SECTION LAN

LAN SYSTEM

CONTENTS

PRECAUTIONS

PFP:00001

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

EKS002C3

The Supplemental Restraint System such as “AIR BAG” and “SEAT BELT PRE-TENSIONER”, used along with a front seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. Information necessary to service the system safely is included in the SRS and SB section of this Service Manual.

WARNING:

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

Precautions For Trouble Diagnosis

EKS002C4

CAN SYSTEM

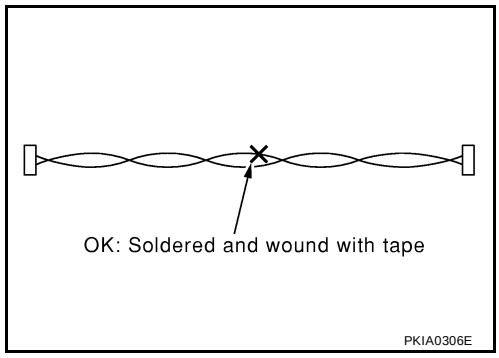
- Do not apply voltage of 7.0V or higher to the measurement terminals.
- Use the tester with its open terminal voltage being 7.0V or less.

Precautions For Harness Repair

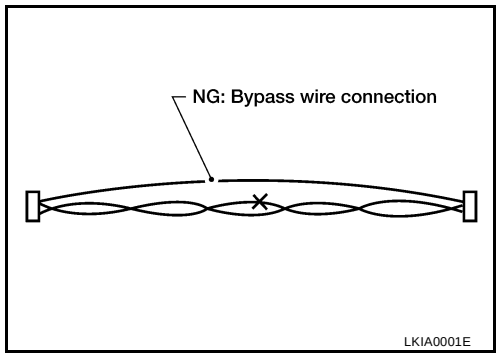
EKS002C5

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 characteristics of twisted line will be lost.)



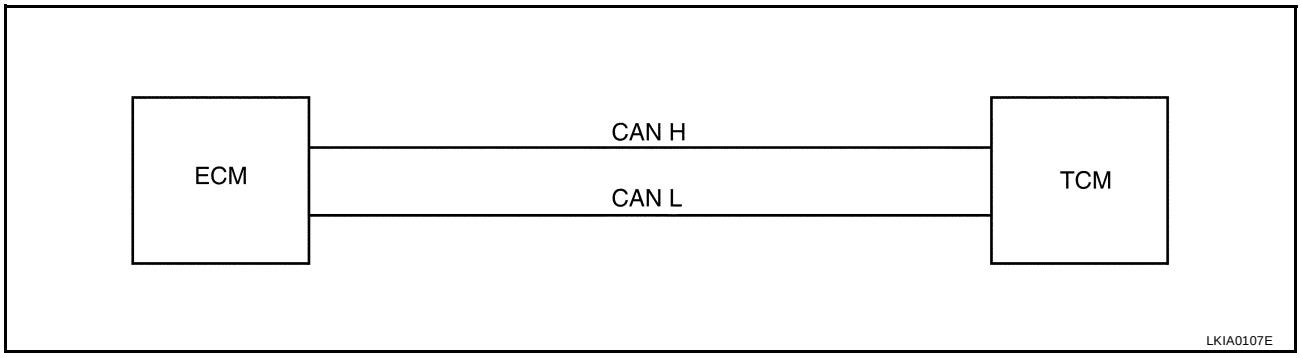
CAN SYSTEM

PFP:23710

System Description

EKS002C6

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.



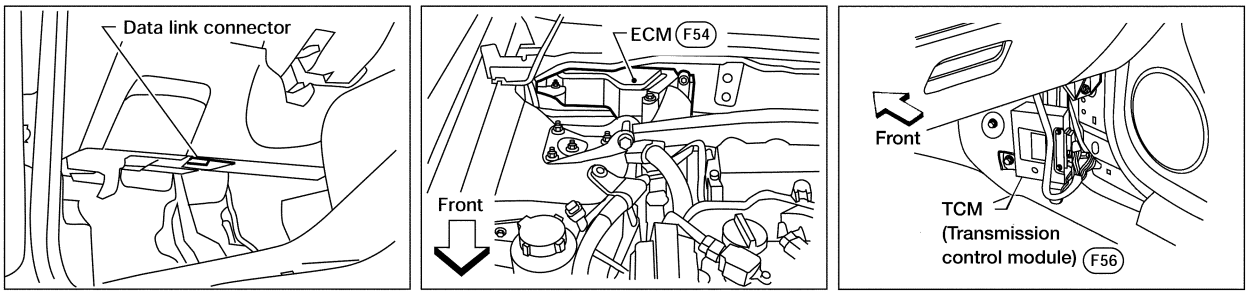
INPUT/OUTPUT SIGNAL CHART

T: Transmit R: Receive

Signals	ECM	TCM
Accelerator pedal position signal	T	R
Output shaft revolution signal	R	T
A/T self-diagnosis signal	R	T

