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PRECAUTIONS

PRECAUTIONS

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

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:

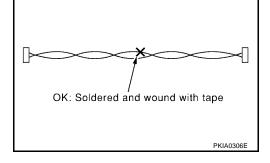
- To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision which would result in air bag inflation, all maintenance must be performed by an authorized NISSAN/INFINITI dealer.
- Improper maintenance, including incorrect removal and installation 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.

Precautions For Trouble Diagnosis CAN SYSTEM

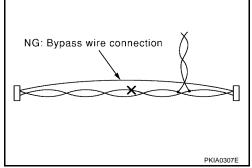
- Do not apply voltage of 7.0V or higher to the measurement terminals.
- Use the tester with its open terminal voltage being 7.0V or less.
- Be sure to turn ignition switch off and disconnect negative battery terminal before checking the circuit.

Precautions For Harness Repair 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.)



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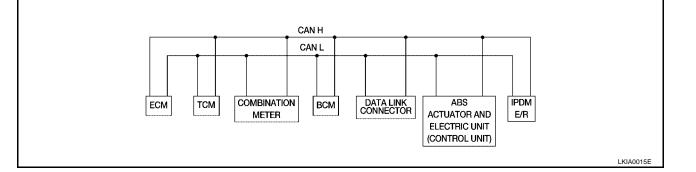
CAN COMMUNICATION

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: Trans	smit R: Receive	ə H
Signals	ECM	ТСМ	COMBINA- TION METER	BCM	ABS/TCS control unit	IPDM E/R	
Engine speed signal	Т		R		R		- 1
Engine coolant temperature signal	Т		R				-
Accelerator pedal position signal	Т						J
Fuel consumption monitor signal	Т		R				-
A/T warning lamp signal		Т	R				
A/T position indicator signal	R	Т	R	R ^(R range only)	R		LA
ABS operation signal	R				Т		
TCS operation signal	R	R			Т		L
Air conditioner switch signal	R			Т			_
Air conditioner compressor signal	R					Т	
A/C compressor request signal	Т					R	N
Cooling fan motor operation signal	R					Т	_
Cooling fan speed request signal	Т					R	=
Position lights request			R	Т		R	-
Position lights status				R		Т	_
Low beam request				Т		R	_
Low beam status	R			R		Т	-
High beam request			R	Т		R	-
High beam status	R			R		Т	-
Front fog lights request				Т		R	-
Front fog light status				R		Т	-
OD cancel switch signal		R	Т			R	-
Brake switch signal		R	Т				-

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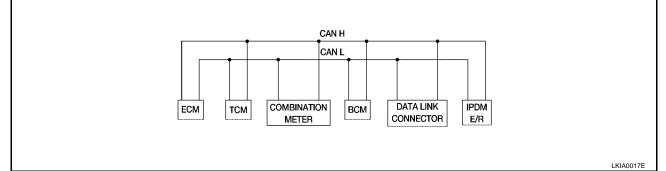
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Signals	ECM	ТСМ	COMBINA- TION METER	BCM	ABS/TCS control unit	IPDM E/R
Vahiala apaad aignal	R		Т			
Vehicle speed signal	R		Т	R		
Oil pressure switch			R			Т
Sleep request1			R	Т		
Sleep request2				Т		R
N range switch signal		R	Т			
P range switch signal		R	Т			
Seat belt buckle switch signal			Т	R		
Door switch signal			R	Т		R
Tail lamp request			R	Т		R
Turn indicator signal			R	Т		
Buzzer output signal			R	Т		
Trunk switch signal			R	Т		
ASCD main switch signal	Т		R			
ASCD cruise signal	Т		R			
Wiper operation				R		Т
Wiper stop position signal				R		Т
Rear window defogger switch signal				Т		R
Rear window defogger control sig- nal	R			R		Т

FOR A/T MODELS

System diagram



Input/output signal chart

				T: Tr	ansmit R: Receive
Signals	ECM	ТСМ	COMBINATION METER	BCM	IPDM E/R
Engine speed signal	т		R		
Engine coolant temperature signal	т		R		
Accelerator pedal position signal	т				R
Fuel consumption monitor signal	т		R		
A/T warning lamp signal		Т	R		
A/T position indicator signal	R	т	R	R ^(R range only)	
Air conditioner switch signal	R			Т	
Air conditioner compressor signal	R				Т
A/C compressor request signal	т				R

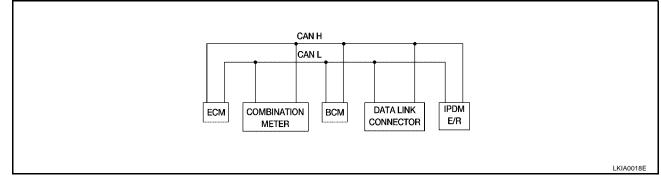
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			COMBINATION			•
Signals	ECM	TCM	METER	BCM	IPDM E/R	А
Blower fan switch signal	R ^(QR25DE)			Т		-
Cooling fan motor operation signal	R			Т		B
Cooling fan speed request signal	Т				R	
Position lights request			R	Т	R	-
Position lights status				R	Т	С
Low beam request				Т	R	-
Low beam status	R			R	Т	
High beam request			R	Т	R	- D
High beam status	R			R	Т	-
Front fog lights request				Т	R	E
Front fog light status				R	Т	-
OD cancel switch signal		R	Т		R	_
Brake switch signal		R	Т			
Vahiala apaged signal	R		Т			-
Vehicle speed signal	R		Т	R		G
Oil pressure switch			R		Т	-
Sleep request1			R	Т		-
Sleep request2				Т	R	H
N range switch signal		R	Т			-
P range switch signal		R	Т			-
Seat belt buckle switch signal			Т	R		
Door switch signal			R	Т	R	-
Tail lamp request			R	Т	R	J
Turn indicator signal			R	Т		_
Buzzer output signal			R	Т		LA
Trunk switch signal			R	Т		
ASCD main switch signal	т		R			-
ASCD cruise signal	Т		R			L
Wiper operation				R	Т	-
Wiper stop position signal				R	Т	в.
Rear window defogger switch signal				Т	R	N
Rear window defogger control signal	R			R	Т	-

FOR M/T MODELS

System diagram



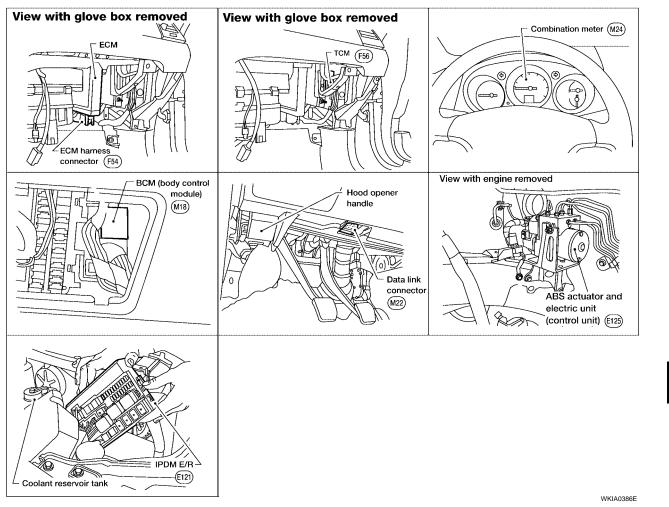
Input/output signal chart

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

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.

Component Parts and Harness Connector Location



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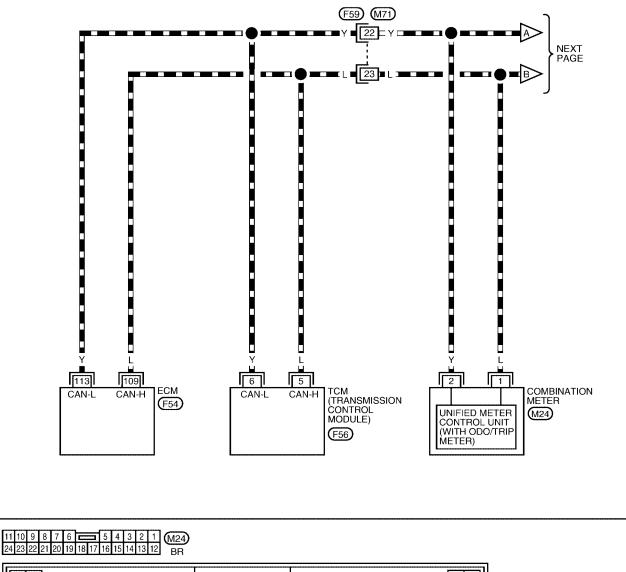
Wiring Diagram — CAN —

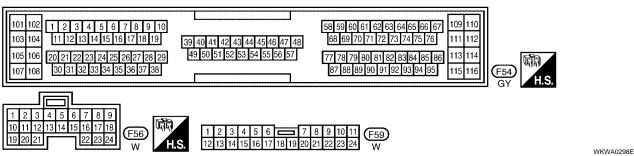
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DATA LINE



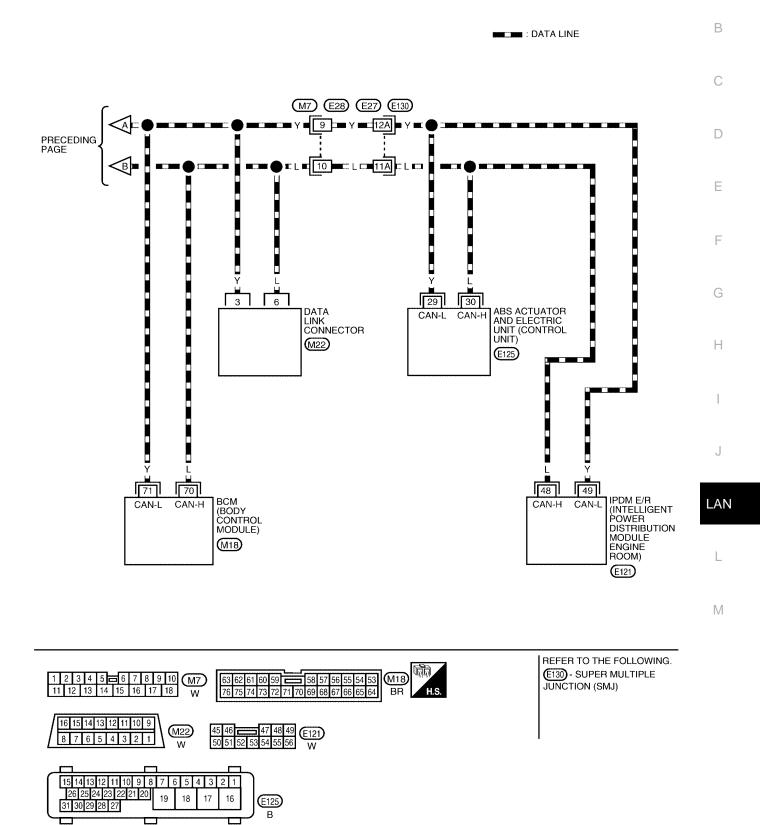


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Work Flow

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

(Example)	SELECT DIAG MODE	SELF-DIAG RESULTS
	WORK SUPPORT	DTC RESULTS TIME
	SELF-DIAG RESULTS	CAN COMM CIRCUIT (U1000)
	DATA MONITOR	
	DATA MONITOR (SPEC)	
	CAN DIAG SUPPORT MNTR	
	ACTIVE TEST	
		F.F.DATA
	Scroll Down	ERASE PRINT
	BACK LIGHT COPY	MODE BACK LIGHT COPY PKIA8260E

