SECTION DI
DRIVER INFORMATION SYSTEM

CONTENTS

PRECAUTION

PFP:00011

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

AKS003V4

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.**

Precautions for Battery Service

AKS003V6

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

Wiring Diagrams and Trouble Diagnosis

AKS000WM

When you read wiring diagrams, refer to the following:

- Refer to GI-15, "How to Read Wiring Diagrams" .
- Refer to PG-4, "POWER SUPPLY ROUTING CIRCUIT" for power distribution circuit.

When you perform trouble diagnosis, refer to the following:

- Refer to GI-11, "HOW TO FOLLOW TEST GROUPS IN TROUBLE DIAGNOSES" .
- Refer to GI-27, "How to Perform Efficient Diagnosis for an Electrical Incident" .

COMBINATION METERS

PFP:24814

System Description

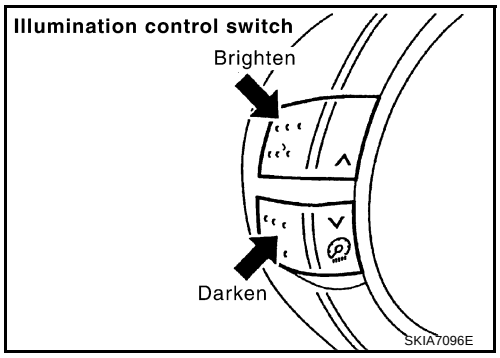
AKS0093R

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.*
  *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.
- Odo/trip meter and A/T indicator segments can be checked in diagnosis mode.
- Meters/gauges can be checked in diagnosis mode.

Illumination Control

The unified meter control unit outputs the combination meter and triple meter dial lighting when the ignition switch is turned on. When the lighting switch is turned on, light on for the trip computer switch, illumination control switch and external lighting are output. In addition, when the lighting switch is turned on, the illumination control switch on the left side of the combination meter can be used to adjust the brightness of each light. Pressing the illumination control switch will brighten or darken the lights. When the key switch is in the START position, the combination meter and triple meter dial lighting and the trip computer switch and illumination control switch lighting are turned off.

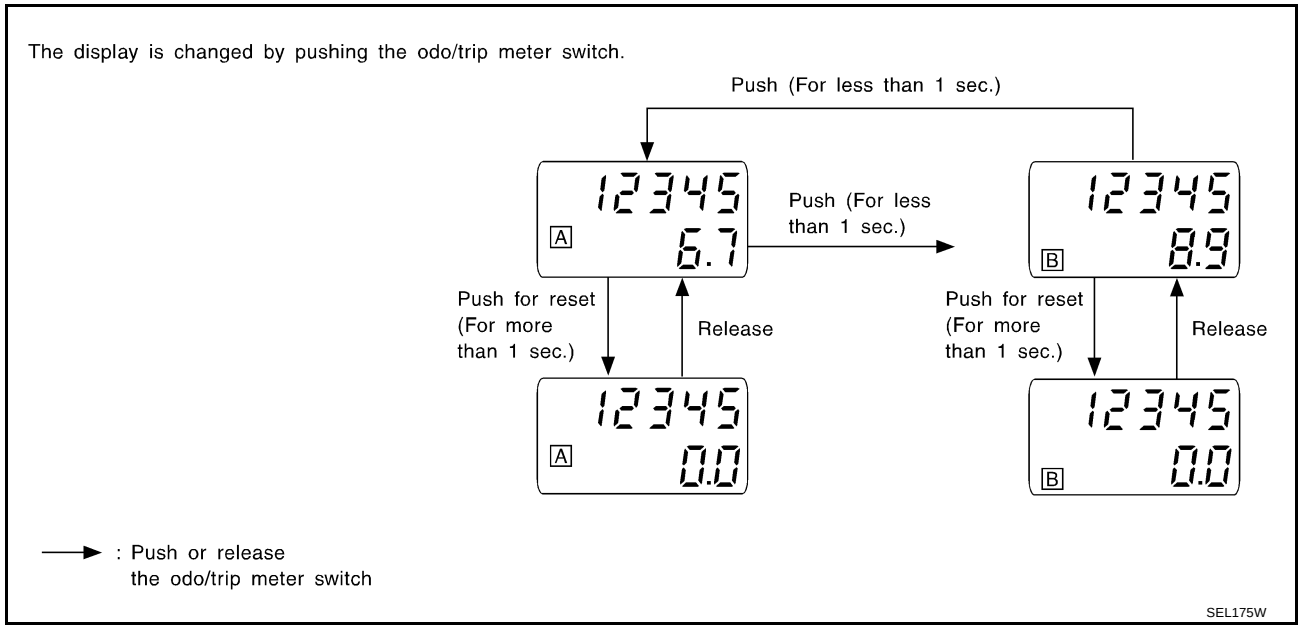


UNIFIED METER AND A/C AMP.

Refer to DI-58, "System Description" in “UNIFIED METER AND A/C AMP”.

HOW TO CHANGE THE DISPLAY FOR ODO/TRIP METER

- The vehicle speed signal and the memory signals from the meter memory circuit are processed by the combination meter and the mileage is displayed.
- 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 to releasing it.
- When resetting with trip A displayed, only trip A display is reset (Trip B operates the same way).

POWER SUPPLY AND GROUND CIRCUIT

Power is supplied at all times

- through 10A fuse [No. 19, located in the fuse block (J/B)]
- to combination meter terminal 24, and
- to unified meter and A/C amp. 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 23.
- 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 ACC or ON position, power is supplied

- through 10A fuse [No. 6, located in the fuse block (J/B)]
- to combination meter terminal 14.
- 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 10, 11 and 12
- to unified meter and A/C amp. terminals 29 and 30
- through body grounds M30 and M66.

WATER TEMPERATURE GAUGE

The water temperature gauge indicates the engine coolant temperature.
ECM provides an engine coolant temperature signal to unified meter and A/C amp. with CAN communication line. Unified meter and A/C amp. provides an engine coolant temperature signal to combination meter for water temperature gauge with communication line between unified meter and A/C amp. and combination meter.

TACHOMETER

The tachometer indicates engine speed in revolutions per minute (rpm).
ECM provides an engine speed signal to unified meter and A/C amp. CAN communication line. Unified meter and A/C amp. provides an engine speed signal to combination meter for tachometer with communication line between unified meter and A/C amp. and combination meter.

FUEL GAUGE

The fuel gauge indicates the approximate fuel level in the fuel tank.
The fuel gauge is regulated by a variable ground signal supplied

- from unified meter and A/C amp. terminal 36
- through terminals 5 and 2 of the fuel level sensor unit and fuel pump (main), and
- through terminals 2 and 1 of the fuel level sensor unit (sub)
- to unified meter and A/C amp. terminal 28 for the fuel gauge.

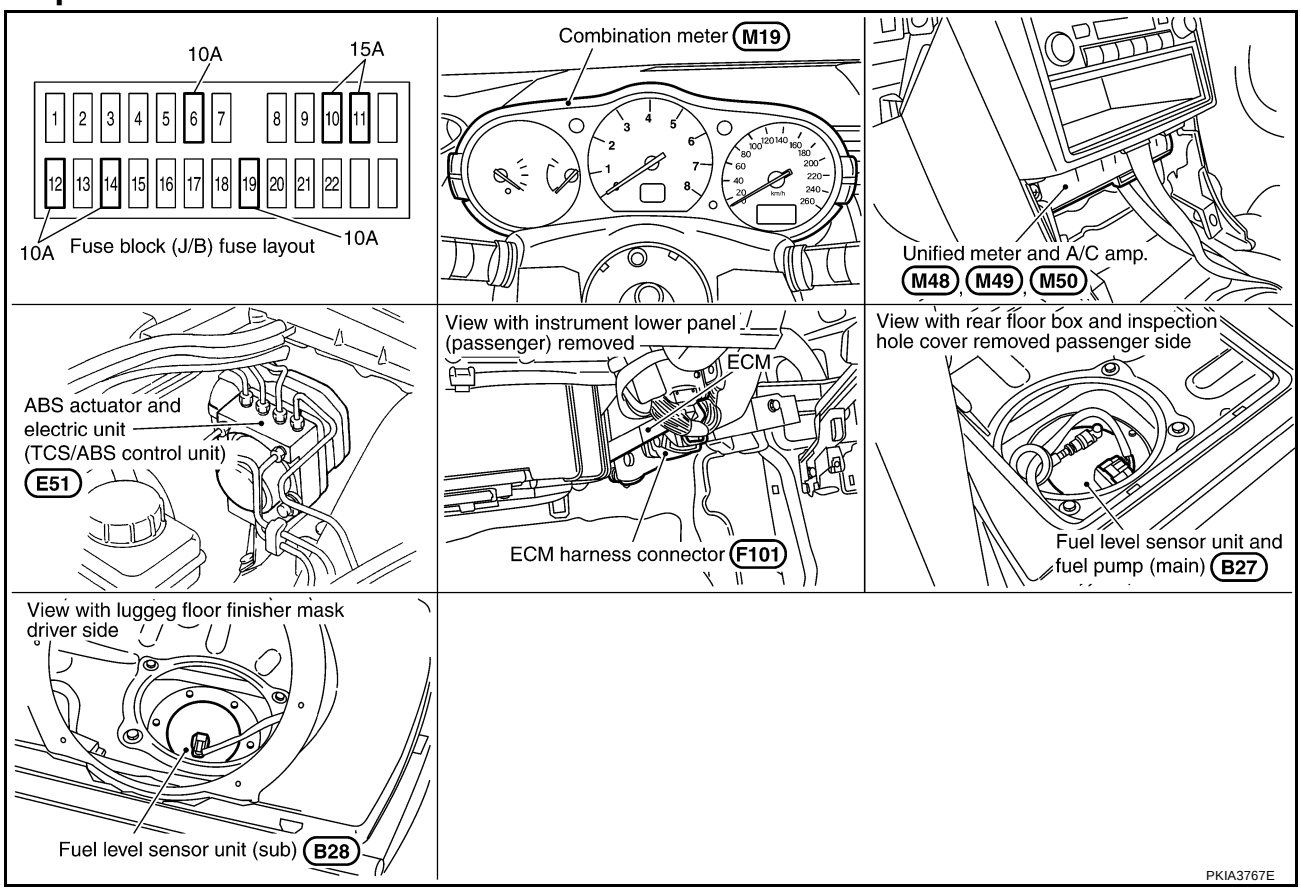
Unified meter and A/C amp. provides an fuel level signal to combination meter for fuel gauge with communication line between unified meter and A/C amp. and combination meter.

SPEEDOMETER

ABS actuator and electric unit (TCS/ABS control unit) provides a vehicle speed signal to the unified meter and A/C amp. with CAN communication line. After unified meter and A/C amp. received the vehicle speed signal, it changes the signal to 8 pulse signal to the combination meter for speedometer.

Component Parts and Harness Connector Location

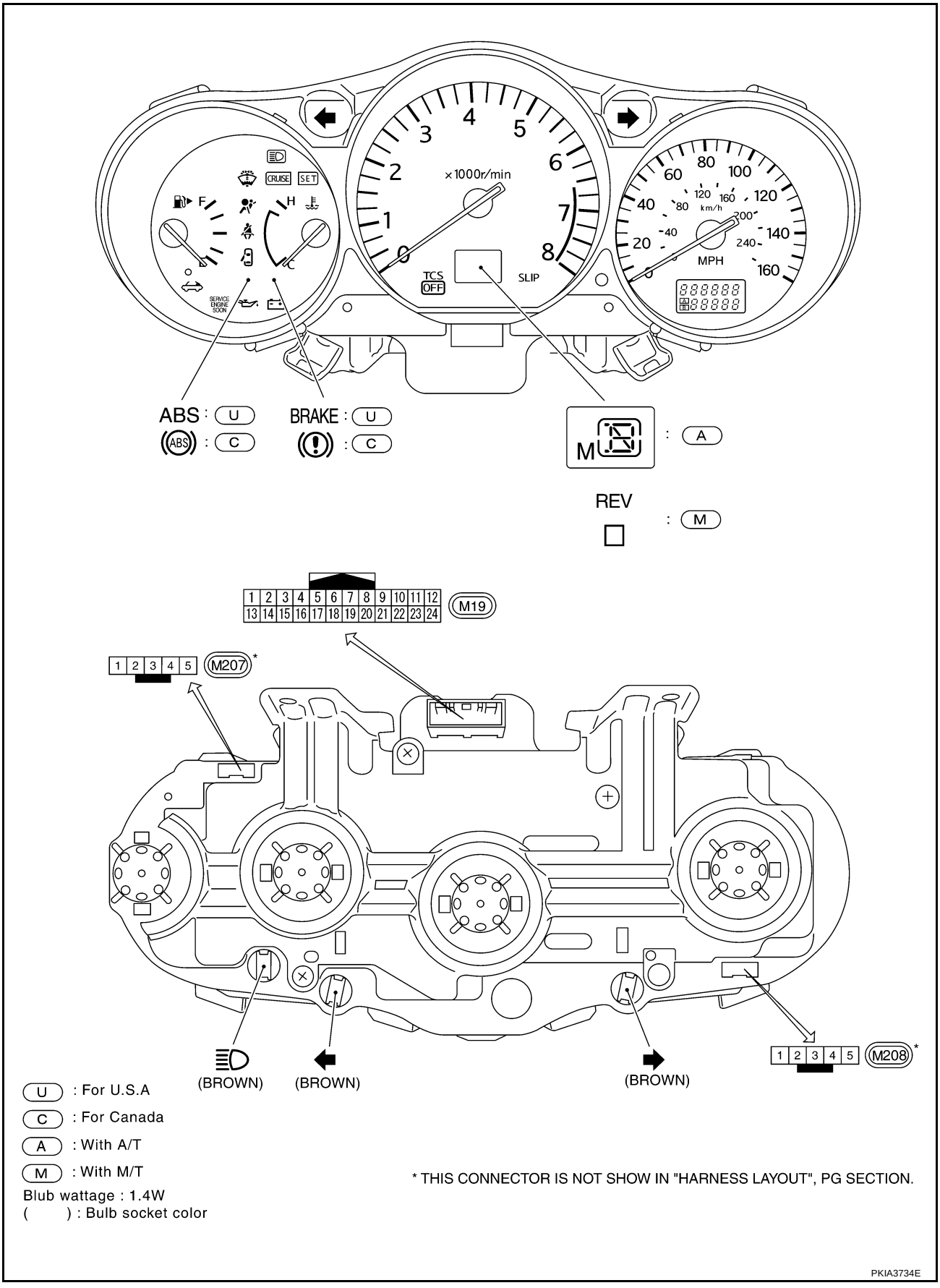
AKS0093S



Combination Meter

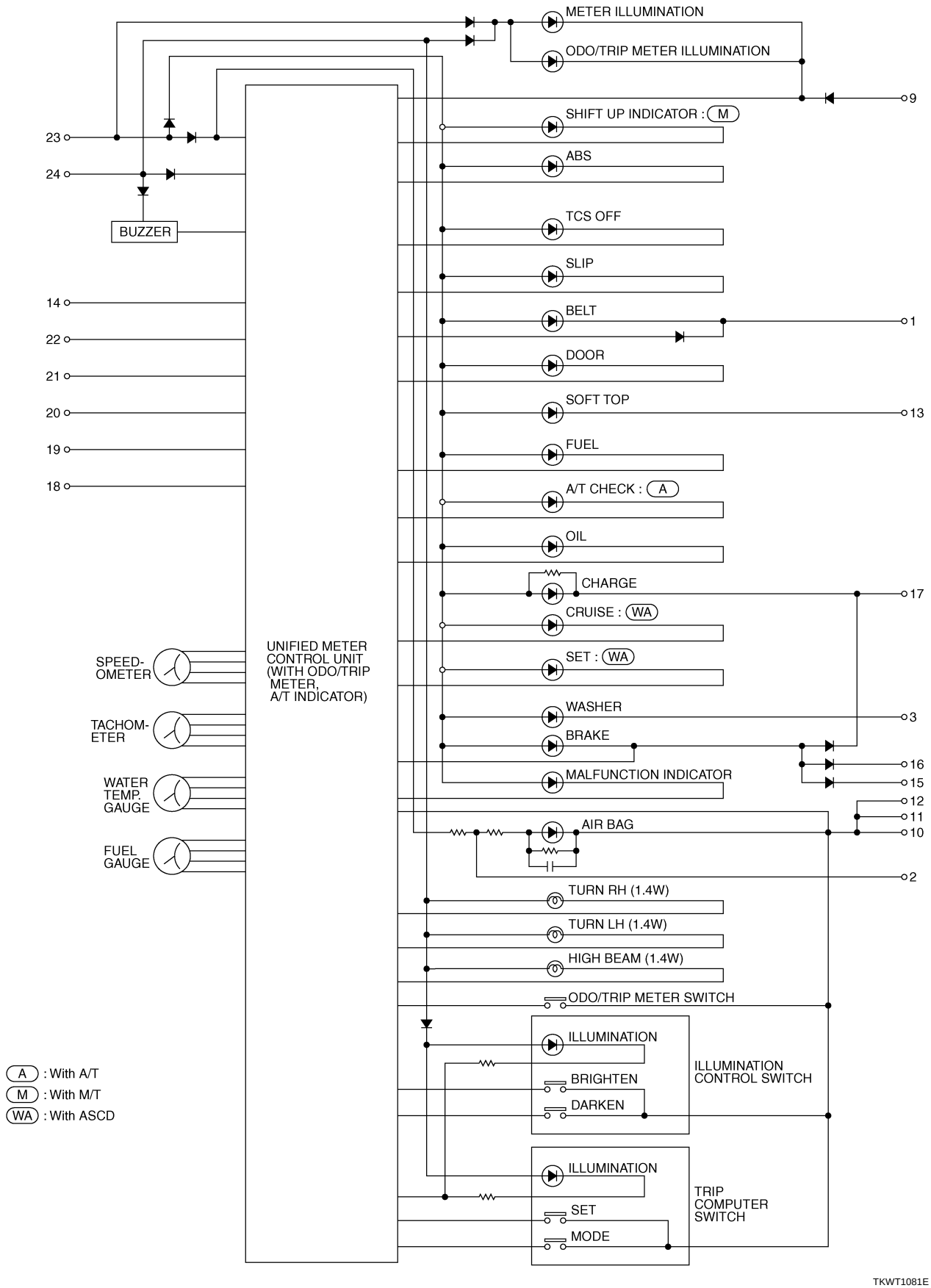
AKS0093T

CHECK



Circuit Diagram

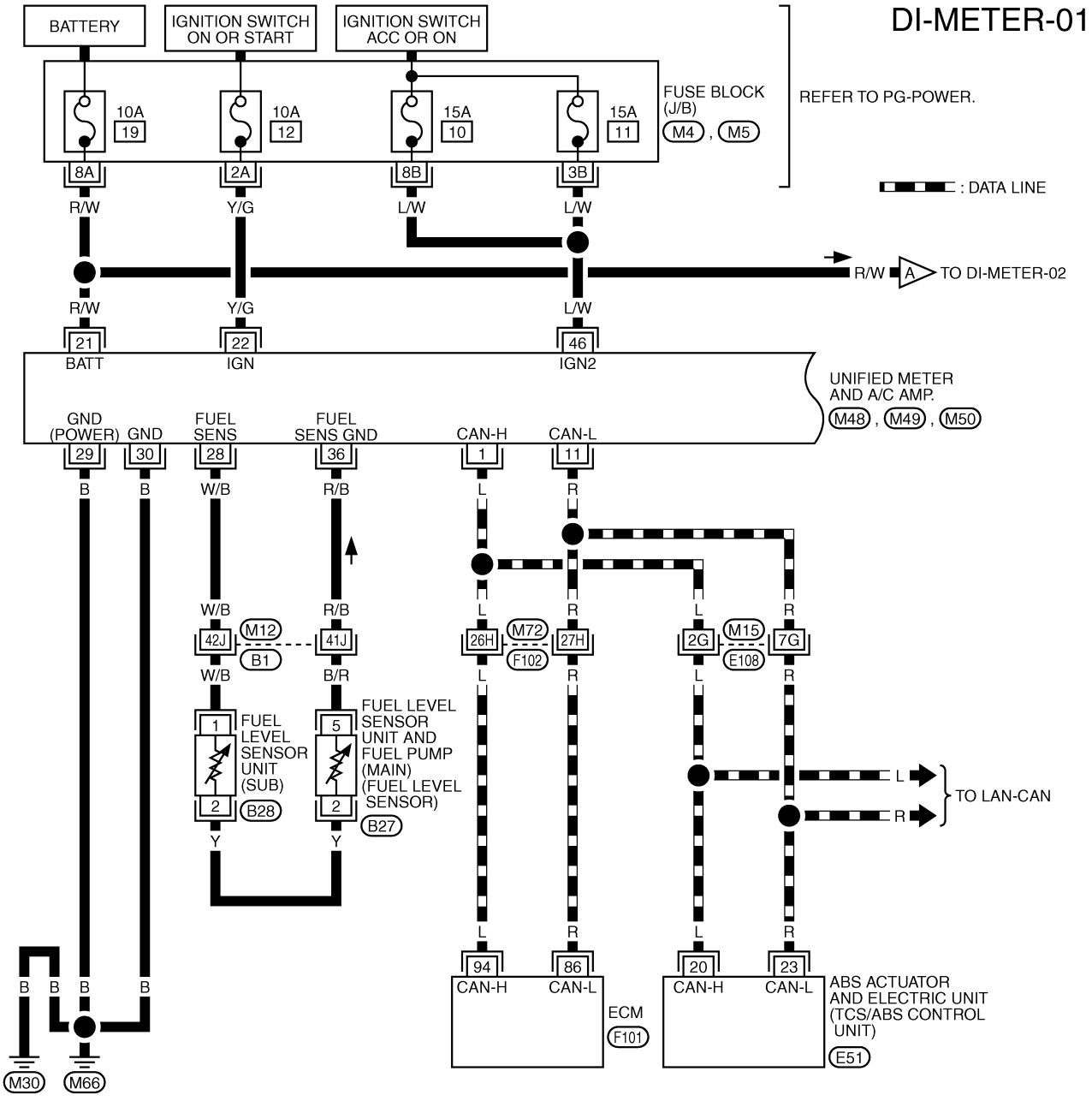
AKS0093U

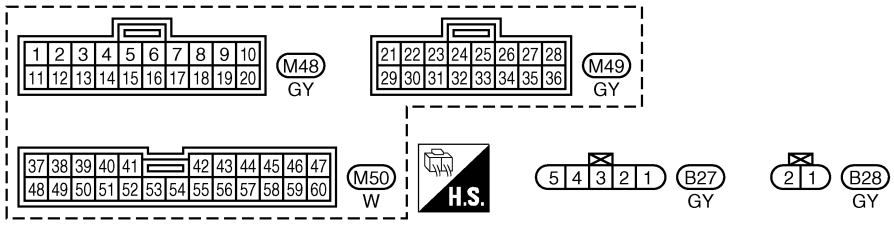


TKWT1081E

Wiring Diagram — METER —

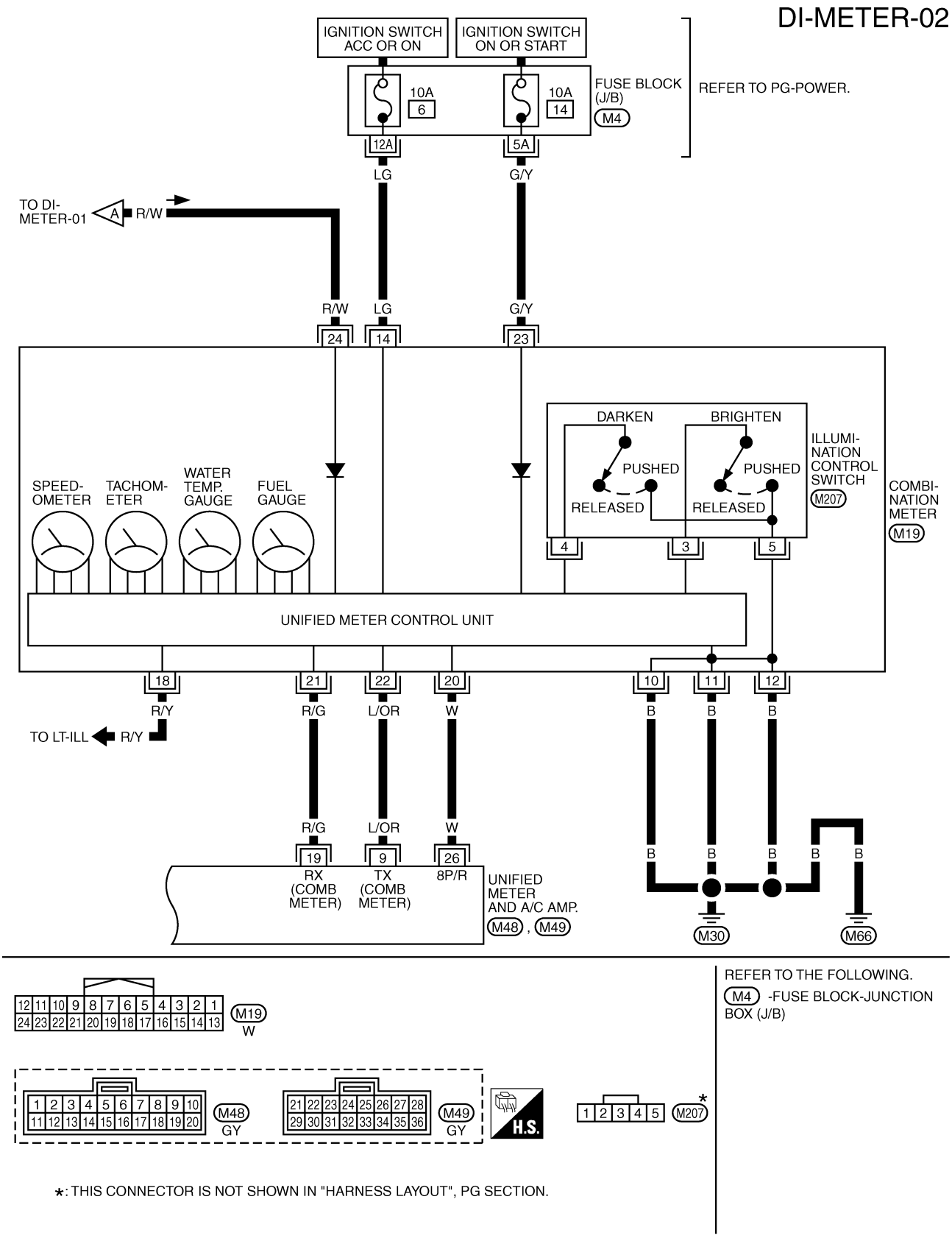
AKS0093V





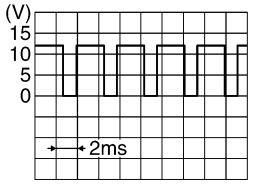
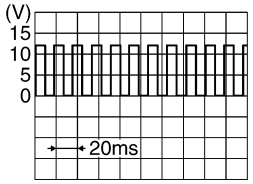
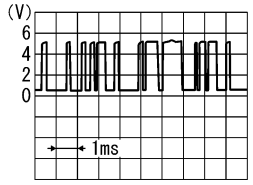
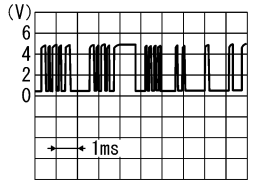
REFER TO THE FOLLOWING.
E108, F102, B1 -SUPER MULTIPLE JUNCTION (SMJ)
M4, M5 -FUSE BLOCK-JUNCTION BOX (J/B)
E51, F101 -ELECTRICAL UNITS

TKWT1082E


DI-METER-02
IGNITION SWITCH ACC OR ON
IGNITION SWITCH ON OR START
10A 6
10A 14
FUSE BLOCK (J/B) M4
REFER TO PG-POWER.
12A
5A
LG
G/Y
TO DI-METER-01
A
R/W
R/W
LG
G/Y
24
14
23
SPEED-OMETER
TACHOM-ETER
WATER TEMP. GAUGE
FUEL GAUGE
DARKEN
BRIGHTEN
PUSHED
RELEASED
PUSHED
RELEASED
ILLUMI-NATION CONTROL SWITCH M207
COMBI-NATION METER M19
4
3
5
UNIFIED METER CONTROL UNIT
18
21
22
20
10
11
12
R/Y
R/G
L/OR
W
B
B
B
TO LT-ILL
R/Y
R/G
L/OR
W
19
9
26
RX (COMB METER)
TX (COMB METER)
8P/R
UNIFIED METER AND A/C AMP. M48 , M49
B
B
B
B
B
M30
M66
REFER TO THE FOLLOWING.
M4 -FUSE BLOCK-JUNCTION BOX (J/B)
M19
W
M48
GY
M49
GY
H.S.
M207
*
*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.
TKWT0482E

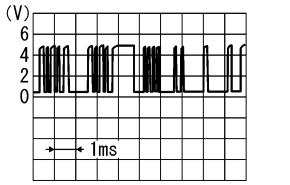
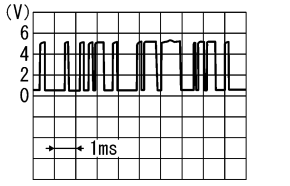
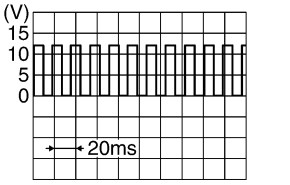
Terminals and Reference Value for Combination Meter

AKS00962

Terminal No.	Wire color	Item	Measuring condition		Reference value (V)
			Ignition switch	Operation or condition	
10	B	Ground	ON	—	Approx. 0
11					
12					
14	LG	Ignition switch ACC or ON	ACC	—	Battery voltage
18	R/Y	Illumination signal	ON	Lighting switch ON, then operate the illumination control switch.	<e.g.> When brightness level is midway.  PKIA3771E
				Lighting switch OFF	Approx. 0
20	W	Vehicle speed signal (8-pulse)	ON	Speedometer operated [When vehicle speed is approx. 40km/h (25MPH)]	 PKIA1935E
21	R/G	TX communication line (To unified meter and A/C amp.)	ON	—	 SKIA3361E
22	L/OR	RX communication line (From unified meter and A/C amp.)	ON	—	 SKIA3362E
23	G/Y	Ignition switch ON or START	ON	—	Battery voltage
24	R/W	Battery power supply	OFF	—	Battery voltage

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

AKS0093X

Terminal No.	Wire color	Item	Measuring condition		Reference value (V)
			Ignition switch	Operation or condition	
1	L	CAN H	—	—	—
9	L/OR	TX communication line (To combination meter)	ON	—	 SKIA3362E
11	R	CAN L	—	—	—
19	R/G	RX communication line (From combination meter)	ON	—	 SKIA3361E
21	R/W	Battery power supply	OFF	—	Battery voltage
22	Y/G	Ignition switch ON or START	ON	—	Battery voltage
26	W	Vehicle speed signal (8-pulse)	ON	Speedometer operated [When vehicle speed is approx. 40km/h (25MPH)]	 PKIA1935E
28	W/B	Fuel level sensor signal	—	—	Refer to DI-31, "FUEL LEVEL SENSOR UNIT CHECK" .
29	B	Ground (For power)	ON	—	Approx. 0
30	B	Ground	ON	—	Approx. 0
36	R/B	Fuel level sensor signal ground	—	—	—
46	L/W	Ignition switch ACC or ON	ACC	—	Battery voltage

Meter/Gauges Operation and Odo/Trip Meter

AKS0093Y

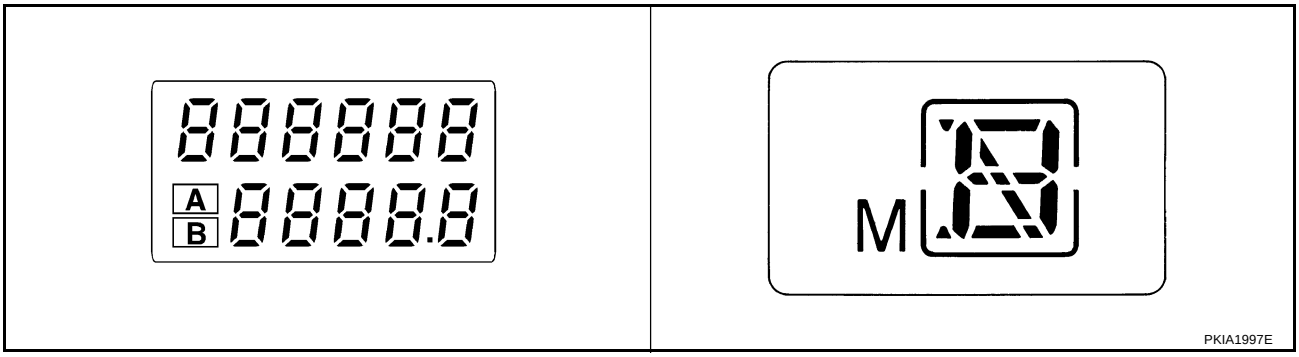
SELF-DIAGNOSIS FUNCTION

- Odo/trip meter segment and A/T indicator segment operation can be checked in self-diagnosis mode.
- Meters/gauges can be checked in self-diagnosis mode.

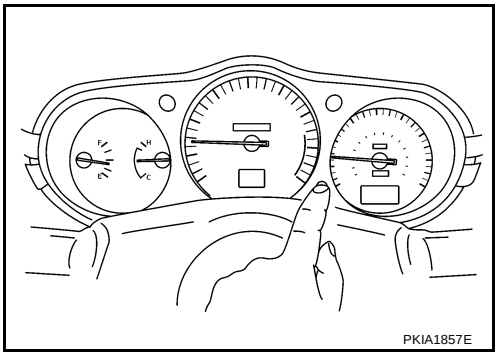
HOW TO ALTERNATE DIAGNOSIS MODE

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

   NOTE:
   If the diagnosis function is activated with the trip meter A displayed, the mileage on the trip meter A will indicate 0000.0, but the actual trip mileage will be retained. (Trip B operates the same way).
2. Turn ignition switch OFF.
3. While pushing the odo/trip meter switch, turn ignition switch ON again.
4. Check that 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 A/T indicator illuminate, and simultaneously the fuel warning lamp indicator illuminates. At this time, the unified meter control unit is turned to diagnosis mode.



