SECTION LAN

LAN SYSTEM

CONTENTS

CAN

PRECAUTIONS

PFP:00001

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

EKS004SR

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

EKS00409

CAN SYSTEM

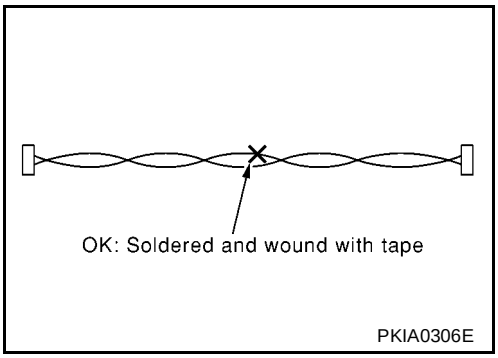
- Do not apply voltage of 7.0V or higher to the measurement terminals.
- Use the tester with its open terminal voltage being 7.0V or less.
- Be sure to turn ignition switch off and disconnect negative battery terminal before checking the circuit.

Precautions For Harness Repair

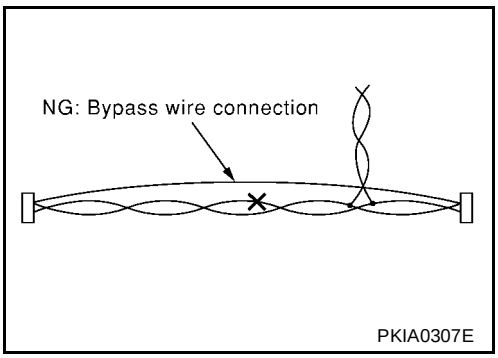
EKS0040A

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.)



CAN COMMUNICATION

PFP:23710

System Description

EKS0040B

CAN (Controller Area Network) is a serial communication line for real time application. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Many electronic control units are equipped onto a vehicle, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN H line, CAN L line) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.

CAN Communication Unit For LHD Models with Tyre Pressure Monitoring System

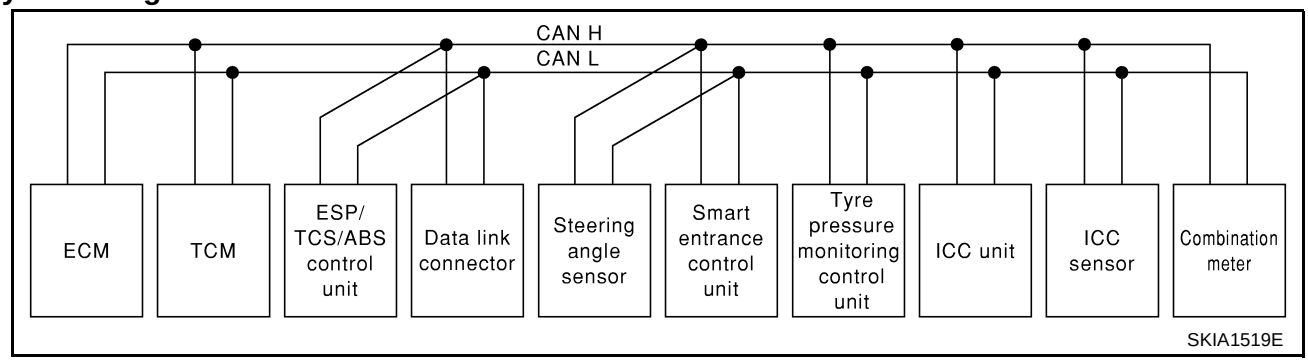
EKS004JD

Go to CAN system, when selecting your car model from the following table.

Body type	Sedan/Wagon								
Axle	2WD								
Engine	QR20DE			QG18DE	QR20DE	QG16DE	QG18DE	QR20DE	YD22DDTi
Transmission	CVT			A/T	6M/T	5M/T		6M/T	
Brake control	ESP		ABS		ESP	ABS			
ICC system	Applicable	Not applicable							
CAN communication unit									
ECM	×	×	×	×	×	×	×	×	×
TCM	×	×	×	×					
ESP/TCS/ABS control unit	×	×			×				
ABS actuator and electric unit (control unit)			×	×		×	×	×	×
Data link connector	×	×	×	×	×	×	×	×	×
Steering angle sensor	×	×			×				
Smart entrance control unit	×	×	×	×	×	×	×	×	×
Tyre pressure monitoring control unit	×	×	×	×	×	×	×	×	×
ICC unit	×								
ICC sensor	×								
Combination meter	×	×	×	×	×	×	×	×	×
CAN communication type	LAN-9, "TYPE 1"	LAN-10, "TYPE 2"	LAN-11, "TYPE 3"	LAN-12, "TYPE 4"	LAN-13, "TYPE 5"	LAN-14, "TYPE 6"			
Can system Trouble diagnosis	LAN-36, "CAN SYSTEM (TYPE 1)"	LAN-63, "CAN SYSTEM (TYPE 2)"	LAN-83, "CAN SYSTEM (TYPE 3)"	LAN-102, "CAN SYSTEM (TYPE 4)"	LAN-121, "CAN SYSTEM (TYPE 5)"	LAN-138, "CAN SYSTEM (TYPE 6)"			

TYPE 1

System diagram



Input/output signal chart

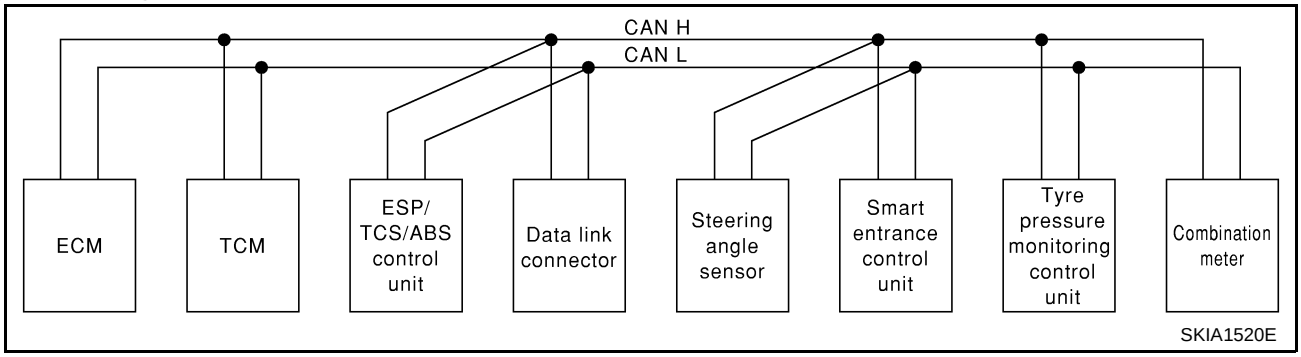
T: Transmit R: Receive

Signals	ECM	TCM	ESP/ TCS / ABS control unit	Steering angle sensor	Smart entrance control unit	Tyre pressure monitoring control unit	ICC unit	ICC sensor	Combination meter
Engine speed signal	T	R	R				R		R
Accelerator pedal position signal	T	R	R				R		
Closed throttle position signal	T						R		
ICC steering switch signal	T						R		
Shift pattern signal		T					R		
Parking brake switch signal			T				R		
ICC system display signal							T		R
ICC sensor signal							R	T	
ESP operation signal	R		T				R		
TCS operation signal	R		T				R		
ABS operation signal	R	R	T				R		
Stop lamp switch signal		R	T						
Steering wheel angle sensor signal			R	T					
Wheel speed sensor signal			T				R		
Rear window defogger signal	R				T				
Heater fan switch signal	R								T
Air conditioner switch signal	R								T
Primary pulley revolution signal	R	T					R		
Secondary pulley revolution signal	R	T					R		
ICC operation signal	R						T		
Brake switch signal	R						T		
MI signal	T								R
Current gear position signal		T							R
Engine coolant temperature signal	T						R		R
Fuel consumption signal	T								R
Vehicle speed signal			T						R
	R								T
Seat belt reminder signal					R				T

Signals	ECM	TCM	ESP/ TCS / ABS control unit	Steering angle sensor	Smart entrance control unit	Tyre pressure monitoring control unit	ICC unit	ICC sensor	Combination meter
Headlamp switch signal					T				R
Flashing indicator signal					T				R
Engine cooling fan speed signal	T				R				
Child lock indicator signal					T				R
Door switches state signal					T				R
Key ID signal	R				T				
	T				R				
A/C compressor signal	T				R				
Tire pressure signal						T			R

TYPE 2

System diagram



Input/output signal chart

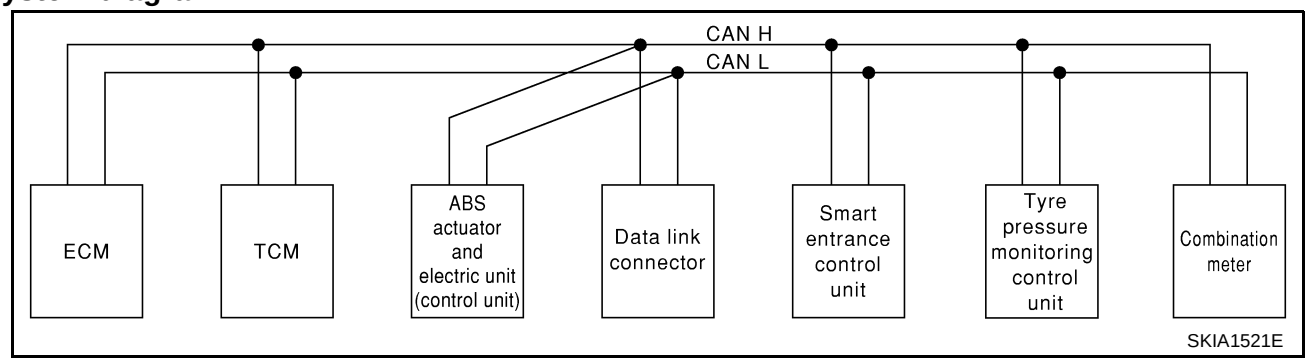
T: Transmit R: Receive

Signals	ECM	TCM	ESP/ TCS / ABS control unit	Steering angle sensor	Smart entrance control unit	Tyre pressure monitoring control unit	Combination meter
Engine speed signal	T	R	R				R
Accelerator pedal position signal	T	R	R				
ESP operation signal	R		T				
TCS operation signal	R		T				
ABS operation signal	R	R	T				
Stop lamp switch signal		R	T				
Steering wheel angle sensor signal			R	T			
Rear window defogger signal	R				T		
Heater fan switch signal	R						T
Air conditioner switch signal	R						T
Primary pulley revolution signal	R	T					
Secondary pulley revolution signal	R	T					
MI signal	T						R
Current gear position signal		T					R
Engine coolant temperature signal	T						R

Signals	ECM	TCM	ESP/ TCS / ABS control unit	Steering angle sensor	Smart entrance control unit	Tyre pressure monitoring control unit	Combination meter
Fuel consumption signal	T						R
Vehicle speed signal			T				R
	R						T
Seat belt reminder signal					R		T
Headlamp switch signal					T		R
Flashing indicator signal					T		R
Engine cooling fan speed signal	T				R		
Child lock indicator signal					T		R
Door switches state signal					T		R
Key ID signal	R				T		
	T				R		
A/C compressor signal	T				R		
Tire pressure signal						T	R

TYPE 3

System diagram



Input/output signal chart

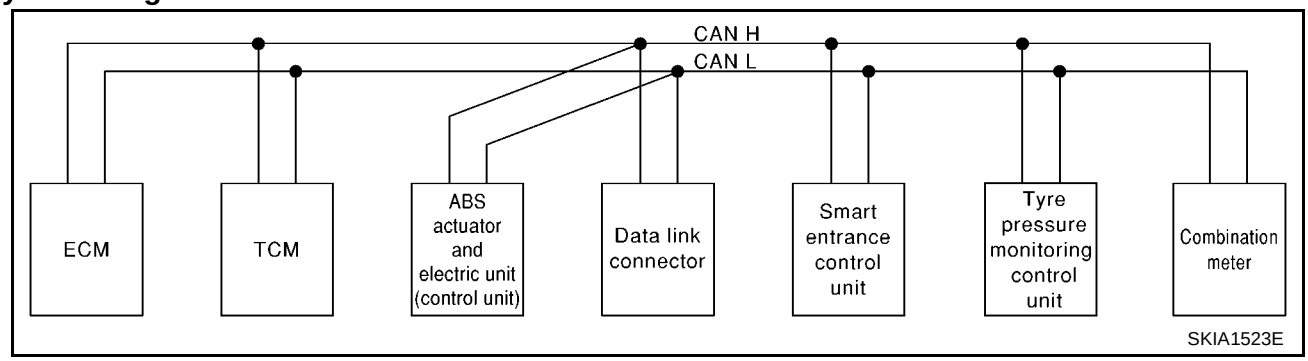
T: Transmit R: Receive

Signals	ECM	TCM	ABS actuator and electric unit (control unit)	Smart entrance control unit	Tyre pressure monitoring control unit	Combination meter
Engine speed signal	T	R				R
Stop lamp switch signal		R	T			
Rear window defogger signal	R			T		
Heater fan switch signal	R					T
Air conditioner switch signal	R					T
Primary pulley revolution signal	R	T				
Secondary pulley revolution signal	R	T				
MI signal	T					R
Current gear position signal		T				R
Engine coolant temperature signal	T					R
Fuel consumption signal	T					R
Vehicle speed signal			T			R
	R					T

Signals	ECM	TCM	ABS actuator and electric unit (control unit)	Smart entrance control unit	Tyre pressure monitoring control unit	Combination meter
Seat belt reminder signal				R		T
Headlamp switch signal				T		R
Flashing indicator signal				T		R
Engine cooling fan speed signal	T			R		
Child lock indicator signal				T		R
Door switches state signal				T		R
Key ID signal	R			T		
	T			R		
A/C compressor signal	T			R		
Tire pressure signal					T	R

TYPE 4

System diagram



Input/output signal chart

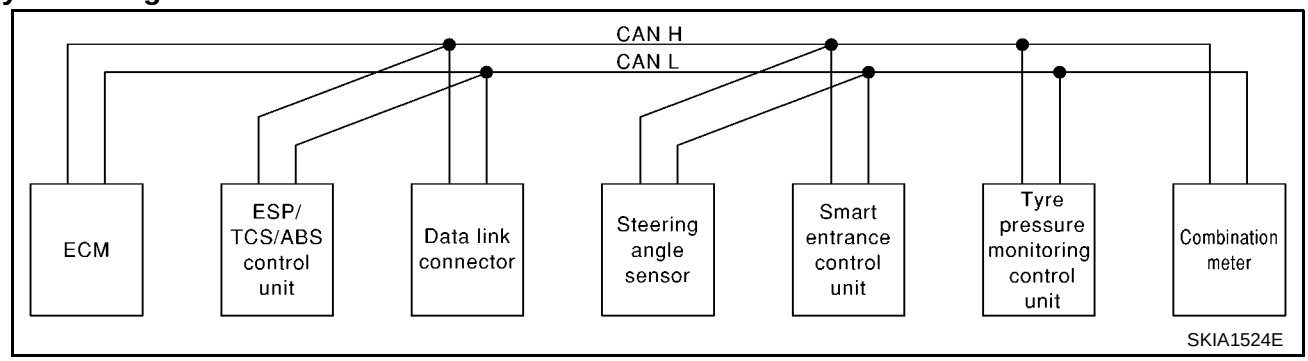
T: Transmit R: Receive

Signals	ECM	TCM	ABS actuator and electric unit (control unit)	Smart entrance control unit	Tyre pressure monitoring control unit	Combination meter
Engine speed signal	T	R				R
Stop lamp switch signal		R	T			
Rear window defogger signal	R			T		
Heater fan switch signal	R					T
Air conditioner switch signal	R					T
MI signal	T					R
Current gear position signal		T				R
Engine coolant temperature signal	T					R
Fuel consumption signal	T					R
Vehicle speed signal			T			R
	R					T
Seat belt reminder signal				R		T
Headlamp switch signal				T		R
Flashing indicator signal				T		R
Engine cooling fan speed signal	T			R		
Child lock indicator signal				T		R

Signals	ECM	TCM	ABS actuator and electric unit (control unit)	Smart entrance control unit	Tyre pressure monitoring control unit	Combination meter
Door switches state signal				T		R
Key ID signal	R			T		
	T			R		
A/C compressor signal	T			R		
Tire pressure signal					T	R

TYPE 5

System diagram



Input/output signal chart

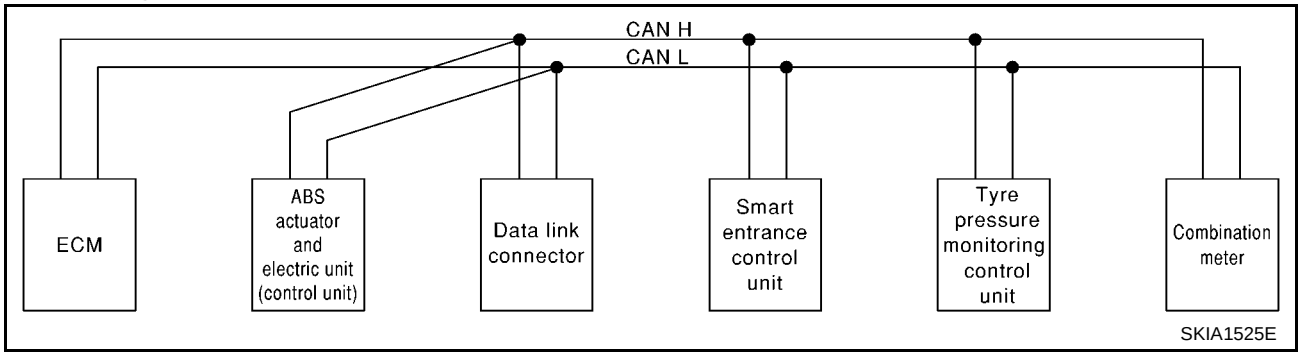
T: Transmit R: Receive

Signals	ECM	ESP/ TCS / ABS control unit	Steering angle sensor	Smart entrance control unit	Tyre pressure monitoring control unit	Combination meter
Engine speed signal	T	R				R
Accelerator pedal position signal	T	R				
ESP operation signal	R	T				
TCS operation signal	R	T				
ABS operation signal	R	T				
Steering wheel angle sensor signal		R	T			
Rear window defogger signal	R			T		
Heater fan switch signal	R					T
Air conditioner switch signal	R					T
MI signal	T					R
Engine coolant temperature signal	T					R
Fuel consumption signal	T					R
Vehicle speed signal		T				R
	R					T
Seat belt reminder signal				R		T
Headlamp switch signal				T		R
Flashing indicator signal				T		R
Engine cooling fan speed signal	T			R		
Child lock indicator signal				T		R
Door switches state signal				T		R

Signals	ECM	ESP/ TCS / ABS control unit	Steering angle sensor	Smart entrance control unit	Tyre pressure monitoring control unit	Combination meter
Key ID signal	R			T		
	T			R		
A/C compressor signal	T			R		
Tire pressure signal					T	R

TYPE 6

System diagram



Input/output signal chart

T: Transmit R: Receive

Signals	ECM	ABS actuator and electric unit (control unit)	Smart entrance control unit	Tyre pressure monitoring control unit	Combination meter
Engine speed signal	T				R
Rear window defogger signal	R*1		T		
Heater fan switch signal	R*1				T
Air conditioner switch signal	R				T
MI signal	T				R
Glow lamp signal*2	T				R
Engine coolant temperature signal	T				R
Fuel consumption signal	T				R
Vehicle speed signal		T			R
	R				T
Seat belt reminder signal			R		T
Headlamp switch signal			T		R
Flashing indicator signal			T		R
Engine cooling fan speed signal	T		R		
Child lock indicator signal			T		R
Door switches state signal			T		R
Key ID signal	R		T		
	T		R		
A/C compressor signal	T		R		
Tire pressure signal				T	R

*1: Except YD22DDTi engine model
*2: YD22DDTi engine model only

CAN Communication Unit For LHD Models without Tyre Pressure Monitoring System

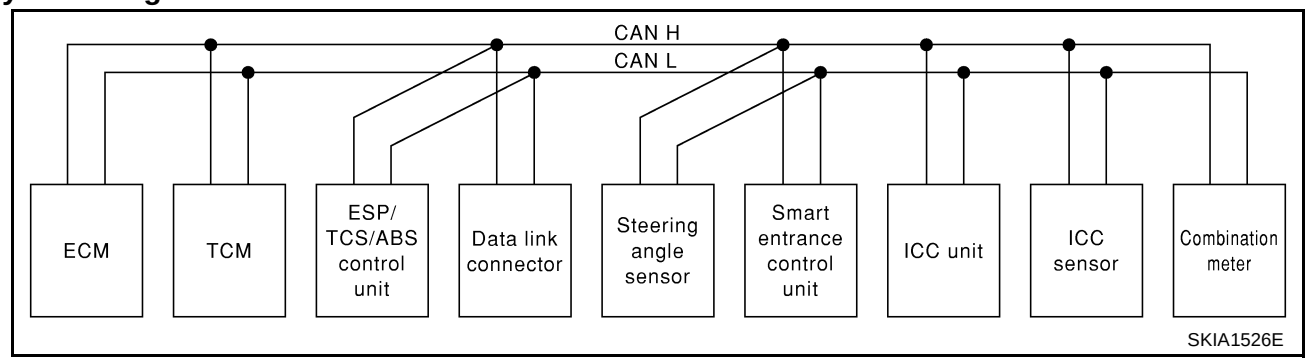
EKS004JE

Go to CAN system, when selecting your car model from the following table.

