SECTION DI
DRIVER INFORMATION SYSTEM

CONTENTS

PRECAUTIONS

PFP:00011

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

EKS0086Z

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. 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 harness connectors.**

Maintenance Information

EKS008W0

If any of following part is replaced, always replace with new* one.
If it's not (or fail to do so), the electrical system may not be operated properly.
*: New one means a virgin control unit that has never been energized on-board.

RHD MODELS

- BCM (Models without Intelligent Key system)
- Intelligent Key unit (Models with Intelligent Key system)
- ECM
- IPDM E/R
- Combination meter
- EPS control unit

LHD MODELS

- BCM (Models without Intelligent Key system)
- Intelligent Key unit (Models with Intelligent Key system)
- ECM

Precautions For Trouble Diagnosis

EKS008WG

CAN SYSTEM

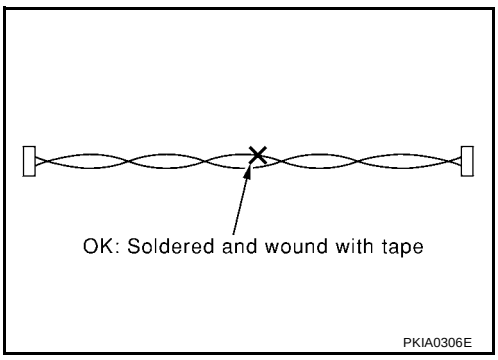
- Do not apply voltage of 7.0V or higher to the measurement terminals.
- Use the tester with its open terminal voltage being 7.0V or less.
- Be sure to turn ignition switch off and disconnect negative battery cable before checking the circuit.

Precautions For Harness Repair

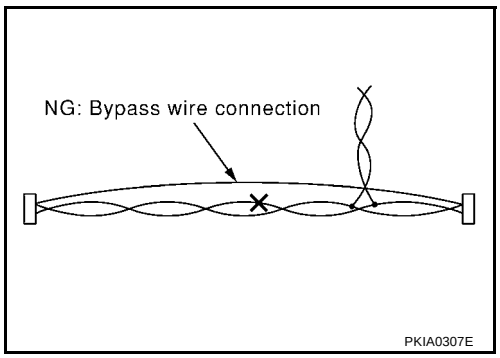
EKS008WH

CAN SYSTEM

- Solder the repaired parts, and wrap with tape. [Frays of twisted line must be within 110 mm (4.33 in)]



- Do not perform bypass wire connections for the repair parts. (The spliced wire will become separated and the characteristics of twisted line will be lost.)



Wiring Diagrams and Trouble Diagnosis

EKS006ZV

When you read wiring diagrams, refer to the following:

- GI-14, "How to Read Wiring Diagrams" in GI section
- PG-4, "POWER SUPPLY ROUTING" for power distribution circuit in PG section

When you perform trouble diagnosis, refer to the following:

- GI-10, "How to Follow Trouble Diagnoses" in GI section
- GI-24, "How to Perform Efficient Diagnosis for an Electrical Incident" in GI section

COMBINATION METERS

PFP:24814

System Description

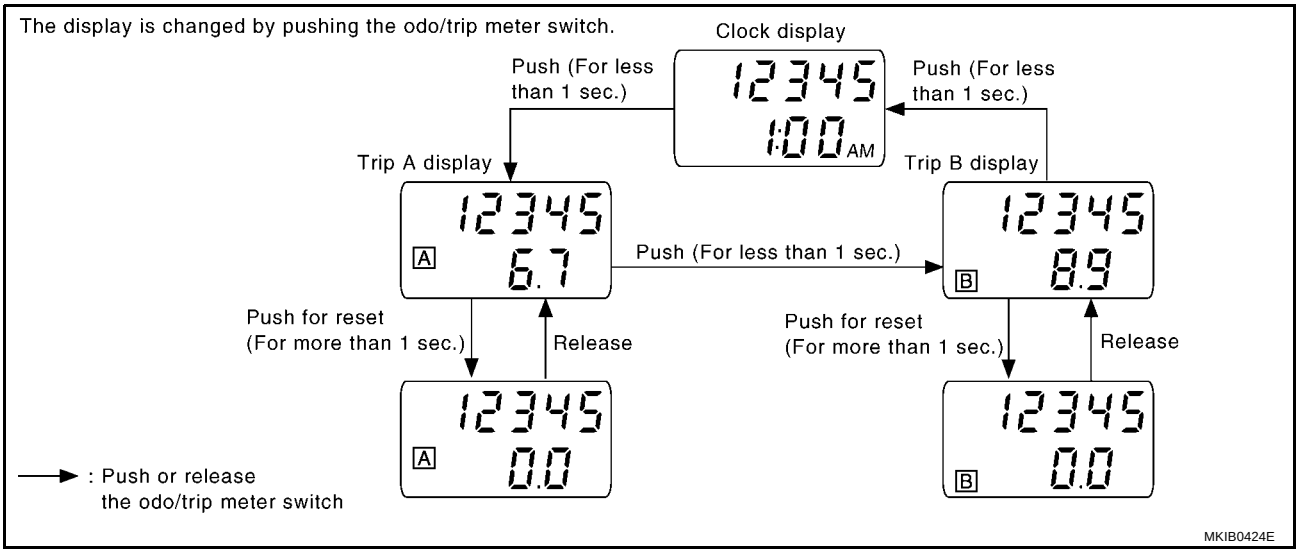
EKS00822

UNIFIED CONTROL METER

- Speedometer, odo/trip meter, tachometer, fuel gauge and water temperature lamps are controlled totally by control unit built in combination meter.
- Signal of speedometer, odo/trip meter, tachometer and water temperature indicator/warning lamps are received via CAN communication line.
- Engine coolant temperature is indicated by water temperature (High) warning lamp and water temperature (Low) indicator lamp.
- Digital meter is adopted for odo/trip meter*.
  *: The record of the odometer 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 display segments can be checked in self-diagnosis mode.
- Meter/gauge can be checked in self-diagnosis mode.

HOW TO CHANGE THE DISPLAY FOR ODO/TRIP METER

- The CAN communication signals (vehicle speed signal) from ABS actuator and electric unit (control unit), and the memory signals from the meter memory circuit are processed by the combination meter, and the mileage is displayed.
- Operating the odo/trip meter switch allows switching the mode in the following order.



- The odo/trip meter display switching and trip display resetting can be identified by the time from pressing the odo/trip meter switch to releasing it.
- When resetting with trip A displayed, only trip A display is reset (same as trip B).

POWER SUPPLY AND GROUND CIRCUIT

Power is supplied at all times

- through 10A fuse [No. 8, located in the fuse block (J/B)]
- to combination meter terminal 27.

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

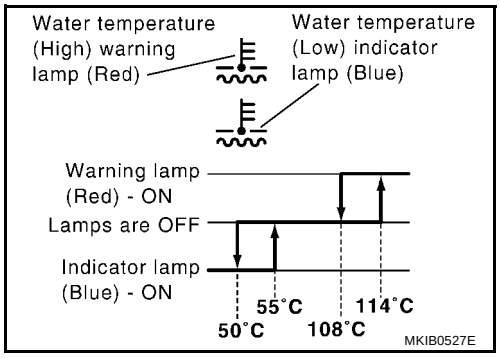
- through 10A fuse [No. 2, located in the fuse block (J/B)]
- to combination meter terminal 28.

Ground is supplied

- to combination meter terminals 21, 22 and 23
- through body grounds M19 and M20.

WATER TEMPERATURE WARNING/INDICATOR LAMP

The water temperature warning/indicator lamp indicate the engine coolant temperature.
ECM provides a engine coolant temperature signal to combination meter for water temperature warning/indicator lamp via CAN communication line.
When turn ignition switch ON, water temperature (High) warning lamp and water temperature (Low) indicator lamp will be ON for 2 seconds.
After engine started,



- Water temperature (Low) indicator lamp will be ON while engine coolant temperature is less than 55 °C.
- Water temperature (Low) indicator lamp will be OFF while

engine coolant temperature is more than 55 °C.

- Water temperature (High) warning lamp and water temperature (Low) indicator lamp will be OFF, while engine coolant temperature is between 55 °C and 114 °C.
- Water temperature (High) warning lamp will be ON, while engine coolant temperature is more than 114 °C.

TACHOMETER

The tachometer indicates engine speed in revolution per minutes (rpm).
ECM provides an engine speed signal to combination meter for tachometer via 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 resistor signal supplied

- to combination meter terminal 6 for the fuel level sensor
- from terminal 2 of the fuel level sensor unit
- through terminal 4 of the fuel level sensor unit and
- through combination meter terminal 24.

SPEEDOMETER

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

CAN Communication

EKS00823

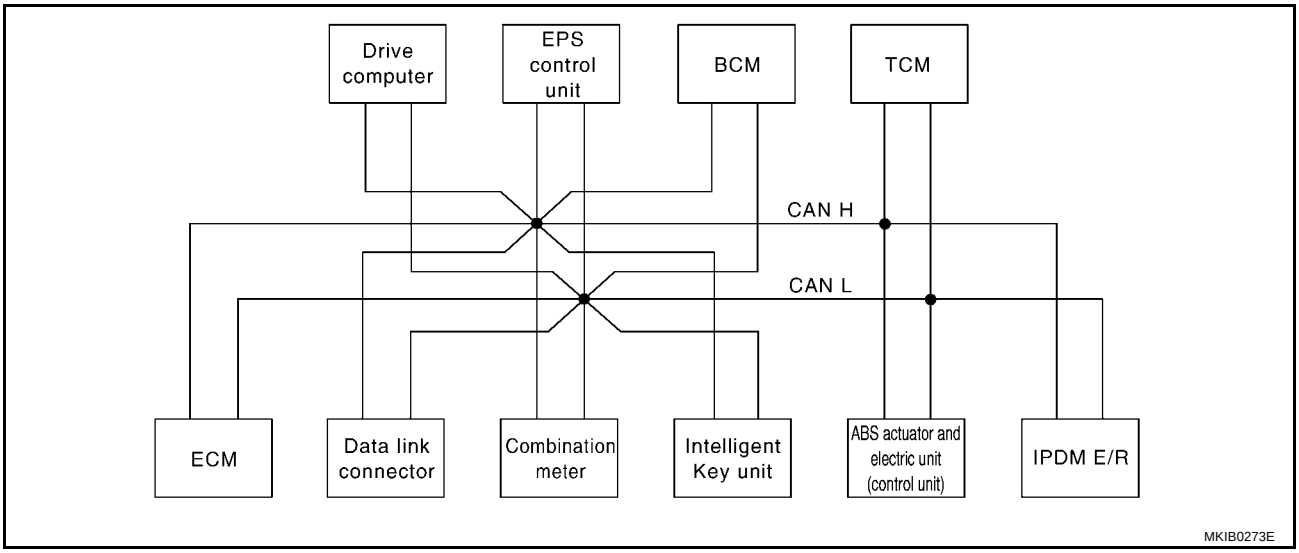
SYSTEM DESCRIPTION

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.

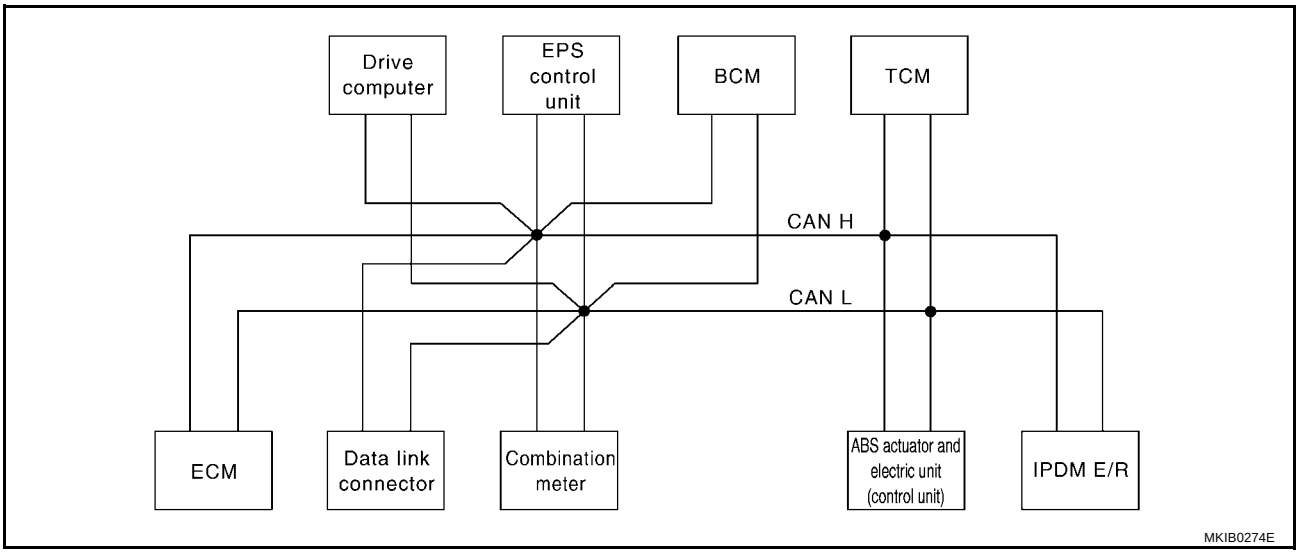
A/T MODELS

System diagram

- With Intelligent Key system



- Without Intelligent Key system



Input/output signal chart

T: Transmit R: Receive

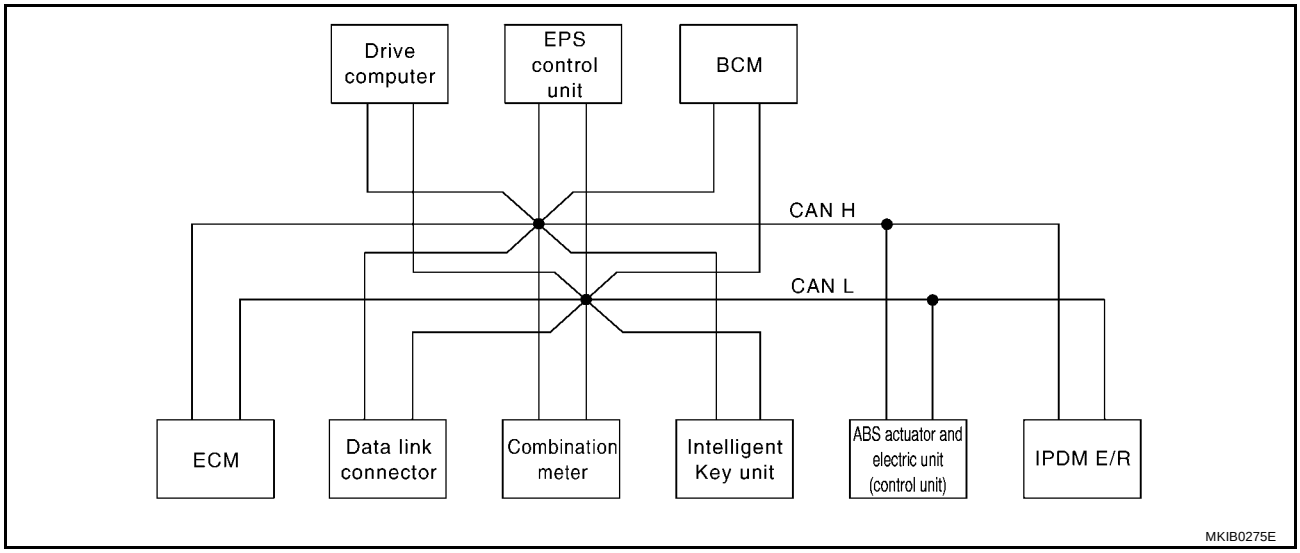
Signals	ECM	Combination meter.	Intelligent Key unit	Drive computer	EPS control unit	BCM	ABS actuator and electric unit (control unit)	TCM	IPDM E/R
Engine speed signal	T	R		R	R				
Engine coolant temperature signal	T	R							
A/T self-diagnosis signal	R							T	
Output shaft revolution signal	R							T	
Accelerator pedal position signal	T							R	
Closed throttle position signal	T							R	
Wide open throttle position signal	T							R	
A/T shift position signal		R						T	
Stop lamp switch signal		T						R	
O/D OFF indicator lamp signal		R						T	
Engine and A/T integrated control signal	T							R	
	R							T	
Fuel consumption monitor signal	T	R							
Oil pressure switch signal		R		R					T
A/C compressor request signal	T								R
Heater fan switch signal	R					T			
Cooling fan speed request signal	T								R
Cooling fan speed status signal	R								T
Position lights request signal		R		R		T			R
Position light status signal	R								T
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
Day time light request signal						T			R
Vehicle speed signal	R	R			R		T		
	R	T	R	R	R	R			
Sleep/wake up signal		R	R			T			R
Door switch signal		R	R	R		T			R
Turn indicator signal		R				T			
Buzzer output signal		R				T			
		R	T						
MI signal	T	R		R					
Front wiper request signal						T			R
Front wiper stop position signal						R			T
Rear window defogger switch signal						T			R

Signals	ECM	Combination meter.	Intelligent Key unit	Drive computer	EPS control unit	BCM	ABS actuator and electric unit (control unit)	TCM	IPDM E/R
Rear window defogger control signal	R								T
Drive computer signal		T		R					
EPS warning lamp signal		R		R	T				
ABS warning lamp signal		R		R			T		
ABS operation signal	R						T		
Brake warning lamp signal		R		R			T		
Buck-up lamp signal					R	T			
Fuel low warning signal		T		R					
Battery charge malfunction signal		T		R					
Air bag system warning signal		T		R					
Brake fluid level warning signal		T		R					
Engine coolant temperature warning signal		T		R					
Front fog lamp request signal		R				T			R
Rear fog lamp status signal		R				T			
Headlamp washer request signal						T			R
Door lock/unlock request signal			R			T			
Door lock/unlock status signal			R			T			
KEY indicator signal		R	T						
LOCK indicator signal		R	T						

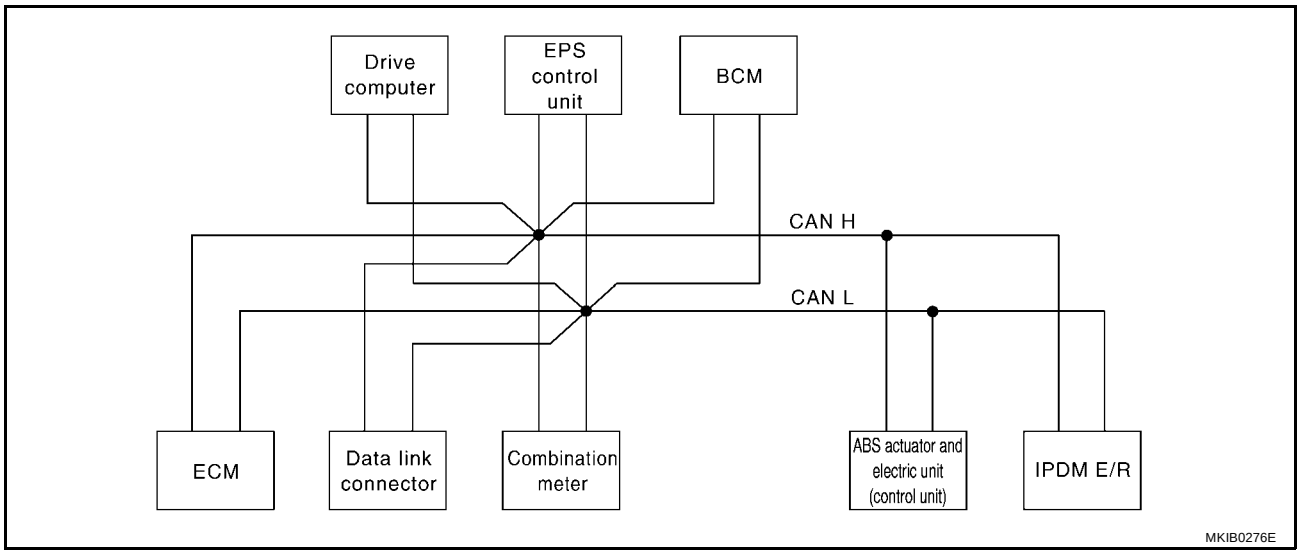
M/T MODELS

System diagram

- With Intelligent Key system



- Without Intelligent Key system



Input/output signal chart

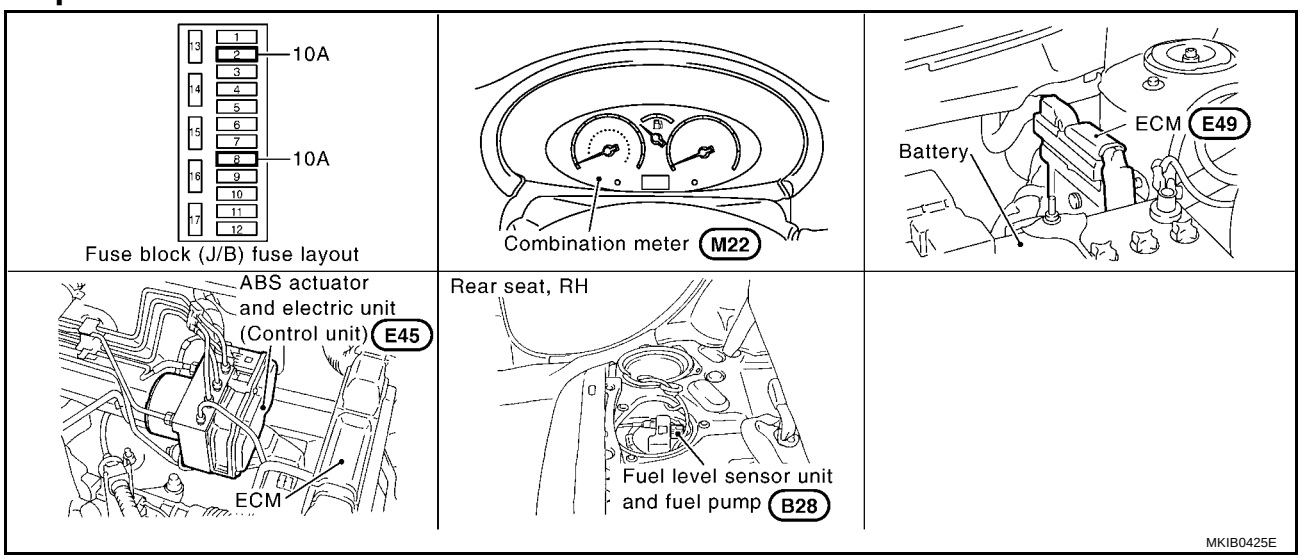
T: Transmit R: Receive

Signals	ECM	Combination meter.	Intelligent Key unit	Drive computer	EPS control unit	BCM	ABS actuator and electric unit (control unit)	IPDM E/R
Engine speed signal	T	R		R	R			
Engine coolant temperature signal	T	R						
Fuel consumption monitor signal	T	R						
Oil pressure switch signal		R		R				T
A/C compressor request signal	T							R
Heater fan switch signal	R					T		
Cooling fan speed request signal	T							R
Cooling fan speed status signal	R							T
Position lights request signal		R		R		T		R

Signals	ECM	Combination meter.	Intelligent Key unit	Drive computer	EPS control unit	BCM	ABS actuator and electric unit (control unit)	IPDM E/R
Position light status signal	R							T
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
Day time light request signal						T		R
Vehicle speed signal	R	R			R		T	
	R	T	R	R	R	R		
Sleep/wake up signal		R	R			T		R
Door switch signal		R	R	R		T		R
Turn indicator signal		R				T		
Buzzer output signal		R				T		
		R	T					
MI signal	T	R		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							T
Drive computer signal		T		R				
EPS warning indicator signal		R		R	T			
ABS warning lamp signal		R		R			T	
ABS operation signal	R			R			T	
Brake warning lamp signal		R					T	
Buck-up lamp signal					R	T		
Fuel low warning signal		T		R				
Battery charge malfunction signal		T		R				
Air bag system warning signal		T		R				
Brake fluid level warning signal		T		R				
Engine coolant temperature warning signal		T		R				
Front fog lamp request signal		R				T		R
Rear fog lamp status signal		R				T		
Headlamp washer request signal						T		R
Door lock/unlock request signal			R			T		
Door lock/unlock status signal			R			T		
KEY indicator signal		R	T					
LOCK indicator signal		R	T					

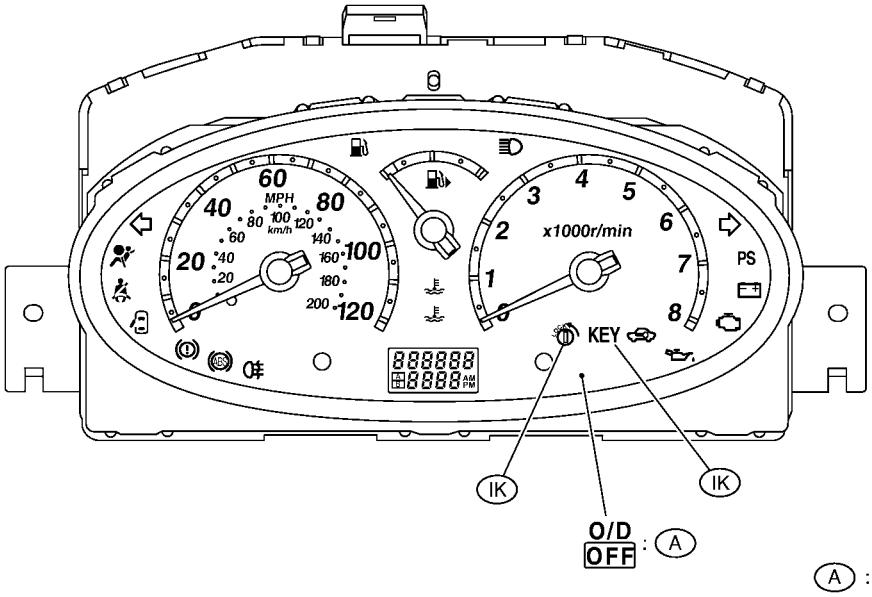
Component Parts and Harness Connector Location