7. Push the odo/trip meter switch. Each meter/gauge should indicate as shown in the figure while pushing odo/trip meter switch. (at this time, the low-fuel warning lamp goes off).



CONSULT-II Function

AKS0093Z

Refer to DI-62, "CONSULT-II Function" in “UNIFIED METER AND A/C AMP”.

How to Proceed With Trouble Diagnosis

AKS00940

1. Confirm the symptom or customer complaint.
2. Perform diagnosis according to diagnosis flow. Refer to DI-14, "Diagnosis Flow" .
3. According to the symptom chart, repair or replace the cause of the symptom.
4. Does the meter operate normally? If so, go to 5. If not, go to 2.
5. INSPECTION END

Diagnosis Flow

AKS00941

1. CHECK SELF-DIAGNOSTIC RESULTS OF UNIFIED METER AND A/C AMP.

1. Start engine.
2. Select “METER A/C AMP” on CONSULT-II, and perform self-diagnosis of unified meter and A/C amp. Refer to DI-62, "CONSULT-II Function" .
3. After erasing the self-diagnosis result, perform self-diagnosis again.

Self-diagnostic results content

No malfunction detected>>GO TO 2.
Malfunction detected>> Go to DI-18, "Symptom Chart 2" .

2. CHECK WARNING LAMP ILLUMINATION

Turn ignition switch ON.

Do warning lamps (such as malfunction indicator lamp and oil pressure warning lamp) illuminate?

YES >> GO TO 3.
NO >> Check ignition power supply system of combination meter. Refer to DI-16, "Power Supply and Ground Circuit Inspection" .

3. CHECK SELF-DIAGNOSIS OPERATION OF COMBINATION METER

Perform combination meter self-diagnosis. Refer to DI-13, "SELF-DIAGNOSIS FUNCTION" .

Does self-diagnosis function operate?

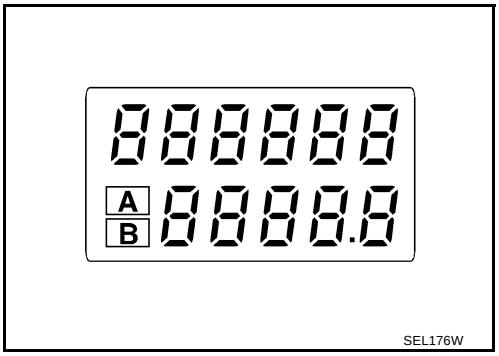
YES >> GO TO 4.
NO >> Check battery power supply of combination meter and ground system. Refer to DI-16, "Power Supply and Ground Circuit Inspection" .

4. CHECK ODO/TRIP METER OPERATION

Check segment display status of odo/trip meter.

Is the display normal?

YES >> GO TO 5.
NO >> Replace combination meter.



SEL176W

5. CHECK FUEL WARNING LAMP ILLUMINATION CONFIRMATION

During fuel warning lamp check, confirm illumination of fuel warning lamp.

Condition of odo/trip meter switch	Fuel warning lamp
Pushed	Does not illuminate.
Released	Illuminates.

OK or NG

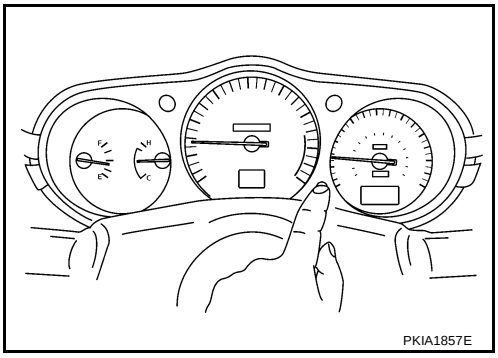
OK >> GO TO 6.
NG >> Replace combination meter.

6. CHECK COMBINATION METER CIRCUIT

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

OK or NG

OK >> Go to DI-17, "Symptom Chart 1" .
NG >> Replace combination meter.



Power Supply and Ground Circuit Inspection

AKS00942

1. CHECK FUSE

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

Unit	Power source	Fuse No.
Combination meter	Battery	19
Unified meter and A/C amp.		
Combination meter	Ignition switch ACC or ON	6
	Ignition switch ON or START	14
Unified meter and A/C amp.	Ignition switch ACC or ON	10, 11
	Ignition switch ON or START	12

OK or NG

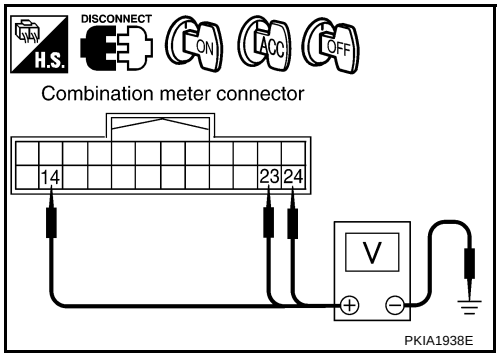
OK >> GO TO 2.

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

2. CHECK POWER SUPPLY CIRCUIT

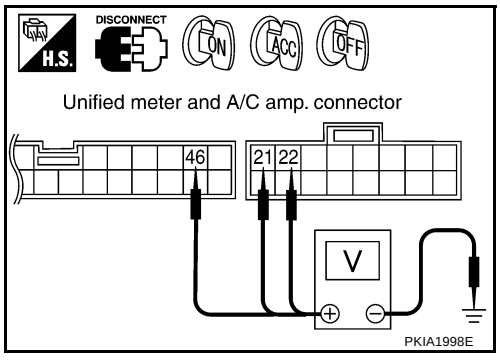
1. Disconnect combination meter connector and unified meter and A/C amp. connector.
2. Check voltage between combination meter harness connector terminals and ground.

Terminals			Ignition switch position		
(+)		(–)			
Connector	Terminal (Wire color)		OFF	ACC	ON
M19	24 (R/W)	Ground	Battery voltage	Battery voltage	Battery voltage
	23 (G/Y)		0V	0V	Battery voltage
	14 (LG)		0V	Battery voltage	Battery voltage



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

Terminals			Ignition switch position		
(+)		(–)			
Connector	Terminal (Wire color)		OFF	ACC	ON
M49	21 (R/W)	Ground	Battery voltage	Battery voltage	Battery voltage
	22 (Y/G)		0V	0V	Battery voltage
M50	46 (L/W)		0V	Battery voltage	Battery voltage



OK or NG

OK >> GO TO 3.

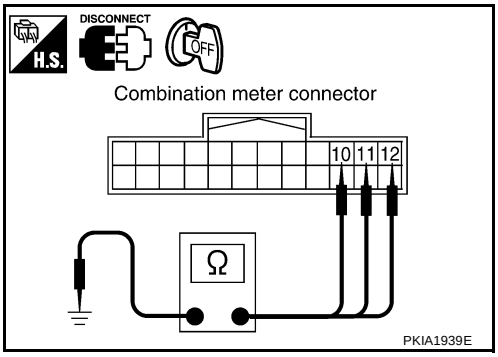
NG >> Check the following.

- Harness for open between combination meter and fuse
- Harness for open between unified meter and A/C amp. and fuse

3. CHECK GROUND CIRCUIT

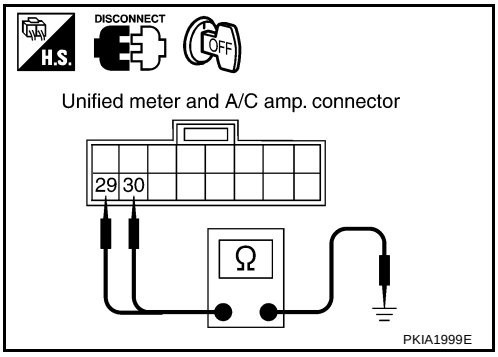
1. Turn ignition switch OFF.
2. Check continuity between combination meter harness connector M19 terminals 10 (B), 11 (B), 12 (B) and ground.

Continuity should exist.



3. Check continuity between unified meter and A/C amp. harness connector M49 terminals 29 (B), 30 (B) and ground.

Continuity should exist.



OK or NG

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

Symptom Chart 1

AKS00943

Trouble phenomenon	Possible cause
Indication is irregular for the speedometer and odo/trip meter.	Refer to DI-19, "Vehicle Speed Signal Inspection" .
Tachometer indication is malfunction.	Refer to DI-21, "Engine Speed Signal Inspection" .
Water temperature gauge indication is malfunction.	Refer to DI-22, "Engine Coolant Temperature Signal Inspection" .
Fuel gauge indication is malfunction.	Refer to DI-23, "Fuel Level Sensor Signal Inspection 1" .
Fuel warning lamp indication is irregular.	Refer to DI-23, "Fuel Level Sensor Signal Inspection 2" .
A/T position indicator is malfunction.	Refer to DI-77, "A/T INDICATOR" .
Illumination control does not operate.	Refer to DI-29, "Illumination Control Switch Inspection" .

Symptom Chart 2

AKS00944

Displayed item [Code]	Inspection contents	Possible cause
CAN COMM CIRC [U1000]	Inspect the CAN communication.	Refer to DI-25, "CAN Communication System Inspection" . **CAUTION:** **Even when there is no malfunction on CAN communication system, malfunction may be misinterpreted when battery has low voltage (when maintaining 7V-8V for about 2 seconds) or 10A fuse [No. 19, located in the fuse block (J/B)] fuse is disconnected.**
T/METER COMM CIRC [B2201]	Inspect the communication line between triple meter and unified meter and A/C amp.	Refer to DI-54, "Communication Line Inspection" in “TRIPLE METERS”.
METER COMM CIRC [B2202]	Inspect the communication line between combination meter and unified meter and A/C amp.	Refer to DI-26, "Communication Line Inspection" .
CODE A203	Inspect the fuel level sensor input signal.	Refer to DI-24, "Fuel Level Sensor Signal Inspection 3" .
CODE A204		Refer to DI-24, "Fuel Level Sensor Signal Inspection 3" . **CAUTION:** **Even if vehicle has no malfunction, when fuel level becomes less than 10 ℓ (10-5/8 US qt, 8-3/4 Imp qt) and float of fuel level sensor goes down extremely because of shake, etc., it is regarded as a malfunction.**
VEHICLE SPEED CIRC [B2205]	Inspect the vehicle speed input signal.	Perform the following self-diagnosis. ABS actuator and electric unit (TCS/ABS control unit); refer to BRC-19, "CONSULT- II Functions" . **CAUTION:** **Even when there is no malfunction on speed signal system, malfunction may be misinterpreted when battery has low voltage (when maintaining 7V-8V for about 2 seconds).**
CODE A206	Inspect the A/T device output signal.	Refer to DI-28, "A/T Device Output Signal Inspection" . **CAUTION:** **Even if vehicle has no malfunction, if A/T shift lever is held more than 2 seconds to up or down side, it is regarded as a malfunction.**

Vehicle Speed Signal Inspection

AKS00945

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

Perform the ABS actuator and electric unit (TCS/ABS control unit) self-diagnostic. Refer to BRC-19, "CONSULT- II Functions" .

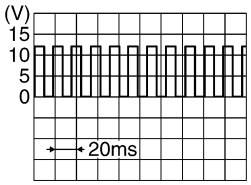
OK or NG

OK >> GO TO 2.
NG >> Repair or replace corresponding parts.

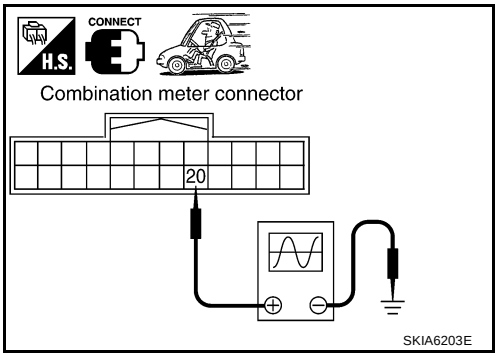
2. CHECK UNIFIED METER AND A/C AMP. OUTPUT SIGNAL

1. Start engine and drive vehicle at approximately 40km/h (25MPH).
2. Check voltage signal between combination meter harness connector M19 terminal 20 (W) and ground with simple oscilloscope of CONSULT-II.

20 (W) - Ground:



PKIA1935E



SKIA6203E

OK or NG

OK >> Replace combination meter.
NG >> GO TO 3.

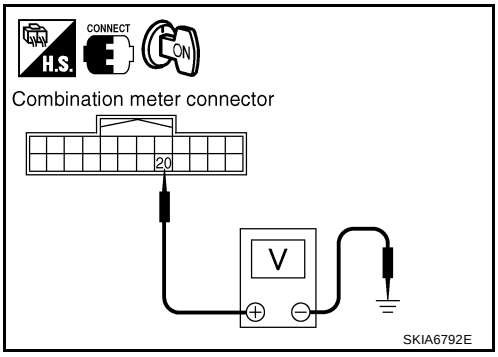
3. CHECK VOLTAGE OF COMBINATION METER

1. Turn ignition switch OFF.
2. Disconnect unified meter and A/C amp. connector.
3. Turn ignition switch ON.
4. Check continuity between combination meter harness connector M19 terminal 20 (W) and ground.

Approx. 12V

OK or NG

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



SKIA6792E

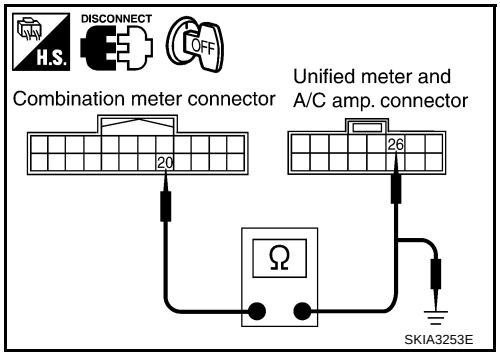
4. CHECK CONTINUITY BETWEEN COMBINATION METER AND UNIFIED METER AND A/C AMP.

1. Turn ignition switch OFF.
2. Disconnect combination meter connector.
3. Check continuity between combination meter harness connector M19 terminal 20 (W) and unified meter and A/C amp. harness connector M49 terminal 26 (W).

   Continuity should exist.

4. Check continuity between combination meter harness connector M19 terminal 20 (W) and ground.

   Continuity should not exist.



OK or NG

OK >> Replace unified meter and A/C amp. Refer to DI-65, "Removal and Installation of Unified Meter and A/C Amp." .

NG >> Repair harness or connector.

Engine Speed Signal Inspection

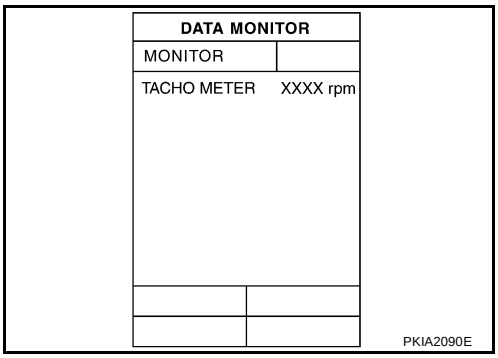
AKS00946

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

1. Start engine and select “METER A/C AMP” on CONSULT-II.
2. 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.

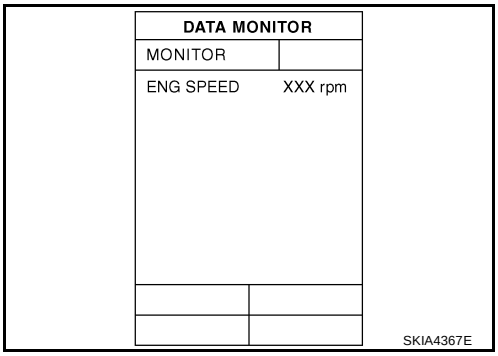


2. CHECK UNIFIED METER AND A/C AMP. INPUT SIGNAL

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 ECM self-diagnosis. Refer to EC-103, "CONSULT-II Function" .
NG >> Replace unified meter and A/C amp. Refer to DI-65, "Removal and Installation of Unified Meter and A/C Amp." .

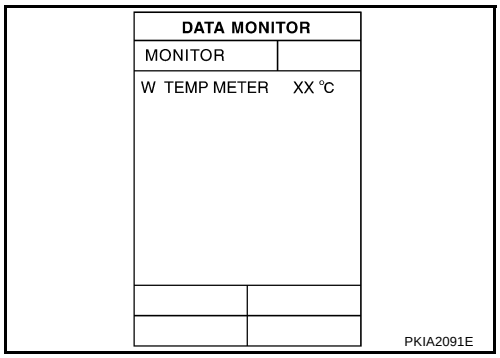


Engine Coolant Temperature Signal Inspection

AKS00947

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

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



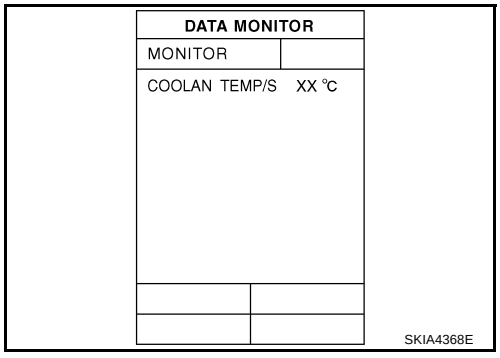
Water temperature gauge pointer	Reference value of data monitor [°C (°F)]
Hot	Approx. 130 (266)
Middle	Approx. 70-105 (158 - 221)
Cold	Approx. 50 (122)

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, compare the value of “DATA MONITOR” with that of the “COOLAN TEMP/S”.



OK or NG

OK >> Perform ECM self-diagnosis. Refer to EC-103, "CONSULT-II Function" .
NG >> Replace unified meter and A/C amp. Refer to DI-65, "Removal and Installation of Unified Meter and A/C Amp." .

Fuel Level Sensor Signal Inspection 1

AKS00948

The following symptoms do not indicate a malfunction.

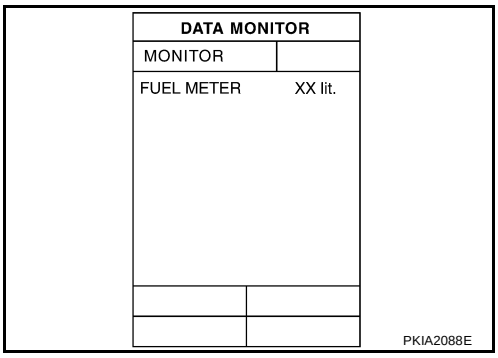
FUEL GAUGE

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

1. CHECK UNIFIED METER AND A/C AMP. 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 indication	Value on monitor [lit.]
Full	Approx. 74
Three quarters	Approx. 61
Half	Approx. 42
A quarter	Approx. 22
Empty	Approx. 8



OK or NG

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

2. CHECK FUEL LEVEL SENSOR

Check components. Refer to DI-31, "FUEL LEVEL SENSOR UNIT CHECK" .

OK or NG

OK >> GO TO 3.
NG >> Replace fuel level sensor unit.

3. CHECK INSTALLATION CONDITION

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

OK or NG

OK >> Replace unified meter and A/C amp. Refer to DI-65, "Removal and Installation of Unified Meter and A/C Amp." .
NG >> Install the fuel level sensor unit properly.

Fuel Level Sensor Signal Inspection 2

AKS00949

The following symptoms do not indicate a malfunction.

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 FUEL GAUGE

Check if fuel gauge is normally operating.

YES >> Replace combination meter.
NO >> Go to DI-23, "Fuel Level Sensor Signal Inspection 1" .

Fuel Level Sensor Signal Inspection 3

AKS0094A

1. CHECK SELF-DIAGNOSIS RESULTS OF UNIFIED METER AND A/C AMP.

1. Confirm fuel level isn't low. If fuel level is low, supply a vehicle with fuel.
2. After erase self-diagnosis results, use “METER A/C AMP” on CONSULT-II again, and perform self-diagnosis of unified meter and A/C amp.

Self-diagnosis results content

No malfunction detected>>INSPECTION END
Malfunction detected>>GO TO 2.

2. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Check unified meter and A/C amp., fuel level sensor unit and terminals (unified meter and A/C amp.-side, fuel level sensor unit-side, harness-side) for looseness or bent terminals.

OK or NG

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

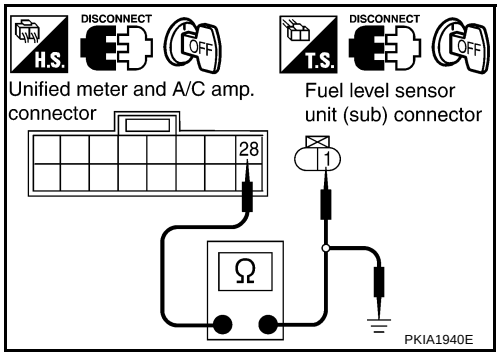
3. CHECK FUEL LEVEL SENSOR (SUB) CIRCUIT

1. Disconnect unified meter and A/C amp. connector and fuel level sensor unit (sub) connector.
2. Check continuity between unified meter and A/C amp. harness connector M49 terminal 28 (W/B) and fuel level sensor unit (sub) harness connector B28 terminal 1 (W/B).

   Continuity should exist.

3. Check continuity between unified meter and A/C amp. harness connector M49 terminal 28 (W/B) and ground.

   Continuity should not exist.



OK or NG

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

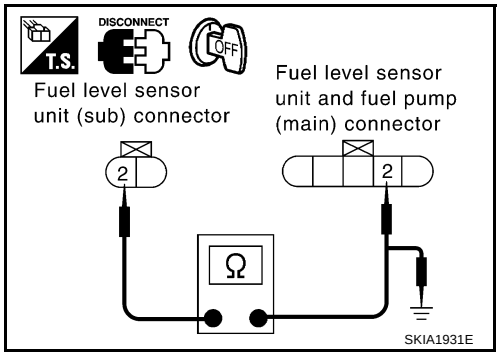
4. CHECK FUEL LEVEL SENSOR (MAIN·SUB) CIRCUIT

1. Disconnect fuel level sensor unit and fuel pump (main) connector.
2. Check continuity between fuel level sensor unit (sub) harness connector B28 terminal 2 (Y) and fuel level sensor unit and fuel pump (main) harness connector B27 terminal 2 (Y).

   Continuity should exist.

3. Check continuity between fuel level sensor unit (sub) harness connector B28 terminal 2 (Y) and ground.

   Continuity should not exist.



OK or NG

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

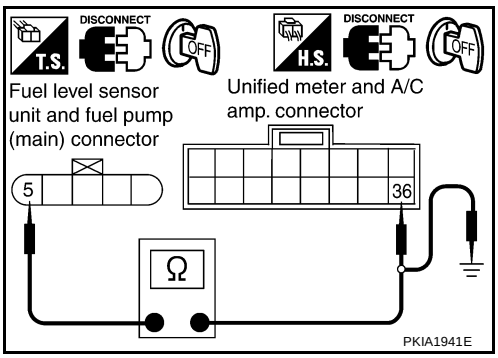
5. CHECK FUEL LEVEL SENSOR (MAIN) CIRCUIT

1. Check continuity between fuel level sensor unit and fuel pump (main) harness connector B27 terminal 5 (B/R) and unified meter and A/C amp. harness connector M49 terminal 36 (R/B).

   Continuity should exist.

2. Check continuity between fuel level sensor unit and fuel pump (main) harness connector B27 terminal 5 (B/R) and ground.

   Continuity should not exist.



OK or NG

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

6. CHECK FUEL LEVEL SENSOR

Check components. Refer to DI-31, "FUEL LEVEL SENSOR UNIT CHECK" .

OK or NG

OK >> Replace unified meter and A/C amp. Refer to DI-65, "Removal and Installation of Unified Meter and A/C Amp." .
NG >> Replace fuel level sensor unit.

CAN Communication System Inspection

AKS00BRE

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 “CAN system”. Refer to LAN-2, "Precautions When Using CONSULT-II" .

Communication Line Inspection

AKS0094C

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

Does the pointer on the meter/gauges fluctuate at the engine start?

Is the fluctuation acceptable?

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

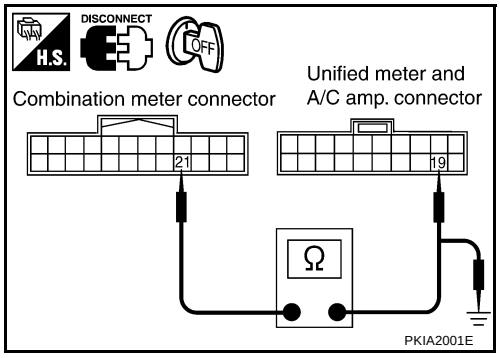
3. CHECK CONTINUITY COMMUNICATION CIRCUIT (TX: COMBINATION METER)

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 M19 terminal 21 (R/G) and unified meter and A/C amp. harness connector M48 terminal 19 (R/G).

   Continuity should exist.

4. Check continuity between combination meter harness connector M19 terminal 21 (R/G) and ground.

   Continuity should not exist.



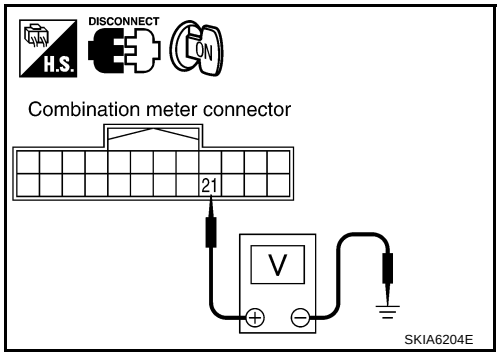
OK or NG

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 M19 terminal 21 (R/G) and ground.

   Approx. 5V

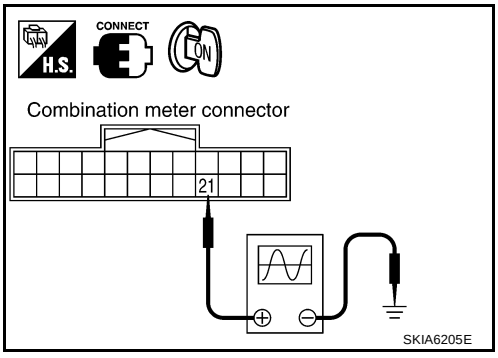


OK or NG

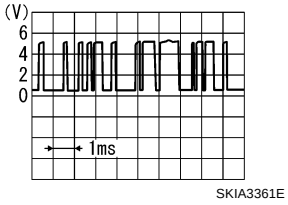
OK >> GO TO 5.
NG >> Replace unified meter and A/C amp. Refer to DI-65, "Removal and Installation of Unified Meter and A/C Amp." .

5. CHECK VOLTAGE SIGNAL OF COMBINATION METER

1. Turn ignition switch OFF and connect combination meter connector.
2. Turn ignition switch ON.
3. Check voltage signal between combination meter harness connector M19 terminal 21 (R/G) and ground with simple oscilloscope of CONSULT-II.



21 (R/G) - Ground:



OK or NG

OK >> Replace unified meter and A/C amp. Refer to DI-65, "Removal and Installation of Unified Meter and A/C Amp." .

NG >> Replace combination meter.

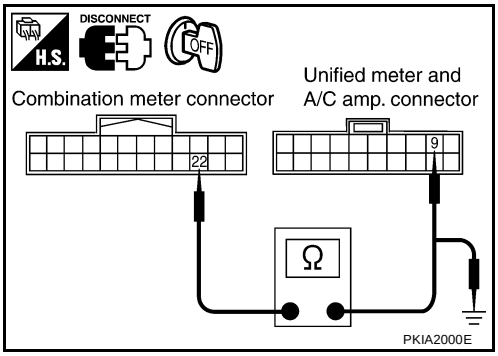
6. CHECK CONTINUITY COMMUNICATION CIRCUIT (RX: COMBINATION METER)

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 M19 terminal 22 (L/OR) and unified meter and A/C amp. harness connector M48 terminal 9 (L/OR).

Continuity should exist.

4. Check continuity between combination meter harness connector M19 terminal 22 (L/OR) and ground.

Continuity should not exist.



OK or NG

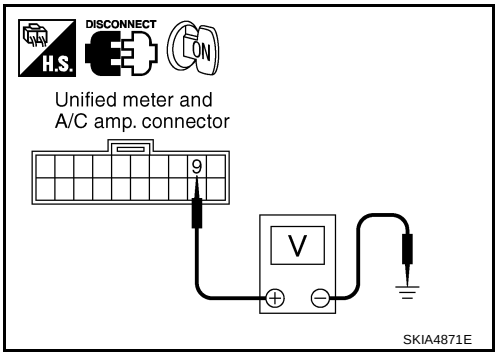
OK >> GO TO 7.

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 M48 terminal 9 (L/OR) and ground.

Approx. 5V



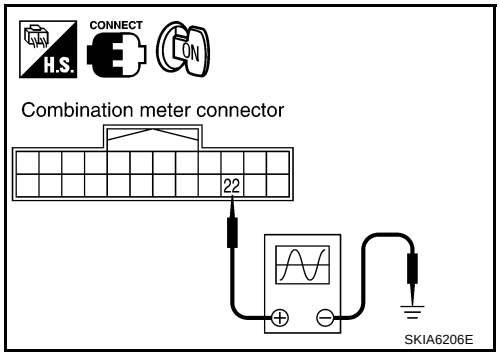
OK or NG

OK >> GO TO 8.

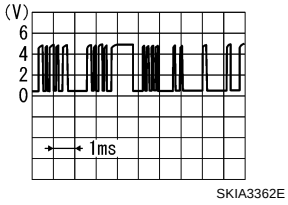
NG >> Replace combination meter.

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

1. Turn ignition switch OFF and connect unified meter and A/C amp. connector.
2. Turn ignition switch ON.
3. Check voltage signal between combination meter harness connector M19 terminal 22 (L/OR) and ground with simple oscilloscope of CONSULT-II.



22 (L/OR) - Ground:



OK or NG

OK >> Replace combination meter.
NG >> Replace unified meter and A/C amp. Refer to DI-65, "Removal and Installation of Unified Meter and A/C Amp." .

A/T Device Output Signal Inspection

AKS0094D

1. CHECK A/T DEVICE

Check manual mode switch system. Refer to AT-168, "DTC P1815 MANUAL MODE SWITCH" .

OK or NG

OK >> Replace unified meter and A/C amp. Refer to DI-65, "Removal and Installation of Unified Meter and A/C Amp." .
NG >> Replace applicable parts.

Illumination Control Switch Inspection

AKS0094E

1. CHECK CONNECTOR

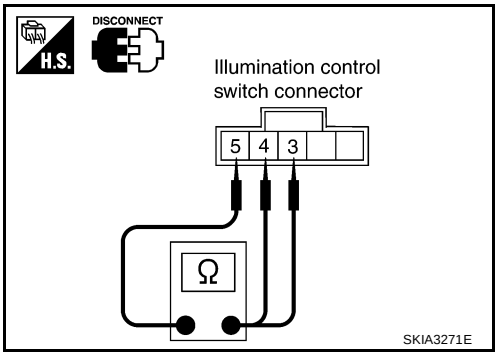
1. Remove combination meter. Refer to DI-32, "Removal and Installation for Combination Meter" .
2. Remove rear finisher to combination meter. Refer to DI-32, "Disassembly and Assembly for Combination Meter" .
3. Check illumination control switch connector for looseness.

OK or NG

OK >> GO TO 2.
NG >> Repair illumination control switch connector.

2. CHECK ILLUMINATION CONTROL SWITCH

1. Disconnect illumination control switch connector.
2. Check continuity between illumination control switch harness connector terminal 3 or 4 and 5.



Terminal		Condition	Continuity
3	5	Illumination control switch upper side (BRIGHTEN) is pushed.	Yes
		Illumination control switch upper side (BRIGHTEN) is released.	No
4	5	Illumination control switch lower side (DARKEN) is pushed.	Yes
		Illumination control switch lower side (DARKEN) is released.	No

OK or NG

OK >> Replace combination meter.
NG >> Replace illumination control switch.

Fuel Gauge Pointer Fluctuates, Indicator Wrong Value or Varies

AKS0094F

1. CHECK FUEL GAUGE FLUCTUATION

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

Does the indication value vary only during driving or before or after 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

AKS0094G

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-31, "FUEL LEVEL SENSOR UNIT CHECK" .
NO >> The float arm may interfere or bind with any of the components in the fuel tank.

Electrical Components Inspection

AKS0094H

FUEL LEVEL SENSOR UNIT CHECK

For removal, refer to FL-5, "FUEL LEVEL SENSOR UNIT, FUEL FILTER AND FUEL PUMP ASSEMBLY" .

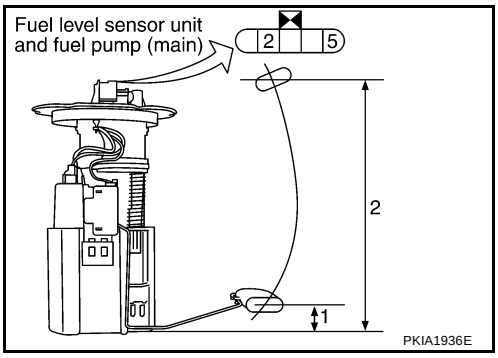
Check Fuel Level Sensor Unit and Fuel Pump (Main)

1. Check the resistance between terminals 2 and 5.

Terminal		Float position mm (in)			Resistance value Ω
2	5	*1	Empty	30 (1.18)	Approx. 80
		*2	Full	210 (8.27)	Approx. 3

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

2. If the results of check is NG, perform check the fuel level sensor unit and fuel pump (main) harness. Refer to DI-31, "Check Fuel Level Sensor Unit and Pump (Main) Harness" .

