SECTION DI
DRIVER INFORMATION SYSTEM

CONTENTS

APPLICATION NOTICE

PFP:00000

How to Check Vehicle Type

EKS00Q7A

Confirm K9K engine type with Model written on identification plate (refer to GI-44, "IDENTIFICATION INFORMATION"),then refer to service information in DI section.

Vehicle type	Engine type
xTKxxxxK12Vxx	Euro3 48kW
xTKxxxxK12Yxx	Euro3 60kW
xTKxxxxK12Txx	Euro4 50kW
xTKxxxxK12Uxx	Euro4 63kW

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 harnesses or 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

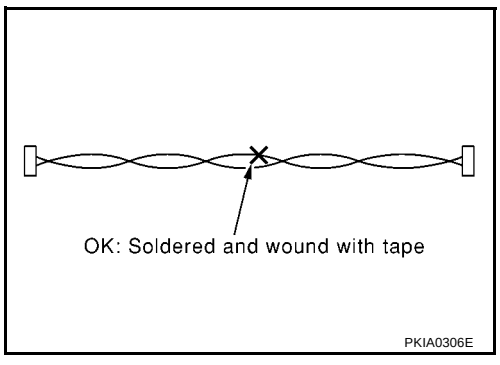
- Do not apply voltage of 7.0V or higher to the measurement terminals.
- Use the tester with its open terminal voltage being 7.0V or less.
- Be sure to turn ignition switch off and disconnect negative battery cable before checking the circuit.

Precautions For Harness Repair

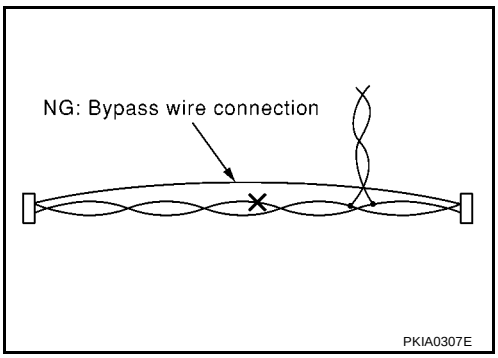
EKS008WH

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.)

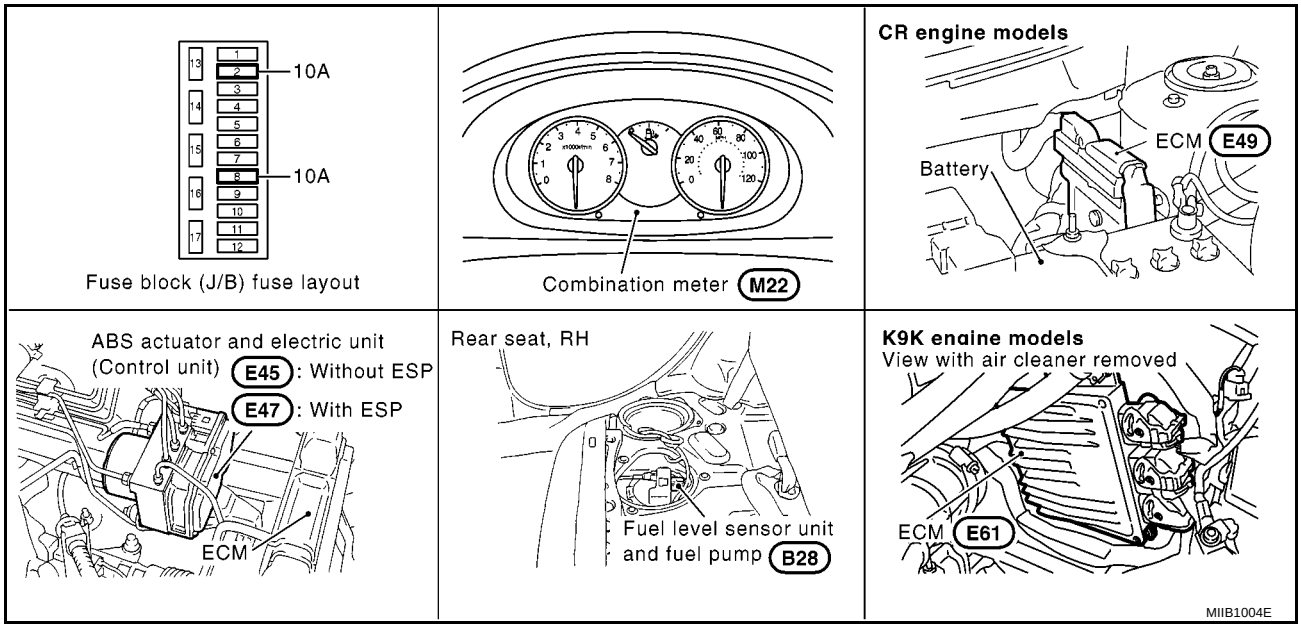


COMBINATION METERS

PFP:24814

Component Parts and Harness Connector Location

EKS00824



System Description

EKS00822

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.

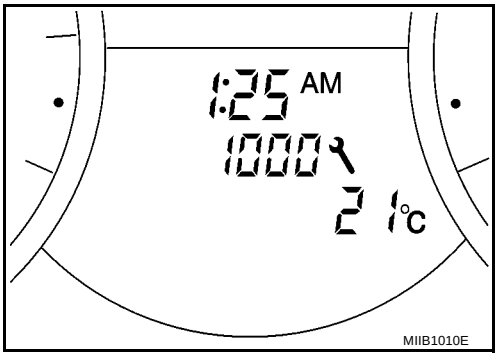
UNIFIED CONTROL METER

- Speedometer, odo/trip meter, tachometer, fuel gauge and water temperature warning/indicator lamp are controlled totally by control unit built in combination meter.
- Signal of speedometer, odo/trip meter, tachometer and water temperature warning/indicator lamp are received via CAN communication line.
- Engine coolant temperature is indicated by water temperature warning/indicator lamp color (blue or red).
- 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.

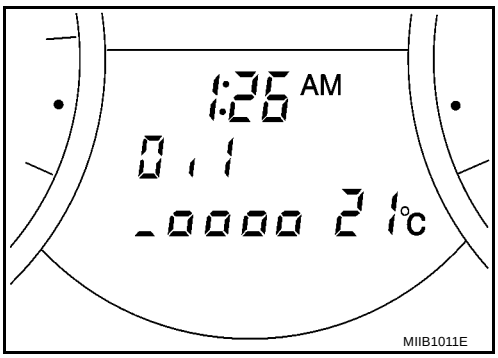
DISPLAY CHANGE AFTER IGNITOIN SWITCH ON

The display will change in the following order after the ignition is turned ON.

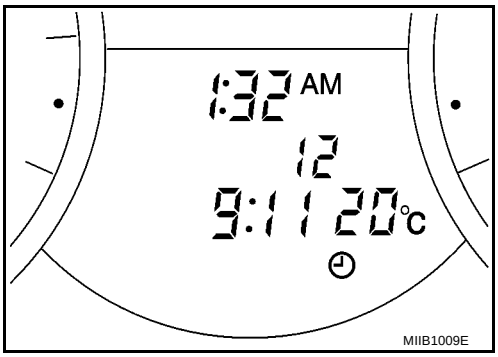
- During the 5 to 10 seconds after the ignition is turned ON.
  Maintenance distance, wrench symbol display



- During the 5 to 10 seconds after ignition is turned ON.
  Oil level display



- About 10 seconds after ignition is turned ON.
  Odo, Trip, or selected items are displayed.



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 refer to DI-38, "DRIVE COMPUTER"
  .
- When resetting with trip A displayed, only trip A display is reset (same as trip B).

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 warning/indicator lamp will be ON with red color for 1 second.
After engine started,

- Water temperature warning/indicator lamp will be ON with blue color while engine coolant temperature is less than 55 °C.
- Water temperature warning/indicator lamp will be OFF wtih blue color, while engine coolant temperature is more than 55 °C.
- Water temperature warning/indicator lamp will be OFF, while engine coolant temperature is between 55 °C and 114 °C.
- Water temperature warning/indicator lamp will be ON with red color, 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

EKS00K37

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.

CAN Communication Unit

EKS00QPF

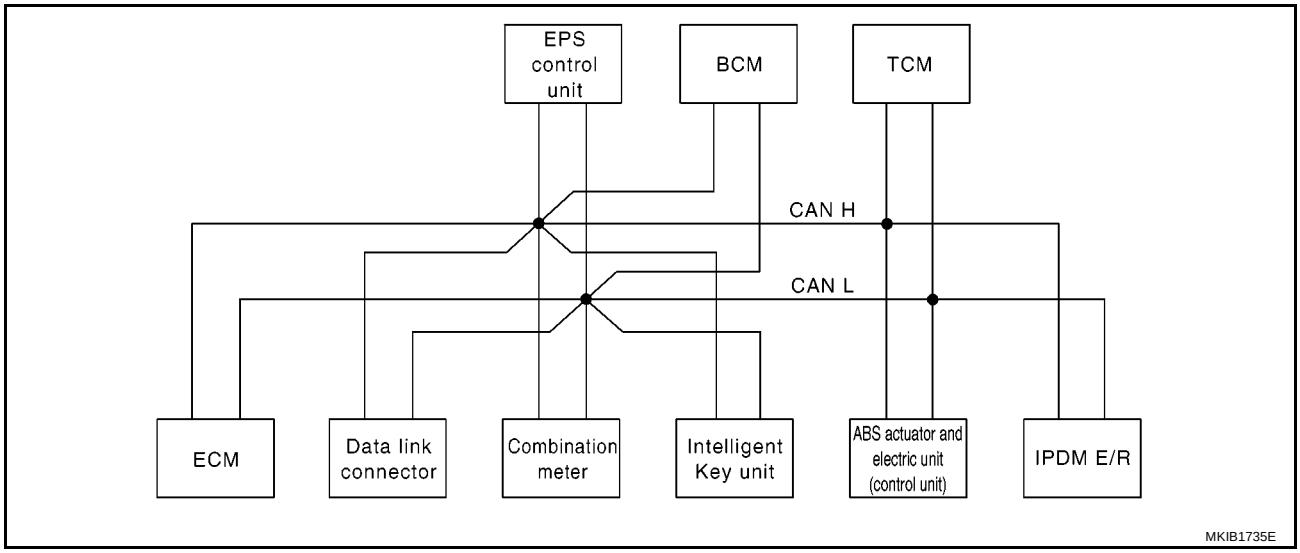
Body type	3door/5door		3door/5door/C+C				3door/5door		3door/5door/C+C				3door/5door	
Axle	2WD													
Engine	CR12DE/CR14DE				HR16DE		CR12DE/CR14DE				HR16DE		K9K	
Handle	LHD/RHD													
Brake control	ABS						ESP						ABS	
Transmission	A/T		M/T				A/T		M/T					
Intelligent Key system	×		×		×		×		×		×		×	
CAN communication unit														
ECM	×	×	×	×	×	×	×	×	×	×	×	×	×	×
Data link connector	×	×	×	×	×	×	×	×	×	×	×	×	×	×
Combination meter	×	×	×	×	×	×	×	×	×	×	×	×	×	×
Intelligent Key unit	×		×		×		×		×		×		×	
EPS control unit	×	×	×	×	×	×	×	×	×	×	×	×	×	×
BCM	×	×	×	×	×	×	×	×	×	×	×	×	×	×
ABS actuator and electric unit (control unit)	×	×	×	×	×	×	×	×	×	×	×	×	×	×
TCM	×	×					×	×						
IPDM E/R	×	×	×	×	×	×	×	×	×	×	×	×	×	×
CAN communication type	DI-10, "TYPE 1/TYPE 2"		DI-13, "TYPE 3/TYPE 4/ TYPE 5/TYPE 6"				DI-15, "TYPE 7/TYPE 8"		DI-18, "TYPE 9/TYPE 10/ TYPE 11/TYPE 12"				DI-20, "TYPE 13/TYPE 14"	

×: Applicable

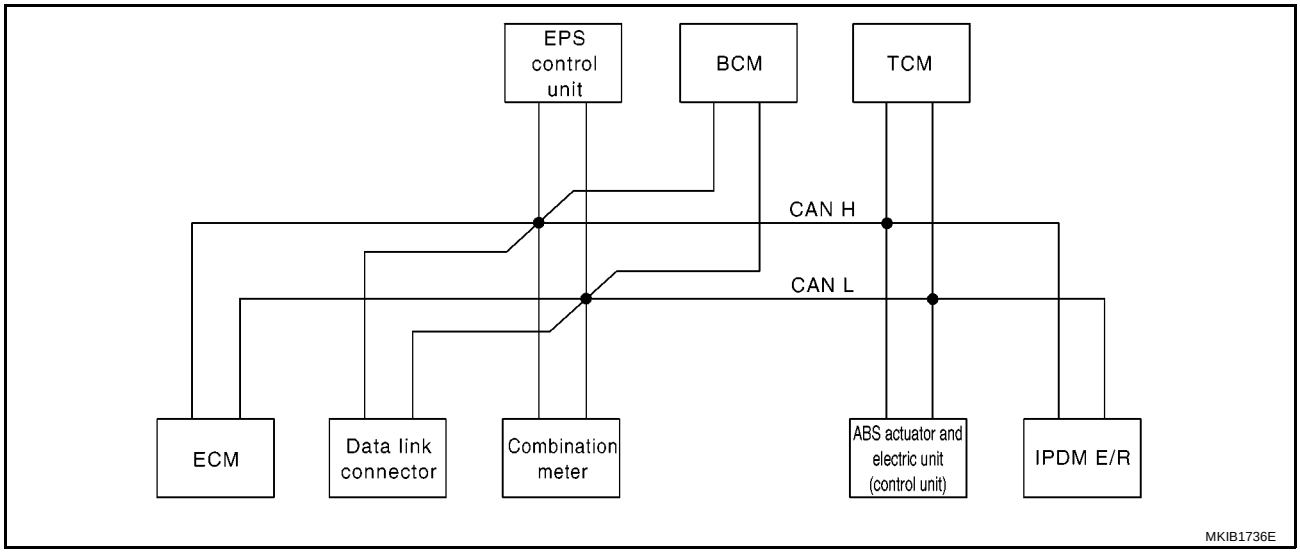
TYPE 1/TYPE 2

System diagram

- Type 1



- Type 2



Input/output signal chart

T: Transmit R: Receive

Signals	ECM	Combi-nation meter.	Intelli-gent Key unit	EPS control unit	BCM	ABS actua-tor and electric unit (control unit)	TCM	IPDM E/R
Engine speed signal	T	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	
Overdrive control switch signal		T					R	

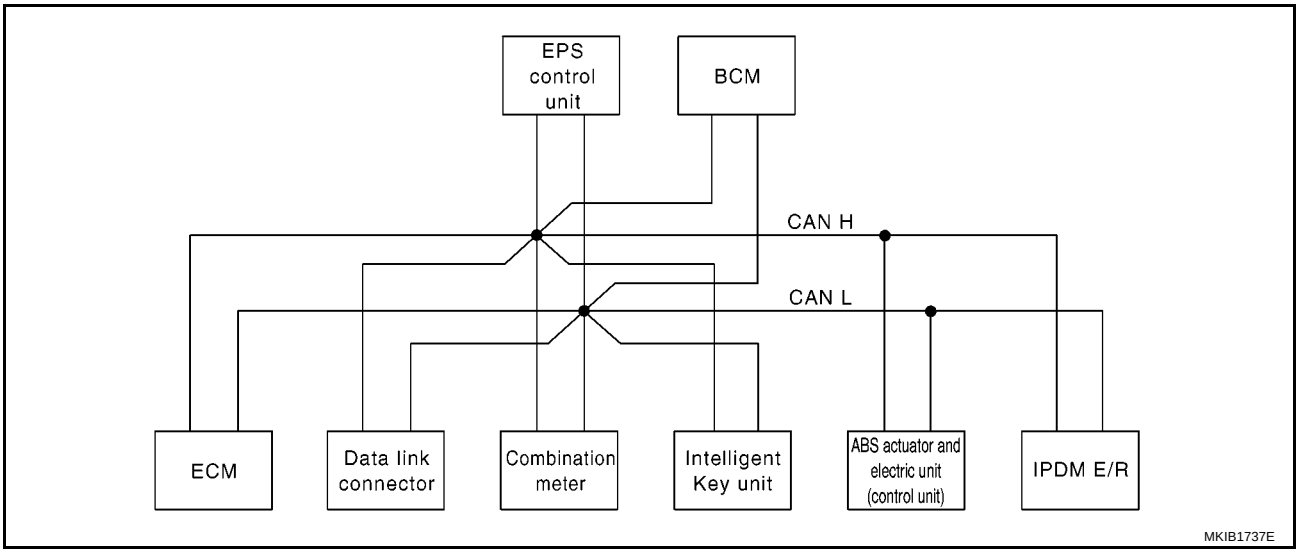
Signals	ECM	Combination meter.	Intelligent Key unit	EPS control unit	BCM	ABS actuator and electric unit (control unit)	TCM	IPDM E/R
A/T position indicator signal		R					T	
Stop lamp switch signal		T					R	
O/D OFF indicator signal		R					T	
Engine and A/T integrated control signal	T						R	
	R						T	
Fuel consumption monitor signal	T	R						
Oil pressure switch signal		R						T
A/C compressor request signal	T							R
Heater fan switch signal	R				T			
Cooling fan speed request signal	T							R
Position lights request signal		R			T			R
Low beam request signal					T			R
Low beam status signal	R							T
High beam request signal		R			T			R
High beam status signal	R							T
Day time light request signal					T			R
Vehicle speed signal	R	R		R		T		
	R	T	R	R	R			
Sleep/wake up signal		R	R		T			R
Door switch signal		R	R		T			R
Turn indicator signal		R			T			
Buzzer output signal		R			T			
		R	T					
MI signal	T	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
EPS warning lamp signal		R		T				
ABS warning lamp signal		R				T		
Brake warning lamp signal		R				T		
Back-up lamp signal				R	T			
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			T		R			
Door lock/unlock status signal			R		T			
KEY indicator signal		R	T					
LOCK indicator signal		R	T					
Engine status signal	T			R				

Signals	ECM	Combi-nation meter.	Intelli-gent Key unit	EPS control unit	BCM	ABS actua-tor and electric unit (control unit)	TCM	IPDM E/R
A/C switch signal	R				T			
Brake system malfunction signal		T		R				
Parking brake switch signal		T		R				
R range signal					R			T

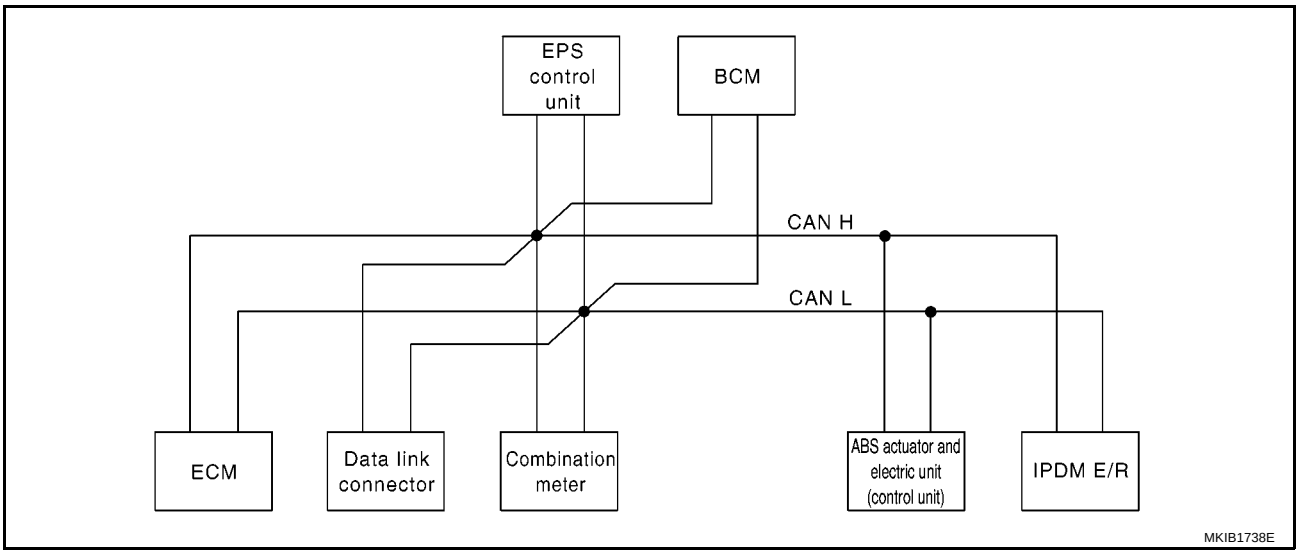
TYPE 3/TYPE 4/TYPE 5/TYPE 6

System diagram

- Type 3/Type 5



- Type 4/Type 6



Input/output signal chart

T: Transmit R: Receive

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

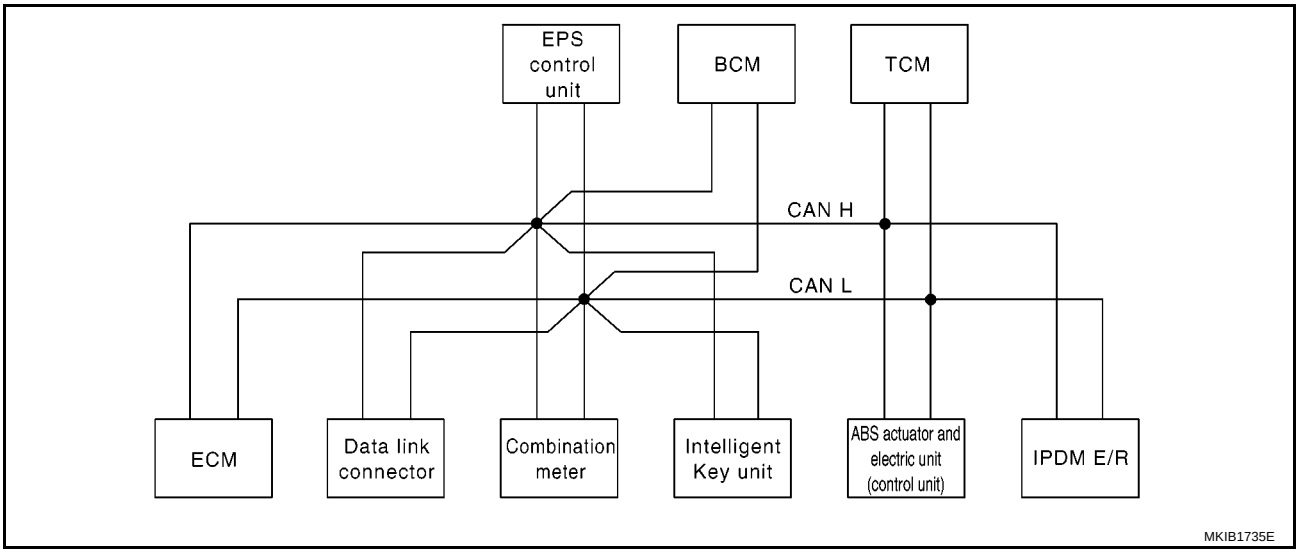
Signals	ECM	Combination meter.	Intelligent Key unit	EPS control unit	BCM	ABS actuator and electric unit (control unit)	IPDM E/R
Low beam status signal	R						T
High beam request signal		R			T		R
High beam status signal	R						T
Day time light request signal					T		R
Vehicle speed signal	R	R		R		T	
	R	T	R	R	R		
Sleep/wake up signal		R	R		T		R
Door switch signal		R	R		T		R
Turn indicator signal		R			T		
Buzzer output signal		R			T		
		R	T				
MI signal	T	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
EPS warning indicator signal		R		T			
ABS warning lamp signal		R				T	
Brake warning lamp signal		R				T	
Back-up lamp signal				R	T		
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			T		R		
Door lock/unlock status signal			R		T		
KEY indicator signal		R	T				
LOCK indicator signal		R	T				
Engine status signal	T			R			
A/C switch signal	R				T		
Brake system malfunction signal		T		R			
Parking brake switch signal		T		R			
R range signal					R		T
Retractable hard top warning lamp signal*		R			T		

*: C+C only

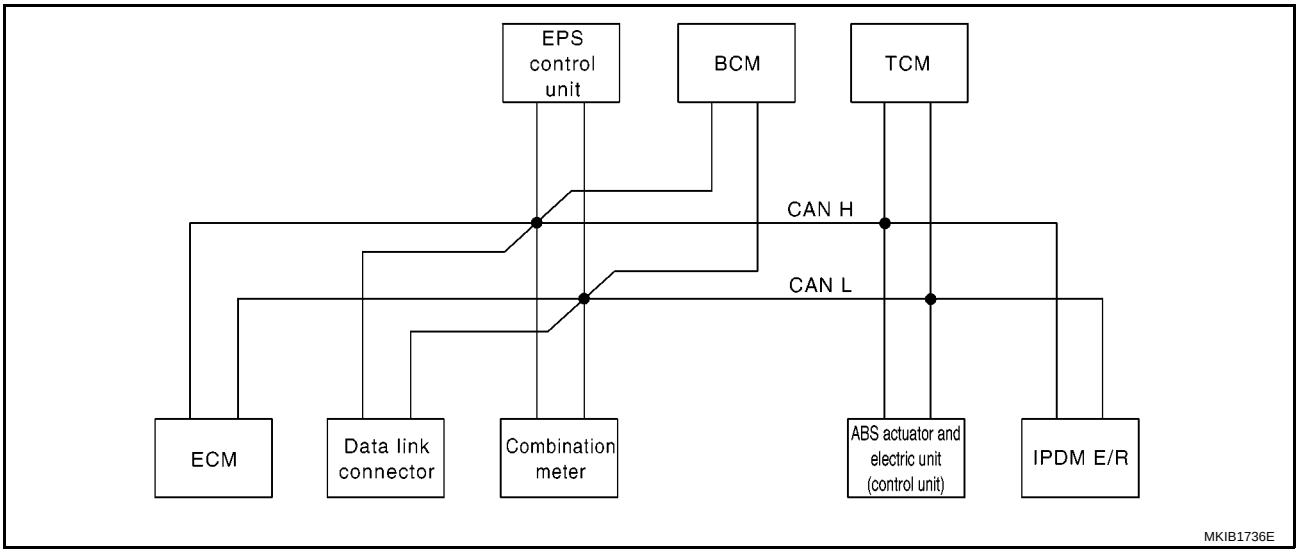
TYPE 7/TYPE 8

System diagram

- Type 7



- Type 8



Input/output signal chart

T: Transmit R: Receive

Signals	ECM	Combination meter.	Intelligent Key unit	EPS control unit	BCM	ABS actuator and electric unit (control unit)	TCM	IPDM E/R
Engine speed signal	T	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	R	
Closed throttle position signal	T						R	
Wide open throttle position signal	T						R	
Overdrive control switch signal		T					R	
A/T position indicator signal		R					T	

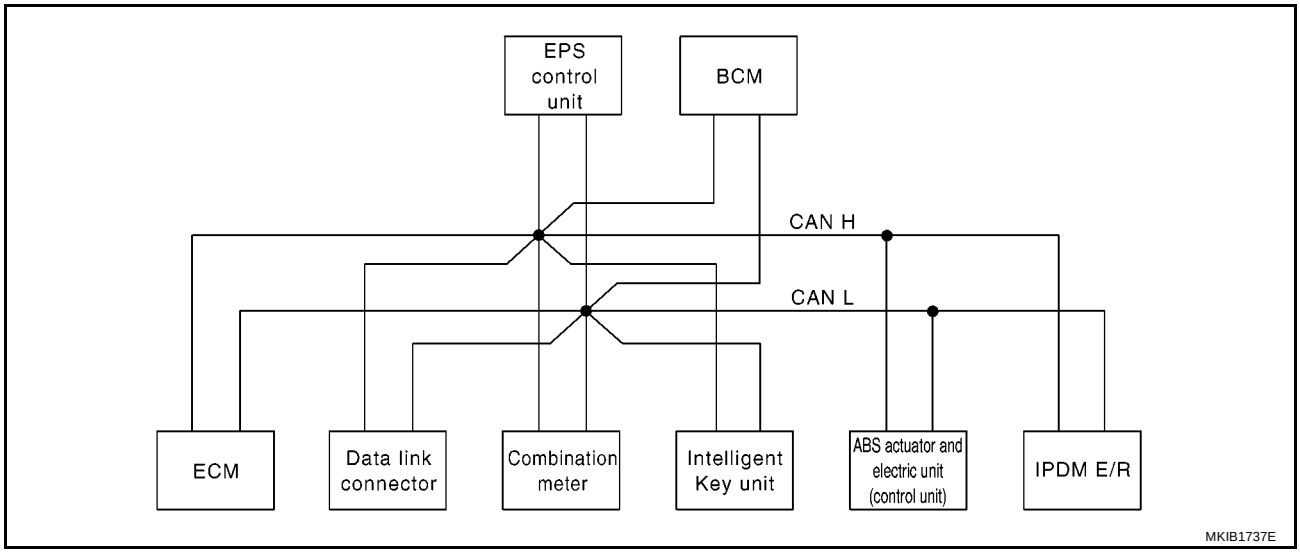
Signals	ECM	Combination meter.	Intelligent Key unit	EPS control unit	BCM	ABS actuator and electric unit (control unit)	TCM	IPDM E/R
A/T shift schedule change demand signal						T	R	
Stop lamp switch signal		T					R	
O/D OFF indicator lamp signal		R					T	
Engine and A/T integrated control signal	T						R	
	R						T	
Fuel consumption monitor signal	T	R						
Oil pressure switch signal		R						T
A/C compressor request signal	T							R
Heater fan switch signal	R				T			
Cooling fan speed request signal	T							R
Position lights request signal		R			T			R
Low beam request signal					T			R
Low beam status signal	R							T
High beam request signal		R			T			R
High beam status signal	R							T
Day time light request signal					T			R
Vehicle speed signal	R	R		R		T		
	R	T	R	R	R			
Sleep/wake up signal		R	R		T			R
Door switch signal		R	R		T			R
Turn indicator signal		R			T			
Buzzer output signal		R			T			
		R	T					
MI signal	T	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
EPS warning lamp signal		R		T				
ABS warning lamp signal		R				T		
ESP warning lamp signal		R				T		
ESP OFF indicator signal		R				T		
SLIP indicator lamp signal		R				T		
Steering angle signal				T		R		
Brake warning lamp signal		R				T		
Back-up lamp signal				R	T			
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			T		R			

Signals	ECM	Combination meter.	Intelligent Key unit	EPS control unit	BCM	ABS actuator and electric unit (control unit)	TCM	IPDM E/R
Door lock/unlock status signal			R		T			
KEY indicator signal		R	T					
LOCK indicator signal		R	T					
Engine status signal	T			R				
A/C switch signal	R				T			
A/T torque signal						R	T	
Brake system malfunction signal		T		R				
Parking brake switch signal		T		R				
R range signal					R			T

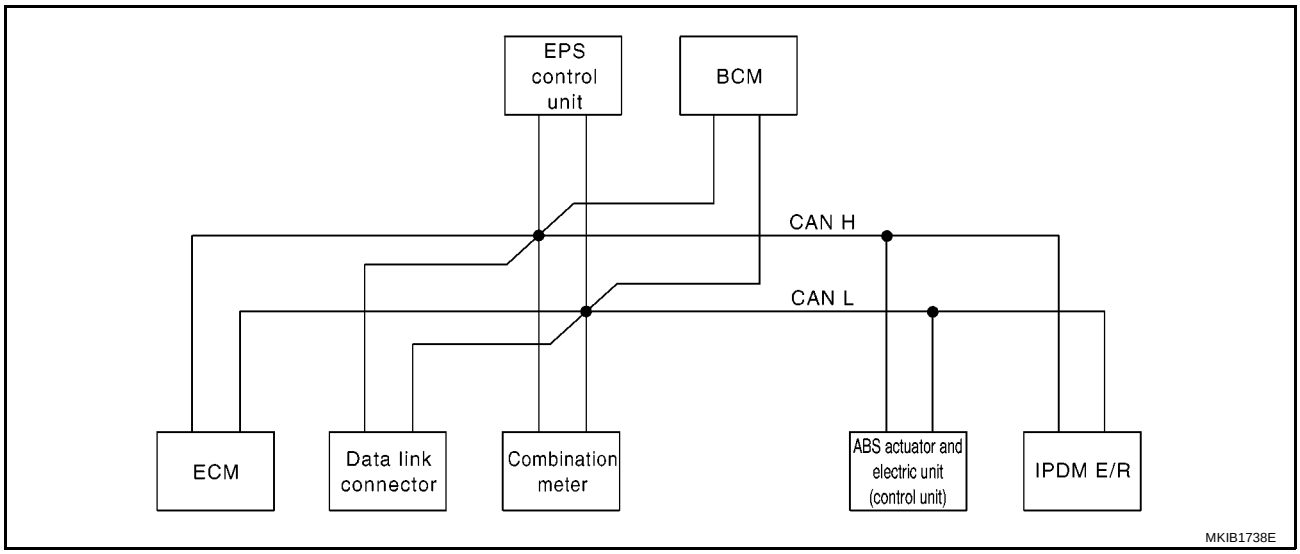
TYPE 9/TYPE 10/TYPE 11/TYPE 12

System diagram

- Type 9/Type 11



- Type 10/Type 12



Input/output signal chart

T: Transmit R: Receive

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

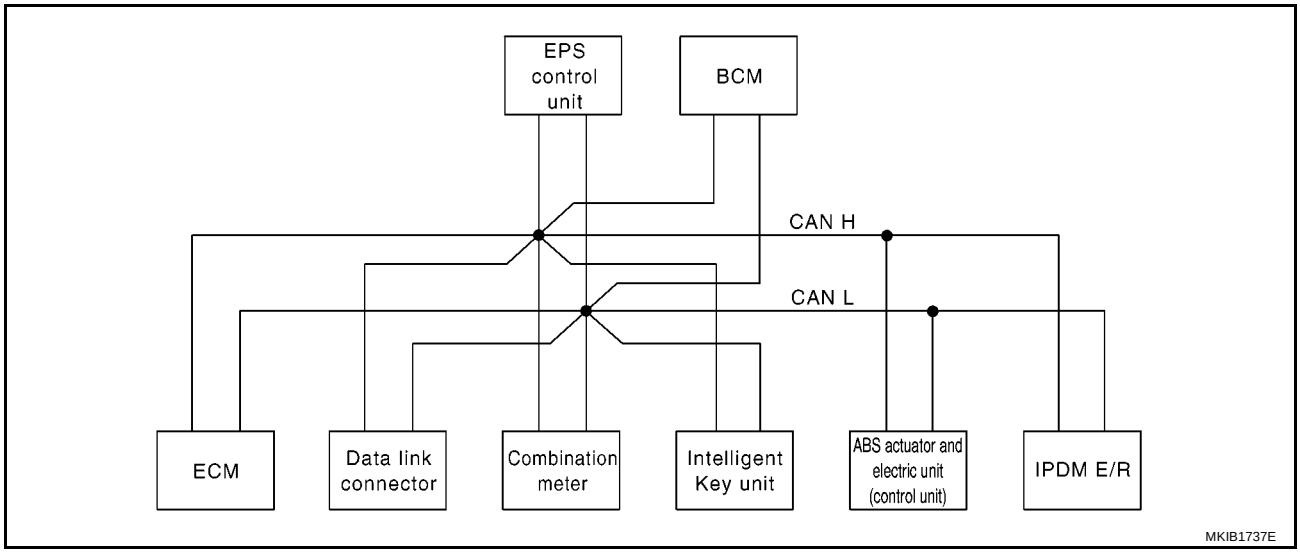
Signals	ECM	Combination meter.	Intelligent Key unit	EPS control unit	BCM	ABS actuator and electric unit (control unit)	IPDM E/R
Low beam request signal					T		R
Low beam status signal	R						T
High beam request signal		R			T		R
High beam status signal	R						T
Day time light request signal					T		R
Vehicle speed signal	R	R		R		T	
	R	T	R	R	R		
Sleep/wake up signal		R	R		T		R
Door switch signal		R	R		T		R
Turn indicator signal		R			T		
Buzzer output signal		R			T		
		R	T				
MI signal	T	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
EPS warning indicator signal		R		T			
ABS warning lamp signal		R				T	
ESP warning lamp signal		R				T	
ESP OFF indicator signal		R				T	
SLIP indicator lamp signal		R				T	
Steering angle signal				T		R	
Brake warning lamp signal		R				T	
Back-up lamp signal				R	T		
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			T		R		
Door lock/unlock status signal			R		T		
KEY indicator signal		R	T				
LOCK indicator signal		R	T				
Engine status signal	T			R			
A/C switch signal	R				T		
Brake system malfunction signal		T		R			
Parking brake switch signal		T		R			
R range signal					R		T
Retractable hard top warning lamp signal*		R			T		

