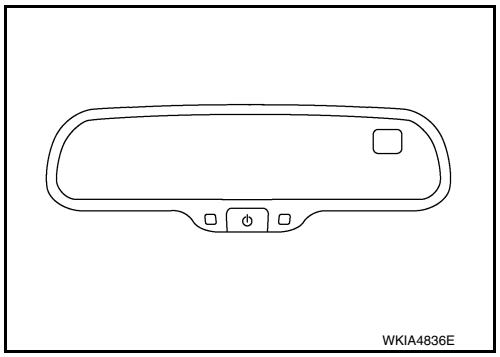
NOTE:
Use zone number 5 for Hawaii.

CALIBRATION PROCEDURE

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

1. Press and hold the mode switch until the display reads “C”.
2. Drive the vehicle slowly in a circle, in an open, safe place. The initial calibration is completed in about 3 turns.

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



DIAGNOSIS SYSTEM (COMBINATION METER)

Description

INFOID:0000000012519129

COMBINATION METER SELF-DIAGNOSIS MODE

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

- Gauge sweep and present gauge values.
- Illumination of all information display segments.
- Illumination of all lamps/LEDs that are controlled by the combination meter (regardless of switch status).
- Estimated present battery voltage.
- Seat belt buckle switch LH status.

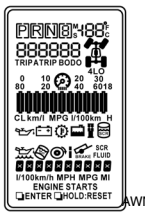
STARTING COMBINATION METER SELF-DIAGNOSIS MODE

NOTE:

- Check combination meter power supply and ground circuits if self-diagnosis mode does not start. Refer to MWI-51, "COMBINATION METER : Diagnosis Procedure". Replace combination meter if power supply and ground circuits are found to be normal and self-diagnosis mode does not start. Refer to MWI-68, "Removal and Installation".
- Combination meter self-diagnosis mode will function with the ignition switch in ON. Combination meter self-diagnosis mode will exit upon turning the ignition switch to OFF.

How to Initiate Self-Diagnosis Mode

1. Press and hold the odometer/trip meter switch. Turn the ignition switch ON.
2. Continue holding the odometer/trip meter switch for 5 - 8 seconds total.
3. When the diagnosis function is activated, the information display will show "tESt".

Event	Display	Description of Test/Data	Notes
Odometer/trip meter A/B switch held from 5 to 8 seconds (or until released)	tESt	—	Initiating self-diagnosis mode
Switch released	GAGE	Performs sweep of all gauges, then displays present gauge values.	Gauges sweep within 10 seconds
Switch pressed	(All segments illuminate)	Lights all LCD segments. Compare with picture.	 AWNIA2385ZZ
Switch pressed	bulb	Illuminates all meter controlled lamps/LEDs.	Part may not be configured for all lamps (functions) that turn on during test. This is normal.
Switch pressed	r XXXX, FAIL	Returns to normal operation of all lamps/LEDs and displays “r XXXX”.	If a malfunction exists, “FAIL” will flash.
Switch pressed	nrXXXX	Displays Hex ROM rev as stored in NVM.	—
Switch pressed	EE XX, FAIL	Displays “EE XX”.	If a malfunction exists, “FAIL” will flash.
Switch pressed* (4 times)	dtXXXX . . . . . Epr XX	—	—

Event	Display	Description of Test/Data	Notes
Switch pressed	1nF XX	Displays 8-bit market info value in Hex format.	$31 = USA $2A = Canada $23 = EUR-R $1C = EUR-L $38 = Japan $15 = Australia $0E = Middle East FF = Other
Switch pressed* (3 times)	cYL XX . . . . . tF	—	—
Switch pressed	ot1 XX	Displays oil pressure telltale ON in Hex format.	—
Switch pressed	ot0 XX	Displays oil pressure telltale OFF in Hex format.	—
Switch pressed	XXXXX	“Raw” speed value in hundredths of MPH. Gauge indication may be slightly higher. This is normal.	Will display “-----” if message is not received. Will display “99999” if data received is invalid.
Switch pressed	XXXXX	“Raw” speed value in hundredths of KPH. Gauge indication may be slightly different. This is normal.	Will display “-----” if message is not received. Will display “99999” if data received is invalid.
Switch pressed	t XXXX	Tachometer value in RPM. Gauge indication may be higher at higher RPM. This is normal.	Will display “-----” if message is not received.
Switch pressed	F1XXXX	Present fuel level A/D input. This input represents fuel sender input.	000-009 = Short circuit 010-254 = Normal range 255 = Open circuit “-----” = Missing (5 s)
Switch pressed	XXXC	Last temperature gauge input value in degrees C. Temperature gauge indicates present temperature per indication standard.	Will display “---”C if message is not received. Will display “999” if data received is invalid.
Switch pressed	BatXX.X	Estimated present battery voltage.	—
Switch pressed	rES -X	Seat belt buckle switch LH status.	1= Buckled 0 = Unbuckled
Switch pressed* (30 times)	PA -XX PA1-XX	—	—
Switch pressed	GAGE	—	Return to beginning of self-diagnosis cycle.

*: Switch must be pressed multiple times to toggle through engineering tests.

CONSULT Function (METER/M&A)

INFOID:0000000012519130

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

METER/M&A diagnosis mode	Description
Self Diagnostic Result	Displays combination meter self-diagnosis results.
Data Monitor	Displays combination meter input/output data in real time.
Work support	Displays diagnosis procedure of each work item.
Warning History	Lighting history of the warning lamp and indicator lamp can be checked.
CAN DIAG SUPPORT MNTR	The result of transmit/receive diagnosis of CAN communication can be read.

SELF-DIAG RESULTS

Display Item List
Refer to MWI-22, "DTC Index".

DATA MONITOR

Display Item List

X: Applicable

Display item [Unit]	MAIN SIGNALS	SELECTION FROM MENU	Description
SPEED METER [km/h] or [mph]	X	X	Displays the value of vehicle speed signal.
SPEED OUTPUT [km/h] or [mph]	X	X	Displays the value of vehicle speed signal, which is transmitted to each unit with CAN communication.
ODO OUTPUT [km/h or mph]		X	Displays odometer signal value transmitted to other units via CAN communication.
TACHO METER [rpm]	X	X	Displays the value of engine speed signal, which is input from ECM.
FUEL METER [lit.]	X	X	Displays the value, which processes a resistance signal from fuel gauge.
W TEMP METER [°C] or [°F]	X	X	Displays the value of engine coolant temperature signal, which is input from ECM.
ABS W/L [ON/OFF]		X	Displays [ON/OFF] condition of ABS warning lamp.
VDC/TCS IND [ON/OFF]		X	Displays [ON/OFF] condition of VDC OFF indicator lamp.
SLIP IND [ON/OFF]		X	Displays [ON/OFF] condition of SLIP indicator lamp.
BRAKE W/L [ON/OFF]		X	Displays [ON/OFF] condition of brake warning lamp.
DOOR W/L [ON/OFF]		X	Displays [ON/OFF] condition of door warning lamp.
HI-BEAM IND [ON/OFF]		X	Displays [ON/OFF] condition of high beam indicator.
TURN IND [ON/OFF]		X	Displays [ON/OFF] condition of turn indicator.
OIL W/L [ON/OFF]		X	Displays [ON/OFF] condition of oil pressure warning lamp.
MIL [ON/OFF]		X	Displays [ON/OFF] condition of malfunction indicator lamp.
CRUISE IND [ON/OFF]		X	Displays [ON/OFF] condition of CRUISE indicator.
SET IND [ON/OFF]		X	Displays [ON/OFF] condition of SET indicator.
ATC/T-AMT W/L [ON/OFF]		X	Displays [ON/OFF] condition of AT CHECK warning lamp.
ATF TEMP W/L [ON/OFF]		X	Displays [ON/OFF] condition of ATF TEMP warning lamp.
FUEL W/L [ON/OFF]		X	Displays [ON/OFF] condition of low-fuel warning lamp.
AIR PRES W/L [ON/OFF]		X	Displays [ON/OFF] condition of tire pressure warning lamp.
CHAGE W/L [ON/OFF]		X	Displays [ON/OFF] condition of charge warning lamp.
SHIFT IND [P, R, N, D, L]		X	Displays [P, R, N, D, L] range position of A/T.
FUEL CAP W/L [ON/OFF]		X	Displays [ON/OFF] condition of loose fuel cap indicator.
M RANGE SW [ON/OFF]		X	Displays [ON/OFF] condition of manual mode range switch.
NM RANGE SW [ON/OFF]		X	Displays [ON/OFF] condition of except for manual mode range switch.
AT SFT UP SW [ON/OFF]		X	Displays [ON/OFF] condition of AT shift-up switch.
AT SFT DWN SW [ON/OFF]		X	Displays [ON/OFF] condition of AT shift-down switch.
PKB SW [ON/OFF]		X	Indicates [ON/OFF] condition of parking brake switch.
BUCKLE SW [ON/OFF]		X	Indicates [ON/OFF] condition of seat belt buckle switch LH.
PASS BUCKLE SW [ON/OFF]		X	Indicates [ON/OFF] condition of seat belt buckle switch RH.
TOW MODE SW [ON/OFF]		X	Indicates [ON/OFF] condition of tow mode switch.
DISTANCE [km] or [mile]		X	Displays the value which is calculated by vehicle speed signal, fuel gauge and fuel consumption from ECM.

Display item [Unit]	MAIN SIGNALS	SELECTION FROM MENU	Description
OUTSIDE TEMP [°C or °F]		X	Ambient temperature value converted from ambient sensor signal received from ambient sensor. **NOTE:** This may not match with the temperature value indicated on the information display. (Because the information display value is a corrected value from the ambient sensor input value.)
BUZZER [ON/OFF]	X	X	Displays [ON/OFF] condition of buzzer.
VOLTMETER [Volts]		X	Displays battery/charging voltage.
TPMS PRESS L [ON/OFF]		X	Displays [ON/OFF] condition of check tire pressure message.
TPMS MALF [ON/OFF]		X	Displays [ON/OFF] condition of TPMS MALF warning lamp.

NOTE:
Some items are not available due to vehicle specification.

