SECTION DI
DRIVER INFORMATION SYSTEM

CONTENTS

PRECAUTION

PFP:00011

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

AKS007VG

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.**

Wiring Diagrams and Trouble Diagnosis

AKS0008S

When you read wiring diagrams, refer to the followings:

- Refer to GI-14, "How to Read Wiring Diagrams"
- Refer to PG-3, "POWER SUPPLY ROUTING CIRCUIT" for power distribution circuit

When you perform trouble diagnosis, refer to the followings:

- Refer to GI-10, "HOW TO FOLLOW TEST GROUPS IN TROUBLE DIAGNOSES"
- Refer to GI-26, "How to Perform Efficient Diagnosis for an Electrical Incident"

COMBINATION METERS

PFP:24814

System Description

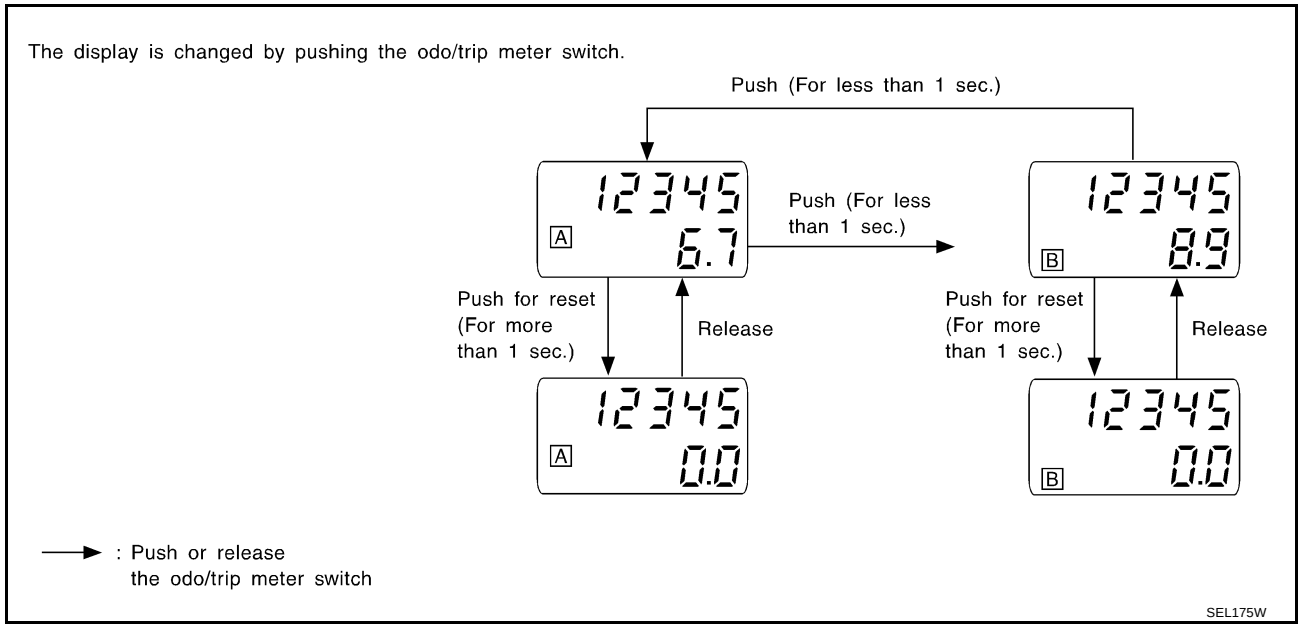
AKS0008U

UNIFIED CONTROL METER

- 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.
- 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.
- Meter/gauge can be checked in diagnosis mode.

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 43.

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 terminals 41 and 42.

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 terminals 40.

Ground is supplied

- to combination meter terminals 45 and 47
- 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 combination meter for water temperature gauge with CAN communication line.

TACHOMETER

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

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 body grounds M30 and M66
- through terminal 2 and 5 of the fuel level sensor unit and fuel pump (main)
- through terminal 1 and 2 of the fuel level sensor unit (sub) and
- to combination meter terminal 17 for the fuel gauge.

SPEEDOMETER

VDC/TCS/ABS control unit provides a vehicle speed signal to the combination meter for the speedometer with CAN communication line.

CAN Communication

AKS0008V

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

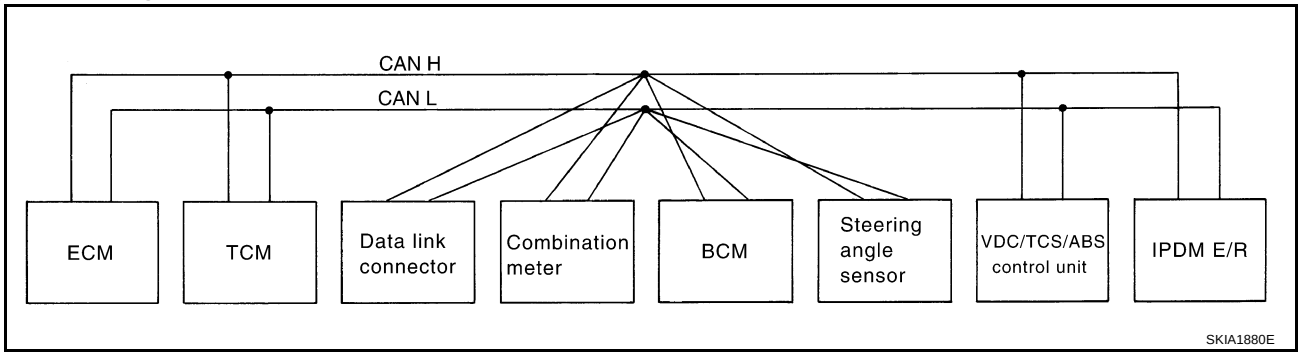
AKS0081B

Body type	Sedan		
Axle	2WD		
Engine	VQ35DE		
Transmission	A/T		M/T
	Up to serial 329287*	From serial 329288*	
Brake control	VDC		
CAN communication unit			
ECM	×		×
TCM	×		
Data link connector	×		×
Combination meter	×		×
BCM	×		×
Steering angle sensor	×		×
VDC/TCS/ABS control unit	×		×
IPDM E/R	×		×
CAN communication type	DI-6, "TYPE 1/TYPE 3"		DI-8, "TYPE 2"

×: Applicable
*:For further information, refer to GI-47, "IDENTIFICATION NUMBER" .

TYPE 1/TYPE 3

System Diagram



Input/Output Signal Chart

T: Transmit R: Receive

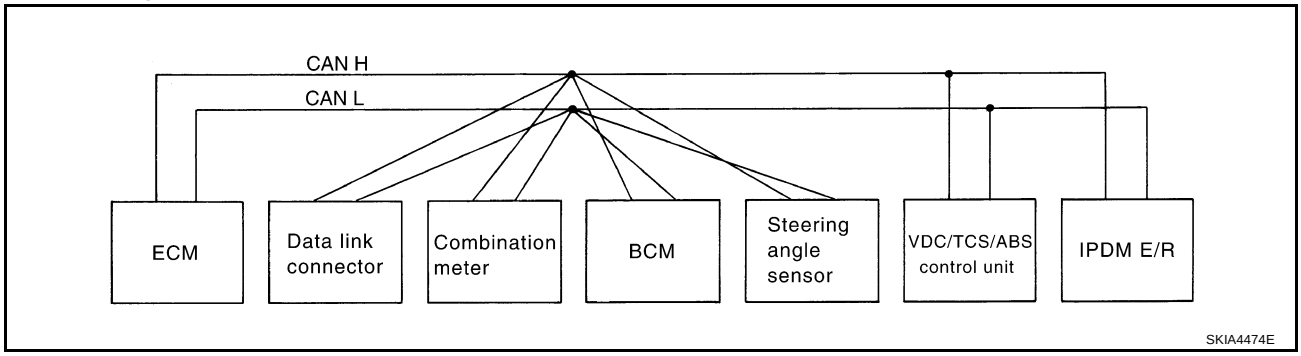
Signals	ECM	TCM	Combination meter	BCM	Steering angle sensor	VDC/TCS/ABS control unit	IPDM E/R
Engine torque signal	T	R					
Engine speed signal	T	R	R			R	
Engine coolant temperature signal	T	R	R				
Accelerator pedal position signal	T	R				R	
Closed throttle position signal	T	R					
Wide open throttle position signal	T	R					
Battery voltage signal	T	R					
Stop lamp switch signal		R	T				
Fuel consumption monitor signal	T		R				
A/T self-diagnosis signal	R	T					
A/T CHECK indicator lamp signal		T	R				
A/T position indicator signal		T	R			R	
ABS operation signal		R				T	
A/T shift schedule change demand signal		R				T	
A/C switch signal	R			T			
A/C compressor request signal	T						R
A/C compressor feedback signal	T		R				
Blower fan motor switch signal	R			T			
Cooling fan motor operation signal	T						R
Position lights request signal			R	T			R
Low beam request signal				T			R
Low beam status signal	R						T
High beam request signal			R	T			R
High beam status signal	R						T
Front fog lights request signal				T			R
Vehicle speed signal			R			T	
	R	R	T	R			
Sleep request 1 signal			R	T			
Sleep request 2 signal				T			R
Wake up request 1 signal			R	T			R

Signals	ECM	TCM	Combination meter	BCM	Steering angle sensor	VDC/TCS/ABS control unit	IPDM E/R
Wake up request 2 signal			R	T			R
Door switch signal (without navigation system)			R	T			R
Door switch signal (with navigation system)			T	R			
Turn indicator signal			R	T			
Seat belt buckle switch signal			T	R			
Oil pressure switch signal			R				T
Buzzer output signal			R	T			
ASCD SET lamp signal	T		R				
ASCD CRUISE lamp signal	T		R				
ASCD OD cancel request signal	T	R					
ASCD operation signal	T	R					
Output shaft revolution signal	R	T					
Front wiper request signal				T			R
Front wiper stop position signal				R			T
Rear window defogger switch signal				T			R
Rear window defogger control signal	R						T
Manual mode signal		R	T				
Not manual mode signal		R	T				
Manual mode shift up signal		R	T				
Manual mode shift down signal		R	T				
Manual mode indicator signal		T	R				
Hood switch signal				R			T
Theft warning horn request signal				T			R
Horn chirp signal				T			R
Steering angle sensor signal					T	R	
Malfunction indicator lamp signal (Type 3 only: From serial 329288*)	T		R				
Fuel level sensor signal (Type 3 only: From serial 329288*)	R		T				
Turbine revolution signal (Type 3 only: From serial 329288*)	R	T					

*:For further information, refer to GI-47, "IDENTIFICATION NUMBER" .

TYPE 2

System Diagram



Input/Output Signal Chart

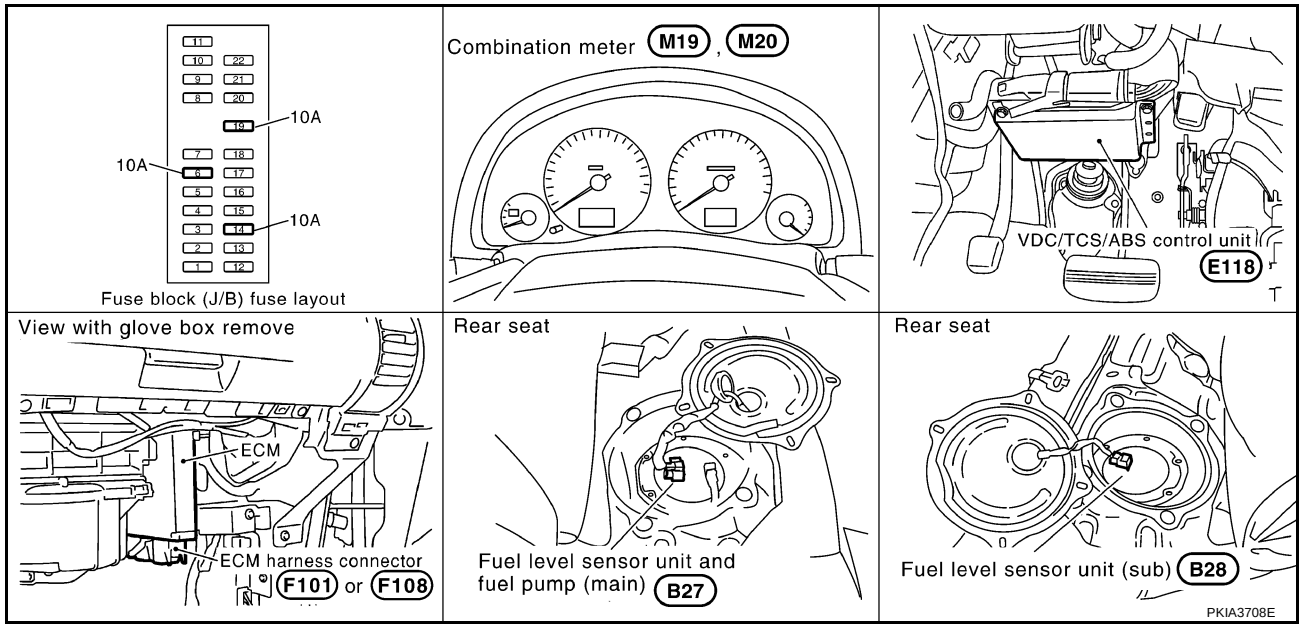
T: Transmit R: Receive

Signals	ECM	Combination meter	BCM	Steering angle sensor	VDC/TCS/ABS control unit	IPDM E/R
Engine speed signal	T	R			R	
Engine coolant temperature signal	T	R				
Accelerator pedal position signal	T				R	
Fuel consumption monitor signal	T	R				
A/C switch signal	R		T			
A/C compressor request signal	T					R
A/C compressor feedback signal	T	R				
Blower fan motor switch signal	R		T			
Cooling fan motor operation signal	T					R
Position lights request signal		R	T			R
Low beam request signal			T			R
Low beam status signal	R		R			T
High beam request signal		R	T			R
High beam status signal	R		R			T
Front fog lights request signal			T			R
Vehicle speed signal		R			T	
	R	T	R			
Sleep request 1 signal		R	T			
Sleep request 2 signal			T			R
Wake up request 1 signal		R	T			
Wake up request 2 signal		R	T			
Door switch signal (without navigation system)		R	T			R
Door switch signal (with navigation system)		T	R			
Turn indicator signal		R	T			
Seat belt buckle switch signal		T	R			
Oil pressure switch signal		R				T
Buzzer output signal		R	T			
Malfunction indicator lamp signal	T	R				
ASCD SET lamp signal	T	R				
ASCD CRUISE lamp signal	T	R				
Fuel level sensor signal	R	T				

Signals	ECM	Combination meter	BCM	Steering angle sensor	VDC/TCS/ABS control unit	IPDM E/R
Front wiper request signal			T			R
Front wiper stop position signal			R			T
Rear window defogger switch signal			T			R
Rear window defogger control signal	R		R			T
Hood switch signal			R			T
Theft warning horn request signal			T			R
Horn chirp signal			T			R
Steering angle sensor signal				T	R	

