SECTION DI
DRIVER INFORMATION SYSTEM

CONTENTS

PRECAUTION 3
Precautions for Supplemental Restraint System (SRS) “AIR BAG” and “SEAT BELT PRE-TENSIONER” 3
COMBINATION METERS 4
System Description 4
UNIFIED METER CONTROL UNIT 4
POWER SUPPLY AND GROUND CIRCUIT 4
UNIFIED METER AND A/C AMP. 4
SPEEDOMETER 5
TACHOMETER 5
WATER TEMPERATURE GAUGE 5
FUEL GAUGE 6
ODO/TRIP METER 6
COMBINATION METER ILLUMINATION CONTROL 7
FAIL-SAFE 7
Component Parts and Harness Connector Location 8
Arrangement of Combination Meter 9
Schematic 10
Wiring Diagram — METER — 11
Terminals and Reference Value for Combination Meter 13
Terminals and Reference Value for Unified Meter and A/C Amp. 14
Self-Diagnosis Mode of Combination Meter 15
SELF-DIAGNOSIS FUNCTION 15
OPERATION PROCEDURE 15
CONSULT-II Function (METER A/C AMP) 15
Trouble Diagnosis 16
HOW TO PERFORM TROUBLE DIAGNOSIS 16
PRELIMINARY CHECK 16
Symptom Chart 16
Power Supply and Ground Circuit Inspection 17
Vehicle Speed Signal Inspection 18
Engine Speed Signal Inspection 19
Engine Coolant Temperature Signal Inspection 20
Fuel Level Sensor Signal Inspection 20
Fuel Gauge Pointer Fluctuates, Indicator Wrong Value or Varies 22
Fuel Gauge Does Not Move to FULL Position 22
Odo/Trip Meter and Illumination Control Switch Inspection 23
Electrical Components Inspection 23
ODO/TRIP METER AND ILLUMINAION CONTROL SWITCH 23
FUEL LEVEL SENSOR UNIT 23
Removal and Installation of Combination Meter 24
REMOVAL 24
INSTALLATION 24
Disassembly and Assembly of Combination Meter 24
DISASSEMBLY 25
ASSEMBLY 26
UNIFIED METER AND A/C AMP 27
System Description 27
COMBINATION METER CONTROL FUNCTION 27
A/C AUTO AMP. FUNCTION 28
OTHER FUNCTIONS 28
Schematic 29
CONSULT-II Function (METER A/C AMP) 30
CONSULT-II BASIC OPERATION 30
SELF-DIAG RESULTS 30
DATA MONITOR 31
Power Supply and Ground Circuit Inspection 32
DTC [U1000] CAN Communication Circuit 33
DTC [B2202] Meter Communication Circuit 33
DTC [B2205] Vehicle Speed Circuit 36
Removal and Installation of Unified Meter and A/C Amp. 36
REMOVAL 36
INSTALLATION 36
WARNING LAMPS 37
System Description 37
OIL PRESSURE WARNING LAMP 37
Schematic 38
Wiring Diagram — WARN — 39
Oil Pressure Warning Lamp Stays Off (Ignition Switch ON) 47
Oil Pressure Warning Lamp Does Not Turn Off (Oil

Pressure Is Normal) 48
Component Inspection 49
OIL PRESSURE SWITCH 49
CVT INDICATOR 50
System Description 50
MANUAL MODE 50
NOT MANUAL MODE 50
Wiring Diagram — CVTIND — 51
CVT Indicator Is Malfunction 55
WARNING CHIME 57
System Description 57
POWER SUPPLY AND GROUND CIRCUIT 57
IGNITION KEY WARNING CHIME (WITHOUT INTELLIGENT KEY) 58
IGNITION KEY WARNING CHIME (WITH INTELLIGENT KEY) 58
LIGHT WARNING CHIME 59
SEAT BELT WARNING CHIME 59
Component Parts and Harness Connector Location.. 60
Schematic 61
Wiring Diagram — CHIME — 62
Terminals and Reference Value for BCM 65
Terminals and Reference Value for Unified Meter and A/C Amp. 70
Terminals and Reference Value for Combination Meter 70
CONSULT-II Function (METER A/C AMP) 71
CONSULT-II Function (BCM) 71
DIAGNOSIS ITEMS DESCRIPTION 71
CONSULT-II BASIC OPERATION PROCEDURE ... 71
DATA MONITOR 71
ACTIVE TEST 71
SELF-DIAG RESULTS 72
Trouble Diagnosis 72
HOW TO PERFORM TROUBLE DIAGNOSIS ... 72
PRELIMINARY INSPECTION 72
Symptom Chart 72
Power Supply and Ground Circuit Inspection 73
Combination Meter Buzzer Circuit Inspection 74
Driver Side Door Switch Signal Inspection 75
Key Switch Signal Inspection (Without Intelligent Key) 76
Key Switch and Ignition Knob Switch Signal Inspection (With Intelligent Key, When Mechanical Key Is Used) 78
Lighting Switch Signal Inspection 79
Seat Belt Buckle Switch (Driver Side) Signal Inspection 79
Component Inspection 81
DRIVER SIDE DOOR SWITCH 81
KEY SWITCH 81
KEY SWITCH AND IGNITION KNOB SWITCH... 81
SEAT BELT BUCKLE SWITCH (DRIVER SIDE)... 81
CAN COMMUNICATION 82
System Description 82
CAN Communication Unit 82
COMPASS 83
Precautions for Compass 83
System Description 83
Troubleshooting 84
Zone Variation Setting Procedure 85
Calibration Procedure 85
Wiring Diagram – COMPASS – 86
Removal and Installation of Compass 87

PRECAUTION

PFP:00011

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

NKS001RY

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

System Description

NKS001S0

UNIFIED METER CONTROL UNIT

- Speedometer, odo/trip meter, tachometer, fuel gauge and water temperature gauge are controlled by the unified meter control unit, which is built into the combination meter. Unified meter control unit receives signals from unified meter and A/C amp.
- Warning lamp and indicator lamp of combination meter are controlled by signals drawn from the unified meter and A/C amp.
- Digital meter is adopted for odo/trip meter.
- Odo/trip meter and CVT indicator segments can be checked in self-diagnosis mode.
- Meters/gauges can be checked in self-diagnosis mode.

POWER SUPPLY AND GROUND CIRCUIT

Power is supplied at all times

- through 10A fuse [No. 19, located in the fuse block (J/B)]
- to unified meter and A/C amp. terminal 21,
- through 10A fuse [No. 21, located in the fuse block (J/B)]
- to combination meter terminal 21.

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 20,
- through 10A fuse [No. 12, located in the fuse block (J/B)]
- to unified meter and A/C amp. terminal 22.

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

- through 15A fuse [No. 10, located in the fuse block (J/B)], and
- through 15A fuse [No. 11, located in the fuse block (J/B)]
- to unified meter and A/C amp. terminal 46.

Ground is supplied

- to combination meter terminals 22, 23 and 24
- through grounds M14 and M78,
- to unified meter and A/C amp. terminals 29 and 30
- through grounds M14 and M78.

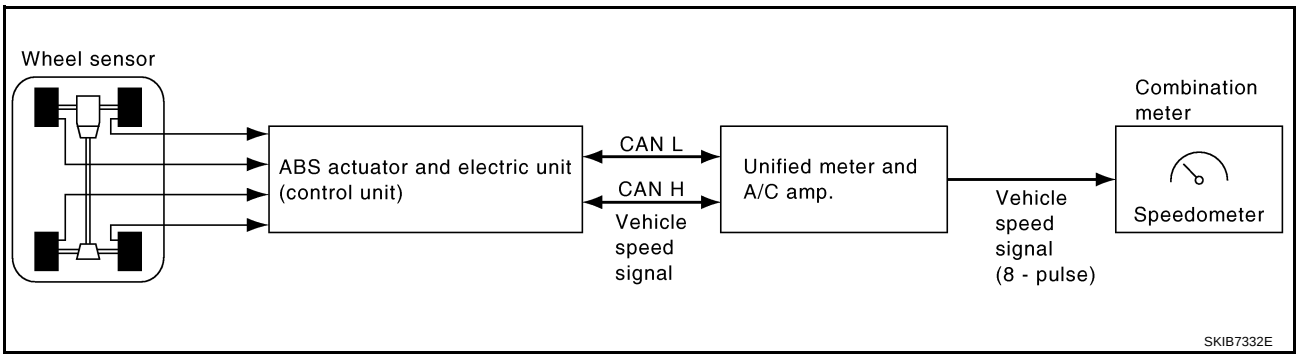
UNIFIED METER AND A/C AMP.

Refer to DI-27, "System Description" in “UNIFIED METER AND A/C AMP”.

SPEEDOMETER

The speedometer indicates the vehicle speed.

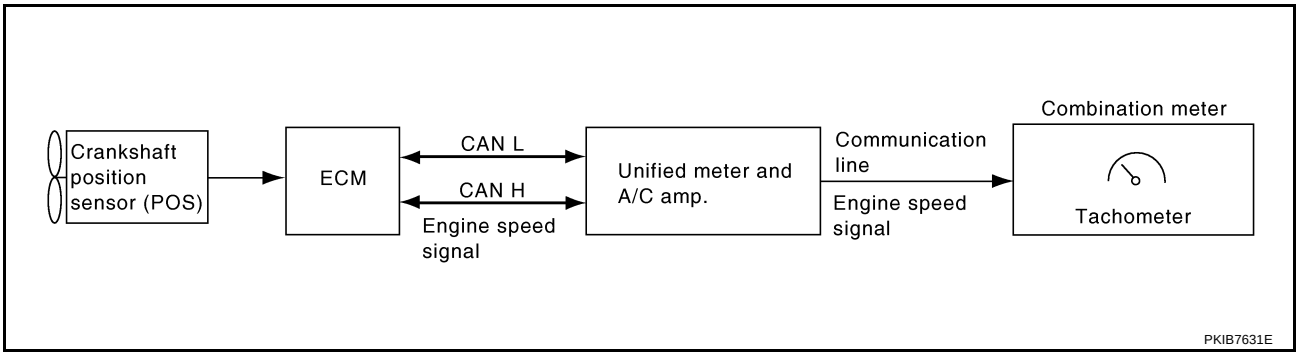
- ABS actuator and electric unit (control unit) provides a vehicle speed signal to the unified meter and A/C amp. with CAN communication.
- Unified meter and A/C amp. converts the vehicle speed signal to the 8-pulse signal, and outputs the vehicle speed signal (8-pulse) to combination meter.
- Combination meter indicates the vehicle speed according to vehicle speed signal (8-pulse) signal.



TACHOMETER

The tachometer indicates engine speed in revolutions per minute (rpm).

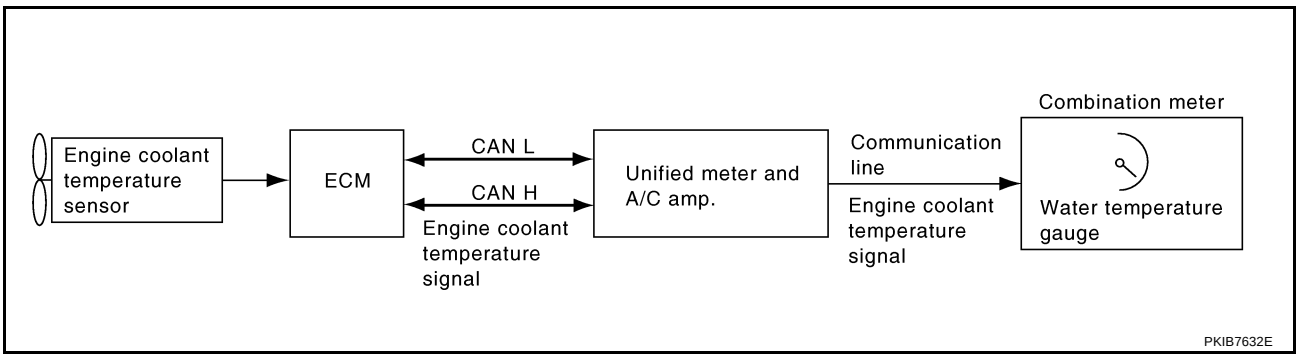
- ECM provides engine speed signal to unified meter and A/C amp. with CAN communication.
- Unified meter and A/C amp. transmits engine speed signal to combination meter with communication line.
- Combination meter indicates the engine speed according to engine speed signal.



WATER TEMPERATURE GAUGE

The water temperature gauge indicates the engine coolant temperature.

- ECM provides engine coolant temperature signal to unified meter and A/C amp. with CAN communication.
- Unified meter and A/C amp. transmits engine coolant temperature signal to combination meter with communication line.
- Combination meter indicates the engine coolant temperature according to engine coolant temperature signal.



FUEL GAUGE

The fuel gauge indicates the approximate fuel level in the fuel tank.

- Unified meter and A/C amp. reads a resistor signal from fuel level sensor.

Signal is supplied

- from unified meter and A/C amp. terminal 36
- through the fuel level sensor unit and fuel pump (main) terminals 5 and 7
- through the fuel level sensor unit (sub), and
- through the fuel level sensor unit and fuel pump (main) terminals 6 and 2
- to unified meter and A/C amp. terminal 28 for the fuel gauge.

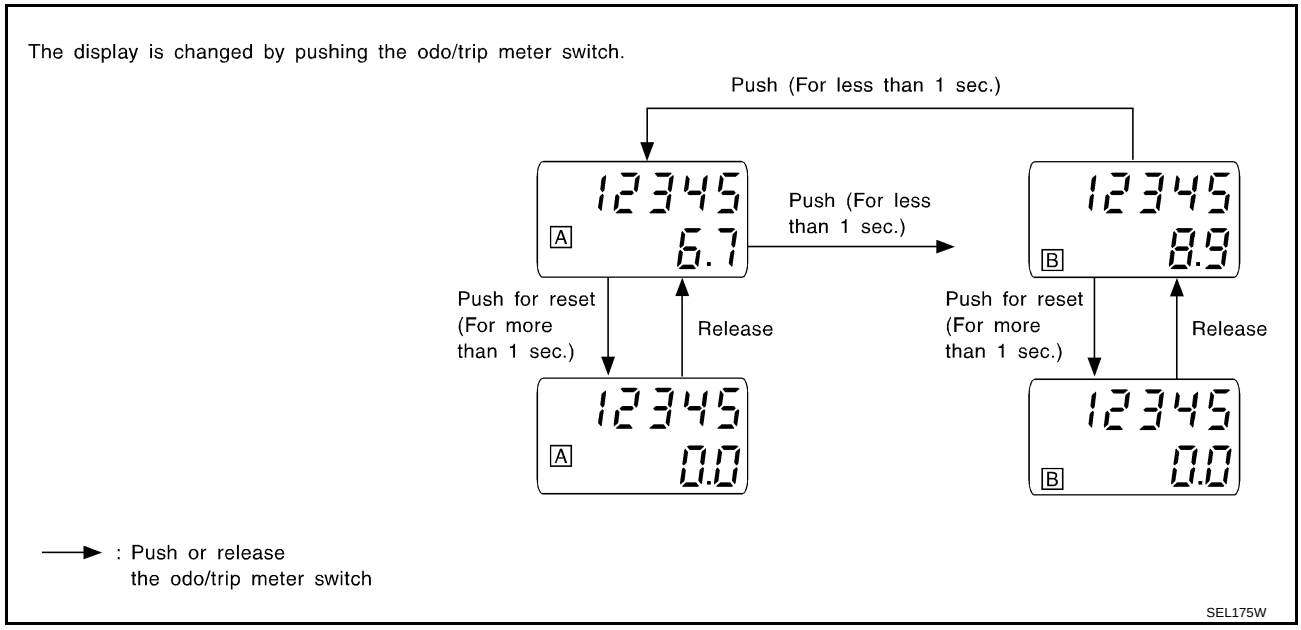
- Unified meter and A/C amp. provides a fuel level signal to combination meter with communication line.
- Combination meter indicates the approximate fuel level according to the fuel level signal.

ODO/TRIP METER

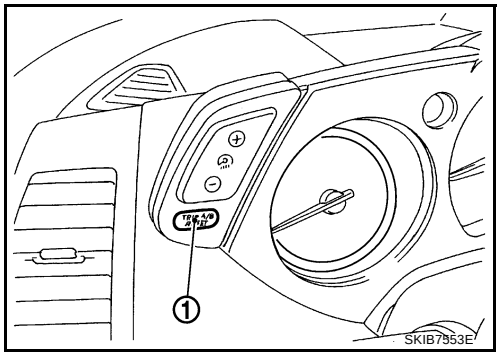
- ABS actuator and electric unit (control unit) provides a vehicle speed signal to the unified meter and A/C amp. with CAN communication.
- Unified meter and A/C amp. converts the vehicle speed signal to the 8-pulse signal, and outputs the vehicle speed signal (8-pulse) to combination meter.
- Combination meter uses the vehicle speed signal (8-pulse) to calculate the mileage, and displays it.

How to Change The Display For Odo/trip Meter

Depressing the odo/trip meter switch toggles the mode in the following order.



- The odo/trip meter display mode toggling and trip display resetting can be identified by the amount of time that elapses from pressing the odo/trip meter switch (1) to releasing it.
- When resetting with “trip A” displayed, only “trip A” display is reset.



NOTE:
The record of the odo meter is kept even if the battery cable is disconnected. The record of the trip meter is erased when the battery cable is disconnected.

COMBINATION METER ILLUMINATION CONTROL

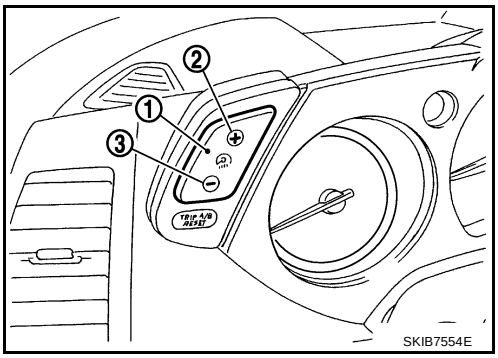
Daytime Mode

When ignition switch is turned ON, combination meter illumination is turned ON by unified meter control unit.

Nighttime Mode

- Unified meter control unit is transferred to nighttime mode, with ignition switch turned ON and position light request signal from BCM with CAN communication.
- When nighttime mode, illumination control switch (1) illumination turns ON by unified meter control unit. Each illumination is controlled by unified meter control unit.
- Each illumination can be adjusted to 16 step by illumination control switch (1) in nighttime mode.

2 : + (Bright)
3 : – (Dark)



NOTE:
For further details of illumination circuit, refer to LT-225, "ILLUMINATION" .

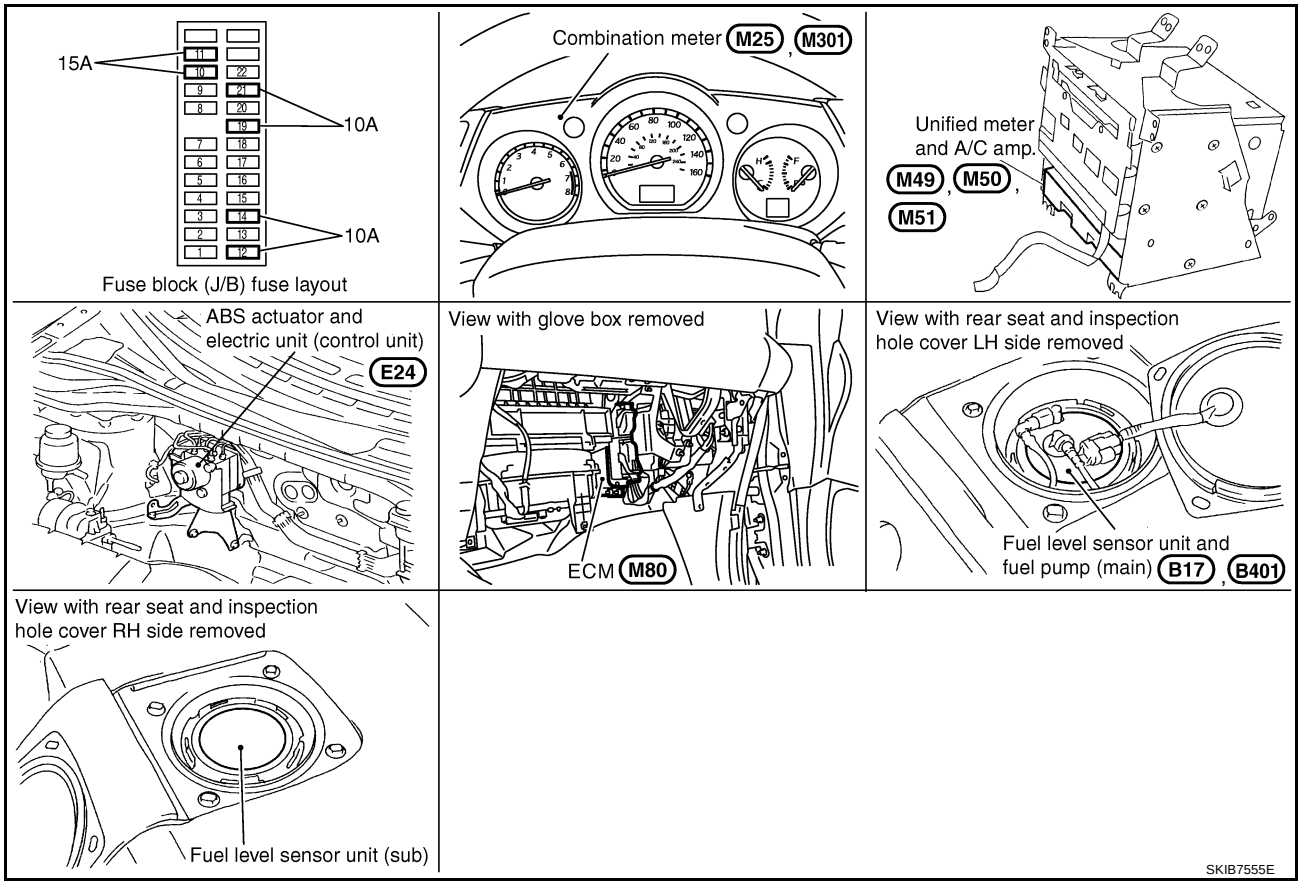
FAIL-SAFE

Combination meter performs fail-safe operation when unified meter and A/C amp. communication is malunction.

Function		Fail-safe operation
Speedometer		Reset to zero.
Tachometer		
Fuel gauge		
Water temperature gauge		
Illumination control	Combination meter illumination	Change to nighttime mode.
Odo/trip meter		Integrate in response to 8-pulse input.
CVT position indicator		The display turns OFF.
Warning buzzer		The warning buzzer turns OFF.
Low tire pressure warning lamp		The lamp turns ON after flashing for one minute.
Warning lamp/indicator lamp	ABS warning lamp	The lamp turns ON.
	VDC OFF indicator	
	SLIP indicator	
	Brake warning lamp	
	High beam indicator	The lamp turns OFF.
	Door warning lamp	
	SET indicator lamp	
	CRUISE indicator lamp	
	AWD warning lamp	
	AWD LOCK indicator lamp	
	Oil pressure warning lamp	
	Turn signal indicator	
	Malfunction indicator lamp	
	CVT indicator lamp	

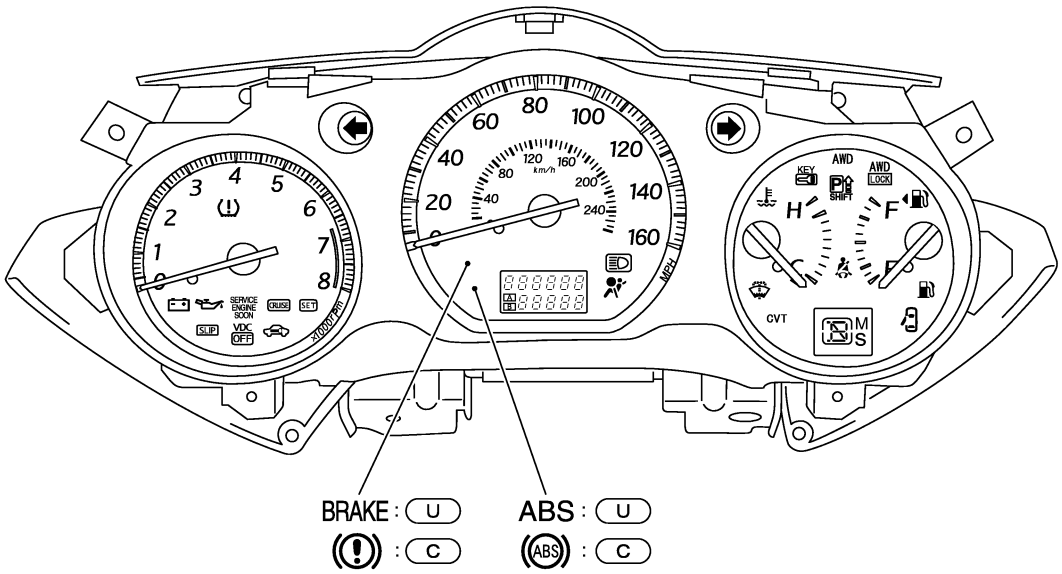
Component Parts and Harness Connector Location

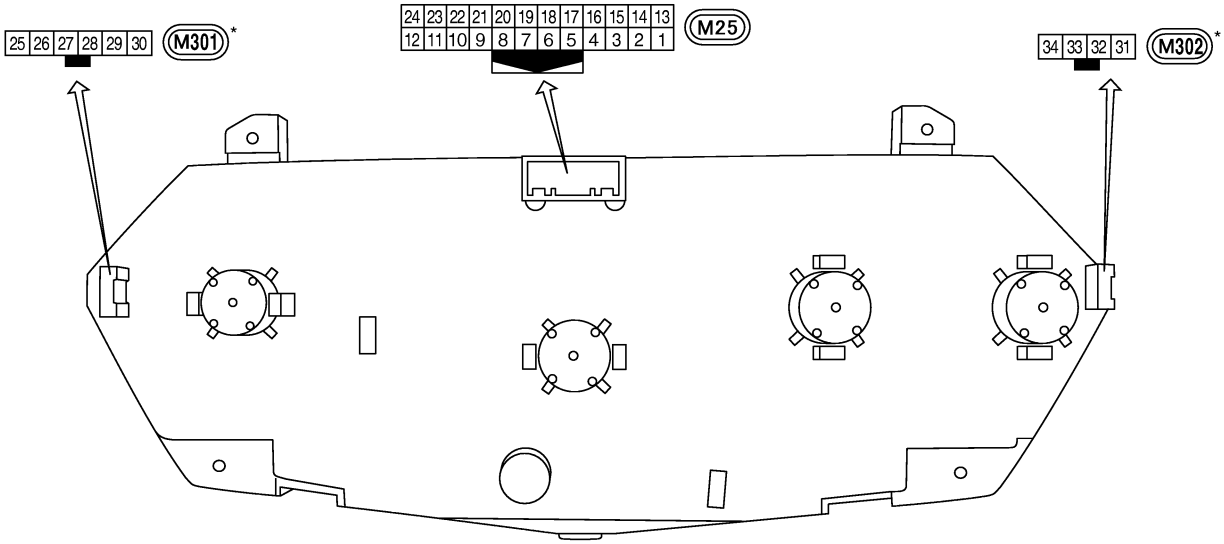
NKS001S1



Arrangement of Combination Meter

NKS001S2





U : For U.S.A.