WARNING HISTORY

Special Menu

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

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

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

WORK SUPPORT

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

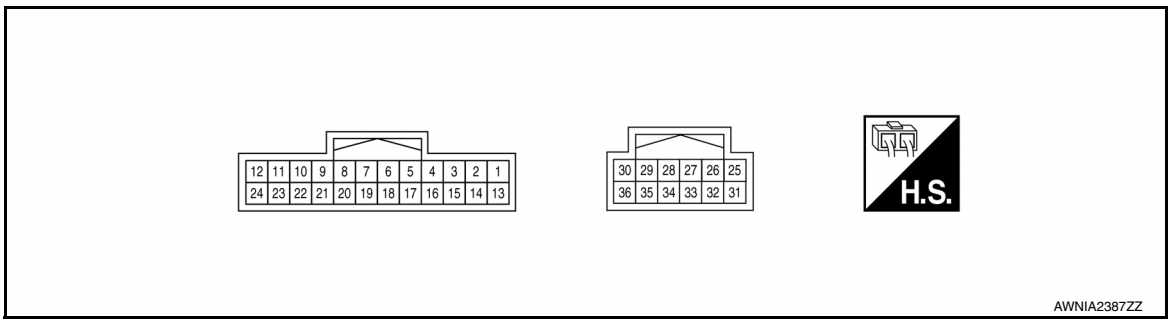
ECU DIAGNOSIS INFORMATION

COMBINATION METER

Reference Value

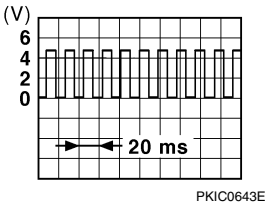
INFOID:0000000012519131

TERMINAL LAYOUT



PHYSICAL VALUES

Terminal	Wire color	Item	Condition		Reference value (V) (Approx.)
			Ignition switch	Operation or condition	
1	L	CAN-H	—	—	—
3	G	Security indicator input signal	OFF	Security indicator ON	0
				Security indicator OFF	Battery voltage
4	LG	Washer fluid level switch signal	ON	Washer fluid level low	0
5	R	Manual mode shift up signal	ON	Selector lever UP operation	0 V
				Other than the above	12 V
6	Y	Manual mode monitor signal	ON	Manual mode button pressed	0 V
				Other than the above	12 V
7	G	Manual mode shift down signal	ON	Selector lever DOWN operation	0 V
				Other than the above	12 V
8	BR	Manual mode M-Mode signal	ON	Manual mode button pressed	12 V
				Other than the above	0 V
10	SB	TOW mode signal	ON	When TOW mode switch is pressed	0 V
				Other than the above	12 V
12	O	Fuel level sensor signal	—	—	Refer to MWI-54, "Description".
13	P	CAN-L	—	—	—
17	O	Ignition switch ACC or ON power supply	—	—	Battery voltage
18	P	Air bag warning lamp signal	ON	Air bag warning lamp ON	4
				Air bag warning lamp OFF	0
20	O	Seat belt buckle switch LH signal	ON	Unfastened (ON)	0
21	B	Ground (Illumination)	—	—	0

Terminal	Wire color	Item	Condition		Reference value (V) (Approx.)
			Ignition switch	Operation or condition	
22	BR	Illumination power supply	—	—	Refer to INL-10, "ILLUMINATION CONTROL SYSTEM : System Description".
24	LG	Fuel level sensor ground	—	—	0
25	Y	Battery power supply	—	—	Battery voltage
29	P	Vehicle speed signal output (8-pulse)	ON	Speedometer operated [When vehicle speed is approx. 40 km/h (25 MPH)]	**NOTE:** Maximum voltage may be 12V due to specifications (connected units).  PKIC0643E
30	BR	Generator signal	ON	Generator voltage low	0
31	B	Ground	—	—	0
32	R	Ignition switch ON or START power supply	ON	—	Battery voltage
33	G	Parking brake switch signal	ON	Parking brake applied	0
36	L	Seat belt buckle switch RH signal	ON	Unfastened (ON)	0

Fail Safe

INFOID:0000000012519132

The combination meter performs a fail-safe operation for the functions listed below when communication is lost.

Function		Specifications
Speedometer		Zero indication.
Tachometer		
Fuel gauge		
Engine coolant temperature gauge		
Engine oil pressure gauge		
Voltage gauge		
A/T oil temperature gauge		
Illumination control	Meter illumination	Change to nighttime mode when communication is lost.
Segment LCD	Odometer	Freeze current indication.
	A/T position	Display turns off.
Buzzer		Buzzer turns off.

Function		Specifications
Warning lamp/indicator lamp	ABS warning lamp	Lamp turns on when communication is lost.
	BRAKE warning lamp	
	VDC OFF indicator lamp	
	SLIP indicator lamp	
	AT CHECK warning lamp	Lamp turns off when communication is lost.
	Oil pressure warning lamp	
	Malfunction indicator lamp	
	Master warning lamp	
	Air bag warning lamp	
	High beam indicator	
	Turn signal indicator lamp	
	Tow mode indicator lamp (if equipped)	
	Driver and passenger seat belt warning lamps	Lamp turns off when disconnected.
	Charge warning lamp	
	Security indicator lamp (if equipped)	
	Low tire pressure warning lamp	Lamp will flash every second for 1 minute and then stay on continuously thereafter.

DTC Index

INFOID:0000000012519133

CONSULT display	Malfunction	Reference page
CAN COMM CIRC [U1000]	Malfunction is detected in CAN communication. **CAUTION:** **Even when there is no malfunction on CAN communication system, malfunction may be misinterpreted when battery has low voltage (when maintaining 7 - 8 V for about 2 seconds) or 10A fuse [No. 9, located in the fuse block (J/B)] is disconnected.**	MWI-48, "Diagnosis Procedure"
VEHICLE SPEED CIRC [B2205]	Malfunction is detected when an erroneous speed signal is input. **CAUTION:** **Even when there is no malfunction on speed signal system, malfunction may be misinterpreted when battery has low voltage (when maintaining 7 - 8 V for about 2 seconds).**	MWI-50, "Diagnosis Procedure"

NOTE:
"TIME" indicates the following.
- 0: Indicates that a malfunction is detected at present.
- 1-63: Indicates that a malfunction was detected in the past. (Displays number of ignition switch OFF → ON cycles after malfunction is detected. Self-diagnosis result is erased when "63" is exceeded.)

BCM, IPDM E/R

List of ECU Reference

INFOID:0000000012519134

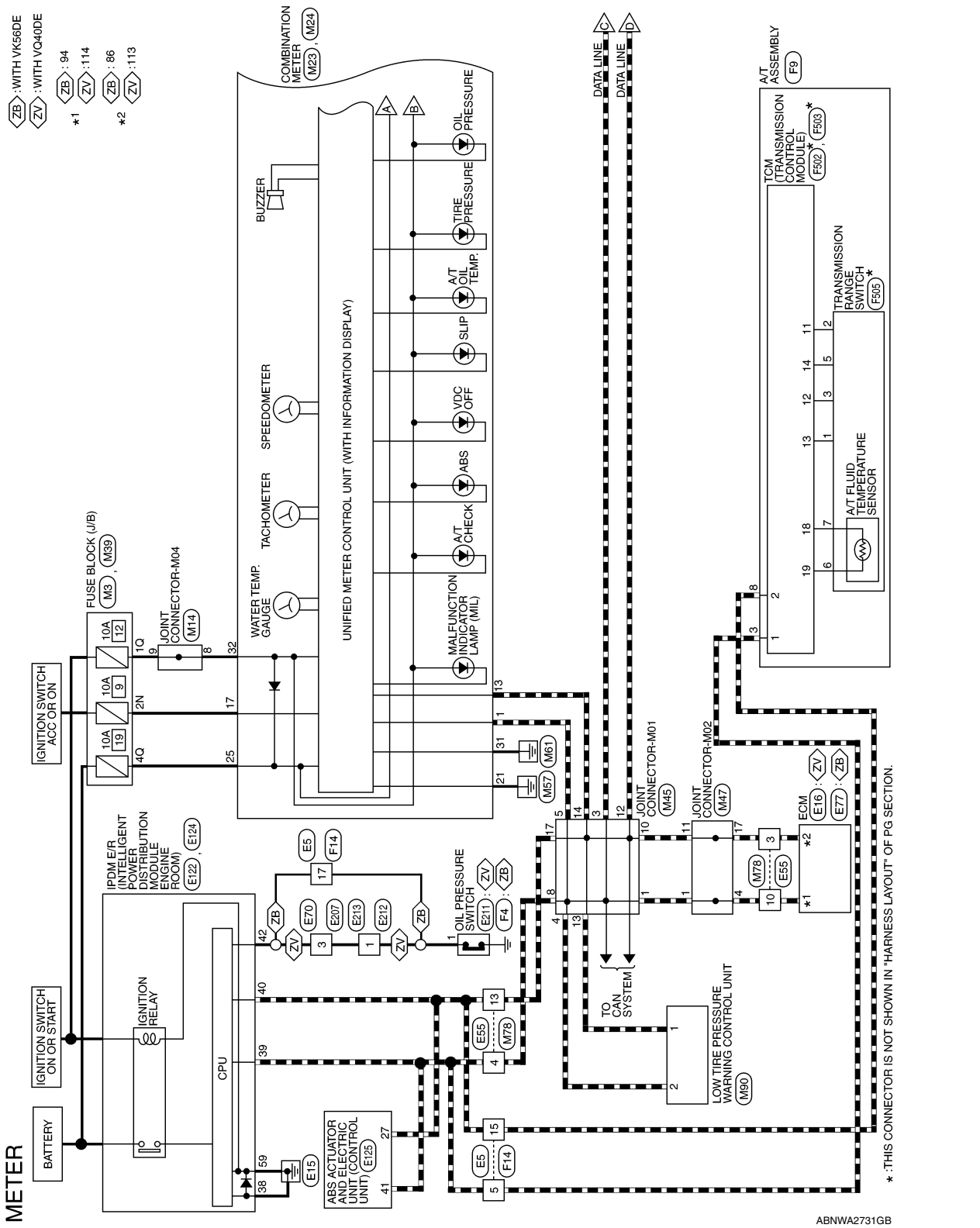
ECU	Reference
BCM	BCS-28, "Reference Value"
	BCS-41, "Wiring Diagram"
	BCS-39, "Fail-safe"
	BCS-39, "DTC Inspection Priority Chart"
	BCS-39, "DTC Index"
IPDM E/R	PCS-12, "Reference Value"
	PCS-19, "Wiring Diagram"
	PCS-13, "Terminal Layout"
	PCS-13, "Physical Values"
	PCS-17, "DTC Index"
	PCS-16, "Fail Safe"