Body type	Sedan/Wagon								
Axle	2WD								
Engine	QR20DE			QG18DE	QR20DE	QG16DE	QG18DE	QR20DE	YD22DD Ti
Transmission	CVT			A/T	6M/T	5M/T		6M/T	
Brake control	ESP		ABS		ESP	ABS			
ICC system	Applica-ble	Not applicable							
CAN communication unit									
ECM	×	×	×	×	×	×	×	×	×
TCM	×	×	×	×					
ESP/TCS/ABS control unit	×	×			×				
ABS actuator and electric unit (control unit)			×	×		×	×	×	×
Data link connector	×	×	×	×	×	×	×	×	×
Steering angle sensor	×	×			×				
Smart entrance control unit	×	×	×	×	×	×	×	×	×
ICC unit	×								
ICC sensor	×								
Combination meter	×	×	×	×	×	×	×	×	×
Can communication type	LAN-16, "TYPE 7"	LAN-17, "TYPE 8"	LAN-18, "TYPE 9"	LAN-19, "TYPE 10"	LAN-20, "TYPE 11"	LAN-21, "TYPE 12"			
Can system Trouble diagnosis	LAN-156, "CAN SYSTEM (TYPE 7)"	LAN-179, "CAN SYSTEM (TYPE 8)"	LAN-195, "CAN SYSTEM (TYPE 9)"	LAN-210, "CAN SYSTEM (TYPE 10)"	LAN-225, "CAN SYSTEM (TYPE 11)"	LAN-238, "CAN SYSTEM (TYPE 12)"			

TYPE 7

System diagram



Input/output signal chart

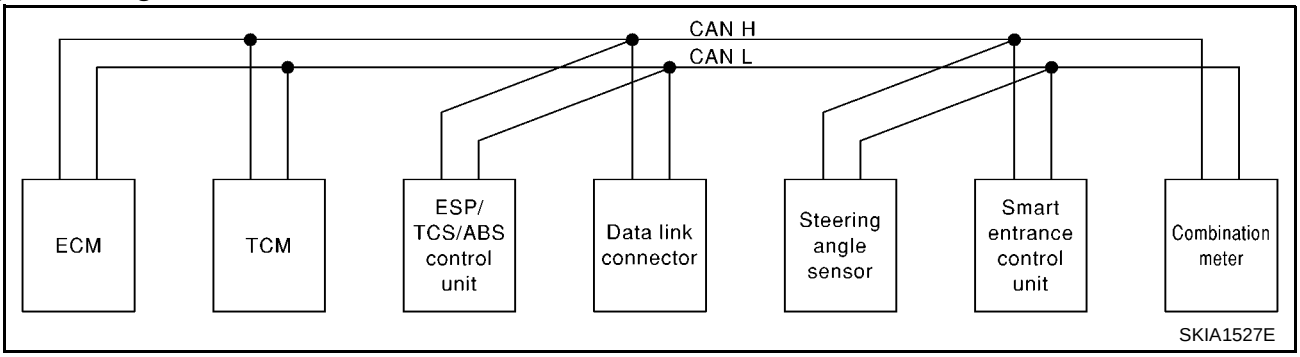
T: Transmit R: Receive

Signals	ECM	TCM	ESP/ TCS / ABS control unit	Steering angle sensor	Smart entrance control unit	ICC unit	ICC sensor	Combination meter
Engine speed signal	T	R	R			R		R
Accelerator pedal position signal	T	R	R			R		
Closed throttle position signal	T					R		
ICC steering switch signal	T					R		
Shift pattern signal		T				R		
Parking brake switch signal			T			R		
ICC system display signal						T		R
ICC sensor signal						R	T	
ESP operation signal	R		T			R		
TCS operation signal	R		T			R		
ABS operation signal	R	R	T			R		
Stop lamp switch signal		R	T					
Steering wheel angle sensor signal			R	T				
Wheel speed sensor signal			T			R		
Rear window defogger signal	R				T			
Heater fan switch signal	R							T
Air conditioner switch signal	R							T
Primary pulley revolution signal	R	T				R		
Secondary pulley revolution signal	R	T				R		
ICC operation signal	R					T		
Brake switch signal	R					T		
MI signal	T							R
Current gear position signal		T						R
Engine coolant temperature signal	T					R		R
Fuel consumption signal	T							R
Vehicle speed signal			T					R
	R							T
Seat belt reminder signal					R			T
Headlamp switch signal					T			R
Flashing indicator signal					T			R

Signals	ECM	TCM	ESP/ TCS / ABS control unit	Steering angle sensor	Smart entrance control unit	ICC unit	ICC sensor	Combination meter
Engine cooling fan speed signal	T				R			
Child lock indicator signal					T			R
Door switches state signal					T			R
Key ID signal	R				T			
	T				R			
A/C compressor signal	T				R			

TYPE 8

System diagram



Input/output signal chart

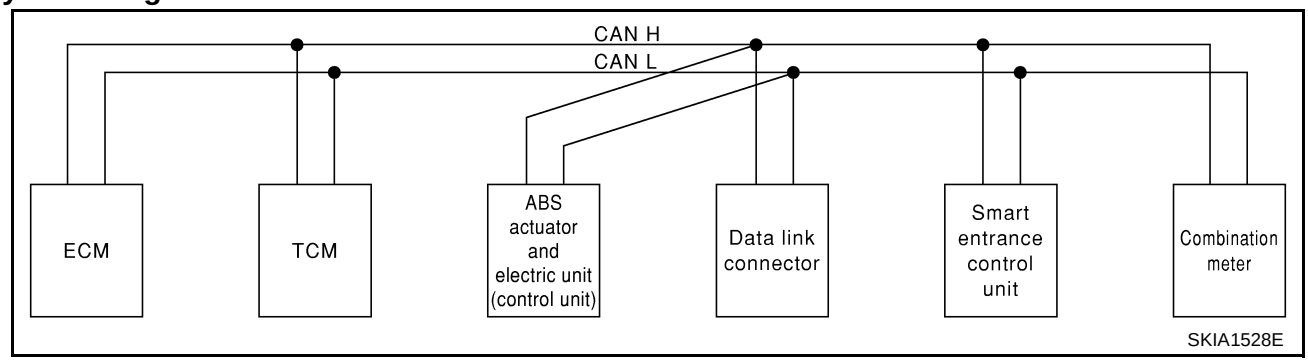
T: Transmit R: Receive

Signals	ECM	TCM	ESP/ TCS / ABS control unit	Steering angle sensor	Smart entrance control unit	Combination meter
Engine speed signal	T	R	R			R
Accelerator pedal position signal	T	R	R			
ESP operation signal	R		T			
TCS operation signal	R		T			
ABS operation signal	R	R	T			
Stop lamp switch signal		R	T			
Steering wheel angle sensor signal			R	T		
Rear window defogger signal	R				T	
Heater fan switch signal	R					T
Air conditioner switch signal	R					T
Primary pulley revolution signal	R	T				
Secondary pulley revolution signal	R	T				
MI signal	T					R
Current gear position signal		T				R
Engine coolant temperature signal	T					R
Fuel consumption signal	T					R
Vehicle speed signal			T			R
	R					T
Seat belt reminder signal					R	T
Headlamp switch signal					T	R
Flashing indicator signal					T	R

Signals	ECM	TCM	ESP/ TCS / ABS control unit	Steering angle sensor	Smart entrance control unit	Combination meter
Engine cooling fan speed signal	T				R	
Child lock indicator signal					T	R
Door switches state signal					T	R
Key ID signal	R				T	
	T				R	
A/C compressor signal	T				R	

TYPE 9

System diagram



Input/output signal chart

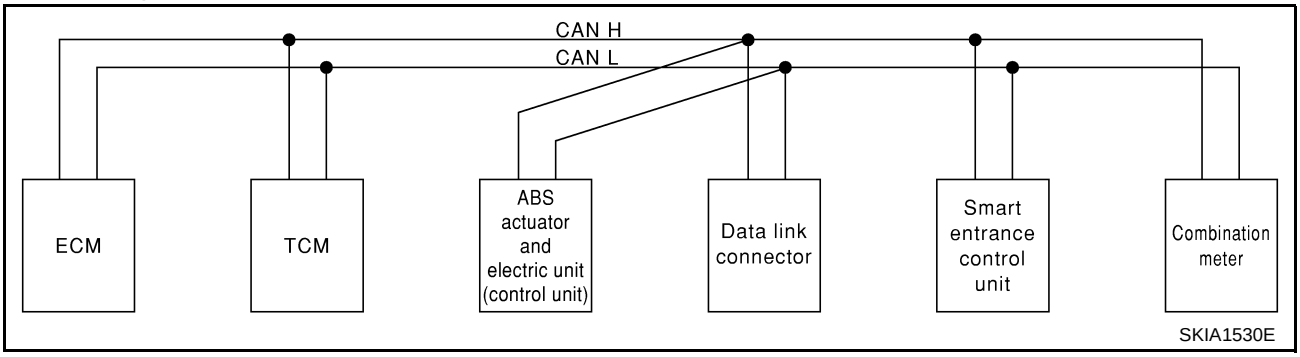
T: Transmit R: Receive

Signals	ECM	TCM	ABS actuator and electric unit (control unit)	Smart entrance control unit	Combination meter
Engine speed signal	T	R			R
Stop lamp switch signal		R	T		
Rear window defogger signal	R			T	
Heater fan switch signal	R				T
Air conditioner switch signal	R				T
Primary pulley revolution signal	R	T			
Secondary pulley revolution signal	R	T			
MI signal	T				R
Current gear position signal		T			R
Engine coolant temperature signal	T				R
Fuel consumption signal	T				R
Vehicle speed signal			T		R
	R				T
Seat belt reminder signal				R	T
Headlamp switch signal				T	R
Flashing indicator signal				T	R
Engine cooling fan speed signal	T			R	
Child lock indicator signal				T	R
Door switches state signal				T	R

Signals	ECM	TCM	ABS actuator and electric unit (control unit)	Smart entrance control unit	Combination meter
Key ID signal	R			T	
	T			R	
A/C compressor signal	T			R	

TYPE 10

System diagram



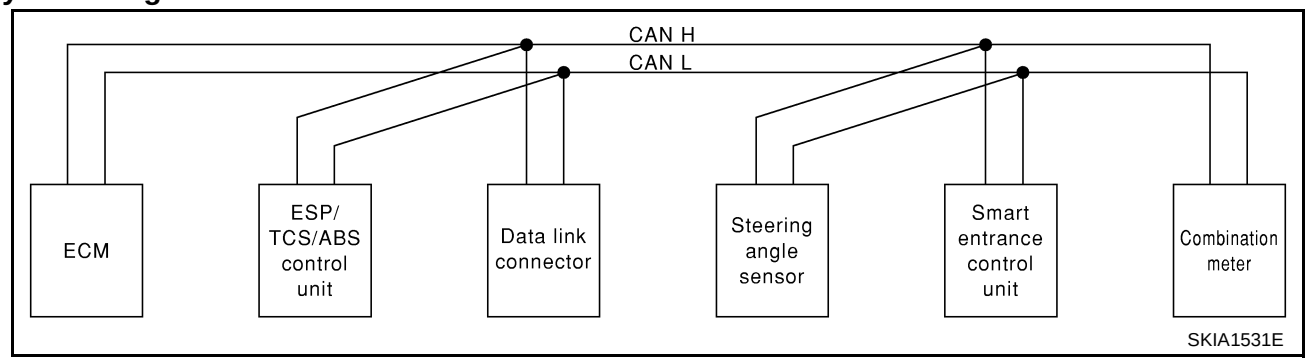
Input/output signal chart

T: Transmit R: Receive

Signals	ECM	TCM	ABS actuator and electric unit (control unit)	Smart entrance control unit	Combination meter
Engine speed signal	T	R			R
Stop lamp switch signal		R	T		
Rear window defogger signal	R			T	
Heater fan switch signal	R				T
Air conditioner switch signal	R				T
MI signal	T				R
Current gear position signal		T			R
Engine coolant temperature signal	T				R
Fuel consumption signal	T				R
Vehicle speed signal			T		R
	R				T
Seat belt reminder signal				R	T
Headlamp switch signal				T	R
Flashing indicator signal				T	R
Engine cooling fan speed signal	T			R	
Child lock indicator signal				T	R
Door switches state signal				T	R
Key ID signal	R			T	
	T			R	
A/C compressor signal	T			R	

TYPE 11

System diagram



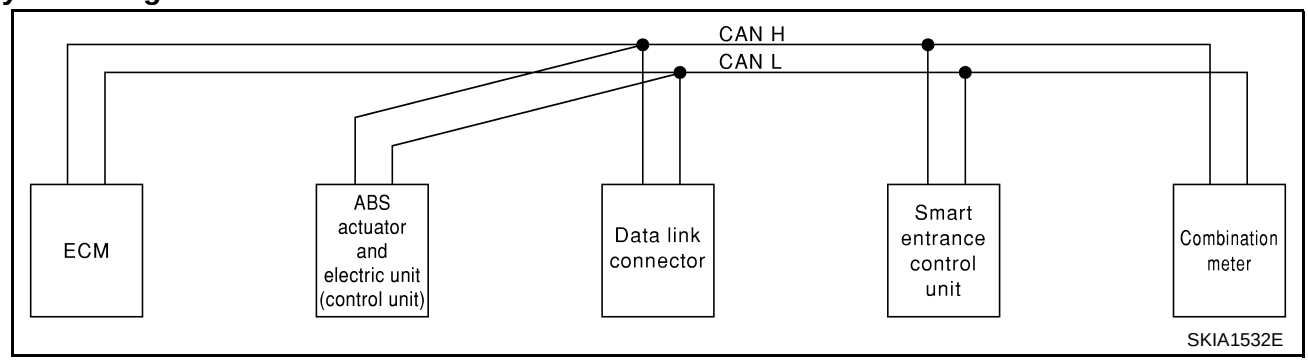
Input/output signal chart

T: Transmit R: Receive

Signals	ECM	ESP/ TCS / ABS control unit	Steering angle sensor	Smart entrance control unit	Combination meter
Engine speed signal	T	R			R
Accelerator pedal position signal	T	R			
ESP operation signal	R	T			
TCS operation signal	R	T			
ABS operation signal	R	T			
Steering wheel angle sensor signal		R	T		
Rear window defogger signal	R			T	
Heater fan switch signal	R				T
Air conditioner switch signal	R				T
MI signal	T				R
Engine coolant temperature signal	T				R
Fuel consumption signal	T				R
Vehicle speed signal		T			R
	R				T
Seat belt reminder signal				R	T
Headlamp switch signal				T	R
Flashing indicator signal				T	R
Engine cooling fan speed signal	T			R	
Child lock indicator signal				T	R
Door switches state signal				T	R
Key ID signal	R			T	
	T			R	
A/C compressor signal	T			R	

TYPE 12

System diagram



Input/output signal chart

T: Transmit R: Receive

Signals	ECM	ABS actuator and electric unit (control unit)	Smart entrance control unit	Combination meter
Engine speed signal	T			R
Rear window defogger signal	R*1		T	
Heater fan switch signal	R*1			T
Air conditioner switch signal	R			T
MI signal	T			R
Glow lamp signal*2	T			R
Engine coolant temperature signal	T			R
Fuel consumption signal	T			R
Vehicle speed signal		T		R
	R			T
Seat belt reminder signal			R	T
Headlamp switch signal			T	R
Flashing indicator signal			T	R
Engine cooling fan speed signal	T		R	
Child lock indicator signal			T	R
Door switches state signal			T	R
Key ID signal	R		T	
	T		R	
A/C compressor signal	T		R	

*1: Except YD22DDTi engine model
*2:YD22DDTi engine model only

CAN Communication Unit For RHD Models with Tyre Pressure Monitoring System

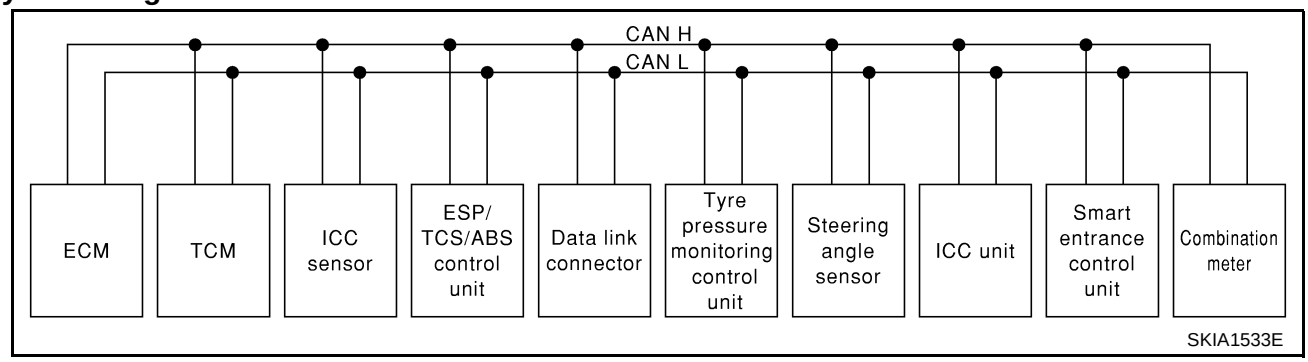
EKS004JF

Go to CAN system, when selecting your car model from the following table.

Body type	Sedan/Wagon								
Axle	2WD								
Engine	QR20DE			QG18DE	QR20DE	QG16DE	QG18DE	QR20DE	YD22DD Ti
Transmission	CVT			A/T	6M/T	5M/T		6M/T	
Brake control	ESP		ABS		ESP	ABS			
ICC system	Applicable	Not applicable							
CAN communication unit									
ECM	×	×	×	×	×	×	×	×	×
TCM	×	×	×	×					
ICC sensor	×								
ESP/TCS/ABS control unit	×	×			×				
ABS actuator and electric unit (control unit)			×	×		×	×	×	×
Data link connector	×	×	×	×	×	×	×	×	×
Tyre pressure monitoring control unit	×	×	×	×	×	×	×	×	×
Steering angle sensor	×	×			×				
ICC unit	×								
Smart entrance control unit	×	×	×	×	×	×	×	×	×
Combination meter	×	×	×	×	×	×	×	×	×
CAN communication type	LAN-23, "TYPE 13"	LAN-24, "TYPE 14"	LAN-25, "TYPE 15"	LAN-26, "TYPE 16"	LAN-27, "TYPE 17"	LAN-28, "TYPE 18"			
Can system Trouble diagnosis	LAN-254, "CAN SYSTEM (TYPE 13)"	LAN-282, "CAN SYSTEM (TYPE 14)"	LAN-304, "CAN SYSTEM (TYPE 15)"	LAN-324, "CAN SYSTEM (TYPE 16)"	LAN-344, "CAN SYSTEM (TYPE 17)"	LAN-362, "CAN SYSTEM (TYPE 18)"			

TYPE 13

System diagram



Input/output signal chart

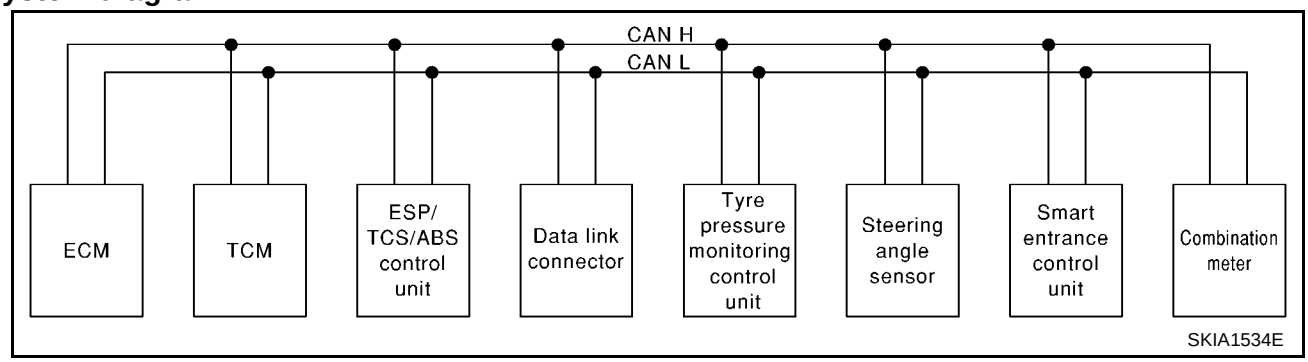
T: Transmit R: Receive

Signals	ECM	TCM	ICC sensor	ESP/ TCS / ABS control unit	Tyre pressure monitoring control unit	Steering angle sensor	ICC unit	Smart entrance control unit	Combination meter
Engine speed signal	T	R		R			R		R
Accelerator pedal position signal	T	R		R			R		
Closed throttle position signal	T						R		
ICC steering switch signal	T						R		
Shift pattern signal		T					R		
Parking brake switch signal				T			R		
ICC system display signal							T		
ICC sensor signal			T				R		
ESP operation signal	R			T			R		
TCS operation signal	R			T			R		
ABS operation signal	R	R		T			R		
Stop lamp switch signal		R		T					
Steering wheel angle sensor signal				R		T			
Wheel speed sensor signal				T			R		
Rear window defogger signal	R							T	
Heater fan switch signal	R								T
Air conditioner switch signal	R								T
Primary pulley revolution signal	R	T					R		
Secondary pulley revolution signal	R	T					R		
ICC operation signal	R						T		
Brake switch signal	R						T		
MI signal	T								R
Current gear position signal		T							R
Engine coolant temperature signal	T						R		R
Fuel consumption signal	T								R
Vehicle speed signal				T					R
	R								T
Seat belt reminder signal								R	T