*: C+C only

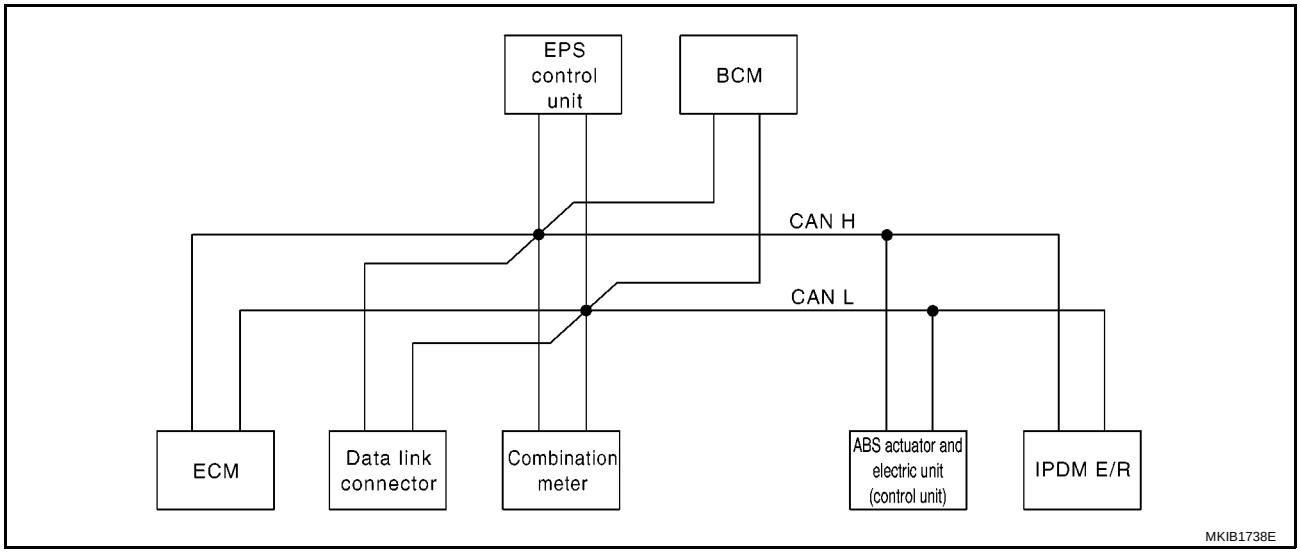
TYPE 13/TYPE 14

System diagram

- Type 13



- Type 14



Input/output signal chart

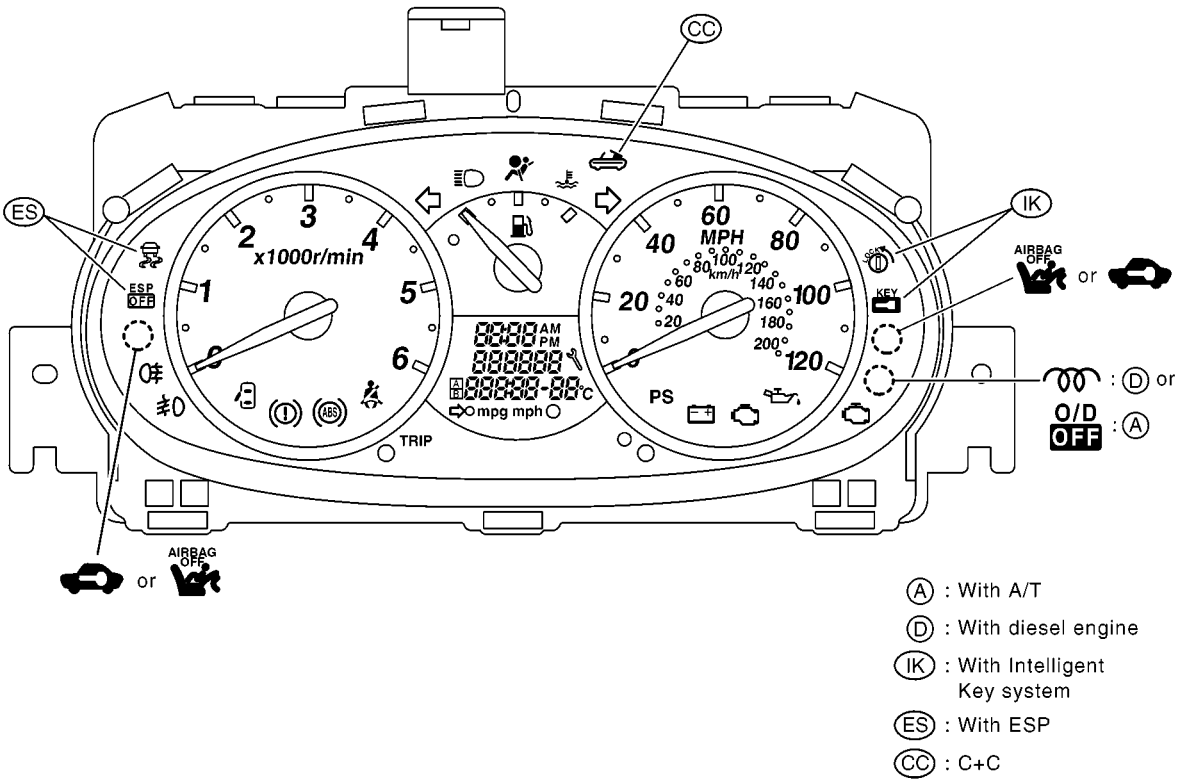
T: Transmit R: Receive

Signals	ECM	Combination meter.	Intelligent Key unit	EPS control unit	BCM	ABS actuator and electric unit (control unit)	IPDM E/R
Engine speed signal	T	R					
Engine coolant temperature signal	T	R			R		
Fuel consumption monitor signal	T	R					
Oil pressure switch signal		R					T
A/C compressor request signal	T						R
Heater fan switch signal	R				T		
Cooling fan speed request signal	T						R
Position lights request signal		R			T		R
Low beam request signal					T		R
High beam request signal		R			T		R
Day time light request signal					T		R
Vehicle speed signal	R	R		R	R	T	
	R	T	R	R			
Sleep/wake up signal		R	R		T		R
Door switch signal		R	R		T		R
Turn indicator signal		R			T		
Buzzer output signal		R			T		
		R	T				
MI signal	T	R					
Front wiper request signal					T		R
Front wiper stop position signal					R		T
Rear window defogger switch signal					T		R
EPS warning indicator signal		R		T			
ABS warning lamp signal		R				T	
Brake warning lamp signal		R				T	
Back-up lamp signal				R	T		
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			T		R		
Door lock/unlock status signal			R		T		
KEY indicator signal		R	T				
LOCK indicator signal		R	T				
Engine status signal	T			R			
Brake system malfunction signal		T		R			
Parking brake switch signal		T		R			
Glow indicator signal	T	R					
R range signal					R		T

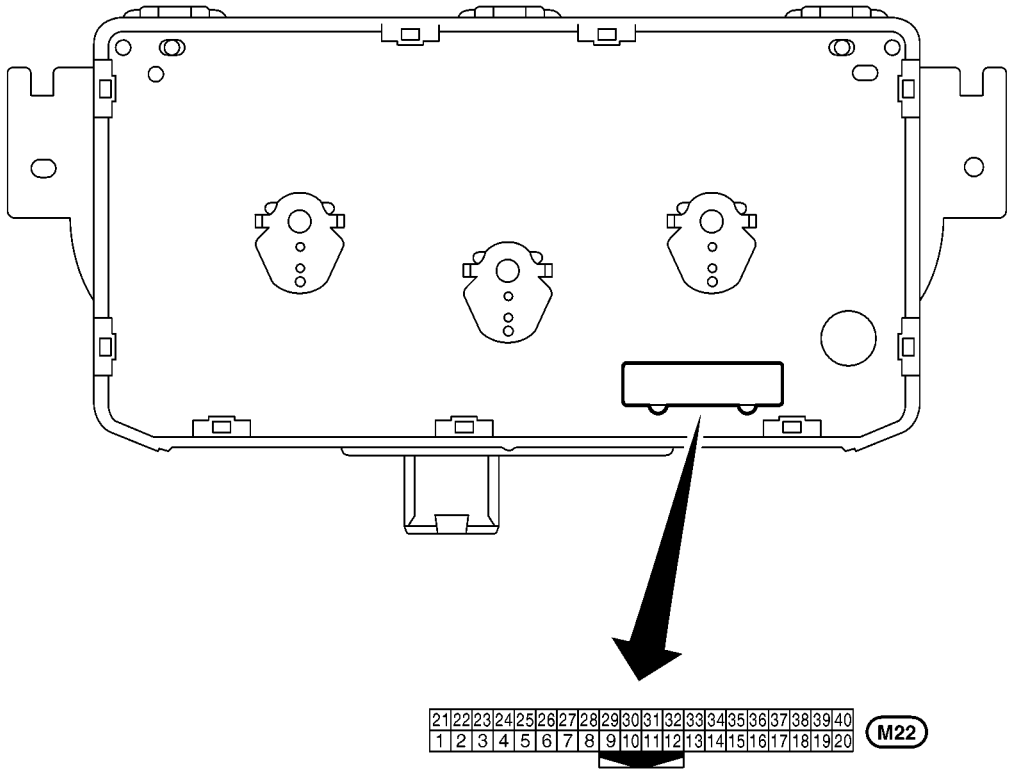
Combination Meter

EKS00825

CHECK



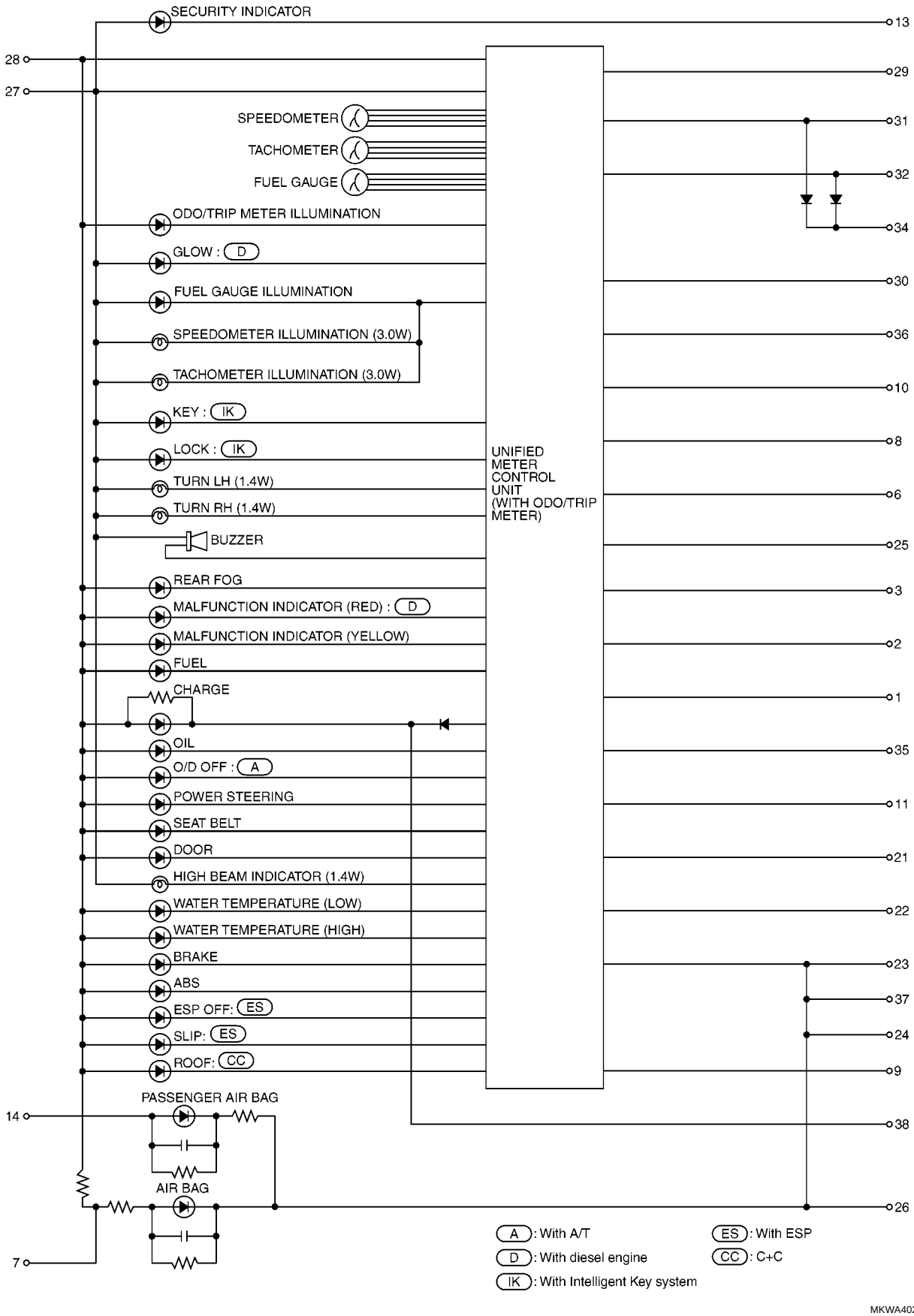
Ⓐ : With A/T
Ⓓ : With diesel engine
IK : With Intelligent Key system
ES : With ESP
CC : C+C



MKWA4023E

Schematic

EKS00826

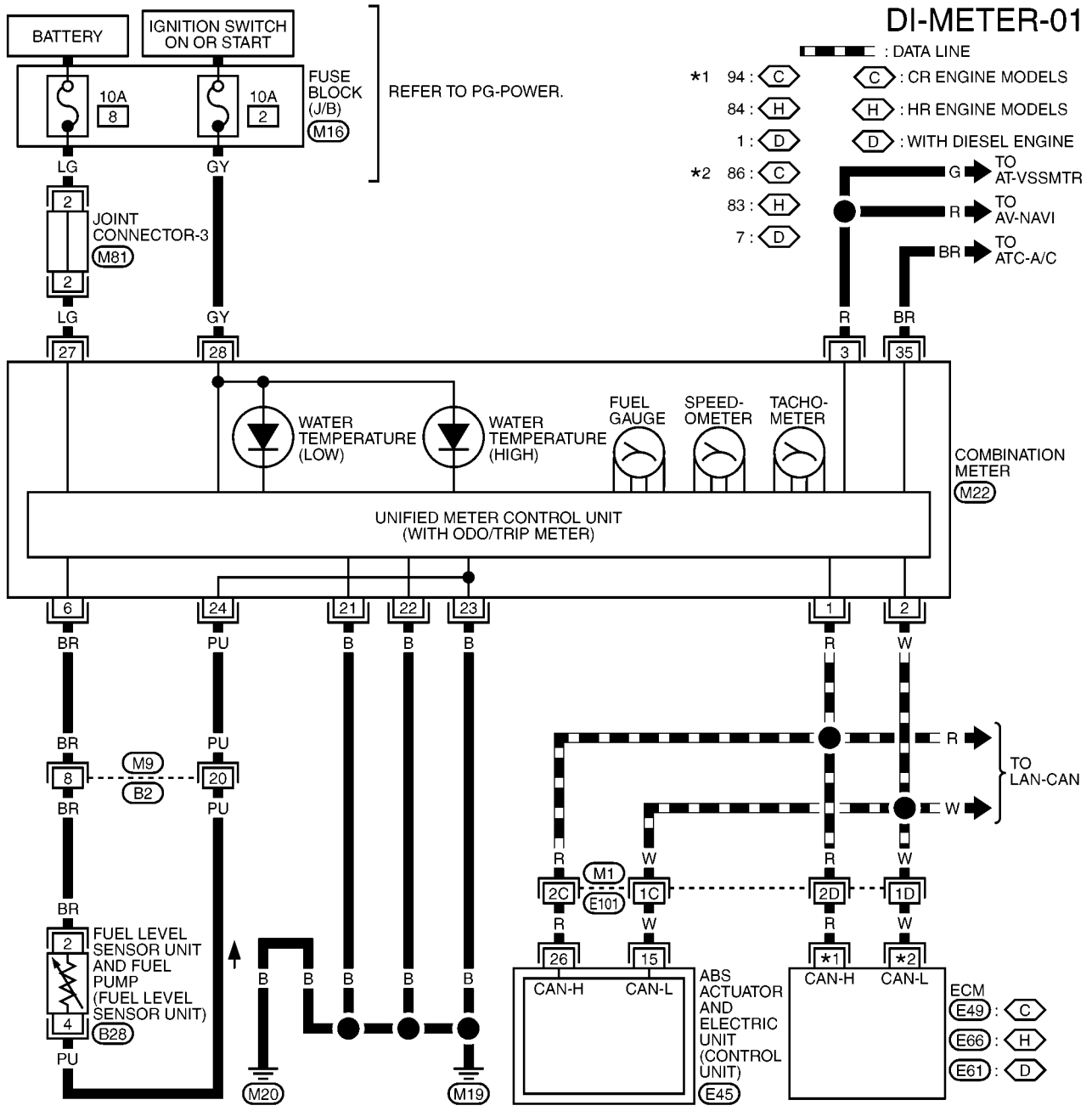


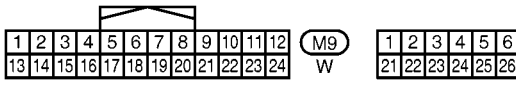
MKWA4024E

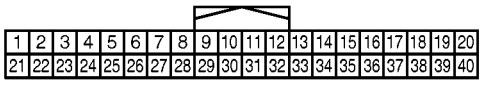
Wiring Diagram — METER —

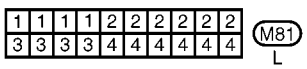
EKS00827

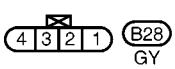
WITHOUT ESP











REFER TO THE FOLLOWING.

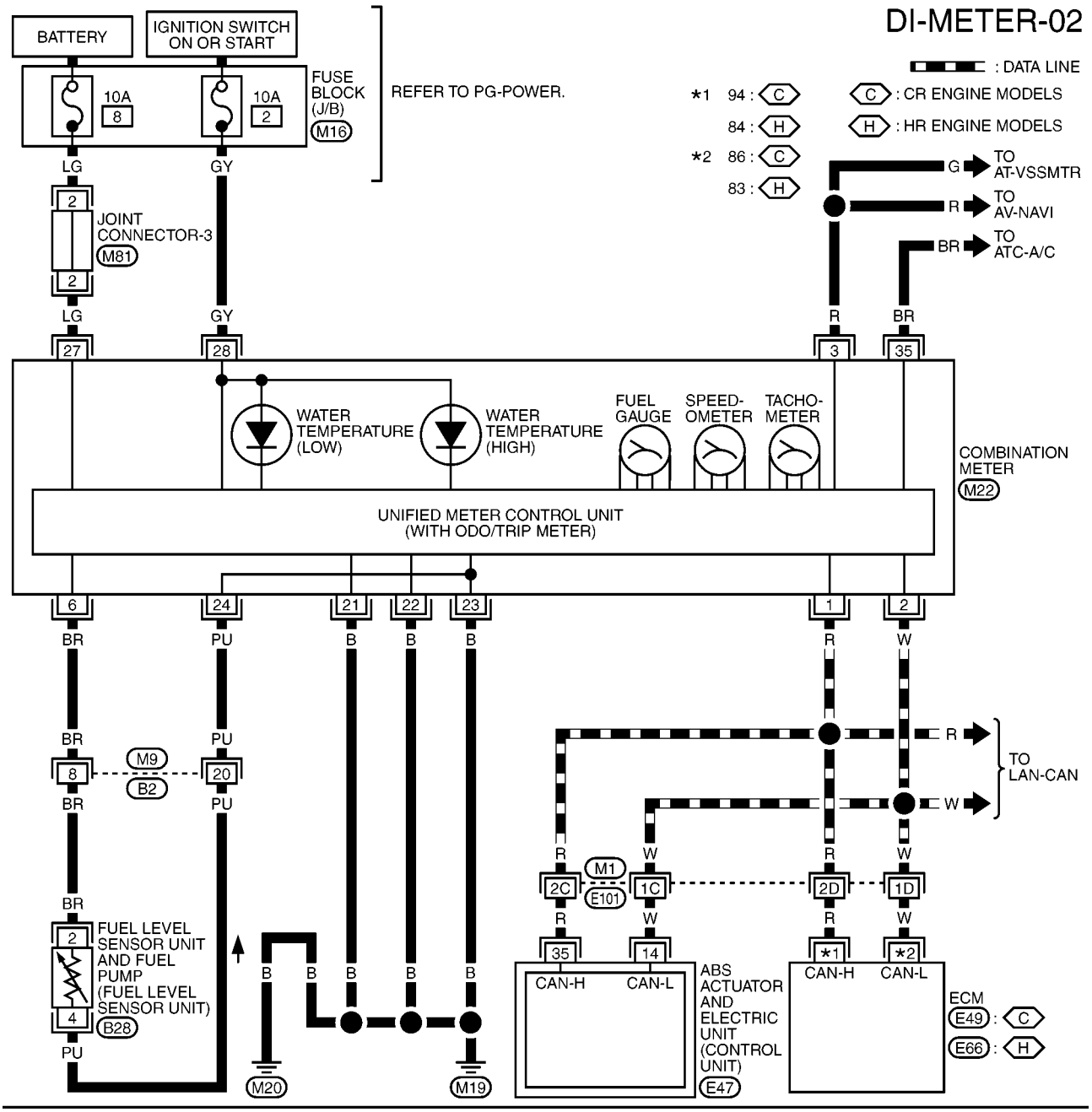
M1 -SUPER MULTIPLE JUNCTION (SMJ)

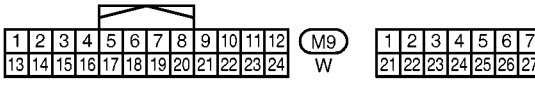
M16 -FUSE BLOCK-JUNCTION BOX (J/B)

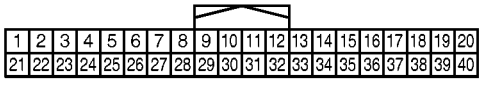
E45 , E49 , E61 , E66 -ELECTRICAL UNITS

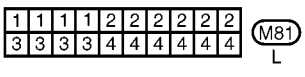
MKWA4025E

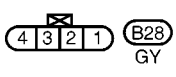
WITH ESP











REFER TO THE FOLLOWING.
M1 -SUPER MULTIPLE JUNCTION (SMJ)
M16 -FUSE BLOCK-JUNCTION BOX (J/B)
E47, E49, E66 -ELECTRICAL UNITS

MKWA4026E

Terminals and Reference Value for Combination Meter

EKS00P1C

Terminal No.	Wire color	Item	Condition		Reference value (V) (Approx.)
			Ignition switch	Operation or condition	
1	R	CAN- H	—	—	—
2	W	CAN- L	—	—	—
6	BR	Fuel level sensor signal	—	—	Refer to (CR engine) FL-4, "FUEL LEVEL SENSOR UNIT, FUEL FILTER AND FUEL PUMP ASSEMBLY" (HR engine)FL-14, "FUEL LEVEL SENSOR UNIT, FUEL FILTER AND FUEL PUMP ASSEMBLY" (K9K engine)FL-27, "FUEL LEVEL SENSOR UNIT" .
21	B	Ground	—	—	0
22	B	Ground	—	—	0
23	B	Ground	—	—	0
24	PU	Fuel level sensor ground	ON	—	0
27	LG	Battery power supply	OFF	—	Battery voltage
28	GY	Ignition switch ON or START	ON	—	Battery voltage

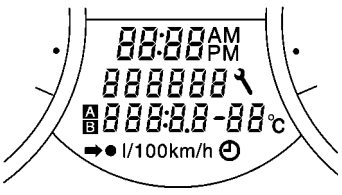
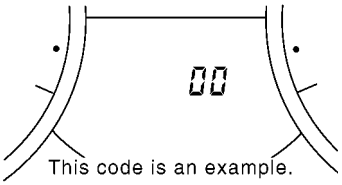
Combination Meter Self-Diagnosis

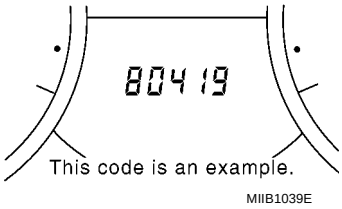
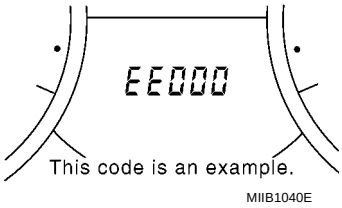
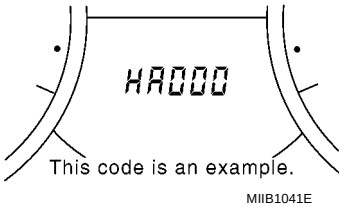
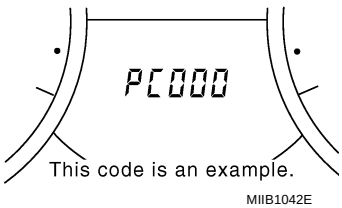
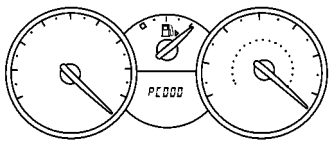
EKS00828

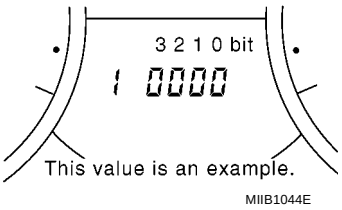
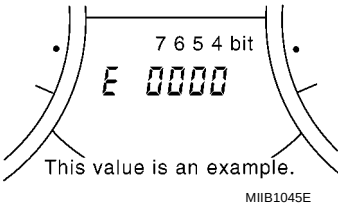
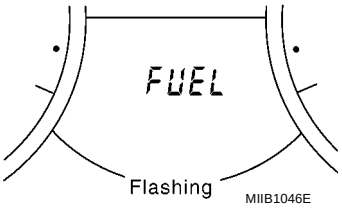
PERFORMING SELF-DIAGNOSIS MODE

1. Turn the ignition switch ON.
2. Turn ignition switch OFF after setting the display to trip A or B.
3. Turn ON the ignition switch while pressing the trip button.
4. Release the trip button after the ignition switch is turned ON.
5. Press the trip button 3 time to start self-diagnosis. The sequence (A to J) is activated by pressing the trip button.

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.

	Check items	Display	Remarks
A	Segment test	 MIIB1037E	All odo/trip meter, segments are ON.
B	Work instruction code	 MIIB1038E	This information is not used for service. Skip this step.

	Check items	Display	Remarks
C	Software code	 MIIB1039E	This information is not used for service. Skip this step.
D	EEPROM code	 MIIB1040E	This information is not used for service. Skip this step.
E	Hardware code	 MIIB1041E	This information is not used for service. Skip this step.
F	PCB code	 MIIB1042E	This information is not used for service. Skip this step.
G	Meter/gauge test (Sweeping movement)	 MIIB1043E	Tachometer, speedometer, fuel level gauge and have sweeping movement test. (The meter/gauges operate MIN. → MAX., MAX. → MIN. for 2 times) Water temperature warning/indicator lamp are ON with bule color. during the sweep movement.

	Check items	Display	Remarks
H	Error 1 (Bit 0 - Bit 3)	 MIIB1044E	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-29, "Malfunction Chart for “Error 1” and “Error E”" .
I	Error E (Bit 4 - Bit 7)	 MIIB1045E	
J	Fuel warning lamp test	 MIIB1046E	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 to DI-33, "Power Supply and Ground Circuit Check" .

2. CHECK OPERATION OF SELF-DIAGNOSIS MODE

Perform self-diagnosis mode. Refer to DI-26, "PERFORMING SELF-DIAGNOSIS MODE" .

Can self-diagnosis mode be activated?

YES >> GO TO 3.
NO >> Replace combination meter. Refer to DI-36, "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-26, "PERFORMING SELF-DIAGNOSIS MODE" .

Is any malfunction indicated in self-diagnosis mode?

YES >> GO TO “Symptom Chart 1”. Refer to DI-32, "Symptom Chart 1" .
NO >> GO TO 4.

4. CHECK WATER TEMPERATURE WARNING/INDICATOR

- Check water temperature waring lamp (Red color)

1. Turn ignition switch OFF.
2. When turn ignition switch ON, water temperature warning/indicator lamp will be ON with red color for 1 second.

- Check water temperature indicator lamp (Blue color)

Check meter/gauge operation in self-diagnosis mode (Meter/gauge test). Refer to DI-26, "Combination Meter Self-Diagnosis" .

Does water temperature warning/lindicator lamp is ON?

Yes >> GO TO 5.
No >> Replace combination meter.

5. CHECK SEGMENTS

Check all odo/trip meter segments in self-diagnosis mode (Odo/trip meter segment test). Refer to DI-26, "PERFORMING SELF-DIAGNOSIS MODE" .

Is any malfunction indicated in self-diagnosis mode?

YES >> GO TO “Symptom Chart 1”. Refer to DI-32, "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-26, "PERFORMING SELF-DIAGNOSIS MODE" .

All warning/indicator lamp should turn ON.

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-29, "Malfunction Chart for “Error 1” and “Error E”" .

OK or NG

OK >> GO TO 8.
NG >> GO TO “Symptom Chart 2”. Refer to DI-32, "Symptom Chart 2" .

8. CHECK OTHER MALFUNCTION

Check each malfunction according to the instruction of the “SYMPTOM CHART 3”. Refer to DI-32, "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-36, "Removal and Installation for Combination Meter" .
Multiple meter/gauge indicate malfunction in Diagnosis mode.		
One of speedometer/tachometer/fuel gauge/Water temperature 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-33, "Inspection/Vehicle Speed Signal" .
Tachometer input signal indicates malfunction in Diagnosis mode.	Tachometer input signal	Check signal for tachometer. Refer to DI-33, "Inspection/Engine Revolution Signal" .
Fuel level input signal indicates malfunction in Diagnosis mode.	Fuel level input signal	Check fuel level signal. Refer to DI-34, "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-35, "Inspection/Water Temperature Warning/indicator Lamp" .
Reset buttons indicates malfunction in Diagnosis mode.	Unified meter control unit	Combination meter. Refer toDI-36, "Removal and Installation for Combination Meter" .
CPU indicates malfunction in Diagnosis mode.	Unified meter control unit	Combination meter. Refer toDI-36, "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-35, "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-35, "Fuel Gauge Does Not Move to FULL position" .
Fuel gauge does not work.	-	Check the case of malfunction. Refer to DI-36, "Fuel Gauge Does Not Work" .

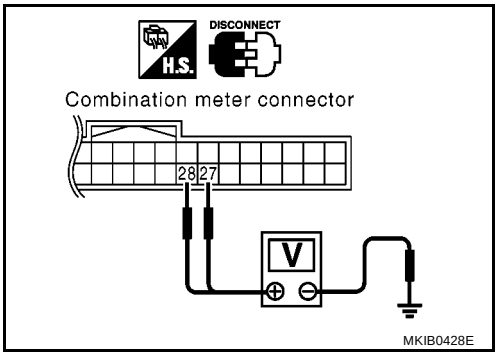
Power Supply and Ground Circuit Check

EKS0082A

1. CHECK POWER SUPPLY CIRCUIT

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

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



OK or NG

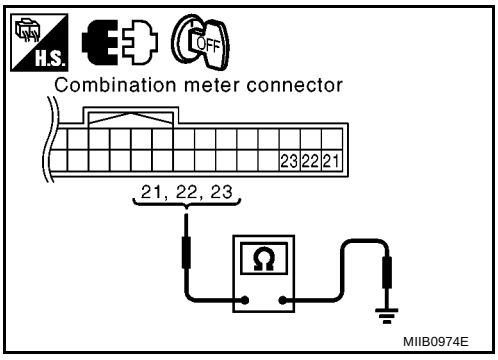
OK >> GO TO 2.
NG >> Check the following.

- 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 connector M22 terminal 21, 22, 23 and ground.

21 (B) - Gound : Continuity should exist.
22 (B) - Gound : Continuity should exist.
23 (B) - Gound : Continuity should exist.



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-22, "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-55, "Emission-related Diagnostic Information" (CR engine models with EURO-OBD), EC-484, "Emission-related Diagnostic Information" (CR engine models without EURO-OBD) , EC-833, "Emission-related Diagnostic Information" (HR engine models with EURO-OBD), EC-1269, "Emission-related Diagnostic Information" (HR engine models without EURO-OBD) or EC-K9K-64, “Trouble diagnosis — Introduction”, “DIESEL INJECTION” (K9K engine models).

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.

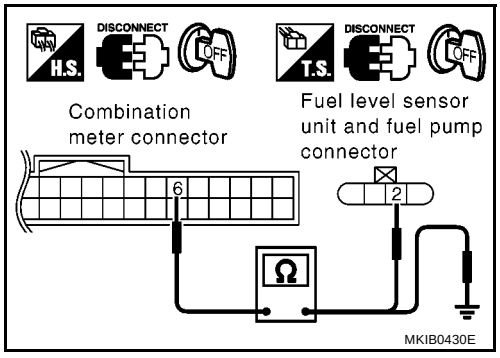
2. CHECK FUEL LEVEL SENSOR INPUT SIGNAL CIRCUIT

1. Disconnect fuel level sensor unit connector and combination meter connector.
2. Check the following.
3. Harness continuity between fuel level sensor unit and fuel pump harness connector B28 terminal 2 and combination meter harness connector M22 terminal 6.

2 (BR) – 6 (BR) : Continuity should exist.

4. Harness continuity between combination meter harness connector M22 terminal 6 and ground.

6 (BR) – Ground : Continuity should not exist.



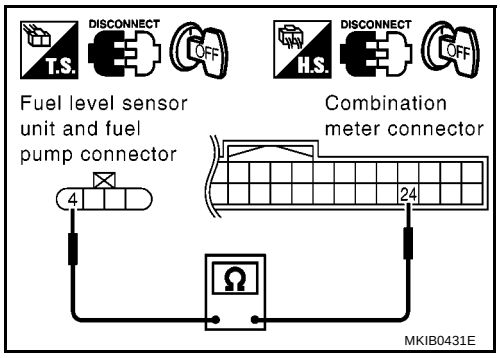
OK or NG

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 and combination meter connector M22 terminal 24.

4 (PU) – 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-36, "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-55, "Emission-related Diagnostic Information" (CR engine models with EURO-OBD), EC-484, "Emission-related Diagnostic Information" (CR engine models without EURO-OBD) , EC-833, "Emission-related Diagnostic Information" (HR engine models with EURO-OBD), EC-1269, "Emission-related Diagnostic Information" (HR engine models without EURO-OBD) or EC-K9K-64, “Trouble diagnosis — Introduction”, “DIESEL INJECTION” (K9K engine models).

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 FLUCTUATION

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

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

YES >> The pointer fluctuation may be caused by fuel level change in the fuel tank. Condition is normal.
NO >> Ask the customer about the situation when the symptom occurs in detail, and perform the trouble diagnosis.

Fuel Gauge Does Not Move to FULL position

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-36, "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" (CR engine models) or FL-27, "FUEL LEVEL SENSOR UNIT" (K9K engine models)], 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-36, "Electrical Components Inspection" .