Component Parts and Harness Connector Location

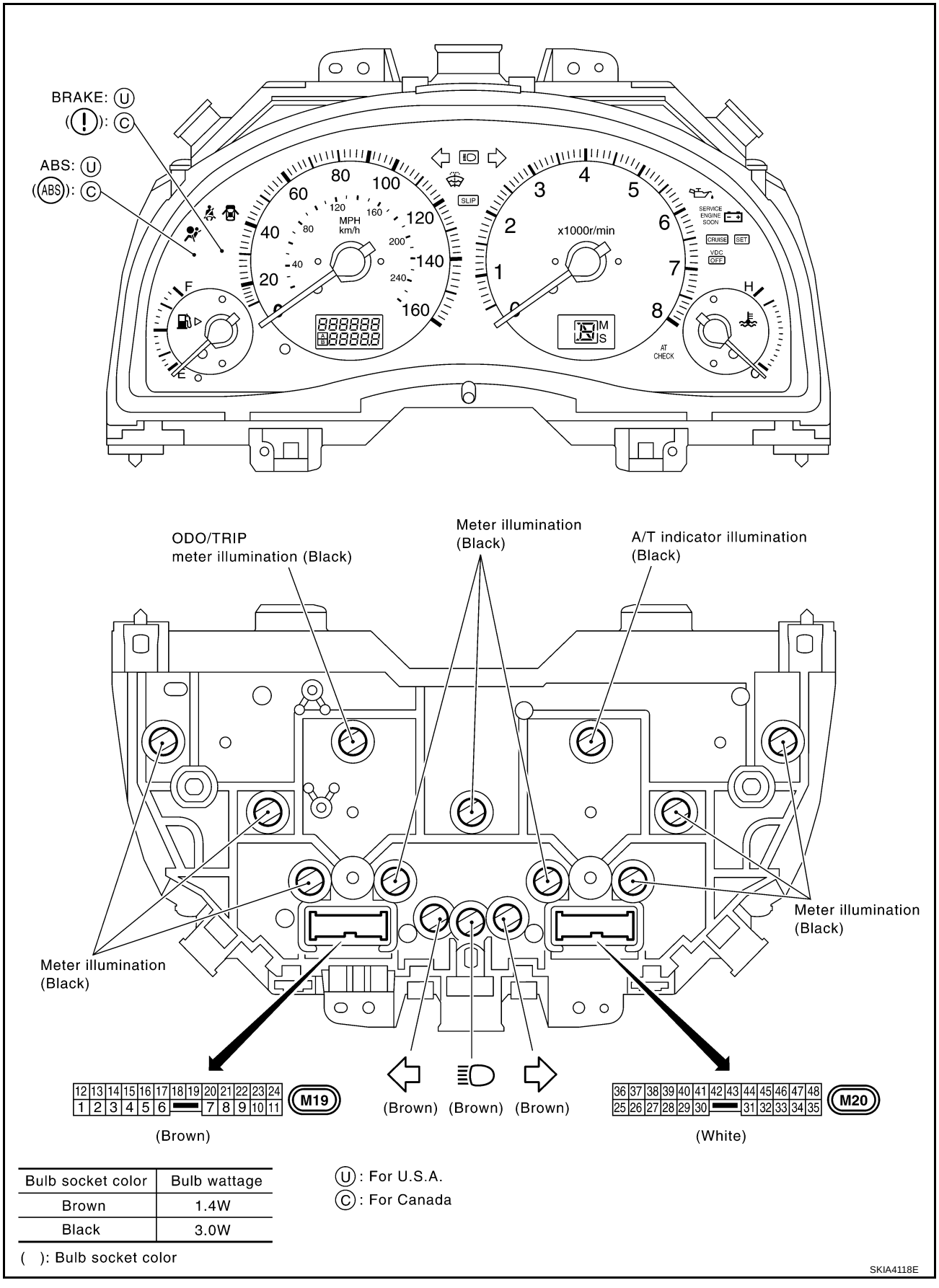
AKS0008T



Combination Meter

AKS0008W

CHECK



Bulb socket color	Bulb wattage
Brown	1.4W
Black	3.0W

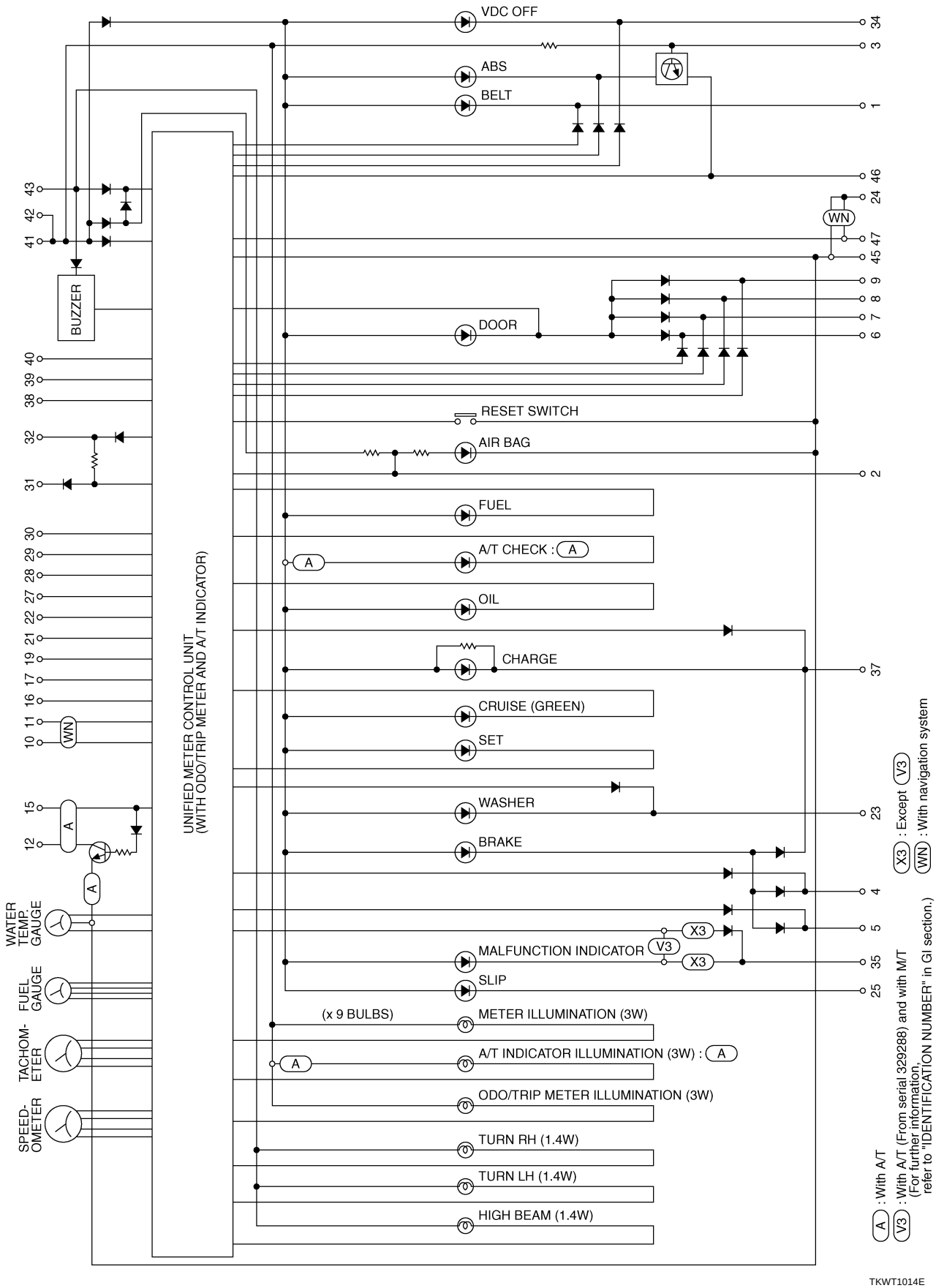
( ): Bulb socket color

U: For U.S.A.
C: For Canada

SKIA4118E

Schematic

AKS0008X

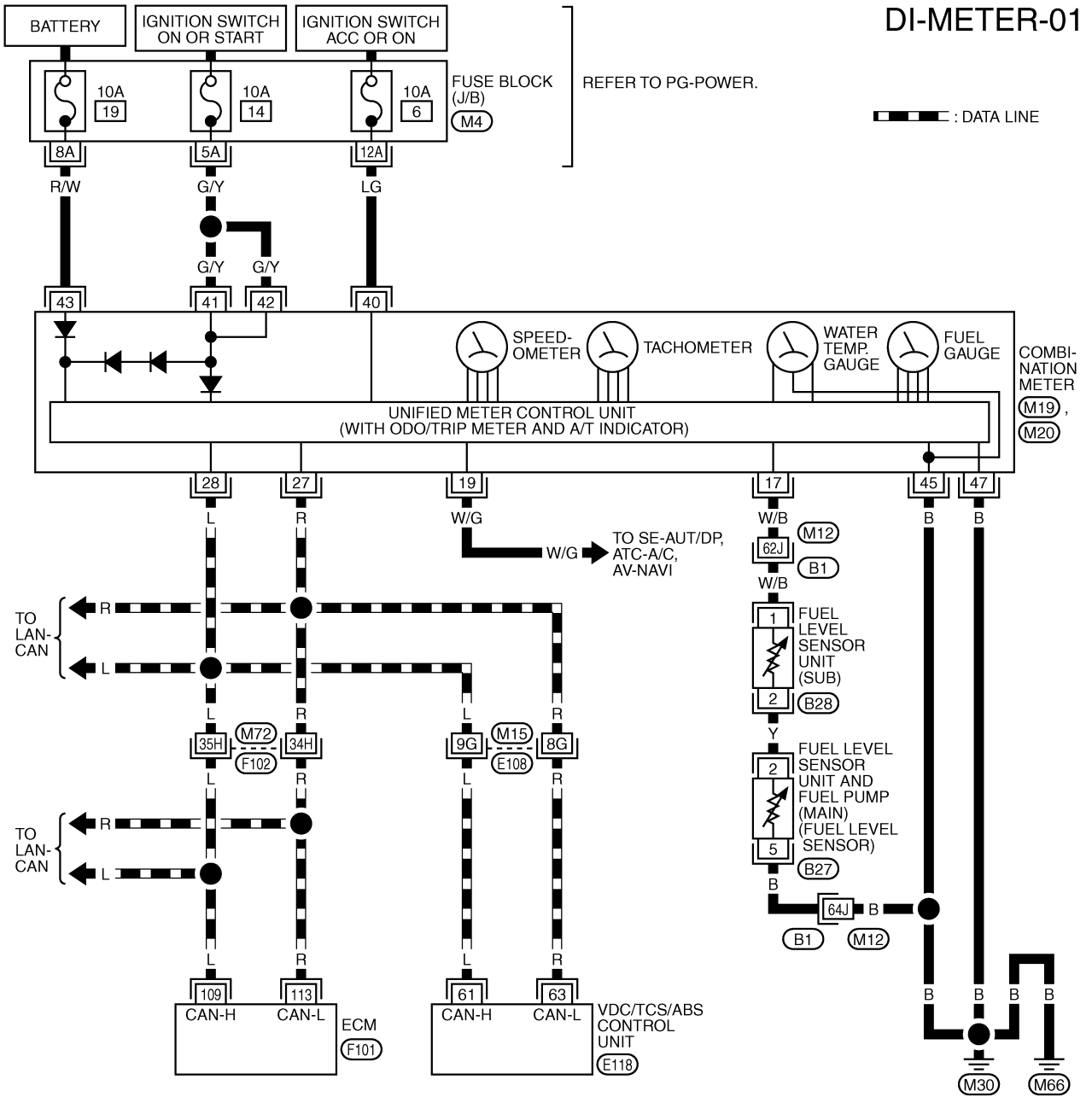


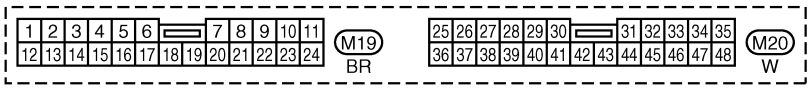
TKWT1014E

Wiring Diagram — METER —/With A/T (Up to Serial 329287*)

AKS0008Y

*:For further information, refer to “IDENTIFICATION NUMBER” in GI section.





REFER TO THE FOLLOWING.

E108, F102, B1 -SUPER MULTIPLE JUNCTION (SMJ)

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

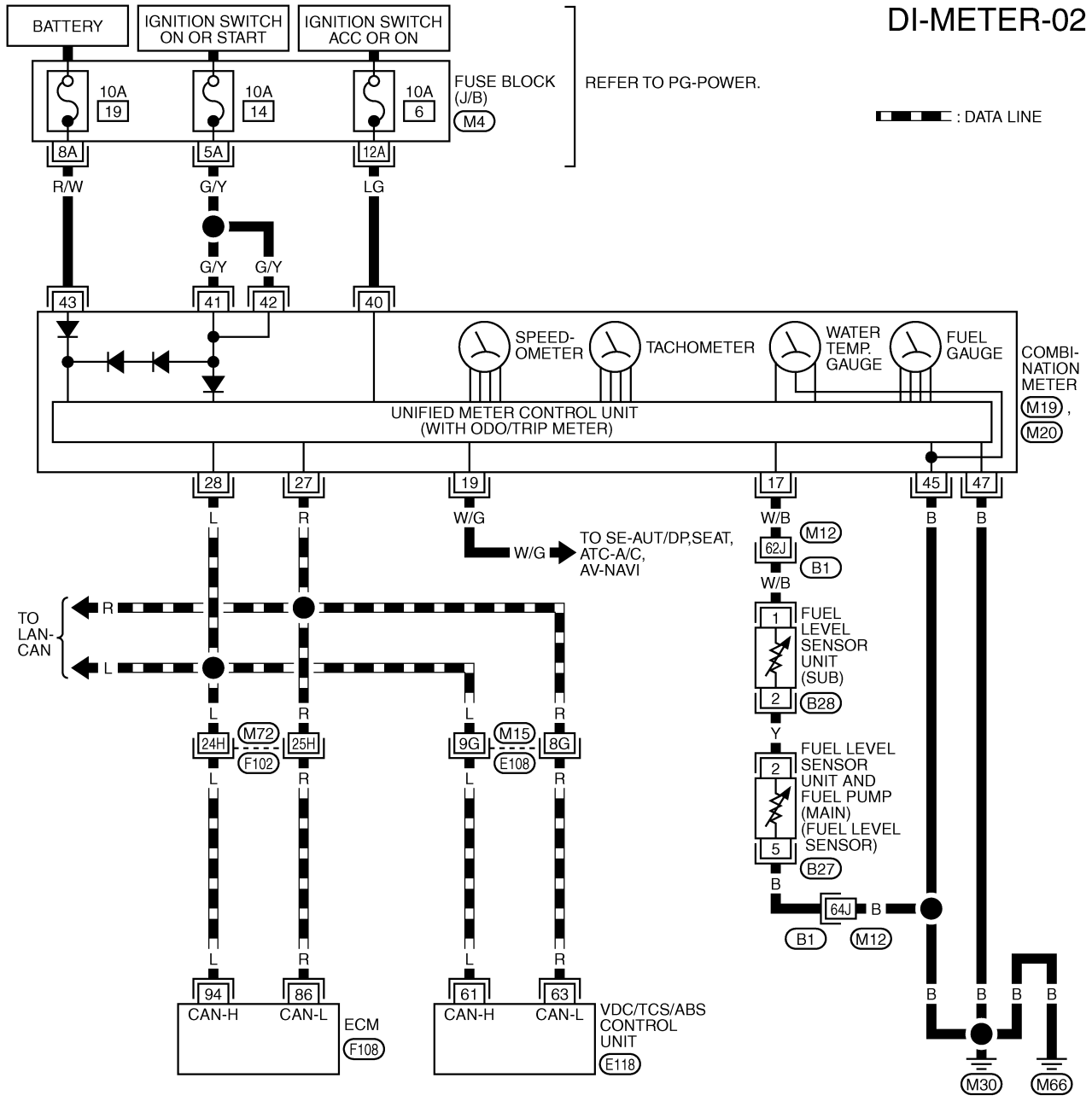
E118, F101 -ELECTRICAL UNITS

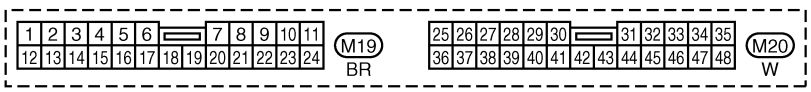
TKWT0715E

Wiring Diagram — METER —/With A/T (From Serial 329288*) and with M/T

AKS007VH

*:For further information, refer to “IDENTIFICATION NUMBER” in GI section.





REFER TO THE FOLLOWING.

E108, F102, B1 -SUPER MULTIPLE JUNCTION (SMJ)

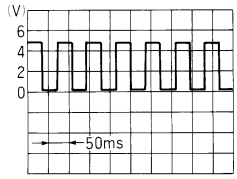
M4 -FUSE BLOCK-JUNCTION BOX (J/B)

E118, F108 -ELECTRICAL UNITS

TKWT1015E

Terminals and Reference Value for Combination Meter

AKS0008Z

Terminal No.	Wire Color	Item	Condition		Reference Value
			Ignition switch	Operation or condition	
17	W/B	Fuel level sensor signal	—	—	Refer to DI-21, "FUEL LEVEL SENSOR UNIT CHECK" .
19	W/G	Vehicle speed signal (2-pulse)	ON	Speedometer operated [When vehicle speed is approx. 40km/h (25MPH)]	 ELF1080D
27	R	CAN-L	—	—	—
28	L	CAN-H	—	—	—
40	LG	Ignition switch (ACC)	ACC	—	Battery voltage
41	G/Y	Ignition switch (ON)	ON	—	Battery voltage
42	G/Y	Ignition switch (ON)	ON	—	Battery voltage
43	R/W	Battery power supply	OFF	—	Battery voltage
45	B	Ground	ON	—	Approx. 0V
47	B	Ground	ON	—	Approx. 0V

Meter/Gauges Operation and Odo/Trip Meter

AKS00090

SELF-DIAGNOSIS FUNCTION

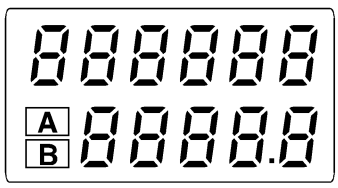
- Odo/trip meter segment and A/T indicator segment operation can be checked in self-diagnosis mode.
- Meters/gauges can be checked in self-diagnosis mode.

HOW TO ALTERNATE DIAGNOSIS MODE

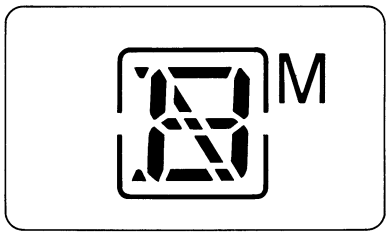
1. Turn the ignition switch ON, and switch the odo/trip meter to “trip A” or “trip B”.

   NOTE:
   If the diagnosis function is activated with the trip meter A displayed, the mileage on the trip meter A will indicate 0000.0 miles, 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 low-fuel warning lamp indicator illuminates. At this time, the unified meter control unit is turned to diagnosis mode.

   NOTE:
   If any of the segments is not displayed, replace the combination meter.



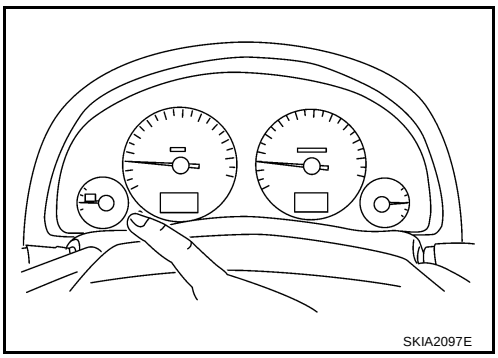
Odo / trip meter



A/T indicator

SKIA4119E

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).


SKIA2097E

How to Proceed With Trouble Diagnosis

AKS00091

1. Confirm the symptom or customer complaint.
2. Perform diagnosis according to diagnosis flow. Refer to DI-15, "Diagnosis Flow" .
3. According to the trouble diagnosis chart, repair or replace the cause of the trouble symptom. Refer to DI-17, "Trouble Diagnosis Chart by Symptom" .
4. Does the meter operate normally? If so, go to 5. If not, go to 2.
5. INSPECTION END

Diagnosis Flow

AKS00092

1. CHECK WARNING LAMP ILLUMINATION

1. Turn ignition switch ON.
2. Check that warning lamps (such as MIL and oil pressure warning lamp) illuminate.

Do warning lamps illuminate?

YES >> GO TO 2.
NO >> Check ignition power supply system of combination meter. Refer to DI-16, "Power Supply and Ground Circuit Check" .

2. CHECK SELF-DIAGNOSIS OPERATION

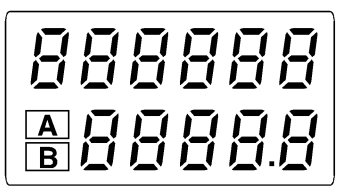
Perform combination meter self-diagnosis. Refer to DI-14, "SELF-DIAGNOSIS FUNCTION" .

Does self-diagnosis function operate?

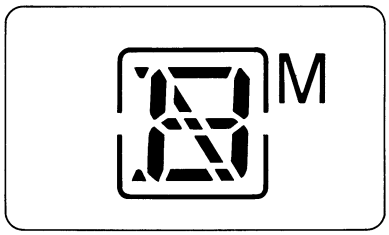
YES >> GO TO 3.
NO >> Check battery power supply of combination meter and ground system. Refer to DI-16, "Power Supply and Ground Circuit Check" .

3. CHECK ODO/TRIP METER OPERATION

Check segment display status of odo/trip meter.



Odo / trip meter



A/T indicator

SKIA4119E

Is the display normal?

YES >> GO TO 4.
NO >> Replace combination meter.

4. CHECK FUEL WARNING LAMP ILLUMINATION

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

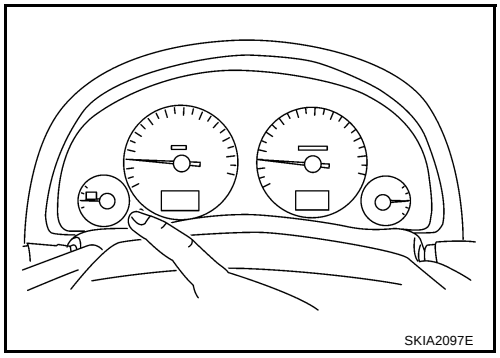
OK >> GO TO 5.
NG >> Replace combination meter.

5. CHECK METER CIRCUIT

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

OK or NG

OK >> Go to diagnosis results. Refer to DI-17, "DIAGNOSIS RESULTS" .
NG >> Replace combination meter.


SKIA2097E

Power Supply and Ground Circuit Check

AKS00093

1. CHECK FUSES

Check for blown combination meter fuses.

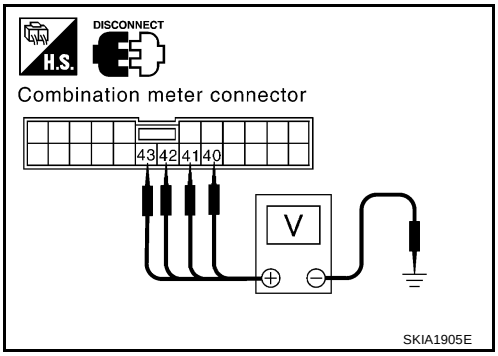
Unit	Power source	Fuse No.
Combination meter	Battery	19
	Ignition switch (ON)	14
	Ignition switch (ACC)	6

OK or NG

OK >> GO TO 2.
NG >> If fuse is blown, be sure to eliminate cause of problem before installing new fuse. Refer to PG-3, "POWER SUPPLY ROUTING CIRCUIT" .

2. CHECK POWER SUPPLY CIRCUIT

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



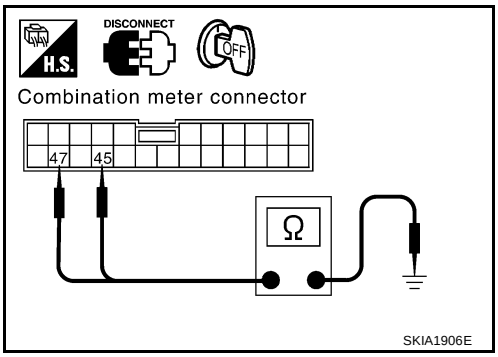
Terminals			Ignition switch position		
(+)		(–)	OFF	ACC	ON
Connector	Terminal (Wire color)				
M20	40 (LG)	Ground	0V	Battery voltage	Battery voltage
	41 (G/Y)		0V	0V	Battery voltage
	42 (G/Y)		0V	0V	Battery voltage
	43 (R/W)		Battery voltage	Battery voltage	Battery voltage

OK or NG

OK >> GO TO 3.
NG >> Check harness for open or short between combination meter and fuse.

3. CHECK GROUND CIRCUIT

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



Terminals			Continuity
(+)		(–)	
Connector	Terminal (Wire color)		
M20	45 (B)	Ground	Yes
	47 (B)		

OK or NG

OK >> INSPECTION END
NG >> Check ground harness.

Trouble Diagnosis Chart by Symptom

AKS00094

DIAGNOSIS RESULTS

Trouble phenomenon	Possible cause
Tachometer indication is malfunction.	Refer to DI-19, "Inspection/Engine Speed Signal" .
Fuel warning lamp indication is irregular.	Refer to DI-18, "Inspection/Fuel Level Sensor" .
Fuel gauge indication is malfunction.	
Water temperature gauge indication is malfunction.	Refer to DI-19, "Inspection/Water Temperature Signal" .
Indication is irregular for the speedometer and odo/trip meter.	Refer to DI-19, "Inspection/Vehicle Speed Signal" .
Indications are irregular for more than one gauge.	Replace combination meter.
A/T position indicator is malfunction.	Refer to DI-40, "A/T Indicator Does Not Illuminate" .