EKS00824

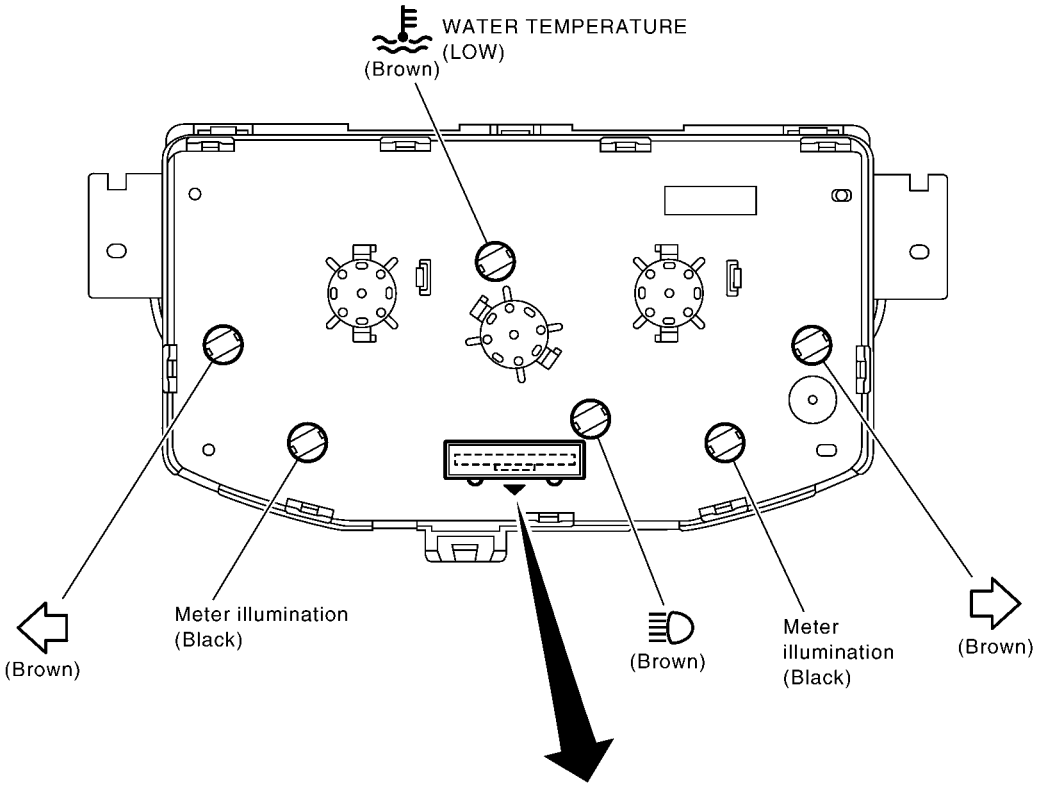


Combination Meter
CHECK

EKS00825



A : With A/T
IK : With intelligent key system



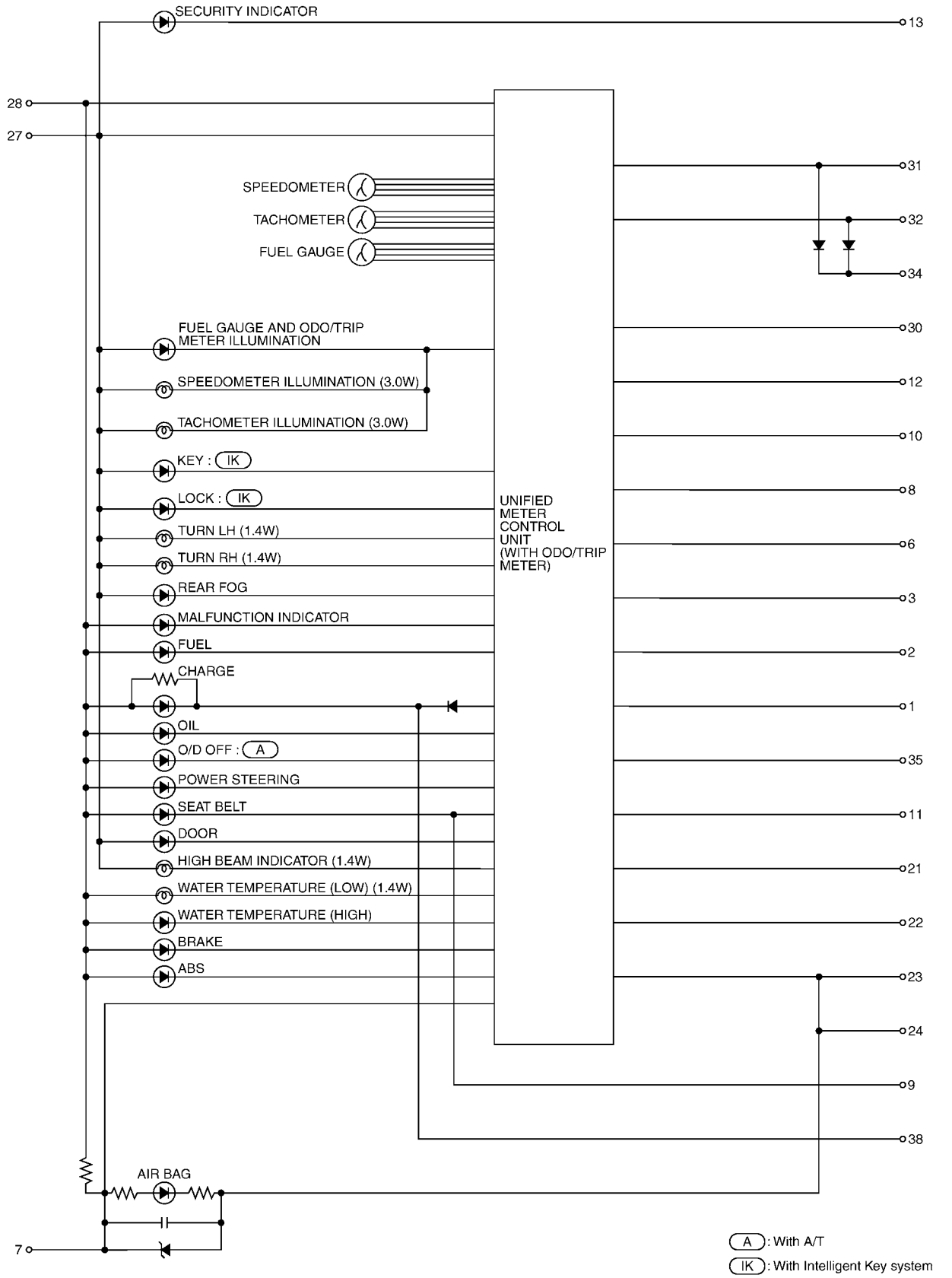
Bulb socket color	Bulb wattage
Brown	1.4W
Black	3.0W

( ): Warning bulb socket color

MKWA1366E

Schematic

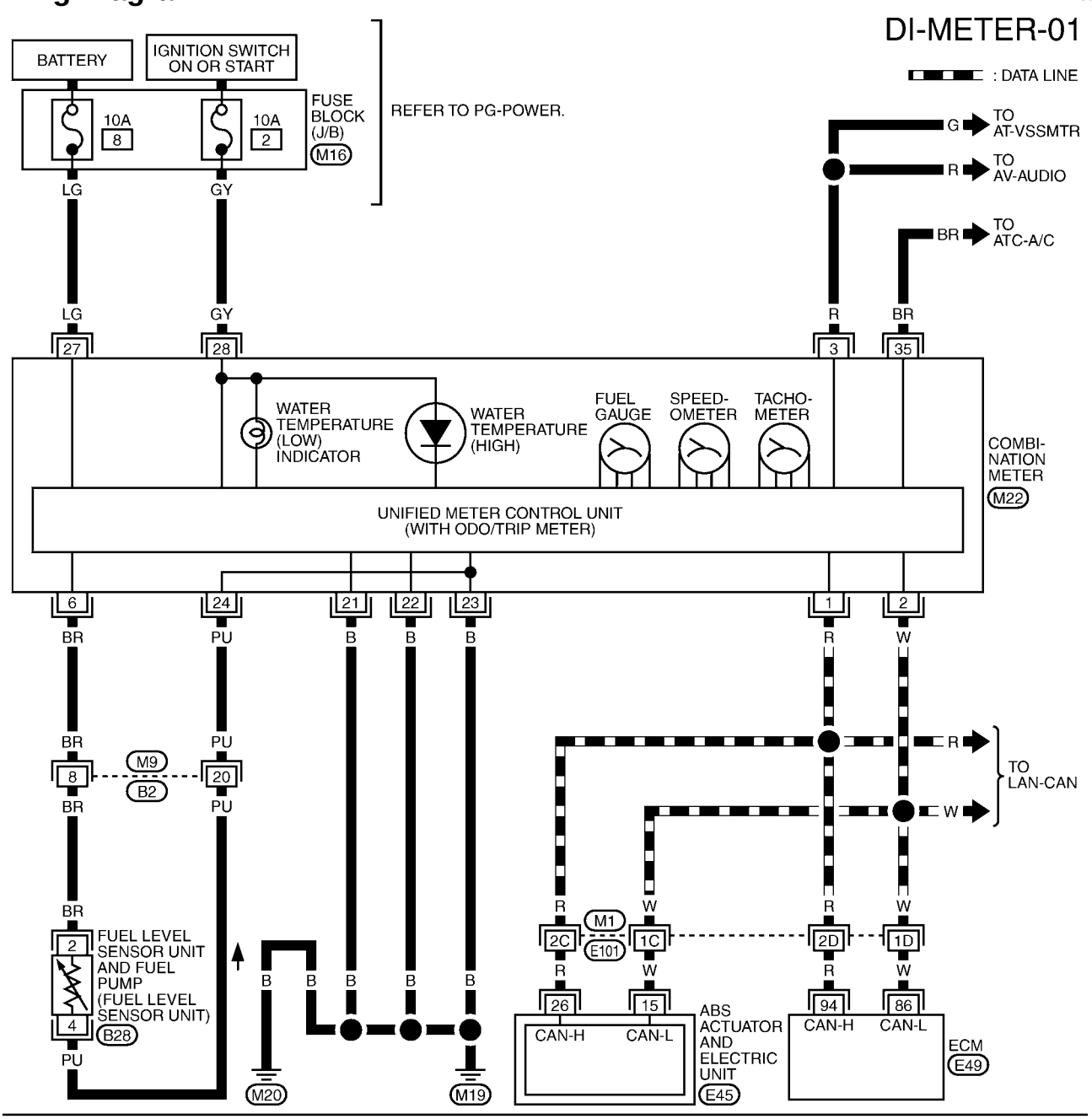
EKS00826



MKWA1367E

Wiring Diagram — METER —

EKS00827



REFER TO THE FOLLOWING.
M1 -SUPER MULTIPLE JUNCTION (SMJ)
M16 -FUSE BLOCK-JUNCTION BOX (J/B)
E45 , E49 -ELECTRICAL UNITS

MKWA0852E

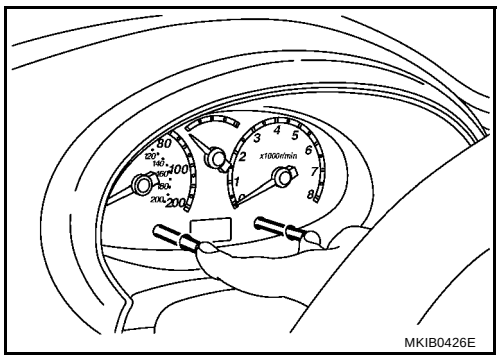
Combination Meter Self-Diagnosis

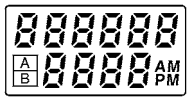
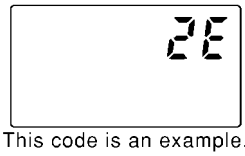
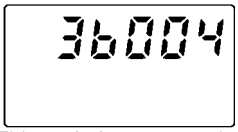
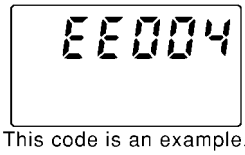
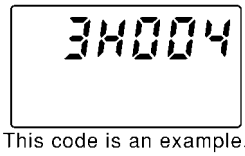
EKS00828

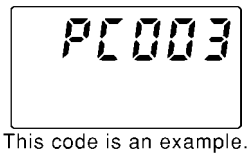
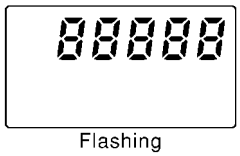
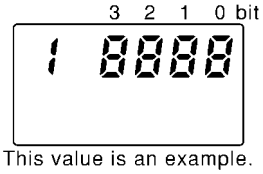
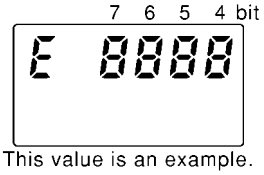
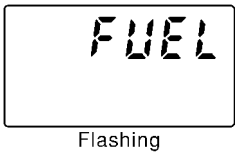
PERFORMING SELF-DIAGNOSIS MODE

1. Turn the ignition switch to the “LOCK” position.
2. Press both reset buttons on the combination meter and keep them depressed.
3. Turn the ignition switch to the “ON” position, while keeping the reset buttons pressed.
4. Release both reset buttons then self-diagnosis will start. The sequence (A to J) is activated by pressing the either reset buttons.

   NOTE:
   If either reset button is not pressed for 20 seconds at each step or if the ignition switch is turned OFF, the self-diagnosis mode is exited.


MKIB0426E

	Check items	Display	Remarks
A)	Segment test	 MKIB0526E	All odo/trip meter, segments are ON.
B)	Work instruction code	 This code is an example. MKIB0002E	This information is not used for service. Skip this step.
C)	Software code	 This code is an example. MKIB0003E	This information is not used for service. Skip this step.
D)	EEPROM code	 This code is an example. MKIB0004E	This information is not used for service. Skip this step.
E)	Hardware code	 This code is an example. MKIB0005E	This information is not used for service. Skip this step.

	Check items	Display	Remarks
F)	PCB code	 This code is an example. MKIB0006E	This information is not used for service. Skip this step.
G)	Meter/gauge test (Sweeping movement)	 Flashing MKIB0007E	Tachometer, speedometer, fuel level gauge and have sweeping movement test. (The meter/gauges operate MIN. → MAX., MAX. → MIN. for 2 times) Water temperature (High) warning lamp and water temperature (Low) indicator lamp are ON. during the sweep movement. The odo/trip meter segment flashes during the sweep movement.
H)	Error 1 (Bit 0 - Bit 3)	 This value is an example. MKIB0008E	The segment of each bit displays “0”, meaning no malfunction. If the bit(s) displays figures other than “0”, the item of the bit has malfunctioned. For details, refer to DI-18, "Malfunction Chart for “Error 1” and “Error E”" .
I)	Error E (Bit 4 - Bit 7)	 This value is an example. MKIB0009E	
J)	Fuel warning lamp test	 Flashing MKIB0010E	All warning lamp and indicator lamp are ON [Except for water temperature (High) warning lamp, water temperature (Low) indicator lamp and security indicator lamp] and odo/trip meter segment “FUEL” flashes.

Malfunction Chart for “Error 1” and “Error E”

Bit	Detectable items	Description of the malfunction		Displayed figure on the bit	
				Malfunction	No malfunction
0	Speedometer input signal	No input signal When no signal is detected for 30 minutes continuously with the ignition ON, it should be judged as signal malfunction. (If input signal is detected later, then the judgement will be canceled immediately.)		1	0
		Unusual input signal When any signal of frequency which would not exist in normal conditions is detected, it should be judged as signal malfunction.		2	
1	Tachometer input signal	No input signal When no signal is detected for 30 minutes continuously with the ignition ON, it should be judged as signal malfunction. (If input signal is detected later, then the judgement will be canceled immediately.)		1	0
		Unusual input signal When any signal of frequency which would not exist in normal conditions is detected, it should be judged as signal malfunction.		2	
2	Fuel level input signal	Short circuit When short circuit of the signal line is detected for 5 seconds or more, it should be judged as short-circuit malfunction.		1	0
		Open circuit When open circuit of the signal line is detected for 5 seconds or more, it should be judged as open-circuit malfunction.		2	
3	Water temperature input signal	Short circuit When short circuit of the signal line is detected for 5 seconds or more, it should be judged as short-circuit malfunction.		1	0
		Open circuit When open circuit of the signal line is detected for 5 seconds or more, it should be judged as open-circuit malfunction.		2	
4	Reset buttons	Short circuit for reset buttons When the short circuit is continuously detected for 5 minutes or more, it should be judged as short-circuit malfunction.	Right side reset button has malfunctioned.	1	0
			Left side reset button has malfunctioned.	2	
			Both reset buttons have malfunctioned.	3	
5	CPU	CPU RAM malfunction		1	0
6	—	—		0	0

Trouble Diagnoses

EKS00829

PRELIMINARY CHECK

1. CHECK POWER SUPPLY

1. Turn ignition switch ON.
2. Warning lamps should illuminate (seat belt warning or door warning etc.).

Do warning lamps illuminate?

YES >> GO TO 2.
NO >> Power supply and ground check. Refer toDI-22, "Power Supply and Ground Circuit Check" .

2. CHECK OPERATION OF SELF-DIAGNOSIS MODE

Perform self-diagnosis mode. Refer to DI-16, "Performing Self-Diagnosis Mode" .

Can self-diagnosis mode be activated?

YES >> GO TO 3.
NO >> Replace combination meter. Refer to DI-27, "Removal and Installation for Combination Meter" .

3. CHECK OPERATION OF METER/GAUGE

Check meter/gauge operation in self-diagnosis mode (Meter/gauge test). Refer to DI-16, "Performing Self-Diagnosis Mode" .

Is any malfunction indicated in self-diagnosis mode?

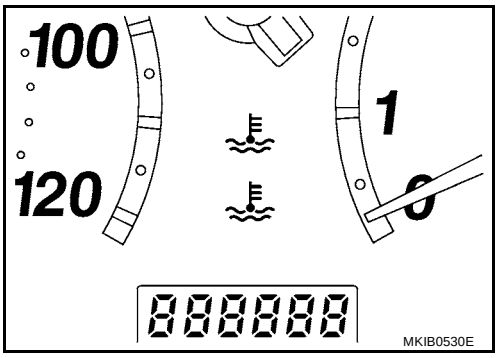
YES >> GO TO “Symptom Chart 1”. Refer to DI-21, "Symptom Chart 1" .
NO >> GO TO 4.

4. CHECK WATER TEMPERATURE WARNING/INDICATOR

Check meter/gauge operation in self-diagnosis mode (Meter/gauge test). Refer to DI-16, "Combination Meter Self-Diagnosis" .

Does water temperature (High) warning lamp and water temperature (Low) indicator is ON?

Yes >> GO TO 5.
Both lamps are OFF>>Replace combination meter.
Only water temperature (High) warning lamp is ON>> Replace combination meter.
Only water temperature (Low) indicator lamp is ON>> Check bulb.

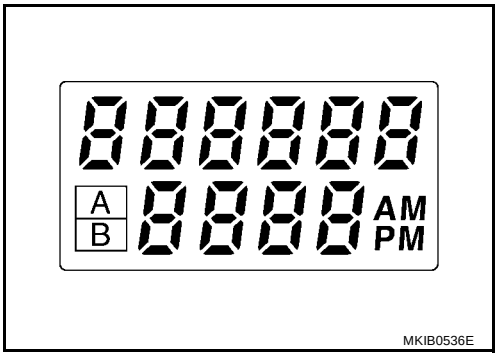


5. CHECK SEGMENTS

Check all odo/trip meter segments in self-diagnosis mode (Odo/trip meter segment test). Refer to DI-16, "Performing Self-Diagnosis Mode" .

Is any malfunction indicated in self-diagnosis mode?

YES >> GO TO “Symptom Chart 1”. Refer to DI-21, "Symptom Chart 1" .
NO >> GO TO 6.



6. CHECK WARNING INDICATOR LAMP

Check fuel warning lamp in self-diagnosis mode (Fuel warning lamp test). Refer to DI-16, "Performing Self-Diagnosis Mode" .

All warning/indicator lamp should turn ON.*

*** Except for water temperature (High) warning lamp, water temperature (Low) indicator lamp and security indicator lamp.**

OK or NG

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

7. CHECK INPUT SIGNALS

Check input signals from each sensors in self-diagnosis mode (Error 1 and Error E). Refer to DI-18, "Malfunction Chart for “Error 1” and “Error E”" .

OK or NG

OK >> GO TO 8.
NG >> GO TO “Symptom Chart 2”. Refer to DI-21, "Symptom Chart 2" .

8. CHECK OTHER MALFUNCTION

Check each malfunction according to the instruction of the “SYMPTOM CHART 3”. Refer to DI-21, "Symptom Chart 3" .

OK or NG

OK >> Combination meter is OK.
NG >> Check the case of malfunction.

SYMPTOM CHART

Symptom Chart 1

Symptom	Possible causes	Repair order
Odo/trip meter indicates malfunction in Diagnosis mode.	Unified meter control unit	Replace combination meter. Refer to DI-27, "Removal and Installation for Combination Meter" .
Multiple meter/gauge indicate malfunction in Diagnosis mode.		
One of speedometer/tachometer/fuel gauge/Water temperature (High) warning lamp. indicates malfunction in Diagnosis mode.		

Symptom Chart 2

Symptom	Possible causes	Repair order
Speedometer input signal indicates malfunction in Diagnosis mode.	Speedometer input signal	Check signal for speedometer. Refer toDI-22, "Inspection/Vehicle Speed Signal" .
Tachometer input signal indicates malfunction in Diagnosis mode.	Tachometer input signal	Check signal for tachometer. Refer to DI-22, "Inspection/Engine Revolution Signal" .
Fuel level input signal indicates malfunction in Diagnosis mode.	Fuel level input signal	Check signal for tachometer. Refer to DI-23, "Inspection/Fuel Level Sensor Unit" .
Water temperature input signal Indicates malfunction in Diagnosis mode.	Water temp. warning/indicator lamps input signal	Check water temperature signal. Refer to DI-25, "Inspection/Water Temperature Warning/indicator Lamp" .
Reset buttons indicates malfunction in Diagnosis mode.	Unified meter control unit	Combination meter. Refer toDI-27, "Removal and Installation for Combination Meter" .
CPU indicates malfunction in Diagnosis mode.	Unified meter control unit	Combination meter. Refer toDI-27, "Removal and Installation for Combination Meter" .

Symptom Chart 3

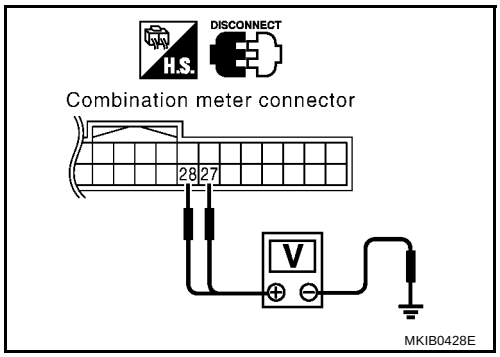
Symptom	Possible causes	Repair order
Fuel gauge pointer fluctuates, Indicator wrong value or varies.	-	Check the case of malfunction. Refer to DI-25, "Fuel Gauge Pointer Fluctuates Indicator Wrong Value or Varies" .
Fuel gauge does not move to “F” position.	-	Check the case of malfunction. Refer to DI-25, "Fuel Gauge Does Not Move to FULL position" .
Fuel gauge does not work.	-	Check the case of malfunction. Refer to DI-26, "Fuel Gauge Does Not Work" .

Power Supply and Ground Circuit Check

EKS0082A

1. CHECK POWER SUPPLY CIRCUIT

1. Disconnect combination meter connector.
2. Check voltage between combination meter harness connector and ground in the following conditions.



Terminals			Ignition switch position		
(+)		(–)	OFF	ACC	ON
Connector	Terminal (Wire color)				
M22	27 (LG)	Ground	Battery voltage	Battery voltage	Battery voltage
M22	28 (GY)	Ground	0V	0V	Battery voltage

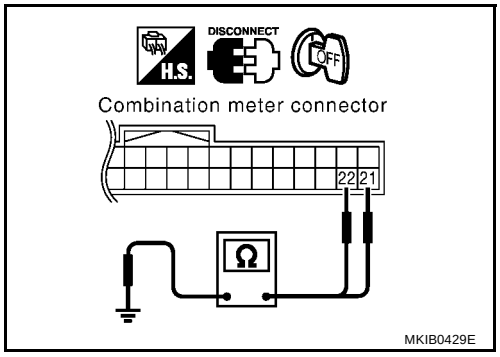
OK or NG

OK >> GO TO 2.
NG >> Check the following.

- 10A fuse [No. 2, located in fuse block (J/B)].
- 10A fuse [No. 8, located in fuse block (J/B)].
- Harness for open or short between fuse and combination meter.

2. CHECK GROUND CIRCUIT

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



Terminals			Continuity
(+)		(–)	
Connector	Terminal (Wire color)		
M22	21 (B)	Ground	Yes
M22	22 (B)	Ground	Yes

OK or NG

OK >> INSPECTION END
NG >> Harness for open ground circuit.

Inspection/Vehicle Speed Signal

EKS0082C

1. CHECK ABS ACTUATOR AND ELECTRIC UNIT SYSTEM

Perform ABS actuator and electric unit (control unit) self-diagnosis. Refer to BRC-15, "CONSULT-II Functions".

OK or NG

OK >> Perform “PRELIMINARY CHECK” again.
NG >> Perform “Diagnostic procedure” for displayed self-diagnosis result.

Inspection/Engine Revolution Signal

EKS0082D

1. CHECK ECM SYSTEM

Perform ECM self-diagnosis. Refer to EC-40, "Emission-related Diagnostic Information" (with EURO-OBD) or EC-440, "Emission-related Diagnostic Information" (without EURO-OBD).

OK or NG

OK >> Perform “PRELIMINARY CHECK” again.
NG >> Perform “Diagnostic procedure” for displayed DTC.

Inspection/Fuel Level Sensor Unit

EKS0082E

FUEL LEVEL SENSOR UNIT

The following symptoms do not indicate a malfunction.

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

1. CHECK HARNESS CONNECTOR

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

OK or NG

OK >> GO TO 2.
NG >> Repair or replace terminals or connectors.

2. CHECK FUEL LEVEL SENSOR INPUT SIGNAL CIRCUIT

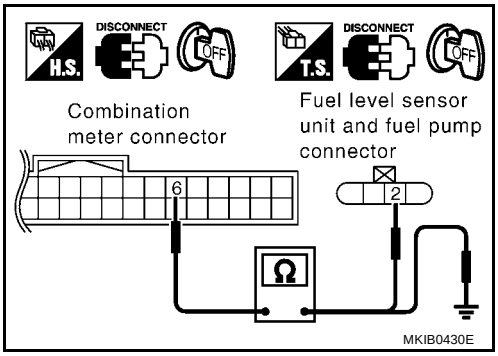
1. Disconnect fuel level sensor unit connector and combination meter connector.
2. Check the following.