Electrical Components Inspection

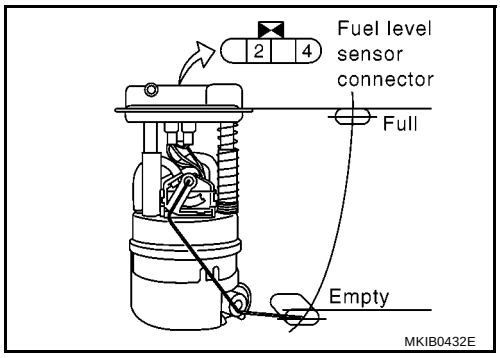
EKS0082J

FUEL LEVEL SENSOR UNIT CHECK

For removal, refer to [refer to FL-4, "FUEL LEVEL SENSOR UNIT, FUEL FILTER AND FUEL PUMP ASSEMBLY" (CR engine models), FL-14, "FUEL LEVEL SENSOR UNIT, FUEL FILTER AND FUEL PUMP ASSEMBLY" (HR engine models) or FL-27, "FUEL LEVEL SENSOR UNIT" (K9K engine models)].

Check the resistance between terminals 2 and 4.

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



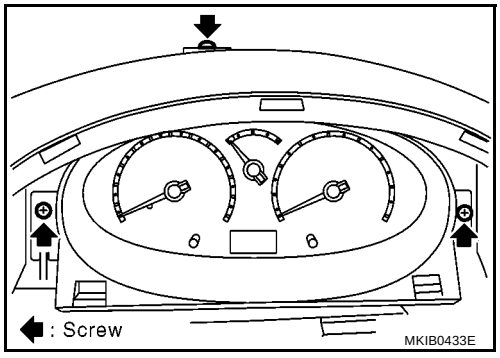
Removal and Installation for Combination Meter

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

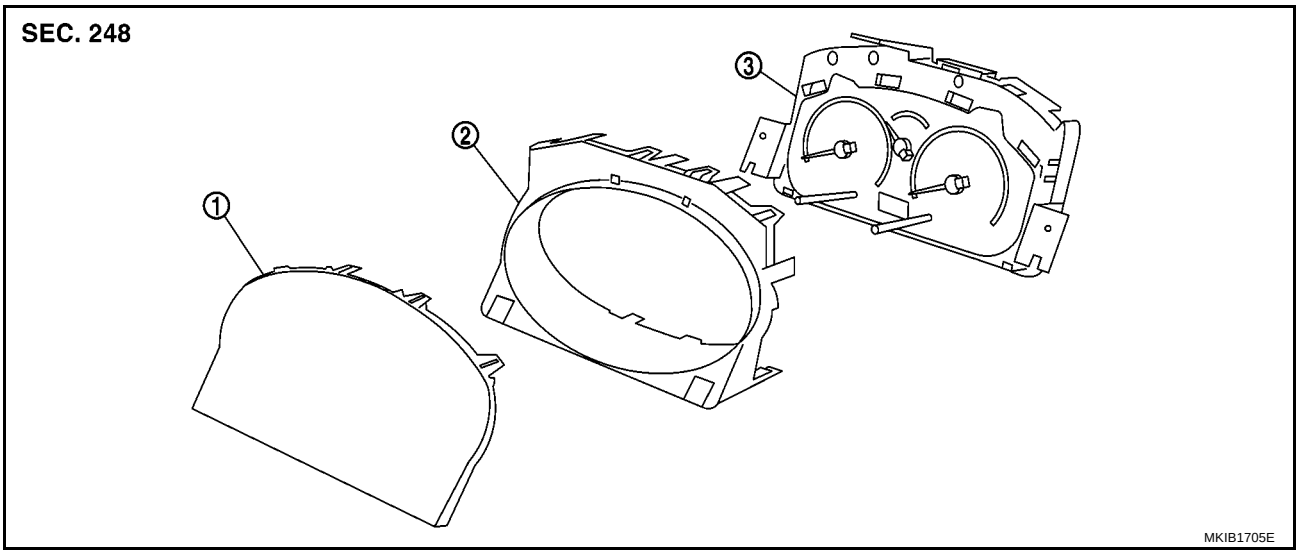


INSTALLATION

- 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

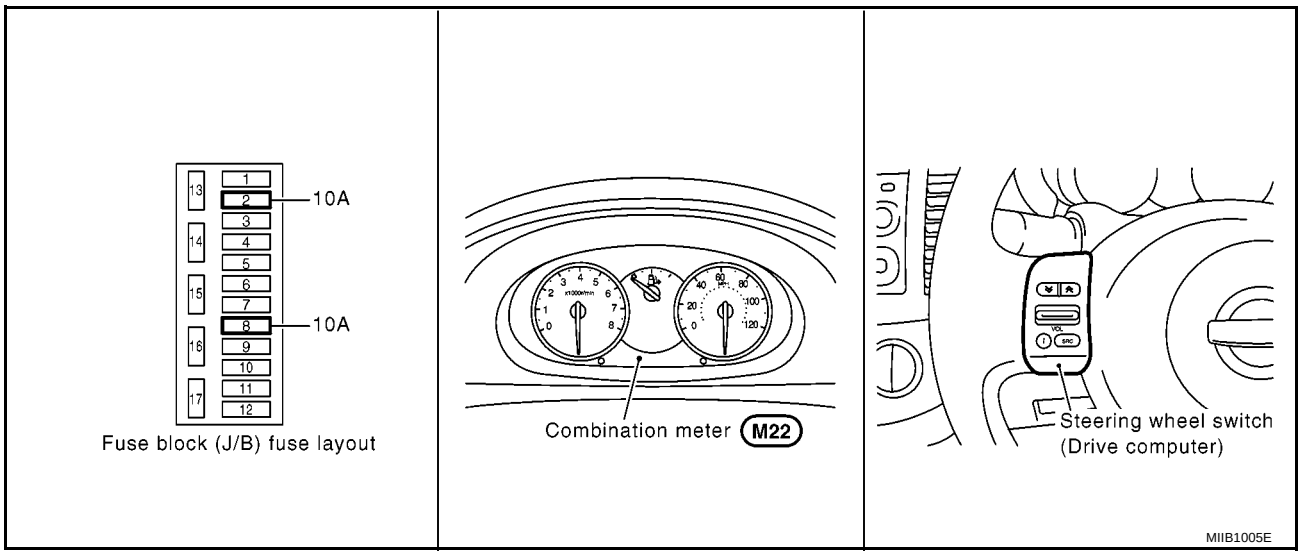
1. Disengage the tabs (13) to separate upper housing.
2. Disengage the tabs (7) to separate front cover.

DRIVE COMPUTER

PFP:24859

Component Parts and Harness Connector and Harness Connector Location

EKS0082N



System Description

EKS0082M

Refer to Owner's Manual for drive computer operating instructions.
Drive computer can be set trip A, trip B, range, average fuel consumption, average speed, time and maintenance information, etc.
And, combination meter is displayed drive computer information.

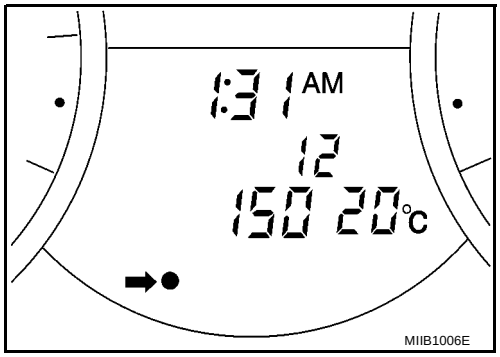
DRIVE COMPUTER

Drive computer can indicate the following item.

- Range
- Average fuel consumption
- Average speed
- Time

Indication can be changed by in the following order by pushing trip button.
Trip A → Trip B → Range → Average fuel consumption → Average speed → Time → Trip A ……

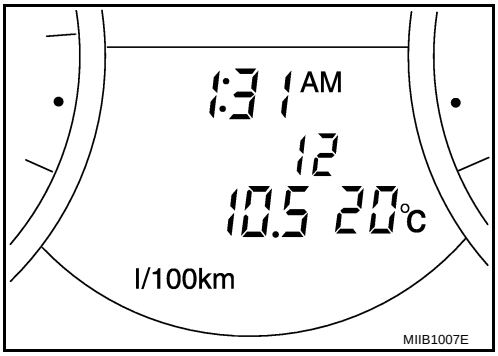
Range



- 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.
- The range is conducted by combination meter and sent to 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. Display will be changed range automatically and flashing as following.
  Range reached < 16km
  Range display (number, symbol and unit) will be diplay "– – – – ".
  Range changed > 34km
  Number will be displayed.

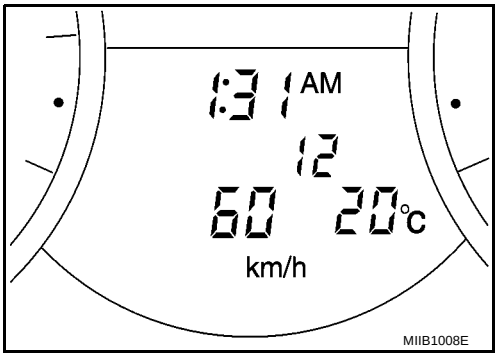
Average Fuel Consumption

- The average fuel economy is conducted by combination meter sent to 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 trip button more than approx.3 seconds, average fuel economy will be reset.
- There are two display types, ℓ/100km and mpg.
- Fuel economy with a range is 0 to 99.9 (ℓ/100 km) or (mpg).



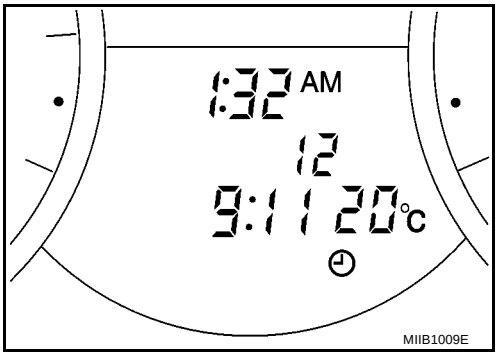
Average Speed

- Average vehicle speed indication is conducted by trip distance and trip time.
- Indication will be renewed every 30 seconds.
- When pushing trip button more than approximately 3 seconds, average speed will be reset.
- If average vehicle speed is reset, average fuel consumption will be reset at the same time.
- there are two display types, km/h or mph .

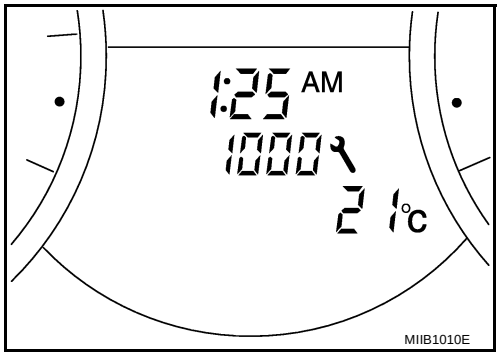


Time

- Trip time is calculated by drive computer as elapsed time since last reset.
- It only increases with ignition switch ON.
- When pushing trip button more than approximately 3 seconds, trip time distance will be reset.



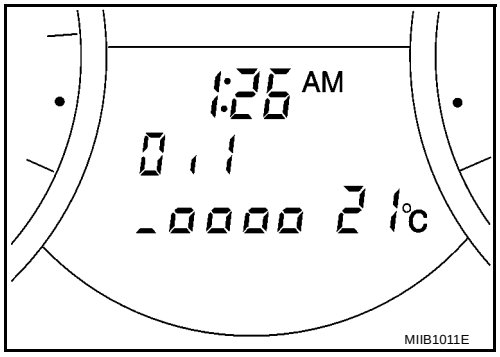
MAINTENANCE



- Show the distance to the next maintenance.
- When the set distance is reached, the wrench symbol in the combination meter illuminates.
- Use the following procedure to set the distance.

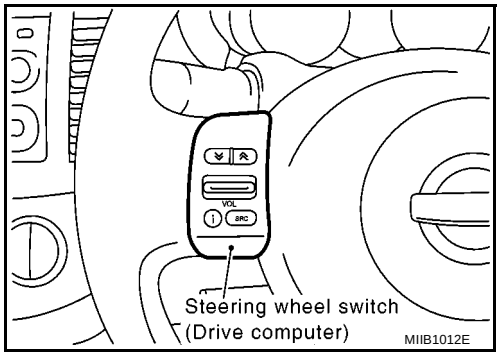
1. Ignition switch ON.
2. Press and hold the clock switch (about 3 seconds) while the maintenance distance and wrench mark are displayed (about 5 seconds after turning on the ignition).
3. Change to the distance setting mode. The maintenance distance and wrench mark will flash.
4. While these are flashing, press the clock switch to display the current maintenance distance.
5. Press the clock switch again to increase the setting distance in 500 km increments.
6. The maximum setting is 31,500 km. Pressing the clock switch one more time after this will return the setting to 0.
7. When the setting procedure is complete, do not touch the switch for 5 seconds in order for the setting to be registered.

OIL LEVEL INDICATOR



- The oil amount is shown on the display about 5 to 10 seconds after the ignition is turned on.
- The display changes depending on the oil level.
  - Oil level Low
    "_ _ _ _ 0"
  - Oil level Hi
    "0 0 0 0 0"
- The indicator flashers when the oil level drops below the set level.

HOW TO CHANGE FOR STEERING SWITCH



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

Trip A → Trip B → Range → Average fuel consumption → Average Speed → Time → Trip A ····

OUTSIDE AIR TEMPERATURE

Outside air temperature is displayed ON when ignition switch ON.

- 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 indicator 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.

Combination meter should read anbient sensor.
The anbient sensor is regulated by a variable resistor signal supplied

- to combination meter terminal 25
- from anbient sensor terminal 3
- through anbient sensor terminal 4 and
- through combination meter terminal 26.

CAN Communication

EKS00K39

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.

CAN Communication Unit

EKS00QPG

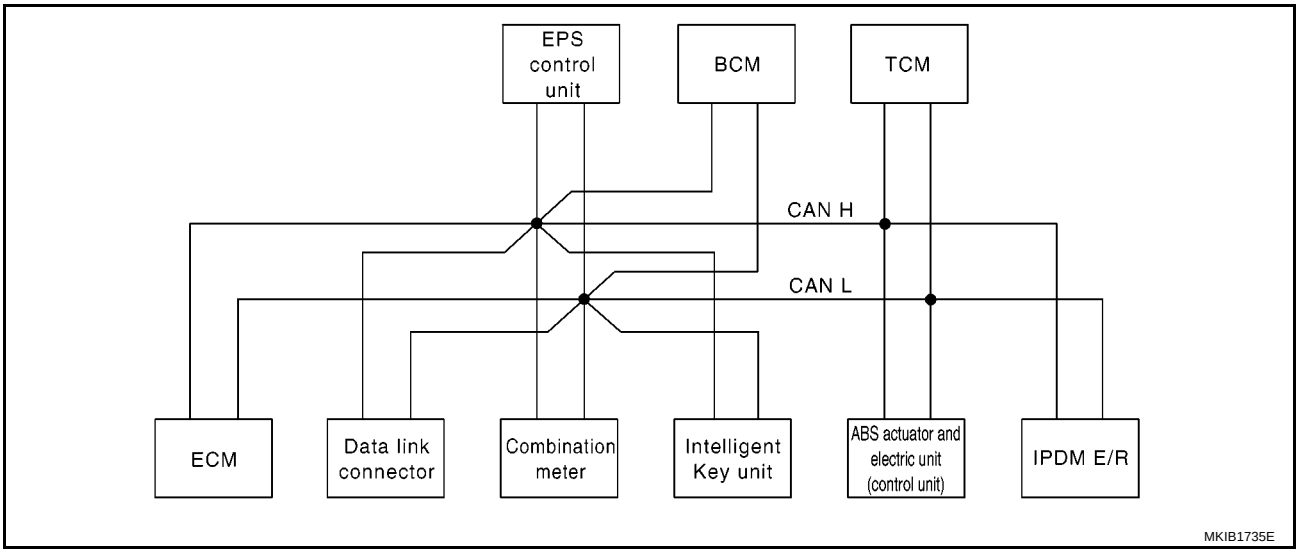
Body type	3door/5door		3door/5door/C+C				3door/5door		3door/5door/C+C				3door/5door	
Axle	2WD													
Engine	CR12DE/CR14DE				HR16DE		CR12DE/CR14DE				HR16DE		K9K	
Handle	LHD/RHD													
Brake control	ABS						ESP						ABS	
Transmission	A/T		M/T				A/T		M/T					
Intelligent Key system	×		×		×		×		×		×		×	
CAN communication unit														
ECM	×	×	×	×	×	×	×	×	×	×	×	×	×	×
Data link connector	×	×	×	×	×	×	×	×	×	×	×	×	×	×
Combination meter	×	×	×	×	×	×	×	×	×	×	×	×	×	×
Intelligent Key unit	×		×		×		×		×		×		×	
EPS control unit	×	×	×	×	×	×	×	×	×	×	×	×	×	×
BCM	×	×	×	×	×	×	×	×	×	×	×	×	×	×
ABS actuator and electric unit (control unit)	×	×	×	×	×	×	×	×	×	×	×	×	×	×
TCM	×	×					×	×						
IPDM E/R	×	×	×	×	×	×	×	×	×	×	×	×	×	×
CAN communication type	DI-43, "TYPE 1/TYPE 2"		DI-46, "TYPE 3/TYPE 4/ TYPE 5/TYPE 6"				DI-48, "TYPE 7/TYPE 8"		DI-51, "TYPE 9/TYPE 10/ TYPE 11/TYPE 12"				DI-53, "TYPE 13/TYPE 14"	

×: Applicable

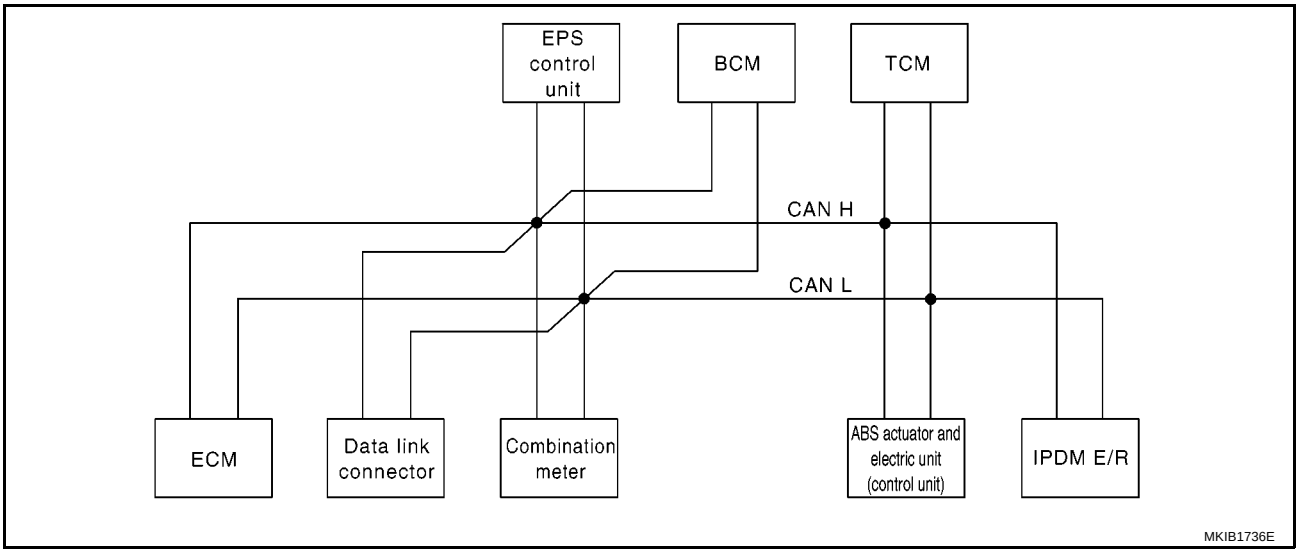
TYPE 1/TYPE 2

System diagram

- Type 1



- Type 2



Input/output signal chart

T: Transmit R: Receive

Signals	ECM	Combination meter.	Intelligent Key unit	EPS control unit	BCM	ABS actuator and electric unit (control unit)	TCM	IPDM E/R
Engine speed signal	T	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	
Overdrive control switch signal		T					R	

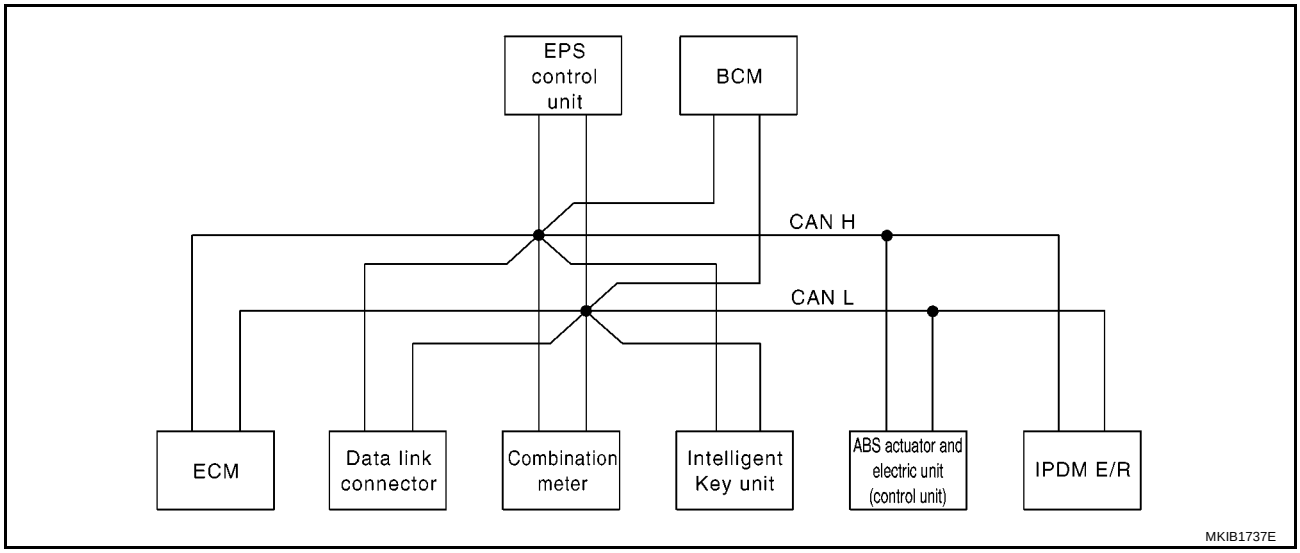
Signals	ECM	Combi-nation meter.	Intelli-gent Key unit	EPS control unit	BCM	ABS actua-tor and electric unit (control unit)	TCM	IPDM E/R
A/T position indicator signal		R					T	
Stop lamp switch signal		T					R	
O/D OFF indicator signal		R					T	
Engine and A/T integrated control signal	T						R	
	R						T	
Fuel consumption monitor signal	T	R						
Oil pressure switch signal		R						T
A/C compressor request signal	T							R
Heater fan switch signal	R				T			
Cooling fan speed request signal	T							R
Position lights request signal		R			T			R
Low beam request signal					T			R
Low beam status signal	R							T
High beam request signal		R			T			R
High beam status signal	R							T
Day time light request signal					T			R
Vehicle speed signal	R	R		R		T		
	R	T	R	R	R			
Sleep/wake up signal		R	R		T			R
Door switch signal		R	R		T			R
Turn indicator signal		R			T			
Buzzer output signal		R			T			
		R	T					
MI signal	T	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
EPS warning lamp signal		R		T				
ABS warning lamp signal		R				T		
Brake warning lamp signal		R				T		
Back-up lamp signal				R	T			
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			T		R			
Door lock/unlock status signal			R		T			
KEY indicator signal		R	T					
LOCK indicator signal		R	T					
Engine status signal	T			R				

Signals	ECM	Combi-nation meter.	Intelli-gent Key unit	EPS control unit	BCM	ABS actua-tor and electric unit (control unit)	TCM	IPDM E/R
A/C switch signal	R				T			
Brake system malfunction signal		T		R				
Parking brake switch signal		T		R				
R range signal					R			T

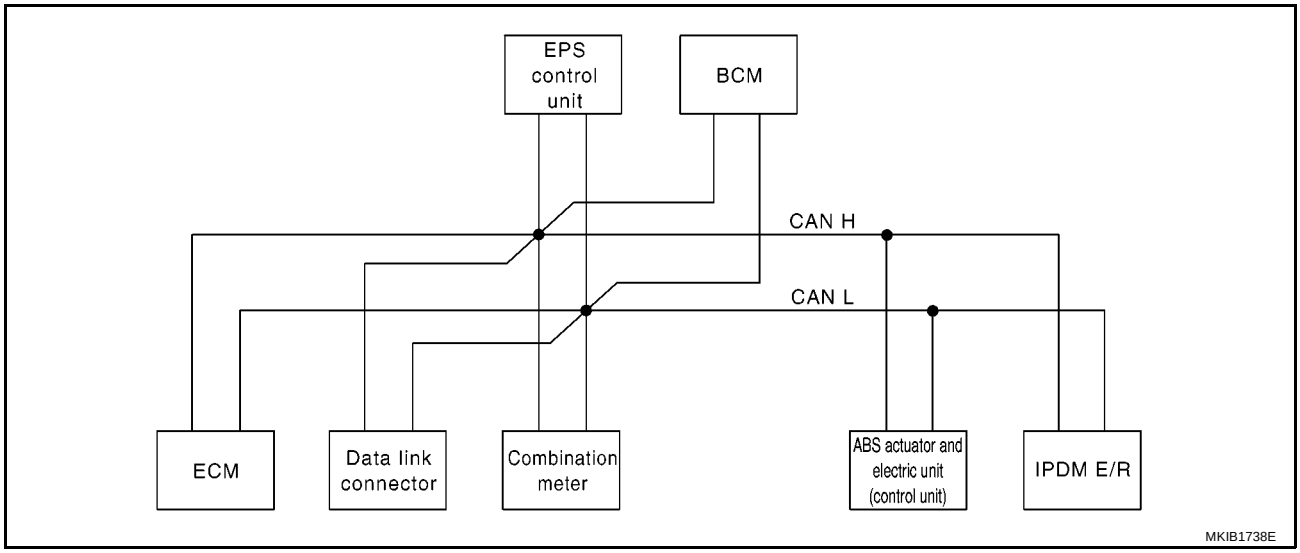
TYPE 3/TYPE 4/TYPE 5/TYPE 6

System diagram

- Type 3/Type 5



- Type 4/Type 6



Input/output signal chart

T: Transmit R: Receive

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

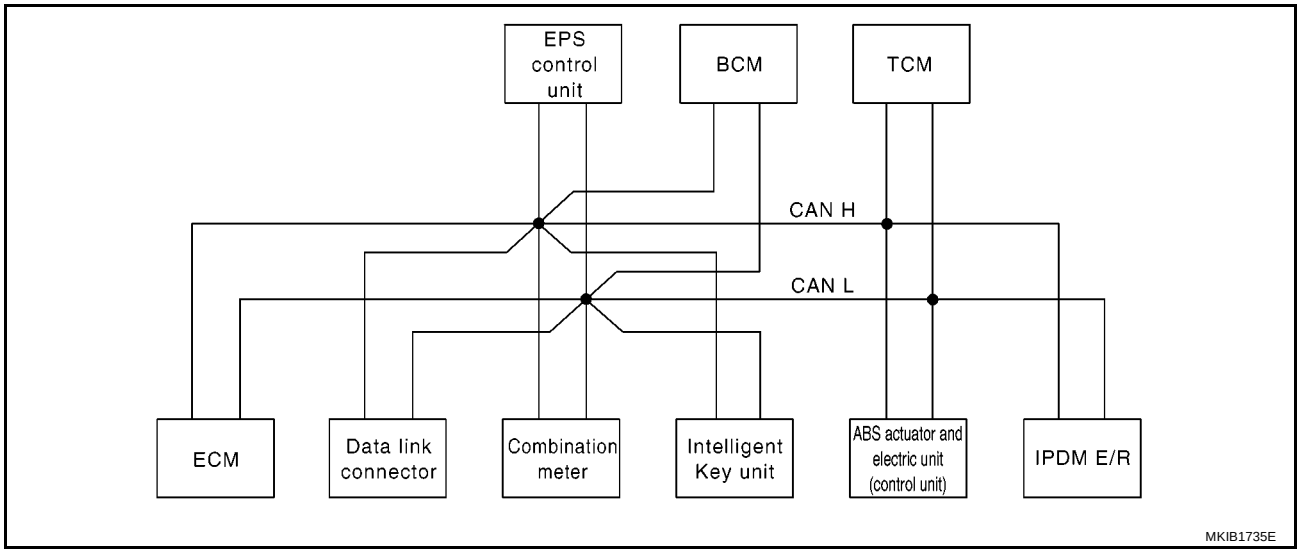
Signals	ECM	Combination meter.	Intelligent Key unit	EPS control unit	BCM	ABS actuator and electric unit (control unit)	IPDM E/R
Low beam status signal	R						T
High beam request signal		R			T		R
High beam status signal	R						T
Day time light request signal					T		R
Vehicle speed signal	R	R		R		T	
	R	T	R	R	R		
Sleep/wake up signal		R	R		T		R
Door switch signal		R	R		T		R
Turn indicator signal		R			T		
Buzzer output signal		R			T		
		R	T				
MI signal	T	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
EPS warning indicator signal		R		T			
ABS warning lamp signal		R				T	
Brake warning lamp signal		R				T	
Back-up lamp signal				R	T		
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			T		R		
Door lock/unlock status signal			R		T		
KEY indicator signal		R	T				
LOCK indicator signal		R	T				
Engine status signal	T			R			
A/C switch signal	R				T		
Brake system malfunction signal		T		R			
Parking brake switch signal		T		R			
R range signal					R		T
Retractable hard top warning lamp signal*		R			T		

*: C+C only

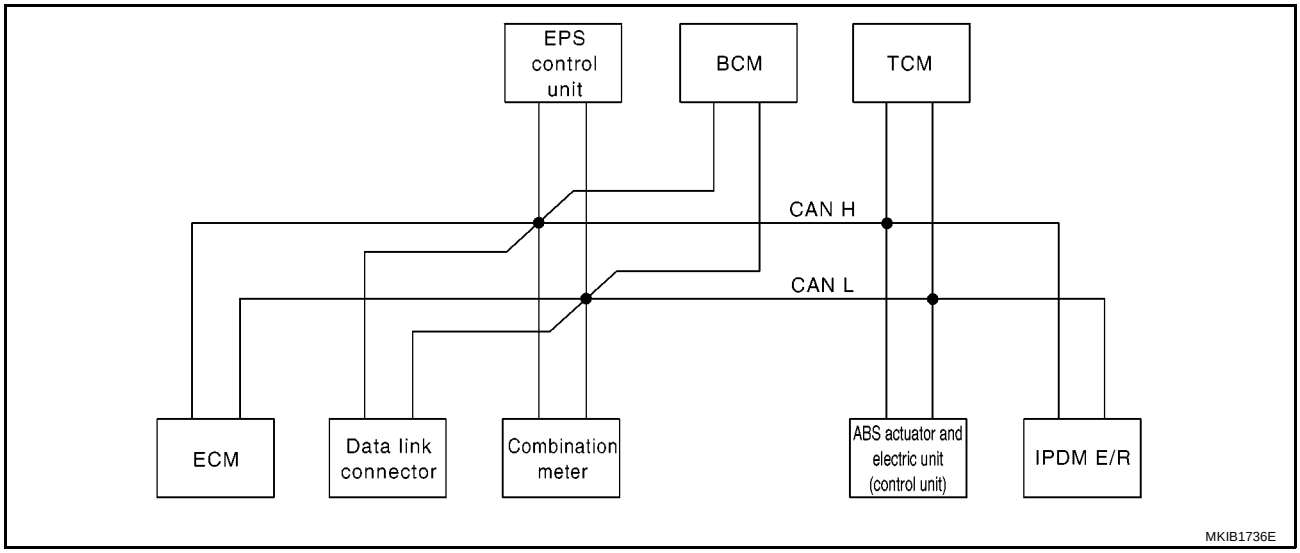
TYPE 7/TYPE 8

System diagram

- Type 7



- Type 8



Input/output signal chart

T: Transmit R: Receive

Signals	ECM	Combination meter.	Intelligent Key unit	EPS control unit	BCM	ABS actuator and electric unit (control unit)	TCM	IPDM E/R
Engine speed signal	T	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	R	
Closed throttle position signal	T						R	
Wide open throttle position signal	T						R	
Overdrive control switch signal		T					R	
A/T position indicator signal		R					T	

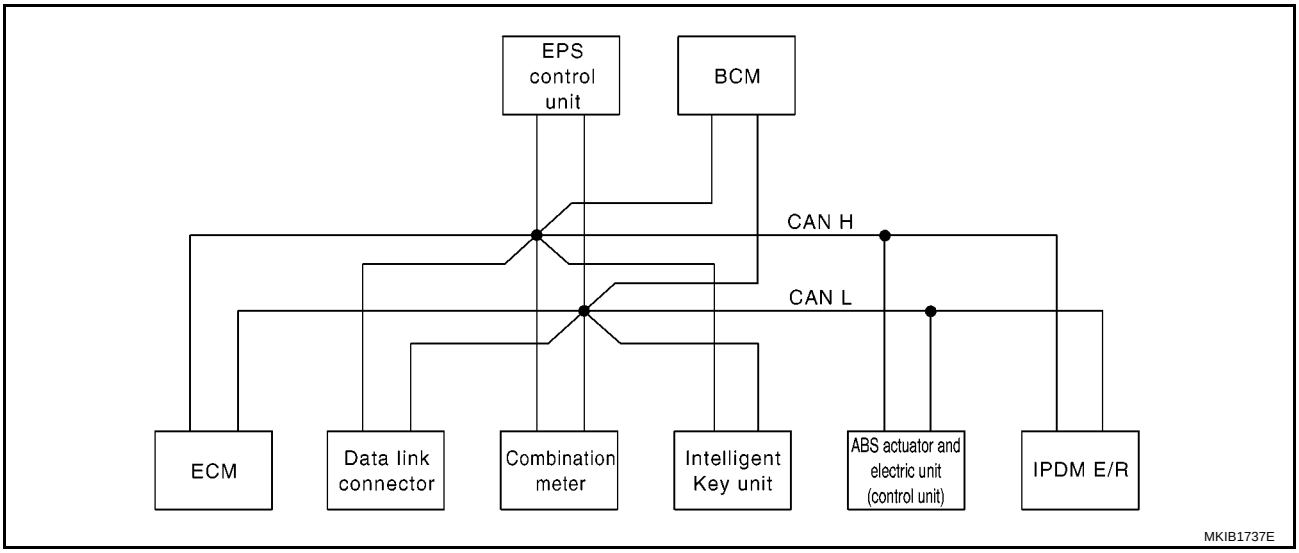
Signals	ECM	Combination meter.	Intelligent Key unit	EPS control unit	BCM	ABS actuator and electric unit (control unit)	TCM	IPDM E/R
A/T shift schedule change demand signal						T	R	
Stop lamp switch signal		T					R	
O/D OFF indicator lamp signal		R					T	
Engine and A/T integrated control signal	T						R	
	R						T	
Fuel consumption monitor signal	T	R						
Oil pressure switch signal		R						T
A/C compressor request signal	T							R
Heater fan switch signal	R				T			
Cooling fan speed request signal	T							R
Position lights request signal		R			T			R
Low beam request signal					T			R
Low beam status signal	R							T
High beam request signal		R			T			R
High beam status signal	R							T
Day time light request signal					T			R
Vehicle speed signal	R	R		R		T		
	R	T	R	R	R			
Sleep/wake up signal		R	R		T			R
Door switch signal		R	R		T			R
Turn indicator signal		R			T			
Buzzer output signal		R			T			
		R	T					
MI signal	T	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
EPS warning lamp signal		R		T				
ABS warning lamp signal		R				T		
ESP warning lamp signal		R				T		
ESP OFF indicator signal		R				T		
SLIP indicator lamp signal		R				T		
Steering angle signal				T		R		
Brake warning lamp signal		R				T		
Back-up lamp signal				R	T			
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			T		R			

