SECTION DI
DRIVER INFORMATION SYSTEM

CONTENTS

PRECAUTION

PFP:00011

Precautions for Supplemental Restraint System (SRS) “AIR BAG” and “SEAT BELT PRE-TENSIONER”

EKS00DCY

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

WARNING:

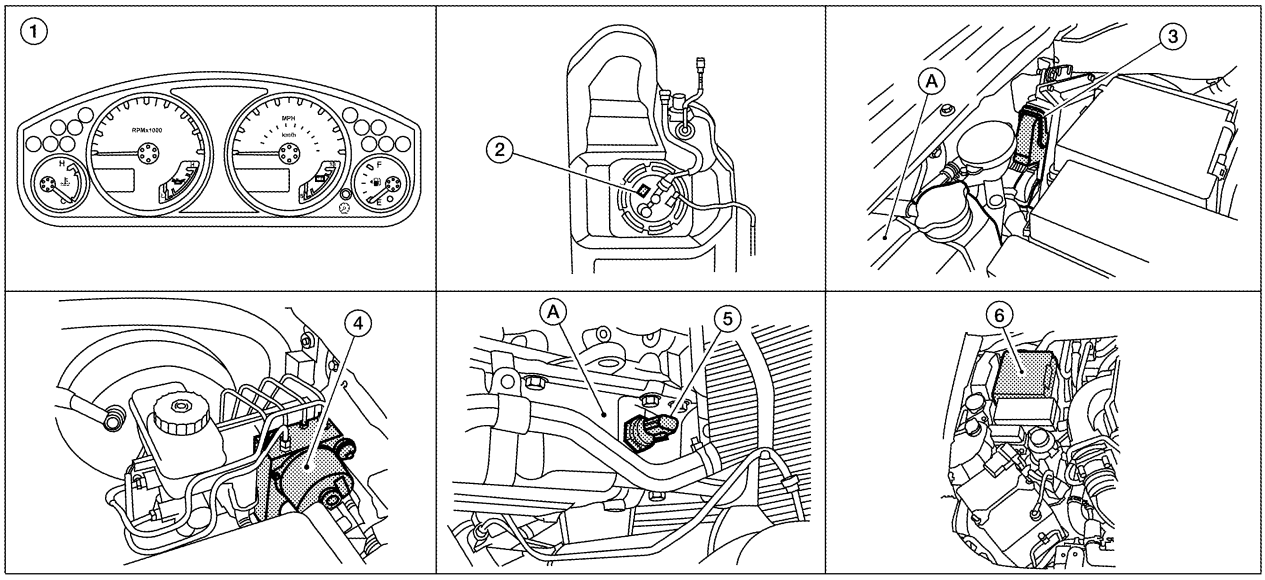
- **To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision which would result in air bag inflation, all maintenance must be performed by an authorized NISSAN/INFINITI dealer.**
- **Improper maintenance, including incorrect removal 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 SRS 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.**

COMBINATION METERS

PFP:24814

Component Parts and Harness Connector Location

EKS00DD0



WKIA5727E

1. Combination meter M24
2. Fuel level sensor unit and fuel pump C5 (view with fuel tank removed)
3. ECM E16 (view with ECM cover removed)
   A. Coolant reservoir
4. ABS actuator and electric unit (control unit) E125
5. Oil pressure switch E208
   A. Oil pan (upper)
6. IPDM E/R E122

System Description

EKS00DD1

UNIFIED METER CONTROL UNIT

- Speedometer, odometer, tachometer, fuel gauge, oil pressure gauge, voltage gauge, and water temperature gauge are controlled by the unified meter control unit, which is built into the combination meter.
- Warning indicators are controlled by signals drawn from the CAN communication system, BCM (body control module), and components connected directly to the combination meter.
- Digital meter is adopted for odometer/trip meters*, as well as the A/T position indicator display.
  *The record of the odometer is kept even if the battery cable is disconnected.
- Odometer/trip meters and A/T indicator segments can be checked in diagnosis mode.
- Meters/gauges can be checked in diagnosis mode.

NOTE:
Under the following conditions, the meters will perform a homing function. The meter pointers will move down slightly and then move back to the resting position. This is a normal design condition.

- Approximately 60 seconds after turning the ignition switch from the ON to the OFF position
- If the battery is disconnected and then reconnected

Illumination control

The unified meter control unit outputs the speedometer, odometer/trip meters, tachometer, oil pressure gauge, voltage gauge, A/T indicator, fuel and temperature gauge lighting when the ignition switch is turned on. When the lighting switch is turned on, the illumination control switch can be used to adjust the brightness of the combination meter illumination and the odometer/trip meters and meter illumination.

POWER SUPPLY AND GROUND CIRCUIT

Power is supplied at all times

- through 10A fuse [No.19, located in the fuse block (J/B)]
- to combination meter terminal 3.

With the ignition switch in the ON or START position, power is supplied

- through 10A fuse [No.14, located in the fuse block (J/B)]
- to combination meter terminal 16.

Ground is supplied

- to combination meter terminals 13 and 23
- through body grounds M57, M61 and M79.

WATER TEMPERATURE GAUGE

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

ENGINE OIL PRESSURE GAUGE

The engine oil pressure gauge indicates whether the engine oil pressure is low or normal.
The oil pressure gauge is controlled by the IPDM E/R (intelligent power distribution module engine room). Low oil pressure causes oil pressure switch terminal 1 to provide ground to IPDM E/R terminal 42. The IPDM E/R then signals the combination meter (unified meter control unit) via CAN communication lines and a low oil pressure indication is displayed by the oil pressure gauge.

VOLTAGE GAUGE

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

TACHOMETER

The tachometer indicates engine speed in revolutions per minute (rpm).
ECM provides an engine speed signal to combination meter via CAN communication lines.

FUEL GAUGE

The fuel gauge indicates the approximate fuel level in the fuel tank.
The fuel gauge is regulated by the unified meter control unit and a variable resistor signal supplied

- to combination meter terminal 9
- through fuel level sensor unit and fuel pump terminal 2
- through fuel level sensor unit and fuel pump terminal 5
- from combination meter terminal 4.

SPEEDOMETER

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

ODO/TRIP METER

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

How to Change the Display

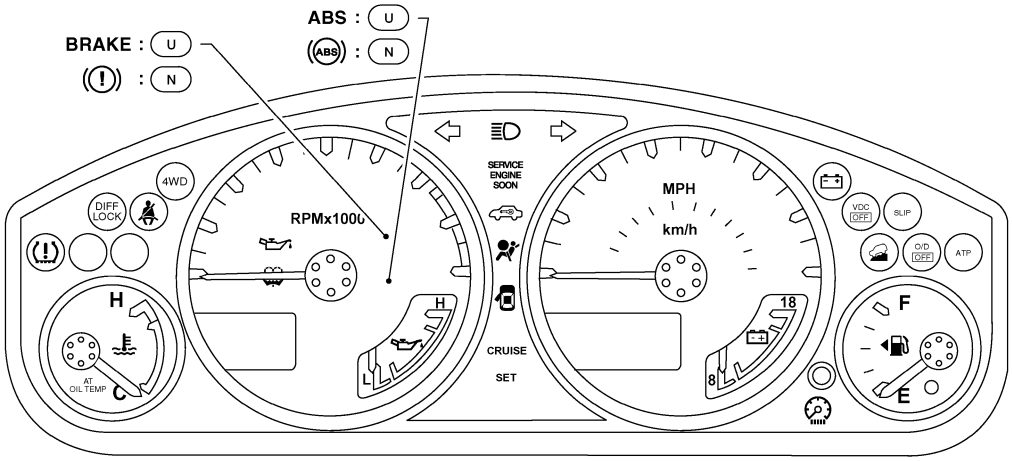
Refer to Owner's Manual for odo/trip meter operating instructions.

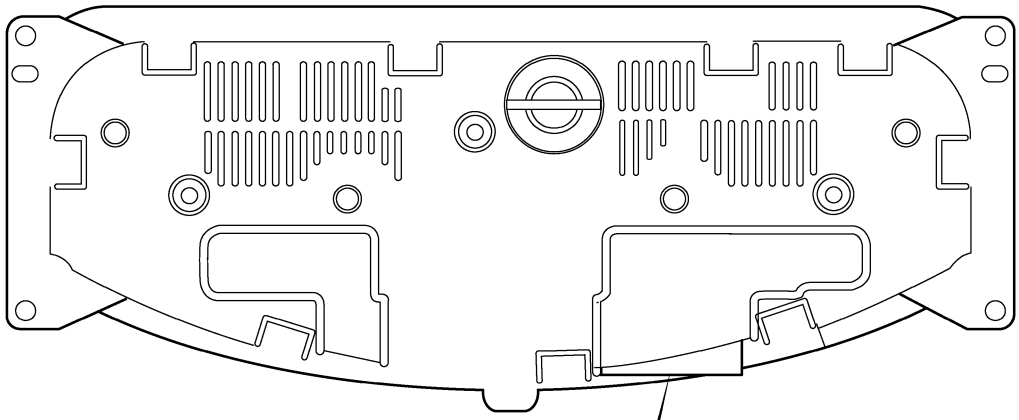
CAN COMMUNICATION SYSTEM DESCRIPTION

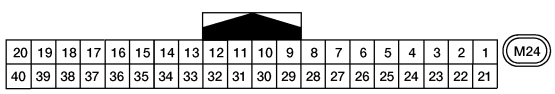
Refer to LAN-4, "SYSTEM DESCRIPTION" .

Arrangement of Combination Meter

EKS00DD2







N : Canada

U : USA

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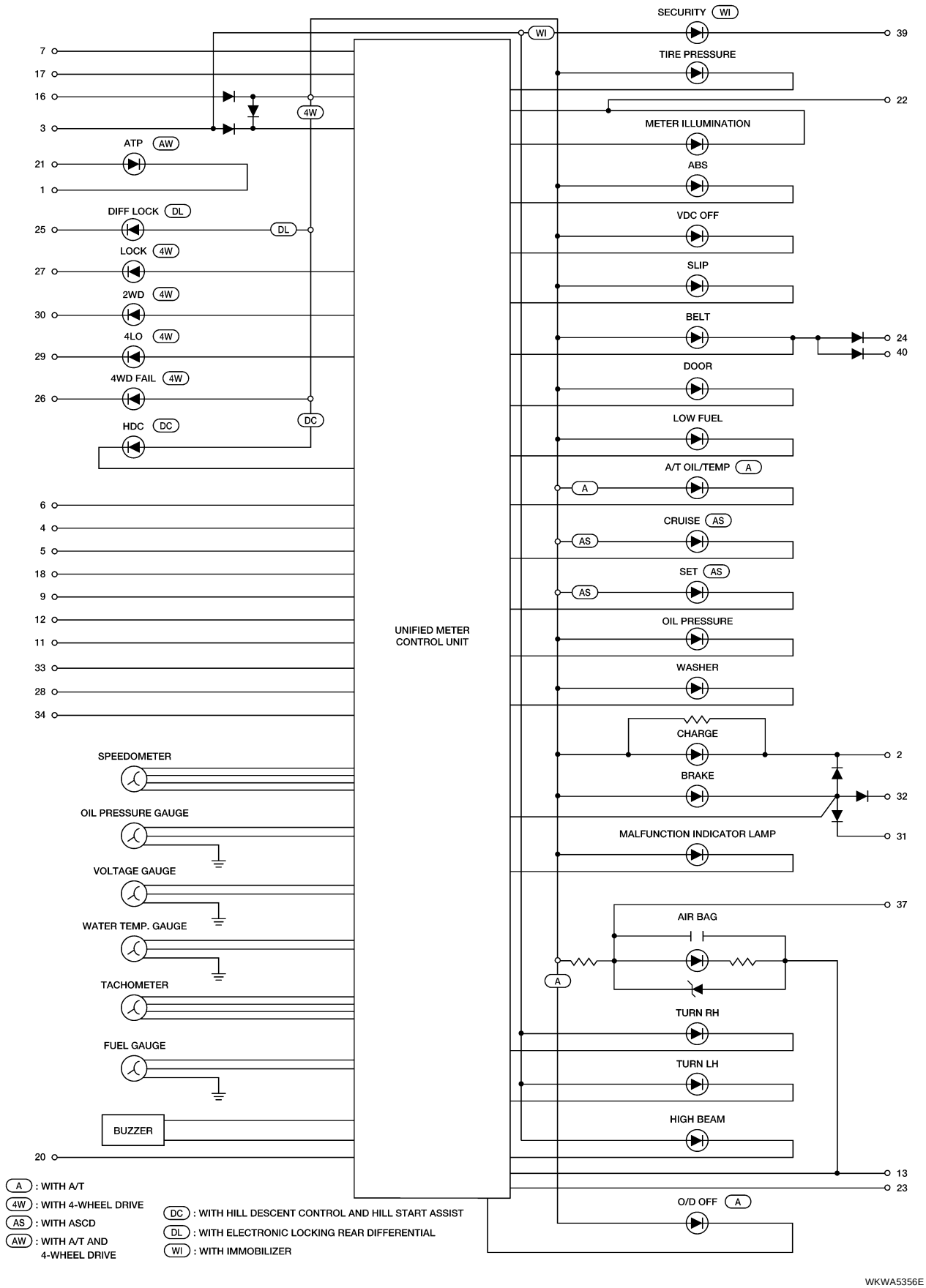
Internal Circuit

EKS00DD3



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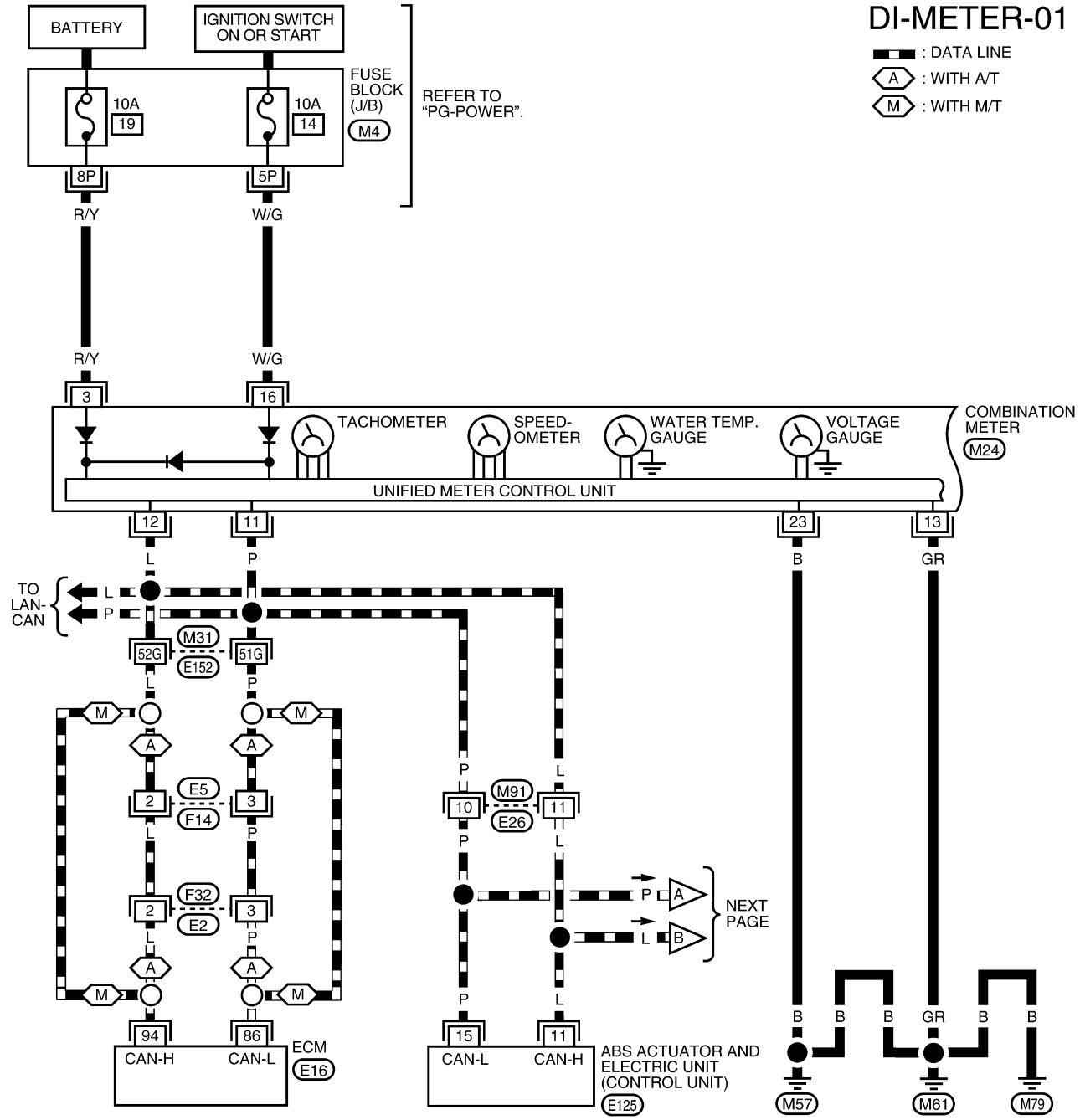
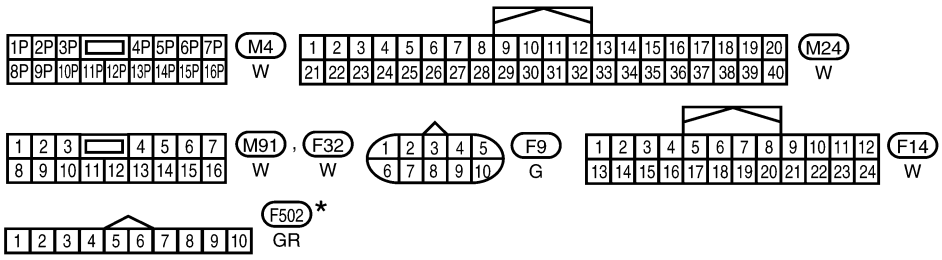
Wiring Diagram — METER —