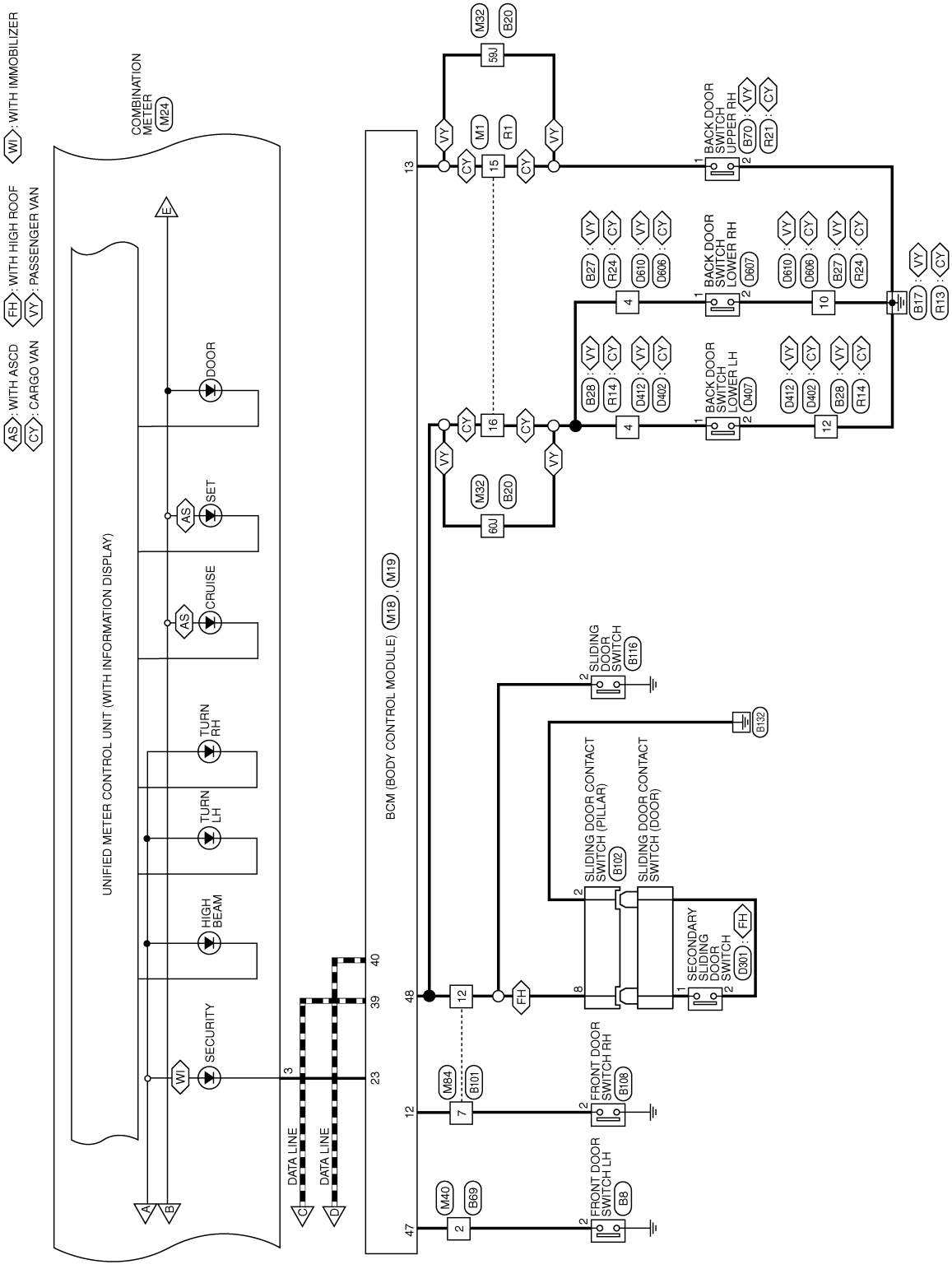
WIRING DIAGRAM

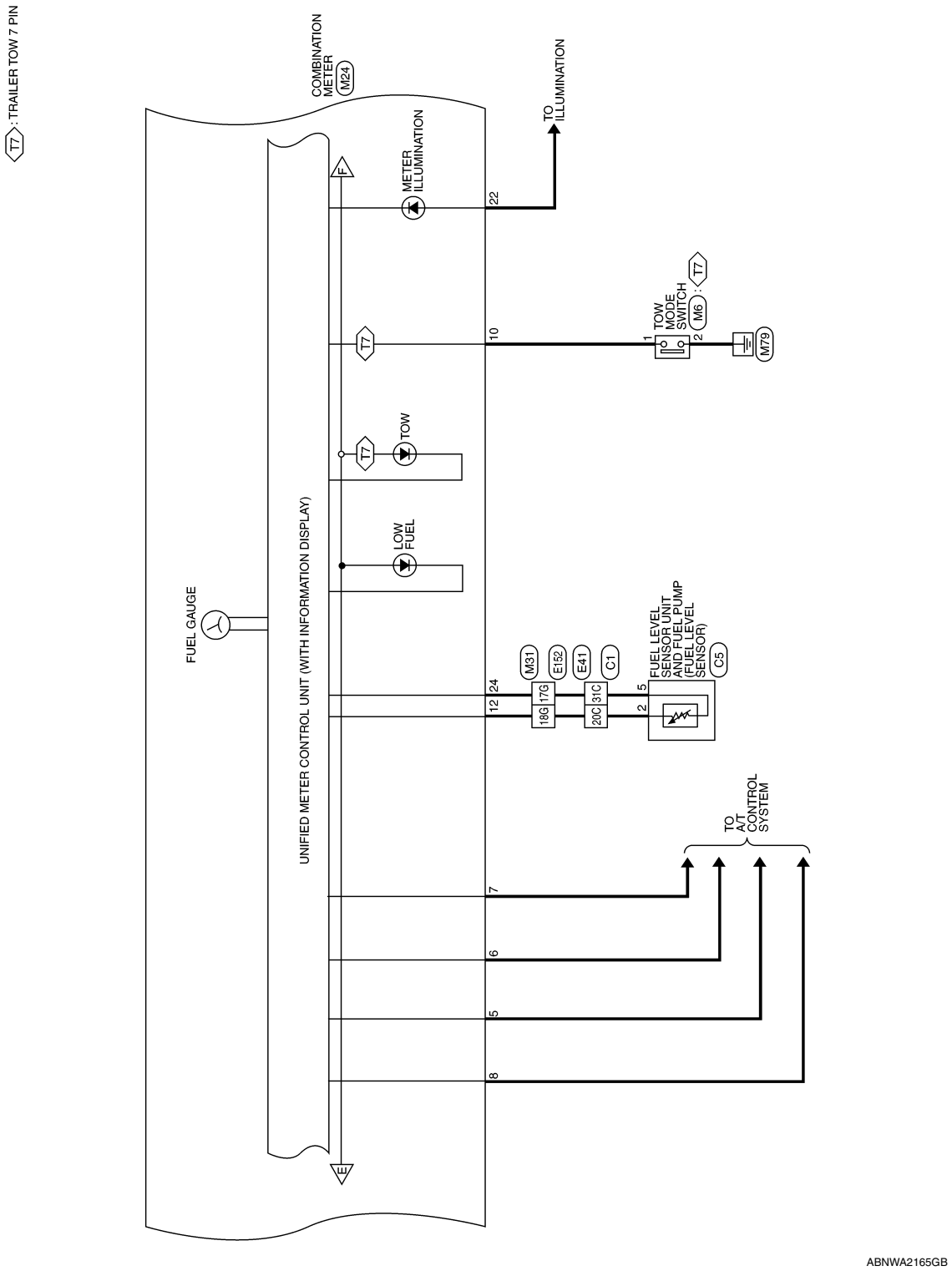
METER SYSTEM

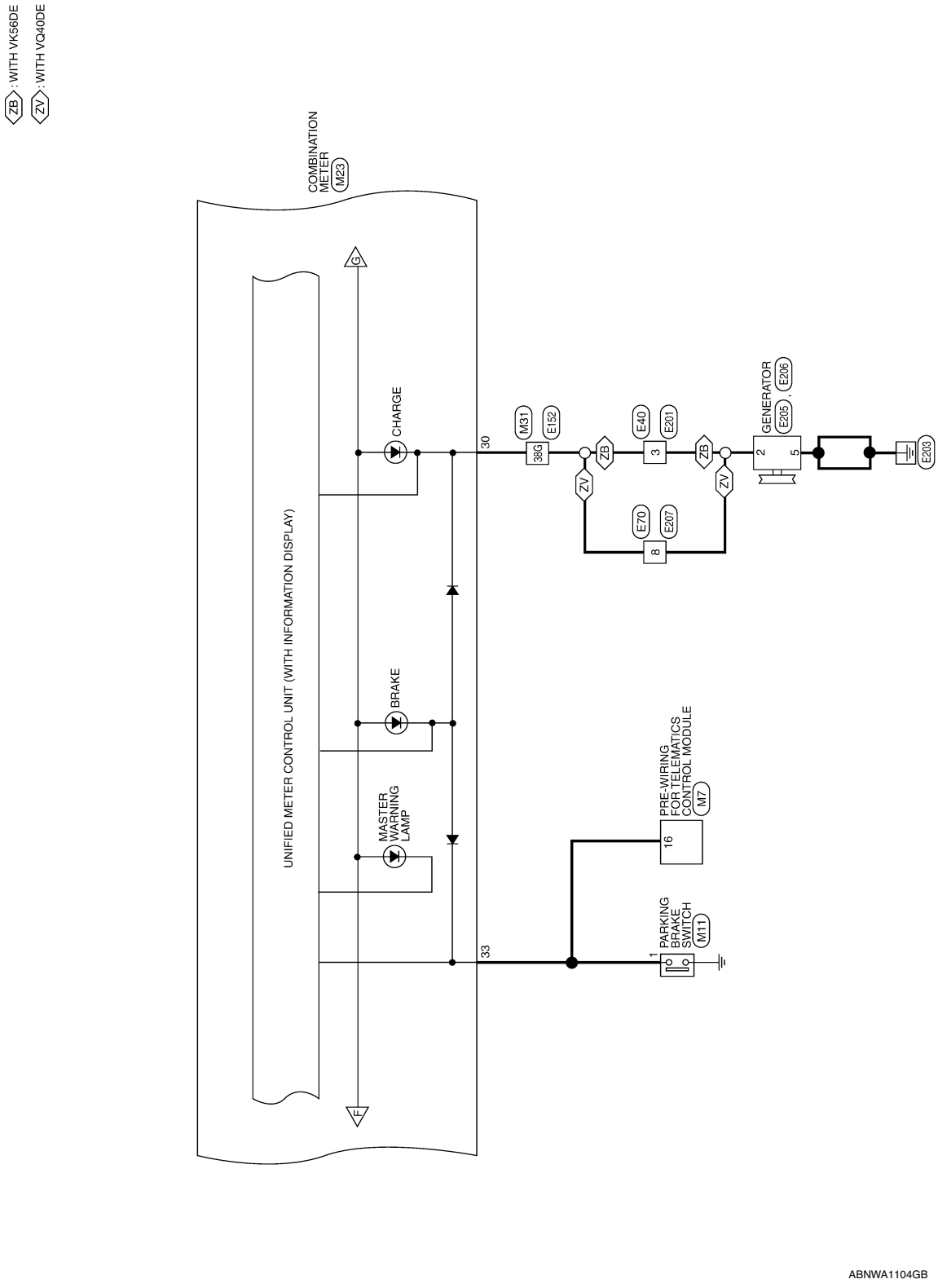
Wiring Diagram

INFOID:0000000012519135




WI : WITH IMMOBILIZER
FH : WITH HIGH ROOF
VY : PASSENGER VAN
AS : WITH ASCD
CY : CARGO VAN
COMBINATION METER M24
UNIFIED METER CONTROL UNIT (WITH INFORMATION DISPLAY)
DOOR
SET
CRUISE
TURN RH
TURN LH
HIGH BEAM
SECURITY
DATA LINE
BCM (BODY CONTROL MODULE) M18, M19
59J
60J
M32
B20
M1
R1
BACK DOOR SWITCH UPPER RH B70 : VY R21 : CY
BACK DOOR SWITCH LOWER RH D607 B27 : VY R24 : CY D610 : VY D606 : CY
BACK DOOR SWITCH LOWER LH D407 B28 : VY R14 : CY D412 : VY D402 : CY
B17 : VY R13 : CY
SLIDING DOOR SWITCH B116
B132
SLIDING DOOR CONTACT SWITCH (PILLAR) B102
SLIDING DOOR CONTACT SWITCH (DOOR)
SECONDARY SLIDING DOOR SWITCH D301 : FH
FRONT DOOR SWITCH RH B108
FRONT DOOR SWITCH LH B8
M84
B101
M40
B69
AANWA1454GB