– Harness continuity between fuel level sensor unit and fuel pump harness connector B28 terminal 2 (BR) and combination meter harness connector M22 terminal 6 (BR).

Continuity should exist.

– Harness continuity between combination meter harness connector M22 terminal 6 (BR) and ground.

Continuity should not exist.



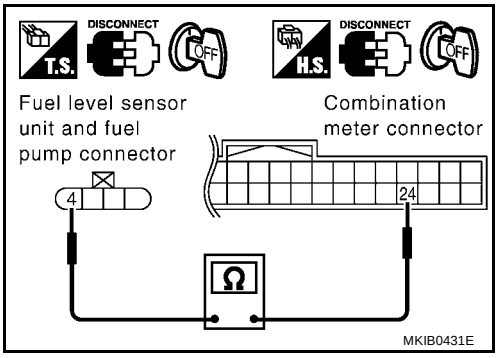
OK or NG

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

3. CHECK FUEL LEVEL SENSOR GROUND CIRCUIT

Check harness continuity between fuel level sensor unit and fuel pump harness connector B28 terminal 4 (PU) and combination meter connector M22 terminal 24 (PU).

Continuity should exist.



OK or NG

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

4. CHECK FUEL LEVEL SENSOR UNIT

Refer to DI-27, "FUEL LEVEL SENSOR UNIT CHECK" .

OK or NG

OK >> GO TO 5.
NG >> Replace fuel level sensor unit.

5. CHECK INSTALLATION CONDITION

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

OK or NG

OK >> Replace combination meter.
NG >> Install fuel level sensor unit properly.

Inspection/Water Temperature Warning/indicator Lamp

EKS0082F

1. CHECK ECM SYSTEM

Perform ECM self-diagnosis. Refer to EC-40, "Emission-related Diagnostic Information" (with EURO-OBD) or EC-440, "Emission-related Diagnostic Information" (without EURO-OBD).

OK or NG

OK >> Perform “PRELIMINARY CHECK” again.
NG >> Perform “Diagnostic procedure” for displayed DTC.

Fuel Gauge Pointer Fluctuates Indicator Wrong Value or Varies

EKS0082G

1. CHECK FUEL GAUGE POINTER FOR FLUCTUATION

Does the indication value fluctuate during driving or before/after stop?

OK or NG

OK >> The pointer fluctuation may be caused by fuel level change in the fuel tank.
NG >> Ask the customer about the situation when the symptom occurs in detail, and preform the trouble diagnosis.

Fuel Gauge Does Not Move to FULL position

EKS0082H

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 floor or the vehicle inclined?

YES or NO

YES >> It may not be filled fully.
NO >> GO TO 4.

4. QUESTION 4

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

YES or NO

YES >> Check the components. Refer to DI-27, "Electrical Components Inspection" .
NO >> The float arm may interfere or bind with any of the components in the fuel tank.

Fuel Gauge Does Not Work

EKS0082I

1. CHECK HARNESS CONNECTOR

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

OK or NG

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

2. CHECK INSTALLATION CONDITION

Check fuel level sensor unit installation (refer to FL-4, "FUEL LEVEL SENSOR UNIT, FUEL FILTER AND FUEL PUMP ASSEMBLY"), and check whether the float arm interferes or binds with any components inside the arm.

OK or NG

OK >> Perform “PRELIMINARY CHECK” again.
NG >> Check fuel level sensor unit. Refer to DI-27, "Electrical Components Inspection" .

Electrical Components Inspection

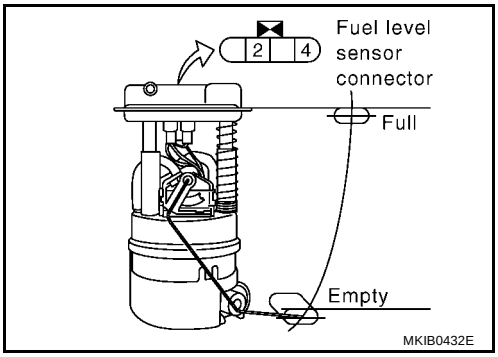
EKS0082J

FUEL LEVEL SENSOR UNIT CHECK

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

Check the resistance between terminals 2 and 4.

Ohmmeter		Float position	Resistance value [Ω]
(+)	(–)		
4	2	Full	Approx. 46
		Empty	Approx. 320



Removal and Installation for Combination Meter

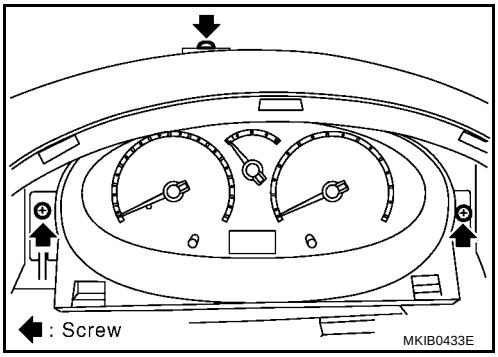
EKS0082K

CAUTION:

Always replace with new* combination meter when the combination meter replacement is required.
***: New one means virgin control unit that has never been energized on-board.**

REMOVAL

1. Remove the upper instrument panel. Refer to IP-6, "B. Upper Instrument Panel" .
2. Remove the steering column cover. Refer to IP-6, "F. Steering Column Cover" .
3. Remove the cluster lid A. Refer to IP-7, "H. Cluster lid “A”" .
4. Remove the screws (4), and pull out combination meter.
5. Disconnect connectors and remove combination meter.

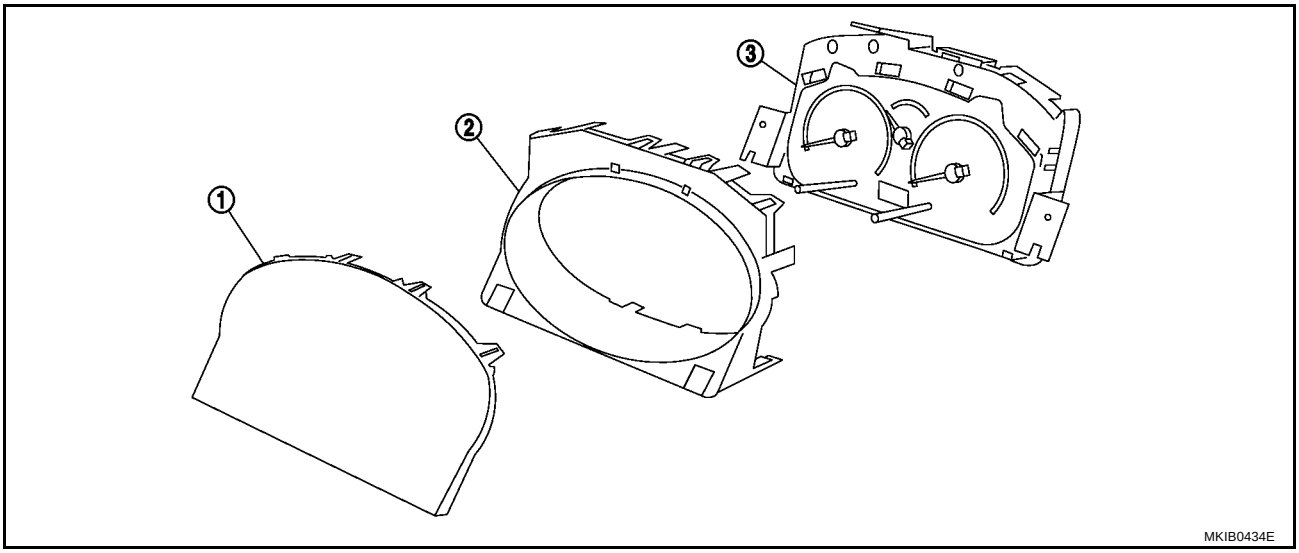


INSTALLATION

- Install in the reverse order of removal.

Disassembly and Assembly for Combination Meter

EKS0082L



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

1. Disengage the tabs (13) to separate upper housing.
2. Disengage the tabs (7) to separate front cover.

DRIVE COMPUTER

PFP:24859

System Description

EKS0082M

Refer to Owner's Manual for drive computer operating instructions.
Drive computer can be set anniversary information, maintenance information, clock and calender, etc.
And, drive computer is displayed drive information, outside temperature and warning information, etc.

POWER SUPPLY AND GROUND

Power is supplied at all times

- through 10A fuse [No. 8, located in fuse block (J/B)]
- to drive computer terminal 6 and
- to combination meter terminals 27.

When ignition switch is in ACC or ON position, power is supplied

- through 10A fuse [No. 12, located in fuse block (J/B)]
- to drive computer terminal 5.

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

- through 10A fuse [No. 4, located in fuse block (J/B)]
- to display unit terminal 4, and
- through 10A fuse [No. 2, located in fuse block (J/B)]
- to combination meter terminal 28.

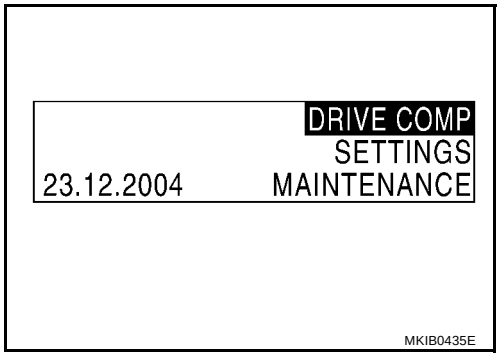
Ground is supplied

- to multifunction switch terminal 1 and
- to drive computer terminals 12
- to combination meter terminals 21and 22
- through body grounds, M19 and M20.

DISPLAY MENU

Turn ignition switch ON, the following function is displayed.

- CLOCK: This clock is to have 12/24 hour mode
- CALENDAR: Calendar is displayed
- OUTSIDE AIR TEMPERATURE
- DRIVE COMP
- SETTINGS
- MAINTENANCE



OUTSIDE AIR TEMPERATURE

Outside air temperature is displayed ON when ignition switch ON after 2.5 seconds.

- When the outside air temperature is lower than -30°C or higher than 56°C the display shows. only "– – –" though it is operating. This is not a malfunction.
- When the outside air temperature drops below freezing point (Approx. 3°C), it display as following. (Low temperature warning)
  - Outside air temperature is 3°C⋯"3°C" is flushed.
  - Outside air temperature is -2°C⋯"°C" is flushed.
  - Outside air temperature is more than 4°C low temperature warning is canceled.

Drive computer should read outside air temperature sensor.
The outside air temperature sensor is regulated by a variable resistor signal supplied

- to drive computer terminal 3
- from outside air temperature sensor terminal 1
- through outside air temperature sensor terminal 2 and

- through drive computer terminal 2.

DRIVE COMPUTER

1. Select “DRIVE COMP”.
2. Drive comp has following functiron.
   - Fuel economy
   - Trip computer
   - Global reset

   Indication can be changed by in the following order by pushing “▼” button.
   Fuel economy→ Trip computer→ Grobal reset→ Fuel economy

Display items		Display contents
Fuel Economy	Average fuel economy (l/100km)	Displays fuel economy with ignition switch ON, average fuel economy each 30 minutes.
	Instantaneous fuel economy (l/100km)	Displays fuel economy each approx. 100 ms.
	History (l/100 km)	Displays average fuel consumption history.
Trip Computer	Range	Displays range to empty with a range of 0 to 2000km.
	Trip distance (km)	Displays driving distance with a range of 0 to 9999.
	Trip time	Displays driving time with a range of 0 to 99 hour 59 minutes.
	Average speed (km/h)	Displays average speed with a range of 0 to 260 km/h (160 MPH).
Global Reset	Drive computer functions are all reset	

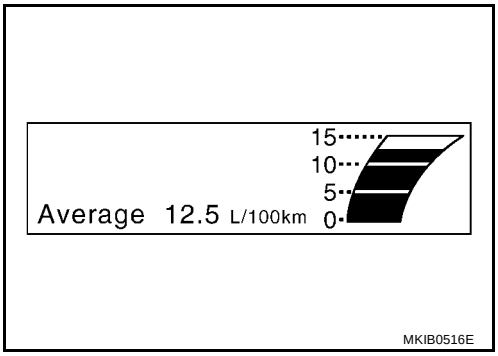
Fuel Economy

1. Select “Fuel Economy”.
2. Fuel Economy has average fuel economy, instantaneous fuel economy and history functions.

Indication can be changed by following order by pushing “▼” button.
Average fuel economy → Instantaneous fuel economy → History

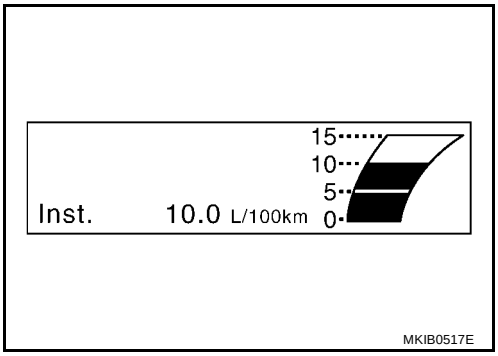
Average fuel economy

- The average fuel economy is conducted by combination meter and sent to drive computer as CAN communication line. Combination meter calculate the average fuel economy by fuel consumption signal and vehicle speed signal.
- Indication will be renewed every 30 seconds.
- When pushing “OK” switch more than approx.1 second, average fuel economy will be reset.
- After reset operation, the display shows “– –.–” until the vehicle is driven 500 m (1,600 ft) or 30 seconds has passed.
- Fuel economy with a range is 0 to 99.9 (ℓ/100 km).



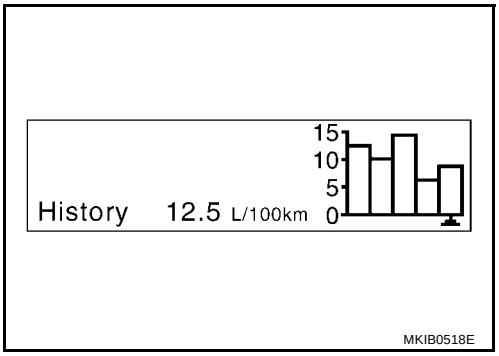
Instantaneous fuel economy

- The instantaneous fuel economy is conducted by combination meter and sent to drive computer as CAN communication line. Combination meter calculate the instantaneous fuel economy by fuel consumption signal and vehicle speed signal.
- Indication will be renewed every 2 seconds (number) and 100ms (bar graph)
- After reset operation, the display shows “– –.–” until the vehicle speed is below than 20 km/h (**MPH).
- Display s fuel economy with a range is 0 to 99.9 (ℓ/100 km).



History

- History displays previous 4 average fuel economy values and current average fuel economy value.
- With average fuel economy displayed, press “OK” switch more than 1 seconds then average fuel economy resets and added to history record. Current history data is same as average fuel economy data.



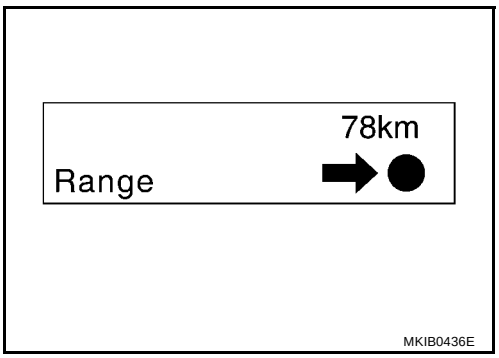
Trip Computer

1. Select “Trip Computer”.
2. .Trip computer has following functions.
   - Range
   - Trip distance
   - Trip time
   - Average speed

Indication can be changed by following order by pushing “▼” button.
Range → Trip distance → Trip time → Average speed → Range.

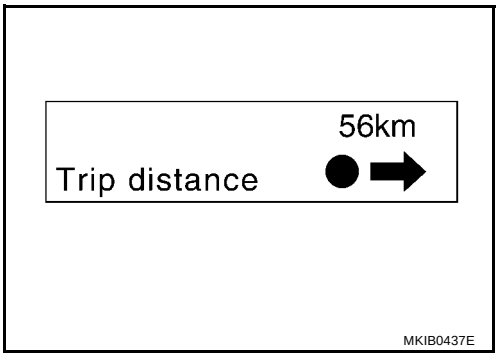
Range

- The elapsed time indication provides driver with an estimation of the distance that can be driven before refuelling.The range is conducted by fuel tank level sensor unit (fuel remaining), ECM pulse signal (fuel consumption) and vehicle speed signal.
- Indication will be renewed every 30 seconds.
- The range is conducted by combination meter and sent to drive computer as CAN communication line. Combination meter calculate the range by fuel level sensor unit (fuel remaining), ECM pulse signal (fuel consumption signal) and vehicle speed signal.
- When combination meter low fuel warning lamp is ON, if drive computer detects low fuel warning lamp signal from combination meter via CAN communication line. Display will be changed range automatically and flashing as following.
  Range reached < 16km
  Range display (number, symbol and unit) will be flashing “– –.–”.
  Range changed > 34km
  Number will be displayed. Flashing or not flashing is depending on combination meter (low fuel warning lamp) condition.



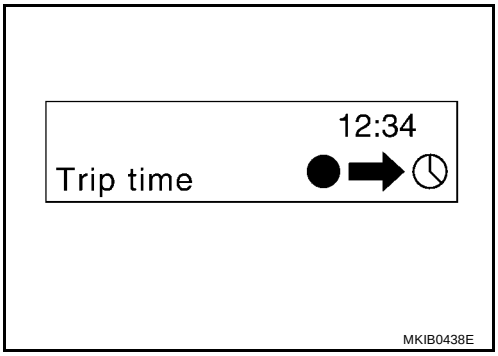
Trip distance

- Trip distance indication is conducted by vehicle speed signal via CAN communication line.
- When pushing “OK” switch more than approximately 1 second, trip distance will be reset.



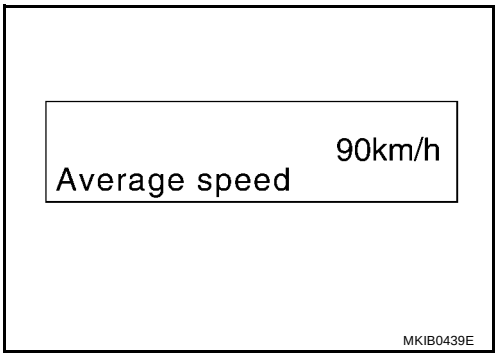
Trip time

- Trip time is calculated by drive computer as elapsed time since last reset.
- It only increases with ignition switch ON.
- When pushing “OK” switch more than approximately 1 second, trip time distance will be reset.



Average vehicle speed

- Average vehicle speed indication is conducted by trip distance and trip time.
- Indication will be renewed every 30 seconds.
- When pushing “OK” switch more than approximately 1 second, average speed will be reset.
- If average vehicle speed is reset, average fuel consumption will be reset at the same time.
- After reset operation, the displays shows “– –.–” for 30 seconds.



SETTING

1. Select “SETTING”.
2. SETTING has following functions.
   - TIME/DATE
   - LANGUAGE
   - ANNIVERSARY

   Indication can be changed by in the following order by pushing “▼” button.
   TIME/DATE→ LANGUAGE→ ANNIVERSARY→ TIME/DATE

Time/Date

This function is used to set clock and calendar.

Timer

- Default time is 12:00 AM
- This function is used to change hour, minutes or 12/24 hour.

Calendar

- Default date is “01.01.2003”
- This function is used to change day, month or year.

Language

The display text can be changed to the following languages:

- ENGLISH (mile)
- ENGLISH (km)
- FRENCH
- GERMAN
- DUTCH
- SPANISH
- ITALIAN
- DANISH
- SWEDISH

NOTE:
Disconnect the battery cable erase memories Time/Date.

MAINTENANCE

1. Select “MAINTENANCE”.
2. MAINTENANCE has following functions.
   - SERVICE
   - REMINDER1
   - REMINDER2

   Indication can be changed in the following order by pushing “▼” button.
   SERVICE→ REMAINDER1→ REMAINDER2 →SERVICE

Service, Reminder1/2 Function

- When maintenance information is displayed, pressing any button return to at last ignition OFF screen.
- Maintenance reminder counts will not reset if battery disconnected.
- Maintenance remainder count down is disabled for 500 km (300 miles) after first battery on.
- To set a maintenance information for service or any remainder (tire change, drive belts change, air cleaner filter change, etc.)
- “SERVICE” information should provide a information to the driver at the accumulated distance, or 12 months whichever comes first.
- The service information screen should appear 8 seconds at every ignition switch ON after 12 months or 1,500 km (1,000 miles) before the scheduled service is due. Whichever comes first.
- The 12 months timer should after the accumulated distance 300 km (200 miles).
- Remainder 1 or remainder 2 are controlled by only distance.

WARNING INDICATIONS

When combination meter receives warning signal from some control units or sensors, then combination meter warning lamp is illuminated.
Then combination meter sends warning signal to drive computer warning indications on the screen.

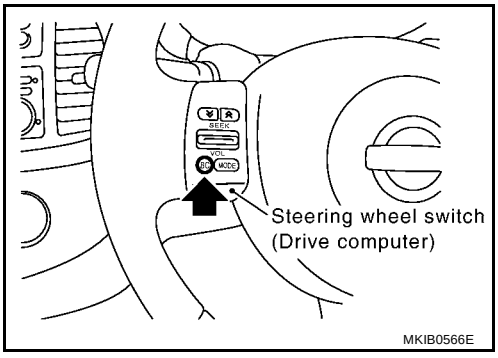
Control items	Active massage	Warning indicators	Warning detection and cancel conditions		Cases of malfunction
ENGINE	Contact a NISSAN dealer	ENGINE CHECK WARNING	Detection condition	Warning lamp ON signal is detected while engine is running.	ECM malfunction
			Cancel condition	Warning lamp OFF signal is detected.	
Engine oil pressure	STOP and contact a NISSAN dealer	ENGINE OIL WARNING	Detection condition	Warning lamp ON signal is detected for at least approx. 5 seconds while engine is running.	Engine oil pressure decreases.
			Cancel condition	Warning lamp OFF signal is detected.	
Front right door	Check door	DOOR OPEN	Detection condition	Vehicle is running [approx. 5 km/h (3 MPH) or faster] and door ajar of any of the doors is detected.	Door is open
Front left door					
Rear right door			Cancel condition	Vehicle is stopped and all the doors lock	
Rear left door					
Back door	Check tail gate	TAIL GATE OPEN	Detection condition	Vehicle is running [approx. 5 km/h (3 MPH) or faster] and door ajar of any of the doors is detected.	Back door is open
			Cancel condition	Vehicle is stopped and all the doors lock	
ANY DOORS (More than two doors)	Check doors	DOORS OPEN	Detection condition	Vehicle is running [approx. 5 km/h (3 MPH) or faster] and door ajar of any of the doors is detected.	Any door is open
			Cancel condition	Vehicle is stopped and all the doors lock	

Control items	Active massage	Warning indicators	Warning detection and cancel conditions		Cases of malfunction
Air bag	Contact a NISSAN dealer	AIR BAG WARNING	Detection condition	Warning lamp ON signal is detected for at least approx. 10 seconds after ignition switch is turned ON.	SRS air bag system malfunction
			Cancel condition	Warning lamp OFF signal is detected.	
Over heat	STOP and contact a NISSAN dealer	ENGINE TEMPERATURE WARNING	Detection condition	Engine coolant temperature as being approx. 105°C (246°F) min.	Engine cooling system malfunction
			Cancel condition	Engine coolant temperature as being approx. 105°C (221°F) max.	
Charge	Contact a NISSAN dealer	CHARGE WARNING	Detection condition	Warning lamp ON signal is detected while engine is running. Charging system malfunction	Charging system malfunction
			Cancel condition	Warning lamp OFF signal is detected.	
Fuel level	Refuel when possible	LOW FUEL WARNING	Detection condition	After warning lamp ON signal is detected, vehicle is driven for over specified distance.	Low fuel level
			Cancel condition	Warning lamp OFF signal is detected.	
ABS	Contact a NISSAN dealer	ABS WARNING	Detection condition	Warning lamp ON signal is detected when engine is running.	ABS control system malfunction
			Cancel condition	Warning lamp OFF signal is detected.	
EPS	Contact a NISSAN dealer	POWER STEERING WARNING	Detection condition	Warning lamp ON signal is detected after ignition switch is turned ON.	EPS system malfunction
			Cancel condition	Warning lamp OFF signal is detected.	

HOW TO CHANGE FOR STEERING SWITCH

- Indication can be changed in the following order by pushing steering switch.

Range → Trip Distance → Trip Time → Average Vehicle Speed → Average Fuel Economy → Instantaneous Fuel Economy → Range



CAN Communication

EKS008IQ

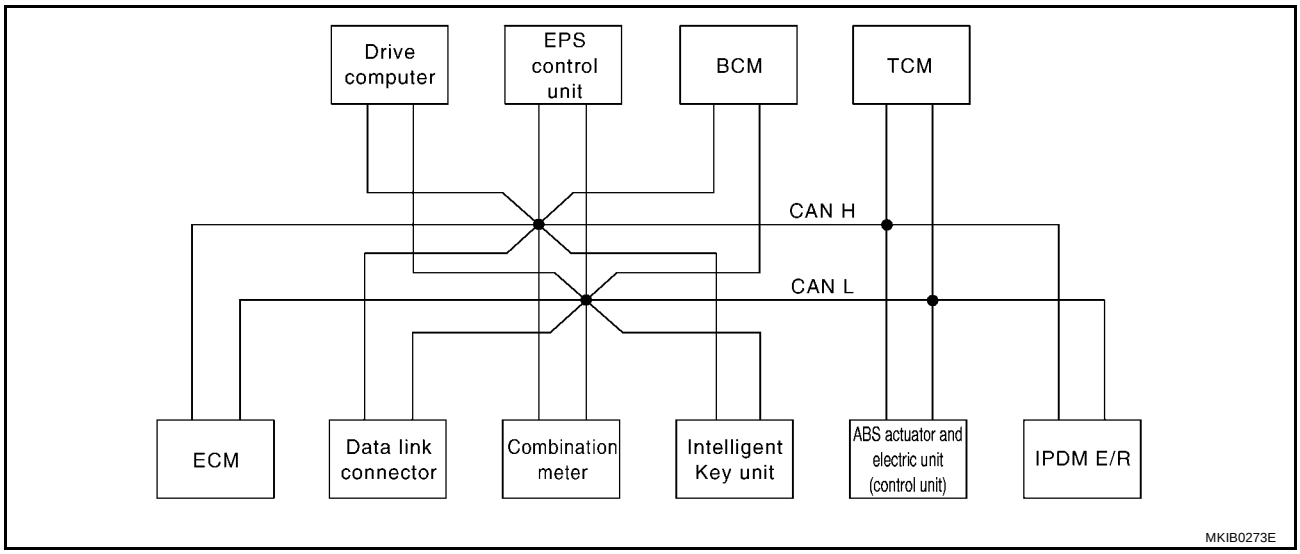
SYSTEM DESCRIPTION

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. A modern vehicle is equipped with many electronic control units, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, two control units are connected with two communication lines (CAN H-line, L-line) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.

