

SECTION **LAN**
LAN SYSTEM

A
B
C

CONTENTS

CAN		
PRECAUTIONS	2	
Precautions for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER"	2	
Precautions For Trouble Diagnosis	2	
CAN SYSTEM	2	
Precautions For Harness Repair	2	
CAN SYSTEM	2	
CAN COMMUNICATION	3	
System Description	3	
FOR TCS MODELS	3	
FOR A/T MODELS	4	
FOR M/T MODELS	5	
CAN SYSTEM (FOR TCS MODELS)	7	
System Description	7	
Component Parts and Harness Connector Location	7	
Wiring Diagram — CAN —	8	
Work Flow	10	
CHECK SHEET	11	
CHECK SHEET RESULTS (EXAMPLE)	12	
Circuit Check Between TCM and Combination Meter	17	
Circuit Check Between Combination Meter and BCM	18	
Circuit Check Between BCM and ABS Actuator and Electric Unit (Control Unit)	19	
ECM Circuit Check	21	
TCM Circuit Check	21	
Combination Meter Circuit Check	22	
BCM Circuit Check	22	
ABS Actuator and Electric Unit (Control Unit) Circuit Check	23	
IPDM E/R Circuit Check	23	
CAN Communication Circuit Check	24	
IPDM E/R Ignition Relay Circuit Check	27	
Component Inspection	27	
ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION	27	
CAN SYSTEM (FOR A/T MODELS)	28	
System Description	28	
Component Parts and Harness Connector Location	28	
Wiring Diagram — CAN —	29	
Work Flow	31	
CHECK SHEET	32	
CHECK SHEET RESULTS (EXAMPLE)	33	
Circuit Check Between TCM and Combination Meter	36	
Circuit Check Between Combination Meter and BCM	38	
ECM Circuit Check	38	
TCM Circuit Check	39	
Combination Meter Circuit Check	39	
BCM Circuit Check	40	
IPDM E/R Circuit Check	40	
CAN Communication Circuit Check	41	
IPDM E/R Ignition Relay Circuit Check	44	
IPDM E/R Check	44	
Component Inspection	44	
ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION	44	
CAN SYSTEM (FOR M/T MODELS)	45	
System Description	45	
Component Parts and Harness Connector Location	45	
Wiring Diagram — CAN —	46	
Work Flow	48	
CHECK SHEET	49	
CHECK SHEET RESULTS (EXAMPLE)	50	
Circuit Check Between Combination Meter and BCM	52	
ECM Circuit Check	53	
Combination Meter Circuit Check	54	
BCM Circuit Check	54	
IPDM E/R Circuit Check	55	
CAN Communication Circuit Check	56	
Component Inspection	59	
ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION	59	

D
E
F
G
H
I
J
LAN

PRECAUTIONS

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

EKS00651

The Supplemental Restraint System such as “AIR BAG” and “SEAT BELT PRE-TENSIONER”, used along with a front seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. This system includes seat belt switch inputs and dual stage front air bag modules. The SRS system uses the seat belt switches to determine the front air bag deployment, and may only deploy one front air bag, depending on the severity of a collision and whether the front occupants are belted or unbelted. Information necessary to service the system safely is included in the SRS and SB section of this Service Manual.

WARNING:

- To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision which would result in air bag inflation, all maintenance must be performed by an authorized NISSAN/INFINITI dealer.
- Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system. For removal of Spiral Cable and Air Bag Module, see the SRS section.
- Do not use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.

**Precautions For Trouble Diagnosis
CAN SYSTEM**

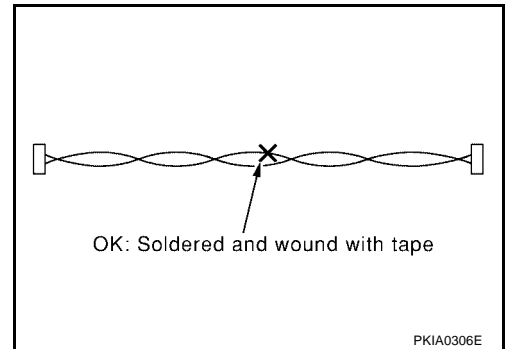
EKS003HN

- 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 terminal before checking the circuit.

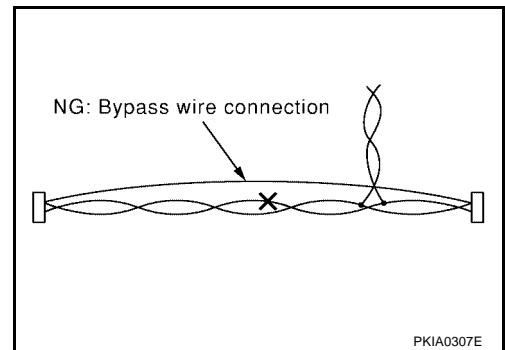
**Precautions For Harness Repair
CAN SYSTEM**

EKS003HO

- 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.)



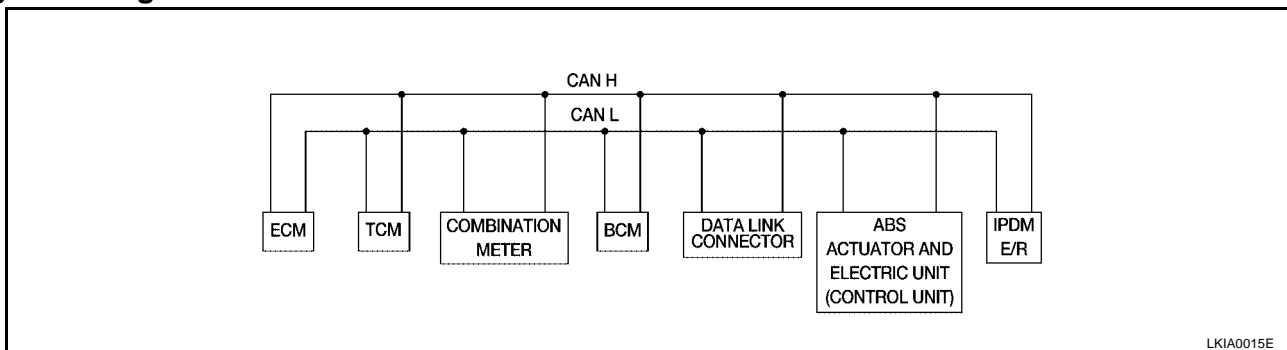
CAN COMMUNICATION

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.

FOR TCS MODELS

System diagram



Input/output signal chart

T: Transmit R: Receive

Signals	ECM	TCM	COMBINATION METER	BCM	ABS/TCS control unit	IPDM E/R
Engine speed signal	T		R		R	
Engine coolant temperature signal	T		R			
Accelerator pedal position signal	T					
Fuel consumption monitor signal	T		R			
A/T warning lamp signal		T	R			
A/T position indicator signal	R	T	R	R (R range only)	R	
ABS operation signal	R				T	
TCS operation signal	R	R			T	
Air conditioner switch signal	R			T		
Air conditioner compressor signal	R					T
A/C compressor request signal	T					R
Cooling fan motor operation signal	R					T
Cooling fan speed request signal	T					R
Position lights request			R	T		R
Position lights status				R		T
Low beam request				T		R
Low beam status	R			R		T
High beam request			R	T		R
High beam status	R			R		T
Front fog lights request				T		R
Front fog light status				R		T
OD cancel switch signal		R	T			R
Brake switch signal		R	T			

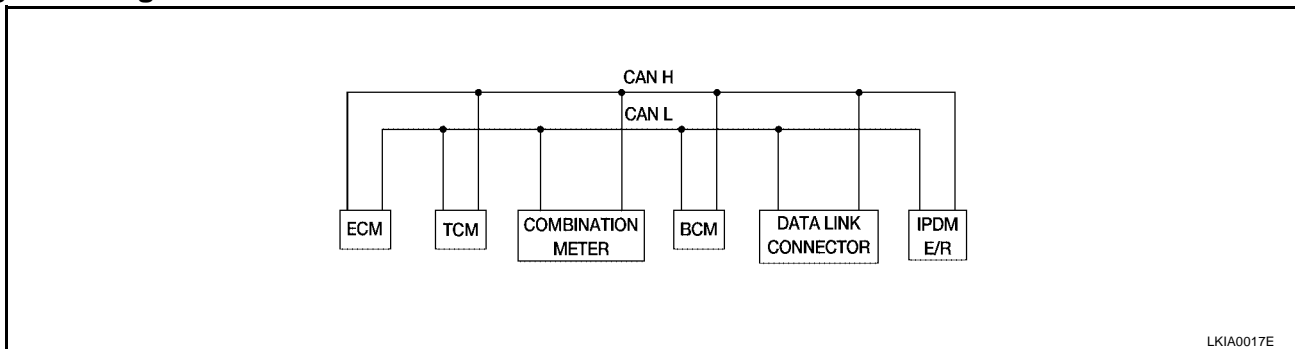
CAN COMMUNICATION

[CAN]

Signals	ECM	TCM	COMBINATION METER	BCM	ABS/TCS control unit	IPDM E/R
Vehicle speed signal	R		T			
	R		T	R		
Oil pressure switch			R			T
Sleep request1			R	T		
Sleep request2				T		R
N range switch signal		R	T			
P range switch signal		R	T			
Seat belt buckle switch signal			T	R		
Door switch signal			R	T		R
Tail lamp request			R	T		R
Turn indicator signal			R	T		
Buzzer output signal			R	T		
Trunk switch signal			R	T		
ASCD main switch signal	T		R			
ASCD cruise signal	T		R			
Wiper operation				R		T
Wiper stop position signal				R		T
Rear window defogger switch signal				T		R
Rear window defogger control signal	R			R		T

FOR A/T MODELS

System diagram



LKIA0017E

Input/output signal chart

T: Transmit R: Receive

Signals	ECM	TCM	COMBINATION METER	BCM	IPDM E/R
Engine speed signal	T		R		
Engine coolant temperature signal	T		R		
Accelerator pedal position signal	T				R
Fuel consumption monitor signal	T		R		
A/T warning lamp signal		T	R		
A/T position indicator signal	R	T	R	R (R range only)	
Air conditioner switch signal	R			T	
Air conditioner compressor signal	R				T
A/C compressor request signal	T				R

CAN COMMUNICATION

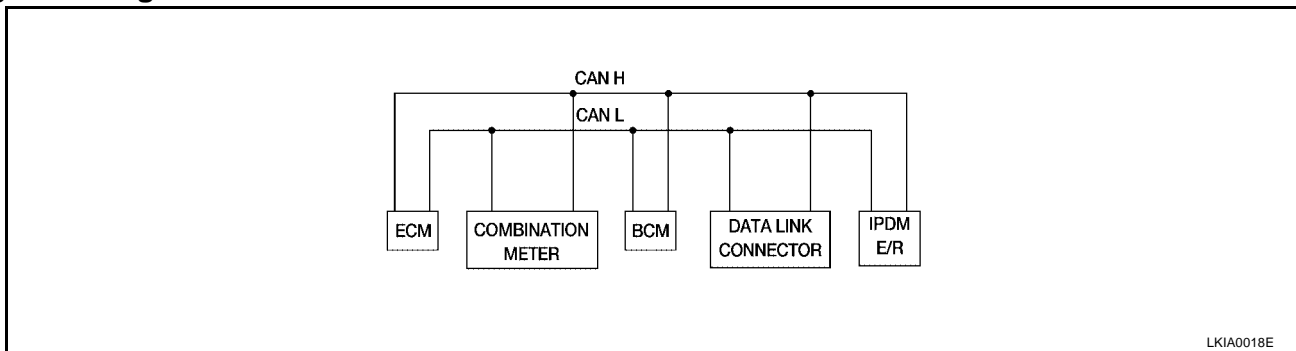
[CAN]

Signals	ECM	TCM	COMBINATION METER	BCM	IPDM E/R
Blower fan switch signal	R ^(QR25DE)			T	
Cooling fan motor operation signal	R			T	
Cooling fan speed request signal	T				R
Position lights request			R	T	R
Position lights status				R	T
Low beam request				T	R
Low beam status	R			R	T
High beam request			R	T	R
High beam status	R			R	T
Front fog lights request				T	R
Front fog light status				R	T
OD cancel switch signal		R	T		R
Brake switch signal		R	T		
Vehicle speed signal	R		T		
	R		T	R	
Oil pressure switch			R		T
Sleep request1			R	T	
Sleep request2				T	R
N range switch signal		R	T		
P range switch signal		R	T		
Seat belt buckle switch signal			T	R	
Door switch signal			R	T	R
Tail lamp request			R	T	R
Turn indicator signal			R	T	
Buzzer output signal			R	T	
Trunk switch signal			R	T	
ASCD main switch signal	T		R		
ASCD cruise signal	T		R		
Wiper operation				R	T
Wiper stop position signal				R	T
Rear window defogger switch signal				T	R
Rear window defogger control signal	R			R	T

A
B
C
D
E
F
G
H
I
J
LAN
L
M

FOR M/T MODELS

System diagram



CAN COMMUNICATION

[CAN]

Input/output signal chart

T: Transmit R: Receive

Signals	ECM	COMBINATION METER	BCM	IPDM E/R
Engine speed signal	T			
Engine coolant temperature signal	T			
Fuel consumption monitor signal	T			
Air conditioner switch signal	R		T	
Air conditioner compressor signal	R			T
A/C compressor request signal	T			R
Blower fan switch signal	R ^(QR25DE)		T	
Cooling fan motor operation signal	R			T
Cooling fan speed request signal	T			R
Position lights request		R	T	R
Position lights status			R	T
Low beam request			T	R
Low beam status	R		R	T
High beam request		R	T	R
High beam status	R		R	T
Front fog lights request			T	R
Front fog light status			R	T
Vehicle speed signal	R	T		
Oil pressure switch		R		T
Sleep request1		R	T	
Sleep request2			T	R
Seat belt buckle switch signal		T	R	
Door switch signal		R	T	R
Tail lamp request		R	T	R
Turn indicator signal		R	T	
Buzzer output signal		R	T	
Trunk switch signal		R	T	
ASCD main switch signal	T	R		
ASCD cruise signal	T	R		
Wiper operation			R	T
Wiper stop position signal			R	T
Rear window defogger switch signal			T	R
Rear window defogger control signal	R		R	T

CAN SYSTEM (FOR TCS MODELS)

PFP:23710

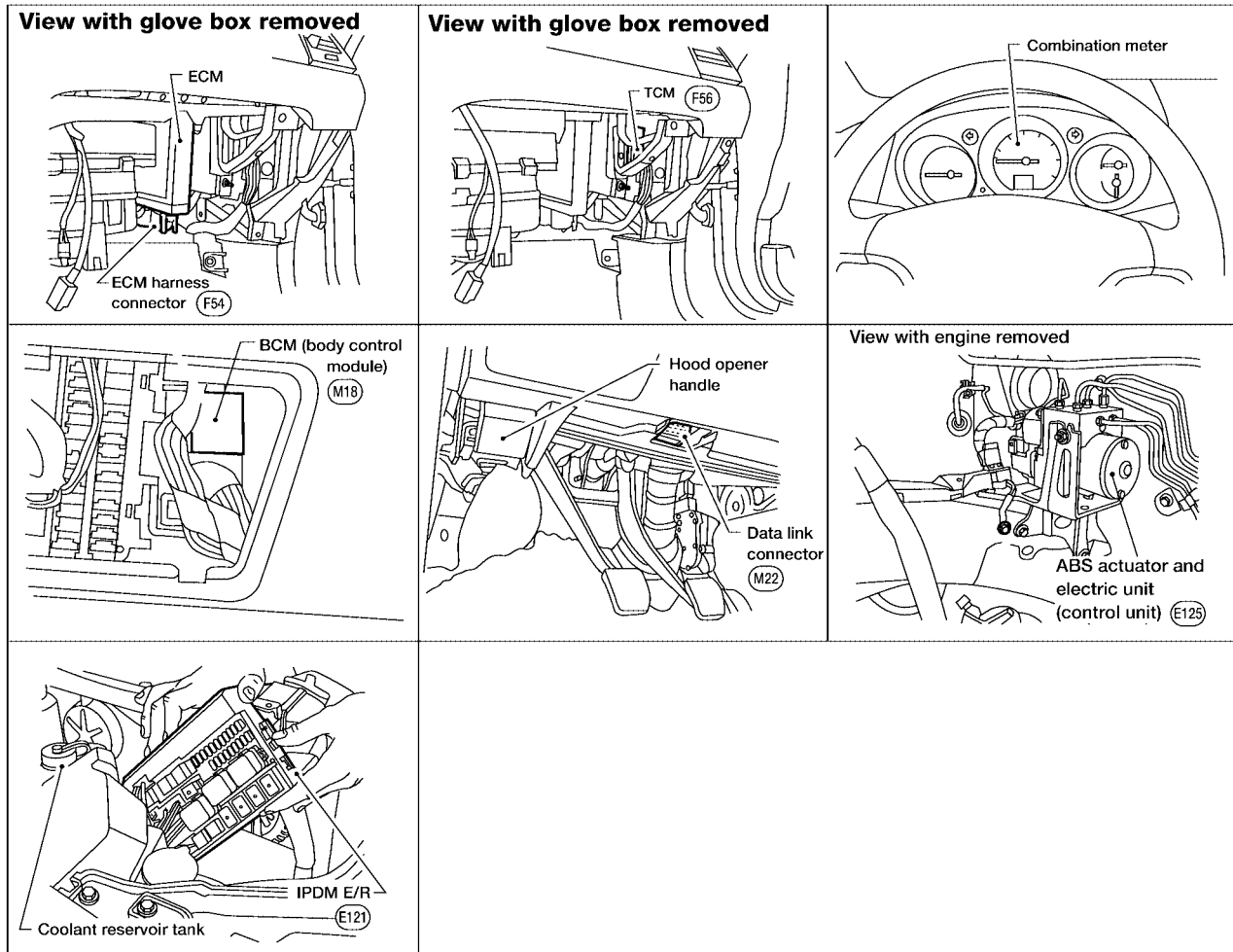
System Description

EKS003HQ

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.