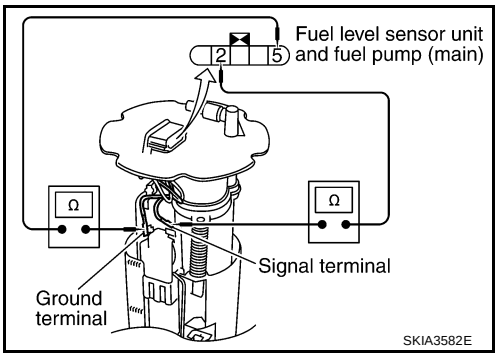


Check Fuel Level Sensor Unit and Pump (Main) Harness

1. Check the continuity following terminals.

Terminal	Continuity
2 - Signal terminal	Yes
5 - Ground terminal	

2. If the results of check is NG, replace fuel pump assembly. If the results of check is OK, replace fuel level sensor unit.

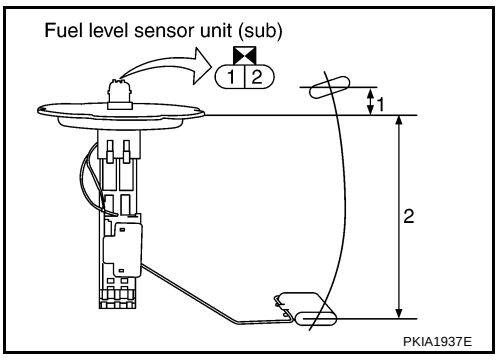


Check Fuel Level Sensor Unit (Sub)

Check the resistance between terminals 1 and 2.

Terminal		Float position mm (in)			Resistance value Ω
1	2	*1	Full	8 (0.31)	Approx. 3
		*2	Empty	175 (6.89)	Approx. 43

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

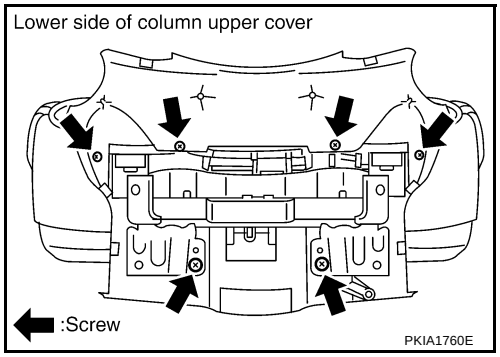


Removal and Installation for Combination Meter

AKS0094I

REMOVAL

1. Remove instrument driver panel lower. Refer to IP-10, "INSTRUMENT PANEL ASSEMBLY" .
2. Remove steering column lower cover. Refer to IP-10, "INSTRUMENT PANEL ASSEMBLY" .
3. Remove bolts (4) and remove column upper cover and combination meter assembly.
4. Remove screws (6) and remove combination meter.



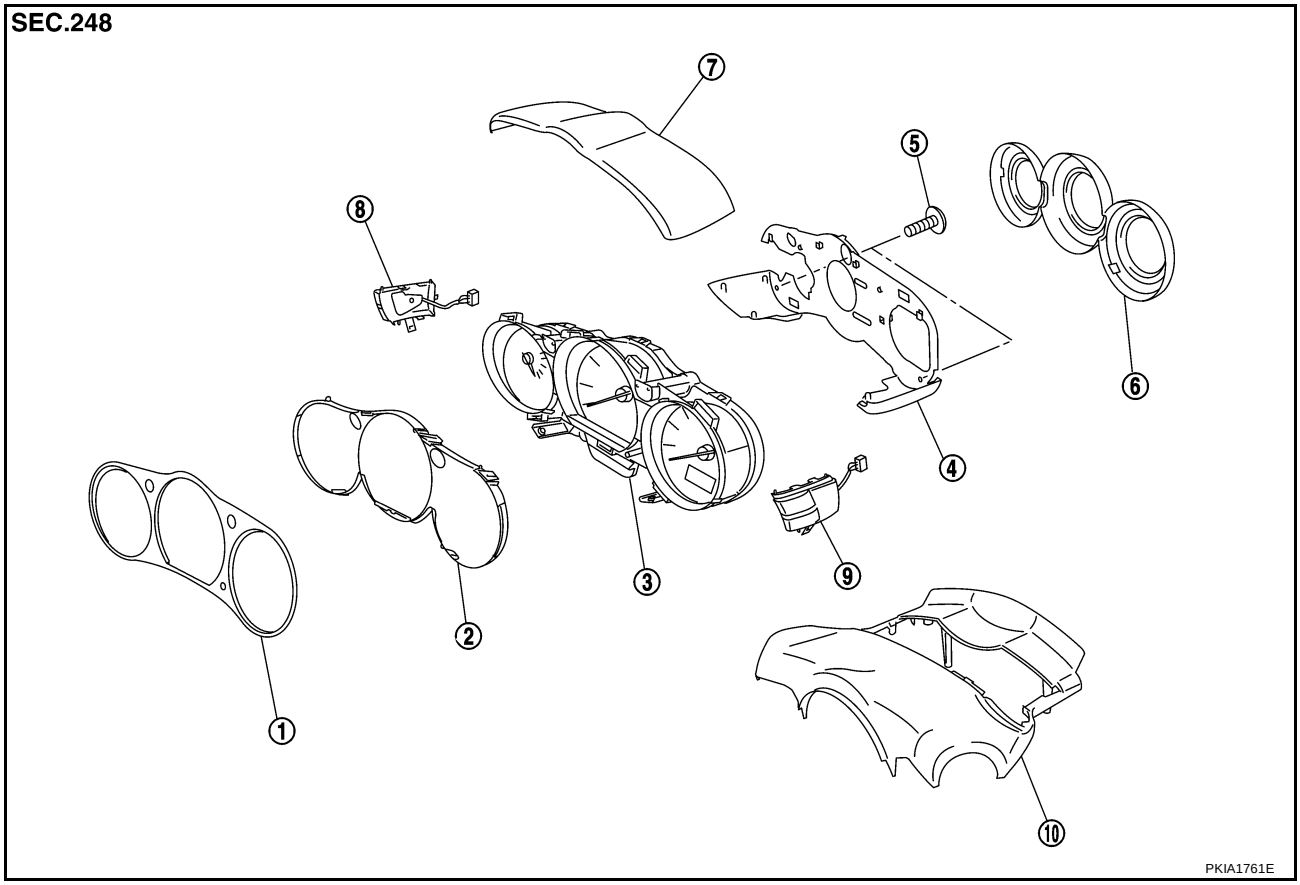
INSTALLATION

Install in the reverse order of removal.

Disassembly and Assembly for Combination Meter

AKS0094J

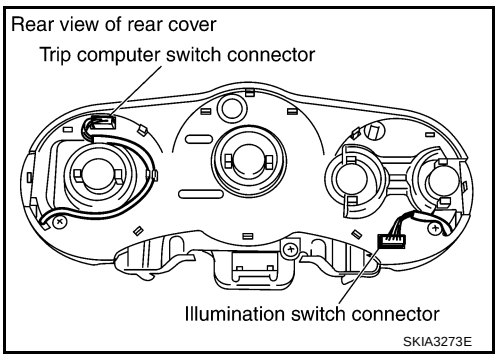
DISASSEMBLY



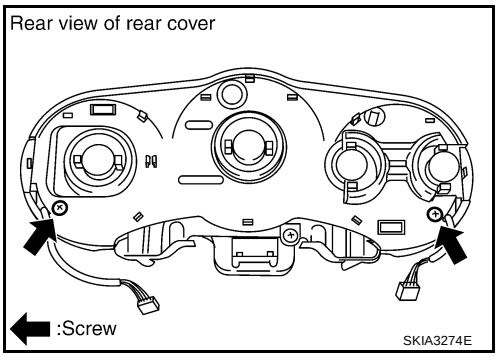
1. Front finisher
2. Front cover
3. Unified meter control unit
4. Rear cover
5. Screws
6. Rear finisher
7. Upper cover
8. Illumination control switch
9. Trip computer switch
10. Steering column upper cover

1. Remove screws (6) to separate steering column upper cover.
2. Disengage tabs (2) to separate front finisher.
3. Disengage tabs (8) to separate rear finisher.

4. Disconnect illumination control switch connector and trip computer switch connector.



5. Remove screws (2) and remove rear cover.



6. Disengage tabs (4) to separate upper cover from rear cover.
7. Remove illumination control switch.
8. Remove trip computer switch.
9. Disengage tabs (7) to separate front cover.

ASSEMBLY

Assemble in reverse order of disassembly.

TRIPLE METERS

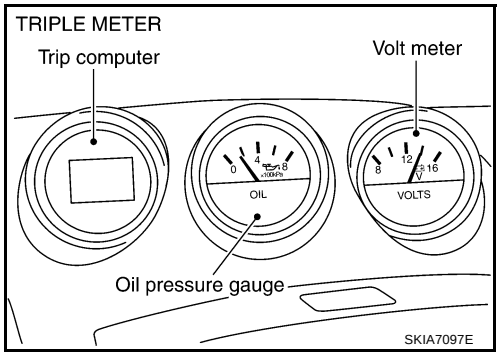
PFP:24845

System Description

AKS0094K

TRIPLE METER

- Oil pressure gauge and voltmeter are controlled by the triple meter.
- Trip computer are controlled by signals from the unified meter and A/C amp.
- Trip computer segment can be checked in self-diagnosis mode of combination meter.
- Meters/gauges can be checked in self-diagnosis mode of combination meter.



POWER SUPPLY AND GROUND CIRCUIT

Power is supplied at all times

- through 10A fuse [No. 19, located in the fuse block (J/B)]
- to triple meter terminal 2,
- to combination meter terminal 24, and
- to unified meter and A/C amp. 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 triple meter terminal 3, and
- to combination meter terminal 23.
- 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 ACC or 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 triple meter terminal 1,
- to combination meter terminals 10,11 and 12, and
- to unified meter and A/C amp. terminals 29 and 30
- through body grounds M30 and M66.

TRIP COMPUTER

Function

The display of the trip computer is situated in the triple meter. When the ignition switch is turned to ON, the display scrolls all the modes of the trip computer and then shows the mode chosen before the ignition switch is turned OFF.

The trip computer can indicate the following items.

- Vehicle speed
- Outside air temperature
- DTE (distance to empty)
- Average fuel consumption
- Average vehicle speed
- Trip time
- Trip distance
- Stopwatch
- Shift-up indicator setting

Vehicle Speed Indication

With ignition switch ON position, trip computer displays vehicle speed according to vehicle speed signal from unified meter and A/C amp. Unified meter and A/C amp. received this signal from the combination meter.
The vehicle speed indication is displayed in km/h (MPH) while driving.

Outside Air Temperature Indication

With ignition switch ON position, trip computer displays outside air temperature according to signal of outside air temperature from unified meter and A/C amp. Unified meter and A/C amp. receives these signals from outside air temperature sensor.
The outside air temperature is displayed while the ignition switch is in the ON position.
Signal is supplied

- through ambient sensor terminal 1
- to unified meter and A/C amp. terminal 39.
- through unified meter and A/C amp. terminal 10
- to triple meter terminal 5.

Indication range is between -30 and 55°C (-22 and 131°F). When outside air temperature is less than -30°C (-22°F) or more than 55°C (131°F), display shows "--". When outside temperature is less than 3°C (37°F) continuously, display will "ICY" indicator illuminate as warning. In this case, the display will change to the outside air temperature mode even though the display is showing a different mode. The "ICY" indicator will continue illuminate as long as the temperature remains below 4°C (39°F).

DTE (Distance to Empty) Indication

With ignition switch ON position, trip computer displays DTE according to signal to DTE from unified meter and A/C amp.
The DTE indication provides the driver with an estimation of the distance that can be driven before refueling. The DTE is calculated by signals from the fuel level sensor unit (fuel remaining), ECM (fuel consumption) and ABS actuator and electric unit (TCS/ABS control unit) [vehicle speed].
The indication will be refreshed every 30 seconds. When fuel remaining is less than approximately 10 ℓ (10-5/8 US qt, 8-3/4 Imp qt), the indication will "dte" indicator blink as a warning. If the fuel remaining is less than approximately 8 ℓ (8-1/2 US qt, 7 Imp qt), the indication will show "----". In this case, the display will change to the DTE mode even though the display is showing a different mode. Press trip computer mode switch if you wish to return to the mode that was selected before the warning occurred. The "dte" indicator will remain blinking until the vehicle is refueled. When the battery is disconnected and reconnected, DTE mode will display "----" for 30 seconds.

Average Fuel Consumption Indication

With ignition switch ON position, trip computer displays average fuel consumption according to signal of average fuel consumption from unified meter and A/C amp. Average fuel consumption is calculated by signals from ABS actuator and electric unit (TCS/ABS control unit) [vehicle speed] and the ECM (fuel consumption).
The indication will be refreshed every 30 seconds. If average fuel consumption is reset, average vehicle speed will be reset at the same time. At about 1/3 miles (500 m) or for 80 seconds after resetting, the display shows "----".

Average Vehicle Speed Indication

With ignition switch ON position, trip computer displays average vehicle speed according to signal of average vehicle speed from unified meter and A/C amp.
Average vehicle speed indication is calculated by running distance and running time. The indication will be refreshed every 30 seconds. If average vehicle speed is reset, average fuel consumption will be reset at the same time. After resetting, the display will show "----" for 30 seconds.

Trip Time Indication

With ignition switch ON position, trip computer displays trip time according to trip time signal from unified meter and A/C amp.
Trip time displays accumulate ignition switch ON time. If trip time is reset, trip distance will be reset at the same time.

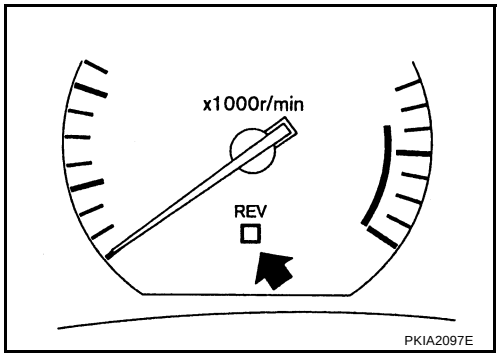
Trip Distance Indication

With ignition switch ON position, trip computer displays trip distance according to trip distance signal from unified meter and A/C amp.
Trip distance is calculated by vehicle speed signal from ABS actuator and electric unit (TCS/ABS control unit) [vehicle speed] with CAN communication line. If trip distance is reset, trip time will be reset at the same time.

Stopwatch Indication

With ignition switch ON position, trip computer displays stopwatch according to trip computer setting switch signal from unified meter and A/C amp.
Stopwatch can be changed in START, STOP or RESET by pressing trip computer setting switch. After 100 hours, the time will start from the reset display again. Even if the display is switched to the other mode while the time is starting, the stopwatch continues to advance until you stop the time in the stopwatch mode. When the ignition switch is turned OFF, the time is reset.

Shift-up Indicator Setting Indication



With ignition switch ON position, trip computer displays shift-up indicator setting according to trip computer setting switch signal from unified meter and A/C amp. Shift-up indicator in combination meter is setting according to trip computer setting switch signal from unified meter and A/C amp.
The shift-up indicator setting indication is used to set the desired engine speed (rpm) for the shift-up indicator (situated in the tachometer) to illuminate. When the engine speed approaches or reaches the set figure, the shift-up indicator will flash or illuminate to show the driver the timing for shifting into a higher gear. The shift-up indicator will start flashing when the engine speed is within 500 rpm of the set figure while driving, and then illuminate after the engine speed reaches the set figure. The figure of engine speed can changed between 2,000 and 8,000 rpm by pressing trip computer setting switch. Pressing the trip computer setting switch for less than approximately 1 second will add the figure by 100 rpm. If pressing for more than approximately 1 second, the figure will increase by 500 rpm.

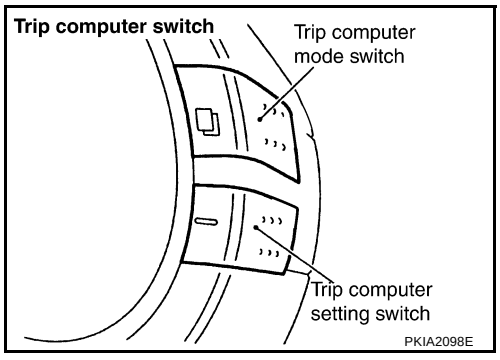
For example, you can use the shift-up indicator when driving as follows:

- If the maximum engine speed is desired, set the figure at 6,600 rpm. (The indicator starts flashing from about 6,100 rpm and comes on steady at 6,600 rpm.)
- If the maximum acceleration performance is desired, set the figure at 4,800 rpm. (The indicator starts flashing from about 4,300 rpm and comes on steady at 4,800 rpm.)

NOTE:

- **There may be a lag between the timing of the shift-up indicator illumination and the tachometer indication.**
- **If the battery cable is disconnected, the set engine speed will be returned to the initial figure (6,600 rpm).**
- **This is also available for the purpose of breaking in to the vehicle.**

How to Change/Reset Indication



When the ignition switch is turned to ON, modes of the trip computer can be selected by pressing trip computer mode switch. The switches for the trip computer are located on the right side of the combination meter. Indication can be changed in the following order by momentarily depressing the trip computer mode switch. Vehicle speed → Outside air temperature → DTE → Average fuel consumption and average vehicle speed → Trip time and trip distance → Stopwatch → Shift-up indicator setting.
Holding the trip computer setting switch for more than 0.8 second will reset the indication of the currently displayed mode (Average fuel consumption, average vehicle speed, trip time, trip distance or stopwatch).

NOTE:
When the OUTSIDE AIR TEMPERATURE warning and the DTE warning match warning conditions at the same time, the display automatically indicates the OUTSIDE AIR TEMPERATURE.

OIL PRESSURE GAUGE

The oil pressure gauge indicates engine oil pressure drawn from oil pressure sensor.
With the ignition switch in the ON or START position, power is supplied

- through triple meter terminal 9
- to oil pressure sensor terminal 1.

Ground is supplied

- to triple meter terminal 7
- through oil pressure sensor terminal 3.

And triple meter receives oil pressure signal from oil pressure sensor

- through oil pressure sensor terminal 2
- to triple meter terminal 8.

NOTE:
This gauge is not designed to indicate low oil level. Use the oil level gauge to check the oil level.

VOLTMETER

When the ignition switch is turned to the ON position, the voltmeter indicates the battery voltage drawn from battery, while the engine is running, it indicates the alternator voltage of about 13 to 15 volts.
With the ignition switch in the ON or START position, power is supplied

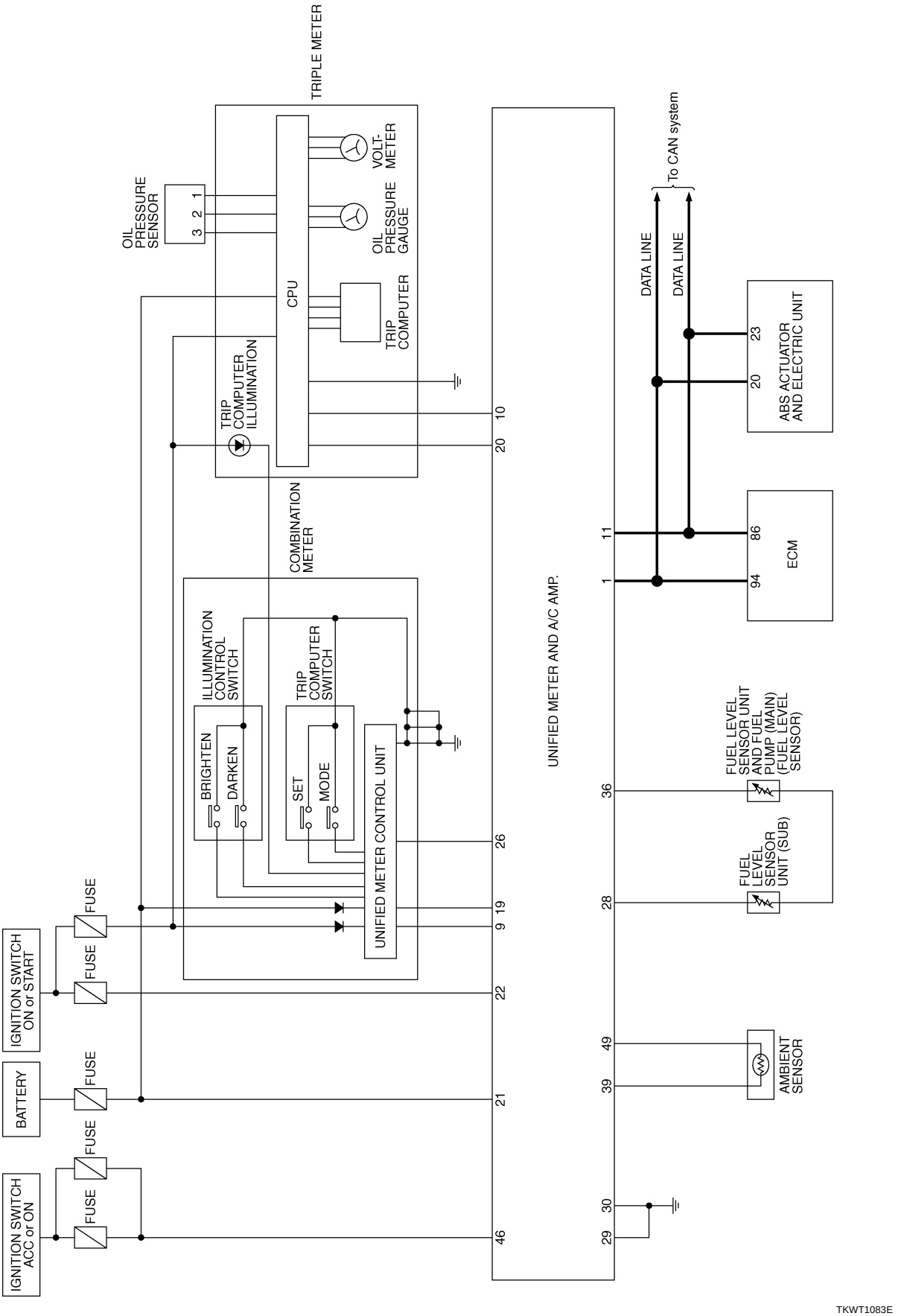
- through 10A fuse [No. 14, located in the fuse block (J/B)]
- to triple meter terminal 3.

Ground is supplied

- to triple meter terminal 1
- through body grounds M30 and M66.

Schematic

AKS0094L

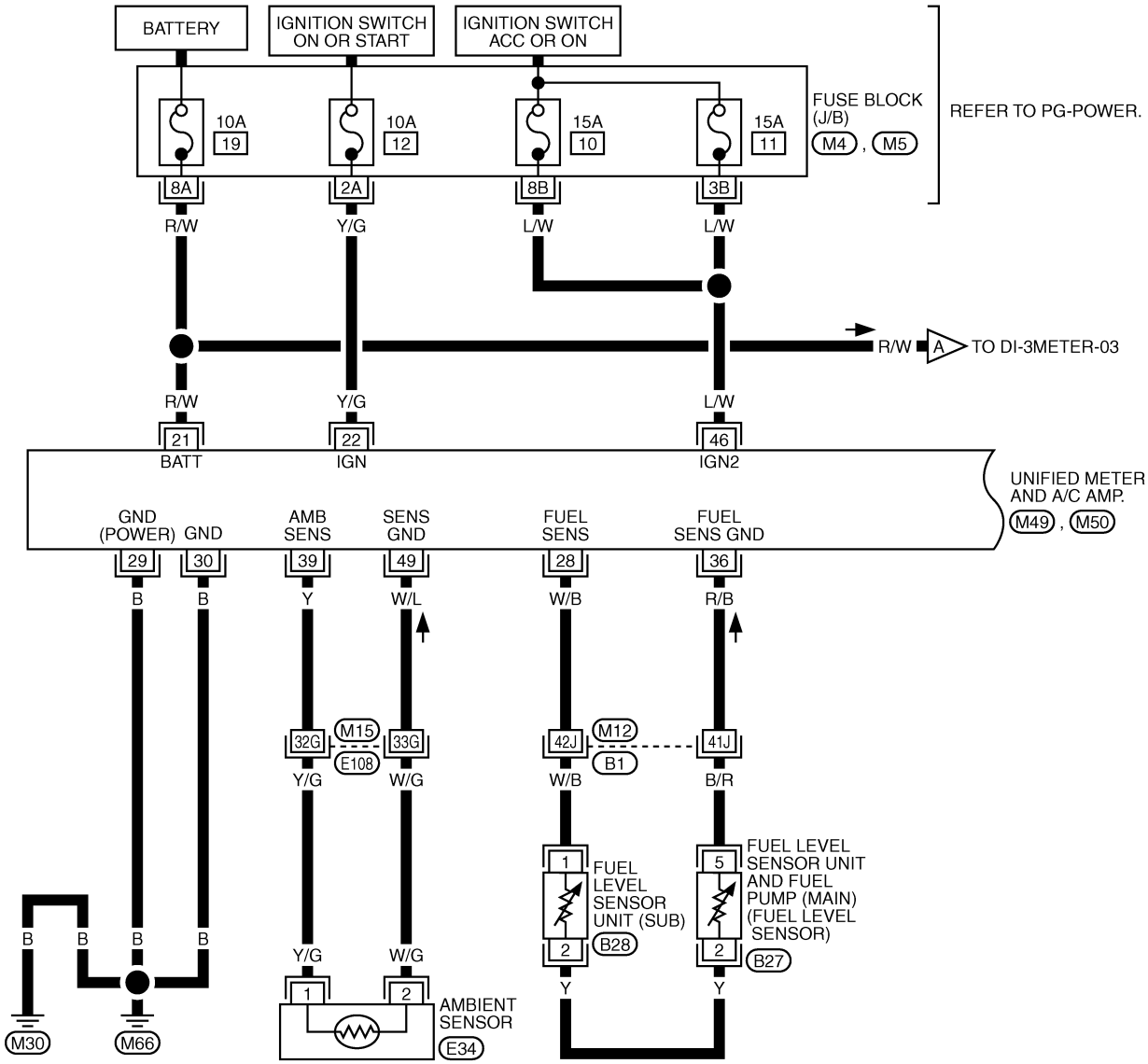


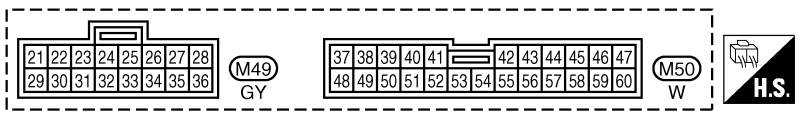
TKWT1083E

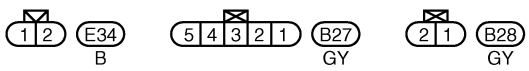
Wiring Diagram — 3METER —

AKS0094M

DI-3METER-01



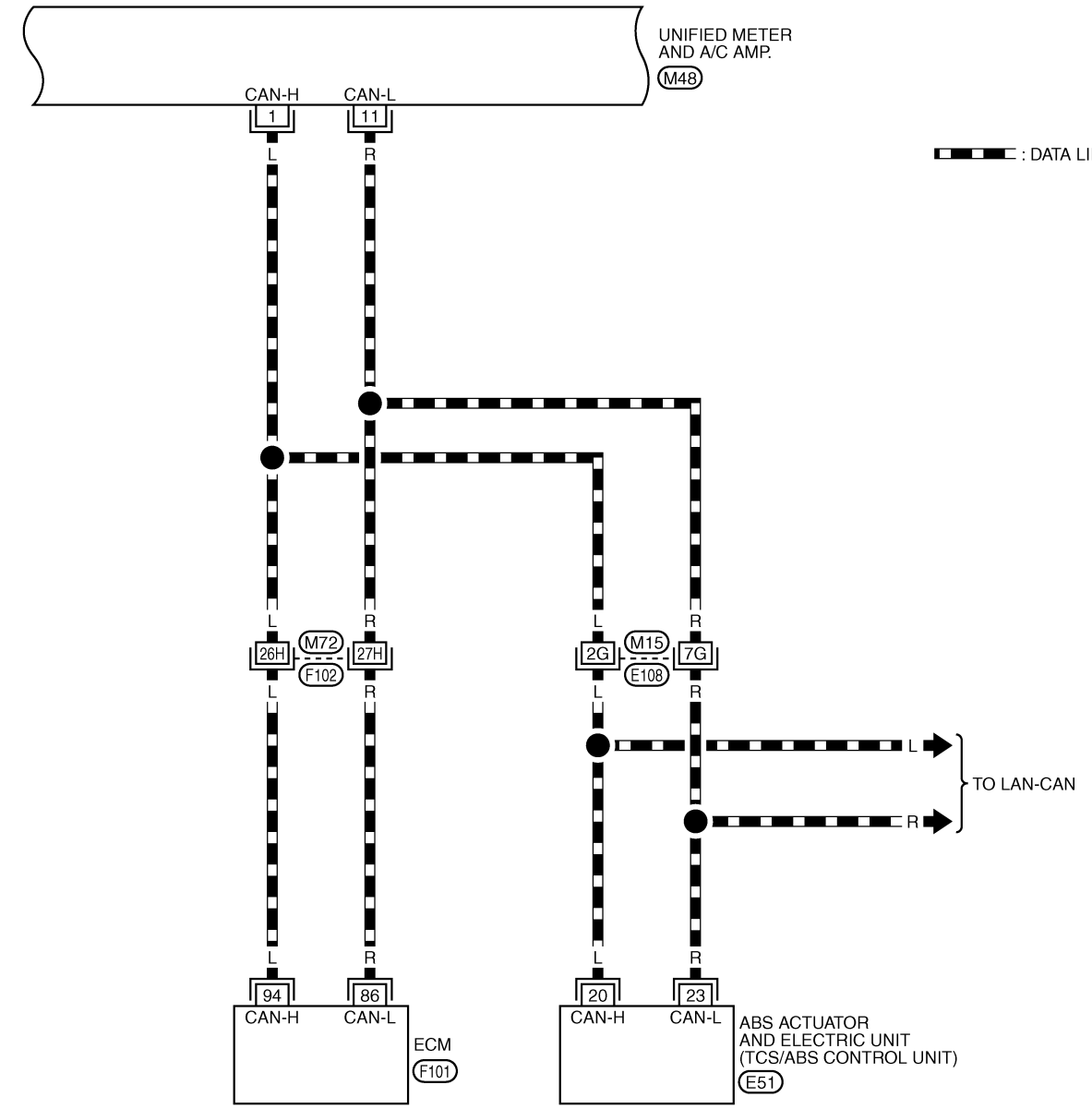


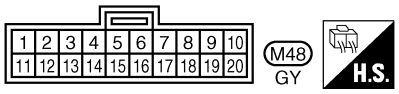


REFER TO THE FOLLOWING.
E108, B1 -SUPER MULTIPLE JUNCTION (SMJ)
M4, M5 -FUSE BLOCK-JUNCTION BOX (J/B)