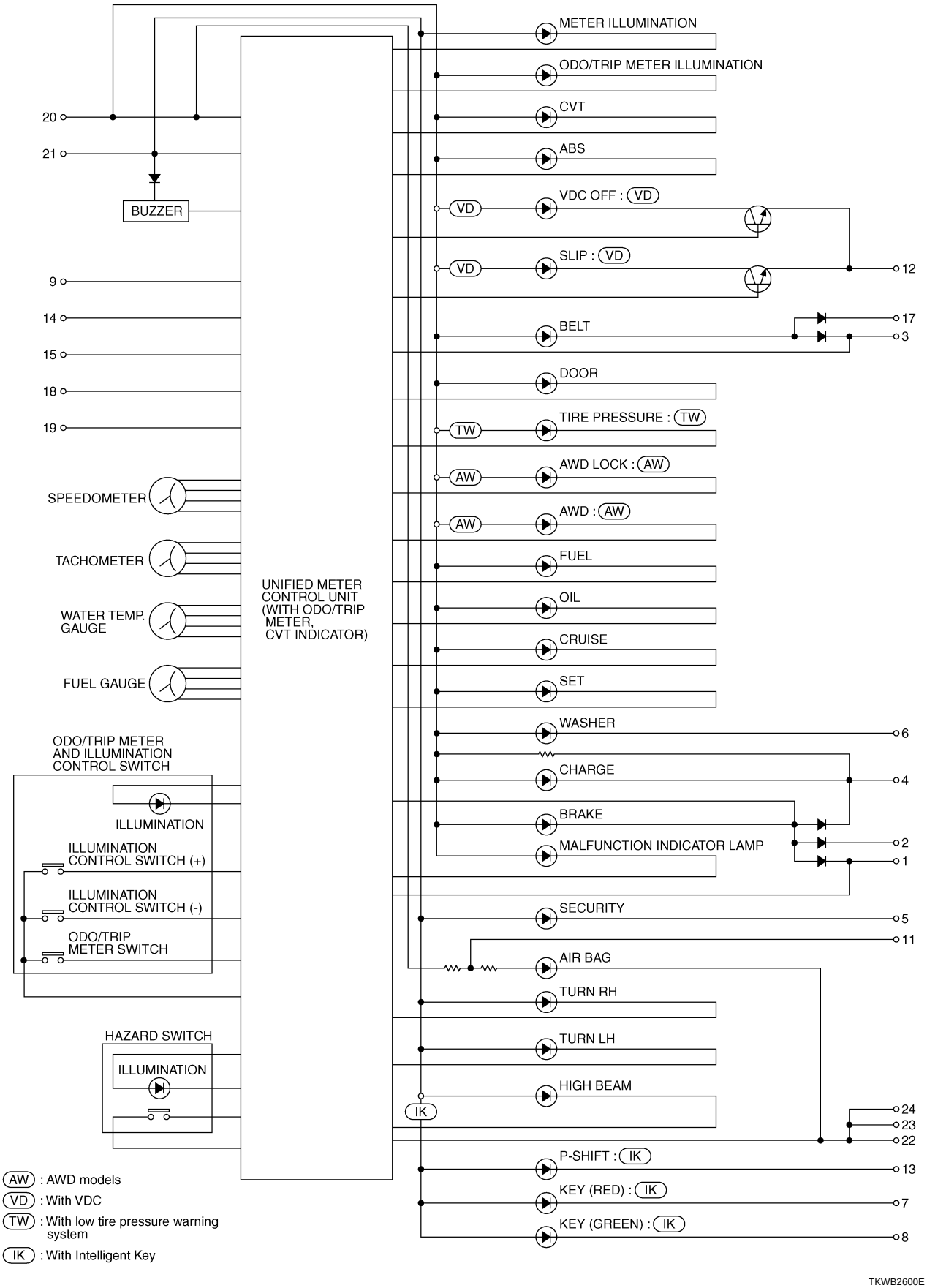
C : For Canada

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

SKIB7333E

Schematic

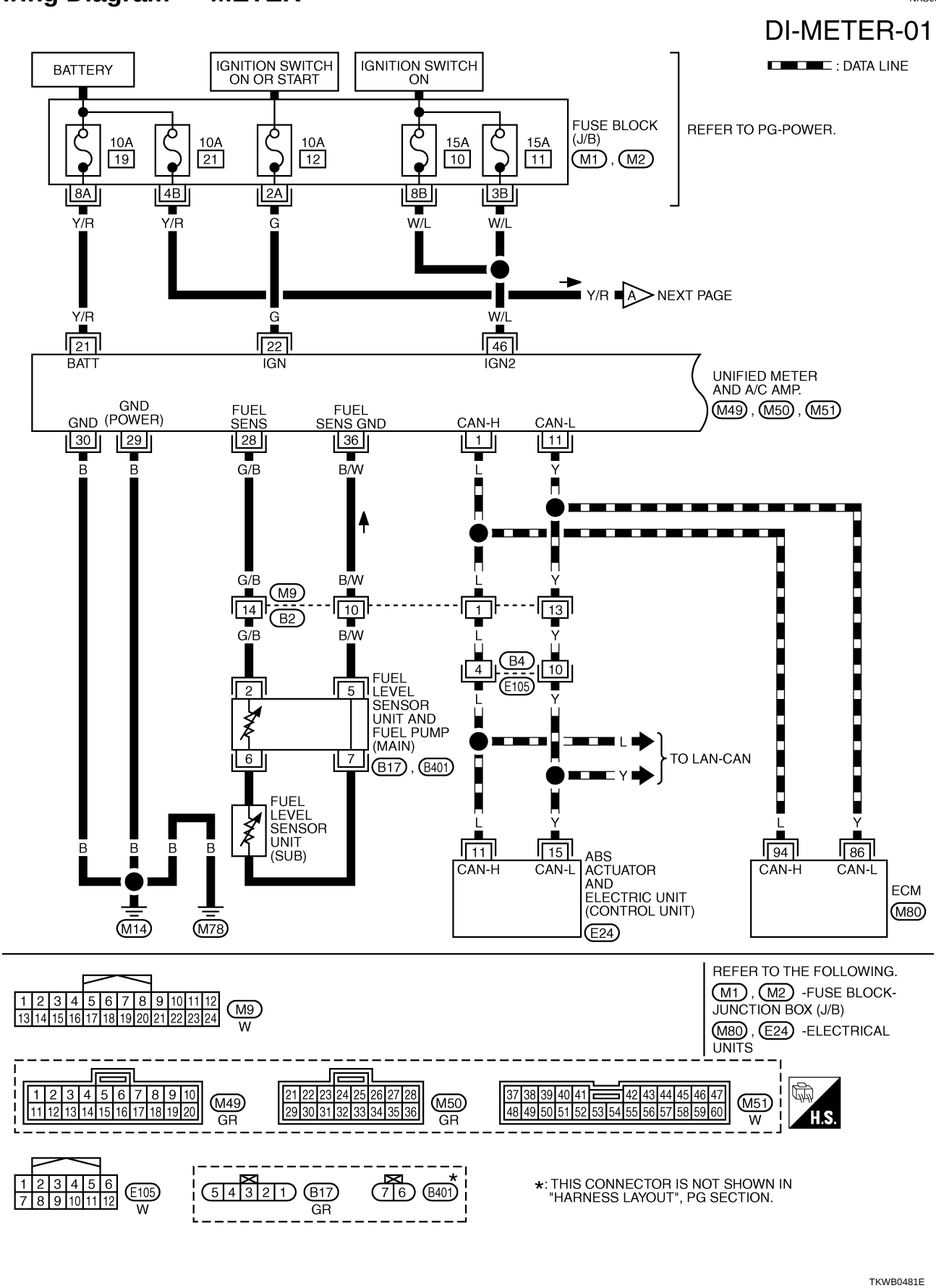
NKS001S3



TKWB2600E

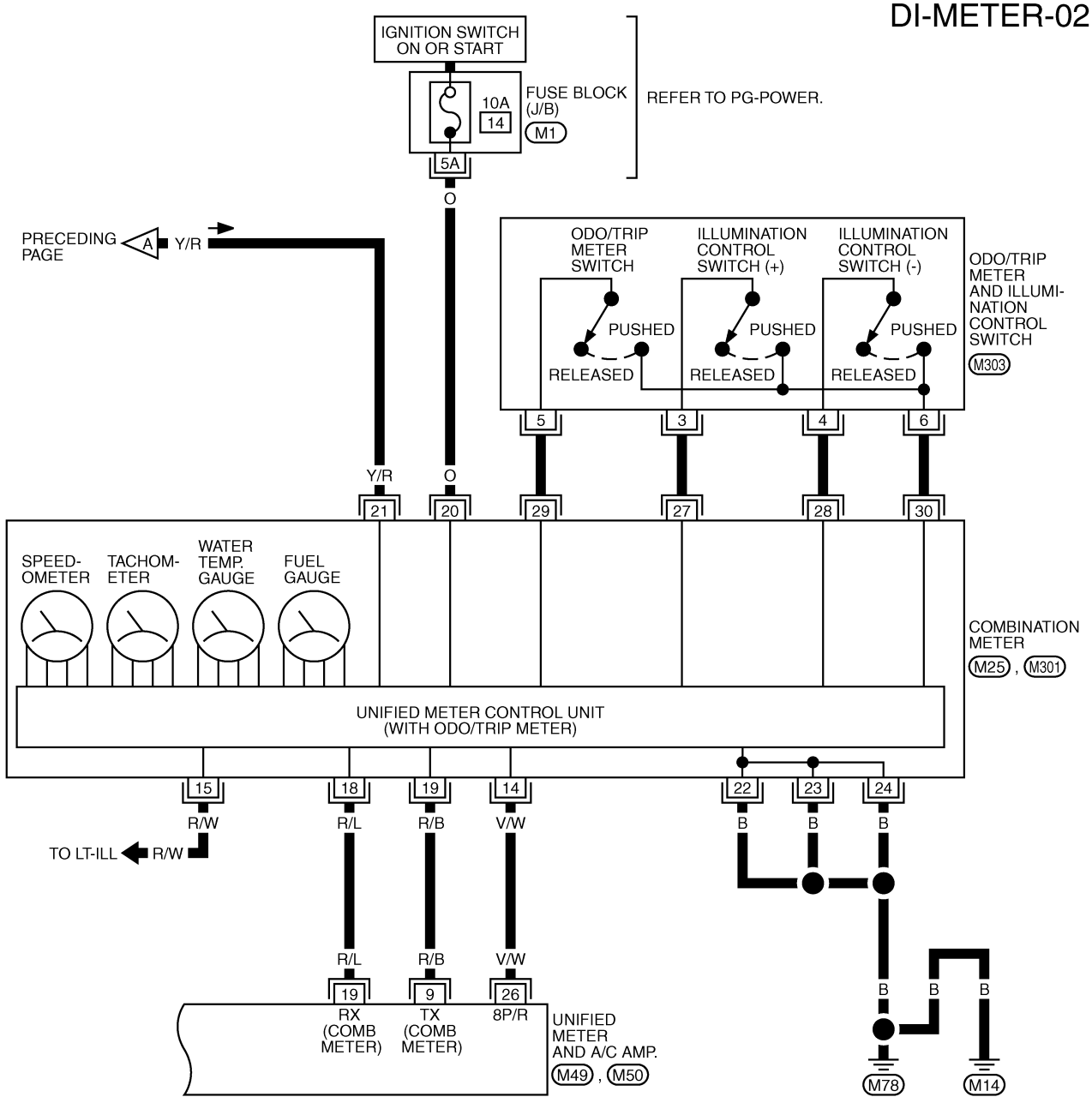
Wiring Diagram — METER —

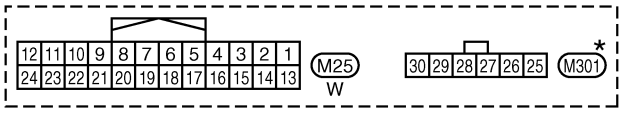
NKS001S4

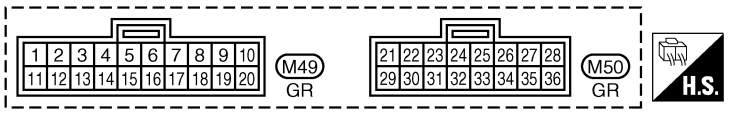


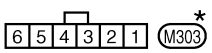
TKWB0481E

DI-METER-02









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

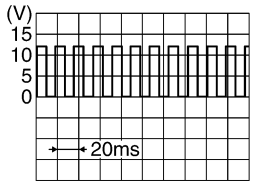
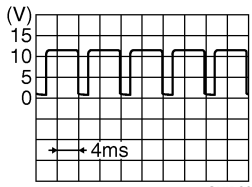
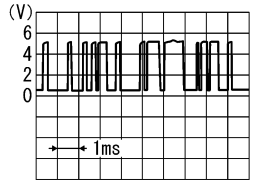
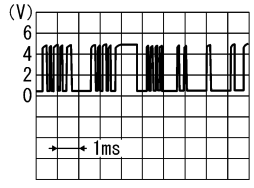
REFER TO THE FOLLOWING.

M1 -FUSE BLOCK-JUNCTION BOX (J/B)

TKWB0902E

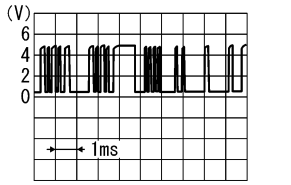
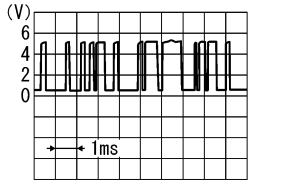
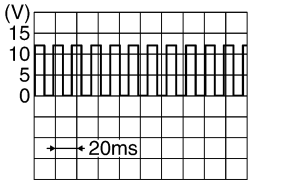
Terminals and Reference Value for Combination Meter

NKS001S5

Terminal No.	Wire color	Item	Measuring condition		Reference value (V)
			Ignition switch	Operation or condition	
14	V/W	Vehicle speed signal (8-pulse)	ON	Speedometer operated [When vehicle speed is approx. 40 km/h (25 MPH)]	**NOTE:** Maximum voltage may be 5 V due to specifications (connected units).  PKIA1935E
15	R/W	Illumination signal	ON	Lighting switch ON, then operate the illumination control switch.	<e.g.> When brightness level is midway.  SKIB8011E
				Lighting switch OFF	Approx. 0
18	R/L	TX communication line (To unified meter and A/C amp.)	ON	—	 SKIA3361E
19	R/B	RX communication line (From unified meter and A/C amp.)	ON	—	 SKIA3362E
20	O	Ignition power supply	ON	—	Battery voltage
21	Y/R	Battery power supply	OFF	—	Battery voltage
22	B	Ground	ON	—	Approx. 0
23					
24					
27	—	Illumination control switch (+)	—	—	Refer to DI-23, "Odo/Trip Meter and Illumination Control Switch Inspection" .
28		Illumination control switch (–)	—	—	
29		Odo/trip meter switch	—	—	
30		Odo/trip meter and illumination control switch ground	—	—	

Terminals and Reference Value for Unified Meter and A/C Amp.

NKS001S6

Terminal No.	Wire color	Item	Measuring condition		Reference value (V)
			Ignition switch	Operation or condition	
1	L	CAN H	—	—	—
9	R/B	TX communication line (To combination meter)	ON	—	 SKIA3362E
11	Y	CAN L	—	—	—
19	R/L	RX communication line (From combination meter)	ON	—	 SKIA3361E
21	Y/R	Battery power supply	OFF	—	Battery voltage
22	G	Ignition power supply	ON	—	Battery voltage
26	V/W	Vehicle speed signal (8-pulse)	ON	Speedometer operated [When vehicle speed is approx. 40 km/h (25 MPH)]	**NOTE:** Maximum voltage may be 5 V due to specifications (connected units).  PKIA1935E
28	G/B	Fuel level sensor signal	—	—	Refer to DI-23, "FUEL LEVEL SENSOR UNIT" .
29	B	Ground (For power)	ON	—	Approx. 0
30		Ground	ON	—	Approx. 0
36	B/W	Fuel level sensor signal ground	ON	—	Approx. 0
46	W/L	Ignition power supply	ON	—	Battery voltage

Self-Diagnosis Mode of Combination Meter

NKS001S7

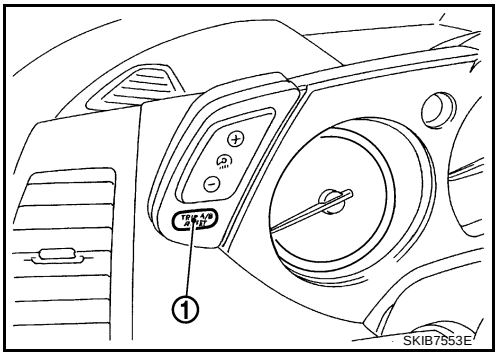
SELF-DIAGNOSIS FUNCTION

- Odo/trip meter and CVT indicator segments operation can be checked in self-diagnosis mode.
- Meters/gauges can be checked in self-diagnosis mode.

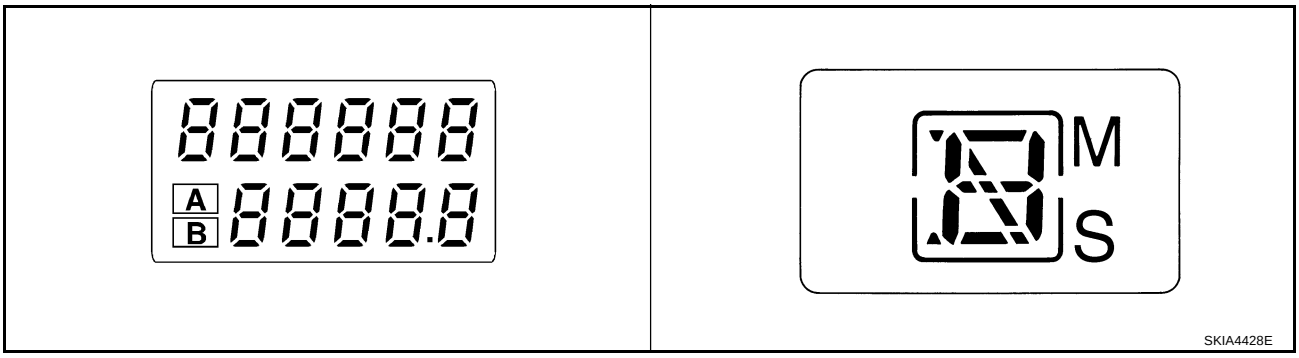
OPERATION PROCEDURE

1. Turn ignition switch ON, and switch the odo/trip meter to “trip A” or “trip B”.

   NOTE:
   If the self-diagnosis function is activated with the “trip A” displayed, only “trip A” display is reset.
2. Turn ignition switch OFF.
3. While pushing the odo/trip meter switch, turn ignition switch ON again.
4. Make sure the trip meter displays “0000.0”.
5. Push the odo/trip meter switch at least 3 times (within 7 seconds after the ignition switch is turned ON)



6. All the segments on the odo/trip meter and CVT indicator illuminate, and simultaneously the low-fuel warning lamp indicator illuminates. At this time, the unified meter control unit is turned to self-diagnosis mode.

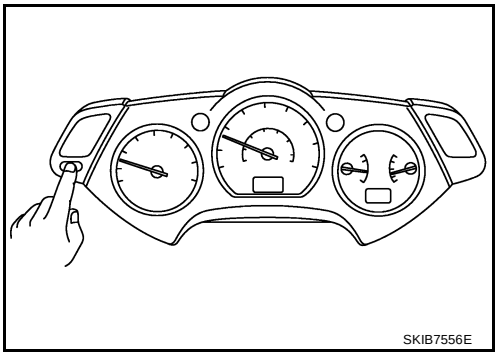


NOTE:

- Check odo/trip meter switch and combination meter power supply and ground circuit when self-diagnosis mode of combination meter dose not start. Replace combination meter if the results of the check are normal.
- If any of the segments are not displayed, replace combination meter.

7. Each meter/gauge activates during pressing odo/trip meter switch. (Then low-fuel warning lamp turns OFF.)

   NOTE:
   - If any of the meters/gauges are not activated, replace the combination meter.
   - The figure is reference.



CONSULT-II Function (METER A/C AMP)

NKS001S8

Refer to DI-30, "CONSULT-II Function (METER A/C AMP)" in “UNIFIED METER AND A/C AMP”.

Trouble Diagnosis

NKS001S9

HOW TO PERFORM TROUBLE DIAGNOSIS

1. Confirm the symptom or customer complaint.
2. Perform preliminary check. Refer to DI-16, "PRELIMINARY CHECK" .
3. According to the symptom chart, repair or replace the cause of the symptom. Refer to DI-16, "Symptom Chart" .
4. Does the meter operate normally? If so, GO TO 5. If not, GO TO 2.
5. INSPECTION END

PRELIMINARY CHECK

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

Perform self-diagnosis mode of combination meter. Refer to DI-15, "OPERATION PROCEDURE" .

Does self-diagnosis mode operation normally?

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

2. CHECK UNIFIED METER AND A/C AMP. (CONSULT-II)

Perform self-diagnosis of unified meter and A/C amp. Refer to DI-30, "CONSULT-II Function (METER A/C AMP)" .

Self-diagnosis results

No malfunction detected >> INSPECTION END
Malfunction detected >> Check applicable parts, and repair or replace corresponding parts.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT OF COMBINATION METER

Check battery power supply and ground circuit of combination meter. Refer to DI-17, "Power Supply and Ground Circuit Inspection" .

OK or NG

OK >> Check odo/trip meter switch. Refer to DI-23, "Odo/Trip Meter and Illumination Control Switch Inspection" .
NG >> Repair malfunctioning part.

Symptom Chart

NKS001SA

Symptom	Possible cause
Speedometer and odo/trip meter indication is malfunction.	Refer to DI-18, "Vehicle Speed Signal Inspection" .
Tachometer indication is malfunction.	Refer to DI-19, "Engine Speed Signal Inspection" .
Water temperature gauge indication is malfunction.	Refer to DI-20, "Engine Coolant Temperature Signal Inspection" .
Fuel gauge indication is malfunction.	Refer to DI-20, "Fuel Level Sensor Signal Inspection" .
Low-fuel warning lamp indication is irregular.	
CVT position indicator is malfunction.	Refer to DI-55, "CVT Indicator Is Malfunction" .
Illumination control does not operate.	Refer to DI-23, "Odo/Trip Meter and Illumination Control Switch Inspection" .

Power Supply and Ground Circuit Inspection

NKS002CH

1. CHECK FUSE

Check for blown combination meter fuses.

Power source	Fuse No.
Battery power supply	21
Ignition power supply	14

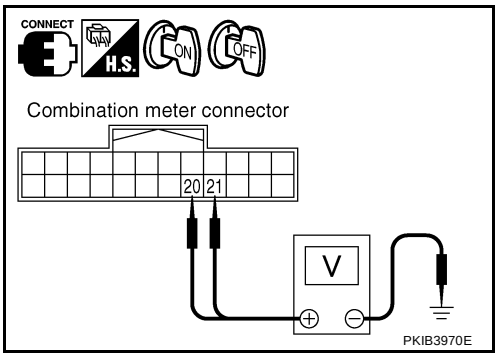
OK or NG

OK >> GO TO 2.
NG >> Be sure to eliminate cause of malfunction before installing new fuse. Refer to PG-3, "POWER SUPPLY ROUTING CIRCUIT" .

2. CHECK POWER SUPPLY CIRCUIT

Check voltage between combination meter harness connector M25 terminals 20, 21 and ground.

Terminals			Ignition switch position	
(+)		(–)	OFF	ON
Connector	Terminal			
M25	20	Ground	0 V	Battery voltage
	21		Battery voltage	Battery voltage



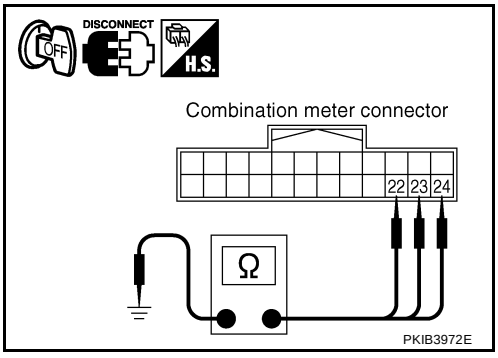
OK or NG

OK >> GO TO 3.
NG >> Check harness between combination meter and fuse.

3. CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect combination meter connector.
3. Check continuity between combination meter harness connector M25 terminals 22, 23, 24 and ground.

22 – Ground
23 – Ground : Continuity should exist.
24 – Ground



OK or NG

OK >> INSPECTION END
NG >> Repair harness or connector.

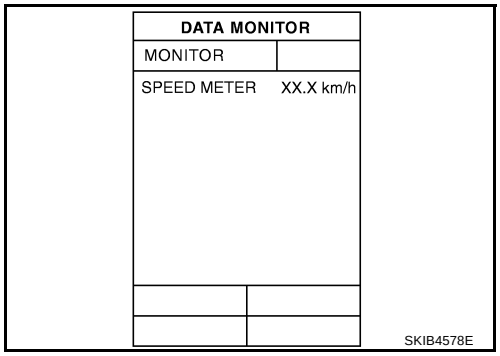
Vehicle Speed Signal Inspection

NKS002CI

Symptom: Speedometer and odo/trip meter indication is malfunction.

1. CHECK COMBINATION METER INPUT SIGNAL

1. Connect CONSULT-II, and start engine.
2. Select “METER A/C AMP” on CONSULT-II.
3. Using “SPEED METER” on “DATA MONITOR”, compare the value of “DATA MONITOR” with speedometer pointer of combination meter.



OK or NG

OK >> Perform self-diagnosis of ABS actuator and electric unit (control unit). Refer to BRC-64, "CONSULT-II Functions (ABS)" (with VDC system) or BRC-20, "CONSULT- II Functions (ABS)" (without VDC system).

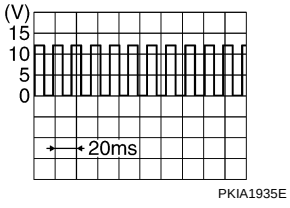
NG >> GO TO 2.

2. CHECK UNIFIED METER AND A/C AMP. OUTPUT SIGNAL

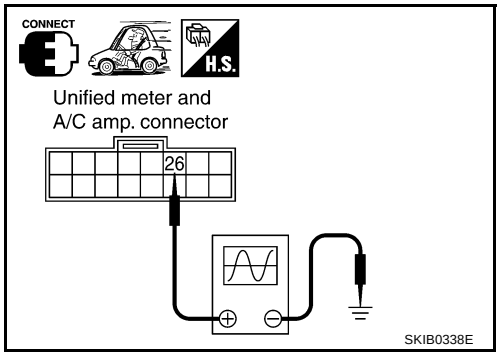
1. Drive vehicle at approximately 40 km/h (25 MPH).
2. Check voltage signal between unified meter and A/C amp. harness connector M50 terminal 26 and ground.

NOTE:
Maximum voltage may be 5 V due to specifications (connected units).

26 – Ground:



PKIA1935E



OK or NG

OK >> GO TO 3.

NG-1 >> If monitor indicates “0 V” constantly, perform the following.

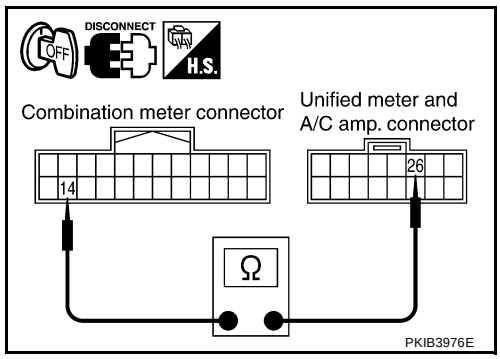
1. Check each unit inputting vehicle speed signal (8-pulse), harness and connector between each unit and unified meter and A/C amp.
2. Repair or replace malfunctioning parts.

NG-2 >> If monitor indicates “5 V” or “12 V” constantly, replace unified meter and A/C amp. Refer to DI-36, "Removal and Installation of Unified Meter and A/C Amp." .

3. CHECK CONTINUITY BETWEEN COMBINATION METER AND UNIFIED METER AND A/C AMP.

1. Turn ignition switch OFF.
2. Disconnect combination meter connector and unified meter and A/C amp. connector.
3. Check continuity between combination meter harness connector M25 terminal 14 and unified meter and A/C amp. harness connector M50 terminal 26.

14 – 26 : Continuity should exist.



OK or NG

OK >> Replace combination meter.
NG >> Repair harness or connector.

Engine Speed Signal Inspection

NKS002CJ

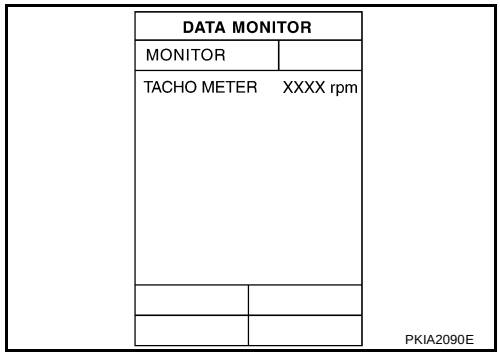
Symptom: Tachometer indication is malfunction.

1. CHECK COMBINATION METER INPUT SIGNAL

1. Connect CONSULT-II, and start engine.
2. Select “METER A/C AMP” on CONSULT-II.
3. Using “TACHO METER” on “DATA MONITOR”, compare the value of “DATA MONITOR” with tachometer pointer of combination meter.

OK or NG

OK >> GO TO 2.
NG >> Replace combination meter.

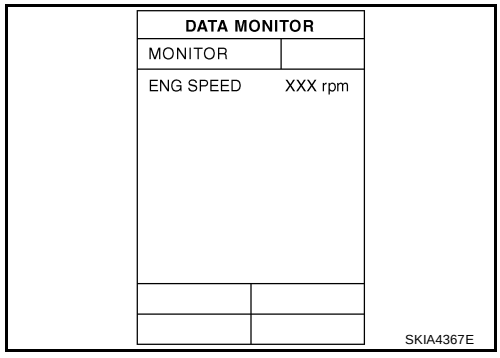


2. CHECK UNIFIED METER AND A/C AMP. INPUT SIGNAL

1. Select “ENGINE” on CONSULT-II.
2. Using “ENG SPEED” on “DATA MONITOR”, print out the CONSULT-II screen when the engine is idling.
3. Select “METER A/C AMP” on CONSULT-II.
4. Using “TACHO METER” on “DATA MONITOR”, compare the value of “DATA MONITOR” of the idling speed with that of the “ENG SPEED”.

OK or NG

OK >> Perform self-diagnosis of ECM. Refer to EC-111, "CONSULT-II Function (ENGINE)" .
NG >> Replace unified meter and A/C amp. Refer to DI-36, "Removal and Installation of Unified Meter and A/C Amp." .



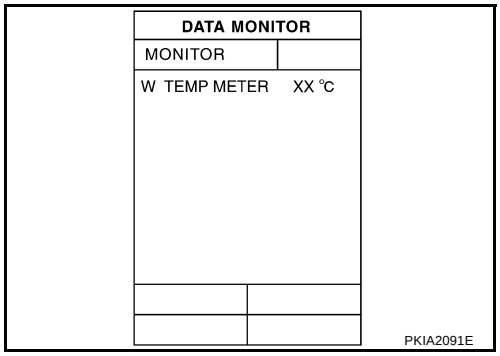
Engine Coolant Temperature Signal Inspection

NKS002CK

Symptom: Water temperature gauge indication is malfunction.

1. CHECK COMBINATION METER INPUT SIGNAL

1. Connect CONSULT-II, and start engine.
2. Select “METER A/C AMP” on CONSULT-II.
3. Using “W TEMP METER” on “DATA MONITOR”, compare the value of “DATA MONITOR” with water temperature gauge pointer of combination meter.



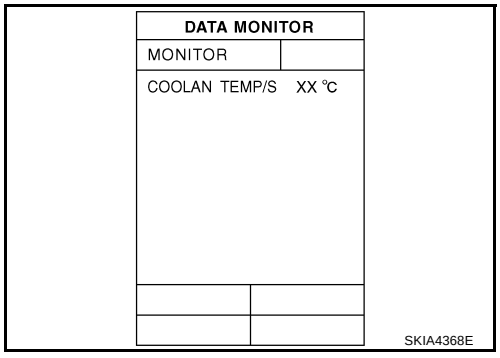
Water temperature gauge pointer	Reference value of data monitor [°C (°F)]
Hot	Approx. 130 (266)
Middle	Approx. 70 - 105 (158 - 221)
Cold	Approx. 50 (122)

OK or NG

OK >> GO TO 2.
NG >> Replace combination meter.

2. CHECK UNIFIED METER AND A/C AMP. INPUT SIGNAL

1. Select “ENGINE” on CONSULT-II.
2. Using “COOLAN TEMP/S” on “DATA MONITOR”, print out the CONSULT-II screen.
3. Select “METER A/C AMP” on CONSULT-II.
4. Using “W TEMP METER” on “DATA MONITOR”, compare the value of data monitor with that of the “COOLAN TEMP/S”.



OK or NG

OK >> Perform self-diagnosis of ECM. Refer to EC-111, "CONSULT-II Function (ENGINE)" .
NG >> Replace unified meter and A/C amp. Refer to DI-36, "Removal and Installation of Unified Meter and A/C Amp." .

Fuel Level Sensor Signal Inspection

NKS002CL

Symptom:

- Fuel gauge indication is malfunction.
- Low-fuel warning lamp indication is irregular.

NOTE:
The following symptoms are not malfunction.

Fuel gauge

- Depending on vehicle position or driving circumstance, the fuel level in the tank various, and the pointer may fluctuate.
- If the vehicle is fueled with the ignition switch ON, the pointer will move slowly.

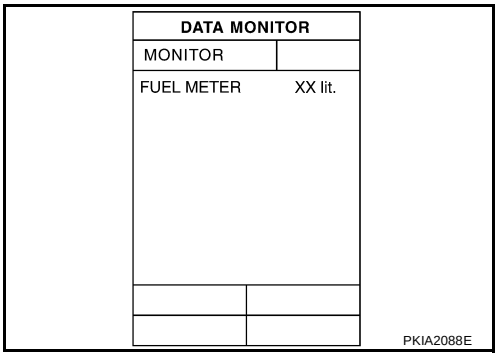
Low-fuel warning lamp

- Depending on vehicle position or driving circumstance, the fuel in the tank flows and the warning lamp ON timing may change.

1. CHECK COMBINATION METER INPUT SIGNAL

1. Select “METER A/C AMP” on CONSULT-II.
2. Using “FUEL METER” on “DATA MONITOR”, compare the value of “DATA MONITOR” with fuel gauge pointer of combination meter.

Fuel gauge pointer	Reference value of data monitor [lit.]
Full	Approx. 78
Three quarters	Approx. 63
Half	Approx. 43
A quarter	Approx. 22
Empty	Approx. 7



OK or NG

OK >> GO TO 2.
NG >> Replace combination meter.

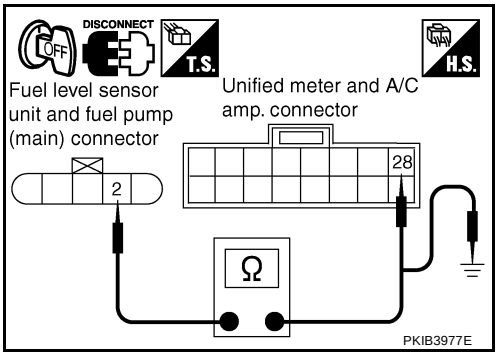
2. CHECK FUEL LEVEL SENSOR (MAIN) CIRCUIT 1

1. Turn ignition switch OFF.
2. Disconnect fuel level sensor unit and fuel pump (main) connector and unified meter and A/C amp. connector.
3. Check continuity between fuel level sensor unit and fuel pump (main) harness connector B17 terminal 2 and unified meter and A/C amp. harness connector M50 terminal 28.

2 – 28 : Continuity should exist.

4. Check continuity between fuel level sensor unit and fuel pump (main) harness connector B17 terminal 2 and ground.

2 – Ground : Continuity should not exist.



OK or NG

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

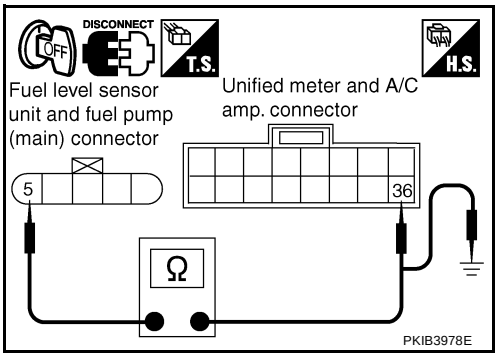
3. CHECK FUEL LEVEL SENSOR (MAIN) CIRCUIT 2

1. Check continuity between fuel level sensor unit and fuel pump (main) harness connector B17 terminal 5 and unified meter and A/C amp. harness connector M50 terminal 36.

5 – 36 : Continuity should exist.

2. Check continuity between fuel level sensor unit and fuel pump (main) harness connector B17 terminal 5 and ground.

5 – Ground : Continuity should not exist.



OK or NG

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

4. CHECK FUEL LEVEL SENSOR

Check components. Refer to DI-23, "FUEL LEVEL SENSOR UNIT" .

OK or NG

OK >> 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. Repair or replace malfunctioning part, if necessary.

NG >> Replace fuel level sensor unit.

Fuel Gauge Pointer Fluctuates, Indicator Wrong Value or Varies

NKS002CN

1. CHECK FUEL GAUGE FLUCTUATION

Test drive vehicle to see if gauge fluctuates only during driving or at the instant of stopping.