Inspection/Fuel Level Sensor

AKS00095

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.

LOW-FUEL WARNING LAMP

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

1. CHECK HARNESS CONNECTOR

Check combination meter and fuel level sensor unit terminals (meter-side, unit-side harness-side) for looseness or bent terminals.

OK or NG

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

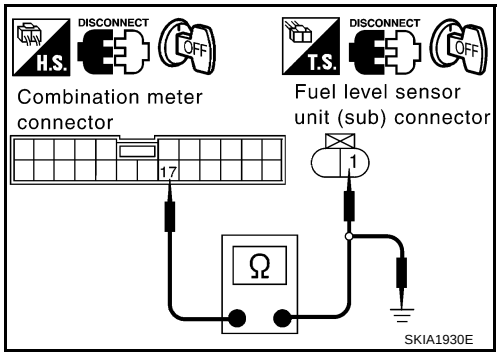
2. CHECK COMBINATION METER CIRCUIT

1. Disconnect combination meter connector and fuel level sensor unit (sub) connector.
2. Check continuity between combination meter harness connector M19 terminal 17 (W/B) and fuel level sensor unit (sub) harness connector B28 terminal 1 (W/B).

   Continuity should exist.

3. Check continuity between combination meter harness connector M19 terminal 17 (W/B) and ground.

   Continuity should not exist.



OK or NG

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

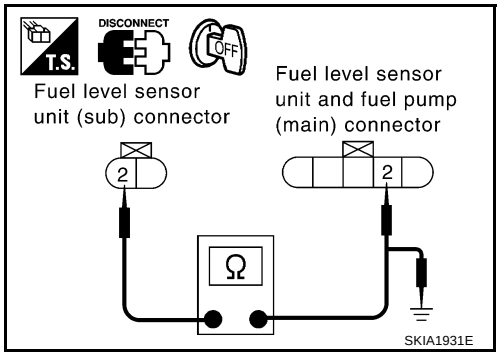
3. CHECK FUEL LEVEL SENSOR CIRCUIT

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.



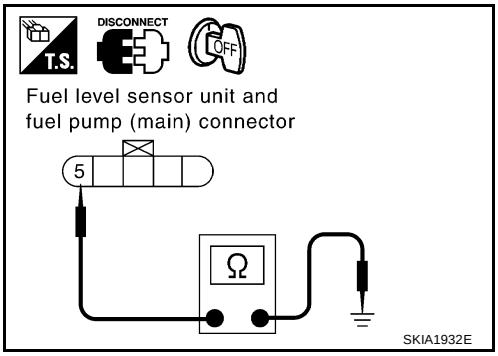
OK or NG

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

4. CHECK GROUND CIRCUIT

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

Continuity should exist.



OK or NG

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

5. CHECK FUEL LEVEL SENSOR

Check fuel level sensor units. Refer to DI-21, "FUEL LEVEL SENSOR UNIT CHECK" .

OK or NG

OK >> GO TO 6.
NG >> Replace fuel level sensor unit and fuel pump (main) or fuel level sensor unit

6. 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 combination meter.
NG >> Install fuel level sensor unit properly.

Inspection/Engine Speed Signal

AKS00096

1. CHECK ECM SELF-DIAGNOSIS

Perform ECM self-diagnosis. Refer to EC-15, "APPLICATION NOTICE" .

OK or NG

OK >> Replace combination meter.
NG >> Perform “Diagnostic Procedure” in displayed DTC.

Inspection/Water Temperature Signal

AKS00098

1. CHECK ECM SELF-DIAGNOSIS

Preform the ECM self-diagnosis. Refer to EC-15, "APPLICATION NOTICE" .

OK or NG

OK >> Replace combination meter.
NG >> Perform “Diagnostic Procedure” in displayed DTC.

Inspection/Vehicle Speed Signal

AKS00099

1. CHECK VDC/TCS/ABS CONTROL UNIT SELF-DIAGNOSIS

Preform VDC/TCS/ABS control unit self-diagnosis. Refer to BRC-35, "CONSULT-II Functions" .

OK or NG

OK >> Replace combination meter.
NG >> Check applicable parts.

The Fuel Gauge Pointer Fluctuates, Indicator Wrong Value Or Varies

AKS0009B

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.

The Fuel Gauge Does Not Move to FULL position

AKS0009C

1. QUESTION 1

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

YES or NO

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

2. QUESTION 2

Was the vehicle fueled with the ignition switch ON?

YES or NO

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

3. QUESTION 3

Is the vehicle parked on an incline?

YES or NO

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

4. QUESTION 4

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

YES or NO

YES >> Check fuel level sensor unit. Refer to DI-21, "FUEL LEVEL SENSOR UNIT CHECK" .
NO >> The float arm may interfere or bind with any of the components in the fuel tank.

The Fuel Gauge Does Not Work

AKS0009D

1. CHECK HARNESS CONNECTOR

Check combination meter and fuel level sensor unit terminals (meter-side, unit side and harness-side) for poor connection and bend.

OK or NG

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

2. CHECK INSTALLATION CONDITION

Check fuel level sensor unit installation (refer to FL-5, "FUEL LEVEL SENSOR UNIT, FUEL FILTER AND FUEL PUMP ASSEMBLY" , and check whether the float arm interferes or binds with any components inside the fuel tank.

OK or NG

OK >> Fuel level sensor unit is OK.
NG >> Check fuel level sensor. Refer to DI-18, "Inspection/Fuel Level Sensor" .

Low Fuel Warning Lamp Illuminates at All Times or Does Not Illuminate

AKS0009E

1. CHECK SELF-DIAGNOSIS

Perform combination meter self-diagnosis. Refer to DI-14, "Meter/Gauges Operation and Odo/Trip Meter" .

OK or NG

OK >> Check fuel level sensor unit. Refer to DI-21, "FUEL LEVEL SENSOR UNIT CHECK" .

NG >> Replace combination meter.

Electrical Components Inspection

AKS000EA

FUEL LEVEL SENSOR UNIT CHECK

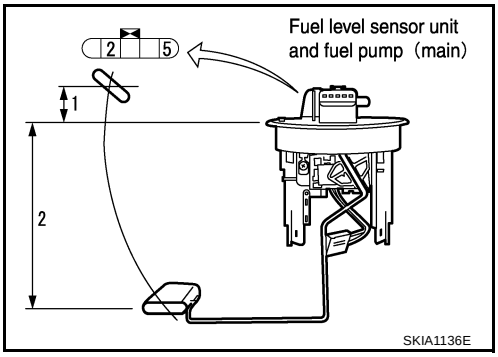
For removal, refer to FL-5, "FUEL LEVEL SENSOR UNIT, FUEL FILTER AND FUEL PUMP ASSEMBLY" .

Fuel Level Sensor Unit and Fuel Pump (Main)

Check the resistance between terminals 2 and 5.

Terminal		Float position mm (in)			Resistance value Ω
(+)	(–)				
2	5	*1	Full	9.0 (0.35)	Approx. 2 - 3
		*2	Empty	175 (6.89)	Approx.79 - 85

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

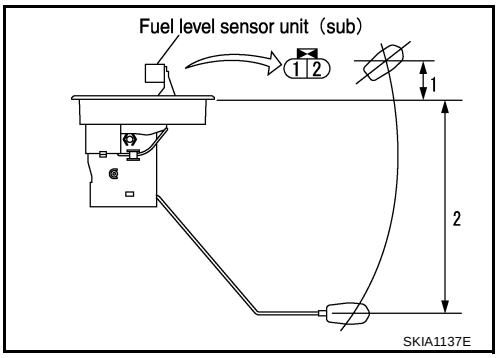


Fuel Level Sensor Unit (Sub)

Check the resistance between terminals 1 and 2.

Terminal		Float position mm (in)			Resistance value Ω
(+)	(–)				
1	2	*1	Full	9.4 (0.37)	Approx. 2 - 3
		*2	Empty	179 (7.05)	Approx. 41- 45

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

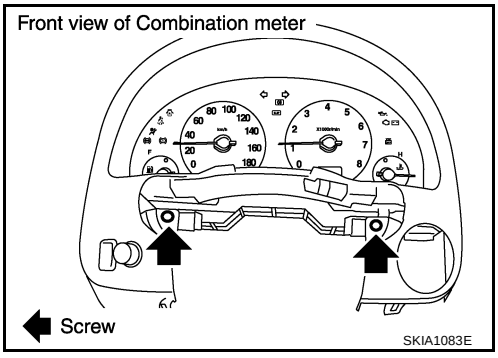


Removal and Installation for Combination Meter

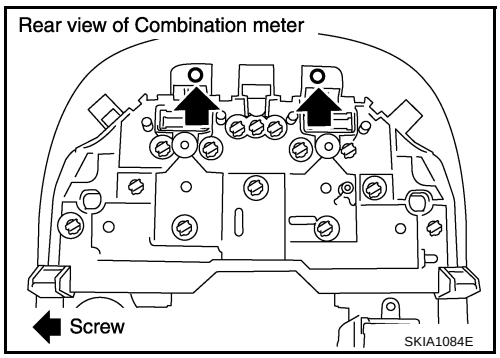
AKS000EV

REMOVAL

1. Remove column cover. Refer to PS-9, "STEERING COLUMN" .
2. Remove combination switch. Refer to IP-10, "INSTRUMENT PANEL ASSEMBLY" .
3. Remove instrument lower cover. Refer to IP-10, "INSTRUMENT PANEL ASSEMBLY" .
4. Remove the screw (4) and remove cluster lid A and combination meter assembly. Refer to IP-10, "INSTRUMENT PANEL ASSEMBLY" .



5. Disconnect connectors and remove combination meter.
6. Disassembly cluster lid A and combination meter.

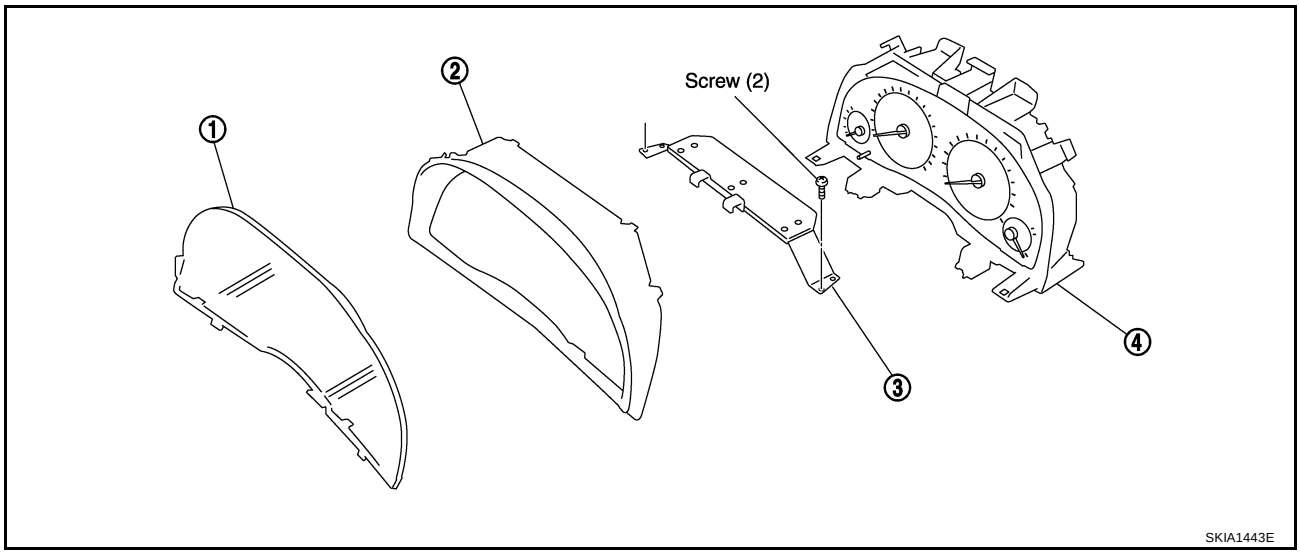


INSTALLATION

Install in the reverse order of removal.

Disassembly and Assembly for Combination Meter

AKS000EW



1. Front cover
2. Upper housing
3. Plate
4. Unified meter control unit assembly

DISASSEMBLY

1. Disengaged the tabs (8) to separate front cover.
2. Remove screw (2) and remove plate.
3. Disengaged the tabs (8) to separate upper housing.
4. Remove bulbs.

ASSEMBLY

Assembly in the reverse order of disassembly.

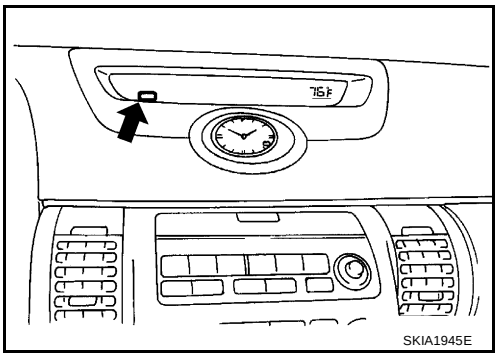
COMPASS

PFP:24835

System Description

AKS004FE

This unit displays earth magnetism and heading direction of vehicle.



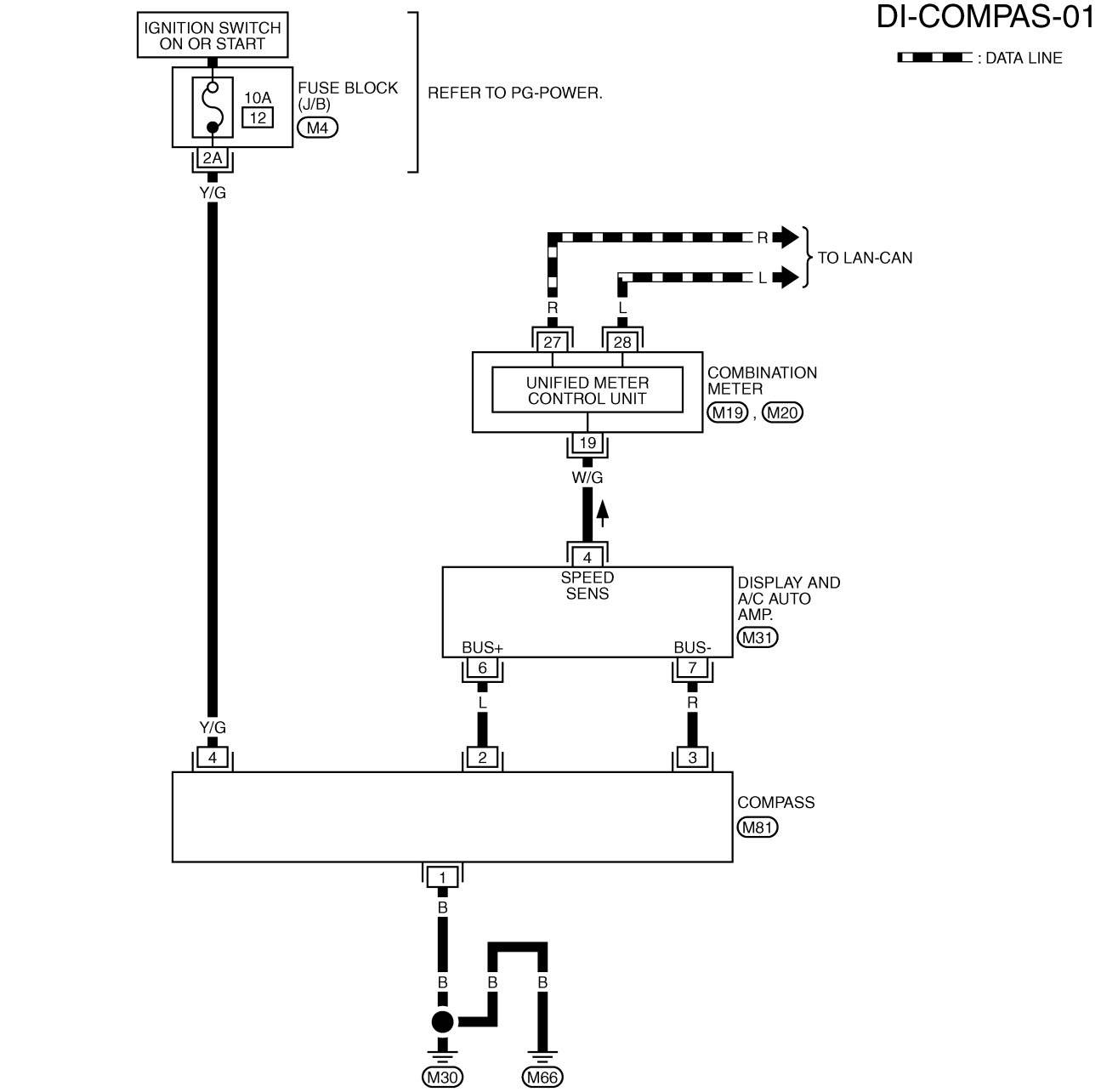
DIRECTION DISPLAY

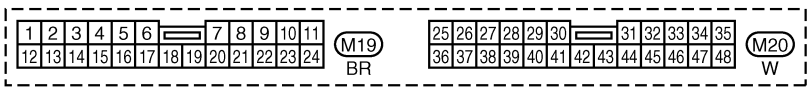
Push the switch when the ignition key is in the “ON” or “START” position. The direction will be displayed.

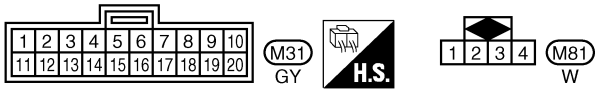
Wiring Diagram — COMPASS —

AKS004FF

DI-COMPAS-01







REFER TO THE FOLLOWING.

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

TKWT0716E

Power Supply and Ground Circuit Check for Compass

AKS004FG

1. CHECK FUSE

Check 10A fuse [No. 12, located in fuse block (J/B)].

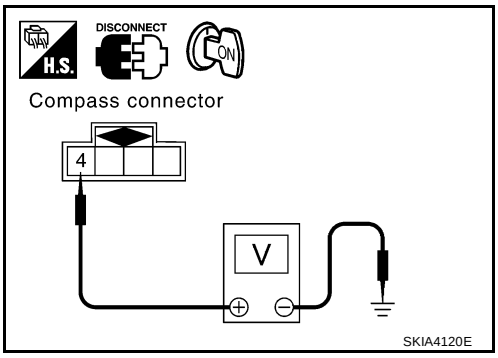
OK or NG

OK >> GO TO 2.
NG >> If fuse is blown, be sure to eliminate case of problem before installing new fuse. Refer to PG-3, "POWER SUPPLY ROUTING CIRCUIT" .

2. POWER SUPPLY CIRCUIT CHECK

1. Disconnect the compass connector.
2. Turn ignition switch ON.
3. Check voltage between compass harness connector M81 terminal 4 (Y/G) and ground.

Battery voltage should exist.



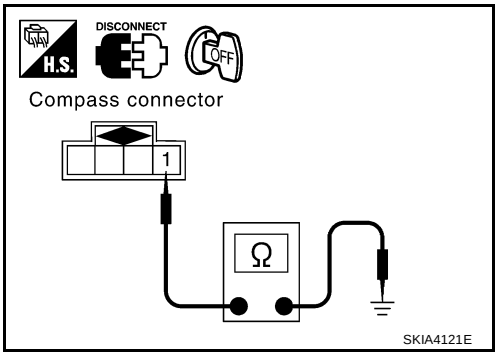
OK or NG

OK >> GO TO 3.
NG >> Check harness for open or short between compass and fuse.

3. GROUND CIRCUIT CHECK

1. Turn ignition switch OFF.
2. Check continuity between compass harness connector M81 terminal 1 (B) and ground.

Continuity should exist.



OK or NG

OK >> Inspection end.
NG >> Repair or replace harness for ground circuit.

Fail-Safe System

AKS004FH

DESCRIPTION

- If there is no response from display and A/C auto amp., previous display is kept for 10 minutes. After 10 minutes, “---” is displayed. (Only when there is no response continuously for 10 minutes.)
- If display and A/C auto amp. receives normal data within 10 minutes, normal operation will be recovered.
- If display and A/C auto amp. receives normal data while “---” is being displayed, normal operation will be recovered.
- If ignition switch is turned OFF within 10 minutes: Previously retained data is displayed when ignition switch is turned ON again. Then after 10 minutes, “---” is displayed.
- If response is never received after battery is turned ON, no data is retained. Therefore nothing is displayed for 10 minutes.

Compass Does not Display.