Component Parts and Harness Connector Location

EKS002C7

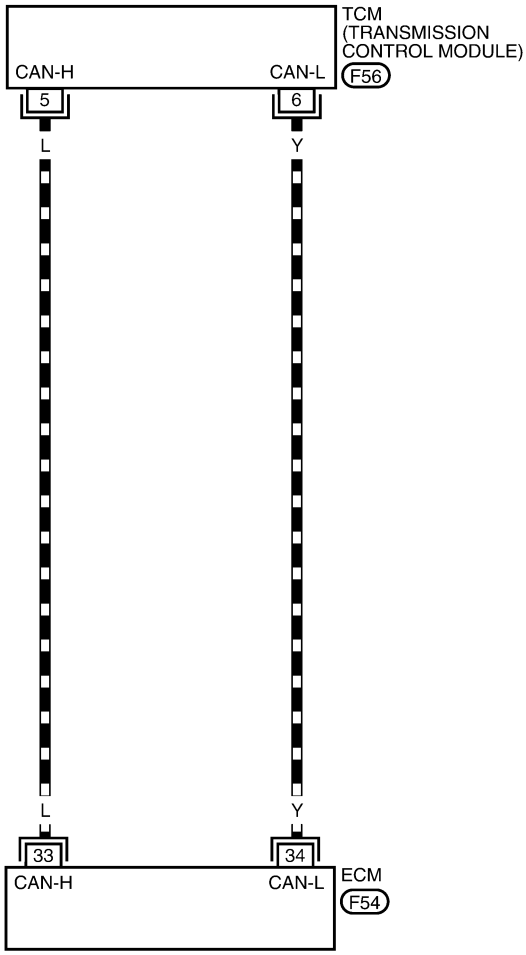


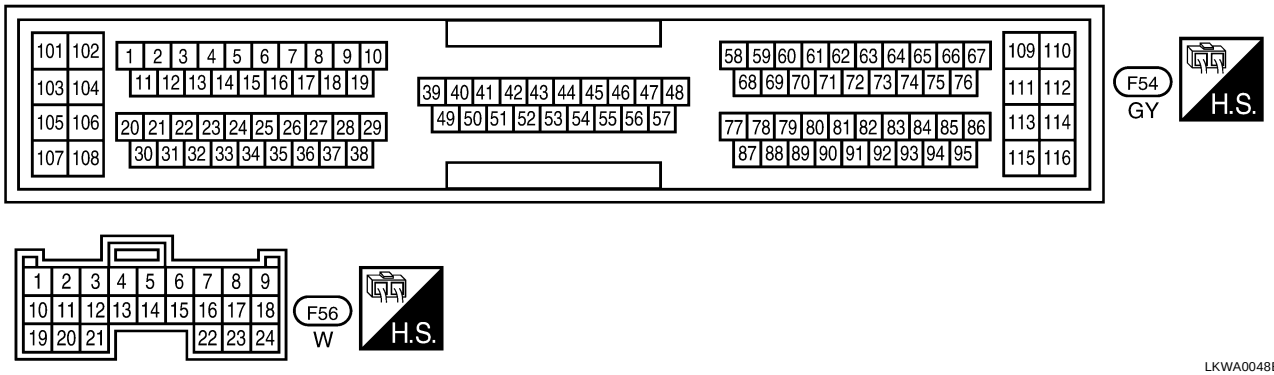
Wiring Diagram — CAN —

EKS002C8

LAN-CAN-01

: DATA LINE





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Work Flow

EKS002C9

1. Print all the data of “SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE” and “A/T” displayed on CONSULT-II. Refer to EC-1348, "DTC U1000, U1001 CAN COMMUNICATION LINE" for “ENGINE” and Refer to AT-596, "DTC U1000 CAN COMMUNICATION LINE" for “A/T”.
2. Attach the printed sheet of “SELF-DIAG RESULTS” and “DATA MONITOR” onto the check sheet. Refer to LAN-6, "CHECK SHEET" .
3. Based on the data monitor results, put “v” marks onto the items with “UNKWN” or “NG” in the check sheet table. Refer to LAN-6, "CHECK SHEET" .

   NOTE:
   If “NG” is displayed on “CAN COMM” for the diagnosed control unit, replace the control unit.
4. According to the check sheet results (example), start inspection. Refer to LAN-7, "CHECK SHEET RESULTS (EXAMPLE)" .