Component Parts and Harness Connector Location

EKS003HR



LKIA0049E

A
B
C
D
E
F
G
H
I
J
L
M

LAN

CAN SYSTEM (FOR TCS MODELS)

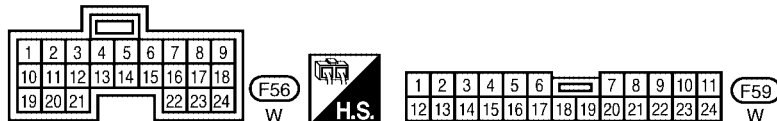
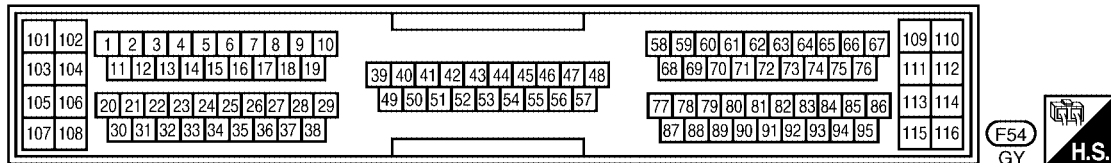
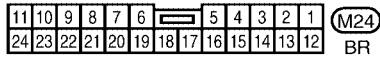
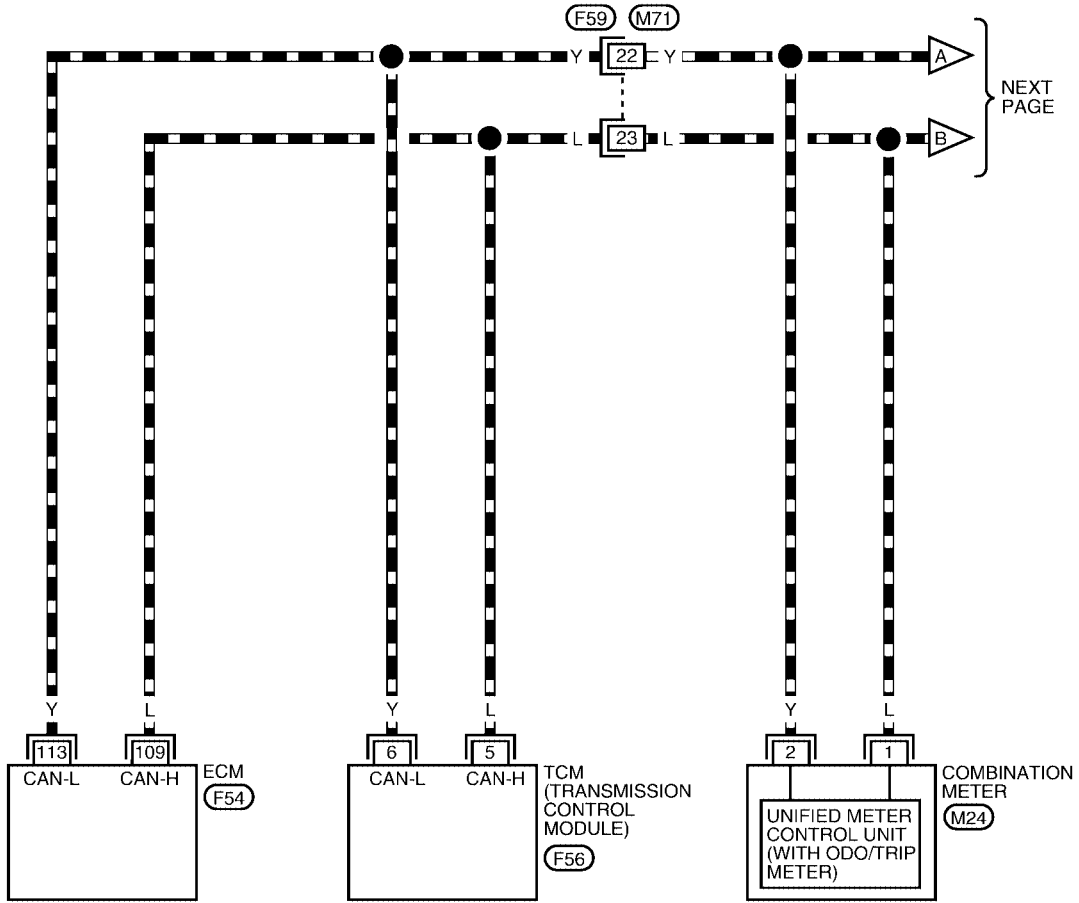
[CAN]

Wiring Diagram — CAN —

EKS003HS

LAN-CAN-01

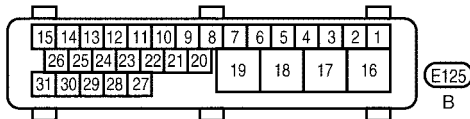
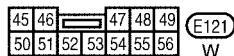
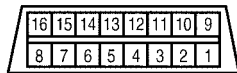
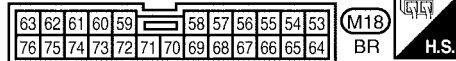
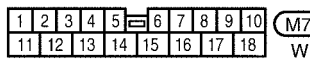
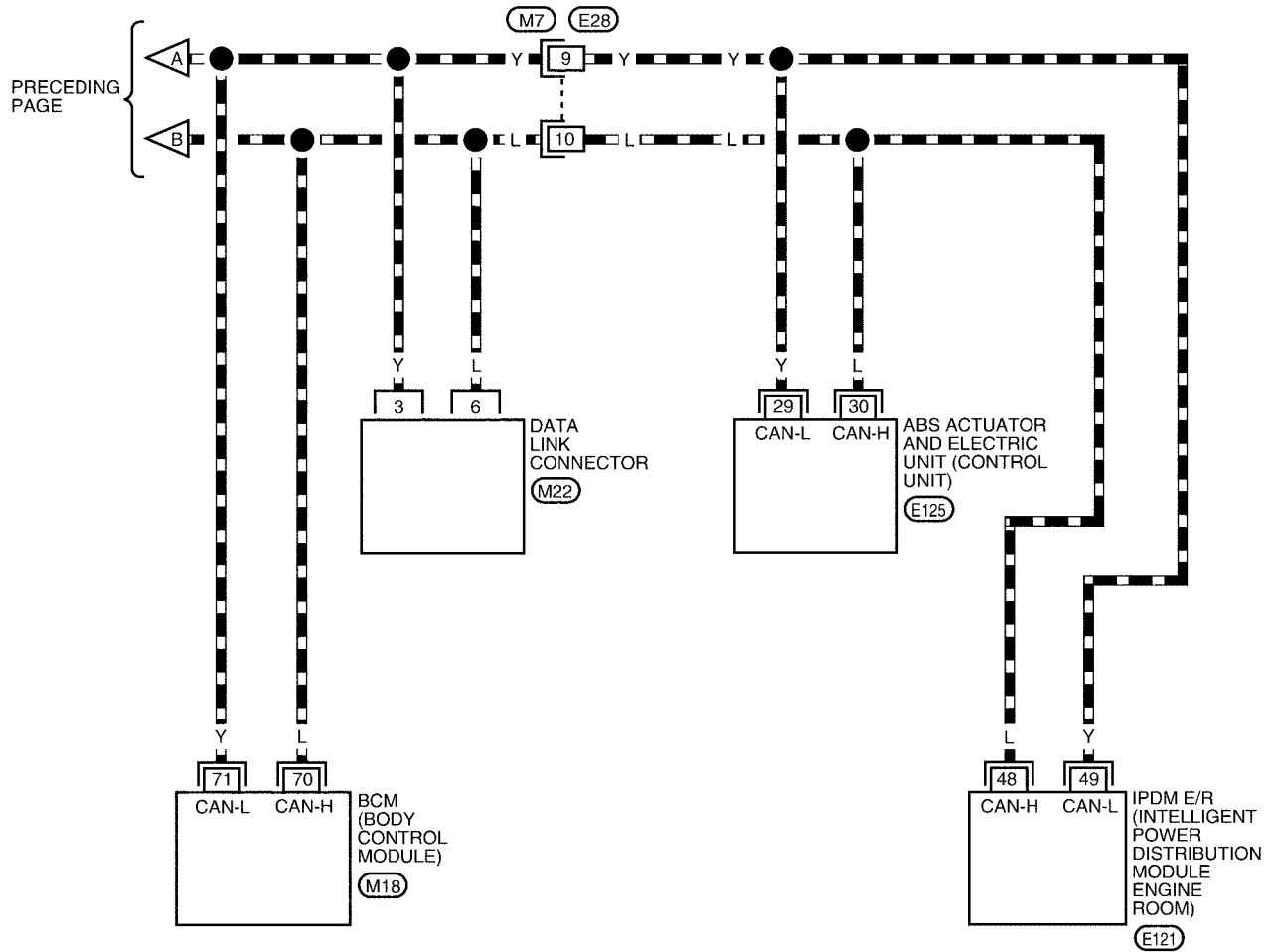
— — — — — : DATA LINE



WKWA0298E

A
B
C
D
E
F
G
H
I
J
L
M

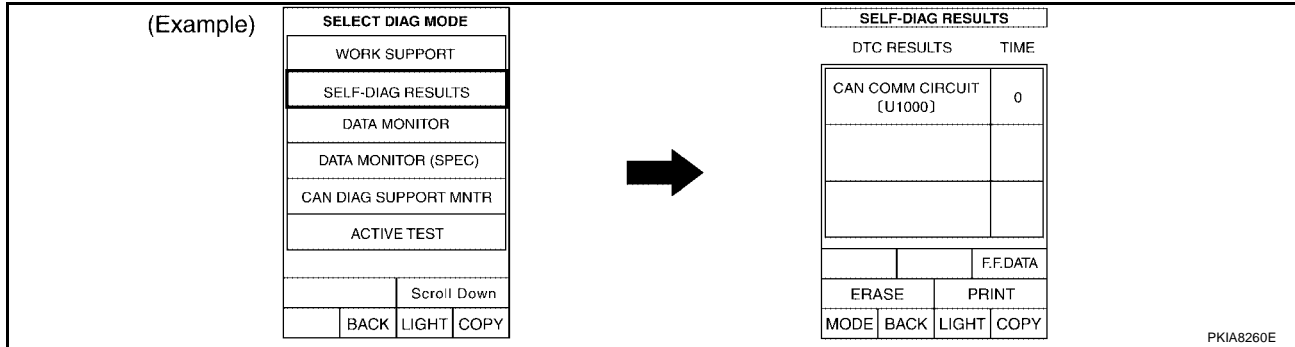
— : DATA LINE



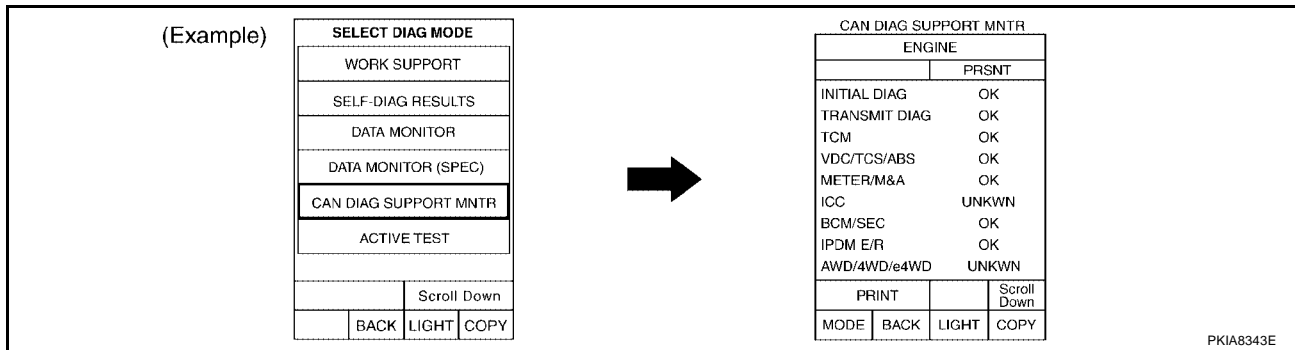
WKWA0344E

Work Flow

- Print all the data of "SELF-DIAG RESULTS" for "ENGINE", "A/T", "BCM", and "ABS" displayed on CONSULT-II.



- Print all the data of "CAN DIAG SUPPORT MNTR" for "ENGINE", "A/T", "BCM", and "ABS" displayed on CONSULT-II.



- Attach the printed sheet of "SELF-DIAG RESULTS" and "CAN DIAG SUPPORT MNTR" onto the check sheet. Refer to [LAN-11, "CHECK SHEET"](#) .
- Based on the "CAN DIAG SUPPORT MNTR" results, put check marks onto the items with "UNKWN" or "NG" in the check sheet table. Refer to [LAN-11, "CHECK SHEET"](#) .

NOTE:

If "NG" is displayed on "INITIAL DIAG (initial diagnosis)" as "CAN DIAG SUPPORT MNTR" for the diagnosed control unit, replace the control unit.

- According to the check sheet results (example), start inspection. Refer to [LAN-12, "CHECK SHEET RESULTS \(EXAMPLE\)"](#) .

CAN SYSTEM (FOR TCS MODELS)

[CAN]

CHECK SHEET

Check sheet table

SELECT SYSTEM screen	CAN DIAG SUPPORT MNTR							
	Initial diagnosis	Transmit diagnosis	Receive diagnosis					IPDM E/R
			ECM	TCM	METER/M&A	BCM/SEC	VDC/TCS/ABS	
ENGINE	NG	UNKWN	-	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	NG	UNKWN	UNKWN	-	UNKWN	-	UNKWN	-
BCM	NG	UNKWN	UNKWN	-	UNKWN	-	-	UNKWN
ABS	NG	UNKWN	UNKWN	UNKWN	-	-	-	-

Symptoms:

Attach copy of
ENGINE SELF-DIAG
RESULTS

Attach copy of
A/T SELF-DIAG
RESULTS

Attach copy of
BCM SELF-DIAG
RESULTS

Attach copy of
ABS SELF-DIAG
RESULTS

Attach copy of
ENGINE
CAN DIAG SUPPORT
MNTR

Attach copy of
A/T
CAN DIAG SUPPORT
MNTR

Attach copy of
BCM
CAN DIAG SUPPORT
MNTR

Attach copy of
ABS
CAN DIAG SUPPORT
MNTR

LKIA0525E

A
B
C
D
E
F
G
H
I
J
LAN
L
M

CAN SYSTEM (FOR TCS MODELS)

[CAN]

CHECK SHEET RESULTS (EXAMPLE)

Case 1

Replace ECM.

SELECT SYSTEM screen	CAN DIAG SUPPORT MNTR							
	Initial diagnosis	Transmit diagnosis	Receive diagnosis					
			ECM	TCM	METER/M&A	BCM/SEC	VDC/TCS/ABS	IPDM E/R
ENGINE	✓	UNKWN	-	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	NG	UNKWN	UNKWN	-	UNKWN	-	UNKWN	-
BCM	NG	UNKWN	UNKWN	-	UNKWN	-	-	UNKWN
ABS	NG	UNKWN	UNKWN	UNKWN	-	-	-	-

LKIA0526E

SELECT SYSTEM screen	CAN DIAG SUPPORT MNTR							
	Initial diagnosis	Transmit diagnosis	Receive diagnosis					
			ECM	TCM	METER/M&A	BCM/SEC	VDC/TCS/ABS	IPDM E/R
ENGINE	NG	UNKWN ✓	-	UNKWN ✓	UNKWN ✓	UNKWN ✓	UNKWN ✓	UNKWN ✓
A/T	NG	UNKWN	UNKWN ✓	-	UNKWN	-	UNKWN	-
BCM	NG	UNKWN	UNKWN	-	UNKWN	-	-	UNKWN
ABS	NG	UNKWN	UNKWN	UNKWN ✓	-	-	-	-

WKIA2974E

Case 2

Replace TCM.

SELECT SYSTEM screen	CAN DIAG SUPPORT MNTR							
	Initial diagnosis	Transmit diagnosis	Receive diagnosis					
			ECM	TCM	METER/M&A	BCM/SEC	VDC/TCS/ABS	IPDM E/R
ENGINE	NG	UNKWN	-	UNKWN ✓	UNKWN	UNKWN	UNKWN	UNKWN
A/T	✓	UNKWN	UNKWN	-	UNKWN	-	UNKWN	-
BCM	NG	UNKWN	UNKWN	-	UNKWN	-	-	UNKWN
ABS	NG	UNKWN	UNKWN	UNKWN ✓	-	-	-	-

WKIA2975E

SELECT SYSTEM screen	CAN DIAG SUPPORT MNTR							
	Initial diagnosis	Transmit diagnosis	Receive diagnosis					
			ECM	TCM	METER/M&A	BCM/SEC	VDC/TCS/ABS	IPDM E/R
ENGINE	NG	UNKWN ✓	-	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	NG	UNKWN	UNKWN ✓	-	UNKWN ✓	-	UNKWN ✓	-
BCM	NG	UNKWN	UNKWN	-	UNKWN	-	-	UNKWN
ABS	NG	UNKWN	UNKWN	UNKWN	-	-	-	-

WKIA2976E

CAN SYSTEM (FOR TCS MODELS)

[CAN]

Case 3

Replace BCM.

SELECT SYSTEM screen	Initial diagnosis	Transmit diagnosis	CAN DIAG SUPPORT MNTR					
			Receive diagnosis					
			ECM	TCM	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	NG	UNKWN	-	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	NG	UNKWN	UNKWN	-	UNKWN	-	UNKWN	-
BCM	✓	UNKWN	UNKWN	-	UNKWN	-	-	UNKWN
ABS	NG	UNKWN	UNKWN	UNKWN	-	-	-	-

WKIA2977E

SELECT SYSTEM screen	Initial diagnosis	Transmit diagnosis	CAN DIAG SUPPORT MNTR					
			Receive diagnosis					
			ECM	TCM	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	NG	UNKWN	-	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	NG	UNKWN	UNKWN	-	UNKWN	-	UNKWN	-
BCM	NG	UNKWN	✓	-	✓	-	-	✓
ABS	NG	UNKWN	UNKWN	UNKWN	-	-	-	-

WKIA2978E

Case 4

Replace ABS actuator and electric unit (control unit). Refer to [BRC-44, "Removal and Installation"](#).

SELECT SYSTEM screen	Initial diagnosis	Transmit diagnosis	CAN DIAG SUPPORT MNTR					
			Receive diagnosis					
			ECM	TCM	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	NG	UNKWN	-	UNKWN	UNKWN	UNKWN	✓	UNKWN
A/T	NG	UNKWN	UNKWN	-	UNKWN	-	✓	-
BCM	NG	UNKWN	UNKWN	-	UNKWN	-	-	UNKWN
ABS	✓	UNKWN	UNKWN	UNKWN	-	-	-	-

WKIA2979E

SELECT SYSTEM screen	Initial diagnosis	Transmit diagnosis	CAN DIAG SUPPORT MNTR					
			Receive diagnosis					
			ECM	TCM	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	NG	UNKWN	-	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	NG	UNKWN	UNKWN	-	UNKWN	-	UNKWN	-
BCM	NG	UNKWN	UNKWN	-	UNKWN	-	-	UNKWN
ABS	NG	UNKWN	✓	✓	-	-	-	-

WKIA2980E

A
B
C
D
E
F
G
H
I
J
K
L
M

LAN

CAN SYSTEM (FOR TCS MODELS)

[CAN]

Case 5

Check harness between TCM and combination meter. Refer to [LAN-17, "Circuit Check Between TCM and Combination Meter"](#) .

SELECT SYSTEM screen	CAN DIAG SUPPORT MNTR							
	Initial diagnosis	Transmit diagnosis	Receive diagnosis					
			ECM	TCM	METER/M&A	BCM/SEC	VDC/TCS/ABS	IPDM E/R
ENGINE	NG	UNKWN	-	UNKWN	UNKWN ✓	UNKWN ✓	UNKWN ✓	UNKWN ✓
A/T	NG	UNKWN	UNKWN	-	UNKWN ✓	-	UNKWN ✓	-
BCM	NG	UNKWN	UNKWN ✓	-	UNKWN	-	-	UNKWN
ABS	NG	UNKWN	UNKWN ✓	UNKWN ✓	-	-	-	-

WKIA2983E

Case 6

Check harness between combination meter and BCM. Refer to [LAN-18, "Circuit Check Between Combination Meter and BCM"](#) .

SELECT SYSTEM screen	CAN DIAG SUPPORT MNTR							
	Initial diagnosis	Transmit diagnosis	Receive diagnosis					
			ECM	TCM	METER/M&A	BCM/SEC	VDC/TCS/ABS	IPDM E/R
ENGINE	NG	UNKWN	-	UNKWN	UNKWN	UNKWN ✓	UNKWN ✓	UNKWN ✓
A/T	NG	UNKWN	UNKWN	-	UNKWN	-	UNKWN ✓	-
BCM	NG	UNKWN	UNKWN ✓	-	UNKWN ✓	-	-	UNKWN
ABS	NG	UNKWN	UNKWN ✓	UNKWN ✓	-	-	-	-

WKIA2984E

Case 7

Check harness between BCM and ABS actuator and electric unit (control unit). Refer to [LAN-19, "Circuit Check Between BCM and ABS Actuator and Electric Unit \(Control Unit\)"](#) .