AKS004FI

1. DISPLAY AND A/C AUTO AMP. SELF-DIAGNOSIS CHECK

Check display and A/C auto amp. self-diagnosis. Refer to ATC-62, "FUNCTION CONFIRMATION PROCEDURE" .

Does display and A/C auto amp. segments all displayed?

Yes >> Check fail safe system. refer to DI-25, "Fail-Safe System" .
No >> Replace display and A/C auto amp.

Compass Display “– – –”.

AKS004FJ

1. FAIL-SAFE MODE CHECK

Check that fail-safe mode is not activated. Refer to DI-25, "Fail-Safe System" .

Does be activated Fail-safe mode?

Yes >> GO TO 3.
No >> GO TO 2.

2. DISPLAY AND A/C AUTO AMP. SELF-DIAGNOSIS CHECK

Check display and A/C auto amp. self-diagnosis. Refer to ATC-62, "FUNCTION CONFIRMATION PROCEDURE" .

Does display and A/C auto amp. segments all displayed?

Yes >> Inspection end.
No >> Replace display and A/C auto amp.

3. POWER AND GROUND CIRCUIT CHECK

Check power and ground circuit. Refer to DI-25, "Power Supply and Ground Circuit Check for Compass" .

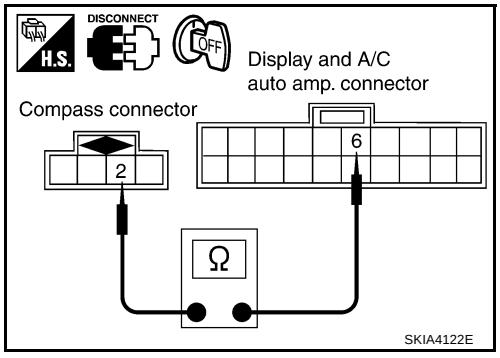
OK or NG

OK >> GO TO 4.
NG >> Repair power and ground circuit.

4. COMPASS CIRCUIT CHECK

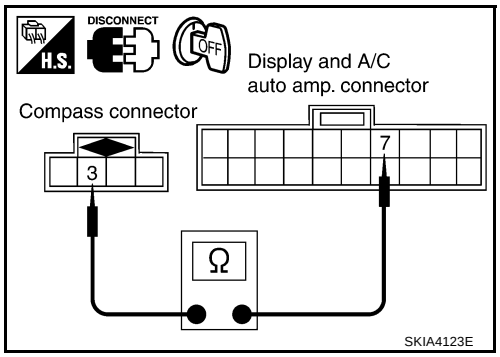
1. Turn ignition switch OFF.
2. Disconnect compass connector and display and A/C auto amp. connector.
3. Check continuity between compass harness connector M81 terminal 2 (L) and display and A/C auto amp. harness connector M31 terminal 6 (L).

   Continuity should exist.



4. Check continuity between compass harness connector M81 terminal 3 (R) and display and A/C auto amp. harness connector M31 terminal 7 (R).

   Continuity should exist.

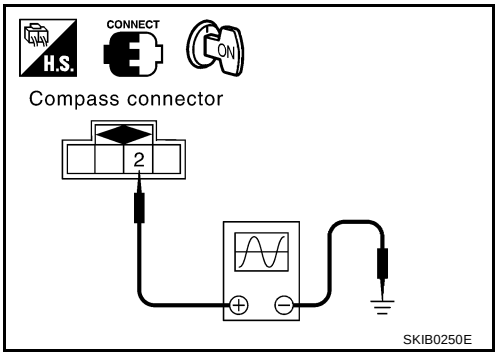


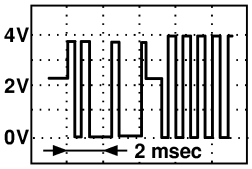
Question

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

5. COMPASS SIGNAL CHECK

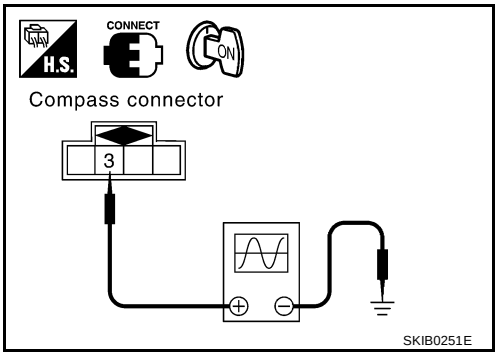
1. Connect compass connector and display and A/C auto amp. connector.
2. Turn ignition switch ON.
3. Check the signal between compass harness connector M81 terminal 2 (L) and ground with CONSULT-II or oscilloscope.

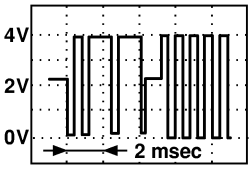




RJIA0867E

4. Check the signal between compass harness connector M81 terminal 3 (R) and ground with CONSULT-II or oscilloscope.





RJIA0868E

OK or NG

OK >> Replace display and A/C auto amp.
NG >> Replace compass

Forward Direction Indication Slips Off The Mark Or Incorrect.

AKS004FK

1. ZONE VARIATION CHANGE IS NOT DONE

Perform the zone variation change.

OK or NG

OK >> inspection end.
NG >> Replace compass.

Compass Reading Remains Unchanged.

AKS004FL

1. POWER AND GROUND CIRCUIT CHECK

Check power and ground circuit. Refer to DI-25, "Power Supply and Ground Circuit Check for Compass" .

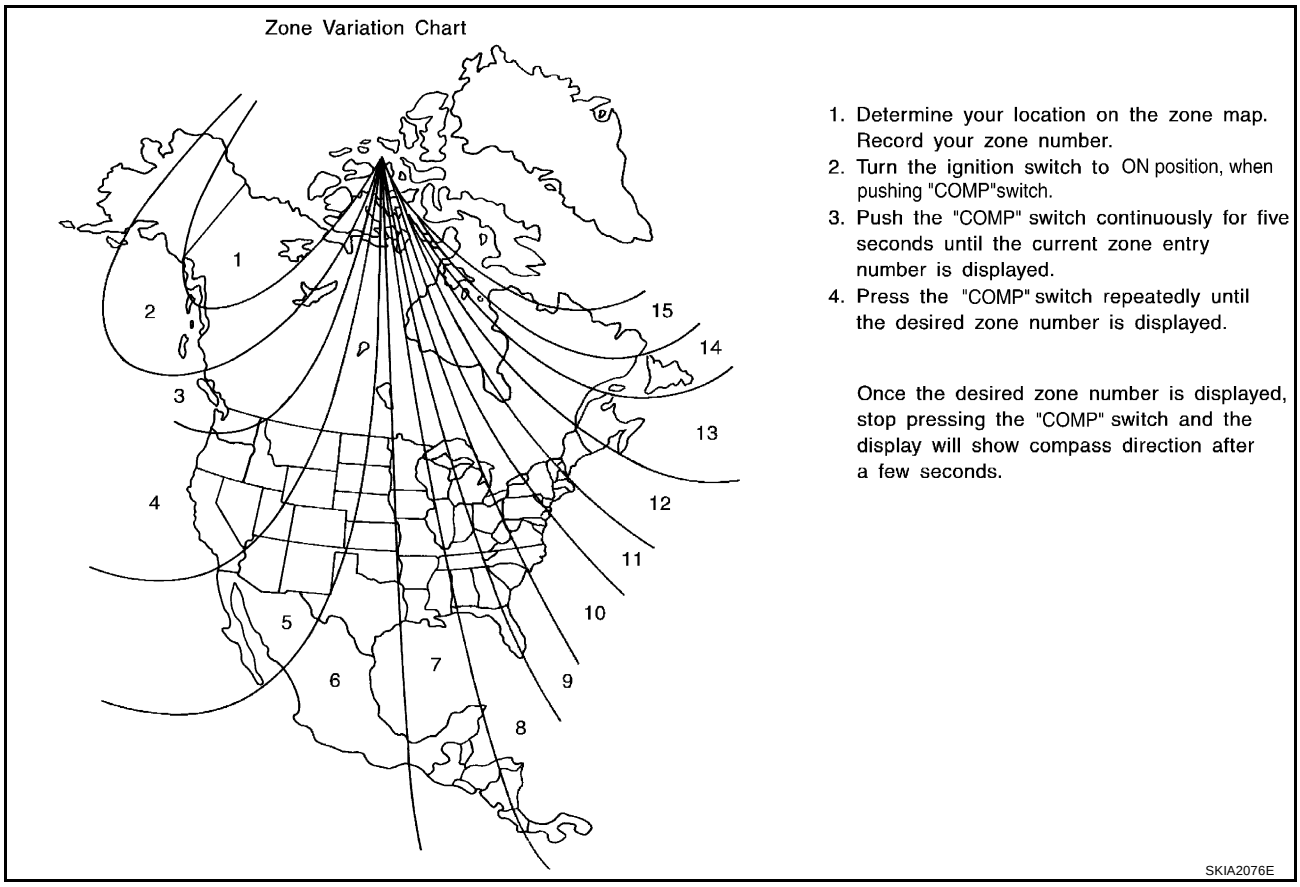
OK or NG

OK >> Replace compass.
NG >> Repair power and ground circuit.

Calibration Procedure for Compass

AKS004FM

The difference between magnetic North and geographical North can sometimes be great enough to cause false compass readings.
In order for the compass to operate accurately in a particular zone, it must be calibrated using the following procedure.

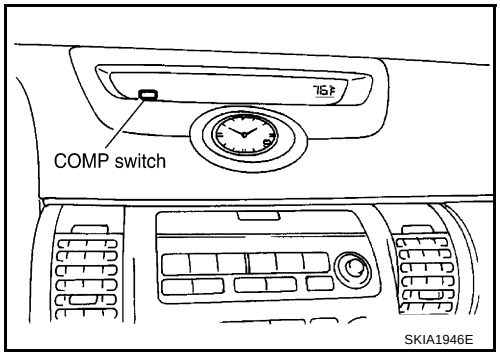


CORRECTION FUNCTIONS OF COMPASS

If the direction is not shown correctly, carry out initial correction.

INITIAL CORRECTION PROCEDURE FOR COMPASS

1. Pushing the “COMP” switch for about 10 seconds will enter the initial correction mode. The direction bar starts blinking.
2. Turn off all electrical equipment (turn signals, hazard signal, A/C, lights, etc.). In a broad, flat, and safe location, drive the vehicle slowly [approximately 5 km/h (3 MPH) or less], and turn the vehicle 360° or more several times. When the direction appears on the display, correction is complete.



NOTE:
The correct direction may not be shown in locations where the earth's magnetic field is disrupted, such as those listed below.

- Elevated bridges
- Railroad crossings
- Streets lined with large buildings
- Iron bridges
- Tunnels
- Locations above subways
- Underground parking areas
- Near large vehicles
- Electric power substations

If display correction is performed in any of the above locations, accurate correction may not be possible.

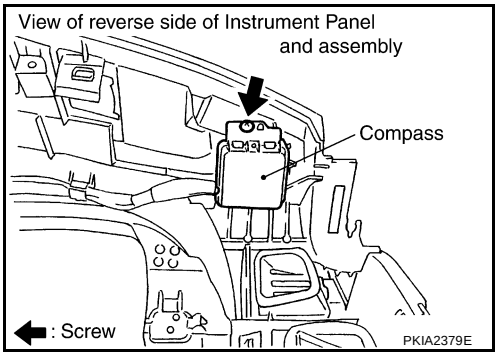
- When heater or A/C fan speed is at maximum, the direction indicator display may move. This is not a malfunction. It will return to normal when the heater or A/C fan speed is reduced.

Removal and Installation of Compass

AKS004D4

REMOVAL

1. Remove instrument panel and pad. Refer to IP-11, "Removal and Installation" .
2. Remove screw (1), and remove compass.



INSTALLATION

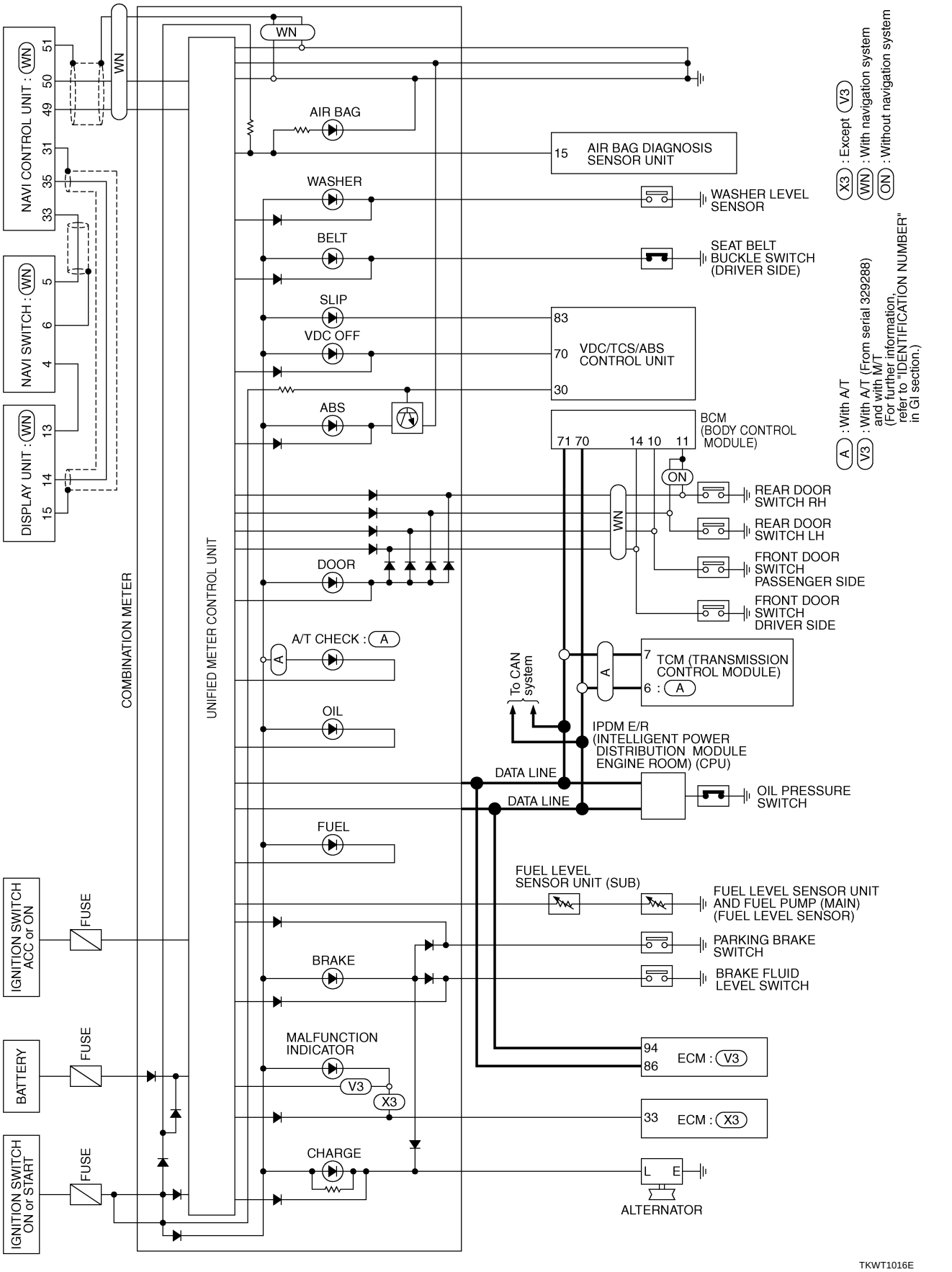
Install in the reverse order of removal.