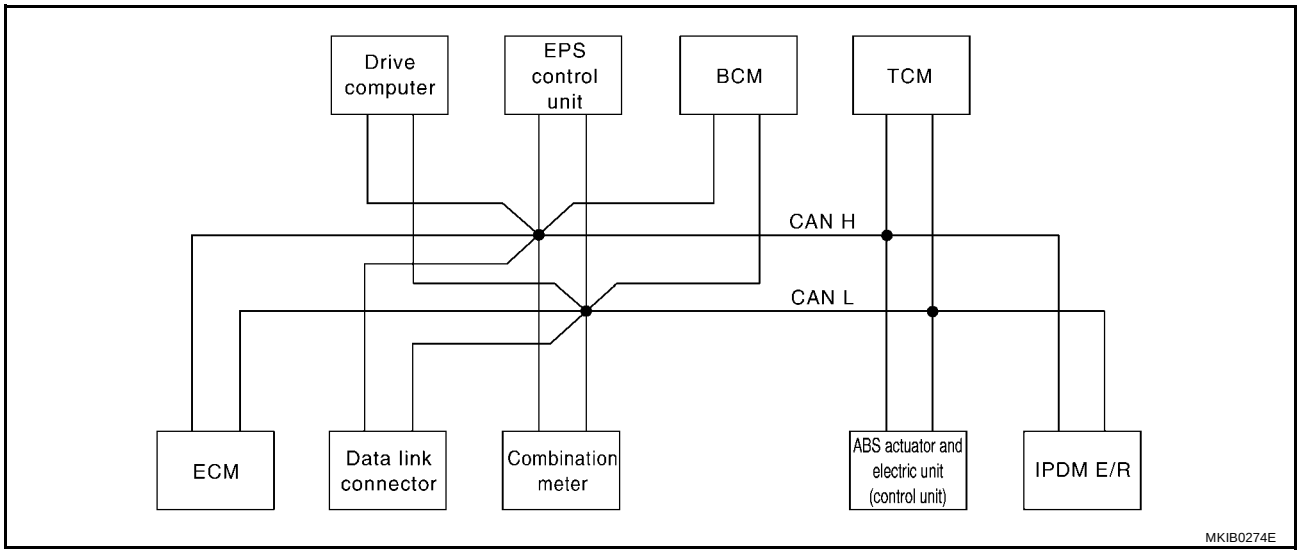
A/T MODELS

System diagram

- With intelligent key unit



- Without intelligent key unit



Input/output signal chart

T: Transmit R: Receive

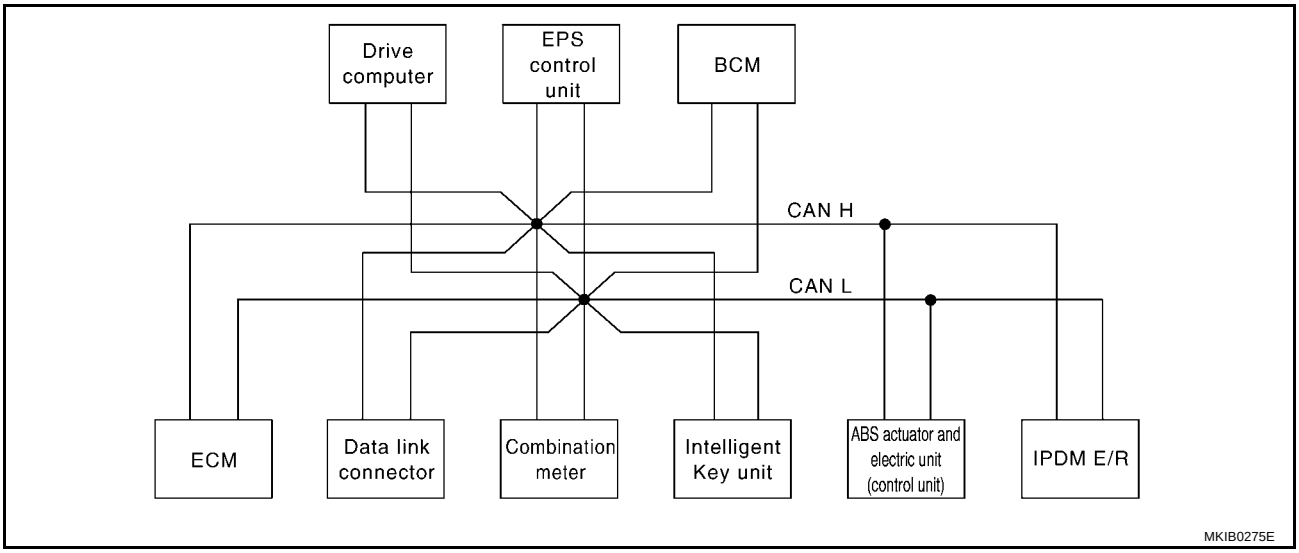
Signals	ECM	Combination meter.	Intelligent Key unit	Drive computer	EPS control unit	BCM	ABS actuator and electric unit (control unit)	TCM	IPDM E/R
Engine speed signal	T	R		R	R				
Engine coolant temperature signal	T	R							
A/T self-diagnosis signal	R							T	
Output shaft revolution signal	R							T	
Accelerator pedal position signal	T							R	
Closed throttle position signal	T							R	
Wide open throttle position signal	T							R	
A/T shift position signal		R						T	
Stop lamp switch signal		T						R	
O/D OFF indicator lamp signal		R						T	
Engine and A/T integrated control signal	T							R	
	R							T	
Fuel consumption monitor signal	T	R							
Oil pressure switch signal		R		R					T
A/C compressor request signal	T								R
Heater fan switch signal	R					T			
Cooling fan speed request signal	T								R
Cooling fan speed status signal	R								T
Position lights request signal		R		R		T			R
Position light status signal	R								T
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
Day time light request signal						T			R
Vehicle speed signal	R	R			R		T		
	R	T	R	R	R	R			
Sleep/wake up signal		R	R			T			R
Door switch signal		R	R	R		T			R
Turn indicator signal		R				T			
Buzzer output signal		R				T			
		R	T						
MI signal	T	R		R					
Front wiper request signal						T			R
Front wiper stop position signal						R			T
Rear window defogger switch signal						T			R

Signals	ECM	Combi-nation meter.	Intelli-gent Key unit	Drive com-puter	EPS control unit	BCM	ABS actuator and electric unit (control unit)	TCM	IPDM E/R
Rear window defogger control signal	R								T
Drive computer signal		T		R					
EPS warning lamp signal		R		R	T				
ABS warning lamp signal		R		R			T		
ABS operation signal	R						T		
Brake warning lamp signal		R		R			T		
Buck-up lamp signal					R	T			
Fuel low warning signal		T		R					
Battery charge malfunction signal		T		R					
Air bag system warning signal		T		R					
Brake fluid level warning signal		T		R					
Engine coolant temperature warning signal		T		R					
Front fog lamp request signal		R				T			R
Rear fog lamp status signal		R				T			
Headlamp washer request signal						T			R
Door lock/unlock request signal			R			T			
Door lock/unlock status signal			R			T			
KEY indicator signal		R	T						
LOCK indicator signal		R	T						

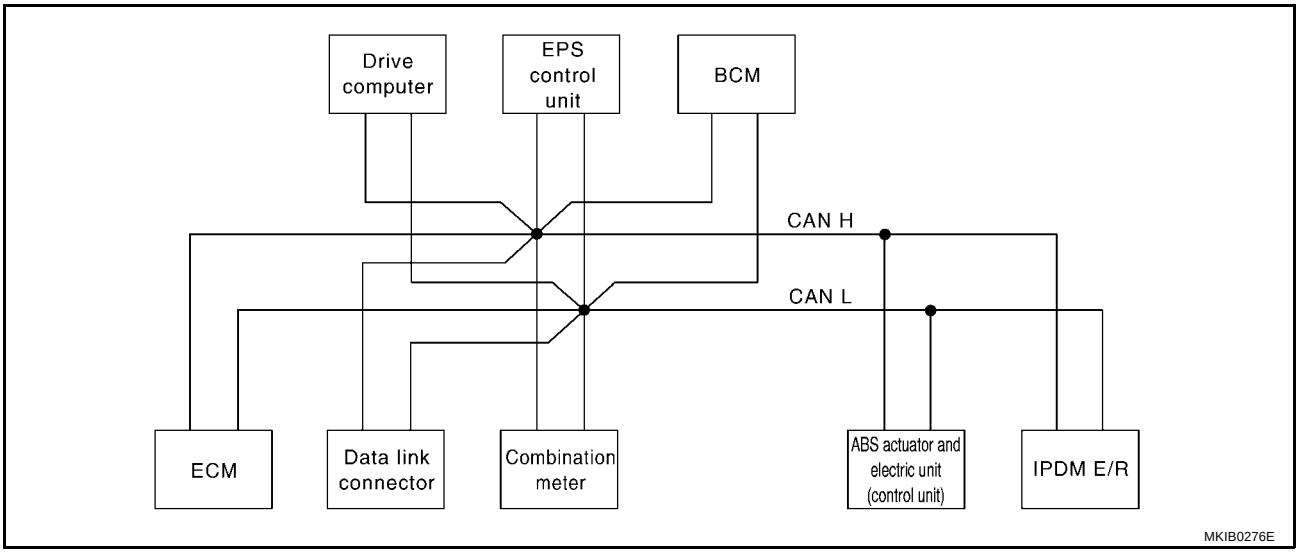
M/T MODELS

System diagram

- With intelligent key unit



- Without intelligent key unit



Input/output signal chart

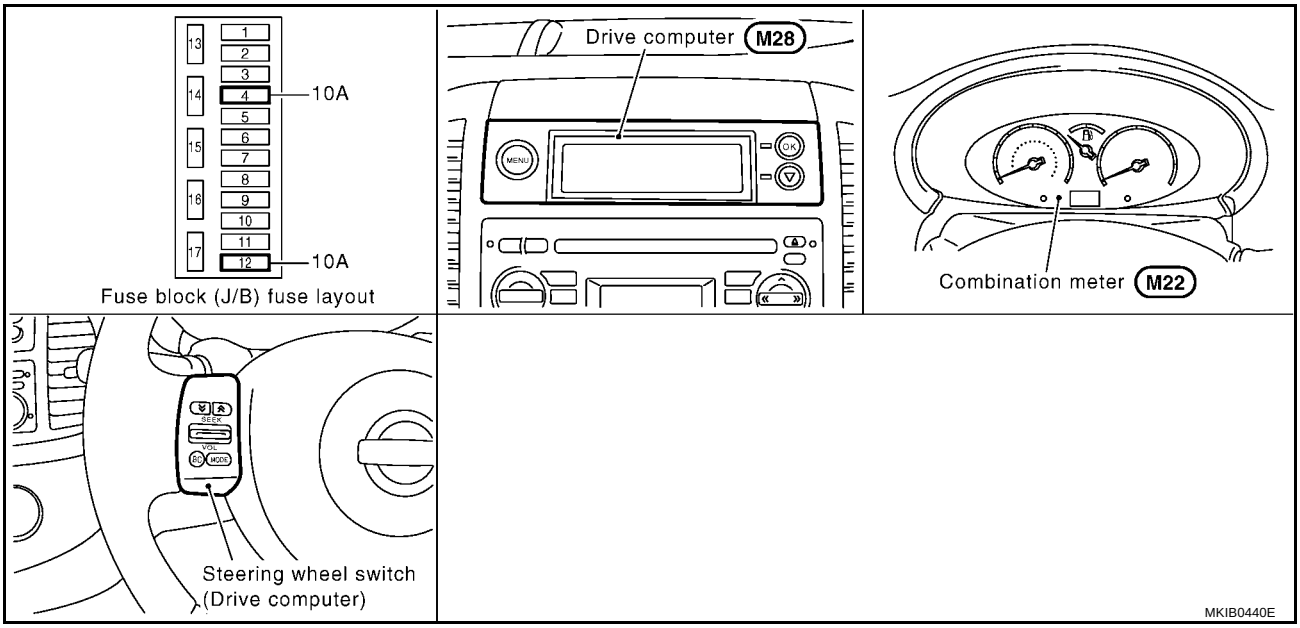
T: Transmit R: Receive

Signals	ECM	Combination meter.	Intelligent Key unit	Drive computer	EPS control unit	BCM	ABS actuator and electric unit (control unit)	IPDM E/R
Engine speed signal	T	R		R	R			
Engine coolant temperature signal	T	R						
Fuel consumption monitor signal	T	R						
Oil pressure switch signal		R		R				T
A/C compressor request signal	T							R
Heater fan switch signal	R					T		
Cooling fan speed request signal	T							R
Cooling fan speed status signal	R							T
Position lights request signal		R		R		T		R

Signals	ECM	Combination meter.	Intelligent Key unit	Drive computer	EPS control unit	BCM	ABS actuator and electric unit (control unit)	IPDM E/R
Position light status signal	R							T
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
Day time light request signal						T		R
Vehicle speed signal	R	R			R		T	
	R	T	R	R	R	R		
Sleep/wake up signal		R	R			T		R
Door switch signal		R	R	R		T		R
Turn indicator signal		R				T		
Buzzer output signal		R				T		
		R	T					
MI signal	T	R		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							T
Drive computer signal		T		R				
EPS warning indicator signal		R		R	T			
ABS warning lamp signal		R		R			T	
ABS operation signal	R			R			T	
Brake warning lamp signal		R					T	
Buck-up lamp signal					R	T		
Fuel low warning signal		T		R				
Battery charge malfunction signal		T		R				
Air bag system warning signal		T		R				
Brake fluid level warning signal		T		R				
Engine coolant temperature warning signal		T		R				
Front fog lamp request signal		R				T		R
Rear fog lamp status signal		R				T		
Headlamp washer request signal						T		R
Door lock/unlock request signal			R			T		
Door lock/unlock status signal			R			T		
KEY indicator signal		R	T					
LOCK indicator signal		R	T					

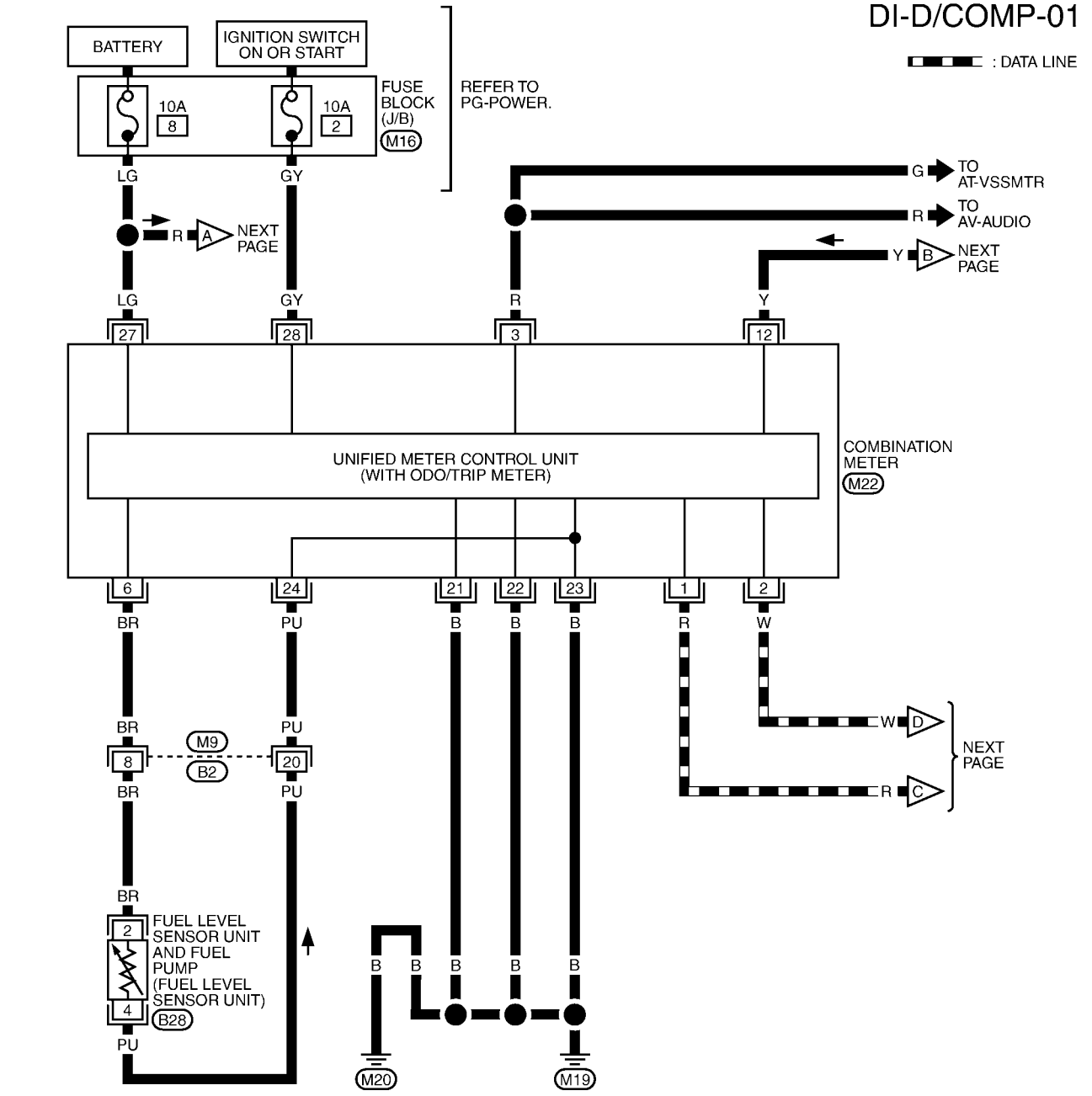
Component Parts and Harness Connector and Harness Connector Location

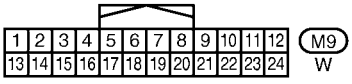
EKS0082N

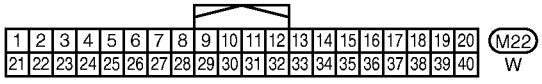


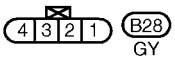
Wiring Diagram — D/COMP —

EKS0082O





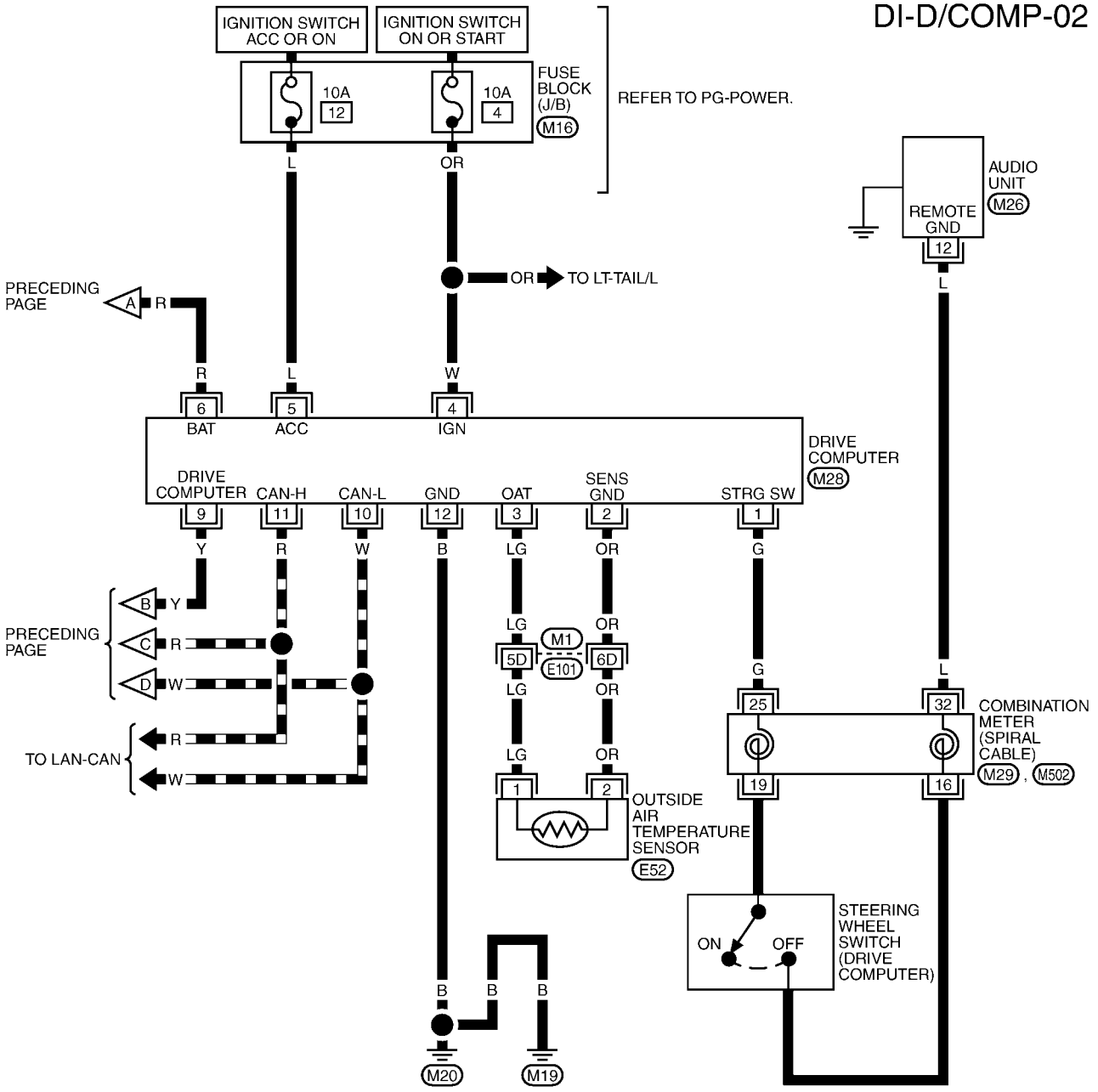


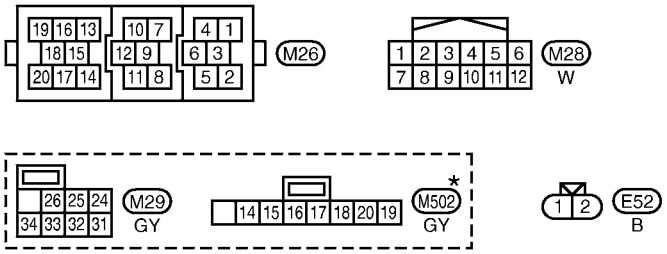


REFER TO THE FOLLOWING.
M16 -FUSE BLOCK-
JUNCTION BOX (J/B)

MKWA0853E

DI-D/COMP-02





REFER TO THE FOLLOWING.
M1 -SUPER MULTIPLE JUNCTION (SMJ)
M16 -FUSE BLOCK-JUNCTION BOX (J/B)

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

MKWA0854E

Terminals and Reference Value

EKS0082P

Terminal	Wire color	Item	Condition		Voltage [V]
			Ignition switch	Operation	
1	G	Communication signal (+)	ON	Steering wheel switch is pushed.	Approx. 0
				Steering wheel switch is released.	Battery voltage
2	OR	OAT (GND)	—	—	—
3	LG	OAT	ON	—	Approx. 5
4	W	Ignition switch (ON)	ON	—	Battery voltage
5	L	Ignition switch (ACC)	ACC	—	Battery voltage
6	R	Power source (ON)	OFF	—	Battery voltage
9	Y	Drive computer	ON	—	Approx.0
10	W	CAN L	—	—	—
11	R	CAN H	—	—	—
22	B	—	—	—	—

Self-Diagnosis Function

EKS0082R

DESCRIPTION

Self-diagnosis items are as follows.

- Screen of all segments check
- Software version of drive computer is displayed. (This information is not used for service, skip this step.)
- EEPROM code of drive computer is displayed. (This information is not used for service, skip this step)

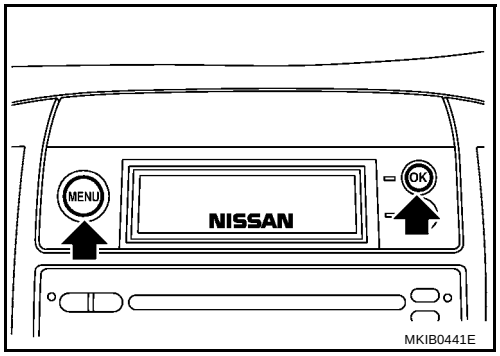
Performing Self-Diagnosis Mode

EKS0082S

OPERATION PROCEDURES

1. Turn ignition switch ACC.
2. Press “OK” button 3 times with holding “MENU” button.

NOTE:
If any button is not pressed for 20 seconds at each step or if the ignition switch is turned OFF, the self-diagnosis mode is exited.

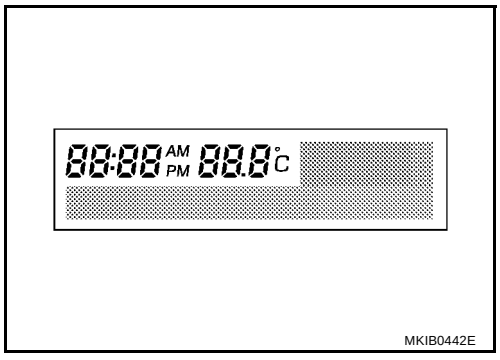


MKIB0441E

SELF-DIAGNOSIS RESULT ITEM

Display of all segments indicate

This mode is checking the display of all segments.
If any of the segment is not displayed, replace the drive computer.