EKS00DD4



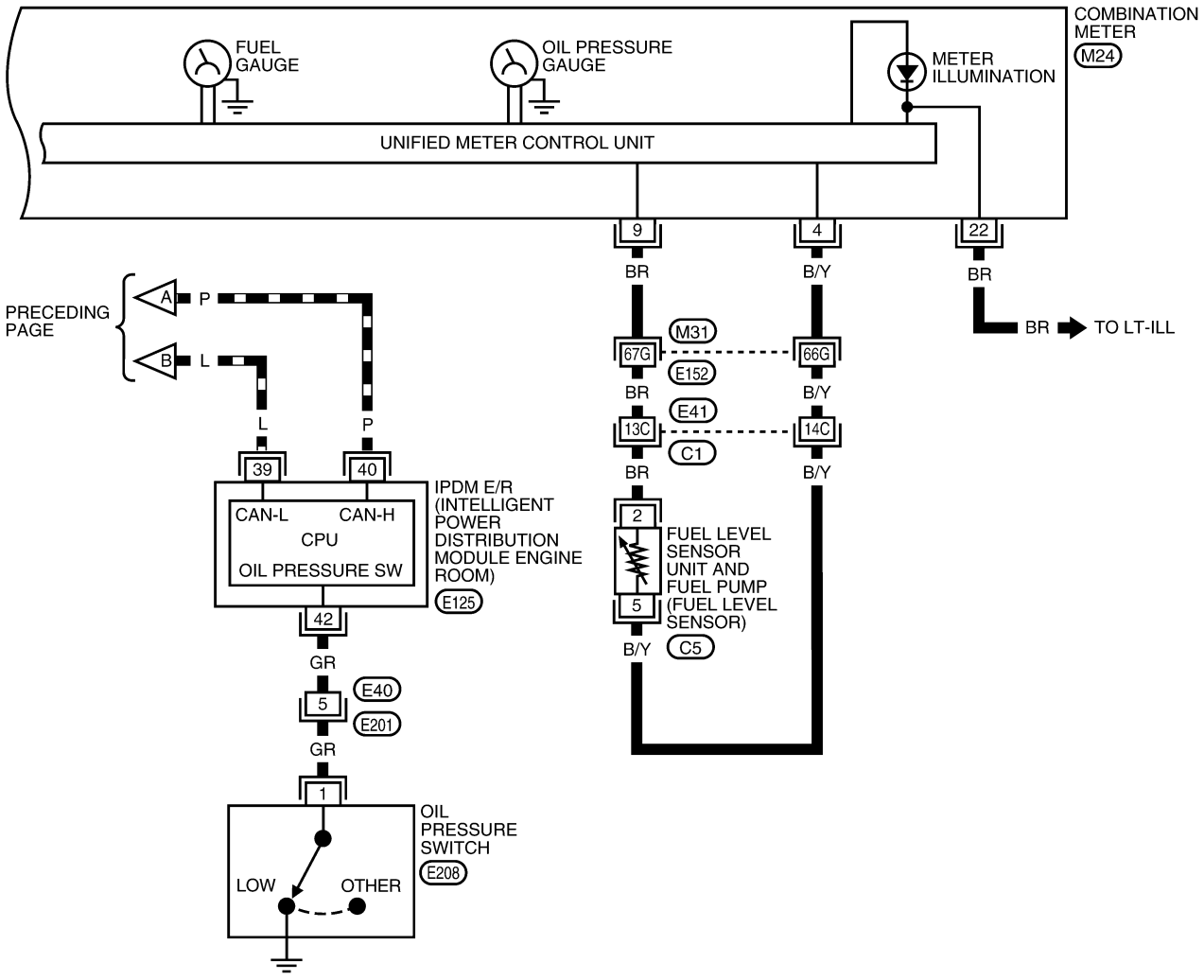


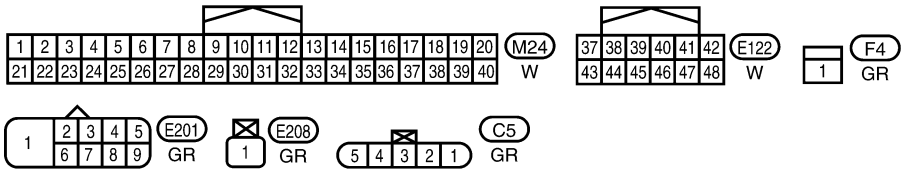
REFER TO THE FOLLOWING.
E16 , E125 - ELECTRICAL UNITS
M31 - SUPER MULTIPLE JUNCTION (SMJ)

*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT" OF PG SECTION.

WKWA5357E

DI-METER-02



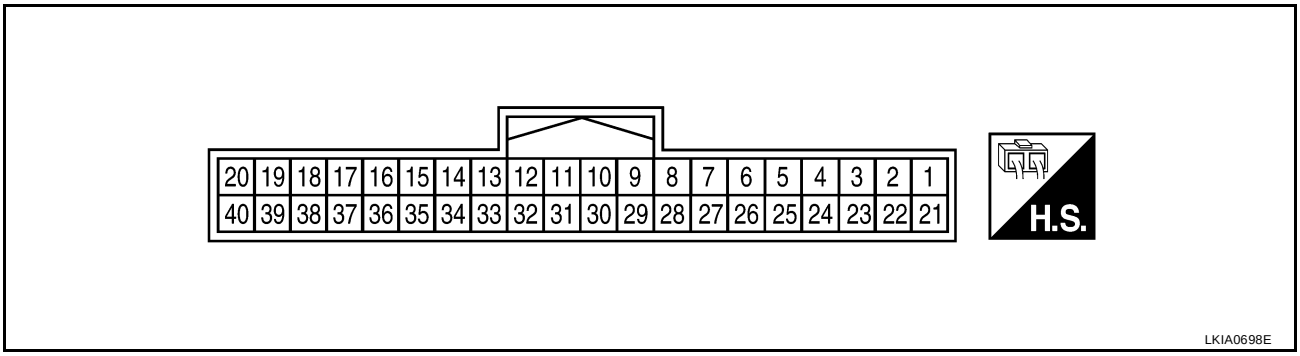


REFER TO THE FOLLOWING.
M31 , C1 - SUPER MULTIPLE JUNCTION (SMJ)

WKWA5358E

Combination Meter Harness Connector Terminal Layout

EKS00IZV



Terminals and Reference Values for Combination Meter

EKS00DD5

Terminal No.	Wire color	Item	Condition		Reference value (V) (Approx.)
			Ignition switch	Operation or condition	
3	R/Y	Battery power supply	OFF	—	Battery voltage
4	B/Y	Fuel level sensor ground	ON	—	0
9	BR	Fuel level sensor signal	—	—	Refer to DI-20, "Fuel Level Sensor Unit Inspection" .
11	P	CAN-L	—	—	—
12	L	CAN-H	—	—	—
13	GR	Ground	—	—	0
16	W/G	Ignition switch ON or START	ON	—	Battery voltage
22	BR	Illumination control switch	—	Lighting switch ON	Refer to LT-126, "ILLUMINATION OPERATION BY LIGHTING SWITCH" .
23	B	Ground	—	—	0
24	V	Seat belt buckle switch LH	ON	Unfastened (ON)	0
				Fastened (OFF)	Battery voltage
25	SB	DIFF LOCK indicator input	OFF	DIFF LOCK indicator ON	0
				DIFF LOCK indicator OFF	Battery voltage
31	G	Parking Brake switch	ON	Parking brake applied	0
				Parking brake released	Battery voltage
32	SB	Brake fluid level switch	ON	Brake fluid level low	0
				Brake fluid level normal	Battery voltage
33	LG	Stop lamp switch	ON	Brake pedal depressed	Battery voltage
				Brake pedal released	0
34	L	Washer fluid level switch	ON	Washer fluid level low	0
				Washer fluid level normal	Battery voltage
39	G	Security indicator input	OFF	Security indicator ON	0
				Security indicator OFF	Battery voltage
40	LG	Seat belt buckle switch RH	ON	Unfastened (ON)	0
				Fastened (OFF)	Battery voltage

Self-Diagnosis Mode of Combination Meter

EKS00DD6

SELF-DIAGNOSIS FUNCTION

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

- Gauge sweep and present gauge values.
- Illuminates all odometer/trip meters and A/T indicator segments.
- Illuminates all micro controlled lamps/LEDs regardless of switch position.
- Displays estimated present battery voltage.
- Displays seat belt buckle switch LH status.

HOW TO INITIATE COMBINATION METER SELF-DIAGNOSIS MODE

NOTE:
Once entered, Combination Meter Self-Diagnosis Mode will function with the ignition switch in ON or START. Combination Meter Self-Diagnosis Mode will exit upon turning the ignition switch to OFF or ACC.
To initiate Combination Meter Self-Diagnosis Mode, refer to the following procedure.

1. Turn the ignition switch ON, while pressing the odometer/trip meter switch for 5 - 8 seconds. When the diagnosis function is activated, the odometer/trip meter will display tESt.

   NOTE:
   Check combination meter power supply and ground circuit when self-diagnosis mode of combination meter does not start. Refer to DI-18, "Power Supply and Ground Circuit Inspection" . Replace combination meter if normal. Refer to IP-13, "COMBINATION METER" .

COMBINATION METER SELF-DIAGNOSIS MODE FUNCTIONS

To interpret Combination Meter Self-Diagnosis Mode functions, refer to the following table.

Event	Odometer 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
Next test requested	GAGE	Performs sweep of all gauges, then displays present gauge values. Performs checksum tests on ROM and EE.	Gauges sweep within 10 seconds
Next test requested	(All segments illuminated)	Lights all odometer/trip meter segments.	Initiating self-diagnosis mode complete
Next test requested	bulb	Illuminates all micro-controlled lamps/LEDs regardless of SW configuration.	
Odometer/trip meter A/B switch engaged and released = next test requested	rXXXX, FAIL	Return to normal operation of all lamps/LEDs and displays hex ROM rev. If a ROM checksum fault exists, display alternates between "r XXXX" and "FAIL".	
Next test requested	nrXXXX	Displays hex ROM rev as stored in NVM.	
Next test requested	EE XX, FAIL	Hex EE level. If EE checksum fault exists, display alternates between "EE XX" and "FAIL".	
Next test requested	dtXXXX	Hex coding of final manufacturing test date.	

Event	Odometer Display	Description of Test/Data	Notes:
Next test requested	Sc1XX	Displays 8-bit software configuration value in Hex format.	Bit Coding 7-3 = reserved for future use 2 = TCS/VDC 0 = not present 1 = present 1 = Shift type 0 = Column shift 1 = Floor shift 0 = ICC 0 = not present 1 = present
Next test requested	Sc2XX	Displays 8-bit software configuration value in Hex format.	Bit coding 7-0 = Reserved for future use
Next test requested	EprXX	Displays 8-bit software configuration value in Hex format.	Bit Coding 7-2 = reserved for future use 1 = A/T Oil Temp (gauge) 0 = not present 1 = present 1 = Odo Units 0 = kilometers 1 = miles
Next test requested	1nFXX	Displays 8-bit market info value in Hex format.	$31 = USA $2A = Canada
Next test requested	cYLXX	Displays 8-bit engine configuration value in Hex format.	$08 = 8 cylinder $06 = 6 cylinder
Next test requested	FFXXXX	Displays 16-bit fuel flow constant "Q" in tenths of cc/min in Hex format.	$0000 - $FFFF
Next test requested	tF	Displays 16-bit tire factor "A" in hundredths in Hex format.	$0000 - $FFFF
Next test requested	ot1XX	Displays oil pressure telltale "on" threshold in A/D counts in Hex format.	$00 - $FF
Next test requested	ot0XX	Displays oil pressure telltale "off" threshold in A/D counts in Hex format.	$00 - $FF
Next test requested	XXXXX	Raw uncompensated english speed value in hundredths of MPH. Speedometer indicates present speed.	Will display "-----" if message is not received. Will display "99999" if data received is invalid
Next test requested	XXXXX	Raw uncompensated metric speed value in hundredths of km/h. Speedometer indicates present speed.	Will display "-----" if message is not received. Will display "99999" if data received is invalid
Next test requested	tXXXX	Tachometer value in RPM. Tachometer indicates present RPM.	Will display "-----" if message is not received.
Next test requested	F1 XXXX	Present ratioed fuel level A/D input 1 in decimal format. Fuel gauge indicates present filtered level.	000-009 = Short circuit 010-254 = Normal range 255 = Open circuit --- = Missing 5 seconds
Next test requested	XXXC	Last temperature gauge input value in degrees C. Temperature gauge indicates present filtered temperature.	Will display "---"C if message is not received. Will display "999" if data received is invalid.

Event	Odometer Display	Description of Test/Data	Notes:
Next test requested	BAtXX.X	Estimated present battery voltage.	
Next test requested	rES -X	Seat belt buckle switch LH status.	1= Buckled 0 = Unbuckled
Next test requested	PA -XX	Hex value port A.	
Next test requested	Pb -XX	Hex value port B.	
Next test requested	PE -XX	Hex value port E.	
Next test requested	PL -XX	Hex value port L.	
Next test requested	P6 -XX	Hex value port K.	
Next test requested	Pn -XX	Hex value port M.	
Next test requested	PP -XX	Hex value port P.	
Next test requested	PS -XX	Hex value port S.	
Next test requested	Pt -XX	Hex value port T.	
Next test requested	Pu -XX	Hex value port U.	
Next test requested	P4 -XX	Hex value port V.	
Next test requested	Puu -XX	Hex value port W.	
Next test requested	A00XXX	A/D port A/D value (non-ratioed).	0-255
Next test requested	A01XXX	A/D port A/D value (non-ratioed).	0-255
Next test requested	A02XXX	A/D port A/D value (non-ratioed).	0-255
Next test requested	A03XXX	A/D port A/D value (non-ratioed).	0-255
Next test requested	A04XXX	A/D port A/D value (non-ratioed).	0-255
Next test requested	A05XXX	A/D port A/D value (non-ratioed).	0-255
Next test requested	A06XXX	A/D port A/D value (non-ratioed).	0-255
Next test requested	A07XXX	A/D port A/D value (non-ratioed).	0-255
Next test requested	A08XXX	A/D port A/D value (non-ratioed).	0-255
Next test requested	A09XXX	A/D port A/D value (non-ratioed).	0-255
Next test requested	A10XXX	A/D port A/D value (non-ratioed).	0-255
Next test requested	A11XXX	A/D port A/D value (non-ratioed).	0-255
Next test requested	A12XXX	A/D port A/D value (non-ratioed).	0-255
Next test requested	A13XXX	A/D port A/D value (non-ratioed).	0-255
Next test requested	A14XXX	A/D port A/D value (non-ratioed).	0-255
Next test requested	A15XXX	A/D port A/D value (non-ratioed).	0-255
Next test requested	PA0-XX	Hex value representing state of A/D ports 0-7.	

Event	Odometer Display	Description of Test/Data	Notes:
Next test requested	PA1-XX	Hex value representing state of A/D ports 0-7.	
Next test requested	GAGE		Return to beginning of self-diagnosis.

CONSULT-II Function (METER)

EKS00DD7

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

METER diagnosis mode	Description
SELF-DIAG RESULTS	Displays combination meter self-diagnosis results.
DATA MONITOR	Displays combination meter input/output data in real time.
CAN DIAG SUPPORT MNTR	The result of transmit/receive diagnosis of CAN communication can be read.

CONSULT-II START PROCEDURE

Refer to GI-38, "CONSULT-II Start Procedure" .

SELF-DIAGNOSTIC RESULTS

Display Item List

CONSULT-II display	Malfunction
CAN COMM CIRC [U1000]	Malfunction is detected in CAN communication lines. **CAUTION:** **Even when there is no malfunction on CAN communication system, malfunction may be misinterpreted when battery has low voltage (when maintaining 7V-8V for about 2 seconds) or 10A fuse [No. 19, located in the fuse block (J/B)] is removed.**
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, malfunctions may be misinterpreted when battery has low voltage (when maintaining 7V-8V for about 2 seconds).**

"TIME" indicates the condition of the self-diagnosis results judged by each signal input.

- Normal: If the system is presently operating properly, but had a malfunction in the past, the time will indicate "1-63".
- Malfunction: Soon after detecting malfunctions by self-diagnoses or current malfunction, "0" is indicated.

After the system returns to normal operating condition, every time the ignition switch is cycled (turned to OFF from ON), a value of one is added to the counter (i.e. "1"→"2"→"3"···"63"). When the ignition switch is cycled 64 times, the result of the self-diagnoses will be erased. If a malfunction is detected again, "0" will be indicated.

DATA MONITOR

Display Item List

Display item [Unit]	MAIN SIGNALS	SELECTION FROM MENU	Contents
SPEED METER [km/h] or [mph]	X	X	This is the angle correction value after the speed signal from the ABS actuator and electric unit (control unit) is converted into the vehicle speed.
SPEED OUTPUT [km/h] or [mph]	X	X	This is the angle correction value before the speed signal from the ABS actuator and electric unit (control unit) is converted into the vehicle speed.
TACHO METER [rpm]	X	X	This is the converted value for the engine speed signal from the ECM.
W TEMP METER [°C] or [°F]	X	X	This is the converted value for the water temp signal from the ECM.
FUEL METER [lit.]	X	X	This is the processed value for the signal (resistance value) from the fuel gauge.
DISTANCE [km]	X	X	This is the calculated value for the speed signal from the ABS actuator and electric unit (control unit), the signal (resistance signal) from the fuel gauge and fuel consumption from ECM.
FUEL W/L [ON/OFF]	X	X	Indicates [ON/OFF] condition of low fuel warning lamp.
C-ENG W/L [ON/OFF]		X	Indicates [ON/OFF] condition of malfunction indicator lamp.