TKWT0497E

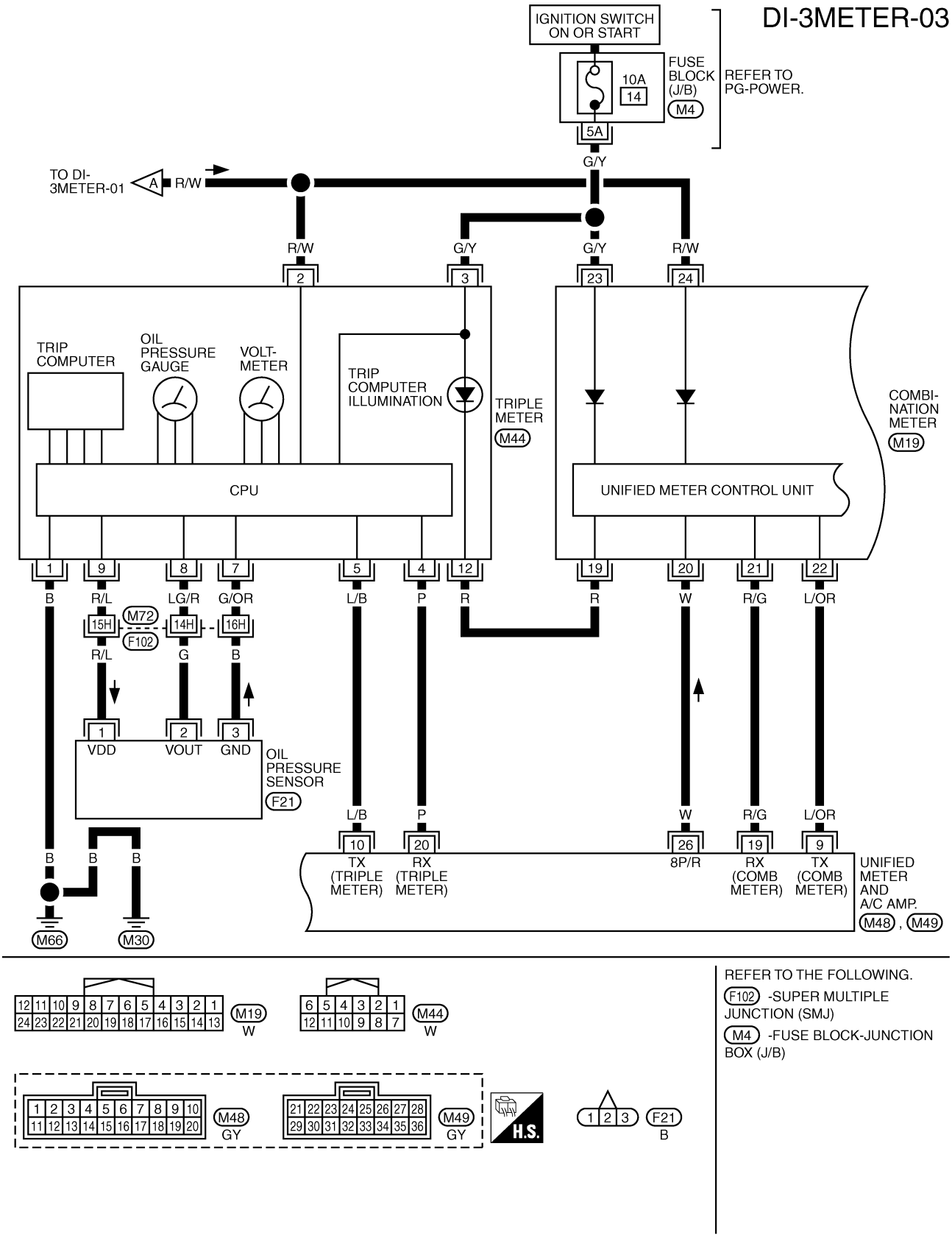
DI-3METER-02



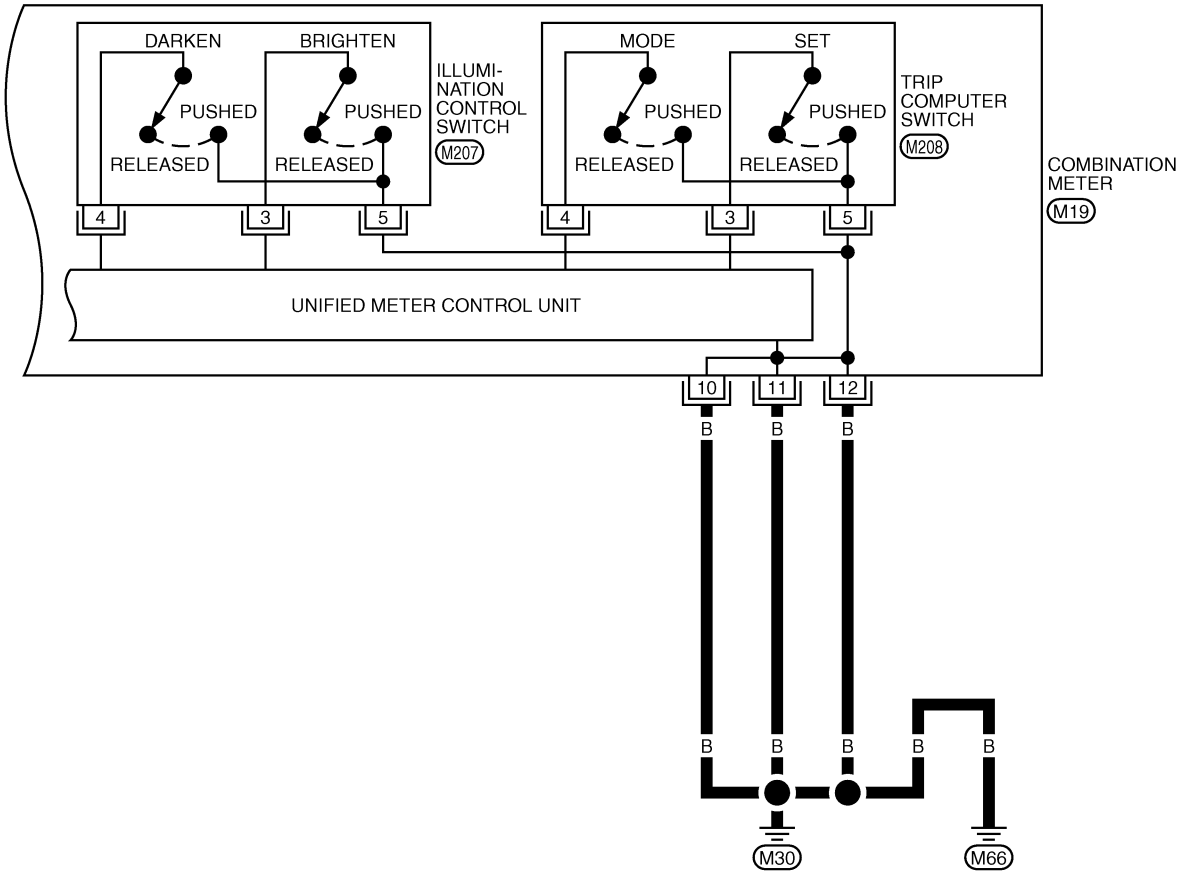


REFER TO THE FOLLOWING.
E108 , F102 -SUPER MULTIPLE JUNCTION (SMJ)
E51 , F101 -ELECTRICAL UNITS

TKWT1084E


DI-3METER-03
IGNITION SWITCH ON OR START
FUSE BLOCK (J/B) M4
10A 14
5A
REFER TO PG-POWER.
G/Y
TO DI-3METER-01
A
R/W
R/W
G/Y
G/Y
R/W
2
3
23
24
TRIP COMPUTER
OIL PRESSURE GAUGE
VOLT-METER
TRIP COMPUTER ILLUMINATION
TRIPLE METER M44
COMBI-NATION METER M19
CPU
UNIFIED METER CONTROL UNIT
1
9
8
7
5
4
12
19
20
21
22
B
R/L
LG/R
G/OR
L/B
P
R
R
W
R/G
L/OR
M72
15H
14H
16H
F102
R/L
G
B
1
2
3
VDD
VOUT
GND
OIL PRESSURE SENSOR F21
L/B
P
W
R/G
L/OR
10
20
26
19
9
TX (TRIPLE METER)
RX (TRIPLE METER)
8P/R
RX (COMB METER)
TX (COMB METER)
UNIFIED METER AND A/C AMP. M48, M49
B
B
B
M66
M30
M19
W
M44
W
M48
GY
M49
GY
H.S.
F21
B
REFER TO THE FOLLOWING.
F102 -SUPER MULTIPLE JUNCTION (SMJ)
M4 -FUSE BLOCK-JUNCTION BOX (J/B)

TKWT0499E

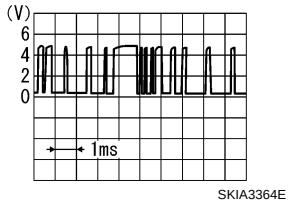
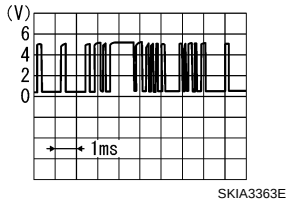
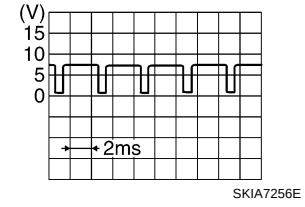


*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

TKWT0522E

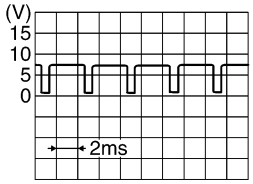
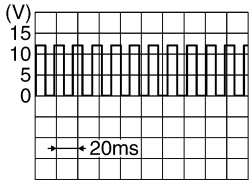
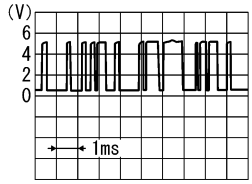
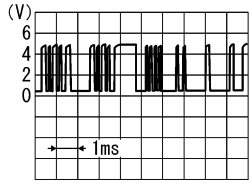
Terminals and Reference Value for Triple Meter

AKS0094O

Terminal No.	Wire color	Item	Measuring condition		Reference value (V)
			Ignition switch	Operation or condition	
1	B	Ground	ON	—	Approx. 0
2	R/W	Battery power supply	OFF	—	Battery voltage
3	G/Y	Ignition switch ON or START	ON	—	Battery voltage
4	P	TX communication line (To unified meter and A/C amp.)	ON	—	 SKIA3364E
5	L/B	RX communication line (From unified meter and A/C amp.)	ON	—	 SKIA3363E
7	G/OR	Oil pressure sensor ground	ON	—	Approx. 0
8	LG/R	Oil pressure sensor signal	ON	When ignition switch is in ON position. (Engine stopped.)	Approx. 1
				Engine running. (When the oil pressure is 500kPa.)	Approx. 3
9	R/L	Oil pressure sensor power supply	ON	—	Approx. 5
12	R	Illumination signal	ON	Lighting switch ON, then operate the illumination control switch.	<e.g.> When brightness level is midway.  SKIA7256E
				Lighting switch OFF	Approx. 0

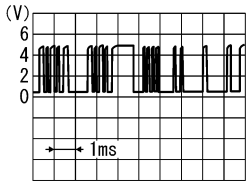
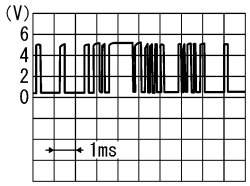
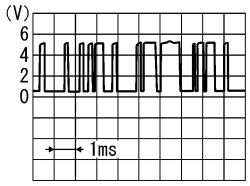
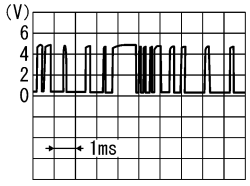
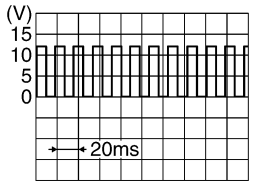
Terminals and Reference Value for Combination Meter

AKS0094P

Terminal No.	Wire color	Item	Measuring condition		Reference value (V)
			Ignition switch	Operation or condition	
10	B	Ground	ON	—	Approx. 0
11					
12					
19	R	Illumination signal	ON	Lighting switch ON, then operate the illumination control switch.	<e.g.> When brightness level is midway.  SKIA7256E
				Lighting switch OFF	Approx. 0
20	W	Vehicle speed signal (8-pulse)	ON	Speedometer operated [When vehicle speed is approx. 40km/h (25MPH)]	 PKIA1935E
21	R/G	TX communication line (To unified meter and A/C amp.)	ON	—	 SKIA3361E
22	L/OR	RX communication line (From unified meter and A/C amp.)	ON	—	 SKIA3362E
23	G/Y	Ignition switch ON or START	ON	—	Battery voltage
24	R/W	Battery power supply	OFF	—	Battery voltage

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

AKS0094Q

Terminal No.	Wire color	Item	Measuring condition		Reference value (V)
			Ignition switch	Operation or condition	
1	L	CAN H	—	—	—
9	L/OR	TX communication line (To combination meter)	ON	—	 SKIA3362E
10	L/B	TX communication line (To triple meter)	ON	—	 SKIA3363E
11	R	CAN L	—	—	—
19	R/G	RX communication line (From combination meter)	ON	—	 SKIA3361E
20	P	RX communication line (From triple meter)	ON	—	 SKIA3364E
21	R/W	Battery power supply	OFF	—	Battery voltage
22	Y/G	Ignition switch ON or START	ON	—	Battery voltage
26	W	Vehicle speed signal (8-pulse)	ON	Speedometer operated [When vehicle speed is approx. 40km/h (25MPH)]	 PKIA1935E
28	W/B	Fuel level sensor signal	—	—	Refer to DI-31, "FUEL LEVEL SENSOR UNIT CHECK" .
29	B	Ground (For power)	ON	—	Approx. 0
30	B	Ground	ON	—	Approx. 0
36	R/B	Fuel level sensor signal ground	ON	—	Approx. 0
39	Y	Ambient sensor signal	—	—	Refer to ATC-97, "Ambient Sensor Circuit" .
46	L/W	Ignition switch ACC or ON	ACC	—	Battery voltage
49	W/L	Ambient sensor signal ground	ON	—	Approx. 0

Meter/Gauges Operation and Trip Computer

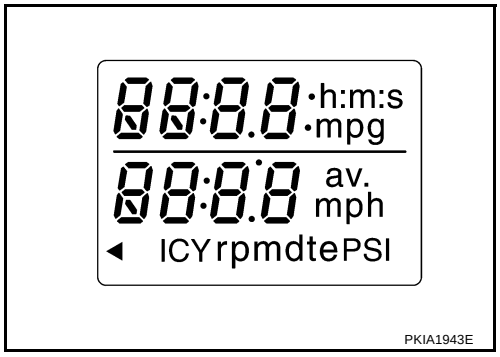
AKS0094R

SELF-DIAGNOSIS FUNCTION

- Trip computer segment operation can be checked in self-diagnosis mode of combination meter.
- Meters/gauges can be checked in self-diagnosis mode of combination meter.

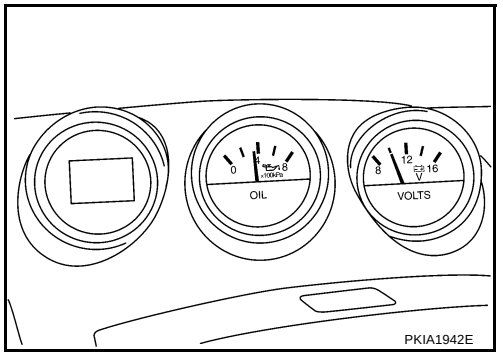
HOW TO ALTERNATE DIAGNOSIS MODE

1. While pushing the odo/trip meter switch, turn ignition switch ON.
2. Check that the trip meter displays “0000.0”.
3. Push the odo/trip meter switch at least 3 times. (Within 7 seconds after the ignition switch is turned ON.)
4. All the segments on the trip computer illuminate. At this time, the unified meter control unit is turned to diagnosis mode.



PKIA1943E

5. Push the odo/trip meter switch. Each meter/gauge should indicate as shown in the figure while pushing odo/trip meter switch.



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CONSULT-II Function

AKS0094S

Refer to DI-62, "CONSULT-II Function" in “UNIFIED METER AND A/C AMP”.

How to Proceed With Trouble Diagnosis

AKS0094T

1. Confirm the symptom or customer complaint.
2. Perform diagnosis according to diagnosis flow. Refer to DI-47, "Diagnosis Flow" .
3. According to the symptom chart, repair or replace the cause of the symptom.
4. Does the meter operate normally? If so, go to 5. If not, go to 2.
5. INSPECTION END

Diagnosis Flow

AKS0094U

1. CHECK SELF-DIAGNOSTIC RESULTS OF UNIFIED METER AND A/C AMP.

1. Start engine.
2. Select “METER A/C AMP” on CONSULT-II, and perform self-diagnosis of unified meter and A/C amp. Refer to DI-62, "CONSULT-II Function" .
3. After erasing the self-diagnosis result, perform self-diagnosis again.

Self-diagnostic results content

No malfunction detected>>GO TO 2.
Malfunction detected>> Go to DI-51, "Symptom Chart 2" .

2. CHECK TRIP COMPUTER ILLUMINATION

Turn ignition switch ON.

Do trip computer display illuminate?

YES >> GO TO 3.
NO >> Check ignition power supply system of triple meter. Refer to DI-49, "Power Supply and Ground Circuit Check" .

3. CHECK SELF-DIAGNOSIS OPERATION OF COMBINATION METER

Perform combination meter self-diagnosis. Refer to DI-46, "SELF-DIAGNOSIS FUNCTION" .

Does self-diagnosis function operate?

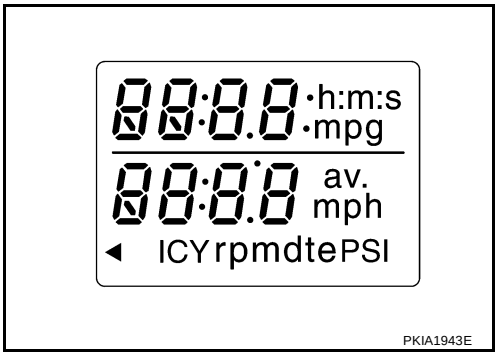
YES >> GO TO 4.
NO >> Check battery power supply of triple meter and ground system. Refer to DI-49, "Power Supply and Ground Circuit Check" .

4. CHECK TRIP COMPUTER OPERATION

Check segment display status of trip computer.

Is the display normal?

YES >> GO TO 5.
NO >> Replace triple meter.



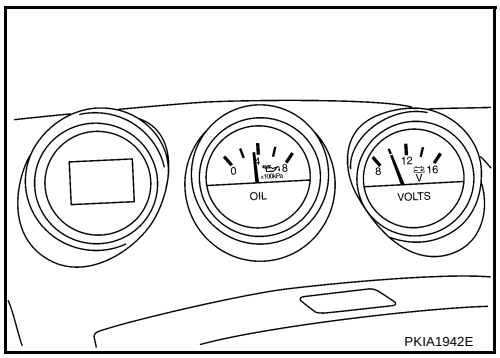
PKIA1943E

5. CHECK METER CIRCUIT

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

OK or NG

OK >> Go to DI-50, "Symptom Chart 1" .
NG >> Replace triple meter.



Power Supply and Ground Circuit Check

AKS0094V

1. CHECK FUSE

Check for blown triple meter fuses.

Unit	Power source	Fuse No.
Triple meter	Battery	19
Unified meter and A/C amp.		
Unified meter and A/C amp.	Ignition switch ACC or ON	10, 11
Triple meter	Ignition switch ON or START	14
Unified meter and A/C amp.		12

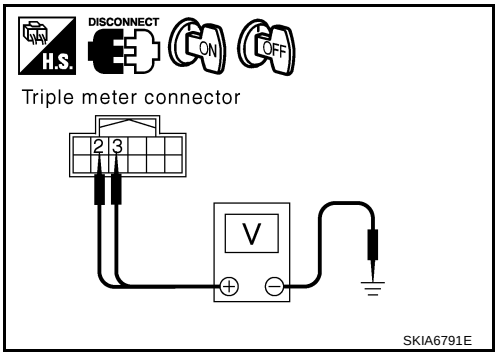
OK or NG

OK >> GO TO 2.
NG >> If fuse is blown, be sure to eliminate cause of malfunction before installing new fuse. Refer to PG-4, "POWER SUPPLY ROUTING CIRCUIT" .

2. CHECK POWER SUPPLY CIRCUIT

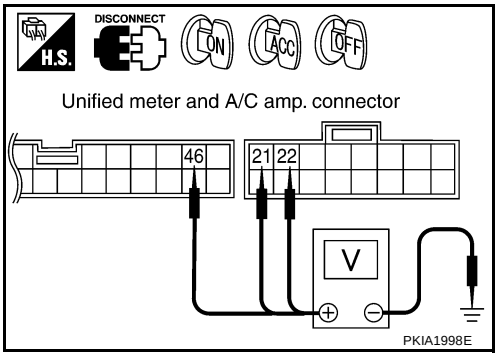
1. Disconnect the triple meter connector.
2. Check voltage between triple meter harness connector terminals and ground.

Terminals			Ignition switch position	
(+)		(–)	OFF	ON
Connector	Terminal (Wire color)			
M44	2 (R/W)	Ground	Battery voltage	Battery voltage
	3 (G/Y)		0V	Battery voltage



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

Terminals			Ignition switch position		
(+)		(–)	OFF	ACC	ON
Connector	Terminal (Wire color)				
M49	21 (R/W)	Ground	Battery voltage	Battery voltage	Battery voltage
	22 (Y/G)		0V	0V	Battery voltage
M50	46 (L/W)		0V	Battery voltage	Battery voltage



OK or NG

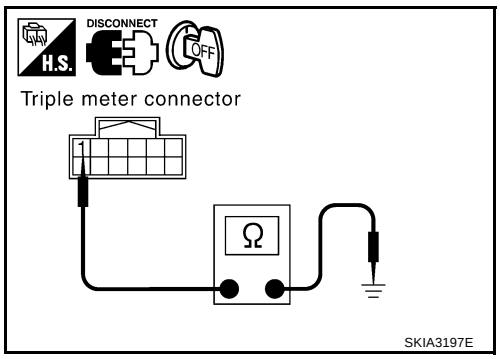
OK >> GO TO 3.
NG >> Check the following.

- Harness for open between triple meter and fuse
- Harness for open between unified meter and A/C amp. and fuse

3. CHECK GROUND CIRCUIT

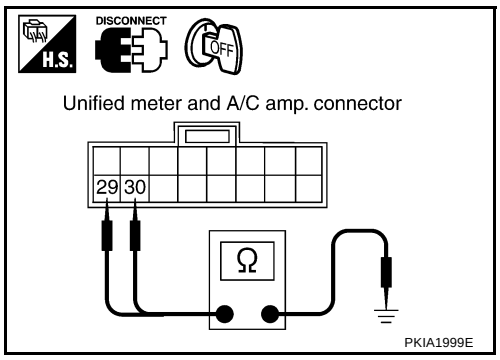
1. Turn ignition switch OFF.
2. Check continuity between triple meter harness connector M44 terminal 1 (B) and ground.

Continuity should exist.



3. Check continuity between unified meter and A/C amp. harness connector M49 terminals 29 (B), 30 (B) and ground.

Continuity should exist.



OK or NG

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

Symptom Chart 1

AKS0094W

Trouble phenomenon	Possible cause
Speed indication is not displayed properly.	Refer to DI-51, "Vehicle Speed Signal Inspection" .
Outside air temperature indication is not displayed properly. (It may take a short time to steady the indication after ignition switch is turned ON.) **NOTE:** If the meter is powered up with the ambient sensor disconnected, outside air temperature display will show “---” even if the sensor is reconnected. In this case, with the sensor connected, disconnect and reconnect the battery, then the correct temperature will be displayed.	Refer to ATC-97, "AMBIENT TEMPERATURE INPUT PROCESS" in “ATC”.
DTE (distance to empty) indication is not displayed properly.	Refer to DI-52, "Fuel Consumption Monitor Signal Inspection" .
Average fuel consumption indication is not displayed properly.	
Shift-up indicator setting indication is not displayed properly or shift-up indicator does not operate properly.	Refer to DI-56, "Trip Computer Switch Inspection" .
Average vehicle speed indication is not indicated properly.	Replace triple meter.
Trip distance indication is not indicated properly.	
Trip time indication is not indicated properly.	
Stopwatch indication is not displayed properly.	
Indication is malfunction of voltmeter.	
Indication is malfunction of oil pressure gauge.	Refer to DI-52, "Oil Pressure Sensor Inspection" .
Trip computer switch is not operate.	Refer to DI-56, "Trip Computer Switch Inspection" .

Symptom Chart 2

AKS0094X

Displayed item [Code]	Inspection contents	Possible cause
CAN COMM CIRC [U1000]	Inspect the CAN communication circuit.	Refer to DI-25, "CAN Communication System Inspection" in “COMBINATION METERS”. **CAUTION:** **Even when there is no malfunction on CAN communication system, malfunction may be misinterpreted when battery has low voltage (when maintaining 7V-8V for about 2 seconds) or 10A fuse [No. 19, located in the fuse block (J/B)] fuse is disconnected.**
T/METER COMM CIRC [B2201]	Inspect the communication line of between triple meter and unified meter and A/C amp.	Refer to DI-54, "Communication Line Inspection" .
METER COMM CIRC [B2202]	Inspect the communication line of between combination meter and unified meter and A/C amp.	Refer to DI-26, "Communication Line Inspection" in “COMBINATION METERS”.
CODE A203	Inspect the fuel level sensor input signal.	Refer to DI-24, "Fuel Level Sensor Signal Inspection 3" in “COMBINATION METERS”.
CODE A204		Refer to DI-24, "Fuel Level Sensor Signal Inspection 3" in “COMBINATION METERS”. **CAUTION:** **Even if vehicle has no malfunction, when fuel level becomes less than 10 ℓ (10-5/8 US qt, 8-3/4 Imp qt) and float of fuel level sensor goes down extremely because of shake, etc., it is regarded as a malfunction.**
VEHICLE SPEED CIRC [B2205]	Inspect the vehicle speed input signal.	Perform the following self-diagnosis. ABS actuator and electric unit (TCS/ABS control unit); refer to BRC-19, "CONSULT- II Functions" . **CAUTION:** **Even when there is no malfunction on speed signal system, malfunction may be misinterpreted when battery has low voltage (when maintaining 7V-8V for about 2 seconds).**
CODE A206	Inspect the A/T device output signal.	Refer to DI-28, "A/T Device Output Signal Inspection" in “COMBINATION METER”. **CAUTION:** **Even if vehicle has no malfunction, if A/T shift lever is held more than 2 seconds to up or down side, it is regarded as a malfunction.**

Vehicle Speed Signal Inspection

AKS0094Y

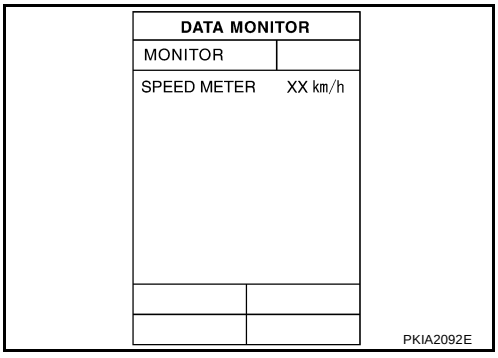
1. CHECK UNIFIED METER AND A/C AMP. INPUT SIGNAL

1. Start engine and select “METER A/C AMP” on CONSULT-II.
2. Using “SPEED METER” on the data monitor, Compare the value of data monitor with speed indication of trip computer.

OK or NG

OK >> Refer to DI-19, "Vehicle Speed Signal Inspection" of “COMBINATION METERS”.

NG >> Replace triple meter.



Fuel Consumption Monitor Signal Inspection

AKS0094Z

1. CHECK ECM SELF-DIAGNOSIS

Perform the ECM self-diagnosis. Refer to EC-103, "CONSULT-II Function" .

OK or NG

OK >> Replace the unified meter and A/C amp. Refer to DI-65, "Removal and Installation of Unified Meter and A/C Amp." .

NG >> Check the applicable parts.

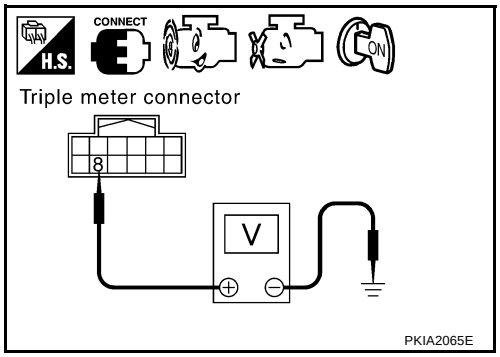
Oil Pressure Sensor Inspection

AKS00950

1. CHECK OIL PRESSURE SENSOR SIGNAL

1. Turn ignition switch ON.
2. Check voltage between triple meter harness connector M44 terminal 8 (LG/R) and ground.

Terminals			Condition	Voltage (V)
(+)		(–)		
Connector	Terminal (Wire color)			
M44	8 (LG/R)	Ground	When ignition switch is in ON position. (Engine stopped.)	Approx. 1
			Engine running. (When the oil pressure is 500kPa.)	Approx. 3



OK or NG

OK >> Replace triple meter.

NG >> GO TO 2.

2. CHECK OIL PRESSURE SENSOR POWER SUPPLY

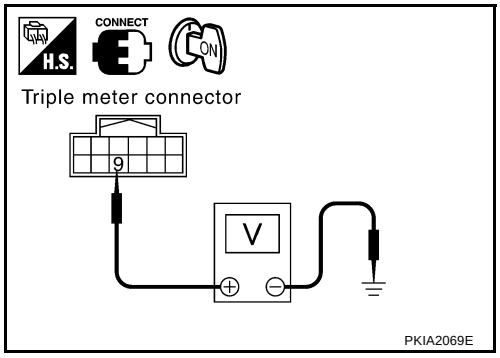
Check voltage between triple meter harness connector M44 terminal 9 (R/L) and ground.

Approx. 5V

OK or NG

OK >> GO TO 3.

NG >> Replace triple meter.



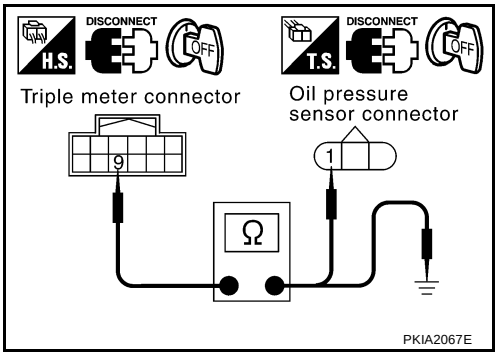
3. CHECK OIL PRESSURE SENSOR POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect triple meter and oil pressure switch connector.
3. Check continuity between triple meter harness connector M44 terminal 9 (R/L) and oil pressure sensor harness connector F21 terminal 1 (R/L).

   Continuity should exist.

4. Check continuity between triple meter harness connector M44 terminal 9 (R/L) and ground.

   Continuity should not exist.



OK or NG

OK >> GO TO 4.
NG >> Repair harness or connector between triple meter and oil pressure sensor.

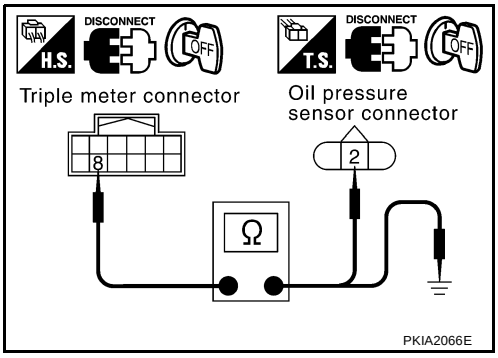
4. CHECK OIL PRESSURE SENSOR SIGNAL CIRCUIT

1. Check continuity between triple meter harness connector M44 terminal 8 (LG/R) and oil pressure sensor harness connector F21 terminal 2 (G).

   Continuity should exist.

2. Check continuity between triple meter harness connector M44 terminal 8 (LG/R) and ground.

   Continuity should not exist.



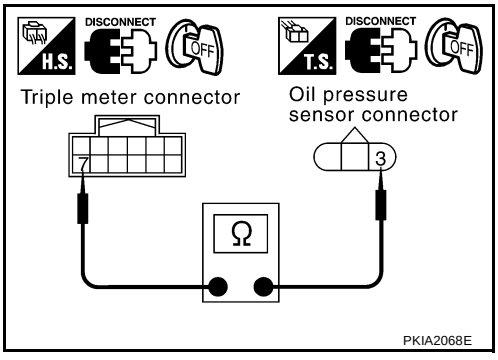
OK or NG

OK >> GO TO 5.
NG >> Repair harness or connector between triple meter and oil pressure sensor.

5. CHECK OIL PRESSURE SENSOR GROUND CIRCUIT

Check continuity between triple meter harness connector M44 terminal 7 (G/OR) and oil pressure sensor harness connector F21 terminal 3 (B).

Continuity should exist.



OK or NG

OK >> Replace oil pressure sensor.
NG >> Repair harness or connector between triple meter and oil pressure sensor.

Communication Line Inspection

AKS00951

1. CHECK CONNECTOR

Check triple meter, unified meter and A/C amp. and terminals (triple 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

Does the pointer on the meter/gauges fluctuate at the engine start?

Is the fluctuation acceptable?

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

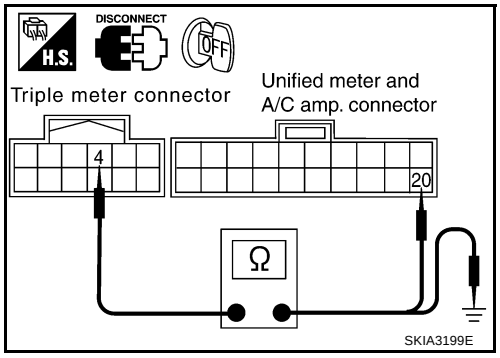
3. CHECK CONTINUITY COMMUNICATION CIRCUIT (TX: TRIPLE METER)

1. Turn ignition switch OFF.
2. Disconnect triple meter connector and unified meter and A/C amp. connector.
3. Check continuity between triple meter harness connector M44 terminal 4 (P) and unified meter and A/C amp. harness connector M48 terminal 20 (P).

   Continuity should exist.

4. Check continuity between triple meter harness connector M44 terminal 4 (P) and ground.

   Continuity should not exist.



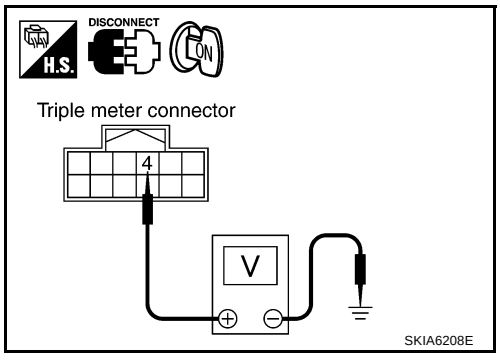
OK or NG

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 triple meter harness connector M44 terminal 4 (P) and ground.

   Approx. 5V

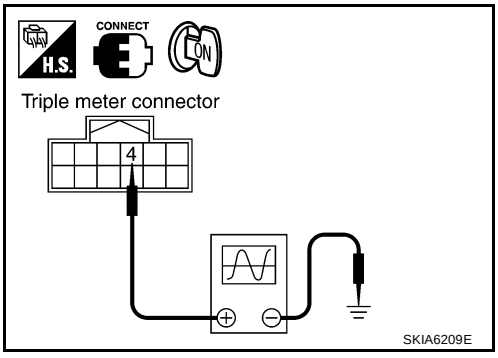


OK or NG

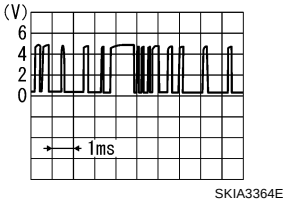
OK >> GO TO 5.
NG >> Replace unified meter and A/C amp. Refer to DI-65, "Removal and Installation of Unified Meter and A/C Amp." .

5. CHECK VOLTAGE SIGNAL OF COMBINATION METER

1. Turn ignition switch OFF and connect triple meter connector.
2. Turn ignition switch ON.
3. Check voltage signal between triple meter harness connector M44 terminal 4 (P) and ground with simple oscilloscope of CONSULT-II.



4 (P) - Ground:



OK or NG

OK >> Replace unified meter and A/C amp. Refer to DI-65, "Removal and Installation of Unified Meter and A/C Amp." .

NG >> Replace triple meter.

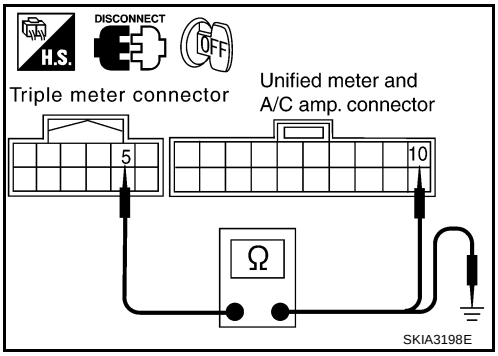
6. CHECK CONTINUITY COMMUNICATION CIRCUIT (RX: TRIPLE METER)

1. Turn ignition switch OFF.
2. Disconnect triple meter connector and unified meter and A/C amp. connector.
3. Check continuity between triple meter harness connector M44 terminal 5 (L/B) and unified meter and A/C amp. harness connector M48 terminal 10 (L/B).