SELECT SYSTEM screen	CAN DIAG SUPPORT MNTR							
	Initial diagnosis	Transmit diagnosis	Receive diagnosis					
			ECM	TCM	METER/M&A	BCM/SEC	VDC/TCS/ABS	IPDM E/R
ENGINE	NG	UNKWN	-	UNKWN	UNKWN	UNKWN	UNKWN ✓	UNKWN ✓
A/T	NG	UNKWN	UNKWN	-	UNKWN	-	UNKWN ✓	-
BCM	NG	UNKWN	UNKWN	-	UNKWN	-	-	UNKWN ✓
ABS	NG	UNKWN	UNKWN ✓	UNKWN ✓	-	-	-	-

WKIA2985E

Case 8

Check ECM circuit. Refer to [LAN-21, "ECM Circuit Check"](#) .

SELECT SYSTEM screen	CAN DIAG SUPPORT MNTR							
	Initial diagnosis	Transmit diagnosis	Receive diagnosis					
			ECM	TCM	METER/M&A	BCM/SEC	VDC/TCS/ABS	IPDM E/R
ENGINE	NG	UNKWN ✓	-	UNKWN ✓	UNKWN ✓	UNKWN ✓	UNKWN ✓	UNKWN ✓
A/T	NG	UNKWN	UNKWN ✓	-	UNKWN	-	UNKWN	-
BCM	NG	UNKWN	UNKWN ✓	-	UNKWN	-	-	UNKWN
ABS	NG	UNKWN	UNKWN ✓	UNKWN	-	-	-	-

WKIA2986E

Case 9

Check TCM circuit. Refer to [LAN-21, "TCM Circuit Check"](#) .

SELECT SYSTEM screen	CAN DIAG SUPPORT MNTR							
	Initial diagnosis	Transmit diagnosis	Receive diagnosis					
			ECM	TCM	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	NG	UNKWN	-	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	NG	UNKWN	UNKWN	-	UNKWN	-	UNKWN	-
BCM	NG	UNKWN	UNKWN	-	UNKWN	-	-	UNKWN
ABS	NG	UNKWN	UNKWN	UNKWN	-	-	-	-

WKIA2987E

Case 10

Check combination meter circuit. Refer to [LAN-22, "Combination Meter Circuit Check"](#) .

SELECT SYSTEM screen	CAN DIAG SUPPORT MNTR							
	Initial diagnosis	Transmit diagnosis	Receive diagnosis					
			ECM	TCM	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	NG	UNKWN	-	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	NG	UNKWN	UNKWN	-	UNKWN	-	UNKWN	-
BCM	NG	UNKWN	UNKWN	-	UNKWN	-	-	UNKWN
ABS	NG	UNKWN	UNKWN	UNKWN	-	-	-	-

WKIA2988E

Case 11

Check BCM circuit. Refer to [LAN-22, "BCM Circuit Check"](#) .

SELECT SYSTEM screen	CAN DIAG SUPPORT MNTR							
	Initial diagnosis	Transmit diagnosis	Receive diagnosis					
			ECM	TCM	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	NG	UNKWN	-	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	NG	UNKWN	UNKWN	-	UNKWN	-	UNKWN	-
BCM	NG	UNKWN	UNKWN	-	UNKWN	-	-	UNKWN
ABS	NG	UNKWN	UNKWN	UNKWN	-	-	-	-

WKIA2989E

Case 12

Check ABS actuator and electric unit (control unit) circuit. Refer to [LAN-23, "ABS Actuator and Electric Unit \(Control Unit\) Circuit Check"](#) .

SELECT SYSTEM screen	CAN DIAG SUPPORT MNTR							
	Initial diagnosis	Transmit diagnosis	Receive diagnosis					
			ECM	TCM	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	NG	UNKWN	-	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	NG	UNKWN	UNKWN	-	UNKWN	-	UNKWN	-
BCM	NG	UNKWN	UNKWN	-	UNKWN	-	-	UNKWN
ABS	NG	UNKWN	UNKWN	UNKWN	-	-	-	-

WKIA2990E

Case 13

Check IPDM E/R circuit. Refer to [LAN-23, "IPDM E/R Circuit Check"](#) .

SELECT SYSTEM screen	CAN DIAG SUPPORT MNTR							
	Initial diagnosis	Transmit diagnosis	Receive diagnosis					
			ECM	TCM	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	NG	UNKWN	-	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	NG	UNKWN	UNKWN	-	UNKWN	-	UNKWN	-
BCM	NG	UNKWN	UNKWN	-	UNKWN	-	-	UNKWN
ABS	NG	UNKWN	UNKWN	UNKWN	-	-	-	-

WKIA2991E

Case 14

Check CAN communication circuit. Refer to [LAN-24, "CAN Communication Circuit Check"](#) .

SELECT SYSTEM screen	CAN DIAG SUPPORT MNTR							
	Initial diagnosis	Transmit diagnosis	Receive diagnosis					
			ECM	TCM	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	NG	UNKWN	-	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	NG	UNKWN	UNKWN	-	UNKWN	-	UNKWN	-
BCM	NG	UNKWN	UNKWN	-	UNKWN	-	-	UNKWN
ABS	NG	UNKWN	UNKWN	UNKWN	-	-	-	-

WKIA2992E

Case 15

Check IPDM E/R ignition relay circuit. Refer to [LAN-27, "IPDM E/R Ignition Relay Circuit Check"](#) .

SELECT SYSTEM screen	CAN DIAG SUPPORT MNTR							
	Initial diagnosis	Transmit diagnosis	Receive diagnosis					
			ECM	TCM	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	NG	UNKWN	-	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	NG	UNKWN	UNKWN	-	UNKWN	-	UNKWN	-
BCM	NG	UNKWN	UNKWN	-	UNKWN	-	-	UNKWN
ABS	NG	UNKWN	UNKWN	UNKWN	-	-	-	-

WKIA2993E

SELECT SYSTEM screen	CAN DIAG SUPPORT MNTR							
	Initial diagnosis	Transmit diagnosis	Receive diagnosis					
			ECM	TCM	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	NG	UNKWN	-	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	NG	UNKWN	UNKWN	-	UNKWN	-	UNKWN	-
BCM	NG	UNKWN	UNKWN	-	UNKWN	-	-	UNKWN
ABS	NG	UNKWN	UNKWN	UNKWN	-	-	-	-

WKIA2994E

Circuit Check Between TCM and Combination Meter

1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check following terminals and connector for damage, bent or loose connection (control module-side, meter-side and harness-side).
 - TCM.
 - Combination meter.
 - Between TCM and combination meter.

OK or NG

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

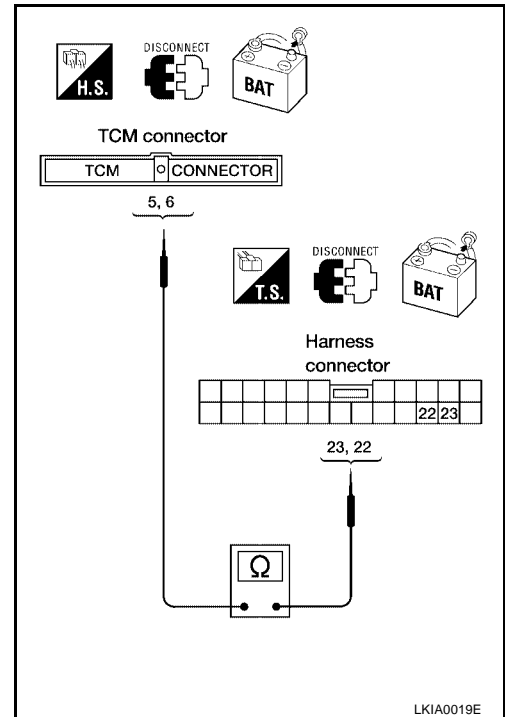
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect TCM connector and harness connector F59.
2. Check continuity between TCM harness connector F56 terminals 5 (L), 6 (Y) and harness connector F59 terminals 23 (L), 22 (Y).

5 (L) – 23 (L) : Continuity should exist.
6 (Y) – 22 (Y) : Continuity should exist.

OK or NG

- OK >> GO TO 3.
 NG >> Repair harness.



3. CHECK HARNESS FOR OPEN CIRCUIT

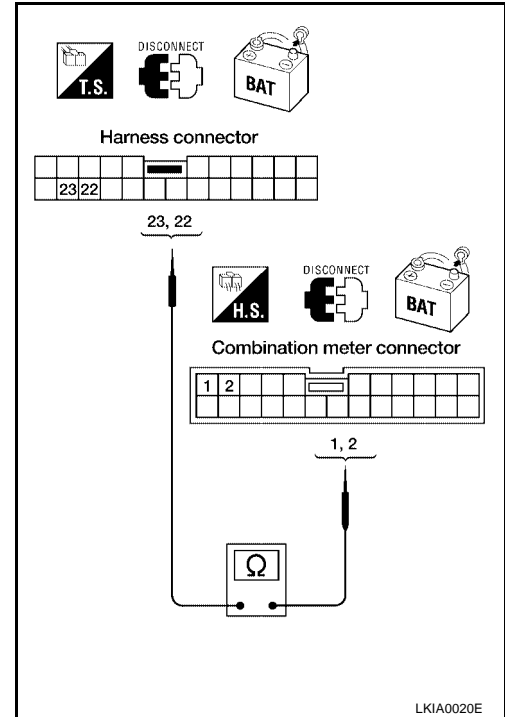
1. Disconnect combination meter connector.
2. Check continuity between harness connector M71 terminals 23 (L), 22 (Y) and combination meter harness connector M24 terminals 1 (L), 2 (Y).

23 (L) – 1 (L) : Continuity should exist.

22 (Y) – 2 (Y) : Continuity should exist.

OK or NG

- OK >> Connect all the connectors and diagnose again. Refer to [LAN-10, "Work Flow"](#) .
- NG >> Repair harness.



Circuit Check Between Combination Meter and BCM

EKS003HV

1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check following terminals and connector for damage, bent or loose connection (meter-side, control module-side and harness-side).
 - Combination meter.
 - BCM.

OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

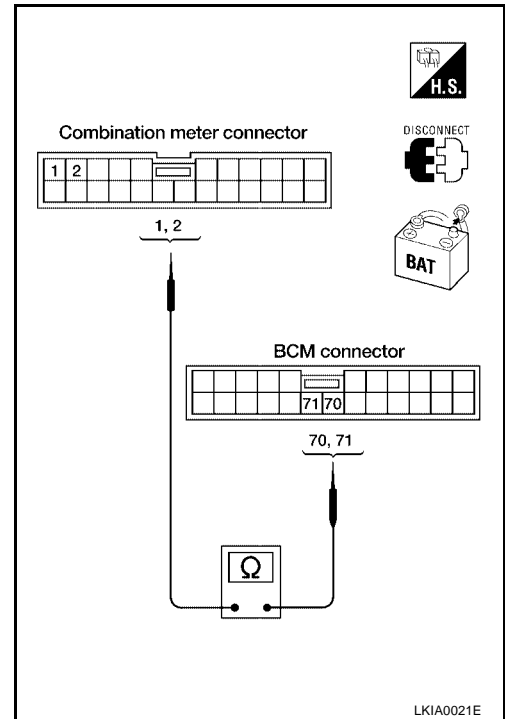
1. Disconnect combination meter connector and BCM connector.
2. Check continuity between combination meter harness connector M24 terminals 1 (L), 2 (Y) and BCM harness connector M18 terminals 70 (L), 71 (Y).

1 (L) – 70 (L) : Continuity should exist.

2 (Y) – 71 (Y) : Continuity should exist.

OK or NG

- OK >> Connect all the connectors and diagnose again. Refer to [LAN-10, "Work Flow"](#) .
- NG >> Repair harness.



Circuit Check Between BCM and ABS Actuator and Electric Unit (Control Unit)

EKS003HW

1. CHECK CONNECOTR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check following terminals and connector for damage, bent or loose connection (control module-side, control unit-side and harness-side).
 - BCM.
 - ABS actuator and electric unit (control unit).
 - Between BCM and ABS actuator and electric unit (control unit).

OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect BCM connector and harness connector M7.
2. Check continuity between BCM harness connector M18 terminals 70 (L), 71 (Y) and harness connector M7 terminals 10 (L), 9 (Y).

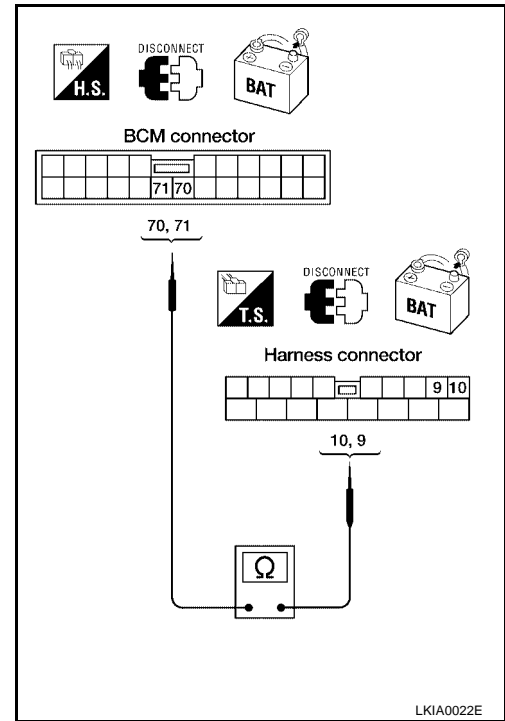
70 (L) – 10 (L) : Continuity should exist.

71 (Y) – 9 (Y) : Continuity should exist.

OK or NG

OK >> GO TO 3.

NG >> Repair harness.



3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector E27.
2. Check continuity between harness connector E28 terminals 10 (L), 9 (Y) and harness connector E27 terminals 11A (L), 12A (Y).

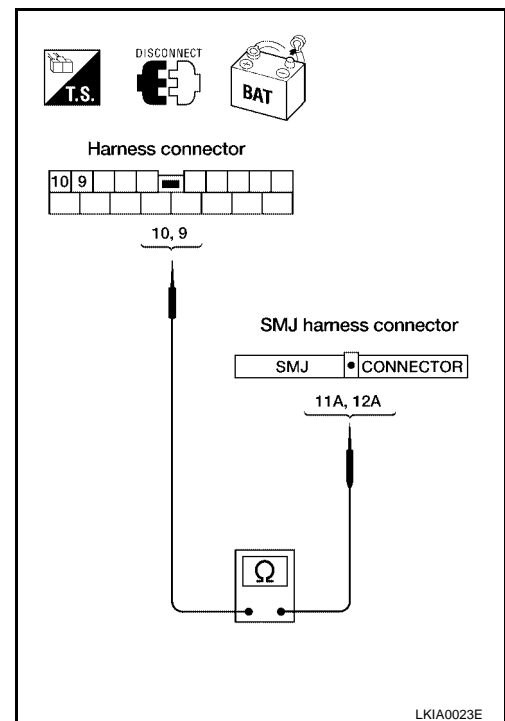
10 (L) – 11A (L) : Continuity should exist.

9 (Y) – 12A (Y) : Continuity should exist.

OK or NG

OK >> GO TO 4.

NG >> Repair harness.



4. CHECK HARNESS FOR OPEN CIRCUIT

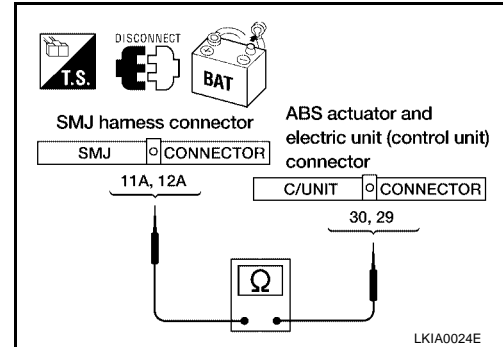
1. Disconnect ABS actuator and electric unit (control unit) connector.
2. Check continuity between harness connector E130 terminals 11A (L), 12A (Y) and ABS actuator and electric unit (control unit) connector harness connector E125 terminals 30 (L), 29 (Y).

11A (L) – 30 (L) : Continuity should exist.

12A (Y) – 29 (Y) : Continuity should exist.

OK or NG

- OK >> Connect all the connectors and diagnose again. Refer to [LAN-10, "Work Flow"](#) .
- NG >> Repair harness.



EKS003HX

ECM Circuit Check

1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check the terminals and connector of ECM for damage, bent or loose connection (control module-side and harness-side).

OK or NG

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

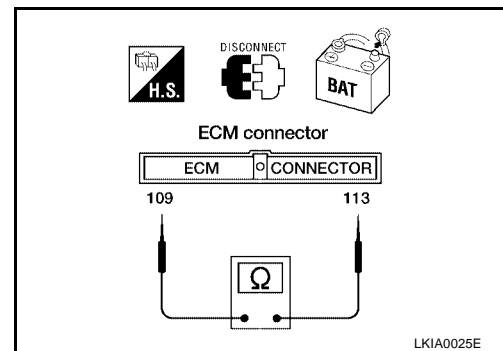
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ECM connector.
2. Check resistance between ECM harness connector F54 terminals 109 (L) and 113 (Y).

109 (L) – 113 (Y) : Approx. 108 – 132Ω

OK or NG

- OK >> Replace ECM.
- NG >> Repair harness between harness connector F59 and ECM.



EKS003HY

TCM Circuit Check

1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check the terminals and connector of TCM for damage, bent or loose connection (control module-side and harness-side).

OK or NG

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

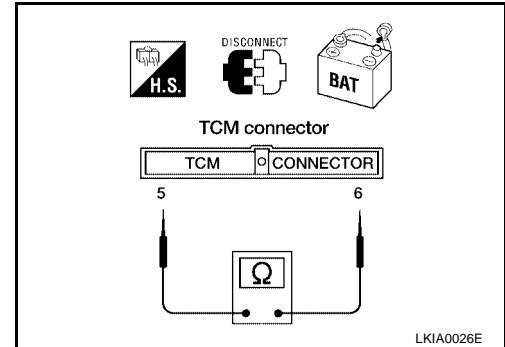
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect TCM connector.
2. Check resistance between TCM harness connector F56 terminals 5 (L) and 6 (Y).

5 (L) – 6 (Y) : Approx. 54 – 66Ω

OK or NG

- OK >> Replace TCM.
 NG >> Repair harness between harness connector F59 and TCM.



EKS003HZ

Combination Meter Circuit Check

1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check terminals and connector of combination meter for damage, bent or loose connection (meter-side and harness-side).

OK or NG

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

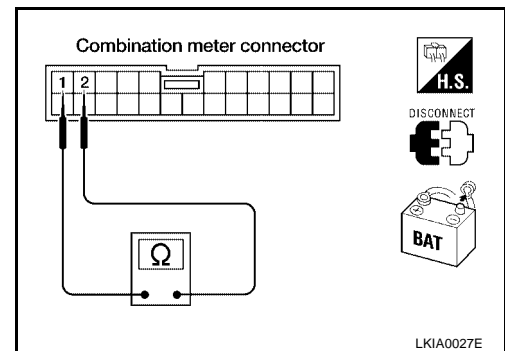
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect combination meter connector.
2. Check resistance between combination meter harness connector M24 terminals 1 (L) and 2 (Y).