Signals	ECM	Combination meter.	Intelligent Key unit	EPS control unit	BCM	ABS actuator and electric unit (control unit)	TCM	IPDM E/R
Door lock/unlock status signal			R		T			
KEY indicator signal		R	T					
LOCK indicator signal		R	T					
Engine status signal	T			R				
A/C switch signal	R				T			
A/T torque signal						R	T	
Brake system malfunction signal		T		R				
Parking brake switch signal		T		R				
R range signal					R			T

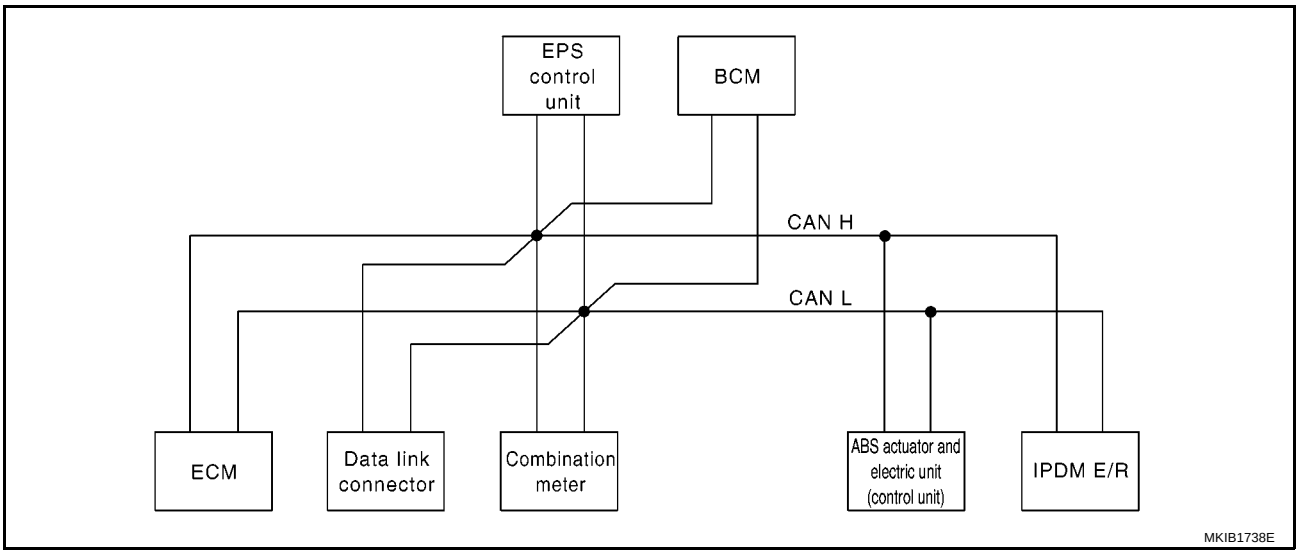
TYPE 9/TYPE 10/TYPE 11/TYPE 12

System diagram

- Type 9/Type 11



- Type 10/Type 12



Input/output signal chart

T: Transmit R: Receive

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

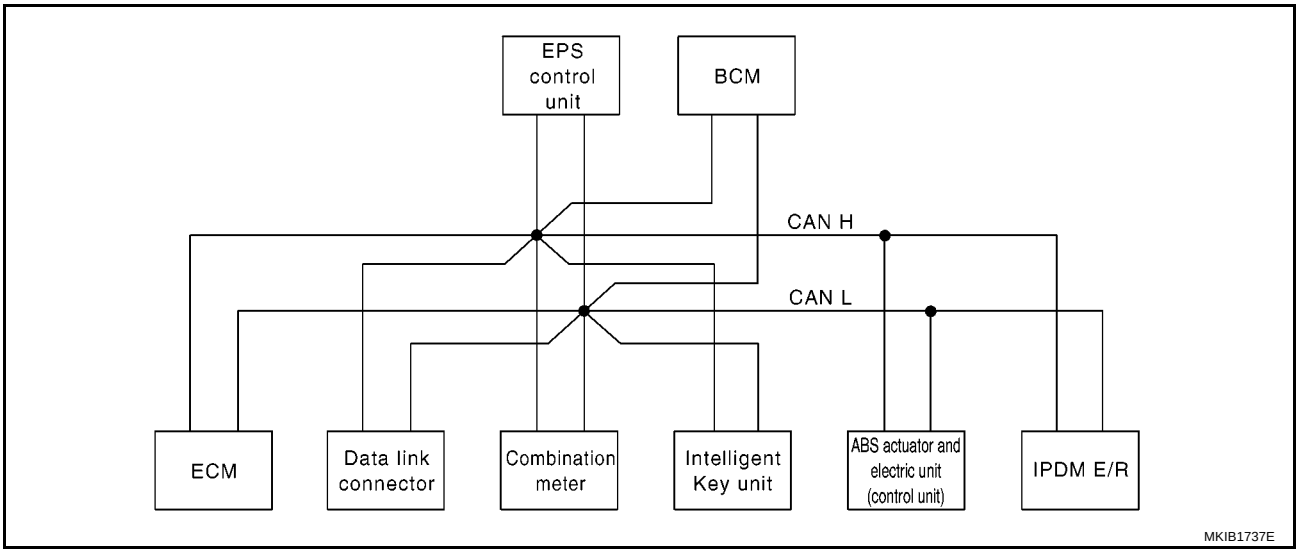
Signals	ECM	Combination meter.	Intelligent Key unit	EPS control unit	BCM	ABS actuator and electric unit (control unit)	IPDM E/R
Low beam request signal					T		R
Low beam status signal	R						T
High beam request signal		R			T		R
High beam status signal	R						T
Day time light request signal					T		R
Vehicle speed signal	R	R		R		T	
	R	T	R	R	R		
Sleep/wake up signal		R	R		T		R
Door switch signal		R	R		T		R
Turn indicator signal		R			T		
Buzzer output signal		R			T		
		R	T				
MI signal	T	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
EPS warning indicator signal		R		T			
ABS warning lamp signal		R				T	
ESP warning lamp signal		R				T	
ESP OFF indicator signal		R				T	
SLIP indicator lamp signal		R				T	
Steering angle signal				T		R	
Brake warning lamp signal		R				T	
Back-up lamp signal				R	T		
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			T		R		
Door lock/unlock status signal			R		T		
KEY indicator signal		R	T				
LOCK indicator signal		R	T				
Engine status signal	T			R			
A/C switch signal	R				T		
Brake system malfunction signal		T		R			
Parking brake switch signal		T		R			
R range signal					R		T
Retractable hard top warning lamp signal*		R			T		

*: C+C only

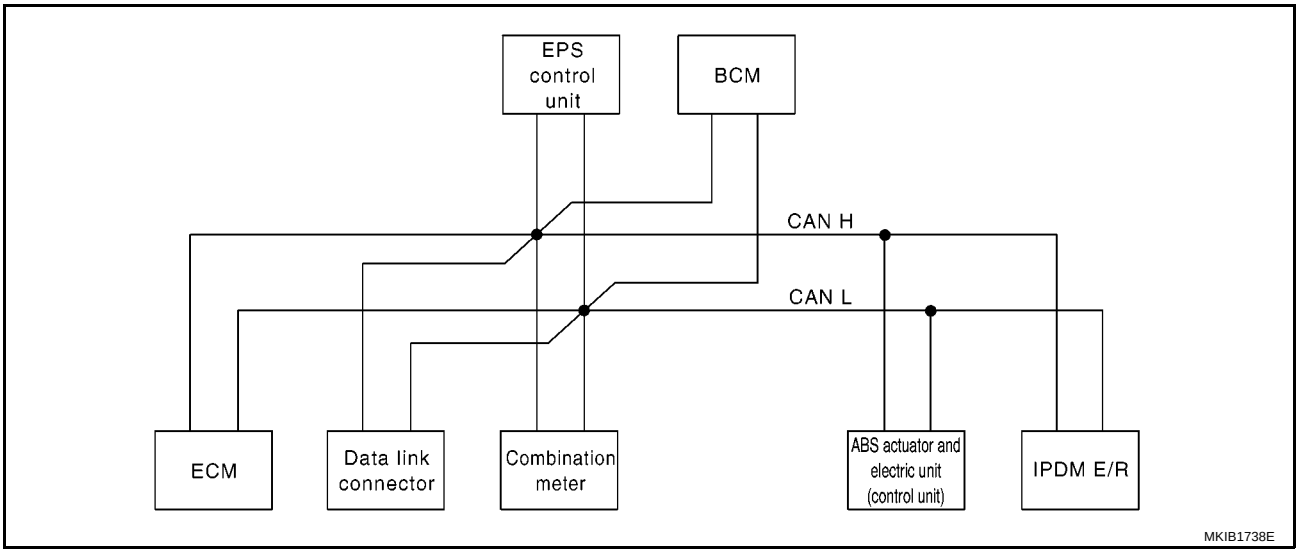
TYPE 13/TYPE 14

System diagram

- Type 13



- Type 14



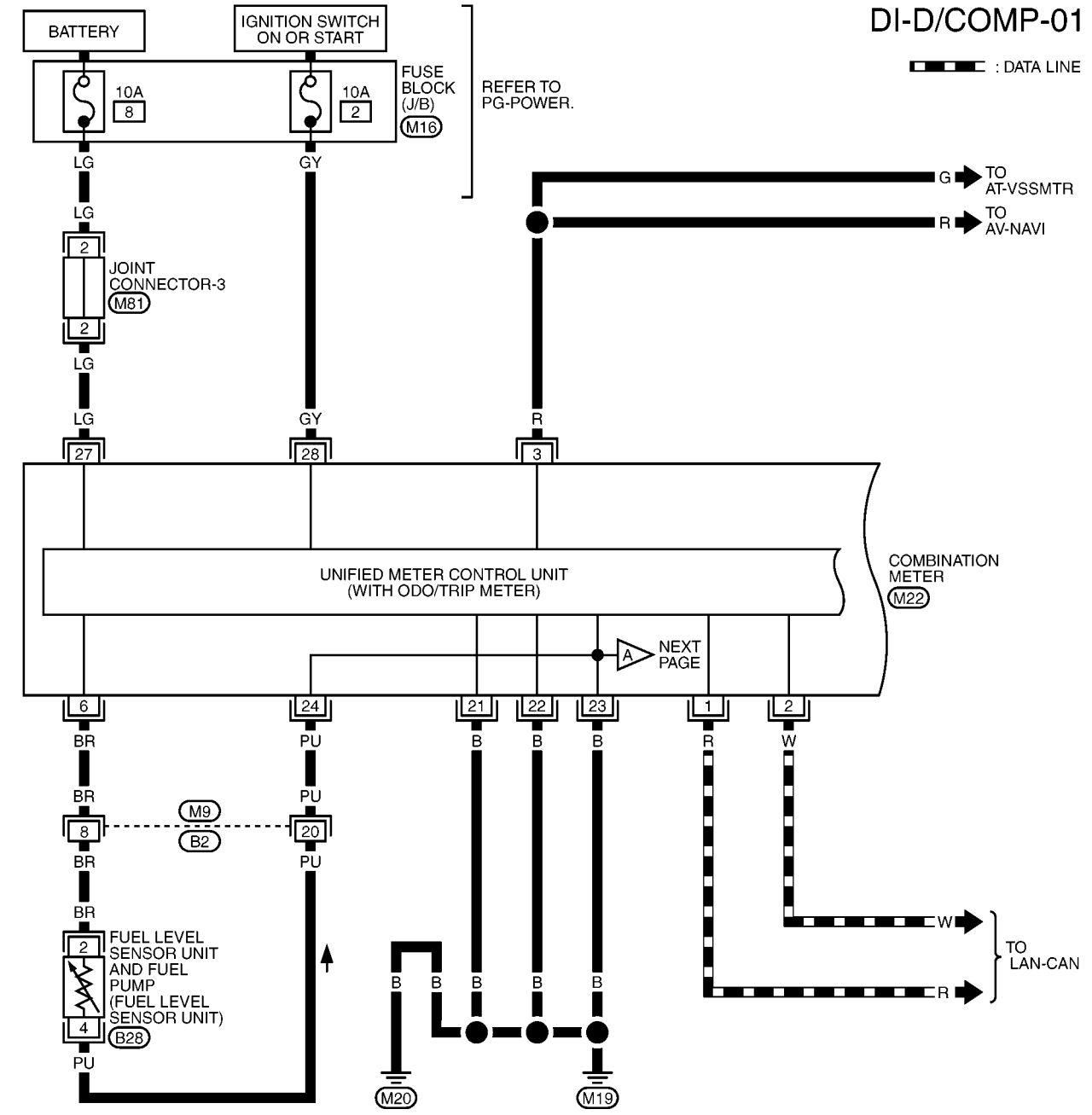
Input/output signal chart

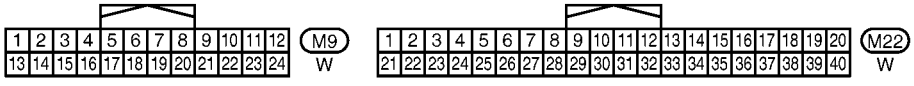
T: Transmit R: Receive

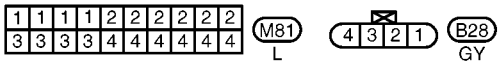
Signals	ECM	Combination meter.	Intelligent Key unit	EPS control unit	BCM	ABS actuator and electric unit (control unit)	IPDM E/R
Engine speed signal	T	R					
Engine coolant temperature signal	T	R			R		
Fuel consumption monitor signal	T	R					
Oil pressure switch signal		R					T
A/C compressor request signal	T						R
Heater fan switch signal	R				T		
Cooling fan speed request signal	T						R
Position lights request signal		R			T		R
Low beam request signal					T		R
High beam request signal		R			T		R
Day time light request signal					T		R
Vehicle speed signal	R	R		R	R	T	
	R	T	R	R			
Sleep/wake up signal		R	R		T		R
Door switch signal		R	R		T		R
Turn indicator signal		R			T		
Buzzer output signal		R			T		
		R	T				
MI signal	T	R					
Front wiper request signal					T		R
Front wiper stop position signal					R		T
Rear window defogger switch signal					T		R
EPS warning indicator signal		R		T			
ABS warning lamp signal		R				T	
Brake warning lamp signal		R				T	
Back-up lamp signal				R	T		
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			T		R		
Door lock/unlock status signal			R		T		
KEY indicator signal		R	T				
LOCK indicator signal		R	T				
Engine status signal	T			R			
Brake system malfunction signal		T		R			
Parking brake switch signal		T		R			
Glow indicator signal	T	R					
R range signal					R		T

Wiring Diagram — D/COMP —

EKS0082O

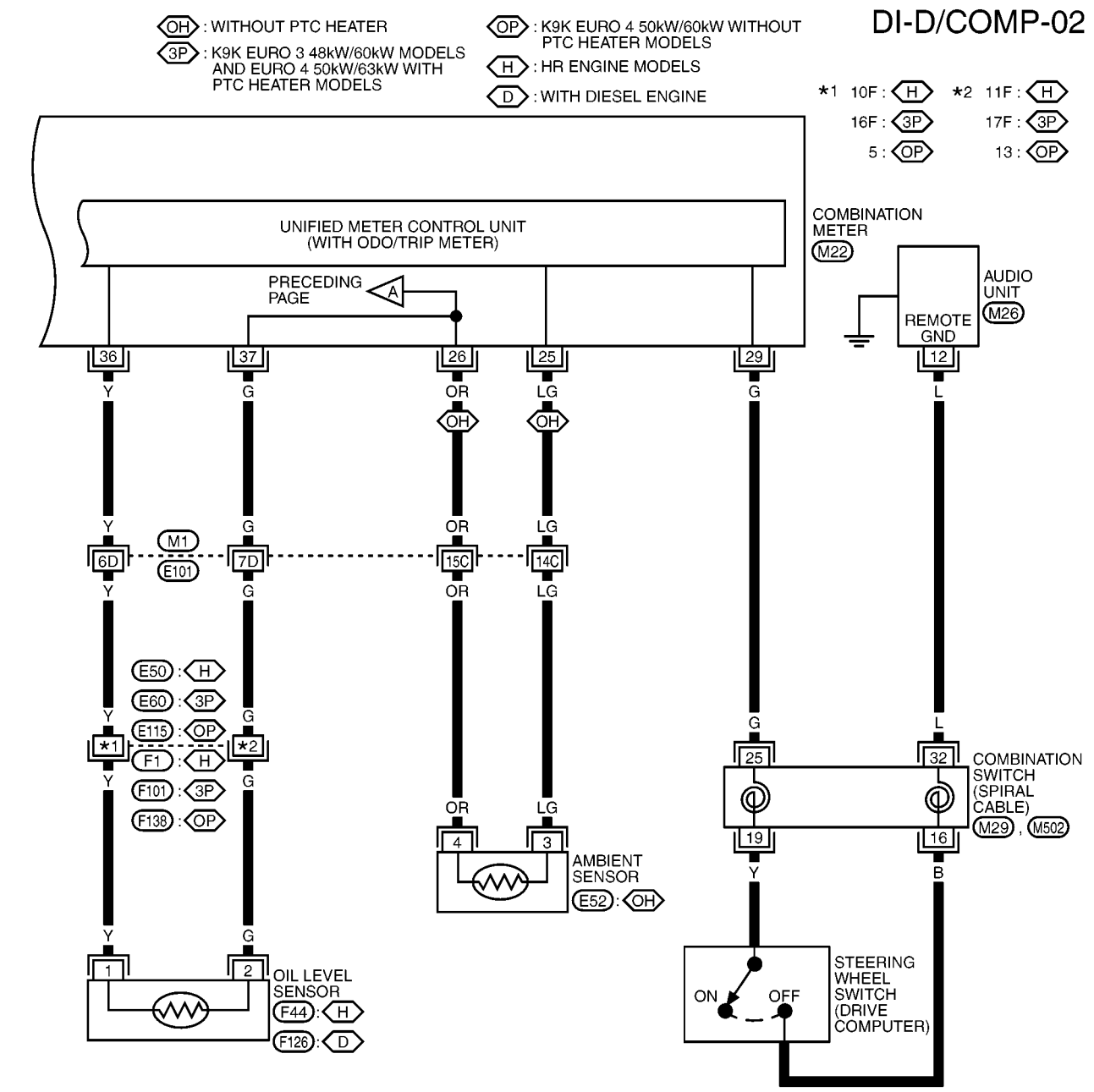


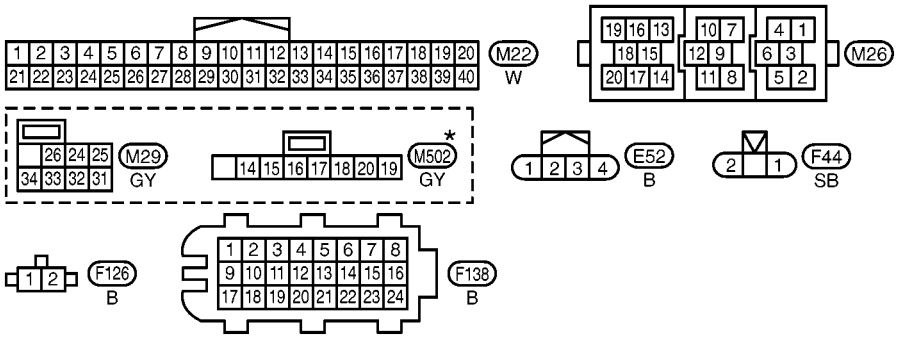




REFER TO THE FOLLOWING.
M16 -FUSE BLOCK-JUNCTION BOX (J/B)

MKWA4027E





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

REFER TO THE FOLLOWING.
M1 , F1 , F101
-SUPER MULTIPLE JUNCTION (SMJ)

MKWA4028E

Terminals and Reference Value for Combination Meter

EKS00P1D

Terminal No.	Wire color	Item	Condition		Voltage (V) (Approx.)
			Ignition switch	Operation or condition	
1	R	CAN- H	—	—	—
2	W	CAN- L	—	—	—
6	BR	Fuel level sensor signal	—	—	Refer to (CR engine) FL-4, "FUEL LEVEL SENSOR UNIT, FUEL FILTER AND FUEL PUMP ASSEMBLY" (HR engine)FL-14, "FUEL LEVEL SENSOR UNIT, FUEL FILTER AND FUEL PUMP ASSEMBLY" (K9K engine) FL-27, "FUEL LEVEL SENSOR UNIT" .
21	B	Ground	—	—	0
22	B	Ground	—	—	0
23	B	Ground	—	—	0
24	PU	Fuel level sensor ground	ON	—	0
25	LG	Anbient sensor signal	ON	—	2.6
				Disconnect anbient sensor connector	5
26	OR	Anbient sensor ground	ON	—	0
27	LG	Battery power supply	OFF	—	Battery voltage
28	GY	Ignition switch ON or START	ON	—	Battery voltage
29	G	Sterring switch signal	ON	Sterring switch release	10
				Sterring switch pushed	0
36	Y	Oil level sensor signal	ON	—	—
37	G	Oil level sensor ground	ON	—	0

Self-Diagnosis Function

EKS0082R

Refe to DI-26, "Combination Meter Self-Diagnosis"

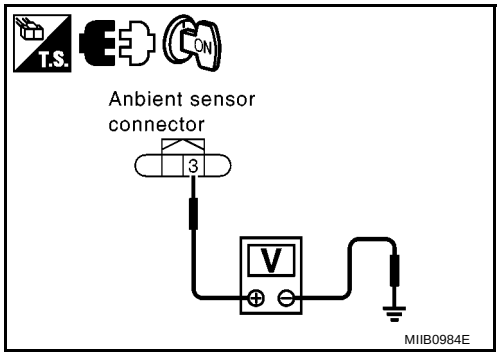
Outside Air Temperature is not Displayed

EKS008IG

1. CHECK ANBIENT SENSOR IN PUT SIGNAL

1. Turn ignition switch OFF.
2. Disconnect anbient sensor connector.
3. Turn ignition switch ON.
4. Check voltage between anbient sensor harness connector E52 terminal 3 and ground.

3 (LG) – Ground : Approx. 5V



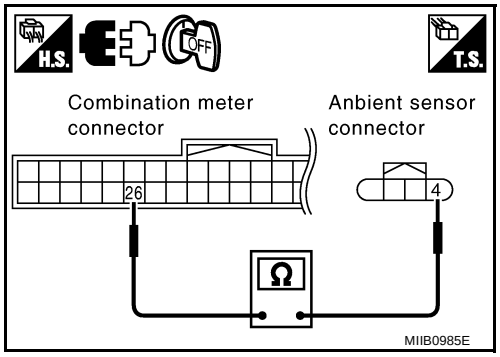
OK or NG

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

2. CHECK ANBIENT SENSOR GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect combination meter harness connector.
3. Check continuity between anbient sensor harness connector E52 terminal 4 and combination meter harness connector M22 terminal 26.

4 (OR) - 26 (OR) : Continuity should exist.



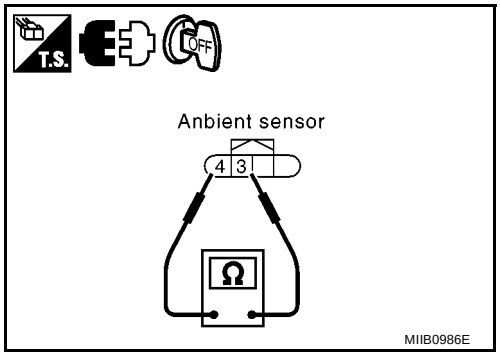
OK or NG

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

3. CHECK ANBIENT SENSOR

Check anbient sensor harness connector E52 terminals 3 and 4.

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



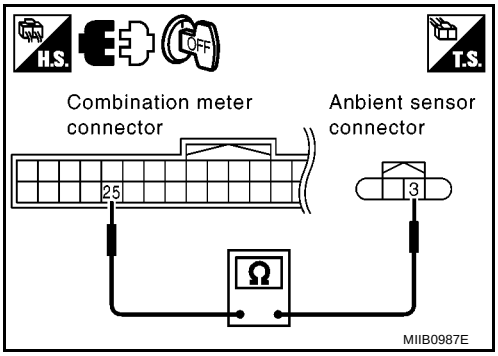
OK or NG

OK >> Replace combination meter.
NG >> Replace anbient sensor.

4. CHECK ANBIENT SENSOR CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect combination meter connector.
3. Check continuity between anbient sensor harness connector E52 terminal 3 and combination meter harness connector M28 terminal 25.

3 (LG) - 25 (LG) : Continuity should exist.



OK or NG

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

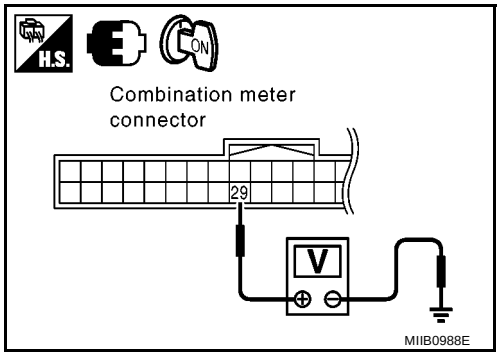
Steering Wheel Switch Does Not Operate

EKS0088R

1. CHECK COMBINATION METER INPUT SIGNAL

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

Connector	Terminals (Wire color)		Condition	Voltage [V] (Approx.)
	(+)	(-)		
M22	29 (G)	Ground	Steering wheel switch is pushed.	0
			Steering wheel switch is released.	Battery voltage



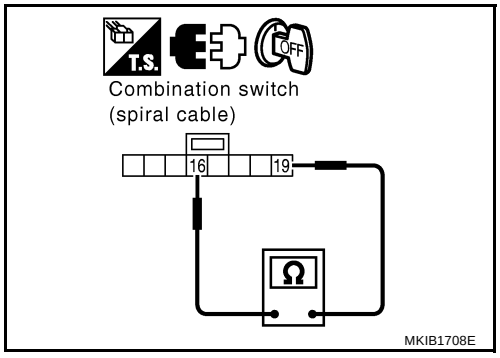
OK or NG

OK >> Replace combination meter.
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		Condition	Continuity
M502	16	19	Steering wheel switch is pushed.	No
			Steering wheel switch is released.	Yes



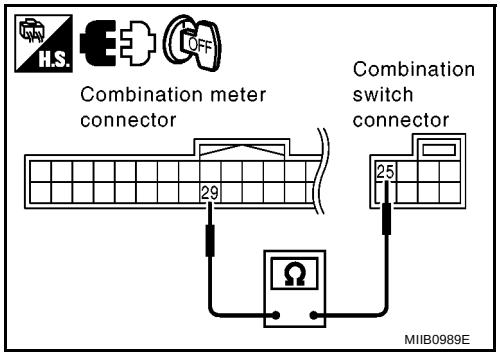
OK or NG

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

3. CHECK STEERING WHEEL SWITCH CIRCUIT

1. Disconnect combination meter connector.
2. Check continuity between combination meter harness connector M22 terminal 29 and combination switch (spiral cable) harness connector M29 terminal 25.

29 (G) - 25 (G) : Continuity should exist.



OK or NG

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

4. CHECK STEERING WHEEL SWITCH GROUND CIRCUIT

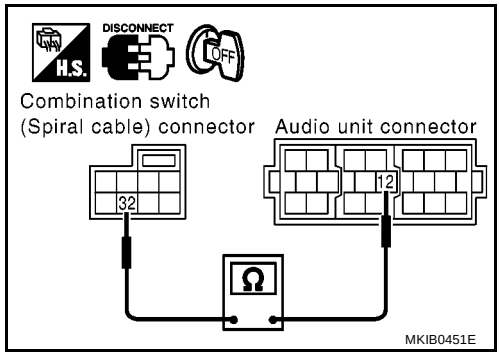
1. Disconnect audio unit connector.
2. Check continuity between combination switch harness connector M29 terminal 32 and audio unit harness connector M26 terminal 12.

32 (L) - 12 (L) : Continuity should exist.

OK or NG

OK >> Check audio unit ground circuit. Refer to AV-14, "Power Supply Circuit Inspection" .

NG >> Repair harness or connector.

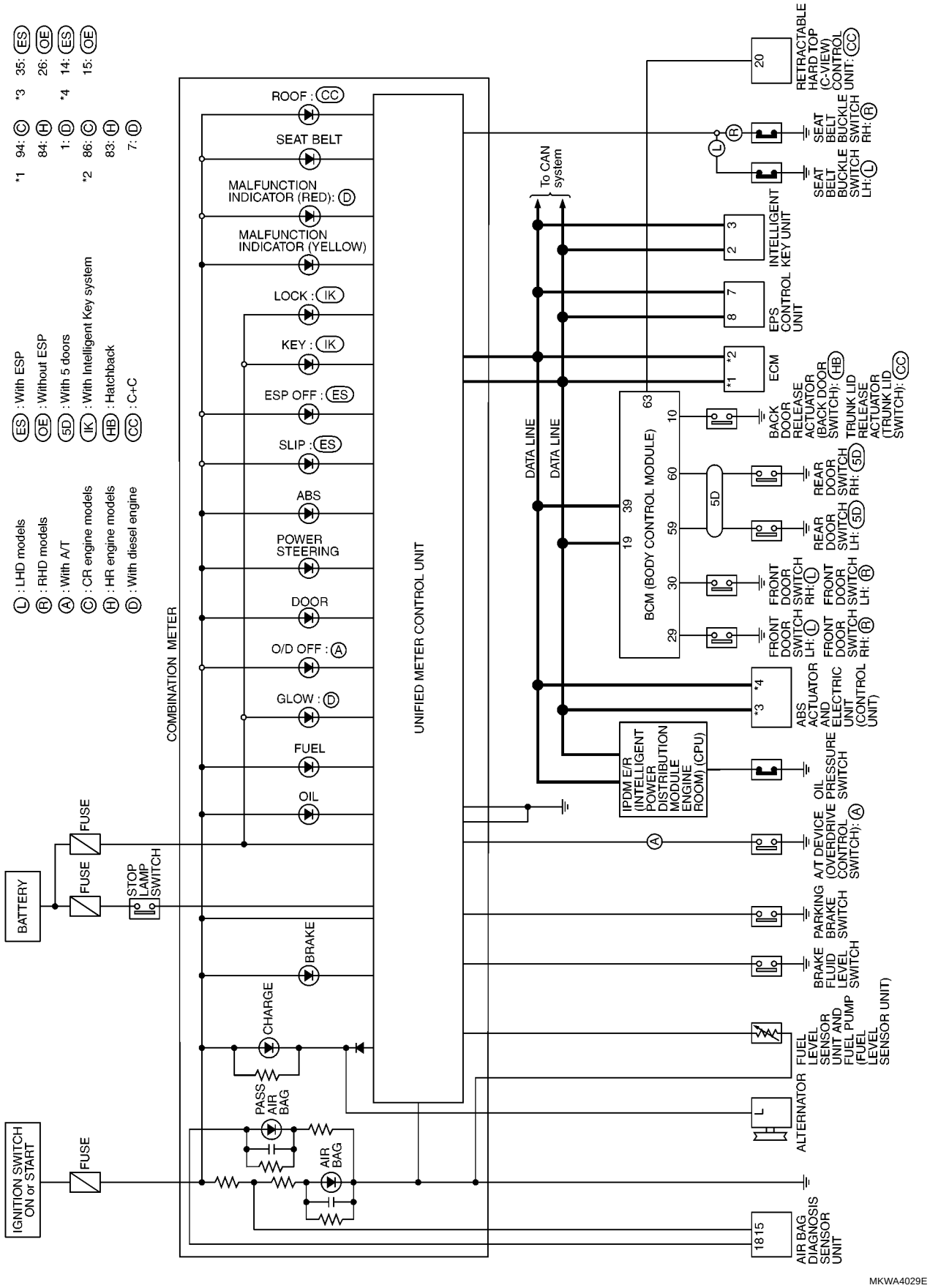


WARNING LAMPS

PFP:24814

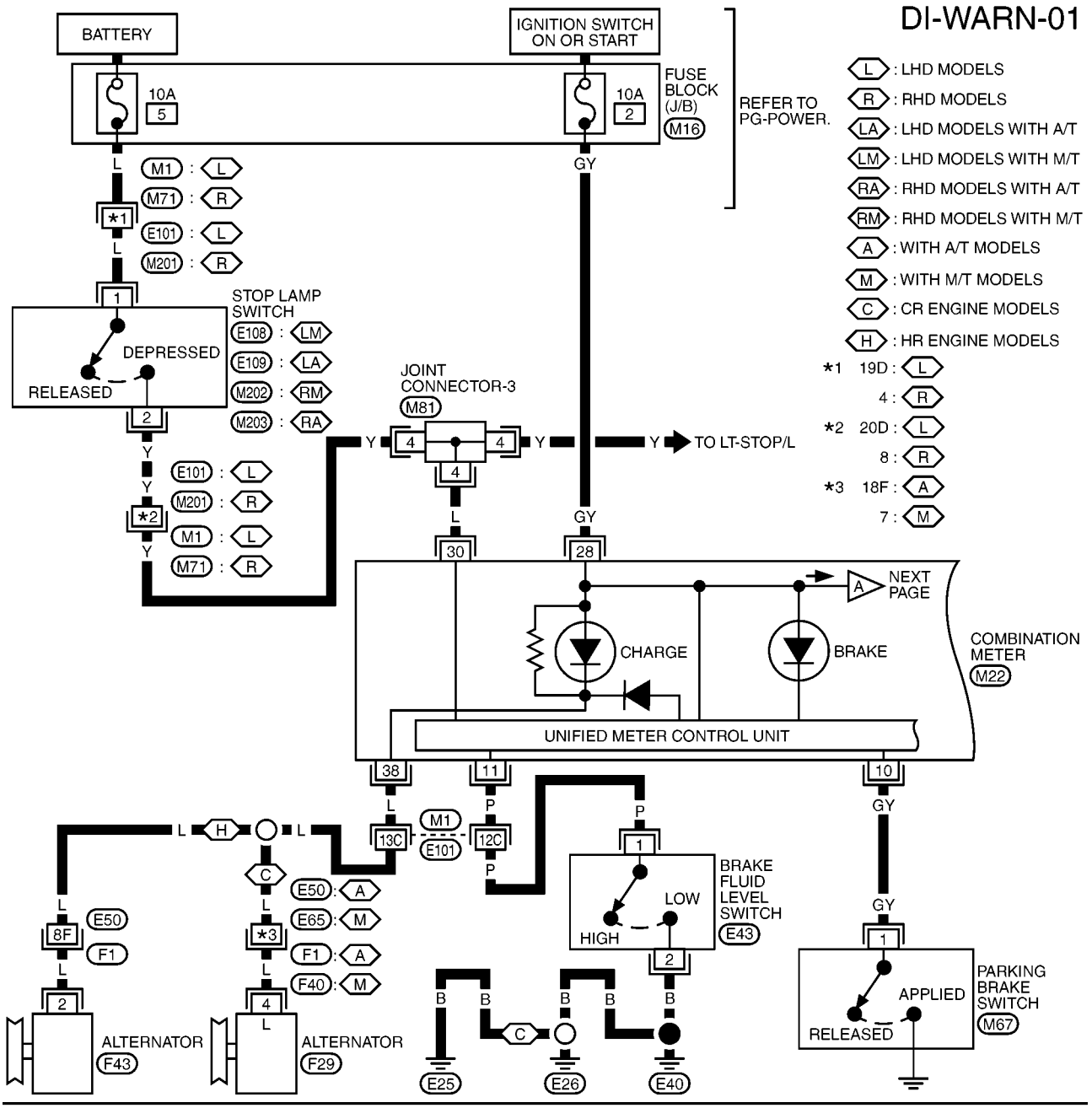
Schematic

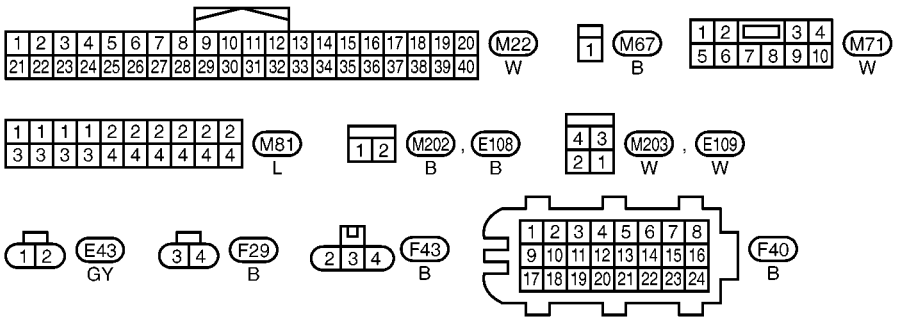
EKS0072G



Wiring Diagram — WARN — / With Gasoline Engine Models

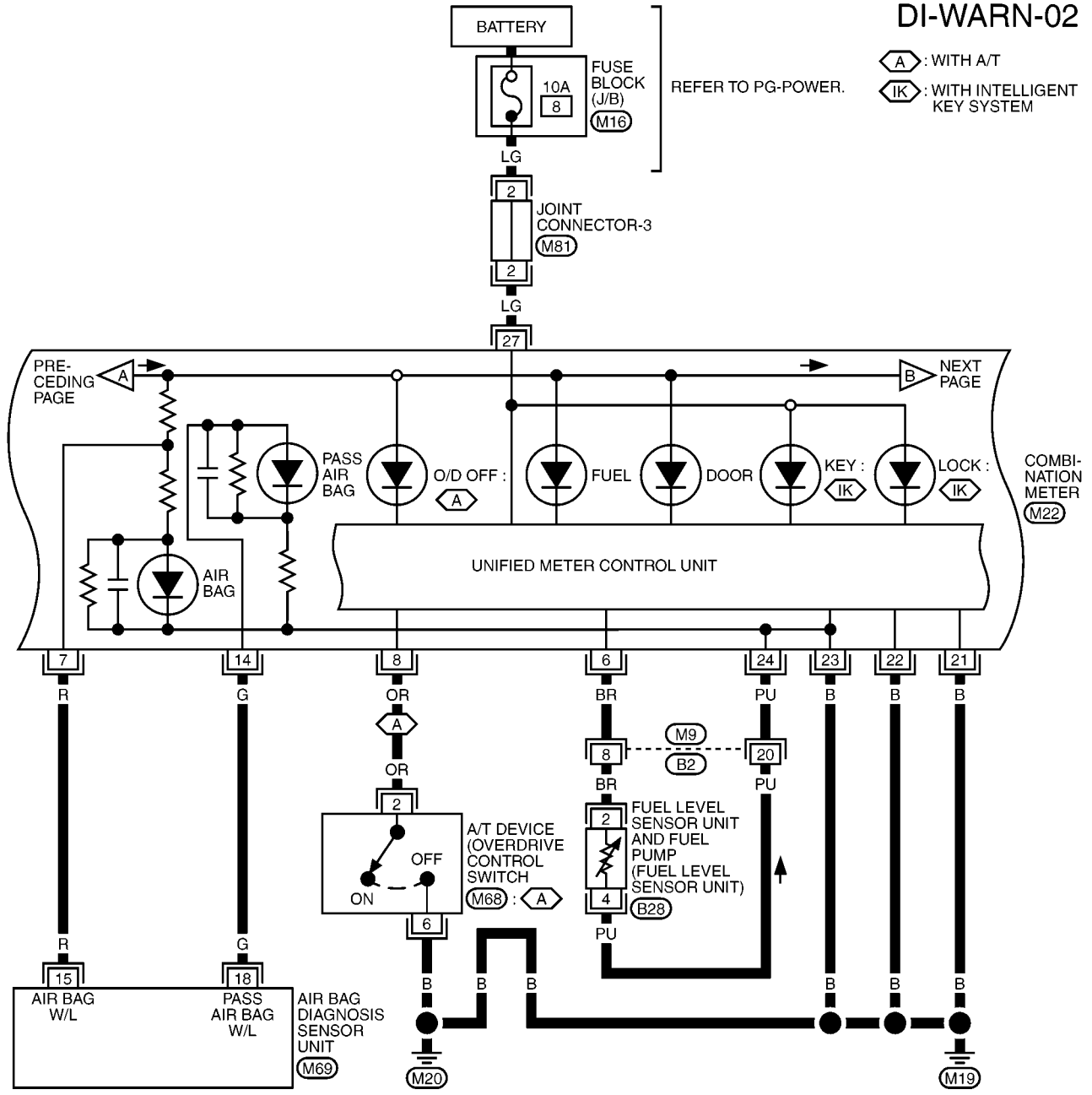
EKS0072H

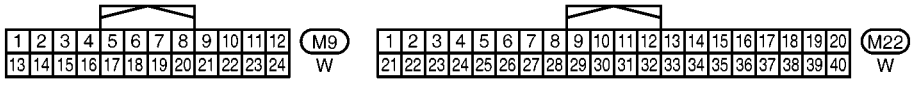


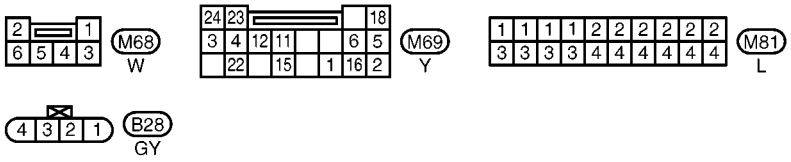


REFER TO THE FOLLOWING.
M1 , F1 -SUPER MULTIPLE JUNCTION (SMJ)
M16 -FUSE BLOCK- JUNCTION BOX (J/B)