Does the indication value vary only during driving or at the instant of stopping?

YES >> The pointer fluctuation may be caused by fuel level change in the fuel tank. Condition is normal.

NO >> Ask the customer about the situation when the symptom occurs in detail, and perform the trouble diagnosis.

Fuel Gauge Does Not Move to FULL Position

NKS002CO

1. QUESTION 1

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

YES >> GO TO 2.

NO >> GO TO 3.

2. QUESTION 2

Was the vehicle fueled with the ignition switch ON?

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. QUESTION 3

Is the vehicle parked on an incline?

YES >> Check the fuel level indication with vehicle on a level surface.

NO >> GO TO 4.

4. QUESTION 4

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

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

NO >> The float arm may interfere or bind with any of the components in the fuel tank.

Odo/Trip Meter and Illumination Control Switch Inspection

NKS002CM

Symptom: Illumination control does not operate.

1. CHECK ODO/TRIP METER AND ILLUMINATION CONTROL SWITCH

1. Remove combination meter. Refer to DI-24, "Removal and Installation of Combination Meter" .
2. Remove meter lid. Refer to DI-24, "Disassembly and Assembly of Combination Meter" .
3. Check odo/trip meter and illumination control switch. Refer to DI-23, "ODO/TRIP METER AND ILLUMINAION CONTROL SWITCH" .

OK or NG

OK >> Check harness between combination meter and odo/trip meter and illumination control switch. Replace combination meter if the results of the check are normal.

NG >> Replace odo/trip meter and illumination control switch.

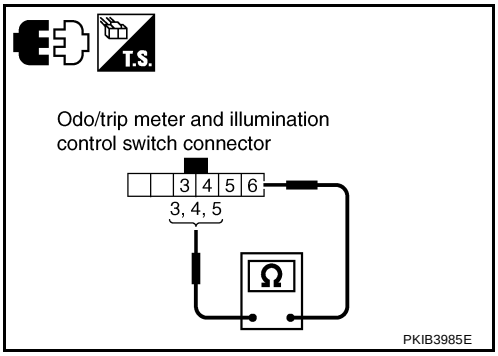
Electrical Components Inspection

NKS002CP

ODO/TRIP METER AND ILLUMINAION CONTROL SWITCH

Check continuity between terminals 3, 4 or 5 and 6.

Terminal		Condition	Continuity
3	6	Illumination control switch (+) is pressed.	Yes
		Illumination control switch (+) is released.	No
4		Illumination control switch (–) is pressed.	Yes
		Illumination control switch (–) is released.	No
5		Odo/trip meter switch is pressed.	Yes
		Odo/trip meter switch is released.	No



FUEL LEVEL SENSOR UNIT

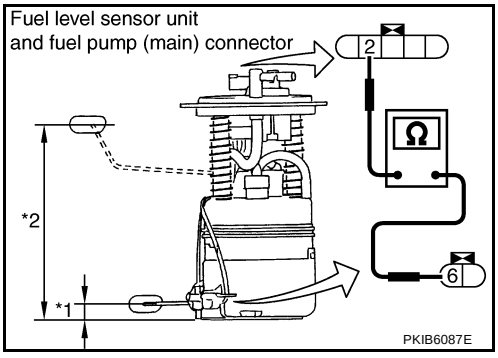
For removal, refer to FL-4, "FUEL LEVEL SENSOR UNIT, FUEL FILTER AND FUEL PUMP ASSEMBLY" .

Fuel Level Sensor Unit and Fuel Pump (Main)

Check resistance between fuel level sensor unit and fuel pump (main) connector terminals 2 and 6.

Terminal		Float position		[mm (in)]	Resistance value [Ω]
2	6	*1	Empty	15 (0.59)	Approx. 81.5
		*2	Full	193 (7.6)	Approx. 2.5

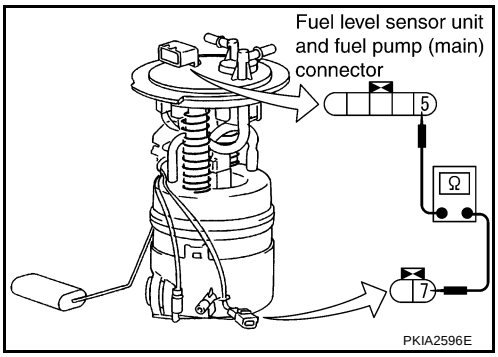
*1 and *2: When float rod is in contact with stopper.



Fuel Level Sensor Unit and Pump (Main) Harness

Check continuity between fuel level sensor unit and fuel pump (main) connector terminals 5 and 7.

5 – 7 : Continuity should exist.

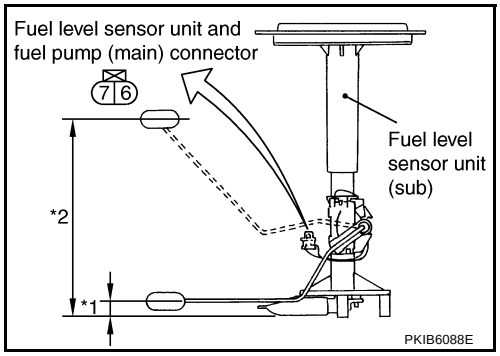


Fuel Level Sensor Unit (Sub)

Check resistance between fuel level sensor unit and fuel pump (main) connector terminals 6 and 7.

Terminal		Float position [mm (in)]			Resistance value [Ω]
6	7	*1	Empty	10 (0.39)	Approx. 45.2
		*2	Full	198 (7.8)	Approx. 2.5

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

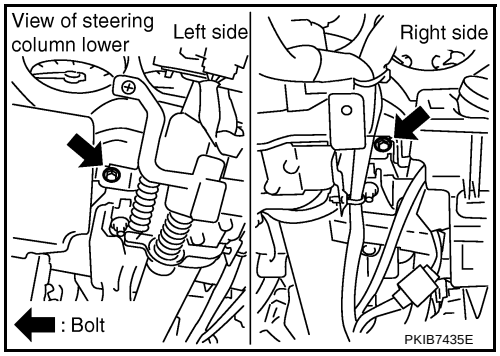


Removal and Installation of Combination Meter

NKS002CQ

REMOVAL

1. Remove instrument driver lower panel. Refer to IP-10, "INSTRUMENT PANEL ASSEMBLY" .
2. Remove steering column cover. Refer to IP-10, "INSTRUMENT PANEL ASSEMBLY" .
3. Remove bolts (2) and remove combination meter.

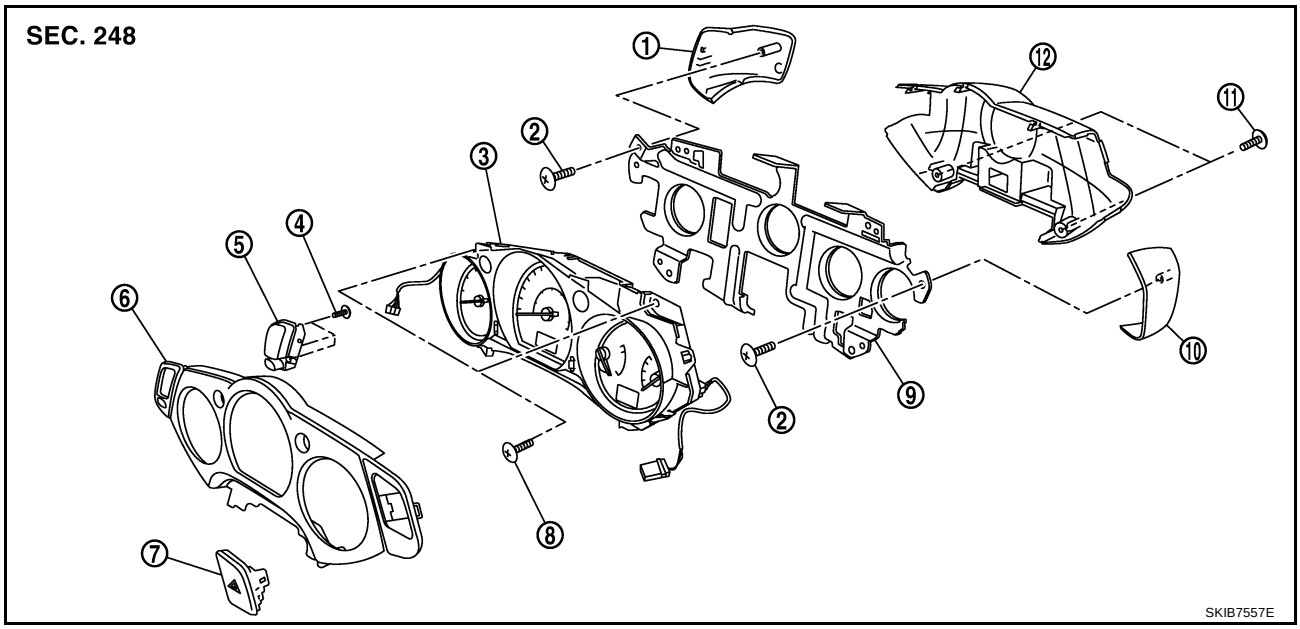


INSTALLATION

Installation is the reverse order of removal.

Disassembly and Assembly of Combination Meter

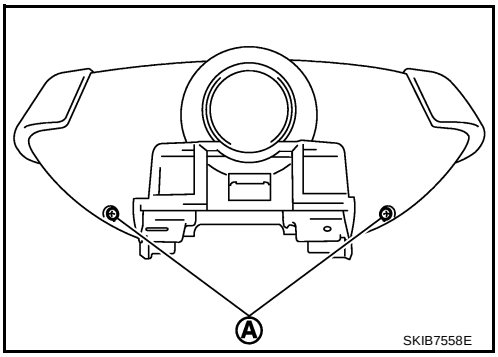
NKS002CR



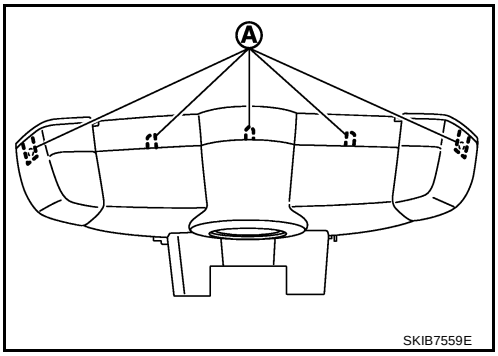
1. Switch cover (Left side)
2. Screws
3. Unified meter control unit assembly
4. Screws
5. Odo/trip meter and illumination control switch
6. Meter lid
7. Hazard switch
8. Screws
9. Bracket
10. Switch cover (Right side)
11. Screws
12. Rear cover

DISASSEMBLY

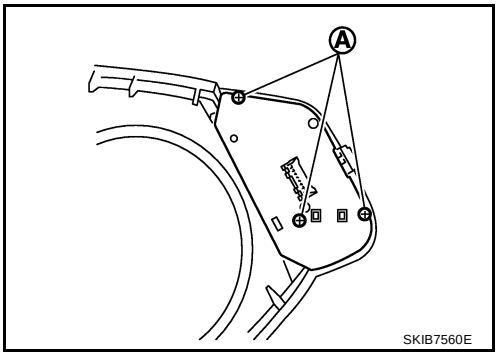
1. Remove screws (A).



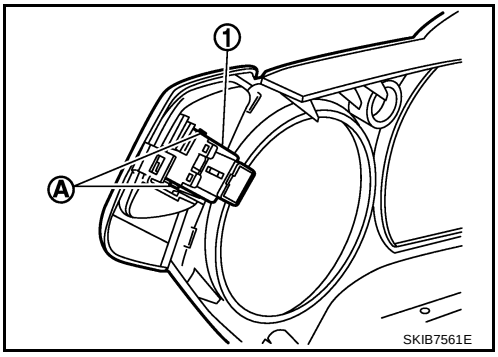
2. Disengaged the tabs (A) and remove meter lid.
3. Disconnect odo/trip meter and illumination control switch and hazard switch connectors.



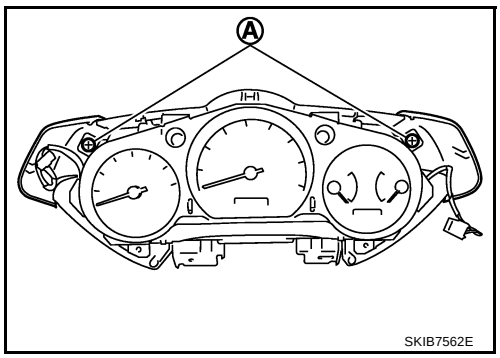
4. Remove screws (A) and remove odo/trip meter and illumination control switch.



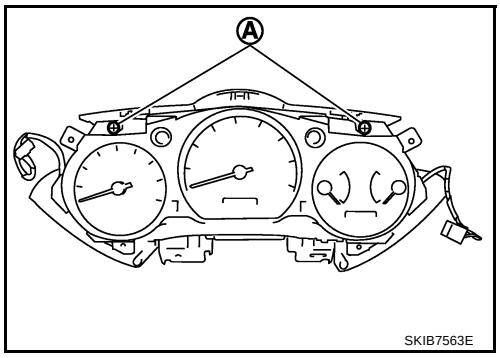
5. Disengaged the tabs (A) and remove hazard switch (1).



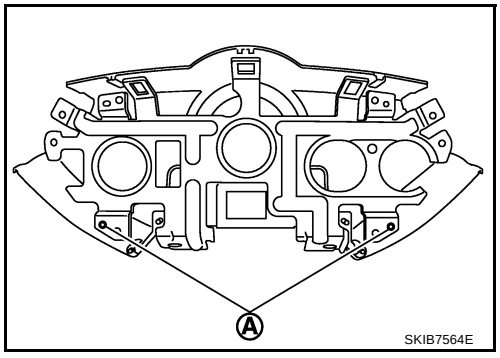
6. Remove screws (A) and remove switch cover.



7. Remove screws (A) and remove rear cover.



8. Disengaged the tabs (A) to separate bracket.



ASSEMBLY

Assembly is the reverse order of disassembly.

UNIFIED METER AND A/C AMP

PFP:27760

System Description

NKS001SN

- For the unified meter and A/C amp., the signal required for controlling the combination meter are integrated in the A/C auto amp.
- The unified meter and A/C amp. corresponds to a CONSULT-II function (self-diagnosis results, CAN diagnosis support monitor, data monitor).

COMBINATION METER CONTROL FUNCTION

- Unified meter and A/C amp. receives necessary information for combination meter from each unit by CAN communication.
- Unified meter and A/C amp. transmits a signals with communication line (TX, RX) between unified meter and A/C amp. and combination meter.

Input/output signals between unified meter and A/C amp. and combination meter.

Unit	Input	Output
Unified meter and A/C amp.	● Seat belt buckle switch signal (Driver's side) ● Parking brake signal ● Illumination control nighttime required signal ● Refuel status signal ● Low-fuel warning lamp condition signal ● Combination meter receive error signal ● Delivery destination data signal ● Combination meter specifications signal	● Vehicle speed signal (8-pulse) ● Engine speed signal ● Engine coolant temperature signal ● Fuel level sensor signal (resistance value) ● Malfunction indicator signal ● ABS warning lamp signal ● Low tire pressure warning signal ● Brake warning lamp signal ● AWD warning lamp signal ● Turn indicator signal ● High beam request signal ● VDC OFF indicator lamp signal ● SLIP indicator lamp signal ● CRUISE indicator lamp signal ● SET indicator lamp signal ● AWD lock indicator lamp signal ● CVT indicator lamp signal ● CVT position indicator signal ● Manual mode indicator signal ● Manual mode gear position signal ● Second position indicator signal ● CAN communication condition signal of CVT ● Door switch signal ● Oil pressure switch signal ● Position lights request signal ● Buzzer output signal

NOTE:
Combination meter performs fail-safe operation when unified meter and A/C amp. communication is malfunction. Refer to DI-7, "FAIL-SAFE" .

A/C AUTO AMP. FUNCTION

Unified meter and A/C amp. controls each operation for A/C auto amp. Regarding A/C control, refer to ATC-25, "AIR CONDITIONER CONTROL" in ATC section.

OTHER FUNCTIONS

Drive Computer Function

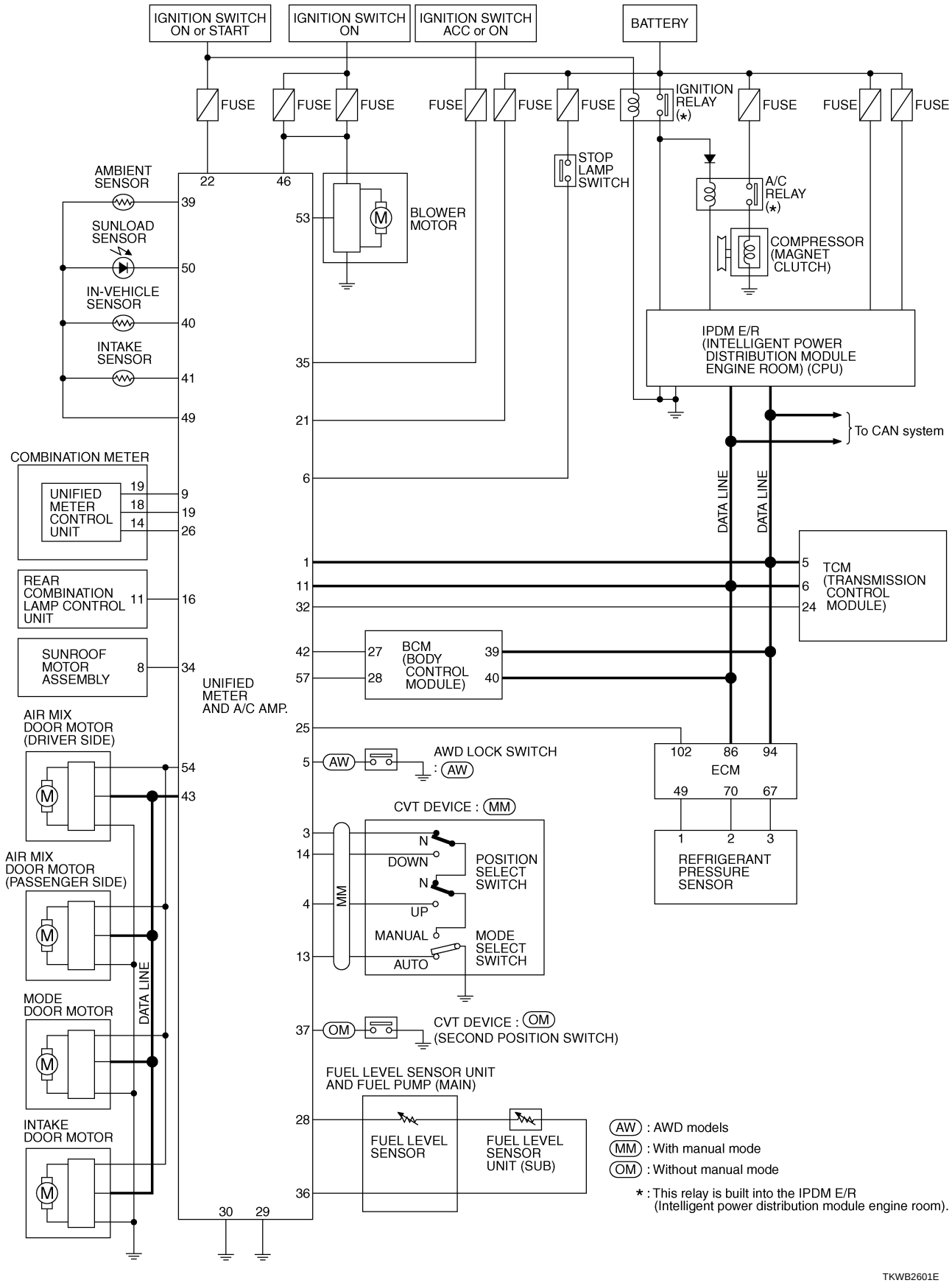
The signals required for the distance to empty (DTE) display are centralized in the unified meter and A/C amp., converted into data, and sent to the display unit (without NAVI) or display control unit (with NAVI) using CAN communication.

Signal Buffer Function

Unified meter and A/C amp. transmits each signal to other units with CAN communication.

Schematic

NKS001SQ



TKWB2601E

CONSULT-II Function (METER A/C AMP)

NKS001SR

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

System	Diagnosis mode	Description	Reference page
METER A/C AMP	SELF-DIAG RESULTS	Unified meter and A/C amp. checks the conditions and displays memorized error.	DI-30
	CAN DIAG SUPPORT MNTR	The results of transmit/receive diagnosis of CAN communication can be read.	LAN-44
	DATA MONITOR	Displays unified meter and A/C amp. input data in real time.	DI-31

CONSULT-II BASIC OPERATION

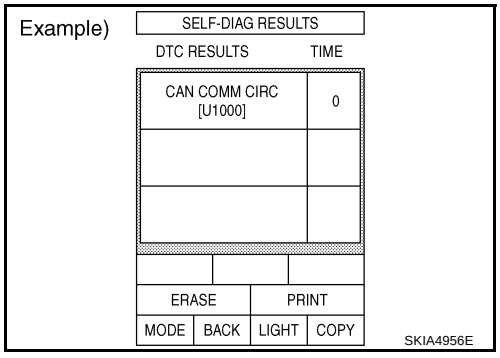
Refer to GI-37, "CONSULT-II Start Procedure" .

SELF-DIAG RESULTS

Operation Procedure

1. Touch “SELF-DIAG RESULTS” on “SELECT DIAG MODE” screen.
2. Self-diagnosis results are displayed.

Example)



Display Item List

CONSULT-II display	Malfunction is detected when...	Reference page
CAN COMM CIRC [U1000]	When meter and A/C amp. is not transmitting or receiving CAN communication signal for 2 seconds or more.	DI-33
METER COMM CIRC [B2202]	Malfunction is detected in communication of between combination meter and unified meter and A/C amp.	DI-33
VEHICLE SPEED CIRC [B2205]	When an erroneous speed signal is input for 1 second. **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).**	DI-36

NOTE:

“TIME” means the following.

- 0: Means detected malfunction at present. (From malfunction detection to turning ignition switch OFF)
- 1 - 63: Means detected malfunction in past. (Displays number of ignition switch OFF → ON after detecting malfunction. “SELF-DIAG RESULTS” is erased when exceeding “63”.)

CAUTION:

“TIME” keeps showing “0” after returning to normal condition only in the case that malfunction history of “CAN COMM CIRC [U1000]” remains because of display control unit (with NAVI) or display unit (without NAVI) malfunction.

DATA MONITOR

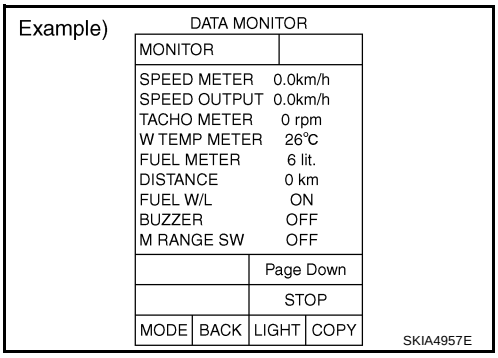
Operation Procedure

1. Touch “DATA MONITOR” on “SELECT DIAG MODE” screen.
2. Touch “MAIN SIGNALS” or “SELECTION FROM MENU” on the “DATA MONITOR” screen.

MAIN SIGNALS	Monitors main signals.
SELECTION FROM MENU	Selects and monitors individual signal.

3. When “SELECTION FROM MENU” is selected, touch individual items to be monitored. When “MAIN SIGNALS” is selected, main items will be monitored.
4. Touch “START”.
5. Touch “RECORD” while monitoring, then the status of the monitored item can be recorded. To stop recording, touch “STOP”.

Example)



Display Item List

Display item [Unit]	MAIN SIGNALS	SELECTION FROM MENU	Contents
SPEED METER [km/h] or [mph]	X	X	Displays the value of vehicle speed signal, which is input from ABS actuator and electric unit (control unit).
SPEED OUTPUT [km/h] or [mph]	X	X	Displays the value of vehicle speed signal, which is transmitted to each unit with CAN communication.
TACHO METER [rpm]	X	X	Displays the value of engine speed signal, which is input from ECM.
W TEMP METER [°C] or [°F]	X	X	Displays the value of engine coolant temperature signal, which is input from ECM.
FUEL METER [lit.]	X	X	Displays the value, which processes a resistance signal from fuel gauge.
DISTANCE [km] or [mile]	X	X	Displays the value, which is calculated by vehicle speed signal from ABS actuator and electric unit (control unit), fuel gauge and fuel consumption from ECM.
FUEL W/L [ON/OFF]	X	X	Indicates [ON/OFF] condition of low-fuel warning lamp.
MIL [ON/OFF]		X	Indicates [ON/OFF] condition of malfunction indicator lamp.
AIR PRES W/L [ON/OFF]		X	Indicates [ON/OFF] condition of low tire pressure warning 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/TCS 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]*1		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.

Display item [Unit]	MAIN SIGNALS	SELECTION FROM MENU	Contents
AT SFT UP SW [ON/OFF]	X	X	Indicates [ON/OFF] condition of CVT shift-up switch.
AT SFT DWN SW [ON/OFF]	X	X	Indicates [ON/OFF] condition of CVT shift-down switch.
O/D OFF SW [ON/OFF]		X	Indicates [ON/OFF] condition of SPORT mode switch (second position switch).
BRAKE SW [ON/OFF]		X	Indicates [ON/OFF] condition of brake switch (stop lamp switch).
AT-M IND [ON/OFF]	X	X	Indicates [ON/OFF] condition of CVT manual mode indicator.
AT-M GEAR [5-1]	X	X	Indicates [5-1] condition of CVT manual mode gear position.
P RANGE IND [ON/OFF]	X	X	Indicates [ON/OFF] condition of CVT shift P range indicator.
R RANGE IND [ON/OFF]	X	X	Indicates [ON/OFF] condition of CVT shift R range indicator.
N RANGE IND [ON/OFF]	X	X	Indicates [ON/OFF] condition of CVT shift N range indicator.
D RANGE IND [ON/OFF]	X	X	Indicates [ON/OFF] condition of CVT shift D range indicator.
L RANGE IND [ON/OFF]	X	X	Indicates [ON/OFF] condition of CVT shift L range indicator.
CVT IND [ON/OFF]		X	Indicates [ON/OFF] condition of CVT indicator.
S RANGE IND [ON/OFF]	X	X	Indicates [ON/OFF] condition of CVT shift S range indicator.
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 AWD lock switch.
4WD LOCK IND [ON/OFF]		X	Indicates [ON/OFF] condition of AWD lock indicator lamp.
4WD W/L [ON/OFF]		X	Indicates [ON/OFF] condition of AWD warning lamp.
RR COMB STATE [OK/NG]		X	Indicates [OK/NG] condition of rear combination lamp circuit.

NOTE:
Any monitored item that does not match the vehicle being diagnosed is deleted from the display automatically.
*1: Monitor keeps indicating “OFF” when brake warning lamp is on by the parking brake operation or low brake fluid level.

Power Supply and Ground Circuit Inspection

NKS002CS

1. CHECK FUSE

Check for blown unified meter and A/C amp. fuses.

Power source	Fuse No.
Battery power supply	19
Ignition power supply (ON or START)	12
Ignition power supply (ON)	10, 11

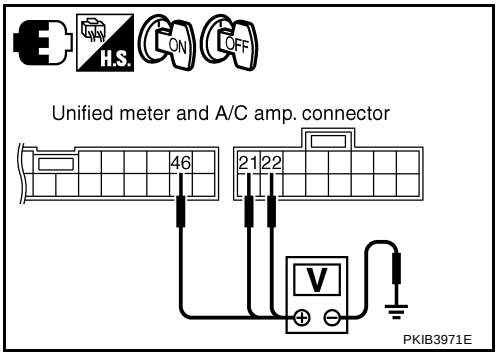
OK or NG

OK >> GO TO 2.
NG >> Be sure to eliminate cause of malfunction before installing new fuse. Refer to PG-3, "POWER SUPPLY ROUTING CIRCUIT" .

2. CHECK POWER SUPPLY CIRCUIT

Check voltage between unified meter and A/C amp. harness connector terminals and ground.

Terminals			Ignition switch position	
(+)		(–)	OFF	ON
Connector	Terminal			
M50	21	Ground	Battery voltage	Battery voltage
	22		0 V	Battery voltage
M51	46		0 V	Battery voltage



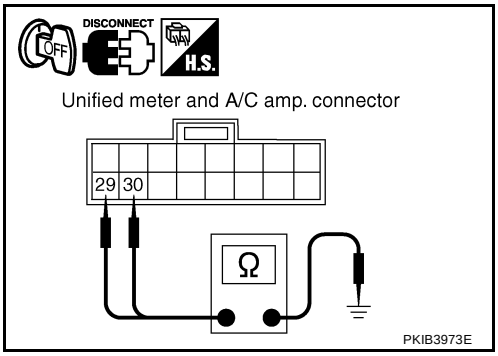
OK or NG

OK >> GO TO 3.
NG >> Check harness between unified meter and A/C amp. and fuse.

3. CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect unified meter and A/C amp. connector.
3. Check continuity between unified meter and A/C amp. harness connector M50 terminals 29, 30 and ground.

29 – Ground
30 – Ground **: Continuity should exist.**



OK or NG

OK >> INSPECTION END
NG >> Repair harness or connector.

DTC [U1000] CAN Communication Circuit

NKS001SS

Symptom: Display “CAN COMM CIRC [U1000]” at the result of self-diagnosis for unified meter and A/C amp.

1. CHECK CAN COMMUNICATION

1. Select “SELF-DIAG RESULTS” mode for “METER A/C AMP” with CONSULT-II.
2. Print out CONSULT-II screen.

>> Go to “LAN system”. Refer to LAN-3, "Precautions When Using CONSULT-II" .

DTC [B2202] Meter Communication Circuit

NKS001ST

Symptom: Display “METER COMM CIRC [B2202]” at the result of self-diagnosis for unified meter and A/C amp.

1. CHECK CONNECTOR

Check combination meter, unified meter and A/C amp. and terminals (combination meter side, unified meter and A/C amp. side and harness side) for looseness or bent terminals.

OK or NG

OK >> GO TO 2.
NG >> Repair terminal or connector.

2. CHECK METER/GAUGES VISUALLY

Check the pointer on the meter/gauges fluctuate at the engine start.

Is the fluctuation acceptable?

YES >> GO TO 3.
NO >> GO TO 6.

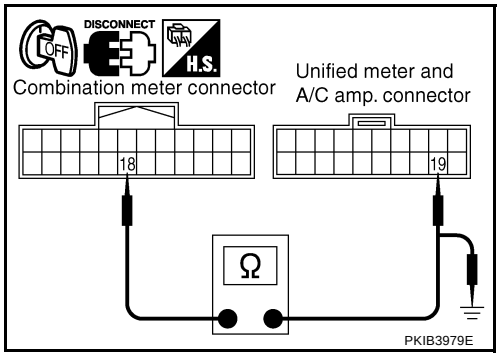
3. CHECK CONTINUITY COMMUNICATION CIRCUIT (TX: COMBINATION METER)

1. Turn ignition switch OFF.
2. Disconnect combination meter connector and unified meter and A/C amp. connector.
3. Check continuity between combination meter harness connector M25 terminal 18 and unified meter and A/C amp. harness connector M49 terminal 19.

18 – 19 : Continuity should exist.

4. Check continuity between combination meter harness connector M25 terminal 18 and ground.

18 – Ground : Continuity should not exist.



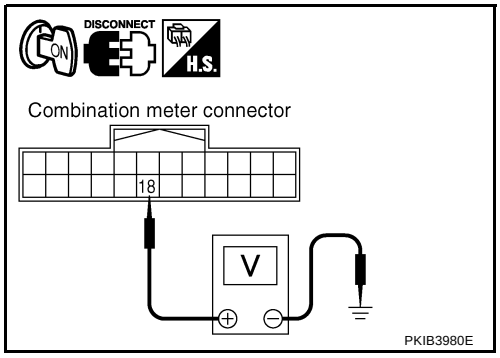
OK or NG

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

4. CHECK VOLTAGE OF UNIFIED METER AND A/C AMP.

1. Connect unified meter and A/C amp. connector.
2. Turn ignition switch ON.
3. Check voltage between combination meter harness connector M25 terminal 18 and ground.