1 (L) – 2 (Y) : Approx. 54 – 66Ω

OK or NG

- OK >> Replace combination meter.
 NG >> Repair harness between harness connector M71 and combination meter.



EKS00310

BCM Circuit Check

1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check the terminals and connector of BCM for damage, bent or loose connection (control module-side and harness-side).

OK or NG

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

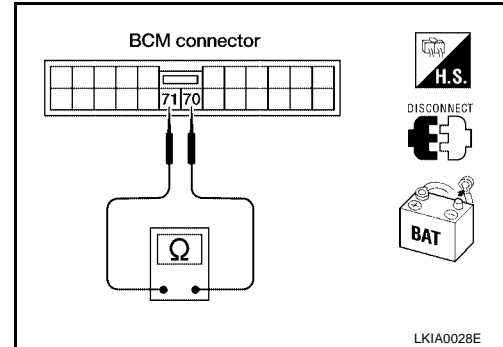
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect BCM connector.
2. Check resistance between BCM harness connector M18 terminals 70 (L) and 71 (Y).

70 (L) – 71 (Y) : Approx. 54 – 66Ω

OK or NG

- OK >> Replace BCM.
 NG >> Repair harness between harness connector M7 and BCM.



ABS Actuator and Electric Unit (Control Unit) Circuit Check

EKS00311

1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check the terminals and connector of ABS actuator and electric unit (control unit) for damage, bent or loose connection (control unit-side and harness-side).

OK or NG

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

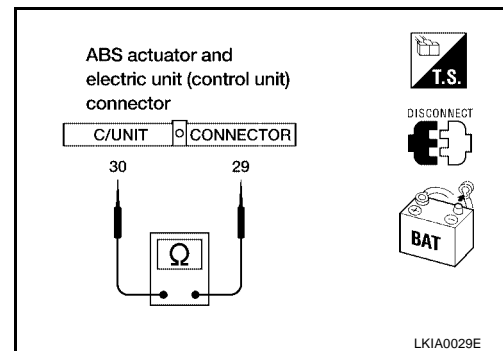
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector.
2. Check resistance between ABS actuator and electric unit (control unit) harness connector E125 terminals 30 (L) and 29 (Y).

30 (L) – 29 (Y) : Approx. 54 – 66Ω

OK or NG

- OK >> Replace ABS actuator and electric unit (control unit).
 NG >> Repair harness between harness connector E130 and ABS actuator and electric unit (control unit). Refer to [BRC-92. "Removal and Installation"](#).



EKS00312

IPDM E/R Circuit Check

1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check the terminals and connector of IPDM E/R for damage, bent or loose connection (control module-side and harness-side).

OK or NG

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

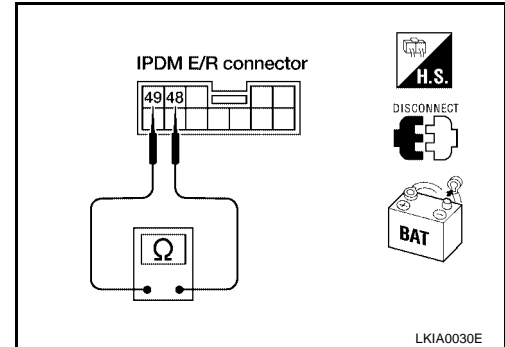
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect IPDM E/R connector.
2. Check resistance between IPDM E/R harness connector E121 terminals 48 (L) and 49 (Y).

48 (L) – 49 (Y) : Approx. 108 – 132Ω

OK or NG

- OK >> Replace IPDM E/R. Refer to [PG-24, "Removal and Installation of IPDM E/R"](#).
- NG >> Repair harness between harness connector E130 and IPDM E/R.



EKS00313

CAN Communication Circuit Check

1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check following terminals and connector for damage, bent or loose connection (control module-side, control unit-side, meter-side and harness-side).
 - ECM.
 - TCM.
 - Combination meter.
 - BCM.
 - ABS actuator and electric unit (control unit).
 - IPDM E/R.
 - Between ECM and IPDM E/R.

OK or NG

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

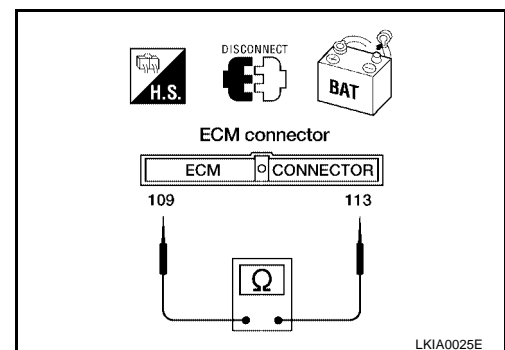
2. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect ECM connector, TCM connector and harness connector F59.
2. Check continuity between ECM harness connector F54 terminals 109 (L) and 113 (Y).

109 (L) – 113 (Y) : Continuity should not exist.

OK or NG

- OK >> GO TO 3.
- NG >>
 - Repair harness between ECM and harness connector F59.
 - Repair harness between TCM and harness connector F59.



3. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ECM harness connector F54 terminals 109 (L), 113 (Y) and ground.

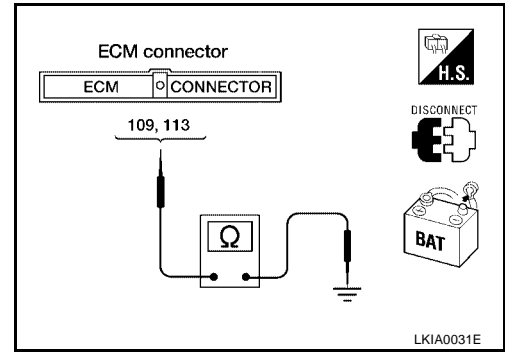
109 (L) – ground : Continuity should not exist.

113 (Y) – ground : Continuity should not exist.

OK or NG

OK >> GO TO 4.

- NG >> ● Repair harness between ECM and harness connector F59.
 ● Repair harness between TCM and harness connector F59.



4. CHECK HARNESS FOR SHORT CIRCUIT

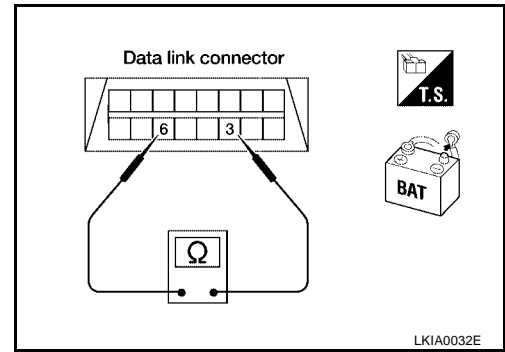
1. Disconnect combination meter connector, BCM connector and harness connector M7.
2. Check continuity between data link connector M22 terminals 6 (L) and 3 (Y).

6 (L) – 3 (Y) : Continuity should not exist.

OK or NG

OK >> GO TO 5.

- NG >> ● Repair harness between harness connector M71 and harness connector M7.
 ● Repair harness between harness connector M71 and combination meter.
 ● Repair harness between harness connector M71 and data link connector.
 ● Repair harness between harness connector M71 and BCM.



5. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between data link connector M22 terminals 6 (L), 3 (Y) and ground.

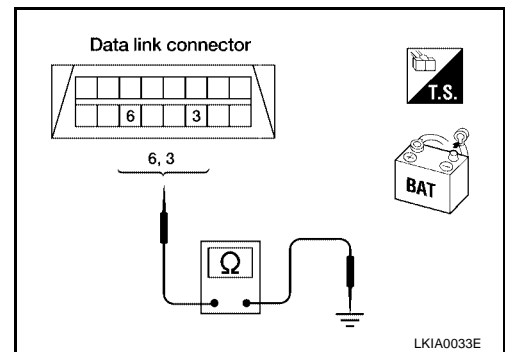
6 (L) – ground : Continuity should not exist.

3 (Y) – ground : Continuity should not exist.

OK or NG

OK >> GO TO 6.

- NG >> ● Repair harness between harness connector M71 and harness connector M7.
 ● Repair harness between harness connector M71 and combination meter.
 ● Repair harness between harness connector M71 and data link connector.
 ● Repair harness between harness connector M71 and BCM.



A
B
C
D
E
F
G
H
I
J
L
M

LAN

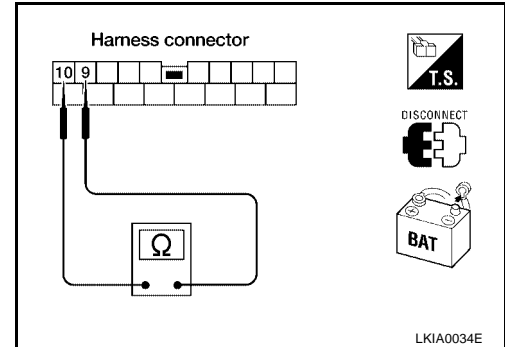
6. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect harness connector E27.
2. Check continuity between harness connector E28 terminals 10 (L) and 9 (Y).

10 (L) – 9 (Y) : Continuity should not exist.

OK or NG

- OK >> GO TO 7.
 NG >> Repair harness between harness connector E28 and harness connector E27.



7. CHECK HARNESS FOR SHORT CIRCUIT

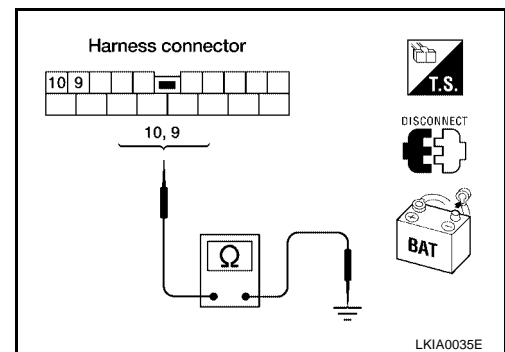
Check continuity between harness connector E28 terminals 10 (L), 9 (Y) and ground.

10 (L) – ground : Continuity should not exist.

9 (Y) – ground : Continuity should not exist.

OK or NG

- OK >> GO TO 8.
 NG >> Repair harness between harness connector E28 and harness connector E27.



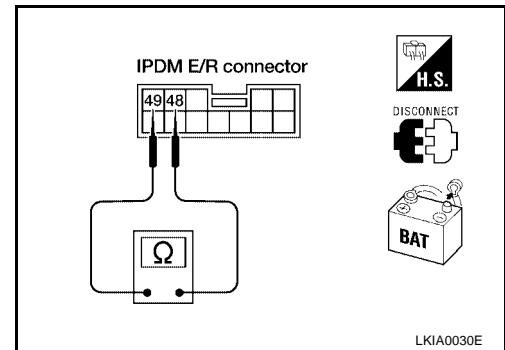
8. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector and IPDM E/R connector.
2. Check continuity between IPDM E/R harness connector E121 terminals 48 (L) and 49 (Y).

48 (L) – 49 (Y) : Continuity should not exist.

OK or NG

- OK >> GO TO 9.
 NG >> ● Repair harness between harness connector E130 and ABS actuator and electric unit (control unit).
 ● Repair harness between harness connector E130 and IPDM E/R.



9. CHECK HARNESS FOR SHORT CIRCUIT

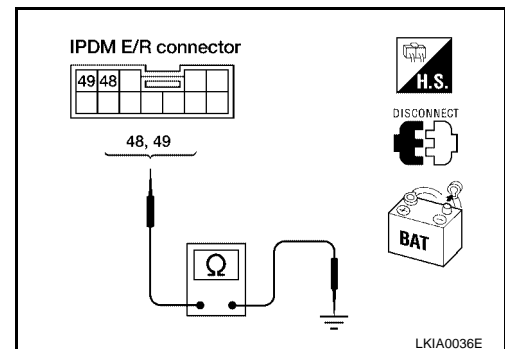
Check continuity between IPDM E/R harness connector E121 terminals 48 (L), 49 (Y) and ground.

48 (L) – ground : Continuity should not exist.

49 (Y) – ground : Continuity should not exist.

OK or NG

- OK >> GO TO 10.
 NG >> ● Repair harness between harness connector E130 and ABS actuator and electric unit (control unit).
 ● Repair harness between harness connector E130 and IPDM E/R.



10. ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION

Perform components inspection. Refer to [LAN-27, "ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION"](#)

OK or NG

- OK >> Connect all the connectors and diagnose again. Refer to [LAN-10, "Work Flow"](#) .
 NG >> Replace ECM and/or IPDM E/R.

IPDM E/R Ignition Relay Circuit Check

EKS003KT

Check the following. If no problem is found, replace the IPDM E/R. Refer to [PG-24, "Removal and Installation of IPDM E/R"](#) .

- IPDM E/R Power Circuit. Refer to [PG-23, "IPDM E/R Power/Ground Circuit Inspection"](#) .
- Ignition Power Supply Circuit. Refer to [PG-11, "IGNITION POWER SUPPLY — IGNITION SW. IN ON AND/OR START"](#) .

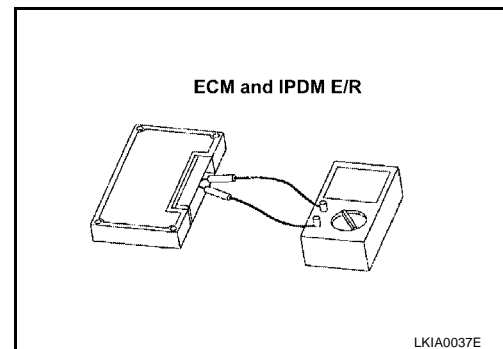
Component Inspection

EKS00314

ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION

- Remove ECM and IPDM E/R from vehicle. Refer to [PG-24, "Removal and Installation of IPDM E/R"](#) .
- Check resistance between ECM terminals 109 and 113.
- Check resistance between IPDM E/R terminals 48 and 49.

Unit	Terminal	Resistance value (Ω) (Approx.)
ECM	109 – 113	108 - 132
IPDM E/R	48 – 49	

A
B
C
D
E
F
G
H
I
J

LAN

L
M

CAN SYSTEM (FOR A/T MODELS)

PFP:23710

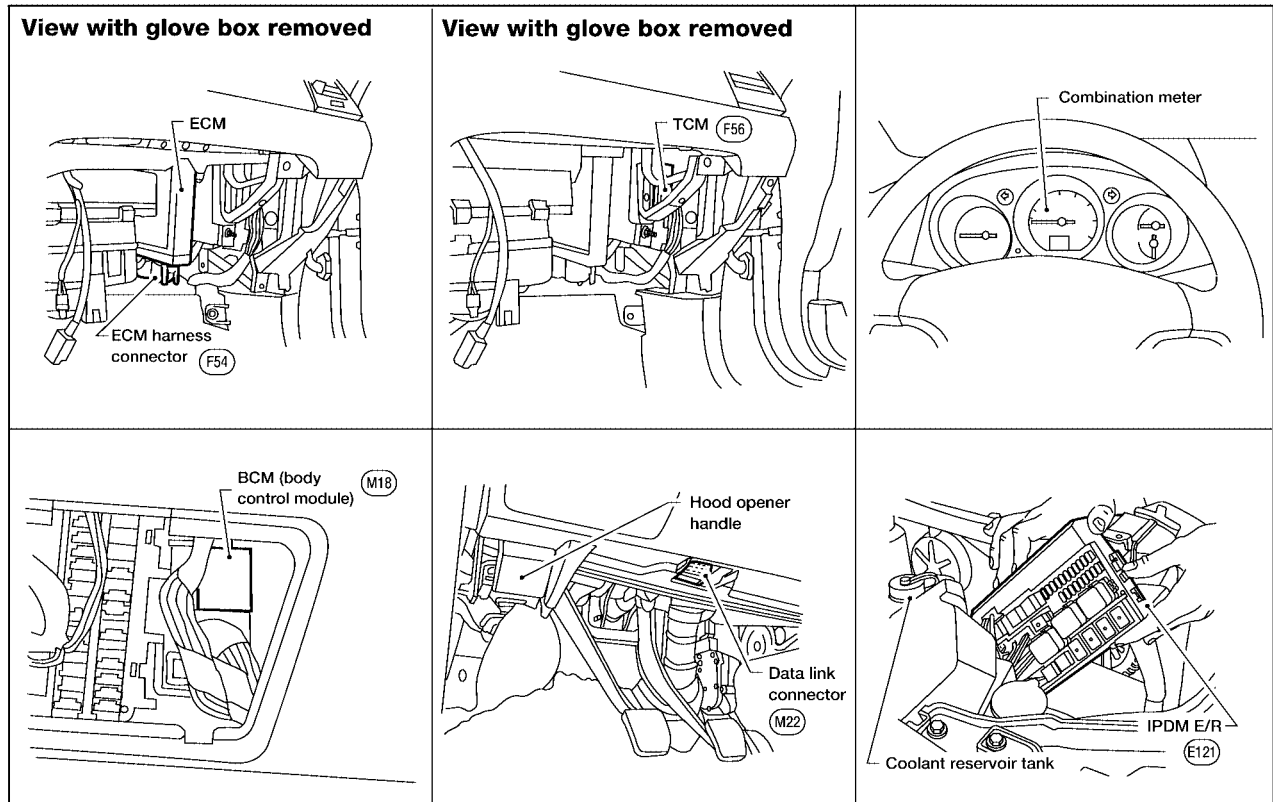
System Description

EKS00315

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.