Signals	ECM	TCM	ICC sensor	ESP/ TCS / ABS control unit	Tyre pressure monitoring control unit	Steering angle sensor	ICC unit	Smart entrance control unit	Combination meter
Headlamp switch signal								T	R
Flashing indicator signal								T	R
Engine cooling fan speed signal	T							R	
Child lock indicator signal								T	R
Door switches state signal								T	R
Key ID signal	R							T	
	T							R	
A/C compressor signal	T							R	
Tire pressure signal					T				R

TYPE 14

System diagram



Input/output signal chart

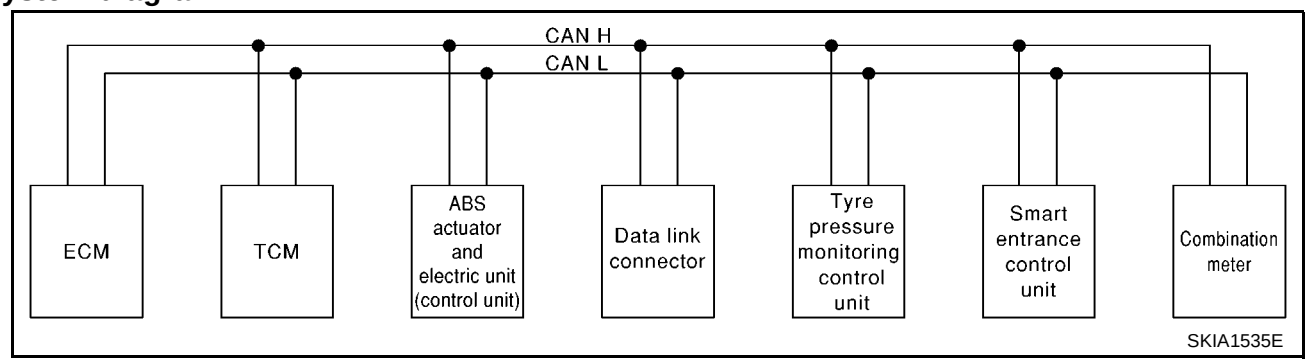
T: Transmit R: Receive

Signals	ECM	TCM	ESP/ TCS / ABS control unit	Tyre pressure monitoring control unit	Steering angle sensor	Smart entrance control unit	Combination meter
Engine speed signal	T	R	R				R
Accelerator pedal position signal	T	R	R				
ESP operation signal	R		T				
TCS operation signal	R		T				
ABS operation signal	R	R	T				
Stop lamp switch signal		R	T				
Steering wheel angle sensor signal			R		T		
Rear window defogger signal	R					T	
Heater fan switch signal	R						T
Air conditioner switch signal	R						T
Primary pulley revolution signal	R	T					
Secondary pulley revolution signal	R	T					
MI signal	T						R
Current gear position signal		T					R
Engine coolant temperature	T						R

Signals	ECM	TCM	ESP/ TCS / ABS control unit	Tyre pressure monitoring control unit	Steering angle sensor	Smart entrance control unit	Combination meter
Fuel consumption signal	T						R
Vehicle speed signal			T				R
	R						T
Seat belt reminder signal						R	T
Headlamp switch signal						T	R
Flashing indicator signal						T	R
Engine cooling fan speed signal	T					R	
Child lock indicator signal						T	R
Door switches state signal						T	R
Key ID signal	R					T	
	T					R	
A/C compressor signal	T					R	
Tire pressure signal				T			R

TYPE 15

System diagram



Input/output signal chart

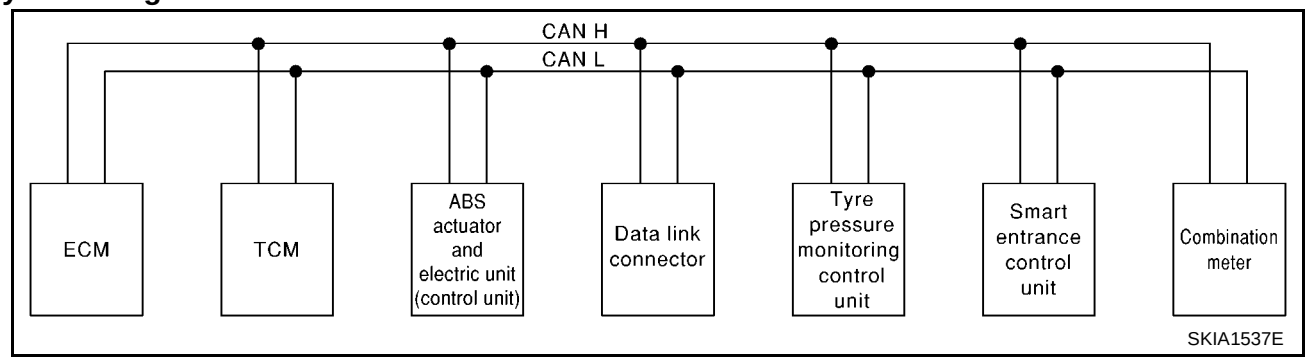
T: Transmit R: Receive

Signals	ECM	TCM	ABS actuator and electric unit (control unit)	Tyre pressure monitoring control unit	Smart entrance control unit	Combination meter
Engine speed signal	T	R				R
Stop lamp switch signal		R	T			
Rear window defogger signal	R				T	
Heater fan switch signal	R					T
Air conditioner switch signal	R					T
Primary pulley revolution signal	R	T				
Secondary pulley revolution signal	R	T				
MI signal	T					R
Current gear position signal		T				R
Engine coolant temperature signal	T					R
Fuel consumption signal	T					R

Signals	ECM	TCM	ABS actuator and electric unit (control unit)	Tyre pressure monitoring control unit	Smart entrance control unit	Combination meter
Vehicle speed signal			T			R
	R					T
Seat belt reminder signal					R	T
Headlamp switch signal					T	R
Flashing indicator signal					T	R
Engine cooling fan speed signal	T				R	
Child lock indicator signal					T	R
Door switches state signal					T	R
Key ID signal	R				T	
	T				R	
A/C compressor signal	T				R	
Tire pressure signal				T		R

TYPE 16

System diagram



Input/output signal chart

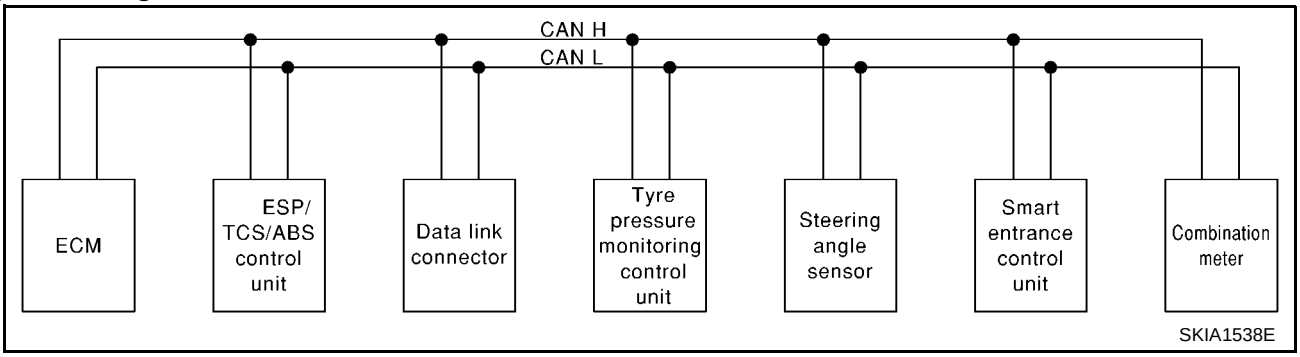
T: Transmit R: Receive

Signals	ECM	TCM	ABS actuator and electric unit (control unit)	Tyre pressure monitoring control unit	Smart entrance control unit	Combination meter
Engine speed signal	T	R				R
Stop lamp switch signal		R	T			
Rear window defogger signal	R				T	
Heater fan switch signal	R					T
Air conditioner switch signal	R					T
MI signal	T					R
Current gear position signal		T				R
Engine coolant temperature signal	T					R
Fuel consumption signal	T					R
Vehicle speed signal			T			R
	R					T
Seat belt reminder signal					R	T
Headlamp switch signal					T	R

Signals	ECM	TCM	ABS actuator and electric unit (control unit)	Tyre pressure monitoring control unit	Smart entrance control unit	Combination meter
Flashing indicator signal					T	R
Engine cooling fan speed signal	T				R	
Child lock indicator signal					T	R
Door switches state signal					T	R
Key ID signal	R				T	
	T				R	
A/C compressor signal	T				R	
Tire pressure signal				T		R

TYPE 17

System diagram



Input/output signal chart

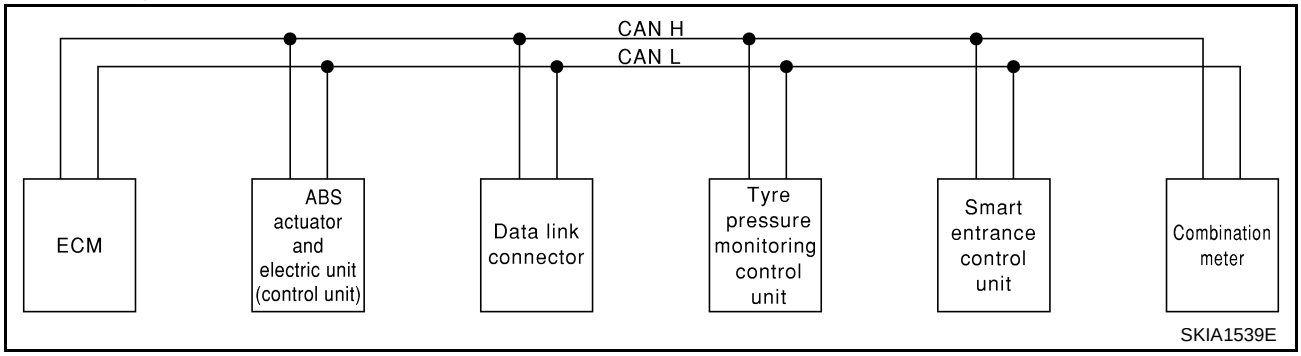
T: Transmit R: Receive

Signals	ECM	ESP/ TCS / ABS control unit	Tyre pressure monitoring control unit	Steering angle sensor	Smart entrance control unit	Combination meter
Engine speed signal	T	R				R
Accelerator pedal position signal	T	R				
ESP operation signal	R	T				
TCS operation signal	R	T				
ABS operation signal	R	T				
Steering wheel angle sensor signal		R		T		
Rear window defogger signal	R				T	
Heater fan switch signal	R					T
Air conditioner switch signal	R					T
MI signal	T					R
Engine coolant temperature signal	T					R
Fuel consumption signal	T					R
Vehicle speed signal		T				R
	R					T
Seat belt reminder signal					R	T
Headlamp switch signal					T	R
Flashing indicator signal					T	R
Engine cooling fan speed signal	T				R	

Signals	ECM	ESP/ TCS / ABS control unit	Tyre pressure monitoring control unit	Steering angle sensor	Smart entrance control unit	Combination meter
Child lock indicator signal					T	R
Door switches state signal					T	R
Key ID signal	R				T	
	T				R	
A/C compressor signal	T				R	
Tire pressure signal			T			R

TYPE 18

System diagram



Input/output signal chart

T: Transmit R: Receive

Signals	ECM	ABS actuator and electric unit (control unit)	Tyre pressure monitoring control unit	Smart entrance control unit	Combination meter
Engine speed signal	T				R
Rear window defogger signal	R*1			T	
Heater fan switch signal	R*1				T
Air conditioner switch signal	R				T
MI signal	T				R
Glow lamp signal*2	T				R
Engine coolant temperature signal	T				R
Fuel consumption signal	T				R
Vehicle speed signal		T			R
	R				T
Seat belt reminder signal				R	T
Headlamp switch signal				T	R
Flashing indicator signal				T	R
Engine cooling fan speed signal	T			R	
Child lock indicator signal				T	R
Door switches state signal				T	R
Key ID signal	R			T	
	T			R	

Signals	ECM	ABS actuator and electric unit (control unit)	Tyre pressure monitoring control unit	Smart entrance control unit	Combination meter
A/C compressor signal	T			R	
Tire pressure signal			T		R

*1: Except YD22DDTi engine model
*2: YD22DDTi engine model only

CAN Communication Unit For RHD Models without Tyre Pressure Monitoring System

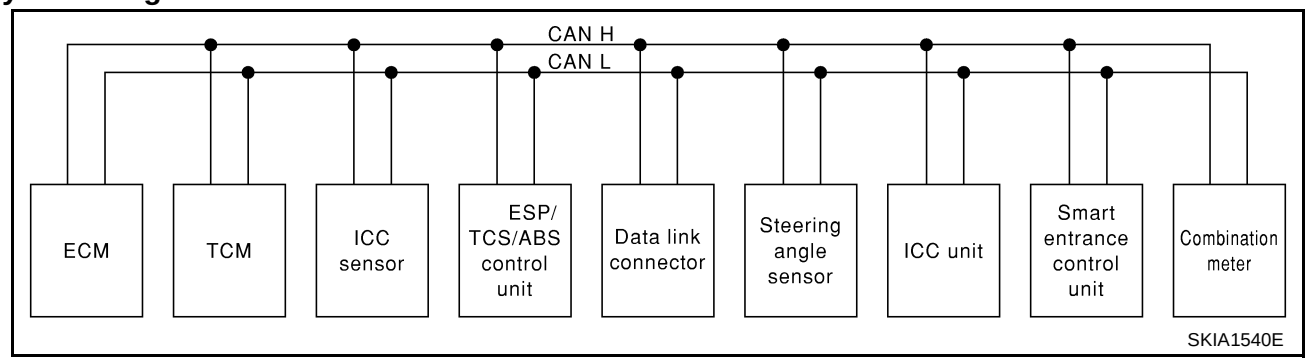
EKS004JG

Go to CAN system, when selecting your car model from the following table.

Body type	Sedan/Wagon								
Axle	2WD								
Engine	QR20DE			QG18DE	QR20DE	QG16DE	QG18DE	QR20DE	YD22DDTi
Transmission	CVT			A/T	6M/T	5M/T		6M/T	
Brake control	ESP		ABS		ESP	ABS			
ICC system	Applicable	Not applicable							
CAN communication unit									
ECM	×	×	×	×	×	×	×	×	×
TCM	×	×	×	×					
ICC sensor	×								
ESP/TCS/ABS control unit	×	×			×				
ABS actuator and electric unit (control unit)			×	×		×	×	×	×
Data link connector	×	×	×	×	×	×	×	×	×
Steering angle sensor	×	×			×				
ICC unit	×								
Smart entrance control unit	×	×	×	×	×	×	×	×	×
Combination meter	×	×	×	×	×	×	×	×	×
Can communication type	LAN-30, "TYPE 19"	LAN-31, "TYPE 20"	LAN-32, "TYPE 21"	LAN-33, "TYPE 22"	LAN-34, "TYPE 23"	LAN-35, "TYPE 24"			
Can system Trouble Diagnosis	LAN-379, "CAN SYSTEM (TYPE 19)"	LAN-404, "CAN SYSTEM (TYPE 20)"	LAN-422, "CAN SYSTEM (TYPE 21)"	LAN-438, "CAN SYSTEM (TYPE 22)"	LAN-454, "CAN SYSTEM (TYPE 23)"	LAN-469, "CAN SYSTEM (TYPE 24)"			

TYPE 19

System diagram



Input/output signal chart

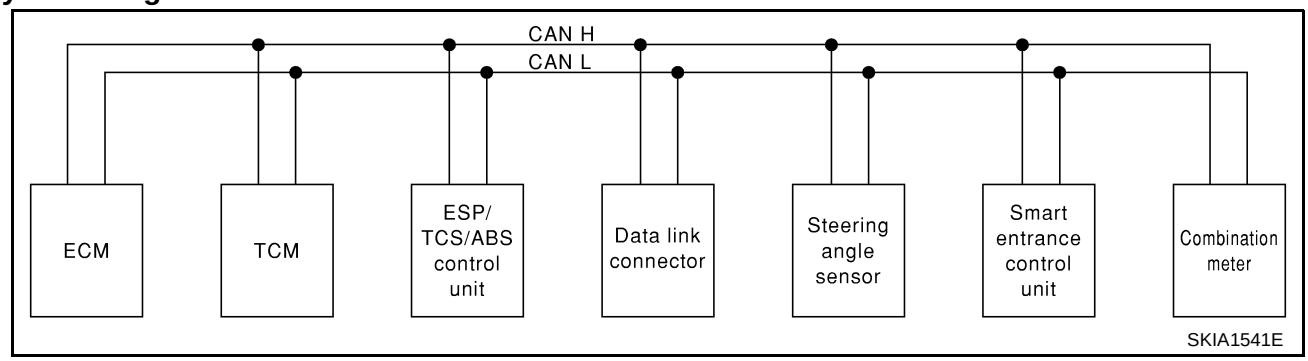
T: Transmit R: Receive

Signals	ECM	TCM	ICC sensor	ESP/ TCS / ABS control unit	Steering angle sensor	ICC unit	Smart entrance control unit	Combination meter
Engine speed signal	T	R		R		R		R
Accelerator pedal position signal	T	R		R		R		
Closed throttle position signal	T					R		
ICC steering switch signal	T					R		
Shift pattern signal		T				R		
Parking brake switch signal				T		R		
ICC system display signal						T		R
ICC sensor signal			T			R		
ESP operation signal	R			T		R		
TCS operation signal	R			T		R		
ABS operation signal	R	R		T		R		
Stop lamp switch signal		R		T				
Steering wheel angle sensor signal				R	T			
Wheel speed sensor signal				T		R		
Rear window defogger signal	R						T	
Heater fan switch signal	R							T
Air conditioner switch signal	R							T
Primary pulley revolution signal	R	T				R		
Secondary pulley revolution signal	R	T				R		
ICC operation signal	R					T		
Brake switch signal	R					T		
MI signal	T							R
Current gear position signal		T						R
Engine coolant temperature signal	T					R		R
Fuel consumption signal	T							R
Vehicle speed signal				T				R
	R							T
Seat belt reminder signal							R	T
Headlamp switch signal							T	R

Signals	ECM	TCM	ICC sensor	ESP/ TCS / ABS control unit	Steering angle sensor	ICC unit	Smart entrance control unit	Combination meter
Flashing indicator signal							T	R
Engine cooling fan speed signal	T						R	
Child lock indicator signal							T	R
Door switches state signal							T	R
Key ID signal	R						T	
	T						R	
A/C compressor signal	T						R	

TYPE 20

System diagram



Input/output signal chart

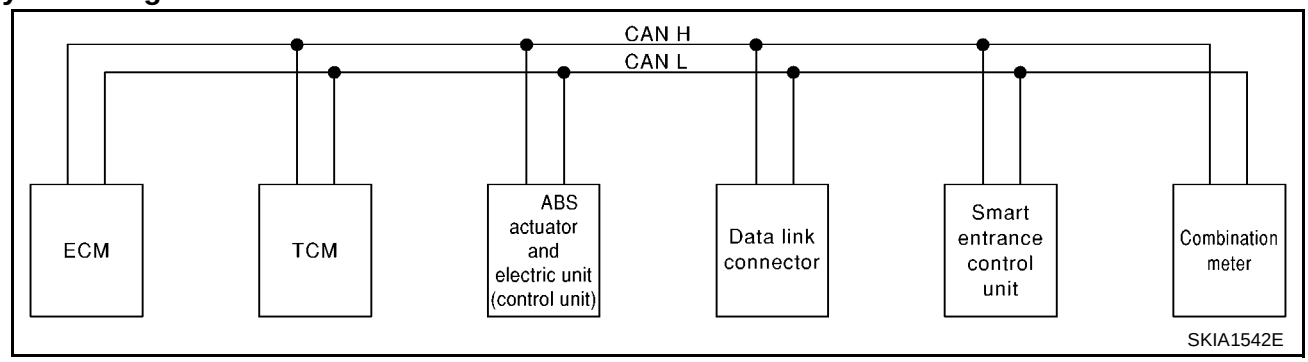
T: Transmit R: Receive

Signals	ECM	TCM	ESP/ TCS / ABS control unit	Steering angle sensor	Smart entrance control unit	Combination meter
Engine speed signal	T	R	R			R
Accelerator pedal position signal	T	R	R			
ESP operation signal	R		T			
TCS operation signal	R		T			
ABS operation signal	R	R	T			
Stop lamp switch signal		R	T			
Steering wheel angle sensor signal			R	T		
Rear window defogger signal	R				T	
Heater fan switch signal	R					T
Air conditioner switch signal	R					T
Primary pulley revolution signal	R	T				
Secondary pulley revolution signal	R	T				
MI signal	T					R
Current gear position signal		T				R
Engine coolant temperature signal	T					R
Fuel consumption signal	T					R
Vehicle speed signal			T			R
	R					T
Seat belt reminder signal					R	T

Signals	ECM	TCM	ESP/TCS / ABS control unit	Steering angle sensor	Smart entrance control unit	Combination meter
Headlamp switch signal					T	R
Flashing indicator signal					T	R
Engine cooling fan speed signal	T				R	
Child lock indicator signal					T	R
Door switches state signal					T	R
Key ID signal	R				T	
	T				R	
A/C compressor signal	T				R	