MKWA4030E



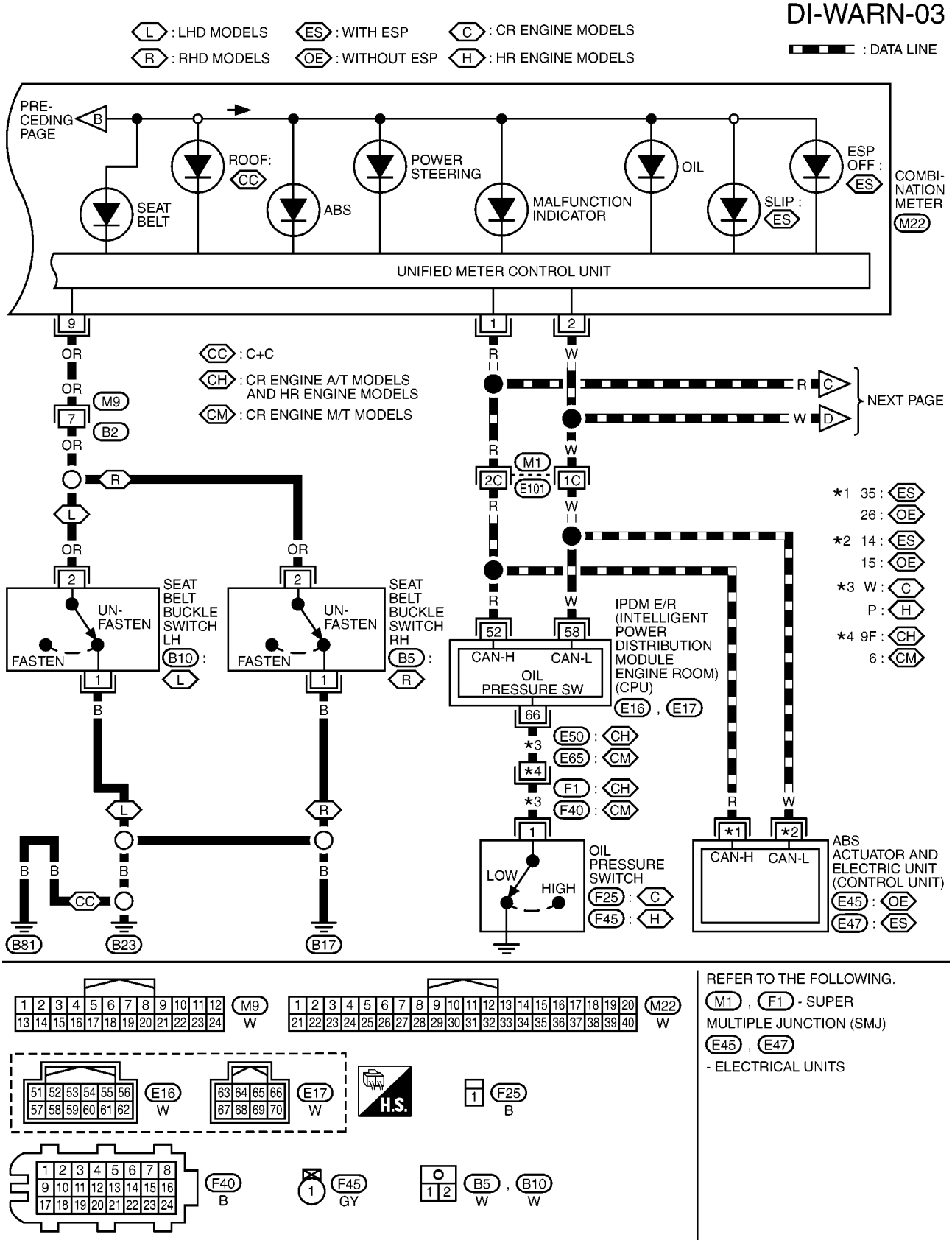




REFER TO THE FOLLOWING.
M16 -FUSE BLOCK-JUNCTION BOX (J/B)

MKWA4031E

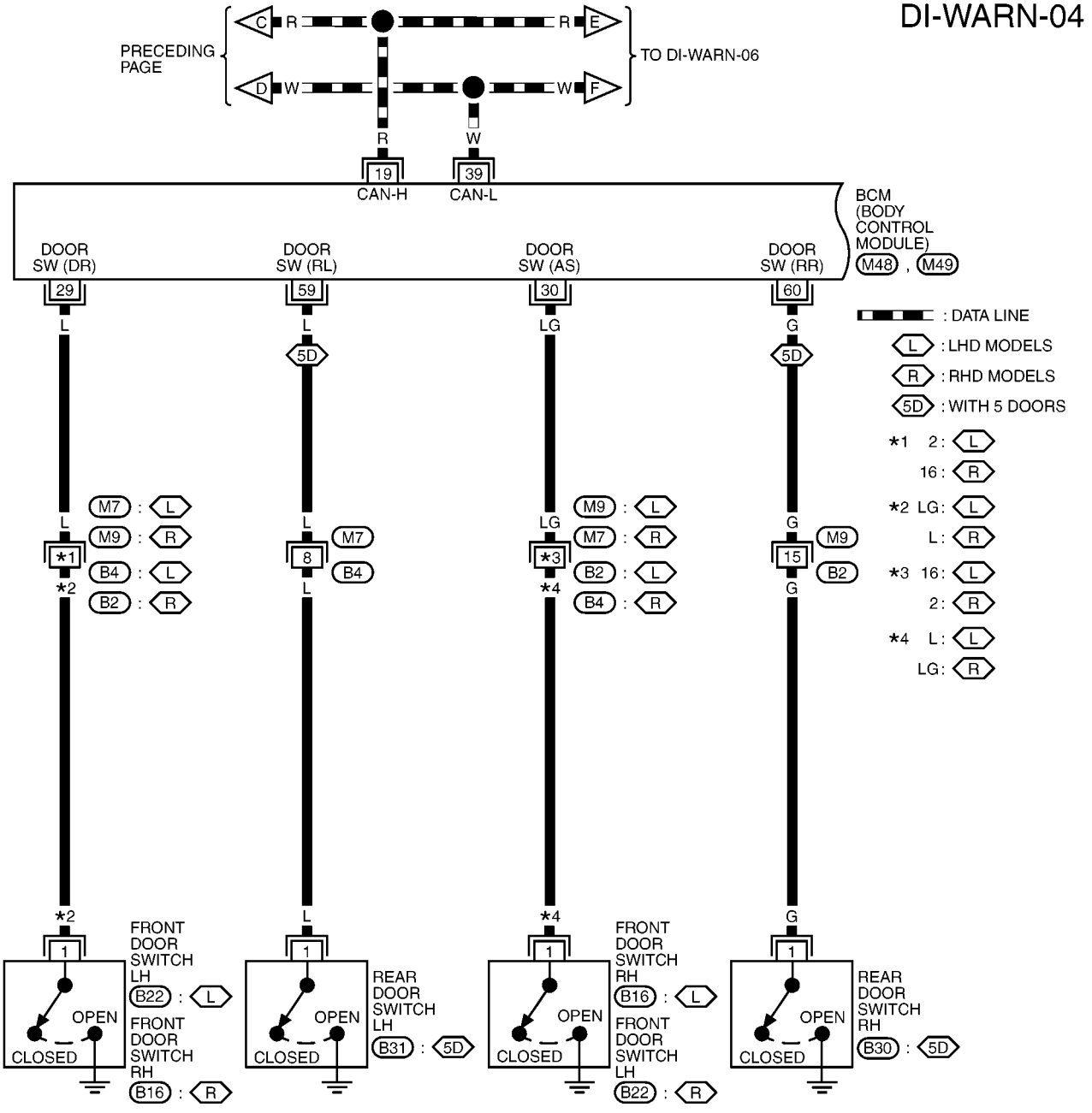
DI-WARN-03



REFER TO THE FOLLOWING.
M1 , F1 - SUPER MULTIPLE JUNCTION (SMJ)
E45 , E47 - ELECTRICAL UNITS

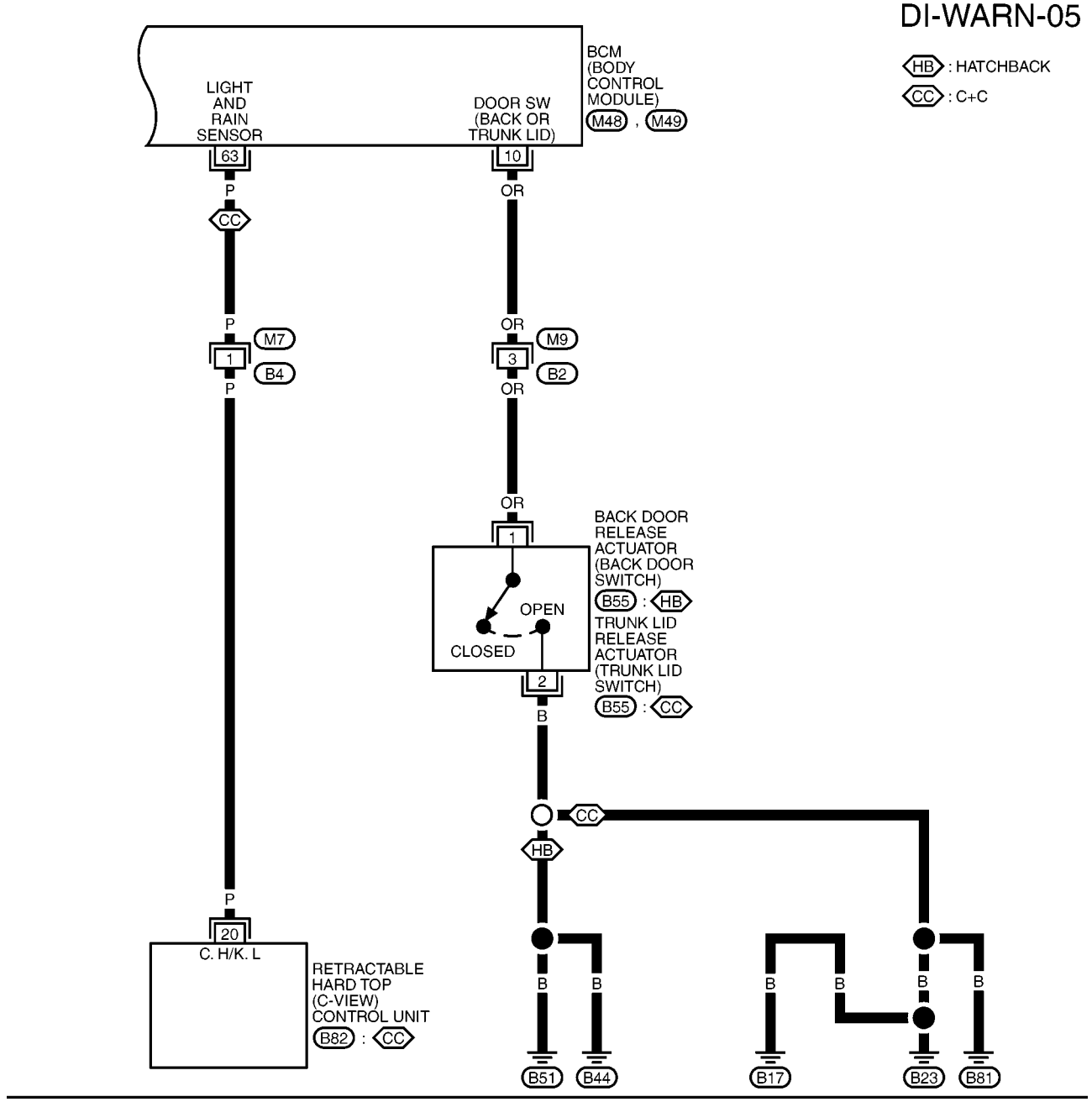
MKWA4032E

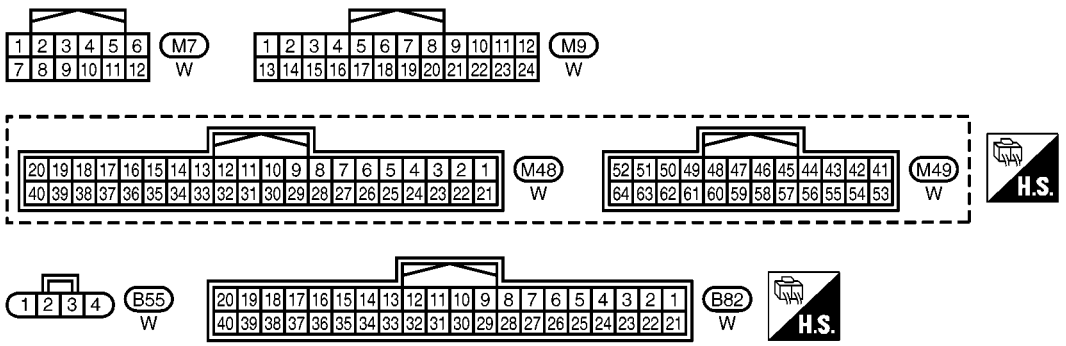
DI-WARN-04



MKWA4033E

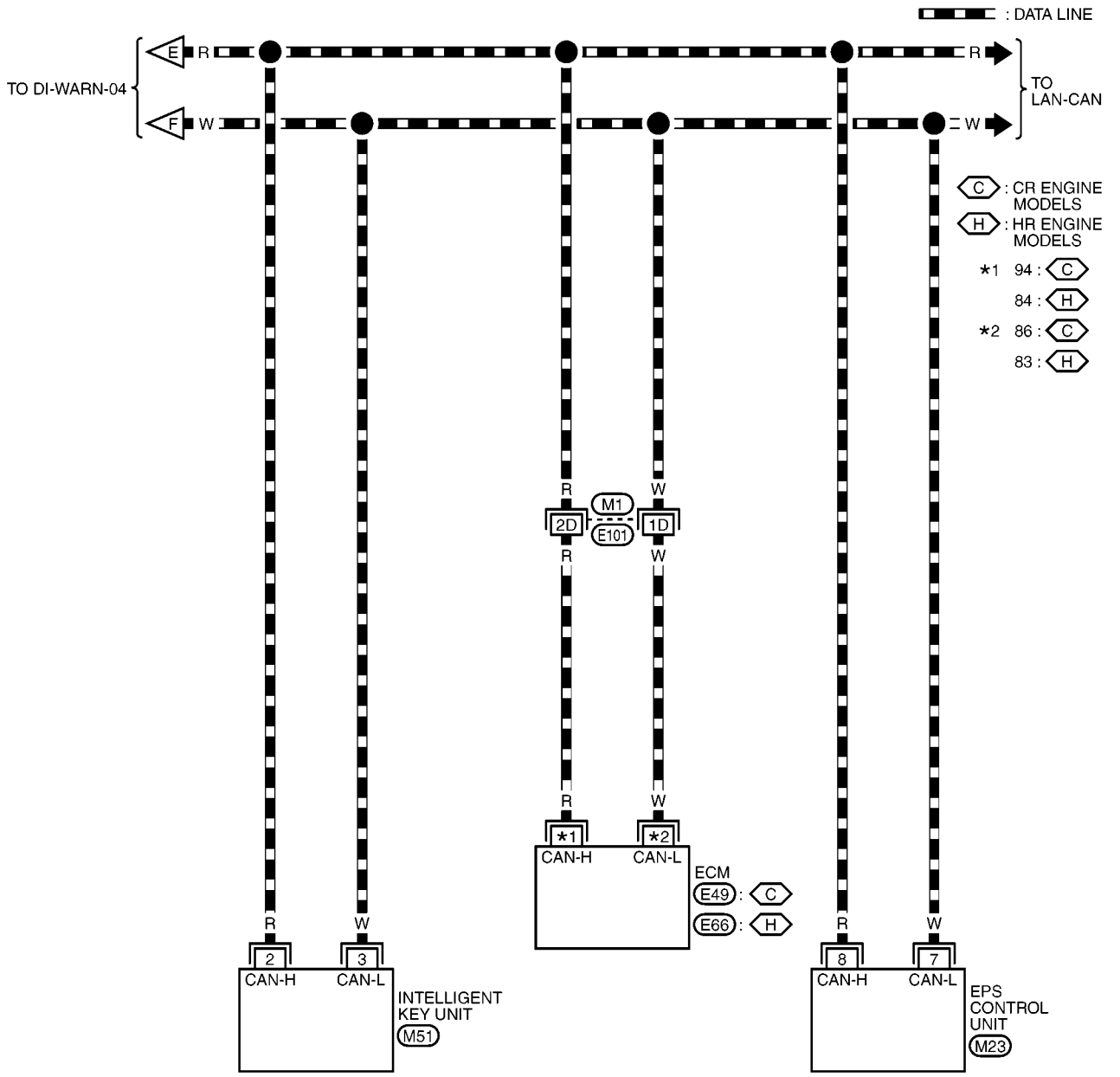
DI-WARN-05

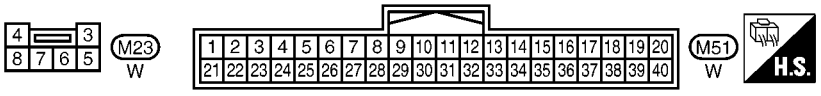




MKWA4034E

DI-WARN-06



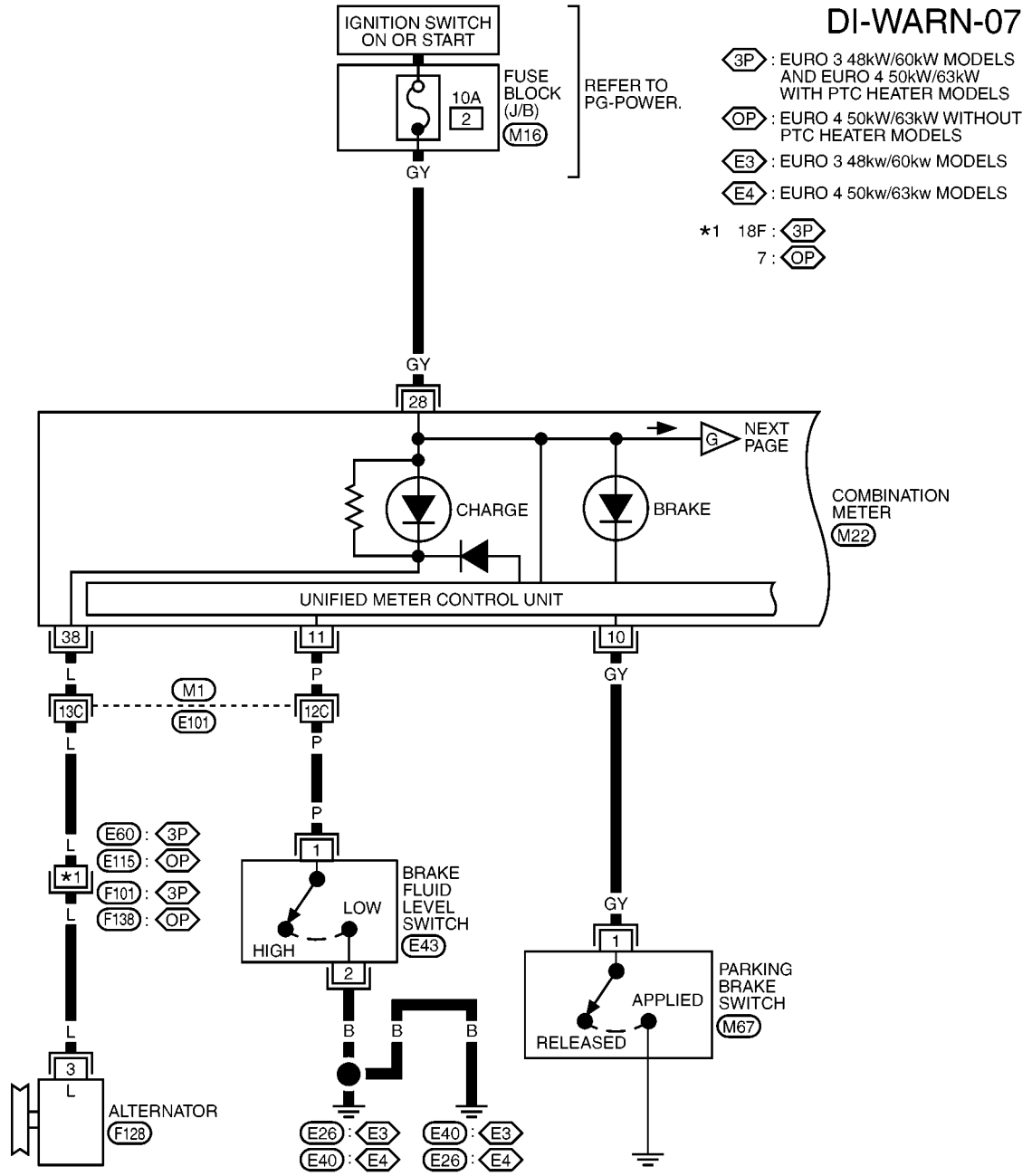


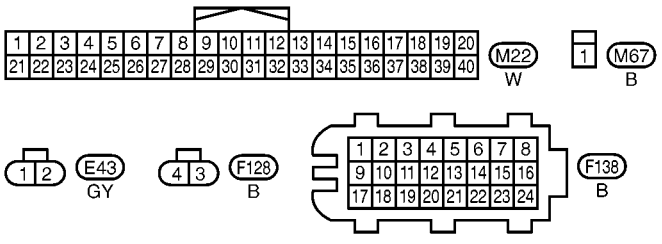
REFER TO THE FOLLOWING.
M1 -SUPER MULTIPLE JUNCTION (SMJ)
E49 , E66
-ELECTRICAL UNITS

MKWA4035E

Wiring Diagram — WARN — / With Diesel Engine Models

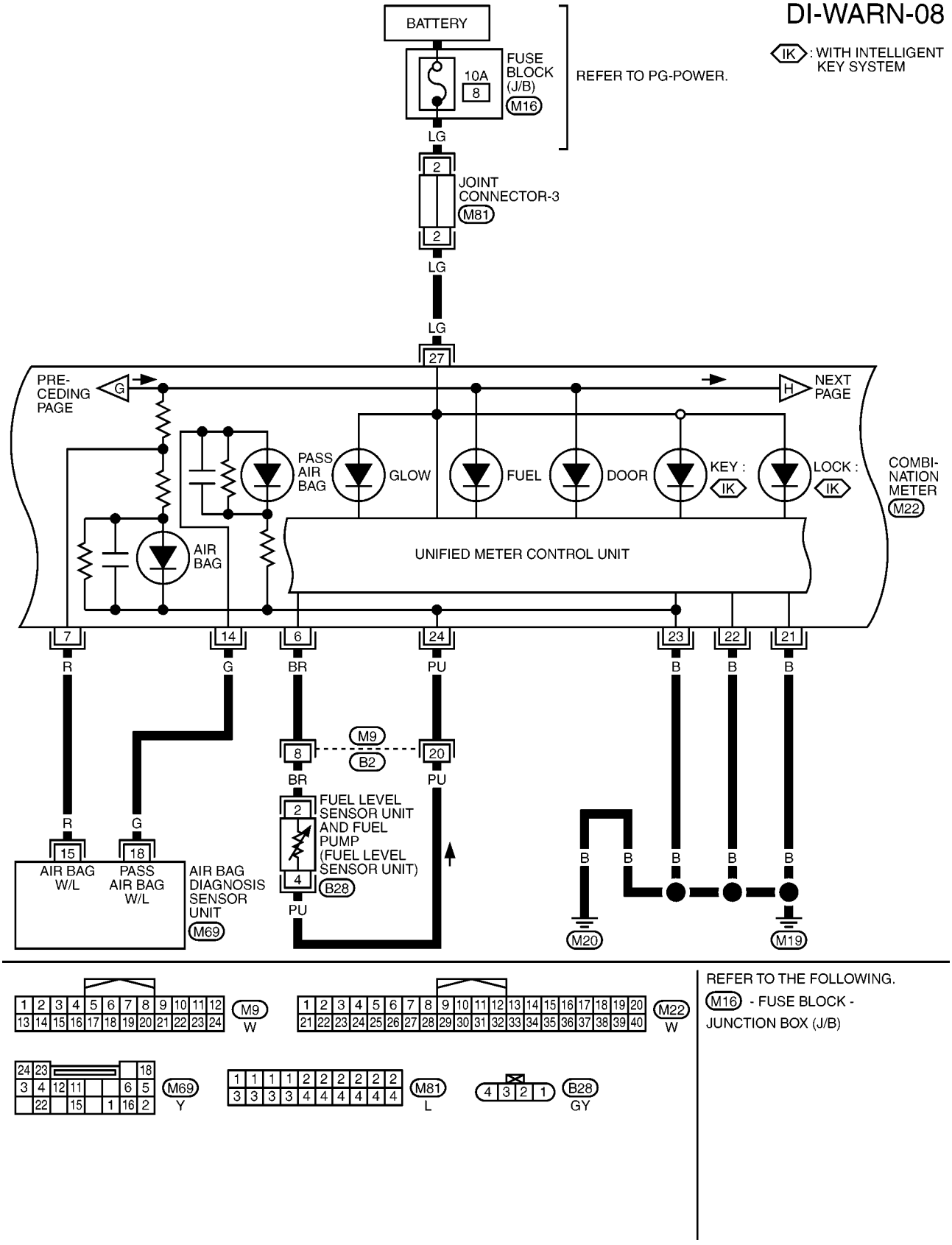
EKS00K3F





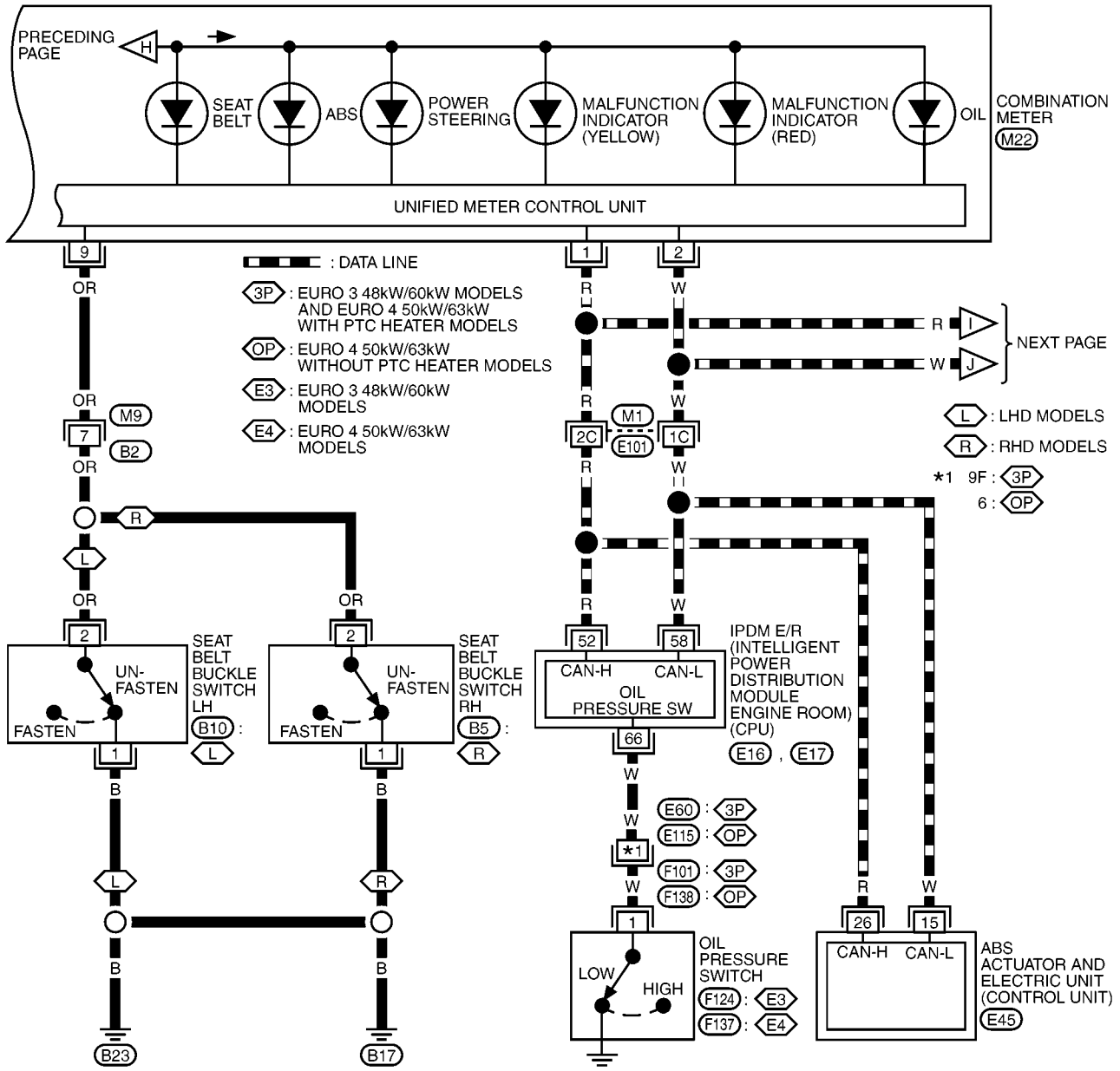
REFER TO THE FOLLOWING.
M1 , F101 - SUPER MULTIPLE JUNCTION (SMJ)
M16 - FUSE BLOCK - JUNCTION BOX (J/B)

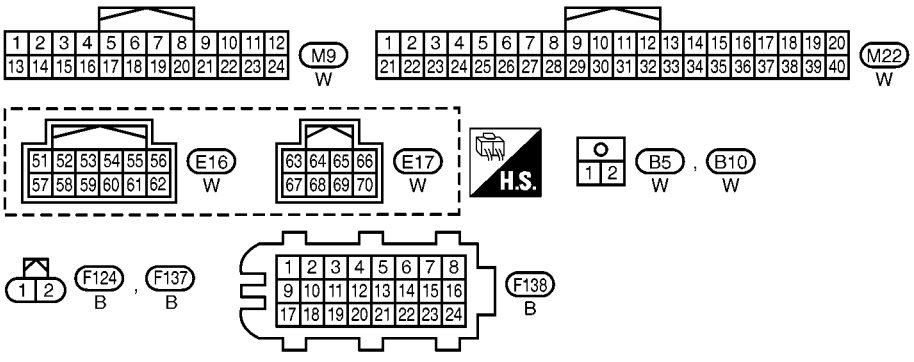
MKWA4036E


DI-WARN-08
IK : WITH INTELLIGENT KEY SYSTEM
BATTERY
FUSE BLOCK (J/B) M16
10A 8
REFER TO PG-POWER.
LG
2
JOINT CONNECTOR-3 M81
2
LG
LG
27
PRE-CEDING PAGE
G
H
NEXT PAGE
PASS AIR BAG
GLOW
FUEL
DOOR
KEY : IK
LOCK : IK
COMBI-NATION METER M22
AIR BAG
UNIFIED METER CONTROL UNIT
7
14
6
24
23
22
21
R
G
BR
PU
B
B
B
M9
B2
8
20
BR
PU
FUEL LEVEL SENSOR UNIT AND FUEL PUMP (FUEL LEVEL SENSOR UNIT) B28
2
4
PU
R
G
15
18
AIR BAG W/L
PASS AIR BAG W/L
AIR BAG DIAGNOSIS SENSOR UNIT M69
B B B B B
M20
M19
M9 W
M22 W
M69 Y
M81 L
B28 GY
REFER TO THE FOLLOWING.
M16 - FUSE BLOCK - JUNCTION BOX (J/B)