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

WORK SUPPORT PRSNT SELF-DIAG RESULTS INITIAL DIAG DATA MONITOR OK DATA MONITOR OK DATA MONITOR (SPEC) INITIAL DIAG CAN DIAG SUPPORT MNTR INITIAL DIAG ACTIVE TEST INITIAL DIAG Scroll Down PRINT	(Example)	SELECT DIAG MODE	CAN DIAG SUF	
SELF-DIAG RESULTS INITIAL DIAG OK DATA MONITOR TRANSMIT DIAG OK DATA MONITOR (SPEC) INITIAL DIAG OK CAN DIAG SUPPORT MNTR INITIAL DIAG OK ACTIVE TEST IDOWN IDOWN Scroll Down PRINT Scroll	()		ENGI	
SELF-DIAG RESULTS TRANSMIT DIAG OK DATA MONITOR OK OK DATA MONITOR (SPEC) VDC/TCS/ABS OK CAN DIAG SUPPORT MNTR ICC UNKWN ACTIVE TEST IPDM E/R OK Scroll Down PRINT Scroll Down				
DATA MONITOR TCM OK DATA MONITOR (SPEC) VDC/TCS/ABS OK CAN DIAG SUPPORT MNTR Image: Comparison of the second		SELF-DIAG RESULTS		
DATA MONITOR (SPEC) VDC/TCS/ABS OK CAN DIAG SUPPORT MNTR ICC UNKWN ACTIVE TEST ICC OK Scroll Down PRINT Scroll Down		DATA MONITOR		
CAN DIAG SUPPORT MNTR METER/M&A OK ACTIVE TEST ICC UNKWN BCM/SEC OK IPDM E/R OK AWD/4WD/e4WD UNKWN Scroll Down PRINT				
ACTIVE TEST BCM/SEC OK IPDM E/R OK AWD/4WD/e4WD UNKWN Scroll Down PRINT Scroll Down		DATA MONITOR (SPEC)	METER/M&A	ок
ACTIVE TEST IPDM E/R OK AWD/4WD/e4WD UNKWN Scroll Down PRINT Scroll Down		CAN DIAG SUPPORT MNTR	ICC	UNKWN
AWD/4WD/e4WD UNKWN Scroll Down PRINT Scroll Down		ACTIVE TEST		
Scroll Down PRINT Scroll Down		ACTIVE TEST		
Scroir Down			AWD/4WD/e4WD	
BACK LIGHT COPY		Scroll Down	PRINT	
		BACK LIGHT COPY	MODE BACK	LIGHT COPY

- Attach the printed sheet of "SELF-DIAG RESULTS" and "CAN DIAG SUPPORT MNTR" onto the check sheet. Refer to <u>LAN-11, "CHECK SHEET"</u>.
- 4. 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 <u>LAN-11</u>, "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.

5. According to the check sheet results (example), start inspection. Refer to <u>LAN-12, "CHECK SHEET</u> <u>RESULTS (EXAMPLE)"</u>.

CHECK SHEET

SELECT SYSTEM screen uninative diagnosis TCM MERV M&A BCM/SEC VDC/TCS/ ABS IPDM E/R NGINE NG UNKWN - UNKWN UNKWN UNKWN UNKWN UNKWN UNKWN - UNKWN UNKWN -					CAN DIAG S	CAN DIAG SUPPORT MNTR Receive diagnosis					
NGINE NG UNKWN UNKWN UNKWN UNKWN UNKWN /T NG UNKWN UNKWN - UNKWN - CM NG UNKWN UNKWN - UNKWN - BS NG UNKWN UNKWN - - - OMS: NG UNKWN UNKWN - - -	SELECT SYSTEM screen			ECM	тсм	METER/			IPDM E/R		
CM NG UNKWN . UNKWN . . UNKWN BS NG UNKWN UNKWN UNKWN OMS:	ENGINE	NG	UNKWN	-	UNKWN		UNKWN		UNKWN		
Attach copy of Attach copy of Attach copy of Attach copy of BCM SELF-DIAG Attach copy of ABS SELF-DIAG	A/T	NG	UNKWN	UNKWN	-		-	UNKWN	-		
oms:	всм	NG	UNKWN	UNKWN	-	UNKWN	-	-	UNKWN		
Attach copy of Attach	ABS	NG	UNKWN	UNKWN	UNKWN	-	-	-	-		
	Attach copy of GINE SELF-DIAG RESULTS	A/T	SELF-DIAG	i	BC	M SELF-DIA		ABS S	SELF-DIAG		

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CHECK SHEET RESULTS (EXAMPLE)

Case 1

Replace ECM.

ENGINE VINKWN UNKWN UNKWN UNKWN UNKWN A/T NG UNKWN UNKWN UNKWN UNKWN			CAN DIAG SUPPORT MNTR								
diagnosis diagnosis ECM TCM METER/ M&A BCM/SEC VDC/TCS/ ABS IPDM ENGINE VV UNKWN UNKW	SELECT SYSTEM screen	Initial	Tranemit			Receive	diagnosis				
V Image: Constraint of the second secon	SELECT STSTEM SCIENT			ECM	тсм		BCM/SEC		IPDM E/R		
	ENGINE	v	UNKWN	-	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN		
BCM NG UNKWN UNKWN - UNKWN UNK	А/Т	NG	UNKWN	UNKWN	-	UNKWN	-	UNKWN	-		
	всм	NG	UNKWN	UNKWN	-	UNKWN	-	-	UNKWN		
ABS NG UNKWN UNKWN	ABS	NG	UNKWN	UNKWN	UNKWN	-	-	-	-		

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

Case 2

Replace TCM.

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

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			1	UAN DIAG	SUPPORT MNTR	diagnosis		
SELECT SYSTEM screen	Initial diagnosis	Transmit diagnosis	ECM	тсм	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	NG	UNKIN	-	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	NG	UNKWN	UNKWN	-	UNKAVN	-	UNKWN	-
всм	NG	UNKWN	UNKWN	-	UNKWN	-	-	UNKWN
ABS	NG	UNKWN	UNKWN	UNKWN	-	-	-	-

Case 3

Replace BCM.

				CAN DIAG	SUPPORT MNTR						
SELECT SYSTEM screen	Initial	Transmit		Receive diagnosis							
SELECT STSTEM SCIENT	diagnosis	diagnosis	ECM	тсм	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/F			
ENGINE	NG	UNKWN	-	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN			
A/T	NG	UNKWN	UNKWN	-	UNKWN	-	UNKWN	-			
ВСМ	*	UNKWN	UNKWN	-	UNKWN	-	-	UNKWN			
ABS	NG	UNKWN	UNKWN	UNKWN	-	-	-	-			

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WKIA2979E

				CAN DIAG	SUPPORT MNTR			
SELECT SYSTEM screen	Initial	Transmit			Receive	diagnosis		
SELECT STSTEM SCIENT	diagnosis	diagnosis	ECM	тсм	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	-	UNKAVN	-	-	UNKIN
ABS	NG	UNKWN	UNKWN	UNKWN	-	-	-	-

Case 4

Replace ABS actuator and electric unit (control unit). Refer to BRC-43, "Removal and Installation" .

				CAN DIAG	SUPPORT MNTR			
SELECT SYSTEM screen	Initial	Transmit			Receive	diagnosis		
SELECT STSTEM Screen	Initial diagnosis		ECM	тсм	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/F
ENGINE	NG	UNKWN	-	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	NG	UNKWN	UNKWN	-	UNKWN	-	UNKAVN	-
BCM	NG	UNKWN	UNKWN	-	UNKWN	-	-	UNKWN
ABS	**	UNKWN	UNKWN	UNKWN	-	-	-	-

CAN DIAG SUPPORT MNTR Receive diagnosis SELECT SYSTEM screen Initial diagnosis Transmit diagnosis METER/ M&A VDC/TCS/ ABS IPDM E/R ECM TCM BCM/SEC ENGINE UNKWN NG UNKWN -UNKWN UNKWN UNKWN UNKWN A/T NG UNKWN UNKWN -UNKWN -UNKWN . всм NG UNKWN UNKWN -UNKWN --UNKWN ABS NG UNKWN UNKIN UNK ----WKIA2980E

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Case 5

Check harness between TCM and combination meter. Refer to <u>LAN-17, "Circuit Check Between TCM and</u> <u>Combination Meter"</u>.

				CAN DIAG S	SUPPORT MNTR			
SELECT SYSTEM screen	Initial diagnosis	Transmit diagnosis	ECM	тсм	METER/ M&A	diagnosis BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	NG	UNKWN	-	UNKWN	UNKWN	UNKOVN	UNKWN	UNKIVN
A/T	NG	UNKWN	UNKWN	-	UNKOVN	-	UNKWN	-
всм	NG	UNKWN	UNKVN	-	UNKWN	-	-	UNKWN
ABS	NG	UNKWN	UNKIN	UNKOWN	-	-	-	-

Case 6

Check harness between combination meter and BCM. Refer to <u>LAN-18, "Circuit Check Between Combination</u> <u>Meter and BCM"</u>.