TYPE 21

System diagram



Input/output signal chart

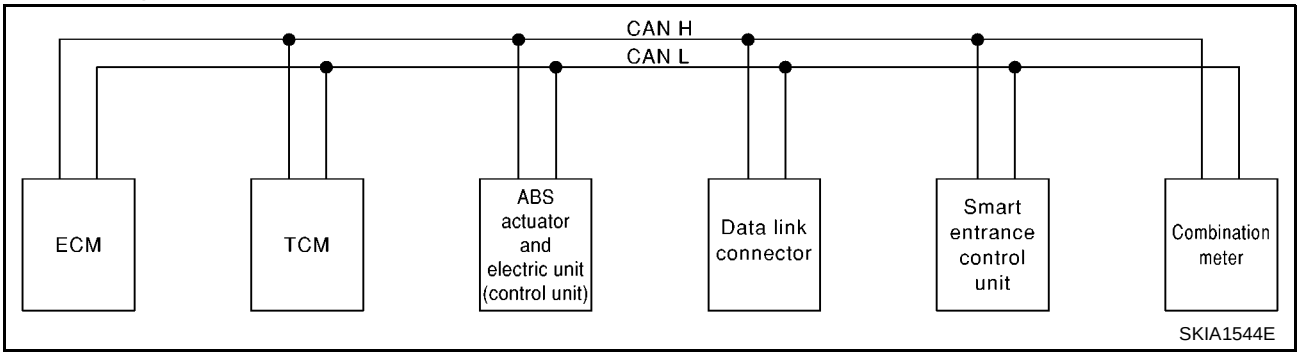
T: Transmit R: Receive

Signals	ECM	TCM	ABS actuator and electric unit (control unit)	Smart entrance control unit	Combination meter
Engine speed signal	T	R			R
Stop lamp switch signal		R	T		
Rear window defogger signal	R			T	
Heater fan switch signal	R				T
Air conditioner switch signal	R				T
Primary pulley revolution signal	R	T			
Secondary pulley revolution signal	R	T			
MI signal	T				R
Current gear position signal		T			R
Engine coolant temperature signal	T				R
Fuel consumption signal	T				R
Vehicle speed signal			T		R
	R				T
Seat belt reminder signal				R	T
Headlamp switch signal				T	R
Flashing indicator signal				T	R
Engine cooling fan speed signal	T			R	
Child lock indicator signal				T	R

Signals	ECM	TCM	ABS actuator and electric unit (control unit)	Smart entrance control unit	Combination meter
Door switches state signal				T	R
Key ID signal	R			T	
	T			R	
A/C compressor signal	T			R	

TYPE 22

System diagram



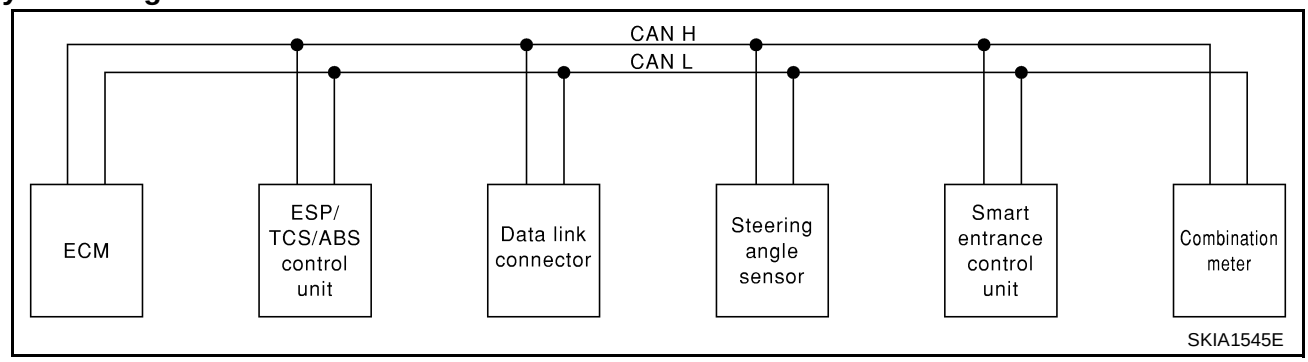
Input/output signal chart

T: Transmit R: Receive

Signals	ECM	TCM	ABS actuator and electric unit (control unit)	Smart entrance control unit	Combination meter
Engine speed signal	T	R			R
Stop lamp switch signal		R	T		
Rear window defogger signal	R			T	
Heater fan switch signal	R				T
Air conditioner switch signal	R				T
MI signal	T				R
Current gear position signal		T			R
Engine coolant temperature signal	T				R
Fuel consumption signal	T				R
Vehicle speed signal			T		R
	R				T
Seat belt reminder signal				R	T
Headlamp switch signal				T	R
Flashing indicator signal				T	R
Engine cooling fan speed signal	T			R	
Child lock indicator signal				T	R
Door switches state signal				T	R
Key ID signal	R			T	
	T			R	
A/C compressor signal	T			R	

TYPE 23

System diagram



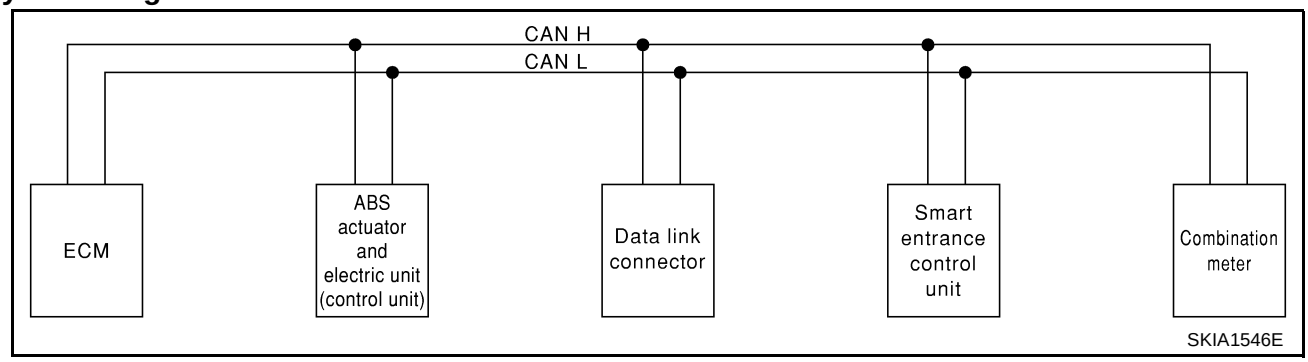
Input/output signal chart

T: Transmit R: Receive

Signals	ECM	ESP/ TCS / ABS control unit	Steering angle sensor	Smart entrance control unit	Combina-tion meter
Engine speed signal	T	R			R
Accelerator pedal position signal	T	R			
ESP operation signal	R	T			
TCS operation signal	R	T			
ABS operation signal	R	T			
Steering wheel angle sensor signal		R	T		
Rear window defogger signal	R			T	
Heater fan switch signal	R				T
Air conditioner switch signal	R				T
MI signal	T				R
Engine coolant temperature signal	T				R
Fuel consumption signal	T				R
Vehicle speed signal		T			R
	R				T
Seat belt reminder signal				R	T
Headlamp switch signal				T	R
Flashing indicator signal				T	R
Engine cooling fan speed signal	T			R	
Child lock indicator signal				T	R
Door switches state signal				T	R
Key ID signal	R			T	
	T			R	
A/C compressor signal	T			R	

TYPE 24

System diagram



Input/output signal chart

T: Transmit R: Receive

Signals	ECM	ABS actuator and electric unit (control unit)	Smart entrance control unit	Combination meter
Engine speed signal	T			R
Rear window defogger signal	R*1		T	
Heater fan switch signal	R*1			T
Air conditioner switch signal	R			T
MI signal	T			R
Glow lamp signal*2	T			R
Engine coolant temperature signal	T			R
Fuel consumption signal	T			R
Vehicle speed signal		T		R
	R			T
Seat belt reminder signal			R	T
Headlamp switch signal			T	R
Flashing indicator signal			T	R
Engine cooling fan speed signal	T		R	
Child lock indicator signal			T	R
Door switches state signal			T	R
Key ID signal	R		T	
	T		R	
A/C compressor signal	T		R	

*1: Except YD22DDTi engine model
*2: YD22DDTi engine model only

CAN SYSTEM (TYPE 1)

PFP:23710

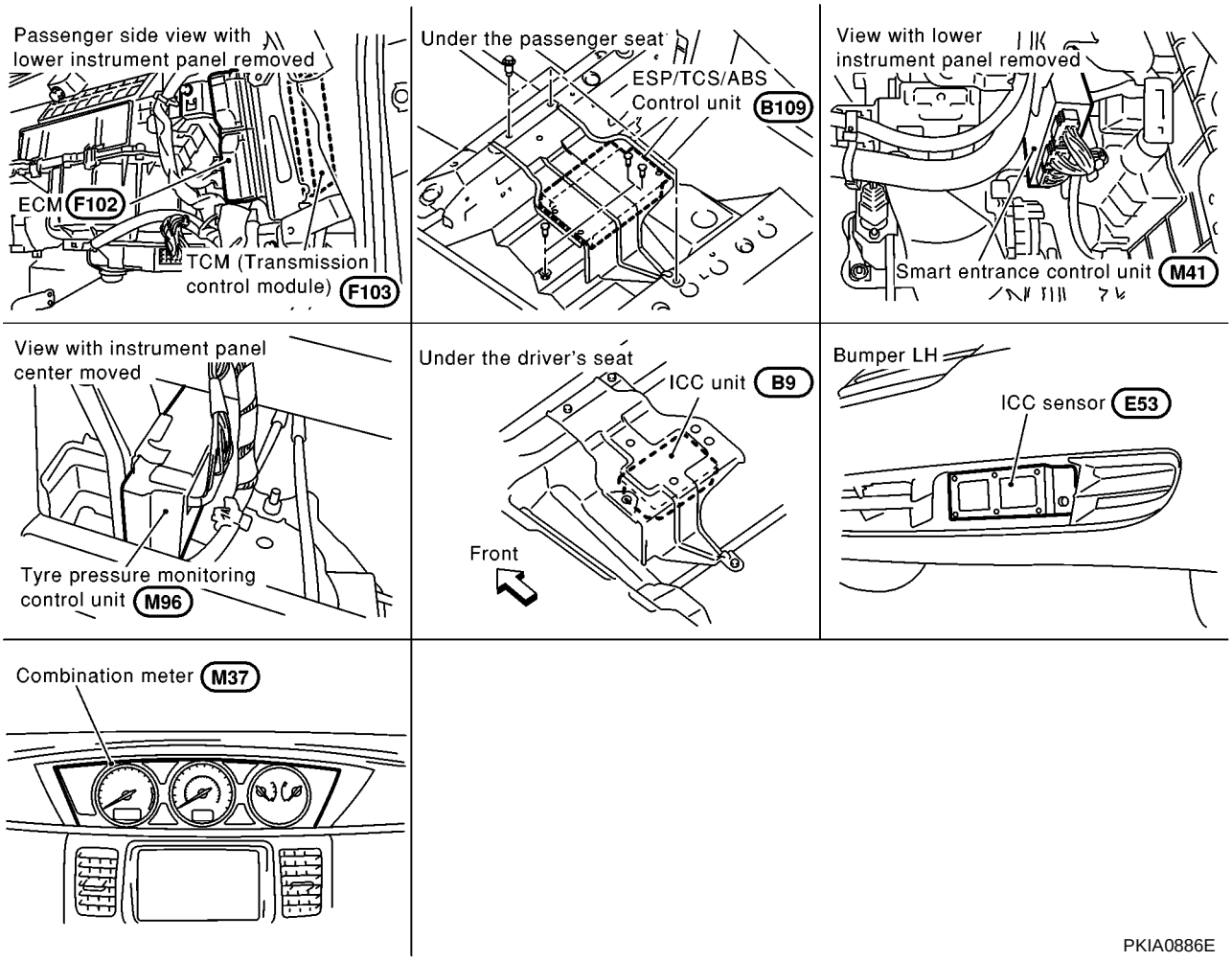
System Description

EKS004YI

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.

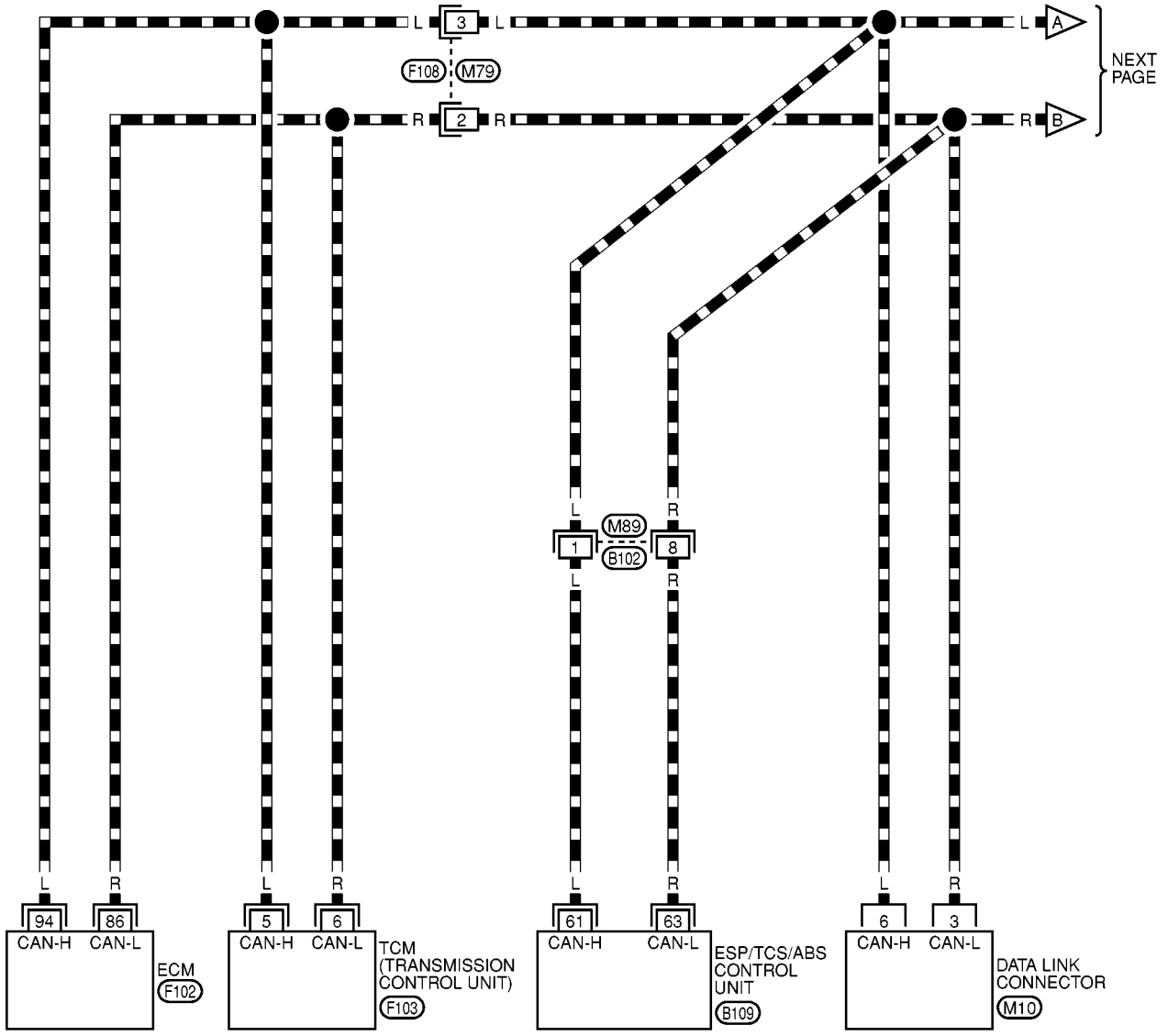
Component Parts and Harness Connector Location

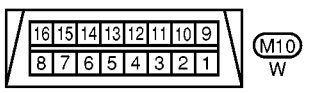
EKS004YJ

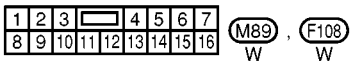


Wiring Diagram — CAN —

EKS004YK





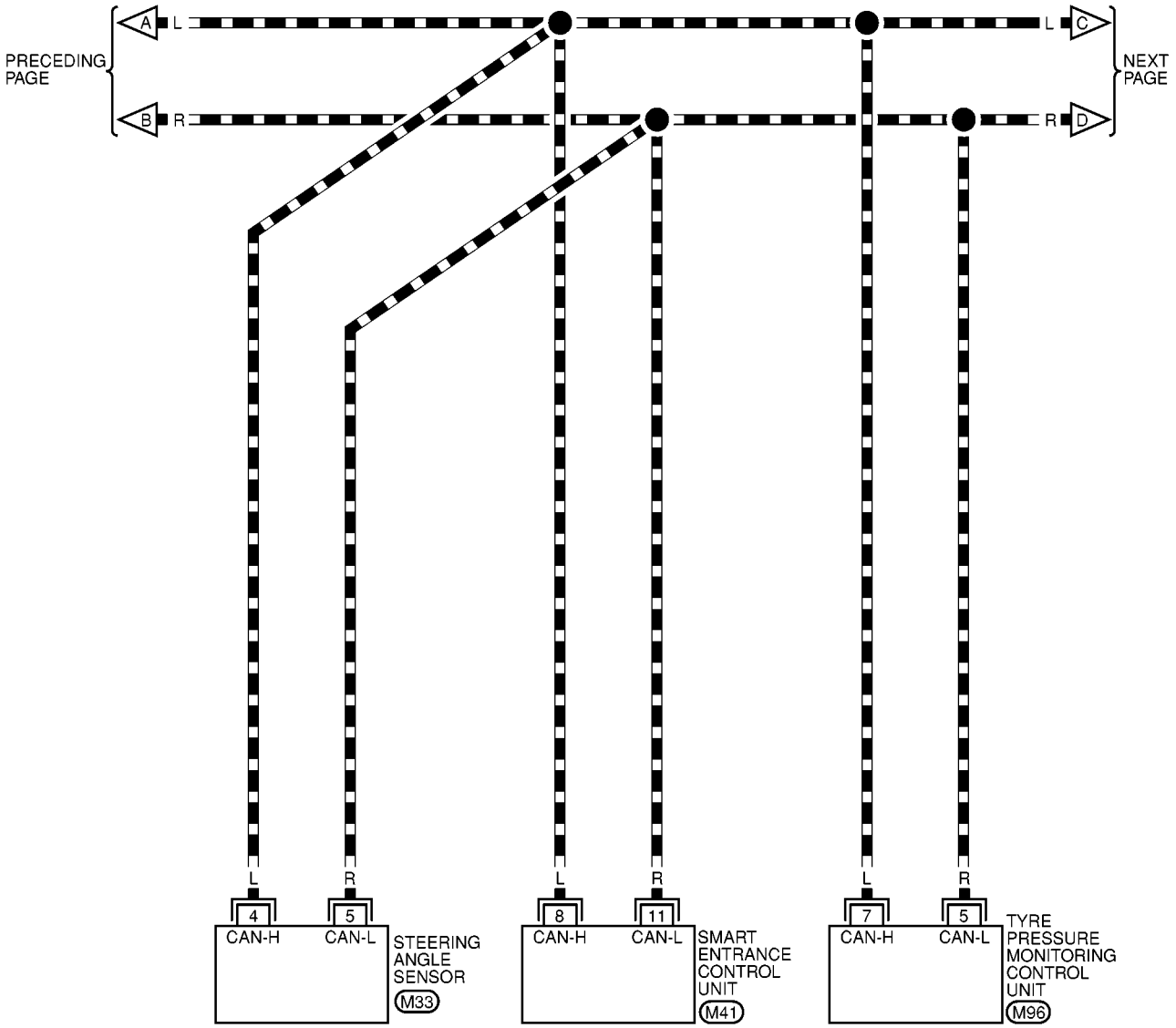


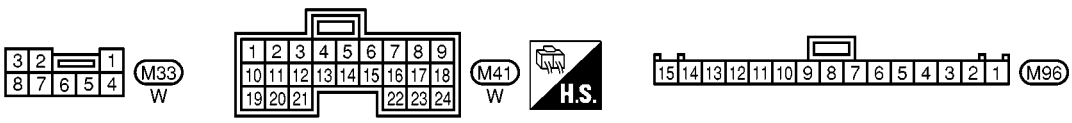
REFER TO THE FOLLOWING.
F102 , F103 , B109
-ELECTRICAL UNITS