T7 : TRAILER TOW 7 PIN
COMBINATION METER (M24)
TO ILLUMINATION
METER ILLUMINATION
F
22
T7
10
TOW MODE SWITCH (M6)
T7
1
2
M79
T7
TOW
LOW FUEL
FUEL GAUGE
UNIFIED METER CONTROL UNIT (WITH INFORMATION DISPLAY)
M31
E152
E41
C1
24
12
18G
17G
20C
31C
5
2
FUEL LEVEL SENSOR UNIT AND FUEL PUMP (FUEL LEVEL SENSOR) C5
TO A/T CONTROL SYSTEM
7
6
5
8
E
ABNWA2165GB



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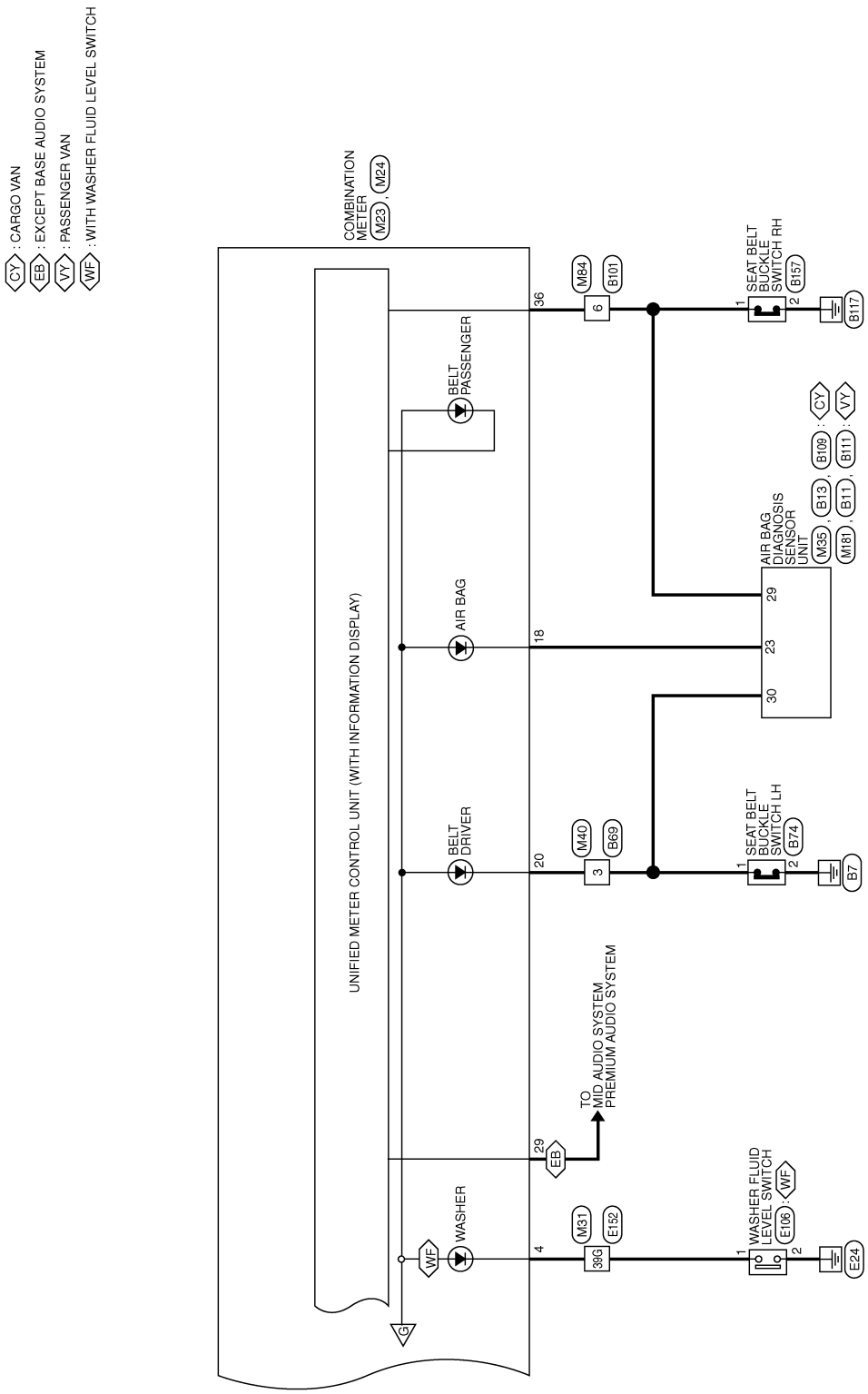
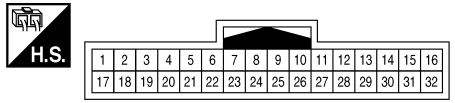

CY : CARGO VAN
EB : EXCEPT BASE AUDIO SYSTEM
VY : PASSENGER VAN
WF : WITH WASHER FLUID LEVEL SWITCH
COMBINATION METER
M23, M24
UNIFIED METER CONTROL UNIT (WITH INFORMATION DISPLAY)
BELT PASSENGER
AIR BAG
BELT DRIVER
WASHER
TO MID AUDIO SYSTEM PREMIUM AUDIO SYSTEM
M84
B101
SEAT BELT BUCKLE SWITCH RH
B157
B117
AIR BAG DIAGNOSIS SENSOR UNIT
M35, M181
B13, B11
B109 : CY
B111 : VY
M40
B69
SEAT BELT BUCKLE SWITCH LH
B74
B7
M31
E152
WASHER FLUID LEVEL SWITCH
E106 : WF
E24
AANWA1451GB

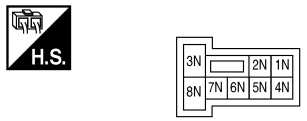
METER CONNECTORS

Connector No.	M1
Connector Name	WIRE TO WIRE
Connector Color	WHITE



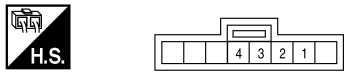
Terminal No.	Color of Wire	Signal Name
15	GR	–
16	O	–

Connector No.	M3
Connector Name	FUSE BLOCK (J/B)
Connector Color	WHITE



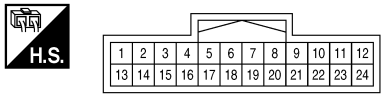
Terminal No.	Color of Wire	Signal Name
2N	O	–

Connector No.	M6
Connector Name	TOW MODE SWITCH
Connector Color	GRAY



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

Connector No.	M7
Connector Name	PRE-WIRING FOR TELEMATICS CONTROL MODULE
Connector Color	WHITE

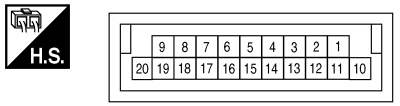


Terminal No.	Color of Wire	Signal Name
16	G	PARKING BRAKE

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

Terminal No.	Color of Wire	Signal Name
1	G	–

Connector No.	M14
Connector Name	JOINT CONNECTOR-M04
Connector Color	BLUE



Terminal No.	Color of Wire	Signal Name
8	R	–
9	R	–

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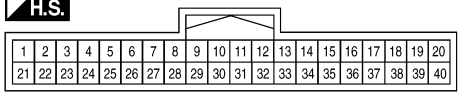
Connector No.	M18
Connector Name	BCM (BODY CONTROL MODULE)
Connector Color	WHITE

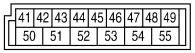
H.S.



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

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

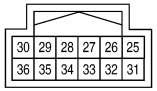
H.S.



Terminal No.	Color of Wire	Signal Name
47	SB	DOOR SW (DR)
48	O	DOOR SW (SLIDE, BK LWR)

Connector No.	M23
Connector Name	COMBINATION METER
Connector Color	WHITE

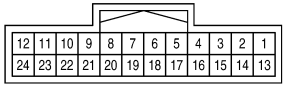
H.S.



Terminal No.	Color of Wire	Signal Name
25	Y	BATTERY
26	–	–
27	–	–
28	–	–
29	P	SPEED OUT 8
30	BR	CHARGE (ALT) INPUT
31	B	GND (POWER)
32	R	RUN START
33	G	PARK BRAKE SW
34	–	–
35	–	–
36	L	PASSENGER SEAT BELT

Connector No.	M24
Connector Name	COMBINATION METER
Connector Color	WHITE

H.S.



Terminal No.	Color of Wire	Signal Name
1	L	CAN-H
2	–	–
3	G	SECURITY
4	LG	WASHER FLUID SW
5	R	MANUAL MODE : UP
6	Y	MANUAL MODE : MONITOR
7	G	MANUAL MODE : DOWN
8	BR	MANUAL MODE : M-MODE
9	–	–
10	SB	TOW MODE SWITCH

Terminal No.	Color of Wire	Signal Name
11	–	–
12	O	FUEL SENDER INPUT
13	P	CAN-L
14	–	–
15	–	–
16	–	–
17	O	ACC
18	P	AIRBAG CONT
19	–	–
20	O	SEATBELT
21	B	GND (ILL)
22	BR	ILLUMINATION CONTROL
23	–	–
24	LG	FUEL LEVEL GROUND

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Connector No.	M32
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

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

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

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

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

71J	72J	73J	74J	75J	76J	77J	78J	79J	80J	81J
	82J	83J	84J	85J	86J	87J	88J	89J	90J	

91J	92J	93J	94J	95J
	96J	97J	98J	99J	100J

Terminal No.	Color of Wire	Signal Name
59J	GR	–
60J	O	–

Connector No.	M39
Connector Name	FUSE BLOCK (J/B)
Connector Color	WHITE

H.S.

3Q		2Q	1Q
8Q	7Q	6Q	5Q	4Q

Terminal No.	Color of Wire	Signal Name
1Q	R	–
4Q	Y	–

Terminal No.	Color of Wire	Signal Name
17G	LG	–
18G	O	–
38G	BR	–
39G	LG	–

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

H.S.

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

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

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

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

71G	72G	73G	74G	75G	76G	77G	78G	79G	80G	81G
	82G	83G	84G	85G	86G	87G	88G	89G	90G	

91G	92G	93G	94G	95G
	96G	97G	98G	99G	100G

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

Connector No.	M35
Connector Name	AIR BAG DIAGNOSIS SENSOR UNIT (CARGO VAN)
Connector Color	YELLOW

H.S.

8	9	7	6		2	5	4	3
19				23			22	
18				60	59	57	58	1

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

H.S.

5	4		3	2	1
12	11	10	9	8	7	6

Terminal No.	Color of Wire	Signal Name
2	SB	–
3	O	–

Connector No.	M45
Connector Name	JOINT CONNECTOR-M01
Connector Color	BLUE

H.S.