				CAN DIAG S	SUPPORT MNTR			
SELECT SYSTEM screen	Initial	Transmit			Receive	diagnosis		
SELECT STOTEM SCIENT	diagnosis	diagnosis	ECM	тсм	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	NG	UNKWN	-	UNKWN	UNKWN	UNKIVN	UNKWN	UNKAVN
A/T	NG	UNKWN	UNKWN	-	UNKWN	-	UNKWN	-
BCM	NG	UNKWN	UNK	-	UNKVN	-	-	UNKWN
ABS	NG	UNKWN	UNKOVN	UNKNIN	-	-	-	-

Case 7

Check harness between BCM and ABS actuator and electric unit (control unit). Refer to <u>LAN-19</u>, "Circuit <u>Check Between BCM and ABS Actuator and Electric Unit (Control Unit)</u>".

				CAN DIAG S	SUPPORT MNTR			
SELECT SYSTEM screen	Initial	Transmit			Receive	diagnosis		
SELECT STSTEM SCIENT	diagnosis	diagnosis	ECM	тсм	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	-	UNKOWN	-
всм	NG	UNKWN	UNKWN	-	UNKWN	-	-	UNK
ABS	NG	UNKWN	UNKIN	UNKWN	-	-	-	-

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Case 8

Check ECM circuit. Refer to LAN-21, "ECM Circuit Check" .

				UNIVERSIT	SUPPORT MNTR	diagnosis		
SELECT SYSTEM screen	Initial diagnosis	Transmit diagnosis	ECM	тсм	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	NG	UNKVN	-	UNKIN	UNKOVN	UNKOWN	UNKAVN	UNKAVN
A/T	NG	UNKWN	UNKVN	-	UNKWN	-	UNKWN	-
BCM	NG	UNKWN	UNKVN	-	UNKWN	-	-	UNKWN
ABS	NG	UNKWN	UNKIVN	UNKWN	-	-	-	-

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Case 9

Check TCM circuit. Refer to LAN-21, "TCM Circuit Check" .

				CAN DIAG :	SUPPORT MNTR			
SELECT SYSTEM screen	Initial	Transmit			Receive	diagnosis		
SELECT STOTEM SCREEN	diagnosis	diagnosis	ECM	тсм	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R
ENGINE	NG	UNKWN	-	UNKIN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	NG	UNKVN	UNK	-	UNKWN	-	UNKWN	-
всм	NG	UNKWN	UNKWN	-	UNKWN	-	-	UNKWN
ABS	NG	UNKWN	UNKWN	UNKWN	-	-	-	-

Case 10

Check combination meter circuit. Refer to LAN-22, "Combination Meter Circuit Check" .

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

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WKIA2989E

WKIA2987E

Case 11

Check BCM circuit. Refer to LAN-22, "BCM Circuit Check" .

				CAN DIAG	SUPPORT MNTR			
SELECT SYSTEM screen	Initial	Treasurit			Receive	diagnosis		
SELECT STSTEM Screen		diagnosis	ECM	тсм	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/F
ENGINE	NG	UNKWN	-	UNKWN	UNKWN	UNKOWN	UNKWN	UNKWN
A/T	NG	UNKWN	UNKWN	-	UNKWN	-	UNKWN	-
BCM	NG	UNKVN	UNK	-	UNKIN	-	-	UNKWN
ABS	NG	UNKWN	UNKWN	UNKWN	-	-	-	-

Case 12

Check ABS actuator and electric unit (control unit) circuit. Refer to <u>LAN-23</u>, "ABS Actuator and Electric Unit (<u>Control Unit</u>) <u>Circuit Check</u>".

	CAN DIAG SUPPORT MNTR									
SELECT SYSTEM screen	Initial	Transmit			Receive	diagnosis				
	diagnosis	diagnosis	ECM	тсм	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	-	UNKAVN	-		
всм	NG	UNKWN	UNKWN	-	UNKWN	-	-	UNKWN		
ABS	NG	UNKVN	UNKWN	UNKWN	-	-	-	-		

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Case 13

Check IPDM E/R circuit. Refer to LAN-23, "IPDM E/R Circuit Check" .

				CAN DIAG S	SUPPORT MNTR			
SELECT SYSTEM screen	Initial	Transmit				diagnosis		
	diagnosis	diagnosis	ECM TCM METER/ BCM,	BCM/SEC	VDC/TCS/ ABS	IPDM E/R		
ENGINE	NG	UNKWN	-	UNKWN	UNKWN	UNKWN	UNKWN	UNKAVN
A/T	NG	UNKWN	UNKWN	-	UNKWN	-	UNKWN	-
ВСМ	NG	UNKWN	UNKWN	-	UNKWN	-	-	UNKIVN
ABS	NG	UNKWN	UNKWN	UNKWN	-	-	-	-

Case 14

Check CAN communication circuit. Refer to LAN-24, "CAN Communication Circuit Check" .

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

WKIA2992E

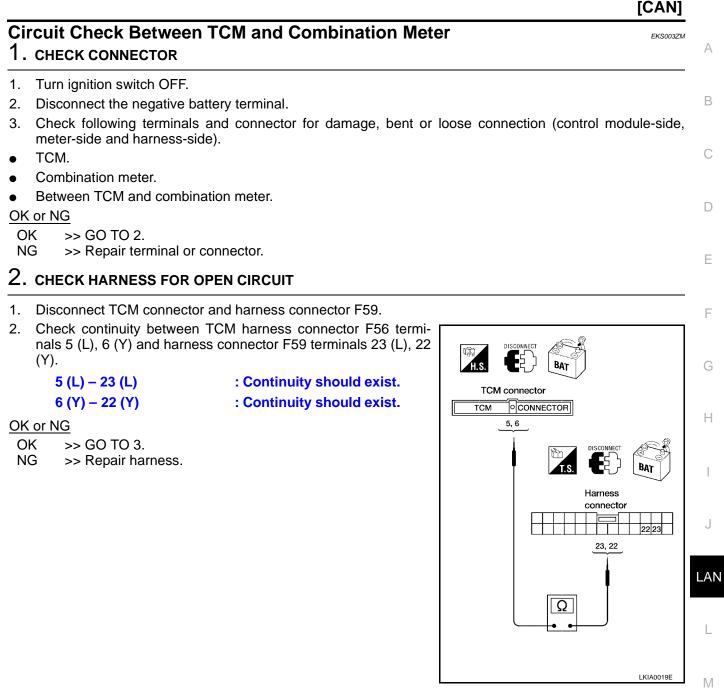
Case 15

Check IPDM E/R ignition relay circuit. Refer to LAN-27, "IPDM E/R Ignition Relay Circuit Check" .

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

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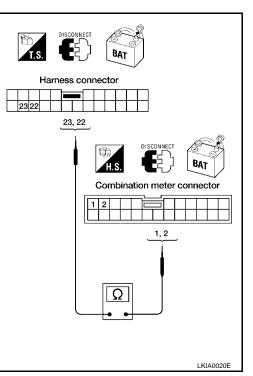
		CAN DIAG SUPPORT MNTR								
SELECT SYSTEM screen	Initial	Transmit Receive diagnosis								
SELECT STOTEM SCIENT	diagnosis	diagnosis	ECM	тсм	METER/ M&A	BCM/SEC	VDC/TCS/ ABS	IPDM E/R		
ENGINE	NG	UNKWN	-	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN		
A/T	NG	UNKWN	UNKWN	-	UNKAVN	-	UNKWN	-		
BCM	NG	UNKWN	UNKWN	-	UNKWN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



- 1. Disconnect combination meter connector.
- 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)
 - 22 (Y) 2 (Y)
- : Continuity should exist.
- : Continuity should exist.

OK or NG

- OK >> Connect all the connectors and diagnose again. Refer to <u>LAN-10, "Work Flow"</u>.
- NG >> Repair harness.



Circuit Check Between Combination Meter and BCM

EKS003ZN

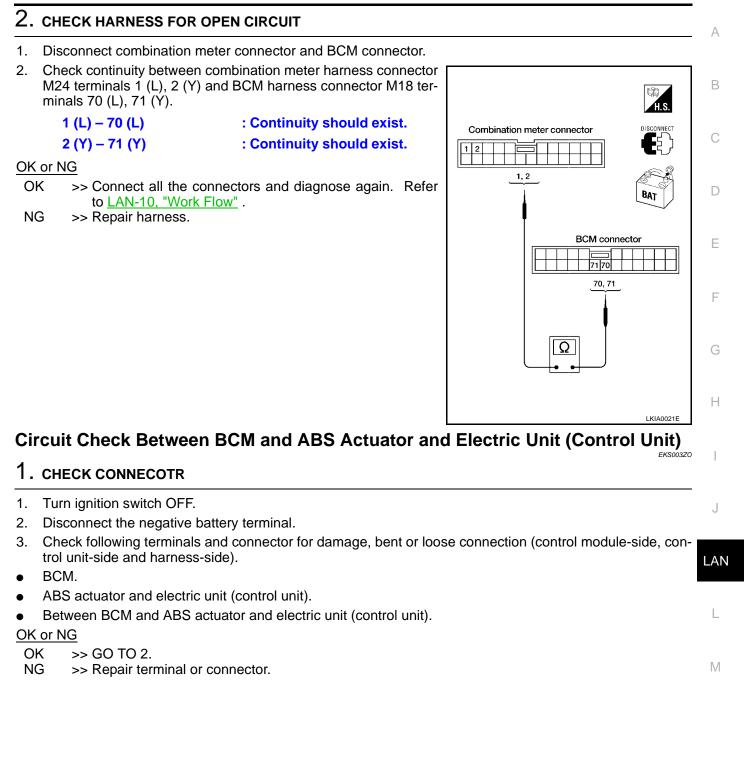
[CAN]

- 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.

[CAN]



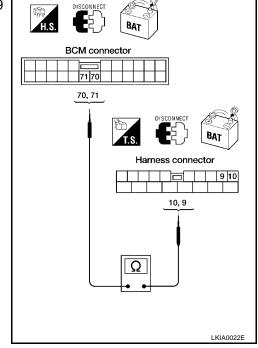
- 1. Disconnect BCM connector and harness connector M7.
- 2. Check continuity between BCM harness connector M18 terminals 70 (L), 71 (Y) and harness connector M7 terminals 10 (L), 9 (Y).
 - 70 (L) 10 (L)
 - 71 (Y) 9 (Y)

: Continuity should exist.

: 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) 9 (Y) – 12A (Y)

: Continuity should exist.

: Continuity should exist.

OK or NG

OK >> GO TO 4.

NG >> Repair harness.

Harness connector
SMJ harness connector
SMJ • CONNECTOR
11A, 12A
LKIA0023E

- 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)
 - 12A(Y) 29(Y)
- : Continuity should exist.
- : Continuity should exist.
- OK or NG
- OK >> Connect all the connectors and diagnose again. Refer to LAN-10, "Work Flow" .
- NG >> Repair harness.