MKWA4037E

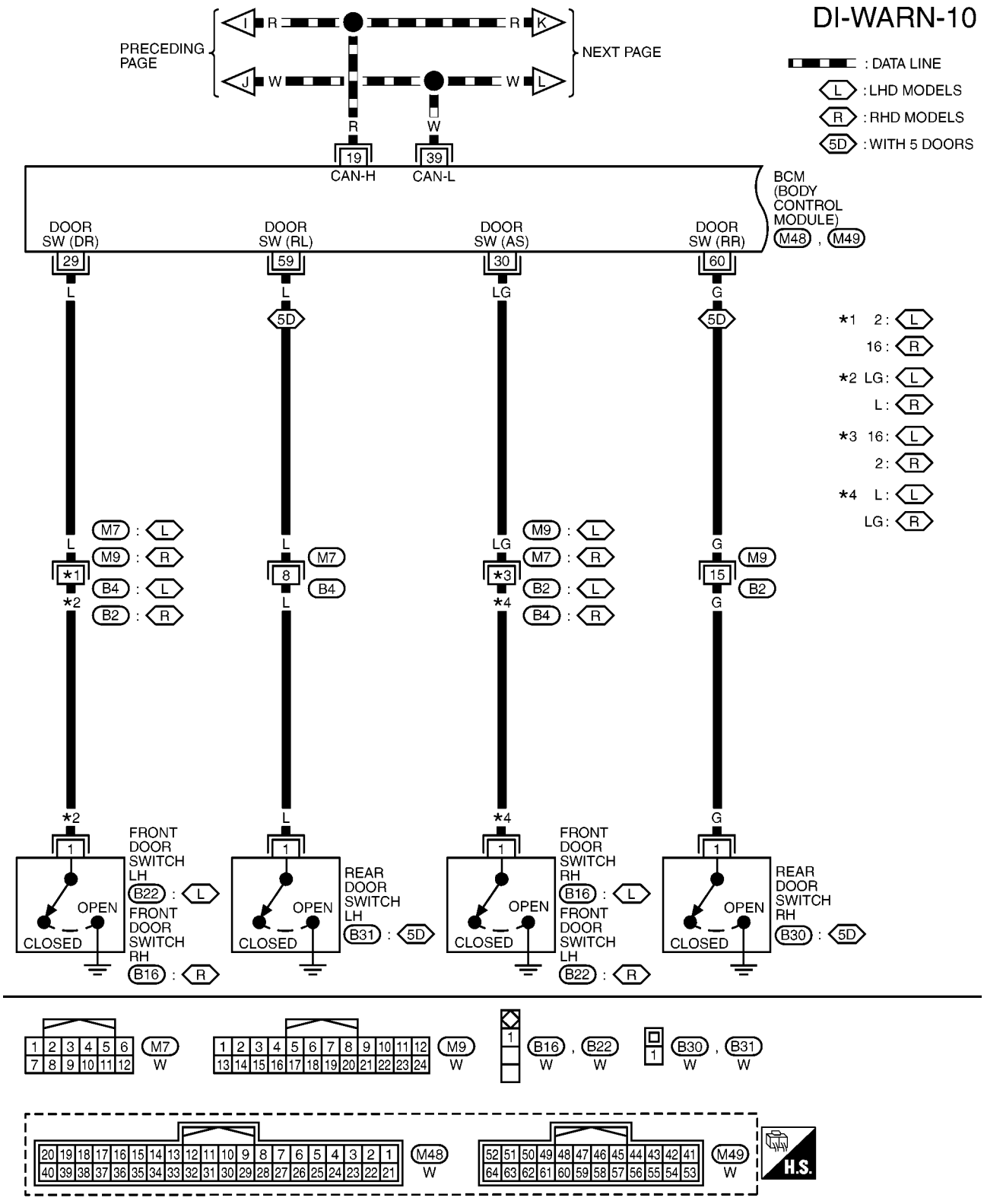
DI-WARN-09





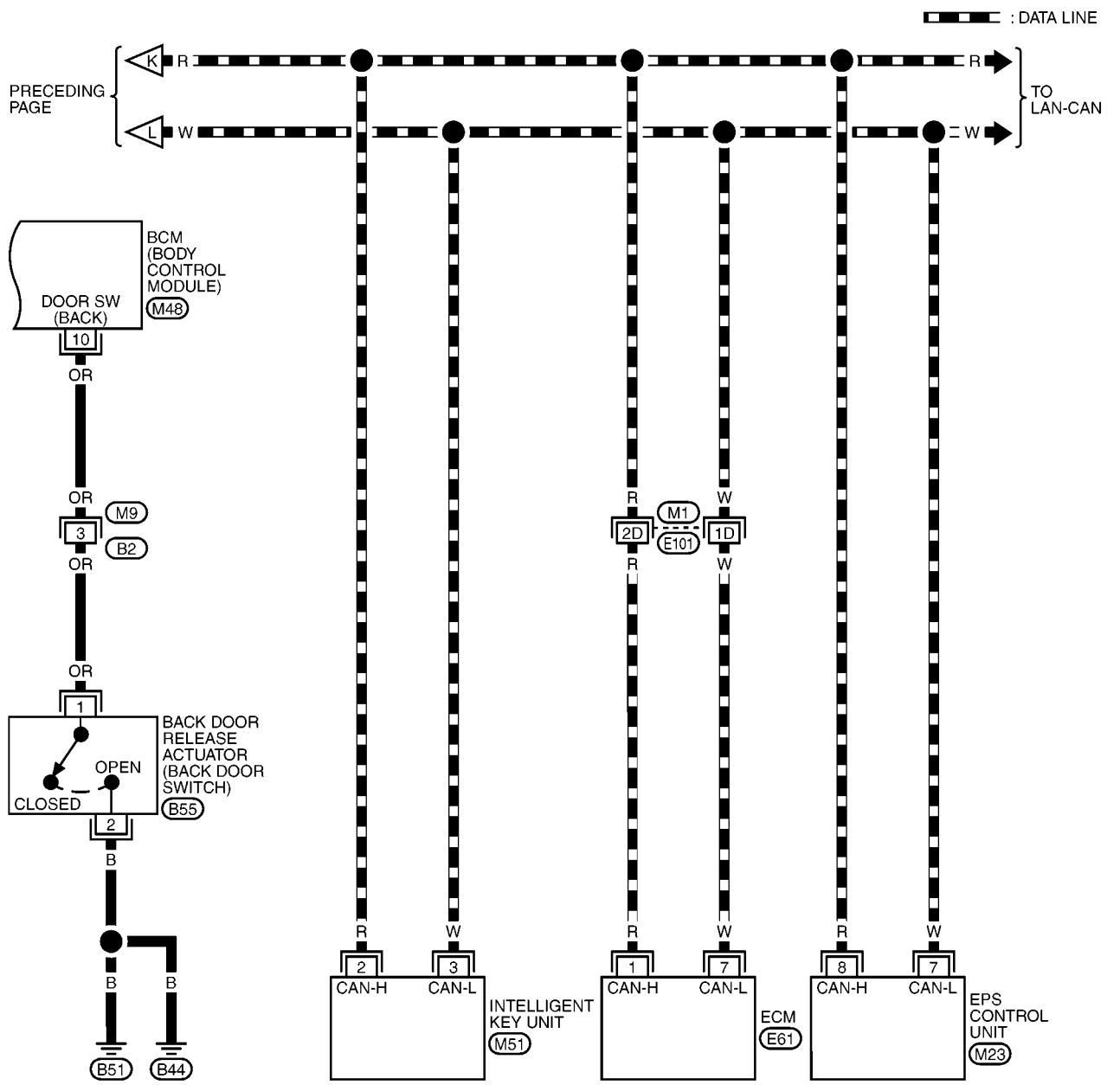
REFER TO THE FOLLOWING.
M1 , F101 - SUPER MULTIPLE JUNCTION (SMJ)
E45 - ELECTRICAL UNITS

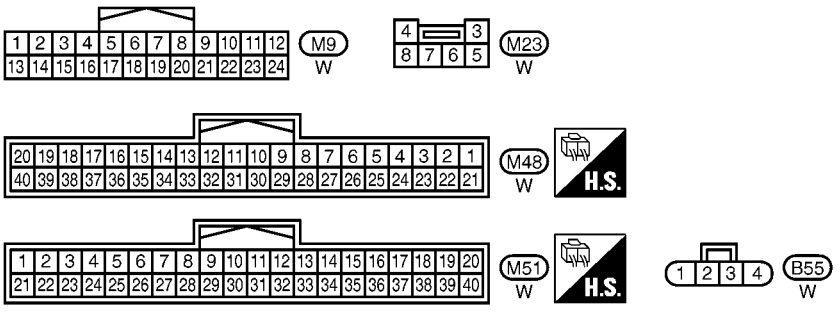
MKWA4038E


DI-WARN-10
PRECEDING PAGE
NEXT PAGE
: DATA LINE
: LHD MODELS
: RHD MODELS
: WITH 5 DOORS
CAN-H
CAN-L
BCM (BODY CONTROL MODULE)
M48 , M49
DOOR SW (DR)
DOOR SW (RL)
DOOR SW (AS)
DOOR SW (RR)
*1 2 : L
16 : R
*2 LG : L
L : R
*3 16 : L
2 : R
*4 L : L
LG : R
FRONT DOOR SWITCH LH
B22 : L
FRONT DOOR SWITCH RH
B16 : R
REAR DOOR SWITCH LH
B31 : 5D
REAR DOOR SWITCH RH
B30 : 5D
OPEN
CLOSED
M7
M9
B16 , B22
B30 , B31
M48
M49
H.S.

MKWA4039E

DI-WARN-11





REFER TO THE FOLLOWING.
M1 - SUPER MULTIPLE JUNCTION (SMJ)
E61 - ELECTRICAL UNITS

MKWA4040E

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-34, "CONSULT-II Function (IPDM E/R)" .

self-diagnostic results content

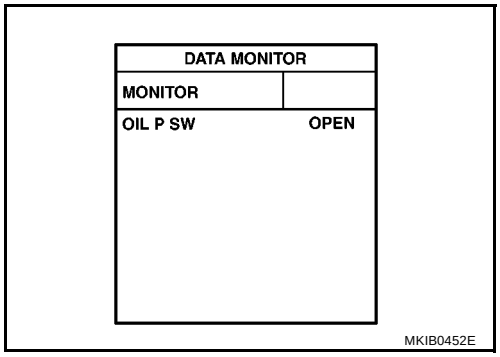
NON DTC IS DETECTED >>GO TO 2.
CAN COMMUNICATION CIRCUIT >>Check IPDM. Refer to PG-49, "Inspection With CONSULT-II (Self-Diagnosis)" .

2. CHECK IPDM E/R DATA MONITOR

With CONSULT-II

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

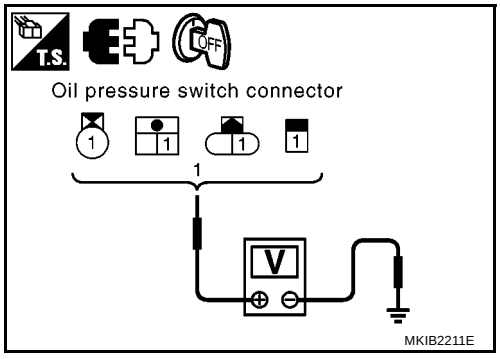
Engine is stopped (IGN ON) : OIL P SW CLOSE
Engine is running : OIL P SW OPEN



Without CONSULT-II

1. Disconnect oil pressure switch.
2. Turn the ignition switch ON.
3. Check voltage between oil pressure switch harness connector F25 (CR engine models), F45 (HR engine models), F124 (K9K Euro 3 48kw / 60kw models) or F137 (K9K Euro 4 50kw / 63kw models) terminall 1 and ground.

1 (W) - Ground : Battery voltage



OK or NG

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

3. CHECK OIL PRESSURE SWITCH

Check oil pressure switch. Refer to DI-77, "OIL PRESSURE SWITCH CHECK" .

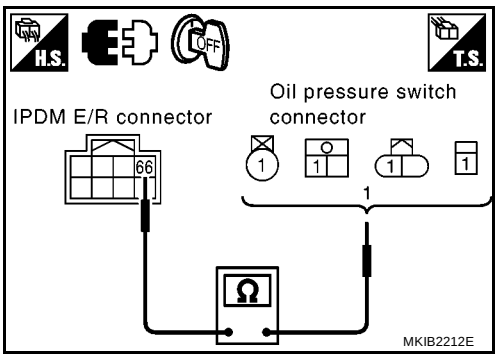
OK or NG

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 and oil pressure switch harness connector F25 (CR engine models), F45 (HR engine models), F124 (K9K Euro 3 48kw / 60kw models) or F137 (K9K Euro 4 50kw / 63kw models) terminal 1.

66 (W) - 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

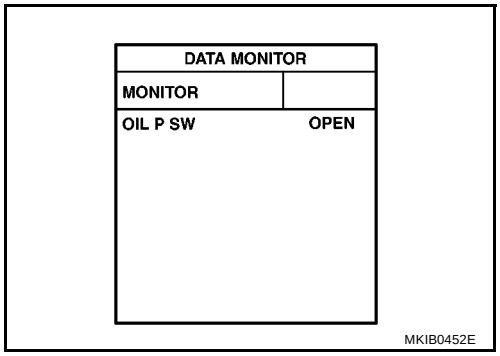
NOTE:
For oil pressure inspection, refer to LU-6, "OIL PRESSURE CHECK" (CR engine models) or LU-24, "OIL PRESSURE CHECK" (K9K engine models).

1. CHECK OIL PRESSURE SWITCH INPUT

With CONSULT-II

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

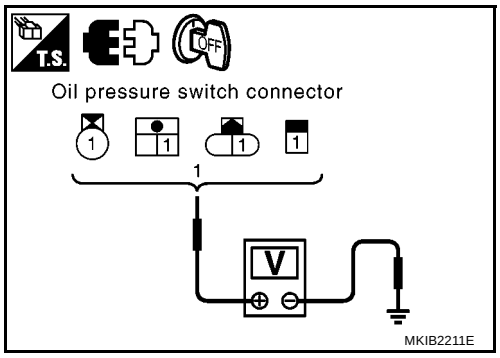
Engine is stopped (IGN ON) : OIL P SW CLOSE
Engine is running : OIL P SW OPEN



Without CONSULT-II

1. Disconnect oil pressure switch.
2. Turn the ignition switch ON.
3. Check voltage between oil pressure switch harness connector F25 (CR engine models), F45 (HR engine models), F124 (K9K Euro 3 48kw / 60kw models) or F137 (K9K Euro 4 50kw / 63kw models) terminal 1 and ground.

1 (W) - Ground : Battery voltage



OK or NG

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

2. CHECK OIL PRESSURE SWITCH

Check oil pressure switch. Refer to DI-77, "OIL PRESSURE SWITCH CHECK" .

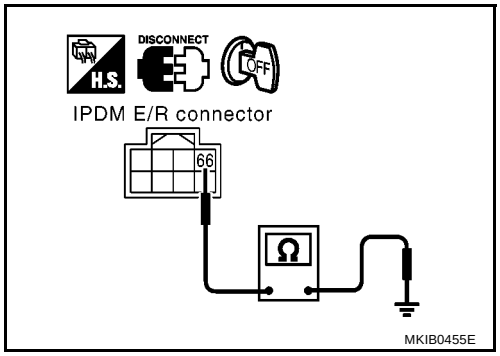
OK or NG

OK >> Replace combination meter.
NG >> Replace the oil pressure switch.

3. CHECK OIL PRESSURE SWITCH CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connector.
3. Check continuity between IPDM E/R harness connector E17 terminal 66 and ground.

66 (W) - Ground : Continuity should not exist.



OK or NG

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

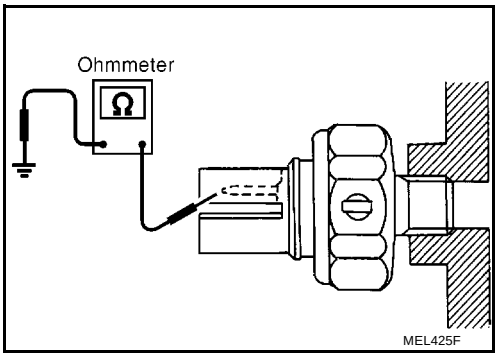
Electrical Components Inspection

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.

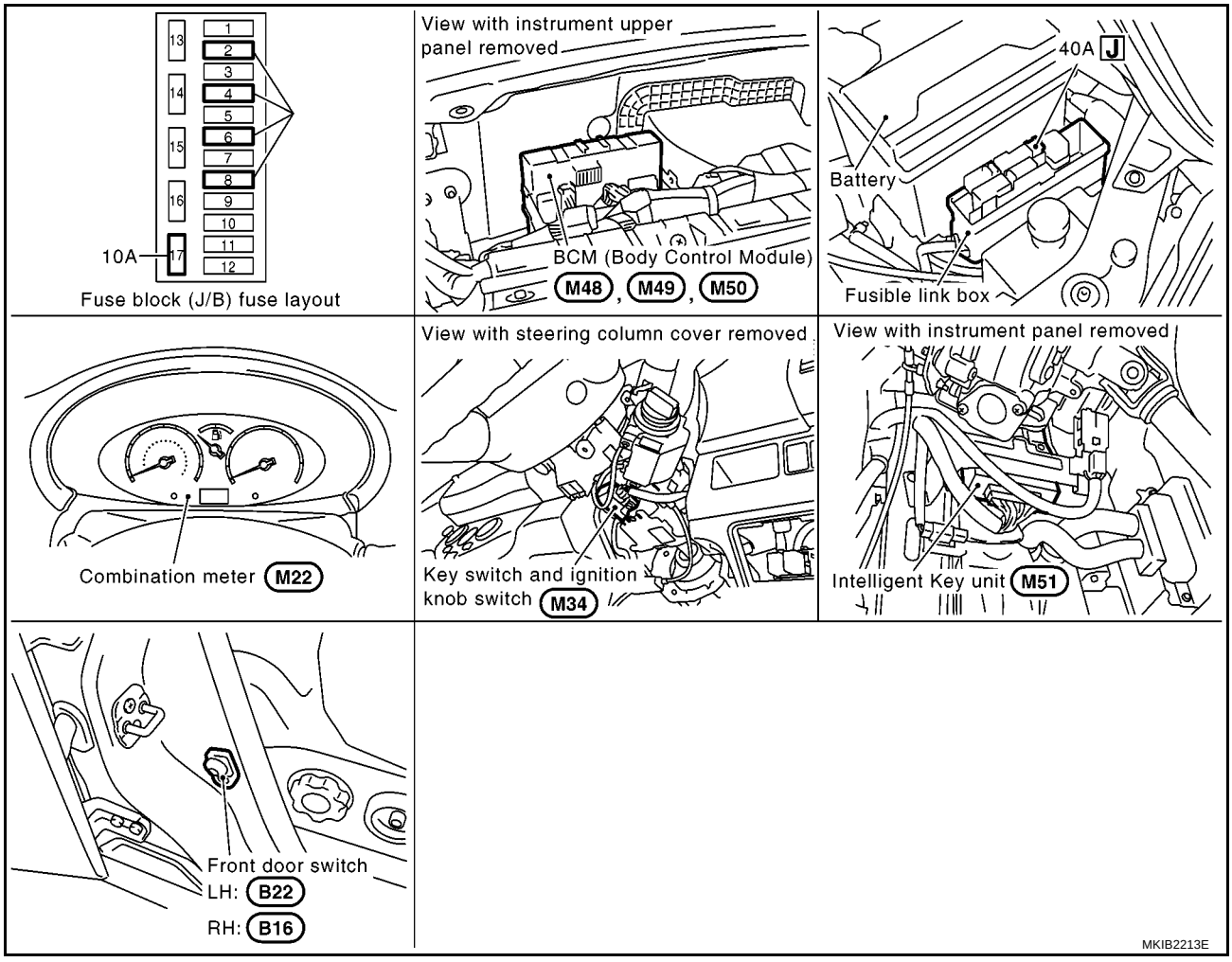


WARNING CHIME

PFP:24814

Component Parts and Harness Connector Location

EKS0072M



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)
- through 10A fuse [No. 17, located in the fuse block (J/B)]
- 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 (LHD models) and M20 (RHD models).

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 2 (with Intelligent Key system)
- to BCM terminal 3.

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 INTELLIGENT 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 4
- to Intelligent Key unit terminal 7.

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, 4, 5, 6, 7, 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-212, "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.

SEAT BELT WARNING CHIME

With ignition switch ON, vehicle speed more than 20km/h and seat belt unfastened [seat belt buckle switch (driver side)], warning chime will be sound.
Ground is supplied

- to combination meter 9
- though seat belt buckle switch LH (LHD) or RH (RHD) terminal 2
- though seat belt buckle switch LH (LHD) or RH (RHD) terminal 1
- though body grounds B17, B23 and B81 (retractable hard top models) or B17, B23, B44 and B51 (hatch back models).

Will these conditions, when power and ground are supplied, the seat belt warning chime sounds.

RETRACTABLE HARD TOP WARNING CHIME

Refer to RF-40, "INDICATOR LAMP AND BUZZER FUNCTION"

CAN Communication

EKS00K3B

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.

CAN Communication Unit

EKS00QPH

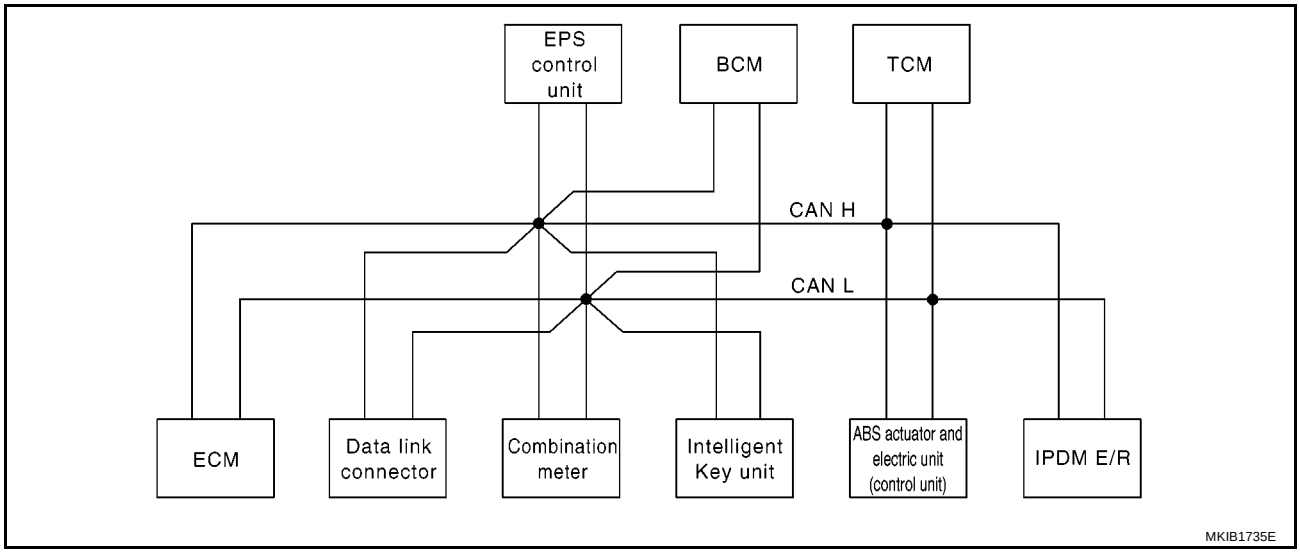
Body type	3door/5door		3door/5door/C+C				3door/5door		3door/5door/C+C				3door/5door	
Axle	2WD													
Engine	CR12DE/CR14DE				HR16DE		CR12DE/CR14DE				HR16DE		K9K	
Handle	LHD/RHD													
Brake control	ABS						ESP						ABS	
Transmission	A/T		M/T				A/T		M/T					
Intelligent Key system	×		×		×		×		×		×		×	
CAN communication unit														
ECM	×	×	×	×	×	×	×	×	×	×	×	×	×	×
Data link connector	×	×	×	×	×	×	×	×	×	×	×	×	×	×
Combination meter	×	×	×	×	×	×	×	×	×	×	×	×	×	×
Intelligent Key unit	×		×		×		×		×		×		×	
EPS control unit	×	×	×	×	×	×	×	×	×	×	×	×	×	×
BCM	×	×	×	×	×	×	×	×	×	×	×	×	×	×
ABS actuator and electric unit (control unit)	×	×	×	×	×	×	×	×	×	×	×	×	×	×
TCM	×	×					×	×						
IPDM E/R	×	×	×	×	×	×	×	×	×	×	×	×	×	×
CAN communication type	DI-82, "TYPE 1/TYPE 2"		DI-85, "TYPE 3/TYPE 4/ TYPE 5/TYPE 6"				DI-87, "TYPE 7/TYPE 8"		DI-90, "TYPE 9/TYPE 10/ TYPE 11/TYPE 12"				DI-92, "TYPE 13/TYPE 14"	

×: Applicable

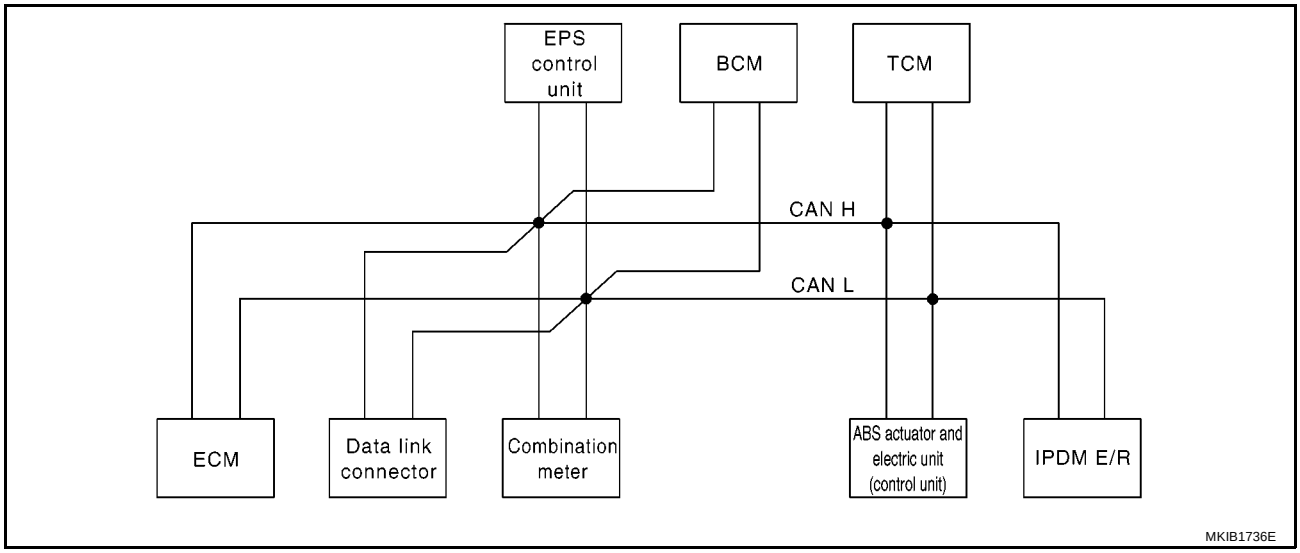
TYPE 1/TYPE 2

System diagram

- Type 1



- Type 2



Input/output signal chart

T: Transmit R: Receive

Signals	ECM	Combi-nation meter.	Intelli-gent Key unit	EPS control unit	BCM	ABS actua-tor and electric unit (control unit)	TCM	IPDM E/R
Engine speed signal	T	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	
Overdrive control switch signal		T					R	

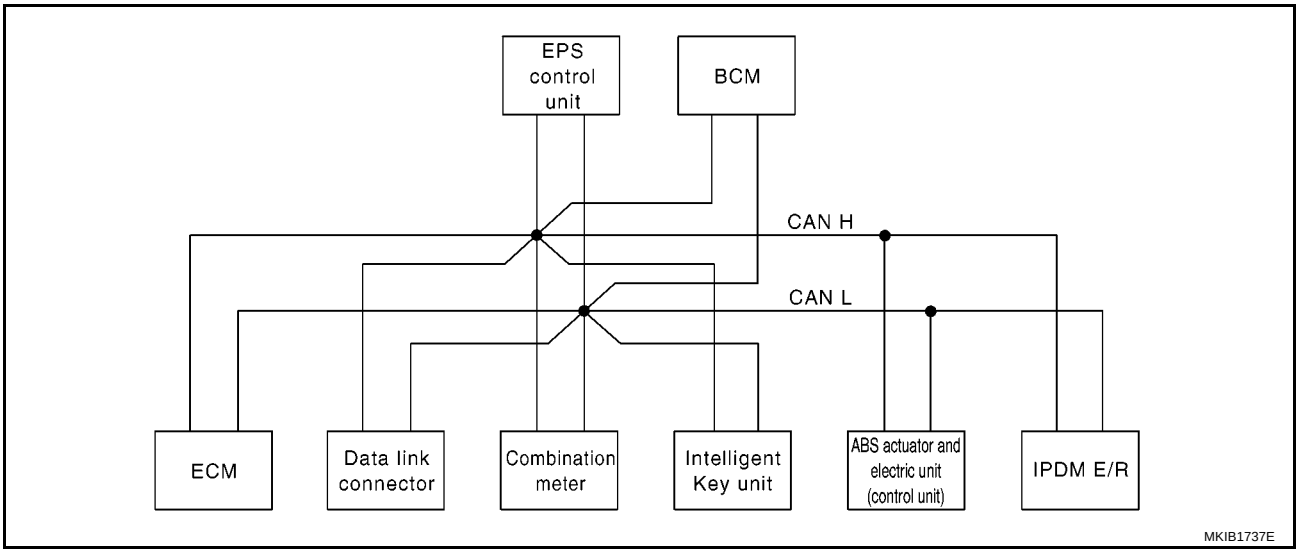
Signals	ECM	Combination meter.	Intelligent Key unit	EPS control unit	BCM	ABS actuator and electric unit (control unit)	TCM	IPDM E/R
A/T position indicator signal		R					T	
Stop lamp switch signal		T					R	
O/D OFF indicator signal		R					T	
Engine and A/T integrated control signal	T						R	
	R						T	
Fuel consumption monitor signal	T	R						
Oil pressure switch signal		R						T
A/C compressor request signal	T							R
Heater fan switch signal	R				T			
Cooling fan speed request signal	T							R
Position lights request signal		R			T			R
Low beam request signal					T			R
Low beam status signal	R							T
High beam request signal		R			T			R
High beam status signal	R							T
Day time light request signal					T			R
Vehicle speed signal	R	R		R		T		
	R	T	R	R	R			
Sleep/wake up signal		R	R		T			R
Door switch signal		R	R		T			R
Turn indicator signal		R			T			
Buzzer output signal		R			T			
		R	T					
MI signal	T	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
EPS warning lamp signal		R		T				
ABS warning lamp signal		R				T		
Brake warning lamp signal		R				T		
Back-up lamp signal				R	T			
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			T		R			
Door lock/unlock status signal			R		T			
KEY indicator signal		R	T					
LOCK indicator signal		R	T					
Engine status signal	T			R				

Signals	ECM	Combi-nation meter.	Intelli-gent Key unit	EPS control unit	BCM	ABS actua-tor and electric unit (control unit)	TCM	IPDM E/R
A/C switch signal	R				T			
Brake system malfunction signal		T		R				
Parking brake switch signal		T		R				
R range signal					R			T

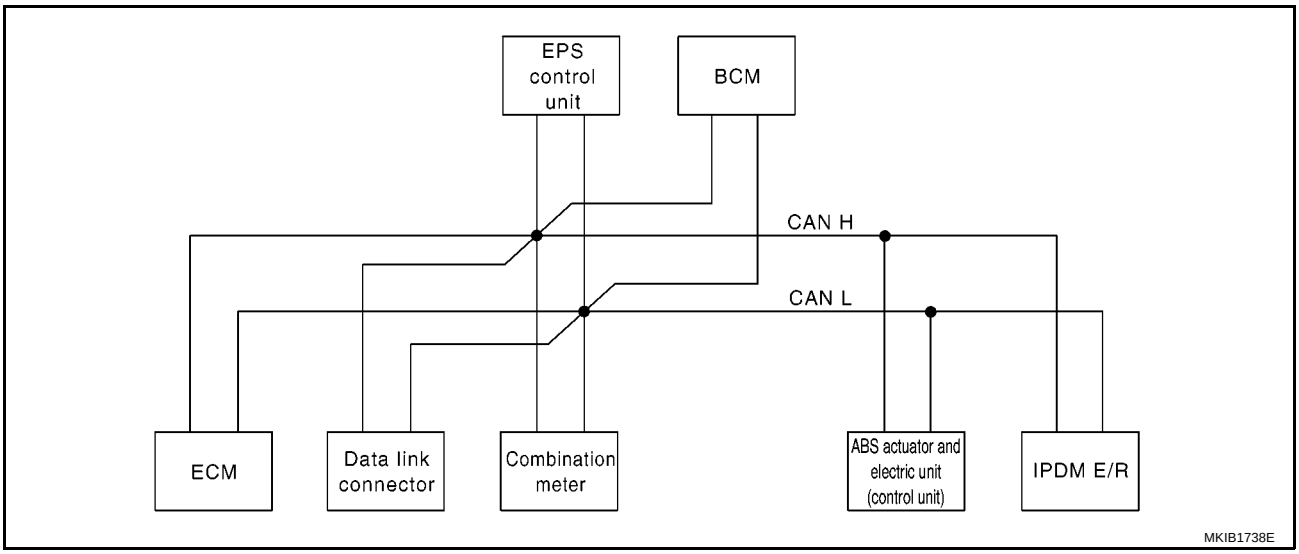
TYPE 3/TYPE 4/TYPE 5/TYPE 6

System diagram

- Type 3/Type 5



- Type 4/Type 6



Input/output signal chart

T: Transmit R: Receive

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

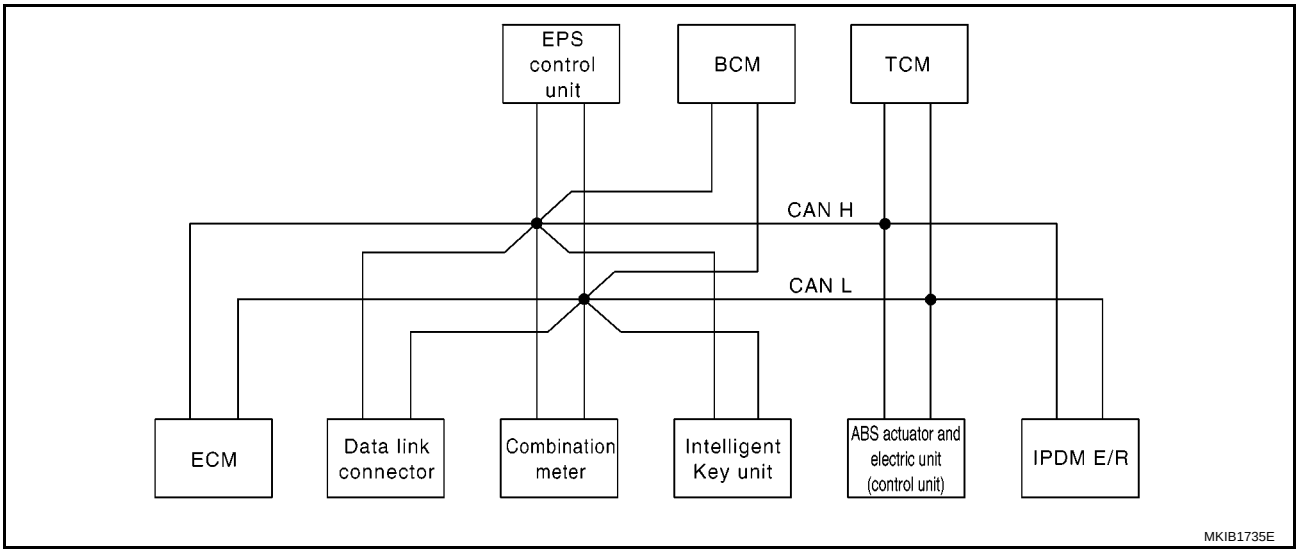
Signals	ECM	Combination meter.	Intelligent Key unit	EPS control unit	BCM	ABS actuator and electric unit (control unit)	IPDM E/R
Low beam status signal	R						T
High beam request signal		R			T		R
High beam status signal	R						T
Day time light request signal					T		R
Vehicle speed signal	R	R		R		T	
	R	T	R	R	R		
Sleep/wake up signal		R	R		T		R
Door switch signal		R	R		T		R
Turn indicator signal		R			T		
Buzzer output signal		R			T		
		R	T				
MI signal	T	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
EPS warning indicator signal		R		T			
ABS warning lamp signal		R				T	
Brake warning lamp signal		R				T	
Back-up lamp signal				R	T		
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			T		R		
Door lock/unlock status signal			R		T		
KEY indicator signal		R	T				
LOCK indicator signal		R	T				
Engine status signal	T			R			
A/C switch signal	R				T		
Brake system malfunction signal		T		R			
Parking brake switch signal		T		R			
R range signal					R		T
Retractable hard top warning lamp signal*		R			T		