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

Terminal No.	Color of Wire	Signal Name
1	L	–
3	L	–
4	L	–
5	L	–
8	L	–
10	P	–
12	P	–
13	P	–
14	P	–
17	P	–

Connector No.	M47
Connector Name	JOINT CONNECTOR-M02
Connector Color	GREEN

H.S.

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

Terminal No.	Color of Wire	Signal Name
1	L	–
4	L	–
11	P	–
17	P	–

Connector No.	M78
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

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

Terminal No.	Color of Wire	Signal Name
3	P	–
4	L	–
10	L	–
13	P	–

Connector No.	M84
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

5	4		3	2	1
12	11	10	9	8	7	6

Terminal No.	Color of Wire	Signal Name
6	L	–
7	O	–
12	O	–

Connector No.	M90
Connector Name	LOW TIRE PRESSURE WARNING CONTROL UNIT
Connector Color	WHITE

H.S.

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

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

AANIA4225GB

Connector No.	E16
Connector Name	ECM (WITH VQ40DE)
Connector Color	GRAY

H.S.

97	101	105	109	113	117	121	125
98	102	106	110	114	118	122	126
99	103	107	111	115	119	123	127
100	104	108	112	116	120	124	128

Terminal No.	Color of Wire	Signal Name
113	P	CAN-L
114	L	CAN-H

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

H.S.

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

Terminal No.	Color of Wire	Signal Name
5	L	–
15	P	–
17	SB	–

Connector No.	M181
Connector Name	AIR BAG DIAGNOSIS SENSOR UNIT (PASSENGER VAN)
Connector Color	YELLOW

H.S.

8	9	7	6				2	5	4	3
19					23				22	
18					60	59		57	58	1

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

Connector No.	E55
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

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

Terminal No.	Color of Wire	Signal Name
3	P	–
4	L	–
10	L	–
13	P	–

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

H.S.

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

Terminal No.	Color of Wire	Signal Name
20C	O	–
31C	LG	–

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

H.S.

1	2	3

Terminal No.	Color of Wire	Signal Name
3	BR	–

AANIA4226GB

Connector No.	E70
Connector Name	WIRE TO WIRE
Connector Color	GRAY

H.S.

Terminal No.	Color of Wire	Signal Name
3	SB	–
8	BR	–

Connector No.	E77
Connector Name	ECM (WITH VK56DE)
Connector Color	BLACK

H.S.

Terminal No.	Color of Wire	Signal Name
86	P	CAN-L
94	L	CAN-H

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

H.S.

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

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

H.S.

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

Connector No.	E124
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Color	BLACK

H.S.

Terminal No.	Color of Wire	Signal Name
59	B	GND (POWER)

Connector No.	E125
Connector Name	ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)
Connector Color	BLACK

H.S.

Terminal No.	Color of Wire	Signal Name
27	P	CAN-L
41	L	CAN-H

AANIA4227GB

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

H.S.

Terminal No.	Color of Wire	Signal Name
3	BR	–

Connector No.	E207
Connector Name	WIRE TO WIRE
Connector Color	GRAY

H.S.

Terminal No.	Color of Wire	Signal Name
3	SB	–
8	BR	–

Terminal No.	Color of Wire	Signal Name
17G	LG	–
18G	O	–
38G	BR	–
39G	LG	–

Connector No.	E206
Connector Name	GENERATOR
Connector Color	–

H.S.

Terminal No.	Color of Wire	Signal Name
5	B	–

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

H.S.

Connector No.	E205
Connector Name	GENERATOR
Connector Color	BLACK

H.S.

Terminal No.	Color of Wire	Signal Name
2	BR	–

AANIA4228GB

Connector No.	E211
Connector Name	OIL PRESSURE SWITCH (WITH VQ40DE)
Connector Color	BLACK

H.S.

Terminal No.	Color of Wire	Signal Name
1	SB	–

Connector No.	E212
Connector Name	WIRE TO WIRE
Connector Color	BLACK

H.S.

Terminal No.	Color of Wire	Signal Name
1	SB	–

Connector No.	E213
Connector Name	WIRE TO WIRE
Connector Color	BLACK

H.S.

Terminal No.	Color of Wire	Signal Name
1	SB	–

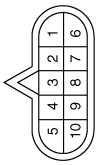
Connector No.	F4
Connector Name	OIL PRESSURE SWITCH (WITH VK56DE)
Connector Color	GRAY

H.S.

Terminal No.	Color of Wire	Signal Name
1	SB	–

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

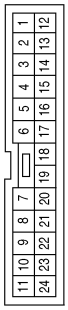
H.S.



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

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

H.S.



Terminal No.	Color of Wire	Signal Name
5	L	–
15	P	–
17	SB	–

AANIA4229GB

Connector No.	F502
Connector Name	TCM (TRANSMISSION CONTROL MODULE)
Connector Color	GRAY

H.S.

10	9	8	7	6	5	4	3	2	1

Terminal No.	Color of Wire	Signal Name
1	BR	CAN-H
2	L/Y	CAN-L

Connector No.	F503
Connector Name	TCM (TRANSMISSION CONTROL MODULE)
Connector Color	GREEN

H.S.

20	19	18	17	16	15	14	13	12	11

Terminal No.	Color of Wire	Signal Name
11	W	TR SW4
12	GR	TR SW2
13	BR	TR SW1
14	L	TR SW3
18	O	ATF SENS
19	G	ATF SENS

Connector No.	F505
Connector Name	TRANSMISSION RANGE SWITCH
Connector Color	GRAY

H.S.

10	9	8	7	6	5	4	3	2	1

Terminal No.	Color of Wire	Signal Name
1	BR	S1
2	W	S4
3	GR	S2
5	L	S3
6	G	–
7	O	–

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

H.S.

Terminal No.	Color of Wire	Signal Name
20C	O	–
31C	LG	–

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

H.S.

1	2	3	4	5

Terminal No.	Color of Wire	Signal Name
2	O	–
5	LG	–

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

H.S.

◇ 1	2	3

Terminal No.	Color of Wire	Signal Name
2	SB	–

AANIA4230GB

Connector No.	B11
Connector Name	AIR BAG DIAGNOSIS SENSOR UNIT (PASSENGER VAN)
Connector Color	YELLOW

H.S.

Terminal No.	Color of Wire	Signal Name
30	O	LH SEAT BELT BUCKLE SWITCH

Connector No.	B13
Connector Name	AIR BAG DIAGNOSIS SENSOR UNIT (CARGO VAN)
Connector Color	YELLOW

H.S.

Terminal No.	Color of Wire	Signal Name
30	O	LH SEAT BELT BUCKLE SWITCH

Connector No.	B20
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
59J	GR	–
59J	O	–

Connector No.	B27
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
4	O	–
10	B	–

AANIA4231GB

Connector No.	B70
Connector Name	BACK DOOR SWITCH UPPER RH (PASSENGER VAN)
Connector Color	WHITE

H.S.

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

Connector No.	B69
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
2	SB	–
3	O	–

Connector No.	B28
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
4	O	–
12	B	–

Connector No.	B102
Connector Name	SLIDING DOOR CONTACT SWITCH
Connector Color	WHITE

H.S.

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

Connector No.	B101
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
6	L	–
7	O	–
12	O	

Connector No.	B74
Connector Name	SEAT BELT BUCKLE SWITCH LH
Connector Color	WHITE

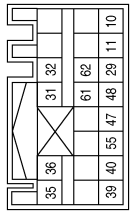
H.S.

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

AANIA4232GB

Connector No.	B111
Connector Name	AIR BAG DIAGNOSIS SENSOR UNIT (PASSENGER VAN)
Connector Color	YELLOW

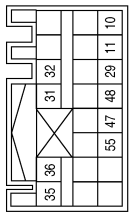
H.S.



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

Connector No.	B109
Connector Name	AIR BAG DIAGNOSIS SENSOR UNIT (CARGO VAN)
Connector Color	YELLOW

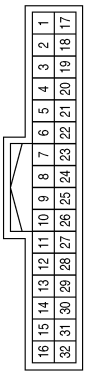
H.S.



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

Connector No.	R1
Connector Name	WIRE TO WIRE
Connector Color	WHITE

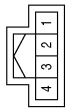
H.S.



Terminal No.	Color of Wire	Signal Name
15	GR	–
16	O	–

Connector No.	B157
Connector Name	SEAT BELT BUCKLE SWITCH RH
Connector Color	WHITE

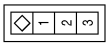
H.S.



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

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

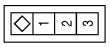
H.S.



Terminal No.	Color of Wire	Signal Name
2	O	–

Connector No.	B116
Connector Name	SLIDING DOOR SWITCH
Connector Color	WHITE

H.S.



Terminal No.	Color of Wire	Signal Name
2	O	–

AANIA4233GB

Connector No.	R24
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

1	2	3		4	5
6	7	8	9	10	11	12

Terminal No.	Color of Wire	Signal Name
4	O	–
10	B	–

Connector No.	R21
Connector Name	BACK DOOR SWITCH UPPER RH (CARGO VAN)
Connector Color	WHITE

H.S.

1
2

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

Connector No.	R14
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

1	2	3		4	5
6	7	8	9	10	11	12

Terminal No.	Color of Wire	Signal Name
4	O	–
12	B	–

Connector No.	D407
Connector Name	BACK DOOR SWITCH LOWER LH
Connector Color	BLACK

H.S.

2	1

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

Connector No.	D402
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

5	4		3	2	1
12	11	10	9	8	7	6

Terminal No.	Color of Wire	Signal Name
4	O	–
12	B	–

Connector No.	D301
Connector Name	SECONDARY SLIDING DOOR SWITCH
Connector Color	BLACK

H.S.

2	1

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

AANIA4234GB

Connector No.	D412
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

5	4		3	2	1
12	11	10	9	8	7	6

Terminal No.	Color of Wire	Signal Name
4	O	–
12	B	–

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

H.S.

5	4		3	2	1
12	11	10	9	8	7	6

Terminal No.	Color of Wire	Signal Name
4	O	–
10	B	–

Connector No.	D607
Connector Name	BACK DOOR SWITCH LOWER RH
Connector Color	BLACK

H.S.