Component Parts and Harness Connector Location

EKS00316



LKIA0050E



CAN SYSTEM (FOR A/T MODELS)

[CAN]

Wiring Diagram — CAN —

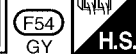
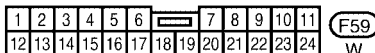
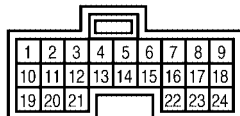
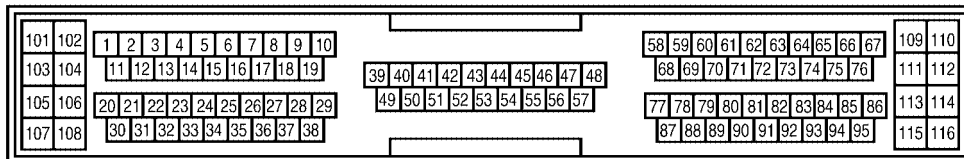
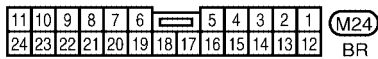
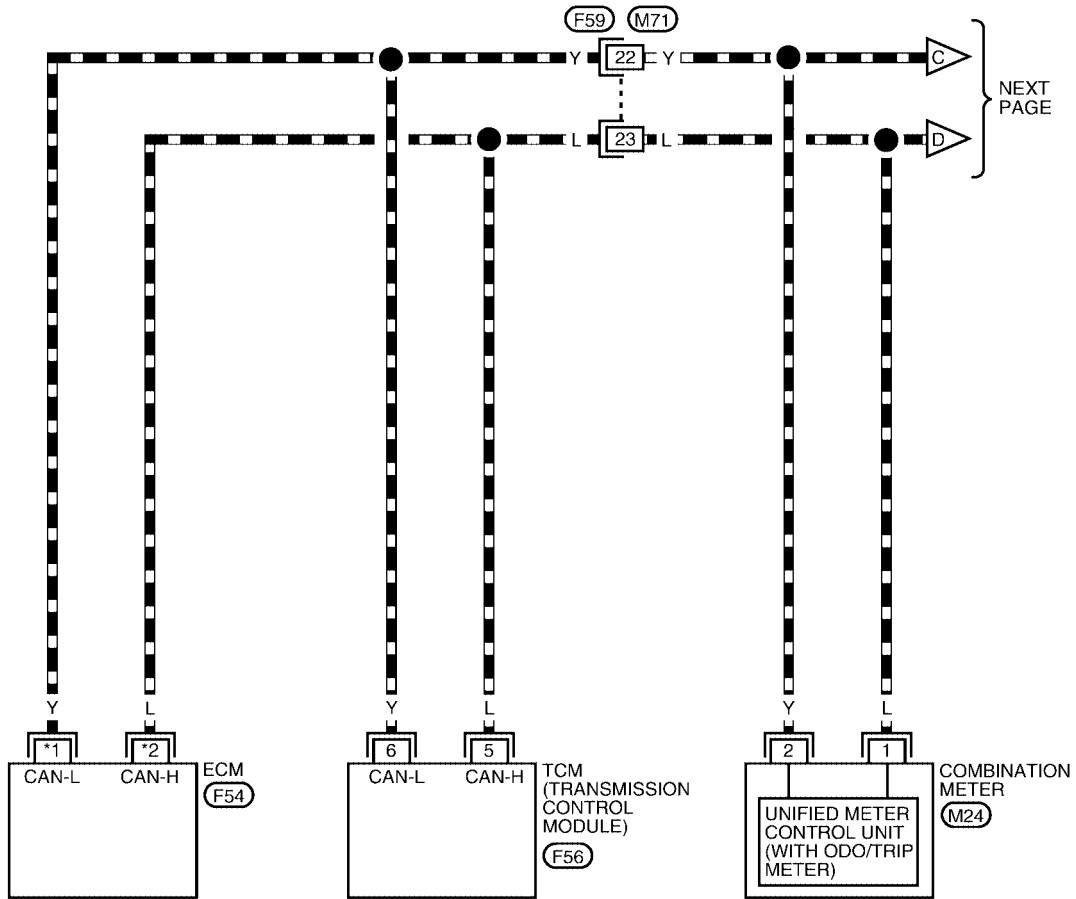
EKS00317

LAN-CAN-03

 : WITH QR25DE
 : WITH VQ35DE

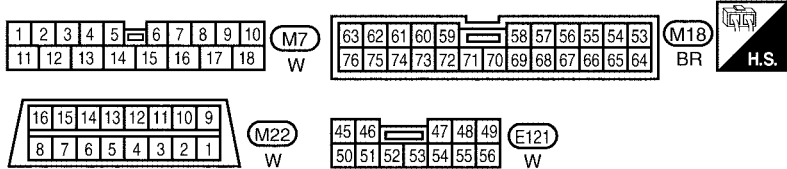
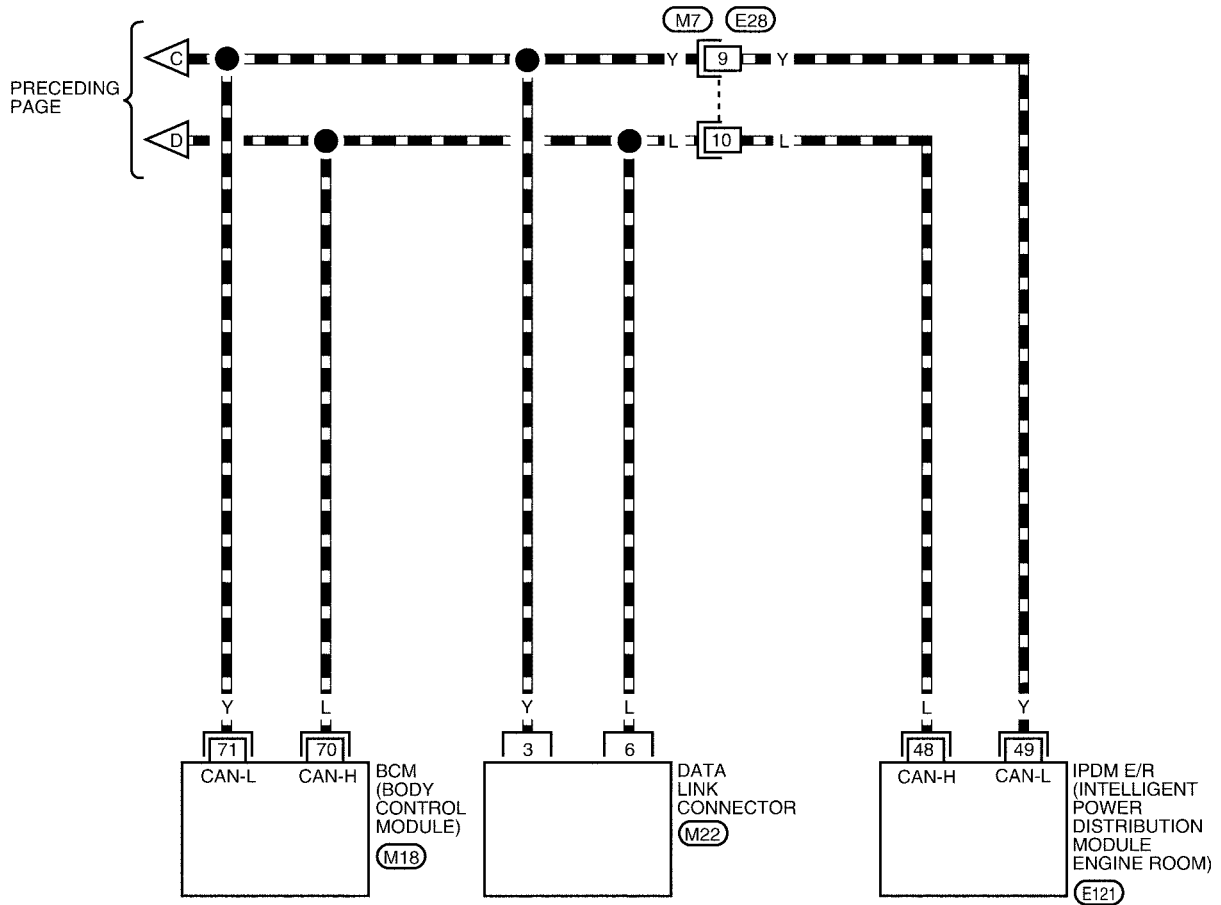
— : DATA LINE

*1  : 34
 : 113
 *2  : 33
 : 109



LKWA0066E

— : DATA LINE



Work Flow

- Print all the data of "SELF-DIAG RESULTS" for "ENGINE", "A/T" and "BCM" displayed on CONSULT-II.

(Example)

SELECT DIAG MODE			
WORK SUPPORT			
SELF-DIAG RESULTS			
DATA MONITOR			
DATA MONITOR (SPEC)			
CAN DIAG SUPPORT MNTR			
ACTIVE TEST			
			Scroll Down
BACK	LIGHT	COPY	

➔

SELF-DIAG RESULTS			
DTC RESULTS		TIME	
CAN COMM CIRCUIT (U1000)		0	
			F.F.DATA
ERASE		PRINT	
MODE	BACK	LIGHT	COPY

PKIA8260E

- Print all the data of "CAN DIAG SUPPORT MNTR" for "ENGINE", "A/T" and "BCM" displayed on CONSULT-II.

(Example)

SELECT DIAG MODE			
WORK SUPPORT			
SELF-DIAG RESULTS			
DATA MONITOR			
DATA MONITOR (SPEC)			
CAN DIAG SUPPORT MNTR			
ACTIVE TEST			
			Scroll Down
BACK	LIGHT	COPY	

➔

CAN DIAG SUPPORT MNTR			
ENGINE			
		PRSN	
INITIAL DIAG		OK	
TRANSMIT DIAG		OK	
TCM		OK	
VDC/TCS/ABS		OK	
METER/M&A		OK	
ICC		UNKWN	
BCM/SEC		OK	
IPDM E/R		OK	
AWD/4WD/e4WD		UNKWN	
PRINT		Scroll Down	
MODE	BACK	LIGHT	COPY

PKIA8343E

- Attach the printed sheet of "SELF-DIAG RESULTS" and "CAN DIAG SUPPORT MNTR" onto the check sheet. Refer to [LAN-32, "CHECK SHEET"](#) .
- Based on the "CAN DIAG SUPPORT MNTR" results, put check marks onto the items with "UNKWN" or "NG" in the check sheet table. Refer to [LAN-32, "CHECK SHEET"](#) .

NOTE:

If "NG" is displayed on "INITIAL DIAG (initial diagnosis)" as "CAN DIAG SUPPORT MNTR" for the diagnosed control unit, replace the control unit.

- According to the check sheet results (example), start inspection. Refer to [LAN-33, "CHECK SHEET RESULTS \(EXAMPLE\)"](#) .

A
B
C
D
E
F
G
H
I
J
L
M

LAN

CAN SYSTEM (FOR A/T MODELS)

[CAN]

CHECK SHEET

Check sheet table

SELECT SYSTEM screen	CAN DIAG SUPPORT MNTR						
	Initial diagnosis	Transmit diagnosis	Receive diagnosis				
			ECM	TCM	METER/ M&A	BCM/SEC	IPDM E/R
ENGINE	NG	UNKWN	-	UNKWN	UNKWN	UNKWN	UNKWN
A/T	NG	UNKWN	UNKWN	-	UNKWN	-	-
BCM	NG	UNKWN	UNKWN	-	UNKWN	-	UNKWN

Symptoms:

Attach copy of
ENGINE SELF-DIAG
RESULTS

Attach copy of
A/T SELF-DIAG
RESULTS

Attach copy of
BCM SELF-DIAG
RESULTS

Attach copy of
ENGINE
CAN DIAG SUPPORT
MNTR

Attach copy of
A/T
CAN DIAG SUPPORT
MNTR

Attach copy of
BCM
CAN DIAG SUPPORT
MNTR

WKIA2995E

CAN SYSTEM (FOR A/T MODELS)

[CAN]

CHECK SHEET RESULTS (EXAMPLE)

Case 1

Replace ECM.

SELECT SYSTEM screen	CAN DIAG SUPPORT MNTR						
	Initial diagnosis	Transmit diagnosis	Receive diagnosis				
			ECM	TCM	METER/M&A	BCM/SEC	IPDM E/R
ENGINE	NG	UNKWN	-	UNKWN	UNKWN	UNKWN	UNKWN
A/T	NG	UNKWN	UNKWN	-	UNKWN	-	-
BCM	NG	UNKWN	UNKWN	-	UNKWN	-	UNKWN

WKIA2996E

SELECT SYSTEM screen	CAN DIAG SUPPORT MNTR						
	Initial diagnosis	Transmit diagnosis	Receive diagnosis				
			ECM	TCM	METER/M&A	BCM/SEC	IPDM E/R
ENGINE	NG	UNKWN	-	UNKWN	UNKWN	UNKWN	UNKWN
A/T	NG	UNKWN	UNKWN	-	UNKWN	-	-
BCM	NG	UNKWN	UNKWN	-	UNKWN	-	UNKWN

WKIA2997E

Case 2

Replace TCM.

SELECT SYSTEM screen	CAN DIAG SUPPORT MNTR						
	Initial diagnosis	Transmit diagnosis	Receive diagnosis				
			ECM	TCM	METER/M&A	BCM/SEC	IPDM E/R
ENGINE	NG	UNKWN	-	UNKWN	UNKWN	UNKWN	UNKWN
A/T	NG	UNKWN	UNKWN	-	UNKWN	-	-
BCM	NG	UNKWN	UNKWN	-	UNKWN	-	UNKWN

WKIA2998E

Case 3

Replace BCM.

SELECT SYSTEM screen	CAN DIAG SUPPORT MNTR						
	Initial diagnosis	Transmit diagnosis	Receive diagnosis				
			ECM	TCM	METER/M&A	BCM/SEC	IPDM E/R
ENGINE	NG	UNKWN	-	UNKWN	UNKWN	UNKWN	UNKWN
A/T	NG	UNKWN	UNKWN	-	UNKWN	-	-
BCM	NG	UNKWN	UNKWN	-	UNKWN	-	UNKWN

WKIA2999E

A
B
C
D
E
F
G
H
I
J
L
M

LAN

CAN SYSTEM (FOR A/T MODELS)

[CAN]

SELECT SYSTEM screen	CAN DIAG SUPPORT MNTR						
	Initial diagnosis	Transmit diagnosis	Receive diagnosis				
			ECM	TCM	METER/M&A	BCM/SEC	IPDM E/R
ENGINE	NG	UNKW	-	UNKW	UNKW	UNKW	UNKW
A/T	NG	UNKW	UNKW	-	UNKW	-	-
BCM	NG	UNKW	UNKW	-	UNKW	-	UNKW

WKIA3000E

Case 4

Check harness between TCM and combination meter. Refer to [LAN-36, "Circuit Check Between TCM and Combination Meter"](#) .

SELECT SYSTEM screen	CAN DIAG SUPPORT MNTR						
	Initial diagnosis	Transmit diagnosis	Receive diagnosis				
			ECM	TCM	METER/M&A	BCM/SEC	IPDM E/R
ENGINE	NG	UNKW	-	UNKW	UNKW	UNKW	UNKW
A/T	NG	UNKW	UNKW	-	UNKW	-	-
BCM	NG	UNKW	UNKW	-	UNKW	-	UNKW

WKIA3001E

Case 5

Check harness between combination meter and BCM. Refer to [LAN-38, "Circuit Check Between Combination Meter and BCM"](#) .

SELECT SYSTEM screen	CAN DIAG SUPPORT MNTR						
	Initial diagnosis	Transmit diagnosis	Receive diagnosis				
			ECM	TCM	METER/M&A	BCM/SEC	IPDM E/R
ENGINE	NG	UNKW	-	UNKW	UNKW	UNKW	UNKW
A/T	NG	UNKW	UNKW	-	UNKW	-	-
BCM	NG	UNKW	UNKW	-	UNKW	-	UNKW

WKIA3002E

Case 6

Check ECM circuit. Refer to [LAN-38, "ECM Circuit Check"](#) .

SELECT SYSTEM screen	CAN DIAG SUPPORT MNTR						
	Initial diagnosis	Transmit diagnosis	Receive diagnosis				
			ECM	TCM	METER/M&A	BCM/SEC	IPDM E/R
ENGINE	NG	UNKW	-	UNKW	UNKW	UNKW	UNKW
A/T	NG	UNKW	UNKW	-	UNKW	-	-
BCM	NG	UNKW	UNKW	-	UNKW	-	UNKW

WKIA3003E

Case 7

Check TCM circuit. Refer to [LAN-39, "TCM Circuit Check"](#) .

SELECT SYSTEM screen	CAN DIAG SUPPORT MNTR						
	Initial diagnosis	Transmit diagnosis	Receive diagnosis				
			ECM	TCM	METER/M&A	BCM/SEC	IPDM E/R
ENGINE	NG	UNKW N	-	UNKW N	UNKW N	UNKW N	UNKW N
A/T	NG	UNKW N	UNKW N	-	UNKW N	-	-
BCM	NG	UNKW N	UNKW N	-	UNKW N	-	UNKW N

WKIA3004E

Case 8

Check combination meter circuit. Refer to [LAN-39, "Combination Meter Circuit Check"](#) .

SELECT SYSTEM screen	CAN DIAG SUPPORT MNTR						
	Initial diagnosis	Transmit diagnosis	Receive diagnosis				
			ECM	TCM	METER/M&A	BCM/SEC	IPDM E/R
ENGINE	NG	UNKW N	-	UNKW N	UNKW N	UNKW N	UNKW N
A/T	NG	UNKW N	UNKW N	-	UNKW N	-	-
BCM	NG	UNKW N	UNKW N	-	UNKW N	-	UNKW N

WKIA3005E

Case 9

Check BCM circuit. Refer to [LAN-40, "BCM Circuit Check"](#) .

SELECT SYSTEM screen	CAN DIAG SUPPORT MNTR						
	Initial diagnosis	Transmit diagnosis	Receive diagnosis				
			ECM	TCM	METER/M&A	BCM/SEC	IPDM E/R
ENGINE	NG	UNKW N	-	UNKW N	UNKW N	UNKW N	UNKW N
A/T	NG	UNKW N	UNKW N	-	UNKW N	-	-
BCM	NG	UNKW N	UNKW N	-	UNKW N	-	UNKW N

WKIA3006E

Case 10

Check IPDM E/R circuit. Refer to [LAN-40, "IPDM E/R Circuit Check"](#) .

SELECT SYSTEM screen	CAN DIAG SUPPORT MNTR						
	Initial diagnosis	Transmit diagnosis	Receive diagnosis				
			ECM	TCM	METER/M&A	BCM/SEC	IPDM E/R
ENGINE	NG	UNKW N	-	UNKW N	UNKW N	UNKW N	UNKW N
A/T	NG	UNKW N	UNKW N	-	UNKW N	-	-
BCM	NG	UNKW N	UNKW N	-	UNKW N	-	UNKW N

WKIA3007E

Case 11

Check CAN communication circuit. Refer to [LAN-41, "CAN Communication Circuit Check"](#) .

SELECT SYSTEM screen	Initial diagnosis	Transmit diagnosis	CAN DIAG SUPPORT MNTR				
			Receive diagnosis				
			ECM	TCM	METER/M&A	BCM/SEC	IPDM E/R
ENGINE	NG	UNKW ^N	-	UNKW ^N	UNKW ^N	UNKW ^N	UNKW ^N
A/T	NG	UNKW ^N	UNKW ^N	-	UNKW ^N	-	-
BCM	NG	UNKW ^N	UNKW ^N	-	UNKW ^N	-	UNKW ^N

WKIA3008E

Case 12

Check IPDM E/R ignition relay circuit. Refer to [LAN-44, "IPDM E/R Ignition Relay Circuit Check"](#) .

SELECT SYSTEM screen	Initial diagnosis	Transmit diagnosis	CAN DIAG SUPPORT MNTR				
			Receive diagnosis				
			ECM	TCM	METER/M&A	BCM/SEC	IPDM E/R
ENGINE	NG	UNKW ^N	-	UNKW ^N	UNKW ^N	UNKW ^N	UNKW ^N
A/T	NG	UNKW ^N	UNKW ^N	-	UNKW ^N	-	-
BCM	NG	UNKW ^N	UNKW ^N	-	UNKW ^N	-	UNKW ^N

WKIA3009E

Case 13

Check IPDM E/R. Refer to [LAN-44, "IPDM E/R Check"](#) .

SELECT SYSTEM screen	Initial diagnosis	Transmit diagnosis	CAN DIAG SUPPORT MNTR				
			Receive diagnosis				
			ECM	TCM	METER/M&A	BCM/SEC	IPDM E/R
ENGINE	NG	UNKW ^N	-	UNKW ^N	UNKW ^N	UNKW ^N	UNKW ^N
A/T	NG	UNKW ^N	UNKW ^N	-	UNKW ^N	-	-
BCM	NG	UNKW ^N	UNKW ^N	-	UNKW ^N	-	UNKW ^N

WKIA3010E

Circuit Check Between TCM and Combination Meter

EKS00319

1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check following terminals and connector for damage, bent or loose connection (control module-side, meter-side and harness-side).
 - TCM.
 - Combination meter.
 - Between TCM and combination meter.

OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

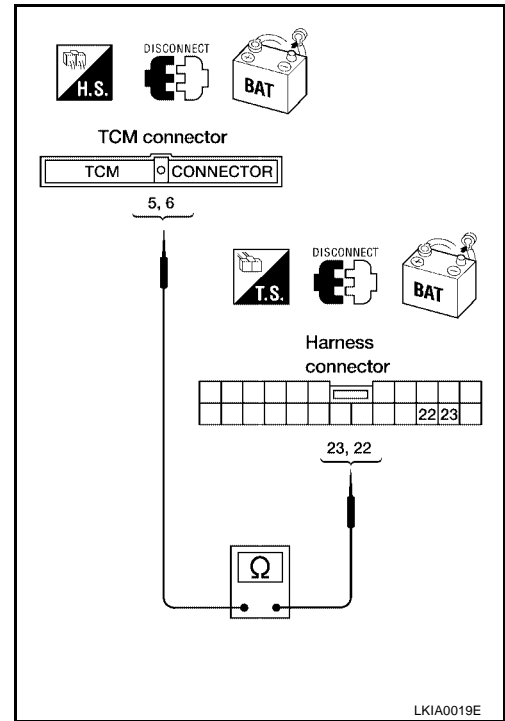
1. Disconnect TCM connector and harness connector F59.
2. Check continuity between TCM harness connector F56 terminals 5 (L), 6 (Y) and harness connector F59 terminals 23 (L), 22 (Y).

5 (L) – 23 (L) : Continuity should exist.

6 (Y) – 22 (Y) : Continuity should exist.

OK or NG

- OK >> GO TO 3.
- NG >> Repair harness.



3. CHECK HARNESS FOR OPEN CIRCUIT

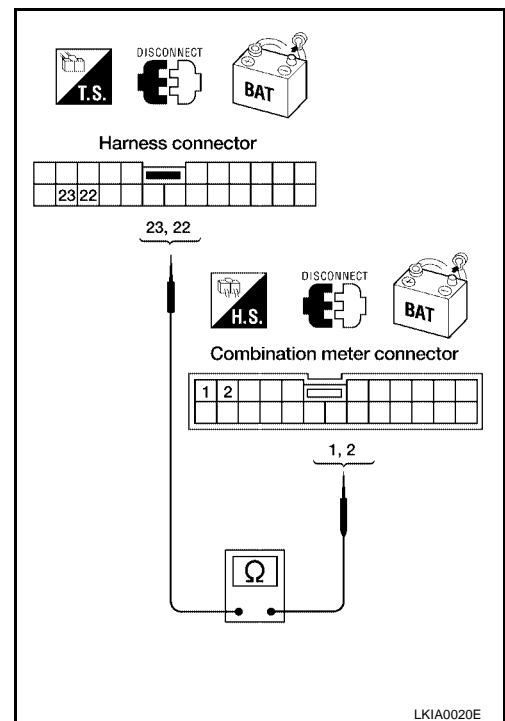
1. Disconnect combination meter connector.
2. Check continuity between harness connector M71 terminals 23 (L), 22 (Y) and combination meter harness connector M24 terminals 1 (L), 2 (Y).

23 (L) – 1 (L) : Continuity should exist.

22 (Y) – 2 (Y) : Continuity should exist.

OK or NG

- OK >> Connect all the connectors and diagnose again. Refer to LAN-31, "Work Flow" .
- NG >> Repair harness.



Circuit Check Between Combination Meter and BCM**1. CHECK CONNECTOR**

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check following terminals and connector for damage, bent or loose connection (meter-side, control module-side and harness-side).
 - Combination meter.
 - BCM.

OK or NG

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

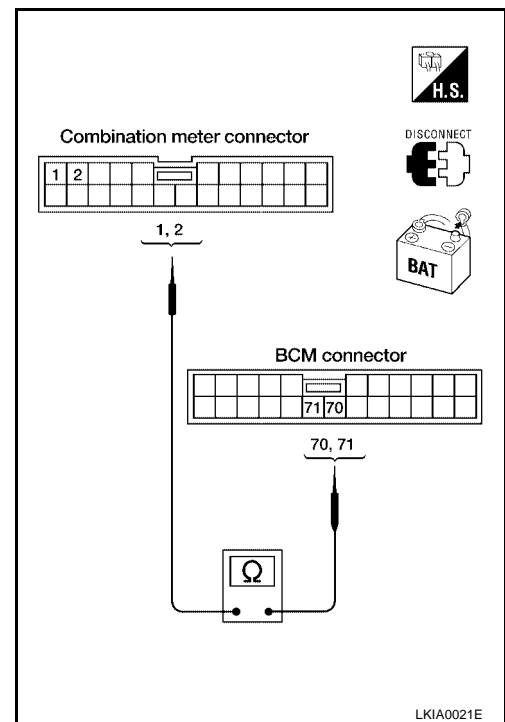
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect combination meter connector and BCM connector.
2. Check continuity between combination meter harness connector M24 terminals 1 (L), 2 (Y) and BCM harness connector M18 terminals 70 (L), 71 (Y).

1 (L) – 70 (L) : Continuity should exist.
2 (Y) – 71 (Y) : Continuity should exist.

OK or NG

- OK >> Connect all the connectors and diagnose again. Refer to [LAN-31, "Work Flow"](#) .
 NG >> Repair harness.

**ECM Circuit Check****1. CHECK CONNECTOR**

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check the terminals and connector of ECM for damage, bent or loose connection. (control module-side and harness-side)

OK or NG

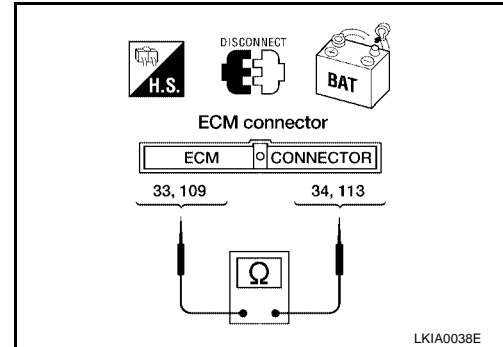
- OK >> GO TO 2.
 NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ECM connector.
2. Check the following.
 - Resistance between ECM harness connector F54 terminals 33 (L) and 34 (Y) (QR25DE models).
 - Resistance between ECM harness connector F54 terminals 109 (L) and 113 (Y) (VQ35DE models).

33 (L) – 34 (Y) (QR25DE models) : Approx. 108 – 132Ω

109 (L) – 113 (Y) (VQ35DE models) : Approx. 108 – 132Ω



OK or NG

- OK >> Replace ECM.
 NG >> Repair harness between harness connector F59 and ECM.

TCM Circuit Check

EKS0031C

1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check the terminals and connector of TCM for damage, bent or loose connection (control module-side and harness-side).

OK or NG

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

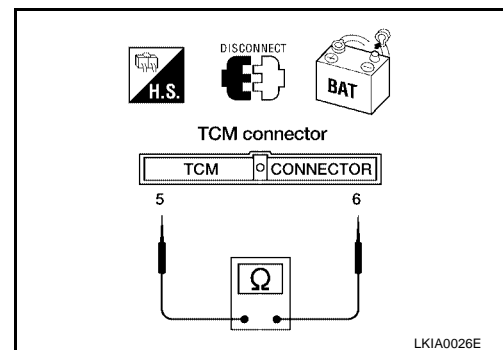
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect TCM connector.
2. Check resistance between TCM harness connector F56 terminals 5 (L) and 6 (Y).

5 (L) – 6 (Y) : Approx. 54 – 66Ω

OK or NG

- OK >> Replace TCM.
 NG >> Repair harness between harness connector F59 and TCM.



EKS0031D

Combination Meter Circuit Check

1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check terminals and connector of combination meter for damage, bent or loose connection (meter-side and harness-side).

OK or NG

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

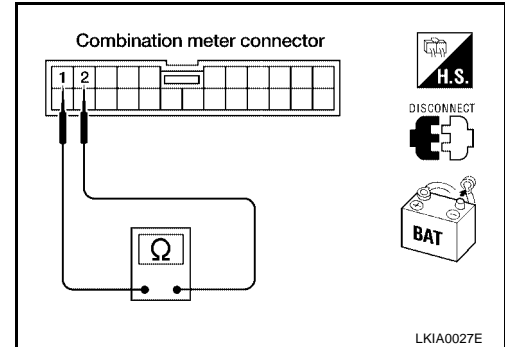
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect combination meter connector.
2. Check resistance between combination meter harness connector M24 terminals 1 (L) and 2 (Y).

1 (L) – 2 (Y) : Approx. 54 – 66Ω

OK or NG

- OK >> Replace combination meter. Refer to [DI-21, "Combination Meter"](#).
- NG >> Repair harness between harness connector M71 and combination meter.



EKS0031E

BCM Circuit Check

1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check the terminals and connector of BCM for damage, bent or loose connection (control module-side and harness-side).

OK or NG

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

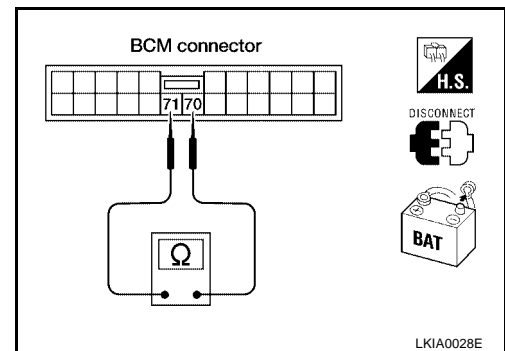
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect BCM connector.
2. Check resistance between BCM harness connector M18 terminals 70 (L) and 71 (Y).

70 (L) – 71 (Y) : Approx. 54 – 66Ω

OK or NG

- OK >> Replace BCM.
- NG >> Repair harness between harness connector M7 and BCM.



EKS0031F

IPDM E/R Circuit Check

1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check the terminals and connector of IPDM E/R for damage, bent or loose connection (control module-side and harness-side).

OK or NG

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

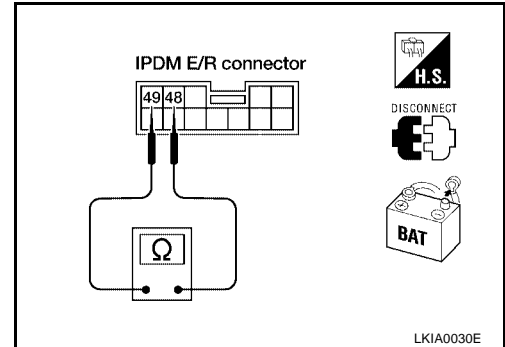
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect IPDM E/R connector.
2. Check resistance between IPDM E/R harness connector E121 terminals 48 (L) and 49 (Y).

48 (L) – 49 (Y) : Approx. 108 – 132Ω

OK or NG

- OK >> Replace IPDM E/R.
 NG >> Repair harness between data link connector and IPDM E/R.



EKS0031G

CAN Communication Circuit Check

1. CHECK CONNECTOR

1. Turn ignition switch OFF.
 2. Disconnect the negative battery terminal.
 3. Check following terminals and connector for damage, bent or loose connection (control module-side, meter-side and harness-side).
- ECM.
 - TCM.
 - Combination meter.
 - BCM.
 - IPDM E/R.
 - Between ECM and IPDM E/R.

OK or NG

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

2. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect ECM connector, TCM connector and harness connector F59.
2. Check the following.

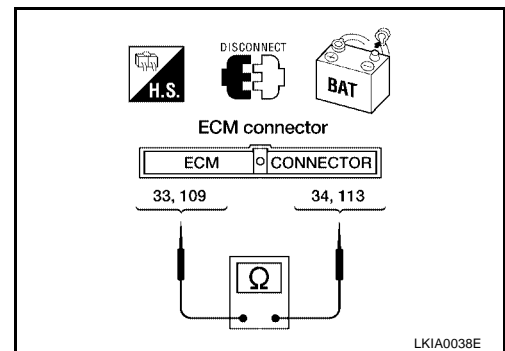
- Continuity between ECM harness connector F54 terminals 33 (L) and 34 (Y) (QR25DE models).
- Continuity between ECM harness connector F54 terminals 109 (L) and 113 (Y) (VQ35DE models).

33 (L) – 34 (Y) : Continuity should not exist.
(QR25DE models)

109 (L) – 113 (Y) : Continuity should not exist.
(VQ35DE models)

OK or NG

- OK >> GO TO 3.
 NG >> ● Repair harness between ECM and harness connector F59.
 ● Repair harness between TCM and harness connector F59.

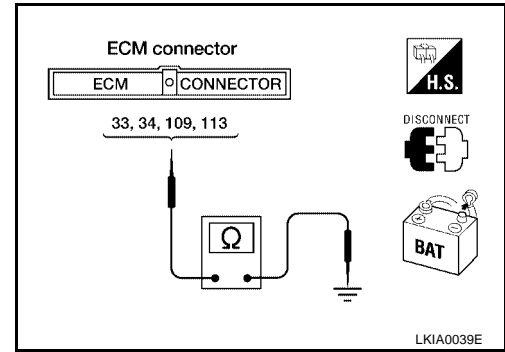


3. CHECK HARNESS FOR SHORT CIRCUIT

1. Check the following.

- Continuity between ECM harness connector F54 terminals 33 (L), 34 (Y) and ground. (QR25DE models)
- Continuity between ECM harness connector F54 terminals 109 (L), 113 (Y) and ground. (VQ35DE models)

- 33 (L) – ground (QR25DE models) : Continuity should not exist.**
- 34 (Y) – ground (QR25DE models) : Continuity should not exist.**
- 109 (L) – ground (VQ35DE models) : Continuity should not exist.**
- 113 (Y) – ground (VQ35DE models) : Continuity should not exist.**



OK or NG

OK >> GO TO 4.

- NG >> ● Repair harness between ECM and harness connector F59.
 ● Repair harness between TCM and harness connector F59.

4. CHECK HARNESS FOR SHORT CIRCUIT

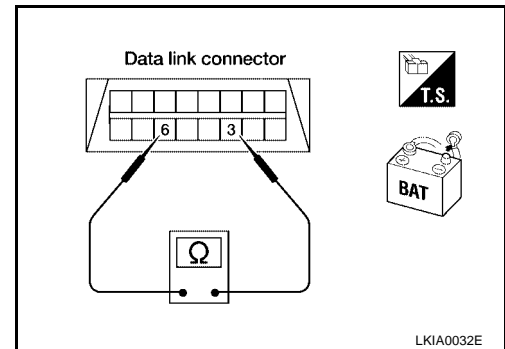
1. Disconnect combination meter connector, BCM connector and harness connector M7.
2. Check continuity between data link connector M22 terminals 6 (L) and 3 (Y).

- 6 (L) – 3 (Y) : Continuity should not exist.**

OK or NG

OK >> GO TO 5.

- NG >> ● Repair harness between harness connector M71 and harness connector M7.
 ● Repair harness between harness connector M71 and combination meter.
 ● Repair harness between harness connector M71 and data link connector.
 ● Repair harness between harness connector M71 and BCM.



5. CHECK HARNESS FOR SHORT CIRCUIT

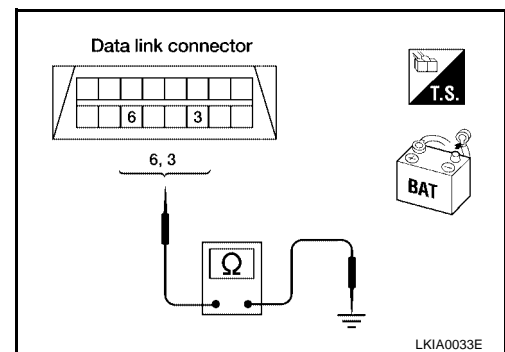
Check continuity between data link connector M22 terminals 6 (L), 3 (Y) and ground.

- 6 (L) – ground : Continuity should not exist.**
- 3 (Y) – ground : Continuity should not exist.**

OK or NG

OK >> GO TO 6.

- NG >> ● Repair harness between harness connector M71 and harness connector M7.
 ● Repair harness between harness connector M71 and combination meter.
 ● Repair harness between harness connector M71 and data link connector.
 ● Repair harness between harness connector M71 and BCM.



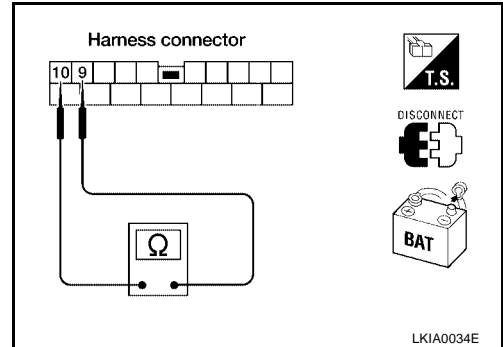
6. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect harness connector E27.
2. Check continuity between harness connector E28 terminals 10 (L) and 9 (Y).

10 (L) – 9 (Y) : Continuity should not exist.

OK or NG

- OK >> GO TO 7.
- NG >> Repair harness between harness connector E28 and harness connector E27.



7. CHECK HARNESS FOR SHORT CIRCUIT

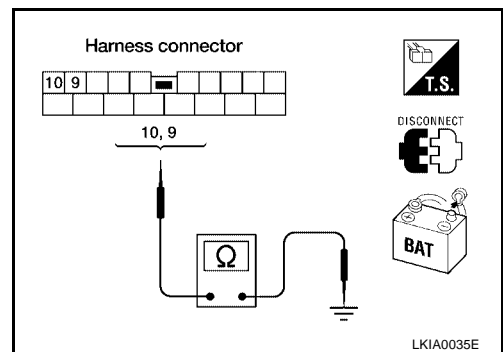
Check continuity between harness connector E28 terminals 10 (L), 9 (Y) and ground.

10 (L) – ground : Continuity should not exist.

9 (Y) – ground : Continuity should not exist.

OK or NG

- OK >> GO TO 8.
- NG >> Repair harness between harness connector E28 and harness connector E27.



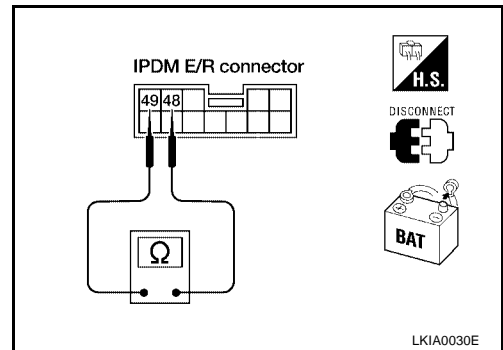
8. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect IPDM E/R connector.
2. Check continuity between IPDM E/R harness connector E121 terminals 48 (L) and 49 (Y).

48 (L) – 49 (Y) : Continuity should not exist.

OK or NG

- OK >> GO TO 9.
- NG >> Repair harness between harness connector E130 and IPDM E/R .



9. CHECK HARNESS FOR SHORT CIRCUIT

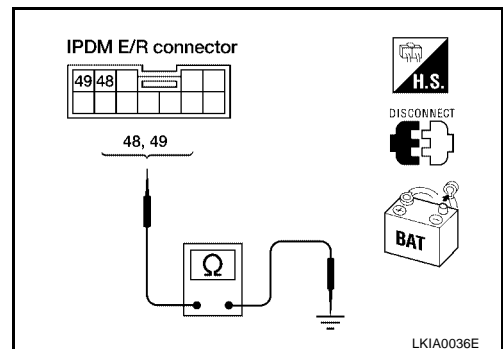
Check continuity between IPDM E/R harness connector E121 terminals 48 (L), 49 (Y) and ground.