18 – Ground : Approx. 5 V



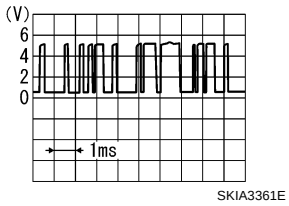
OK or NG

OK >> GO TO 5.
NG >> Replace unified meter and A/C amp. Refer to DI-36, "Removal and Installation of Unified Meter and A/C Amp." .

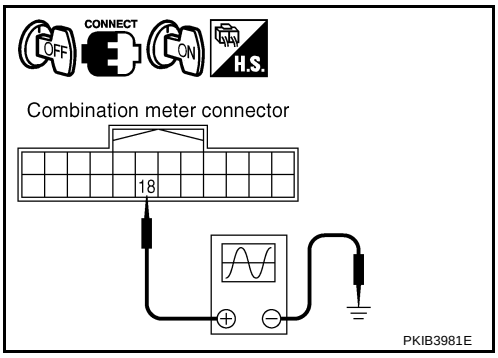
5. CHECK VOLTAGE SIGNAL OF COMBINATION METER

1. Turn ignition switch OFF.
2. Connect combination meter connector.
3. Turn ignition switch ON.
4. Check voltage signal between combination meter harness connector M25 terminal 18 and ground.

18 – Ground:



SKIA3361E



PKIB3981E

OK or NG

OK >> Replace unified meter and A/C amp. Refer to DI-36, "Removal and Installation of Unified Meter and A/C Amp." .
NG >> Replace combination meter.

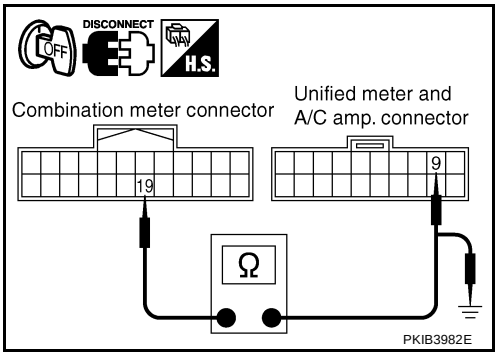
6. CHECK CONTINUITY COMMUNICATION CIRCUIT (RX: COMBINATION METER)

1. Turn ignition switch OFF.
2. Disconnect combination meter connector and unified meter and A/C amp. connector.
3. Check continuity between combination meter harness connector M25 terminal 19 and unified meter and A/C amp. harness connector M49 terminal 9.

19 – 9 : Continuity should exist.

4. Check continuity between combination meter harness connector M25 terminal 19 and ground.

19 – Ground : Continuity should not exist.



PKIB3982E

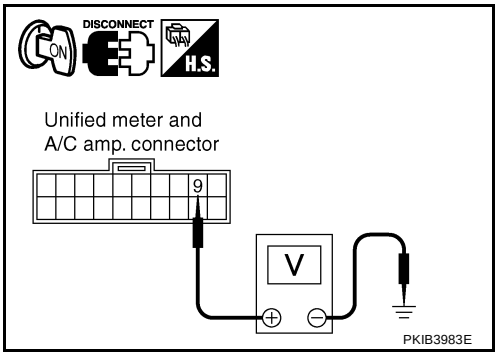
OK or NG

OK >> GO TO 7.
NG >> Repair harness or connector.

7. CHECK VOLTAGE OF COMBINATION METER

1. Connect combination meter connector.
2. Turn ignition switch ON.
3. Check voltage between unified meter and A/C amp. harness connector M49 terminal 9 and ground.

9 – Ground : Approx. 5 V



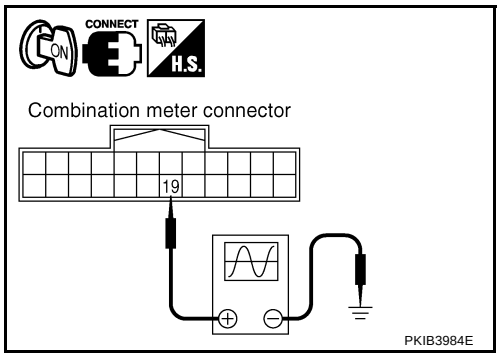
PKIB3983E

OK or NG

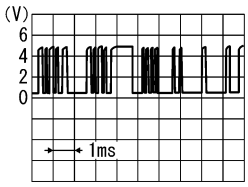
OK >> GO TO 8.
NG >> Replace combination meter.

8. CHECK VOLTAGE SIGNAL OF UNIFIED METER AND A/C AMP.

1. Turn ignition switch OFF.
2. Connect unified meter and A/C amp. connector.
3. Turn ignition switch ON.
4. Check voltage signal between combination meter harness connector M25 terminal 19 and ground.



19 – Ground:



OK or NG

OK >> Replace combination meter.
NG >> Replace unified meter and A/C amp. Refer to DI-36, "Removal and Installation of Unified Meter and A/C Amp." .

DTC [B2205] Vehicle Speed Circuit

NKS001SU

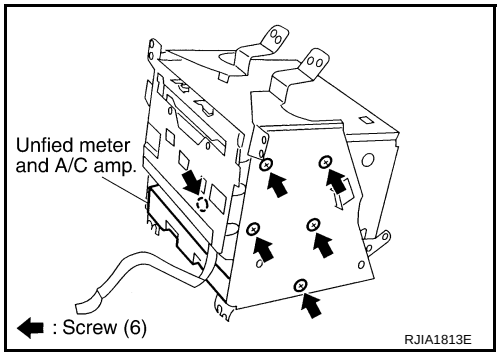
Symptom: Display “VEHICLE SPEED CIRC [B2205]” at the result of self-diagnosis for unified meter and A/C amp.
Perform self-diagnosis of ABS actuator and electric unit (control unit), and repair or replace malfunctioning parts. Refer to BRC-64, "CONSULT-II Functions (ABS)" (with VDC system) or BRC-20, "CONSULT- II Functions (ABS)" (without VDC system).

Removal and Installation of Unified Meter and A/C Amp.

NKS001SV

REMOVAL

1. Remove the audio unit. Refer to AV-59, "Removal and Installation of Audio Unit" .
2. Remove the fixing screws, then remove the unified meter and A/C amp.



CAUTION:

- **When carrying audio unit body, do not touch internal mechanism access from cassette tape slot.**
- **Be careful not to allow foreign material to enter from cassette tape slot.**
- **Use appropriate screws for each, as screws for audio unit are different from that for unified meter and A/C amp.**

INSTALLATION

Installation is basically the reverse order of removal.

WARNING LAMPS

PFP:24814

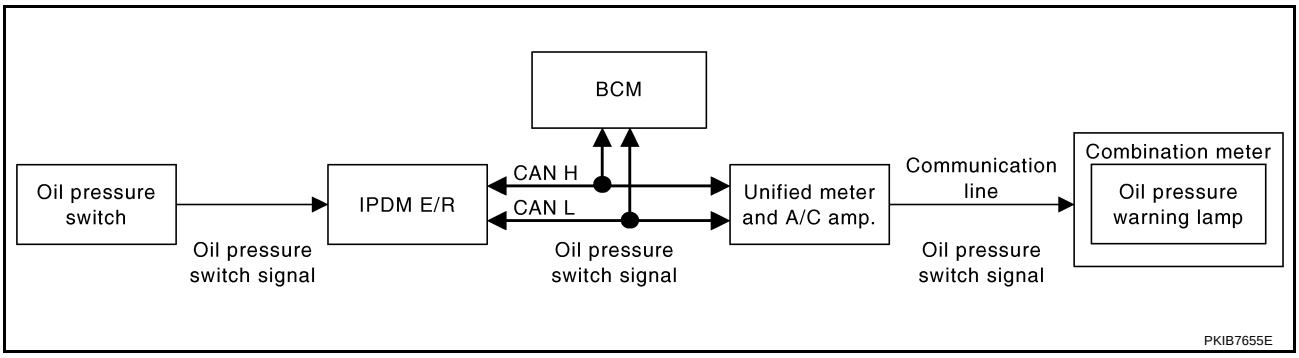
System Description

NKS002D0

OIL PRESSURE WARNING LAMP

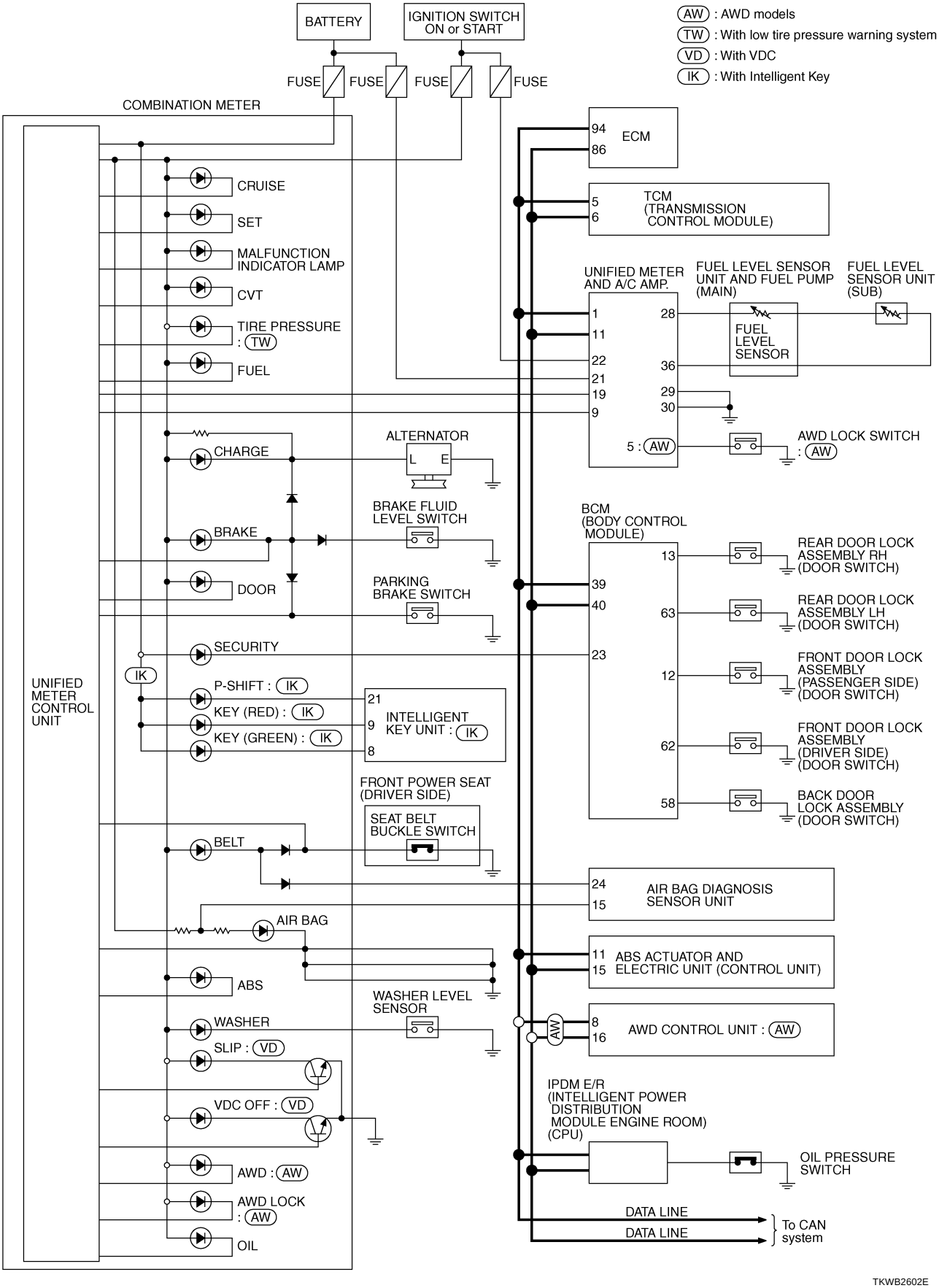
Oil pressure warning lamp turns ON when reducing engine oil pressure abnormally.

- IPDM E/R reads oil pressure switch signal from oil pressure switch, and transmits the signal to unified meter and A/C amp. through BCM with CAN communication.
- Unified meter and A/C amp. transmits oil pressure switch signal to combination meter with communication line.
- Combination meter turns oil pressure warning lamp ON with received oil pressure switch signal.



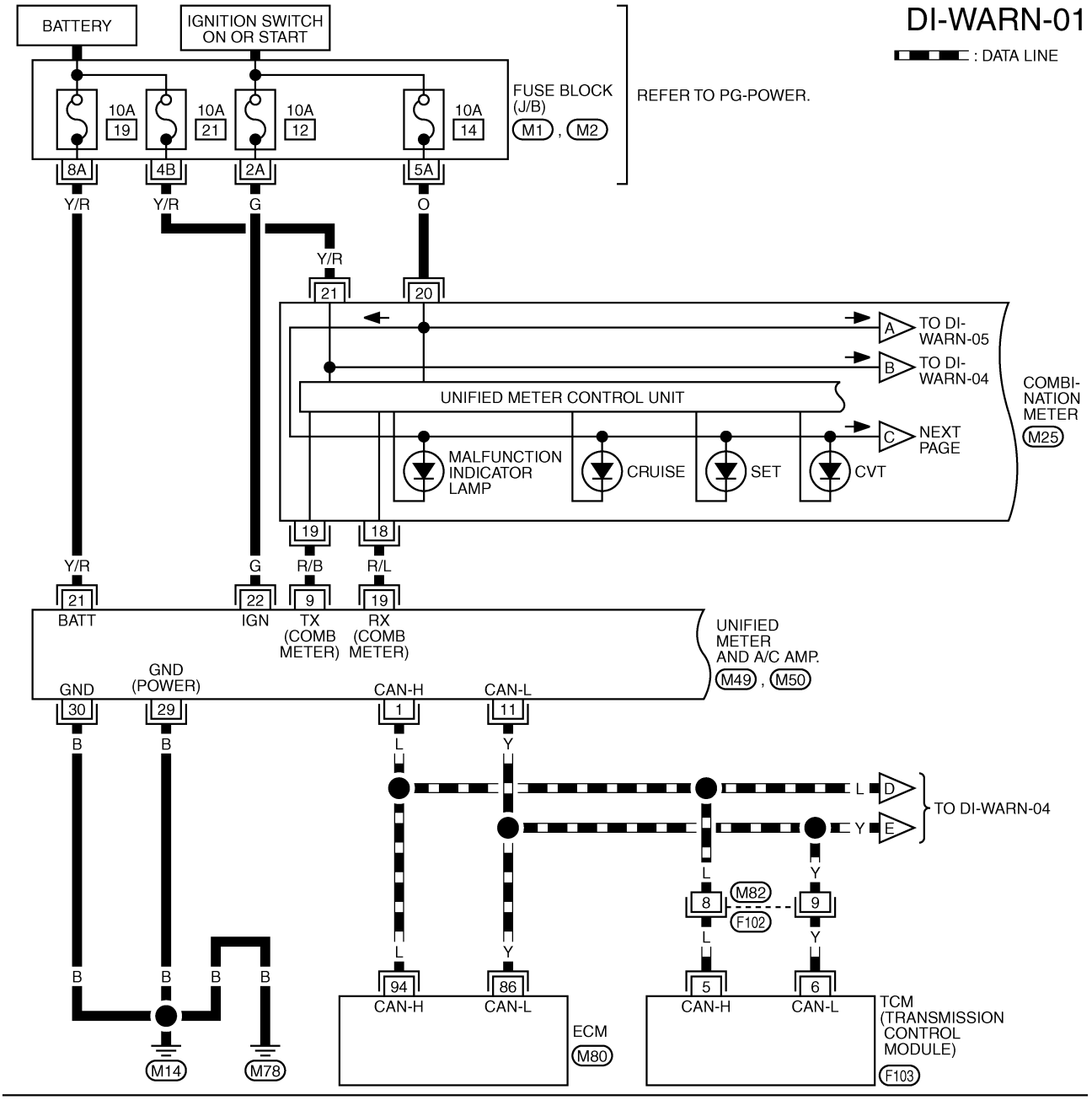
Schematic

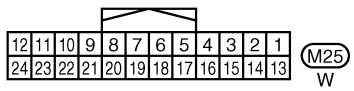
NKS001SZ

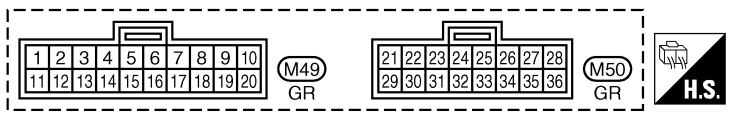


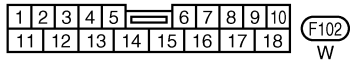
Wiring Diagram — WARN —

NKS001T0







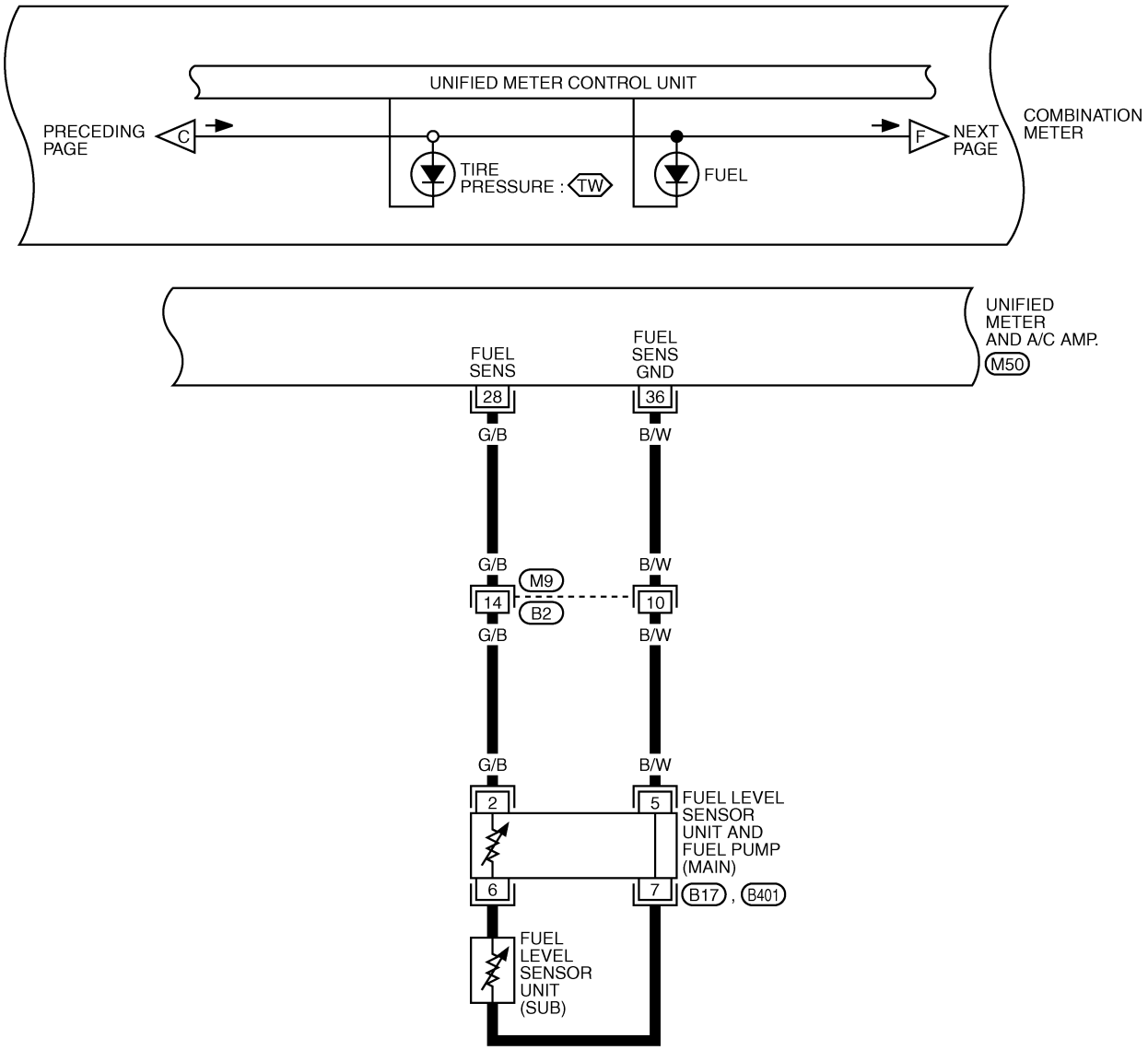


REFER TO THE FOLLOWING.
M1, M2 -FUSE BLOCK-JUNCTION BOX (J/B)
M80, F103 -ELECTRICAL UNITS

TKWB2603E

DI-WARN-02

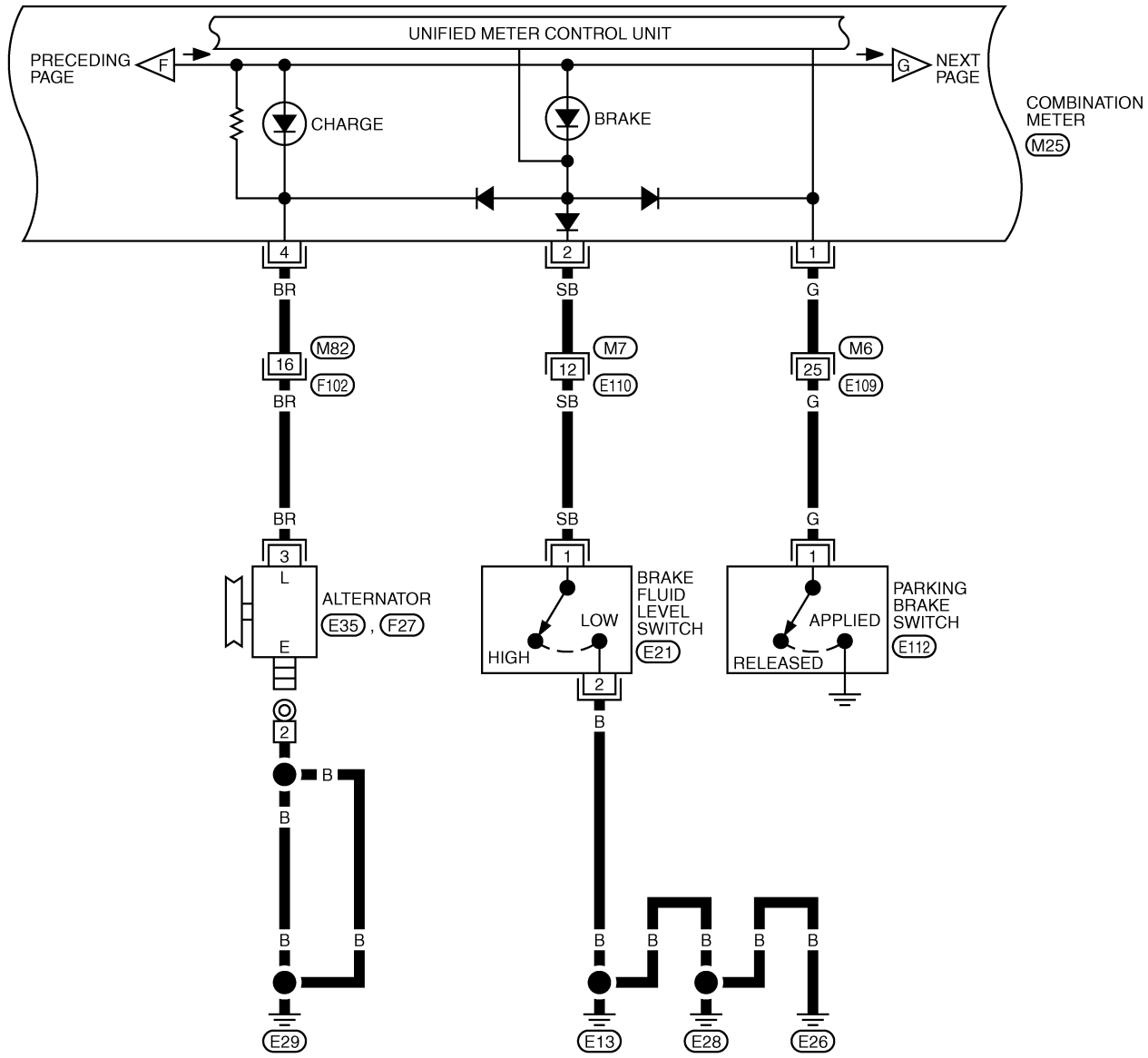
TW : WITH LOW TIRE PRESSURE WARNING SYSTEM

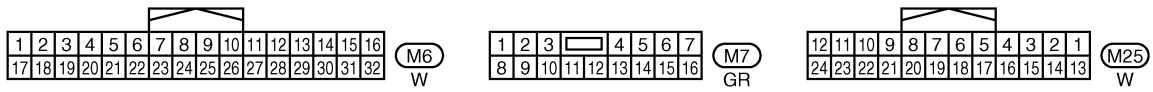


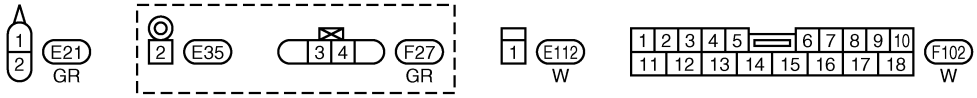
*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

TKWB2604E

DI-WARN-03

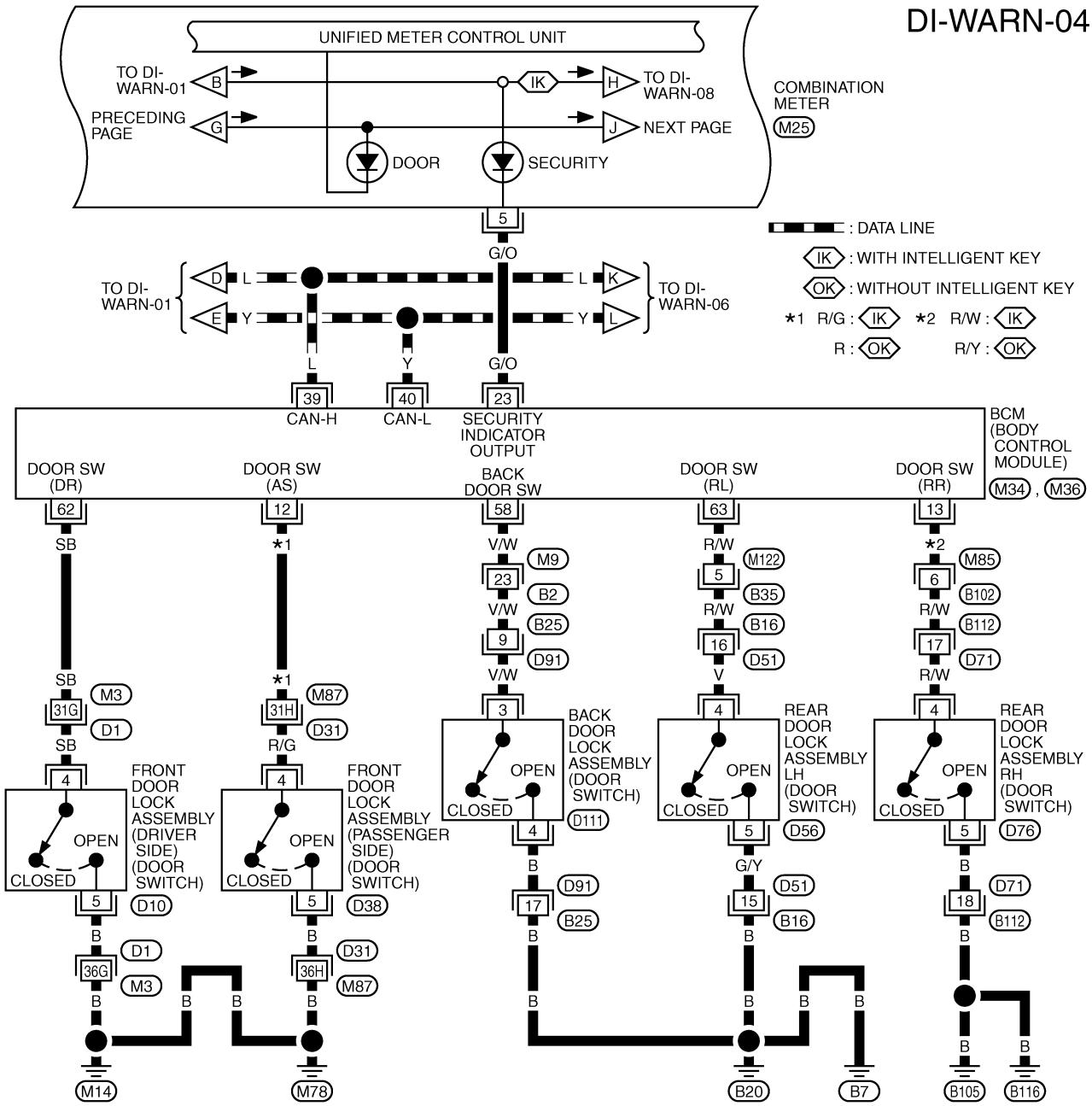


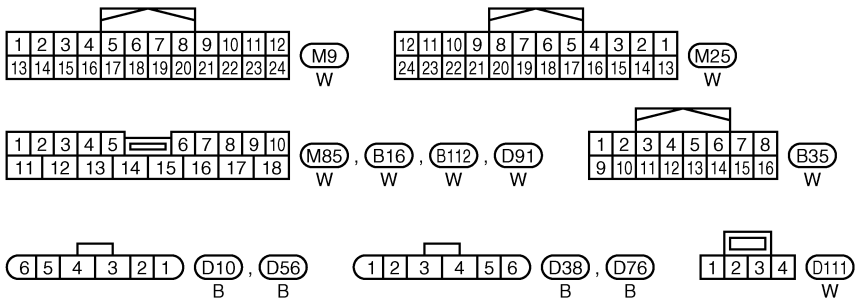




TKWB2605E

DI-WARN-04





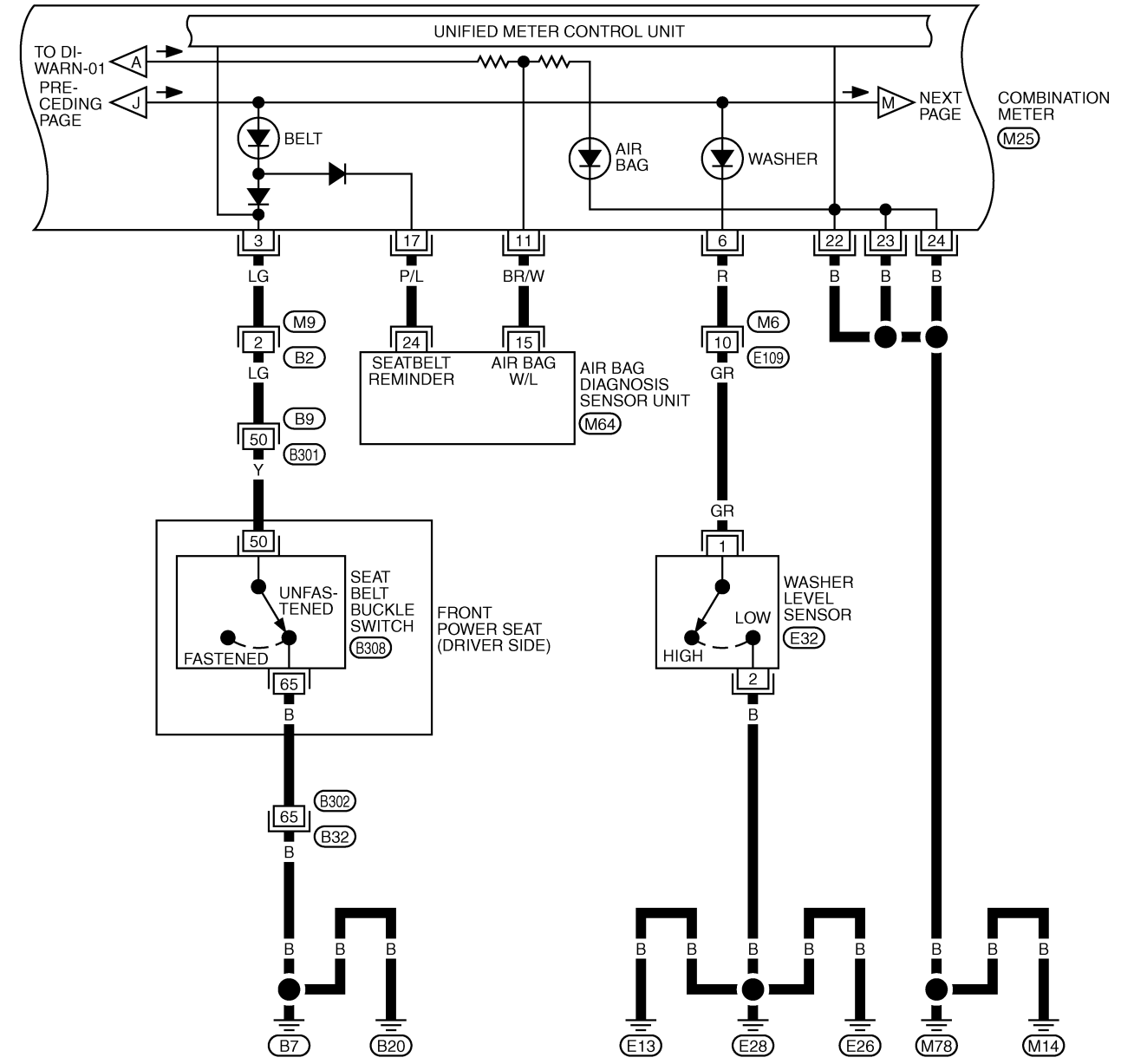
REFER TO THE FOLLOWING.