MKIB0442E

Power Supply and Ground Circuit Check

EKS0082T

1. CHECK FUSE

Check that the following fuses in drive computer are blown.

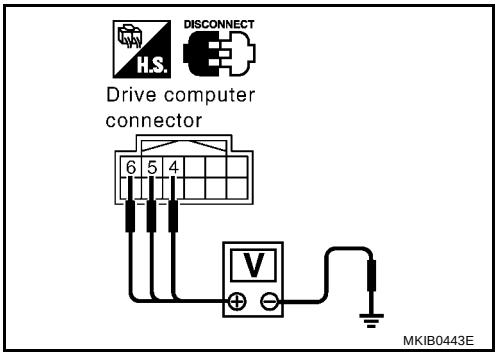
Unit	Power source	Fuse No.
Drive computer	Power source (BAT)	8
	Ignition switch (IGN)	4
	Ignition switch (ACC)	12

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" .

2. CHECK POWER SUPPLY CIRCUIT

1. Disconnect display connector.
2. Check voltage between drive computer and ground.



Terminals			Ignition switch position		
(+)		(–)	OFF	ACC	ON
Connector	Terminal (Wire color)				
M28	4 (W)	Ground	0V	0V	Battery voltage
	5 (L)	Ground	0V	Battery voltage	Battery voltage
	6 (R)	Ground	Battery voltage	Battery voltage	Battery voltage

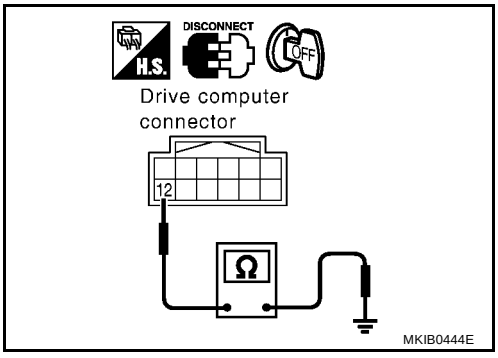
OK or NG

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

3. CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Check continuity between drive computer harness connector M28 terminal 12 (B) and ground.

Continuity should exist.



OK or NG

OK >> INSPECTION END
NG >> Harness for open ground circuit.

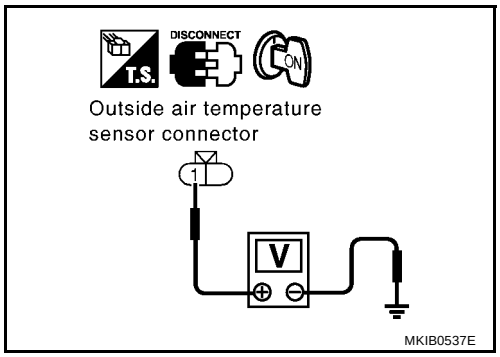
Outside Air Temperature is not Displayed

EKS008IG

1. CHECK OUTSIDE AIR TEMPERATURE SENSOR IN PUT SIGNAL

1. Disconnect outside air temperature sensor connector.
2. Turn ignition switch ON.
3. Check voltage between outside air temperature sensor harness connector E52 terminal 1 (LG) and ground.

1 – Ground : Approx. 5V



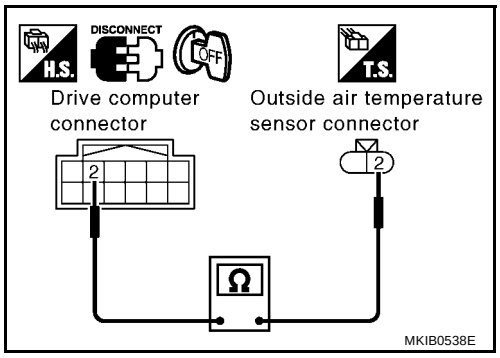
OK or NG

OK >> GO TO 2.
NG >> GO TO 4.

2. CHECK OUTSIDE AIR TEMPERATURE SENSOR GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect drive computer harness connector.
3. Check continuity between outside air temperature sensor harness connector E52 terminal 2 (OR) and drive computer harness connector M28 terminal 2 (OR).

Continuity should exist.



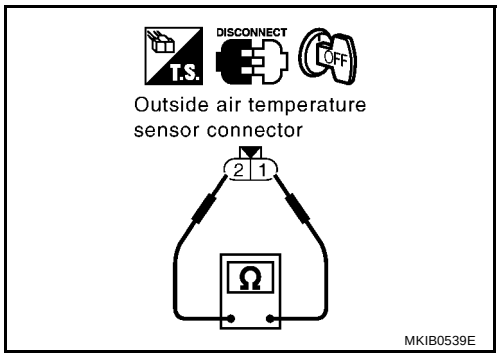
OK or NG

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

3. CHECK OUTSIDE AIR TEMPERATURE

Check outside air temperature sensor harness connector E52 terminals 1 and 2.

Temperature °C	Resistance [kΩ]
–20	16.53
–10	9.93
0	6.19
10	3.99
20	2.65
30	1.81
40	1.27
50	0.91



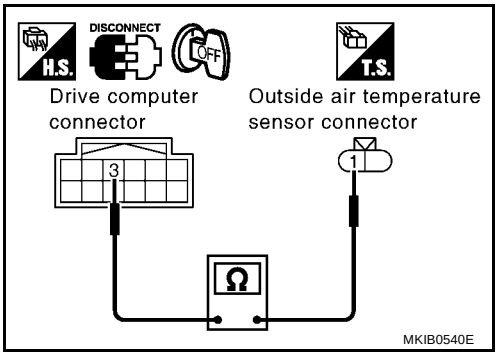
OK or NG

OK >> Replace drive computer.
NG >> Replace outside air temperature sensor.

4. CHECK OUTSIDE AIR TEMPERATUE SENSOR CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect drive computer connector.
3. Check continuity between outside air temperature harness connector E52 terminal 1 (LG) and drive computer harness connector M28 terminal 3 (LG).

Continuity should exist.



OK or NG

OK >> Replace drive computer.
NG >> Repair harness or connector.

All of Display is not Displayed Properly

EKS0082Z

1. DISPLAY SELF-DIAGNOSIS

1. Perform self-diagnosis drive computer. Refer to DI-42, "Performing Self-Diagnosis Mode" .
2. All display segments are ON.

OK or NG

OK >> Power supply and ground circuit check. Refer to DI-43, "Power Supply and Ground Circuit Check" .
NG >> Replace drive computer.

Drive Computer of Display Items are not Displayed. (ex, “– –.– km”)

EKS00830

1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery cable.
3. Check the terminals and connector of drive computer for damage, bend and loose connection (control unit-side and harness-side).

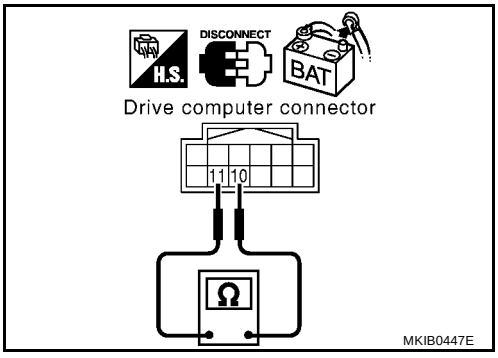
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect drive computer connector.
2. Check resistance between drive computer harness connector M28 terminals 11 (R) and 10 (W).

11 (R) – 10 (W) : Approx. 54 – 66Ω



OK or NG

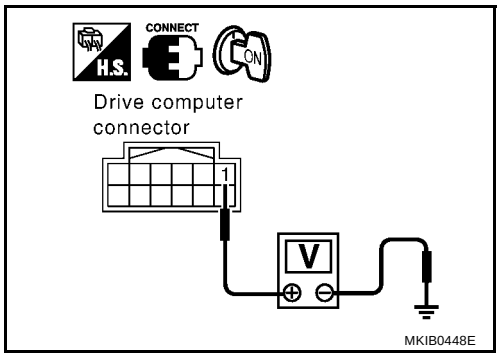
OK >> Replace drive computer.
NG >> Repair harness between drive computer and data link connector.

Steering Wheel Switch Does Not Operate

EKS0088R

1. CHECK DRIVE COMPUTER INPUT SIGNAL

1. Turn ignition switch ON.
2. Check voltage between drive computer and ground.



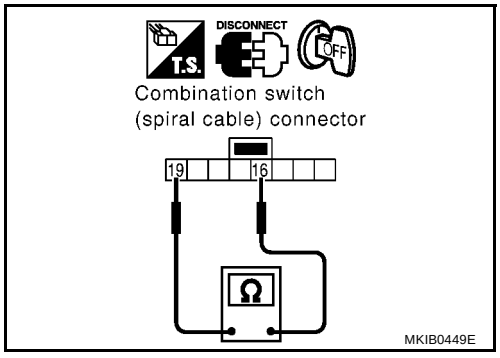
Connector	Terminals (Wire color)		Condition	Voltage [V] (Approx.)
	(+)	(-)		
M28	1 (G)	Ground	Steering wheel switch is pushed.	0
			Steering wheel switch is released.	Battery voltage

OK or NG

OK >> Replace drive computer.
NG >> GO TO 2.

2. CHECK STEERING WHEEL SWITCH

1. Turn ignition switch OFF.
2. Disconnect steering wheel switch.
3. Check steering wheel switch (drive computer).



Connector	Terminals (Wire color)		Condition	Continuity
	(+)	(-)		
M502	16	19	Steering wheel switch is pushed.	No
			Steering wheel switch is released.	Yes

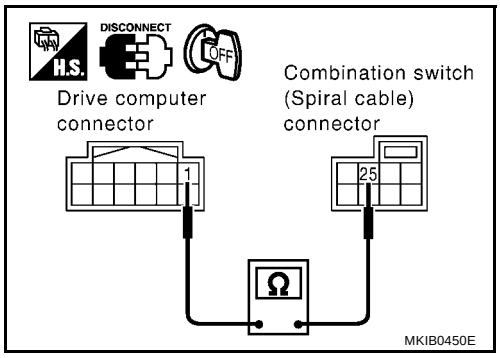
OK or NG

OK >> GO TO 3.
NG >> Replace steering wheel switch.

3. CHECK STEERING WHEEL SWITCH CIRCUIT

1. Disconnect drive computer connector and combination switch connector.
2. Check continuity between drive computer harness connector M28 terminal 1(G) and combination switch (spiral cable) harness connector M29 terminal 25 (G).

Continuity should exist.



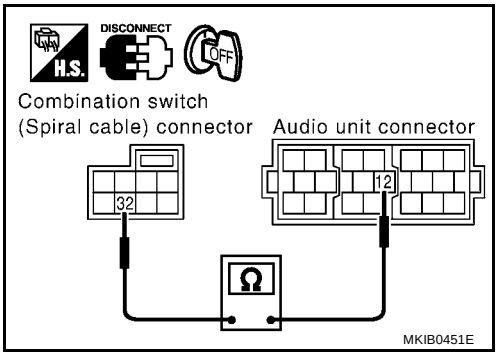
OK or NG

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

4. CHECK STEERING WHEEL SWITCH GROUND CIRCUIT

1. Disconnect audio unit connector.
2. Check continuity between combination switch harness connector M29 terminal 32 (L) and audio unit harness connector M26 terminal 12 (L).

Continuity should exist.



OK or NG

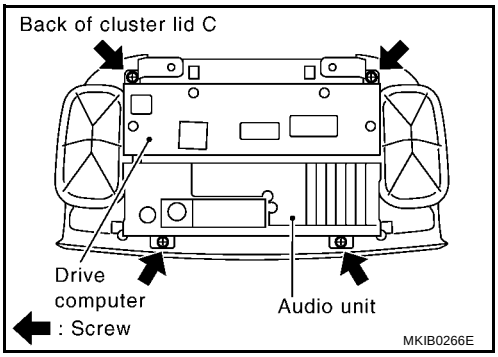
OK >> Check audio unit ground circuit. Refer to AV-9, "Power Supply Circuit Inspection" .

NG >> Repair harness or connector.

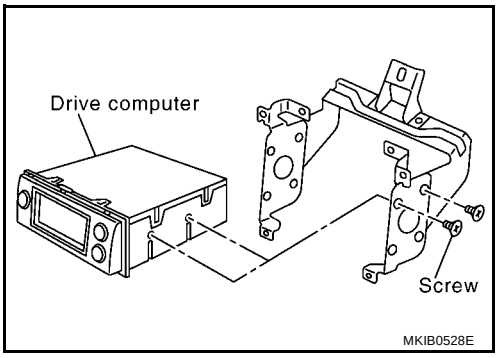
Removal and Installation of Drive Computer

EKS00832

1. Remove cluster lid C. Refer to IP-4, "INSTRUMENT PANEL ASSEMBLY" .
2. Remove screws and remove drive computer and bracket.