WARNING LAMPS

PFP:24814

Schematic

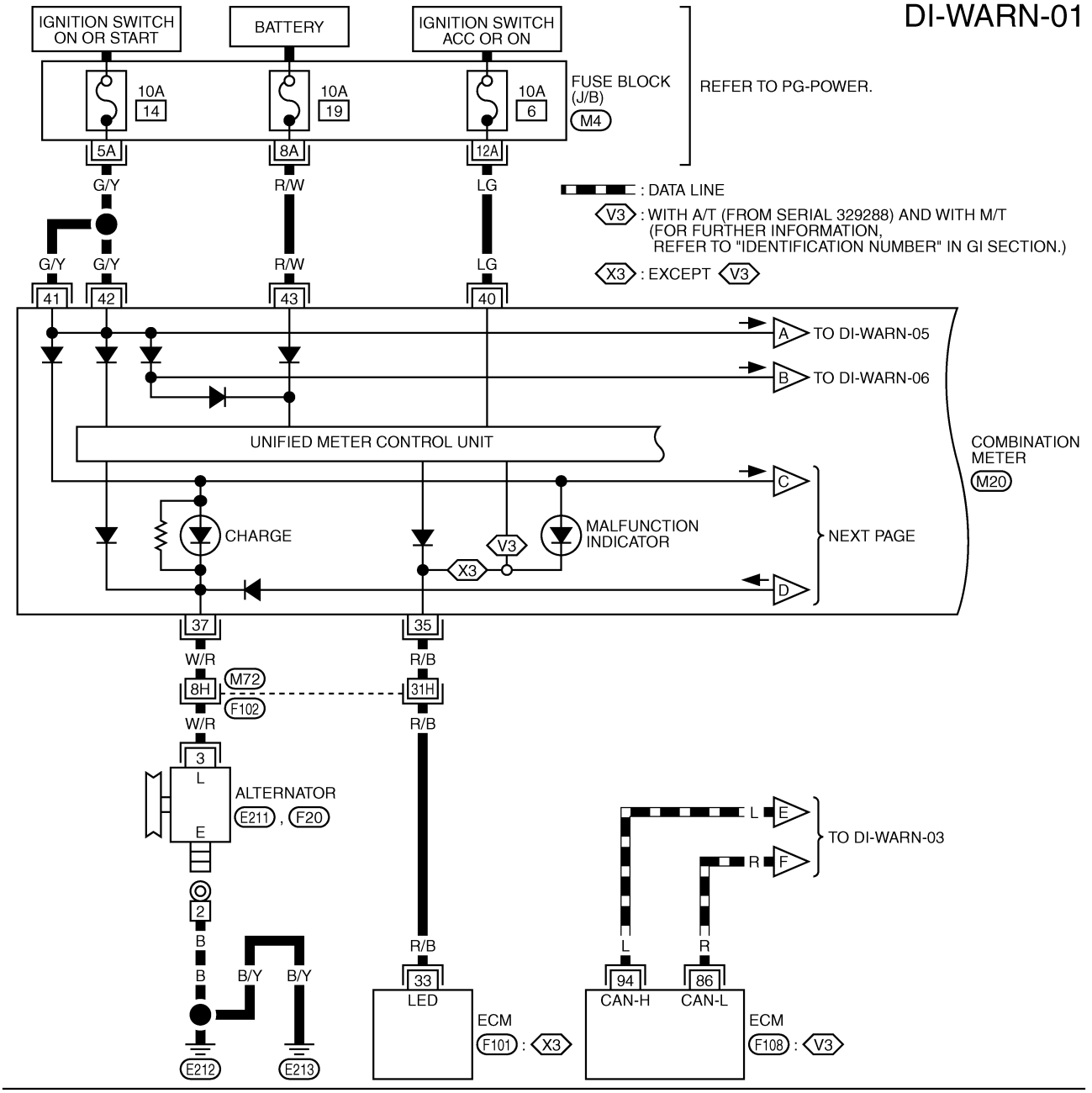
AKS0009J

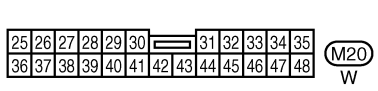


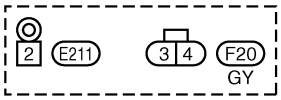
TKWT1016E

Wiring Diagram — WARN —

AKS0009K



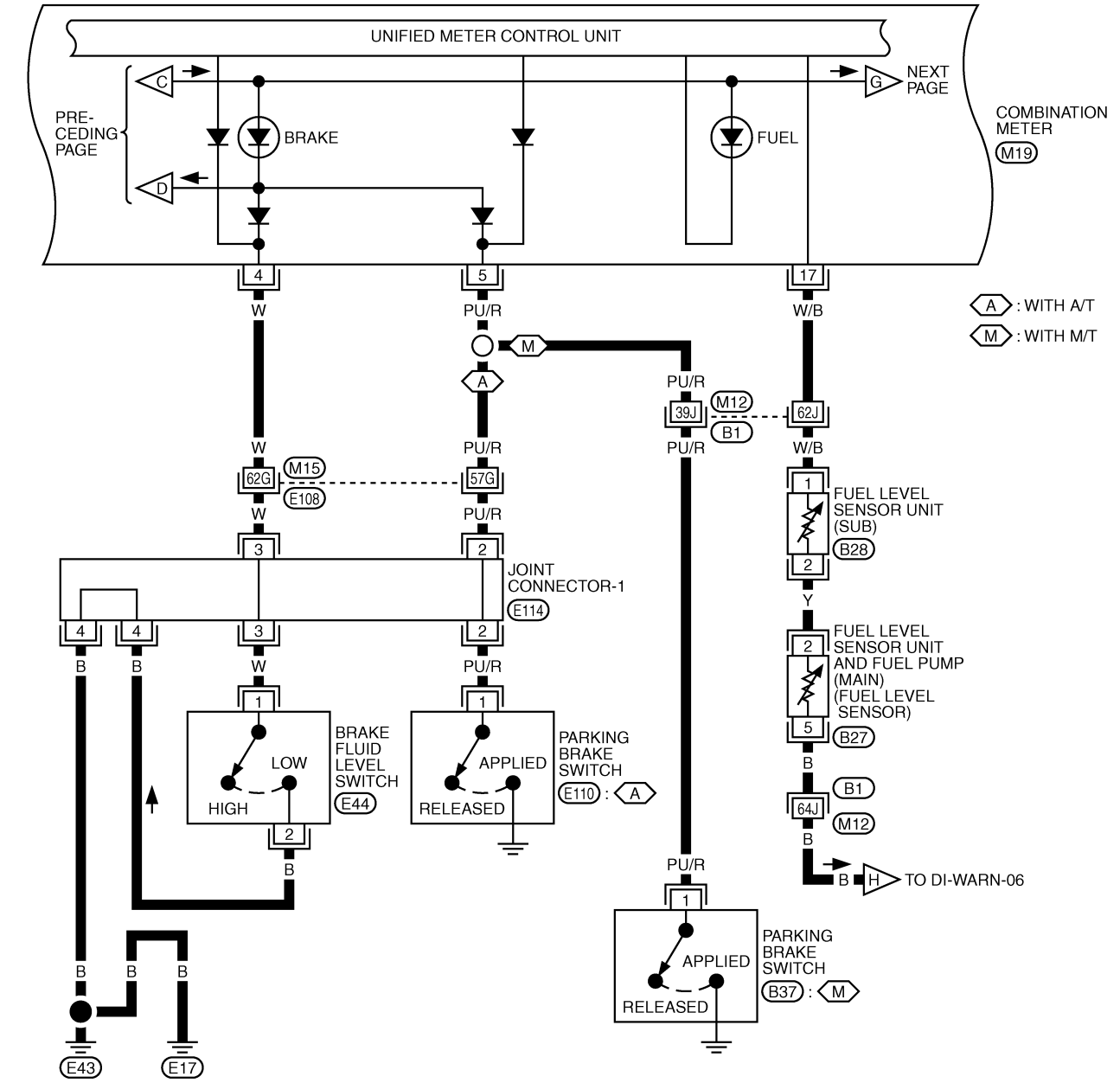


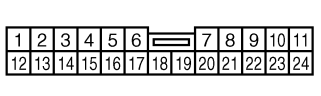


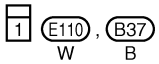
REFER TO THE FOLLOWING.
F102 -SUPER MULTIPLE JUNCTION (SMJ)
M4 -FUSE BLOCK-JUNCTION BOX (J/B)
F101 , F108 -ELECTRICAL UNITS

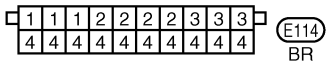
TKWT1017E

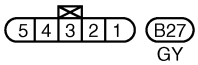
DI-WARN-02







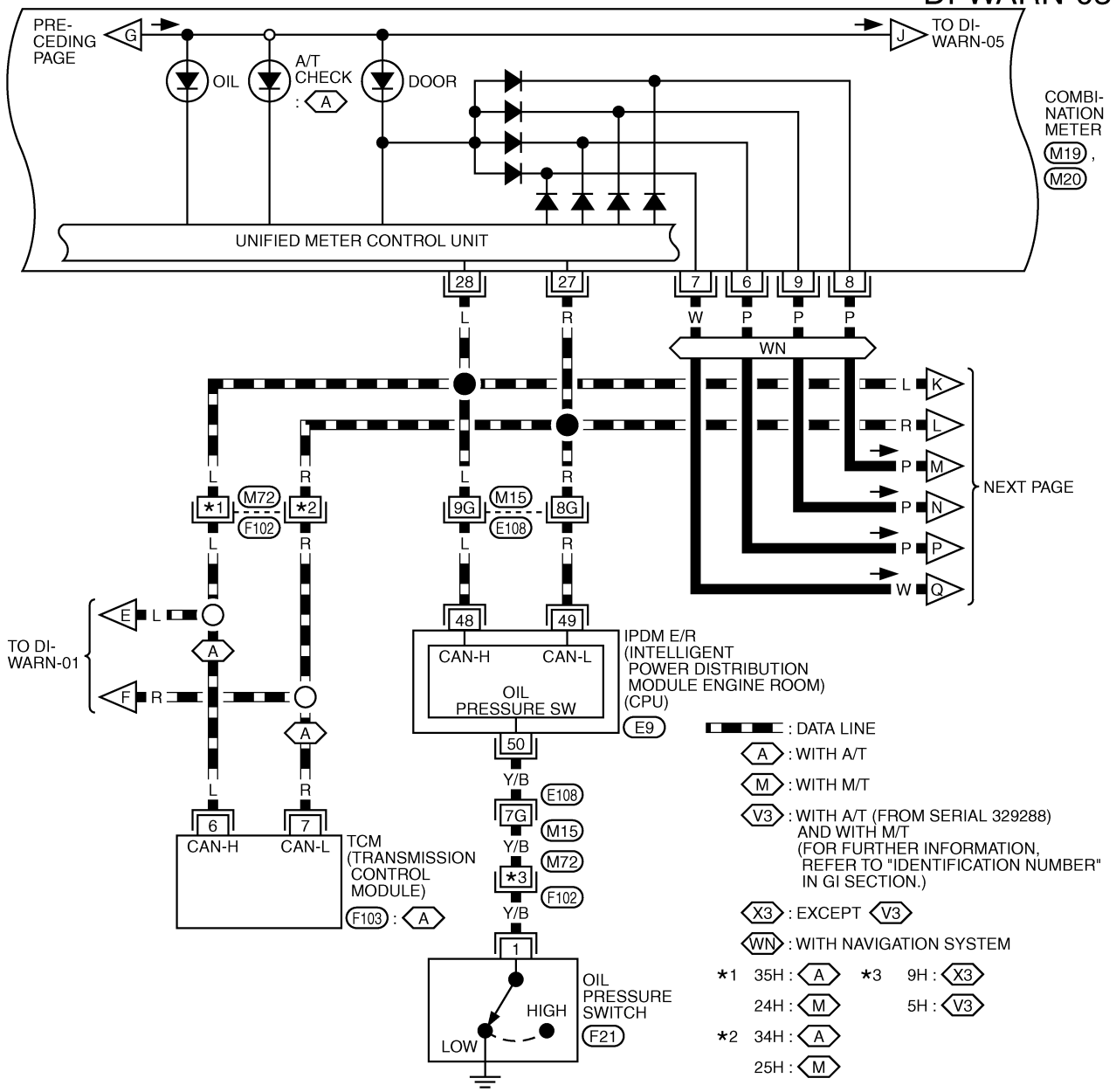


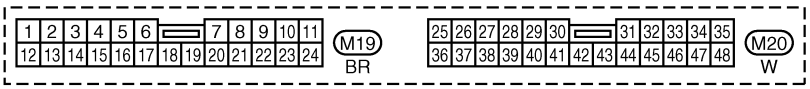


REFER TO THE FOLLOWING.
E108 , B1 -SUPER MULTIPLE JUNCTION (SMJ)

TKWT0945E

DI-WARN-03

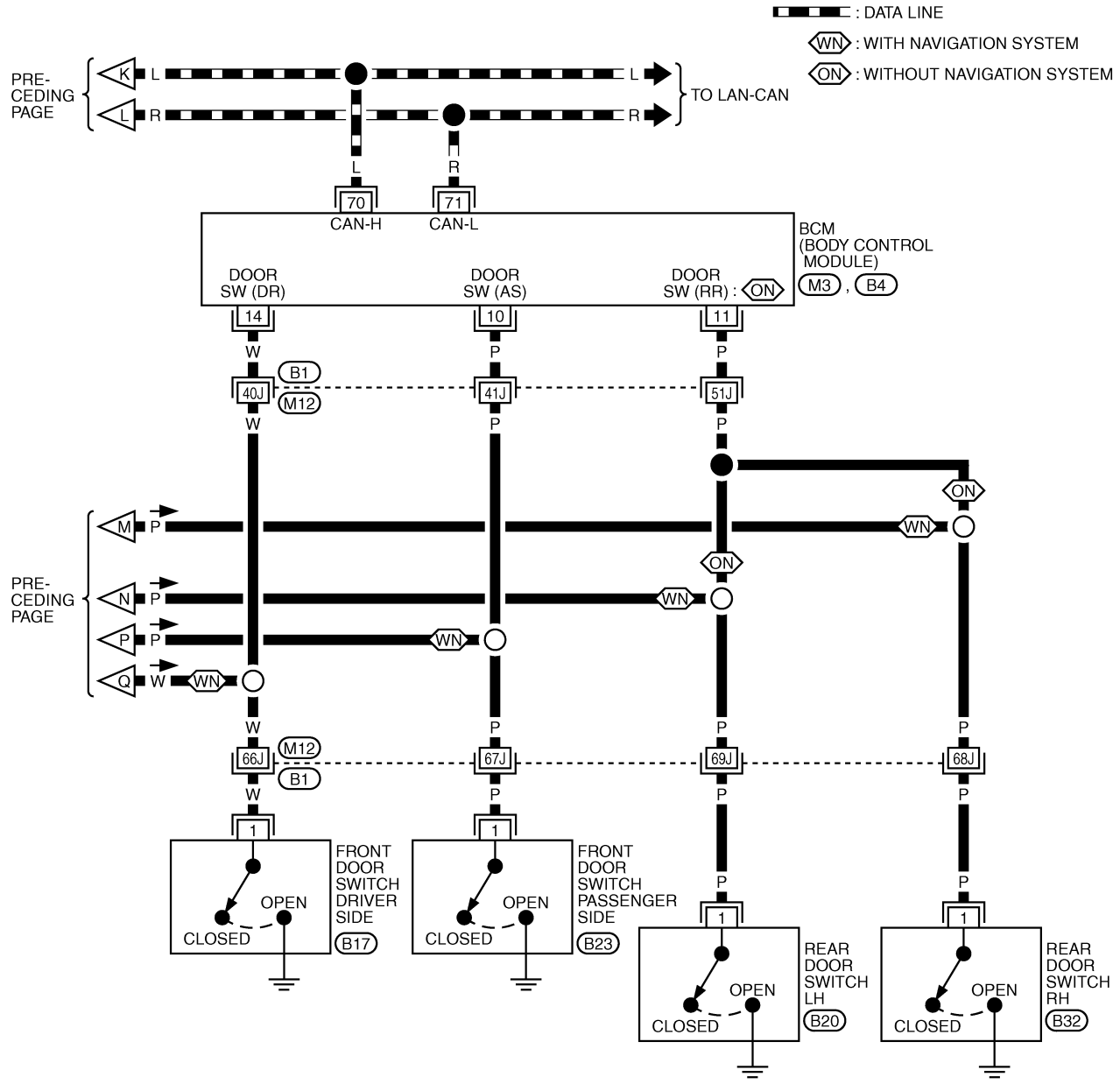




REFER TO THE FOLLOWING.
E108 , F102 -SUPER MULTIPLE JUNCTION (SMJ)
F103 -ELECTRICAL UNITS

TKWT1018E

DI-WARN-04

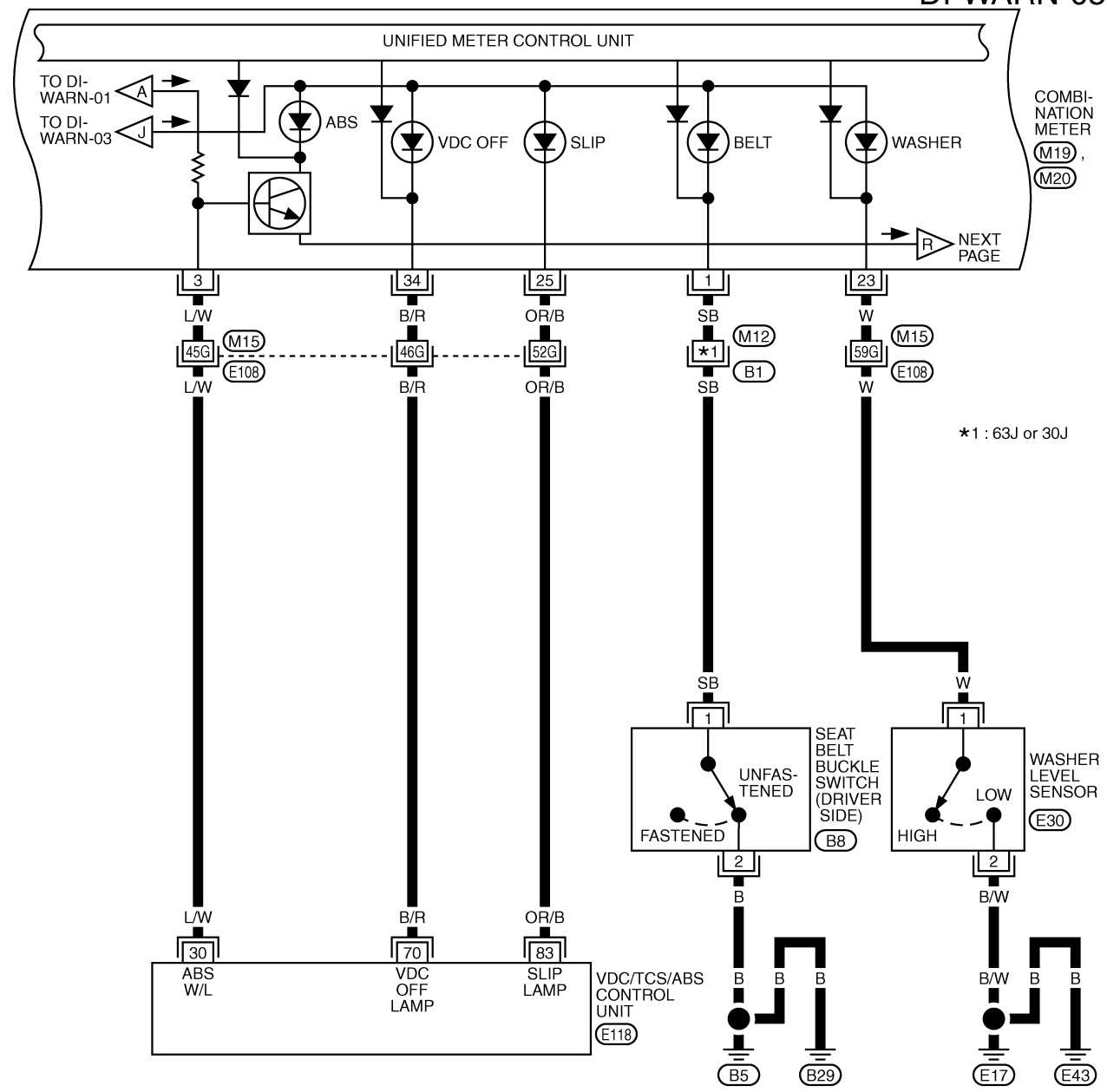


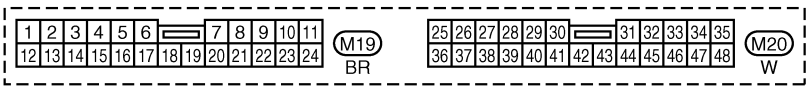
1
2
3
B17 , B20 , B23 , B32
W W W W

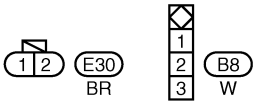
REFER TO THE FOLLOWING.
B1 -SUPER MULTIPLE JUNCTION (SMJ)
M3 , B4 -ELECTRICAL UNITS

TKWT0947E

DI-WARN-05







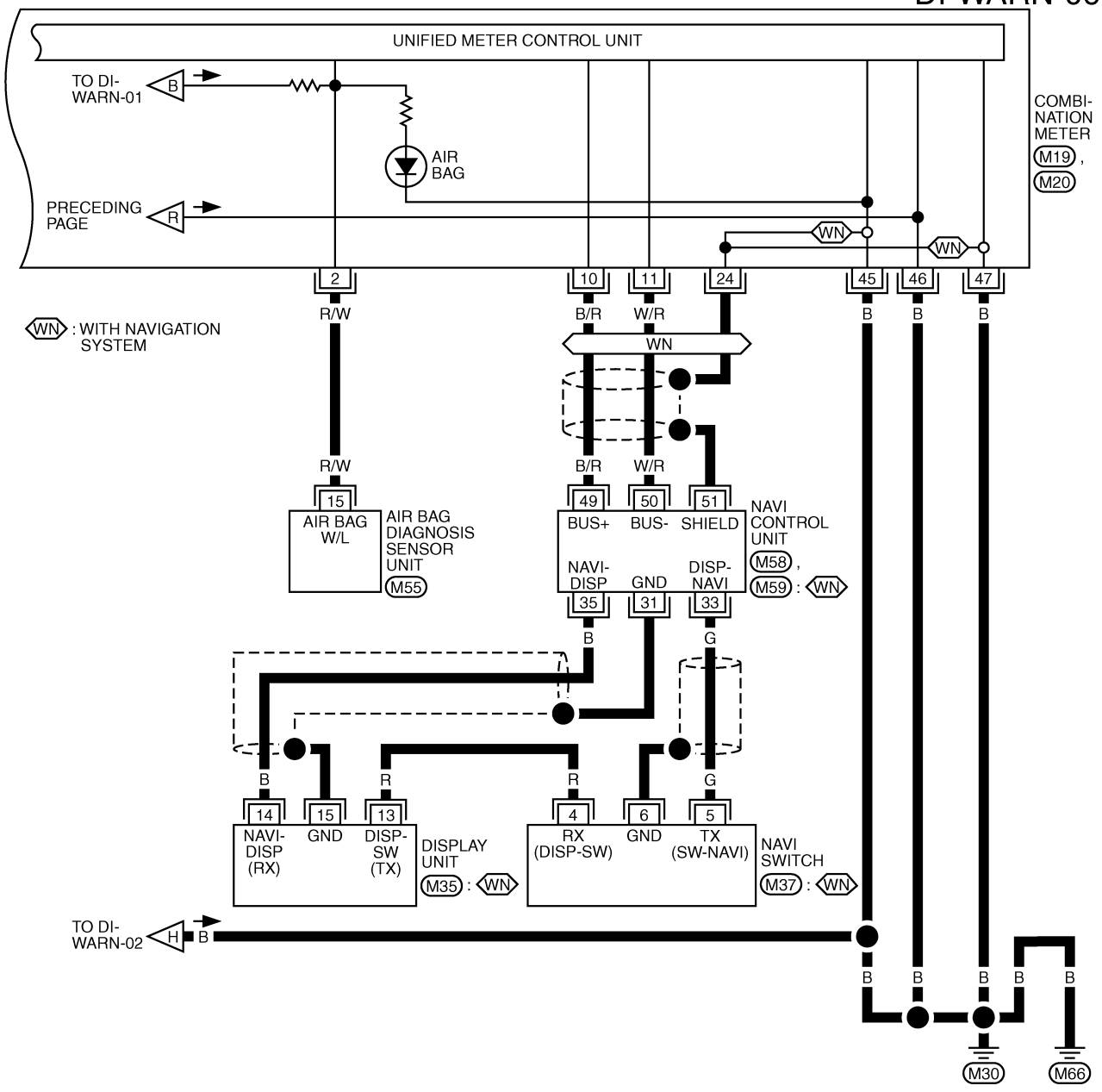
REFER TO THE FOLLOWING.