2	1

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

Connector No.	D610
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

5	4		3	2	1
12	11	10	9	8	7	6

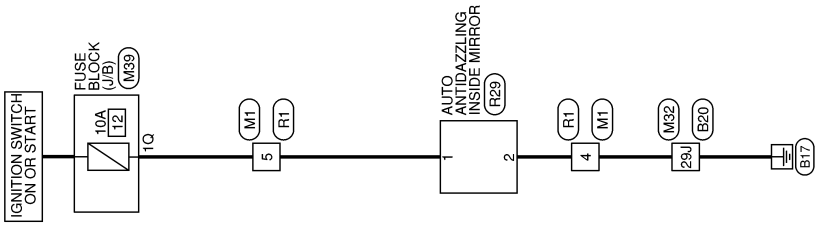
Terminal No.	Color of Wire	Signal Name
4	O	–
10	B	–

AANIA4235GB

COMPASS

Wiring Diagram

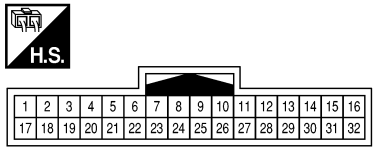
INFOID:0000000012519136



AANWA1457GB

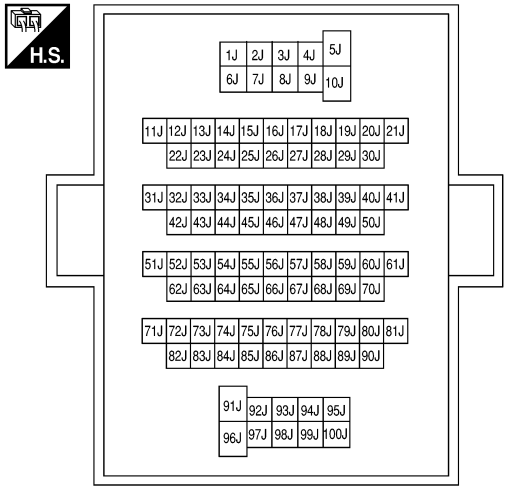
COMPASS CONNECTORS

Connector No.	M1
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
4	B	–
5	R	–

Connector No.	M32
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
29J	B	–

Connector No.	M39
Connector Name	FUSE BLOCK (J/B)
Connector Color	WHITE

Terminal No.	Color of Wire	Signal Name
1Q	R	–

AANIA4249GB

Connector No.	R1
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

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

Terminal No.	Color of Wire	Signal Name
4	B	–
5	R	–

Connector No.	B20
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

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

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

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

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

81J	80J	79J	78J	77J	76J	75J	74J	73J	72J	71J
90J	89J	88J	87J	86J	85J	84J	83J	82J		

95J	94J	93J	92J	91J
100J	99J	98J	97J	96J

Terminal No.	Color of Wire	Signal Name
29J	B	–

Connector No.	R29
Connector Name	AUTO ANTI-DAZZLING INSIDE MIRROR
Connector Color	BLACK

H.S.

1	2	3	4	5	6	7

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

AANIA4250GB

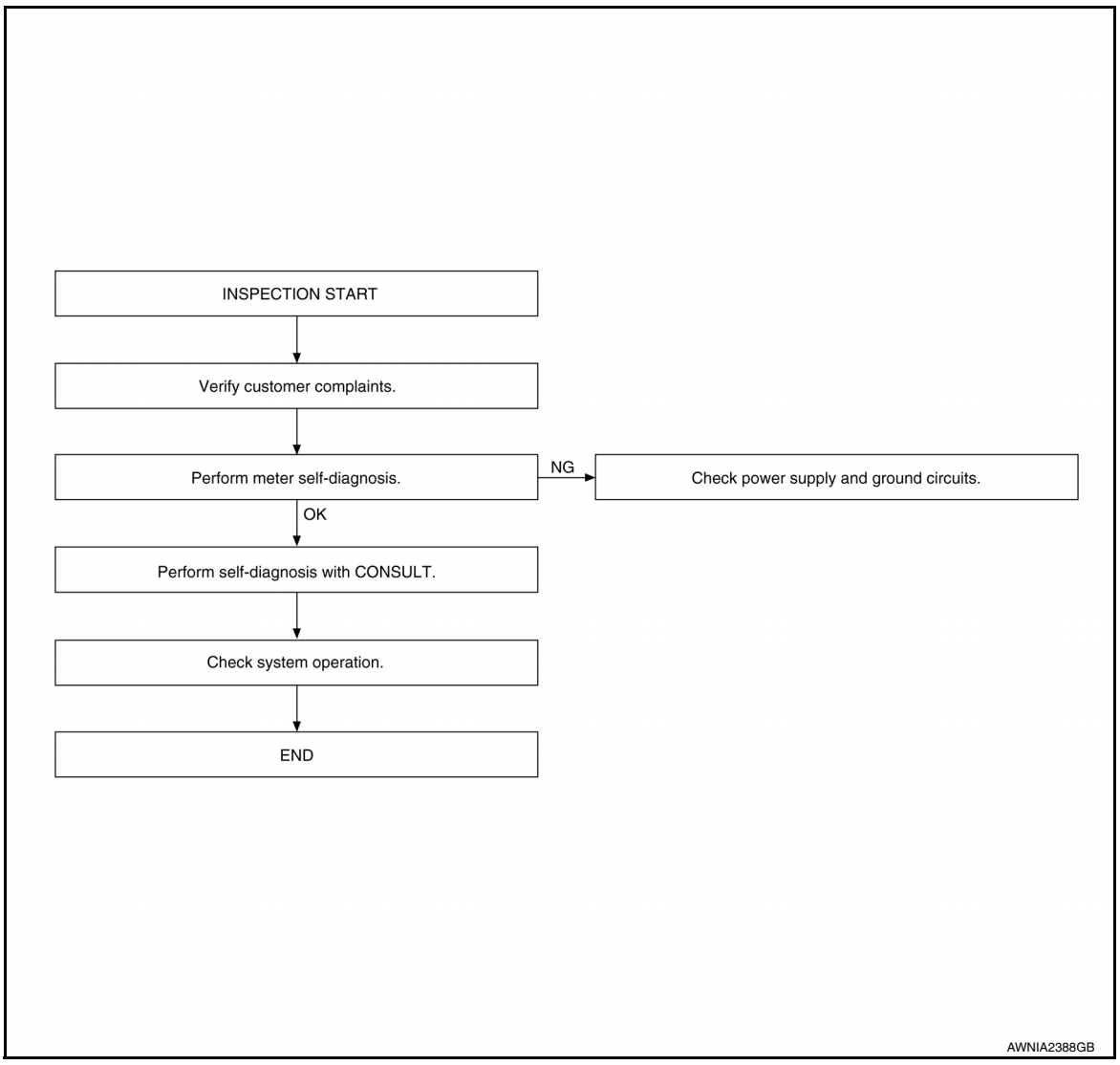
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORKFLOW

Work Flow

INFOID:0000000012519137

OVERALL SEQUENCE



DETAILED FLOW

1.CONFIRM SYMPTOM

Confirm symptom or customer complaint.

>> GO TO 2

2.SELF-DIAGNOSIS OF COMBINATION METER

Perform self-diagnosis of combination meter. Refer to MWI-16, "Description".

Is the inspection result normal?

YES >> GO TO 3

NO >> If self-diagnosis will not start, check power supply and ground circuit of combination meter. Refer to MWI-51, "COMBINATION METER : Diagnosis Procedure". If power supply and ground circuits are OK, replace combination meter. Refer to MWI-68, "Removal and Installation".

3.CHECK COMBINATION METER WITH CONSULT

Select “METER/M&A” on CONSULT and perform self-diagnosis of combination meter. Refer to MWI-17, "CONSULT Function (METER/M&A)".

Is the inspection result normal?

YES >> Check symptom. GO TO 4.
NO >> Refer to MWI-22, "DTC Index".

4.CHECK SYSTEM OPERATION

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

Is the inspection result normal?

YES >> Inspection End.
NO >> GO TO 1

DTC/CIRCUIT DIAGNOSIS

U1000 CAN COMM CIRCUIT

DTC Logic

INFOID:0000000012519138

DTC DETECTION LOGIC

DTC	CONSULT	Detection condition	Possible malfunction location
U1000	CAN COMM CIRC [U1000]	When combination meter is not receiving or transmitting CAN communication signals for 2 seconds or more.	CAN communication system

Diagnosis Procedure

INFOID:0000000012519139

1.CHECK CAN COMMUNICATION

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

>> GO TO LAN system. Refer to LAN-16, "Trouble Diagnosis Flow Chart".

U1010 CONTROL UNIT (CAN)

Description

INFOID:0000000012519140

Initial diagnosis of combination meter.

DTC Logic

INFOID:0000000012519141

DTC DETECTION LOGIC

DTC	CONSULT	Description	Probable malfunction location
U1010	CONTROL UNIT (CAN)	Error detected during the initial diagnosis of the CAN controller of combination meter.	Combination meter

Diagnosis Procedure

INFOID:0000000012519142

1.REPLACE COMBINATION METER

Replace combination meter. Refer to MWI-68, "Removal and Installation".

>> Inspection End.

DTC B2205 VEHICLE SPEED CIRCUIT

Description

INFOID:0000000012519143

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

DTC Logic

INFOID:0000000012519144

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

Diagnosis Procedure

INFOID:0000000012519145

1.CHECK COMBINATION METER INPUT SIGNAL

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

Is the inspection result normal?

YES >> Perform ABS actuator and electric unit (control unit) self-diagnosis. Refer to BRC-32, "CONSULT Function (ABS)".

NO >> Replace combination meter. Refer to MWI-68, "Removal and Installation".

POWER SUPPLY AND GROUND CIRCUIT
COMBINATION METER

COMBINATION METER : Diagnosis Procedure

INFOID:0000000012519146

Regarding Wiring Diagram information, refer to MWI-24, "Wiring Diagram".

1.CHECK FUSES

Check for blown combination meter fuses.

Unit	Power source	Fuse No.
Combination meter	Battery	19
	Ignition switch ON or START	12
	Ignition switch ACC or ON	9

Is the inspection result normal?

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

2.POWER SUPPLY CIRCUIT CHECK

1. Disconnect combination meter connectors.
2. Check voltage between combination meter harness connectors M23, M24 terminals 17, 25, 32 and ground.

Terminals			Ignition switch position			
(+)		(–)	OFF	ACC	ON	START
Connector	Terminal					
M23	25	Ground	Battery voltage	Battery voltage	Battery voltage	Battery voltage
	32		0V	0V	Battery voltage	Battery voltage
M24	17		0V	Battery voltage	Battery voltage	0V

Is the inspection result normal?

YES >> GO TO 3
NO >> Check harness for open between combination meter and fuse.

3.GROUND CIRCUIT CHECK

1. Turn ignition switch OFF.
2. Disconnect combination meter connectors.
3. Check continuity between combination meter harness connector M23 terminal 31 and ground, and connector M24 terminal 21 and ground.

Terminals			Continuity
(+)		(–)	
Connector	Terminal		
M23	31	Ground	Yes
M24	21		

Is the inspection result normal?

YES >> Inspection End.
NO >> Check ground harness.

BCM (BODY CONTROL MODULE)

BCM (BODY CONTROL MODULE) : Diagnosis Procedure

INFOID:0000000012815337

Regarding Wiring Diagram information, refer to BCS-41, "Wiring Diagram".

1.CHECK FUSES AND FUSIBLE LINK

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

Terminal No.	Signal name	Fuses and fusible link No.
57	Battery power supply	22 (10A)
70		J (40A)
11	Ignition ACC or ON	9 (10A)
38	Ignition ON or START	12 (10A)

Is the fuse blown?

YES >> Replace the blown fuse or fusible link after repairing the affected circuit.
NO >> GO TO 2.

2.CHECK POWER SUPPLY CIRCUIT

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

Terminals			Ignition switch position		
(+)		(–)			
BCM			OFF	ACC	ON
Connector	Terminal				
M20	70	Ground	Battery voltage	Battery voltage	Battery voltage
	57				
M18	11		Approx. 0 V	Battery voltage	Battery voltage
	38		Approx. 0 V	Approx. 0 V	Battery voltage

Is the inspection result normal?