D1 , D31 -SUPER MULTIPLE JUNCTION (SMJ)

M34 , M36 -ELECTRICAL UNITS

TKWB2606E

DI-WARN-05

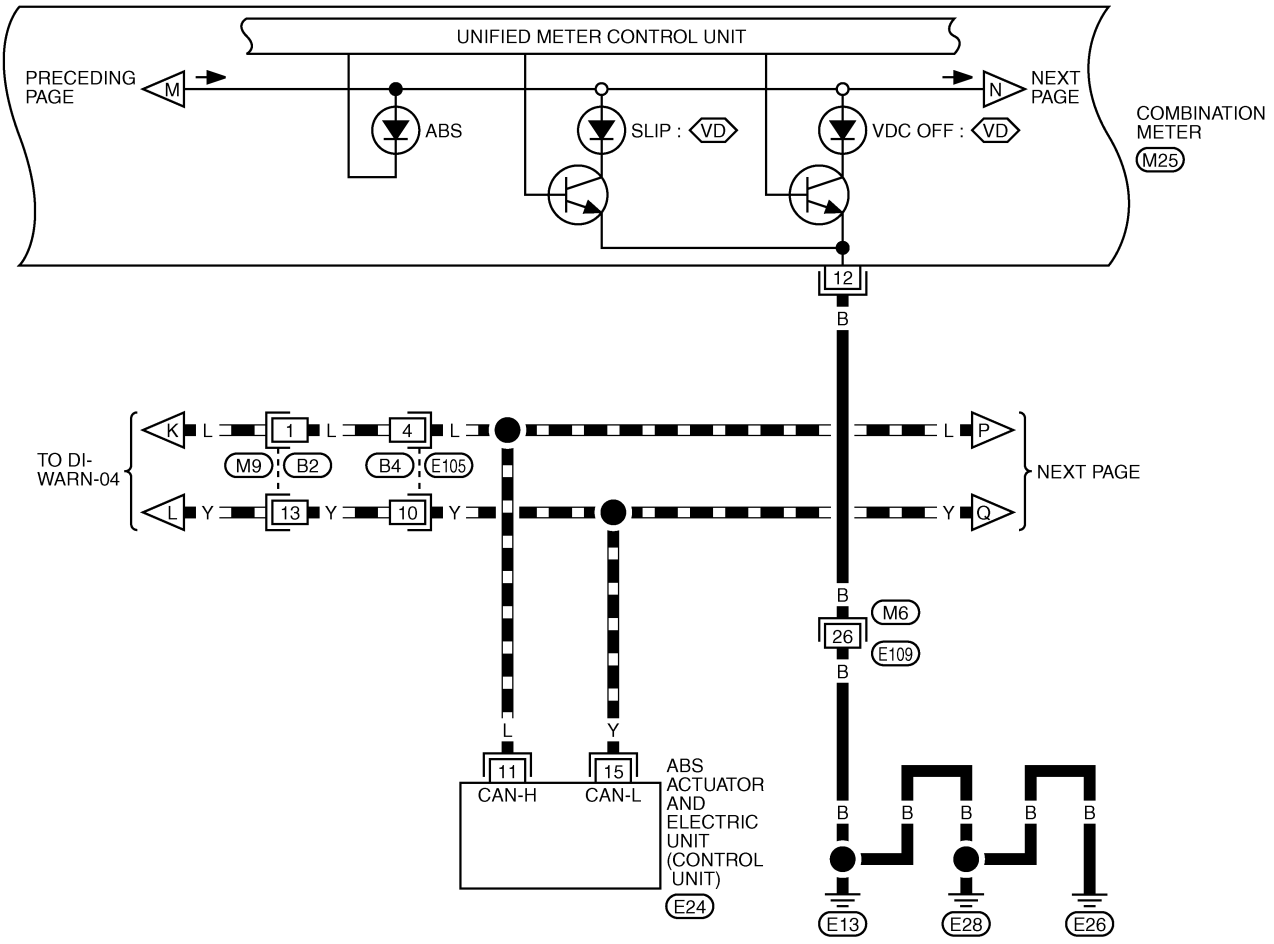


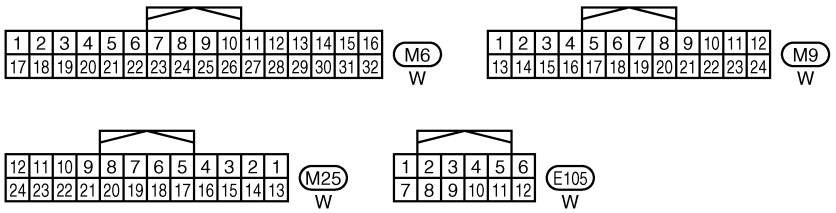
*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

TKWB2607E

DI-WARN-06

: DATA LINE
VD : WITH VDC

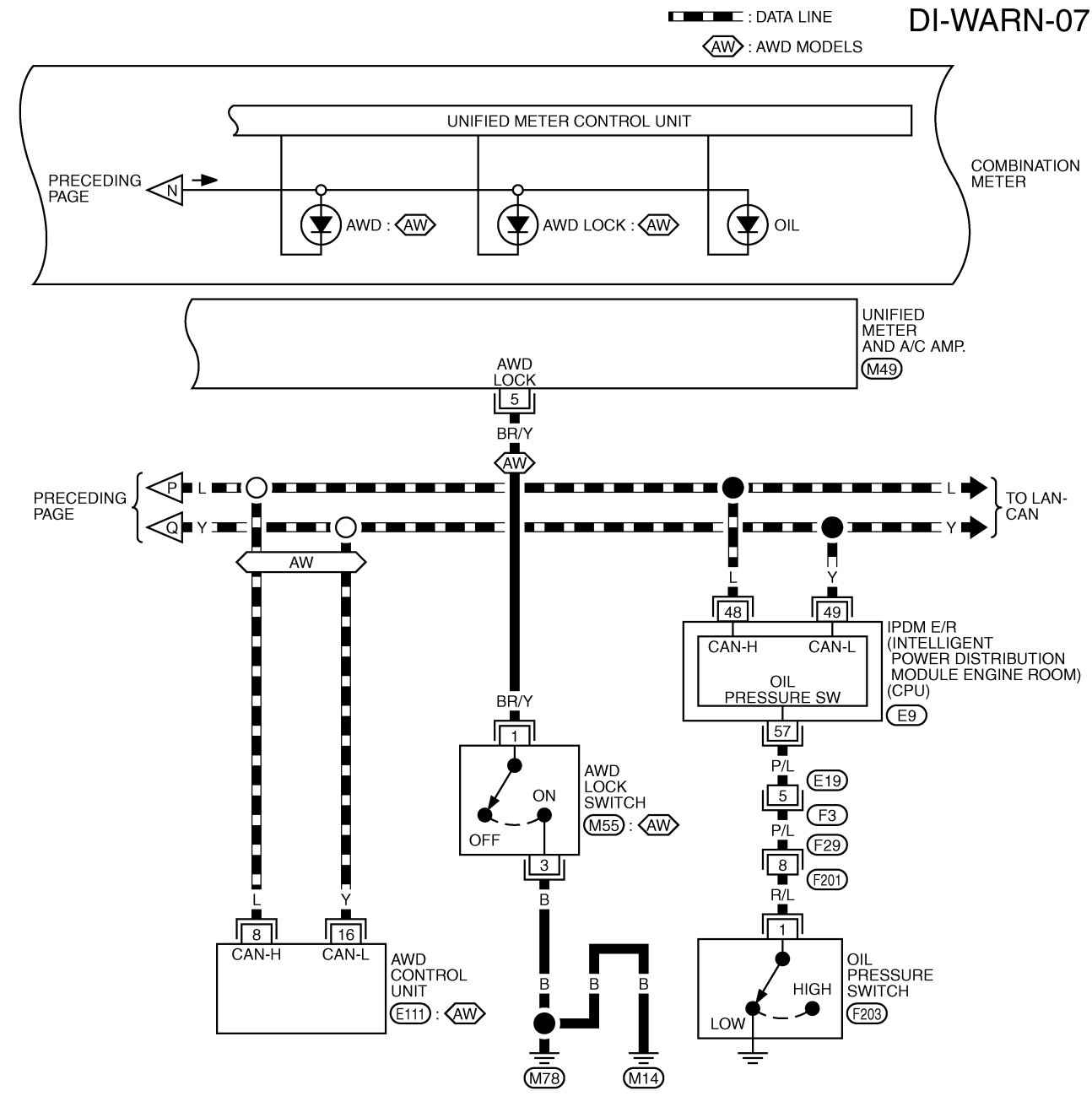


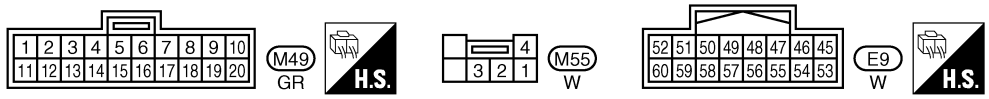


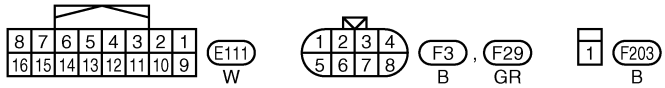
REFER TO THE FOLLOWING.
E24 -ELECTRICAL UNITS

TKWB2608E

DI-WARN-07



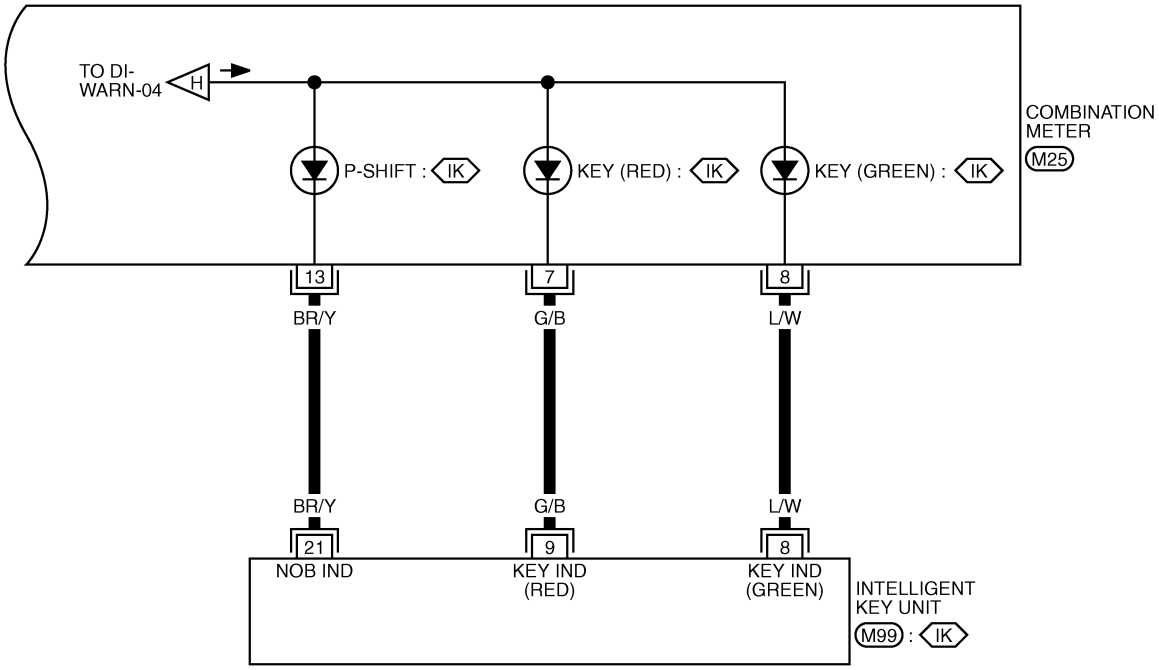


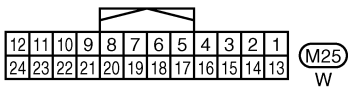


TKWB2609E

DI-WARN-08

IK : WITH INTELLIGENT KEY





REFER TO THE FOLLOWING.
M99 -ELECTRICAL UNITS

TKWB2610E

Oil Pressure Warning Lamp Stays Off (Ignition Switch ON)

NKS001T1

1. CHECK OIL PRESSURE WARNING LAMP OPERATION

Activate IPDM E/R auto active test. Refer to PG-21, "Auto Active Test" .

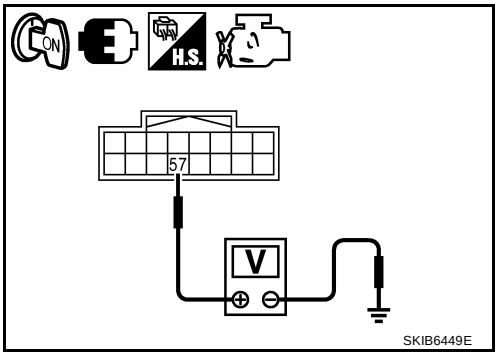
Does oil pressure warning lamp blink?

YES >> GO TO 2.
NO >> GO TO 5.

2. CHECK IPDM E/R INPUT SIGNAL

1. Turn ignition switch ON.
2. Check voltage between IPDM E/R harness connector E9 terminal 57 and ground.

57 – Ground : Approx. 0 V



OK or NG

OK >> Replace IPDM E/R. Refer to PG-28, "Removal and Installation of IPDM E/R" .
NG >> GO TO 3.

3. CHECK OIL PRESSURE SWITCH

1. Turn ignition switch OFF.
2. Disconnect oil pressure switch connector.
3. Check oil pressure switch. Refer to DI-49, "OIL PRESSURE SWITCH" .

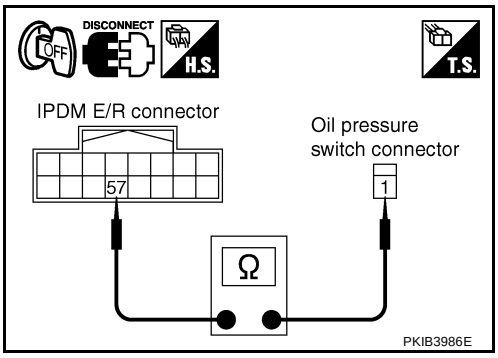
OK or NG

OK >> GO TO 4.
NG >> Replace oil pressure switch.

4. CHECK OIL PRESSURE SWITCH CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connector.
3. Check continuity between IPDM E/R harness connector E9 terminal 57 and oil pressure switch harness connector F203 terminal 1.

57 – 1 : Continuity should exist.



OK or NG

OK >> Replace IPDM E/R. Refer to PG-28, "Removal and Installation of IPDM E/R" .
NG >> Repair harness or connector.

5. CHECK UNIFIED METER AND A/C AMP. (CONSULT-II)

Perform self-diagnosis of unified meter and A/C amp. Refer to DI-30, "CONSULT-II Function (METER A/C AMP)" .

Self-diagnosis results

No malfunction detected >> GO TO 6.
Malfunction detected >> Check applicable parts, and repair or replace corresponding parts.

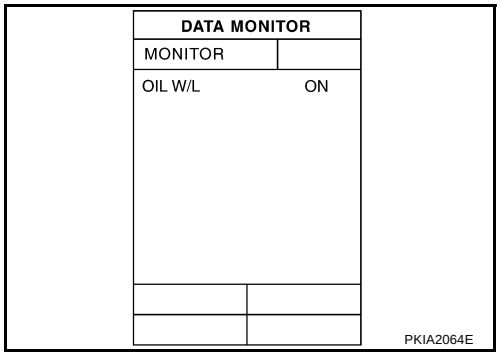
6. CHECK UNIFIED METER AND A/C AMP. INPUT SIGNAL

1. Select “METER A/C AMP” on CONSULT-II.
2. Operate ignition switch with “OIL W/L” of “DATA MONITOR” and check operation status.

“OIL W/L”

When ignition switch is in ON position (Engine stopped) : ON

When engine running : OFF



OK or NG

OK >> Replace combination meter.
NG >> GO TO 7.

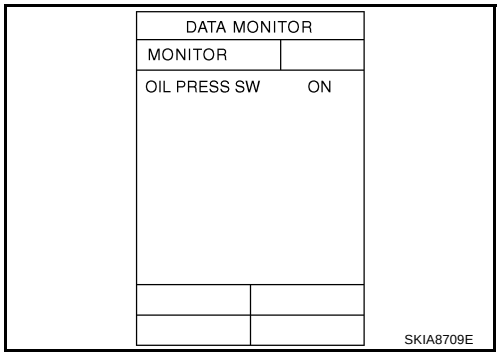
7. CHECK BCM INPUT SIGNAL

1. Select “BCM” on CONSULT-II.
2. Select “DATA MONITOR” of “SIGNAL BUFFER”.
3. Operate ignition switch with “OIL PRESS SW” of “DATA MONITOR” and check operate status.

“OIL PRESS SW”

When ignition switch is in ON position (Engine stopped) : ON

When engine running : OFF



OK or NG

OK >> Replace BCM. Refer to BCS-14, "Removal and Installation of BCM" .
NG >> Replace IPDM E/R. Refer to PG-28, "Removal and Installation of IPDM E/R" .

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

NKS001T2

NOTE:
For oil pressure inspection, refer to LU-7, "OIL PRESSURE CHECK" .

1. CHECK OIL PRESSURE WARNING LAMP OPERATION

Activate IPDM E/R auto active test. Refer to PG-21, "Auto Active Test" .

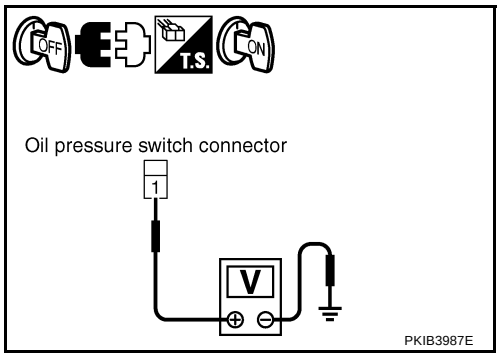
Does oil pressure warning lamp blink?

YES >> GO TO 2.
NO >> GO TO 5.

2. CHECK IPDM E/R OUTPUT SIGNAL

1. Turn ignition switch OFF.
2. Disconnect oil pressure switch connector.
3. Turn ignition switch ON.
4. Check voltage between oil pressure switch harness connector F1 terminal 1 and ground.

1 – Ground : Approx. 12 V



OK or NG

OK >> GO TO 3.
NG >> GO TO 4.

3. CHECK OIL PRESSURE SWITCH

1. Turn ignition switch OFF.
2. Check oil pressure switch. Refer to DI-49, "OIL PRESSURE SWITCH" .

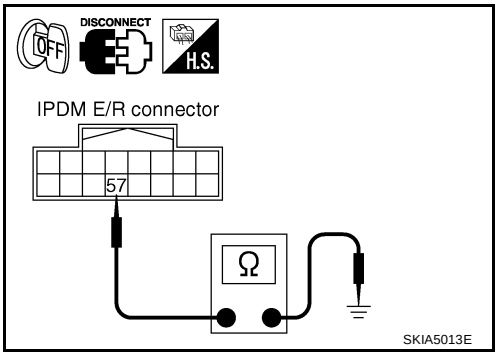
OK or NG

OK >> Replace IPDM E/R. Refer to PG-28, "Removal and Installation of IPDM E/R" .
NG >> Replace oil pressure switch.

4. CHECK OIL PRESSURE SWITCH CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connector.
3. Check continuity between IPDM E/R harness connector E9 terminal 57 and ground.

57 – Ground : Continuity should not exist.



OK or NG

OK >> Replace IPDM E/R. Refer to PG-28, "Removal and Installation of IPDM E/R" .
NG >> Repair harness or connector.

5. CHECK IPDM E/R (CONSULT-II)

Perform self-diagnosis of IPDM E/R. Refer to PG-19, "CONSULT-II Function (IPDM E/R)" .

Self-diagnosis results

No malfunction detected >> Replace combination meter.
Malfunction detected >> Check applicable parts, and repair or replace corresponding parts.

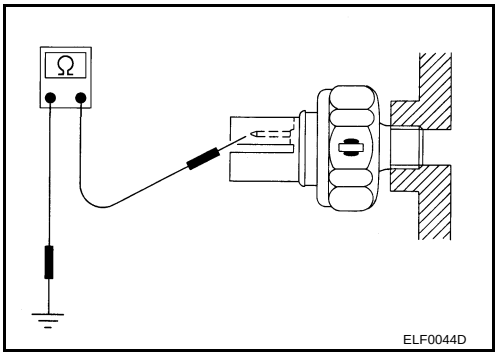
Component Inspection

NKS001T3

OIL PRESSURE SWITCH

Check continuity between oil pressure switch and 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



CVT INDICATOR

PFP:24820

System Description

NKS002D1

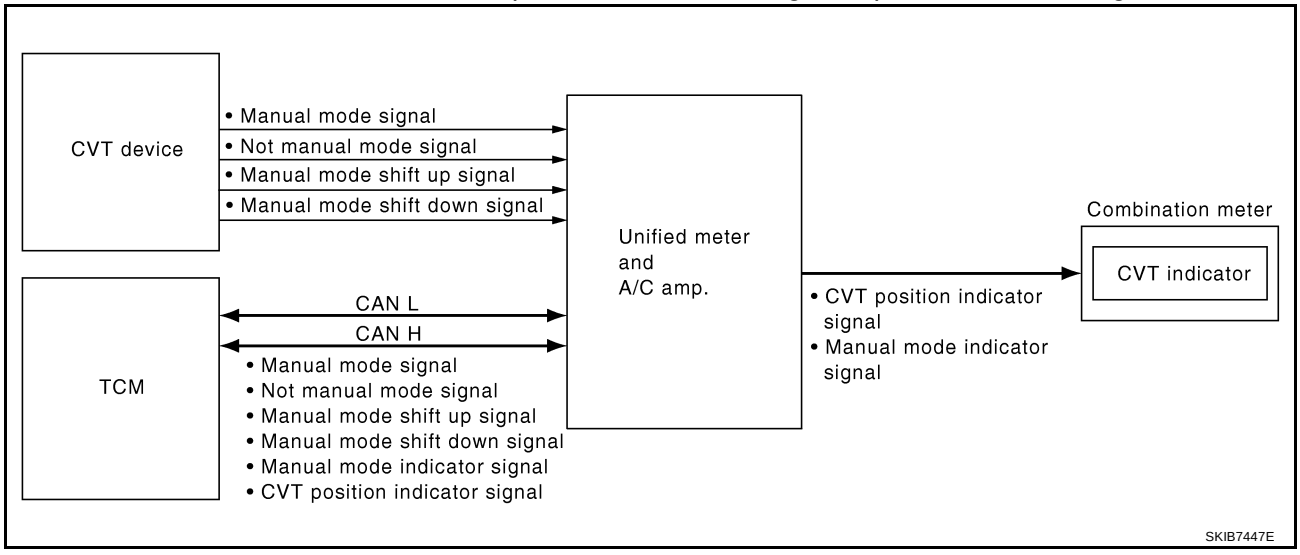
CVT position is displayed in the segment display in the combination meter.

MANUAL MODE

- Unified meter and A/C amp. reads manual mode signal and shift-up/down signal from CVT device, and transmits the signals to TCM with CAN communication.
- TCM processes manual mode signal and shift-up/down signal, and transmits manual mode indicator signal and CVT position indicator signal to unified meter and A/C amp. with CAN communication.
- Unified meter and A/C amp. transmits manual mode indicator signal and CVT position indicator signal to combination meter with the communication line.
- Combination meter indicates CVT gear position and manual mode indicator, when receiving manual mode indicator signal and CVT position indicator signal.

NOT MANUAL MODE

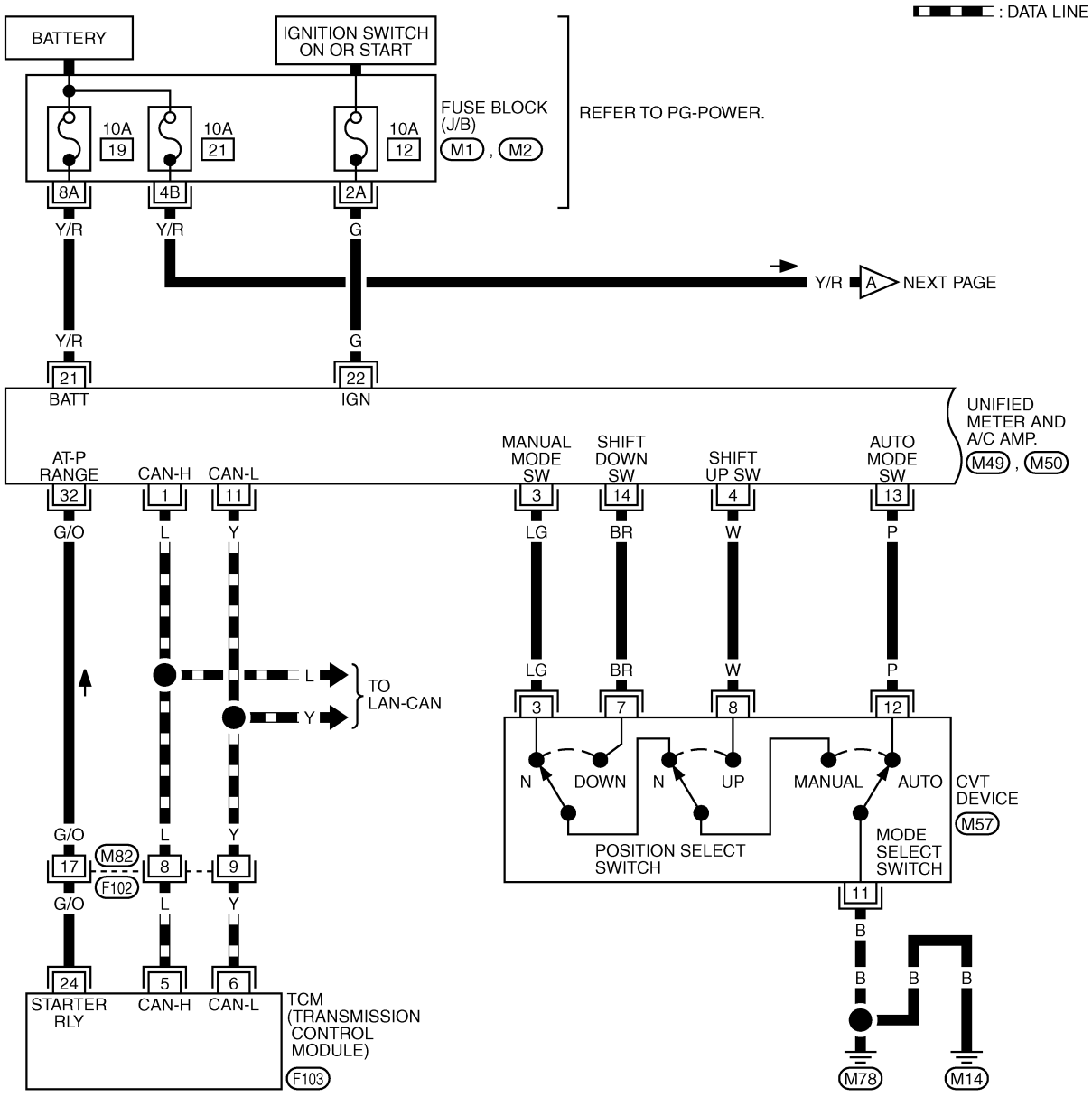
- Unified meter and A/C amp. reads not manual mode signal and second position signal from CVT device, and transmits the signals to TCM with CAN communication.
- TCM transmits CVT position indicator signal to unified meter and A/C amp. with CAN communication.
- Unified meter and A/C amp. transmits CVT position indicator signal to combination meter with the communication line.
- Combination meter indicates CVT shift position when receiving CVT position indicator signal.