Continuity should exist.

4. Check continuity between triple meter harness connector M44 terminal 5 (L/B) and ground.

Continuity should not exist.



OK or NG

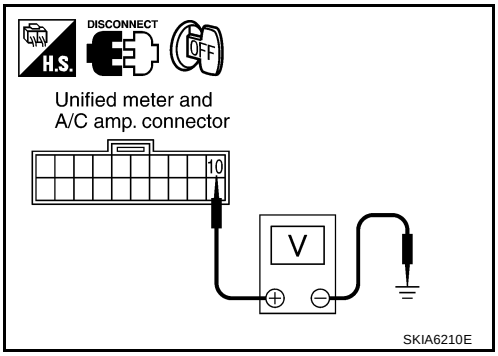
OK >> GO TO 7.

NG >> Repair harness or connector.

7. CHECK VOLTAGE OF COMBINATION METER

1. Connect triple meter connector.
2. Turn ignition switch ON.
3. Check voltage between unified meter and A/C amp. harness connector M48 terminal 10 (L/B) and ground.

Approx. 5V



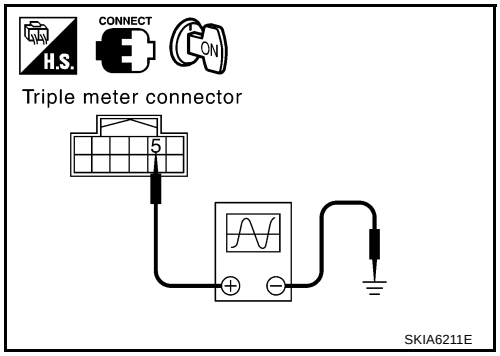
OK or NG

OK >> GO TO 8.

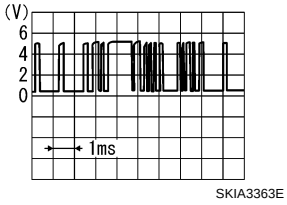
NG >> Replace triple meter.

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

1. Connect triple meter connector and unified meter and A/C amp. connector.
2. Ignition switch turn ON.
3. Check voltage signal between triple meter harness connector M44 terminal 5 (L/B) and ground with simple oscilloscope of CONSULT-II.



5 (L/B) - Ground :



OK or NG

OK >> Replace triple meter.
NG >> Replace unified meter and A/C amp. Refer to DI-65, "Removal and Installation of Unified Meter and A/C Amp." .

Trip Computer Switch Inspection

AKS00952

1. CHECK CONNECTOR

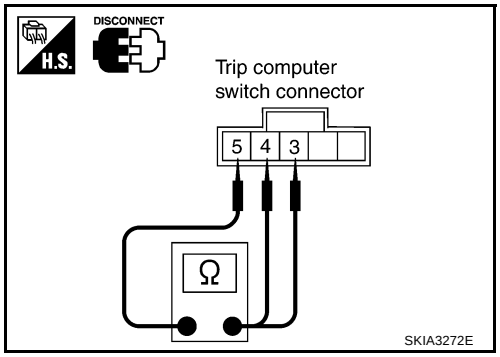
1. Remove combination meter. Refer to DI-32, "Removal and Installation for Combination Meter" .
2. Remove rear finisher to combination meter. Refer to DI-32, "Disassembly and Assembly for Combination Meter" .
3. Check trip computer connector for looseness.

OK or NG

OK >> GO TO 2.
NG >> Repair trip computer switch connector.

2. CHECK CIRCUIT

1. Disconnect trip computer switch connector.
2. Check continuity between trip computer switch harness connector terminals 3, 4 and 5.



Terminal		Condition	Continuity
3	5	Mode switch is pushed.	Yes
		Mode switch is released.	No
4	5	Setting switch is pushed.	Yes
		Setting switch is released.	No

OK or NG

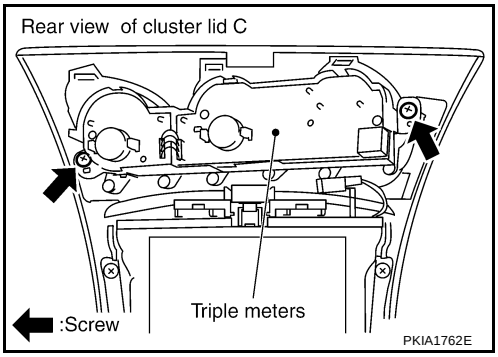
OK >> Replace combination meter.
NG >> Replace trip computer switch.

Removal and Installation of Triple Meters

AKS00953

REMOVAL

1. Remove cluster lid C. Refer to IP-10, "INSTRUMENT PANEL ASSEMBLY" .
2. Remove screws (2), and remove triple meters.



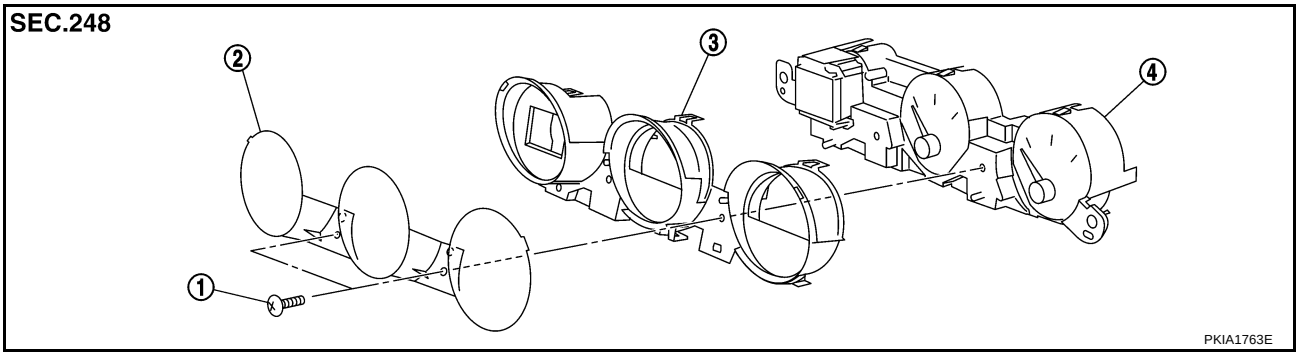
INSTALLATION

Install in the reverse order of removal.

Disassembly and Assembly for Triple Meters

AKS00954

DISASSEMBLY



1. Screws
2. Front cover
3. Upper housing
4. Triple meter

1. Remove screws (2), and remove front cover.
2. Disengage tabs (6) to separate upper housing.

ASSEMBLY

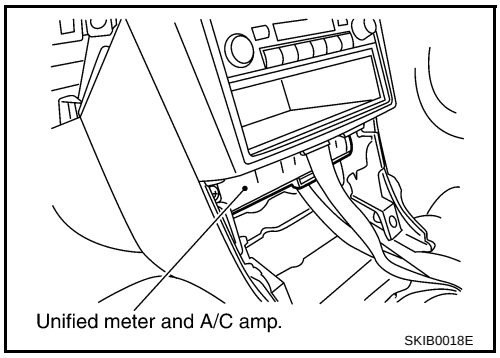
Assemble in reverse order of disassembly.

UNIFIED METER AND A/C AMP

PFP:27760

System Description

AKS00955



- For the unified meter and A/C amp., the signal required for controlling the combination meter and triple meter are integrated in the A/C auto amp.
- Unified meter and A/C amp. controls each operation for A/C auto amp. For information regarding A/C control, refer to ATC-27, "AIR CONDITIONER CONTROL" in “ATC” section.
- Unified meter and A/C amp. inputs necessary information for combination meter and triple meter from each unit by CAN communication and so on.
- And unified meter and A/C amp. outputs these signals using communication line (TX, RX) between unified meter and A/C amp. and various meters.
- In addition to sending output to the combination meter and triple meter containing the signals input from the various units, it also receives the signals between the combination meter and triple meter.
- Other input signals are also sent to the ECM, TCM, and BCM using CAN communication.
- The signals required for the trip computer display are centralized in the unified meter and A/C amp., converted into data, and sent to the triple meter.
- The unified meter and A/C amp. correspond a CONSULT-II function (self-diagnostic results, CAN diagnostic support monitor, data monitor).

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) ● Trip computer mode switch signal ● Trip computer setting switch signal ● Illumination control nighttime required signal ● Refuel status signal ● Vehicle speed signal ● Low-fuel warning lamp condition signal ● Self-diagnosis condition signal ● Odo/trip switch signal ● Delivery destination data signal ● Combination meter receive error signal ● Combination meter specifications signal ● Triple meter specifications signal	● Vehicle speed signal (8-pulse) ● Engine speed signal ● Engine coolant temperature signal ● Fuel level sensor signal (resistance value) ● Malfunction indicator lamp signal ● ABS warning lamp signal ● Brake warning lamp signal ● Oil pressure warning lamp signal ● Turn indicator signal ● High beam request signal ● TCS OFF indicator lamp signal ● SLIP indicator lamp signal ● ASCD CRUSE indicator lamp signal ● ASCD SET indicator lamp signal ● A/T CHECK indicator lamp signal ● A/T position indicator signal ● Manual mode indicator signal ● Manual mode gear position signal ● Shift-up indicator setting signal ● CAN communication condition signal of A/T ● Door switch signal ● Position lights request signal ● Buzzer output signal

Between Unified Meter and A/C Amp. and Triple Meter

Unit	Input	Output
Unified meter and A/C amp.	● LCD indication condition signal ● Shift-up indicator setting signal ● Oil pressure warning lamp signal ● Triple meter receive error signal	● Outside air temperature signal ● Outside air temperature warning signal ● Trip distance signal ● Trip time signal ● Average vehicle speed signal ● Average fuel consumption signal ● Vehicle speed signal ● DTE (Distance to empty) signal ● DTE (Distance to empty) warning signal ● Trip computer mode switch signal ● Trip computer setting switch signal ● Self-diagnosis condition signal ● Odo/trip switch signal ● Triple meter specifications signal

FAIL-SAFE

Solution When Communication Error Between the Unified Meter & A/C Amp. and the Combination Meter

Function		Specifications
Speedometer		Return to zero when discontinuing communication or receiving irregular data.
Tachometer		Reset to zero by suspending communication.
Fuel gauge		
Water temperature gauge		
Illumination control	Combination meter illumination	When suspending communication, change to nighttime mode.
Odo/trip meter		Integrate in response to 8-pulse input.
A/T indicator		The display turns off by suspending communication.
Warning buzzer		The warning buzzer turns off by suspending communication.
Warning lamp/indicator lamp	A/T CHECK lamp	The light turns on by suspending communication.
	ABS warning lamp	
	TCS OFF indicator	
	SLIP indicator	
	Brake warning lamp	
	High beam indicator	The light turns off by suspending communication.
	ASCD CRUISE indicator lamp	
	ASCD SET indicator lamp	
	Oil pressure warning lamp	
	Door warning lamp	
	Malfunction indicator lamp	
	Turn signal indicator	

Solution When Communication Error Between the Unified Meter & A/C Amp. and the Triple Meter

Function		Specifications
Trip computer	Vehicle speed indication	● Display “---” by suspending communications. ● Display “---” using erroneous signal input.
	Out air temperature indication	Display “--” by suspending communications.
	DTE (Distance to empty) indication	Display “----” by suspending communications.
	Average fuel consumption indication	
	Average vehicle speed indication	
	Trip distance indication	
	Trip time indication	Display “--:--” by suspending communications.
Illumination control	Triple meter illumination	When suspending communication, change to nighttime mode.

CAN Communication System Description

AKS00956

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.

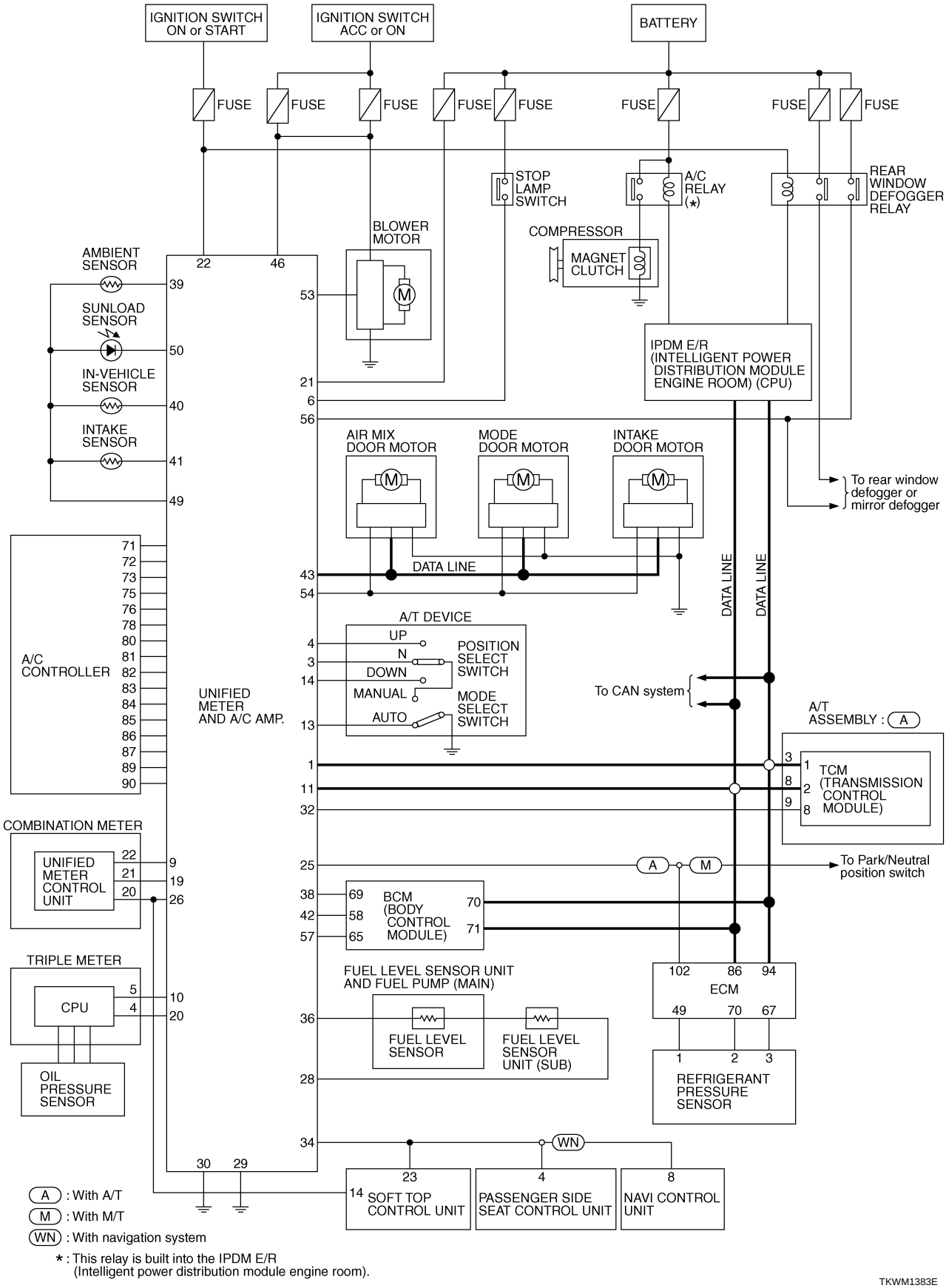
CAN Communication Unit

AKS00C33

Refer to LAN-4, "CAN Communication Unit" in “CAN SYSTEM”.

Schematic

AKS00C34



TKWM1383E

CONSULT-II Function

AKS00959

CONSULT-II executes the following functions by combining data reception and command transmission via the communication line from unified meter and A/C amp. Self-diagnosis results and data monitor display.

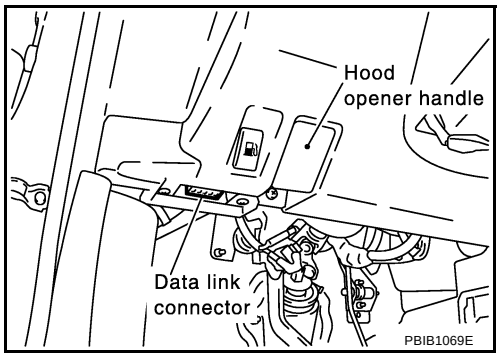
System part	Check item, diagnosis mode	Description
METER A/C AMP	Self-diagnosis results	Unified meter and A/C amp. check the conditions and indicates any error that unified meter and A/C amp. memorized.
	CAN diagnostic support monitor	The results of transmit/receive diagnosis of CAN communication can be read.
	Data monitor	Displays unified meter and A/C amp. input data in real time.

CONSULT-II BASIC OPERATION

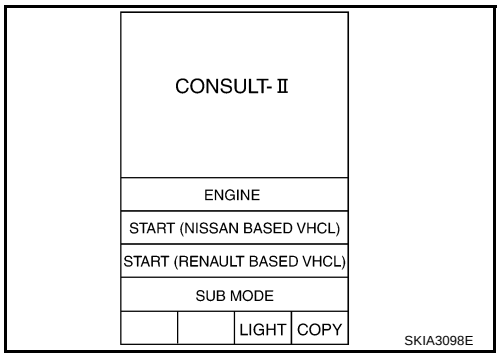
CAUTION:

If CONSULT-II is used with no connection of CONSULT-II CONVERTER, malfunctions might be detected in self-diagnosis depending on control unit which carry out CAN communication.

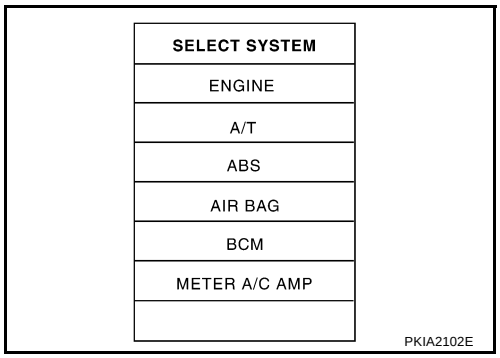
1. With the ignition switch OFF, connect “CONSULT-II” and “CONSULT-II CONVERTER” to the data link connector, then turn ignition switch ON.



2. Touch “START (NISSAN BASED VHCL)”.



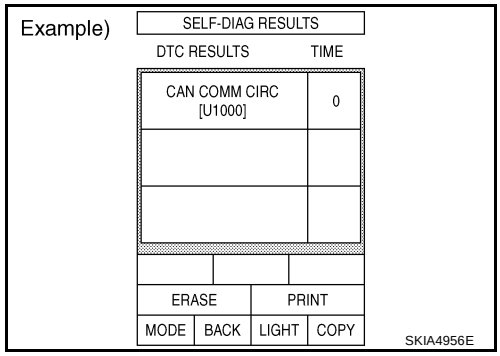
3. Touch “METER A/C AMP” on “SELECT SYSTEM” screen. If “METER A/C AMP” is not indicated, go to GI-39, "CONSULT-II Data Link Connector (DLC) Circuit" .
4. Select “SELF-DIAG RESULTS”, “CAN DIAG SUPPORT MNTR” or “DATA MONITOR”.



SELF-DIAGNOSIS RESULTS

Operation Procedure

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



Display Item List

CONSULT-II display	Malfunction is detected when...
CAN COMM CIRC [U1000]	Malfunction is detected in CAN communication. **CAUTION:** **Even when there is no malfunction on CAN communication system, malfunction may be misinterpreted when battery has low voltage (when maintaining 7V-8V for about 2 seconds) or 10A fuse [No. 19, located in the fuse block (J/B)] is disconnected.**
T/METER COMM CIRC [B2201]	Malfunction is detected in communication of between triple meter and unified meter and A/C amp.
METER COMM CIRC [B2202]	Malfunction is detected in communication of between combination meter and unified meter and A/C amp.
CODE A203	When the sensor input is 0V.
CODE A204	When the sensor input is open. **CAUTION:** **Even if vehicle has no malfunction, when fuel level becomes less than 10 ℓ (10-5/8 US qt, 8-3/4 Imp qt) and float of fuel level sensor goes down extremely because of shake, etc., it is regarded as a malfunction.**
VEHICLE SPEED CIRC [B2205]	When an erroneous signal is input. **CAUTION:** **Even when there is no malfunction on speed signal system, malfunction may be misinterpreted when battery has low voltage (when maintaining 7V-8V for about 2 seconds).**
CODE A206	When the manual mode switch and a switch other than the manual mode switch are turned on or off at the same time for 2 seconds. **CAUTION:** **Even if vehicle has no malfunction, if A/T shift lever is held more than 2 seconds to up or down side, it is regarded as a malfunction.**

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

- Normal: In case of operating properly at the present in spite of having problem in the past, then “TIME” indicates “1-63”.
- Malfunction: Soon after detecting malfunctions by self-diagnoses or current malfunction, “0” is indicated.

After returning to normal condition, every time when ignition switch is turned to “OFF” from “ON”, time will be added like “1”→“2”→“3”···“63”, and when the key operation is performed 64 times, the result of the self-diagnoses will be erased. And if any malfunction is detected again, “0” will be indicated.

DATA MONITOR

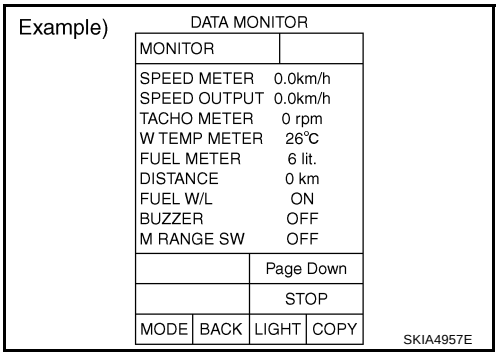
Operation Procedure

1. Touch “DATA MONITOR” on “SELECT DIAG MODE” screen.
2. Touch either “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. Touch “START”.
4. When “SELECTION FROM MENU” is selected, touch individual items to be monitored. When “MAIN SIGNALS” is selected, main items will be monitored.
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	This is the angle correction value after the speed signal from ABS actuator and electric unit (TCS/ABS control unit) is converted into the vehicle speed.
SPEED OUTPUT [km/h] or [mph]	X	X	This is the angle correction value before the speed signal from ABS actuator and electric unit (TCS/ABS control unit) is converted into the vehicle speed.
TACHO METER [rpm]	X	X	This is the converted value for the engine speed signal from the ECM.
W TEMP METER [°C] or [°F]	X	X	This is the converted value for the engine coolant temperature signal from the ECM.
FUEL METER [lit.]	X	X	This is the processed value for the signal (resistance value) from the fuel gauge.
DISTANCE [km] or [mile]	X	X	This is the calculated value for the speed signal from ABS actuator and electric unit (TCS/ABS control unit) and the signal (resistance signal) from the fuel gauge.
FUEL W/L [ON/OFF]	X	X	Indicates [ON/OFF] condition of fuel warning lamp.
MIL [ON/OFF]		X	Indicates [ON/OFF] condition of malfunction indicator lamp.
SEAT BELT W/L [ON/OFF]		X	Indicates [ON/OFF] condition of seat belt warning lamp.
BUZZER [ON/OFF]	X	X	Indicates [ON/OFF] condition of buzzer.
DOOR W/L [ON/OFF]		X	Indicates [ON/OFF] condition of door warning lamp.
HI-BEAM IND [ON/OFF]		X	Indicates [ON/OFF] condition of high beam indicator.
TURN IND [ON/OFF]		X	Indicates [ON/OFF] condition of turn indicator.
OIL W/L [ON/OFF]		X	Indicates [ON/OFF] condition of oil pressure warning lamp.
VDC/TCS IND [ON/OFF]		X	Indicates [ON/OFF] condition of TCS/VDC OFF indicator lamp.
ABS W/L [ON/OFF]		X	Indicates [ON/OFF] condition of ABS warning lamp.
SLIP IND [ON/OFF]		X	Indicates [ON/OFF] condition of SLIP indicator lamp.
BRAKE W/L [ON/OFF]		X	Indicates [ON/OFF] condition of brake warning lamp.*
M RANGE SW [ON/OFF]	X	X	Indicates [ON/OFF] condition of manual mode range switch.

Display item [Unit]	MAIN SIGNALS	SELECTION FROM MENU	Contents
NM RANGE SW [ON/OFF]	X	X	Indicates [ON/OFF] condition of except for manual mode range switch.
AT SFT UP SW [ON/OFF]	X	X	Indicates [ON/OFF] condition of A/T shift up switch.
AT SFT DWN SW [ON/OFF]	X	X	Indicates [ON/OFF] condition of A/T shift down switch.
AT P MODE SW [ON/OFF]		X	Indicates [ON/OFF] condition of A/T power mode switch.
AT S MODE SW [ON/OFF]		X	Indicates [ON/OFF] condition of A/T snow mode 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 A/T manual mode indicator.
AT-M GEAR [5-1]	X	X	Indicates [5-1] condition of A/T manual mode gear position.
P RANGE IND [ON/OFF]	X	X	Indicates [ON/OFF] condition of A/T shift P range indicator.
R RANGE IND [ON/OFF]	X	X	Indicates [ON/OFF] condition of A/T shift R range indicator.
N RANGE IND [ON/OFF]	X	X	Indicates [ON/OFF] condition of A/T shift N range indicator.
D RANGE IND [ON/OFF]	X	X	Indicates [ON/OFF] condition of A/T shift D range indicator.
AT CHECK W/L [ON/OFF]		X	Indicates [ON/OFF] condition of A/T CHECK warning lamp.
CRUISE IND [ON/OFF]		X	Indicates [ON/OFF] condition of CRUISE indicator.
SET IND [ON/OFF]		X	Indicates [ON/OFF] condition of SET indicator.

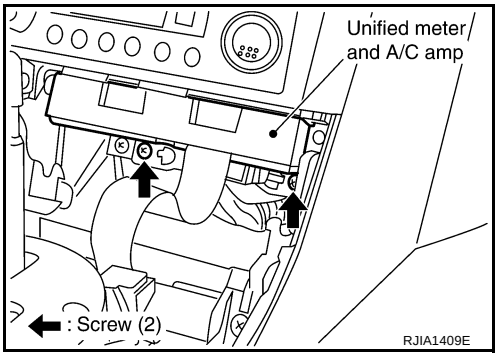
NOTE:
Any monitored item that does not match the vehicle being diagnosed is deleted from the display automatically.
*: Monitor keeps indicating “OFF” when brake warning lamp is on by the parking brake operation or low brake fluid level.

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

AKS0095A

REMOVAL

1. Remove the console finisher (A/T) or console boot (M/T). Refer to IP-10, "INSTRUMENT PANEL ASSEMBLY" .
2. Remove the fixing screws, then remove the unified meter and A/C amp.



INSTALLATION

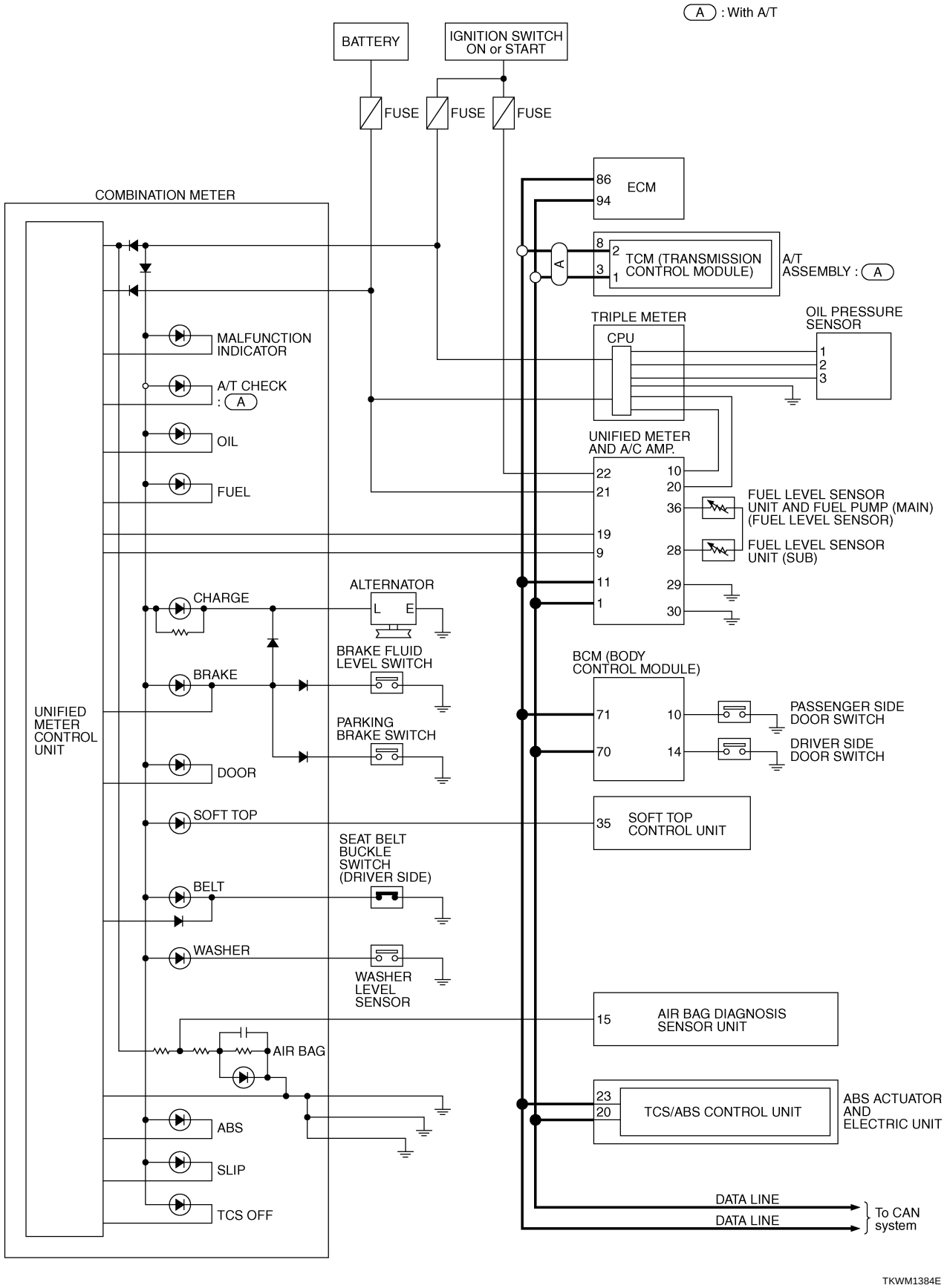
Installation is basically the reverse order of removal.