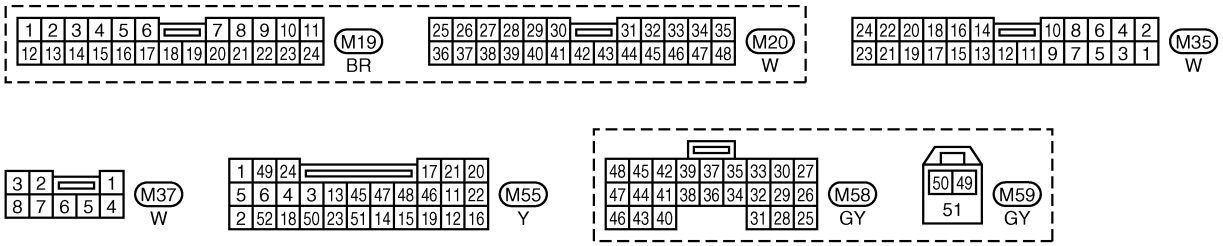
E108 , B1 -SUPER MULTIPLE-JUNCTION (SMJ)

E118 -ELECTRICAL UNITS

TKWT0948E

DI-WARN-06





TKWT0949E

Oil Pressure Warning Lamp Stays Off (Ignition Switch ON)

AKS0009R

1. CHECK BETWEEN IPDM E/R AND COMBINATION METER

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

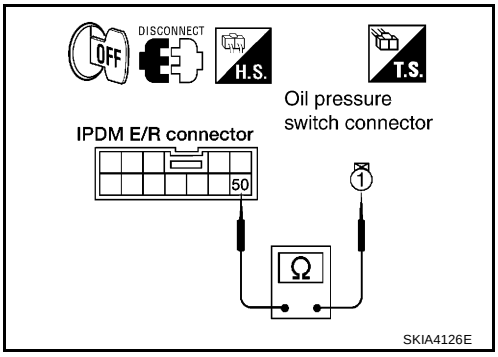
Does auto active test activate?

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

2. CHECK OIL PRESSURE SWITCH CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connector and oil pressure switch connector.
3. Check continuity between IPDM E/R harness connector E9 terminal 50 (Y/B) and oil pressure switch harness connector F21 terminal 1 (Y/B).

Continuity should exist.



OK or NG

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

3. CHECK OIL PRESSURE SWITCH

Check oil pressure switch. Refer to DI-38, "OIL PRESSURE SWITCH" .

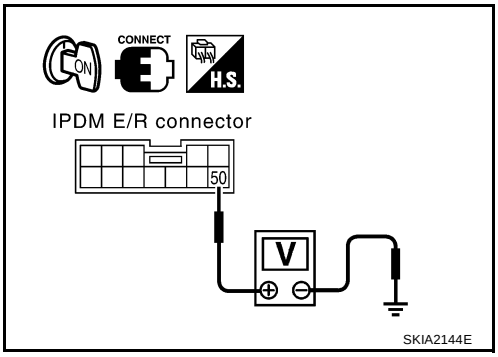
OK or NG

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

4. CHECK IPDM E/R OUTPUT SIGNAL

1. Connect IPDM E/R connector.
2. Turn ignition switch ON.
3. Check voltage between IPDM E/R harness connector E9 terminal 50 (Y/B) and ground.

Battery voltage should exist.



OK or NG

OK >> Perform BCM self-diagnosis.
NG >> Replace IPDM E/R.

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

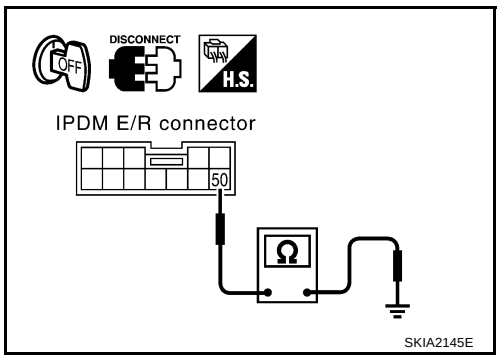
AKS0009S

NOTE:
For oil pressure inspection, refer to LU-6, "OIL PRESSURE CHECK" .

1. CHECK OIL PRESSURE SWITCH CIRCUIT

1. Disconnect IPDM E/R connector and oil pressure switch connector.
2. Check continuity between IPDM E/R harness connector E9 terminal 50 (Y/B) and ground.

Continuity should not exist.



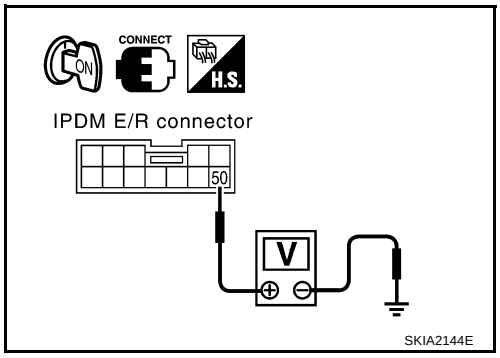
OK or NG

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

2. CHECK IPDM E/R OUTPUT SIGNAL

1. Connect IPDM E/R connector.
2. Turn ignition switch ON.
3. Check voltage between IPDM E/R harness connector E9 terminal 50 (Y/B) and body ground.

Battery voltage should exist.



OK or NG

OK >> Check oil pressure switch. Refer to DI-38, "OIL PRESSURE SWITCH" .
NG >> Replace IPDM E/R.

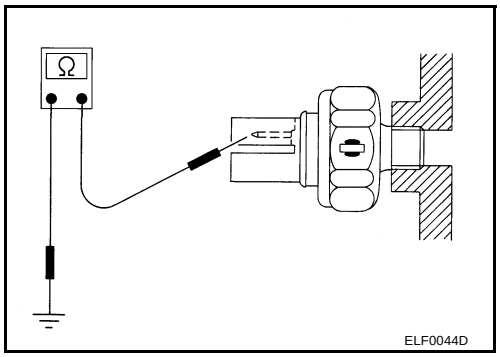
Component Inspection

AKS0009T

OIL PRESSURE SWITCH

Check continuity between the oil pressure switch and body ground.

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



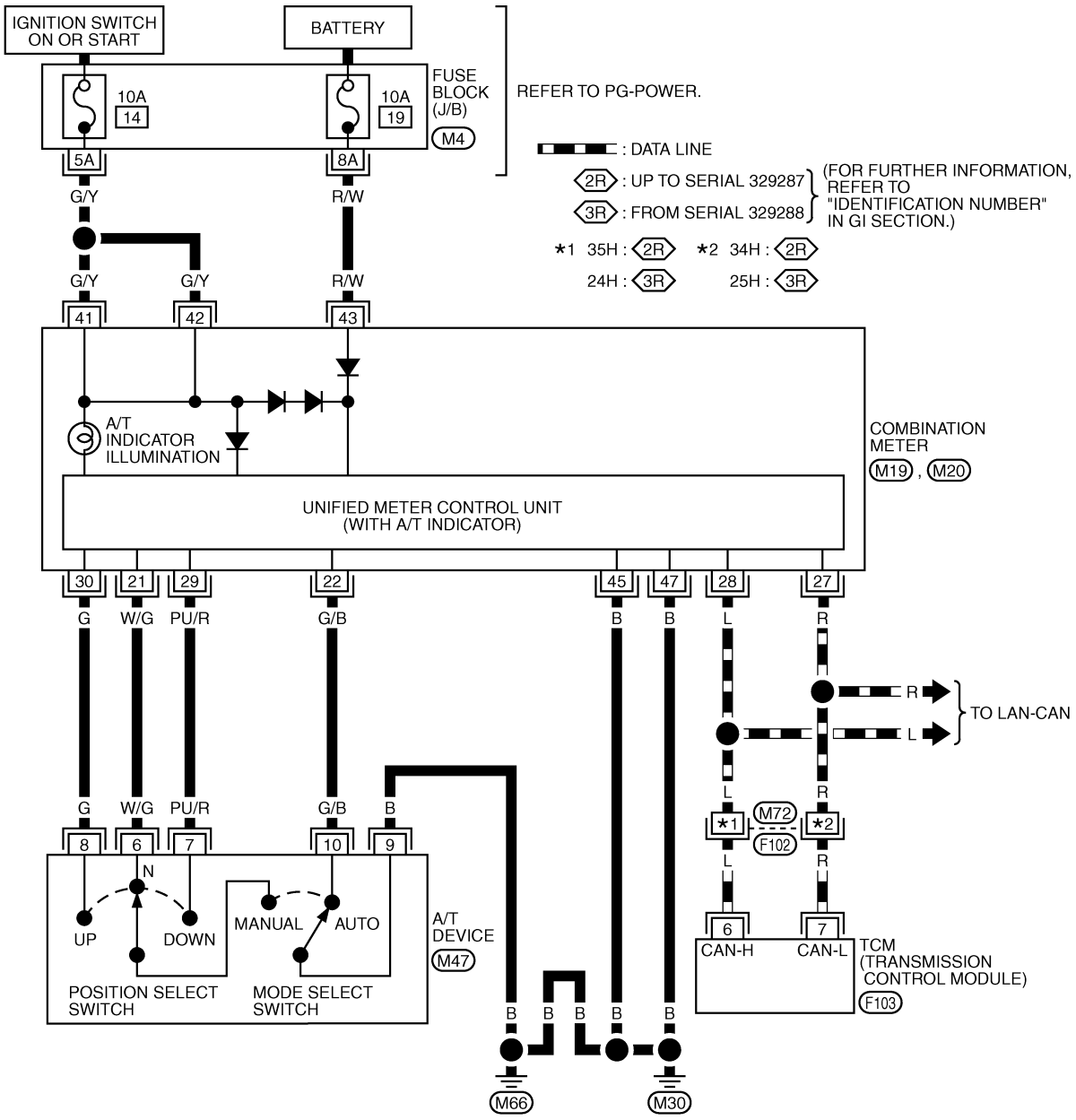
A/T INDICATOR

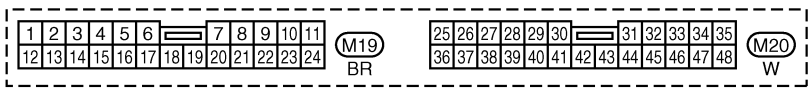
PFP:24814

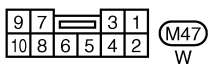
Wiring Diagram — AT/IND —

AKS0009U

DI-AT/IND-01







REFER TO THE FOLLOWING.

F102 -SUPER MULTIPLE JUNCTION (SMJ)

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

F103 -ELECTRICAL UNITS

TKWT1019E

A/T Indicator Does Not Illuminate

AKS0009W

1. CHECK COMBINATION METER SELF-DIAGNOSIS

Perform combination meter self-diagnosis. Refer to DI-14, "Meter/Gauges Operation and Odo/Trip Meter" .

Does all segments displayed?

YES or NO

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

2. CHECK TCM SELF-DIAGNOSIS

Perform TCM self-diagnosis. Refer to AT-43, "TROUBLE DIAGNOSIS" .

OK or NG

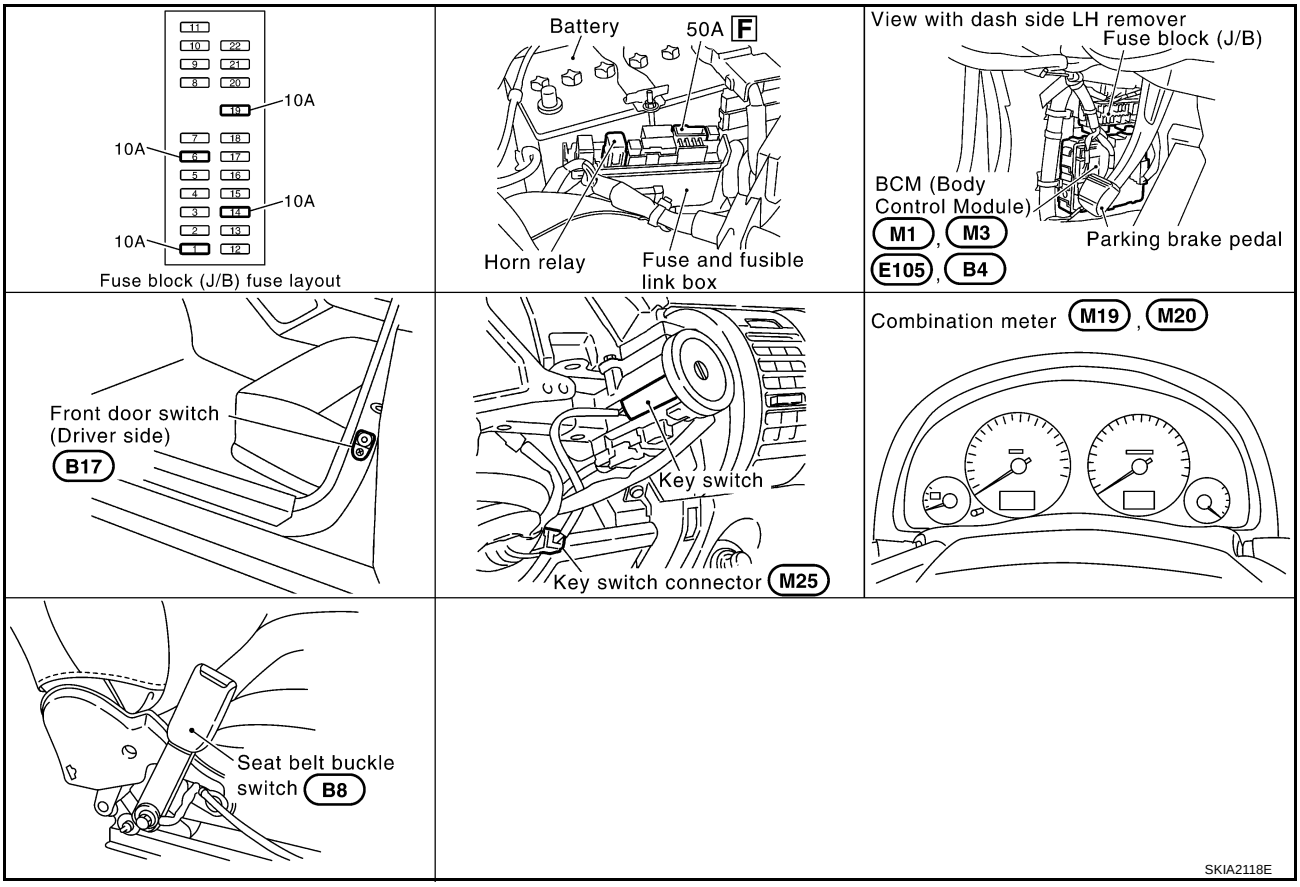
OK >> Replace combination meter.
NG >> Go to TCM trouble diagnosis.

WARNING CHIME

PFP:24814

Component Parts and Harness Connector Location

AKS0009X



System Description

AKS0009Y

The warning chime is controlled by the BCM.
The warning chime is located in the combination meter.
Combination meter is received buzzer signal from BCM with CAN communication line, the warning chime will sound.

FUNCTION

Power is supplied at all times

- through 50A 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 and
- through 10A fuse [No. 19, located in the fuse block (J/B)]
- to combination meter terminal 43.

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. 14, located in the fuse block (J/B)]
- to combination meter terminal 41 and 42.

Ground is supplied

- to BCM terminal 8
- through body grounds E17 and E43 and
- to combination meter terminals 45
- 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, and

Ground is supplied (with navigation system)

- to combination meter terminal 7
- through front door switch driver side terminal 1.

Front door switch driver side is case grounded.
Combination meter send door switch signal (door open signal) to BCM with CAN communication system.
Ground is supplied (without navigation system)

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

Front door switch driver side is case grounded.
BCM detects key inserted into the ignition switch, and sends buzzer output signal (key warning signal) to combination meter with CAN communication line.
When combination meter receives buzzer output signal (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-120, "Combination Switch Reading Function" .

Ground is supplied (with navigation system)

- to combination meter terminal 7
- through front door switch driver side terminal 1.

Front door switch driver side is case grounded.
Combination meter send door switch signal (door open signal) to BCM with CAN communication system.
Ground is supplied (without navigation system)

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

BCM detects headlamps are illuminated, and sends buzzer output signal (light warning signal) to combination meter with CAN communication line.
When combination meter receives buzzer output signal (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

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

Seat belt buckle switch (driver side) terminal 2 is grounded through body grounds B5 and B29.
BCM receives buzzer output signal (seat belt unfastened signal) from combination meter over CAN communication line, and sends buzzer output signal (seat belt warning signal) to combination meter with CAN communication line.
When combination meter receives buzzer output signal (seat belt warning signal), it sounds warning chime.

CAN Communication

AKS0009Z

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

AKS0081C

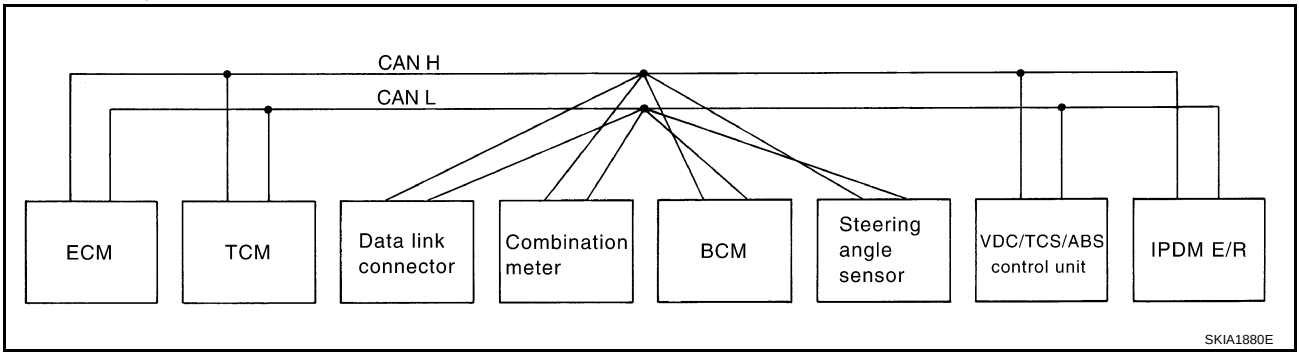
Body type	Sedan	
Axle	2WD	
Engine	VQ35DE	
Transmission	A/T	M/T
	Up to serial 329287* / From serial 329288*	
Brake control	VDC	
CAN communication unit		
ECM	×	×
TCM	×	
Data link connector	×	×
Combination meter	×	×
BCM	×	×
Steering angle sensor	×	×
VDC/TCS/ABS control unit	×	×
IPDM E/R	×	×
CAN communication type	DI-43, "TYPE 1/TYPE 3"	DI-45, "TYPE 2"

×: Applicable

*:For further information, refer to GI-47, "IDENTIFICATION NUMBER" .