*: C+C only

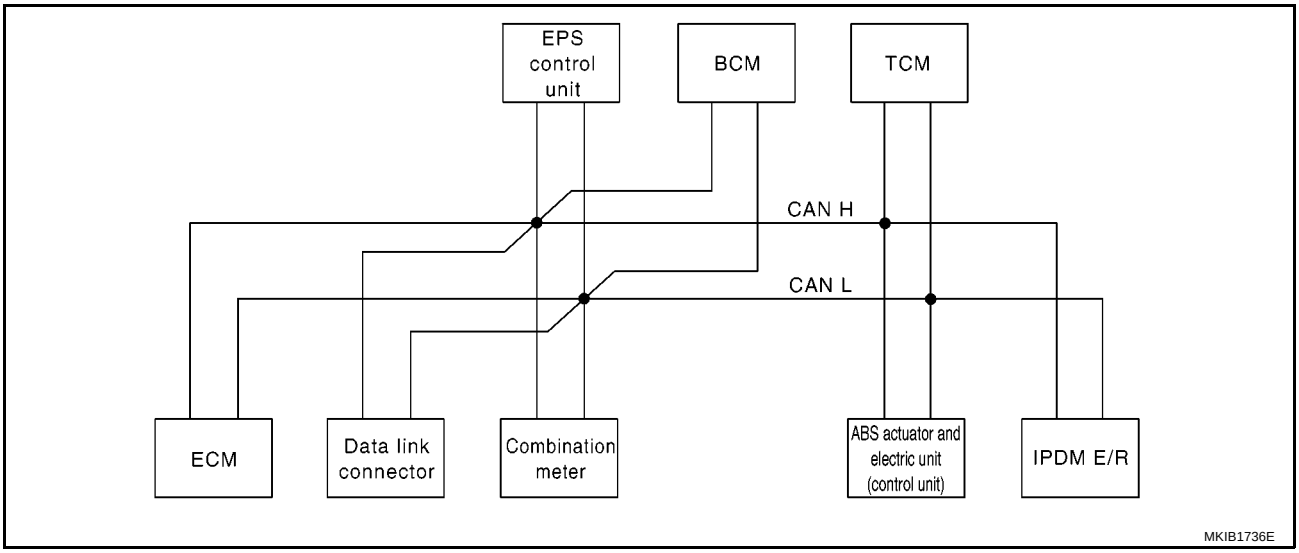
TYPE 7/TYPE 8

System diagram

- Type 7



- Type 8



Input/output signal chart

T: Transmit R: Receive

Signals	ECM	Combination meter.	Intelligent Key unit	EPS control unit	BCM	ABS actuator and electric unit (control unit)	TCM	IPDM E/R
Engine speed signal	T	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	R	
Closed throttle position signal	T						R	
Wide open throttle position signal	T						R	
Overdrive control switch signal		T					R	
A/T position indicator signal		R					T	

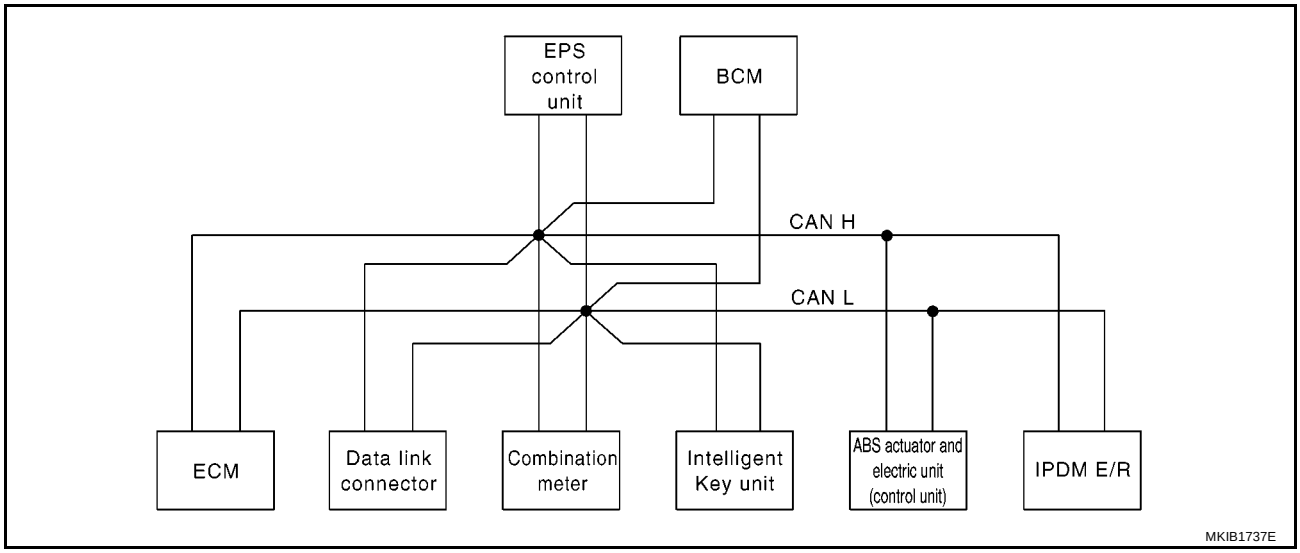
Signals	ECM	Combination meter.	Intelligent Key unit	EPS control unit	BCM	ABS actuator and electric unit (control unit)	TCM	IPDM E/R
A/T shift schedule change demand signal						T	R	
Stop lamp switch signal		T					R	
O/D OFF indicator lamp signal		R					T	
Engine and A/T integrated control signal	T						R	
	R						T	
Fuel consumption monitor signal	T	R						
Oil pressure switch signal		R						T
A/C compressor request signal	T							R
Heater fan switch signal	R				T			
Cooling fan speed request signal	T							R
Position lights request signal		R			T			R
Low beam request signal					T			R
Low beam status signal	R							T
High beam request signal		R			T			R
High beam status signal	R							T
Day time light request signal					T			R
Vehicle speed signal	R	R		R		T		
	R	T	R	R	R			
Sleep/wake up signal		R	R		T			R
Door switch signal		R	R		T			R
Turn indicator signal		R			T			
Buzzer output signal		R			T			
		R	T					
MI signal	T	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
EPS warning lamp signal		R		T				
ABS warning lamp signal		R				T		
ESP warning lamp signal		R				T		
ESP OFF indicator signal		R				T		
SLIP indicator lamp signal		R				T		
Steering angle signal				T		R		
Brake warning lamp signal		R				T		
Back-up lamp signal				R	T			
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			T		R			

Signals	ECM	Combination meter.	Intelligent Key unit	EPS control unit	BCM	ABS actuator and electric unit (control unit)	TCM	IPDM E/R
Door lock/unlock status signal			R		T			
KEY indicator signal		R	T					
LOCK indicator signal		R	T					
Engine status signal	T			R				
A/C switch signal	R				T			
A/T torque signal						R	T	
Brake system malfunction signal		T		R				
Parking brake switch signal		T		R				
R range signal					R			T

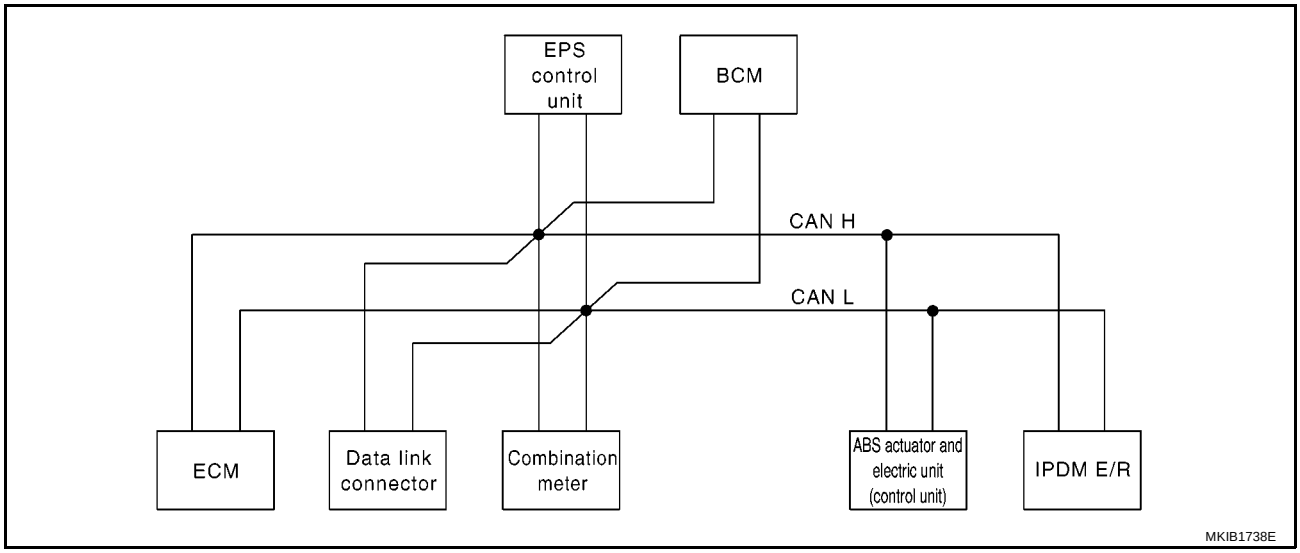
TYPE 9/TYPE 10/TYPE 11/TYPE 12

System diagram

- Type 9/Type 11



- Type 10/Type 12



Input/output signal chart

T: Transmit R: Receive

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

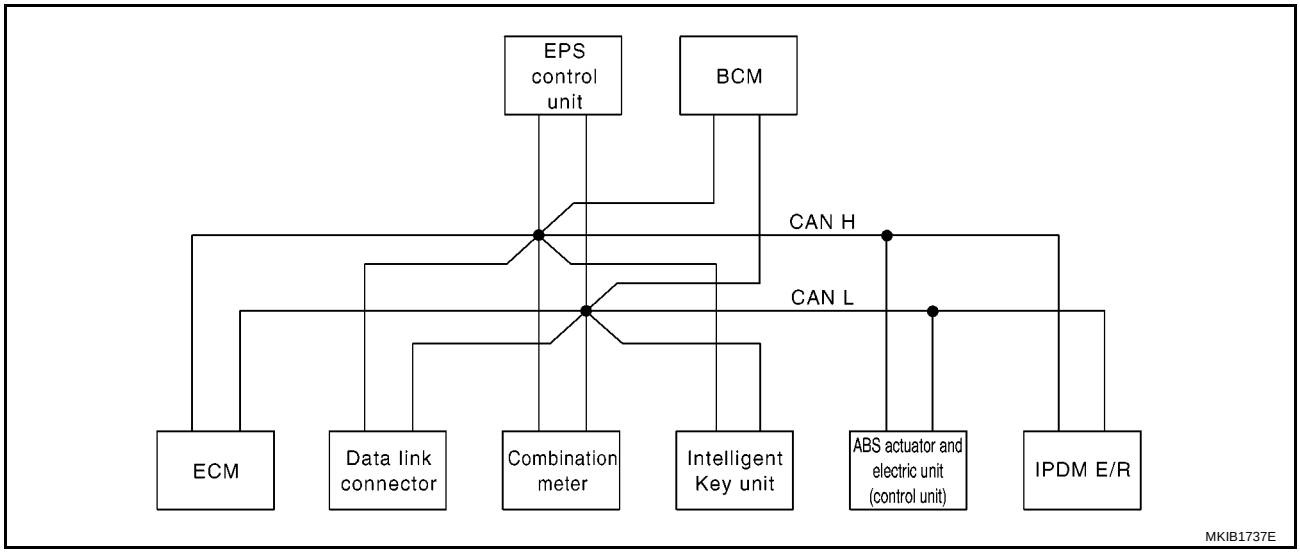
Signals	ECM	Combination meter.	Intelligent Key unit	EPS control unit	BCM	ABS actuator and electric unit (control unit)	IPDM E/R
Low beam request signal					T		R
Low beam status signal	R						T
High beam request signal		R			T		R
High beam status signal	R						T
Day time light request signal					T		R
Vehicle speed signal	R	R		R		T	
	R	T	R	R	R		
Sleep/wake up signal		R	R		T		R
Door switch signal		R	R		T		R
Turn indicator signal		R			T		
Buzzer output signal		R			T		
		R	T				
MI signal	T	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
EPS warning indicator signal		R		T			
ABS warning lamp signal		R				T	
ESP warning lamp signal		R				T	
ESP OFF indicator signal		R				T	
SLIP indicator lamp signal		R				T	
Steering angle signal				T		R	
Brake warning lamp signal		R				T	
Back-up lamp signal				R	T		
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			T		R		
Door lock/unlock status signal			R		T		
KEY indicator signal		R	T				
LOCK indicator signal		R	T				
Engine status signal	T			R			
A/C switch signal	R				T		
Brake system malfunction signal		T		R			
Parking brake switch signal		T		R			
R range signal					R		T
Retractable hard top warning lamp signal*		R			T		

*: C+C only

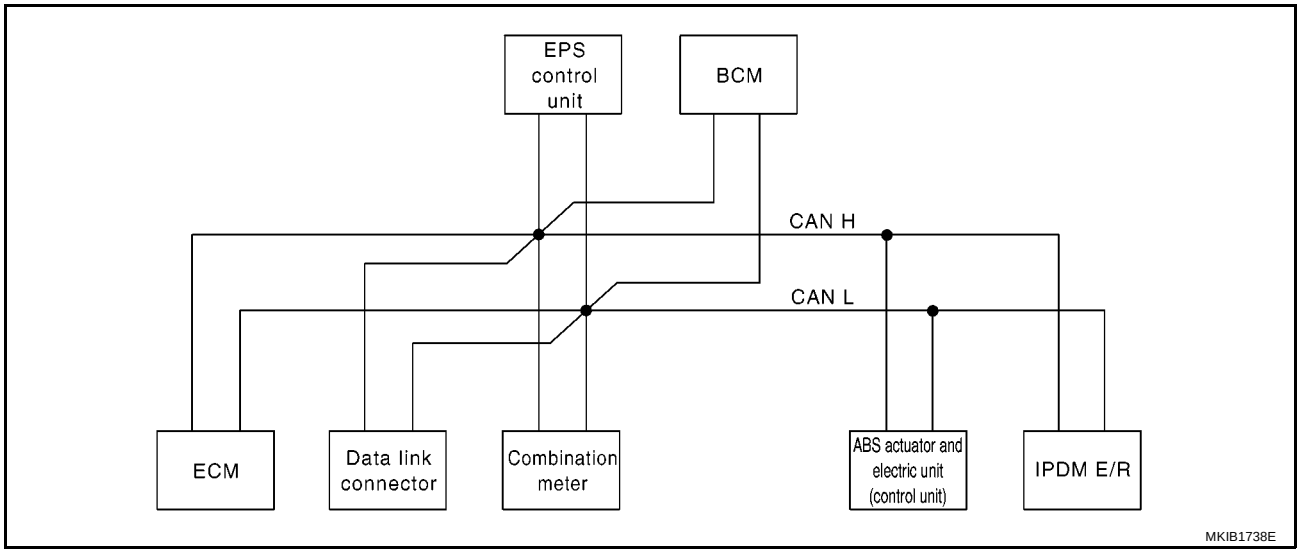
TYPE 13/TYPE 14

System diagram

- Type 13



- Type 14



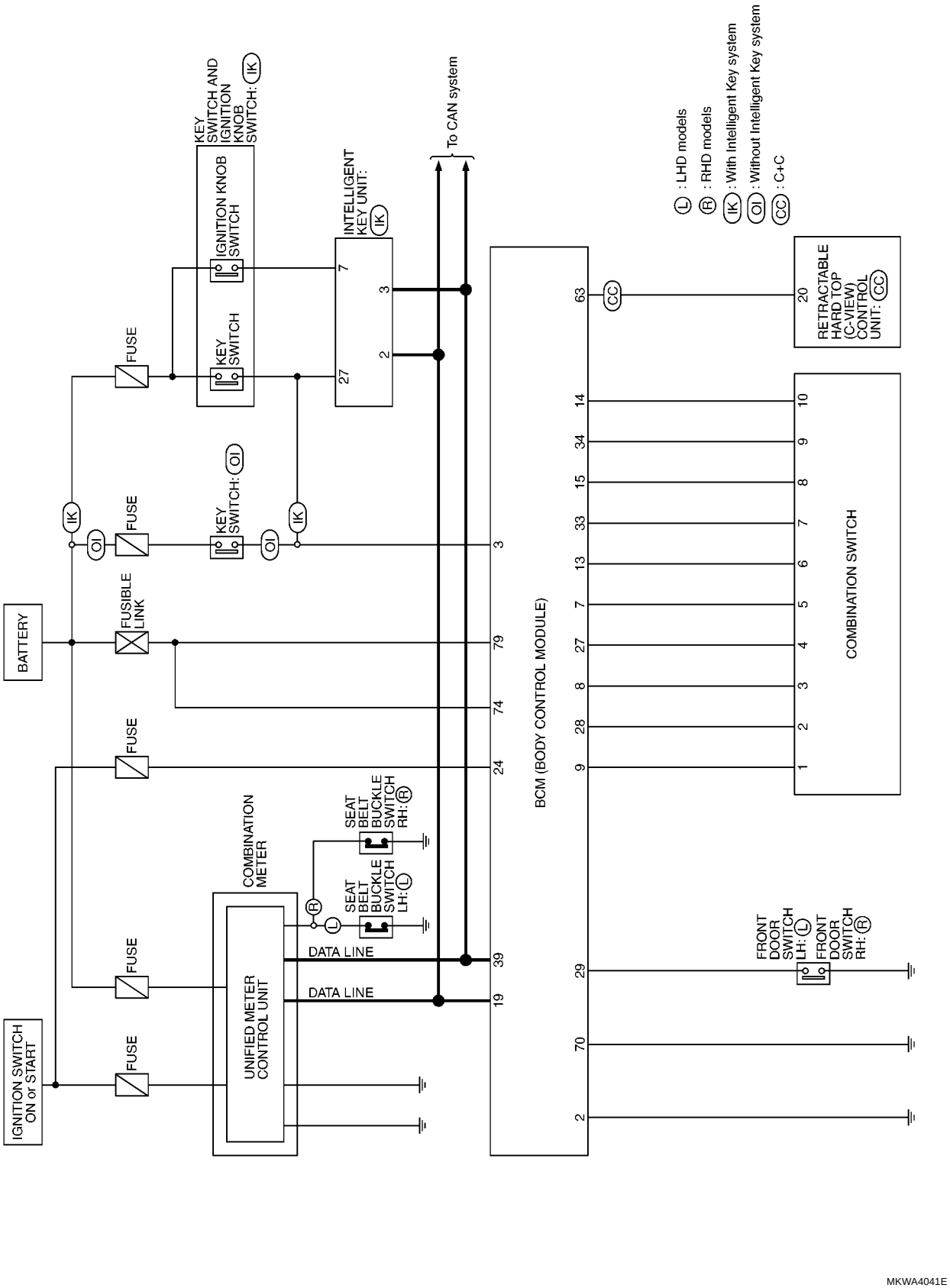
Input/output signal chart

T: Transmit R: Receive

Signals	ECM	Combination meter.	Intelligent Key unit	EPS control unit	BCM	ABS actuator and electric unit (control unit)	IPDM E/R
Engine speed signal	T	R					
Engine coolant temperature signal	T	R			R		
Fuel consumption monitor signal	T	R					
Oil pressure switch signal		R					T
A/C compressor request signal	T						R
Heater fan switch signal	R				T		
Cooling fan speed request signal	T						R
Position lights request signal		R			T		R
Low beam request signal					T		R
High beam request signal		R			T		R
Day time light request signal					T		R
Vehicle speed signal	R	R		R	R	T	
	R	T	R	R			
Sleep/wake up signal		R	R		T		R
Door switch signal		R	R		T		R
Turn indicator signal		R			T		
Buzzer output signal		R			T		
		R	T				
MI signal	T	R					
Front wiper request signal					T		R
Front wiper stop position signal					R		T
Rear window defogger switch signal					T		R
EPS warning indicator signal		R		T			
ABS warning lamp signal		R				T	
Brake warning lamp signal		R				T	
Back-up lamp signal				R	T		
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			T		R		
Door lock/unlock status signal			R		T		
KEY indicator signal		R	T				
LOCK indicator signal		R	T				
Engine status signal	T			R			
Brake system malfunction signal		T		R			
Parking brake switch signal		T		R			
Glow indicator signal	T	R					
R range signal					R		T

Schematic

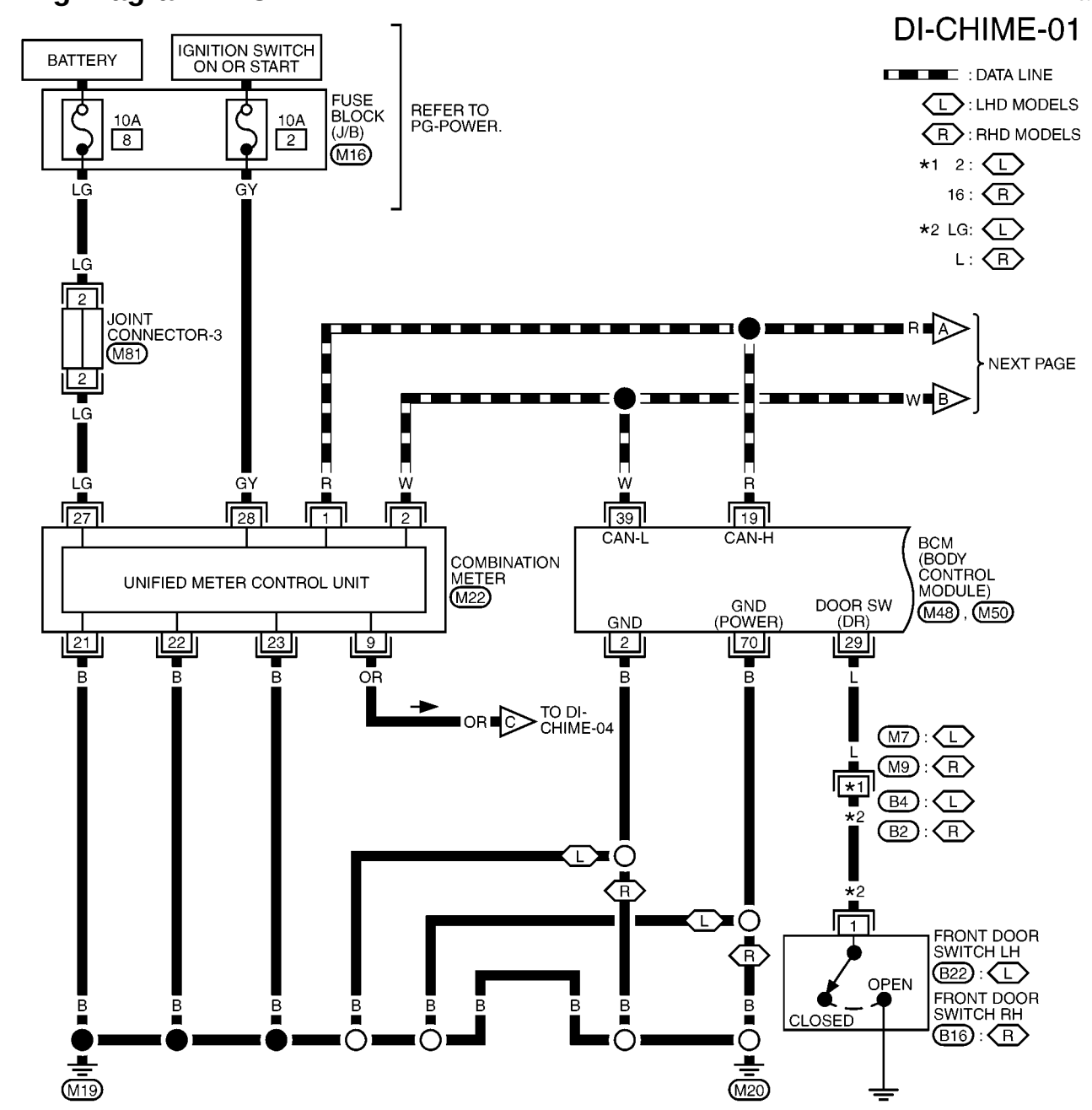
EKS00EKJ

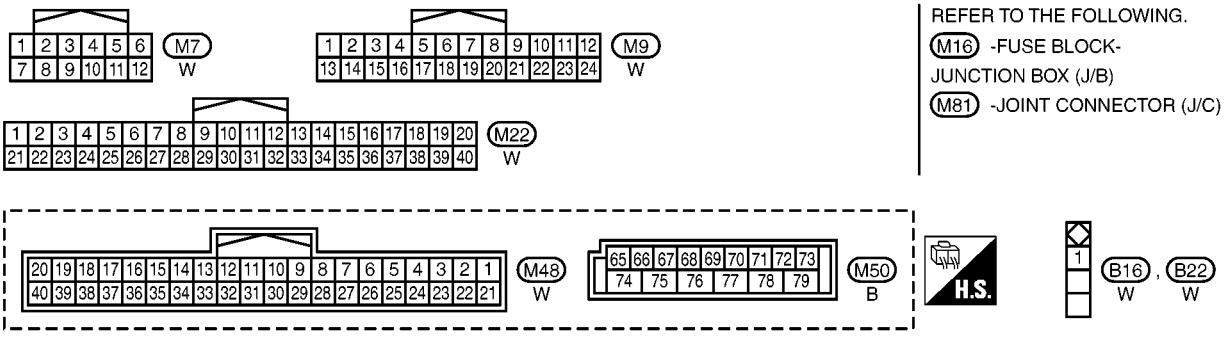


MKWA4041E

Wiring Diagram — CHIME —

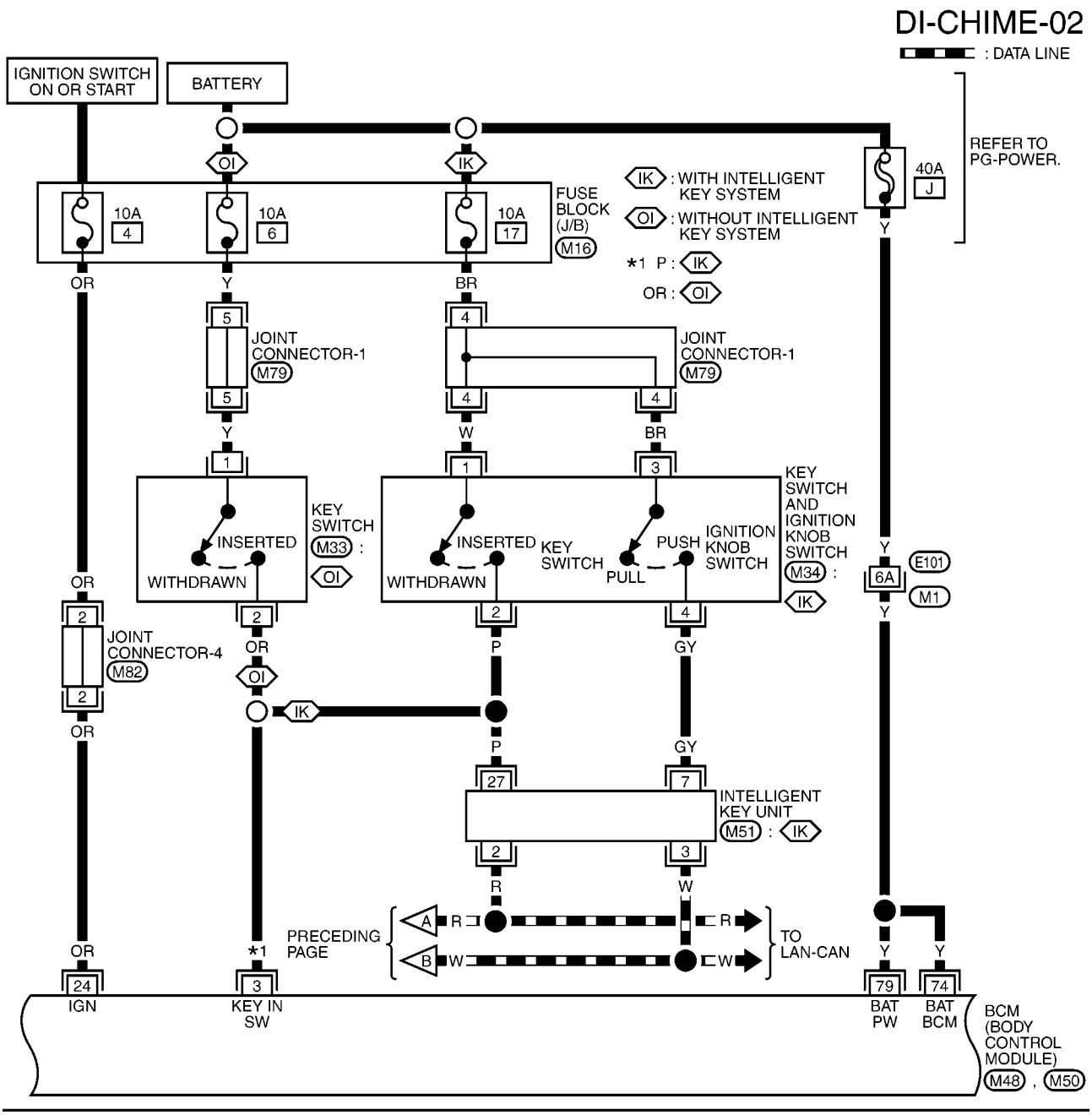
EKS0072N

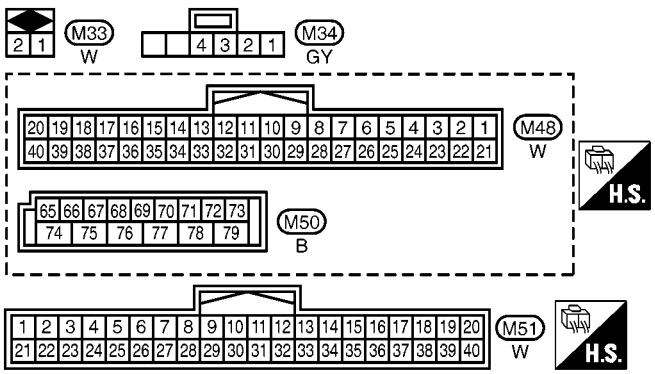




REFER TO THE FOLLOWING.
M16 -FUSE BLOCK-JUNCTION BOX (J/B)
M81 -JOINT CONNECTOR (J/C)

MKWA4042E

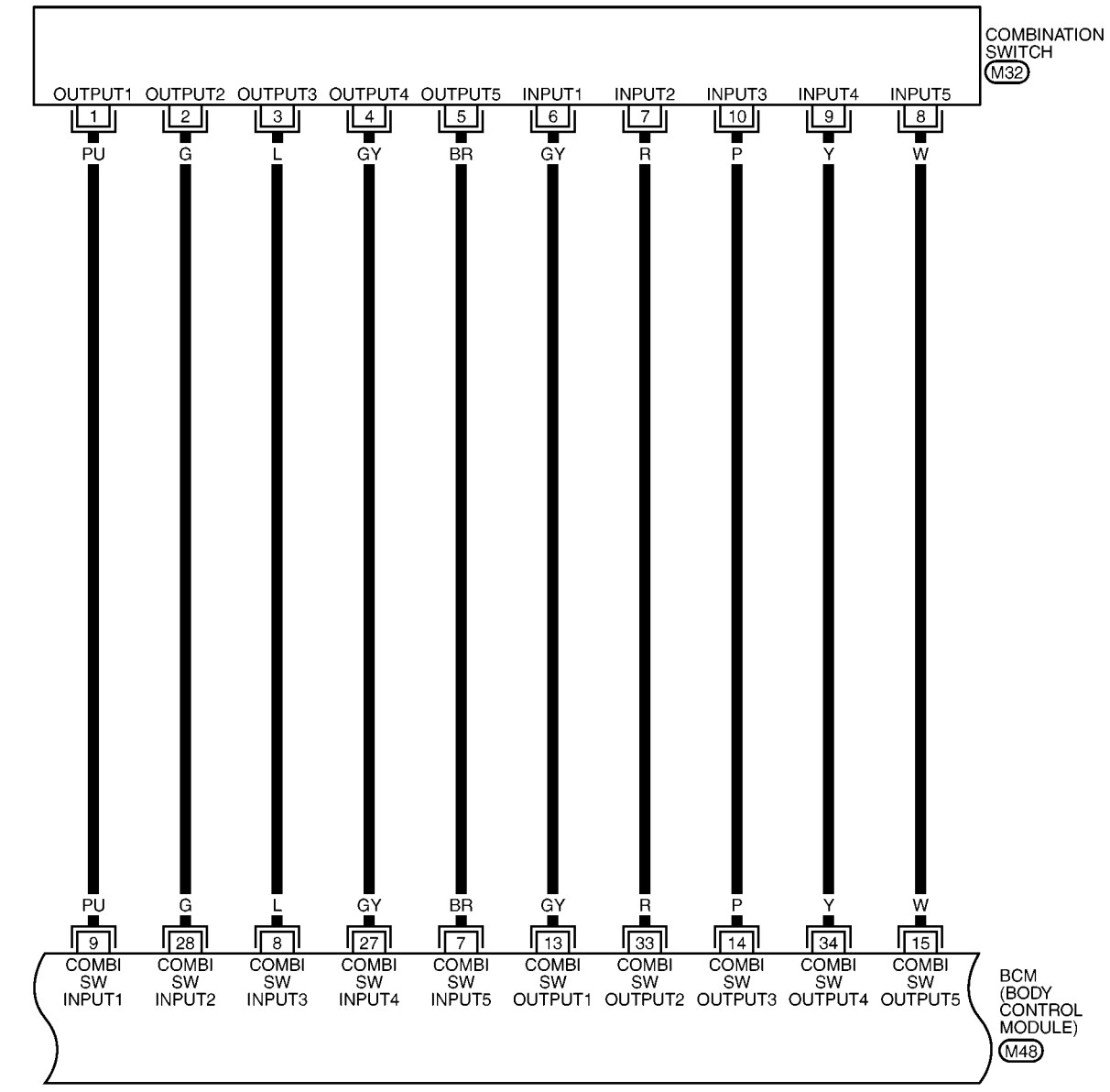


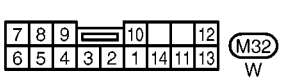


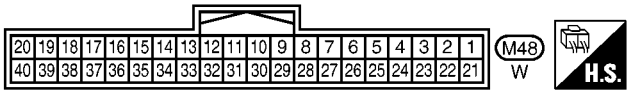
REFER TO THE FOLLOWING.
M1 -SUPER MULTIPLE JUNCTION (SMJ)
M16 -FUSE BLOCK-JUNCTION BOX (J/B)
M79 , M82
-JOINT CONNECTOR (J/C)