ECM Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- Disconnect the negative battery terminal. 2.
- Check the terminals and connector of ECM for damage, bent or loose connection (control module-side 3. 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 – 132 Ω

OK or NG

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

TCM Circuit Check

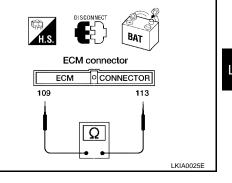
1. CHECK CONNECTOR

- 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,

SMJ harness connector

11A, 12A

SMJ CONNECTOR

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ABS actuator and

connector

electric unit (control unit)

C/UNIT O CONNECTOR

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

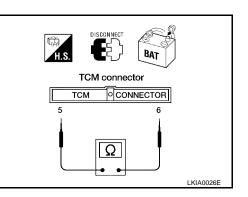
5 (L) – 6 (Y)

: Approx. 54 – 66Ω

OK or NG

OK >> Replace TCM.

NG >> Repair harness between harness connector F59 and TCM.



Combination Meter Circuit Check

1. CHECK CONNECTOR

EKS003ZR

[CAN]

- 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.

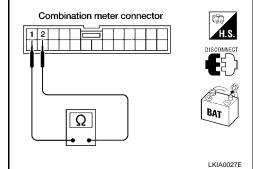
2. CHECK HARNESS FOR OPEN CIRCUIT

- 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 – 66**Ω

OK or NG

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



EKS003ZS

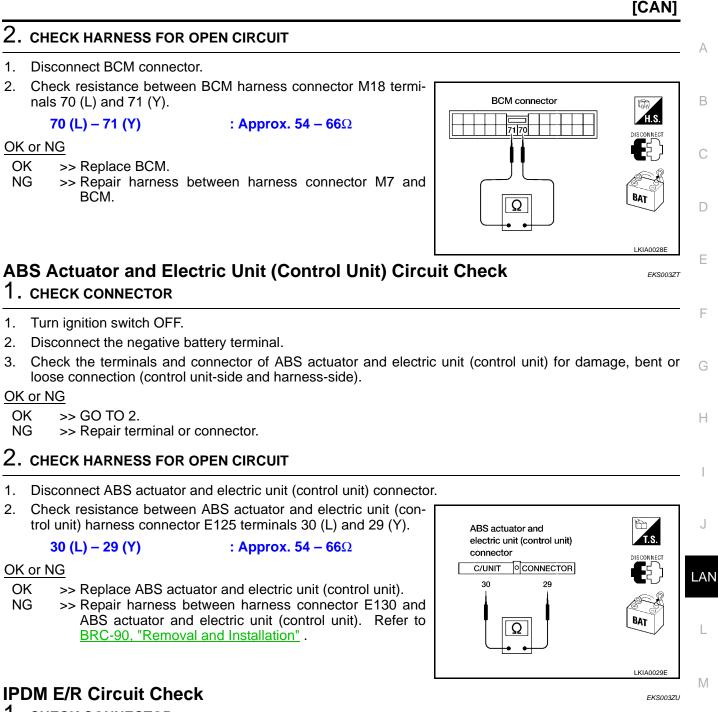
BCM Circuit Check

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.



1. CHECK CONNECTOR

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

OK or NG

OK >> GO TO 2.

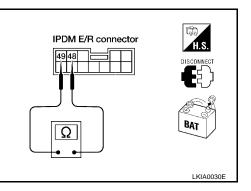
NG >> Repair terminal or connector.

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

: Approx. 108 – 132Ω

OK or NG

- OK >> Replace IPDM E/R. Refer to <u>PG-24</u>, "<u>Removal and</u> <u>Installation of IPDM E/R</u>".
- NG >> Repair harness between harness connector E130 and IPDM E/R.



CAN Communication Circuit Check

1. CHECK CONNECTOR

EKS003ZV

[CAN]

- 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.

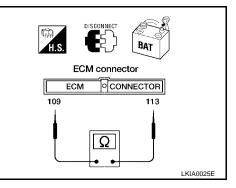
2. CHECK HARNESS FOR SHORT CIRCUIT

- 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) a	ind ground	d.				

- 109 (L) ground
- 113 (Y) ground

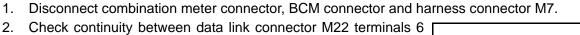
: Continuity should not exist.

: 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



(L) and 3 (Y).

6 (L) – 3 (Y)

: Continuity should not exist.

OK or NG

NG

OK >> GO TO 5.

- 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

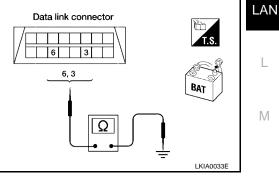
Check continuity between data link connector M22 terminals 6 (L), 3 (Y) and ground.

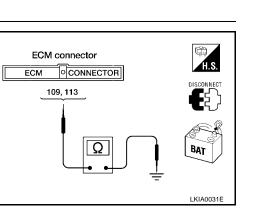
- 6 (L) ground
- 3 (Y) ground
- : Continuity should not exist.
- : Continuity should not exist.

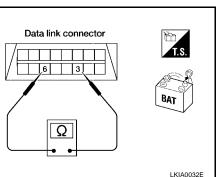
OK or NG

NG

- OK >> GO TO 6.
 - >> 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.







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LAN-25

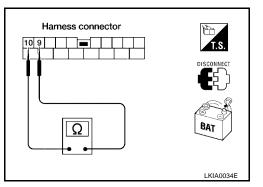
- Disconnect harness connector E27. 1.
- 2. Check continuity between harness connector E28 terminals 10 (L) and 9 (Y).

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

OK or NG

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

Harness connector 10 9 10, 9 BAT Ω LKIA0035E

IPDM E/R connector

4948

Ω

8. CHECK HARNESS FOR SHORT CIRCUIT

- Disconnect ABS actuator and electric unit (control unit) connector and IPDM E/R connector. 1.
- Check continuity between IPDM E/R harness connector E121 2. 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.

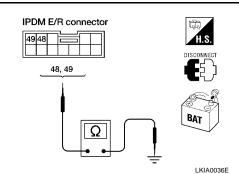
- 49 (Y) ground

- : 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.





BAT

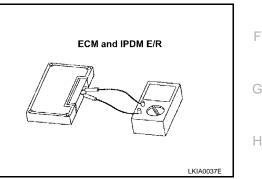
LKIA0030E

[CAN]

10. ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION А Perform components inspection. Refer to LAN-27, "ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION" OK or NG В 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 EKS003ZW 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" . D Ignition Power Supply Circuit. Refer to PG-10, "IGNITION POWER SUPPLY - IGNITION SW. IN ON". Component Inspection EKS003ZX Е ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION

- Remove ECM and IPDM E/R from vehicle. Refer to <u>PG-24</u>, <u>"Removal and Installation of IPDM E/R"</u>.
- 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	108 - 132		



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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.

Component Parts and Harness Connector Location

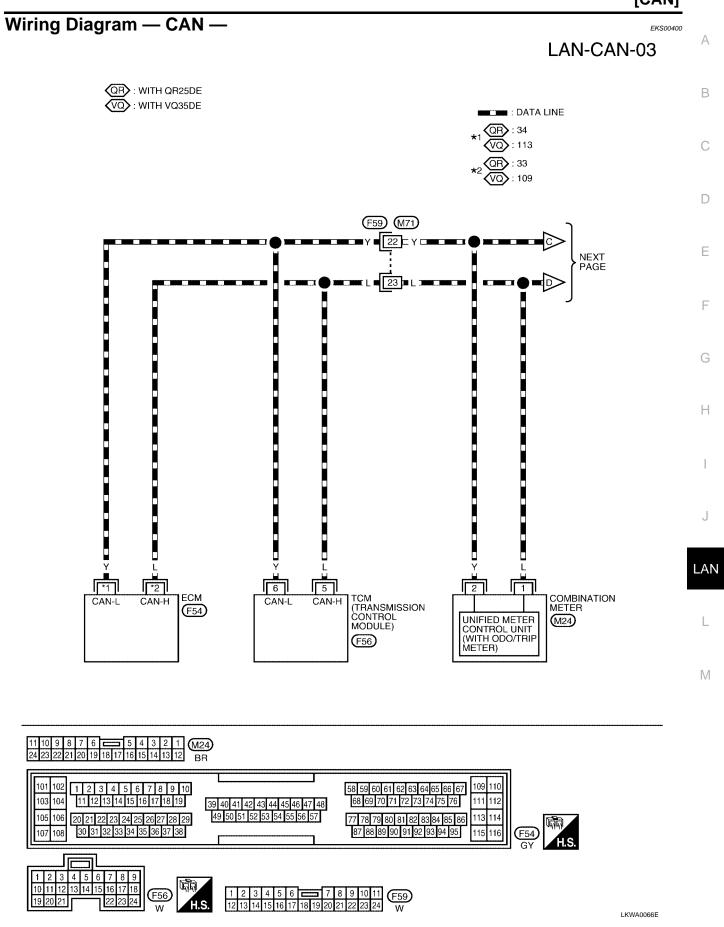
View with glove box removed View with glove box removed Combination meter (M24) ECM тсм F56 \mathbb{T} ECM harness connector (F54) BCM (body (M18) control module) Hood opener handle Data link connector (M22) IPDM E/R Ø (E121) Coolant reservoir tank

WKIA0387E

EKS003ZY

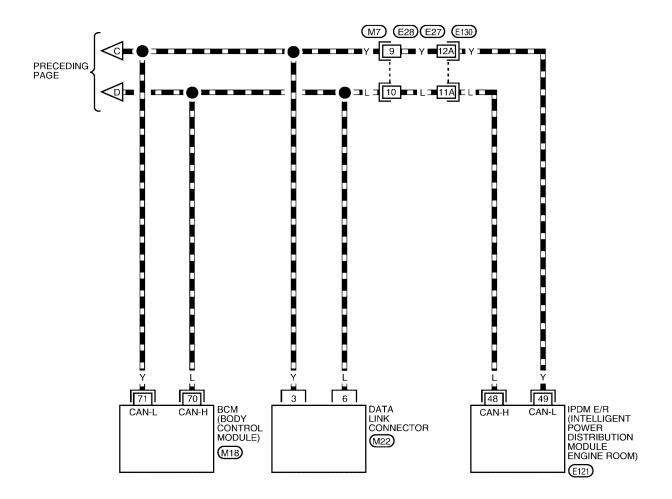
EKS003ZZ

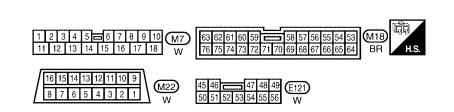
[CAN]