MKWA0219E

LAN-CAN-02

: DATA LINE





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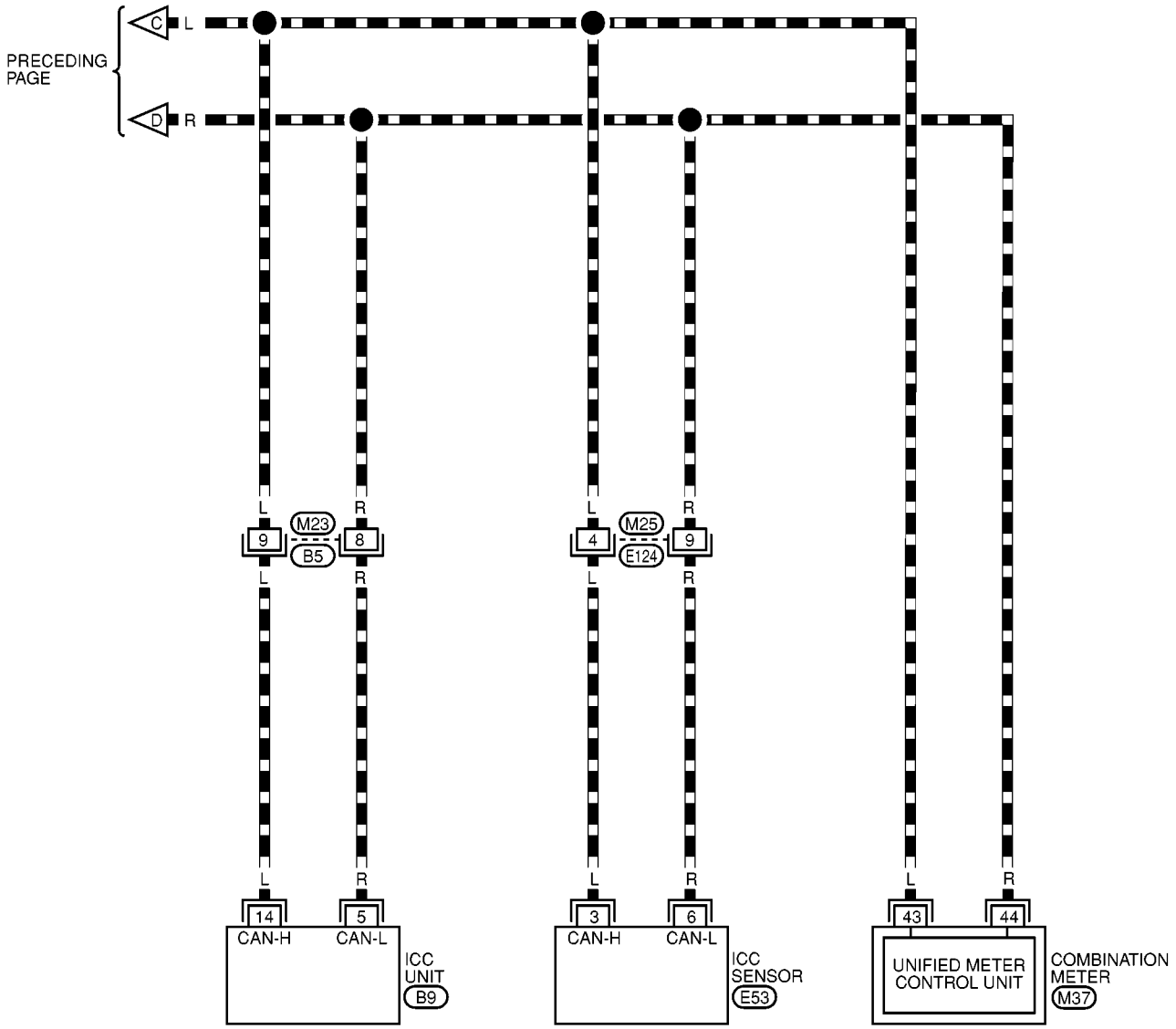
: DATA LINE



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Work Flow

EKS004YL

1. Print all the data of “SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE”, “CVT”, “ABS”, “SMART ENTRANCE”, “AIR PRESSURE MONITOR”, and “ICC” displayed on CONSULT-II. Refer to EC-1083, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) or EC-1505, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) for “ENGINE” and Refer to CVT-118, "DTC U1000 CAN COMMUNICATION LINE" (EURO-OBD) or CVT-201, "CAN COMMUNICATION LINE" (ALL) for “CVT”. Refer to BRC-107, "Inspection 15 CAN Communication Circuit, ESP/TCS/ABS Control Unit and Steering Angle Sensor" for “ABS”. Refer to BCS-40, "CAN Communication Line Check" for “SMART ENTRANCE”. Refer to WT-35, "Inspection 4: CAN Communication Line" for “AIR PRESSURE MONITOR”. Refer to ACS-46, "DTC 20 CAN COMM CIRCUIT" for “ICC”.
2. Attach the printed sheet of “SELF-DIAG RESULTS” and “DATA MONITOR” onto the check sheet. Refer to LAN-41, "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-41, "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-42, "CHECK SHEET RESULTS (EXAMPLE)"

CHECK SHEET

Check sheet table

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 6	–	CAN CIRC 5	–	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 5	–	–	CAN CIRC 6	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–	–	–	CAN CIRC 3
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	–	–	–	CAN CIRC 2
ICC	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 3	–	–	–	–	CAN CIRC 8	–

Symptoms:

Attach copy of
ENGINE
SELF-DIAG RESULTS

Attach copy of
CVT
SELF-DIAG RESULTS

Attach copy of
ABS
SELF-DIAG RESULTS

Attach copy of
SMART ENTRANCE
SELF-DIAG RESULTS

Attach copy of
AIR PRESSURE MONITOR
SELF-DIAG RESULTS

Attach copy of
ICC
SELF-DIAG RESULTS

Attach copy of
ENGINE
DATA MONITOR

Attach copy of
CVT
DATA MONITOR

Attach copy of
ABS
DATA MONITOR

Attach copy of
SMART ENTRANCE
DATA MONITOR

Attach copy of
AIR PRESSURE MONITOR
DATA MONITOR

Attach copy of
ICC
DATA MONITOR

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CHECK SHEET RESULTS (EXAMPLE)

Case 1: Replace ECM

ENGINE	CAN COMM ✓	CAN CIRC 1	–	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 6	–	CAN CIRC 5	–	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 5	–	–	CAN CIRC 6	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–	–	–	CAN CIRC 3
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	–	–	–	CAN CIRC 2
ICC	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 3	–	–	–	–	CAN CIRC 8	–

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2 ✓	CAN CIRC 3 ✓	–	CAN CIRC 6 ✓	–	CAN CIRC 5 ✓	–	CAN CIRC 4 ✓
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 5	–	–	CAN CIRC 6	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–	–	–	CAN CIRC 3
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	–	–	–	CAN CIRC 2
ICC	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 3	–	–	–	–	CAN CIRC 8	–

Case 2: Replace TCM

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2 ✓	CAN CIRC 3	–	CAN CIRC 6	–	CAN CIRC 5	–	CAN CIRC 4
CVT	CAN COMM ✓	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3 ✓	–	CAN CIRC 5	–	–	CAN CIRC 6	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–	–	–	CAN CIRC 3
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	–	–	–	CAN CIRC 2
ICC	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4 ✓	CAN CIRC 3	–	–	–	–	CAN CIRC 8	–

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 6	–	CAN CIRC 5	–	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	–	CAN CIRC 3 ✓	–	–	–	–	–	CAN CIRC 4 ✓
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 5	–	–	CAN CIRC 6	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–	–	–	CAN CIRC 3
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	–	–	–	CAN CIRC 2
ICC	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 3	–	–	–	–	CAN CIRC 8	–

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Case 3: Replace ESP/TCS/ABS control unit

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	CAN CIRC 3 ✓	–	CAN CIRC 6	–	CAN CIRC 5	–	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3 ✓	–	–	–	–	–	CAN CIRC 4
ABS	CAN COMM ✓	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 5	–	–	CAN CIRC 6	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–	–	–	CAN CIRC 3
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	–	–	–	CAN CIRC 2
ICC	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 3 ✓	–	–	–	–	CAN CIRC 8	–

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 6	–	CAN CIRC 5	–	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	CAN CIRC 3 ✓	–	CAN CIRC 5 ✓	–	–	CAN CIRC 6 ✓	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–	–	–	CAN CIRC 3
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	–	–	–	CAN CIRC 2
ICC	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 3	–	–	–	–	CAN CIRC 8	–

Case 4: Replace Smart entrance control unit

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 6	–	CAN CIRC 5	–	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 5	–	–	CAN CIRC 6	–	–
SMART ENTRANCE	CAN COMM ✓	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–	–	–	CAN CIRC 3
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	–	–	–	CAN CIRC 2
ICC	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 3	–	–	–	–	CAN CIRC 8	–

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 6	–	CAN CIRC 5	–	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 5	–	–	CAN CIRC 6	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	–	–	–	–	–	–	–	CAN CIRC 3 ✓
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	–	–	–	CAN CIRC 2
ICC	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 3	–	–	–	–	CAN CIRC 8	–

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Case 5: Replace Tyre pressure monitoring control unit

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 6	–	CAN CIRC 5	–	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 5	–	–	CAN CIRC 6	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–	–	–	CAN CIRC 3
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	–	–	–	CAN CIRC 2
ICC	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 3	–	–	–	–	CAN CIRC 8	–

Case 6: Replace ICC unit

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 6	–	CAN CIRC 5	–	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 5	–	–	CAN CIRC 6	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–	–	–	CAN CIRC 3
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	–	–	–	CAN CIRC 2
ICC	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 3	–	–	–	–	CAN CIRC 8	–

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 6	–	CAN CIRC 5	–	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 5	–	–	CAN CIRC 6	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–	–	–	CAN CIRC 3
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	–	–	–	CAN CIRC 2
ICC	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 3	–	–	–	–	CAN CIRC 8	–

Case 7

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 6	–	CAN CIRC 5	–	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 5	–	–	CAN CIRC 6	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–	–	–	CAN CIRC 3
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	–	–	–	CAN CIRC 2
ICC	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 3	–	–	–	–	CAN CIRC 8	–

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Case 8

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 6 ✓	–	CAN CIRC 5 ✓	–	CAN CIRC 4 ✓
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	–	–	–	CAN CIRC 4 ✓
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 5 ✓	–	–	CAN CIRC 6 ✓	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	–	–	–	–	–	–	–	CAN CIRC 3
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	–	–	–	CAN CIRC 2
ICC	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	CAN CIRC 4 ✓	CAN CIRC 3 ✓	–	–	–	–	CAN CIRC 8	–

Case 9

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 6	–	CAN CIRC 5 ✓	–	CAN CIRC 4 ✓
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	–	–	–	CAN CIRC 4 ✓
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 5	–	–	CAN CIRC 6 ✓	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–	–	–	CAN CIRC 3 ✓
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	–	–	–	CAN CIRC 2
ICC	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	CAN CIRC 4 ✓	CAN CIRC 3 ✓	–	–	–	–	CAN CIRC 8	–

Case 10

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 6	–	CAN CIRC 5 ✓	–	CAN CIRC 4 ✓
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	–	–	–	CAN CIRC 4 ✓
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 5	–	–	CAN CIRC 6 ✓	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–	–	–	CAN CIRC 3 ✓
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	–	–	–	CAN CIRC 2 ✓
ICC	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	CAN CIRC 4 ✓	CAN CIRC 3 ✓	–	–	–	–	CAN CIRC 8	–

Case 11

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 6	–	CAN CIRC 5	–	CAN CIRC 4 ✓
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	–	–	–	CAN CIRC 4 ✓
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 5	–	–	CAN CIRC 6	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–	–	–	CAN CIRC 3 ✓
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	–	–	–	CAN CIRC 2 ✓
ICC	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 3	–	–	–	–	CAN CIRC 8 ✓	–

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Case 12

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 6	–	CAN CIRC 5	–	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 5	–	–	CAN CIRC 6	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–	–	–	CAN CIRC 3
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	–	–	–	CAN CIRC 2
ICC	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 3	–	–	–	–	CAN CIRC 8	–

Case 13

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 6	–	CAN CIRC 5	–	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 5	–	–	CAN CIRC 6	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–	–	–	CAN CIRC 3
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	–	–	–	CAN CIRC 2
ICC	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 3	–	–	–	–	CAN CIRC 8	–

Case 14

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 6	–	CAN CIRC 5	–	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 5	–	–	CAN CIRC 6	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–	–	–	CAN CIRC 3
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	–	–	–	CAN CIRC 2
ICC	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 3	–	–	–	–	CAN CIRC 8	–

Case 15

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 6	–	CAN CIRC 5	–	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 5	–	–	CAN CIRC 6	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–	–	–	CAN CIRC 3
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	–	–	–	CAN CIRC 2
ICC	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 3	–	–	–	–	CAN CIRC 8	–

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Case 16

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 6	–	CAN CIRC 5	–	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 5	–	–	CAN CIRC 6	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–	–	–	CAN CIRC 3
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	–	–	–	CAN CIRC 2
ICC	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 3	–	–	–	–	CAN CIRC 8	–

Case 17

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 6	–	CAN CIRC 5	–	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 5	–	–	CAN CIRC 6	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–	–	–	CAN CIRC 3
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	–	–	–	CAN CIRC 2
ICC	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 3	–	–	–	–	CAN CIRC 8	–

Case 18

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 6	–	CAN CIRC 5	–	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 5	–	–	CAN CIRC 6	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–	–	–	CAN CIRC 3
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	–	–	–	CAN CIRC 2
ICC	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 3	–	–	–	–	CAN CIRC 8	–

Case 19

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 6	–	CAN CIRC 5	–	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 5	–	–	CAN CIRC 6	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–	–	–	CAN CIRC 3
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	–	–	–	CAN CIRC 2
ICC	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 3	–	–	–	–	CAN CIRC 8	–

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Case 20

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 6	–	CAN CIRC 5	–	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 5	–	–	CAN CIRC 6	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–	–	–	CAN CIRC 3
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	–	–	–	CAN CIRC 2
ICC	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 3	–	–	–	–	CAN CIRC 8	–

Case 21

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 6	–	CAN CIRC 5	–	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 5	–	–	CAN CIRC 6	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–	–	–	CAN CIRC 3
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	–	–	–	CAN CIRC 2
ICC	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 3	–	–	–	–	CAN CIRC 8	–

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

INSPECTION

Proceed trouble diagnosis according to the check sheet results (example).
Case 1:Replace ECM.
Case 2:Replace TCM.
Case 3:Replace ESP/TCS/ABS control unit.
Case 4:Replace Smart entrance control unit.
Case 5:Replace Tyre pressure monitoring control unit.
Case 6:Replace ICC unit.
Case 7:Check Harness between TCM and Data link connector. Refer to LAN-49, "Circuit Check Between TCM and Data Link Connector"
Case 8:Check Harness between Data link connector and Smart entrance control unit. Refer to LAN-50, "Circuit Check Between Data Link Connector and Smart Entrance Control Unit"
Case 9:Check Harness between Smart entrance control unit and Tyre pressure monitoring control unit. Refer to LAN-51, "Circuit Check Between Smart Entrance Control Unit and Tyre Pressure Monitoring Control Unit"
Case 10:Check Harness between Tyre pressure monitoring control unit and ICC unit. Refer to LAN-51, "Circuit Check Between Tyre Pressure Monitoring Control Unit and ICC Unit"
Case 11:Check Harness between ICC unit and ICC sensor. Refer to LAN-52, "Circuit Check Between ICC Unit and ICC Sensor"
Case 12:Check ECM Circuit. Refer to LAN-53, "ECM Circuit Check"
Case 13:Check TCM Circuit. Refer to LAN-53, "TCM Circuit Check"
Case 14:Check ESP/TCS/ABS control unit Circuit. Refer to LAN-54, "ESP/TCS/ABS Control Unit Circuit Check"
Case 15:Check Steering angle sensor Circuit. Refer to LAN-54, "Steering Angle Sensor Circuit Check"

Case 16:Check Smart entrance control unit Circuit. Refer to LAN-55, "Smart Entrance Control Unit Circuit Check"
Case 17:Check Tyre pressure monitoring control unit Circuit. Refer to LAN-55, "Tyre Pressure Monitoring Control Unit Circuit Check"
Case 18:Check ICC unit Circuit. Refer to LAN-56, "ICC Unit Circuit Check"
Case 19:Check ICC sensor Circuit. Refer to LAN-56, "ICC Sensor Circuit Check"
Case 20:Check Combination meter Circuit. Refer to LAN-57, "Combination Meter Circuit Check"
Case 21:Check CAN communication Circuit. Refer to LAN-58, "CAN Communication Circuit Check"

Circuit Check Between TCM and Data Link Connector

EKS004YM

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, control unit-side and harness-side)

- TCM.
- ESP/TCS/ABS control unit.
- Between TCM and ESP/TCS/ABS control unit.

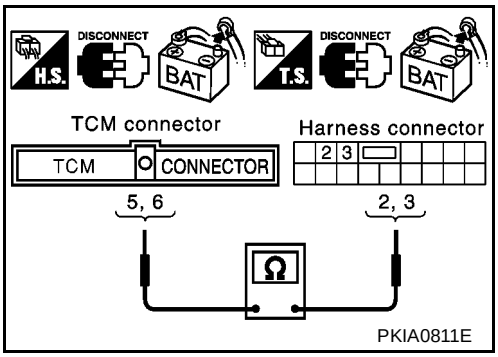
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect TCM connector and harness connector F108.
2. Check continuity between TCM harness connector F103 terminals 5 (L), 6 (R) and harness connector F108 terminals 3 (L), 2 (R).

5(L) – 3(L) : Continuity should exist.
6(R) – 2(R) : Continuity should exist.



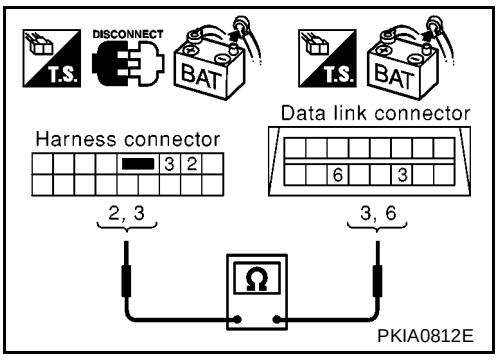
OK or NG

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

3. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between harness connector M79 terminals 3 (L), 2 (R) and Data link connector M10 terminals 6 (L), 3 (R).

3(L) – 6(L) : Continuity should exist.
2(R) – 3(R) : Continuity should exist.



OK or NG

OK >> Reconnect all connectors to perform “SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE”, “CVT”, “ABS”, “SMART ENTRANCE”, “AIR PRESSURE MONITOR”, and “ICC” displayed on CONSULT-II. Refer to EC-1083, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) or EC-1505, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) for “ENGINE” and Refer to CVT-118, "DTC U1000 CAN COMMUNICATION LINE" (EURO-OBD) or CVT-201, "CAN COMMUNICATION LINE" (ALL) for “CVT”. Refer to BRC-107, "Inspection 15 CAN Communication Circuit, ESP/TCS/ABS Control Unit and Steering Angle Sensor" for “ABS”. Refer to BCS-40, "CAN Communication Line Check" for “SMART ENTRANCE”. Refer to WT-35, "Inspection 4:

CAN Communication Line" for “AIR PRESSURE MONITOR”. Refer to ACS-46, "DTC 20 CAN COMM CIRCUIT" for “ICC”.

NG >> Repair harness.

Circuit Check Between Data Link Connector and Smart Entrance Control Unit

EKS004YN

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 unit-side, sensor-side and harness-side)

- Smart entrance control unit.
- Steering angle sensor.
- ESP/TCS/ABS control unit.
- Between smart entrance control unit and ESP/TCS/ABS control unit.

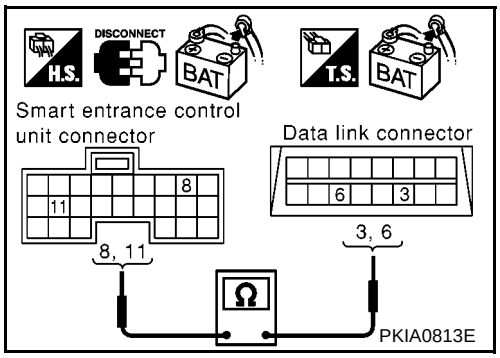
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect smart entrance control unit connector.
2. Check continuity between smart entrance control unit harness connector M41 terminals 8 (L), 11 (R) and Data link connector M10 terminals 6 (L), 3 (R).

8(L) – 6(L) : Continuity should exist.
11(R) – 3(R) : Continuity should exist.



OK or NG

OK >> Reconnect all connectors to perform “SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE”, “CVT”, “ABS”, “SMART ENTRANCE”, “AIR PRESSURE MONITOR”, and “ICC” displayed on CONSULT-II. Refer to EC-1083, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) or EC-1505, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) for “ENGINE” and Refer to CVT-118, "DTC U1000 CAN COMMUNICATION LINE" (EURO-OBD) or CVT-201, "CAN COMMUNICATION LINE" (ALL) for “CVT”. Refer to BRC-107, "Inspection 15 CAN Communication Circuit, ESP/TCS/ABS Control Unit and Steering Angle Sensor" for “ABS”. Refer to BCS-40, "CAN Communication Line Check" for “SMART ENTRANCE”. Refer to WT-35, "Inspection 4: CAN Communication Line" for “AIR PRESSURE MONITOR”. Refer to ACS-46, "DTC 20 CAN COMM CIRCUIT" for “ICC”.

NG >> Repair harness.

Circuit Check Between Smart Entrance Control Unit and Tyre Pressure Monitoring Control Unit

EKS004YO

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 unit-side, sensor-side and harness-side)

- Smart entrance control unit.
- Tyre pressure monitoring control unit.
- Steering angle sensor.

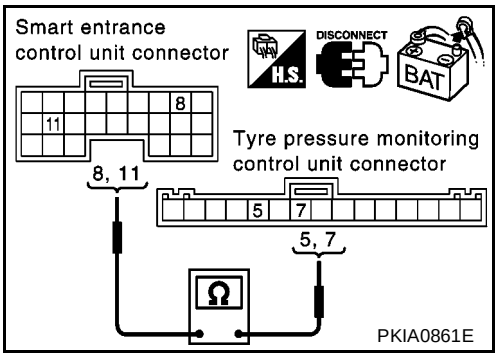
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect smart entrance control unit connector and tyre pressure monitoring control unit connector.
2. Check continuity between smart entrance control unit harness connector M41 terminals 8 (L), 11 (R) and tyre pressure monitoring control unit harness connector M96 terminals 7 (L), 5 (R).