TYPE 1/TYPE 3

System Diagram



Input/Output Signal Chart

T: Transmit R: Receive

Signals	ECM	TCM	Combination meter	BCM	Steering angle sensor	VDC/TCS/ABS control unit	IPDM E/R
Engine torque signal	T	R					
Engine speed signal	T	R	R			R	
Engine coolant temperature signal	T	R	R				
Accelerator pedal position signal	T	R				R	
Closed throttle position signal	T	R					

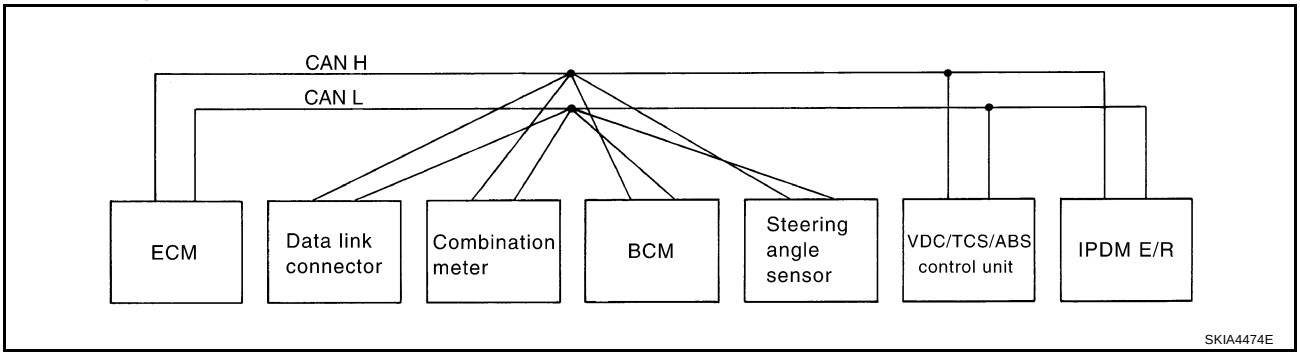
Signals	ECM	TCM	Combination meter	BCM	Steering angle sensor	VDC/TCS/ABS control unit	IPDM E/R
Wide open throttle position signal	T	R					
Battery voltage signal	T	R					
Stop lamp switch signal		R	T				
Fuel consumption monitor signal	T		R				
A/T self-diagnosis signal	R	T					
A/T CHECK indicator lamp signal		T	R				
A/T position indicator signal		T	R			R	
ABS operation signal		R				T	
A/T shift schedule change demand signal		R				T	
A/C switch signal	R			T			
A/C compressor request signal	T						R
A/C compressor feedback signal	T		R				
Blower fan motor switch signal	R			T			
Cooling fan motor operation signal	T						R
Position lights request signal			R	T			R
Low beam request signal				T			R
Low beam status signal	R						T
High beam request signal			R	T			R
High beam status signal	R						T
Front fog lights request signal				T			R
Vehicle speed signal			R			T	
	R	R	T	R			
Sleep request 1 signal			R	T			
Sleep request 2 signal				T			R
Wake up request 1 signal			R	T			R
Wake up request 2 signal			R	T			R
Door switch signal (without navigation system)			R	T			R
Door switch signal (with navigation system)			T	R			
Turn indicator signal			R	T			
Seat belt buckle switch signal			T	R			
Oil pressure switch signal			R				T
Buzzer output signal			R	T			
ASCD SET lamp signal	T		R				
ASCD CRUISE lamp signal	T		R				
ASCD OD cancel request signal	T	R					
ASCD operation signal	T	R					
Output shaft revolution signal	R	T					
Front wiper request signal				T			R
Front wiper stop position signal				R			T
Rear window defogger switch signal				T			R

Signals	ECM	TCM	Combination meter	BCM	Steering angle sensor	VDC/TCS/ABS control unit	IPDM E/R
Rear window defogger control signal	R						T
Manual mode signal		R	T				
Not manual mode signal		R	T				
Manual mode shift up signal		R	T				
Manual mode shift down signal		R	T				
Manual mode indicator signal		T	R				
Hood switch signal				R			T
Theft warning horn request signal				T			R
Horn chirp signal				T			R
Steering angle sensor signal					T	R	
Malfunction indicator lamp signal (Type 3 only: From serial 329288*)	T		R				
Fuel level sensor signal (Type 3 only: From serial 329288*)	R		T				
Turbine revolution signal (Type 3 only: From serial 329288*)	R	T					

*:For further information, refer to GI-47, "IDENTIFICATION NUMBER" .

TYPE 2

System Diagram



Input/Output Signal Chart

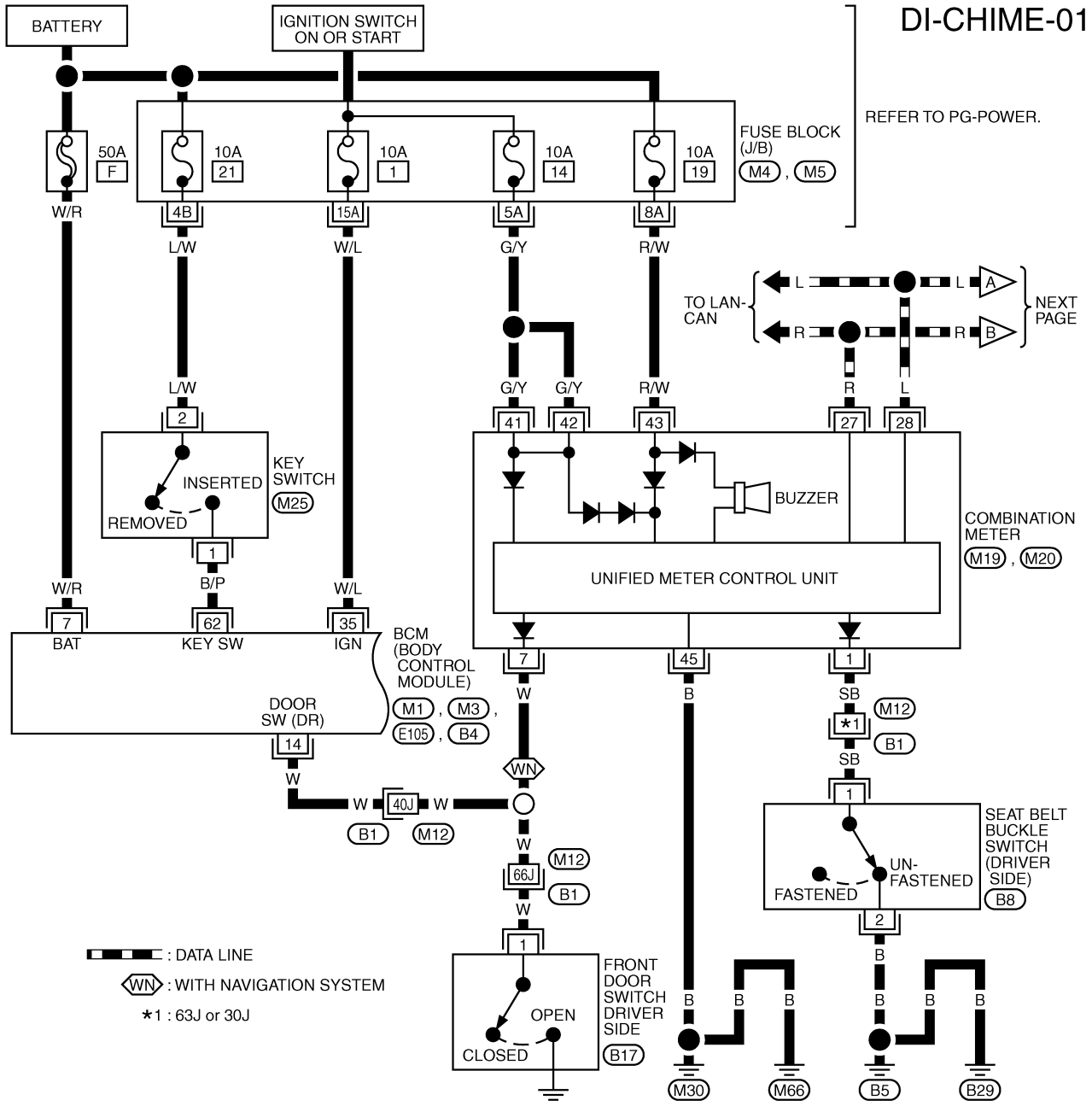
T: Transmit R: Receive

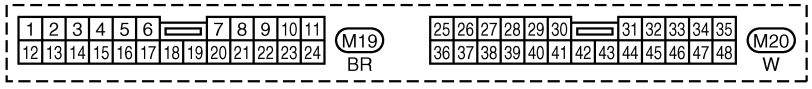
Signals	ECM	Combination meter	BCM	Steering angle sensor	VDC/TCS/ABS control unit	IPDM E/R
Engine speed signal	T	R			R	
Engine coolant temperature signal	T	R				
Accelerator pedal position signal	T				R	
Fuel consumption monitor signal	T	R				
A/C switch signal	R		T			
A/C compressor request signal	T					R
A/C compressor feedback signal	T	R				
Blower fan motor switch signal	R		T			
Cooling fan motor operation signal	T					R
Position lights request signal		R	T			R
Low beam request signal			T			R
Low beam status signal	R		R			T

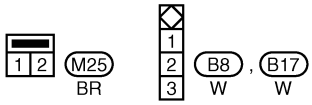
Signals	ECM	Combination meter	BCM	Steering angle sensor	VDC/TCS/ABS control unit	IPDM E/R
High beam request signal		R	T			R
High beam status signal	R		R			T
Front fog lights request signal			T			R
Vehicle speed signal		R			T	
	R	T	R			
Sleep request 1 signal		R	T			
Sleep request 2 signal			T			R
Wake up request 1 signal		R	T			
Wake up request 2 signal		R	T			
Door switch signal (without navigation system)		R	T			R
Door switch signal (with navigation system)		T	R			
Turn indicator signal		R	T			
Seat belt buckle switch signal		T	R			
Oil pressure switch signal		R				T
Buzzer output signal		R	T			
Malfunction indicator lamp signal	T	R				
ASCD SET lamp signal	T	R				
ASCD CRUISE lamp signal	T	R				
Fuel level sensor signal	R	T				
Front wiper request signal			T			R
Front wiper stop position signal			R			T
Rear window defogger switch signal			T			R
Rear window defogger control signal	R		R			T
Hood switch signal			R			T
Theft warning horn request signal			T			R
Horn chirp signal			T			R
Steering angle sensor signal				T	R	

Wiring Diagram — CHIME —

AKS000A1







REFER TO THE FOLLOWING.

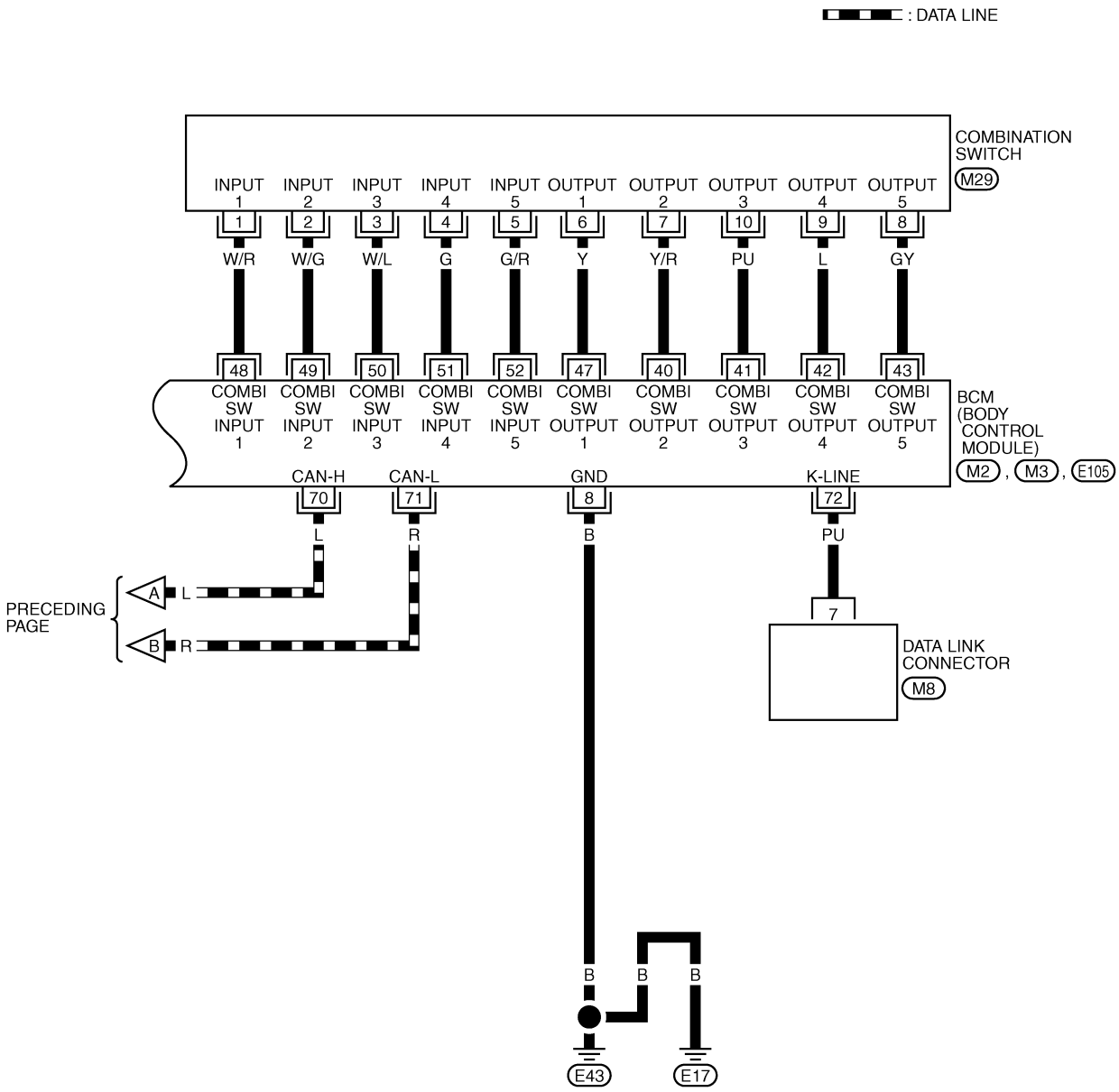
B1 -SUPER MULTIPLE JUNCTION (SMJ)

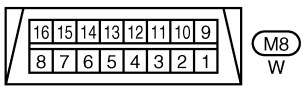
M4 , M5 -FUSE BLOCK-JUNCTION BOX (J/B)

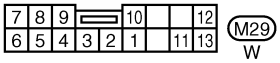
M1 , M3 , E105 , B4 -ELECTRICAL UNITS

TKWT0722E

DI-CHIME-02





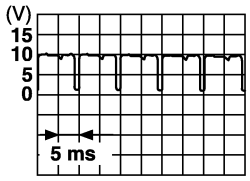


REFER TO THE FOLLOWING.
M2 , M3 , E105
-ELECTRICAL UNITS

TKWT0721E

Terminals and Reference Value for BCM

AKS000A2

Terminal No.	Wire color	Item	Condition			Reference value
			Ignition switch	Measurement method		
7	W/R	Battery power supply	OFF	—		Battery voltage
8	B	Ground	ON	—		Approx.0 V
14	W	Front door switch signal	OFF	Driver door	ON (open)	Approx.0 V
					OFF (closed)	Approx.5 V
35	W/L	Ignition switch (ON)	ON	—		Battery voltage
40	Y/R	Combination switch output 2	ON	—		 SKIA1119J
41	PU	Combination switch output 3				
42	L	Combination switch output 4				
43	GY	Combination switch output 5				
47	Y	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/R	Combination switch input 5				
62	B/P	Key switch signal	OFF	Key is removed		Approx.0 V
				Key is inserted		Battery voltage
70	L	CAN H	OFF	—		—
71	R	CAN L	OFF	—		—

How to Proceed With Trouble Diagnosis

AKS000A3

1. Confirm the symptom or customer complaint.
2. Understand operation description and function description. Refer to DI-41, "System Description" .
3. Carry out the Preliminary Check. Refer to DI-49, "Preliminary Check" .
4. Check symptom and repair or replace the cause of malfunction.
5. Does the warning chime operate normally? If so, go to 6. If not, go to 4.
6. INSPECTION END

Preliminary Check

AKS000A4

INSPECTION FOR POWER SUPPLY AND GROUND CIRCUIT

1. CHECK FUSES

Check for blown BCM fuses.

UNIT	POWER SOURCE	FUSE No.
BCM	Battery	F
	Ignition switch (ON)	1

Refer to DI-47, "Wiring Diagram — CHIME —" .

OK or NG

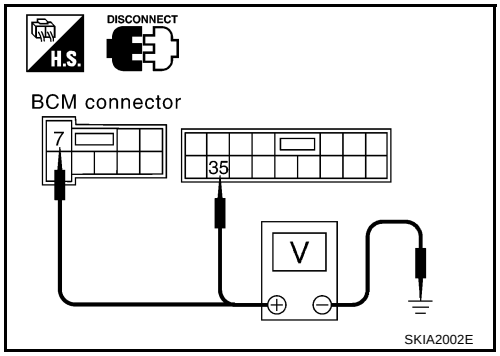
OK >> GO TO 2.

NG >> If fuse is blown, be sure to eliminate cause of problem before installing new fuse. Refer to PG-3, "POWER SUPPLY ROUTING CIRCUIT" .

2. CHECK POWER SUPPLY CIRCUIT

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

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



OK or NG

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

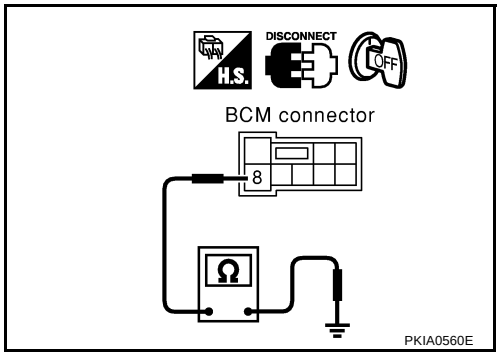
3. CHECK GROUND CIRCUIT

Check continuity between BCM and ground.

Terminals			Continuity
(+)		(–)	
Connector	Terminal (Wire color)		
E105	8 (B)	Ground	Yes

OK or NG

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



CONSULT-II Function

AKS000A5

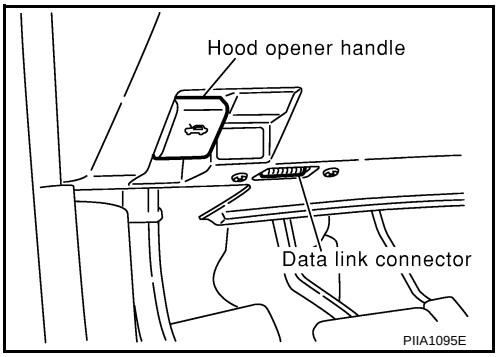
- CONSULT-II executes the following functions by combining data reception and command transmission via the communication line from BCM. Work support, self-diagnosis, data monitor, and active test display.

DIAGNOSTIC ITEMS DESCRIPTION

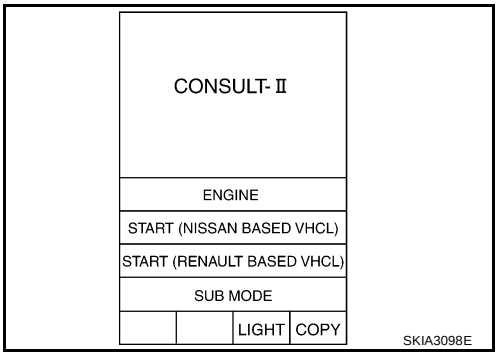
BCM diagnosis position	Diagnosis mode	Description
KEY WARN ALM	Data monitor	The input data to the BCM control unit is displayed in real time.
	Active test	Operation of electrical loads can be checked by sending driving signal to them.
LIGHT WARN ALM	Data monitor	The input data to the BCM control unit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

CONSULT-II BASIC OPERATION PROCEDURE

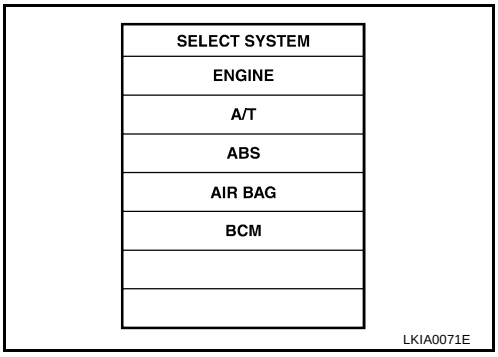
1. With the ignition switch OFF, connect “CONSULT-II” and “CONSULT-II CONVERTER” to the data link connector, and turn the ignition switch ON.



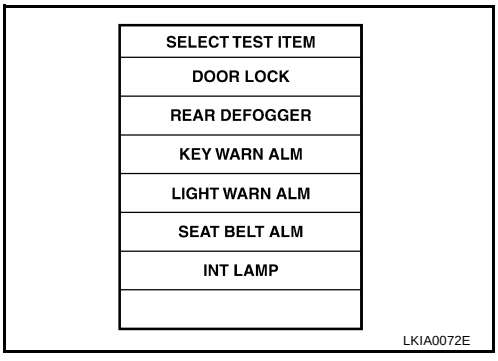
2. Touch “START (NISSAN BASED VHCL)”.



3. Touch “BCM”.
If “BCM” is not indicated, go to GI-38, "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 “KEY 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 the main items.
SELECTION FROM MENU	Selects and monitors the items.

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

Data Monitor Item (Key Warning Chime)

Monitored item	Description
IGN ON SW	Indicates [ON/OFF] condition of ignition switch.
KEY ON SW	Indicates [ON/OFF] condition of key switch.
DOOR SW-DR	Indicates [ON/OFF] condition of front door switch driver side.

Data Monitor Item (Light Warning Chime)

Monitored item	Description
IGN ON SW	Indicates [ON/OFF] condition of ignition switch.
DOOR SW-DR	Indicates [ON/OFF] condition of front door switch driver side.
TAIL LAMP SW	Indicates [ON/OFF] condition of lighting switch.

Data Monitor Item (Seat Belt Warning Chime)

Monitored item	Description
IGN ON SW	Indicates [ON/OFF] condition of ignition switch.
SEAT BELT SW	Indicates [ON/OFF] condition of seat belt buckle switch.