WARNING LAMPS

PFP:24814

Schematic

AKS0095B

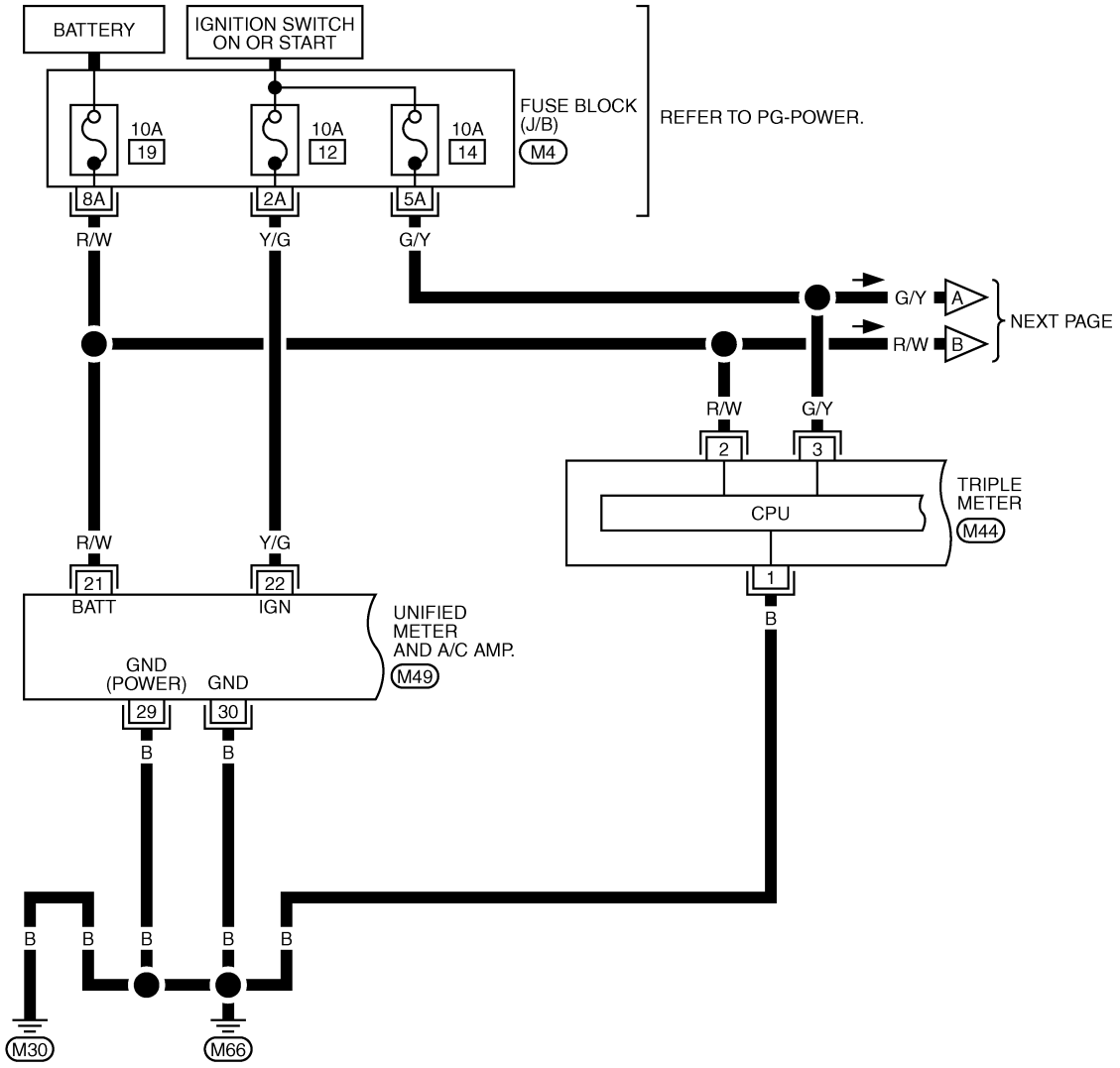


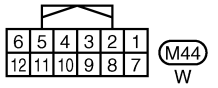
TKWM1384E

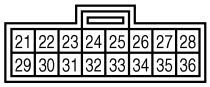
Wiring Diagram — WARN —

AKS0095C

DI-WARN-01

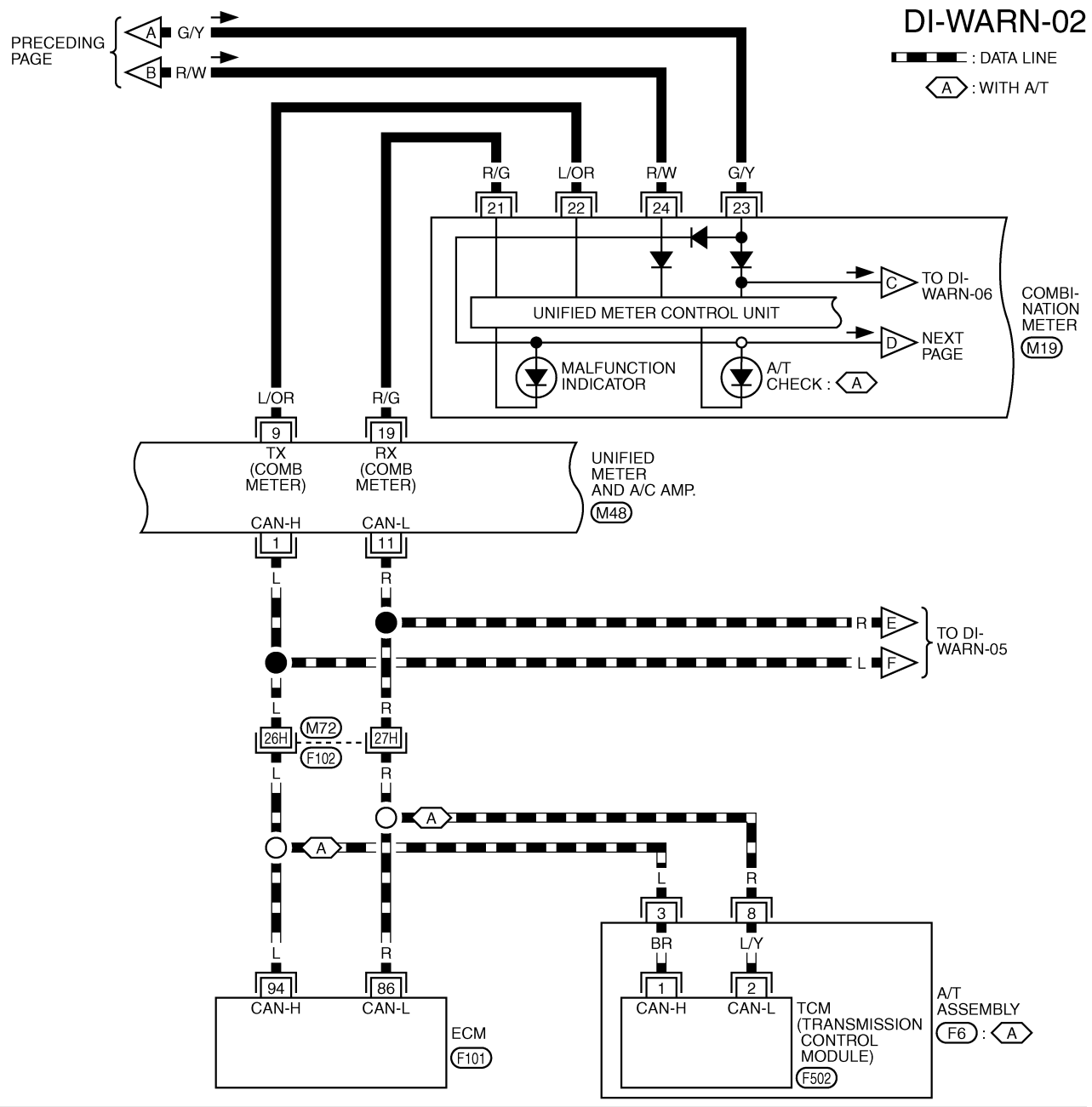


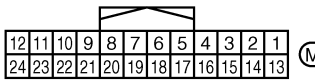


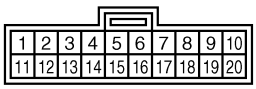


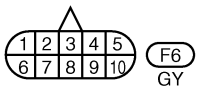
REFER TO THE FOLLOWING.
M4 -FUSE BLOCK-JUNCTION BOX (J/B)

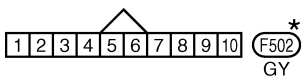
TKWT0485E











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

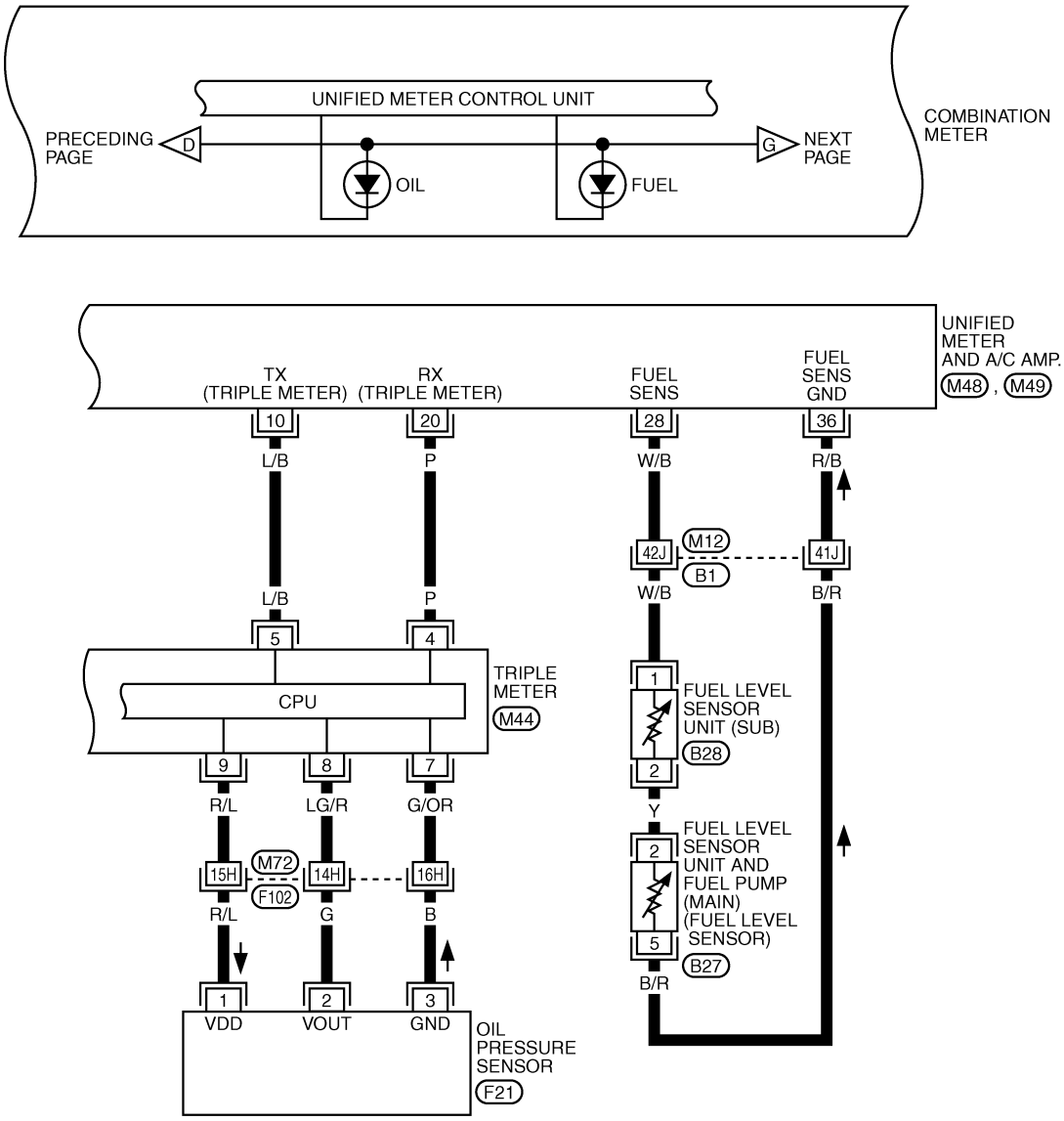
REFER TO THE FOLLOWING.

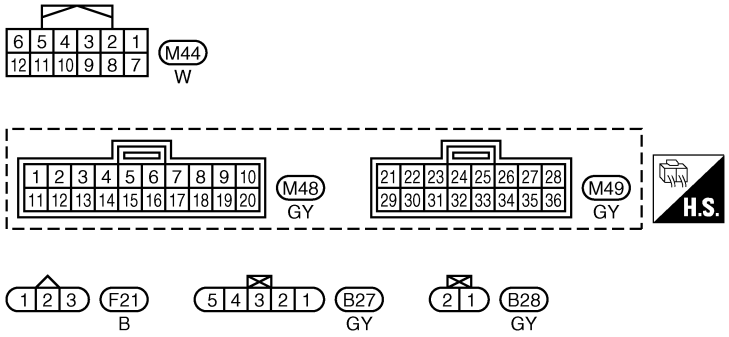
F102 -SUPER MULTIPLE JUNCTION (SMJ)

F101 -ELECTRICAL UNITS

TKWM1385E

DI-WARN-03

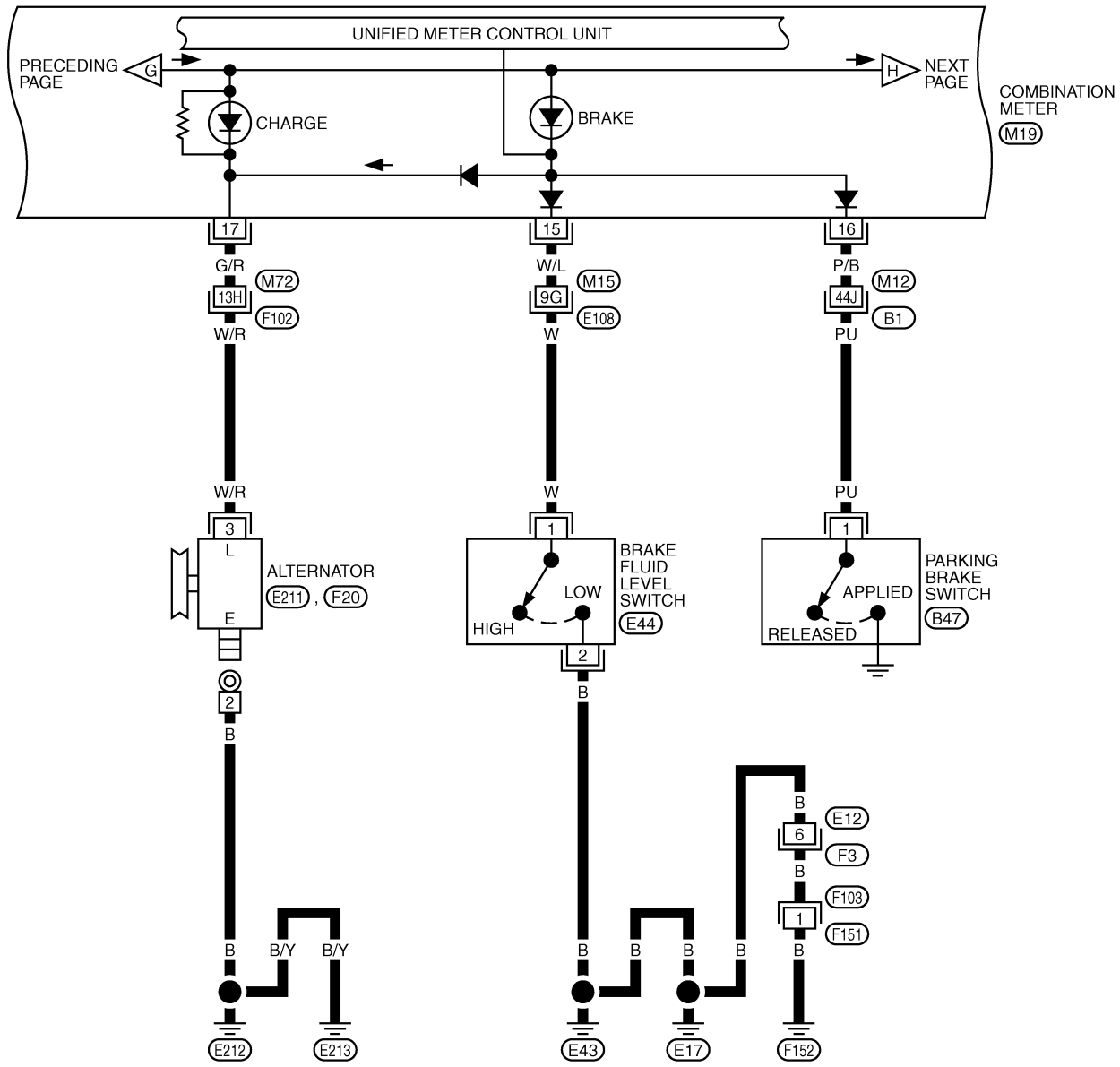


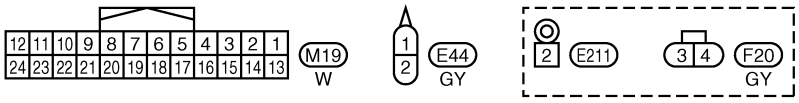


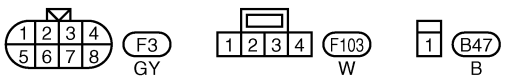
REFER TO THE FOLLOWING.
F102 , B1 -SUPER MULTIPLE JUNCTION (SMJ)

TKWT0487E

DI-WARN-04



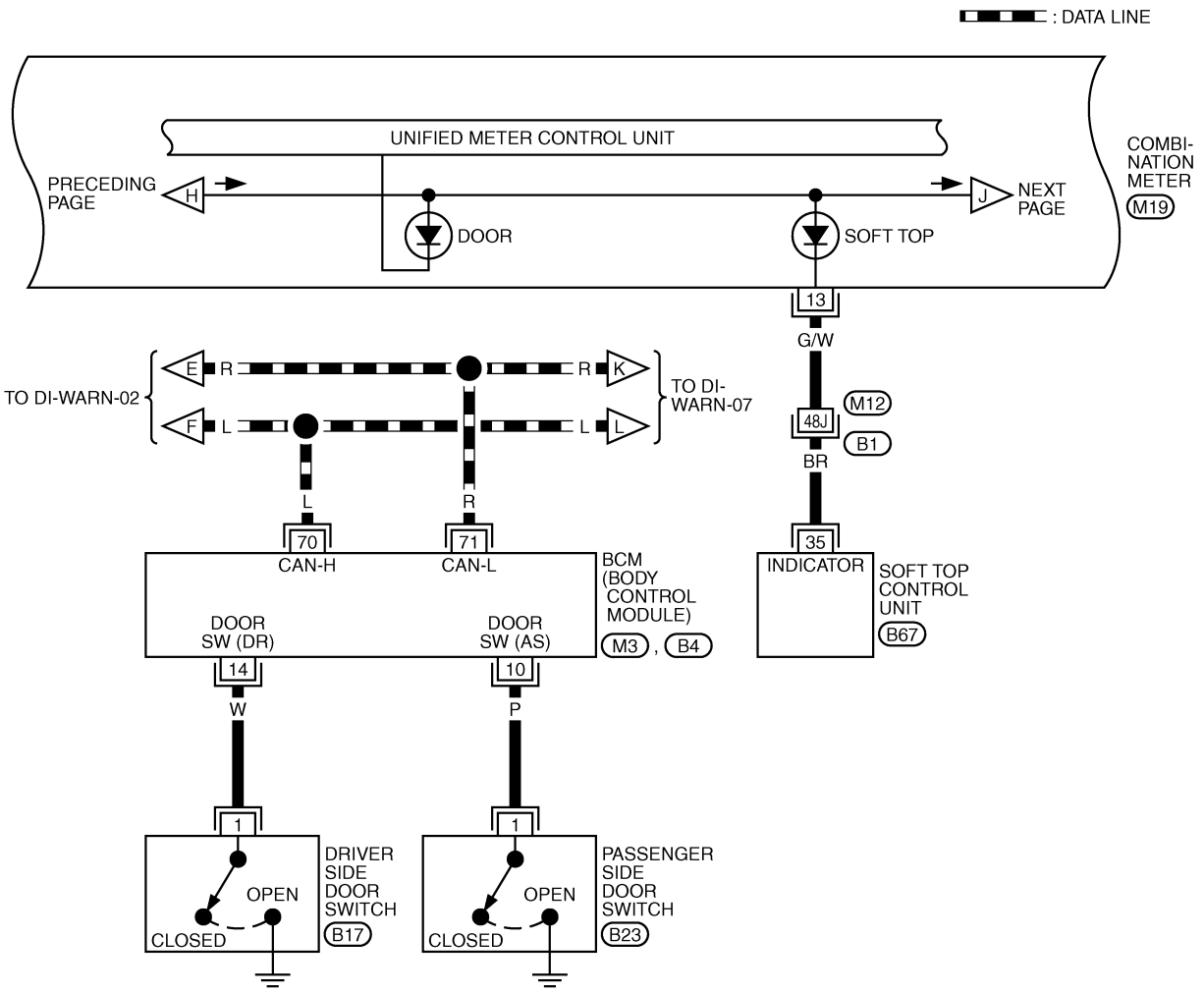


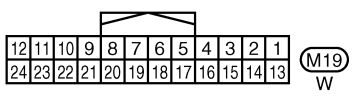


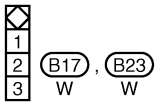
REFER TO THE FOLLOWING.
E108 , F102 , B1 -SUPER MULTIPLE JUNCTION (SMJ)

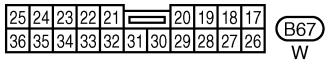
TKWT1088E

DI-WARN-05





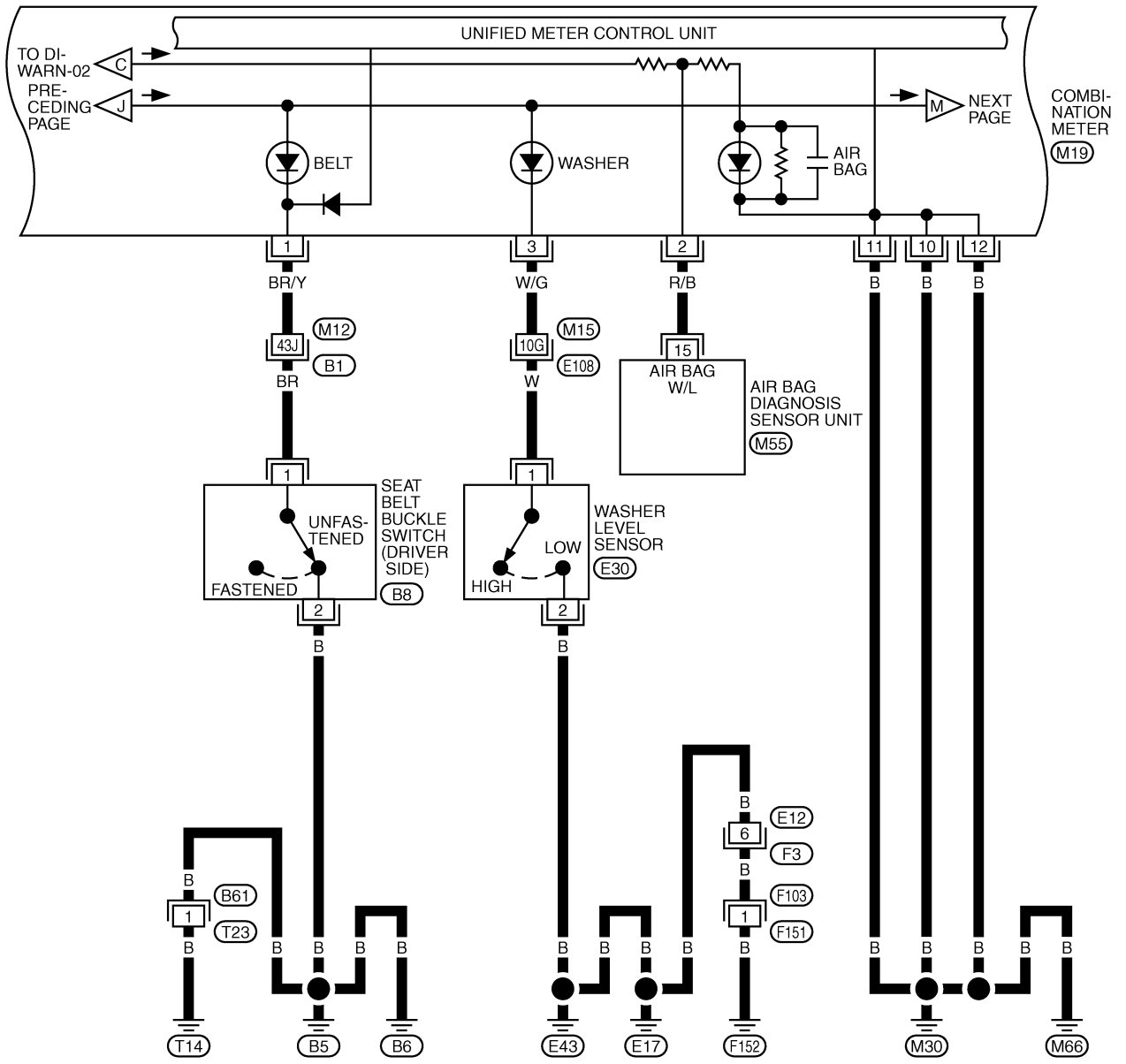


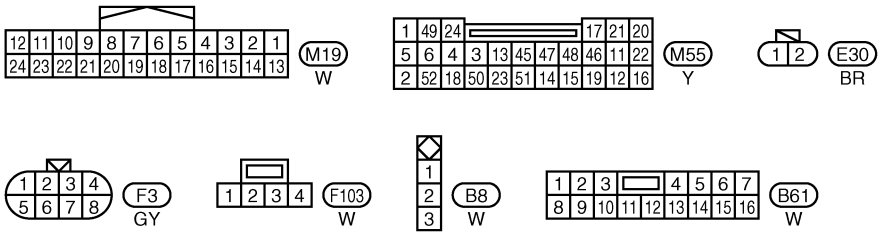


REFER TO THE FOLLOWING.
B1 -SUPER MULTIPLE JUNCTION (SMJ)
M3 , B4 -ELECTRICAL UNITS

TKWT1089E

DI-WARN-06

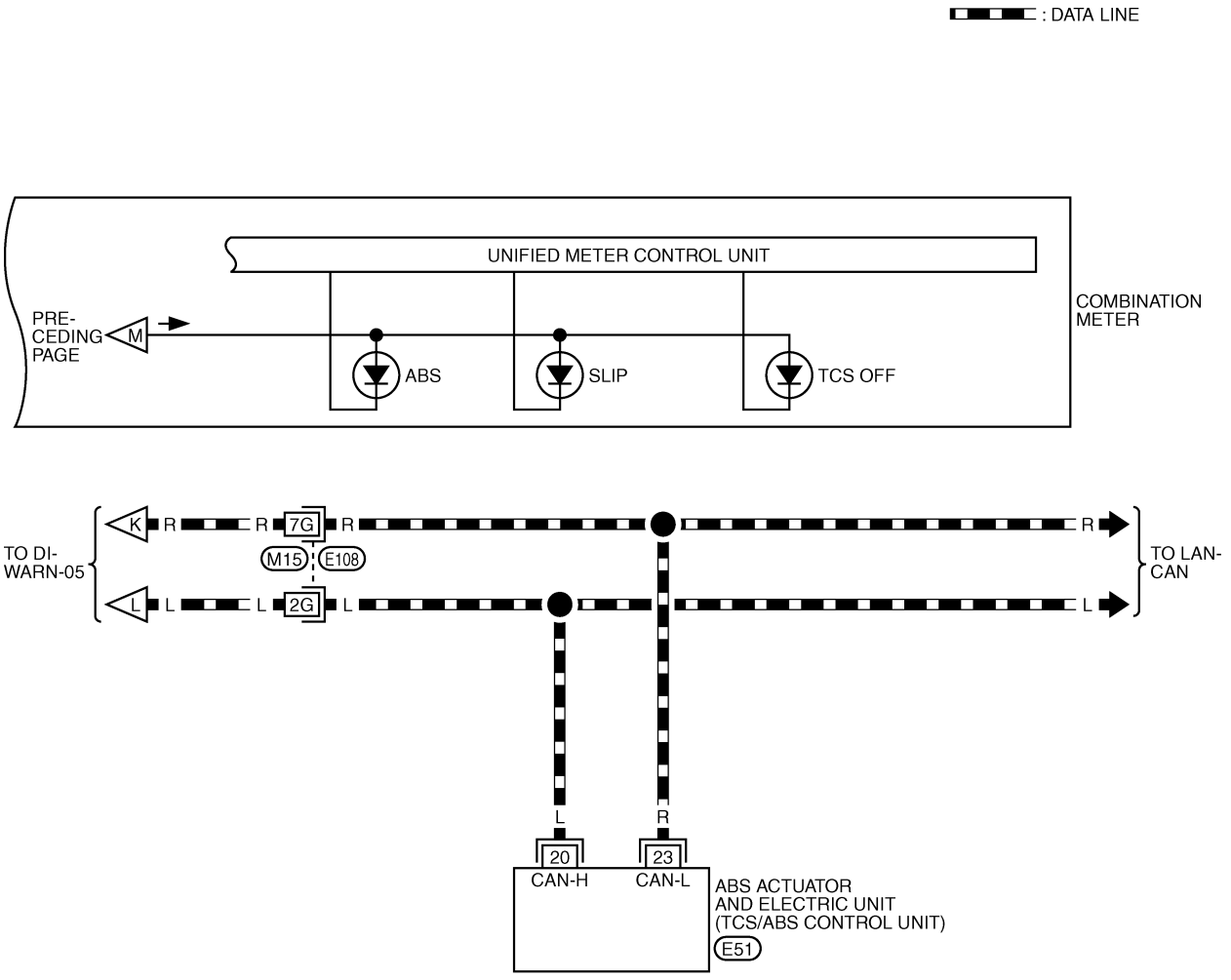




REFER TO THE FOLLOWING.
E108 , B1 -SUPER MULTIPLE JUNCTION (SMJ)

TKWT1090E

DI-WARN-07



REFER TO THE FOLLOWING.
E108 -SUPER MULTIPLE JUNCTION (SMJ)
E51 -ELECTRICAL UNITS

TKWT1091E

Oil Pressure Warning Lamp Stays Off (Ignition Switch ON) or Stays On (Oil Pressure Is Normal)

AKS0095E

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

1. CHECK SELF-DIAGNOSTIC RESULTS OF UNIFIED METER AND A/C AMP.

1. Start engine.
2. Select “METER A/C AMP” on CONSULT-II, and perform self-diagnosis of unified meter and A/C amp. Refer to DI-62, "CONSULT-II Function" .
3. After erasing the self-diagnosis result, perform self-diagnosis again.

Self-diagnostic results content

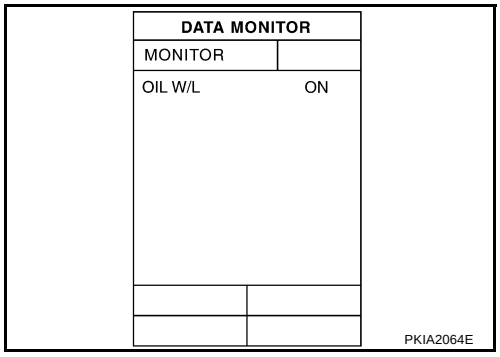
No malfunction detected>>GO TO 2.
Malfunction detected>>Go to DI-18, "Symptom Chart 2" in “COMBINATION METER”.

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

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

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

When engine running : OIL W/L OFF



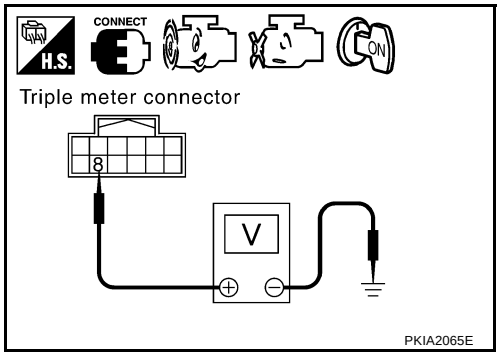
OK or NG

OK >> Replace combination meter.
NG >> GO TO 3.

3. CHECK OIL PRESSURE SENSOR SIGNAL

Check voltage between triple meter harness connector M44 terminal 8 (LG/R) and ground.

Terminals			Condition	Voltage (V)
(+)		(–)		
Connector	Terminal (Wire color)			
M44	8 (LG/R)	Ground	When ignition switch is in ON position. (Engine stopped.)	Approx. 1
			Engine running. (When the oil pressure is 500kPa.)	Approx. 3



OK or NG

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

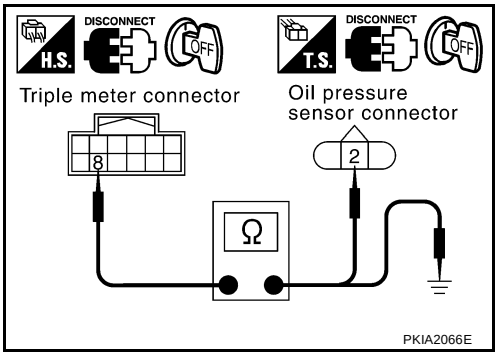
4. CHECK OIL PRESSURE SENSOR INPUT SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect triple meter and oil pressure sensor connector.
3. Check continuity between triple meter harness connector M44 terminal 8 (LG/R) and oil pressure sensor harness connector F21 terminal 2 (G).

Continuity should exist.

4. Check continuity between triple meter harness connector M44 terminal 8 (LG/R) and ground.

Continuity should not exist.



OK or NG

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

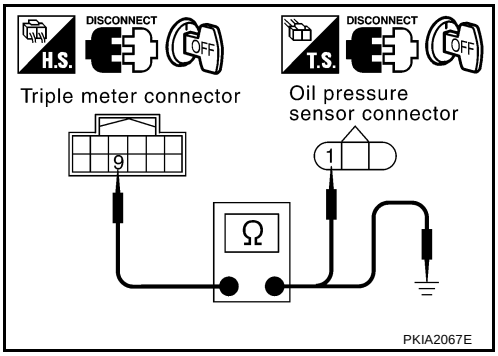
5. CHECK OIL PRESSURE SENSOR POWER SUPPLY CIRCUIT

1. Check continuity between triple meter harness connector M44 terminal 9 (R/L) and oil pressure sensor harness connector F21 terminal 1 (R/L).

Continuity should exist.

2. Check continuity between triple meter harness connector M44 terminal 9 (R/L) and ground.

Continuity should not exist.



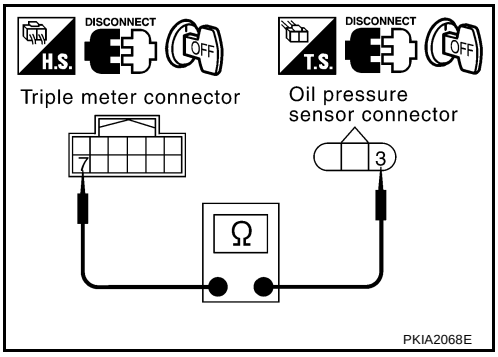
OK or NG

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

6. CHECK OIL PRESSURE SENSOR GROUND CIRCUIT

Check continuity between triple meter harness connector M44 terminal 7 (G/OR) and oil pressure sensor harness connector F21 terminal 3 (B).

Continuity should exist.



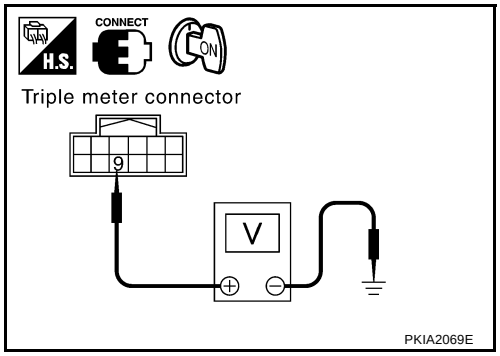
OK or NG

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

7. CHECK OIL PRESSURE SENSOR POWER SUPPLY

1. Connect triple meter connector.
2. Turn ignition switch ON.
3. Check voltage between triple meter harness connector M44 terminal 9 (R/L) and ground.