8(L) – 7(L) : Continuity should exist.
11(R) – 5(R) : Continuity should exist.



OK or NG

OK >> Reconnect all connectors to perform “SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE”, “CVT”, “ABS”, “SMART ENTRANCE”, “AIR PRESSURE MONITOR”, and “ICC” displayed on CONSULT-II. Refer to EC-1083, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) or EC-1505, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) for “ENGINE” and Refer to CVT-118, "DTC U1000 CAN COMMUNICATION LINE" (EURO-OBD) or CVT-201, "CAN COMMUNICATION LINE" (ALL) for “CVT”. Refer to BRC-107, "Inspection 15 CAN Communication Circuit, ESP/TCS/ABS Control Unit and Steering Angle Sensor" for “ABS”. Refer to BCS-40, "CAN Communication Line Check" for “SMART ENTRANCE”. Refer to WT-35, "Inspection 4: CAN Communication Line" for “AIR PRESSURE MONITOR”. Refer to ACS-46, "DTC 20 CAN COMM CIRCUIT" for “ICC”.
NG >> Repair harness.

Circuit Check Between Tyre Pressure Monitoring Control Unit and ICC Unit

EKS004YP

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 unit-side and harness-side)

- Tyre pressure monitoring control unit.
- ICC unit.
- Between tyre pressure monitoring control unit and ICC unit.

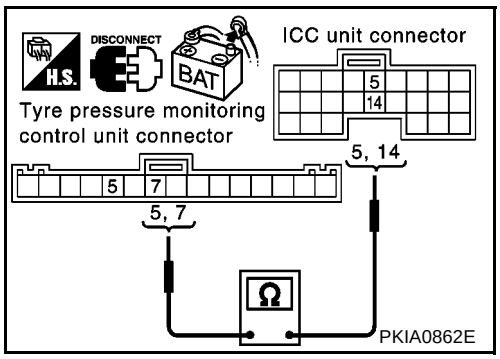
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect tyre pressure monitoring control unit connector and ICC unit connector.
2. Check continuity between tyre pressure monitoring control unit harness connector M96 terminals 7 (L), 5 (R) and ICC unit harness connector B9 terminals 14 (L), 5 (R).

7(L) – 14(L) : Continuity should exist.
5(R) – 5(R) : Continuity should exist.



OK or NG

OK >> Reconnect all connectors to perform “SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE”, “CVT”, “ABS”, “SMART ENTRANCE”, “AIR PRESSURE MONITOR”, and “ICC” displayed on CONSULT-II. Refer to EC-1083, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) or EC-1505, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) for “ENGINE” and Refer to CVT-118, "DTC U1000 CAN COMMUNICATION LINE" (EURO-OBD) or CVT-201, "CAN COMMUNICATION LINE" (ALL) for “CVT”. Refer to BRC-107, "Inspection 15 CAN Communication Circuit, ESP/TCS/ABS Control Unit and Steering Angle Sensor" for “ABS”. Refer to BCS-40, "CAN Communication Line Check" for “SMART ENTRANCE”. Refer to WT-35, "Inspection 4: CAN Communication Line" for “AIR PRESSURE MONITOR”. Refer to ACS-46, "DTC 20 CAN COMM CIRCUIT" for “ICC”.

NG >> Repair harness.

Circuit Check Between ICC Unit and ICC Sensor

EKS004YQ

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. (sensor-side, control unit-side and harness-side)

- ICC sensor.
- ICC unit.
- Between ICC sensor and ICC unit.

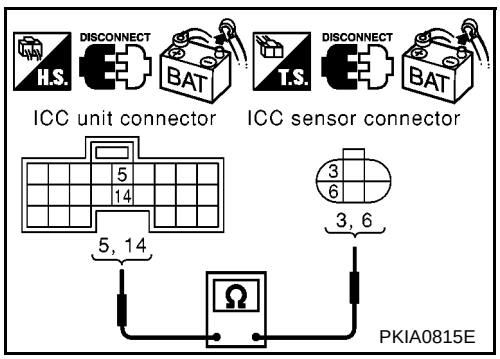
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ICC unit connector and ICC sensor connector.
2. Check continuity between ICC unit harness connector B9 terminals 14 (L), 5 (R) and ICC sensor harness connector E53 terminals 3 (L), 6 (R).

14(L) – 3(L) : Continuity should exist.
5(R) – 6(R) : Continuity should exist.



OK or NG

OK >> Reconnect all connectors to perform “SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE”, “CVT”, “ABS”, “SMART ENTRANCE”, “AIR PRESSURE MONITOR”, and “ICC” displayed on CONSULT-II. Refer to EC-1083, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) or EC-1505, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) for “ENGINE” and Refer to CVT-118, "DTC U1000 CAN COMMUNICATION LINE" (EURO-OBD) or CVT-201, "CAN COMMUNICATION LINE" (ALL) for “CVT”. Refer to BRC-107, "Inspection 15 CAN Communication Circuit, ESP/TCS/ABS Control

Unit and Steering Angle Sensor" for “ABS”. Refer to BCS-40, "CAN Communication Line Check" for “SMART ENTRANCE”. Refer to WT-35, "Inspection 4: CAN Communication Line" for “AIR PRESSURE MONITOR”. Refer to ACS-46, "DTC 20 CAN COMM CIRCUIT" for “ICC”.

NG >> Repair harness.

ECM Circuit Check

EKS004YR

1. CHECK CONNECTOR

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

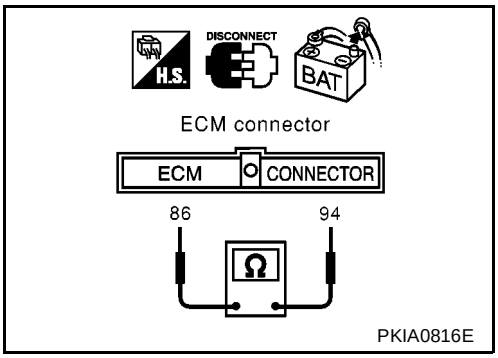
OK or NG

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 F102 terminals 94(L) and 86(R).

94(L) – 86(R) : Approx. 108 – 132Ω



OK or NG

OK >> Replace ECM.
NG >> Repair harness between TCM and ECM.

TCM Circuit Check

EKS004YS

1. CHECK CONNECTOR

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

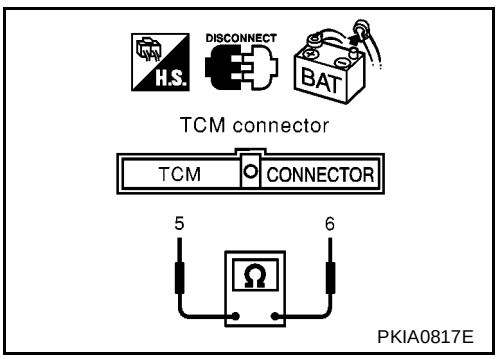
OK or NG

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 F103 terminals 5(L) and 6(R).

5(L) – 6(R) : Approx. 54 – 66Ω



OK or NG

OK >> Replace TCM.
NG >> Repair harness between TCM and ECM.

ESP/TCS/ABS Control Unit Circuit Check

EKS004YT

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 unit-side and harness-side)

- ESP/TCS/ABS control unit.
- Harness connector B102.
- Harness connector M89.

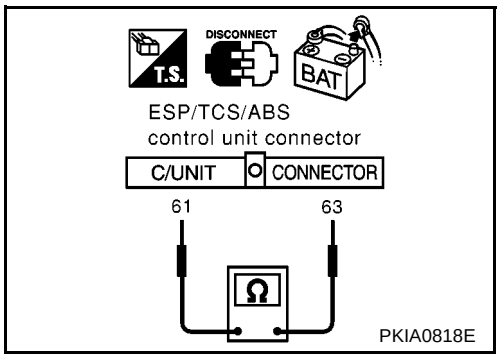
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ESP/TCS/ABS control unit connector.
2. Check resistance between ESP/TCS/ABS control unit harness connector B109 terminals 61(L) and 63(R).

61(L) – 63(R) : Approx. 54 – 66Ω



OK or NG

OK >> Replace ESP/TCS/ABS control unit.
NG >> Repair harness between Data link connector and ESP/TCS/ABS control unit.

Steering Angle Sensor Circuit Check

EKS004YU

1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check terminals and connector of steering angle sensor for damage, bend and loose connection. (sensor-side and harness-side)

OK or NG

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

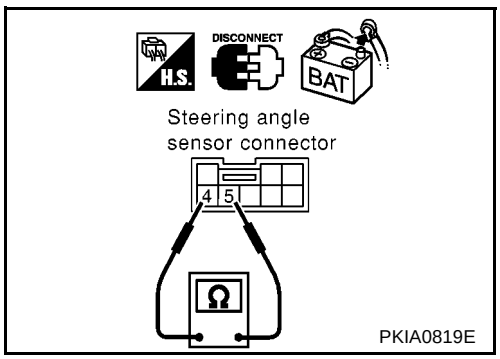
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect steering angle sensor connector.
2. Check resistance between steering angle sensor harness connector M33 terminals 4(L) and 5(R).

4(L) – 5(R) : Approx. 54 – 66Ω

OK or NG

OK >> Replace steering angle sensor.
NG >> Repair harness between steering angle sensor and smart entrance control unit.



Smart Entrance Control Unit Circuit Check

EKS004YV

1. CHECK CONNECTOR

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

OK or NG

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

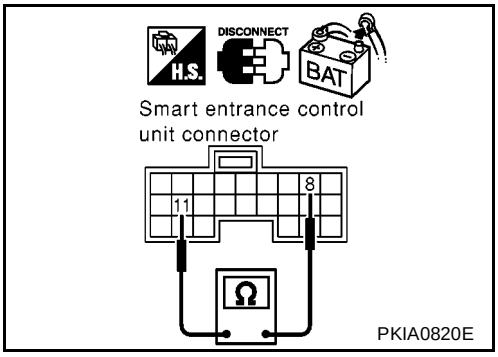
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect smart entrance control unit connector.
2. Check resistance between smart entrance control unit harness connector M41 terminals 8(L) and 11(R).

8(L) – 11(R) : Approx. 54 – 66Ω

OK or NG

OK >> Replace smart entrance control unit.
NG >> Repair harness between steering angle sensor and smart entrance control unit.



Tyre Pressure Monitoring Control Unit Circuit Check

EKS004YW

1. CHECK CONNECTOR

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

OK or NG

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

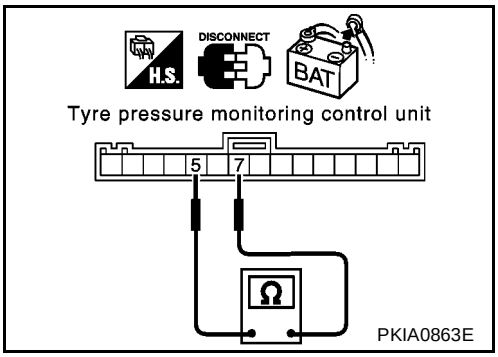
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect tyre pressure monitoring control unit connector.
2. Check resistance between tyre pressure monitoring control unit harness connector M96 terminals 7(L) and 5(R).

7(L) – 5(R) : Approx. 54 – 66Ω

OK or NG

OK >> Replace tyre pressure monitoring control unit.
NG >> Repair harness between smart entrance control unit and tyre pressure monitoring control unit.



ICC Unit Circuit Check

EKS004YX

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 unit-side and harness-side)

- ICC unit.
- Harness connector B5.
- Harness connector M23.

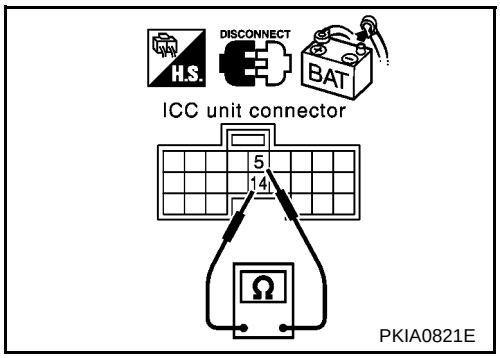
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ICC unit connector.
2. Check resistance between ICC unit harness connector B9 terminals 14(L) and 5(R).

14(L) – 5(R) : Approx. 54 – 66Ω



OK or NG

OK >> Replace ICC unit.
NG >> Repair harness between ICC unit and tyre pressure monitoring control unit.

ICC Sensor Circuit Check

EKS004YY

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. (sensor-side and harness-side)

- ICC sensor.
- Harness connector E124.
- Harness connector M25.

OK or NG

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

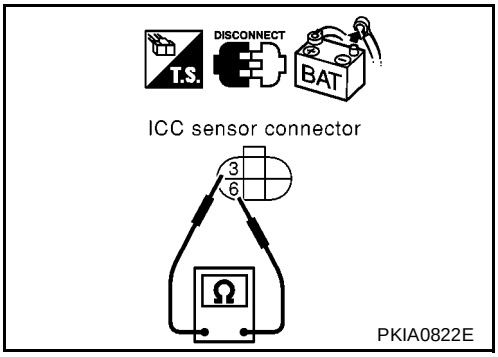
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ICC sensor connector.
2. Check resistance between ICC sensor harness connector E53 terminals 3(L) and 6(R).

3(L) – 6(R) : Approx. 54 – 66Ω

OK or NG

OK >> Replace ICC sensor.
NG >> Repair harness between ICC unit and ICC sensor.



Combination Meter Circuit Check

EKS004YZ

1. CHECK CONNECTOR

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

OK or NG

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

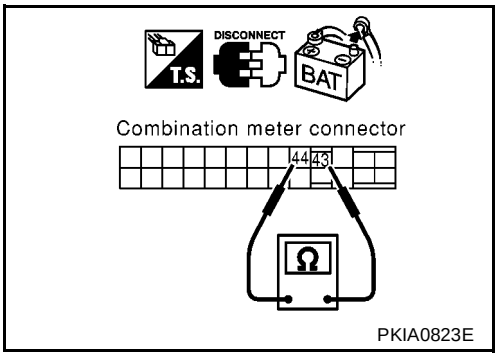
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect combination meter connector.
2. Check resistance between combination meter harness connector M37 terminals 43(L) and 44(R).

43(L) – 44(R) : Approx. 108 – 132Ω

OK or NG

OK >> Replace combination meter.
NG >> Repair harness between ICC sensor and combination meter.



CAN Communication Circuit Check

EKS004Z0

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. (meter-side, sensor-side, control unit-side, control module-side and harness-side)

- Combination meter.
- ICC sensor.
- ICC unit.
- Tyre pressure monitoring control unit.
- Smart entrance control unit.
- Steering angle sensor.
- ESP/TCS/ABS control unit.
- TCM.
- ECM.
- Between ICC sensor and ICC unit.
- Between ESP/TCS/ABS control unit and ECM.

OK or NG

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

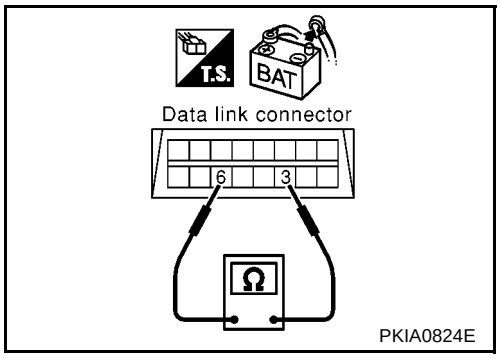
2. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect the following connectors.

- Combination meter connector.
- Tyre pressure monitoring control unit connector.
- Smart entrance control unit connector.
- Steering angle sensor connector.
- Harness connector M25.
- Harness connector M23.
- Harness connector M89.
- Harness connector M79.

2. Check continuity between Data link connector M10 terminals 6 (L) and 3(R).

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



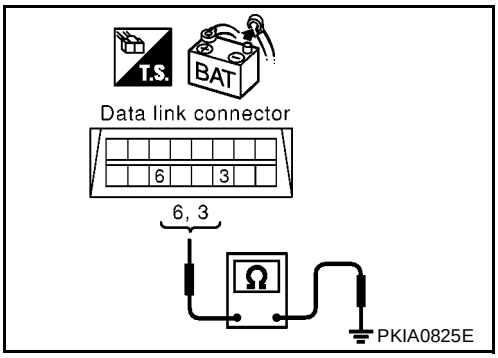
OK or NG

OK >> GO TO 3.
NG >>
- Repair harness between harness connector M25 and combination meter.
- Repair harness between harness connector M25 and harness connector M23.
- Repair harness between harness connector M23 and tyre pressure monitoring control unit.
- Repair harness between tyre pressure monitoring control unit and smart entrance control unit.
- Repair harness between smart entrance control unit and steering angle sensor.
- Repair harness between Data link connector and steering angle sensor.
- Repair harness between harness connector M89 and harness connector M79.

3. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between Data link connector M10 terminals 6 (L), 3(R) and ground.

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



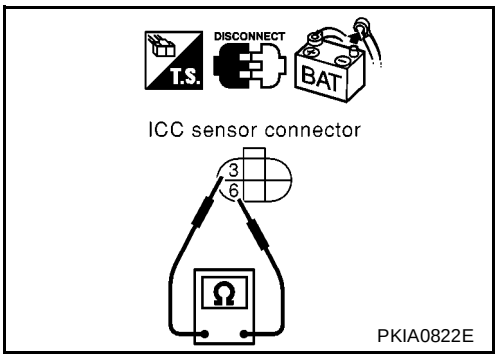
OK or NG

OK >> GO TO 4.
NG >>
- Repair harness between harness connector M25 and combination meter.
- Repair harness between harness connector M25 and harness connector M23.
- Repair harness between harness connector M23 and tyre pressure monitoring control unit.
- Repair harness between tyre pressure monitoring control unit and smart entrance control unit.
- Repair harness between smart entrance control unit and steering angle sensor.
- Repair harness between Data link connector and steering angle sensor.
- Repair harness between harness connector M89 and harness connector M79.

4. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect ICC sensor connector.
2. Check continuity between ICC sensor harness connector E53 terminals 3 (L) and 6(R).

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



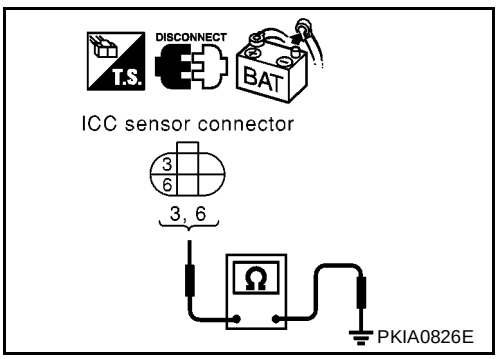
OK or NG

OK >> GO TO 5.
NG >> Repair harness between ICC sensor and harness connector E124.

5. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ICC sensor harness connector E53 terminals 3 (L), 6 (R) and ground.

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



OK or NG

OK >> GO TO 6.
NG >> Repair harness between ICC sensor and harness connector E124.

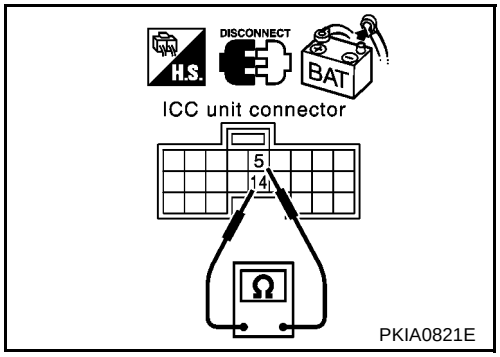
6. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect ICC unit connector.
2. Check continuity between ICC unit harness connector B9 terminals 14 (L) and 5(R).

14(L) – 5(R) : Continuity should not exist.

OK or NG

OK >> GO TO 7.
NG >> Repair harness between ICC unit and harness connector B5.



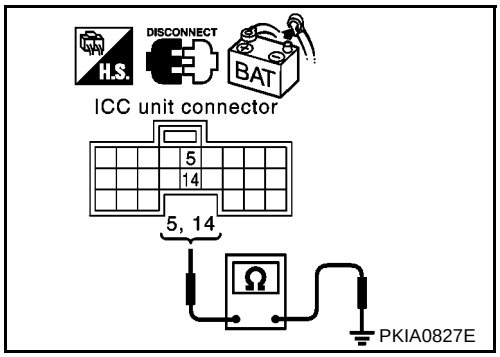
7. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ICC unit harness connector B9 terminals 14 (L), 5 (R) and ground.

14(L) – ground : Continuity should not exist.
5(R) – ground : Continuity should not exist.

OK or NG

OK >> GO TO 8.
NG >> Repair harness between ICC unit and harness connector B5.



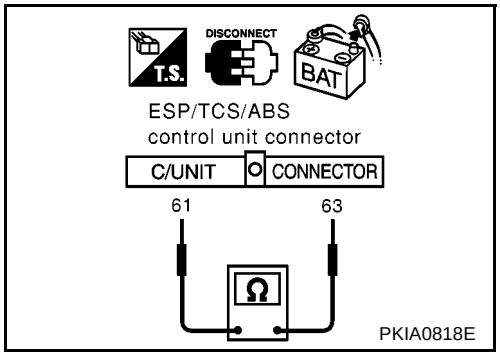
8. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect ESP/TCS/ABS control unit connector.
2. Check continuity between ESP/TCS/ABS control unit harness connector B109 terminals 61 (L) and 63(R).

61(L) – 63(R) : Continuity should not exist.

OK or NG

OK >> GO TO 9.
NG >> Repair harness between ESP/TCS/ABS control unit and harness connector B102.