LAN-CAN-04

DATA LINE





REFER TO THE FOLLOWING. (E130) - SUPER MULTIPLE JUNCTION (SMJ)

LKWA0067E

Work Flow

[CAN]

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

(Example)	SELECT DIAG MODE	SELF-DIAG RESULTS
	WORK SUPPORT	DTC RESULTS TIME
	SELF-DIAG RESULTS	CAN COMM CIRCUIT (U1000) 0
	DATA MONITOR	
	DATA MONITOR (SPEC)	
	CAN DIAG SUPPORT MNTR	
	ACTIVE TEST	
		F.F.DATA
	Scroll Down	ERASE PRINT
	BACK LIGHT COPY	MODE BACK LIGHT COPY PKIA8260E

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

(Example)	SELECT DIAG MODE		CAN DIAG SU	IPPORT MNTR	
(Example)			ENG	GINE	
	WORK SUPPORT			PRSNT	
	SELF-DIAG RESULTS		INITIAL DIAG	ОК	
			TRANSMIT DIAG	i OK	
	DATA MONITOR		тсм	ОК	
	DATA MONITOR (SPEC)	•	VDC/TCS/ABS	OK	
	DAIA MONITOR (SPEC)		METER/M&A	OK	
	CAN DIAG SUPPORT MNTR		ICC	UNKWN	
			BCM/SEC	OK	
	ACTIVE TEST		IPDM E/R	OK	
			AWD/4WD/e4WD	UNKWN	
	Scroll Down		PRINT	Scroll Down	
	BACK LIGHT COPY		MODE BACK	LIGHT COPY	
					PKIA8343E

- Attach the printed sheet of "SELF-DIAG RESULTS" and "CAN DIAG SUPPORT MNTR" onto the check sheet. Refer to <u>LAN-11, "CHECK SHEET"</u>.
- 4. 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 <u>LAN-11, "CHECK SHEET"</u>.

NOTE:

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

5. According to the check sheet results (example), start inspection. Refer to <u>LAN-12</u>, "CHECK SHEET <u>RESULTS (EXAMPLE)</u>".

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CHECK SHEET

				CA	N DIAG SUPPOR	MNTR Receive diagnosi	e	
SELI	ECT SYSTEM screen	Initial diagnosis	Transmit diagnosis	ECM	тсм	METER/ M&A	BCM/SEC	IPDM E/R
ENGINE		NG	UNKWN	-	UNKWN	UNKWN	UNKWN	UNKWN
A/T		NG	UNKWN	UNKWN	-	UNKWN	-	-
всм		NG	UNKWN	UNKWN	-	UNKWN	-	UNKWN
ms:								
ENGIN	ch copy of E SELF-DIAG ESULTS		A	ttach copy o Γ SELF-DIA RESULTS	fG		BCM SE	copy of LF-DIAG ULTS
E CAN DI/	ch copy of NGINE AG SUPPORT MNTR			ttach copy o A/T DIAG SUPP MNTR			BC CAN DIAG	copy of CM SUPPORT ITR

CHECK SHEET RESULTS (EXAMPLE)

Case 1

Replace ECM.

			CA	N DIAG SUPPOR	T MNTR			
SELECT SYSTEM screen	Initial	Transmit	Receive diagnosis					
	diagnosis	diagnosis	ECM	тсм	METER/ M&A	BCM/SEC	IPDM E/F	
ENGINE	\$	UNKWN	-	UNKWN	UNKWN	UNKWN	UNKWN	
A/T	NG	UNKWN	UNKWN	-	UNKWN	-	-	
всм	NG	UNKWN	UNKWN	-	UNKWN	-	UNKWN	

			CA	N DIAG SUPPOR	T MNTR		
SELECT SYSTEM screen	Initial	Transmit			Receive diagnosi:	5	
SELECT STSTEM SCREEN	diagnosis	Transmit diagnosis	ЕСМ	тсм	METER/ M&A	BCM/SEC	IPDM E/R
ENGINE	NG	UNKWN	-	UNKOVN	UNKAVN	UNKOVN	UNKWN
A/T	NG	UNKWN	UNKWN	-	UNKWN	-	-
всм	NG	UNKWN	UNKWN	-	UNKWN	-	UNKWN

Case 2

Replace TCM.

			CA	N DIAG SUPPOR						
SELECT SYSTEM screen	Initial	Transmit	Receive diagnosis							
SELECT STSTEM SCHOOL	diagnosis	diagnosis	ECM	тсм	METER/ M&A	BCM/SEC	IPDM E/F			
ENGINE	NG	UNKWN	-	UNKIVN	UNKWN	UNKWN	UNKWN			
A/T	₩ X	UNKWN	UNKWN	-	UNKWN	-	-			
всм	NG	UNKWN	UNKWN	-	UNKWN	-	UNKWN			

Case 3

Replace BCM.

			CA	N DIAG SUPPOR	T MNTR		
SELECT SYSTEM screen	Initial	Transmit			Receive diagnosi	S	
SELECT STSTEM SCIENT	diagnosis	diagnosis	ECM	тсм	METER/ M&A	BCM/SEC	IPDM E/R
ENGINE	NG	UNKWN	-	UNKWN	UNKWN	UNKWN	UNKWN
A/T	NG	UNKWN	UNKWN	-	UNKWN	-	-
BCM	v	UNKWN	UNKWN	-	UNKWN	-	UNKWN

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				N DIAG SUPPOR			
SELECT SYSTEM screen	Initial	Transmit			Receive diagnosi	s	
SELECT STOTEM SCIENT	diagnosis	diagnosis	ECM	тсм	METER/ M&A	BCM/SEC	IPDM E/R
ENGINE	NG	UNKWN	-	UNKWN	UNKWN	UNKWN	UNKWN
A/T	NG	UNKWN	UNKWN	-	UNKWN	-	-
всм	NG	UNKWN	UNKWN	-	UNKWN	-	UNK

Case 4

Check harness between TCM and combination meter. Refer to <u>LAN-36</u>, "Circuit Check Between TCM and <u>Combination Meter</u>".

				N DIAG SUPPOR	T MNTR		
SELECT SYSTEM screen	Initial	Transmit			Receive diagnosi	S	
	diagnosis	diagnosis	ECM	тсм	METER/ M&A	BCM/SEC	IPDM E/R
ENGINE	NG	UNKWN	-	UNKWN	UNKVN	UNKAVN	UNKIN
A/T	NG	UNKWN	UNKWN	-	UNKIVN	-	-
ВСМ	NG	UNKWN	UNK	-	UNKWN	-	UNKWN

Case 5

Check harness between combination meter and BCM. Refer to <u>LAN-38</u>, "Circuit Check Between Combination <u>Meter and BCM</u>" .

				N DIAG SUPPOR			
SELECT SYSTEM screen	Initial	Transmit			Receive diagnosi:	S	
SELECT STSTEM SCREEN	diagnosis	diagnosis	ECM	тсм	METER/ M&A	BCM/SEC	IPDM E/R
ENGINE	NG	UNKWN	-	UNKWN	UNKWN	UNKWN	UNKWN
A/T	NG	UNKWN	UNKWN	-	UNKWN	-	-
всм	NG	UNKWN	UNKWN	-	UNKOVN	-	UNKWN

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Case 6

Check ECM circuit. Refer to LAN-38, "ECM Circuit Check" .

SELECT SYSTEM screen	Initial	Transmit			Receive diagnosi:	S	
SELECT STOLEM SCHOOL	diagnosis	diagnosis	ECM	тсм	METER/ M&A	BCM/SEC	IPDM E/R
ENGINE	NG	UNKVN	-	UNKUWN	UNKOVN	UNKOVN	UNKAVN
A/T	NG	UNKWN	UNKOVN	-	UNKWN	-	-
всм	NG	UNKWN	UNK	-	UNKWN	-	UNKWN

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Case 7

Check TCM circuit. Refer to LAN-39, "TCM Circuit Check" .

				N DIAG SUPPOR				
SELECT SYSTEM screen	Initial	Transmit	Receive diagnosis					
SELECT STSTEM SCIENT	diagnosis	diagnosis	ECM	тсм	METER/ M&A	BCM/SEC	IPDM E/R	
ENGINE	NG	UNKWN	-	UNKWN	UNKWN	UNKWN	UNKWN	
A/T	NG	UNKAN	UNK	-	UNKIVN	-	-	
всм	NG	UNKWN	UNKWN	-	UNKWN	_	UNKWN	

Case 8

Check combination meter circuit. Refer to LAN-39, "Combination Meter Circuit Check" .

			CA	N DIAG SUPPOR	T MNTR		
SELECT SYSTEM screen	Initial	Transmit			Receive diagnosi:	S	
SELECT STSTEM SCREEN	diagnosis	diagnosis	ECM	тсм	METER/ M&A	BCM/SEC	IPDM E/R
ENGINE	NG	UNKWN	-	UNKWN	UNKWN	UNKWN	UNKWN
A/T	NG	UNKWN	UNKWN	-	UNKOVN	-	-
всм	NG	UNKWN	UNKWN	-	UNKIN	_	UNKWN

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WKIA3004E

Case 9

Check BCM circuit. Refer to LAN-40, "BCM Circuit Check" .

			CA	N DIAG SUPPOR	T MNTR Receive diagnosi:		
SELECT SYSTEM screen	Initial	Transmit				5	
	diagnosis	diagnosis	ECM	тсм	METER/ M&A	BCM/SEC	IPDM E/F
ENGINE	NG	UNKWN	-	UNKWN	UNKWN	UNKAVN	UNKWN
A/T	NG	UNKWN	UNKWN	-	UNKWN	-	-
ВСМ	NG		UNK				

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Case 10

Check IPDM E/R circuit. Refer to LAN-40, "IPDM E/R Circuit Check" .

			CA	N DIAG SUPPOR	T MNTR		
SELECT SYSTEM screen	Initial	Transmit			Receive diagnosi:	5	
SELECT STSTEM SCHEM	diagnosis	diagnosis	ECM	тсм	METER/ M&A	BCM/SEC	IPDM E/R
ENGINE	NG	UNKWN	-	UNKWN	UNKWN	UNKWN	UNKAVN
A/T	NG	UNKWN	UNKWN	-	UNKWN	-	-
всм	NG	UNKWN	UNKWN	-	UNKWN	-	UNKWN

Revision: May 2004

Case 11

Check CAN communication circuit. Refer to LAN-41, "CAN Communication Circuit Check" .