Approx. 5V



OK or NG

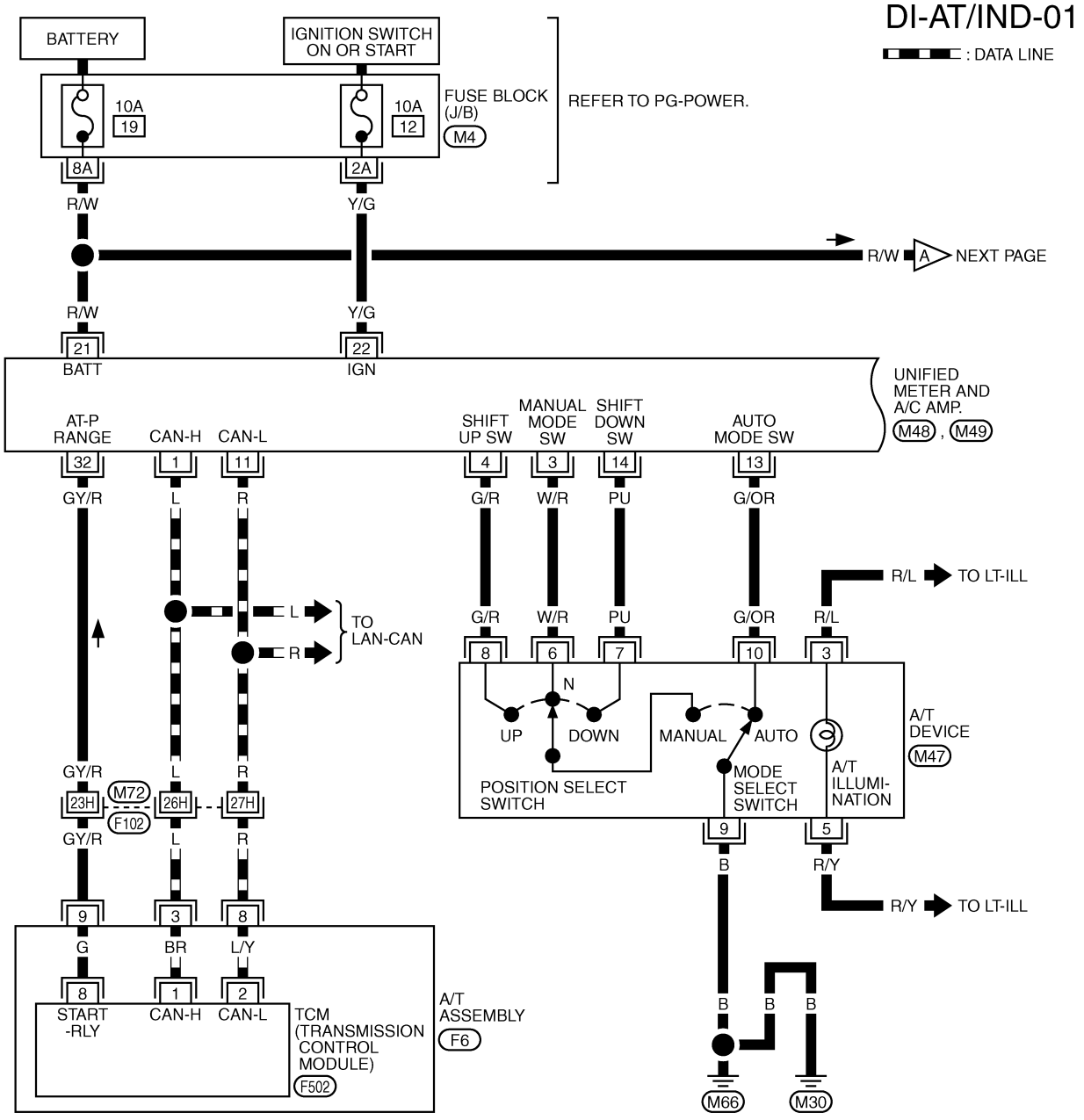
OK >> Replace oil pressure sensor.
NG >> Replace triple meter.

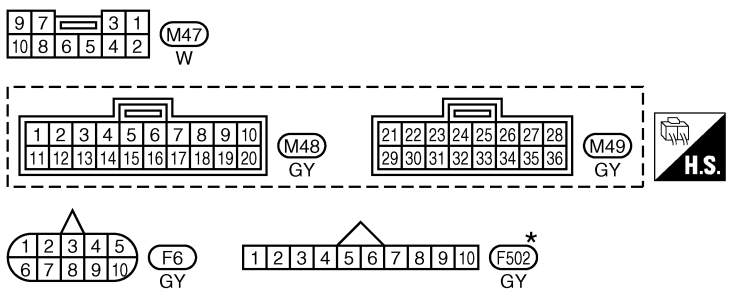
A/T INDICATOR

PFP:24814

Wiring Diagram — AT/IND —

AKS0095F



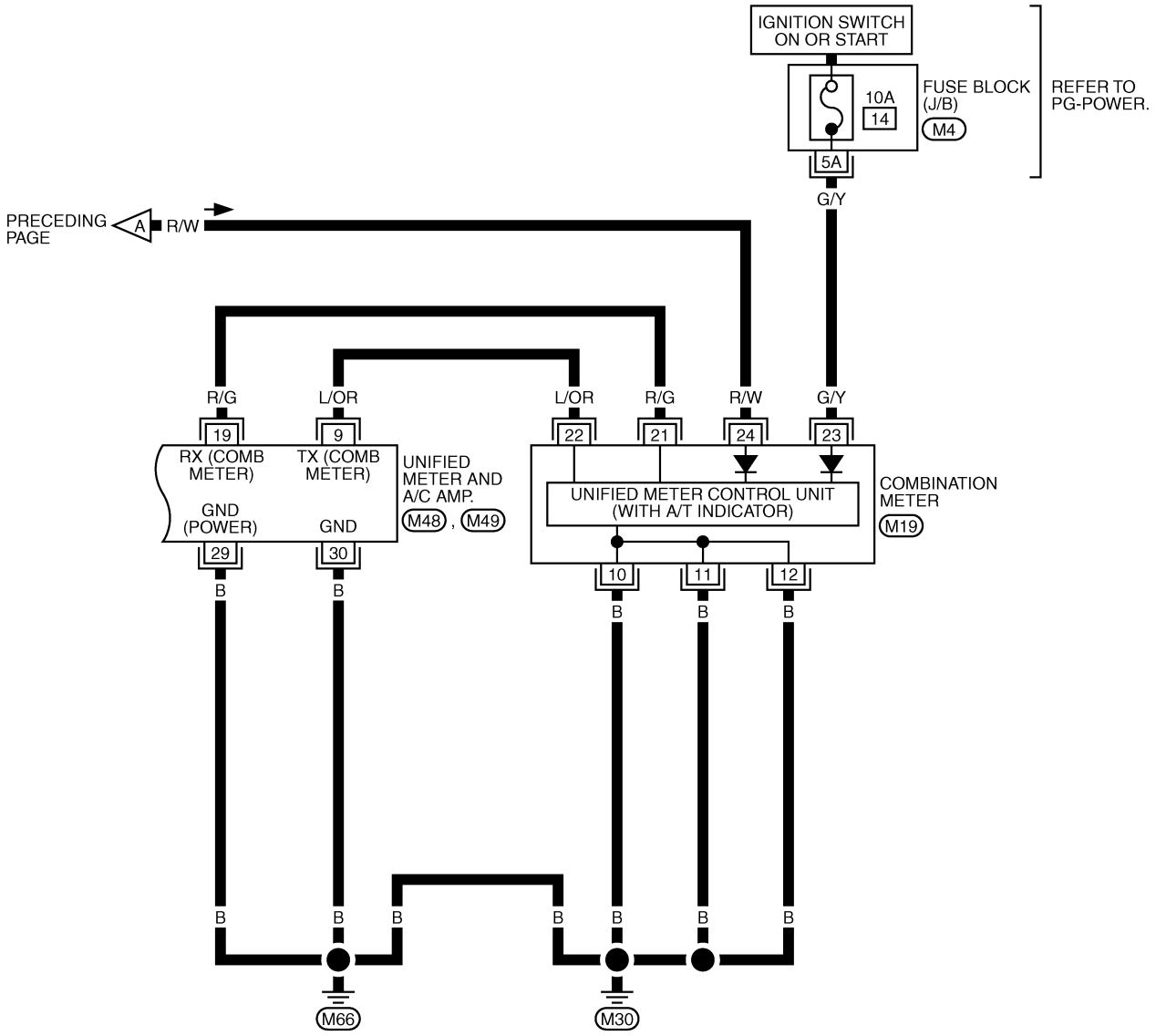


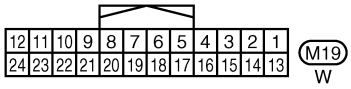
*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

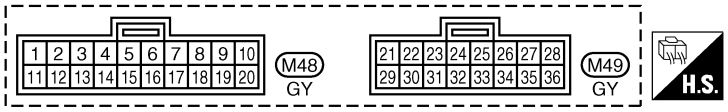
REFER TO THE FOLLOWING.
F102 -SUPER MULTIPLE JUNCTION (SMJ)
M4 -FUSE BLOCK-JUNCTION BOX (J/B)

TKWM1386E

DI-AT/IND-02







REFER TO THE FOLLOWING.
M4 -FUSE BLOCK-JUNCTION BOX (J/B)

TKWT0493E

A/T Indicator Is Malfunction

AKS0095G

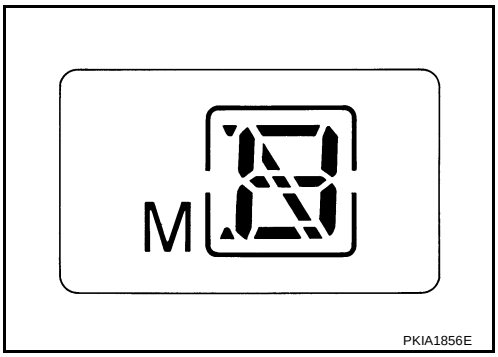
1. CHECK SELF-DIAGNOSIS OF COMBINATION METER

Perform combination meter self-diagnosis. Refer to DI-13, "HOW TO ALTERNATE DIAGNOSIS MODE" .

Are all segments displayed?

YES or NO

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



PKIA1856E

2. CHECK SELF-DIAGNOSTIC RESULTS OF UNIFIED METER AND A/C AMP.

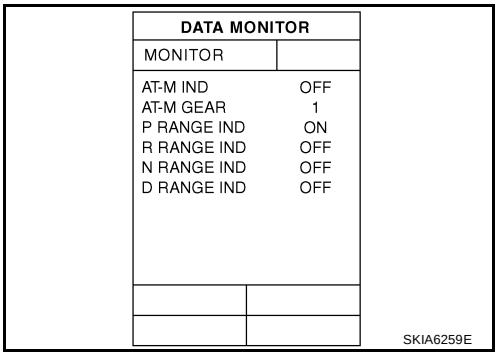
1. Start engine.
2. Select “METER A/C AMP” on CONSULT-II, and perform self-diagnosis of unified meter and A/C amp. Refer to DI-62, "CONSULT-II Function" .
3. After erasing the self-diagnosis result, perform self-diagnosis again.

Self-diagnostic results content

No malfunction detected>>GO TO 3.
Malfunction detected>>Go to DI-18, "Symptom Chart 2" in combination meter.

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

1. Connect CONSULT-II and start engine.
2. Use “DATA MONITOR” of “METER A/C AMP” on CONSULT-II. Confirm each indication on the monitor when operating the shift 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

OK or NG

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

4. CHECK TCM SELF-DIAGNOSIS

Perform TCM self-diagnosis. Refer to AT-41, "TROUBLE DIAGNOSIS" .

OK or NG

OK >> Replace unified meter and A/C amp. Refer to DI-65, "Removal and Installation of Unified Meter and A/C Amp." .

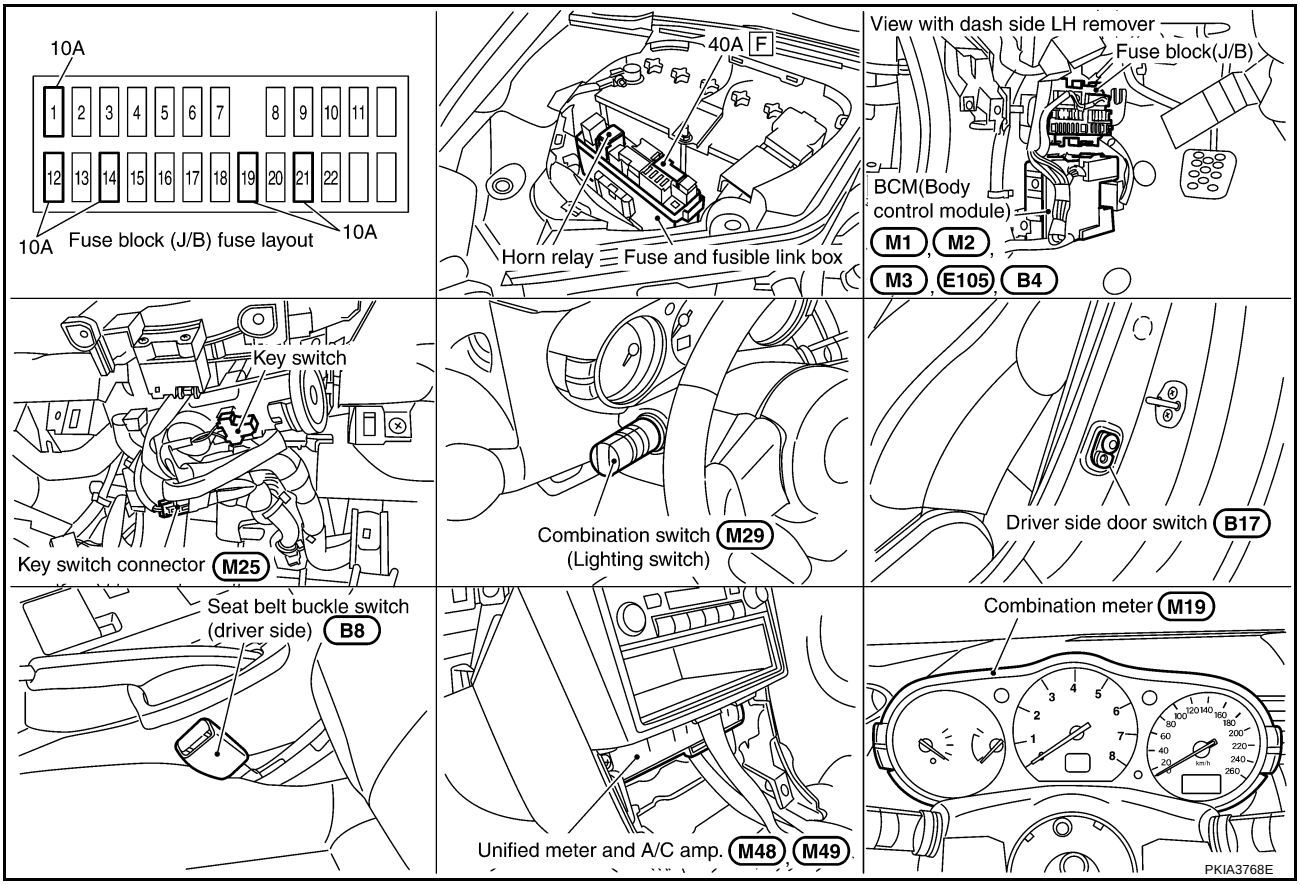
NG >> Repair or replace corresponding parts.

WARNING CHIME

PFP:24814

Component Parts and Harness Connector Location

AKS0095H



System Description

AKS0095I

FUNCTION

Power is supplied at all times

- through 40A fuse (letter **F** , located in the fuse and fusible link box)
- to BCM terminal 7.
- through 10A fuse [No. 21, located in the fuse block (J/B)]
- to key switch terminal 2.
- through 10A fuse [No. 19, located in the fuse block (J/B)]
- to unified meter and A/C amp. terminal 21, and
- to combination meter terminal 24.

When ignition switch ON or START position, power is supplied

- through 10A fuse [No. 1, located in the fuse block (J/B)]
- to BCM terminal 35.
- 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 23.

Ground is supplied

- to BCM terminal 8
- through body grounds E17, E43 and F152.
- to unified meter and A/C amp. terminals 29 and 30, and
- to combination meter terminals 10, 11 and 12,
- through body grounds M30 and M66.

IGNITION KEY WARNING CHIME

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

- through key switch terminal 1
- to BCM terminal 62.

Ground is supplied

- to BCM terminal 14
- through driver side door switch terminal 1.

Driver side door switch is case grounded.
BCM detects key inserted into the ignition switch, and sends key warning signal to unified meter and A/C amp. with CAN communication line. Unified meter and A/C amp. sends key warning signal to combination meter with communication line between unified meter and A/C amp. and combination meter.
When combination meter receives key warning signal, it sounds warning chime.

LIGHT WARNING CHIME

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

- from combination switch (lighting switch) terminals 1, 2, 3, 4, 5, 6, 7, 8, 9 and 10
- to BCM terminals 40, 41, 42, 43, 47, 48, 49, 50, 51 and 52.

  NOTE:
  BCM detected lighting switch in 1st or 2nd position, refer to LT-76, "Combination Switch Reading Function" .

Ground is supplied

- to BCM terminal 14
- through driver side door switch terminal 1.

BCM detects headlamps are illuminated, and sends light warning signal to unified meter and A/C amp. with CAN communication line. Unified meter and A/C amp. sends light warning signal to combination meter with communication line between unified meter and A/C amp. and combination meter.
When combination meter receives light warning signal, it sounds warning chime.

SEAT BELT WARNING CHIME

With ignition switch turned ON and seat belt unfastened [seat belt buckle switch (driver side) ON], warning chime will sound for approximately 6 seconds.
Ground is supplied

- to combination meter terminal 1
- through seat belt buckle switch (driver side) terminal 1.

Seat belt buckle switch (driver side) terminal 2 is grounded through body grounds B5, B6 and T14.
Combination meter sends seat belt unfastened [seat belt buckle switch (driver side) ON] signal to unified meter and A/C amp. with communication line between unified meter and A/C amp. and combination meter.
BCM receives seat belt unfastened [seat belt buckle switch (driver side) ON] signal from unified meter and A/C amp. with CAN communication line, and sends seat belt warning signal to unified meter and A/C amp. with CAN communication line. Unified meter and A/C amp. sends seat belt warning signal to combination meter with communication line between unified meter and A/C amp. and combination meter.
When combination meter receives seat belt warning signal, it sounds warning chime.

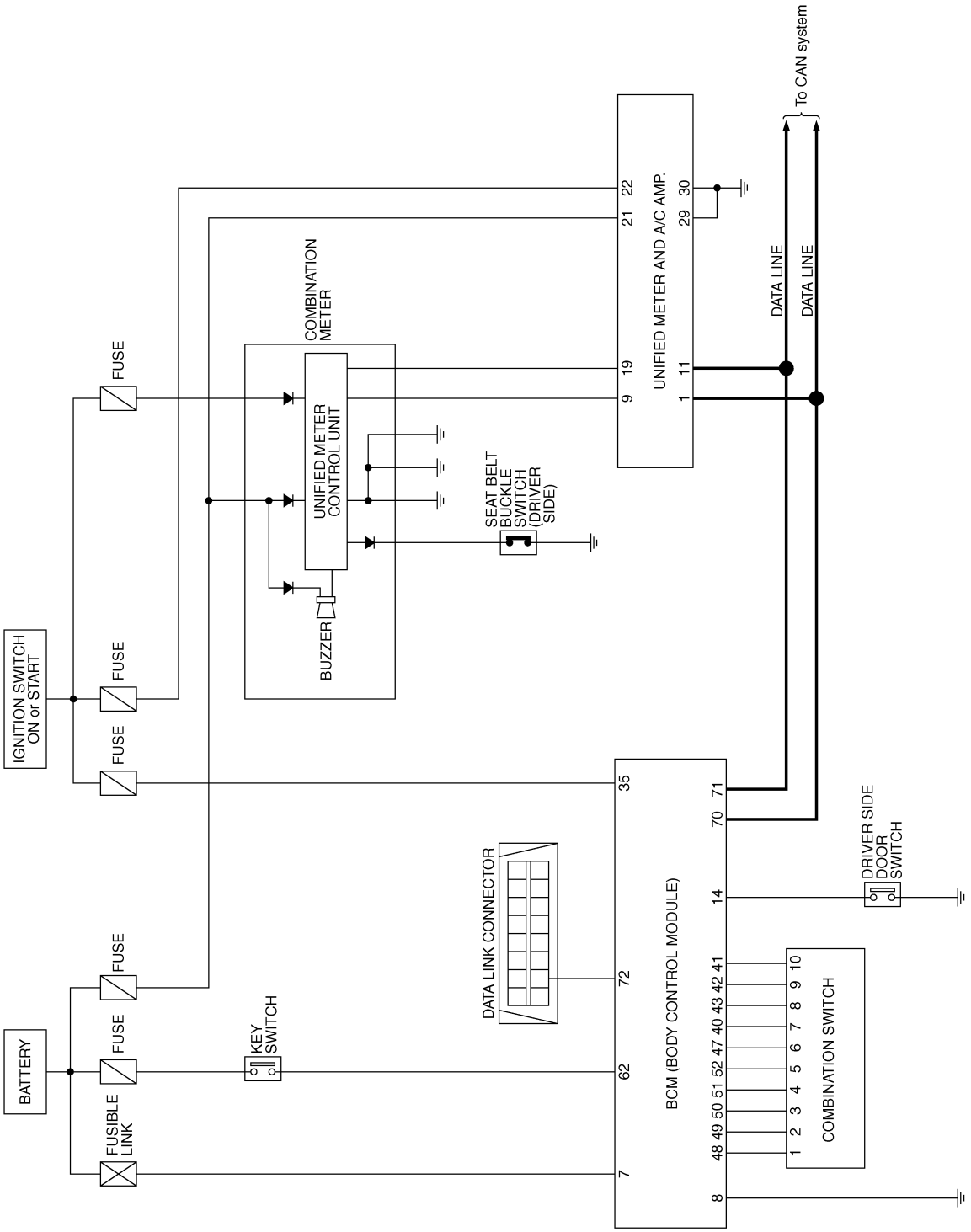
CAN Communication System Description

AKS0095J

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.
For details, refer to LAN-4, "CAN COMMUNICATION" .

Schematic

AKS0095L

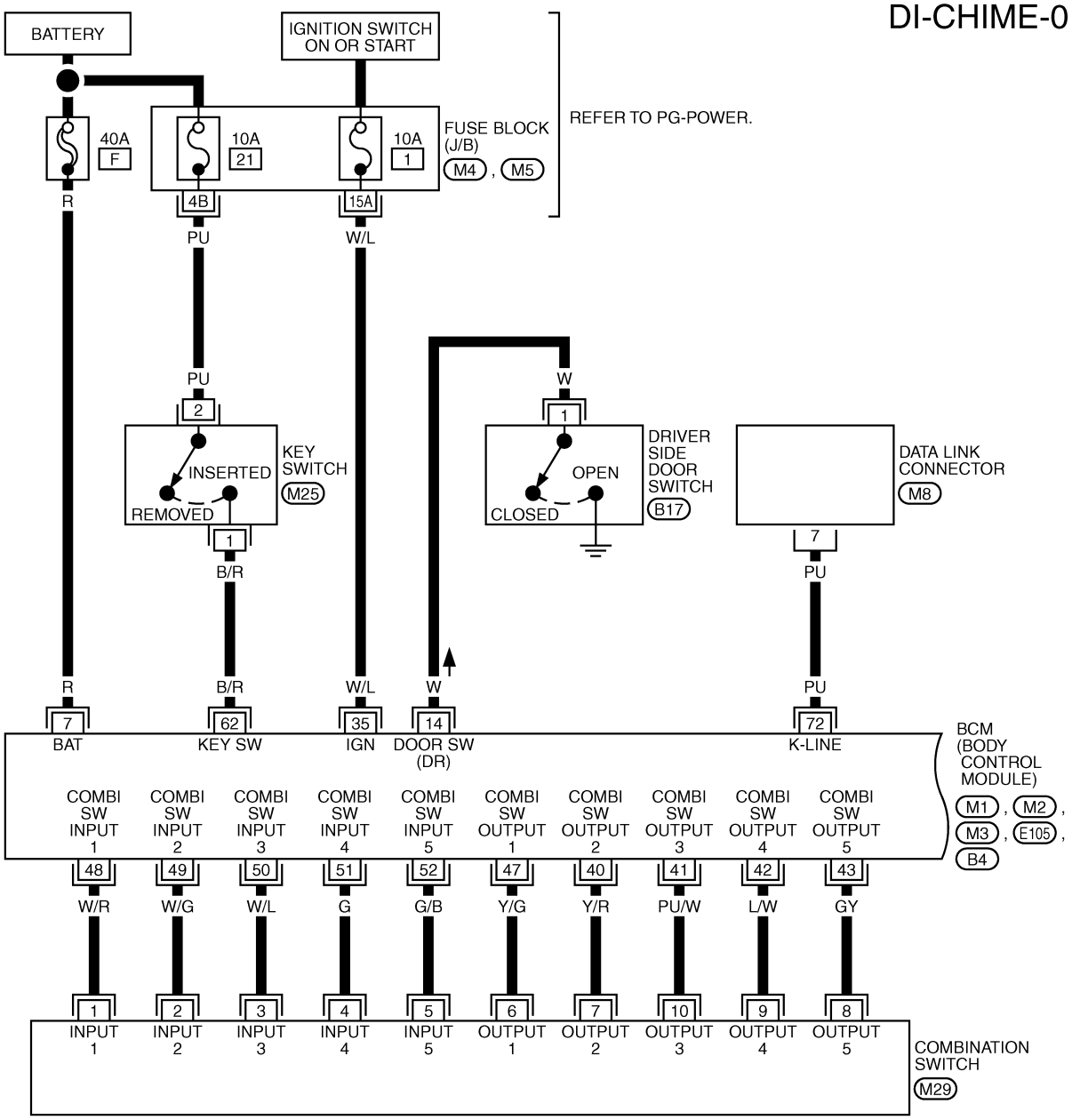


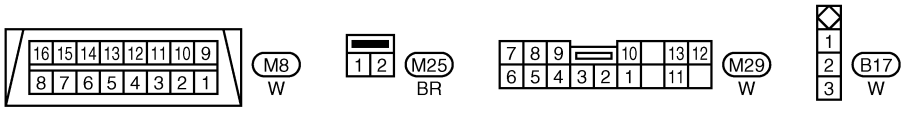
TKWT0519E

Wiring Diagram — CHIME —

AKS0095M

DI-CHIME-01

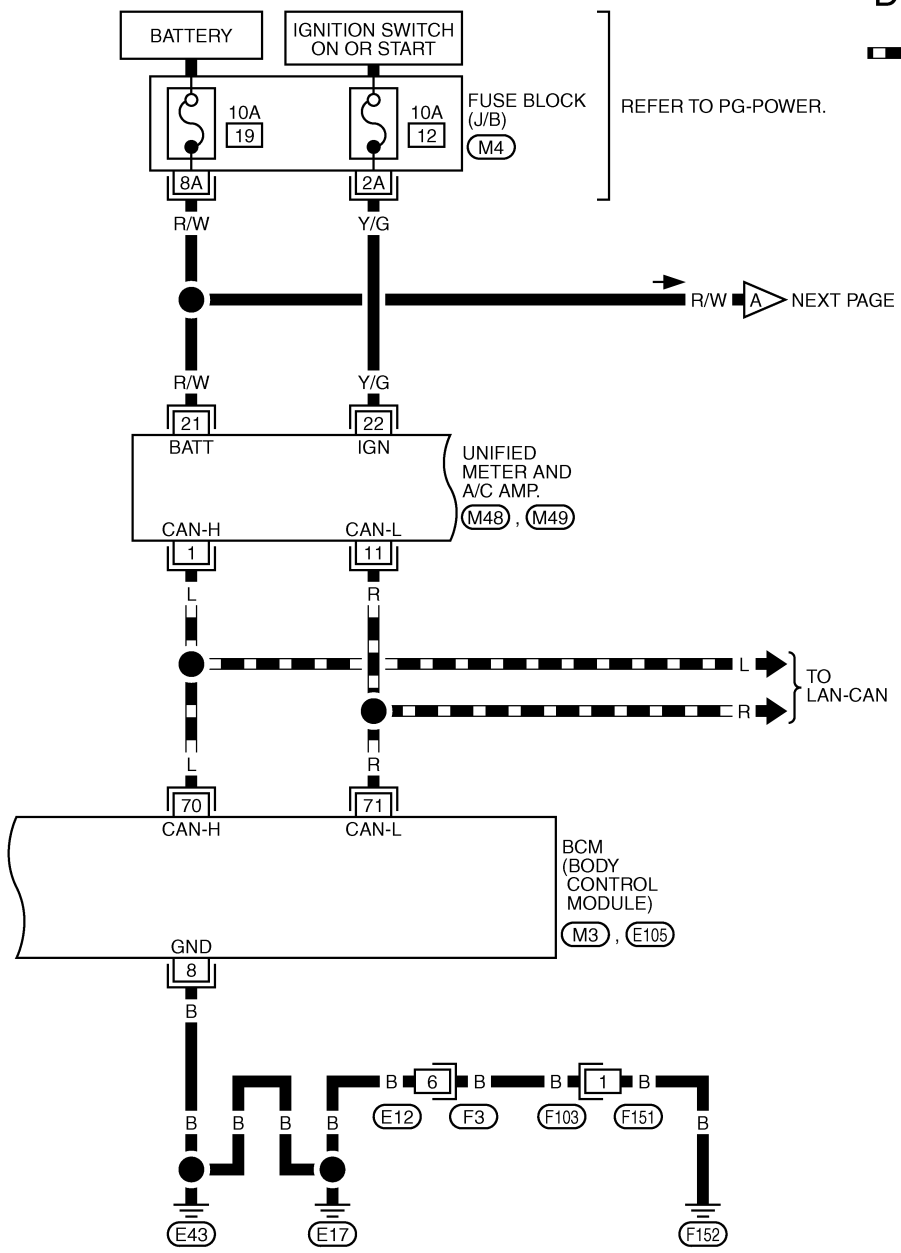


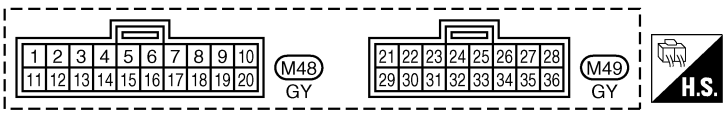


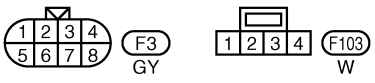
REFER TO THE FOLLOWING.
M4, M5 -FUSE BLOCK-JUNCTION BOX (J/B)
M1, M2, M3, E105, B4 -ELECTRICAL UNITS

TKWT0809E

DI-CHIME-02



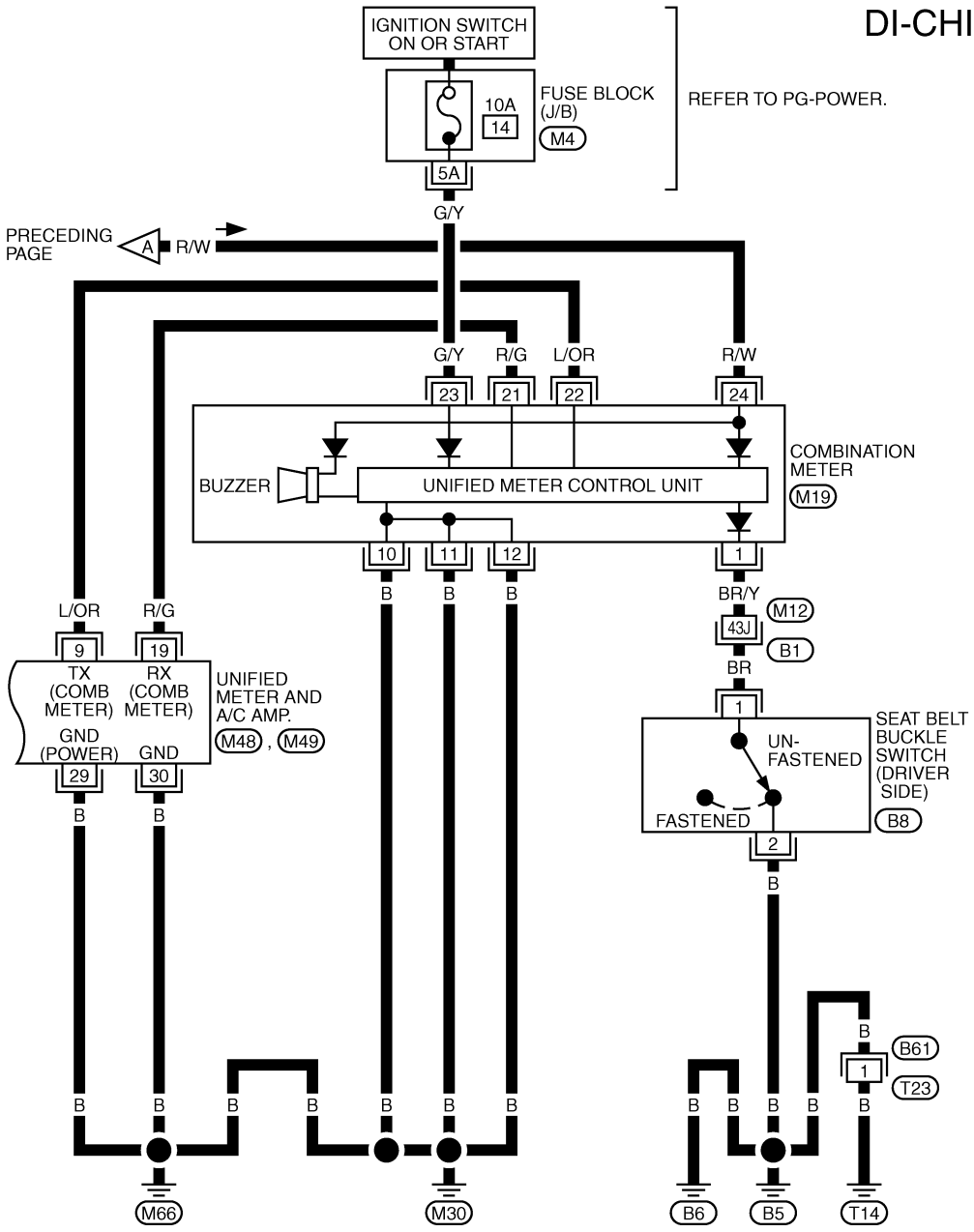


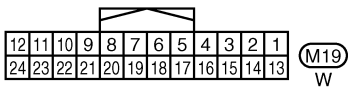


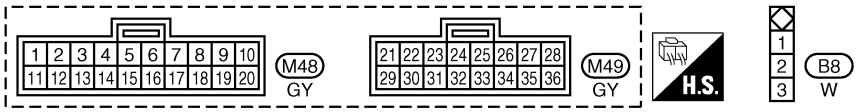
REFER TO THE FOLLOWING.
M4 -FUSE BLOCK-JUNCTION BOX (J/B)
M3 , E105 -ELECTRICAL UNITS

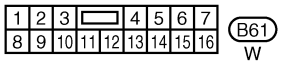
TKWT0810E

DI-CHIME-03









REFER TO THE FOLLOWING.