Display item [Unit]	MAIN SIGNALS	SELECTION FROM MENU	Contents
AIR PRES W/L [ON/OFF]		X	Indicates [ON/OFF] condition of low tire pressure indicator lamp.
SEAT BELT W/L [ON/OFF]		X	Indicates [ON/OFF] condition of seat belt warning lamp.
BUZZER [ON/OFF]	X	X	Indicates [ON/OFF] condition of buzzer.
DOOR W/L [ON/OFF]		X	Indicates [ON/OFF] condition of door warning lamp.
HI-BEAM IND [ON/OFF]		X	Indicates [ON/OFF] condition of high beam indicator.
TURN IND [ON/OFF]		X	Indicates [ON/OFF] condition of turn indicator.
OIL W/L [ON/OFF]		X	Indicates [ON/OFF] condition of oil pressure warning lamp.
VDC/TCS IND [ON/OFF]		X	Indicates [ON/OFF] condition of VDC OFF indicator lamp.
ABS W/L [ON/OFF]		X	Indicates [ON/OFF] condition of ABS warning lamp.
SLIP IND [ON/OFF]		X	Indicates [ON/OFF] condition of SLIP indicator lamp.
BRAKE W/L [ON/OFF]		X	Indicates [ON/OFF] condition of brake warning lamp.*
M RANGE SW [ON/OFF]	X	X	Indicates [ON/OFF] condition of manual mode range switch.
NM RANGE SW [ON/OFF]	X	X	Indicates [ON/OFF] condition of except for manual mode range switch.
AT SFT UP SW [ON/OFF]	X	X	Indicates [ON/OFF] condition of A/T shift-up switch.
AT SFT DWN SW [ON/OFF]	X	X	Indicates [ON/OFF] condition of A/T shift-down switch.
O/D OFF SWITCH [ON/OFF]		X	Indicates [ON/OFF] condition of O/D OFF switch.
BRAKE SW [ON/OFF]		X	Indicates [ON/OFF] condition of parking brake switch.
AT-M IND [ON/OFF]	X	X	Indicates [ON/OFF] condition of A/T manual mode indicator.
AT-M GEAR [1, 2, 3, 4, 5]	X	X	Indicates [1, 2, 3, 4, 5] condition of A/T manual mode gear position.
P RANGE IND [ON/OFF]	X	X	Indicates [ON/OFF] condition of A/T shift P range indicator.
R RANGE IND [ON/OFF]	X	X	Indicates [ON/OFF] condition of A/T shift R range indicator.
N RANGE IND [ON/OFF]	X	X	Indicates [ON/OFF] condition of A/T shift N range indicator.
D RANGE IND [ON/OFF]	X	X	Indicates [ON/OFF] condition of A/T shift D range indicator.
4 RANGE IND [ON/OFF]	X	X	Indicates [ON/OFF] condition of A/T shift 4 range indicator.
3 RANGE IND [ON/OFF]	X	X	Indicates [ON/OFF] condition of A/T shift 3 range indicator.
2 RANGE IND [ON/OFF]	X	X	Indicates [ON/OFF] condition of A/T shift 2 range indicator.
1 RANGE IND [ON/OFF]	X	X	Indicates [ON/OFF] condition of A/T shift 1range indicator.
O/D OFF W/L [ON/OFF]		X	Indicates [ON/OFF] condition of O/D OFF indicator lamp.
CRUISE IND [ON/OFF]		X	Indicates [ON/OFF] condition of CRUISE indicator.
SET IND [ON/OFF]		X	Indicates [ON/OFF] condition of SET indicator.
4WD LOCK SW [ON/OFF]		X	Indicates [ON/OFF] condition of 4WD lock switch.
4WD LOCK IND [ON/OFF]		X	Indicates [ON/OFF] condition of 4WD lock indicator.

*: Monitor keeps indicating “OFF” when brake warning lamp is on because of parking brake operation or low brake fluid level.

How to Proceed With Trouble Diagnosis

EKS00DD8

1. Confirm the symptom or customer complaint.
2. Perform preliminary check. Refer to DI-17, "Preliminary Check" .
3. According to the symptom chart, repair or replace the cause of the symptom.
4. Does the meter operate normally? If so, go to 5. If not, go to 2.
5. Inspection End.

Preliminary Check

EKS00DD9

1. CHECK WARNING INDICATOR ILLUMINATION

1. Turn ignition switch ON.
2. Make sure warning indicators (such as malfunction indicator lamp and oil pressure warning indicator) illuminate.

Do warning indicators illuminate?

YES >> GO TO 2.
NO >> Check ignition power supply system of combination meter. Refer to DI-18, "Power Supply and Ground Circuit Inspection" .

2. CHECK OPERATION OF SELF-DIAGNOSIS MODE (COMBINATION METER)

Perform self-diagnosis mode of combination meter. Refer to DI-11, "Self-Diagnosis Mode of Combination Meter" .

Does self-diagnosis mode operate normally?

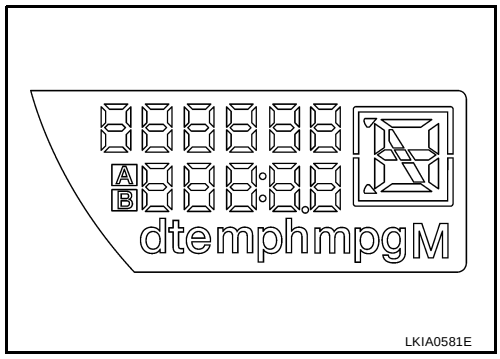
YES >> GO TO 3.
NO >> Check combination meter power supply and ground circuit. Refer to DI-18, "Power Supply and Ground Circuit Inspection" .

3. CHECK ODOMETER OPERATION

Check segment display status of odometer.

Is the display normal?

YES >> GO TO 4.
NO >> Replace the combination meter. Refer to IP-13, "COMBINATION METER" .



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4. CHECK COMBINATION METER CIRCUIT

Check operation of each meter/gauge in self-diagnosis mode.

OK or NG

OK >> GO TO 5.
NG >> Replace the combination meter. Refer to IP-13, "COMBINATION METER" .

5. CHECK SELF-DIAGNOSTIC RESULTS OF METER

Select "METER" on CONSULT-II and perform self-diagnosis of meter.

Self-diagnostic results content

CAN COMM CIRC [U1000]>>Refer to DI-23, "DTC [U1000] CAN Communication Circuit" .
VEHICLE SPEED CIRC [B2205]>>Refer to DI-23, "DTC [B2205] Vehicle Speed Circuit" .

Symptom Chart

EKS00DDB

Trouble phenomenon	Possible cause
Improper tachometer indication.	Refer to DI-20, "Engine Speed Signal Inspection" .
Improper water temperature gauge indication.	Refer to DI-20, "Water Temperature Signal Inspection" .
Improper speedometer or odometer.	Refer to DI-19, "Vehicle Speed Signal Inspection" .
Improper fuel gauge indication.	Refer to DI-20, "Fuel Level Sensor Unit Inspection" .
Fuel warning lamp indication is irregular.	
Improper voltage gauge indication.	Replace combination meter. Refer to IP-13, "COMBINATION METER" .
More than one gauge does not give proper indication.	
Improper A/T position indication.	Refer to DI-32, "A/T INDICATOR" .
Illumination control does not operate properly.	Replace combination meter. Refer to IP-13, "COMBINATION METER" .

Power Supply and Ground Circuit Inspection

EKS00DDA

1. CHECK FUSES

Check for blown combination meter fuses.

Unit	Power source	Fuse No.
Combination meter	Battery	19
	Ignition switch ON or START	14

Refer to DI-8, "Wiring Diagram — METER —" .

OK or NG

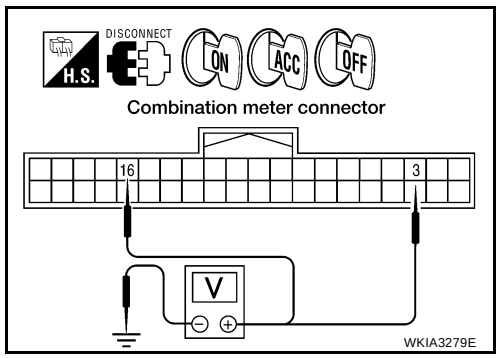
OK >> GO TO 2.

NG >> If fuse is blown, be sure to eliminate cause of malfunction before installing new fuse. Refer to PG-4, "POWER SUPPLY ROUTING CIRCUIT" .

2. CHECK POWER SUPPLY CIRCUIT

1. Disconnect combination meter connector.
2. Check voltage between combination meter harness connector terminals and ground.

Terminals			Ignition switch position		
(+)		(–)	OFF	ACC	ON
Connector	Terminal				
M24	3	Ground	Battery voltage	Battery voltage	Battery voltage
	16		0V	0V	Battery voltage



OK or NG

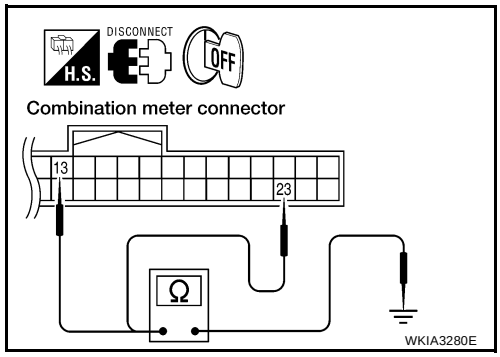
OK >> GO TO 3.

NG >> Check the harness for open between combination meter and fuse.

3. CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Check continuity between combination meter harness connector terminals and ground.

Terminals			Continuity
(+)		(–)	
Connector	Terminal		
M24	13	Ground	Yes
	23		



OK or NG

OK >> Inspection End.
NG >> Repair harness or connector.

Vehicle Speed Signal Inspection

EKS00DDC

1. CHECK ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) SELF-DIAGNOSIS

Refer to BRC-29, "SELF-DIAGNOSIS" .

OK or NG

OK >> Replace the combination meter. Refer to IP-13, "COMBINATION METER" .
NG >> Perform the "Diagnostic Procedure" for displayed DTC.

Engine Oil Pressure Signal Inspection

EKS00DDD

1. CHECK SELF-DIAGNOSTIC RESULTS OF IPDM E/R

Select "IPDM E/R" on CONSULT-II, and perform self-diagnosis of IPDM E/R. Refer to PG-20, "SELF-DIAGNOSTIC RESULTS" .

Self-diagnostic results content

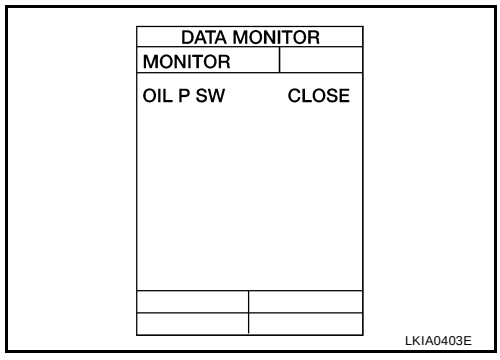
No malfunction detected>>GO TO 2.
Malfunction detected>>GO TO PG-20, "Display Item List" .

2. CHECK IPDM E/R INPUT SIGNAL

Select "IPDM E/R" on CONSULT-II. Operate ignition switch with "OIL P SW" of "DATA MONITOR" and check operation status.

When ignition switch is in ON position (Engine stopped) : OIL P SW CLOSE

When engine running : OIL P SW OPEN



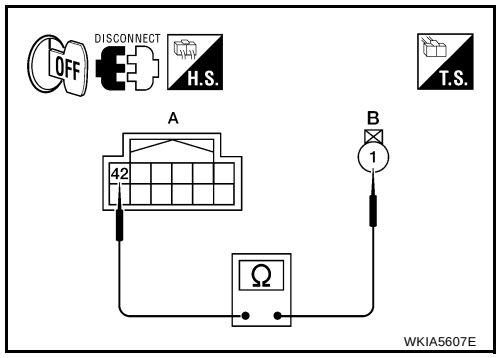
OK or NG

OK >> Replace combination meter. Refer to IP-13, "COMBINATION METER" .
NG >> GO TO 3.

3. CHECK OIL PRESSURE SWITCH CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connector E122 and oil pressure switch connector E208.
3. Check continuity between IPDM E/R harness connector E122 (A) terminal 42 and oil pressure switch harness connector E208 (B) terminal 1.

Continuity should exist.



OK or NG

OK >> GO TO 4.
NG >> Repair harness or connector.

4. CHECK OIL PRESSURE SWITCH

Check oil pressure switch. Refer to DI-23, "OIL PRESSURE SWITCH CHECK" .

OK or NG

OK >> Replace IPDM E/R. Refer to PG-32, "Removal and Installation of IPDM E/R" .
NG >> Replace oil pressure switch.

Water Temperature Signal Inspection

EKS00DDE

1. CHECK ECM SELF-DIAGNOSIS

Perform ECM self-diagnosis. Refer to EC-118, "SELF-DIAG RESULTS MODE" .

OK or NG

OK >> Replace the combination meter. Refer to IP-13, "COMBINATION METER" .
NG >> Perform "Diagnostic procedure" for displayed DTC.

Engine Speed Signal Inspection

EKS00DDF

1. CHECK ECM SELF-DIAGNOSIS

Perform ECM self-diagnosis. Refer to EC-118, "SELF-DIAG RESULTS MODE" .

OK or NG

OK >> Replace the combination meter. Refer to IP-13, "COMBINATION METER" .
NG >> Perform "Diagnostic procedure" for displayed DTC.

Fuel Level Sensor Unit Inspection

EKS00DDG

FUEL LEVEL SENSOR UNIT

The following symptoms do not indicate a malfunction.

- Depending on vehicle position or driving circumstance, the fuel in the tank shifts and the indication may fluctuate.
- If the vehicle is fueled with the ignition switch ON, the indication will update slowly.
- If the vehicle is tilted when the ignition switch is turned ON, fuel in the tank may flow to one direction resulting in a change of reading.

LOW-FUEL WARNING LAMP

Depending on vehicle posture or driving circumstances, the fuel level in the tank varies, and the warning lamp ON timing may be changed.

1. CHECK SELF-DIAGNOSIS

Perform the combination meter self-diagnosis. Refer to DI-11, "SELF-DIAGNOSIS FUNCTION" .

OK or NG

OK >> GO TO 2.
NG >> Replace the combination meter. Refer to IP-13, "COMBINATION METER" .

2. CHECK HARNESS CONNECTOR

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

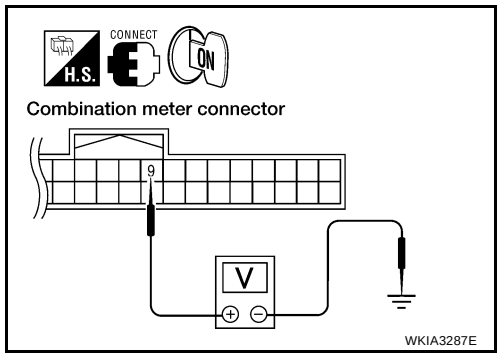
OK or NG

OK >> GO TO 3.
NG >> Repair or replace terminals or connectors.

3. CHECK HARNESS CONNECTOR OUTPUT SIGNAL

1. Disconnect fuel level sensor unit and fuel pump connector.
2. Turn ignition switch ON.
3. Check voltage between combination meter harness connector M24 terminal 9 and ground.

Battery voltage should exist.



OK or NG

OK >> GO TO 4.
NG >> Replace the combination meter. Refer to IP-13, "COMBINATION METER" .

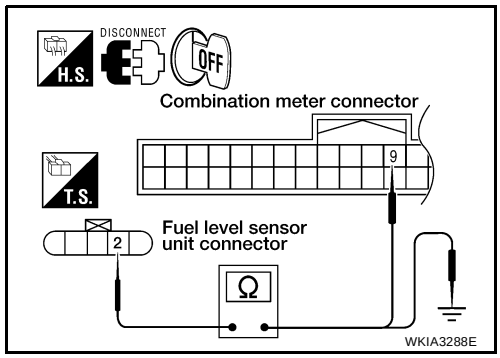
4. CHECK HARNESS FOR OPEN OR SHORT CIRCUIT

1. Turn the ignition switch OFF.
2. Disconnect combination meter connector M24.
3. Check continuity between combination meter harness connector M24 terminal 9 and fuel level sensor unit and fuel pump harness connector C5 terminal 2.

Continuity should exist.

4. Check continuity between fuel level sensor unit and fuel pump harness connector C5 terminal 2 and ground.

Continuity should not exist.



OK or NG

OK >> GO TO 5.
NG >> Repair harness or connector.

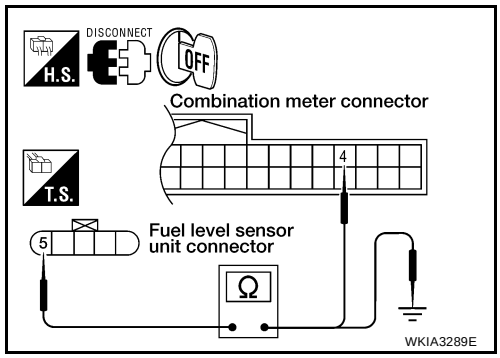
5. CHECK FUEL LEVEL SENSOR CIRCUIT

1. Check continuity between combination meter harness connector M24 terminal 4 and fuel level sensor unit and fuel pump harness connector C5 terminal 5.

Continuity should exist.

2. Check continuity between fuel level sensor unit and fuel pump harness connector C5 terminal 5 and ground.

Continuity should not exist.



OK or NG

OK >> GO TO 6.
NG >> Repair harness or connector.

6. CHECK FUEL LEVEL SENSOR UNIT

Check the fuel level sensor unit. Refer to DI-23, "FUEL LEVEL SENSOR UNIT CHECK" .

OK or NG

OK >> GO TO 7.
NG >> Replace the fuel level sensor unit. Refer to FL-6, "Removal and Installation" .

7. CHECK INSTALLATION CONDITION

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

OK or NG

OK >> Replace the combination meter. Refer to IP-13, "COMBINATION METER" .
NG >> Install the fuel level sensor unit properly.

Fuel Gauge Fluctuates, Indicates Wrong Value, or Varies

EKS00DDH

1. CHECK FUEL GAUGE FLUCTUATION

Test drive vehicle to see if gauge fluctuates only during driving or just before or just after stopping.