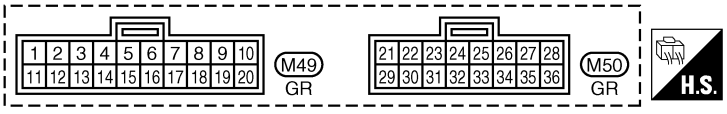


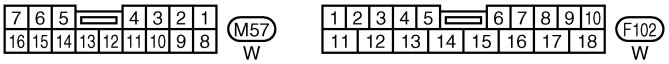
Wiring Diagram — CVTIND —

NKS001T4

DI-CVTIND-01



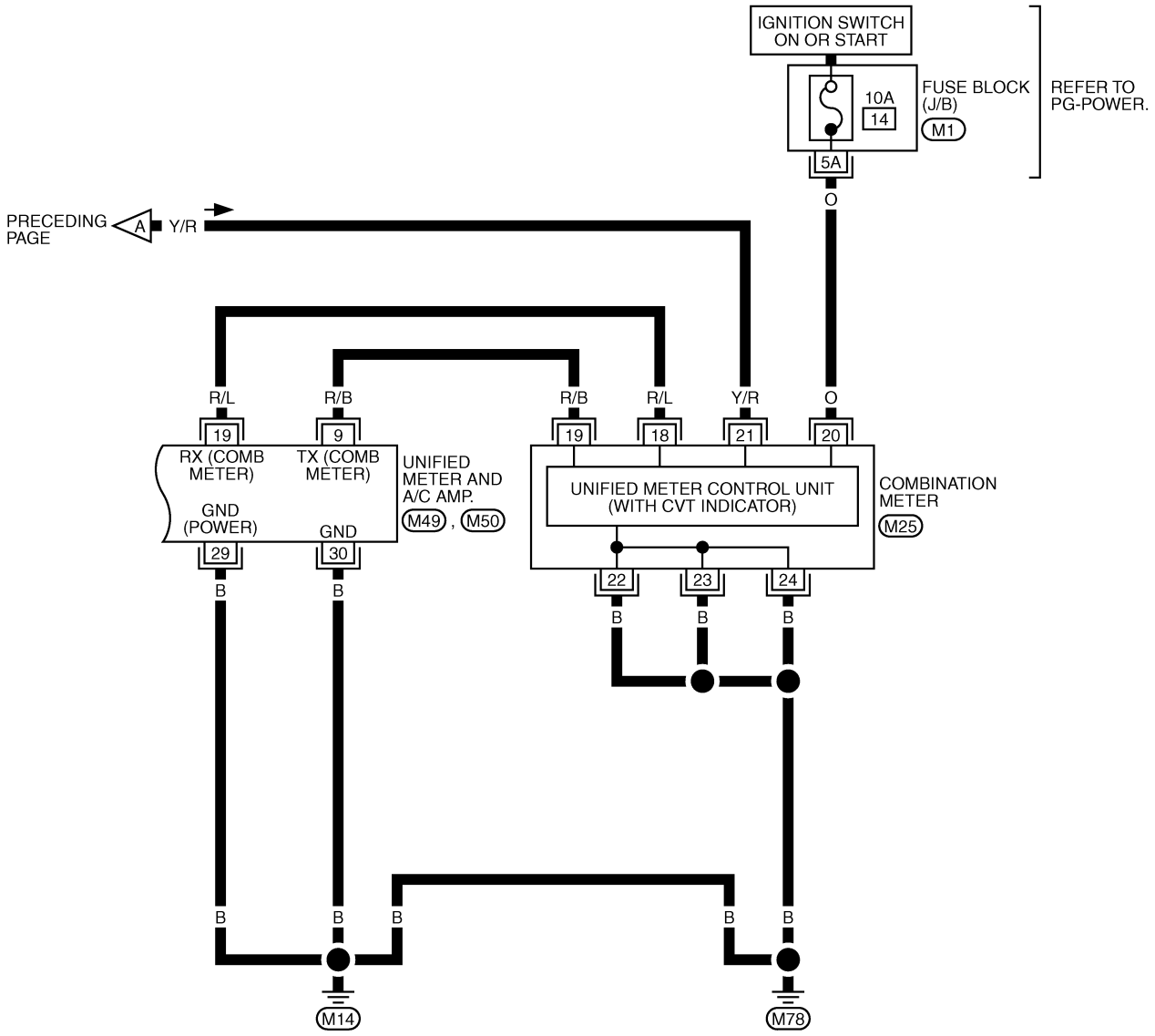


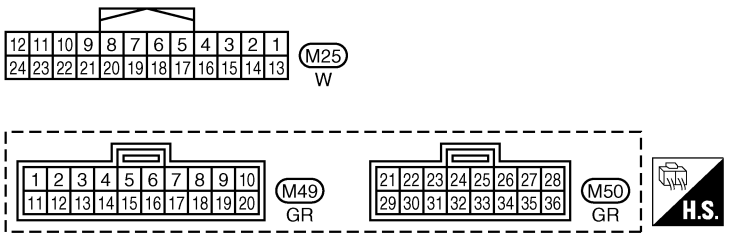


REFER TO THE FOLLOWING.
M1 , M2 -FUSE BLOCK-JUNCTION BOX (J/B)
F103 -ELECTRICAL UNITS

TKWB2612E

DI-CVTIND-02

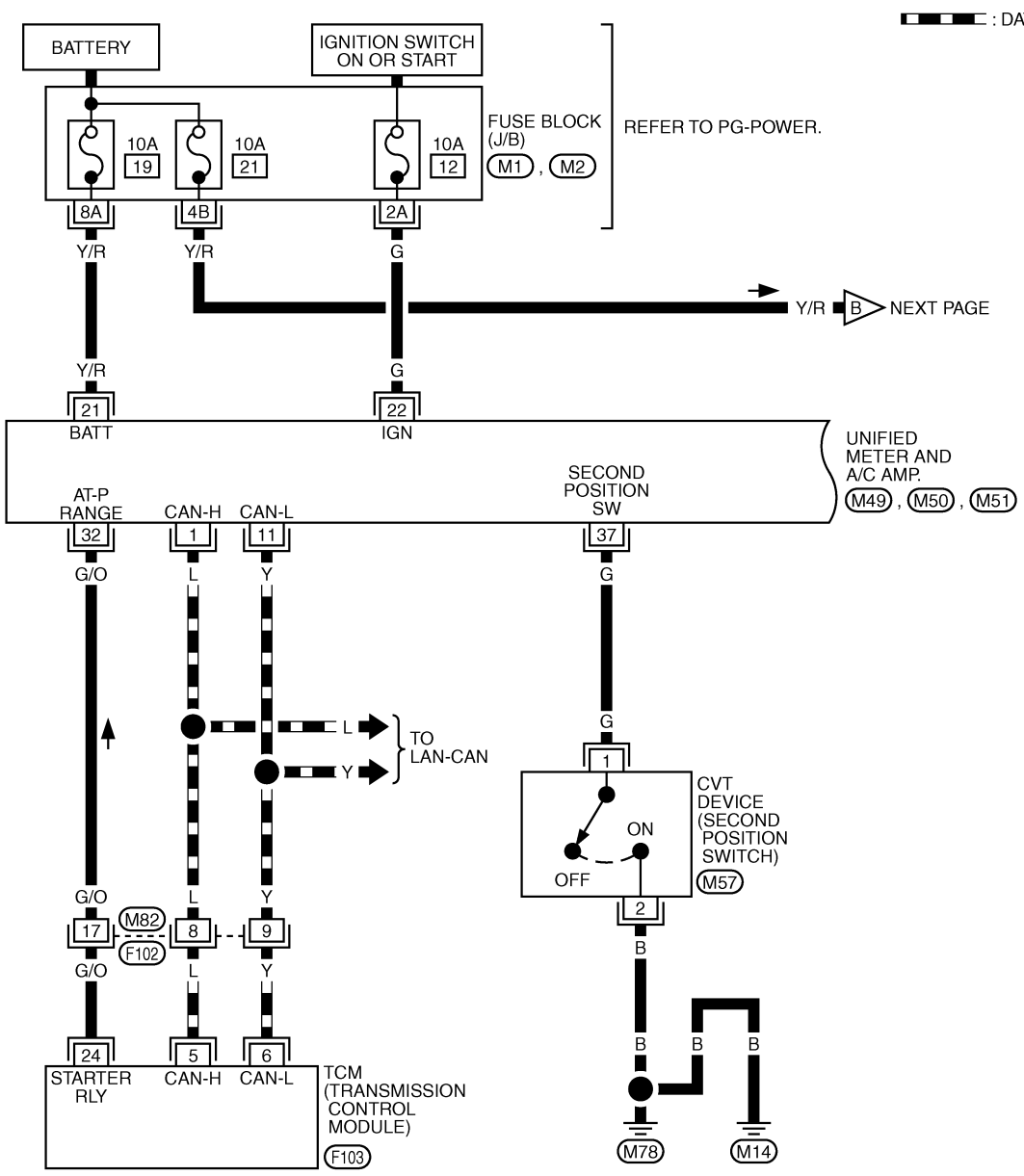


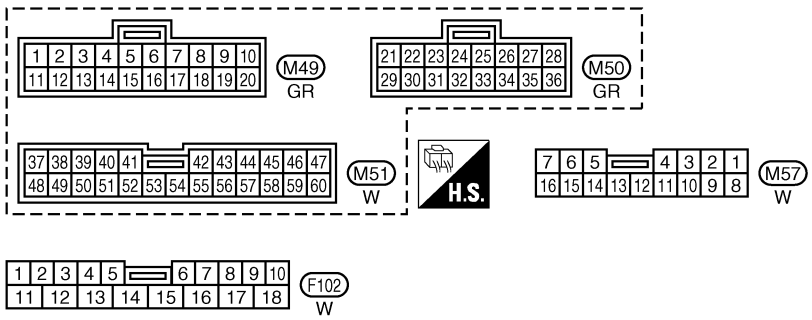


REFER TO THE FOLLOWING.
M1 -FUSE BLOCK-JUNCTION BOX (J/B)

TKWB0104E

DI-CVTIND-03

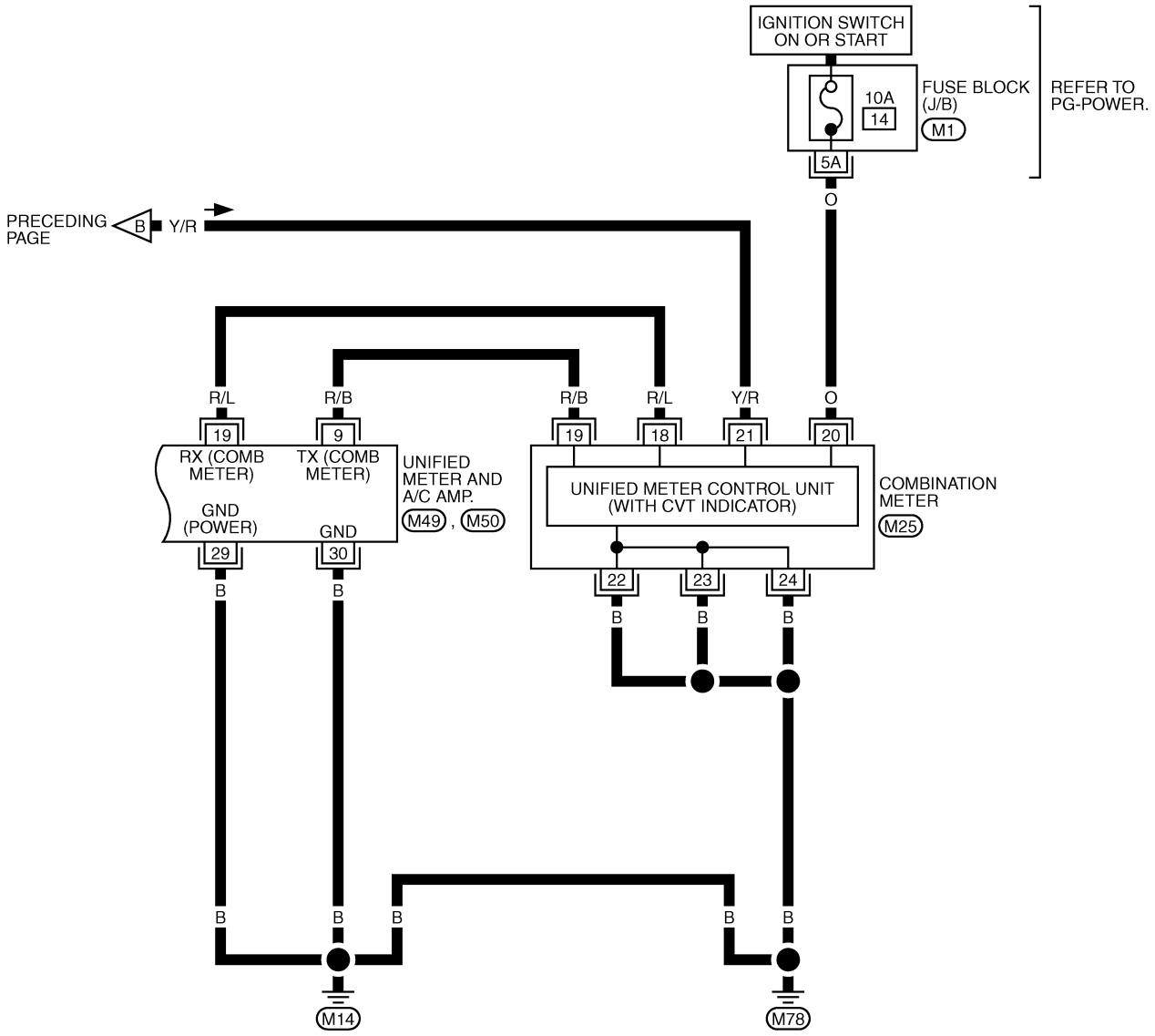


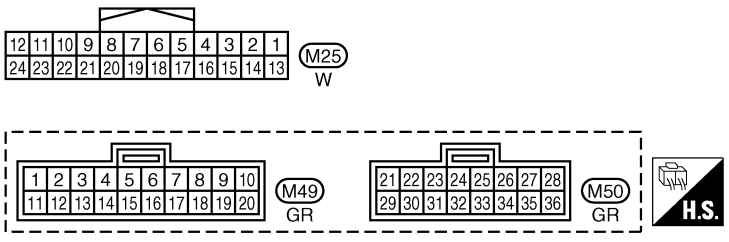


REFER TO THE FOLLOWING.
M1 , M2 -FUSE BLOCK-JUNCTION BOX (J/B)
F103 -ELECTRICAL UNITS

TKWB0123E

DI-CVTIND-04





REFER TO THE FOLLOWING.
M1 -FUSE BLOCK-JUNCTION BOX (J/B)

TKWB0124E

CVT Indicator Is Malfunction

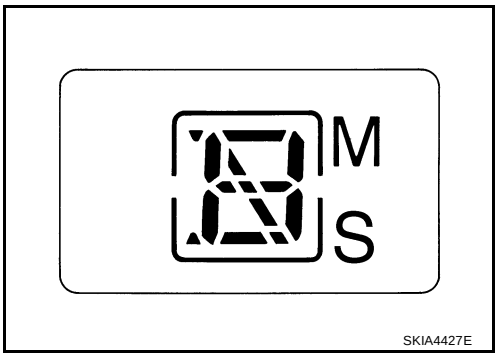
NKS001T5

1. CHECK SEGMENTS OF CVT INDICATOR

Perform self-diagnosis mode of combination meter. Refer to DI-15, "OPERATION PROCEDURE" .

Are all segments displayed?

YES >> GO TO 2.
NO >> Replace combination meter.



SKIA4427E

2. CHECK UNIFIED METER AND A/C AMP. (CONSULT-II)

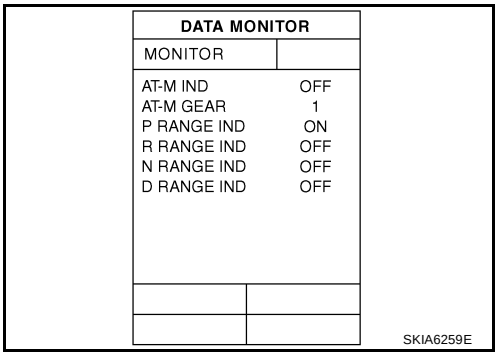
Perform self-diagnosis of unified meter and A/C amp. Refer to DI-30, "CONSULT-II Function (METER A/C AMP)" .

Self-diagnosis results

No malfunction detected >> GO TO 3.
Malfunction detected >> Check applicable parts, and repair or replace corresponding parts.

3. CHECK UNIFIED METER AND A/C AMP. INPUT SIGNAL

1. Select “DATA MONITOR” of “METER A/C AMP” on CONSULT-II.
2. Confirm each indication on the monitor when operating the selector lever.



SKIA6259E

CONSULT-II display	Switch operation	Operation status
AT-M IND	Manual mode range	ON
	Except for manual mode range	OFF
AT-M GEAR	Manual mode range (shift-up or down)	5-1
	Except for manual mode range	1
P RANGE IND	P range position	ON
	Except for P range position	OFF
R RANGE IND	R range position	ON
	Except for R range position	OFF
N RANGE IND	N range position	ON
	Except for N range position	OFF
D RANGE IND	D range position	ON
	Except for D range position	OFF
L RANGE IND*	L range position	ON
	Except for L range position	OFF
S RANGE IND*	S range position	ON
	Except for S range position	OFF

NOTE:
*: Without manual mode

OK or NG

OK >> Replace combination meter.
NG >> GO TO 4.

4. CHECK TCM (CONSULT-II)

Perform self-diagnosis of TCM. Refer to CVT-56, "CONSULT-II Function (TRANSMISSION)" .

Self-diagnosis results

No malfunction detected >> Check TCM input/output signal. Refer to CVT-53, "TCM Input/Output Signal Reference Values" .

Malfunction detected >> Check applicable parts, and repair or replace corresponding parts.

WARNING CHIME

PFP:24814

System Description

NKS001T6

- Buzzer for warning chime system is installed in the combination meter.
- The buzzer sounds when the combination meter receives buzzer output signal from each unit through unified meter and A/C amp.

POWER SUPPLY AND GROUND CIRCUIT

Power is supplied at all times

- through 50A fusible link (letter **F** , located in the fuse and fusible link block)
- to BCM terminal 55,
- through 10A fuse [No. 18, located in the fuse block (J/B)]
- to BCM terminal 42,
- through 10A fuse [No. 21, located in the fuse block (J/B)]
- to key switch terminal 3 (without Intelligent Key), and
- to combination meter terminal 21,
- through 10A fuse [No. 22, located in the fuse block (J/B)]
- to key switch and ignition knob switch terminals 1 and 3 (with Intelligent Key),
- through 10A fuse [No. 19, located in the fuse block (J/B)]
- to unified meter and A/C amp. terminal 21.

With ignition switch 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. 12, located in the fuse block (J/B)]
- to unified meter and A/C amp. terminal 22,
- through 10A fuse [No. 14, located in the fuse block (J/B)]
- to combination meter terminal 20.

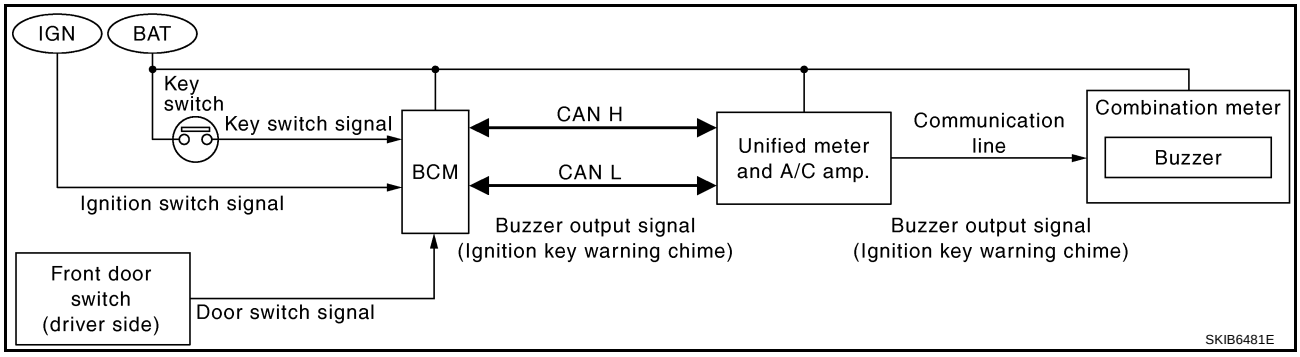
Ground is supplied

- to BCM terminal 52
- through grounds M14 and M78,
- to unified meter and A/C amp. terminals 29 and 30
- through grounds M14 and M78,
- to combination meter terminals 22, 23 and 24
- through grounds M14 and M78.

IGNITION KEY WARNING CHIME (WITHOUT INTELLIGENT KEY)

With the key inserted into the key switch, and the ignition switch in OFF or ACC position, when driver's door is opened, the ignition key warning chime will sound.

- BCM detects key inserted into the key switch, ignition switch in OFF or ACC position, and front door switch (driver side) ON. And then transmits buzzer output signal (ignition key warning chime) to unified meter and A/C amp. with CAN communication.
- Unified meter and A/C amp. transmits buzzer output signal (ignition key warning chime) to combination meter with communication line.
- When combination meter receives buzzer output signal (ignition key warning chime), it sounds the buzzer.

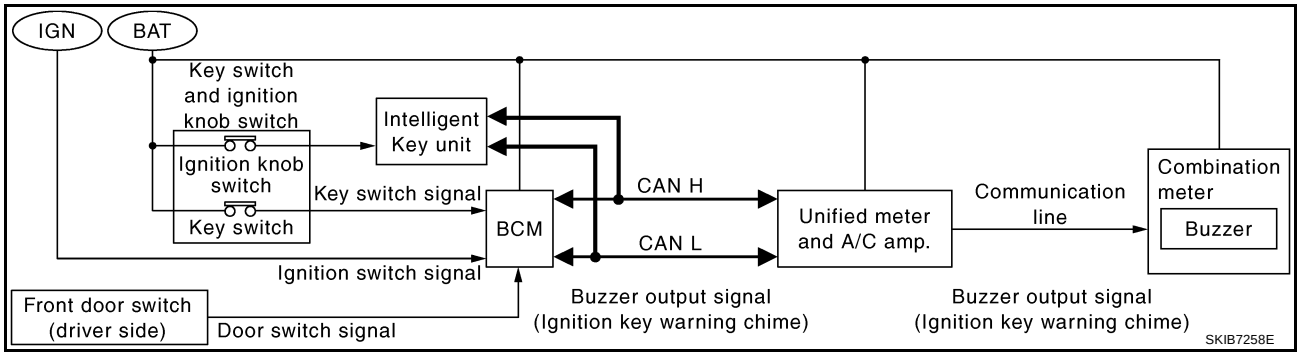


IGNITION KEY WARNING CHIME (WITH INTELLIGENT KEY)

When Mechanical Key Is Used

With the key inserted into the ignition switch, and the ignition switch LOCK or ACC position, when driver's door is opened, the warning chime will sound.

- BCM detects key inserted into the key switch, ignition switch in LOCK or ACC position, and front door switch (driver side) ON. And then transmits buzzer output signal (ignition key warning chime) to unified meter and A/C amp. with CAN communication.
- Unified meter and A/C amp. transmits buzzer output signal (ignition key warning chime) to combination meter with communication line.
- When combination meter receives buzzer output signal (ignition key warning chime), it sounds the buzzer.



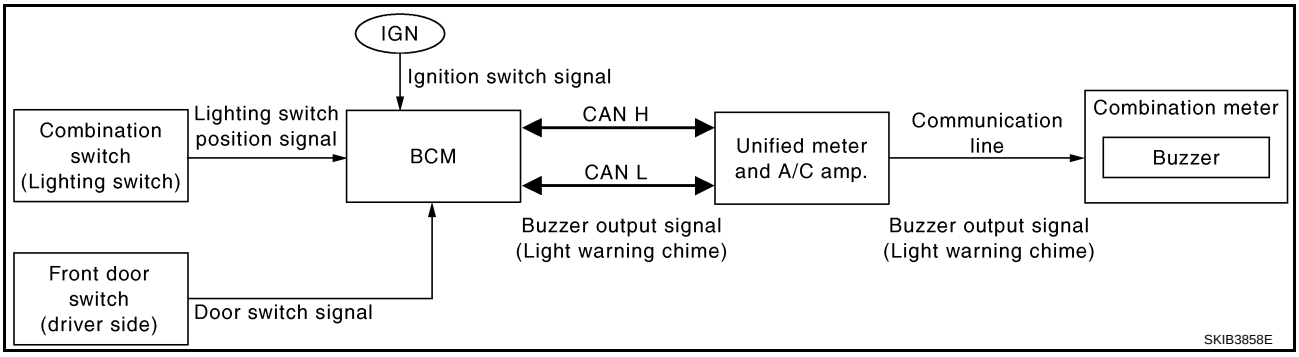
When Intelligent Key Is Carried With The Driver

Refer to BL-98, "WARNING CHIME FUNCTION" .

LIGHT WARNING CHIME

With ignition switch in OFF or ACC position, driver's door is opened, and lighting switch in 1ST or 2ND position, the light warning chime will sound.

- BCM detects ignition switch in OFF or ACC position, front door switch (driver side) ON, and lighting switch in 1ST or 2ND position. And then transmits buzzer output signal (light warning chime) to unified meter and A/C amp. with CAN communication.
- Unified meter and A/C amp. transmits buzzer output signal (light warning chime) to combination meter with communication line.
- When combination meter receives buzzer output signal (light warning chime), it sounds the buzzer.



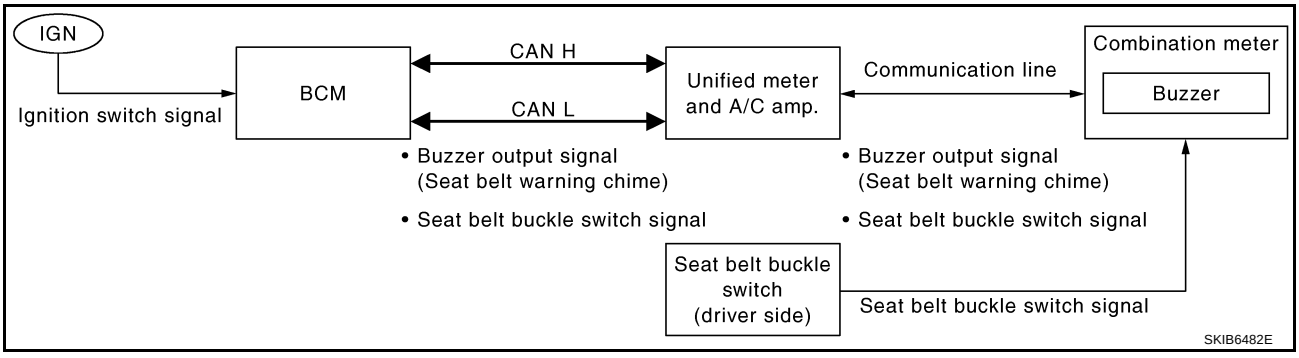
NOTE:

For further details of combination switch, refer to LT-147, "Combination Switch Reading Function" .

SEAT BELT WARNING CHIME

With ignition switch turned ON and driver's seat belt unfastened, seat belt warning chime will sound for approximately 6 seconds.

- Combination meter reads a ON/OFF signal from seat belt buckle switch (driver side), and transmits seat belt buckle switch signal to unified meter and A/C amp. with communication line.
- BCM receives seat belt buckle switch signal from unified meter and A/C amp. with CAN communication.
- BCM detects ignition switch turned ON and seat belt buckle switch (driver side) ON. And then transmits buzzer output signal (seat belt warning chime) to unified meter and A/C amp. with CAN communication.
- Unified meter and A/C amp. transmits buzzer output signal (seat belt warning chime) to combination meter with communication line.
- When combination meter receives buzzer output signal (seat belt warning chime), it sounds the buzzer.



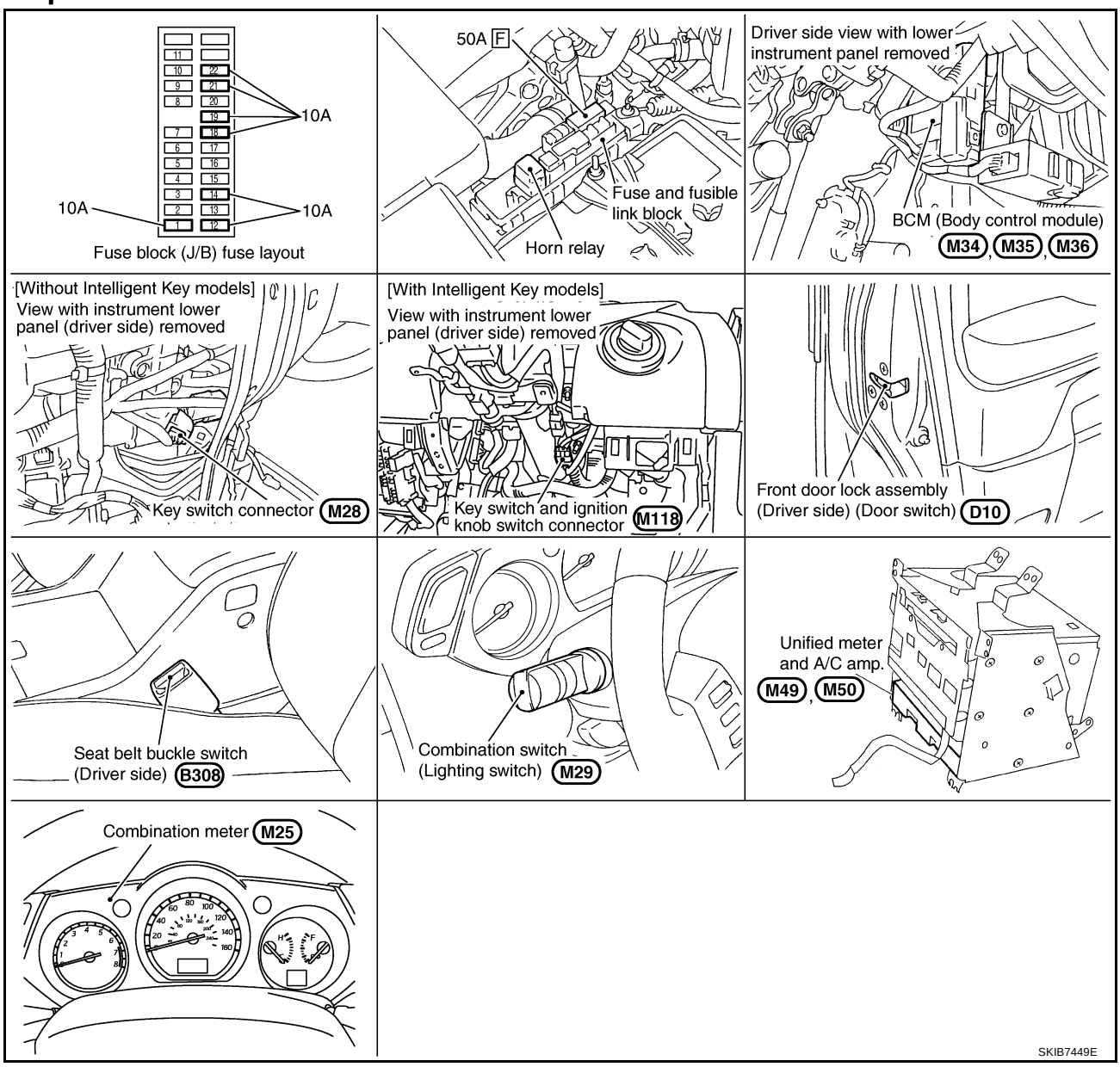
NOTE:

When ignition key warning chime, light warning chime, and seat belt warning chime should be conducted 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

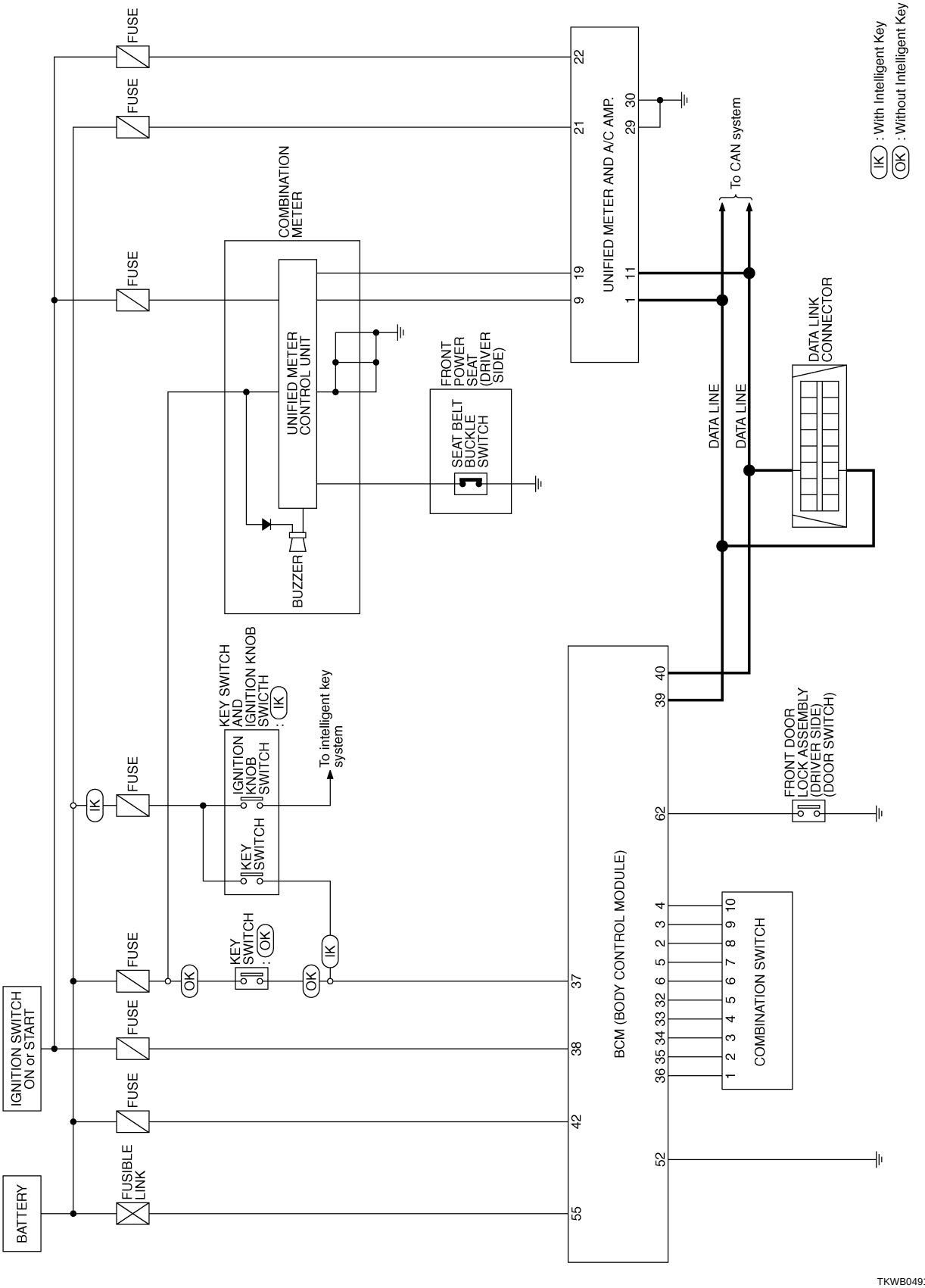
Component Parts and Harness Connector Location