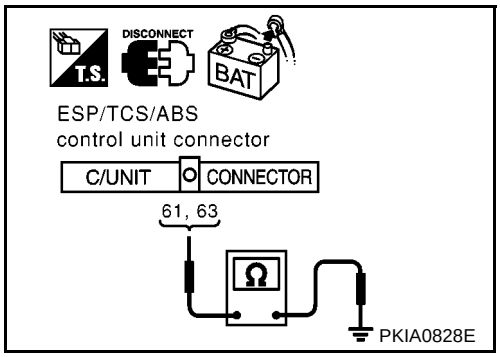
9. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ESP/TCS/ABS control unit harness connector B109 terminals 61 (L), 63 (R) and ground.

61(L) – ground : Continuity should not exist.
63(R) – ground : Continuity should not exist.

OK or NG

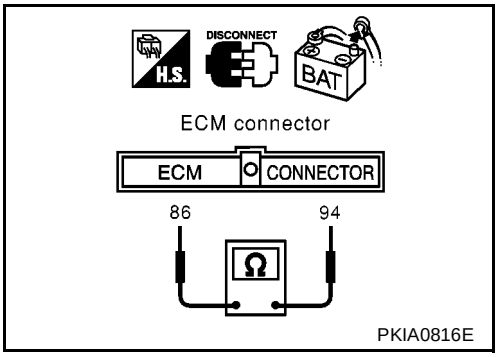
OK >> GO TO 10.
NG >> Repair harness between ESP/TCS/ABS control unit and harness connector B102.



10. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect ECM connector and TCM connector.
2. Check continuity between ECM harness connector F102 terminals 94 (L) and 86(R).

94(L) – 86(R) : Continuity should not exist.



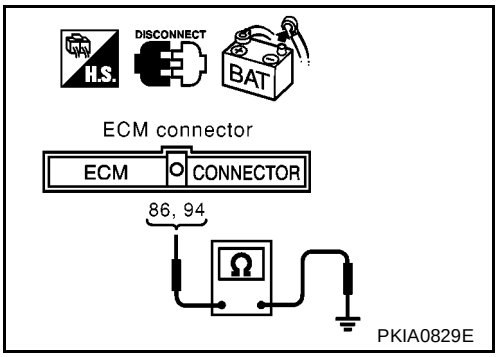
OK or NG

OK >> GO TO 11.
NG >>
- Repair harness between ECM and harness connector F108.
- Repair harness between TCM and harness connector F108.

11. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ECM harness connector F102 terminals 94 (L), 86 (R) and ground.

94(L) – ground : Continuity should not exist.
86(R) – ground : Continuity should not exist.



OK or NG

OK >> GO TO 12.
NG >>
- Repair harness between ECM and harness connector F108.
- Repair harness between TCM and harness connector F108.

12. ECM / COMBINATION METER INTERNAL CIRCUIT INSPECTION

Check components inspection. Refer to LAN-62, "ECM / COMBINATION METER INTERNAL CIRCUIT INSPECTION"

OK or NG

OK >> Reconnect all connectors to perform “SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE”, “CVT”, “ABS”, “SMART ENTRANCE”, “AIR PRESSURE MONITOR”, and “ICC” displayed on CONSULT-II. Refer to EC-1083, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) or EC-1505, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) for “ENGINE” and Refer to CVT-118, "DTC U1000 CAN COMMUNICATION LINE" (EURO-OBD) or CVT-201, "CAN COMMUNICATION LINE" (ALL) for “CVT”. Refer to BRC-107, "Inspection 15 CAN Communication Circuit, ESP/TCS/ABS Control Unit and Steering Angle Sensor" for “ABS”. Refer to BCS-40, "CAN Communication Line Check" for “SMART ENTRANCE”. Refer to WT-35, "Inspection 4: CAN Communication Line" for “AIR PRESSURE MONITOR”. Refer to ACS-46, "DTC 20 CAN COMM CIRCUIT" for “ICC”.
NG >> Replace ECM and/or Combination meter.

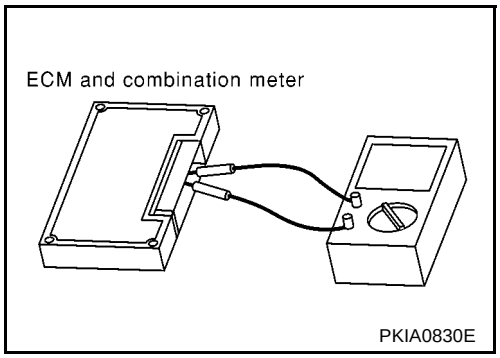
Component Inspection

EKS004Z1

ECM / COMBINATION METER INTERNAL CIRCUIT INSPECTION

- Remove ECM and Combination meter from vehicle.
- Check resistance between ECM terminals 94 and 86.
- Check resistance between Combination meter terminals 43 and 44.

Unit	Terminal	Resistance value (Ω)
ECM	94 – 86	Approx. 108 - 132
Combination meter	43 – 44	



CAN SYSTEM (TYPE 2)

PFP:23710

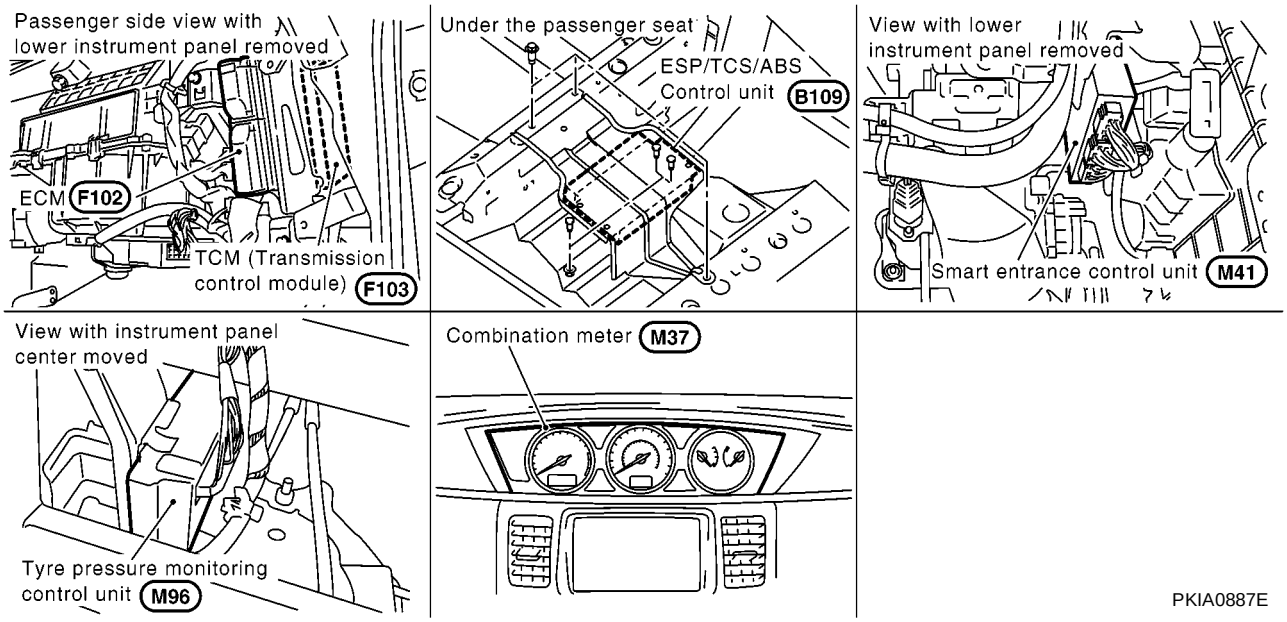
System Description

EKS004Y2

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

EKS004Y3

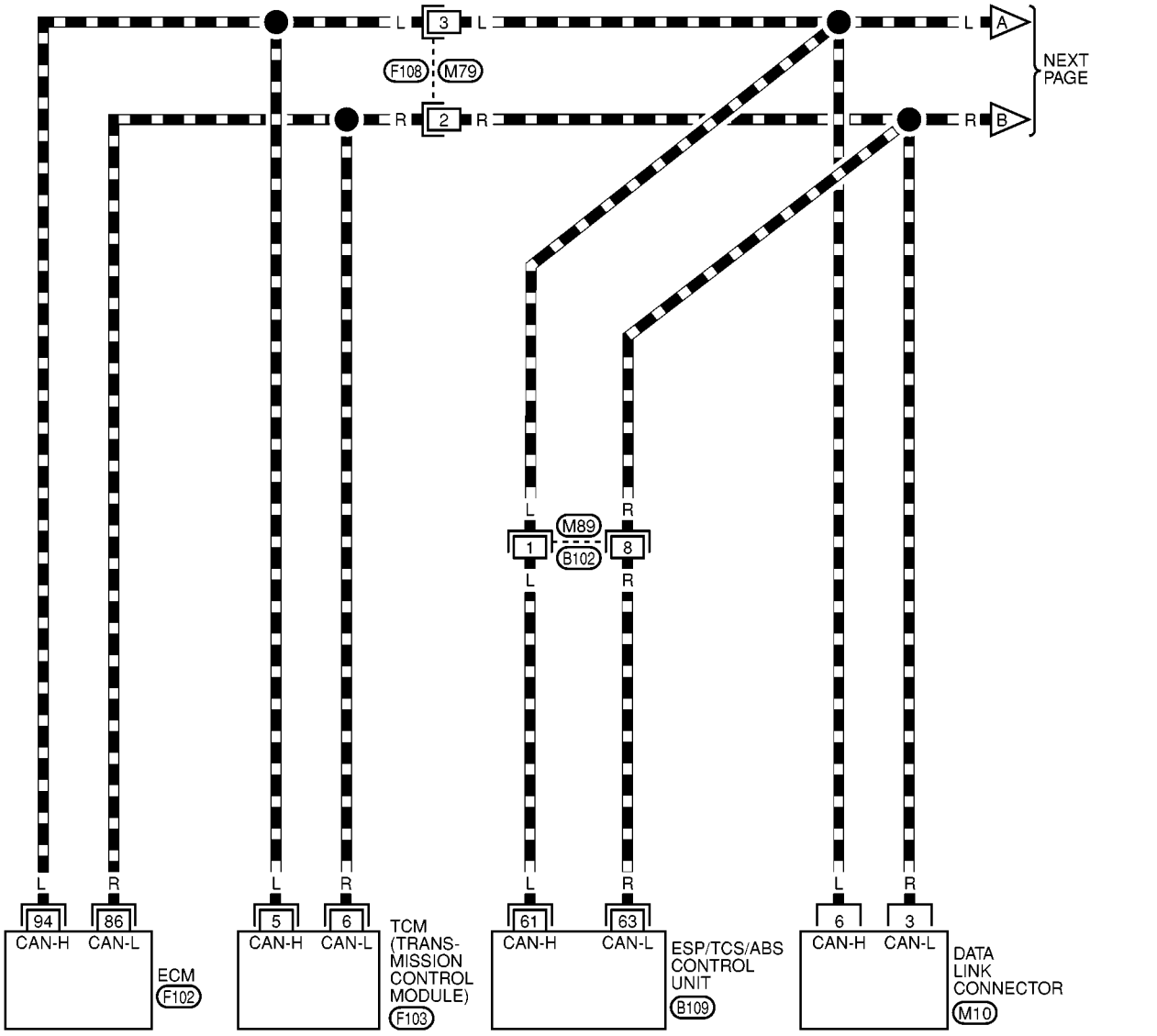


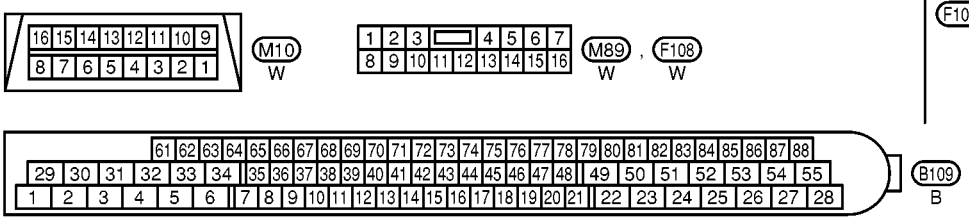
Wiring Diagram — CAN —

EKS004Y4

LAN-CAN-04

: DATA LINE



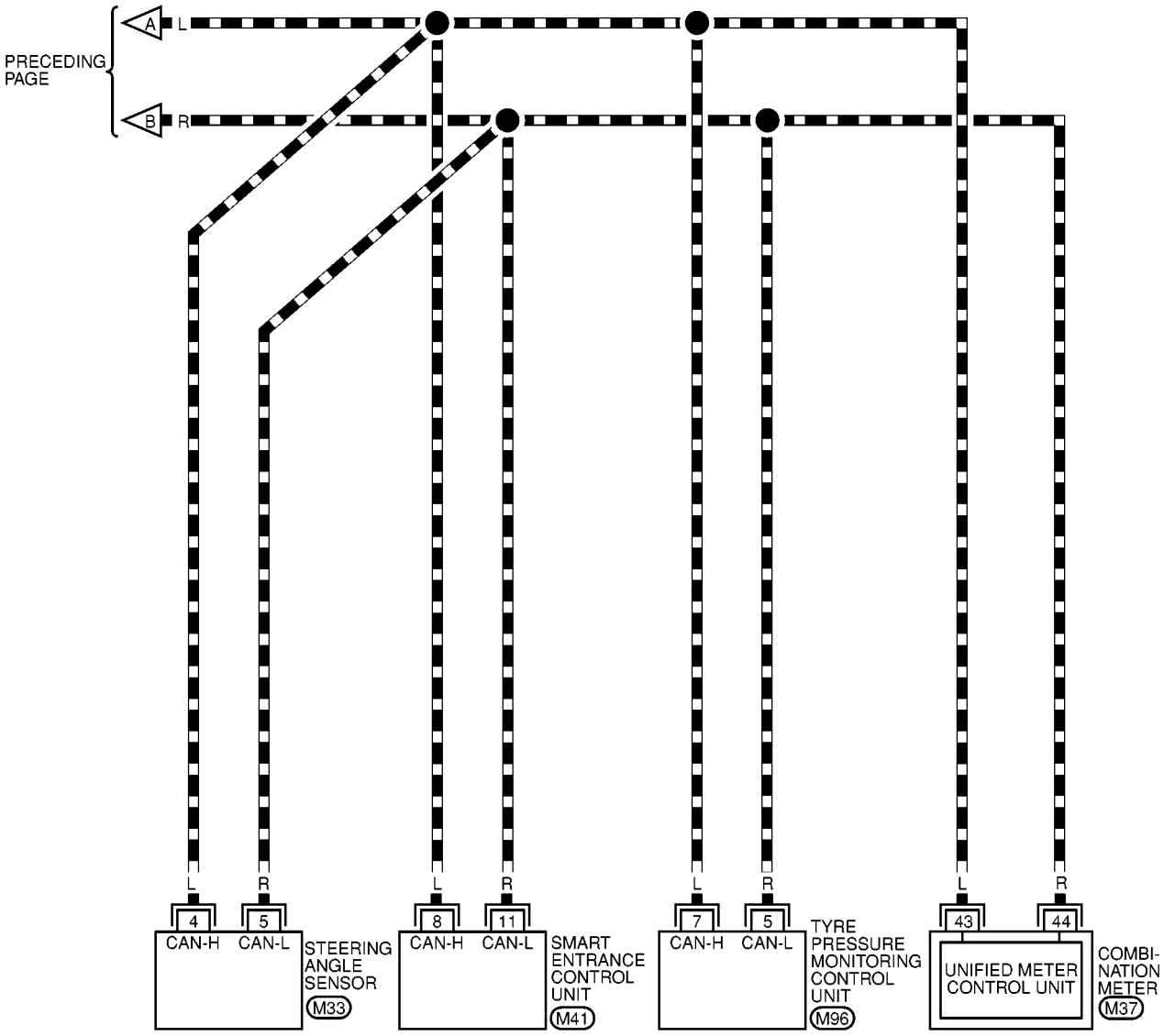


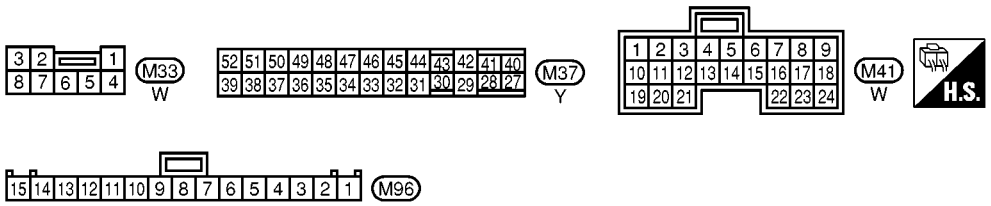
REFER TO THE FOLLOWING.
F102 , F103 -ELECTRICAL UNITS

MKWA0222E

LAN-CAN-05

: DATA LINE





MKWA0223E

Work Flow

EKS004Y5

1. Print all the data of “SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE”, “CVT”, “ABS”, “SMART ENTRANCE”, and “AIR PRESSURE MONITOR” displayed on CONSULT-II. Refer to EC-1083, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) or EC-1505, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) for “ENGINE” and Refer to CVT-118, "DTC U1000 CAN COMMUNICATION LINE" (EURO-OBD) or CVT-201, "CAN COMMUNICATION LINE" (ALL) for “CVT”. Refer to BRC-107, "Inspection 15 CAN Communication Circuit, ESP/TCS/ABS Control Unit and Steering Angle Sensor" for “ABS”. Refer to BCS-40, "CAN Communication Line Check" for “SMART ENTRANCE”. Refer to WT-35, "Inspection 4: CAN Communication Line" for “AIR PRESSURE MONITOR”.
2. Attach the printed sheet of “SELF-DIAG RESULTS” and “DATA MONITOR” onto the check sheet. Refer to LAN-67, "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-67, "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-68, "CHECK SHEET RESULTS (EXAMPLE)"

CHECK SHEET

Check sheet table

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 6	–	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 5	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–	CAN CIRC 3
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	–	CAN CIRC 2

Symptoms:

Attach copy of
ENGINE
SELF-DIAG RESULTS

Attach copy of
CVT
SELF-DIAG RESULTS

Attach copy of
ABS
SELF-DIAG RESULTS

Attach copy of
SMART ENTRANCE
SELF-DIAG RESULTS

Attach copy of
AIR PRESSURE MONITOR
SELF-DIAG RESULTS

Attach copy of
ENGINE
DATA MONITOR

Attach copy of
CVT
DATA MONITOR

Attach copy of
ABS
DATA MONITOR

Attach copy of
SMART ENTRANCE
DATA MONITOR

Attach copy of
AIR PRESSURE MONITOR
DATA MONITOR

PKIA0704E

CHECK SHEET RESULTS (EXAMPLE)

Case 1: Replace ECM

ENGINE	CAN COMM ✓	CAN CIRC 1	–	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 6	–	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 5	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–	CAN CIRC 3
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	–	CAN CIRC 2

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2 ✓	CAN CIRC 3 ✓	–	CAN CIRC 6 ✓	–	CAN CIRC 4 ✓
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 5	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–	CAN CIRC 3
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	–	CAN CIRC 2

Case 2: Replace TCM

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2 ✓	CAN CIRC 3	–	CAN CIRC 6	–	CAN CIRC 4
CVT	CAN COMM ✓	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3 ✓	–	CAN CIRC 5	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–	CAN CIRC 3
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	–	CAN CIRC 2

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 6	–	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	–	CAN CIRC 3 ✓	–	–	–	CAN CIRC 4 ✓
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 5	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–	CAN CIRC 3
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	–	CAN CIRC 2

PKIA0705E

Case 3: Replace ESP/TCS/ABS control unit

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	CAN CIRC 3 ✓	–	CAN CIRC 6	–	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3 ✓	–	–	–	CAN CIRC 4
ABS	CAN COMM ✓	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 5	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–	CAN CIRC 3
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	–	CAN CIRC 2

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 6	–	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	CAN CIRC 3 ✓	–	CAN CIRC 5 ✓	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–	CAN CIRC 3
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	–	CAN CIRC 2

Case 4: Replace Smart entrance control unit

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 6	–	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 5	–	–	–
SMART ENTRANCE	CAN COMM ✓	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–	CAN CIRC 3
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	–	CAN CIRC 2

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 6	–	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 5	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	–	–	–	–	–	CAN CIRC 3 ✓
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	–	CAN CIRC 2

PKIA0706E

Case 5: Replace Tyre pressure monitoring control unit

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 6	–	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 5	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–	CAN CIRC 3
AIR PRESSURE MONITOR	CAN COMM ✓	CAN CIRC 1	–	–	–	–	–	–	CAN CIRC 2

Case 6

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	CAN CIRC ✓	–	CAN CIRC ✓	–	CAN CIRC ✓
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC ✓	–	–	–	CAN CIRC ✓
ABS	CAN COMM	CAN CIRC 1	CAN CIRC ✓	CAN CIRC ✓	–	CAN CIRC 5	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC ✓	–	–	–	–	–	CAN CIRC 3
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	–	CAN CIRC 2

Case 7

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC ✓	–	CAN CIRC ✓
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	–	CAN CIRC ✓
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC ✓	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC ✓	–	–	–	–	–	CAN CIRC 3
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	–	CAN CIRC 2

Case 8

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 6	–	CAN CIRC ✓
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	–	CAN CIRC ✓
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 5	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–	CAN CIRC ✓
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	–	CAN CIRC 2