Does the indication value vary only during driving or just before or just after stopping?

YES >> The fluctuation may be caused by fuel level change in the fuel tank. Condition is normal.
NO >> Ask the customer in detail about the situation when the symptom occurs. Refer to DI-20, "Fuel Level Sensor Unit Inspection" .

Fuel Gauge Does Not Move to Full-position

EKS00DDI

1. CHECK POINTER MOVEMENT TO FULL-POSITION

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. CHECK IGNITION SWITCH POSITION

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 for the pointer 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. CHECK POINTER MOVEMENT TO EMPTY-POSITION

During driving, does the fuel gauge move gradually toward empty-position?

YES or NO

YES >> Check the fuel level sensor unit. Refer to DI-23, "FUEL LEVEL SENSOR UNIT CHECK" .
NO >> Check fuel level sensor unit installation, and determine whether the float arm interferes or binds with any of the internal components in the fuel tank.

DTC [U1000] CAN Communication Circuit

EKS00DDJ

Symptom: Display CAN COMM CIRC [U1000] at the result of self-diagnosis for combination meter.

1. CHECK CAN COMMUNICATION

1. Select "SELF-DIAG RESULTS" mode for "METER" with CONSULT-II.
2. Print out CONSULT-II screen.

>> Go to "CAN SYSTEM". Refer to LAN-44, "TROUBLE DIAGNOSIS" .

DTC [B2205] Vehicle Speed Circuit

EKS00DDK

Symptom: Display VEHICLE SPEED CIRC [B2205] at the result of self-diagnosis for combination meter.

1. CHECK ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)

Perform ABS actuator and electric unit (control unit) self-diagnosis. Refer to BRC-29, "SELF-DIAGNOSIS" .

Are self-diagnosis result items displayed?

YES >> After checking and repairing the applicable item, perform the ABS actuator and electric unit (control unit) self-diagnosis again.

NO >> Replace combination meter. Refer to IP-13, "COMBINATION METER" .

Electrical Components Inspection

EKS00DDL

FUEL LEVEL SENSOR UNIT CHECK

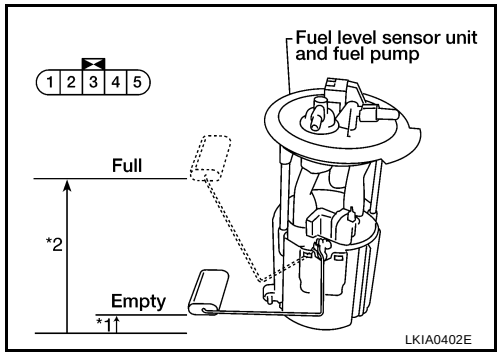
For removal, refer to FL-6, "Removal and Installation" .

Check Fuel Level Sensor Unit and Fuel Pump

Check resistance between fuel level sensor unit and fuel pump connector terminals 2 and 5.

Terminals		Float position mm (in)			Resistance value Ω (Approx.)
2	5	*1	Empty	25.86 (1.02)	81.66
		*2	Full	254.6 (10.02)	6.98

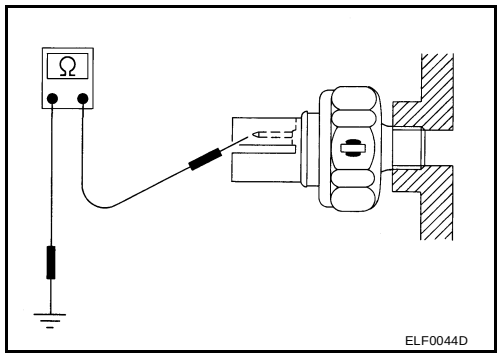
*1 and *2: When float rod is in contact with stopper.



OIL PRESSURE SWITCH CHECK

Check continuity between the oil pressure switch and body ground.

Condition	Oil pressure kPa (kg/cm^2 , psi)	Continuity
Engine stopped	Less than 29 (0.3, 4)	Yes
Engine running	More than 29 (0.3, 4)	No



Removal and Installation

EKS00DDM

COMBINATION METER

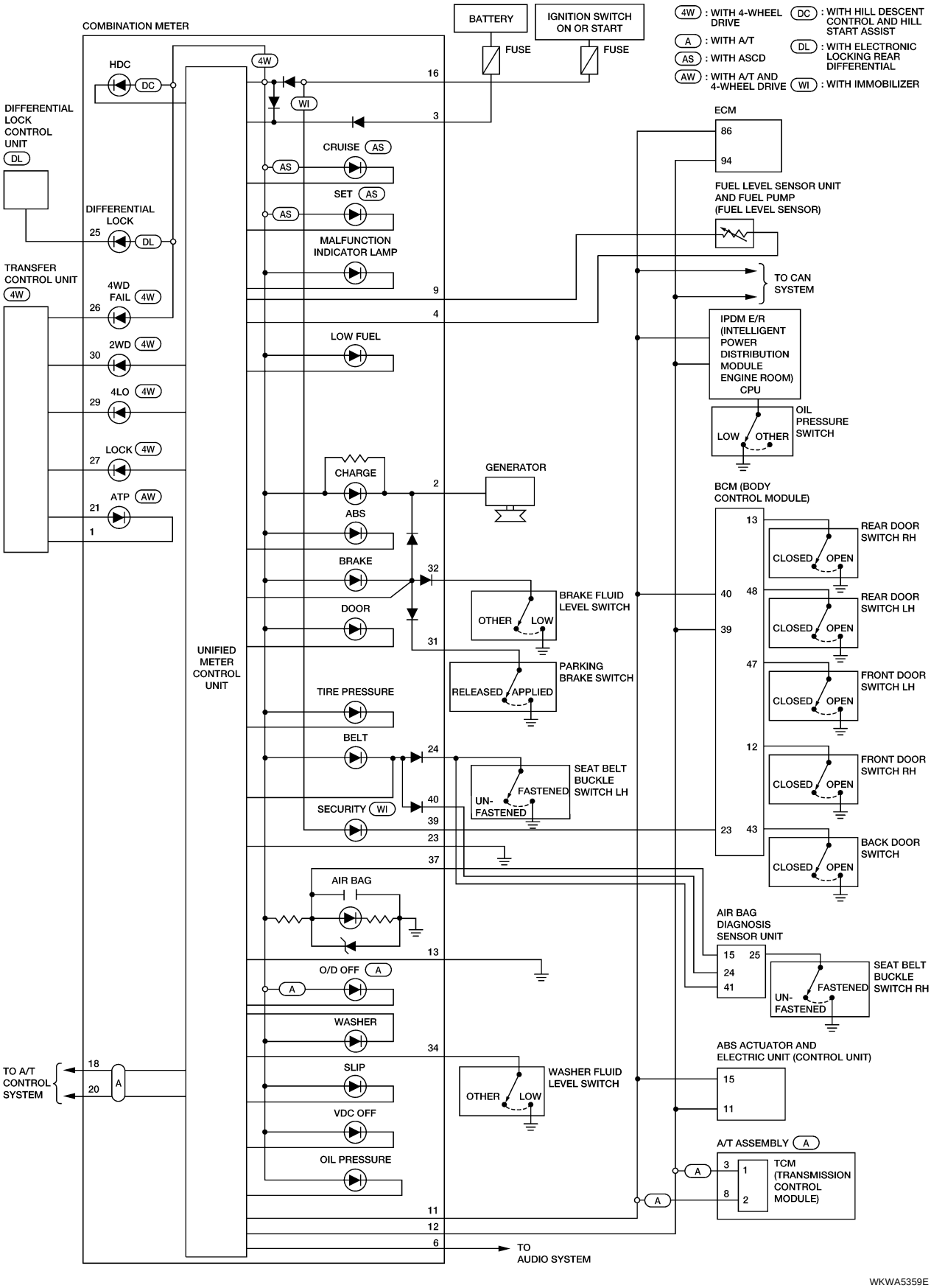
Refer to IP-10, "Removal and Installation" .

WARNING LAMPS

PFP:24814

Schematic

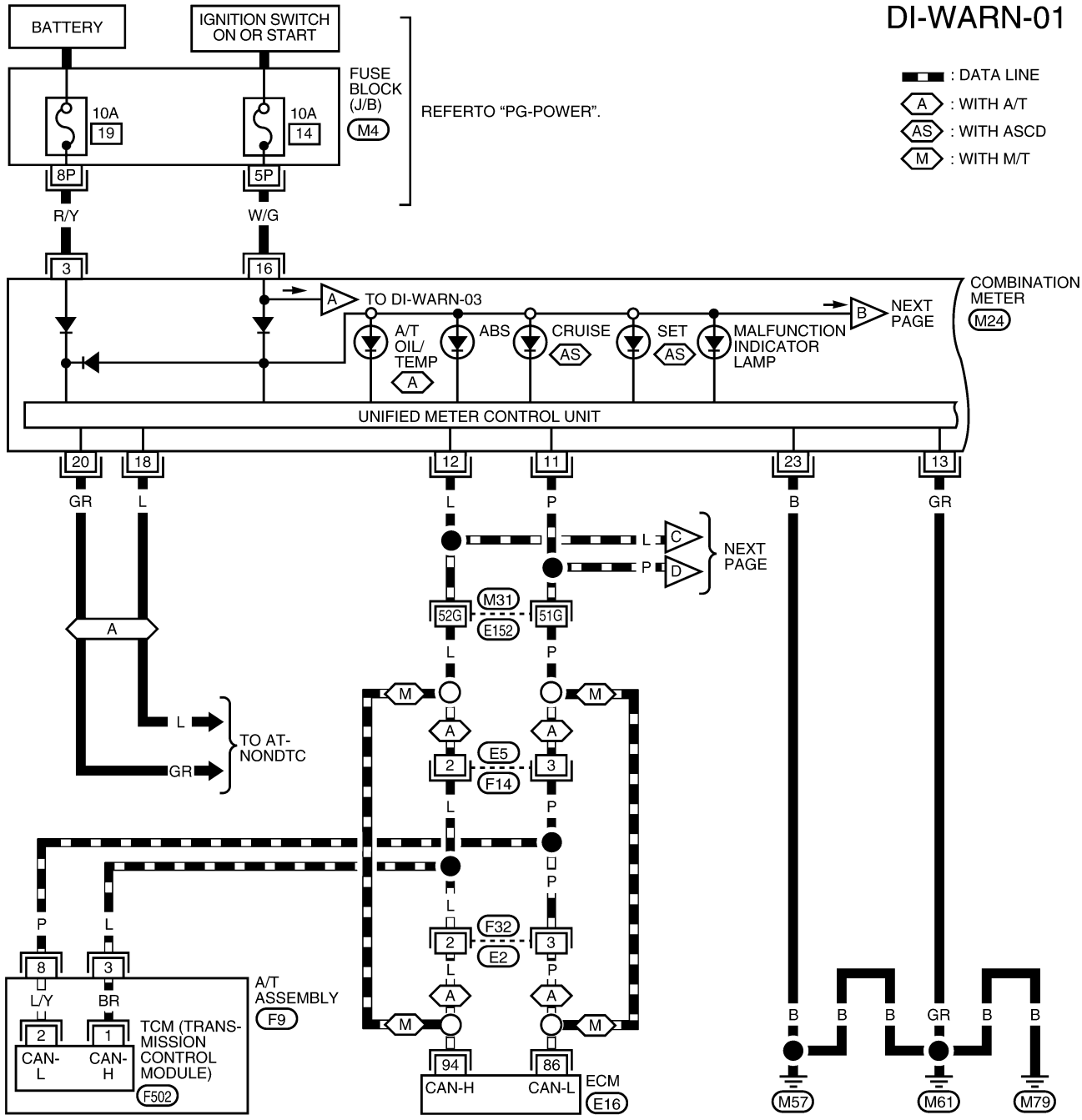
EKS00DDR

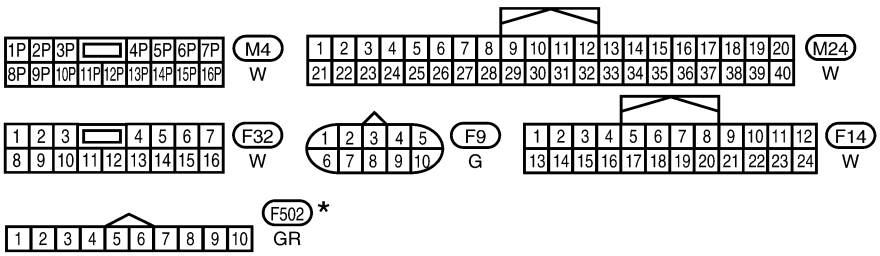


WKWA5359E

Wiring Diagram — WARN —

EKS00DDS





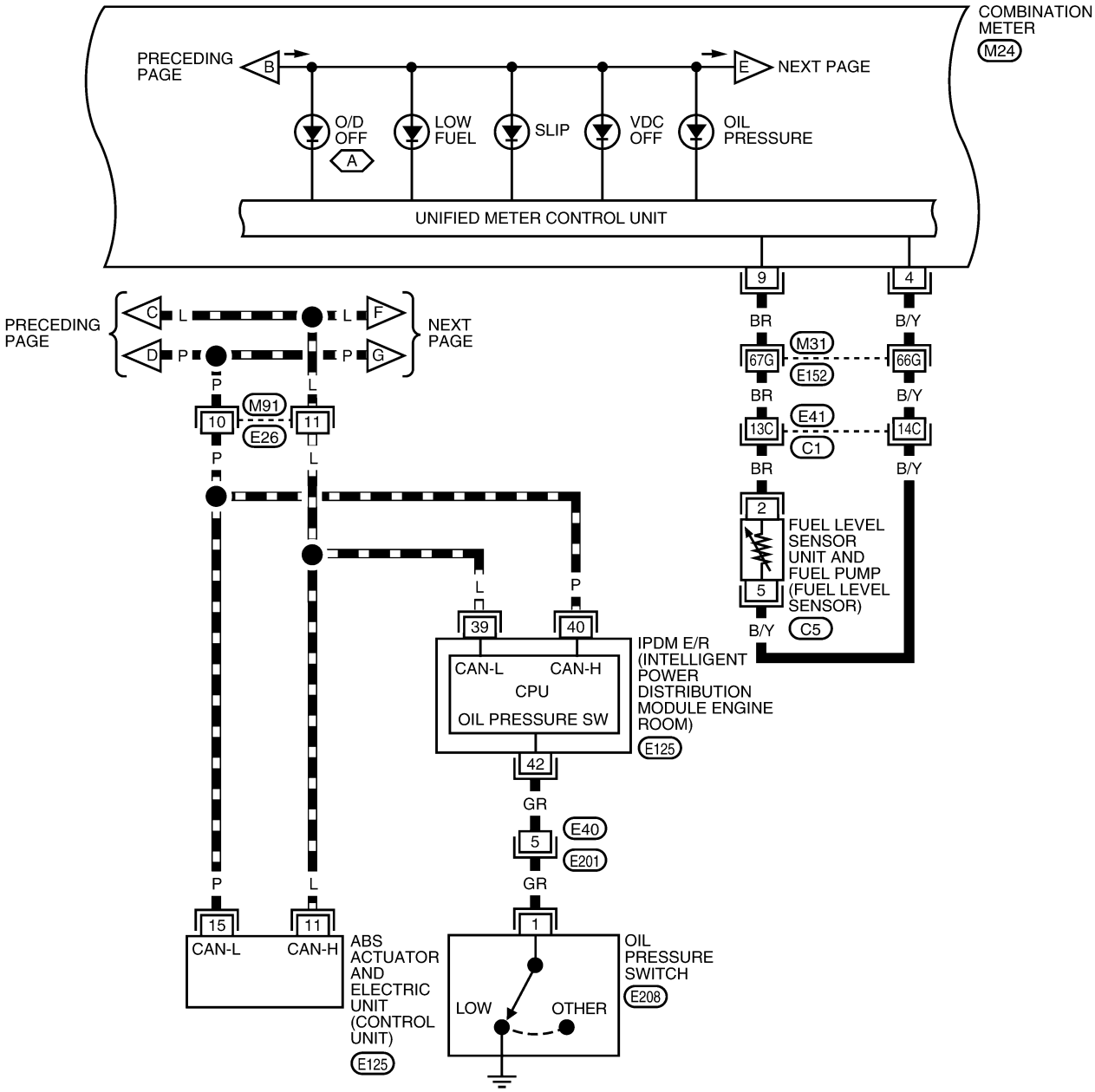
REFER TO THE FOLLOWING.
E16 - ELECTRICAL UNITS
M31 - SUPER MULTIPLE JUNCTION (SMJ)

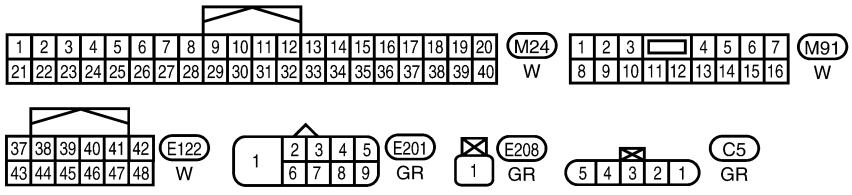
*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT" OF PG SECTION.