NKS001T9



Schematic

NKS001TA

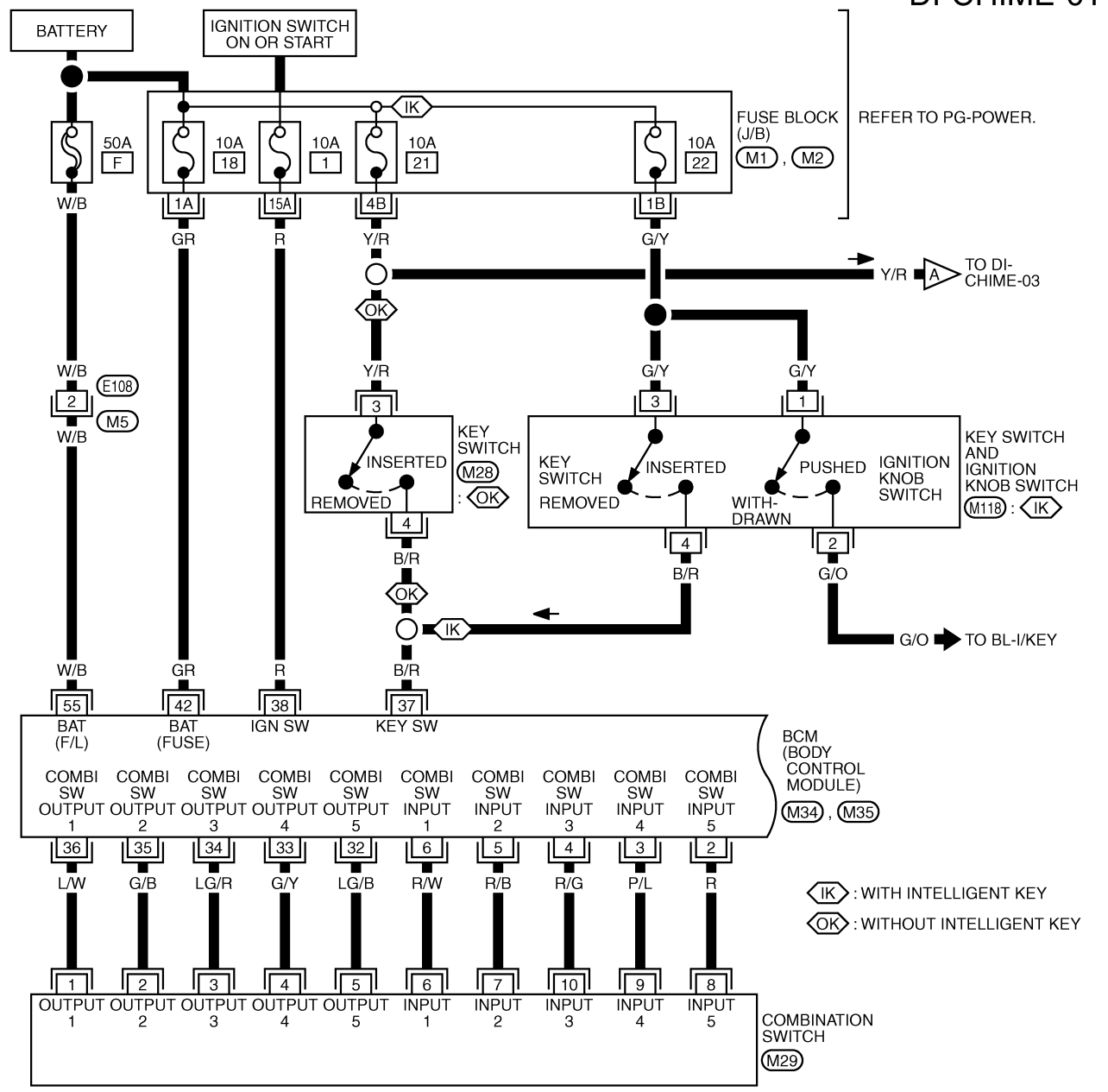


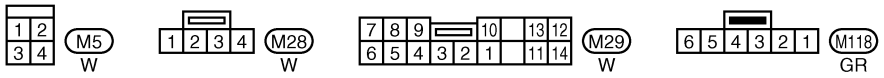
TKWB0491E

Wiring Diagram — CHIME —

NKS001TB

DI-CHIME-01





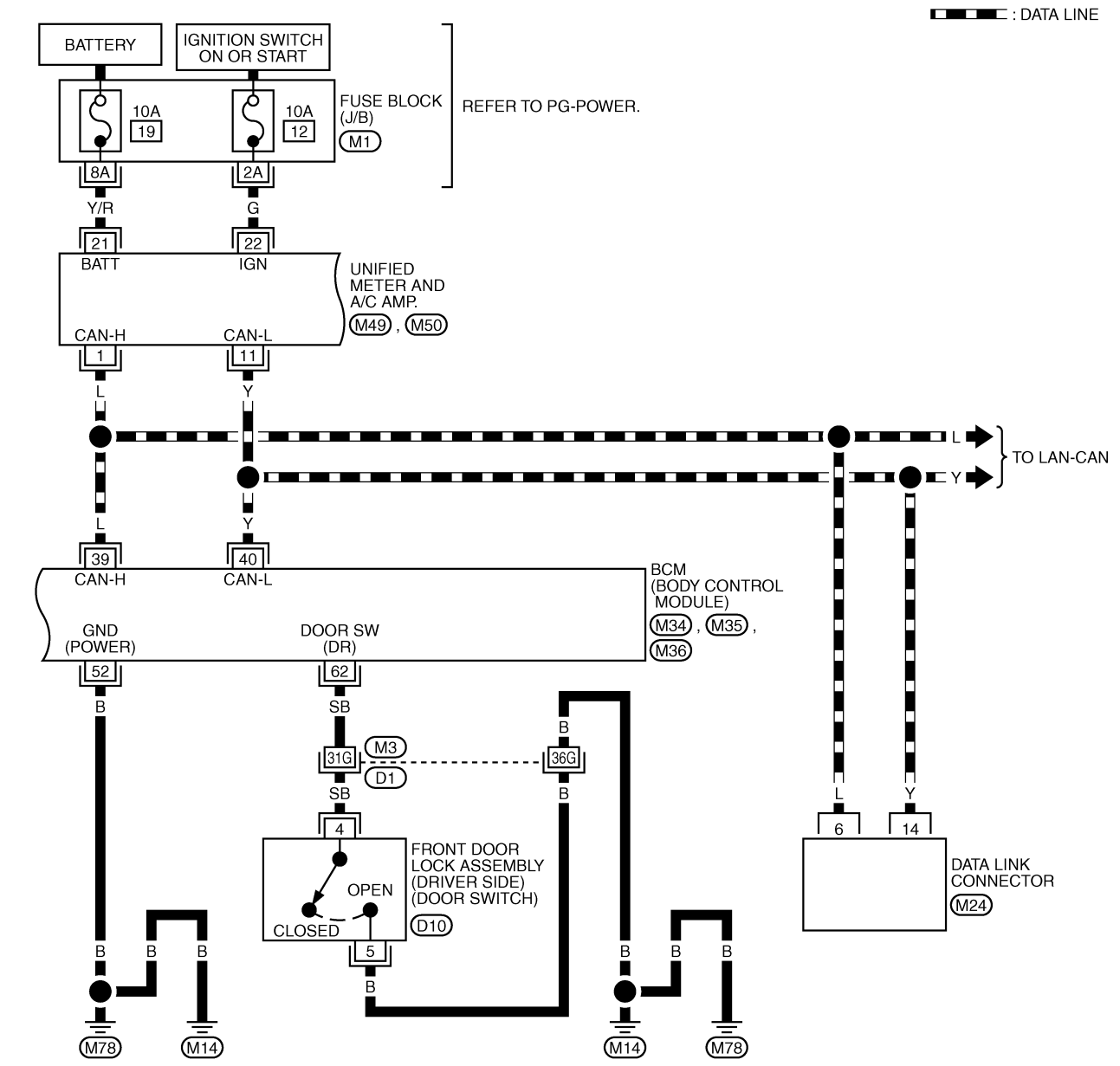
REFER TO THE FOLLOWING.

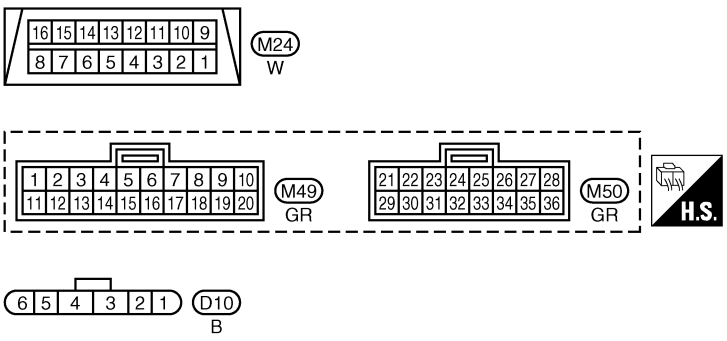
M1 , M2 -FUSE BLOCK-JUNCTION BOX (J/B)

M34 , M35 -ELECTRICAL UNITS

TKWB0492E

DI-CHIME-02





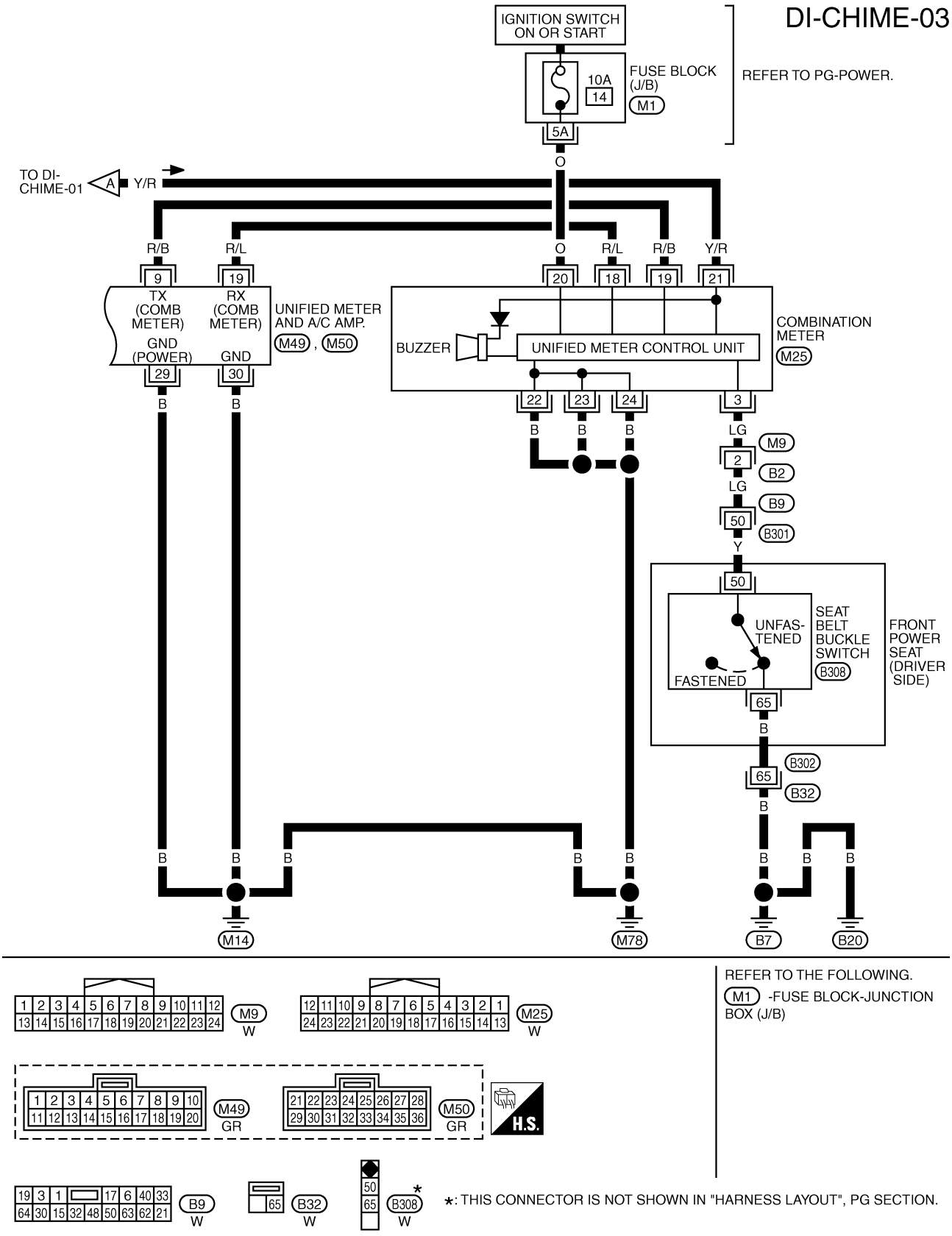
REFER TO THE FOLLOWING.

D1 -SUPER MULTIPLE JUNCTION (SMJ)

M1 -FUSE BLOCK-JUNCTION BOX (J/B)

M34, M35, M36 -ELECTRICAL UNITS

TKWB2613E

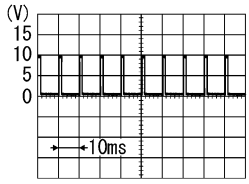
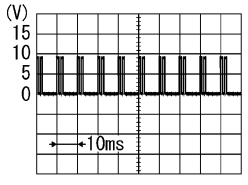
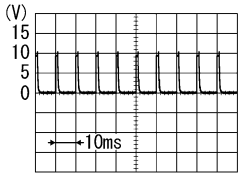
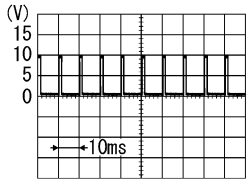
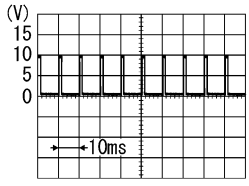

DI-CHIME-03
IGNITION SWITCH ON OR START
FUSE BLOCK (J/B)
M1
10A
14
5A
REFER TO PG-POWER.
TO DI-CHIME-01
A
Y/R
O
R/B
R/L
O
R/L
R/B
Y/R
9
19
20
18
19
21
TX (COMB METER)
RX (COMB METER)
GND (POWER)
GND
UNIFIED METER AND A/C AMP.
M49
M50
BUZZER
UNIFIED METER CONTROL UNIT
COMBINATION METER
M25
29
30
22
23
24
3
B
LG
M9
2
B2
LG
B9
50
B301
Y
50
UNFAS-TENED
FASTENED
SEAT BELT BUCKLE SWITCH
B308
FRONT POWER SEAT (DRIVER SIDE)
65
B302
65
B32
M14
M78
B7
B20
REFER TO THE FOLLOWING.
M1 -FUSE BLOCK-JUNCTION BOX (J/B)
M9
W
M25
W
M49
GR
M50
GR
H.S.
B9
W
65
B32
W
50
65
B308
W
*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.
TKWB0494E

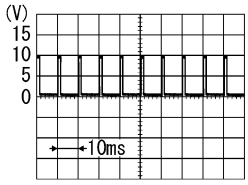
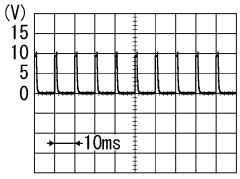
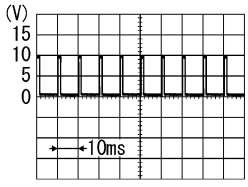
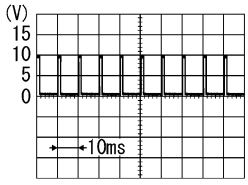
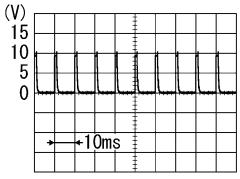
Terminals and Reference Value for BCM

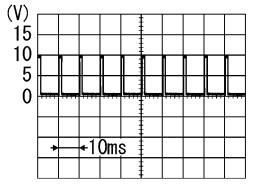
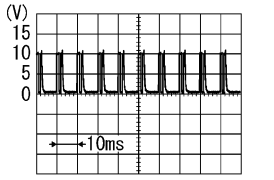
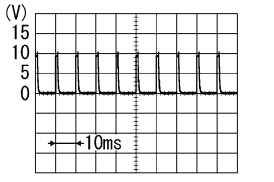
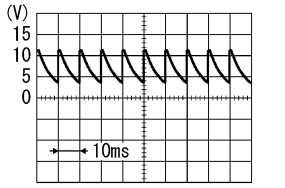
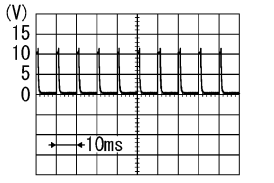
NKS001TC

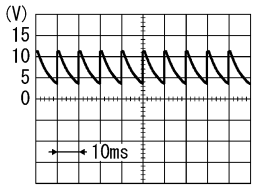
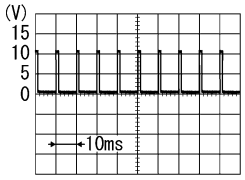
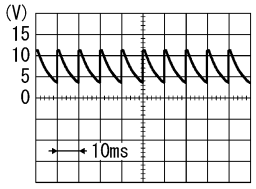
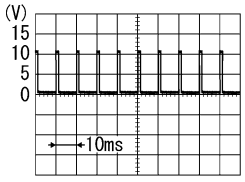
CAUTION:

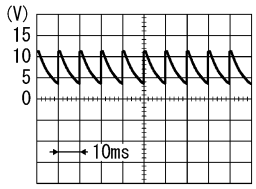
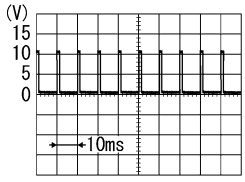
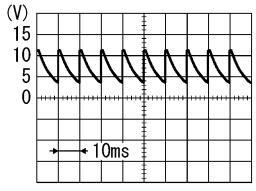
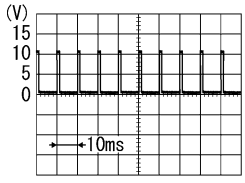
- **Check combination switch system terminal waveform under the loaded condition with lighting switch, turn signal and wiper switch OFF not to be fluctuated by overloaded.**
- **Turn wiper dial position to 4 except when checking waveform or voltage of wiper dial position. Wiper dial position can be confirmed on CONSULT-II. Refer to LT-152, "DATA MONITOR" .**

Terminal No.	Wire color	Signal name	Measuring condition			Reference value (V)
			Ignition switch	Operation or condition		
2	R	Combination switch input 5	ON	Lighting, turn, wiper switch (Wiper intermittent dial position 4)	OFF	Approx. 0
					Any of the conditions below ● Lighting switch 1ST ● Lighting switch HIGH beam (Operates only HIGH beam switch) ● Turn signal switch to right	 PKIB4959J Approx. 1.0
					Lighting switch 2ND	 PKIB4953J Approx. 2.0
3	P/L	Combination switch input 4	ON	Lighting, turn, wiper switch (Wiper intermittent dial position 4)	OFF	Approx. 0
					Front fog lamp switch (Operates only front fog lamp switch)	 PKIB4955J Approx. 0.8
					Any of the conditions below ● Lighting switch 2ND ● Lighting switch PASSING (Operates only PASSING switch) ● Turn signal switch to left	 PKIB4959J Approx. 1.0
4	R/G	Combination switch input 3	ON	Lighting, turn, wiper switch (Wiper intermittent dial position 4)	OFF	Approx. 0
					Any of the conditions below ● Lighting switch AUTO ● Front wiper switch MIST ● Front wiper switch INT ● Front wiper switch LO	 PKIB4959J Approx. 1.0

Terminal No.	Wire color	Signal name	Measuring condition			Reference value (V)
			Ignition switch	Operation or condition		
5	R/B	Combination switch input 2	ON	Lighting, turn, wiper switch	OFF	Approx. 0
					Any of the conditions below ● Front washer switch (Wiper intermittent dial position 4) ● Rear washer switch (Wiper intermittent dial position 4) ● Wiper intermittent dial position 1 ● Wiper intermittent dial position 5 ● Wiper intermittent dial position 6	 PKIB4959J Approx. 1.0
					Rear wiper switch ON (Wiper intermittent dial position 4)	 PKIB4955J Approx. 0.8
4	R/G	Combination switch input 3	ON	Lighting, turn, wiper switch (Wiper intermittent dial position 4)	OFF	Approx. 0
					Any of the conditions below ● Lighting switch AUTO ● Front wiper switch MIST ● Front wiper switch INT ● Front wiper switch LO	 PKIB4959J Approx. 1.0
5	R/B	Combination switch input 2	ON	Lighting, turn, wiper switch	OFF	Approx. 0
					Any of the conditions below ● Front washer switch (Wiper intermittent dial position 4) ● Rear washer switch (Wiper intermittent dial position 4) ● Wiper intermittent dial position 1 ● Wiper intermittent dial position 5 ● Wiper intermittent dial position 6	 PKIB4959J Approx. 1.0
					Rear wiper switch ON (Wiper intermittent dial position 4)	 PKIB4955J Approx. 0.8

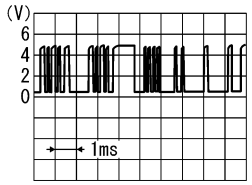
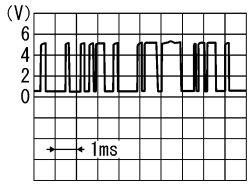
Terminal No.	Wire color	Signal name	Measuring condition			Reference value (V)
			Ignition switch	Operation or condition		
6	R/W	Combination switch input 1	ON	Lighting, turn, wiper switch	OFF	Approx. 0
					Any of the conditions below ● Front wiper switch HI (Wiper intermittent dial position 4) ● Rear wiper switch INT (Wiper intermittent dial position 4) ● Wiper intermittent dial position 3	 PKIB4959J Approx. 1.0
					Any of the conditions below ● Wiper intermittent dial position 1 ● Wiper intermittent dial position 2	 PKIB4952J Approx. 1.7
					Any of the conditions below ● Wiper intermittent dial position 6 ● Wiper intermittent dial position 7	 PKIB4955J Approx. 0.8
32	LG/B	Combination switch output 5	ON	Lighting, turn, wiper switch	OFF (Wiper intermittent dial position 4)	 PKIB4960J Approx. 7.2
					Any of the conditions below ● Front fog lamp switch (Operates only front fog lamp switch) ● Rear wiper switch ON (Wiper intermittent dial position 4) ● Wiper intermittent dial position 1 ● Wiper intermittent dial position 2 ● Wiper intermittent dial position 6 ● Wiper intermittent dial position 7	 PKIB4956J Approx. 1.0

Ter-minal No.	Wire color	Signal name	Measuring condition			Reference value (V)
			Ignition switch	Operation or condition		
33	G/Y	Combination switch output 4	ON	Lighting, turn, wiper switch	OFF (Wiper intermittent dial position 4)	 PKIB4960J Approx. 7.2
					Any of the conditions below ● Lighting switch AUTO (Wiper dial position 4) ● Lighting switch 1ST (The same result with lighting switch 2ND) (Wiper intermittent dial position 4) ● Rear wiper switch INT (Wiper intermittent dial position 4) ● Wiper intermittent dial position 1 ● Wiper intermittent dial position 5 ● Wiper intermittent dial position 6	 PKIB4958J Approx. 1.2
34	LG/R	Combination switch output 3	ON	Lighting, turn, wiper switch	OFF	 PKIB4960J Approx. 7.2
					Any of the conditions below ● Lighting switch 2ND ● Lighting switch HI beam (Operates only HI beam switch) ● Rear washer switch (Wiper intermittent dial position 4) ● Wiper intermittent dial position 1 ● Wiper intermittent dial position 2 ● Wiper intermittent dial position 3	 PKIB4958J Approx. 1.2

Terminal No.	Wire color	Signal name	Measuring condition			Reference value (V)
			Ignition switch	Operation or condition		
35	G/B	Combination switch output 2	ON	Lighting, turn, wiper switch (Wiper intermittent dial position 4)	OFF	 PKIB4960J Approx. 7.2
					Any of the conditions below ● Lighting switch 2ND ● Lighting switch PASSING (Operates only PASSING switch) ● Front wiper switch INT ● Front wiper switch HI	 PKIB4958J Approx. 1.2
36	L/W	Combination switch output 1	ON	Lighting, turn, wiper switch (Wiper intermittent dial position 4)	OFF	 PKIB4960J Approx. 7.2
					Any of the conditions below ● Turn signal switch to right ● Turn signal switch to left ● Front wiper switch MIST ● Front wiper switch LO ● Front washer switch	 PKIB4958J Approx. 1.2
37	B/R	Key switch signal	OFF	Key is removed.		Approx. 0
				Key is inserted.		Approx. 12
38	R	Ignition power supply	ON	—		Battery voltage
39	L	CAN H	—	—		—
40	Y	CAN L	—	—		—
42	GR	Battery power supply	OFF	—		Battery voltage
52	B	Ground (Power)	ON	—		Approx. 0
55	W/B	Battery power supply (F/L)	OFF	—		Battery voltage
62	SB	Driver side door switch signal	OFF	ON (Open)		Approx. 0
				OFF (Closed)		Approx. 12

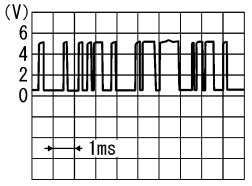
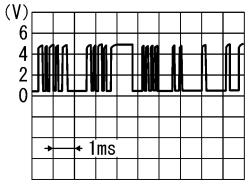
Terminals and Reference Value for Unified Meter and A/C Amp.

NKS001TD

Terminal No.	Wire color	Item	Measuring or condition		Reference value (V)
			Ignition switch	Operation or condition	
1	L	CAN H	OFF	—	—
9	R/B	TX communication line (To combination meter)	ON	—	 SKIA3362E
11	Y	CAN L	OFF	—	—
19	R/L	RX communication line (From combination meter)	ON	—	 SKIA3361E
21	Y/R	Battery power supply	OFF	—	Battery voltage
22	G	Ignition power supply	ON	—	Battery voltage
29	B	Ground (Power)	ON	—	Approx. 0
30		Ground	ON	—	Approx. 0

Terminals and Reference Value for Combination Meter

NKS001TE

Terminal No.	Wire color	Item	Measuring condition		Reference value (V)
			Ignition switch	Operation or condition	
3	LG	Seat belt buckle switch (Driver side)	ON	Unfastened (ON)	Approx. 0
				Fastened (OFF)	Approx. 12
18	R/L	TX communication line (To unified meter and A/C amp.)	ON	—	 SKIA3361E
19	R/B	RX communication line (From unified meter and A/C amp.)	ON	—	 SKIA3362E
20	O	Ignition power supply	ON	—	Battery voltage
21	Y/R	Battery power supply	OFF	—	Battery voltage
22	B	Ground	ON	—	Approx. 0
23					
24					

CONSULT-II Function (METER A/C AMP)

NKS002DH

Refer to DI-30, "CONSULT-II Function (METER A/C AMP)" .

CONSULT-II Function (BCM)

NKS001TG

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

DIAGNOSIS ITEMS DESCRIPTION

System	Test Item	Diagnosis mode	Description	Reference page
BCM	BUZZER	DATA MONITOR	Displays BCM input data in real time.	DI-71
		ACTIVE TEST	Operation of electrical loads can be checked by sending driving signal to them.	DI-71
	BCM	SELF-DIAG RESULTS	BCM checks the conditions and displays memorized error.	DI-72

CONSULT-II BASIC OPERATION PROCEDURE

Refer to GI-37, "CONSULT-II Start Procedure" .

DATA MONITOR

Operation Procedure

1. Touch “BUZZER” on “SELECT TEST ITEM” screen.
2. Touch “DATA MONITOR” on “SELECT DIAG MODE” screen.
3. Touch “ALL SIGNALS” or “SELECTION FROM MENU” on “DATA MONITOR” screen.

ALL SIGNALS	Monitors all items.
SELECTION FROM MENU	Selects and monitors items.

4. If “SELECTION FROM MENU” is selected, touch the desired monitor item. If “ALL SIGNALS” is selected, all items required to control are monitored.
5. Touch “START”.
6. During monitoring, touching “RECORD” can start recording the monitored item status.

Display Item List

Monitored item	ALL SIGNALS	SELECTION FROM MENU	Contents
IGN ON SW	X	X	Indicates [ON/OFF] condition of ignition switch.
KEY ON SW	X	X	Indicates [ON/OFF] condition of key switch.
DOOR SW-DR	X	X	Indicates [ON/OFF] condition of front door switch (driver side).
LIGHT SW 1ST	X	X	Indicates [ON/OFF] condition of lighting switch.
BUCKLE SW	X	X	Indicates [ON/OFF] condition of seat belt buckle switch (driver side).

ACTIVE TEST

Operation Procedure

1. Touch “BUZZER” on “SELECT TEST ITEM” screen.
2. Touch “ACTIVE TEST” on “SELECT DIAG MODE” screen.
3. Touch the item to be tested, and check the operation.
4. During the operation check, touching “OFF” deactivates the operation.

Display Item List

Test item	Malfunction is detected when…
LIGHT WARN ALM	This test is able to check light warning chime operation.
IGN KEY WARN ALM	This test is able to check ignition key warning chime operation.
SEAT BELT WARN TEST	This test is able to check seat belt warning chime operation.

SELF-DIAG RESULTS

Operation Procedure

1. Touch “BCM” on “SELECT TEST ITEM” screen.
2. Touch “SELF-DIAG RESULTS” on “SELECT DIAG MODE” screen.
3. Self-diagnosis results are displayed.

Display Item List

Monitored Item	CONSULT-ll 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 “LAN system”. Refer to LAN-3, "Precautions When Using CONSULT-II" .

Trouble Diagnosis

NKS001TF

HOW TO PERFORM TROUBLE DIAGNOSIS

1. Confirm the symptom or customer complaint.
2. Understand operation description and function description. Refer to DI-57, "System Description" .
3. Perform the preliminary check. Refer to DI-72, "PRELIMINARY INSPECTION" .
4. Referring to trouble diagnosis chart, make sure the cause of the malfunction and repair or replace applicable parts. Refer to DI-72, "Symptom Chart" .
5. Does the warning chime operate normally? If so, GO TO 6. If not, GO TO 3.
6. INSPECTION END

PRELIMINARY INSPECTION

1. CHECK BCM (CONSULT-II)

Perform self-diagnosis of BCM. Refer to DI-71, "CONSULT-II Function (BCM)" .

Self-diagnosis results

No malfunction detected >> GO TO 2.
Malfunction detected >> Check applicable parts, and repair or replace corresponding parts.

2. CHECK UNIFIED METER AND A/C AMP. (CONSULT-II)

Perform self-diagnosis of unified meter and A/C amp. Refer to DI-30, "CONSULT-II Function (METER A/C AMP)" .

Self-diagnosis results

No malfunction detected >> INSPECTION END
Malfunction detected >> Check applicable parts, and repair or replace corresponding parts.

Symptom Chart

NKS002DI

Symptom	Diagnoses/Service procedure
All warning chimes do not activate.	Perform the following inspections. 1. DI-74, "Combination Meter Buzzer Circuit Inspection". 2. DI-73, "Power Supply and Ground Circuit Inspection". Replace BCM, found normal function in the above inspections.

Symptom		Diagnoses/Service procedure
Ignition key warning chime does not activate.	Without Intelligent Key.	Perform the following inspections. 1. DI-75, "Driver Side Door Switch Signal Inspection". 2. DI-76, "Key Switch Signal Inspection (Without Intelligent Key)". Replace BCM, found normal function in the above inspections.
	With Intelligent Key, when mechanical key is used.	Perform the following inspections. 1. DI-75, "Driver Side Door Switch Signal Inspection". 2. DI-78, "Key Switch and Ignition Knob Switch Signal Inspection (With Intelligent Key, When Mechanical Key Is Used)". Replace BCM, found normal function in the above inspections.
	With Intelligent Key, when Intelligent Key is carried with the driver.	Refer to BL-131, "WARNING CHIME FUNCTION MALFUNCTION" .
Light warning chime does not activate.		Perform the following inspections. 1. DI-75, "Driver Side Door Switch Signal Inspection". 2. DI-79, "Lighting Switch Signal Inspection". Replace BCM, found normal function in the above inspections.
Seat belt warning chime does not activate.		Perform DI-79, "Seat Belt Buckle Switch (Driver Side) Signal Inspection" . Replace BCM, found normal function in the above inspection.

Power Supply and Ground Circuit Inspection

NKS002DJ

1. CHECK FUSE AND FUSIBLE LINK

Check for blown BCM fuses and fusible link.