48 (L) – ground : Continuity should not exist.

49 (Y) – ground : Continuity should not exist.

OK or NG

- OK >> GO TO 10.
- NG >> Repair harness between harness connector E130 and IPDM E/R.



10. ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION

Perform components inspection. Refer to [LAN-44, "ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION"](#) .

OK or NG

- OK >> Connect all the connectors and diagnose again. Refer to [LAN-31, "Work Flow"](#) .
- NG >> Replace ECM and/or IPDM E/R. Refer to [PG-24, "Removal and Installation of IPDM E/R"](#) .

IPDM E/R Ignition Relay Circuit Check

EKS003KU

Check the following. If no problem is found, replace the IPDM E/R. Refer to [PG-24, "Removal and Installation of IPDM E/R"](#) .

- IPDM E/R Power Circuit. Refer to [PG-23, "IPDM E/R Power/Ground Circuit Inspection"](#) .
- Ignition Power Supply Circuit. Refer to [PG-11, "IGNITION POWER SUPPLY — IGNITION SW. IN ON AND/OR START"](#) .

IPDM E/R Check

EKS003KV

1. CHECK IPDM E/R

1. Turn ignition switch ON and then OFF.
2. Check for illuminated parking lamps and tail lamps.

Parking lamps and tail lamps should not illuminate.

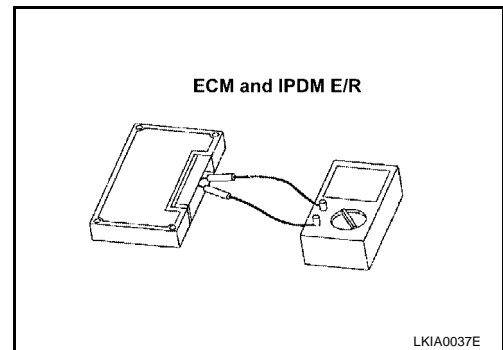
OK or NG

- OK >> Replace the TCM.
- NG >> Replace the IPDM E/R. Refer to [PG-24, "Removal and Installation of IPDM E/R"](#) .

**Component Inspection
ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION**

EKS003IH

- Remove ECM and IPDM E/R from vehicle. Refer to [PG-24, "Removal and Installation of IPDM E/R"](#) .
- Check resistance between ECM terminals 33 and 34 (QR25DE models).
- Check resistance between ECM terminals 109 and 113 (VQ35DE models).
- Check resistance between IPDM E/R terminals 48 and 49.



Unit	Terminal	Resistance value (Ω) (Approx.)
ECM (QR25DE models)	33 – 34	108 - 132
ECM (VQ35DE models)	109 – 113	
IPDM E/R	48 – 49	

CAN SYSTEM (FOR M/T MODELS)

PFP:23710

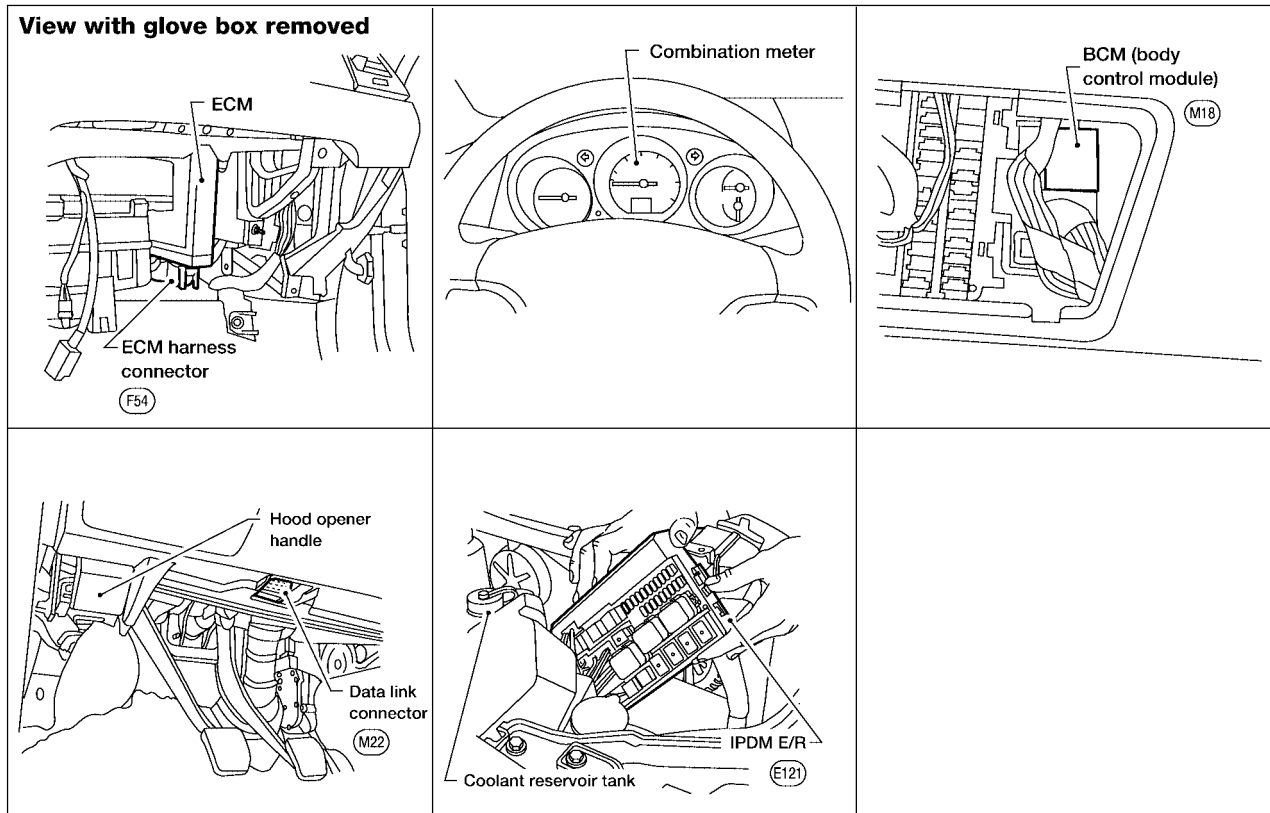
System Description

EKS003II

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.

Component Parts and Harness Connector Location

EKS003J



LKIA0051E

A
B
C
D
E
F
G
H
I
J
L
M

LAN



CAN SYSTEM (FOR M/T MODELS)


[CAN]

EKS003IK

Wiring Diagram — CAN —

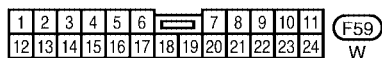
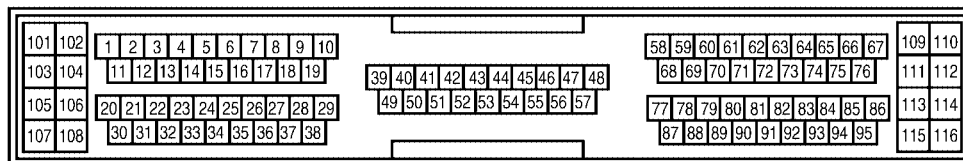
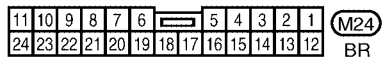
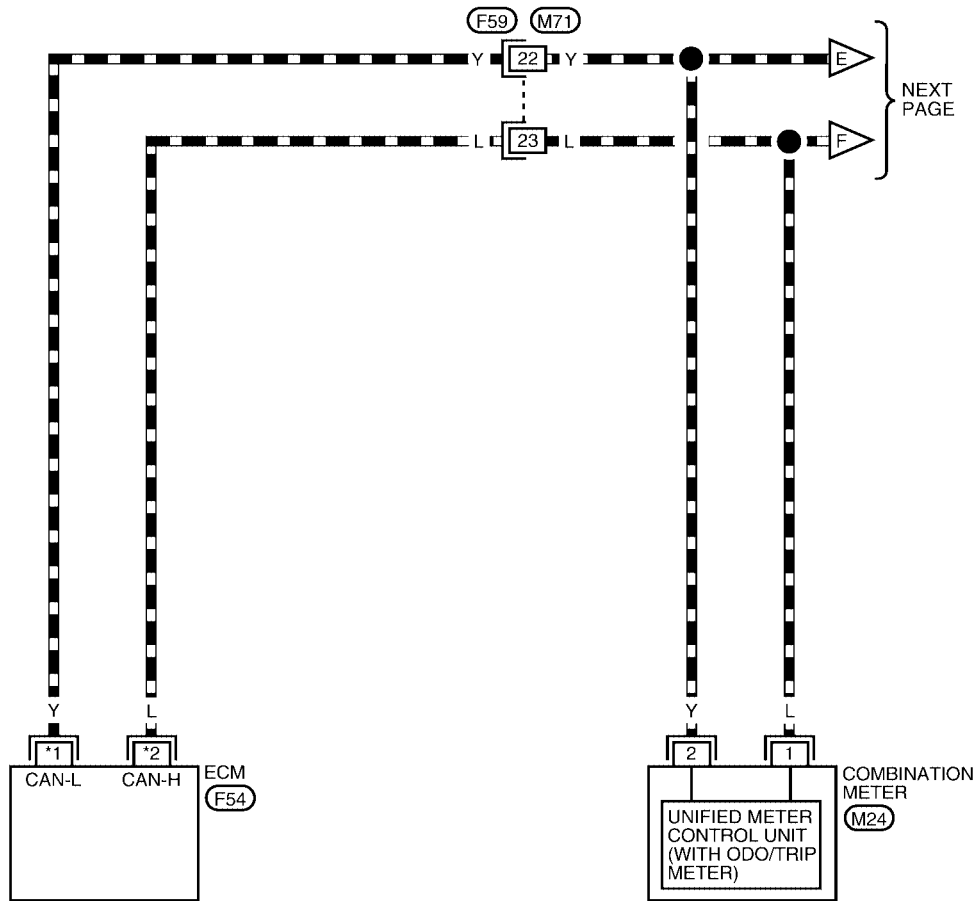
LAN-CAN-05

 : WITH QR25DE
 : WITH VQ35DE

 : DATA LINE

*1  : 34
 : 113

*2  : 33
 : 109



LKWA0068E

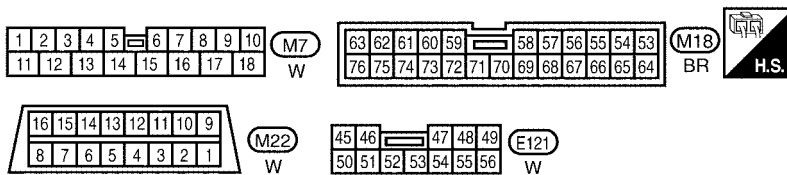
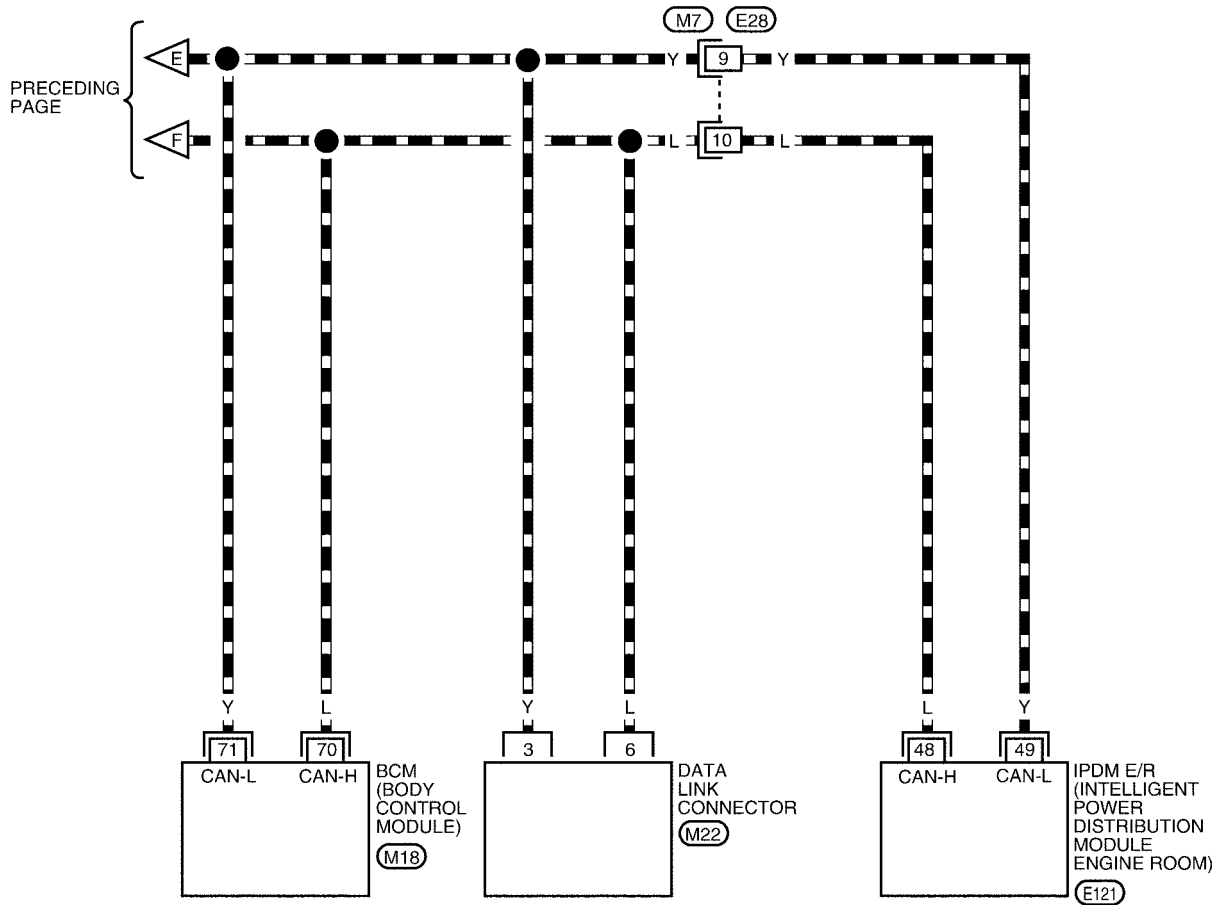
CAN SYSTEM (FOR M/T MODELS)

[CAN]

LAN-CAN-06

A
B
C
D
E
F
G
H
I
J
L
M

— : DATA LINE



WKWA0346E

Work Flow

- Print all the data of "SELF-DIAG RESULTS" for "ENGINE" and "BCM" displayed on CONSULT-II.

(Example)

SELECT DIAG MODE			
WORK SUPPORT			
SELF-DIAG RESULTS			
DATA MONITOR			
DATA MONITOR (SPEC)			
CAN DIAG SUPPORT MNTR			
ACTIVE TEST			
			Scroll Down
BACK	LIGHT	COPY	

➔

SELF-DIAG RESULTS	
DTC RESULTS	
TIME	
CAN COMM CIRCUIT (U1000)	0
F.F.DATA	
ERASE	PRINT
MODE	BACK
LIGHT	COPY

PKIA8260E

- Print all the data of "CAN DIAG SUPPORT MNTR" for "ENGINE", and "BCM" displayed on CONSULT-II.

(Example)

SELECT DIAG MODE			
WORK SUPPORT			
SELF-DIAG RESULTS			
DATA MONITOR			
DATA MONITOR (SPEC)			
CAN DIAG SUPPORT MNTR			
ACTIVE TEST			
			Scroll Down
BACK	LIGHT	COPY	

➔

CAN DIAG SUPPORT MNTR	
ENGINE	
	PRSNT
INITIAL DIAG	OK
TRANSMIT DIAG	OK
TCM	OK
VDC/TCS/ABS	OK
METER/M&A	OK
ICC	UNKWN
BCM/SEC	OK
IPDM E/R	OK
AWD/4WD/e4WD	UNKWN
PRINT	Scroll Down
MODE	BACK
LIGHT	COPY

PKIA8343E

- Attach the printed sheet of "SELF-DIAG RESULTS" and "CAN DIAG SUPPORT MNTR" onto the check sheet. Refer to [LAN-49, "CHECK SHEET"](#) .
- Based on the "CAN DIAG SUPPORT MNTR" results, put check marks onto the items with "UNKWN" or "NG" in the check sheet table. Refer to [LAN-49, "CHECK SHEET"](#) .

NOTE:

If "NG" is displayed on "INITIAL DIAG (initial diagnosis)" as "CAN DIAG SUPPORT MNTR" for the diagnosed control unit, replace the control unit.

- According to the check sheet results (example), start inspection. Refer to [LAN-50, "CHECK SHEET RESULTS \(EXAMPLE\)"](#) .

CAN SYSTEM (FOR M/T MODELS)

[CAN]

CHECK SHEET

Check sheet table

SELECT SYSTEM screen	CAN DIAG SUPPORT MNTR					
	Initial diagnosis	Transmit diagnosis	Receive diagnosis			
			ECM	METER/M&A	BCM/SEC	IPDM E/R
ENGINE	NG	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	NG	UNKWN	UNKWN	UNKWN	-	UNKWN

Symptoms:

Attach copy of
ENGINE SELF-DIAG
RESULTS

Attach copy of
BCM SELF-DIAG
RESULTS

Attach copy of
ENGINE
CAN DIAG SUPPORT
MNTR

Attach copy of
BCM
CAN DIAG SUPPORT
MNTR

WKIA3011E

A
B
C
D
E
F
G
H
I
J
LAN
L
M

CAN SYSTEM (FOR M/T MODELS)

[CAN]

CHECK SHEET RESULTS (EXAMPLE)

Case 1

Replace ECM.

SELECT SYSTEM screen	CAN DIAG SUPPORT MNTR					
	Initial diagnosis	Transmit diagnosis	Receive diagnosis			
			ECM	METER/M&A	BCM/SEC	IPDM E/R
ENGINE	NG	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	NG	UNKWN	UNKWN	UNKWN	-	UNKWN

WKIA3012E

SELECT SYSTEM screen	CAN DIAG SUPPORT MNTR					
	Initial diagnosis	Transmit diagnosis	Receive diagnosis			
			ECM	METER/M&A	BCM/SEC	IPDM E/R
ENGINE	NG	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	NG	UNKWN	UNKWN	UNKWN	-	UNKWN

WKIA3013E

Case 2

Replace BCM.

SELECT SYSTEM screen	CAN DIAG SUPPORT MNTR					
	Initial diagnosis	Transmit diagnosis	Receive diagnosis			
			ECM	METER/M&A	BCM/SEC	IPDM E/R
ENGINE	NG	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	NG	UNKWN	UNKWN	UNKWN	-	UNKWN

WKIA3014E

SELECT SYSTEM screen	CAN DIAG SUPPORT MNTR					
	Initial diagnosis	Transmit diagnosis	Receive diagnosis			
			ECM	METER/M&A	BCM/SEC	IPDM E/R
ENGINE	NG	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	NG	UNKWN	UNKWN	UNKWN	-	UNKWN

WKIA3015E

Case 3

Check harness between combination meter and BCM. Refer to [LAN-52, "Circuit Check Between Combination Meter and BCM"](#) .

SELECT SYSTEM screen	CAN DIAG SUPPORT MNTR					
	Initial diagnosis	Transmit diagnosis	Receive diagnosis			
			ECM	METER/ M&A	BCM/SEC	IPDM E/R
ENGINE	NG	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	NG	UNKWN	UNKWN	UNKWN	-	UNKWN

WKIA3016E

Case 4

Check ECM circuit. Refer to [LAN-53, "ECM Circuit Check"](#) .