WKWA5360E

DI-WARN-02

A : WITH A/T

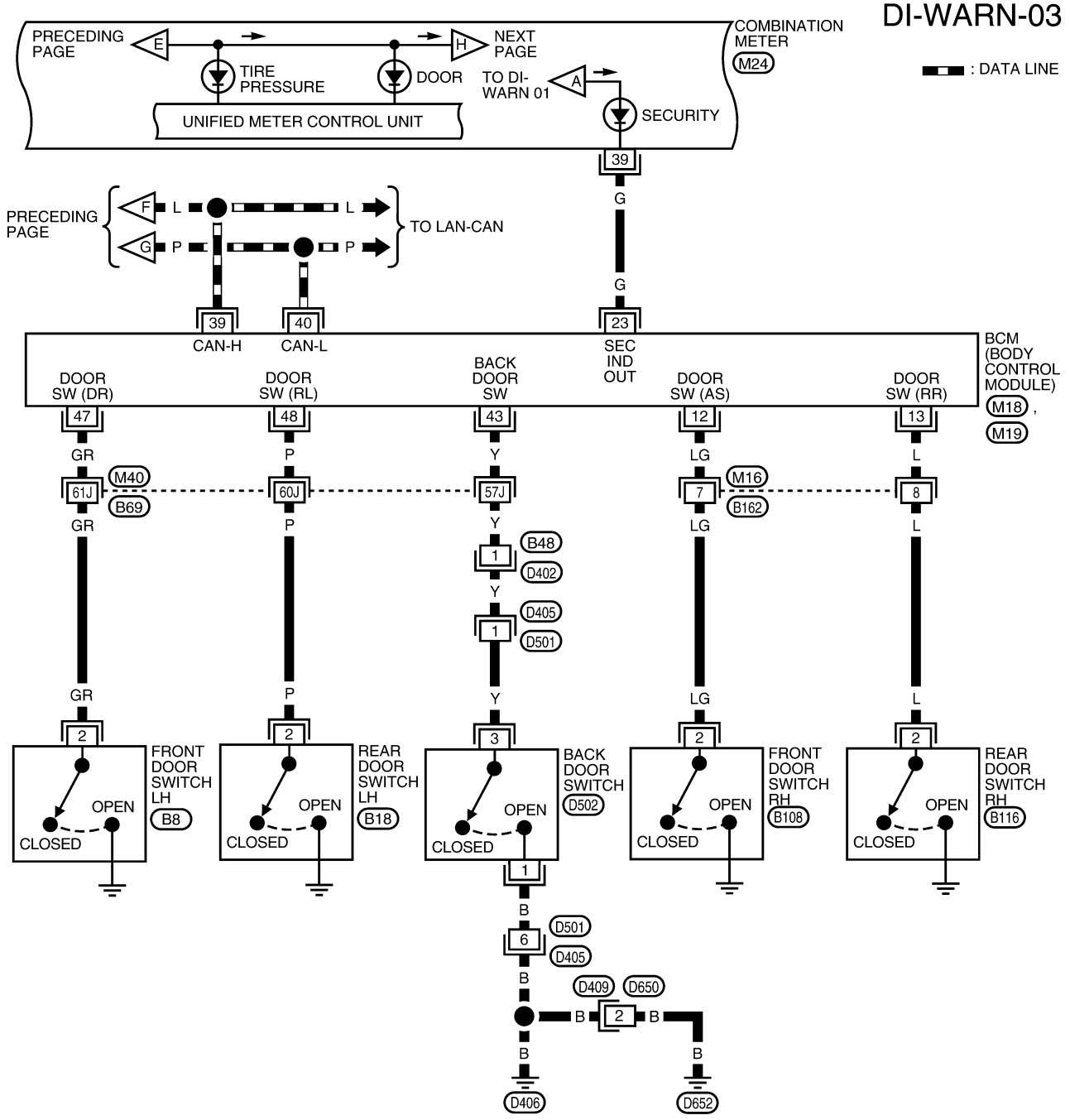




REFER TO THE FOLLOWING
M31 , E125 , C1
- SUPER MULTIPLE JUNCTION (SMJ)

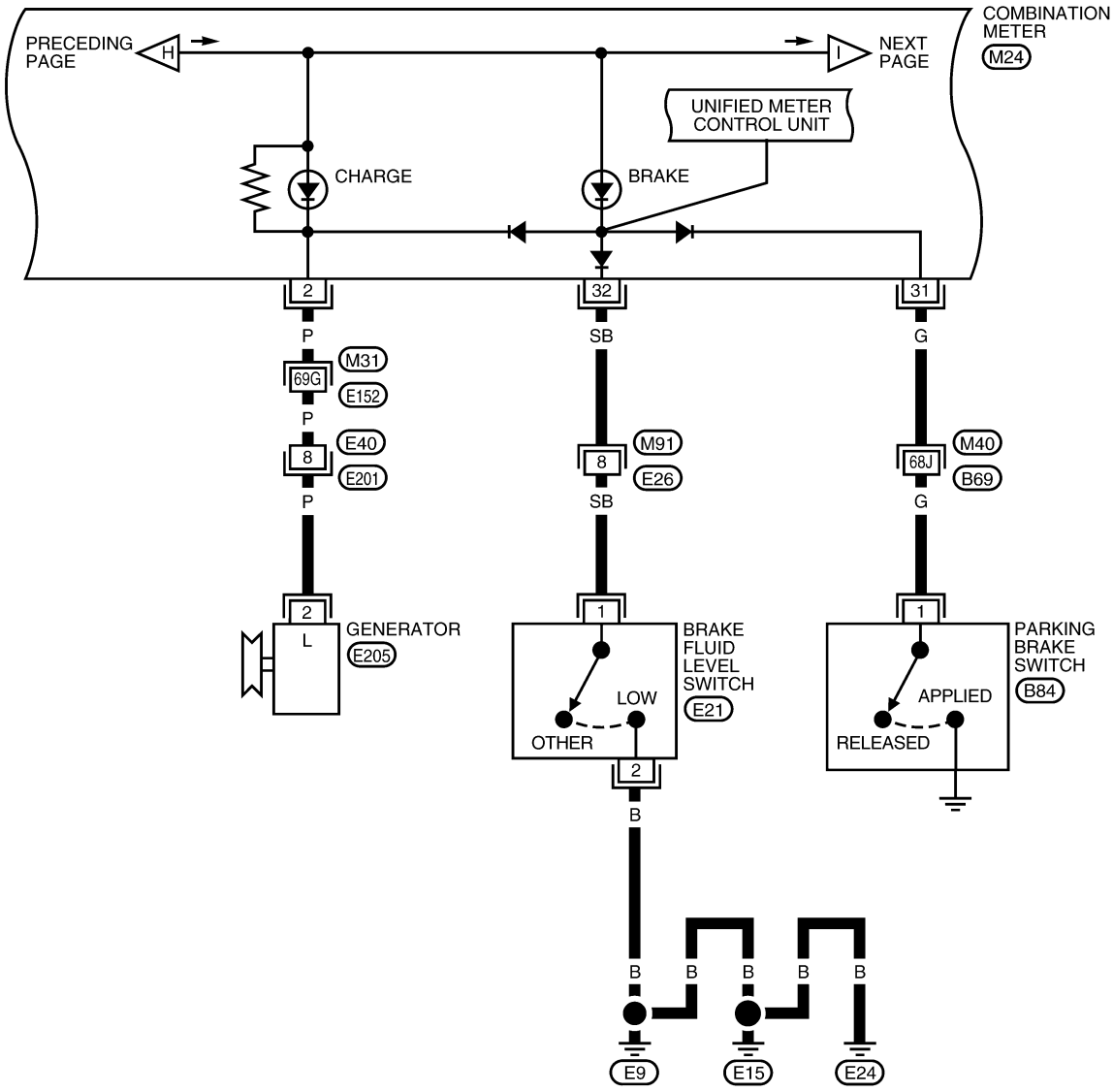
WKWA5361E

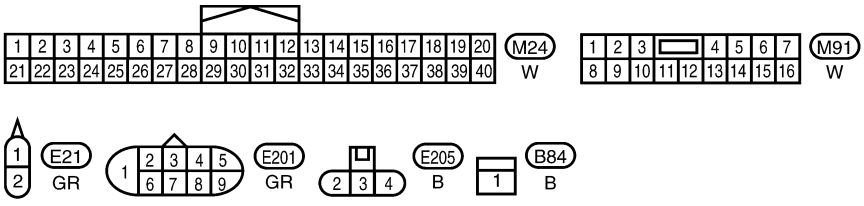
DI-WARN-03



WKWA4396E

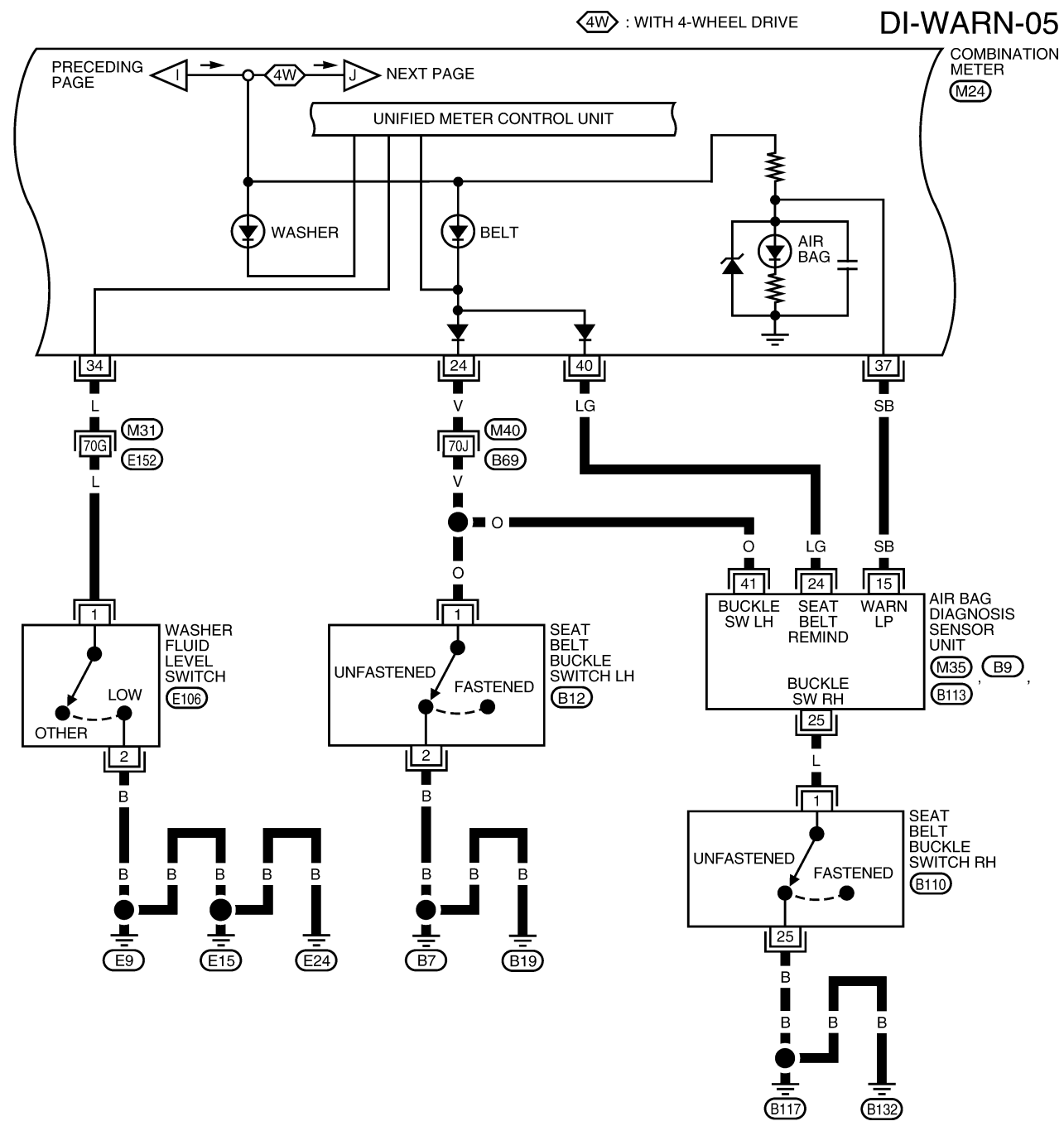
DI-WARN-04

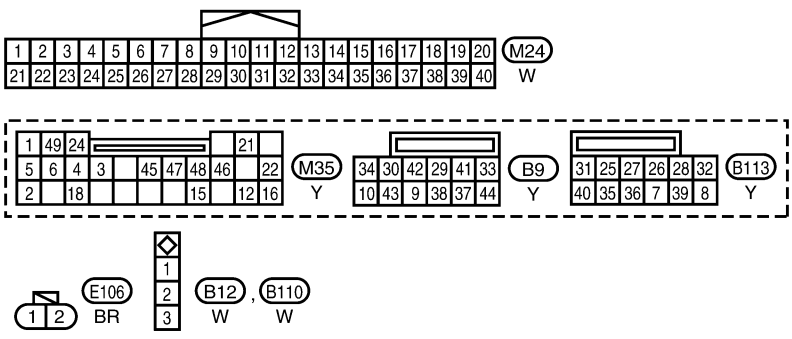




REFER TO THE FOLLOWING.
M31 , M40 - SUPER MULTIPLE JUNCTION (SMJ)

WKWA4397E



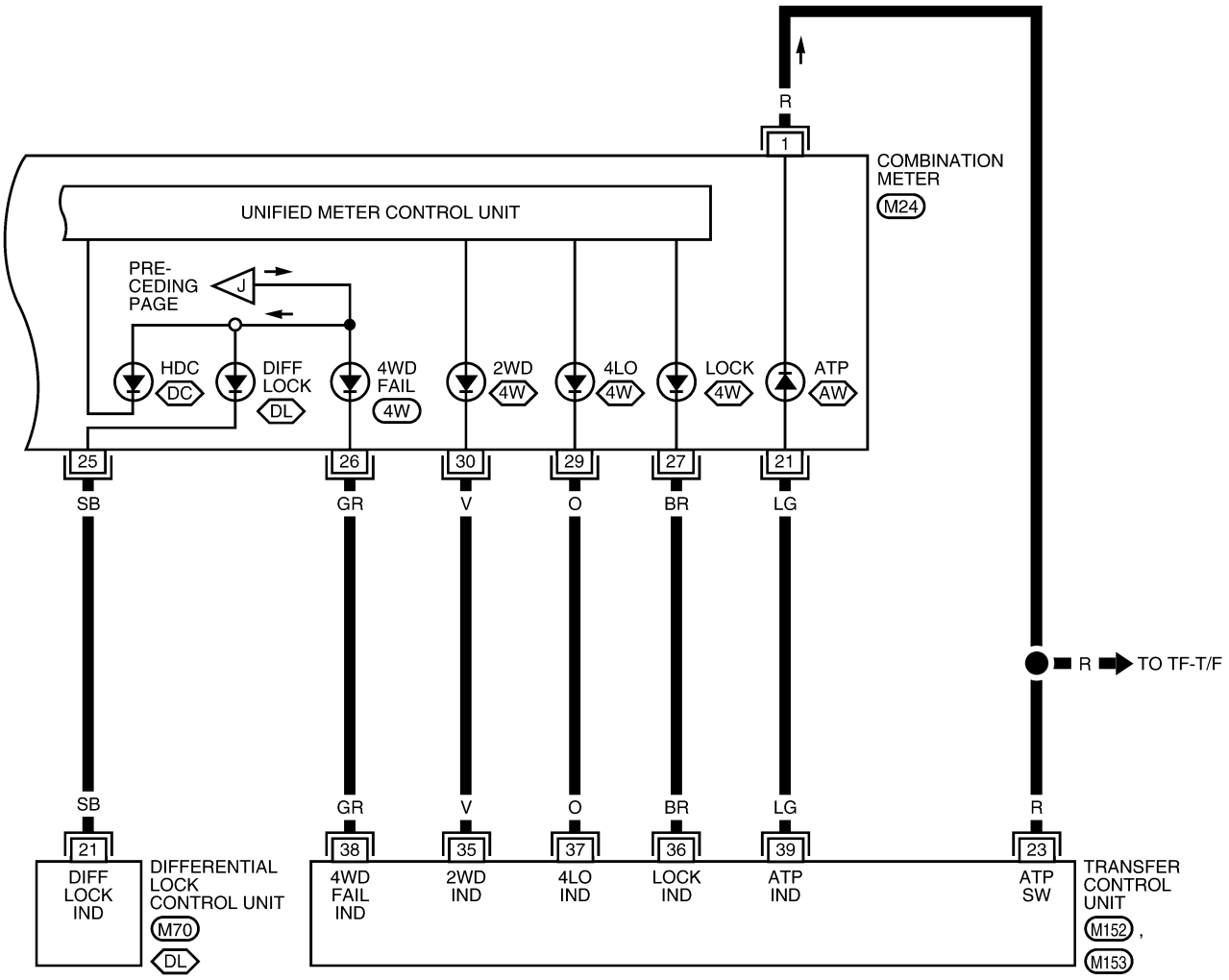


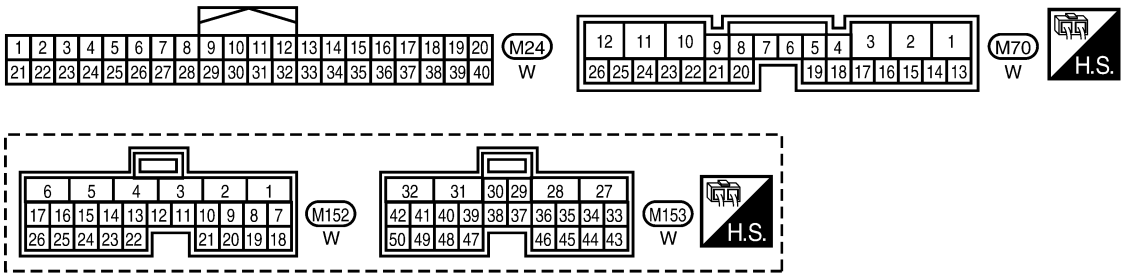
REFER TO THE FOLLOWING
M31 , M40 - SUPER MULTIPLE JUNCTION (SMJ)

WKWA4398E

DI-WARN-06

4W : WITH 4-WHEEL DRIVE
A : WITH A/T
AW : WITH A/T AND 4-WHEEL DRIVE
DC : WITH HILL DESCENT CONTROL AND HILL START ASSIST
DL : WITH ELECTRONIC LOCKING REAR DIFFERENTIAL





WKWA4399E

Oil Pressure Warning Lamp Stays Off (Ignition Switch ON)

EKS00DDT

1. CHECK SELF-DIAGNOSTIC RESULTS OF IPDM E/R

Select "IPDM E/R" on CONSULT-II, and perform self-diagnosis of IPDM E/R. Refer to PG-20, "SELF-DIAGNOSTIC RESULTS" .