MKWA3492E

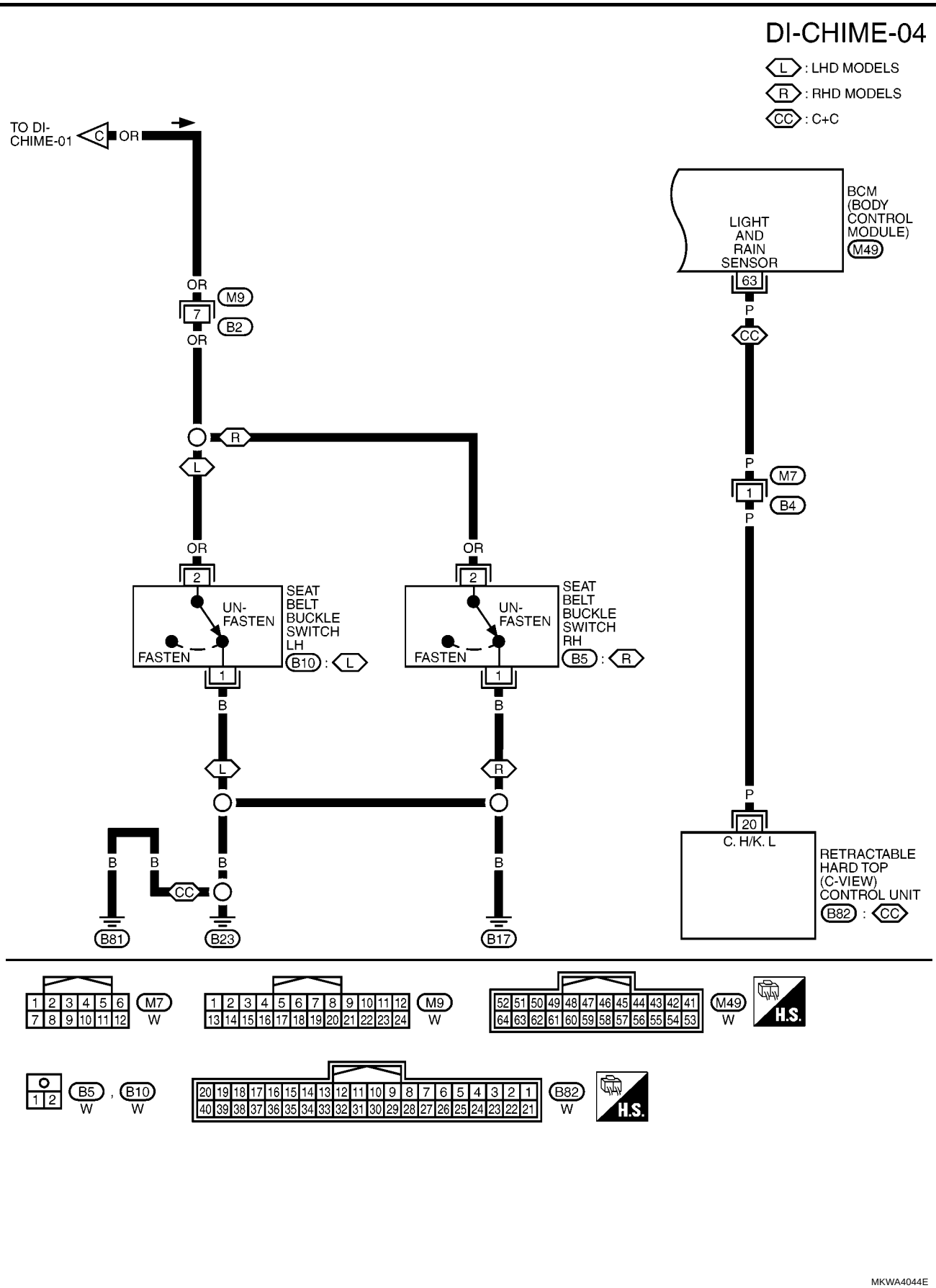
DI-CHIME-03





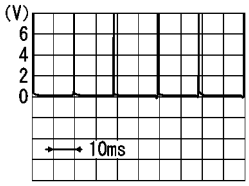
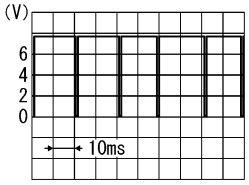
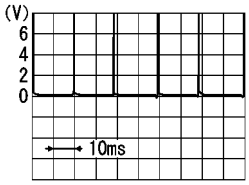


MKWA4043E


DI-CHIME-04
L : LHD MODELS
R : RHD MODELS
CC : C+C
TO DI-CHIME-01
C
OR
OR
M9
7
B2
OR
R
L
OR
2
UN-FASTEN
FASTEN
SEAT BELT BUCKLE SWITCH LH
B10 : L
1
B
L
B
B
CC
B
B81
B23
OR
2
UN-FASTEN
FASTEN
SEAT BELT BUCKLE SWITCH RH
B5 : R
1
B
R
B
B17
BCM (BODY CONTROL MODULE)
M49
LIGHT AND RAIN SENSOR
63
P
CC
P
M7
1
B4
P
P
20
C. H/K. L
RETRACTABLE HARD TOP (C-VIEW) CONTROL UNIT
B82 : CC
M7
W
M9
W
M49
W
H.S.
B5
B10
W
W
B82
W
H.S.
MKWA4044E

Terminals and Reference Value for BCM

EKS00837

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

() : Without Intelligent Key system

Terminals and Reference Value for Combination Meter

EKS00QNS

Terminal No.	Wire color	Item	Condition		Voltage (V) (Approx.)
			Ignition switch	Measurement method	
1	R	CAN H	—	—	—
2	W	CAN L	—	—	—
9	OR	Seat belt buckle switch (Driver side)	ON	Unfastened.	0
				Fastened.	Battery voltage
21	B	Ground	ON	—	0
22	B	Ground	ON	—	0
23	B	Ground	ON	—	0
27	LG	Battery power supply	OFF	—	Battery voltage
28	GY	Ignition switch (ON or START)	ON	—	Battery voltage

CONSULT-II Inspection Procedure

EKS0072O

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.

DIAGNOSTIC ITEMS DESCRIPTION

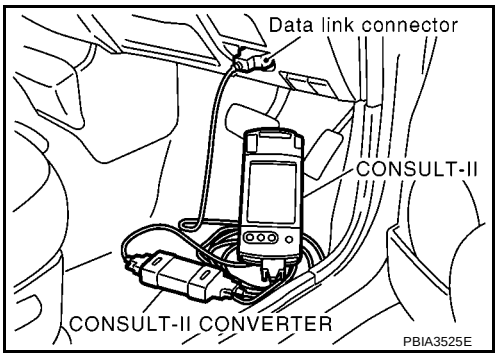
BCM diagnosis position	Diagnosis mode	Description
BUZZER	Data monitor	The input data to the BCM is displayed in real time.
	Active test	Operation of electrical loads can be checked by sending driving signal to them.
BCM	Self-diagnosis	BCM performs self-diagnosis of CAN communication.

CONSULT-II BASIC OPERATION

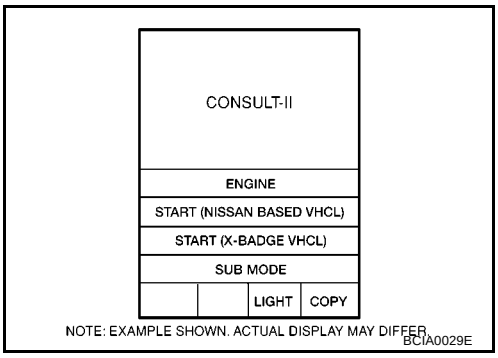
CAUTION:

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.

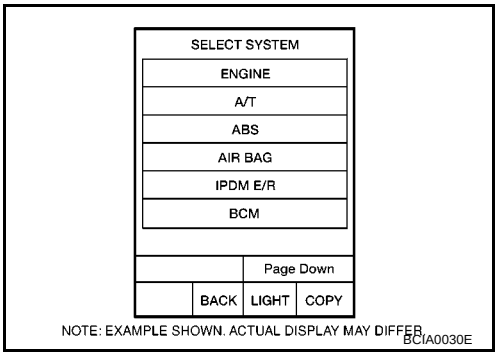
1. Turn ignition switch “OFF”.
2. Connect “CONSULT-II” and “CONSULT-II CONVERTER” to the data link connector.



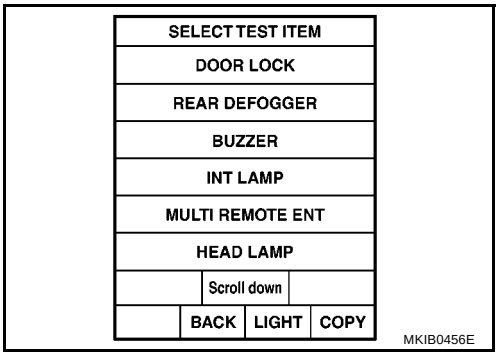
3. Turn ignition switch “ON”.
4. Touch “START” (NISSAN BASED VHCL).



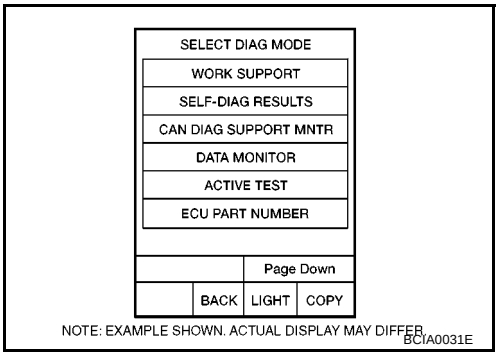
5. Touch “BCM” on “SELECT SYSTEM” screen. If “BCM” is not indicated, go to GI-36, "CONSULT-II Data Link Connector (DLC) Circuit" .



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



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



CONSULT- II Application Items

EKS008WL

DATA MONITOR

Monitored item	Description
IGN ON SW	Indicates [ON/OFF] condition of ignition switch.
PUSH SW (*1)	Indicates [ON/OFF] condition of ignition knob switch.
KEY IN SW (*2)	Indicates [ON/OFF] condition of key switch.
DOOR SW-DR	Indicates [ON/OFF] condition of front door switch (driver side).
DOOR SW-AS	Indicates [ON/OFF] condition of front door switch (passenger side).
DOOR SW-RR	Indicates [ON/OFF] condition of rear door switch RH.
DOOR SW-RL	Indicates [ON/OFF] condition of rear door switch LH.
BACKDOOR SW	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.
LIGHTING SW	Indicates [ON/OFF] condition of lighting switch.
TRANK OPNR SW	Indicates [ON/OFF] condition of back door release actuator.

*1: displayed for models with Intelligent Key System.
*2: displayed for models without Intelligent Key System.

ACTIVE TEST

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-II screen.
KEY REMINDER WARN	This test is check key warning chime operation. Key warning chime sounds for 2 seconds after touching “ON” on CONSULT-II 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-II screen.
DOOR WARNIG IND	This test is check door warning chime operation. Door warning chime sounds for 2 seconds after touching “ON” on CONSULT-II screen.

Symptom Chart

EKS0072P

Symptom	Diagnoses/Service procedure	Reference page
Light warning chime does not activate.	1. Power supply and ground circuit check	DI-103
	2. Lighting switch check	DI-104
	3. Front door switch (driver side) check	DI-111
	4. Ignition ON signal check	DI-110
Key warning chime does not activate.	1. Power supply and ground circuit check	DI-103
	2. Key switch signal check/with Intelligent Key system	DI-107
	3. Key switch signal check/without Intelligent Key system	DI-105
	4. Front door switch (driver side) check	DI-111
	5. Ignition ON signal check	DI-110
Ignition switch OFF warning chime does not activate./With Intelligent Key system	1. Power supply and ground circuit check	DI-103
	2. Ignition knob switch signal check	DI-108
	3. Front door switch (driver side) check	DI-111
	4. Ignition ON signal check	DI-110
Seat belt warning chime does not activate.	1. Can communication check	LAN-7
	2. Ignition ON signal check	DI-110
	3. Seat belt buckle switch check	DI-112
	4. Replace combination meter	DI-37
All warning chimes do not activate.	1. Power supply and ground circuit check	DI-103
	2. BCM self-diagnosis check	BCS-21

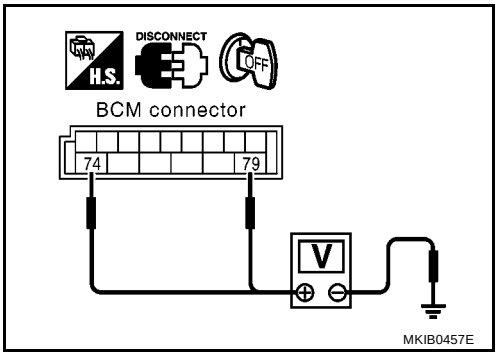
Power Supply and Ground Circuit Check

EKS0072Q

1. CHECK POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect BCM connector.
3. Check the voltage between BCM connector and ground.

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



OK or NG

OK >> GO TO 2.

NG >> Check the following.

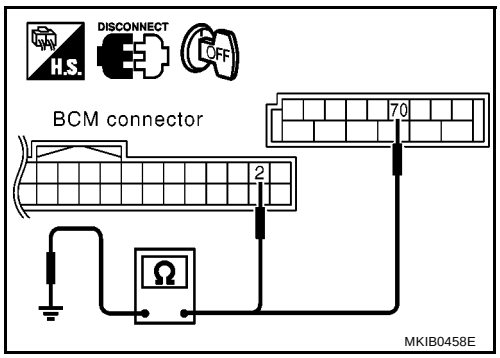
- 40A fusible link [letter **J** , located in fuse and fusible link box.]
- Harness for open or short between BCM and fuse

2. CHECK GROUND CIRCUIT

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

2 (B) - Ground : Continuity should exist.

70 (B) - Ground : Continuity should exist.



OK or NG

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

Lighting Switch Input Signal Check

EKS0072R

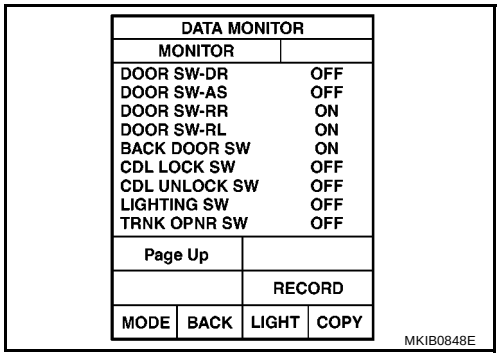
1. CHECK LIGHTING SWITCH INPUT SIGNAL

With CONSULT-II

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

When lighting switch is in 1st or 2nd position : LIGHTING SW ON

When lighting switch is in OFF position : LIGHTING SW OFF

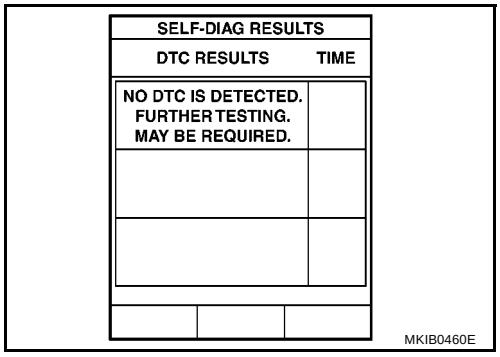


OK or NG

OK >> GO TO 2.
NG >> Check combination switch. Refer to LT-219, "Check Combination Switch" .

2. CHECK BCM SELF-DAIAGNOSIS

Perform BCM self-diagnosis. Refer to BCS-21, "CONSULT-II Function (BCM)" in BCS section.



Self-diagnosis result contents

NO DTC DETECTED>>Replace BCM.
CAN communication circuit>>Refer to BCS-30, "CAN Communication Inspection With CONSULT-II (Self-Diagnosis)" .

Key Switch Signal Check/Without Intelligent Key System

EKS0072S

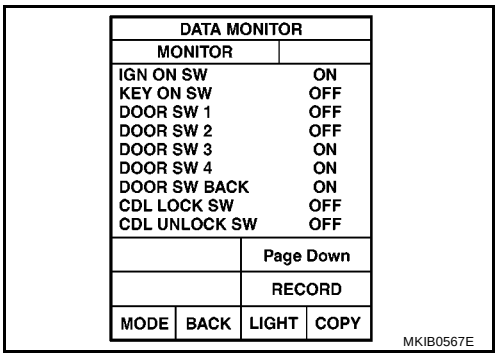
1. CHECK KEY SWITCH INPUT SIGNAL

With CONSULT-II

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

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

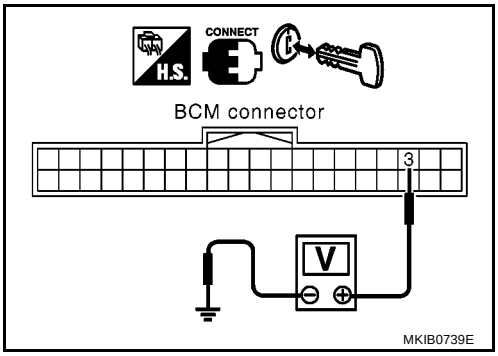
When key is withdrawn from ignition key cylinder : KEY IN SW OFF



Without CONSULT-II

Check voltage between BCM and ground.

Connector	Terminal (Wire color)		Condition	Voltage [V] (Approx.)
	(+)	(-)		
M48	3 (OR)	Ground	Key is inserted	Battery voltage
			key is withdrawn	0



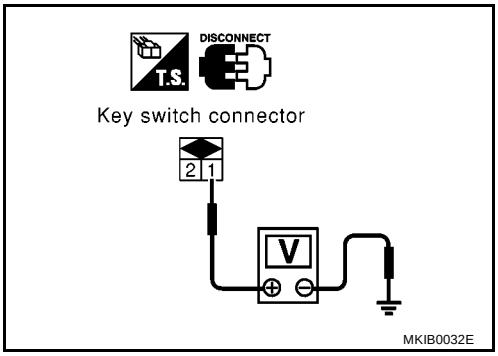
OK or NG

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 and ground.

1 (Y) – Ground : Battery voltage



OK or NG

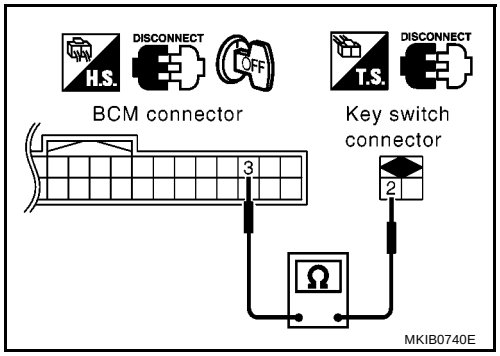
OK >> GO TO 3.
NG >> Check the following.

- 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 and BCM harness connector M48 terminal 3.

2 (OR) – 3 (OR) : Continuity should exist.



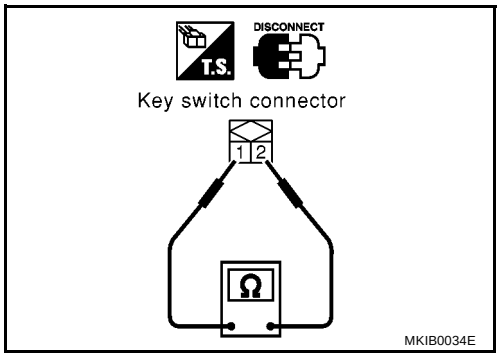
OK or NG

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.

Terminal		Condition	Continuity
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

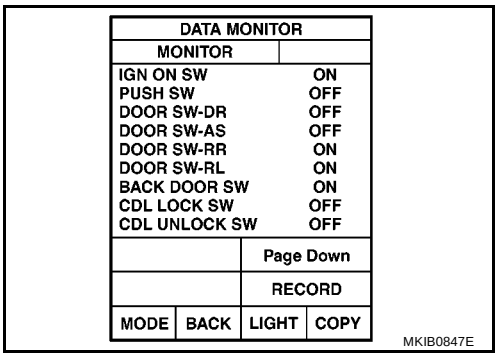
1. CHECK KEY SWITCH INPUT SIGNAL

With CONSULT-II

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

When ignition knob is pushed : PUSH SW ON

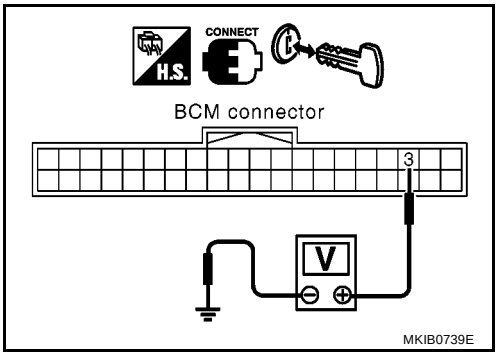
When ignition knob is released : PUSH SW OFF



Without CONSULT-II

Check voltage between BCM and ground.

Connector	Terminal (wire color)		Condition	Voltage [V] (Approx.)
	(+)	(-)		
M48	3 (P)	Ground	Key is inserted.	Battery voltage
			key is withdrawn.	0



OK or NG

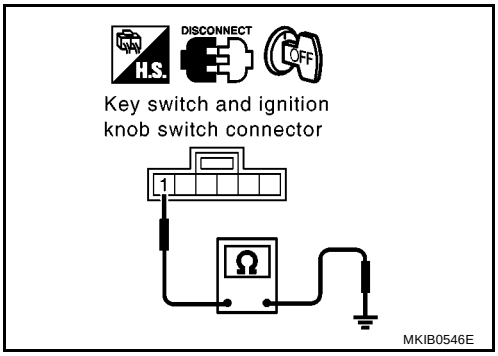
OK >> Key switch and ignition knob switch is OK.

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 1 and ground.

1 (W) – Ground : Battery voltage



OK or NG

OK >> GO TO 3.

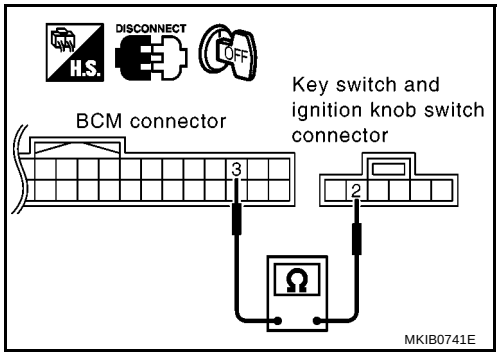
NG >> Check the following.

- 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 2 and BCM harness connector M48 terminal 3.

2 (P) – 3 (P) : Continuity should exist.



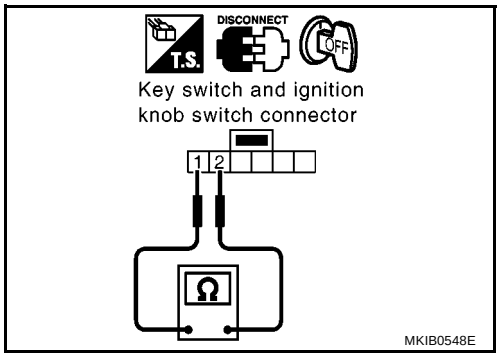
OK or NG

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 1 and 2.

Terminal		Condition	Continuity
1	2	Key is inserted.	Yes
		key is withdrawn.	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

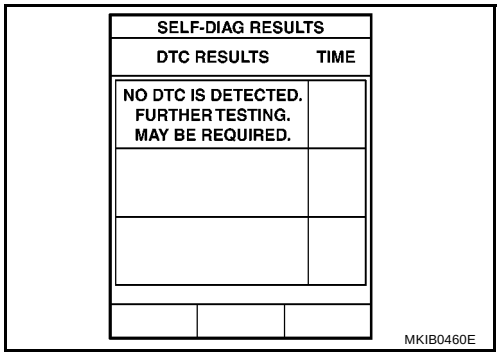
EKS008II

1. PERFORM INTELLIGENT KEY UNIT SELF-DAIAGNOSIS

Perform Intelligent Key unit self-diagnosis, Refer to BL-213, "CONSULT-II Function (INTELLIGENT KEY)" .

Self-diagnosis result contents

NO DTC DETECTED>>GO TO 2.
CAN communication circuit>>Refer to BL-220, "Check CAN Communication System" .



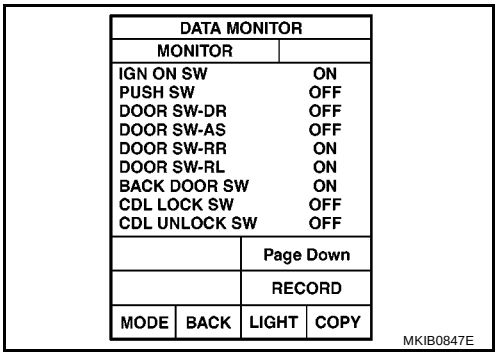
2. CHECK KEY SWITCH INPUT SIGNAL

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

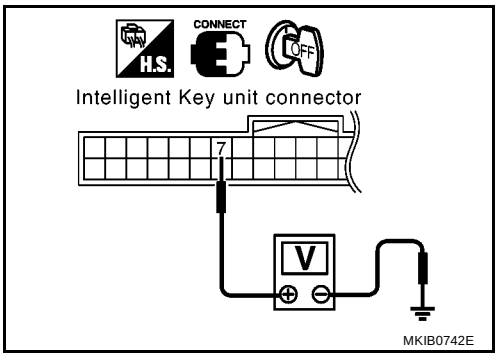
When ignition knob switch is leaved : PUSH SW OFF



Without CONSULT-II

Check voltage between Intelligent Key unit and ground.

Connector	Terminal (Wire color)		Condition	Voltage [V] (Approx.)
	(+)	(-)		
M51	7 (GY)	Ground	Ignition knob switch is pushed.	Battery voltage
			Ignition knob switch is leaved.	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 3 and ground.

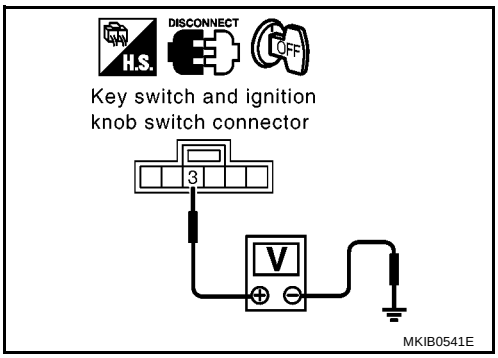
3 (BR) – Ground : Battery voltage

OK or NG

OK >> GO TO 4.

NG >> Check the following.

- 10A fuse [No. 17, 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

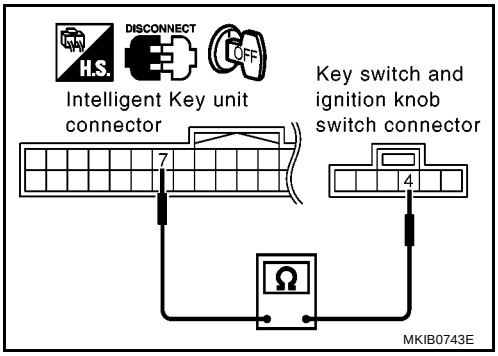
Check harness continuity between key switch and ignition knob switch harness connector M34 terminal 4 and Intelligent Key unit harness connector M51 terminal 7.

4 (GY) – 7 (GY) : Continuity should exist.

OK or NG

OK >> GO TO 5.

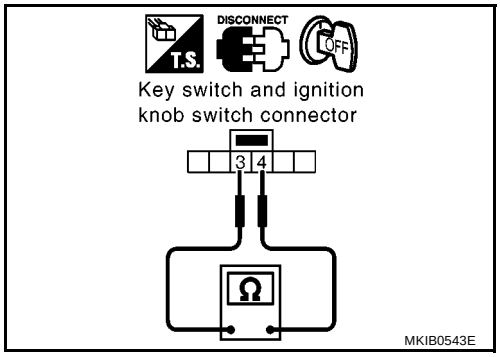
NG >> Repair or replace harness.



5. CHECK KEY SWITCH AND IGNITION KNOB SWITCH

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

Terminal		Condition	Continuity
3	4	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

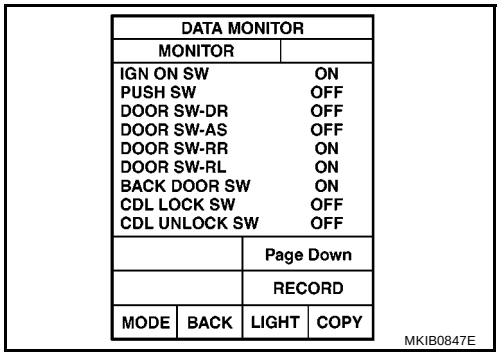
EKS0087C

1. CHECK IGNITION ON SIGNAL

With CONSULT-II

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

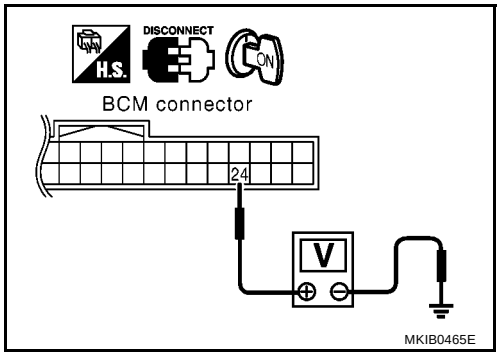
When ignition switch is ON : IGN ON SW ON
When ignition switch is OFF : IGN ON SW OFF



Without CONSULT-II

Check voltage between BCM harness connector and ground.

Connector	Terminal (Wire color)		Ignition switch position		
	(+)	(-)	OFF	ACC	ON
M48	24 (OR)	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

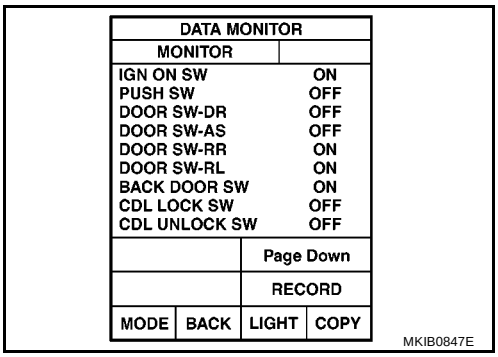
1. CHECK FRONT DOOR SWITCH (DRIVER SIDE) INPUT SIGNAL

With CONSULT-II

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

When driver's door is open : DOOR SW-DR ON

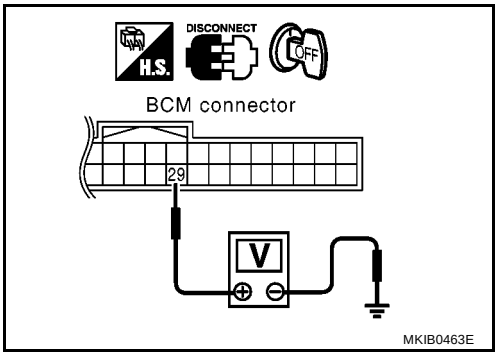
When driver's door is closed : DOOR SW-DR OFF



Without CONSULT-II

Check voltage between BCM harness and ground.

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



OK or NG

OK >> INSPECTION END

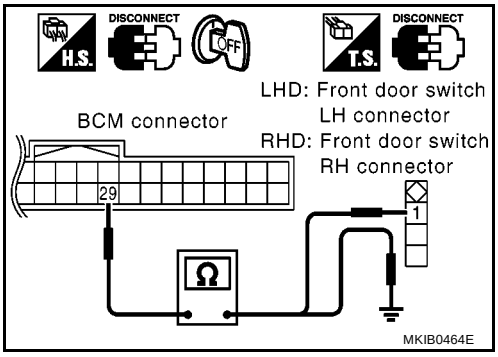
NG >> GO TO 2.

2. CHECK DOOR SWITCH OPEN OR SHORT CIRCUIT

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

   29 (L) - 1 (LG or L) : Continuity should exist.
3. Harness continuity between BCM harness connector M48 terminal 29 and ground.

   29 (L) - Ground : Continuity should not exist.



OK or NG

OK >> Check front door switch (driver side) ground condition.

NG >> Repair harness or connector.

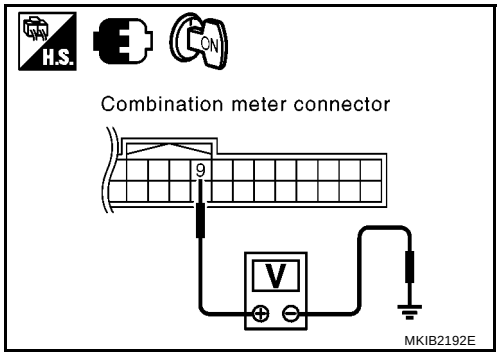
Seat Belt Buckle Switch Check

EKS00QNT

1. CHECK SEAT BELT BUCKLE SWITCH SIGNAL

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

Connector	Terminal (wire color)		Condition of driver side seat belt	Voltage [V] (Approx.)
	(+)	(–)		
M22	9 (OR)	Ground	Fastened	Battery voltage
			Unfastened.	0



OK or NG

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

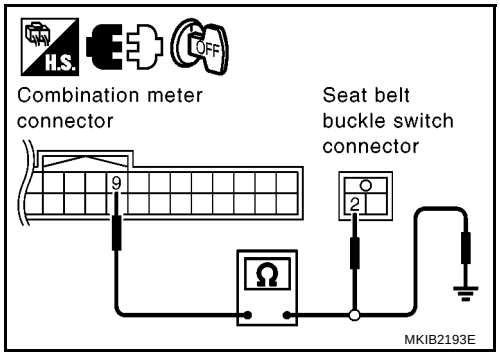
2. CHECK DOOR SWITCH OPEN OR SHORT CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect combination meter and seat belt buckle switch LH (LHD) or RH (RHD) connector.
3. Harness continuity between combination meter connector M22 terminal 9 and seat belt buckle switch connector B10 (LHD models) or B5 (RHD models) terminal 2.

   9 (OR) - 2 (OR) : Continuity should exist.

4. Harness continuity between combination meter connector M22 terminal 9 and ground.

   9 (OR) - Ground : Continuity should not exist.



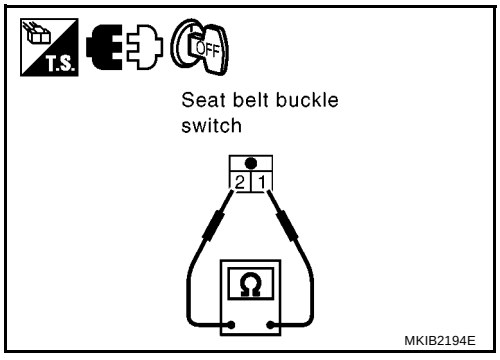
OK or NG

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

3. CHECK SEAT BELT BUCKLE SWITCH

Check continuity between seat belt buckle switch terminals 1 and 2.

Terminal		Condition of driver side seat belt	Continuity
1	2	Fastened	No
		Unfastened.	Yes



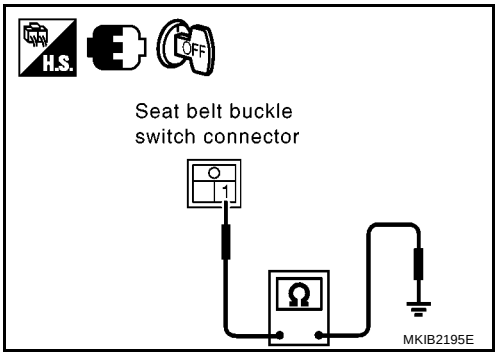
OK or NG

OK >> GO TO 4.
NG >> Replace driver side seat belt buckle switch.

4. CHECK SEAT BELT BUCKLE SWITCH GROUND CIRCUIT

Check continuity between seat belt buckle switch connector B10 (LHD) or B5 (RHD) terminal 1 and ground.

1 (B) – Ground : Continuity should exist.



OK or NG

OK >> Check the condition of harness and connector.
NG >> Repair or replace