3. Remove screws and remove bracket.

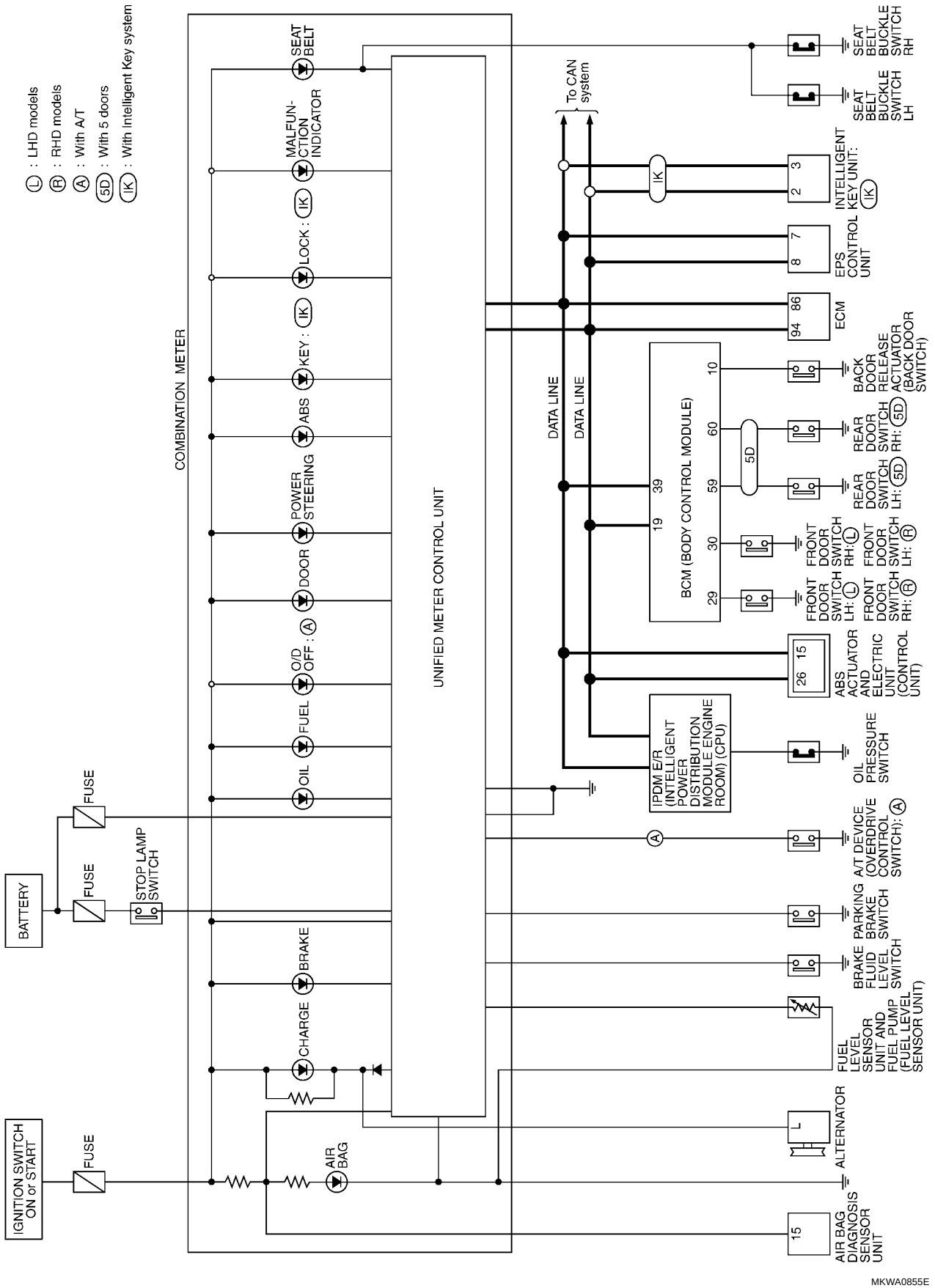


WARNING LAMPS

PFP:24814

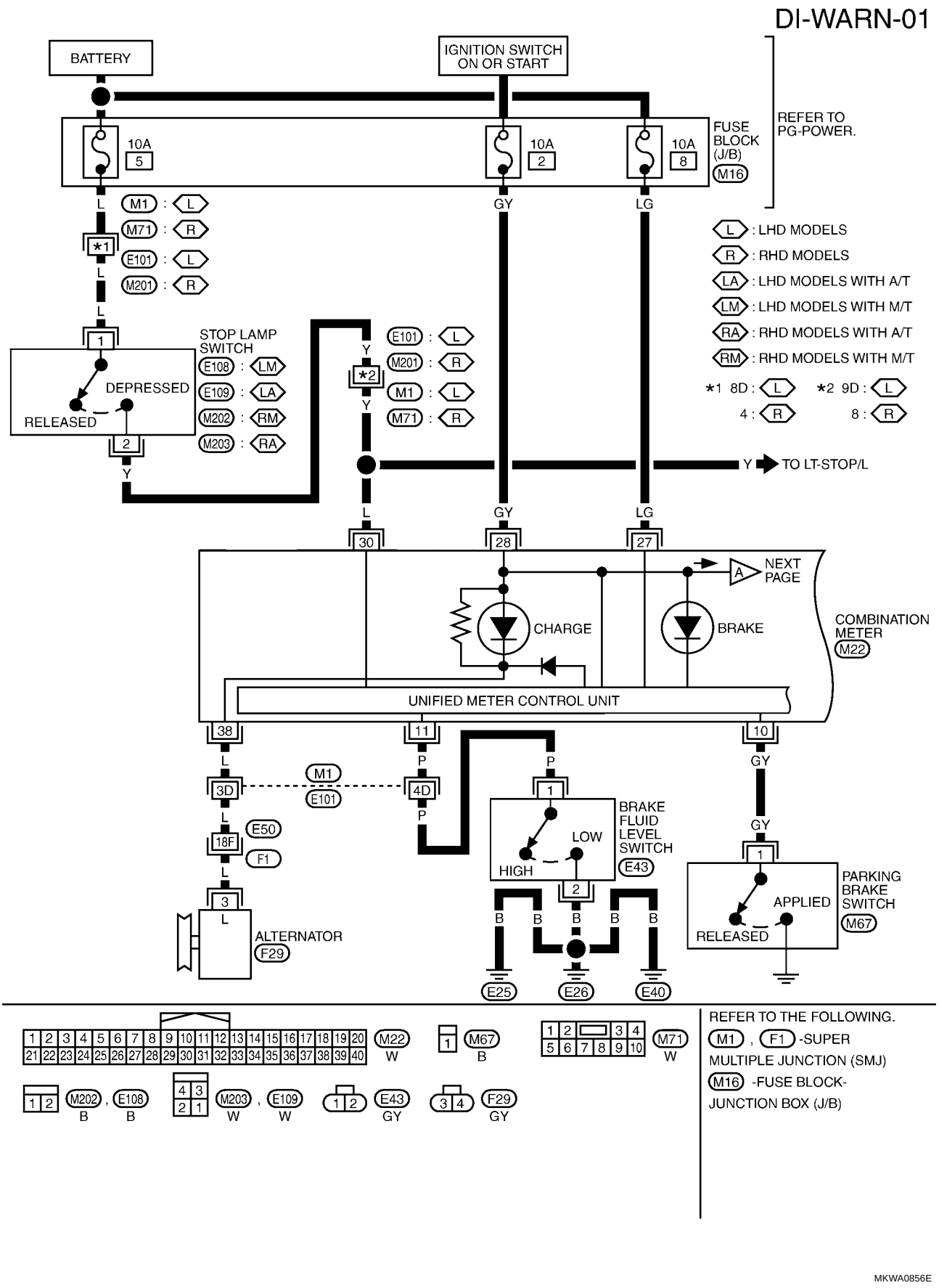
Schematic

EKS0072G



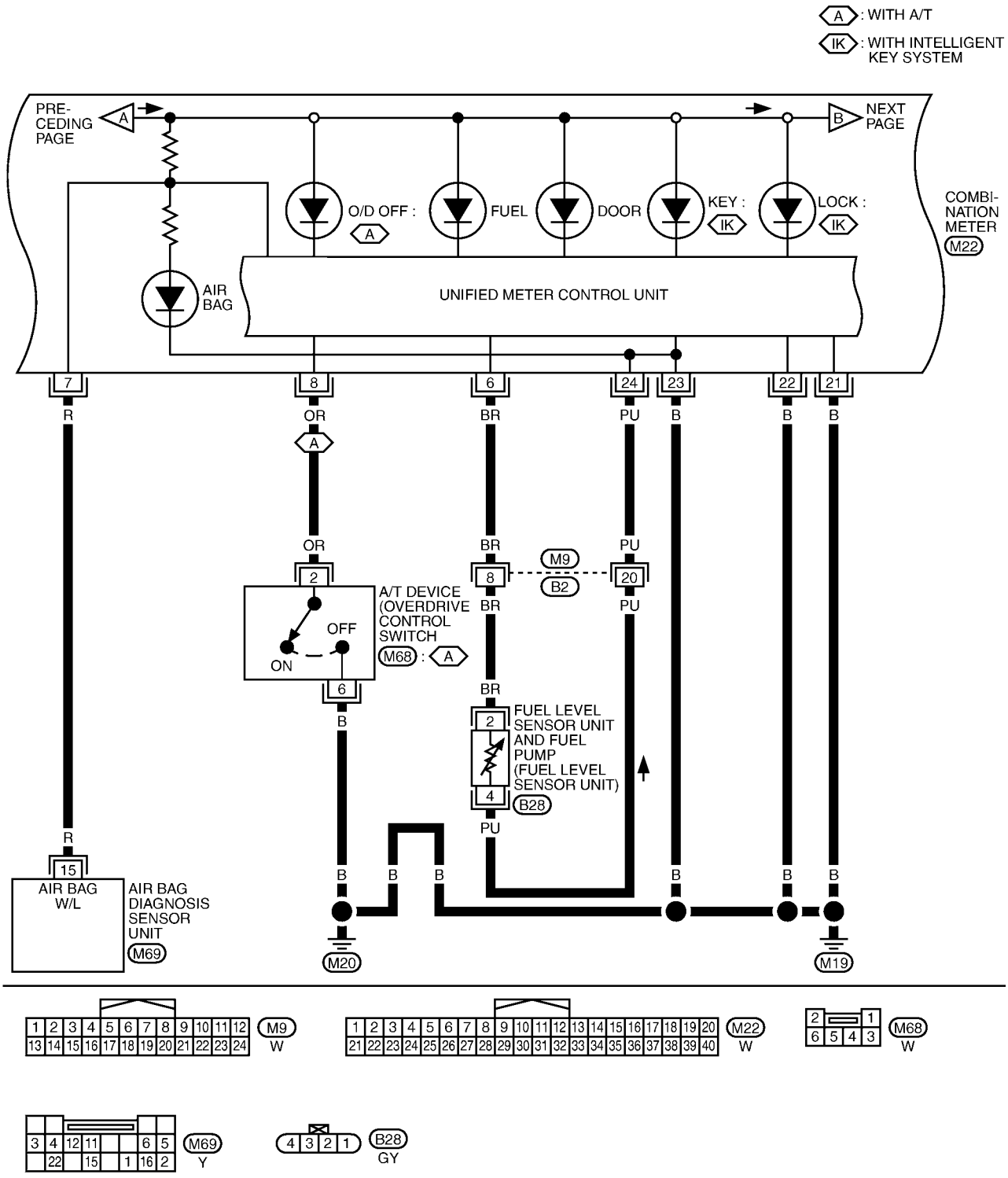
Wiring Diagram — WARN —

EKS0072H



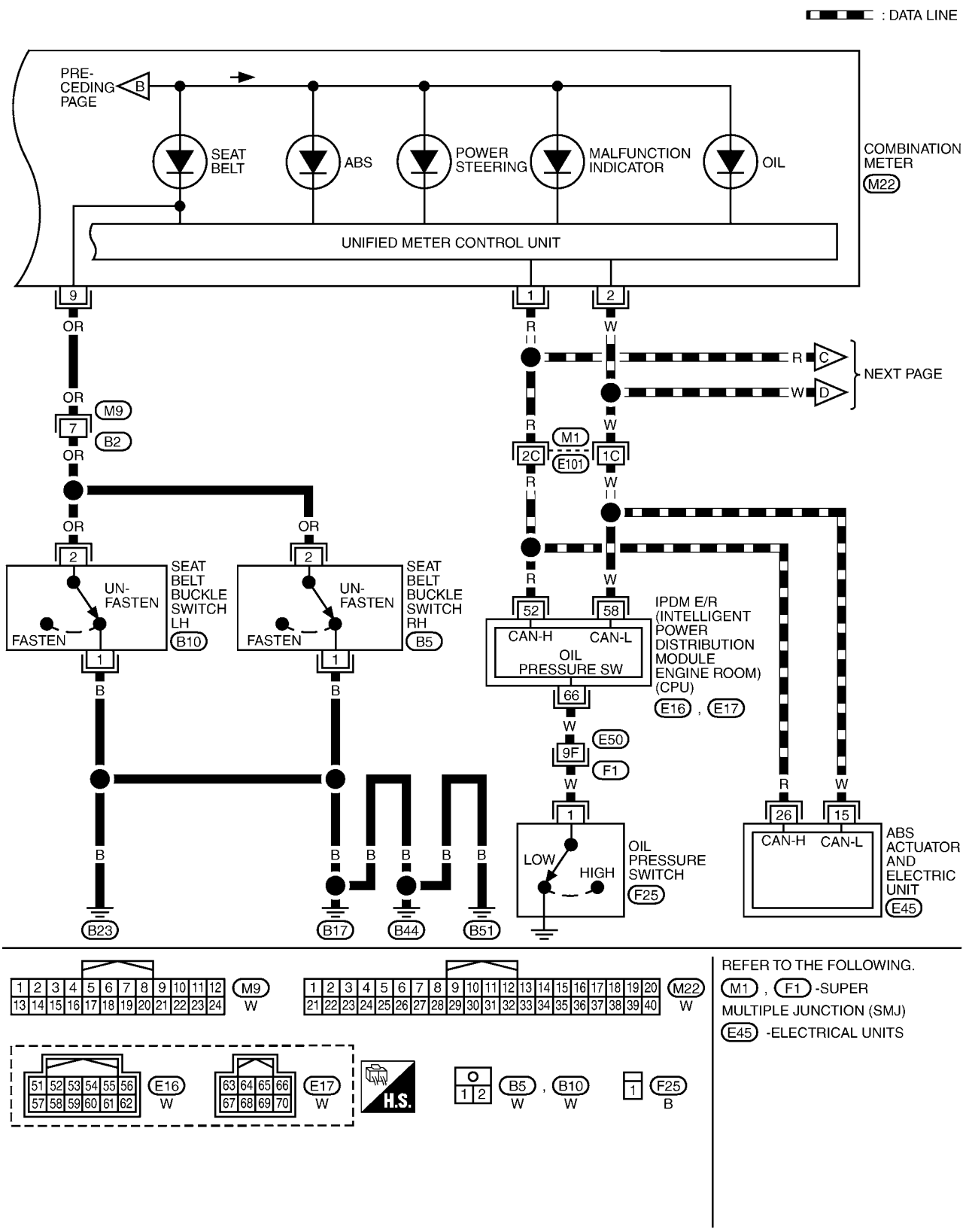
MKWA0856E

DI-WARN-02



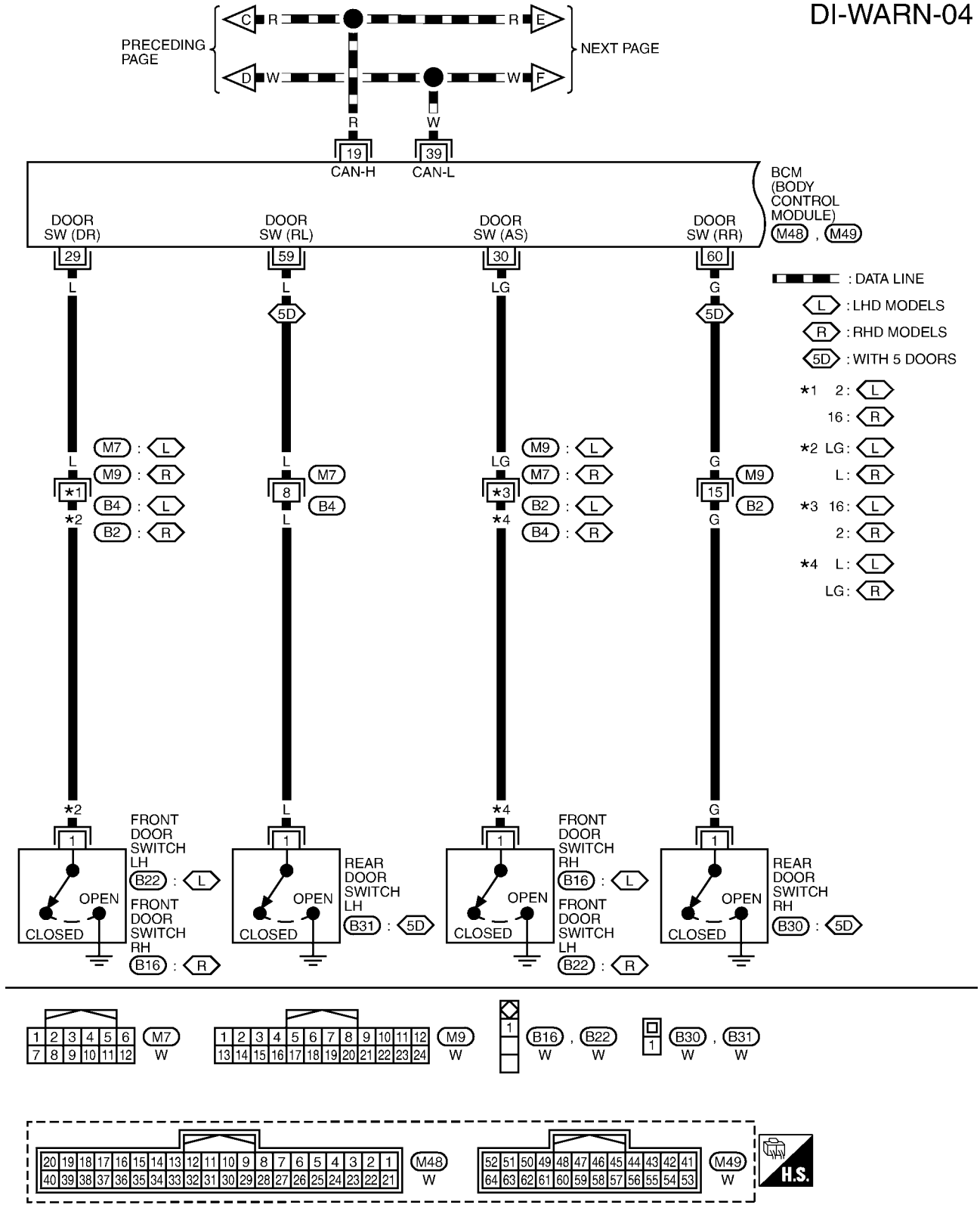
MKWA0857E

DI-WARN-03

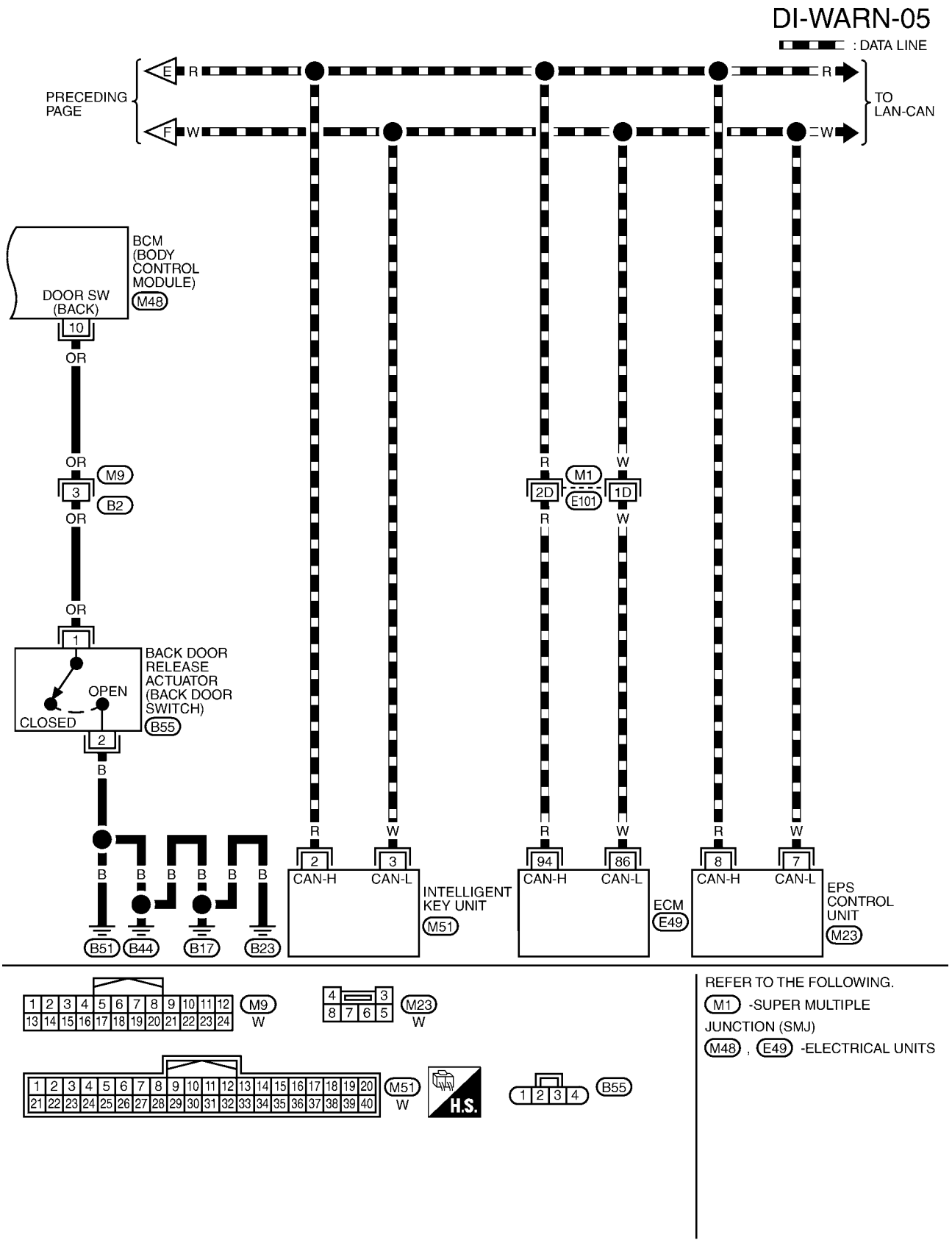


MKWA0858E

DI-WARN-04



MKWA1374E


DI-WARN-05
: DATA LINE
PRECEDING PAGE
E
F
R
W
TO LAN-CAN
BCM (BODY CONTROL MODULE)
M48
DOOR SW (BACK)
10
OR
M9
3
B2
1
BACK DOOR RELEASE ACTUATOR (BACK DOOR SWITCH)
OPEN
CLOSED
B55
2
B
B51
B44
B17
B23
M1
2D
E101
1D
2
CAN-H
3
CAN-L
INTELLIGENT KEY UNIT
M51
94
86
ECM
E49
8
7
EPS CONTROL UNIT
M23
M9
W
M23
W
M51
W
H.S.
B55
REFER TO THE FOLLOWING.
M1 -SUPER MULTIPLE JUNCTION (SMJ)
M48 , E49 -ELECTRICAL UNITS

MKWA1375E

CONSULT-II Functions

EKS00870

CONSULT-II performs the following functions with combination of data receiving, command and transmission using the CAN communication line from the IPDM E/R.

Inspection Item, Diagnosis Mode	Description
SELF-DIAG RESULTS	The IPDM E/R performs diagnosis of the CAN communication and self-diagnosis.
DATA MONITOR	The input/output data of the IPDM E/R is displayed in real time.
ACTIVE TEST	The IPDM E/R sends a drive signal to electronic components to check their operation.

Oil Pressure Warning Lamp Stays Off (Ignition Switch ON)

EKS00833

1. CHECK IPDM SELF-DIAGNOSIS

1. Perform IPDM E/R self-diagnosis. Refer to PG-25, "CONSULT-II Functions" .

self-diagnostic results content

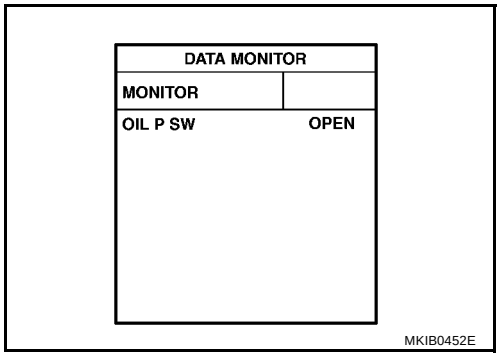
NON DTC IS DETECTED >>GO TO 2.
CAN COMMUNICATION CIRCUIT >>Check IPDM. Refer to PG-35, "Inspection With CONSULT-II (Self-Diagnosis)" .

2. CHECK IPDM E/R DATA MONITOR

With CONSULT-II

Check oil pressure switch (“OIL PSW”) in “DATA MONITOR” mode with CONSULT-II.

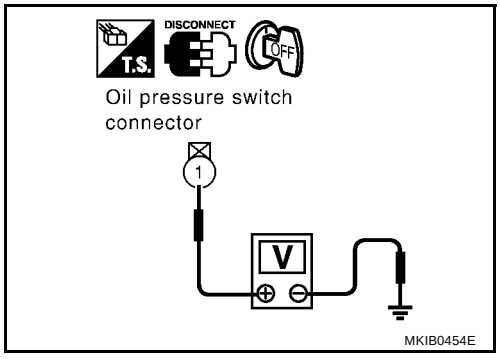
Engine is stopped (IGN ON) : OIL P SW CLOSE
Engine is running : OIL P SW OPEN



With out CONSULT-II

1. Disconnect oil pressure switch.
2. Turn the ignition switch ON.
3. Check voltage between oil pressure switch harness connector F25 terminal 1 (W) and body ground.

Battery voltage should exist.



OK or NG

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

3. CHECK OIL PRESSURE SWITCH

1. Check oil pressure switch. Refer to DI-57, "OIL PRESSURE SWITCH CHECK" .

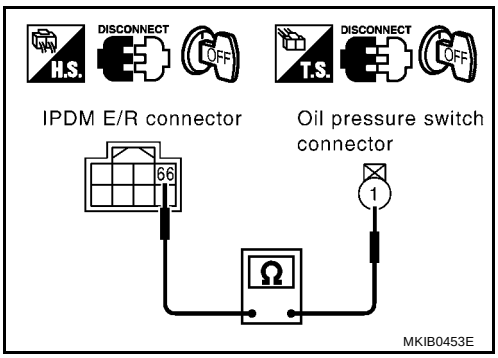
OK or NG

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

4. 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 E17 terminal 66 (W) and oil pressure switch harness connector F25 terminal 1 (W).

Continuity should exist.



OK or NG

OK >> Replace IPDM E/R.
NG >> Repair harness or connector.

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

EKS00834

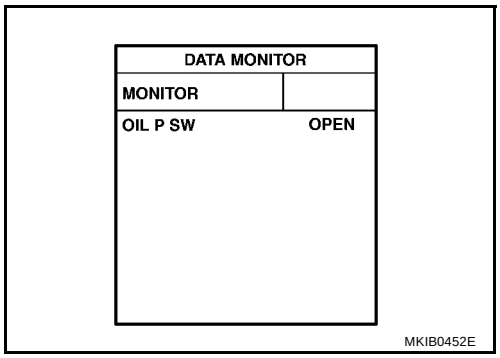
NOTE:
For oil pressure inspection, refer to LU-4, "OIL PRESSURE CHECK" .

1. CHECK OIL PRESSURE SWITCH INPUT

With CONSULT-II

Check oil pressure switch (“OIL PSW”) in “DATA MONITOR” mode with CONSULT-II.

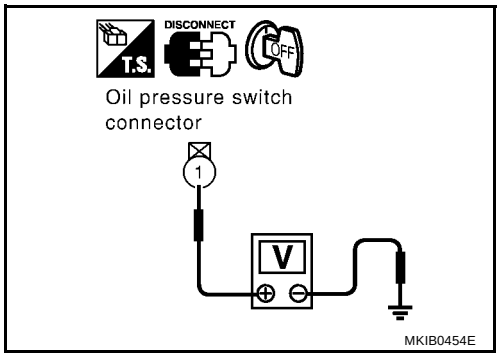
Engine is stopped (IGN ON) : OIL P SW CLOSE
Engine is running : OIL P SW OPEN



With out CONSULT-II

1. Disconnect oil pressure switch.
2. Turn the ignition switch ON.
3. Check voltage between oil pressure switch harness connector F25 terminal 1 (W) and body ground.

Battery voltage should exist.



OK or NG

OK >> GO TO 2.
NG >> GO TO 3.

2. CHECK OIL PRESSURE SWITCH

1. Check oil pressure switch. Refer to DI-57, "OIL PRESSURE SWITCH CHECK" .

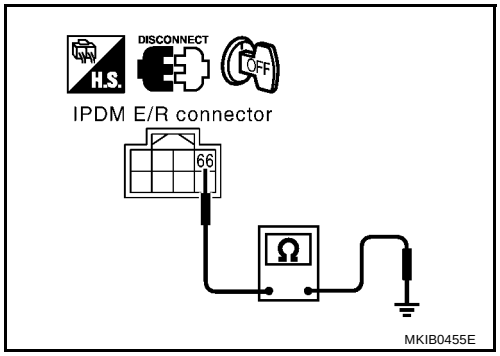
OK or NG

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

3. CHECK OIL PRESSURE SWITCH CIRCUIT

1. Disconnect IPDM E/R connector turn ignition switch OFF.
2. Check continuity between IPDM E/R harness connector E17 terminal 66 (W) and ground.

Continuity should not exist.



OK or NG

OK >> Replace IPDM E/R.
NG >> Repair harness or connector.

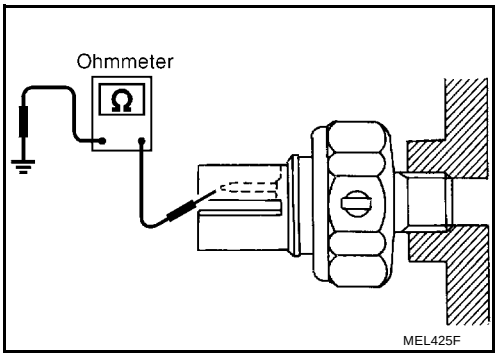
Electrical Components Inspection

EKS0072J

OIL PRESSURE SWITCH CHECK

	Oil pressure kPa (bar, kg/cm^2 , psi)	Continuity
Engine running	More than 10 - 20 (0.10 - 0.20, 0.1 - 0.2, 1 - 3)	No
Engine not running	Less than 10 - 20 (0.10 - 0.20, 0.1 - 0.2, 1 - 3)	Yes

Check the continuity between the terminals of oil pressure switch and body ground.



WARNING CHIME

PFP:24814

System Description

EKS0072L

The warning chime is controlled by the BCM.
The warning chime is located in the combination meter.

POWER SUPPLY AND GROUND CIRCUIT

Power is supplied at all times

- through 40A fusible link (letter **J** , located in fuse and fusible link box)
- to BCM terminals 74 and 79
- through 10A fuse [No. 8, located in fuse block (J/B)]
- to combination meter terminal 27
- through 10A fuse [No. 6, located in the fuse block (J/B)]
- to key switch terminal 1 (without Intelligent Key system) or
- to key switch and ignition knob terminals 1 and 3 (with Intelligent Key system).

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

- through 10A fuse [No. 4, located in the fuse block (J/B)]
- to BCM terminal 24.
- through 10 A fuse [No. 2, located in the fuse block (J/B)]
- to combination meter terminals 28

Ground is supplied

- to BCM terminals 2 and 70, and
- to combination meter terminals 21, 22 and 23,
- through body grounds, M19 and M20.

IGNITION KEY WARNING CHIME

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

- through key switch terminal 2 (without Intelligent Key system) or
- through key switch and ignition knob terminal 4 (with Intelligent Key system)
- to BCM terminal 48.

Ground is supplied

- from front door switch LH (LHD models) or RH (RHD models) terminal 1
- to BCM terminal 29.

Ground is supplied through the case of the front door switch LH (LHD models) or RH (RHD models).
BCM sends buzzer output signal to combination meter via CAN communication line.
When combination meter receives buzzer output signal, it sounds warning chime.

IGINITION SWITCH OFF WARNING CHIME (WITH INTTELUGENT KEY SYSTEM)

When ignition knob switch is pushed (ignition switch is OFF position), and the driver's door open, the earning chime will sound. Power is supplied

- through key switch and ignition knob terminal 2
- to Intelligent Key unit terminal 27

Ground is supplied

- from front door switch LH (LHD models) or RH (RHD models) terminal 1
- to BCM terminal 29.

Ground is supplied through the case of the front door switch LH (LHD models) or RH (RHD models).
BCM sends door switch signal (driver side) to Intelligent Key unit via CAN communication line.
Then, Intelligent Key unit sends buzzer output signal to combination meter via CAN communication line.
When combination meter receives buzzer output signal, it sounds warning chime.

LIGHT WARNING CHIME

With ignition switch OFF position, driver's door open, and lighting switch in 1ST or 2ND position, 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, 3, 4, 5, 6, 8, 9 and 10
- to BCM terminals 7, 8, 9, 13, 14, 15, 27, 28, 33 and 34

NOTE:
BCM detection lighting switch in 1st or 2nd position, refer to LT-104, "COMBINATION SWITCH READING FUNCTION" .
Ground is supplied

- from front door switch LH (LHD models) or RH (RHD models) terminal 1
- to BCM terminal 29.

Ground is supplied through the case of the front door switch LH (LHD models) or RH (RHD models).
BCM sends buzzer output signal to combination meter via CAN communication line. when combination meter receives buzzer output signal, it sounds warning chime.

CAN Communication

EKS00836

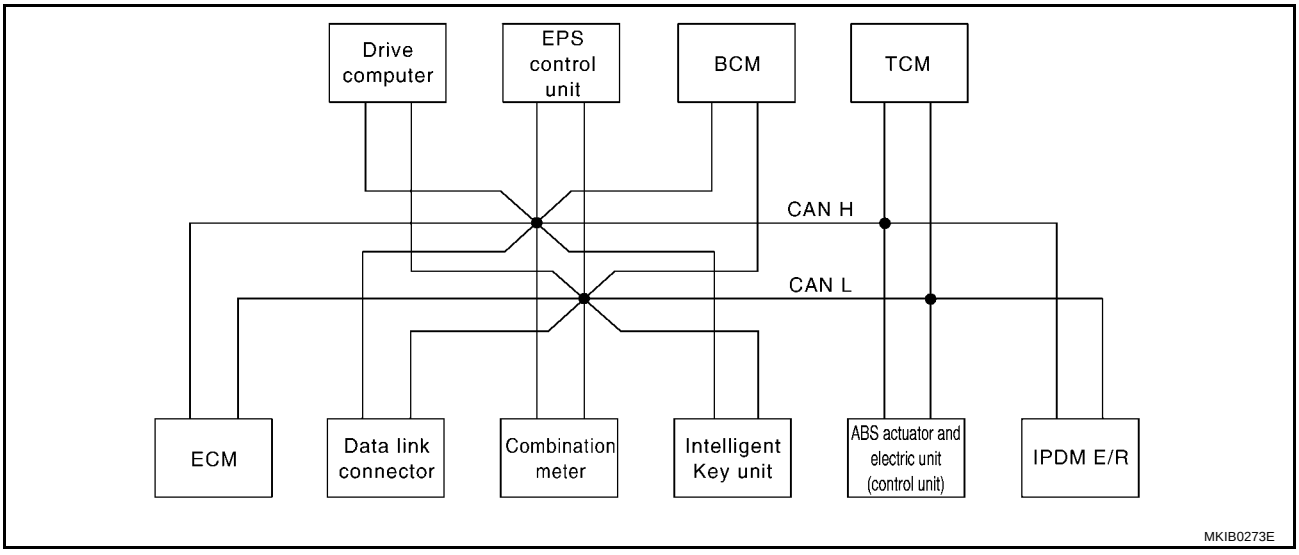
SYSTEM DESCRIPTION

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.