Self-diagnostic results content

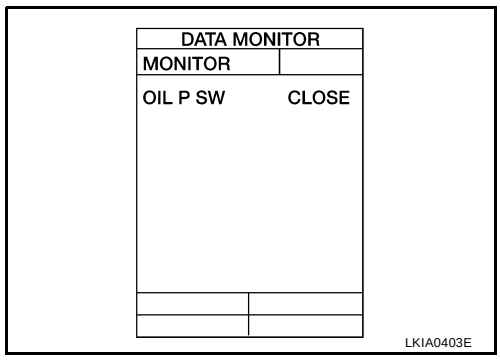
No malfunction detected>>GO TO 2.
Malfunction detected>>GO TO PG-20, "Display Item List" .

2. CHECK IPDM E/R INPUT SIGNAL

Select "IPDM E/R" on CONSULT-II. Operate ignition switch with "OIL P SW" of "DATA MONITOR" and check operation status.

When ignition switch is in ON position (Engine stopped) : OIL P SW CLOSE

When engine running : OIL P SW OPEN



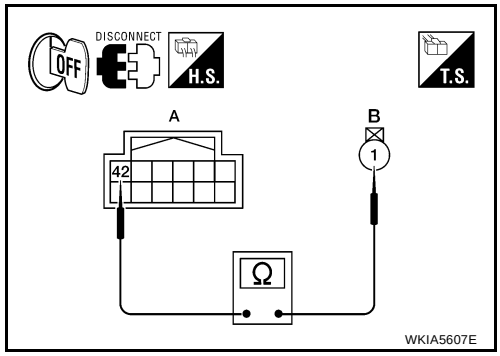
OK or NG

OK >> Replace combination meter. Refer to IP-13, "COMBINATION METER" .
NG >> GO TO 3.

3. CHECK OIL PRESSURE SWITCH CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connector E122 and oil pressure switch connector E208.
3. Check continuity between IPDM E/R harness connector E122 (A) terminal 42 and oil pressure switch harness connector E208 (B) terminal 1.

Continuity should exist.



OK or NG

OK >> GO TO 4.
NG >> Repair harness or connector.

4. CHECK OIL PRESSURE SWITCH

Check oil pressure switch. Refer to DI-23, "OIL PRESSURE SWITCH CHECK" .

OK or NG

OK >> Replace IPDM E/R. Refer to PG-32, "Removal and Installation of IPDM E/R" .
NG >> Replace oil pressure switch.

Oil Pressure Warning Lamp Does Not Turn Off (Oil Pressure Is Normal)

EKS00DDU

NOTE:
For oil pressure inspection, refer to LU-8, "OIL PRESSURE CHECK" .

1. CHECK ENGINE OIL PRESSURE GAUGE OPERATION

Observe operation of engine oil pressure gauge.

Does engine oil pressure gauge function properly?

YES >> Replace the combination meter. Refer to IP-13, "COMBINATION METER" .
NO >> GO TO DI-19, "Engine Oil Pressure Signal Inspection" .

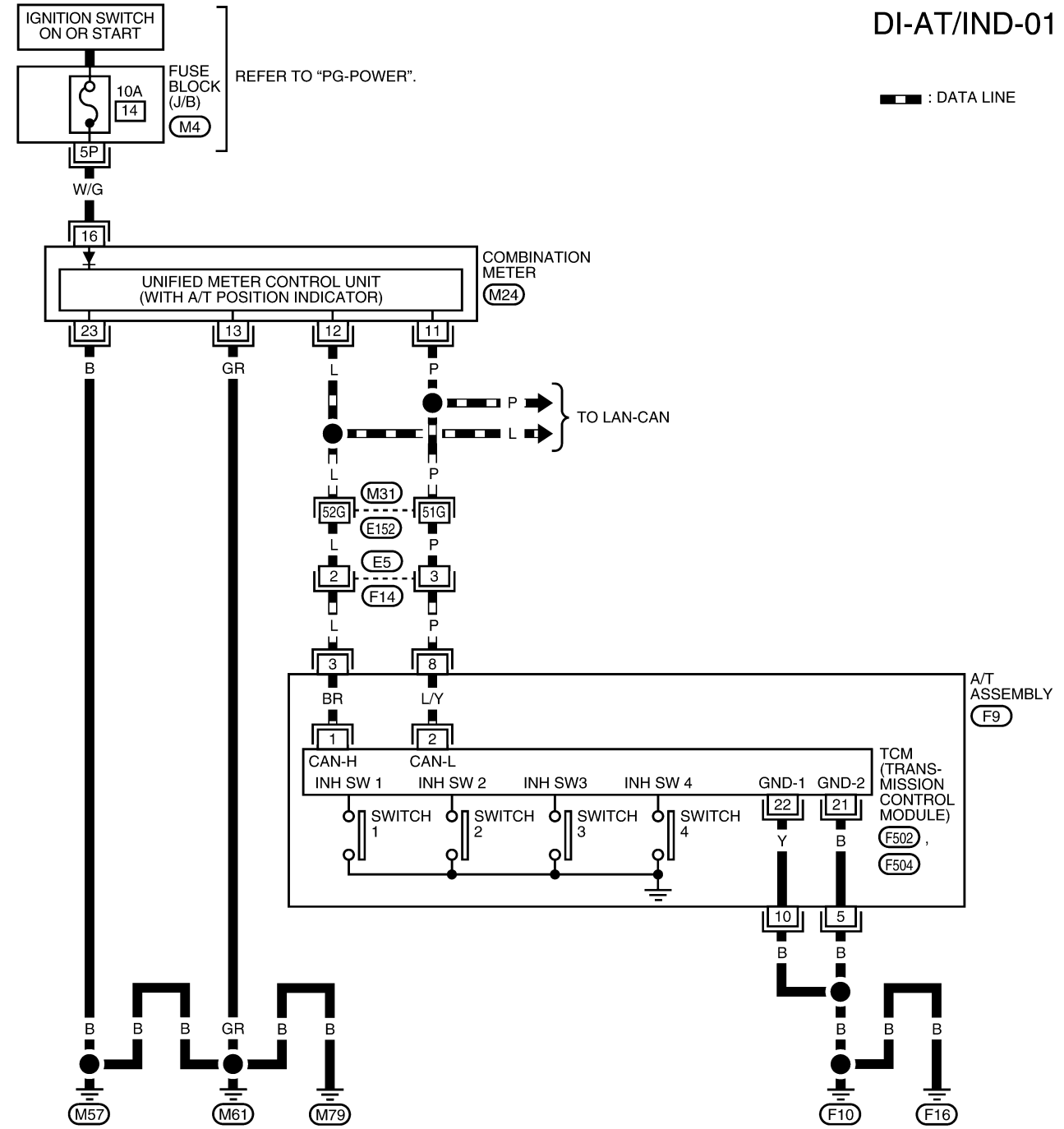
A/T INDICATOR

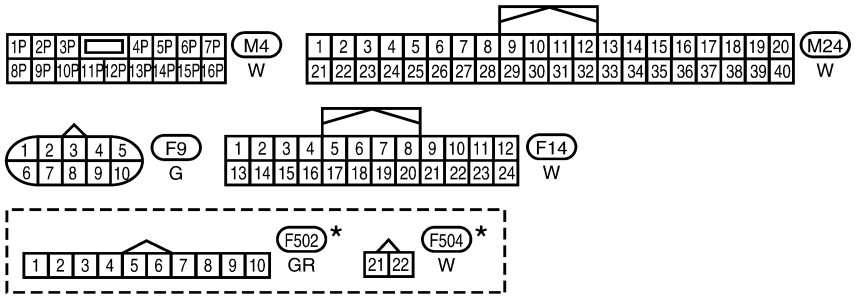
PFP:24814

Wiring Diagram — AT/IND —

EKS00DDV

DI-AT/IND-01





REFER TO THE FOLLOWING.
M31 - SUPER MULTIPLE JUNCTION (SMJ)

★: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT" OF PG SECTION.

WKWA2599E

A/T Indicator Does Not Illuminate

EKS00DDW

1. CHECK SELF-DIAGNOSIS OF COMBINATION METER

Perform combination meter self-diagnosis. Refer to DI-11, "SELF-DIAGNOSIS FUNCTION" .

OK or NG

OK >> GO TO 2.
NG >> Replace combination meter. Refer to IP-13, "COMBINATION METER" .

2. CHECK TCM

Perform self-diagnosis of TCM. Refer to AT-90, "SELF-DIAGNOSTIC RESULT MODE" .

OK or NG

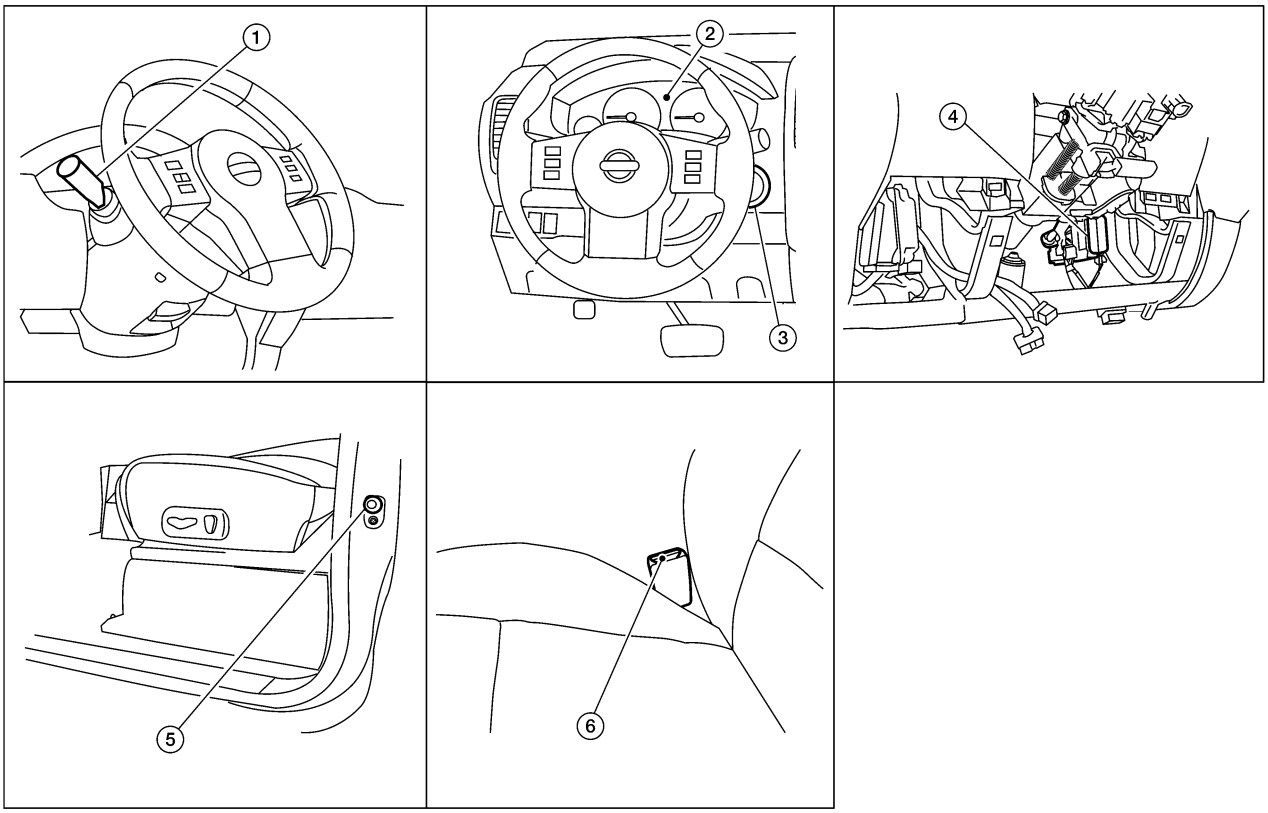
OK >> Replace combination meter. Refer to IP-13, "COMBINATION METER" .
NG >> Refer to DI-11, "SELF-DIAGNOSIS FUNCTION" .

WARNING CHIME

PFP:24814

Component Parts and Harness Connector Location

EKS00DDX



WKIA4890E

1. Combination switch (lighting switch) M28
2. Combination meter M24
3. Key switch M27
4. BCM M18, M19, M20 (view with instrument lower panel LH removed)
5. Front door switch LH B8
6. Seat belt buckle switch LH B12

System Description

EKS00DDY

FUNCTION

Power is supplied at all times

- through 50A fusible link (letter **g** , located in the fuse and fusible link box)
- to BCM terminal 70,
- through 10A fuse (No. 25, located in the fuse and fusible link box)
- to key switch terminal 2,
- through 10A fuse [No. 19, located in the fuse block (J/B)]
- to combination meter terminal 3.

With ignition switch in ON or START position, power is supplied

- through 10A fuse [No. 1, located in the fuse block (J/B)]
- to BCM terminal 38,
- through 10A fuse [No. 14, located in the fuse block (J/B)]
- to combination meter terminal 16.

Ground is supplied

- to BCM terminal 67 and
- to combination meter terminals 13 and 23
- through body grounds M57, M61, and M79.

NOTE:
When ignition key warning chime, light warning chime, and seat belt warning chime are required at the same time, the priorities for each chime are the following.

1. Light warning chime
2. Ignition key warning chime
3. Seat belt warning chime

LIGHT WARNING CHIME

With the key removed from the ignition switch, the driver's door open, and the lighting switch (part of the combination switch) in 1st or 2nd position, the warning chime will sound. [Except when headlamp battery saver control operates (5 minutes after ignition switch is turned to OFF or ACC position) and headlamps do not illuminate.]
Signal is supplied

- from combination switch (lighting switch) terminals 1, 2, 3, 4, 5, 6, 7, 8, 9 and 10
- to BCM terminals 2, 3, 4, 5, 6, 32, 33, 34, 35 and 36.

NOTE:
Lighting switch (detected by BCM) is in 1st or 2nd position. Refer to BCS-3, "COMBINATION SWITCH READING FUNCTION" .

Ground is supplied

- to BCM terminal 47
- through front door switch LH terminal 2.

Front door switch LH is case grounded.
BCM detects headlamps are illuminated, and sends light warning signal to combination meter via CAN communication lines. When the combination meter receives light warning signal, it sounds warning chime.

IGNITION KEY WARNING CHIME

With the key inserted in the ignition switch, the ignition switch in OFF position, and the driver's door open, the warning chime will sound.
Power is supplied

- through key switch terminal 1
- to BCM terminal 37.

Ground is supplied

- to BCM terminal 47
- through front door switch LH terminal 2.

Front door switch LH is case grounded.
BCM detects key inserted into the ignition switch, and sends key warning signal to combination meter via CAN communication lines. When the combination meter receives key warning signal, it sounds warning chime.

SEAT BELT WARNING CHIME

When the ignition switch is turned ON with the driver seat belt unfastened (seat belt buckle switch LH unfastened), warning chime will sound for approximately 6 seconds.
Ground is supplied

- to combination meter terminal 24
- through seat belt buckle switch LH terminal 1.

Seat belt buckle switch LH terminal 2 is grounded through body grounds B7 and B19.
The combination meter sends seat belt buckle switch LH unfastened signal to BCM via CAN communication line.
BCM receives seat belt buckle switch LH unfastened signal from combination meter via CAN communication line, and sends seat belt warning signal to the combination meter via CAN communication line. When the combination meter receives the seat belt warning signal, it sounds the warning chime. The BCM controls the (6 second) duration of the seat belt warning chime.