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

3.CHECK GROUND CIRCUIT

Check continuity between BCM connector and ground.

BCM		Ground	Continuity
Connector	Terminal		
M20	67		Yes

Is the inspection result normal?

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

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

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

agnosis Procedure

INFOID:0000000012815336

Regarding Wiring Diagram information, refer to PCS-19, "Wiring Diagram".

1. CHECK FUSE AND FUSIBLE LINKS

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

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

Is the fuse blown?

YES >> Replace the blown fuse or fusible link after repairing the affected circuit.
NO >> GO TO 2

2. CHECK BATTERY POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R.
3. Check voltage between IPDM E/R connectors and ground.

Terminals			Ignition switch position		
(+)		(–)	OFF	ON	START
Connector	Terminal				
E118	1	Ground	Battery voltage	Battery voltage	Battery voltage
	2		Battery voltage	Battery voltage	Battery voltage
E119	12		0V	Battery voltage	Battery voltage

Is the measurement value normal?

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

3. CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Check continuity between IPDM E/R connectors and ground.

IPDM E/R		Ground	Continuity
Connector	Terminal		
E122	38		Yes
E124	59		

Does continuity exist?

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

FUEL LEVEL SENSOR SIGNAL CIRCUIT

Description

INFOID:0000000012519149

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

Component Function Check

INFOID:0000000012519150

1.COMBINATION METER INPUT SIGNAL

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

Fuel gauge pointer	Fuel tank volume [L] (Approx.)
Full	105.8
3/4	79.35
1/2	52.90
1/4	26.45
Empty	0.0

Does the data monitor value approximately match the fuel gauge indication?

YES >> Inspection End.
NO >> Replace combination meter. Refer to MWI-68, "Removal and Installation".

Diagnosis Procedure

INFOID:0000000012519151

Regarding Wiring Diagram information, refer to MWI-24, "Wiring Diagram".

1.CHECK HARNESS CONNECTOR

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

Is the inspection result normal?

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

2.CHECK FUEL LEVEL SENSOR UNIT CIRCUIT

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

Connector	Terminal	Connector	Terminal	Continuity
C5	2	M24	12	Yes

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

Connector	Terminal	Ground	Continuity
C5	2		No

Is the inspection result normal?

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

3.CHECK FUEL LEVEL SENSOR UNIT GROUND CIRCUIT

1. Check continuity between combination meter harness connector and fuel level sensor unit and fuel pump harness connector.

Connector	Terminal	Connector	Terminal	Continuity
C5	5	M24	24	Yes

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

Connector	Terminal	Ground	Continuity
C5	5		No

Is the inspection result normal?

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

4.CHECK INSTALLATION CONDITION

Check fuel level sensor unit installation, and check whether the float arm interferes or binds with any of the internal components in the fuel tank.

Is the inspection result normal?

YES >> Inspection End.
NO >> Install the fuel level sensor unit properly.

Component Inspection

INFOID:0000000012519152

1.REMOVE FUEL LEVEL SENSOR UNIT

Remove the fuel level sensor unit. Refer to FL-11, "Removal and Installation".

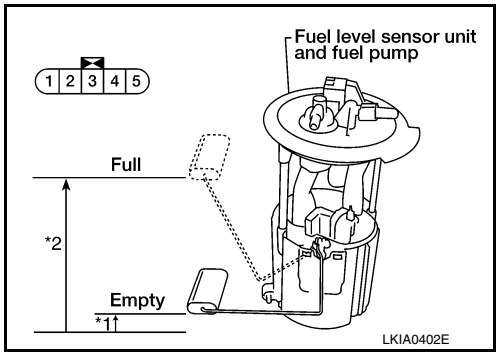
>> GO TO 2

2.CHECK FUEL LEVEL SENSOR UNIT AND FUEL PUMP

Check the resistance between terminals 2 and 5.

Terminal		Float position mm (in)			Resistance value (Approx.)
2	5	*1	Empty	7.5 (0.3)	80Ω
		*2	Full	218.9 (8.6)	6Ω

*1 and *2: When float arm is in contact with stopper.



Is the inspection result normal?

YES >> Inspection End.
NO >> Replace fuel level sensor unit and fuel pump. Refer to FL-11, "Removal and Installation".

OIL PRESSURE SWITCH SIGNAL CIRCUIT

Description

INFOID:0000000012519153

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

Component Function Check

INFOID:0000000012519154

1.COMBINATION METER INPUT SIGNAL

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

OIL W/L
When ignition switch is in ON position (Engine stopped) : ON
When ignition switch is in ON position (Engine running) : OFF

Is the inspection result normal?

YES >> Inspection End.
NO >> Check oil pressure switch signal circuit. Refer to MWI-56, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000012519155

Regarding Wiring Diagram information, refer to MWI-24, "Wiring Diagram".

1.CHECK OIL PRESSURE SWITCH CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connector E122 and oil pressure switch connector E211 (with VQ40DE) or F4 (with VK56DE).
3. Check continuity between IPDM E/R harness connector E122 terminal 42 and oil pressure switch harness connector E211 (with VQ40DE) or F4 (with VK56DE) terminal 1.

Continuity should exist.

4. Check continuity between IPDM E/R harness connector E122 terminal 42 and ground.

Continuity should not exist.

Are the inspection results normal?

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

Component Inspection

INFOID:0000000012519156

1.CHECK OIL PRESSURE SWITCH

Check continuity between oil pressure switch and ground.

Condition	Oil pressure [kPa (kg/cm^2, psi)]	Continuity
Engine stopped	Less than 9.8 (0.1, 1.4)	Yes
Engine running	More than 19.6 (0.2, 2.8)	No

Is the inspection result normal?

YES >> Inspection End.
NO >> Replace the oil pressure switch.

WASHER LEVEL SWITCH SIGNAL CIRCUIT

Description

INFOID:0000000012519157

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

Diagnosis Procedure

INFOID:0000000012519158

Regarding Wiring Diagram information, refer to MWI-24, "Wiring Diagram".

1.CHECK WASHER FLUID LEVEL SWITCH SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect combination meter connector and washer fluid level switch connector.
3. Check continuity between combination meter harness connector M24 terminal 4 and washer fluid level switch harness connector E106 terminal 1.

4 - 1 : Continuity should exist.

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

4 - Ground : Continuity should not exist.

Is the inspection result normal?

YES >> GO TO 2
NO >> Repair harness or connector.

2.CHECK WASHER FLUID LEVEL SWITCH GROUND CIRCUIT

Check continuity between washer fluid level switch harness connector E106 terminal 2 and ground.

2 - Ground : Continuity should exist.

Is the inspection result normal?

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

Component Inspection

INFOID:0000000012519159

1.CHECK WASHER FLUID LEVEL SWITCH

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

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

Is the inspection result normal?

YES >> Inspection End.
NO >> Replace washer fluid level switch.

PARKING BRAKE SWITCH SIGNAL CIRCUIT

Description

INFOID:0000000012519160

Transmits the parking brake switch signal to the combination meter.

Component Function Check

INFOID:0000000012519161

1.COMBINATION METER INPUT SIGNAL

1. Start engine.
2. Monitor BRAKE W/L in DATA MONITOR while applying and releasing the parking brake.

Condition	CONSULT
Parking brake applied	: ON
Parking brake released	: OFF

>> Inspection End.

Diagnosis Procedure

INFOID:0000000012519162

Regarding Wiring Diagram information, refer to MWI-24, "Wiring Diagram".

1.CHECK PARKING BRAKE SWITCH CIRCUIT

1. Disconnect combination meter connector M23 and parking brake switch connector.
2. Check continuity between combination meter harness connector M23 terminal 33 and parking brake switch harness connector M11 terminal 1.

33 - 1	: Continuity should exist.

3. Check continuity between combination meter harness connector M23 terminal 33 and ground.

33 - Ground	: Continuity should not exist.

Is the inspection result normal?

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

Component Inspection

INFOID:0000000012519163

1.CHECK PARKING BRAKE SWITCH

Check continuity between parking brake switch terminal 1 and switch case ground.

Component	Terminal	Condition	Continuity
Parking brake switch	1	Parking brake applied	Yes
		Parking brake released	No

Is the inspection result normal?

YES >> Inspection End.
NO >> Replace parking brake switch.

SYMPTOM DIAGNOSIS

THE FUEL GAUGE POINTER DOES NOT MOVE

Description

INFOID:0000000012519164

Fuel gauge needle will not move from a certain position.

Diagnosis Procedure

INFOID:0000000012519165

1. CHECK COMBINATION METER INPUT SIGNAL

1. Select METER/M&A on CONSULT.
2. Using FUEL METER of DATA MONITOR, compare the monitor value with the fuel gauge reading on the combination meter. Refer to MWI-54, "Component Function Check".

Does monitor value match fuel gauge reading?

YES >> GO TO 2
NO >> Replace combination meter. Refer to MWI-68, "Removal and Installation".

2. CHECK FUEL LEVEL SENSOR SIGNAL CIRCUIT

Check the fuel level sensor signal circuit. Refer to MWI-54, "Diagnosis Procedure".

Is the inspection result normal?

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

3. CHECK FUEL LEVEL SENSOR UNIT

Perform a unit check for the fuel level sensor unit. Refer to MWI-55, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 4
NO >> Replace fuel level sensor unit. Refer to FL-11, "Removal and Installation".

4. CHECK FLOAT INTERFERENCE

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

Is the inspection result normal?

YES >> Replace combination meter. Refer to MWI-68, "Removal and Installation".
NO >> Repair or replace malfunctioning parts.

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

Description

INFOID:0000000012519166

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

Diagnosis Procedure

INFOID:0000000012519167

1.OBSERVE FUEL GAUGE

Does it take a long time for the pointer to move to FULL position?

YES or NO

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

2.IDENTIFY FUELING CONDITION

Was the vehicle fueled with the ignition switch ON?

YES or NO

YES >> Be sure to fuel the vehicle with the ignition switch OFF. Otherwise, it will take a long time to move to FULL position because of the characteristic of the fuel gauge.
NO >> GO TO 3

3.OBSERVE VEHICLE POSITION

Is the vehicle parked on an incline?

YES or NO

YES >> Check the fuel level indication with vehicle on a level surface.
NO >> GO TO 4

4.OBSERVE FUEL GAUGE POINTER

During driving, does the fuel gauge pointer move gradually toward EMPTY position?

YES or NO

YES >> Check the components. Refer to MWI-55, "Component Inspection".
NO >> The float arm may interfere or bind with any of the components in the fuel tank.

THE OIL PRESSURE WARNING LAMP DOES NOT TURN ON

Description

INFOID:0000000012519168

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

Diagnosis Procedure

INFOID:0000000012519169

1.CHECK OIL PRESSURE WARNING LAMP

Perform IPDM E/R auto active test. Refer to PCS-8, "Diagnosis Description".

Is oil pressure warning lamp illuminated?