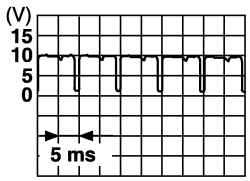
B1 -SUPER MULTIPLE JUNCTION (SMJ)

M4 -FUSE BLOCK-JUNCTION BOX (J/B)

TKWT1093E

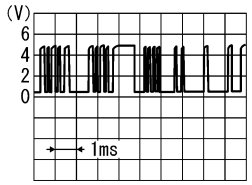
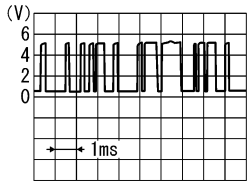
Terminals and Reference Value for BCM

AKS0095O

Terminal No.	Wire color	Item	Measuring condition		Reference value (V)
			Ignition switch	Operation or condition	
7	R	Battery power supply	OFF	—	Battery voltage
8	B	Ground	ON	—	Approx. 0
14	W	Driver side door switch signal	OFF	Door switch is released. (Door switch ON)	Approx. 0
				Door switch is pushed. (Door switch OFF)	Approx. 5
35	W/L	Ignition switch ON or START	ON	—	Battery voltage
40	Y/R	Combination switch output 2	ON	—	 SKIA1119J
41	PU/W	Combination switch output 3			
42	L/W	Combination switch output 4			
43	GY	Combination switch output 5			
47	Y/G	Combination switch output 1			
48	W/R	Combination switch input 1	ON	Lighting switch and wiper switch are OFF.	4.5 or more
49	W/G	Combination switch input 2			
50	W/L	Combination switch input 3			
51	G	Combination switch input 4			
52	G/B	Combination switch input 5			
62	B/R	Key switch signal	OFF	Key is removed.	Approx. 0
				Key is inserted.	Battery voltage
70	L	CAN H	OFF	—	—
71	R	CAN L	OFF	—	—
72	PU	K-LINE	—	—	—

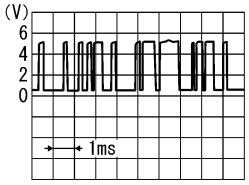
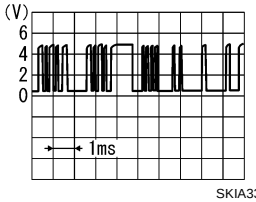
Terminals and Reference Value for Unified Meter and A/C Amp.

AKS0095P

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

Terminals and Reference Value for Combination Meter

AKS0095Q

Terminal No.	Wire color	Item	Measuring condition		Reference value (V)
			Ignition switch	Operation or condition	
1	BR/Y	Seat belt buckle switch (Driver side)	ON	Seat belt is unfastened.	Approx. 0
				Seat belt is fastened.	Approx. 5
10	B	Ground	ON	—	Approx. 0
11					
12					
21	R/G	TX communication line (To unified meter and A/C amp.)	ON	—	 SKIA3361E
22	L/OR	RX communication line (From unified meter and A/C amp.)	ON	—	 SKIA3362E
23	G/Y	Ignition switch ON or START	ON	—	Battery voltage
24	R/W	Battery power supply	OFF	—	Battery voltage

How to Proceed With Trouble Diagnosis

AKS0095R

1. Confirm the symptom or customer complaint.
2. Understand operation description and function description. Refer to DI-81, "System Description" .
3. Perform the Preliminary Check. Refer to DI-89, "Preliminary Check" .
4. Start engine.
5. Select “METER A/C AMP” on CONSULT-II, and perform self-diagnosis of unified meter and A/C amp. Refer to DI-62, "CONSULT-II Function" .
6. After erasing the self-diagnosis result, perform self-diagnosis again. When no malfunction detected, go to next step 7. When malfunction detected, go to DI-18, "Symptom Chart 2" in “COMBINATION METER”.
7. Check symptom and repair or replace the cause of malfunction.
8. Does the warning chime operate normally? If so, go to 9. If not, go to 7.
9. INSPECTION END

Preliminary Check

AKS0095S

INSPECTION FOR POWER SUPPLY AND GROUND CIRCUIT

1. CHECK FUSE

Check for blown BCM fuses.

Unit	Power source	Fuse No.
BCM	Battery	F
	Ignition switch ON or START position	1

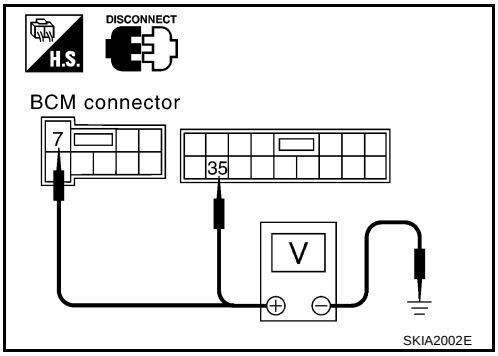
OK or NG

OK >> GO TO 2.
NG >> If fuse is blown, be sure to eliminate cause of malfunction before installing new fuse. Refer to PG-4, "POWER SUPPLY ROUTING CIRCUIT" .

2. CHECK POWER SUPPLY CIRCUIT

1. Disconnect BCM connector.
2. Check voltage between BCM harness connector and ground.

Terminals			Ignition switch position	
(+)		(–)	OFF	ON
Connector	Terminal (Wire color)			
E105	7 (R)	Ground	Battery voltage	Battery voltage
M1	35 (W/L)		0V	Battery voltage



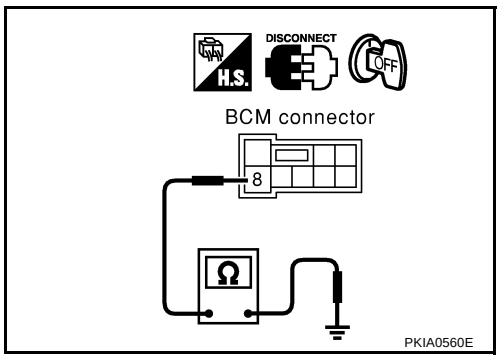
OK or NG

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

3. CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Check continuity between BCM harness connector E105 terminal 8 (B) and ground.

Continuity should exist.



OK or NG

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

CONSULT-II Function

AKS0095T

CONSULT-II executes the following functions by combining data reception and command transmission via the communication line from BCM. Work support, self-diagnosis, data monitor, and active test display.

DIAGNOSTIC ITEMS DESCRIPTION

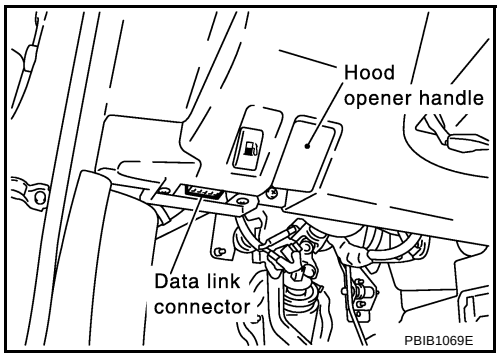
BCM diagnosis position	Diagnosis mode	Description
KEY WARN ALM	Data monitor	The input data to the BCM control unit is displayed in real time.
	Active test	Operation of electrical loads can be checked by sending driving signal to them.
LIGHT WARN ALM	Data monitor	The input data to the BCM control unit is displayed in real time.
	Active test	Operation of electrical loads can be checked by sending driving signal to them.
SEAT BELT ALM	Data monitor	The input data to the BCM control unit is displayed in real time.
	Active test	Operation of electrical loads can be checked by sending driving signal to them.
BCM C/U	Self-diagnostic	BCM performs self-diagnosis of CAN communication and combination switch.

CONSULT-II BASIC OPERATION PROCEDURE

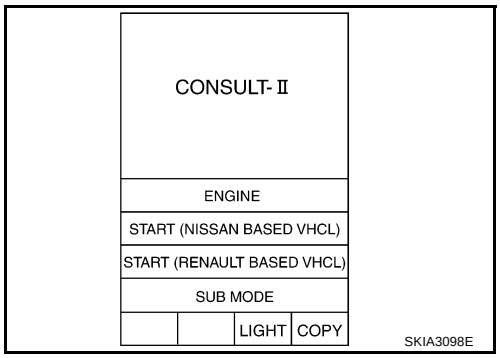
CAUTION:

If CONSULT-II is used with no connection of CONSULT-II CONVERTER, malfunctions might be detected in self-diagnosis depending on control unit which carry out CAN communication.

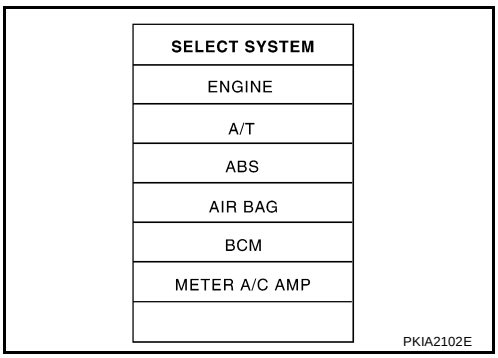
1. With the ignition switch OFF, connect “CONSULT-II” and CONSULT-II CONVERTER” to the data link connector, and turn ignition switch ON.



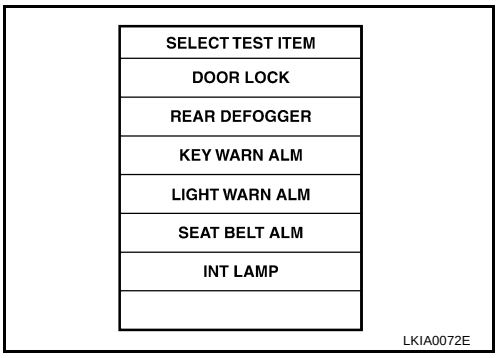
2. Touch “START (NISSAN BASED VHCL)”.



3. Touch “BCM” on “SELECT SYSTEM” screen. If “BCM” is not indicated, go to GI-39, "CONSULT-II Data Link Connector (DLC) Circuit" .



4. Touch “KEY WARN ALM”, “LIGHT WARN ALM”, “SEAT BELT ALM” or “BCM C/U”.
5. Select “DATA MONITOR”, “ACTIVE TEST” or “SELF-DIAG RESULTS”.



DATA MONITOR

Operation Procedure

1. Touch “IGN WARN ALM”, “LIGHT WARN ALM” or “SEAT BELT ALM” 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 main 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.

Data Monitor Item (Key Warning Chime)

Monitored item [Unit]	ALL SIGNALS	SELECTION FROM MENU	Contents
IGN ON SW [ON/OFF]	X	X	Indicates [ON/OFF] condition of ignition switch.
KEY ON SW [ON/OFF]	X	X	Indicates [ON/OFF] condition of key switch.
DOOR SW-DR [ON/OFF]	X	X	Indicates [ON/OFF] condition of driver side door switch.

Data Monitor Item (Light Warning Chime)

Monitored item [Unit]	ALL SIGNALS	SELECTION FROM MENU	Contents
IGN ON SW [ON/OFF]	X	X	Indicates [ON/OFF] condition of ignition switch.
DOOR SW-DR [ON/OFF]	X	X	Indicates [ON/OFF] condition of driver side door switch.
TAIL LAMP SW [ON/OFF]	X	X	Indicates [ON/OFF] condition of lighting switch.

Data Monitor Item (Seat Belt Warning Chime)

Monitored item [Unit]	ALL SIGNALS	SELECTION FROM MENU	Contents
IGN ON SW [ON/OFF]	X	X	Indicates [ON/OFF] condition of ignition switch.
SEAT BELT SW [ON/OFF]	X	X	Indicates [ON/OFF] condition of seat belt switch.

ACTIVE TEST

Operation Procedure

1. Touch “IGN WARN ALM”, “LIGHT WARN ALM” or “SEAT BELT ALM” 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.

Active Test Item (Key Warning Chime)

Test item	Malfunction is detected when…
CHIME	This test is able to check key warning chime operation. Key warning chime sounds for 2 seconds after touching “ON” on CONSULT-ll screen.

Active Test Item (Light Warning Chime)

Test item	Malfunction is detected when…
CHIME	This test is able to check light warning chime operation. Light warning chime sounds for 2 seconds after touching “ON” on CONSULT-ll screen.

Active Test Item (Seat Belt Warning Chime)

Test item	Malfunction is detected when…
CHIME	This test is able to check seat belt warning chime operation. Seat belt warning chime sounds for 2 seconds after touching “ON” on CONSULT-ll screen.

SELF-DIAGNOSTIC RESULTS

Operation Procedure

1. Touch “BCM C/U” on “DIAGNOSIS ITEM SELECTION” screen.
2. Touch “SELF-DIAG RESULTS” on “SELECT DIAG MODE” screen.
3. Self-diagnostic results are displayed.

Display Item List

Items to be displayed	CONSULT-ll display	Description
CAN communication	CAN communication [U1000]	Malfunction is detected in CAN communication.
Combination switch	Diagnosis 1 - 5 systems open circuit	Malfunction is detected in combination switch system.

NOTE:
If “CAN communication [U1000]” is indicated, after printing the monitor item, go to “CAN system”. Refer to LAN-2, "Precautions When Using CONSULT-II" .

All Warnings Are Not Operated

AKS0095U

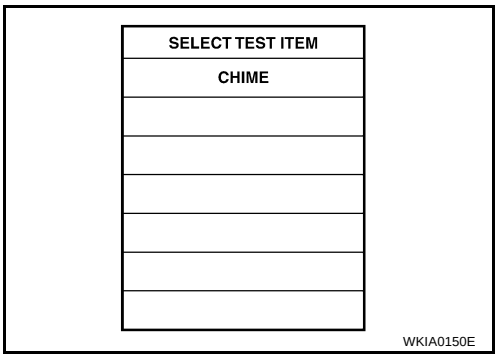
1. CHECK CHIME OPERATION

1. Select “BCM” on CONSULT-II.
2. With “KEY WARN ALM”, “LIGHT WARN ALM” or “SEAT BELT ALM”, and perform “CHIME” of “SELECT TEST ITEM”.

Does chime sound?

YES >> Replace BCM. Refer to BCS-15, "Removal and Installation of BCM" .

NO >> GO TO 2.



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

1. Select “METER A/C AMP” on CONSULT-II.
2. Operate switches meet the requirements to sounds warning chime with “BUZZER” of “DATA MONITOR” and check operation status.

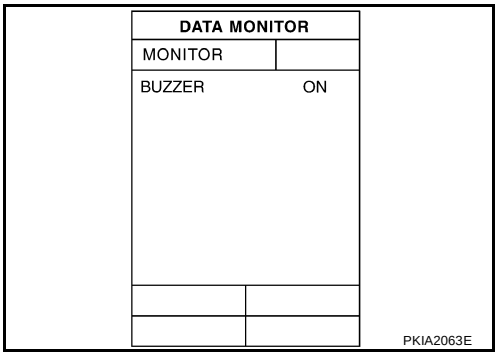
When meet the requirements to sounds warning chime : BUZZER ON

Except above : BUZZER OFF

OK or NG

OK >> Replace combination meter.

NG >> Replace BCM. Refer to BCS-15, "Removal and Installation of BCM" .



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

AKS0095V

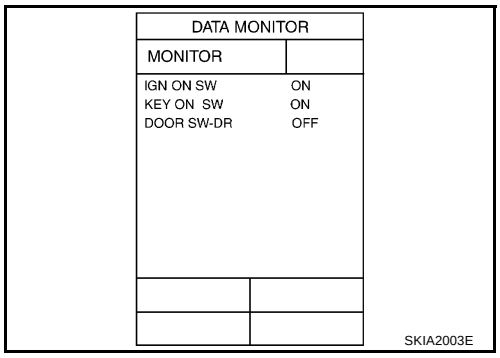
1. CHECK BCM INPUT SIGNAL

With CONSULT-II

With "DATA MONITOR" of "KEY WARN ALM" or "LIGHT WARN ALM", confirm "DOOR SW-DR" when the driver side door switch is operated.

When driver side door is opened : DOOR SW-DR ON

When driver side door is closed : DOOR SW-DR OFF

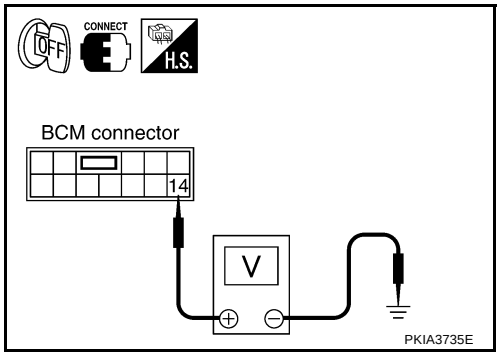


Without CONSULT-II

Check voltage between BCM harness connector B4 terminal 14 (W) and ground.

When driver side door is opened : Approx. 0V

When driver side door is closed : Approx. 5V



OK or NG

OK >> Replace BCM. Refer to BCS-15, "Removal and Installation of BCM" .

NG >> GO TO 2.

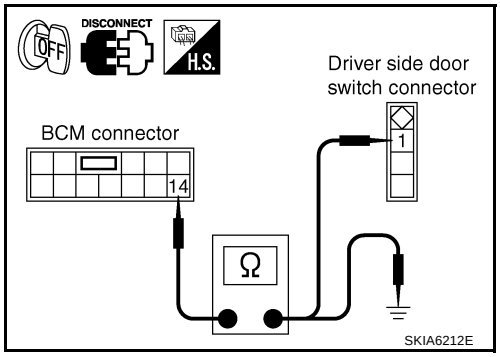
2. CHECK DRIVER SIDE DOOR SWITCH CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect BCM connector and driver side door switch connector.
3. Check continuity between BCM harness connector B4 terminal 14 (W) and driver side door switch harness connector B17 terminal 1 (W).

   Continuity should exist.

4. Check continuity between BCM harness connector B4 terminal 14 (W) and ground.

   Continuity should not exist.



OK or NG

OK >> GO TO 3.

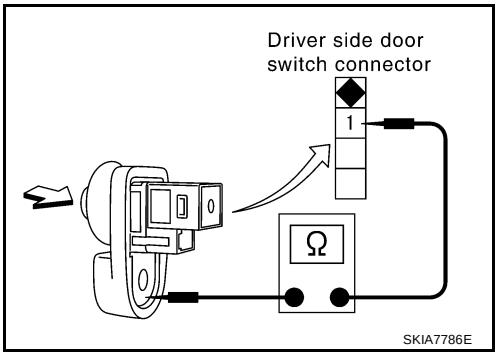
NG >> Repair harness or connector.

3. CHECK DRIVER SIDE DOOR SWITCH

Check driver side door switch.

When driver side door switch is released : **Continuity should exist.**

When driver side door switch is pushed : **Continuity should not exist.**



OK or NG

OK >> Replace BCM. Refer to BCS-15, "Removal and Installation of BCM" .

NG >> Replace driver side door switch.

Key Warning Chime Does Not Operate

AKS0095W

1. CHECK FUSE

Check if the key switch 10A fuse [No. 21, located in the fuse block (J/B)] is blown. Refer to DI-84, "Wiring Diagram — CHIME —" .

Is the fuse blown?

YES >> Replace fuse. Be sure to repair the cause of malfunction before installing new fuse.

NO >> GO TO 2.

2. CHECK WARNING CHIME OPERATION

Check the chime under conditions in exception of key warning chime operation.

Does warning chime sound?

YES >> GO TO 3.

NO >> Go to DI-93, "All Warnings Are Not Operated" .

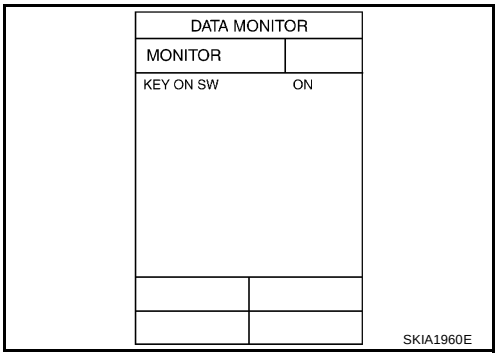
3. CHECK BCM INPUT SIGNAL

With CONSULT-II

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

When key is inserted to ignition key cylinder : **KEY ON SW ON**

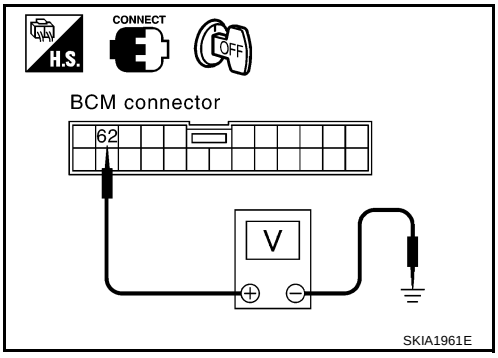
When key is removed from ignition key cylinder : **KEY ON SW OFF**



Without CONSULT-II

Check voltage between BCM harness connector M3 terminal 62 (B/R) and ground.

Terminals			Condition	Voltage (V)
(+)		(–)		
Connector	Terminal (Wire color)			
M3	62 (B/R)	Ground	Key is inserted.	Battery voltage
			Key is removed.	Approx. 0



OK or NG

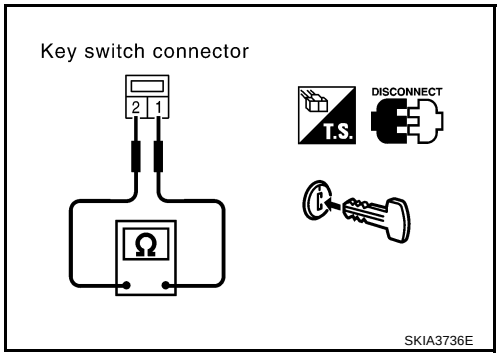
OK >> Replace BCM. Refer to BCS-15, "Removal and Installation of BCM" .

NG >> GO TO 4.

4. CHECK KEY SWITCH (INSERT)

1. Disconnect key switch connector.
2. Check continuity between key switch terminals 1 and 2.

Terminal		Condition	Continuity
1	2	Key is inserted.	Yes
		Key is removed.	No



OK or NG

OK >> GO TO 5.
NG >> Replace key cylinder assembly (key switch).

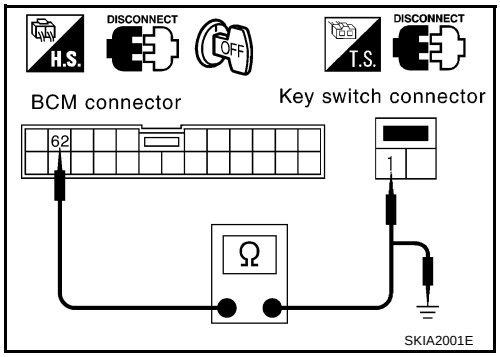
5. CHECK KEY SWITCH CIRCUIT

1. Disconnect BCM connector.
2. Check continuity between BCM harness connector M3 terminal 62 (B/R) and key switch harness connector M25 terminal 1 (B/R).

Continuity should exist.

3. Check continuity between BCM harness connector M3 terminal 62 (B/R) and ground.

Continuity should not exist.



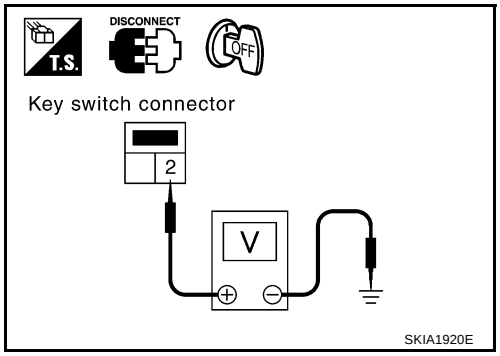
OK or NG

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

6. CHECK KEY SWITCH POWER SUPPLY CIRCUIT

Check voltage between key switch harness connector M25 terminal 2 (PU) and ground.

Battery voltage should exist.



OK or NG

OK >> Replace BCM. Refer to BCS-15, "Removal and Installation of BCM" .
NG >> Check harness for open or short between key switch and fuse.

Light Warning Chime Does Not Operate

AKS0095X

1. CHECK WARNING CHIME OPERATION

Check the chime under conditions in exception of headlamp warning chime operation.

Does warning chime sound?

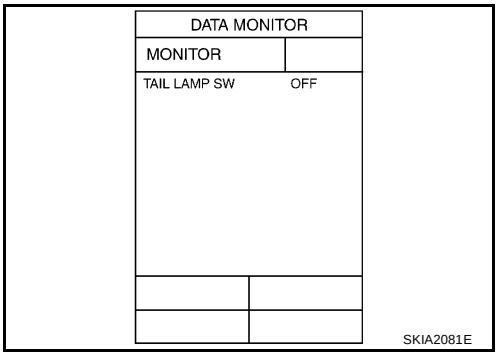
YES >> GO TO 2.
NO >> Go to DI-93, "All Warnings Are Not Operated" .

2. CHECK BCM INPUT SIGNAL

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

When lighting switch is in 1st position : TAIL LAMP SW ON

When lighting switch is OFF : TAIL LAMP SW OFF



OK or NG

OK >> Replace BCM. Refer to BCS-15, "Removal and Installation of BCM" .
NG >> Check lighting switch. Refer to LT-81, "Combination Switch Inspection According to Self-Diagnostic Results" .

Seat Belt Warning Chime Does Not Operate

AKS0095Y

1. CHECK WARNING CHIME OPERATION

Check the chime under conditions in exception of seat belt warning chime operation.

Does warning chime sound?

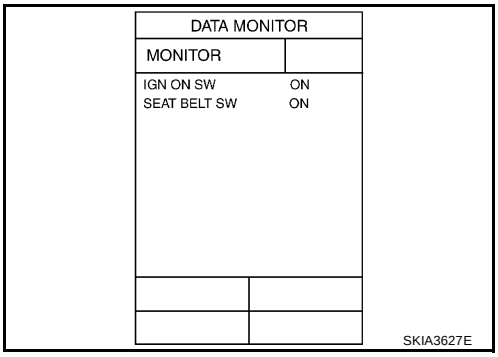
YES >> GO TO 2.
NO >> Go to DI-93, "All Warnings Are Not Operated" .

2. CHECK BCM INPUT SIGNAL

1. Select “BCM” on CONSULT-II.
2. With “DATA MONITOR” of “SEAT BELT ALM”, confirm “SEAT BELT SW” when the seat belt buckle switch is operated.

When seat belt is fastened : SEAT BELT SW OFF

When seat belt is unfastened : SEAT BELT SW ON



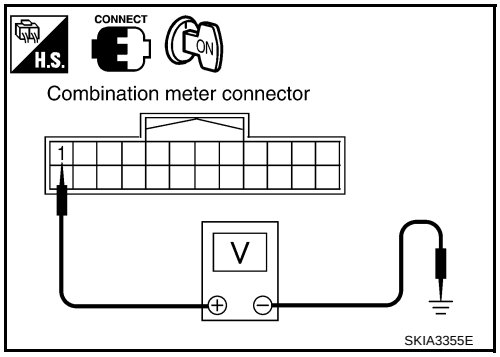
OK or NG

OK >> Replace BCM. Refer to BCS-15, "Removal and Installation of BCM" .
NG >> GO TO 3.

3. CHECK COMBINATION METER INPUT SIGNAL

1. Turn ignition switch ON.
2. Check voltage between combination meter harness connector M19 terminal 1 (BR/Y) and ground.

Terminals			Condition	Voltage (V)
(+)		(–)		
Connector	Terminal (Wire color)			
M19	1 (BR/Y)	Ground	Seat belt is fastened.	Approx. 5
			Seat belt is unfastened.	Approx. 0



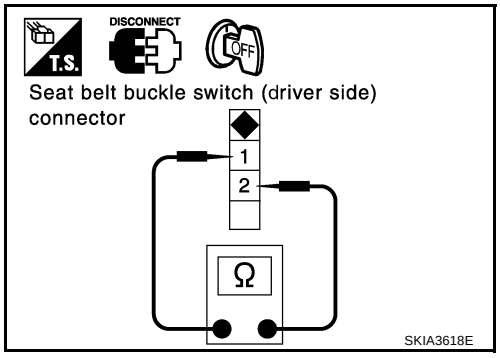
OK or NG

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

4. CHECK SEAT BELT BUCKLE SWITCH

1. Turn ignition switch OFF.
2. Disconnect seat belt buckle switch (driver side) connector.
3. Check continuity between seat belt buckle switch (driver side) harness connector B8 terminals 1 and 2.

Terminal		Condition	Continuity
1	2	Seat belt is fastened.	No
		Seat belt is unfastened.	Yes



OK or NG

OK >> GO TO 5.
NG >> Replace seat belt buckle switch (driver side).

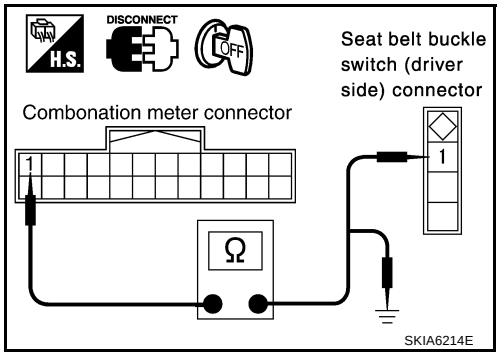
5. CHECK SEAT BELT BUCKLE SWITCH CIRCUIT

1. Disconnect combination meter connector.
2. Check harness continuity between combination meter harness connector M19 terminal 1 (BR/Y) and seat belt buckle switch (driver side) harness connector B8 terminal 1 (BR).

Continuity should exist.

3. Check harness continuity between combination meter harness connector M19 terminal 1 (BR/Y) and ground.

Continuity should not exist.



OK or NG

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

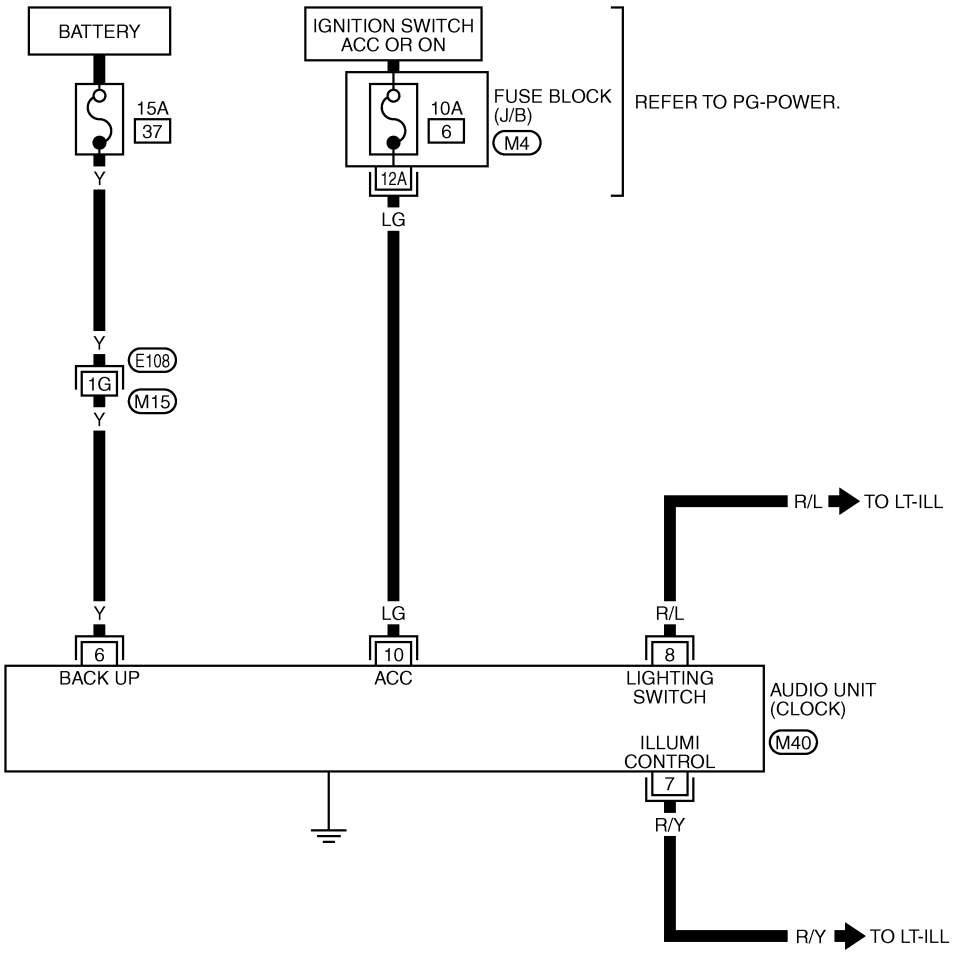
CLOCK

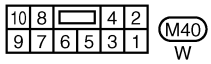
PFP:25820

Wiring Diagram — CLOCK —

AKS0095Z

DI-CLOCK-01





REFER TO THE FOLLOWING.
E108 -SUPER MULTIPLE JUNCTION (SMJ)
M4 -FUSE BLOCK-JUNCTION BOX (J/B)

TKWT0500E

Description

AKS00960

Audio display indication type digital clock has been adopted, and integrated in electronic tuner radio.

Clock Adjustment

AKS00961

- When DISP SW is pressed and held for 1.5 seconds or more, mode is changed to clock mode.
- “hour” and “minute” are flashed.
- When SEEK UP/DOWN SW is pressed, “hour” is adjusted.
- When TUNE UP/DOWN SW is pressed, “minute” is adjusted.
- When DISP SW is pressed, clock mode is canceled.
- During clock adjustment mode, pressing DISP SW and TUNE UP/DOWN SW reset clock, and clock mode is canceled.