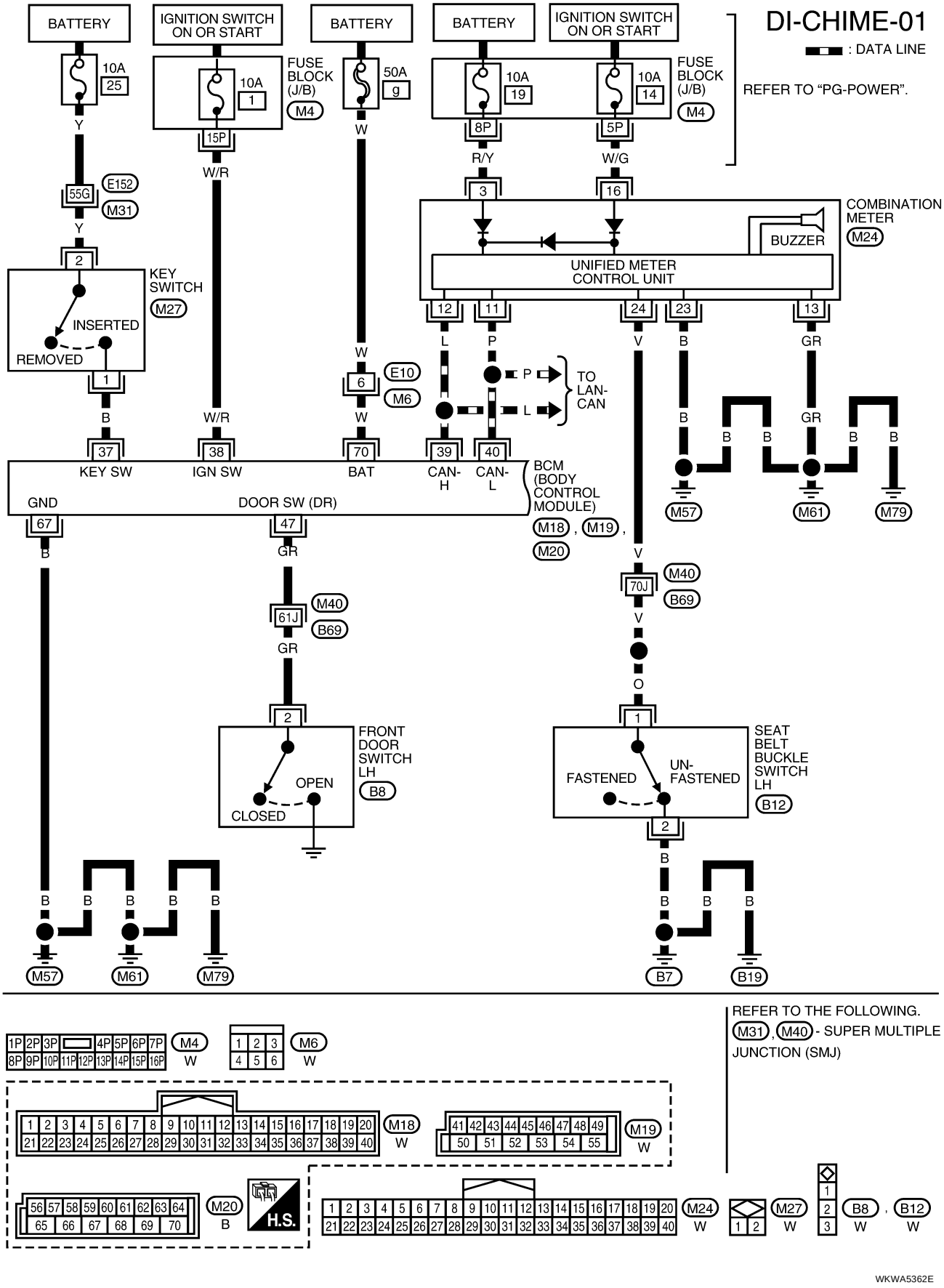
CAN Communication System Description

EKS00DDZ

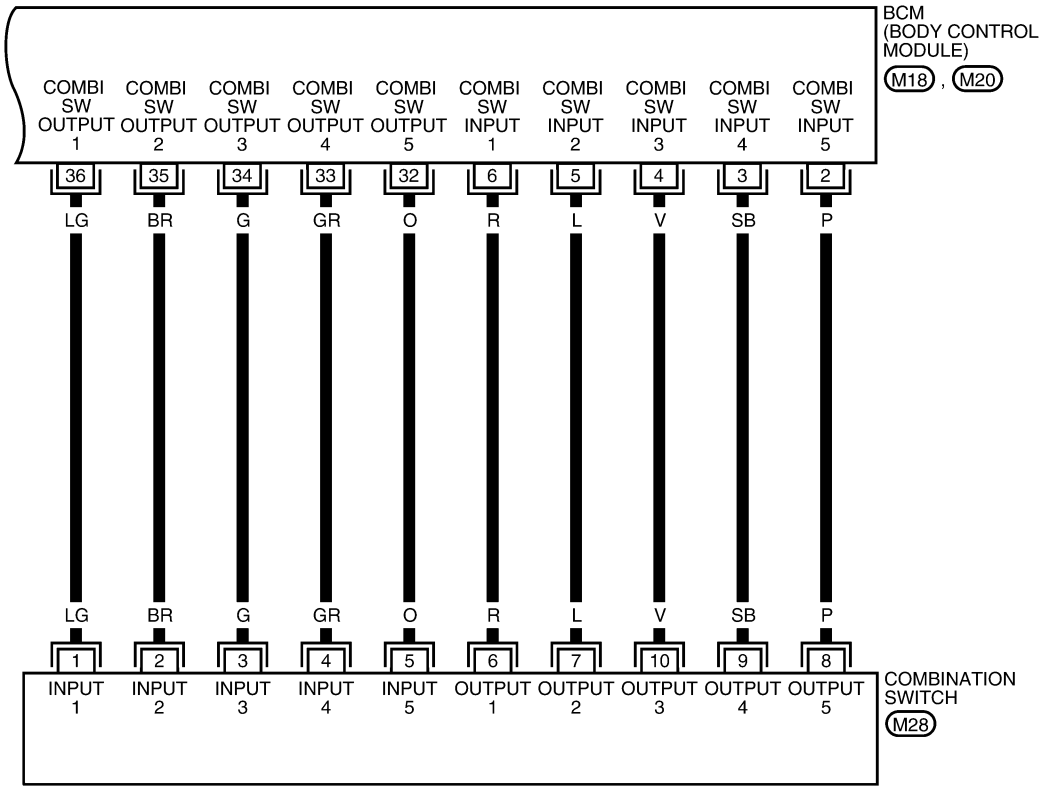
Refer to LAN-4, "SYSTEM DESCRIPTION" .

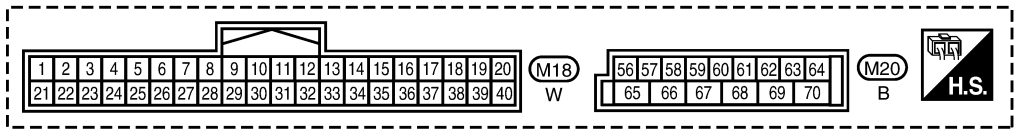
Wiring Diagram — CHIME —

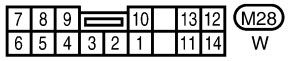
EKS00DE0



WKWA5362E


BCM
(BODY CONTROL
MODULE)
M18 , M20
COMBI SW OUTPUT 1
COMBI SW OUTPUT 2
COMBI SW OUTPUT 3
COMBI SW OUTPUT 4
COMBI SW OUTPUT 5
COMBI SW INPUT 1
COMBI SW INPUT 2
COMBI SW INPUT 3
COMBI SW INPUT 4
COMBI SW INPUT 5
36 35 34 33 32 6 5 4 3 2
LG BR G GR O R L V SB P
LG BR G GR O R L V SB P
1 2 3 4 5 6 7 10 9 8
INPUT 1
INPUT 2
INPUT 3
INPUT 4
INPUT 5
OUTPUT 1
OUTPUT 2
OUTPUT 3
OUTPUT 4
OUTPUT 5
COMBINATION SWITCH
M28


1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40
M18
W
56 57 58 59 60 61 62 63 64
65 66 67 68 69 70
M20
B
H.S.


7 8 9 10 13 12
6 5 4 3 2 1 11 14
M28
W

WKWA5470E

Terminals and Reference Values for BCM

EKS00DE1

Refer to BCS-12, "Terminals and Reference Values for BCM" .

Terminals and Reference Values for Combination Meter

EKS00DE2

Refer to DI-10, "Terminals and Reference Values for Combination Meter" .

How to Proceed With Trouble Diagnosis

EKS00DE3

1. Confirm the symptom or customer complaint.
2. Understand operation description and function description. Refer to DI-34, "System Description" .
3. Perform the preliminary check. Refer to DI-38, "Preliminary Check" .
4. Check symptom and repair or replace the cause of malfunction.
5. Does the warning chime operate properly? If so, go to 6. If not, go to 3.
6. Inspection End.

Preliminary Check

EKS00DE4

INSPECTION FOR POWER SUPPLY AND GROUND CIRCUIT

Refer to BCS-16, "BCM Power Supply and Ground Circuit Check" .

CONSULT-II Function (BCM)

EKS00DE5

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

BCM diagnostic test item	Diagnostic mode	Description
Inspection by part	WORK SUPPORT	Supports inspections and adjustments. Commands are transmitted to the BCM for setting the status suitable for required operation, input/output signals are received from the BCM and received data is displayed.
	DATA MONITOR	Displays BCM input/output data in real time.
	ACTIVE TEST	Operation of electrical loads can be checked by sending drive signal to them.
	SELF-DIAG RESULTS	Displays BCM self-diagnosis results.
	CAN DIAG SUPPORT MNTR	The result of transmit/receive diagnosis of CAN communication can be read.
	ECU PART NUMBER	BCM part number can be read.
	CONFIGURATION	Performs BCM configuration read/write functions.

CONSULT-II START PROCEDURE

Refer to GI-38, "CONSULT-II Start Procedure" .

DATA MONITOR

Display Item List

Monitored item	Description
IGN ON SW	Indicates [ON/OFF] condition of ignition switch.
KEY ON SW	Indicates [ON/OFF] condition of key switch.
DOOR SW-DR	Indicates [ON/OFF] condition of front door switch (driver side).
LIGHT SW 1ST	Indicates [ON/OFF] condition of lighting switch.
BUCKLE SW	Indicates [ON/OFF] condition of seat belt buckle switch LH.

ACTIVE TEST

Display Item List

Test item	Malfunction is detected when···
LIGHT WARN ALM	This test is able to check light warning chime operation. Light warning chime sounds for 2 seconds after touching “ON” on CONSULT-II screen.
IGN KEY WARN ALM	This test is able to check key warning chime operation. Key warning chime sounds for 2 seconds after touching “ON” on CONSULT-II screen.
SEAT BELT WARN TEST	This test is able to check seat belt warning chime operation. Seat belt warning chime sounds for 2 seconds after touching “ON” on CONSULT-II screen.

SELF-DIAGNOSTIC RESULTS

Display Item List

Monitored Item	CONSULT-II display	Description
CAN communication	CAN communication [U1000]	Malfunction is detected in CAN communication.

NOTE:

If "CAN communication [U1000]" is indicated, after printing the monitor item, go to "CAN System". Refer to LAN-44, "TROUBLE DIAGNOSIS" .

All Warning Chimes Do Not Operate

EKS00DE6

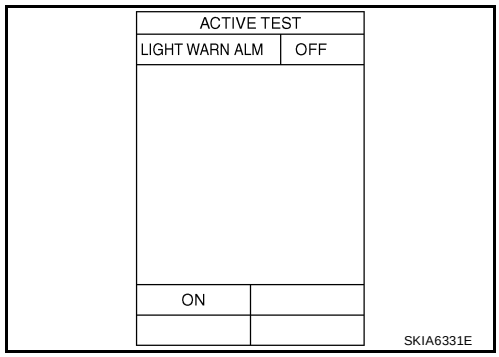
1. CHECK BCM CHIME OPERATION

Select "BUZZER" on CONSULT-II, and perform "LIGHT WARN ALM", "IGN KEY WARN ALM", or "SEAT BELT WARN TEST" active test.

Does chime sound?

YES >> Replace the BCM. Refer to BCS-25, "Removal and Installation of BCM" .

NO >> Replace the combination meter. Refer to IP-13, "COMBINATION METER" .



Key Warning Chime and Light Warning Chime Do Not Operate (Seat Belt Warning Chime Does Operate)

EKS00DE7

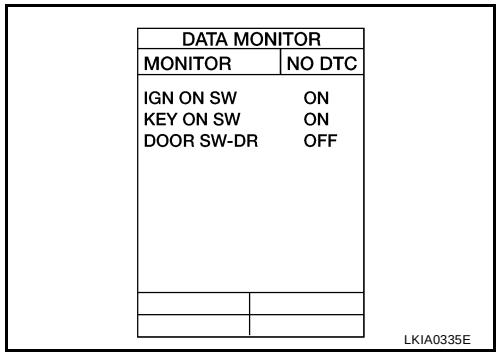
1. CHECK BCM INPUT SIGNAL

With CONSULT-II

1. Select "BCM" on CONSULT-II.
2. With "DATA MONITOR" of "BUZZER", confirm "DOOR SW-DR" changes with the status of front door LH.

When front door LH is opened : DOOR SW-DR ON

When front door LH is closed : DOOR SW-DR OFF



Without CONSULT-II

Check voltage between BCM harness connector M19 terminal 47 and ground.

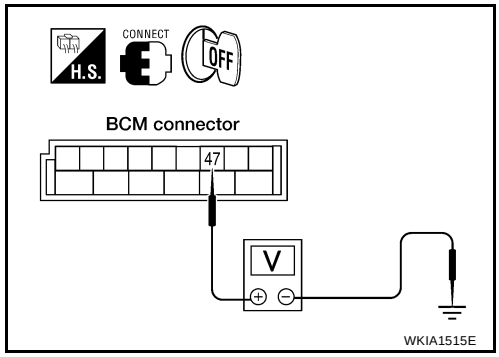
When front door LH is opened : Approx. 0V

When front door LH is closed : Approx. 5V

OK or NG

OK >> Replace the BCM. Refer to BCS-25, "Removal and Installation of BCM" .

NG >> GO TO 2.



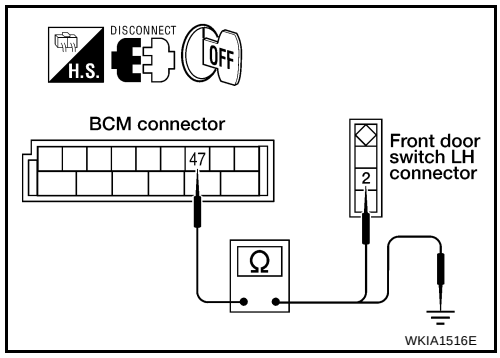
2. CHECK FRONT DOOR SWITCH LH CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect BCM connector M19 and front door switch LH connector B8.
3. Check continuity between BCM harness connector M19 terminal 47 and front door switch LH harness connector B8 terminal 2.

   Continuity should exist.

4. Check continuity between BCM harness connector M19 terminal 47 and ground.

   Continuity should not exist.



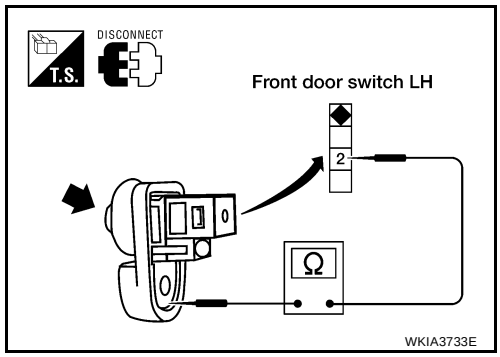
OK or NG

OK >> GO TO 3.
NG >> Repair harness or connector.

3. CHECK FRONT DOOR SWITCH LH

Check continuity between front door switch LH terminal 2 and exposed metal of switch while pressing and releasing switch.

When front door switch LH is released	**: Continuity should exist.**
When front door switch LH is pushed	**: Continuity should not exist.**



OK or NG

OK >> Replace the BCM. Refer to BCS-25, "Removal and Installation of BCM" .
NG >> Replace the front door switch LH.

Key Warning Chime Does Not Operate

EKS00DE8

1. CHECK FUSE

Check if the key switch fuse (No. 25, located in the fuse and fusible link box) is blown. Refer to DI-36, "Wiring Diagram — CHIME —" .

Is the fuse blown?

YES >> Replace the fuse. Be sure to repair the cause of malfunction before installing new fuse.
NO >> GO TO 2.

2. CHECK WARNING CHIME OPERATION

With key removed from the ignition and the front door LH open, turn the lighting switch to 1st or 2nd position.

Does warning chime sound?

YES >> GO TO 3.
NO >> Go to DI-40, "All Warning Chimes Do Not Operate" or DI-40, "Key Warning Chime and Light Warning Chime Do Not Operate (Seat Belt Warning Chime Does Operate)" .

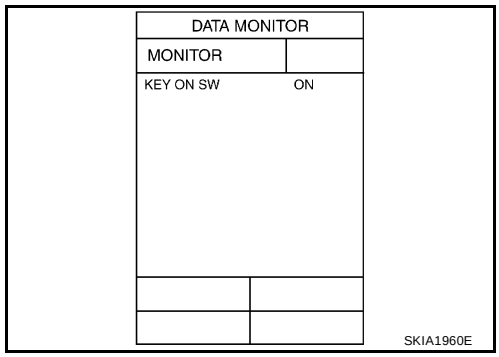
3. CHECK BCM INPUT SIGNAL

With CONSULT-II

With "DATA MONITOR" of "BUZZER", confirm "KEY ON SW" changes when the key is inserted/removed from the ignition key cylinder.

When key is inserted in ignition key cylinder : KEY ON SW ON

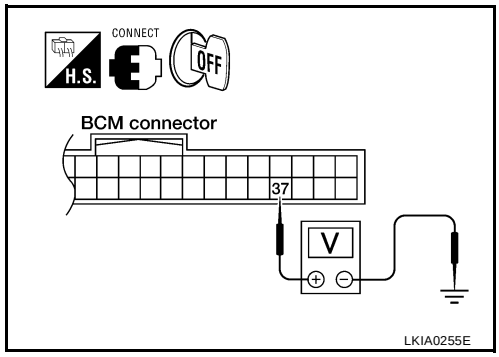
When key is removed from ignition key cylinder : KEY ON SW OFF



Without CONSULT-II

Check voltage between BCM harness connector M18 terminal 37 and ground.

Terminals			Condition	Voltage (V)
(+)		(–)		
Connector	Terminal			
M18	37	Ground	Key is inserted	Battery voltage
			Key is removed	0V



OK or NG

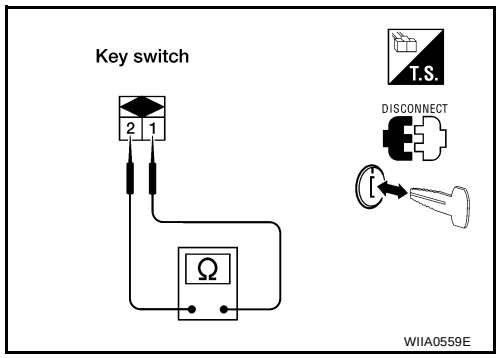
OK >> Replace the BCM. Refer to BCS-25, "Removal and Installation of BCM" .

NG >> GO TO 4.

4. CHECK KEY SWITCH

1. Turn ignition switch OFF.
2. Disconnect key switch connector M27.
3. Check continuity between key switch terminals 1 and 2.

Terminals		Condition	Continuity
1	2	Key is inserted	Yes
		Key is removed	No



OK or NG

OK >> GO TO 5.

NG >> Replace the key switch.

5. CHECK KEY SWITCH CIRCUIT

1. Disconnect BCM connector M18.
2. Check continuity between BCM harness connector M18 terminal 37 and key switch harness connector M27 terminal 1.

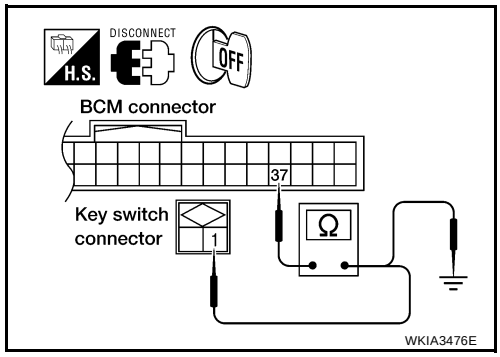
Continuity should exist.