SELECT SYSTEM screen	CAN DIAG SUPPORT MNTR					
	Initial diagnosis	Transmit diagnosis	Receive diagnosis			
			ECM	METER/ M&A	BCM/SEC	IPDM E/R
ENGINE	NG	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	NG	UNKWN	UNKWN	UNKWN	-	UNKWN

WKIA3017E

Case 5

Check combination meter circuit. Refer to [LAN-54, "Combination Meter Circuit Check"](#) .

SELECT SYSTEM screen	CAN DIAG SUPPORT MNTR					
	Initial diagnosis	Transmit diagnosis	Receive diagnosis			
			ECM	METER/ M&A	BCM/SEC	IPDM E/R
ENGINE	NG	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	NG	UNKWN	UNKWN	UNKWN	-	UNKWN

WKIA3018E

Case 6

Check BCM circuit. Refer to [LAN-54, "BCM Circuit Check"](#) .

SELECT SYSTEM screen	CAN DIAG SUPPORT MNTR					
	Initial diagnosis	Transmit diagnosis	Receive diagnosis			
			ECM	METER/ M&A	BCM/SEC	IPDM E/R
ENGINE	NG	UNKWN	-	UNKWN	UNKWN	UNKWN
BCM	NG	UNKWN	UNKWN	UNKWN	-	UNKWN

WKIA3019E

A
B
C
D
E
F
G
H
I
J
L
M

LAN

Case 7

Check IPDM E/R circuit. Refer to [LAN-55, "IPDM E/R Circuit Check"](#) .

SELECT SYSTEM screen	CAN DIAG SUPPORT MNTR					
	Initial diagnosis	Transmit diagnosis	Receive diagnosis			
			ECM	METER/M&A	BCM/SEC	IPDM E/R
ENGINE	NG	UNKWN	-	UNKWN	UNKWN	UNKWN ✓
BCM	NG	UNKWN	UNKWN	UNKWN	-	UNKWN ✓

WKIA3020E

Case 8

Check CAN communication circuit. Refer to [LAN-56, "CAN Communication Circuit Check"](#) .

SELECT SYSTEM screen	CAN DIAG SUPPORT MNTR					
	Initial diagnosis	Transmit diagnosis	Receive diagnosis			
			ECM	METER/M&A	BCM/SEC	IPDM E/R
ENGINE	NG	UNKWN ✓	-	UNKWN ✓	UNKWN ✓	UNKWN ✓
BCM	NG	UNKWN ✓	UNKWN ✓	UNKWN ✓	-	UNKWN ✓

WKIA3021E

Circuit Check Between Combination Meter and BCM

EKS003IM

1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check following terminals and connector for damage, bent or loose connection (meter-side, control module-side and harness-side).
 - Combination meter.
 - BCM.

OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

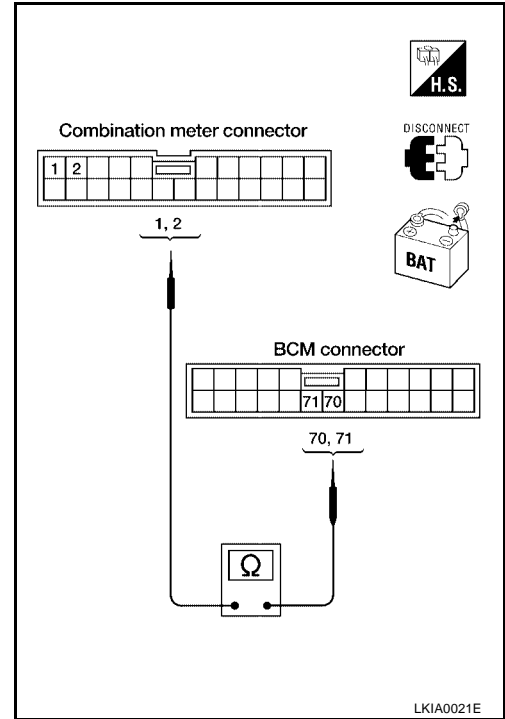
1. Disconnect combination meter connector and BCM connector.
2. Check continuity between combination meter harness connector M24 terminals 1 (L), 2 (Y) and BCM harness connector M18 terminals 70 (L), 71 (Y).

1 (L) – 70 (L) : Continuity should exist.

2 (Y) – 71 (Y) : Continuity should exist.

OK or NG

- OK >> Connect all the connectors and diagnose again. Refer to [LAN-48, "Work Flow"](#).
- NG >> Repair harness.



ECM Circuit Check

1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check following terminals and connector for damage, bent or loose connection (control module-side and harness-side).
 - ECM.
 - Harness connector F59.
 - Harness connector M71.

OK or NG

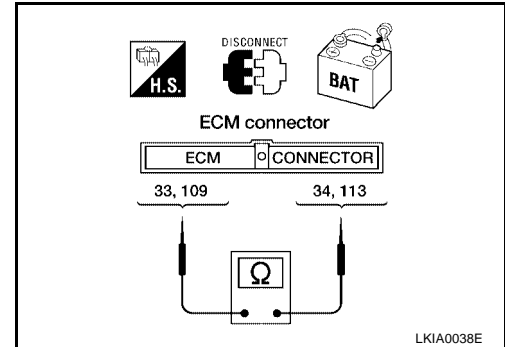
- OK >> GO TO 2.
- NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ECM connector.
2. Check the following.
 - Resistance between ECM harness connector F54 terminals 33 (L) and 34 (Y) (QR25DE models).
 - Resistance between ECM harness connector F54 terminals 109 (L) and 113 (Y) (VQ35DE models).

33 (L) – 34 (Y) (QR25DE models) : Approx. 108 – 132Ω

109 (L) – 113 (Y) (VQ35DE models) : Approx. 108 – 132Ω



OK or NG

- OK >> Replace ECM.
 NG >> Repair harness between harness connector M7 and ECM.

Combination Meter Circuit Check

EKS00310

1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check terminals and connector of combination meter for damage, bent or loose connection (meter-side and harness-side).

OK or NG

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

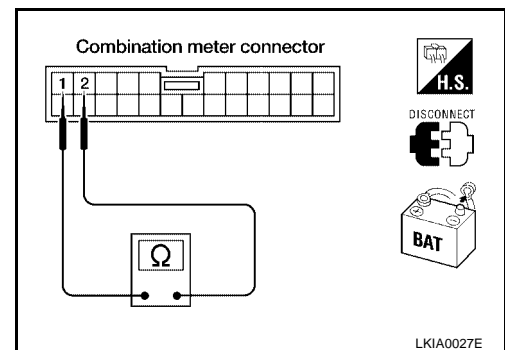
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect combination meter connector.
2. Check resistance between combination meter harness connector M24 terminals 1 (L) and 2 (Y).

1 (L) – 2 (Y) : Approx. 54 – 66Ω

OK or NG

- OK >> Replace combination meter. Refer to [DI-21, "Combination Meter"](#) .
 NG >> Repair harness between harness connector M71 and combination meter.



BCM Circuit Check

EKS0031P

1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check the terminals and connector of BCM for damage, bent or loose connection (control module-side and harness-side).

OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

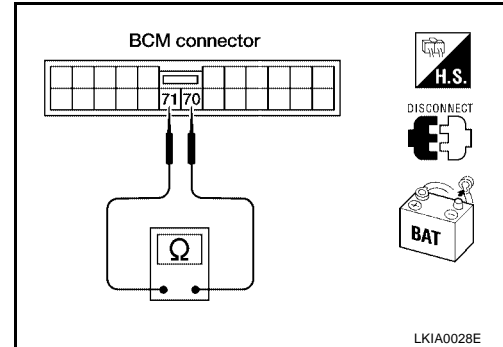
1. Disconnect BCM connector.
2. Check resistance between BCM harness connector M18 terminals 70 (L) and 71 (Y).

70 (L) – 71 (Y)

: Approx. 54 – 66Ω

OK or NG

- OK >> Replace BCM.
 NG >> Repair harness between harness connector M7 and BCM.



EKS0031Q

IPDM E/R Circuit Check

1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check following terminals and connector for damage, bend and loose connection (control module-side and harness-side).
 - IPDM E/R.
 - Harness connector E130.
 - Harness connector E27.
 - Harness connector E28.
 - Harness connector M7.

OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

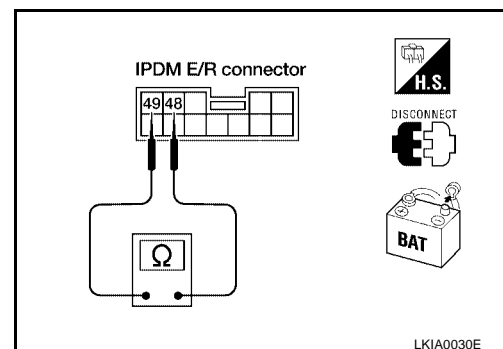
1. Disconnect IPDM E/R connector.
2. Check resistance between IPDM E/R harness connector E121 terminals 48 (L) and 49 (Y).

48 (L) – 49 (Y)

: Approx. 108 – 132Ω

OK or NG

- OK >> Replace IPDM E/R. Refer to [PG-24, "Removal and Installation of IPDM E/R"](#).
- NG >> Repair harness between data link connector and IPDM E/R.



CAN Communication Circuit Check**1. CHECK CONNECTOR**

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check following terminals and connector for damage, bent or loose connection (control module-side, meter-side and harness-side).
 - ECM.
 - Combination meter.
 - BCM.
 - IPDM E/R.
 - Between ECM and IPDM E/R.

OK or NG

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

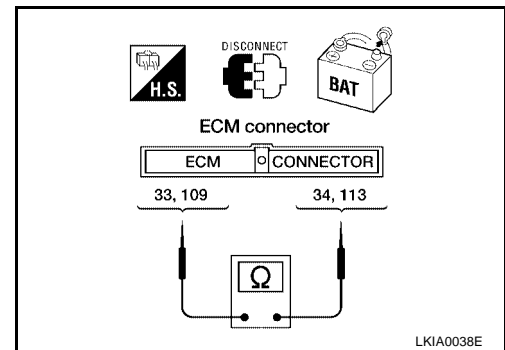
2. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect ECM connector and harness connector F59.
2. Check the following.
 - Continuity between ECM harness connector F54 terminals 33 (L) and 34 (Y) (QR25DE models)
 - Continuity between ECM harness connector F54 terminals 109 (L) and 113 (Y) (VQ35DE models).

- 33 (L) – 34 (Y)**
(QR25DE models) : Continuity should not exist.
- 109 (L) – 113 (Y)**
(VQ35DE models) : Continuity should not exist.

OK or NG

- OK >> GO TO 3.
 NG >> Repair harness between ECM and harness connector F59.



LKIA0038E

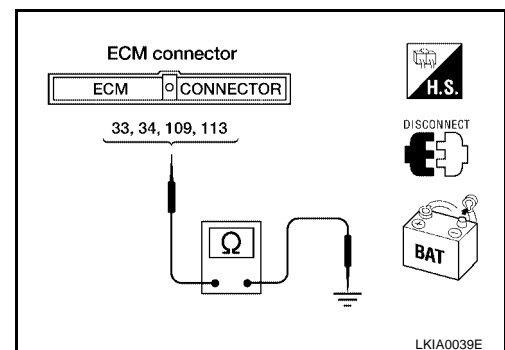
3. CHECK HARNESS FOR SHORT CIRCUIT

1. Check the following.
 - Continuity between ECM harness connector F54 terminals 33 (L), 34 (Y) and ground (QR25DE models).
 - Continuity between ECM harness connector F54 terminals 109 (L), 113 (Y) and ground (VQ35DE models).

- 33 (L) – ground**
(QR25DE models) : Continuity should not exist.
- 34 (Y) – ground**
(QR25DE models) : Continuity should not exist.
- 109 (L) – ground**
(VQ35DE models) : Continuity should not exist.
- 113 (Y) – ground**
(VQ35DE models) : Continuity should not exist.

OK or NG

- OK >> GO TO 4.
 NG >> Repair harness between ECM and harness connector F59.



LKIA0039E

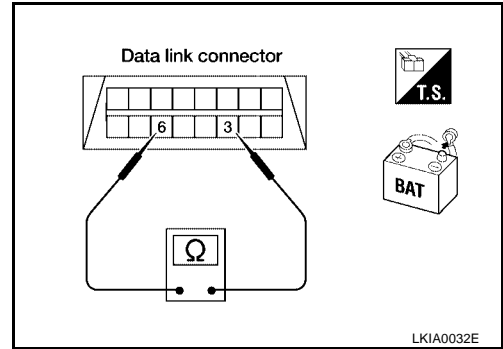
4. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect combination meter connector, BCM connector and harness connector M7.
2. Check continuity between data link connector M22 terminals 6 (L) and 3 (Y).

6 (L) – 3 (Y) : Continuity should not exist.

OK or NG

- OK >> GO TO 5.
 NG >> ● Repair harness between harness connector M71 and harness connector M7.
 ● Repair harness between harness connector M71 and combination meter.
 ● Repair harness between harness connector M71 and data link connector.
 ● Repair harness between harness connector M71 and BCM.



5. CHECK HARNESS FOR SHORT CIRCUIT

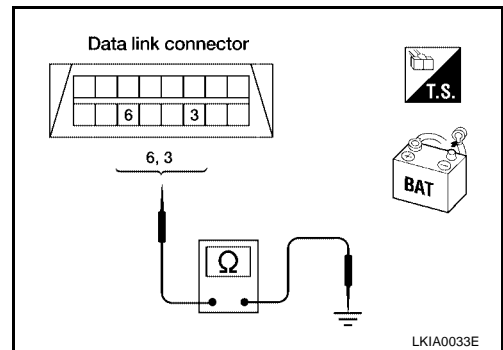
- Check continuity between data link connector M22 terminals 6 (L), 3 (Y) and ground.

6 (L) – ground : Continuity should not exist.

3 (Y) – ground : Continuity should not exist.

OK or NG

- OK >> GO TO 6.
 NG >> ● Repair harness between harness connector M71 and harness connector M7.
 ● Repair harness between harness connector M71 and combination meter.
 ● Repair harness between harness connector M71 and data link connector.
 ● Repair harness between harness connector M71 and BCM.



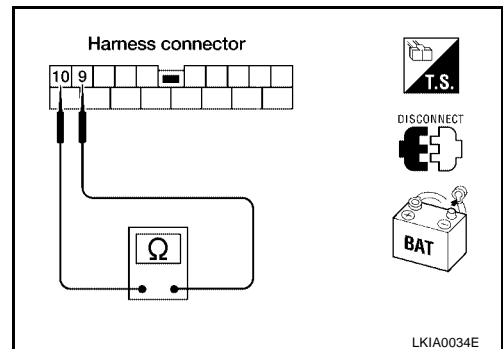
6. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect harness connector E27.
2. Check continuity between harness connector E28 terminals 10 (L) and 9 (Y).

10 (L) – 9 (Y) : Continuity should not exist.

OK or NG

- OK >> GO TO 7.
 NG >> Repair harness between harness connector E28 and harness connector E27.



7. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between harness connector E28 terminals 10 (L), 9 (Y) and ground.

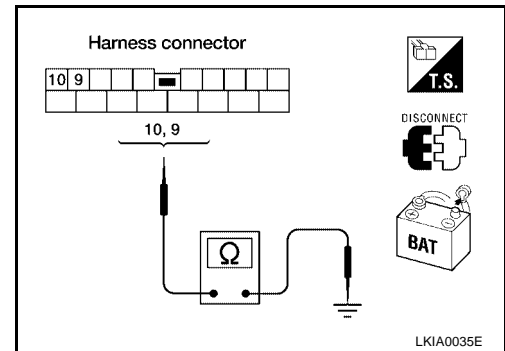
10 (L) – ground : Continuity should not exist.

9 (Y) – ground : Continuity should not exist.

OK or NG

OK >> GO TO 8.

NG >> Repair harness between harness connector E28 and harness connector E27.



8. CHECK HARNESS FOR SHORT CIRCUIT

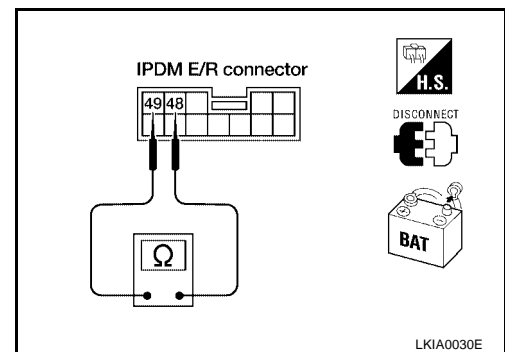
1. Disconnect IPDM E/R connector.
2. Check continuity between IPDM E/R harness connector E121 terminals 48 (L) and 49 (Y).

48 (L) – 49 (Y) : Continuity should not exist.

OK or NG

OK >> GO TO 9.

NG >> Repair harness between harness connector E130 and IPDM E/R.



9. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between IPDM E/R harness connector E121 terminals 48 (L), 49 (Y) and ground.

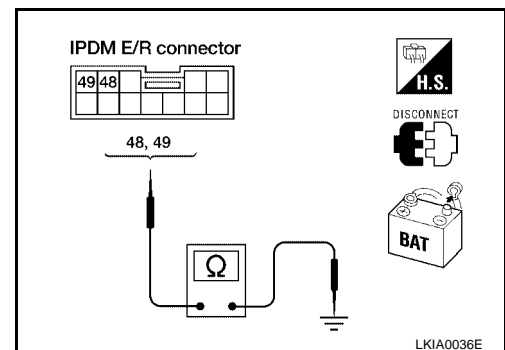
48 (L) – ground : Continuity should not exist.

49 (Y) – ground : Continuity should not exist.

OK or NG

OK >> GO TO 10.

NG >> Repair harness between harness connector E130 and IPDM E/R.



10. ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION

Perform components inspection. Refer to [LAN-59, "ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION"](#).

OK or NG

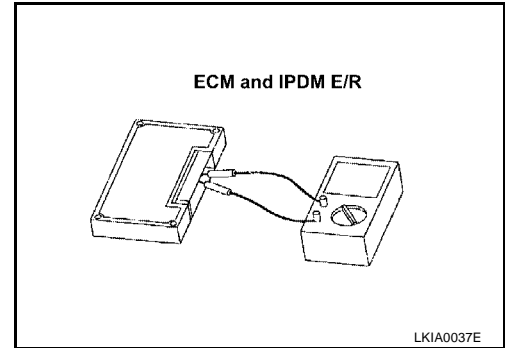
OK >> Connect all the connectors and diagnose again. Refer to [LAN-48, "Work Flow"](#).

NG >> Replace ECM and/or IPDM E/R. Refer to [PG-24, "Removal and Installation of IPDM E/R"](#).

EKS003IS

Component Inspection ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION

- Remove ECM and IPDM E/R from vehicle. Refer to [PG-24, "Removal and Installation of IPDM E/R"](#).
- Check resistance between ECM terminals 33 and 34 (QR25DE models).
- Check resistance between ECM terminals 109 and 113 (VQ35DE models).
- Check resistance between IPDM E/R terminals 48 and 49.



Unit	Terminal	Resistance value (Ω) (Approx.)
ECM (QR25DE models)	33 - 34	108 - 132
ECM (VQ35DE models)	109 - 113	
IPDM E/R	48 - 49	

A
B
C
D
E
F
G
H
I
J
L
M

LAN