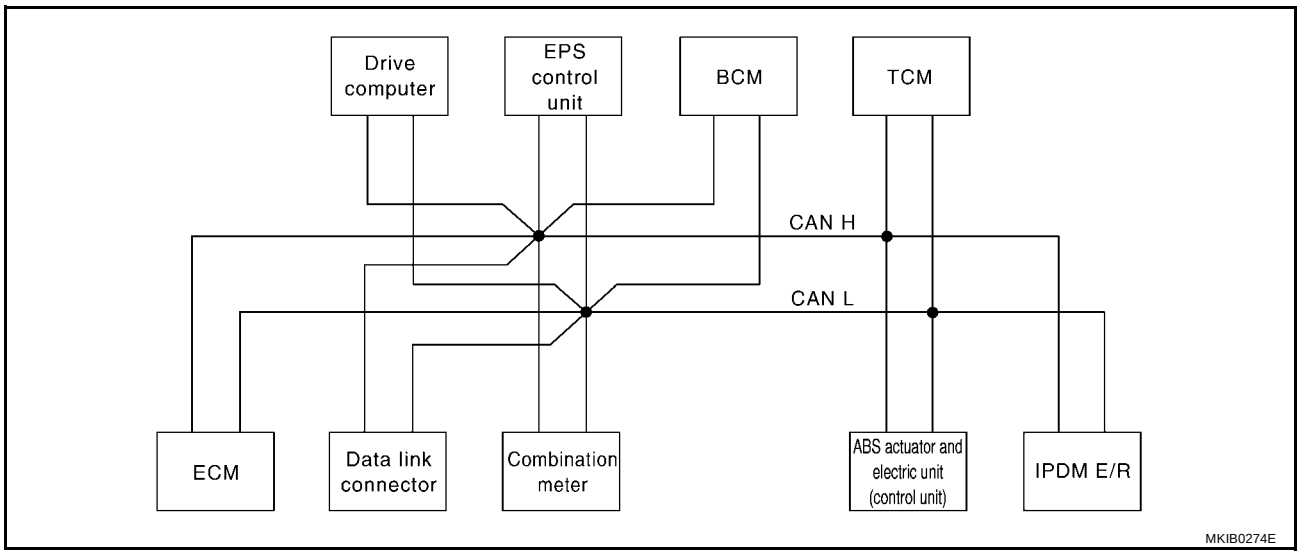
A/T MODELS

System diagram

- With Intelligent Key system



- Without Intelligent Key system



Input/output signal chart

T: Transmit R: Receive

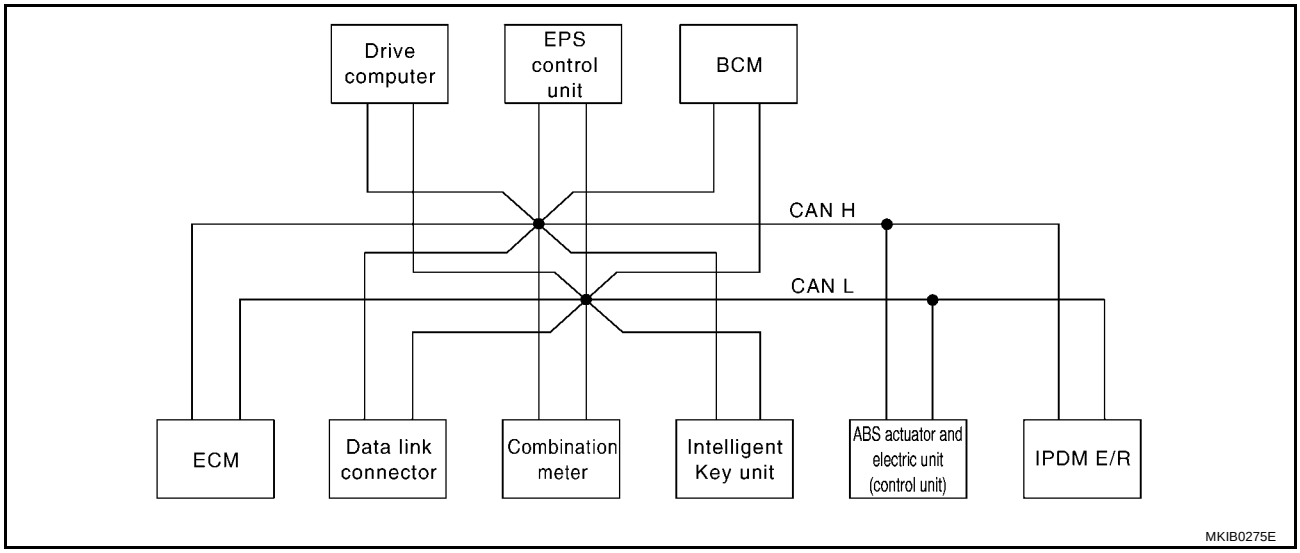
Signals	ECM	Combi-nation meter.	Intelli-gent Key unit	Drive com-puter	EPS control unit	BCM	ABS actuator and electric unit (control unit)	TCM	IPDM E/R
Engine speed signal	T	R		R	R				
Engine coolant temperature signal	T	R							
A/T self-diagnosis signal	R							T	
Output shaft revolution signal	R							T	
Accelerator pedal position signal	T							R	
Closed throttle position signal	T							R	
Wide open throttle position signal	T							R	
A/T shift position signal		R						T	
Stop lamp switch signal		T						R	
O/D OFF indicator lamp signal		R						T	
Engine and A/T integrated control signal	T							R	
	R							T	
Fuel consumption monitor signal	T	R							
Oil pressure switch signal		R		R					T
A/C compressor request signal	T								R
Heater fan switch signal	R					T			
Cooling fan speed request signal	T								R
Cooling fan speed status signal	R								T
Position lights request signal		R		R		T			R
Position light status signal	R								T
Low beam request signal						T			R
Low beam status signal	R								T
High beam request signal		R				T			R

Signals	ECM	Combination meter.	Intelligent Key unit	Drive computer	EPS control unit	BCM	ABS actuator and electric unit (control unit)	TCM	IPDM E/R
High beam status signal	R								T
Day time light request signal						T			R
Vehicle speed signal	R	R			R		T		
	R	T	R	R	R	R			
Sleep/wake up signal		R	R			T			R
Door switch signal		R	R	R		T			R
Turn indicator signal		R				T			
Buzzer output signal		R				T			
		R	T						
MI signal	T	R		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								T
Drive computer signal		T		R					
EPS warning lamp signal		R		R	T				
ABS warning lamp signal		R		R			T		
ABS operation signal	R						T		
Brake warning lamp signal		R		R			T		
Buck-up lamp signal					R	T			
Fuel low warning signal		T		R					
Battery charge malfunction signal		T		R					
Air bag system warning signal		T		R					
Brake fluid level warning signal		T		R					
Engine coolant temperature warning signal		T		R					
Front fog lamp request signal		R				T			R
Rear fog lamp status signal		R				T			
Headlamp washer request signal						T			R
Door lock/unlock request signal			R			T			
Door lock/unlock status signal			R			T			
KEY indicator signal		R	T						
LOCK indicator signal		R	T						

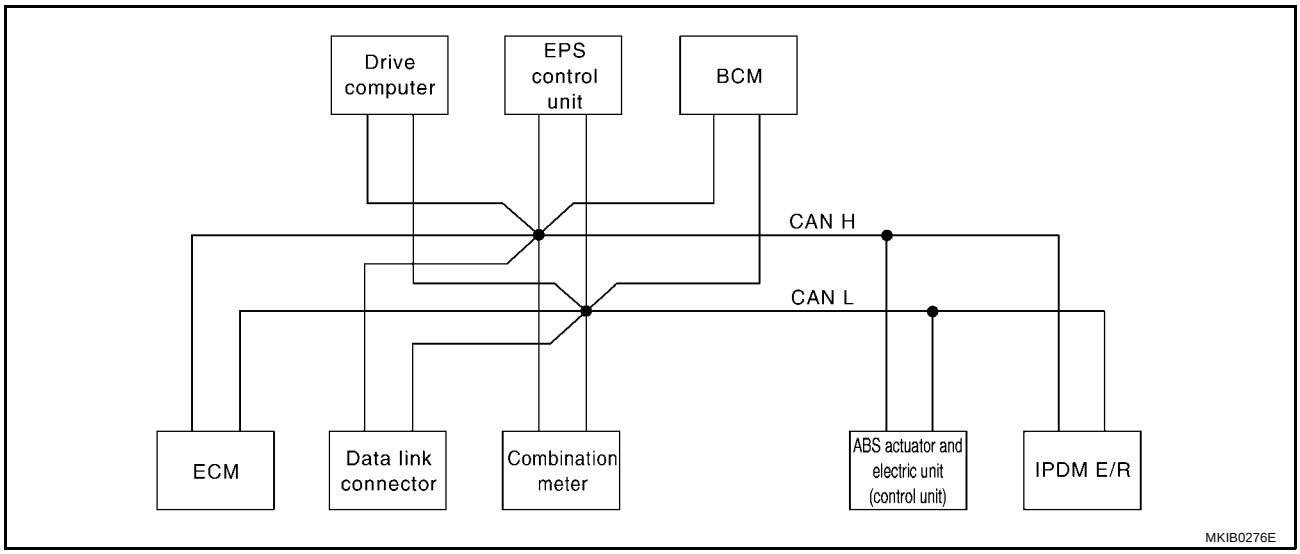
M/T MODELS

System diagram

- With Intelligent Key system



- Without Intelligent Key system



Input/output signal chart

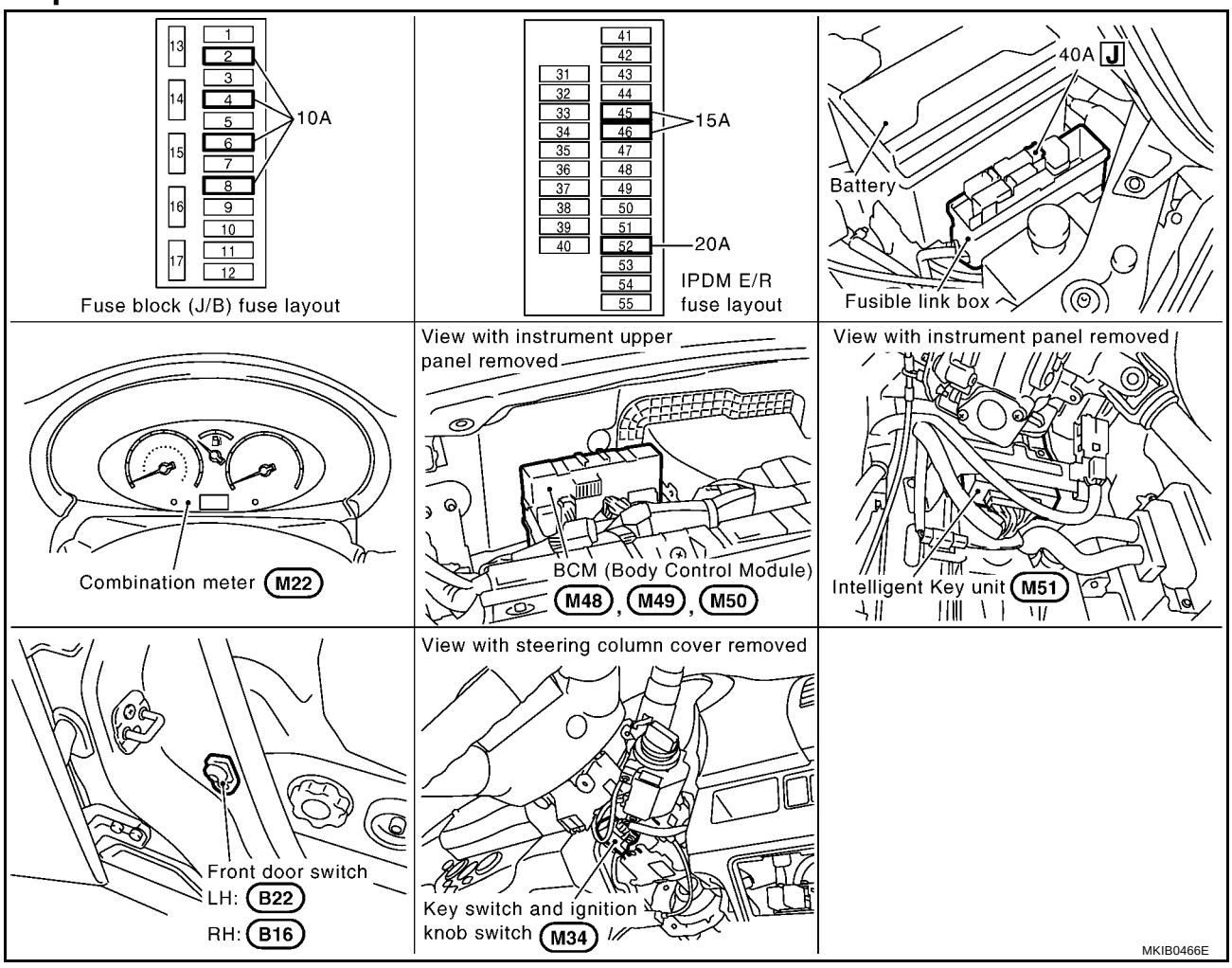
T: Transmit R: Receive

Signals	ECM	Combination meter.	Intelligent Key unit	Drive computer	EPS control unit	BCM	ABS actuator and electric unit (control unit)	IPDM E/R
Engine speed signal	T	R		R	R			
Engine coolant temperature signal	T	R						
Fuel consumption monitor signal	T	R						
Oil pressure switch signal		R		R				T
A/C compressor request signal	T							R
Heater fan switch signal	R					T		
Cooling fan speed request signal	T							R
Cooling fan speed status signal	R							T
Position lights request signal		R		R		T		R

Signals	ECM	Combination meter.	Intelligent Key unit	Drive computer	EPS control unit	BCM	ABS actuator and electric unit (control unit)	IPDM E/R
Position light status signal	R							T
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
Day time light request signal						T		R
Vehicle speed signal	R	R			R		T	
	R	T	R	R	R	R		
Sleep/wake up signal		R	R			T		R
Door switch signal		R	R	R		T		R
Turn indicator signal		R				T		
Buzzer output signal		R				T		
		R	T					
MI signal	T	R		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							T
Drive computer signal		T		R				
EPS warning indicator signal		R		R	T			
ABS warning lamp signal		R		R			T	
ABS operation signal	R			R			T	
Brake warning lamp signal		R					T	
Buck-up lamp signal					R	T		
Fuel low warning signal		T		R				
Battery charge malfunction signal		T		R				
Air bag system warning signal		T		R				
Brake fluid level warning signal		T		R				
Engine coolant temperature warning signal		T		R				
Front fog lamp request signal		R				T		R
Rear fog lamp status signal		R				T		
Headlamp washer request signal						T		R
Door lock/unlock request signal			R			T		
Door lock/unlock status signal			R			T		
KEY indicator signal		R	T					
LOCK indicator signal		R	T					

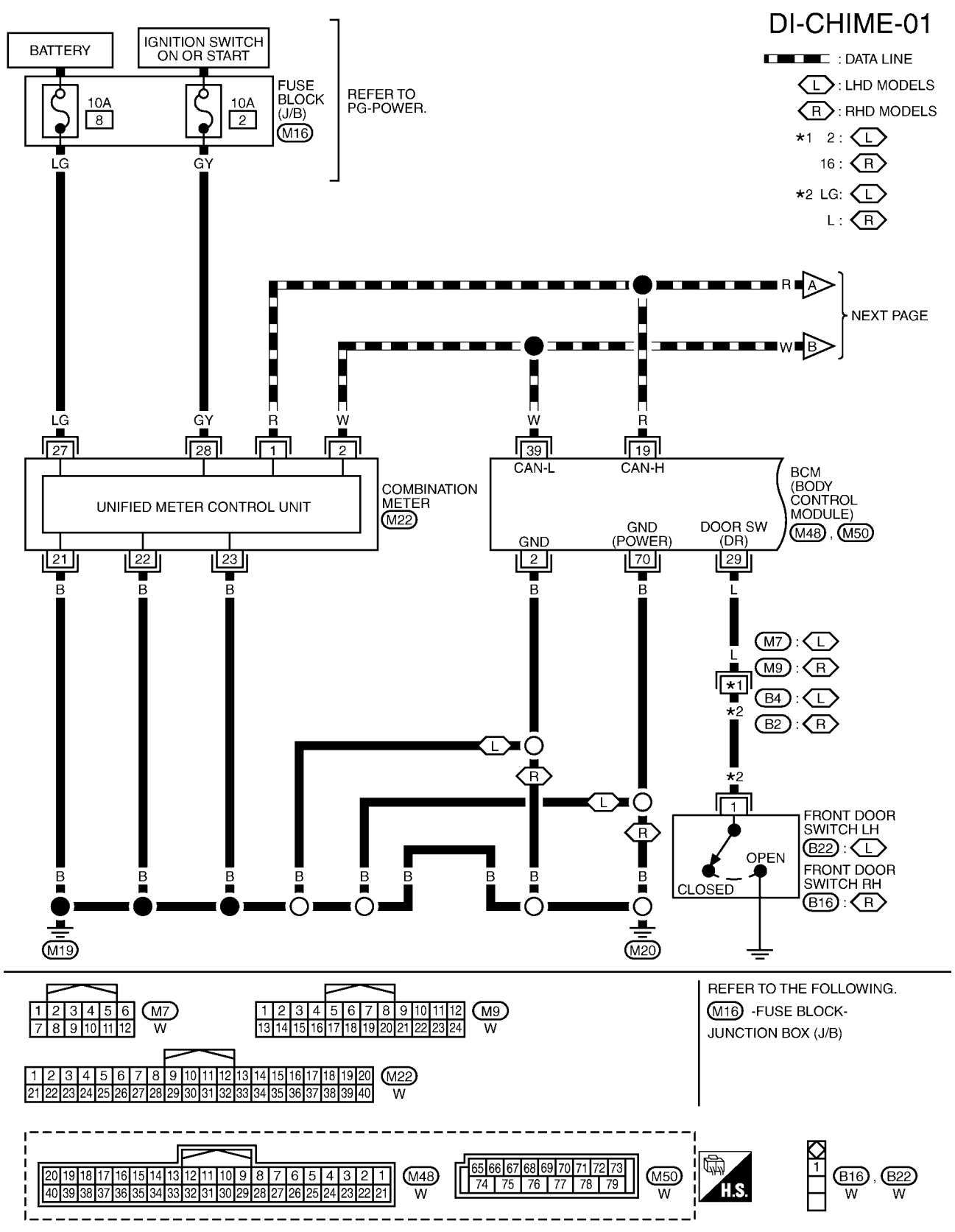
Component Parts and Harness Connector Location

EKS0072M

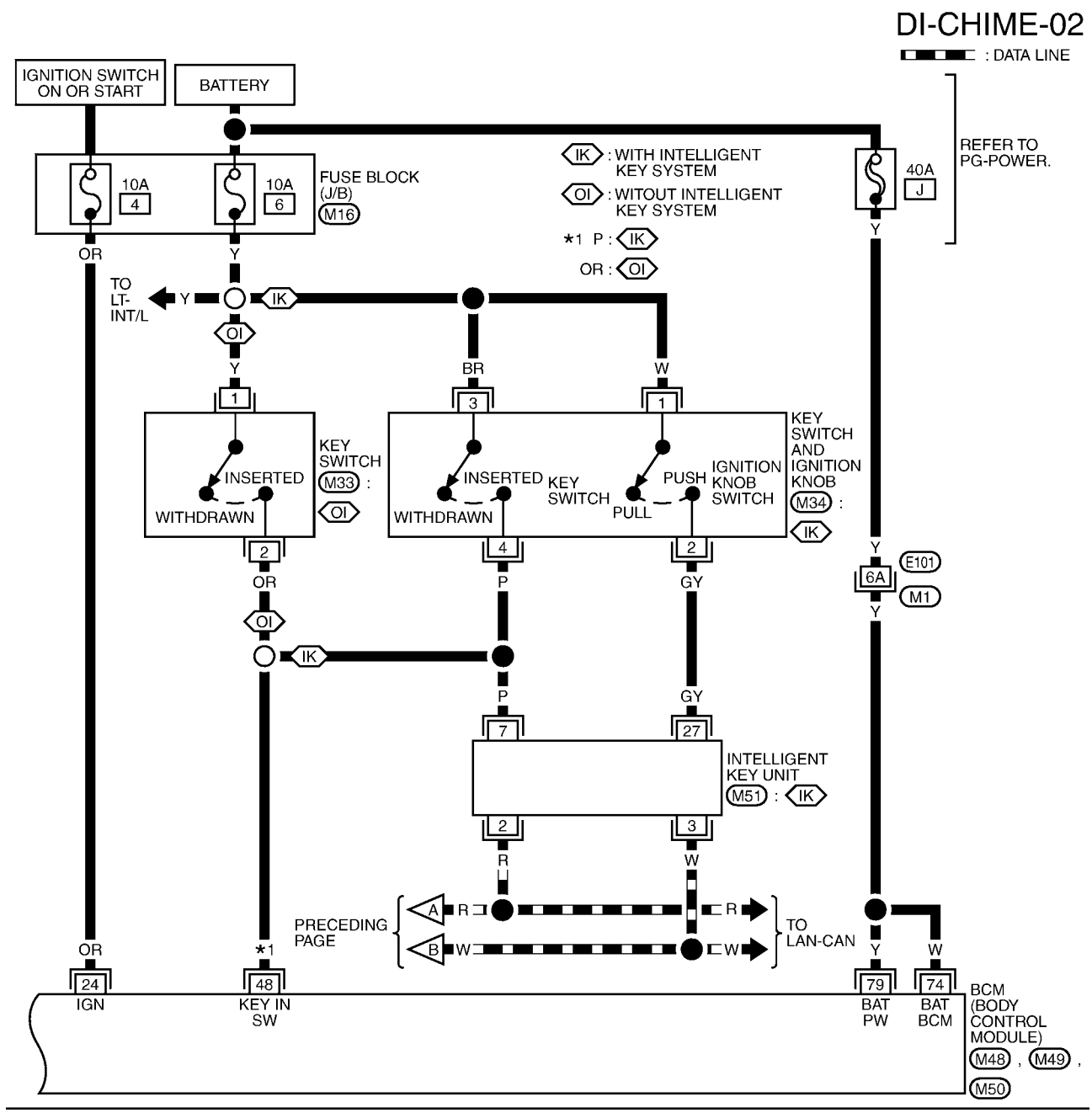


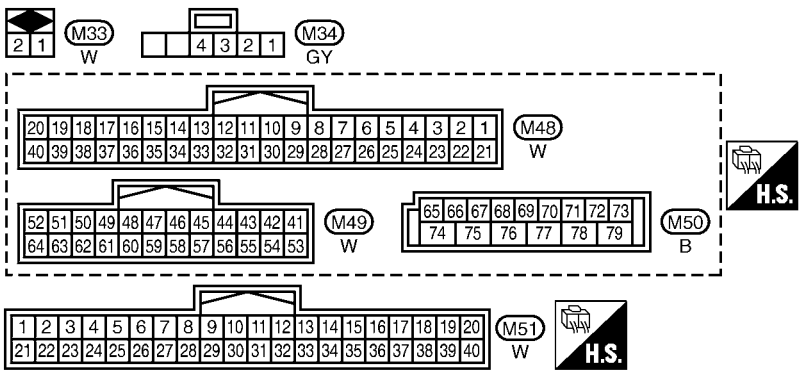
Wiring Diagram — CHIME —

EKS0072N



MKWA0860E



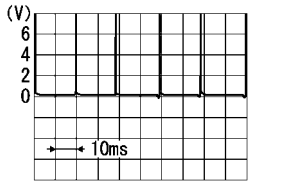
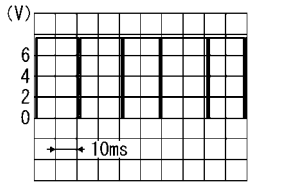
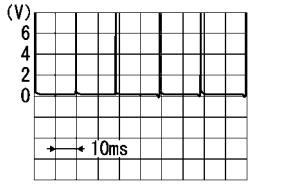


REFER TO THE FOLLOWING.
M1 -SUPER MULTIPLE JUNCTION (SMJ)
M16 -FUSE BLOCK-JUNCTION BOX (J/B)

MKWA0861E

Terminals and Reference Value for BCM

EKS00837

Terminal No.	Wire color	Item	Condition		Reference value (V)
			Ignition switch	Measurement method	
2	B	Ground	ON	—	Approx. 0
7	BR	Combination switch output 5	ON	—	 SKIA2167J
8	L	Combination switch output 3			
9	PU	Combination switch output 1			
27	GY	Combination switch output 4			
28	G	Combination switch output 2			
13	GY	Combination switch input 1	ON	Headlamp, turn signal and wipers are OFF. (wiper INT volume is 1 or 7)	 SKIA2166J
14	P	Combination switch input 3			
15	W	Combination switch input 5		Headlamp, turn signal and wipers are OFF. (wiper INT volume is other than 1 and 7)	 SKIA2167J
33	R	Combination switch input 2			
34	Y	Combination switch input 4			
19	R	CAN H	OFF	—	—
24	OR	Ignition switch (ON)	ON	—	Battery voltage
29	L	Front door switch (driver side)	OFF	ON (open)	Approx. 0
				OFF (closed)	Battery voltage
39	W	CAN L	OFF	—	—
48	*1	Key switch signal	OFF	key is withdrawn.	Approx. 0
				Key is inserted.	Battery voltage
70	B	Ground	ON	—	Approx. 0
74	W	Battery power supply	OFF	—	Battery voltage
79	Y	Battery power supply	OFF	—	Battery voltage

*1: P (with Intelligent Key system)
OR (without Intelligent Key system)

CONSULT-II Inspection Procedure

EKS0072O

CONSULT-II executes the following functions by combining data reception and command transmission via the communication line from BCM. And data monitor, Active test and self-diagnostic display.

DIAGNOSTIC ITEMS DESCRIPTION

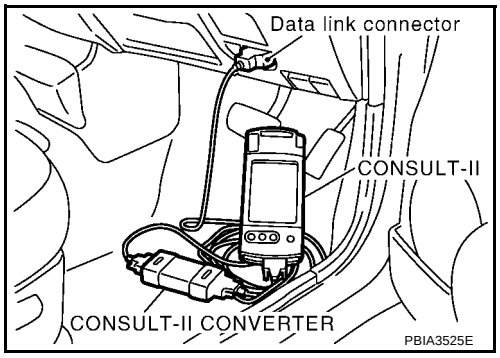
BCM diagnosis position	Diagnosis mode	Description
BUZZER	Work support	Change the setting for each function.
	Data monitor	The input data to the BCM is displayed in real time.
	Active test	Operation of electrical loads can be checked by sending driving signal to them.
BCM	Self-diagnosis	BCM performs self-diagnosis of CAN communication.

CONSULT-II BASIC OPERATION

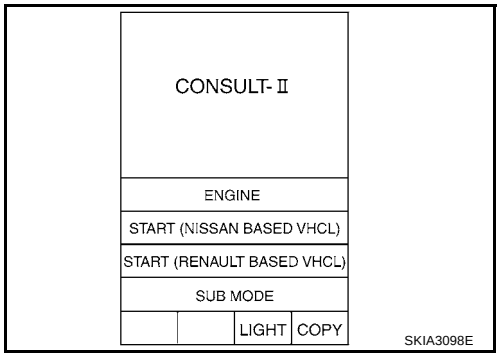
CAUTION:

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.

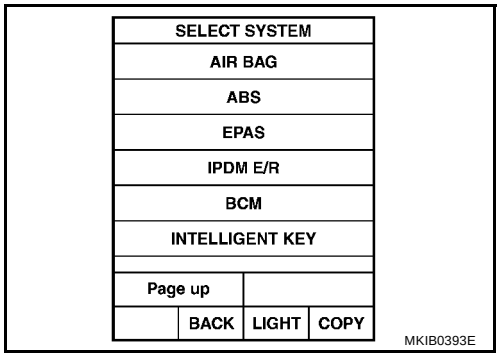
1. Turn ignition switch “OFF”.
2. Connect “CONSULT-II” and “CONSULT-II CONVERTER” to the data link connector.



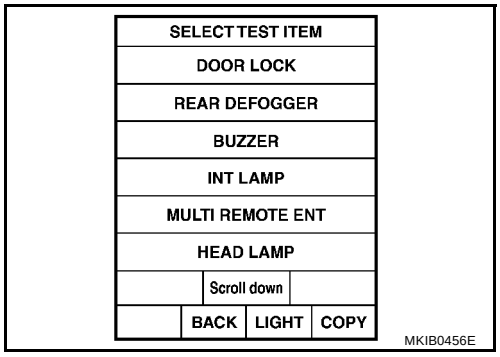
3. Turn ignition switch “ON”.
4. Touch “START” (NISSAN BASED VHCL).



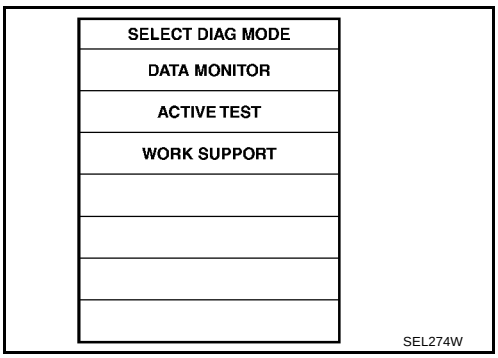
5. Touch “BCM” on “SELECT SYSTEM” screen. If “BCM” is not indicated, go to GI-36, "CONSULT-II Data Link Connector (DLC) Circuit" .