			CA	N DIAG SUPPOR			
SELECT SYSTEM screen	Initial diagnosis	Transmit diagnosis	ECM	тсм	Receive diagnosi METER/ M&A	BCM/SEC	IPDM E/R
ENGINE	NG	UNKVIN	-		UNKAVN	UNKAVN	UNKAVN
A/T	NG	UNKAN	UNKWN	-	UNKIVN	-	-
всм	NG	UNKVN	UNKWN	-	UNK	-	UNKAVN

Case 12

Check IPDM E/R ignition relay circuit. Refer to LAN-44, "IPDM E/R Ignition Relay Circuit Check" .

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

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Case 13

Check IPDM E/R. Refer to LAN-44, "IPDM E/R Check" .

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

WKIA3010E

Circuit Check Between TCM and Combination Meter

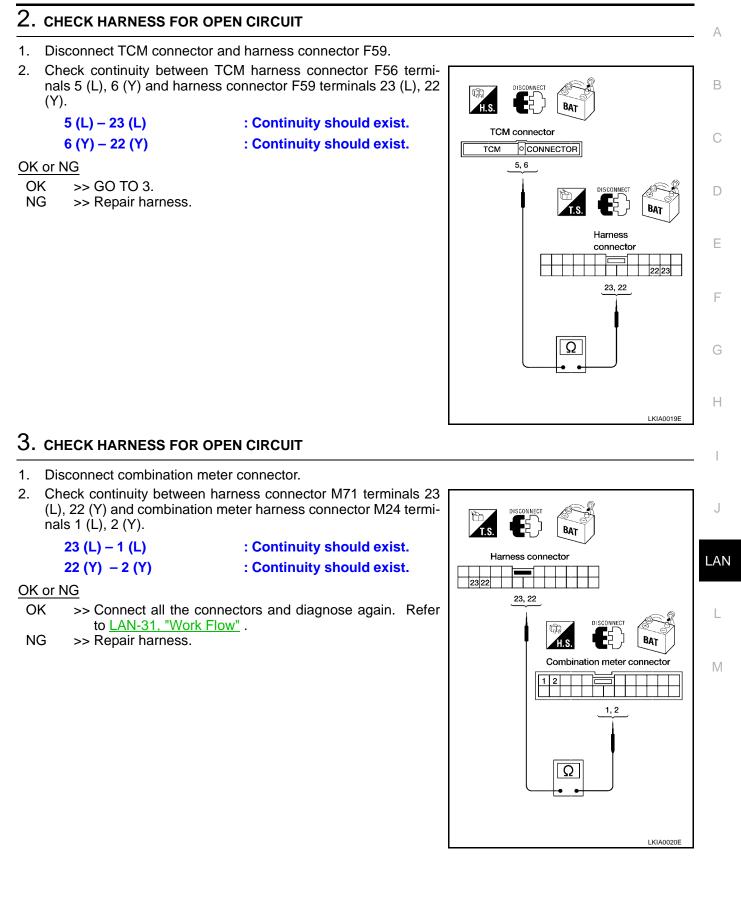
1. CHECK CONNECTOR

EKS00402

- 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.



Circuit Check Between Combination Meter and BCM

1. CHECK CONNECTOR	
 Turn ignition switch OFF. Disconnect the negative battery terminal. Check following terminals and connector for damage, bent or loc ule-side and harness-side). Combination meter. BCM. OK or NG OK >> GO TO 2. NG >> Repair terminal or connector. 	ose connection (meter-side, control mod-
2. CHECK HARNESS FOR OPEN CIRCUIT	
 Disconnect combination meter connector and BCM connector. Check continuity between combination meter harness connector M24 terminals 1 (L), 2 (Y) and BCM harness connector M18 terminals 70 (L), 71 (Y). L) - 70 (L) Continuity should exist. Y) - 71 (Y) Continuity should exist. OK or NG OK >> Connect all the connectors and diagnose again. Referto LAN-31, "Work Flow". NG >> Repair harness. 	Combination meter connector
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EKS00404

ECM Circuit Check

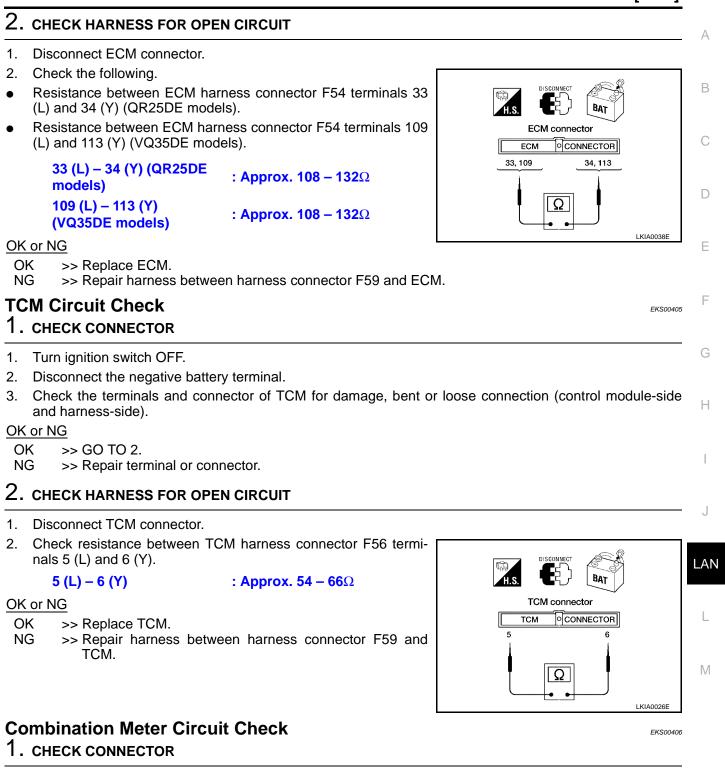
1. CHECK CONNECTOR

- 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.

EKS00403



- 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.

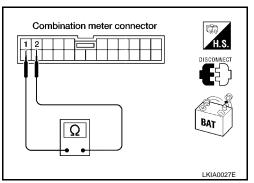
2. CHECK HARNESS FOR OPEN CIRCUIT

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

: **Approx. 54 – 66**Ω

OK or NG

- OK >> Replace combination meter. Refer to <u>DI-21, "Removal</u> and Installation"
- NG >> Repair harness between harness connector M71 and combination meter.



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).

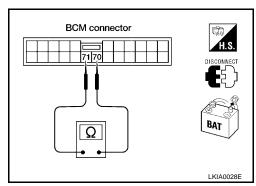
70 (L) – 71 (Y)

: Approx. 54 – 66 Ω

OK or NG

OK >> Replace BCM.

NG >> Repair harness between harness connector M7 and BCM.



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IPDM E/R Circuit Check 1. CHECK CONNECTOR

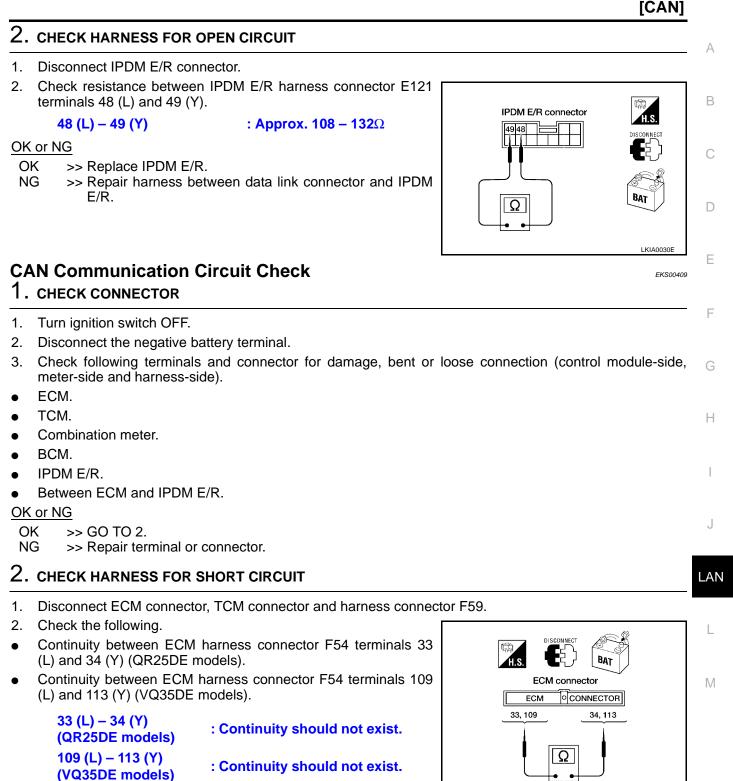
- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check the terminals and connector of IPDM E/R for damage, bent or loose connection (control moduleside and harness-side).

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

EKS00407



OK or NG

OK >> GO TO 3.

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

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3. CHECK HARNESS FOR SHORT CIRCUIT

- 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	: Continuity should not exist.
(QR25DE models) 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.
NC	

33, 34, 109, 113 Ω BAT LKIA0039E

O CONNECTOR

ECM connector

ECM

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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

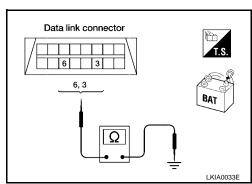
Check continuity between data link connector M22 terminals 6 (L), 3 (Y) and ground.

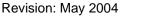
- 6 (L) ground
- : Continuity should not exist.
- 3 (Y) ground
- : Continuity should not exist.
- OK or NG

NG

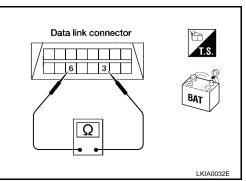
OK >> GO TO 6.