CHECK SHEET

Check sheet table

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2
A/T	CAN COMM	CAN CIRC 1	CAN CIRC 2	–

Symptoms:

Attach copy of ENGINE SELF-DIAG RESULTS

Attach copy of A/T SELF-DIAG RESULTS

Attach copy of ENGINE DATA MONITOR

Attach copy of A/T DATA MONITOR

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CHECK SHEET RESULTS (EXAMPLE)

Case 1: Replace ECM

ENGINE	CAN COMM ✓	CAN CIRC 1	–	CAN CIRC 2
A/T	CAN COMM	CAN CIRC 1	CAN CIRC 2	–

Case 2: Replace TCM

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2 ✓
A/T	CAN COMM ✓	CAN CIRC 1	CAN CIRC 2	–

Case 3

ENGINE	CAN COMM	CAN CIRC 1 ✓	–	CAN CIRC 2 ✓
A/T	CAN COMM	CAN CIRC 1 ✓	CAN CIRC 2 ✓	–

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NOTE:
If “NG” is displayed on “CAN COMM” for the diagnosed control unit, replace the control unit.

INSPECTION

Proceed to trouble diagnosis according to the check sheet results (example).
Case 1: Replace ECM.
Case 2: Replace TCM.
Case 3: Check CAN communication Circuit. Refer to LAN-7, "CAN Communication Circuit Check"

CAN Communication Circuit Check

EKS002CA

1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Check following terminals and connector for damage, bend and loose connection(control module-side and harness-side).

- TCM
- ECM

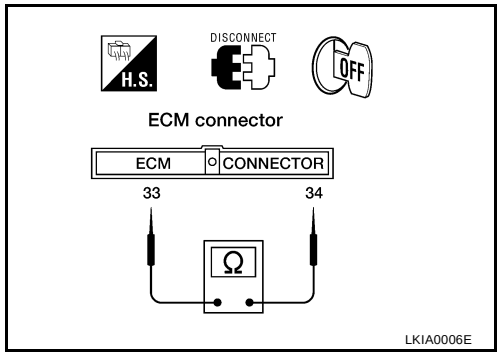
OK or NG

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

2. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect ECM connector and TCM connector.
2. Check continuity between ECM harness connector F54 terminals 33 (L) and 34 (Y).

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



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OK or NG

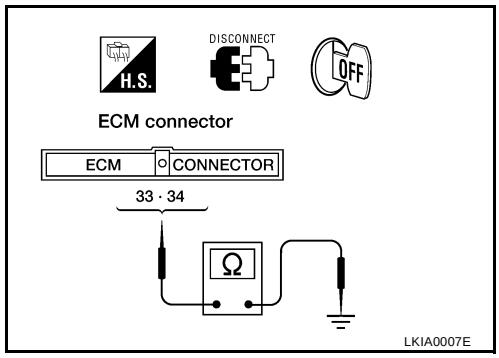
OK >> GO TO 3.
NG >> Repair harness between ECM and TCM.

3. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ECM harness connector F54 terminals 33 (L), 34 (Y) and ground.

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

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



OK or NG

OK >> GO TO 4.

NG >> Repair harness between ECM and TCM.

4. ECM/TCM INTERNAL CIRCUIT INSPECTION

Check components inspection. Refer to LAN-8, "ECM/TCM INTERNAL CIRCUIT INSPECTION" .

OK or NG

OK >> Reconnect all connectors to perform “SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE” and “A/T”. Refer to EC-1348, "DTC U1000, U1001 CAN COMMUNICATION LINE" for “ENGINE” and refer to AT-596, "DTC U1000 CAN COMMUNICATION LINE" for “A/T”.

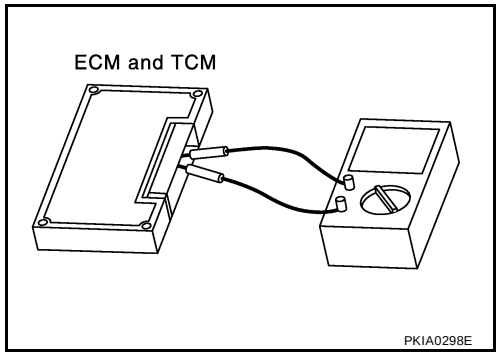
NG >> Replace ECM and/or TCM.

Component Inspection

EKS002CB

ECM/TCM INTERNAL CIRCUIT INSPECTION

- Remove ECM and TCM from vehicle.
- Check resistance between ECM terminals 33 and 34.
- Check resistance between TCM terminals 5 and 6.



Unit	Terminal	Resistance value (Ω) (Approx.)
ECM	33 – 34	108 - 136
TCM	5 – 6	