YES >> GO TO 2
NO >> Replace combination meter. Refer to MWI-68, "Removal and Installation".

2.CHECK OIL PRESSURE SWITCH SIGNAL CIRCUIT

Check the oil pressure switch signal circuit. Refer to MWI-56, "Diagnosis Procedure".

Is the inspection result normal?

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

3.CHECK OIL PRESSURE SWITCH UNIT

Perform a unit check for the oil pressure switch. Refer to MWI-56, "Component Inspection".

Is the inspection result normal?

YES >> Replace IPDM E/R. Refer to PCS-25, "Removal and Installation".
NO >> Replace oil pressure switch.

THE OIL PRESSURE WARNING LAMP DOES NOT TURN OFF

Description

INFOID:0000000012519170

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

Diagnosis Procedure

INFOID:0000000012519171

1.CHECK OIL PRESSURE WARNING LAMP

Perform IPDM E/R auto active test. Refer to PCS-8, "Diagnosis Description".

Does the oil pressure warning lamp flash?

YES >> GO TO 2
NO >> Replace combination meter. Refer to MWI-68, "Removal and Installation".

2.CHECK OIL PRESSURE SWITCH

Perform a unit check for the oil pressure switch. Refer to MWI-56, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 3
NO >> Replace oil pressure switch.

3.CHECK OIL PRESSURE SWITCH SIGNAL CIRCUIT

Check the oil pressure switch signal circuit. Refer to MWI-56, "Diagnosis Procedure".

Is the inspection result normal?

YES >> Replace IPDM E/R. Refer to PCS-25, "Removal and Installation".
NO >> Repair harness or connector.

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

Description

INFOID:0000000012519172

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

Diagnosis Procedure

INFOID:0000000012519173

1.CHECK PARKING BRAKE WARNING LAMP OPERATION

1. Start engine.
2. Watch BRAKE warning lamp while applying and releasing the parking brake.

Condition	BRAKE warning lamp
Parking brake applied	: ON
Parking brake released	: OFF

Is the inspection result normal?

YES >> Replace combination meter. Refer to MWI-68, "Removal and Installation".
NO >> GO TO 2

2.CHECK PARKING BRAKE SWITCH

Perform a unit check for the parking brake switch. Refer to MWI-58, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 3
NO >> Replace parking brake switch.

3.CHECK PARKING BRAKE SWITCH SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Check the parking brake switch signal circuit. Refer to MWI-58, "Diagnosis Procedure".

Is the inspection result normal?

YES >> Replace combination meter. Refer to MWI-68, "Removal and Installation".
NO >> Repair harness or connector.

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

Description

INFOID:0000000012519174

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

Diagnosis Procedure

INFOID:0000000012519175

1.CHECK WASHER FLUID LEVEL SWITCH

Perform a unit check for the washer fluid level switch. Refer to MWI-57, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 2
NO >> Replace washer level switch.

2.CHECK WASHER FLUID LEVEL SWITCH SIGNAL CIRCUIT

Check the washer fluid level switch signal circuit. Refer to MWI-57, "Diagnosis Procedure".

Is the inspection result normal?

YES >> Replace combination meter. Refer to MWI-68, "Removal and Installation".
NO >> Repair harness or connector.

THE DOOR OPEN WARNING CONTINUES DISPLAYING, OR DOES NOT DISPLAY

Description

INFOID:0000000012519176

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

Diagnosis Procedure

INFOID:0000000012519177

1.CHECK COMBINATION METER INPUT SIGNAL

1. Select METER/M&A on CONSULT.
2. Monitor DOOR W/L of DATA MONITOR while opening and closing each door.

Condition	CONSULT	
	Door open	Door closed
Front door LH	ON	OFF
Front door RH	ON	OFF
Back door LH	ON	OFF
Back door RH	ON	OFF
Sliding door	ON	OFF

Is the inspection result normal?

YES >> Replace combination meter. Refer to MWI-68, "Removal and Installation".
NO >> GO TO 2

2.CHECK BCM INPUT SIGNAL

1. Select BCM on CONSULT.
2. Monitor DOOR SW-DR, DOOR SW-AS, DOOR SW-RL (sliding door) and DOOR SW-RR (back door) of DATA MONITOR while opening and closing all doors.

Condition	CONSULT	
	Door open	Door closed
DOOR SW-DR	ON	OFF
DOOR SW-AS	ON	OFF
DOOR SW-RL	ON	OFF
DOOR SW-RR	ON	OFF

Is the inspection result normal?

YES >> Replace BCM. Refer to BCS-62, "Removal and Installation".
NO >> GO TO 3

3.CHECK DOOR SWITCHES

1. Disconnect suspect door switches.
2. Check continuity between suspect door switch and exposed metal of switch while pressing and releasing switch.

When door switch is released : Continuity should exist
When door switch is pushed : Continuity should not exist

Is the inspection result normal?

YES >> Repair open or short in circuit between BCM and door switch.
NO >> Replace door switch.

THE AMBIENT TEMPERATURE DISPLAY IS INCORRECT

Description

INFOID:0000000012519178

- 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:0000000012519179

1.CHECK COMBINATION METER INPUT SIGNAL

1. Select METER/M&A on CONSULT.
2. Check OUTSIDE TEMP of DATA MONITOR.

Does the ambient temperature approximately match the CONSULT display?

YES >> Replace combination meter. Refer to MWI-68, "Removal and Installation".
NO >> GO TO 2

2.CHECK AMBIENT SENSOR SIGNAL CIRCUIT

Check the ambient sensor signal circuit. Refer to HAC-169, "Diagnosis Procedure" (Manual A/C) or HAC-62, "Diagnosis Procedure" (Auto A/C).

Is the inspection result normal?

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

3.CHECK AMBIENT SENSOR

Check the ambient sensor. Refer to HAC-170, "Component Inspection" (Manual A/C) or HAC-63, "Component Inspection" (Auto A/C).

Is the inspection result normal?

YES >> Replace combination meter. Refer to MWI-68, "Removal and Installation".
NO >> Replace ambient sensor. Refer to HAC-213, "Removal and Installation" (Manual A/C) or HAC-111, "Removal and Installation" (Auto A/C).

NORMAL OPERATING CONDITION
COMPASS

COMPASS : Description

INFOID:0000000012519180

COMPASS

- The electronic compass is highly protected from changes in most magnetic fields. However, some large changes in magnetic fields can affect it. Some examples are (but not limited to): high tension power lines, large steel buildings, subways, steel bridges, automatic car washes, large piles of scrap metal, etc. While this does not happen very often, it is possible.
- During normal operation, the Compass Mirror will continuously update the compass calibration to adjust for gradual changes in the vehicle's magnetic "remnant" field. If the vehicle is subjected to high magnetic influences, the compass may appear to indicate false headings, become locked, or appear that it is unable to be calibrated. If this occurs, perform the calibration procedure.
- If at any time the compass continually displays the incorrect direction or the reading is erratic or locked, verify the correct zone variance.

Symptom Chart

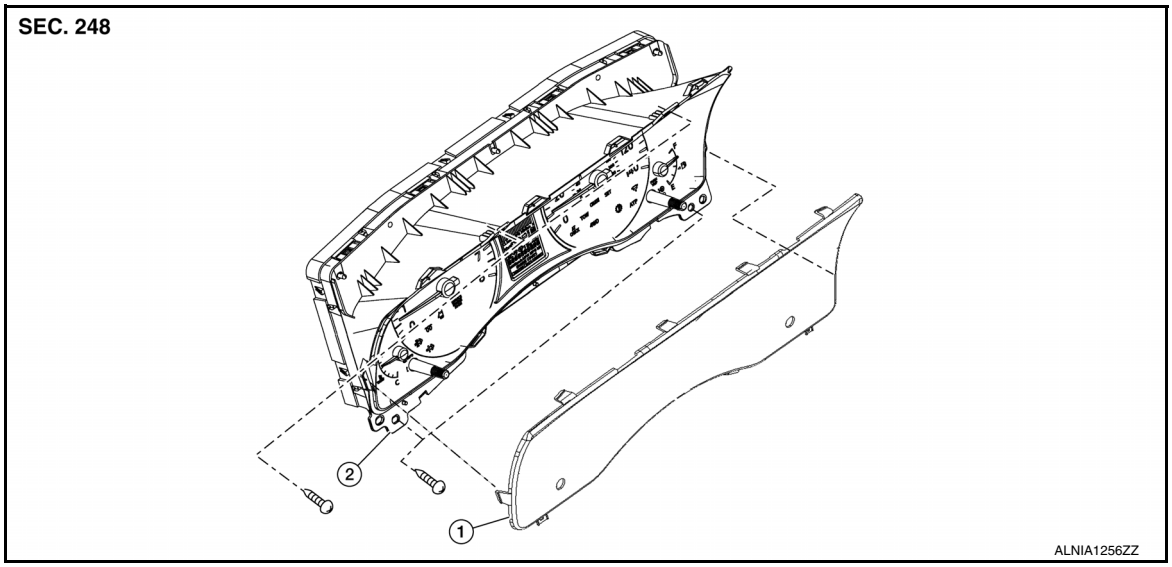
Symptom	Cause	Solution / Reference
The compass display reads "C".	• Compass is not calibrated. • Incorrect zone variance setting. • Large change in magnetic field (Steel bridges, subways, concentrations of metal, car washes, etc.) • Compass was calibrated incorrectly or in the presence of a strong magnetic field.	Perform Calibration. Refer to MWI-14, "COMPASS : System Description".
Compass shows the wrong direction.		
Compass does not change direction appears "Locked".		
Compass does not show all the directions, one or more is missing.		
The compass was calibrated but it "loses" calibration.		
On long trips the compass shows the wrong direction.		Perform Zone Variation Setting if correct reading is desired in that location. Refer to MWI-14, "COMPASS : System Description".

REMOVAL AND INSTALLATION

COMBINATION METER

Exploded View

INFOID:0000000012519181



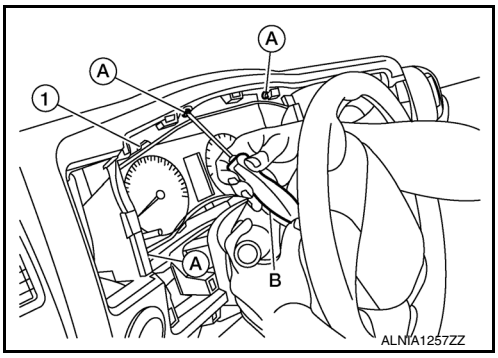
1. Combination meter lens
2. Combination meter

Removal and Installation

INFOID:0000000012519182

REMOVAL

1. Remove cluster lid A. Refer to IP-21, "Removal and Installation".
2. Remove the combination meter screws (A), using a suitable tool (B).
3. Pull out the combination meter (1).
4. Disconnect the harness connectors from the combination meter (1) and remove.



INSTALLATION

Installation is in the reverse order of removal.

Disassembly and Assembly

INFOID:0000000012519183

DISASSEMBLY

Release the pawls and remove the combination meter lens from the combination meter.

ASSEMBLY

Assembly is in the reverse order of disassembly.