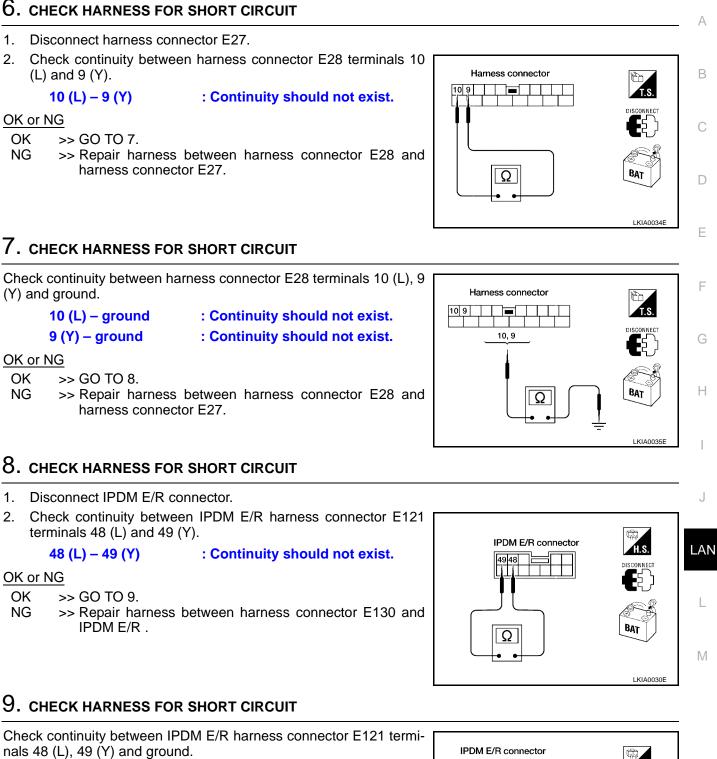
- >> Repair harness between harness connector M71 and harness connector M7.
 - Repair harness between harness connector M71 and combination meter.
 - Repair harness between harness connector M71 and data link connector.
 - Repair harness between harness connector M71 and BCM.





LAN-42





48 (L) – ground

49 (Y) – ground

: Continuity should not exist. : Continuity should not exist.

OK or NG

1.

NG

OK

NG

1.

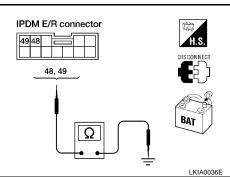
2.

OK

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 <u>LAN-44, "ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION"</u>. 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

Check the following. If no problem is found, replace the IPDM E/R. Refer to <u>PG-24, "Removal and Installation</u> <u>of IPDM E/R"</u>.

- IPDM E/R Power Circuit. Refer to <u>PG-23, "IPDM E/R Power/Ground Circuit Inspection"</u>.
- Ignition Power Supply Circuit. Refer to <u>PG-10, "IGNITION POWER SUPPLY IGNITION SW. IN ON"</u>.

IPDM E/R Check

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.

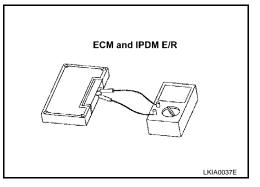
OK or NG

- 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

- Remove ECM and IPDM E/R from vehicle. Refer to <u>PG-24</u>, <u>"Removal and Installation of IPDM E/R"</u>.
- 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	
ECM (VQ35DE models)	109 – 113	108 - 132
IPDM E/R	48 – 49	



EKS0040A

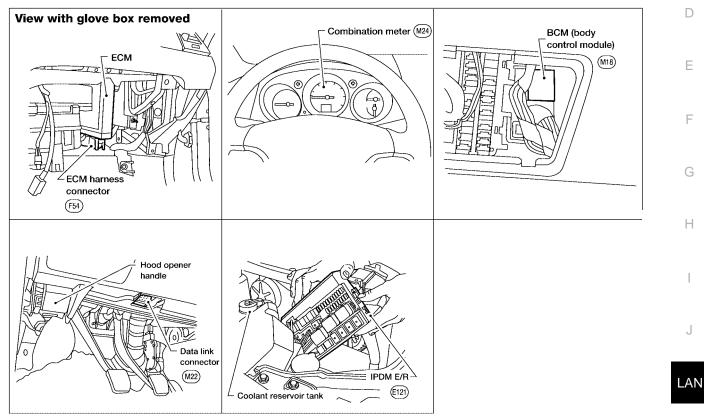
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System Description

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.

Component Parts and Harness Connector Location



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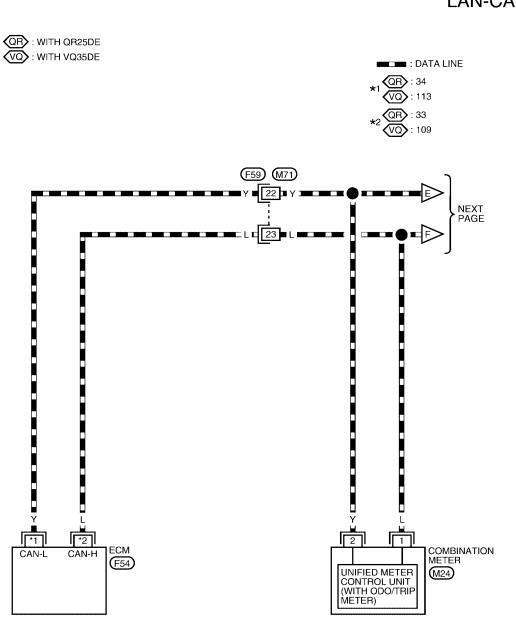
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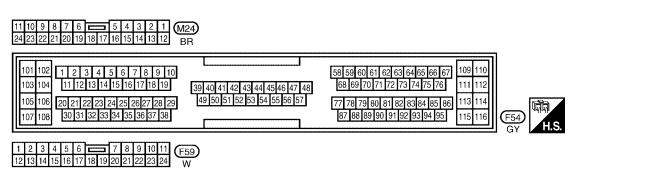
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Wiring Diagram — CAN —



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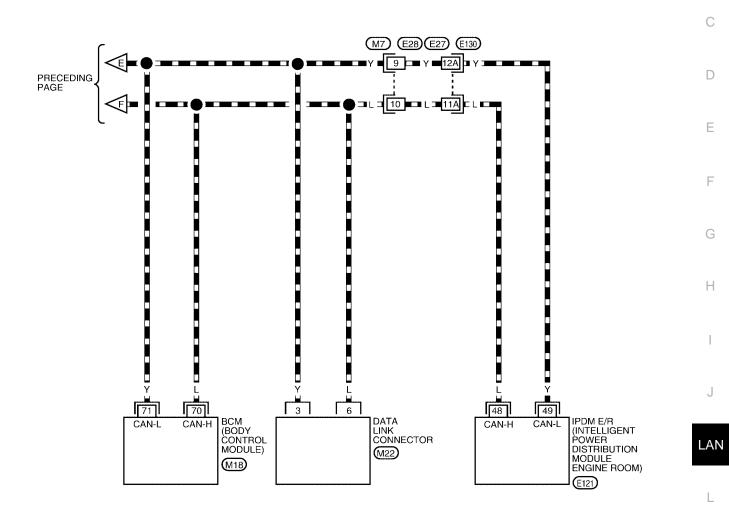
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LAN-CAN-06

DATA LINE



REFER TO THE FOLLOWING. (E130) - SUPER MULTIPLE JUNCTION (SMJ)

LKWA0069E

 1
 2
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12 11 10 9

(M7)

W

(M22)

W

62 61 60 59

52 53

47 48 49 53 54 55 56

76 75 74

45 46 🗖

58 57 56

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W

55 54

70 69 68 67 66 65 64

M

(M18)

BR

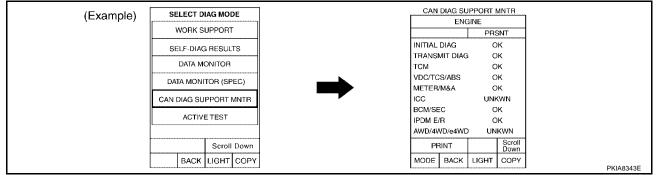
Work Flow

EKS0040G

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

(Example)	SELECT DIA	AG MODE	SELF-DIAG RESULTS
· · · /	WORK SU	PPORT	DTC RESULTS TIME
	SELF-DIAG I	RESULTS	CAN COMM CIRCUIT 0
	data mói	NITOR	
	DATA MONITO	OR (SPEC)	
	CAN DIAG SUP	PORT MNTR	
	ACTIVE	TEST	
	······		F.F.DATA
		Scroll Down	ERASE PRINT
	BACK	IGHT COPY	MODE BACK LIGHT COPY PKIA8260E

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



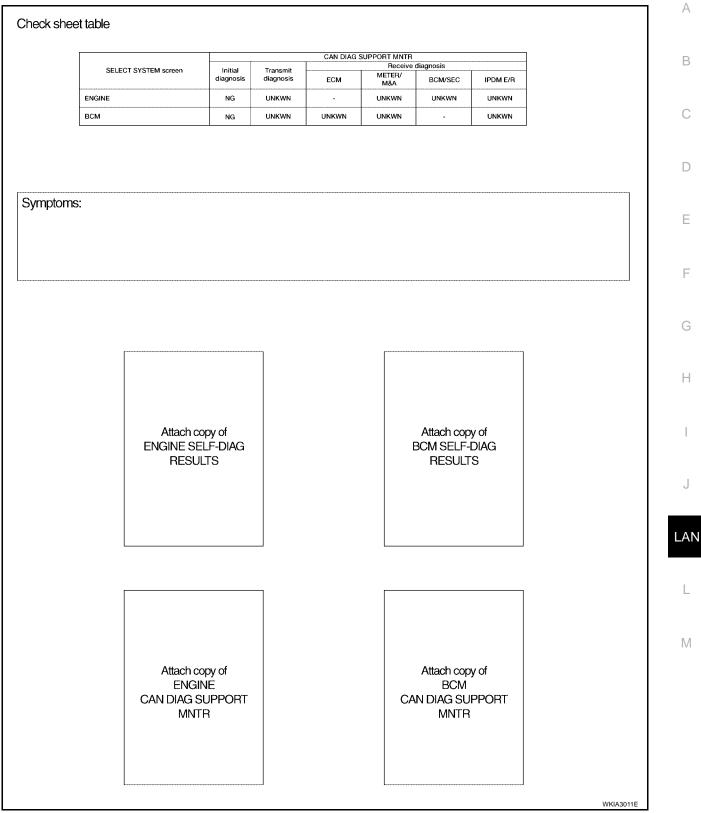
- 3. Attach the printed sheet of "SELF-DIAG RESULTS" and "CAN DIAG SUPPORT MNTR" onto the check sheet. Refer to <u>LAN-11, "CHECK SHEET"</u>.
- 4. Based on the "CAN DIAG SUPPORT MNTR" results, put check marks onto the items with "UNKWN" or "NG" in the check sheet table. Refer to <u>LAN-11, "CHECK SHEET"</u>.