Power source	Fuse and fusible link No.
Battery power supply	F
	18
Ignition power supply	1

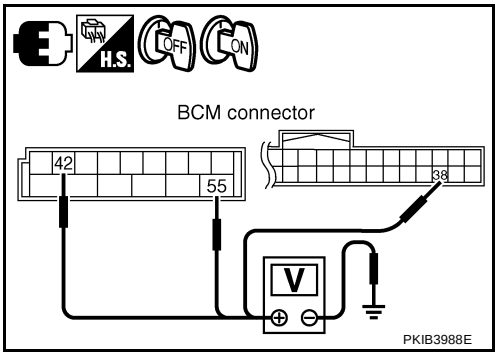
OK or NG

OK >> GO TO 2.
NG >> Be sure to eliminate cause of malfunction before installing new fuse or fusible link. Refer to PG-3, "POWER SUPPLY ROUTING CIRCUIT" .

2. CHECK POWER SUPPLY CIRCUIT

Check voltage between BCM harness connector terminals and ground.

Terminals			Ignition switch position	
(+)		(–)	OFF	ON
Connector	Terminal			
M35	55	Ground	Battery voltage	Battery voltage
	42			
M34	38		0 V	Battery voltage



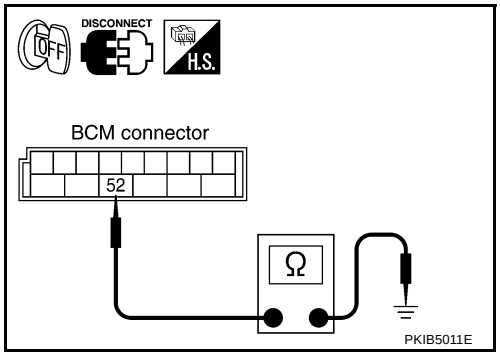
OK or NG

OK >> GO TO 3.
NG >> Check harness between BCM and fuse.

3. CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect BCM connector.
3. Check continuity between BCM harness connector M35 terminal 52 and ground.

52 – Ground : Continuity should exist.



OK or NG

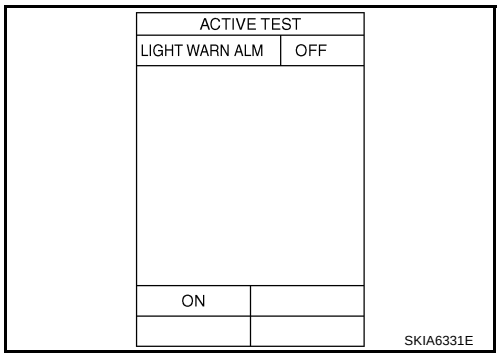
OK >> INSPECTION END
NG >> Repair harness or connector.

Combination Meter Buzzer Circuit Inspection

NKS001TH

1. CHECK OPERATION OF COMBINATION METER BUZZER

1. Select “BUZZER” of “BCM” on CONSULT-ll.
2. Perform “LIGHT WARN ALM”, “IGN KEY WARN ALM” or “SEAT BELT WARN TEST” of “ACTIVE TEST”.



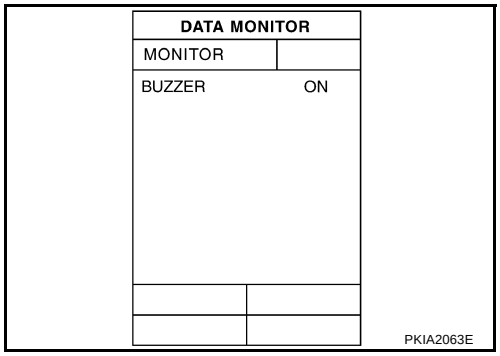
Does chime sound?

YES >> GO TO 4.
NO >> GO TO 2.

2. CHECK UNIFIED METER AND A/C AMP. INPUT SIGNAL

1. Select “METER A/C AMP” on CONSULT-II.
2. With “DATA MONITOR”, confirm “BUZZER” under the condition of buzzer input. (Seat belt warning chime, turn signal lamp operate, etc.)

“BUZZER”
Under the condition of buzzer input : ON
Except above : OFF



OK or NG

OK >> GO TO 3.
NG >> Replace BCM. Refer to BCS-14, "Removal and Installation of BCM" .

3. CHECK BATTERY POWER SUPPLY CIRCUIT OF COMBINATION METER

Check battery power supply circuit of combination meter. Refer to DI-17, "Power Supply and Ground Circuit Inspection" .

OK or NG

OK >> Replace combination meter.
NG >> Check harness between combination meter and fuse.

4. CHECK BATTERY POWER SUPPLY CIRCUIT OF UNIFIED METER AND A/C AMP.

Check battery power supply circuit of unified meter and A/C amp. Refer to DI-32, "Power Supply and Ground Circuit Inspection" .

OK or NG

OK >> INSPECTION END
NG >> Check harness between unified meter and A/C amp. and fuse.

Driver Side Door Switch Signal Inspection

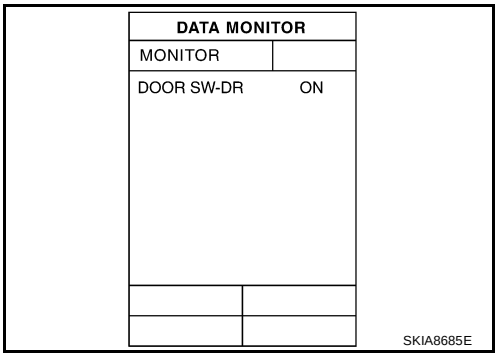
NKS001TI

1. CHECK BCM INPUT SIGNAL

With CONSULT-II

1. Select “BCM”.
2. With “DATA MONITOR” of “BUZZER”, confirm “DOOR SW-DR” when the driver side door is operated.

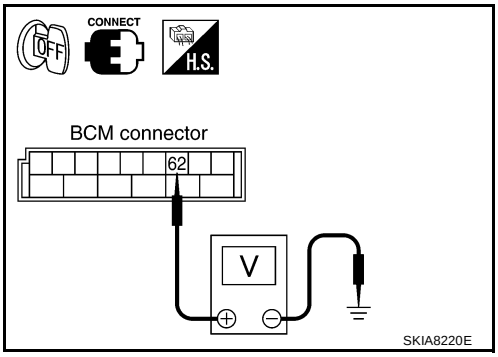
“DOOR SW-DR”
When driver side door is opened : ON
When driver side door is closed : OFF



Without CONSULT-II

Check voltage between BCM harness connector M36 terminal 62 and ground.

62 – Ground
When driver side door is opened : Approx. 0 V
When driver side door is closed : Approx. 12 V



OK or NG

OK >> INSPECTION END
NG >> GO TO 2.

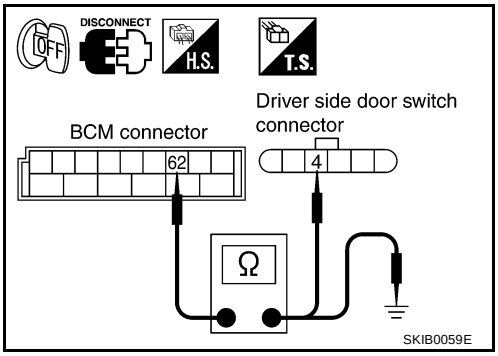
2. CHECK DRIVER SIDE DOOR SWITCH CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect BCM connector and driver side door switch connector.
3. Check continuity between BCM harness connector M36 terminal 62 and driver side door switch harness connector D10 terminal 4.

62 – 4 : Continuity should exist.

4. Check continuity between BCM harness connector M36 terminal 62 and ground.

62 – Ground : Continuity should not exist.



OK or NG

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

3. CHECK DRIVER SIDE DOOR SWITCH

Check driver side door switch. Refer to DI-81, "DRIVER SIDE DOOR SWITCH" .

OK or NG

OK >> Check driver side door switch ground circuit.
NG >> Replace driver side door switch.

Key Switch Signal Inspection (Without Intelligent Key)

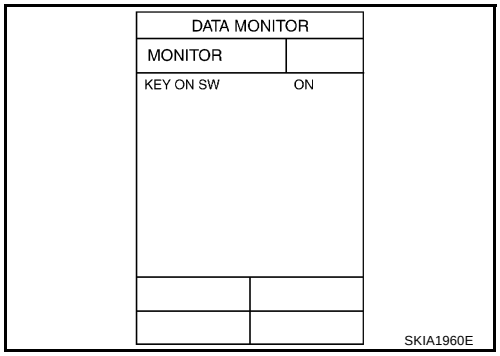
NKS001TJ

1. CHECK BCM INPUT SIGNAL

With CONSULT-II

1. Select “BCM”.
2. With “DATA MONITOR” of “BUZZER”, confirm “KEY ON SW” when the key is operated.

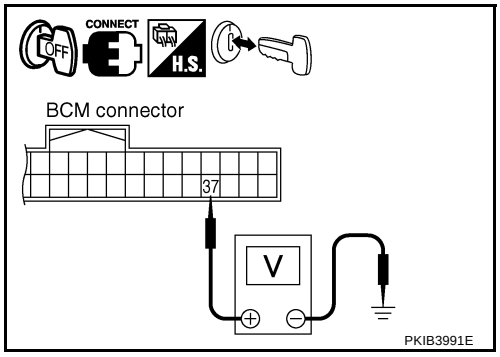
“KEY ON SW”
When key is inserted to ignition key cylinder : ON
When key is removed from ignition key cylinder : OFF



Without CONSULT-II

Check voltage between BCM harness connector M34 terminal 37 and ground.

37 – Ground
When key is inserted to ignition key cylinder : Approx. 12 V
When key is removed from ignition key cylinder : Approx. 0 V



OK or NG

OK >> INSPECTION END
NG >> GO TO 2.

2. CHECK KEY SWITCH

1. Turn ignition switch OFF.
2. Disconnect key switch connector.
3. Check key switch. Refer to DI-81, "KEY SWITCH" .

OK or NG

OK >> GO TO 3.
NG >> Replace key switch.

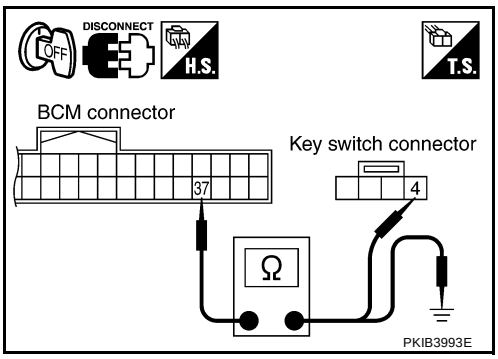
3. CHECK KEY SWITCH CIRCUIT

1. Disconnect BCM connector.
2. Check continuity between BCM harness connector M34 terminal 37 and key switch harness connector M28 terminal 4.

37 – 4 : Continuity should exist.

3. Check continuity between BCM harness connector M34 terminal 37 (B/R) and ground.

37 – Ground : Continuity should not exist.



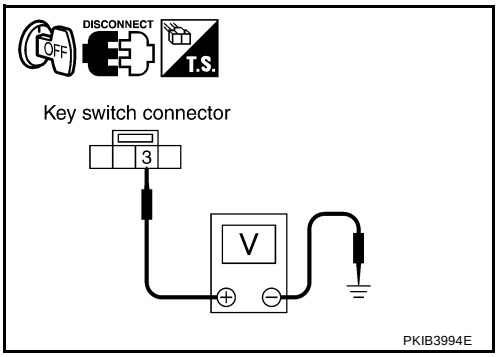
OK or NG

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

4. CHECK KEY SWITCH POWER SUPPLY CIRCUIT

Check voltage between key switch harness connector M28 terminal 3 and ground.

3 – Ground : Battery voltage



OK or NG

OK >> Replace BCM. Refer to BCS-14, "Removal and Installation of BCM" .
NG >> Check harness for open between key switch and fuse.

Key Switch and Ignition Knob Switch Signal Inspection (With Intelligent Key, When Mechanical Key Is Used)

NKS001TK

1. CHECK BCM INPUT SIGNAL

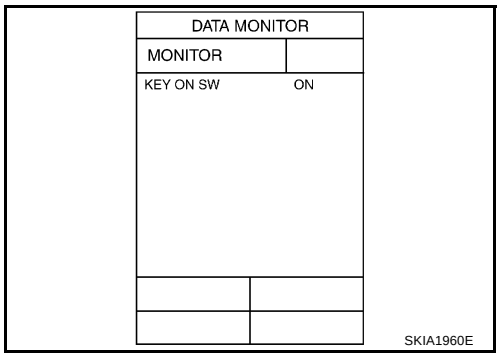
With CONSULT-II

1. Select “BCM”.
2. With “DATA MONITOR” of “BUZZER”, confirm “KEY ON SW” when the key is operated.

“KEY ON SW”

When key is inserted to ignition key cylinder : ON

When key is removed from ignition key cylinder : OFF



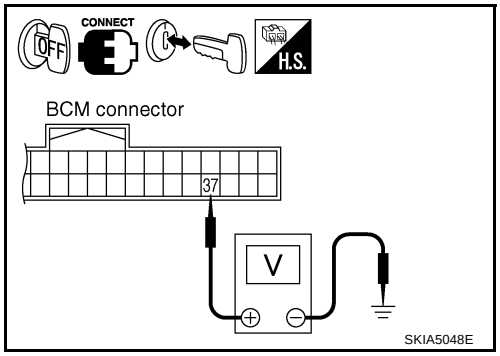
Without CONSULT-II

Check voltage between BCM harness connector M34 terminal 37 and ground.

37 – Ground

When key is inserted to ignition key cylinder : Approx. 12 V

When key is removed from ignition key cylinder : Approx. 0 V



OK or NG

OK >> INSPECTION END
NG >> GO TO 2.

2. CHECK KEY SWITCH AND IGNITION KNOB SWITCH

1. Turn ignition switch OFF.
2. Disconnect key switch and ignition knob switch connector.
3. Check key switch and ignition knob switch. Refer to DI-81, "KEY SWITCH AND IGNITION KNOB SWITCH" .

OK or NG

OK >> GO TO 3.
NG >> Replace key switch and ignition knob switch.

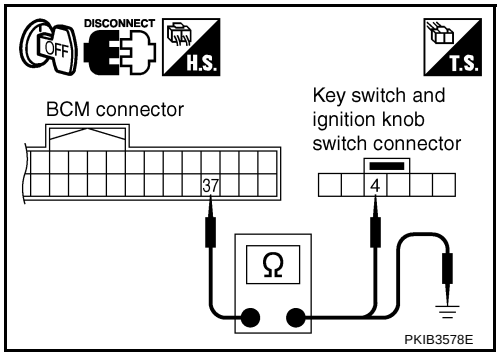
3. CHECK KEY SWITCH AND IGNITION KNOB SWITCH CIRCUIT

1. Disconnect BCM connector.
2. Check continuity between BCM harness connector M34 terminal 37 and key switch and ignition knob switch harness connector M118 terminal 4.

37 – 4 : Continuity should exist.

3. Check continuity between BCM harness connector M34 terminal 37 and ground.

37 – Ground : Continuity should not exist.



OK or NG

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

4. CHECK KEY SWITCH AND IGNITION KNOB SWITCH POWER SUPPLY CIRCUIT

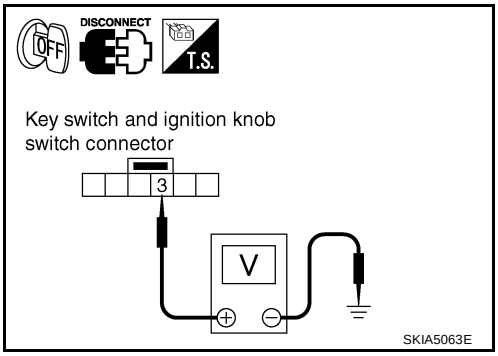
Check voltage between key switch and ignition knob switch harness connector M118 terminal 3 and ground.

3 – Ground : Battery voltage

OK or NG

OK >> Replace BCM. Refer to BCS-14, "Removal and Installation of BCM" .

NG >> Check harness between key switch and ignition knob switch and fuse.



Lighting Switch Signal Inspection

NKS001TM

1. CHECK BCM INPUT SIGNAL

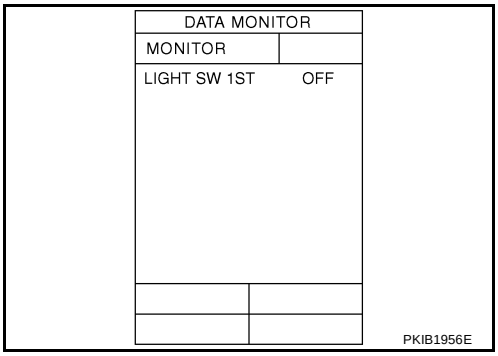
1. Select “BCM” on CONSULT-II.
2. With “DATA MONITOR” of “BUZZER”, confirm “LIGHT SW 1ST” when the lighting switch is operated.

“LIGHT SW 1ST”
When lighting switch is in 1st position : ON
When lighting switch is OFF : OFF

OK or NG

OK >> INSPECTION END

NG >> Check lighting switch. Refer to LT-153, "Combination Switch Inspection" .



Seat Belt Buckle Switch (Driver Side) Signal Inspection

NKS001TN

1. CHECK BCM INPUT SIGNAL

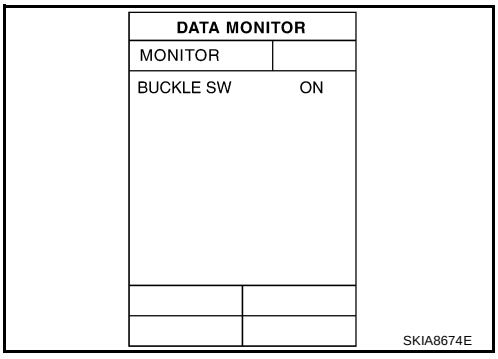
1. Select “BCM” on CONSULT-II.
2. With “DATA MONITOR” of “BUZZER”, confirm “BUCKLE SW” when the seat belt buckle switch (driver side) is operated.

“BUCKLE SW”
When seat belt is fastened : OFF
When seat belt is unfastened : ON

OK or NG

OK >> INSPECTION END

NG >> GO TO 2.



2. CHECK COMBINATION METER INPUT SIGNAL

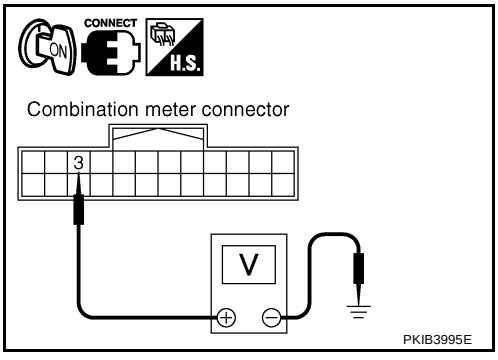
1. Turn ignition switch ON.
2. Check voltage between combination meter harness connector M25 terminal 3 and ground.

3 – Ground
When seat belt is fastened : Approx. 12 V
When seat belt is unfastened : Approx. 0 V

OK or NG

OK >> Replace combination meter.

NG >> GO TO 3.



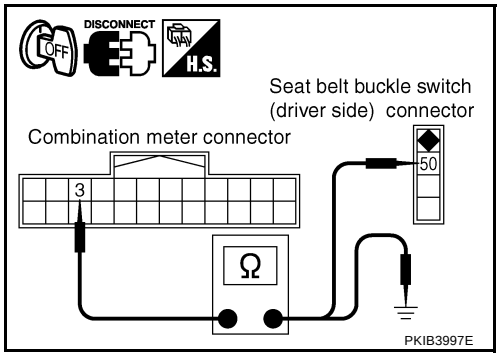
3. CHECK SEAT BELT BUCKLE SWITCH (DRIVER SIDE) CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect combination meter connector and seat belt buckle switch (driver side) connector.
3. Check continuity between combination meter harness connector M25 terminal 3 and seat belt buckle switch (driver side) harness connector B308 terminal 50.

   3 – 50 : Continuity should exist.

4. Check harness continuity between combination meter harness connector M25 terminal 3 and ground.

   3 – Ground : Continuity should not exist.



OK or NG

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

4. CHECK SEAT BELT BUCKLE SWITCH (DRIVER SIDE)

Check seat belt buckle switch (driver side). Refer to DI-81, "SEAT BELT BUCKLE SWITCH (DRIVER SIDE)" .

OK or NG

OK >> Check seat belt buckle switch (driver side) ground circuit.
NG >> Replace seat belt buckle switch (driver side).

Component Inspection

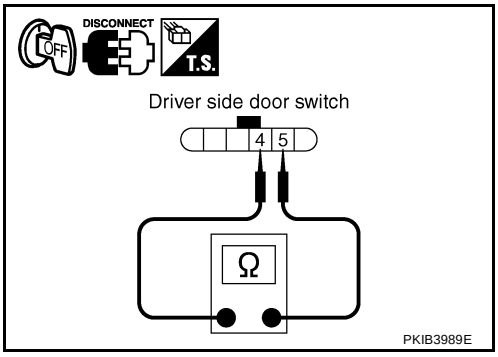
NKS002DK

DRIVER SIDE DOOR SWITCH

Check continuity between terminals 4 and 5.

4 – 5

When driver side door is opened	**: Continuity should exist.**
When driver side door is closed	**: Continuity should not exist.**

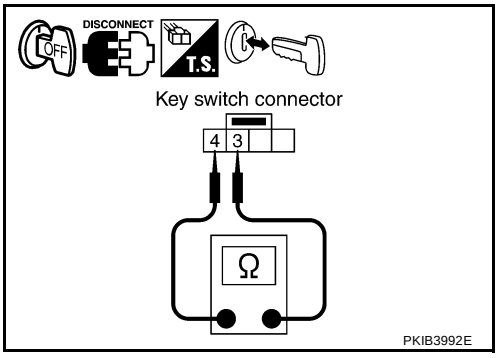


KEY SWITCH

Check continuity between terminals 3 and 4.

3 – 4

When key is inserted to ignition key cylinder	**: Continuity should exist.**
When key is removed from ignition key cylinder	**: Continuity should not exist.**

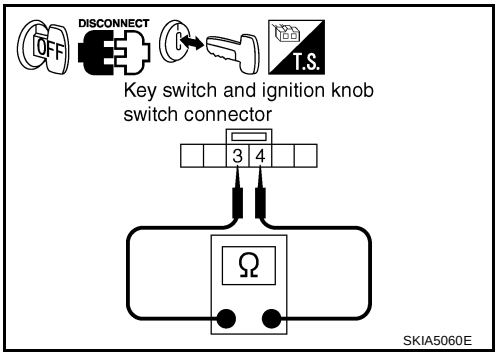


KEY SWITCH AND IGNITION KNOB SWITCH

Check continuity between terminals 3 and 4.

3 – 4

When key is inserted to ignition key cylinder	**: Continuity should exist.**
When key is removed from ignition key cylinder	**: Continuity should not exist.**

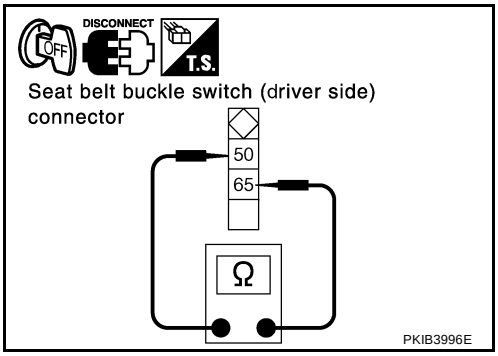


SEAT BELT BUCKLE SWITCH (DRIVER SIDE)

Check continuity between terminals 50 and 65.

50 – 65

When seat belt (driver side) is fastened	**: Continuity should not exist.**
When seat belt (driver side) is unfastened	**: Continuity should exist.**



CAN COMMUNICATION

PFP:23710

System Description

NKS002CT

CAN (Controller Area Network) is a serial communication line for real time application. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Many electronic control units are equipped onto a vehicle, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN-H line, CAN-L line) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.

CAN Communication Unit

NKS002CU

Refer to DI-82, "CAN Communication Unit" in “LAN SYSTEM”.

COMPASS

PFP:24835

Precautions for Compass

NKS004J6

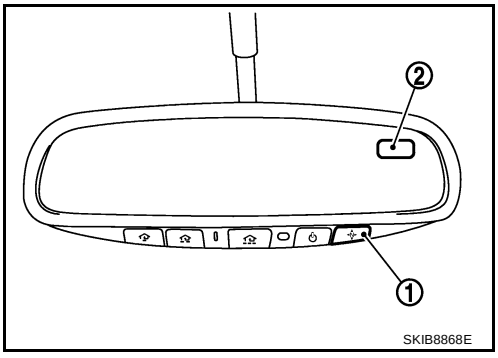
NOTE:

- Do not install the ski rack, antenna, etc. which is attach to the vehicle with a magnet base. It affects the operation of the compass.
- When cleaning the mirror, use a paper towel or similar material dampened with glass cleaner. Do not spray glass cleaner directly on the mirror as it may cause the liquid cleaner to enter the mirror housing.

System Description

NKS004J7

- This electronic compass is able to display 8 primary directions: N, NE, E, SE, S, SW, W, NW.
- The compass switch (1) is used to operate the compass.
  - **(1) : Compass switch**
  - **(2) : Compass display**



Switch Operation

Press	Compass is turned ON/OFF
Press and hold (for 3 – 9 sec.)	Compass display turns to zone variation change mode
Press and hold (for more than 9 sec.)	Compass display turns to calibration mode

- All standard compasses determine direction relative to Magnetic North; however, this electronic compass is designed to display direction relative to True North.
- The difference between Magnetic North and True North varies from place to place across the surface of the earth.
- This electronic compass must be “told” approximately where it is on the earth’s surface so that the Magnetic North reading can be properly converted into a True North display.
- To tell the electronic compass where it’s at, the earth is separated into numbered “Zone Variances”. The Zone Variance number in which the compass is to function must be entered into this electronic compass.
- Each zone is magnetically about 4.2° wide. Typically, anything under 22.5° total zone change is not noticed on the electronic compass display. However, over 22.5°, a reading may be off by one or more primary directions.
- On long trips, a vehicle may leave its original zone and enter one or more new zones. Generally, you do not need to reset the compass zone if you travel between 3 or 4 zones, such as business travel or vacation. The typical driver will not notice any difference on the display within 3 or 4 zones. However, if the vehicle is “permanently” moved to a new location, it is recommended that the compass zone be reset.

Troubleshooting

NKS004J8

- 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.

Troubleshooting Chart

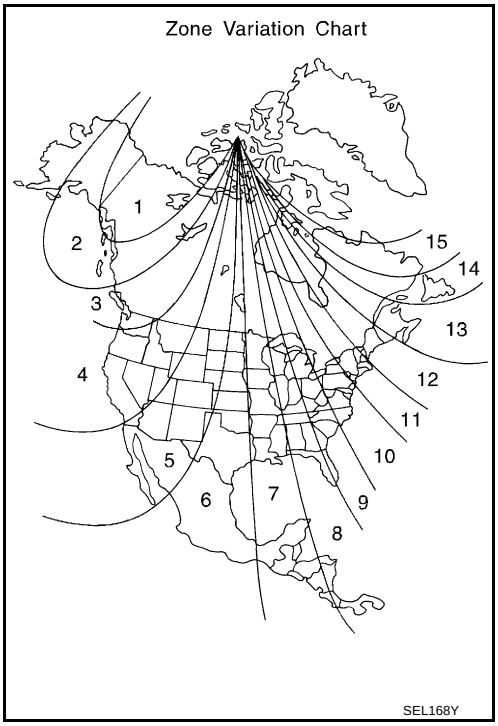
Symptom	Cause	Solution / Reference
The compass display reads “C”.	● Compass is not calibrated. ● Incorrect zone variance setting. ● Large change in magnetic field (Steel bridges, subways, concentrations of metal, carwashes, etc.) ● Compass was calibrated incorrectly or in the presence of a strong magnetic field.	Perform Calibration. Refer to DI-85, "Calibration Procedure" .
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 DI-85, "Zone Variation Setting Procedure" .
Compass does not work – No direction is displayed.	Compass not turned ON.	Check for green LED indicator (inside mirror switch).
	No power to inside mirror.	Check power supply circuit.

Zone Variation Setting Procedure

NKS004J9

NOTE:
The zone setting is factory preset (“default” setting) to zone 8.

1. Press and hold the compass switch for 3 – 9 seconds.
2. The current zone setting appears on the compass display.
3. Find the current geographical location number in the Zone Variation Chart.
4. Select the new zone number. (Press the compass switch until the new zone number appears on the compass display.)
5. After select the new zone number, the compass display will automatically shows a direction within a few seconds.
6. Preform the following Calibration Procedure for more accurate indications.



Calibration Procedure

NKS004JA

NOTE:
The compass calibrates itself under normal driving conditions. However, occasional circumstances may cause the compass to operate inaccurately. Example: Driving from rural (wide open) areas to crowded city areas, or if an aftermarket (i.e., non original equipment) antenna with a magnetic base is attached to the vehicle. Calibrate the mirror compass if the display shows only one direction or a limited number of directions.

NOTE:

- If “magnetic hats” are used in the dealership for vehicle identification, remove the hat from the vehicle before performing the following steps. Do NOT put the hat back on the vehicle after the procedure is completed.
- Drive the vehicle to an open level area; away from large metallic objects, structures, and overhead power lines.
- Turn off “non-essential” electrical accessories (rear window defrost, heater/air conditioning, wipers) and close the doors.

1. Verify the correct compass zone setting for the geographical location. Refer to DI-85, "Zone Variation Setting Procedure" .
2. Press and hold the compass switch for more than 9 seconds.
3. “C” is displayed on the compass display, when calibration starts.
4. Drive slowly [less than 8 km/h (5 mph)] in a circle until the “C / CAL” is replaced with primary headings (N, NE, E, SE, S, SW, W, or NW).

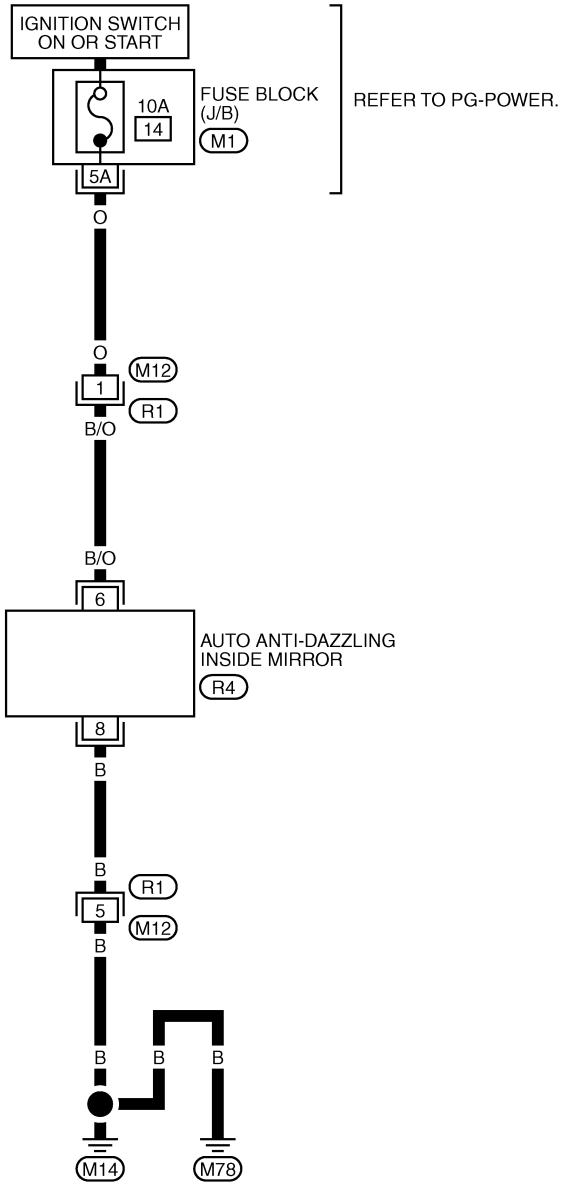
   NOTE:
   This will require driving at least 2 complete 360 degree circles; 3 complete circles may be required.
5. The compass calibration procedure is now complete. The compass should operate normally.

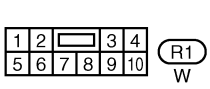
   NOTE:
   If at any time the compass continually displays the incorrect direction or the reading is erratic or locked, repeat the calibration procedure.

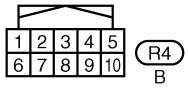
Wiring Diagram – COMPASS –

NKS002CY

DI-COMPAS-01







REFER TO THE FOLLOWING.
M1 -FUSE BLOCK-JUNCTION BOX (J/B)

TKWB2611E

Removal and Installation of Compass

NKS002CZ

Refer to GW-72, "INSIDE MIRROR" .