6. Touch “BUZZER” on “SELECT TEST ITEM”.



7. Touch “WORK SUPPORT”, “DATA MONITOR” or “ACTIVE TEST” on “SETECT DIAG MODE” screen.



CONSULT- II Application Items

EKS008WL

“BUZZER”

Work Support Item

Supported item	Description
ALARM PRESENT SET	Alarm present setting can be changed.

Data Monitor Item

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 1	Indicates [ON/OFF] condition of front door switch (driver side).
DOOR SW 2	Indicates [ON/OFF] condition of front door switch (passenger side).
DOOR SW 3	Indicates [ON/OFF] condition of rear door switch RH.
DOOR SW 4	Indicates [ON/OFF] condition of rear door switch LH.
DOOR SW BACK	Indicates [ON/OFF] condition of back door switch.
CDL LOCK SW	Indicates [ON/OFF] condition of door lock/unlock switch.
CDL UNLOCK SW	Indicates [ON/OFF] condition of door lock/unlock switch.
POS LIGHTS	Indicates [ON/OFF] condition of lighting switch.
TRANK OPNR SW	Indicates [ON/OFF] condition of back door release actuator.

Active Test Item

Test item	Description
LIGHT WARN ALM	This test is check light warning chime operation. Light warning chime sounds for 2 seconds after touching “ON” on CONSULT-ll screen.
IGN KEY WARN ALM	This test is check key warning chime operation. Key warning chime sounds for 2 seconds after touching “ON” on CONSULT-ll screen.
BACK DR OPEN WARN	This test is check back door open warning chime operation. Back door open warning chime sounds for 2 seconds after touching “ON” on CONSULT-ll screen.
DOOR WARNIG	This test is check door warning chime operation. Door warning chime sounds for 2 seconds after touching “ON” on CONSULT-ll screen.

Symptom Chart

EKS0072P

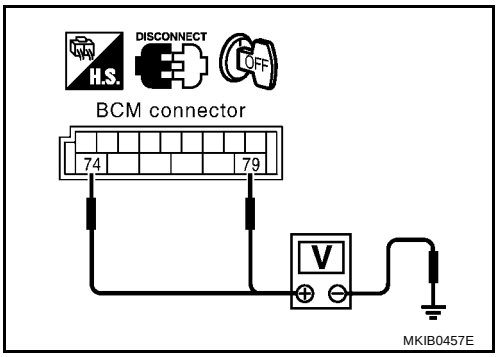
Symptom	Diagnoses/Service procedure	Reference page
Light warning chime does not activate.	● Power supply and ground circuit check	DI-71
	● Lighting switch check	DI-72
	● Front door switch (driver side) check	DI-80
	● Ignition ON signal check	DI-79
Key warning chime does not activate.	● Power supply and ground circuit check	DI-71
	● Key switch signal check/with Intelligent Key system	DI-75
	● Key switch signal check/without Intelligent Key system	DI-73
	● Front door switch (driver side) check	DI-80
	● Ignition ON signal check	DI-79
Ignition switch OFF warning chime does not activate./With Intelligent Key system	● Power supply and ground circuit check	DI-71
	● Ignition knob switch signal check	DI-77
	● Front door switch (driver side) check	DI-80
	● Ignition ON signal check	DI-79
All warning chimes do not activate.	● Power supply and ground circuit check	DI-71
	● BCM self-diagnosis check	BCS-14

Power Supply and Ground Circuit Check

EKS0072Q

1. CHECK POWER SUPPLY CIRCUIT

1. Disconnect smart entrance control unit connector.
2. Check the following.



Terminals			Ignition switch position		
(+)		(–)	OFF	ACC	ON
Connector	Terminal (Wire color)				
M50	74 (W)	Ground	Battery voltage	Battery voltage	Battery voltage
	79 (Y)	Ground	Battery voltage	Battery voltage	Battery voltage

OK or NG

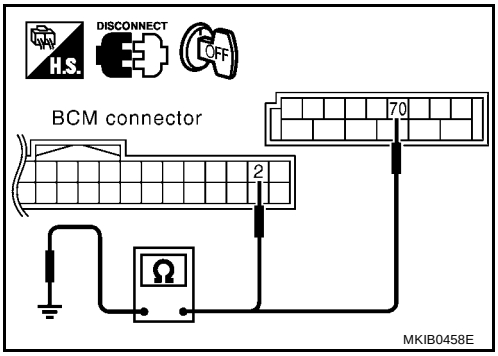
OK >> GO TO 2.
NG >> Check the following.

- 40A fusible link [letter **J** , located in fuse and fusible link box.]
- Harness for open or short between BCM and fuse

2. CHECK GROUND CIRCUIT

Check continuity between BCM harness connector M48 terminal 2 (B), M50 terminal 70 (B) and ground.

Continuity should exist.



OK or NG

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

Lighting Switch Input Signal Check

EKS0072R

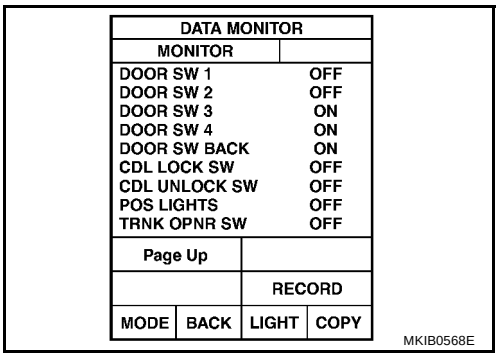
1. CHECK LIGHTING SWITCH INPUT SIGNAL

With CONSULT-II

Check lighting switch (“POS LIGHTS”) in “DATA MONITOR” mode with CONSULT-II.

When lighting switch is in 1st or 2nd position : POS LIGHTS ON

When lighting switch is in OFF position : POS LIGHTS OFF



OK or NG

OK >> GO TO 2.

NG >> Check combination switch. Refer to LT-110, "Check Combination Switch" .

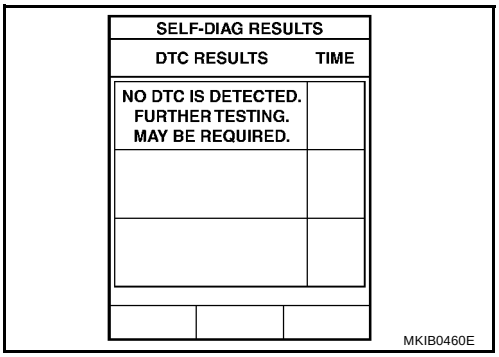
2. CHECK BCM SELF-DAIAGNOSIS

Perform BCM self-diagnosis. Refer to BCS-14, "CONSULT-II" in BCS section.

Self-diagnosis result contents

NO DTC DETECTED>>Replace BCM.

CAN communication circuit>>Refer to BCS-16, "CAN Communication Inspection With CONSULT-II (Self-Diagnosis)" .



Key Switch Signal Check/Without Intelligent Key System

EKS0072S

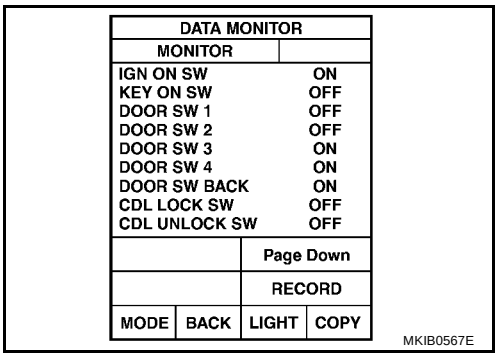
1. CHECK KEY SWITCH INPUT SIGNAL

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

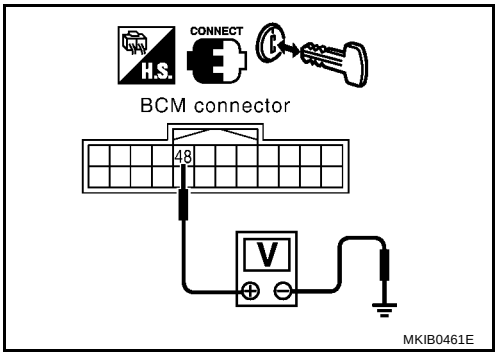
When key is withdrawn from ignition key cylinder : KEY ON SW OFF



Without CONSULT-II

Check voltage between BCM and ground.

Connector	Terminal (Wire color)		Condition	Voltage [V]
	(+)	(-)		
M48	48 (OR)	Ground	Key is inserted	Battery voltage
			key is withdrawn	Approx. 0



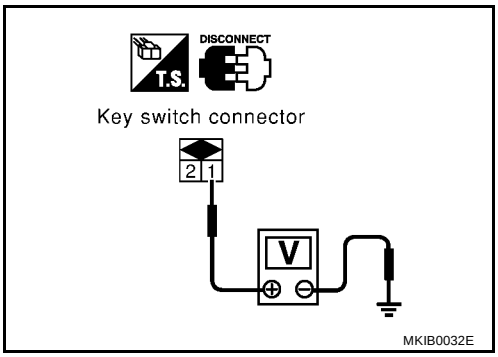
OK or NG

OK >> Key switch is OK.
NG >> GO TO 2.

2. CHECK KEY SWITCH POWER SUPPLY CIRCUIT

1. Disconnect key switch harness connector.
2. Check voltage between key switch harness connector M33 terminal 1 (Y) and ground.

Battery voltage should exist.



OK or NG

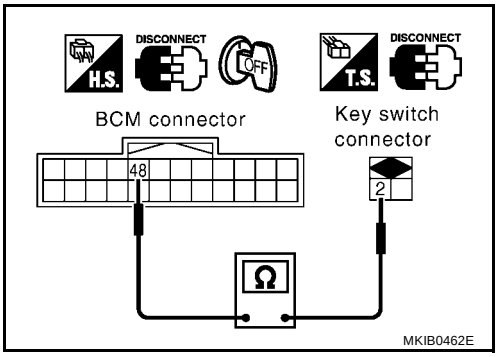
OK >> GO TO 3.
NG >> Check the following.

- 10A fuse [No. 6, located in fuse block (J/B)]
- Harness for open or short between key switch and fuse

3. CHECK KEY SWITCH INPUT SIGNAL CIRCUIT

Check harness continuity between key switch harness connector M33 terminal 2 (OR) and BCM harness connector M49 terminal 48 (OR).

Continuity should exist.

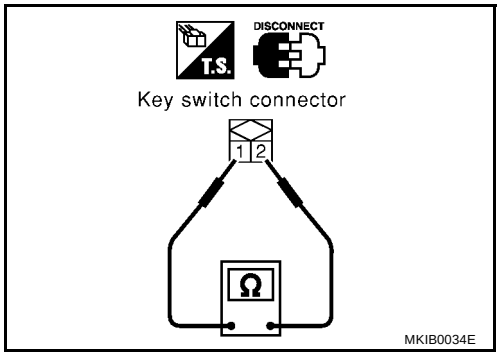


OK or NG

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

4. CHECK KEY SWITCH

Check continuity between key switch harness connector M33 terminals 1 and 2.



Terminals			Condition	Continuity
(+)		(–)		
Connector	Terminal	Terminal		
M33	1	2	Key is inserted.	Yes
			key is withdrawn.	No

OK or NG

OK >> Key switch is OK.
NG >> Replace key switch.

Key Switch Signal Check/With Intelligent Key System

EKS008IH

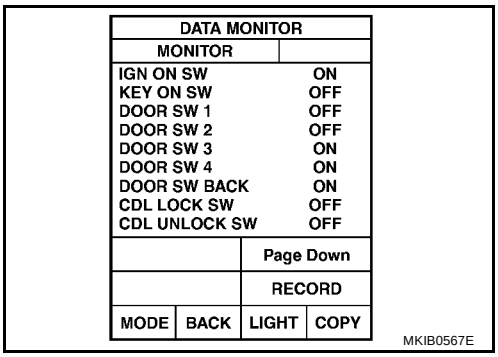
1. CHECK KEY SWITCH INPUT SIGNAL

With CONSULT-II

Check key switch and ignition knob switch (“KEY IN DETECT”) in “DATA MONITOR” mode with CONSULT-II.

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

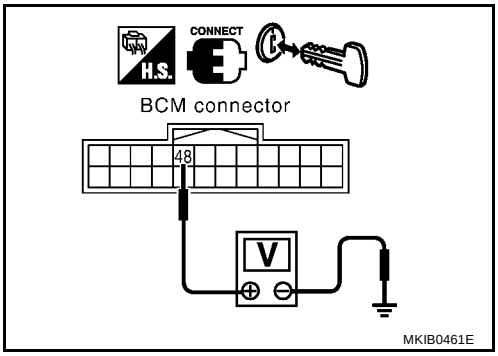
When key is withdrawn from ignition key cylinder : KEY ON SW OFF



Without CONSULT-II

Check voltage between BCM and ground.

Connector	Terminal (wire color)		Condition	Voltage [V]
	(+)	(-)		
M48	48 (P)	Ground	Key is inserted.	Battery voltage
			key is with-drawn.	Approx. 0



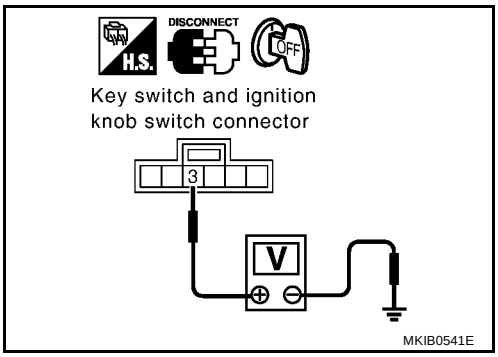
OK or NG

OK >> Key switch and ignition knob switch is OK.
NG >> GO TO 2.

2. CHECK KEY SWITCH POWER SUPPLY CIRCUIT

1. Disconnect key switch and ignition knob switch harness connector.
2. Check voltage between key switch and ignition knob switch harness connector M34 terminal 3 (BR) and ground.

Battery voltage should exist.



OK or NG

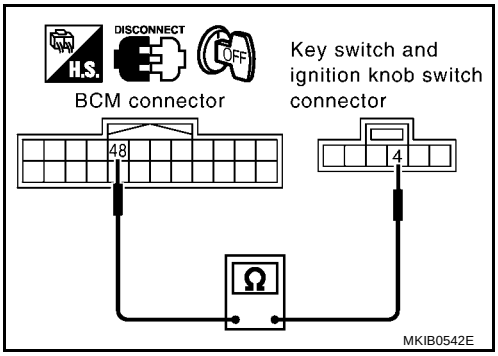
OK >> GO TO 3.
NG >> Check the following.

- 10A fuse [No. 6 located in fuse block (J/B)]
- Harness for open or short between key switch and ignition knob switch and fuse

3. CHECK KEY SWITCH INPUT SIGNAL CIRCUIT

Check harness continuity between key switch and ignition knob switch harness connector M34 terminal 4 (P) and BCM harness connector M49 terminal 48 (OR).

Continuity should exist.

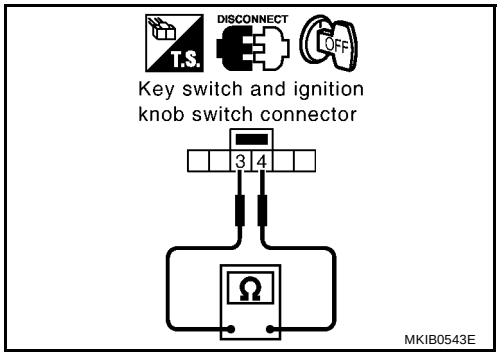


OK or NG

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

4. CHECK KEY SWITCH AND IGNITION KNOB SWITCH

Check continuity between key switch and ignition knob switch harness connector M34 terminals 3 and 4.



Terminals			Condition	Continuity
(+)		(–)		
Connector	Terminal	Terminal		
M34	3	4	Key is inserted.	Yes
			key is with-drawn.	No

OK or NG

OK >> Key switch and ignition knob switch is OK.
NG >> Replace key switch and ignition knob switch.

Ignition Knob Switch Signal Check

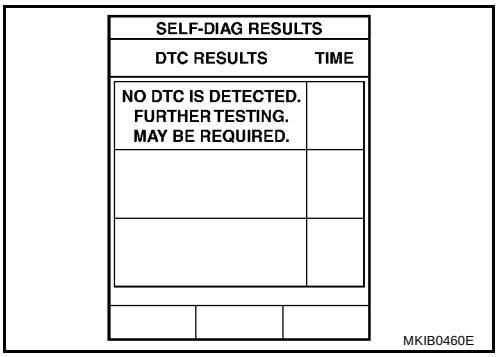
EKS008II

1. PERFORM INTELLIGENT KEY UNIT SELF-DAIAGNOSIS

Perform Intelligent Key unit self-diagnosis, Refer to BL-161, "CONSULT-II Functions" .

Self-diagnosis result contents

NO DTC DETECTED>>GO TO 2.
CAN communication circuit>>Refer to BL-168, "Check CAN Communication System" .



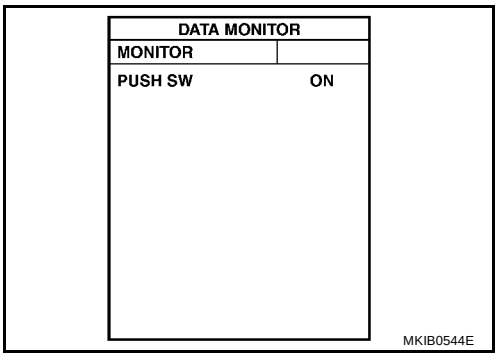
2. CHECK KEY SWITCH INPUT SIGNAL

With CONSULT-II

Check ignition knob switch (“PUSH SW”) in “DATA MONITOR” mode with CONSULT-II.

When ignition knob switch is pushed : PUSH SW ON

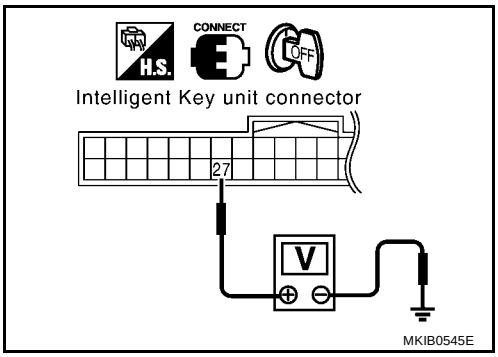
When ignition knob switch is leaved : PUSH SW OFF



Without CONSULT-II

Check voltage between Intelligent Key unit and ground.

Connector	Terminal (Wire color)		Condition	Voltage [V]
	(+)	(-)		
M51	27 (GY)	Ground	Ignition knob switch is pushed.	Battery voltage
			Ignition knob switch is leaved.	Approx. 0



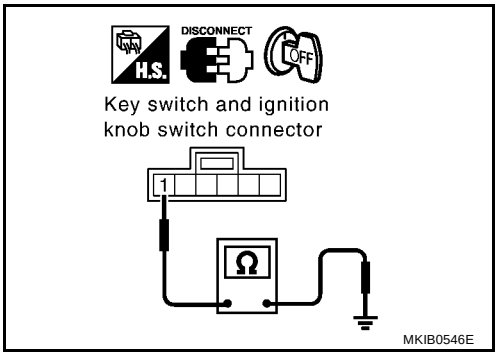
OK or NG

OK >> Key switch and ignition knob switch is OK.
NG >> GO TO 3.

3. CHECK IGNITION KNOB SWITCH POWER SUPPLY CIRCUIT

1. Disconnect key switch and ignition knob switch harness connector.
2. Check voltage between key switch and ignition knob switch harness connector M34 terminal 1 (W) and ground.

Battery voltage should exist.



OK or NG

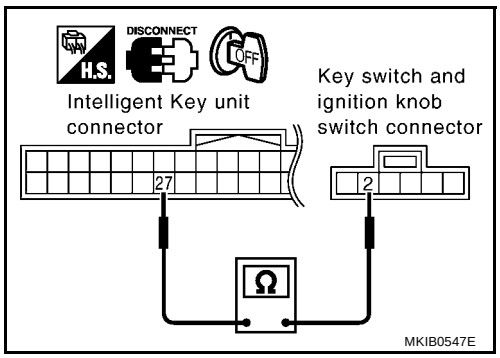
OK >> GO TO 4.
NG >> Check the following.

- 10A fuse [No. 6, located in fuse block (J/B)]
- Harness for open or short between key switch and ignition knob switch and fuse

4. CHECK KEY SWITCH AND IGNITION KNOB SWITCH INPUT SIGNAL CIRCUIT

Check harness continuity between key switch and ignition knob switch harness connector M34 terminal 2 (GY) and Intelligent Key unit harness connector M51 terminal 27 (GY).

Continuity should exist.



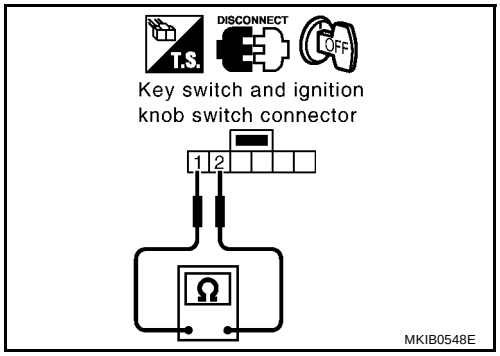
OK or NG

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

5. CHECK KEY SWITCH AND IGNITION KNOB SWITCH

Check continuity between key switch and ignition knob switch harness connector M34 terminals 1 and 2.

Terminals			Condition	Continuity
(+)		(–)		
Connector	Terminal	Terminal		
M34	1	2	Ignition knob switch is pushed.	Yes
			Ignition knob switch is leaved.	No



OK or NG

OK >> Key switch and ignition knob switch is OK.
NG >> Replace key switch and ignition knob switch.

Ignition ON Signal Check

EKS0087C

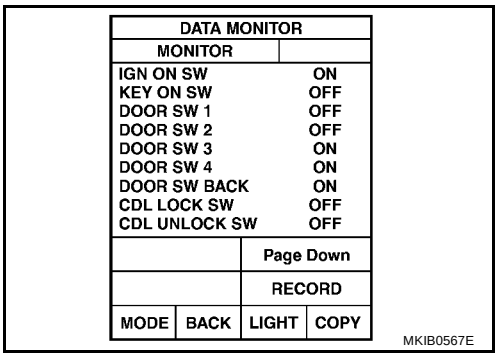
1. CHECK IGNITION ON SIGNAL

With CONSULT-II

Check ignition switch “ON” signal (“IGN ON SW”) in “DATA MONITOR” mode with CONSULT-II.

When ignition switch is ON : IGN ON SW ON

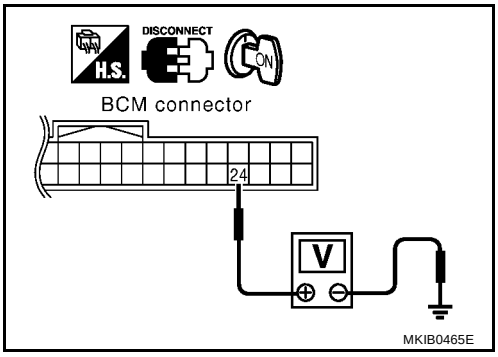
When ignition switch is OFF : IGN ON SW OFF



Without CONSULT-II

Check voltage between BCM harness connector M48 terminal 24 (OR) and ground.

Terminal		Ignition switch position		
(+)	(-)	OFF	ACC	ON
27	Ground	0V	0V	Battery voltage



OK or NG

OK >> INSPECTION END

NG >> Check the following.

- 10A fuse [No. 4, located in fuse block (J/B)].
- Harness for open or short between BCM and fuse.

Front Door Switch (Driver side) Check

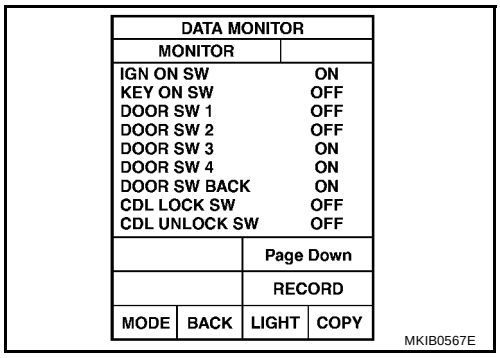
EKS0072T

1. CHECK FRONT DOOR SWITCH (DRIVER SIDE) INPUT SIGNAL

With CONSULT-II

- Check front door switch (“DR DOOR SW”) in “DATA MONITOR” mode with CONSULT-II.

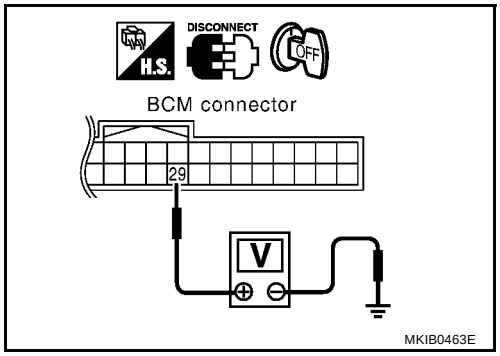
When driver's door is open : DOOR SW 1 ON
When driver's door is closed : DOOR SW 1 OFF



Without CONSULT-II

- Check voltage between BCM harness and ground.

Connector	Terminal (wire color)		Condition (Driver's door)	Voltage [V]
	(+)	(–)		
M48	29 (L)	Ground	Door is opened.	Approx. 5
			Door is closed.	0



OK or NG

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

2. CHECK DOOR SWITCH OPEN OR SHORT CIRCUIT

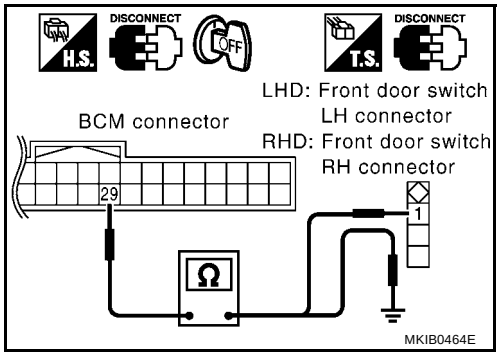
1. Disconnect BCM connector and front door switch (driver side) connector.
2. Check the following.

– Harness continuity between BCM harness connector M48 terminal 29 (L) and front door switch (driver side) connector B22 (LHD models) terminal 1 (LG) or B16 (RHD models) terminal 1 (L).

Continuity should exist.

– Harness continuity between BCM harness connector M48 terminal 29 (L) and ground.

Continuity should not exist.



OK or NG

OK >> Check front door switch (driver side) ground condition.
NG >> Repair harness or connector.