3. Check continuity between BCM harness connector M18 terminal 37 and ground.

Continuity should not exist.

OK or NG

OK >> GO TO 6.
NG >> Repair harness or connector.



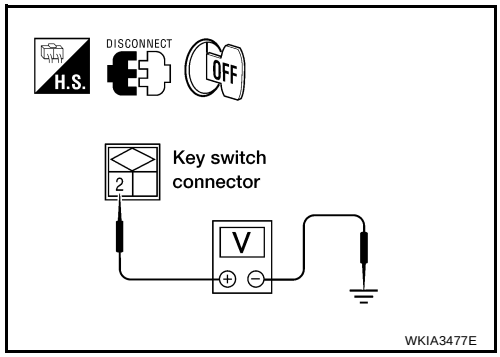
6. CHECK KEY SWITCH POWER SUPPLY CIRCUIT

Check voltage between key switch harness connector M27 terminal 2 and ground.

Battery voltage should exist.

OK or NG

OK >> Replace the BCM. Refer to BCS-25, "Removal and Installation of BCM" .
NG >> Check harness for open between fuse and key switch.



Light Warning Chime Does Not Operate

EKS00DE9

1. CHECK WARNING CHIME OPERATION

Check key warning chime and seat belt warning chime functions.

Do key warning chime and seat belt warning chime sound?

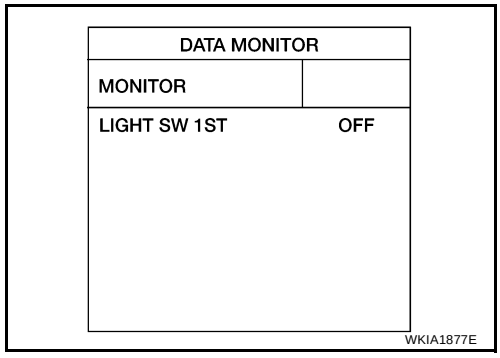
YES >> GO TO 2.
NO >> Go to DI-40, "All Warning Chimes Do Not Operate" .

2. CHECK BCM INPUT SIGNAL

With CONSULT-II

1. Select "BCM".
2. With "DATA MONITOR" of "BUZZER", confirm "LIGHT SW 1ST" status changes when the lighting switch is moved from ON (1st position) to OFF.

Lighting switch ON (1st position) : LIGHT SW 1ST ON
Lighting switch OFF : LIGHT SW 1ST OFF



Without CONSULT-II

Check combination switch. Refer to LT-63, "Combination Switch Reading Function" .

OK or NG

OK >> Replace the BCM. Refer to BCS-25, "Removal and Installation of BCM" .
NG >> Check lighting switch. Refer to LT-64, "Combination Switch Inspection" .

Seat Belt Warning Chime Does Not Operate

EKS00DEA

1. CHECK WARNING CHIME OPERATION

1. With key removed from the ignition and the front door LH open, turn the lighting switch to 1st or 2nd position.
2. Return lighting switch to OFF position, and insert key into ignition.

Does warning chime sound for both steps?

YES >> GO TO 2.
NO >> Go to DI-40, "All Warning Chimes Do Not Operate" .

2. CHECK SEAT BELT WARNING LAMP OPERATION

1. Turn ignition switch ON.
2. Fasten and unfasten the driver seat belt while watching seat belt warning lamp.

When seat belt is fastened : Warning lamp OFF
When seat belt is unfastened : Warning lamp ON

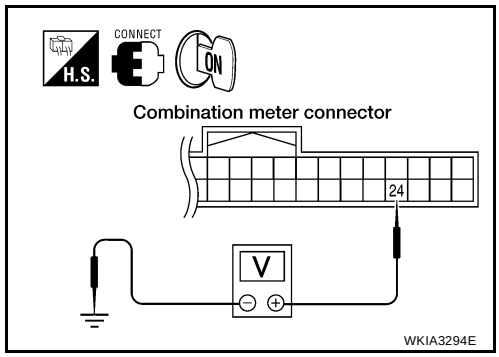
OK or NG

OK >> Replace the BCM. Refer to BCS-25, "Removal and Installation of BCM" .
NG >> GO TO 3.

3. CHECK COMBINATION METER INPUT SIGNAL

1. Turn ignition switch ON.
2. Check voltage between combination meter harness connector M24 terminal 24 and ground.

Terminals			Condition	Voltage (V) (Approx.)
(+)		(–)		
Connector	Terminal			
M24	24	Ground	Seat belt is fastened	Battery voltage
			Seat belt is unfastened	0V



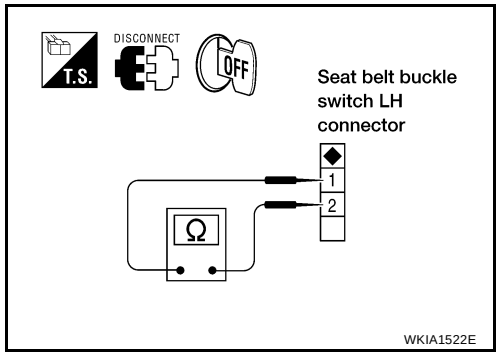
OK or NG

OK >> Replace the combination meter. Refer to IP-13, "COMBINATION METER" .
NG >> GO TO 4.

4. CHECK SEAT BELT BUCKLE SWITCH

1. Turn ignition switch OFF.
2. Disconnect seat belt buckle switch LH connector B12.
3. Check continuity between seat belt buckle switch LH terminals 1 and 2.

Terminals		Condition	Continuity
1	2	Seat belt is fastened	No
		Seat belt is unfastened	Yes



OK or NG

OK >> GO TO 5.
NG >> Replace the seat belt buckle switch LH.

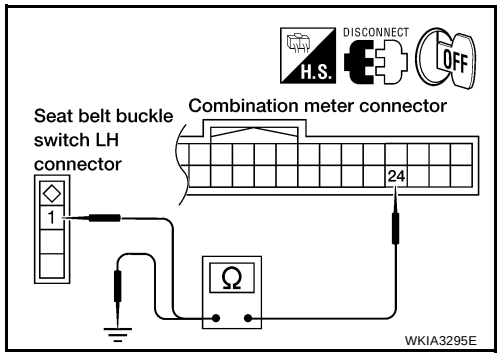
5. CHECK SEAT BELT BUCKLE SWITCH CIRCUIT

1. Disconnect combination meter connector.
2. Check continuity between combination meter harness connector M24 terminal 24 and seat belt buckle switch LH harness connector B12 terminal 1.

Continuity should exist.

3. Check continuity between combination meter harness connector M24 terminal 24 and ground.

Continuity should not exist.



OK or NG

OK >> Check seat belt buckle switch ground circuit.
NG >> Repair harness or connector.

BOARD COMPUTER

PFP:24810

System Description

EKS00DEB

FUNCTION

The board computer can indicate the following items.

- DTE (distance to empty)
- Trip distance
- Trip time
- Average fuel consumption
- Average vehicle speed

DTE (DISTANCE TO EMPTY) INDICATION

The range indication provides the driver with an estimation of the distance that can be driven before refueling. The range is calculated by signals from the fuel level sensor unit (fuel remaining), ECM (fuel consumption) and the ABS actuator and electric unit (vehicle speed). The indication will be refreshed every 30 seconds. When fuel remaining is less than approximately 11.6 ℓ (3 1/8 US gal, 2 1/2 Imp gal), the indication will blink as a warning. If the fuel remaining is less than approximately 9.6 ℓ (2 1/2 US gal, 2 1/8 Imp gal), the indication will show "---". In this case, the display will change to the DTE mode even though the display is showing a different mode. When the battery is disconnected and reconnected, DTE mode will display "---" until the vehicle is driven 0.3 miles (0.5 km).

TRIP DISTANCE

Trip distance is calculated by signal from the ABS actuator and electric unit (vehicle speed). If trip distance is reset, trip time will be reset at the same time.

TRIP TIME

Trip time displays cumulative ignition switch ON time. If trip time is reset, trip distance will be reset at the same time.

AVERAGE FUEL CONSUMPTION

Average fuel consumption indication is calculated by signals from the ABS actuator and electric unit (vehicle speed) and the ECM (fuel consumption). The indication will be refreshed every 30 seconds.

AVERAGE VEHICLE SPEED

Average vehicle speed indication is calculated by running distance and running time. The indication will be refreshed every 30 seconds. If average vehicle speed is reset, average fuel consumption will be reset at the same time. After resetting, the display will show "---" for 30 seconds.

HOW TO CHANGE/RESET INDICATION

Indication can be changed in the following order by momentarily depressing the board computer switch.
Trip distance → dte → Average vehicle speed → Average fuel consumption → Trip time →.
Holding the switch for more than 1 second will reset the indication of the currently displayed mode (trip distance, trip time, average vehicle speed or average fuel consumption).

NOTE:
After the display changes automatically, the indication can be changed to the next mode by pushing the board computer switch.

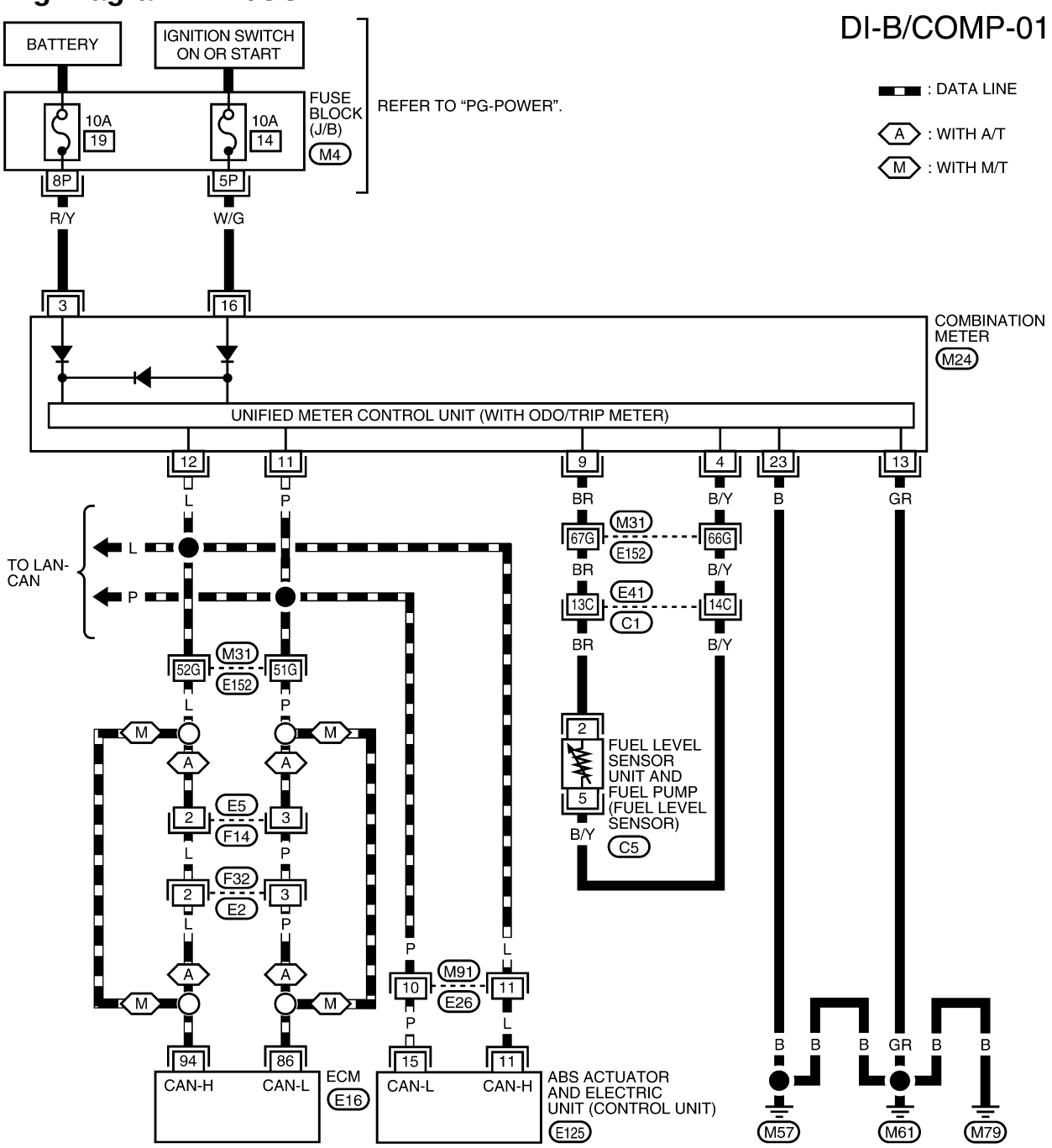
CAN Communication System Description

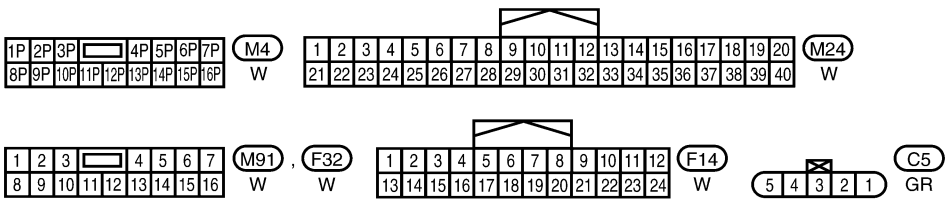
EKS00DEC

Refer to LAN-4, "SYSTEM DESCRIPTION" .

Wiring Diagram — B/COMP —

EKS00DED





REFER TO THE FOLLOWING.
E16 , E125 - ELECTRICAL UNITS
M31 , C1 - SUPER MULTIPLE JUNCTION (SMJ)

WKWA2600E

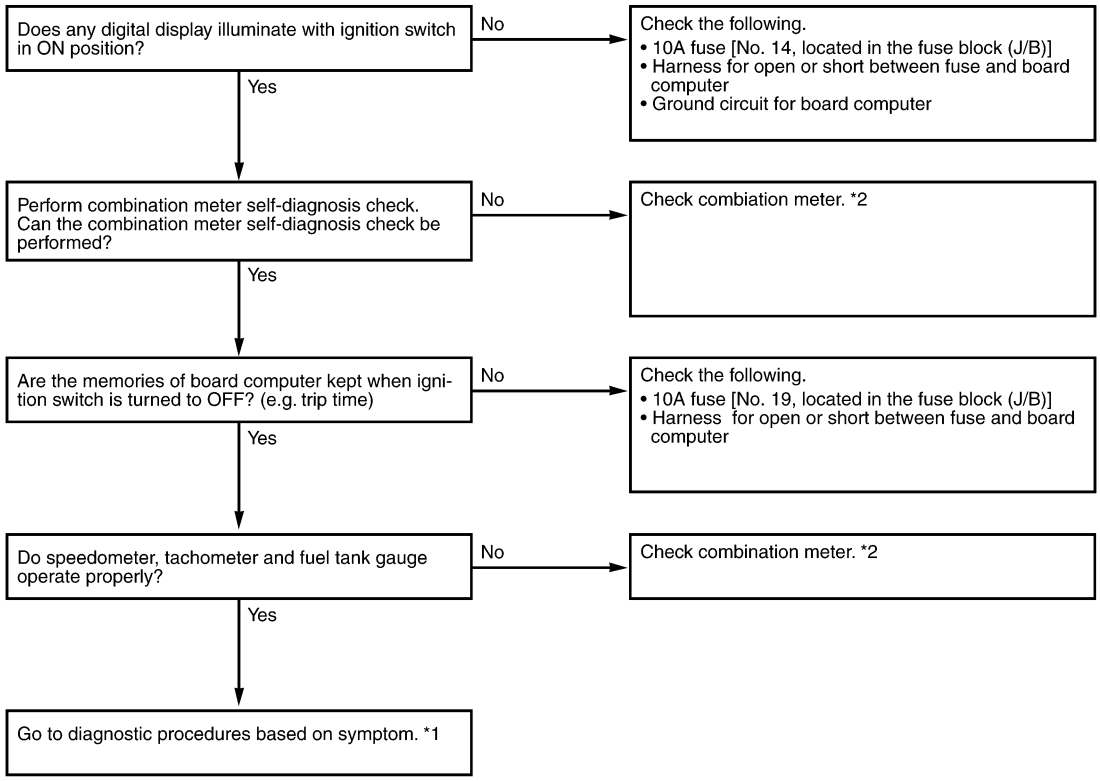
Trouble Diagnoses

EKS00DEE

SEGMENT CHECK

The board computer segment display can be checked by entering combination meter self-diagnostic mode. Refer to DI-11, "SELF-DIAGNOSIS FUNCTION" .

PRELIMINARY CHECK



WKIA3296E

*1 DI-48, "DIAGNOSIS PROCEDURE" *2 DI-17, "Preliminary Check"

DIAGNOSIS PROCEDURE

Symptom	Possible cause	Repair order
DTE (distance to empty) is not displayed properly.	1. Average fuel consumption display 2. Fuel tank gauge signal circuit	1. Make sure fuel consumption is displayed properly. If NG, check fuel consumption display. 2. Make sure fuel gauge operates properly. If NG, check fuel gauge.
Trip distance is not indicated properly.	1. ABS actuator and electric unit (control unit)	1. Perform ABS actuator and electric unit (control unit) self diagnosis.
Trip time is not indicated properly.	1. Fuse	1. 10A fuse [No. 19 located in fuse block (J/B)]. Verify battery voltage is present at combination meter terminal 3.
Average fuel consumption is not displayed properly.	1. Trip distance display 2. Fuel consumption signal	1. Perform ABS actuator and electric unit (control unit) self-diagnosis. 2. Check CAN lines for open or short between ECM and combination meter.
Average vehicle speed is not indicated properly.	1. Trip distance display 2. Trip time display	1. Perform ABS actuator and electric unit (control unit) self-diagnosis. 2. Make sure trip time is displayed properly. If NG, check trip time display.