ACTIVE TEST

Operation Procedure

1. Touch “KEY 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 detecting condition
CHIME	This test is able to check key warning chime operation. Key warning chime sounds for 2 seconds after touching “ON” on CONSULT-II screen.

Active Test Item (Light Warning Chime)

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

Active Test Item (Seat Belt Warning Chime)

Test item	Malfunction detecting condition
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-II 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-II 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-4, "CAN Communication Unit" .

All Warnings Are Not Operated

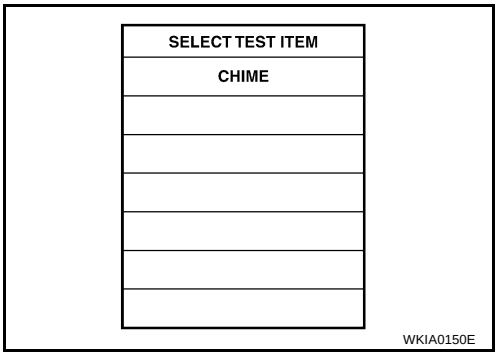
AKS000A6

1. CHIME OPERATION INSPECTION

Select “KEY WARN ALM”, “LIGHT WARN ALM” or “SEAT BELT ALM” on CONSULT-II, and perform “CHIME” active test.

Does chime sound?

Yes >> GO TO 3.
No >> GO TO 2.



2. BCM SELF-DIAGNOSIS

Select BCM on CONSULT-II, and perform “BCM C/U” self-diagnosis.

Self-diagnostic results content

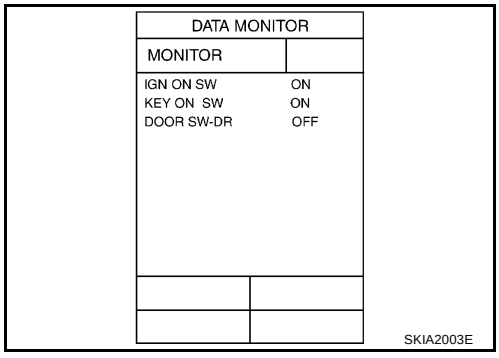
No malfunction detected>> GO TO 3.
CAN communication [U1000]>>After printing the monitor item, go to “CAN system”. Refer to LAN-4, "CAN Communication Unit" .
Diagnosis 1 - 5 systems open circuit>>Malfunction in combination switch system. Go to BCS-17, "Combination Switch Inspection According to Self-Diagnostic Results" according to self-diagnostic results.

3. DATA MONITOR INSPECTION

Select BCM on CONSULT-II. Operate each switch with data monitor of “KEY WARN ALM”, “LIGHT WARN ALM” or “SEAT BELT ALM” and check operation status of applicable switches.

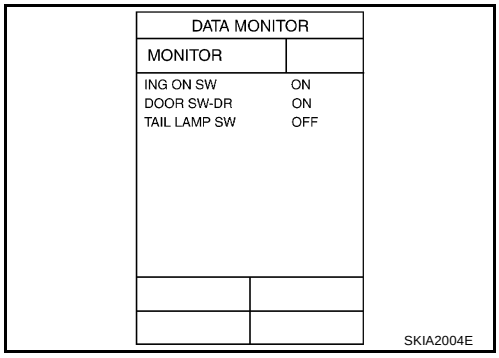
KEY WARNING ALM

Switch operation	CONSULT-II display	Operation status
Ignition switch (ON)	IGN ON SW	ON
Ignition switch (OFF)		OFF
Ignition switch (key in switch)	KEY ON SW	ON
Ignition switch (key out of switch)		OFF
Driver door (open)	DOOR SW-DR	ON
Driver door (closed)		OFF



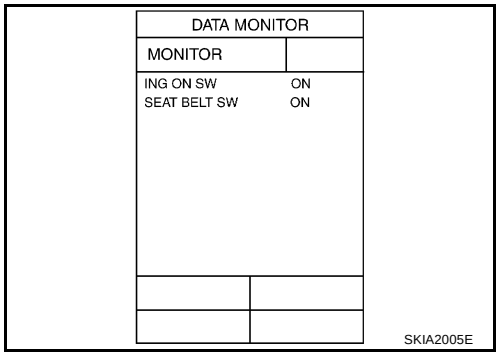
LIGHT WARNING ALM

Switch operation	CONSULT-II display	Operation status
Ignition switch (ON)	IGN ON SW	ON
Ignition switch (OFF)		OFF
Driver door (open)	DOOR SW-DR	ON
Driver door (closed)		OFF
Lighting switch (1st position)	TAIL LAMP SW	ON
Lighting switch (OFF)		OFF



SEAT BELT ALM

Switch operation	CONSULT-II display	Operation status
Ignition switch (ON)	IGN ON SW	ON
Ignition switch (OFF)		OFF
Seat belt switch (unfastened)	SEAT BELT SW	ON
Seat belt switch (fastened)		OFF



OK or NG

OK >> Replace combination meter.

NG >>
- GO TO 4 (With navigation system).
- GO TO 5 (Without navigation system)

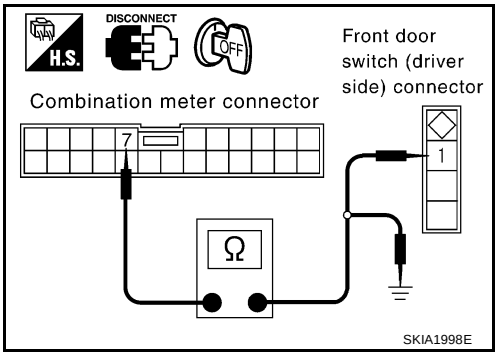
4. CHECK CONTINUITY DOOR SWITCH CIRCUIT (WITH NAVIGATION SYSTEM)

1. Disconnect combination meter connector and front door switch driver side connector.
2. Check harness continuity between combination meter harness connector M19 terminal 7 (W) and front door switch driver side harness connector B17 terminal 1 (W).

Continuity should exist.

3. Check continuity between combination meter harness connector M19 terminal 7 (W) and ground.

Continuity should not exist.



OK or NG

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

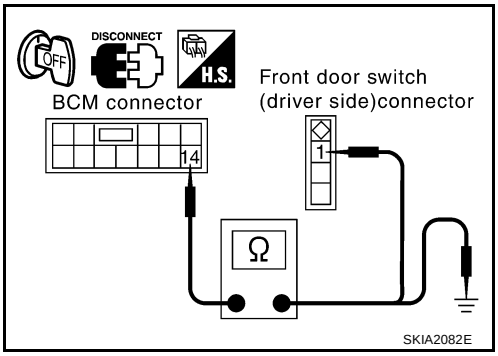
5. CHECK DOOR SWITCH CIRCUIT (WITHOUT NAVIGATION SYSTEM)

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

Continuity should exist.

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

Continuity should not exist.



OK or NG

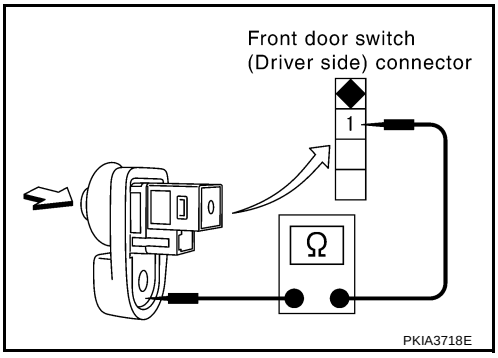
OK >> GO TO 6
NG >> Repair harness or connector.

6. CHECK DOOR SWITCH

Check front door switch driver side.

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.
NG >> Replace driver side door switch.

Key Warning Chime Does Not Operate

AKS000A7

1. CHECK FUSE

Check if the key switch fuse is blown. Refer to DI-47, "Wiring Diagram — CHIME —" .

Is the fuse blown?

Yes >> Replace fuse. Be sure to repair the cause of the problem before installing new fuse.
No >> GO TO 2.

2. CHECK WARNING CHIME OPERATION

Check except for key warning chime operation.

Dose warning chime sound?

Yes >> GO TO 3
No >> GO TO DI-53, "All Warnings Are Not Operated" .

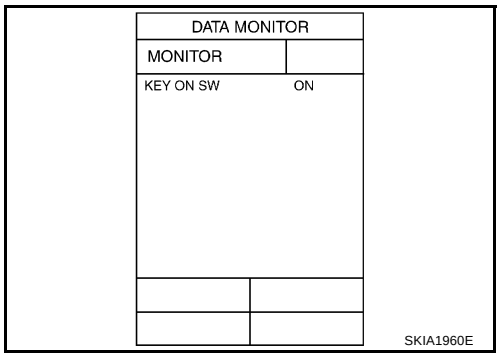
3. CHECK KEY SWITCH INPUT SIGNAL

With CONSULT-II

Check key switch (“KEY ON SW”) in “DATA MONITOR” mode with CONSULT-II.

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

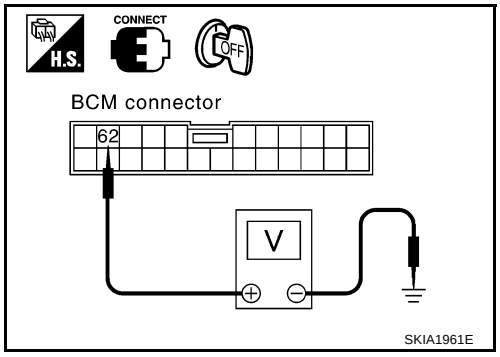
When key is removed from ignition key cylinder : KEY ON SW OFF



Without CONSULT-II

Check voltage between BCM and ground.

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



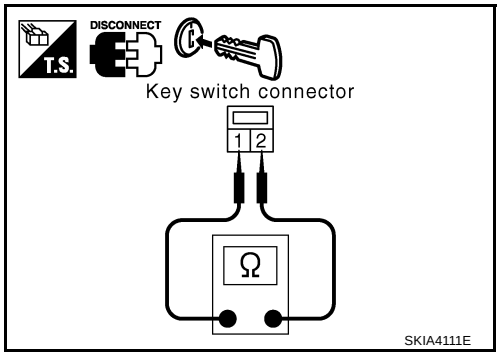
OK or NG

OK >> Key switch is OK.
NG >> GO TO 4

4. CHECK KEY SWITCH (INSERT)

1. Disconnect key switch connector.
2. Check continuity between key switch terminal 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 switch.

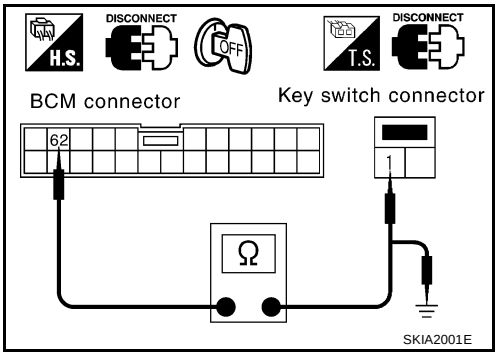
5. CHECK CONTINUITY BCM AND KEY SWITCH

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

Continuity should exist.

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

Continuity should not exist.



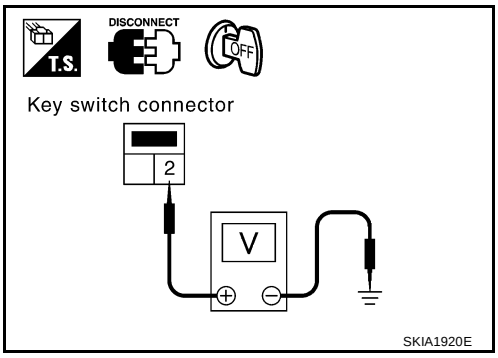
OK or NG

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

6. CHECK KEY SWITCH INPUT SIGNAL

Check voltage between key switch harness connector M25 terminal 2 (L/W) and ground.

Battery voltage should exist.



OK or NG

OK >> Replace BCM. Refer to BCS-23, "Removal and Installation of BCM" .
NG >> Check continuity open or short between key switch and fuse.

Light Warning Chime Does Not Operate

AKS000A8

1. CHECK WARNING CHIME OPERATION

Check except for headlamp warning chime operation.

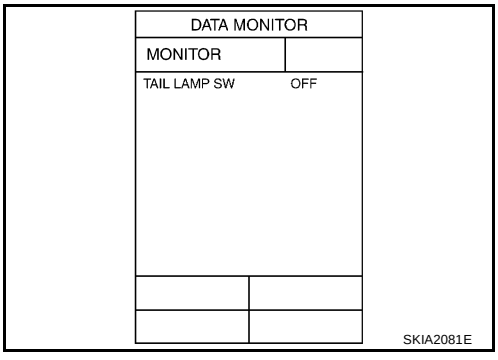
Dose warning chime sound?

YES >> GO TO 2
NO >> GO TO DI-53, "All Warnings Are Not Operated" .

2. CHECK DATA MONITOR

With “LIGHT WARN ALM” on the data monitor, confirm “TAIL LAMP SW” and “FR FOG SW” turn ON/OFF when lighting switch is operated.

Switch operation	CONSULT-II display	Operation status
Lighting switch (1st position)	TAIL LAMP SW	ON
Lighting switch (OFF)		OFF



OK or NG

OK >> Replace BCM. Refer to BCS-23, "Removal and Installation of BCM" .
NG >> Replace lighting switch.

Seat Belt Warning Chime Does Not Operate

AKS000A9

1. CHECK WARNING CHIME OPERATION

Check except for seat belt warning chime operation.

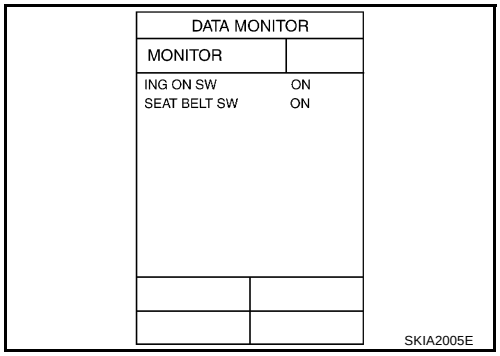
Does warning chime sound?

YES >> GO TO 2
NO >> GO TO DI-53, "All Warnings Are Not Operated" .

2. SEAT BELT WARNING CHIME INPUT SIGNAL

With “SEAT BELT ALM” on the data monitor, 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



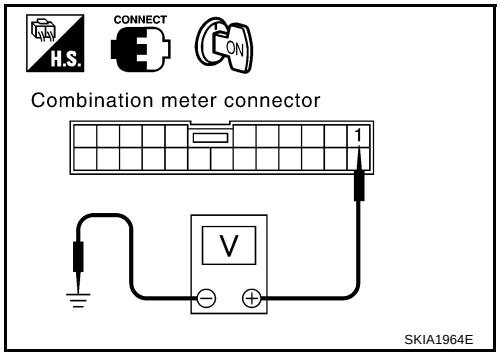
OK or NG

OK >> Seat belt buckle switch is OK.
NG >> GO TO 3.

3. COMBINATION METER INPUT SIGNAL

1. Turn ignition switch ON.
2. Check voltage between Combination meter and ground.

Terminals			Condition	Voltage (V)
(+)		(–)		
Connec-tor	Terminal			
M19	1 (SB)	Ground	Seat belt is fastened	Battery voltage
			Seat belt is unfastened	0



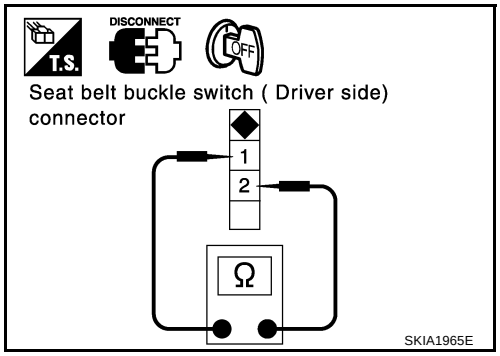
OK or NG

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

4. SEAT BELT BUCKLE SWITCH CHECK

1. Turn ignition switch OFF.
2. Disconnect seat belt buckle switch (driver side) connector
3. Check continuity 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).

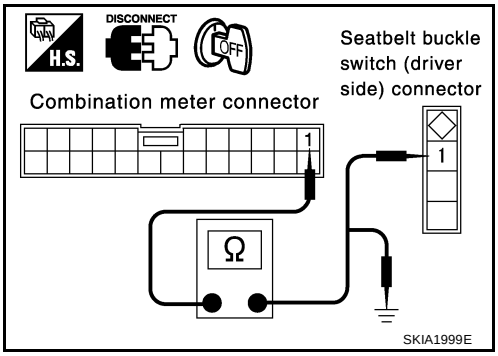
5. CHECK SEAT BELT BUCKLE SWITCH CIRCUIT

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

Continuity should exist.

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

Continuity should not exist.



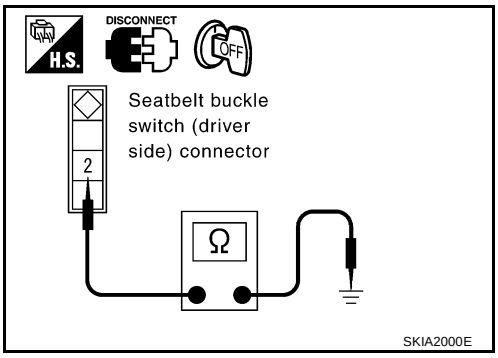
OK or NG

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

6. CHECK SEAT BELT BUCKLE SWITCH GROUND CIRCUIT

1. Disconnect BCM connector.
2. Check harness continuity between seat belt buckle switch (driver side) harness connector B8 terminal 2 (B) and ground.

Continuity should exist.



OK or NG

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

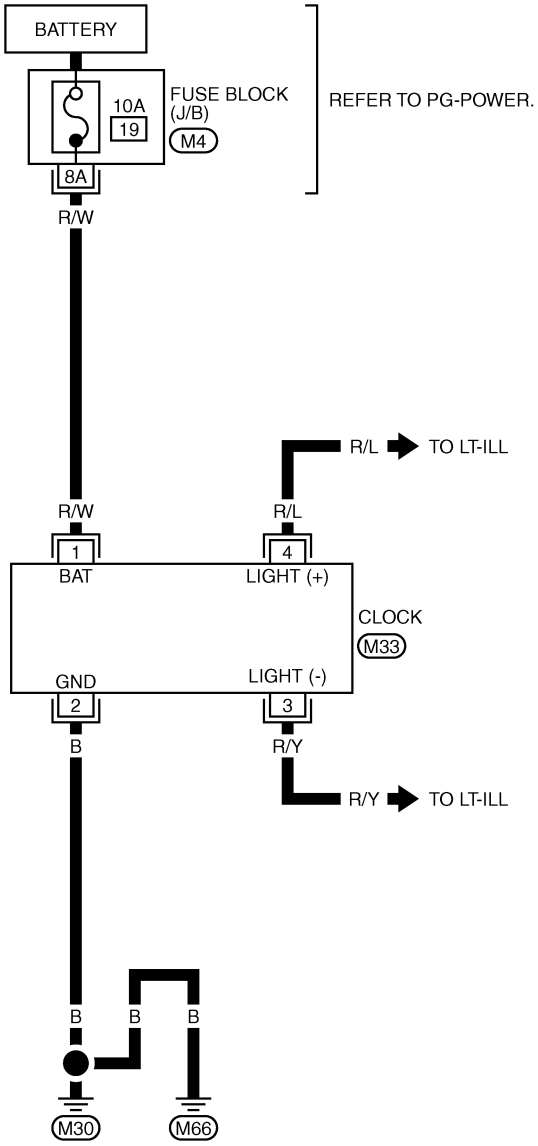
CLOCK

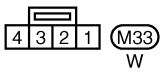
PFP:25820

Wiring Diagram — CLOCK —

AKS000IM

DI-CLOCK-01





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

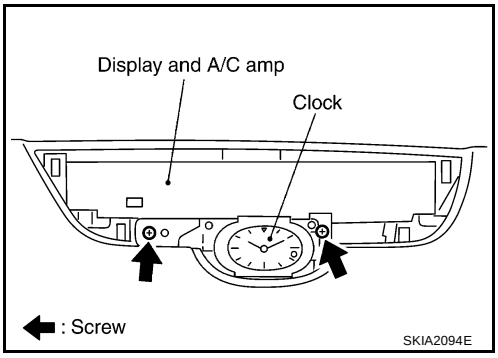
TKWT0345E

Removal and Installation of Clock

AKS000IN

REMOVAL

1. Remove the cluster lid finisher, refer to IP-10, "INSTRUMENT PANEL ASSEMBLY" .
2. Remove the screws (2), and remove clock.



INSTALLATION

Install in the reverse order of removal.