NOTE:

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

5. According to the check sheet results (example), start inspection. Refer to <u>LAN-12, "CHECK SHEET</u> <u>RESULTS (EXAMPLE)"</u> .

CHECK SHEET



CHECK SHEET RESULTS (EXAMPLE)

Case 1

Replace ECM.

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

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

Case 2

Replace BCM.

CAN DIAG SUPPORT MNTR SELECT SYSTEM screen Transmit diagnosis Receive diagnosis Initial diagnosis Transmit diagnosis Receive diagnosis ECM METERY BCM/SEC IPDM E/R ENGINE NG UNKWN - UNKWN UNKWN <td< th=""><th></th><th></th><th></th><th></th><th></th><th></th><th></th></td<>									
SELECT SYSTEM screen Initial diagnosis Transmit diagnosis Receive diagnosis METER/ M&A BCM/SEC IPDM E/R ENGINE NG UNKWN - UNKWN	ſ			CAN DIAG S					
SELECT SYSTEM screen Initial diagnosis Iransmit diagnosis ECM METER/ M&A BCM/SEC IPDM E/R ENGINE NG UNKWN - UNKWN UNKWN </td <td></td> <td></td> <td></td> <td></td> <td colspan="5">Receive diagnosis</td>					Receive diagnosis				
	SELECT SYSTEM screen			ECM	METER/		IPDM E/R		
	ENGINE	NG	UNKWN	-	UNKWN	UNKWN	UNKWN		
	ВСМ	V	UNKWN	UNKWN	UNKWN	-	UNKWN		

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

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Case 3

Check harness between combination meter and BCM. Refer to <u>LAN-52, "Circuit Check Between Combination</u> A <u>Meter and BCM"</u>.

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

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Case 4

Check ECM circuit. Refer to LAN-53, "ECM Circuit Check" .

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

WKIA3017E

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Case 5

Check combination meter circuit. Refer to LAN-54, "Combination Meter Circuit Check" .

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

M

Case 6

Check BCM circuit. Refer to LAN-54, "BCM Circuit Check" .

			CAN DIAG S	SUPPORT MNTR		
SELECT SYSTEM screen	Initial	Transmit		Receive	diagnosis	
SELECT STOTEM Screen	diagnosis	diagnosis	ECM	METER/ M&A	BCM/SEC	IPDM E/R
ENGINE	NG	UNKWN	-	UNKWN	UNKWN	UNKWN
всм	NG	UNKOVN	UNKIVN	UNK	-	UNKAVN

Case 7

Check IPDM E/R circuit. Refer to LAN-55, "IPDM E/R Circuit Check" .

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

Case 8

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Check CAN communication circuit. Refer to LAN-56, "CAN Communication Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR Receive diagnosis				
	Initial diagnosis	Transmit diagnosis	ECM	METER/ M&A	BCM/SEC	IPDM E/F
ENGINE	NG	UNK	-	UNKIN	UNKWN	UNKAN
всм	NG	UNKVN	UNKWN	UNKIVN	-	UNKIN

Circuit Check Between Combination Meter and BCM 1. CHECK CONNECTOR

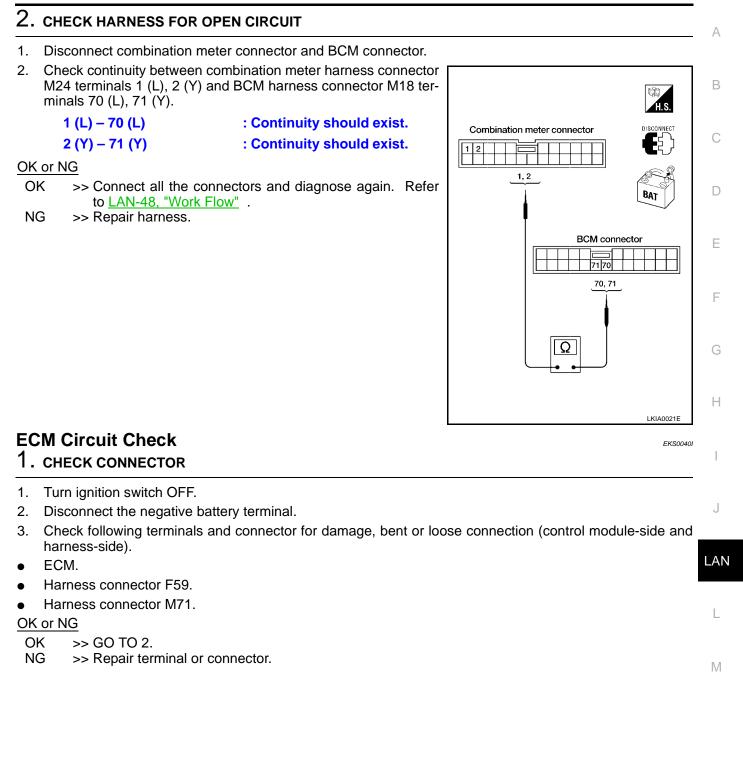
EKS0040H

- 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.

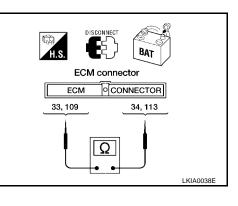


2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect 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



[CAN]

EKS0040J

OK or NG

OK >> Replace ECM.

NG >> Repair harness between harness connector M7 and ECM.

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.

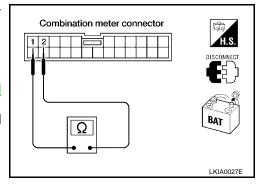
2. CHECK HARNESS FOR OPEN CIRCUIT

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

: **Approx. 54 – 66**Ω

OK or NG

- OK >> Replace combination meter. Refer to <u>DI-21, "Removal</u> and Installation"
- NG >> Repair harness between harness connector M71 and combination meter.



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BCM Circuit Check

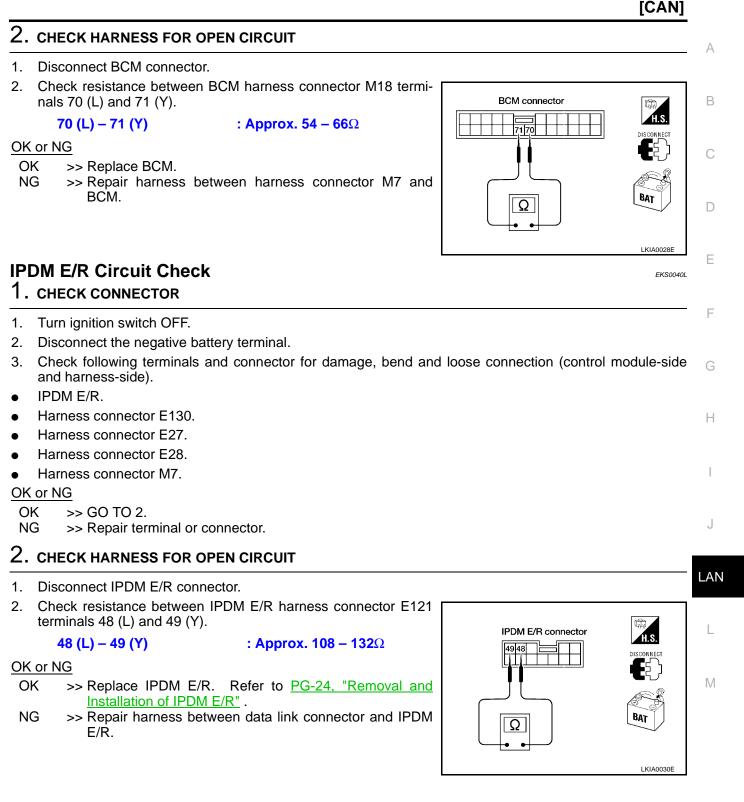
1. CHECK CONNECTOR

- 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

1.

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



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) 109 (L) – 113 (Y) (VQ35DE models)

: Continuity should not exist.

: Continuity should not exist.

OK or NG

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

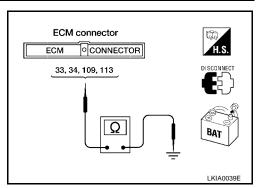
3. CHECK HARNESS FOR SHORT CIRCUIT

- 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).

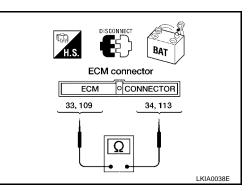
33 (L) - ground
(QR25DE models): Continuity should not exist.34 (Y) - ground
(QR25DE models): Continuity should not exist.109 (L) - ground
(VQ35DE models): Continuity should not exist.113 (Y) - ground
(VQ35DE models): Continuity should not exist.

OK or NG

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



LAN-56



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

NG

OK >> GO TO 6.

- >> 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).

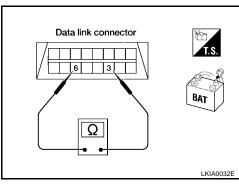
10(L) - 9(Y)

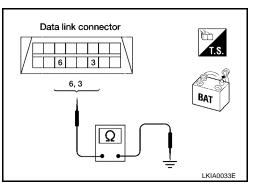
: Continuity should not exist.

OK or NG

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







Harness connector

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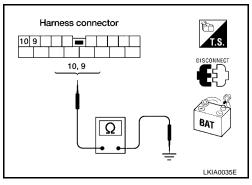
7. CHECK HARNESS FOR SHORT CIRCUIT

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

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

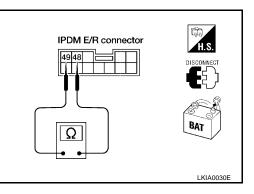
49 (Y) – ground

: Continuity should not exist.

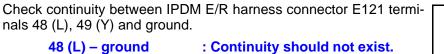
OK or NG

OK >> GO TO 9.

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



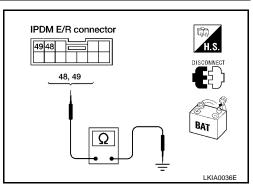
9. CHECK HARNESS FOR SHORT CIRCUIT



: 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

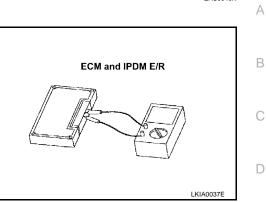
Perform components inspection. Refer to <u>LAN-59, "ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION"</u>. OK or NG

- 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".

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		
ECM (VQ35DE models)	109 – 113	108 - 132	
IPDM E/R	48 – 49		



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