PKIA0707E

Case 9

ENGINE	CAN COMM	CAN CIRC 1 ✓	–	CAN CIRC 2 ✓	CAN CIRC 3 ✓	–	CAN CIRC 6 ✓	–	CAN CIRC 4 ✓
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	–	CAN CIRC 3	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	CAN CIRC 3	–	CAN CIRC 5	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	–	–	–	–	–	CAN CIRC 3
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	–	CAN CIRC 2

Case 10

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2 ✓	CAN CIRC 3	–	CAN CIRC 6	–	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1 ✓	CAN CIRC 2 ✓	–	CAN CIRC 3 ✓	–	–	–	CAN CIRC 4 ✓
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3 ✓	–	CAN CIRC 5	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–	CAN CIRC 3
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	–	CAN CIRC 2

Case 11

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	CAN CIRC 3 ✓	–	CAN CIRC 6	–	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3 ✓	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1 ✓	CAN CIRC 2 ✓	CAN CIRC 3 ✓	–	CAN CIRC 5 ✓	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–	CAN CIRC 3
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	–	CAN CIRC 2

Case 12

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 6	–	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 5 ✓	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–	CAN CIRC 3
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	–	CAN CIRC 2

PKIA0708E

Case 13

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC ✓	–	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 5	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC ✓	CAN CIRC ✓	–	–	–	–	–	CAN CIRC ✓
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	–	CAN CIRC 2

Case 14

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 6	–	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 5	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–	CAN CIRC 3
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC ✓	–	–	–	–	–	–	CAN CIRC ✓

Case 15

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 6	–	CAN CIRC ✓
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	–	CAN CIRC ✓
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 5	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–	CAN CIRC ✓
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	–	CAN CIRC ✓

Case 16

ENGINE	CAN COMM	CAN CIRC ✓	–	CAN CIRC ✓	CAN CIRC ✓	–	CAN CIRC ✓	–	CAN CIRC ✓
CVT	CAN COMM	CAN CIRC ✓	CAN CIRC ✓	–	CAN CIRC ✓	–	–	–	CAN CIRC ✓
ABS	CAN COMM	CAN CIRC ✓	CAN CIRC ✓	CAN CIRC ✓	–	CAN CIRC ✓	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC ✓	CAN CIRC ✓	–	–	–	–	–	CAN CIRC ✓
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC ✓	–	–	–	–	–	–	CAN CIRC ✓

PKIA0709E

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

INSPECTION

Proceed trouble diagnosis according to the check sheet results (example).
Case 1:Replace ECM.
Case 2:Replace TCM.
Case 3:Replace ESP/TCS/ABS control unit.
Case 4:Replace Smart entrance control unit.
Case 5:Replace Tyre pressure monitoring control unit.
Case 6:Check Harness between TCM and Data link connector. Refer to LAN-73, "Circuit Check Between TCM and Data Link Connector"
Case 7:Check Harness between Data link connector and Smart entrance control unit. Refer to LAN-74, "Circuit Check Between Data Link Connector and Smart Entrance Control Unit"
Case 8:Check Harness between Smart entrance control unit and Tyre pressure monitoring control unit. Refer to LAN-75, "Circuit Check Between Smart Entrance Control Unit and Tyre Pressure Monitoring Control Unit"
Case 9:Check ECM Circuit. Refer to LAN-75, "ECM Circuit Check"
Case 10:Check TCM Circuit. Refer to LAN-76, "TCM Circuit Check"
Case 11:Check ESP/TCS/ABS control unit Circuit. Refer to LAN-76, "ESP/TCS/ABS Control Unit Circuit Check"
Case 12:Check Steering angle sensor Circuit. Refer to LAN-77, "Steering Angle Sensor Circuit Check"
Case 13:Check Smart entrance control unit Circuit. Refer to LAN-77, "Smart Entrance Control Unit Circuit Check"
Case 14:Check Tyre pressure monitoring control unit Circuit. Refer to LAN-78, "Tyre Pressure Monitoring Control Unit Circuit Check"
Case 15:Check Combination meter Circuit. Refer to LAN-78, "Combination Meter Circuit Check"
Case 16:Check CAN communication Circuit. Refer to LAN-79, "CAN Communication Circuit Check"

Circuit Check Between TCM and Data Link Connector

EKS004Y6

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, control unit-side and harness-side)

- TCM.
- ESP/TCS/ABS control unit.
- Between TCM and ESP/TCS/ABS control unit.

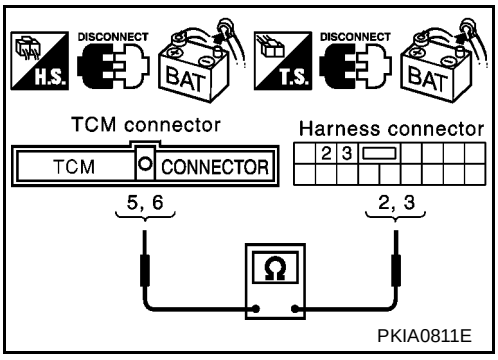
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect TCM connector and harness connector F108.
2. Check continuity between TCM harness connector F103 terminals 5 (L), 6 (R) and harness connector F108 terminals 3 (L), 2 (R).

5(L) – 3(L) : Continuity should exist.
6(R) – 2(R) : Continuity should exist.



OK or NG

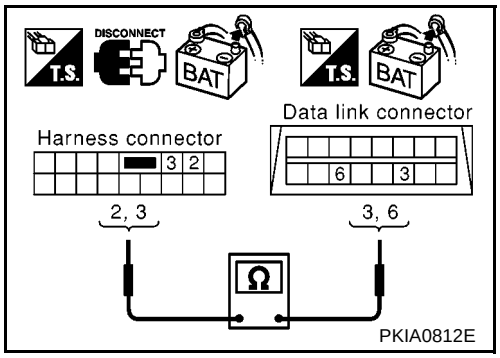
OK >> GO TO 3.
NG >> Repair harness.

3. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between harness connector M79 terminals 3 (L), 2 (R) and Data link connector M10 terminals 6 (L), 3 (R).

3(L) – 6(L) : Continuity should exist.

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



OK or NG

OK >> Reconnect all connectors to perform SELF-DIAG RESULTS" and "DATA MONITOR" for "ENGINE", "CVT", "ABS", "SMART ENTRANCE", and "AIR PRESSURE MONITOR" displayed on CONSULT-II. Refer to EC-1083, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) or EC-1505, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) for "ENGINE" and Refer to CVT-118, "DTC U1000 CAN COMMUNICATION LINE" (EURO-OBD) or CVT-201, "CAN COMMUNICATION LINE" (ALL) for "CVT". Refer to BRC-107, "Inspection 15 CAN Communication Circuit, ESP/TCS/ABS Control Unit and Steering Angle Sensor" for "ABS". Refer to BCS-40, "CAN Communication Line Check" for "SMART ENTRANCE". Refer to WT-35, "Inspection 4: CAN Communication Line" for "AIR PRESSURE MONITOR".

NG >> Repair harness.

Circuit Check Between Data Link Connector and Smart Entrance Control Unit

EKS004Y7

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 unit-side, sensor-side and harness-side)

- Smart entrance control unit.
- Steering angle sensor.
- ESP/TCS/ABS control unit.
- Between smart entrance control unit and ESP/TCS/ABS control unit.

OK or NG

OK >> GO TO 2.

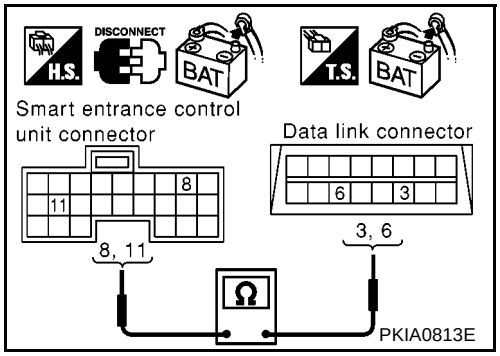
NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect smart entrance control unit connector.
2. Check continuity between smart entrance control unit harness connector M41 terminals 8 (L), 11 (R) and Data link connector M10 terminals 6 (L), 3 (R).

8(L) – 6(L) : Continuity should exist.

11(R) – 3(R) : Continuity should exist.



OK or NG

OK >> Reconnect all connectors to perform SELF-DIAG RESULTS" and "DATA MONITOR" for "ENGINE", "CVT", "ABS", "SMART ENTRANCE", and "AIR PRESSURE MONITOR" displayed on CONSULT-II. Refer to EC-1083, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) or EC-1505, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) for "ENGINE" and Refer to CVT-118, "DTC U1000 CAN COMMUNICATION LINE" (EURO-OBD) or CVT-201, "CAN COMMUNICATION LINE" (ALL) for "CVT". Refer to BRC-107, "Inspection 15 CAN Communication Circuit, ESP/TCS/ABS Control Unit and Steer-

ing Angle Sensor" for “ABS”. Refer to BCS-40, "CAN Communication Line Check" for “SMART ENTRANCE”. Refer to WT-35, "Inspection 4: CAN Communication Line" for “AIR PRESSURE MONITOR”.

NG >> Repair harness.

Circuit Check Between Smart Entrance Control Unit and Tyre Pressure Monitoring Control Unit

EKS004Y8

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 unit-side, sensor-side and harness-side)

- Smart entrance control unit.
- Tyre pressure monitoring control unit.
- Steering angle sensor.

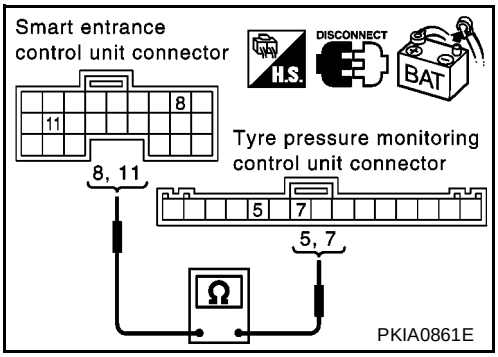
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect smart entrance control unit connector and tyre pressure monitoring control unit connector.
2. Check continuity between smart entrance control unit harness connector M41 terminals 8 (L), 11 (R) and tyre pressure monitoring control unit harness connector M96 terminals 7 (L), 5 (R).

8(L) – 7(L) : Continuity should exist.
11(R) – 5(R) : Continuity should exist.



OK or NG

OK >> Reconnect all connectors to perform SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE”, “CVT”, “ABS”, “SMART ENTRANCE”, and “AIR PRESSURE MONITOR” displayed on CONSULT-II. Refer to EC-1083, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) or EC-1505, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) for “ENGINE” and Refer to CVT-118, "DTC U1000 CAN COMMUNICATION LINE" (EURO-OBD) or CVT-201, "CAN COMMUNICATION LINE" (ALL) for “CVT”. Refer to BRC-107, "Inspection 15 CAN Communication Circuit, ESP/TCS/ABS Control Unit and Steering Angle Sensor" for “ABS”. Refer to BCS-40, "CAN Communication Line Check" for “SMART ENTRANCE”. Refer to WT-35, "Inspection 4: CAN Communication Line" for “AIR PRESSURE MONITOR”.

NG >> Repair harness.

ECM Circuit Check

EKS004Y9

1. CHECK CONNECTOR

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

OK or NG

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

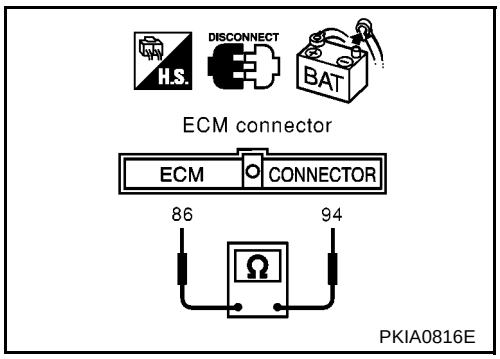
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ECM connector.
2. Check resistance between ECM harness connector F102 terminals 94(L) and 86(R).

94(L) – 86(R) **: Approx. 108 – 132Ω**

OK or NG

OK >> Replace ECM.
NG >> Repair harness between TCM and ECM.



TCM Circuit Check

EKS004YA

1. CHECK CONNECTOR

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

OK or NG

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

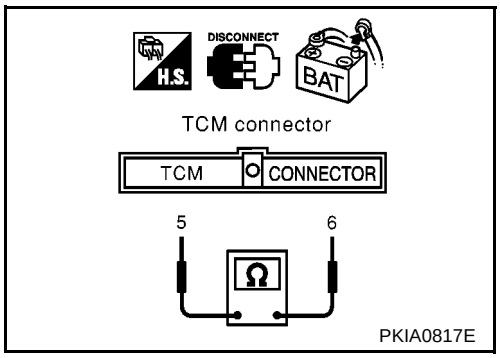
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect TCM connector.
2. Check resistance between TCM harness connector F103 terminals 5(L) and 6(R).

5(L) – 6(R) **: Approx. 54 – 66Ω**

OK or NG

OK >> Replace TCM.
NG >> Repair harness between TCM and ECM.



ESP/TCS/ABS Control Unit Circuit Check

EKS004YB

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 unit-side and harness-side)

- ESP/TCS/ABS control unit.
- Harness connector B102.
- Harness connector M89.

OK or NG

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

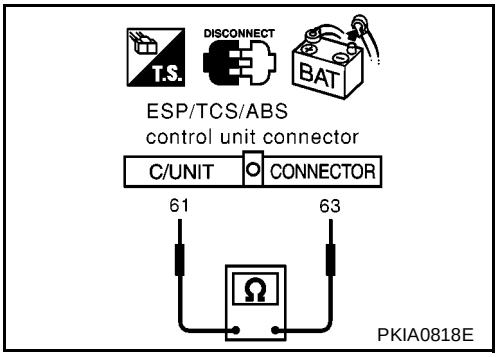
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ESP/TCS/ABS control unit connector.
2. Check resistance between ESP/TCS/ABS control unit harness connector B109 terminals 61(L) and 63(R).

61(L) – 63(R) : Approx. 54 – 66Ω

OK or NG

OK >> Replace ESP/TCS/ABS control unit.
NG >> Repair harness between Data link connector and ESP/TCS/ABS control unit.



Steering Angle Sensor Circuit Check

EKS004YC

1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check terminals and connector of steering angle sensor for damage, bend and loose connection. (sensor-side and harness-side)

OK or NG

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

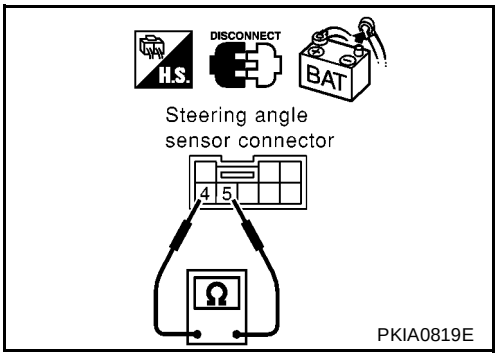
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect steering angle sensor connector.
2. Check resistance between steering angle sensor harness connector M33 terminals 4(L) and 5(R).

4(L) – 5(R) : Approx. 54 – 66Ω

OK or NG

OK >> Replace steering angle sensor.
NG >> Repair harness between steering angle sensor and smart entrance control unit.



Smart Entrance Control Unit Circuit Check

EKS004YD

1. CHECK CONNECTOR

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

OK or NG

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

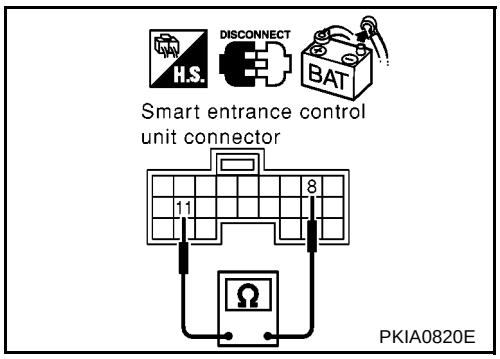
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect smart entrance control unit connector.
2. Check resistance between smart entrance control unit harness connector M41 terminals 8(L) and 11(R).

8(L) – 11(R) : Approx. 54 – 66Ω

OK or NG

OK >> Replace smart entrance control unit.
NG >> Repair harness between steering angle sensor and smart entrance control unit.



Tyre Pressure Monitoring Control Unit Circuit Check

EKS004YE

1. CHECK CONNECTOR

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

OK or NG

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

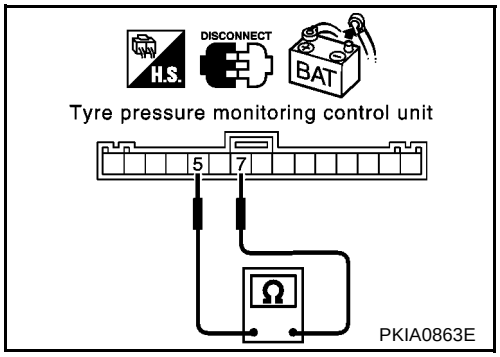
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect tyre pressure monitoring control unit connector.
2. Check resistance between tyre pressure monitoring control unit harness connector M96 terminals 7(L) and 5(R).

7(L) – 5(R) : Approx. 54 – 66Ω

OK or NG

OK >> Replace tyre pressure monitoring control unit.
NG >> Repair harness between smart entrance control unit and tyre pressure monitoring control unit.



Combination Meter Circuit Check

EKS004YF

1. CHECK CONNECTOR

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

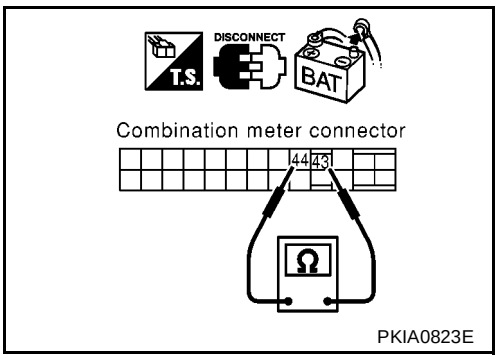
OK or NG

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 M37 terminals 43(L) and 44(R).

43(L) – 44(R) : Approx. 108 – 132Ω



OK or NG

OK >> Replace combination meter.
NG >> Repair harness between tyre pressure monitoring control unit and combination meter.

CAN Communication Circuit Check

EKS004YG

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. (meter-side, control unit-side, sensor-side, control module-side and harness-side)

- Combination meter.
- Tyre pressure monitoring control unit.
- Smart entrance control unit.
- Steering angle sensor.
- ESP/TCS/ABS control unit.
- TCM.
- ECM.
- Between ESP/TCS/ABS control unit and ECM.

OK or NG

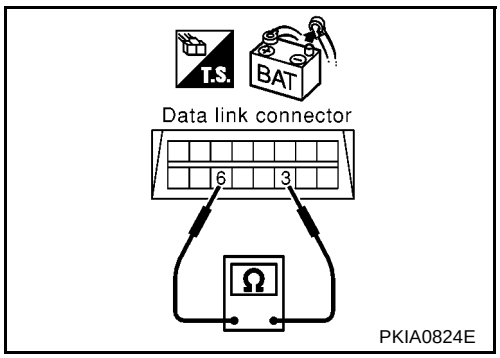
OK >> GO TO 2.
NG >> Repair terminal or connector.

2. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect the following connectors.
- Combination meter connector.
- Tyre pressure monitoring control unit connector.
- Smart entrance control unit connector.
- Steering angle sensor connector.
- Harness connector M89.
- Harness connector M79.

2. Check continuity between Data link connector M10 terminals 6 (L) and 3(R).

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



OK or NG

OK >> GO TO 3.

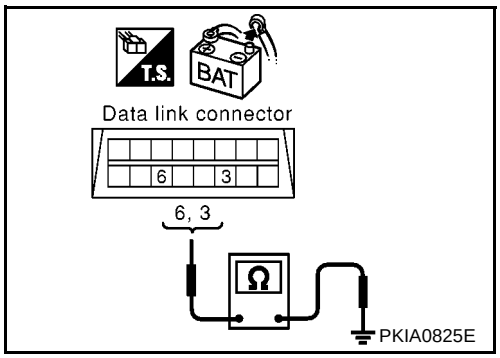
NG >>
- Repair harness between tyre pressure monitoring control unit and combination meter.
- Repair harness between smart entrance control unit and tyre pressure monitoring control unit.
- Repair harness between smart entrance control unit and steering angle sensor.
- Repair harness between Data link connector and steering angle sensor.
- Repair harness between harness connector M89 and harness connector M79.

3. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between Data link connector M10 terminals 6 (L), 3(R) and ground.

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

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



OK or NG

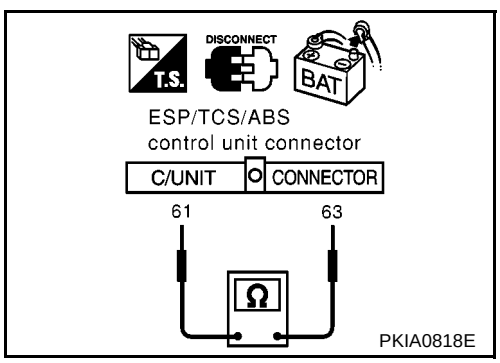
OK >> GO TO 4.

NG >>
- Repair harness between tyre pressure monitoring control unit and combination meter.
- Repair harness between smart entrance control unit and tyre pressure monitoring control unit.
- Repair harness between smart entrance control unit and steering angle sensor.
- Repair harness between Data link connector and steering angle sensor.
- Repair harness between harness connector M89 and harness connector M79.

4. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect ESP/TCS/ABS control unit connector.
2. Check continuity between ESP/TCS/ABS control unit harness connector B109 terminals 61 (L) and 63(R).

61(L) – 63(R) : Continuity should not exist.



OK or NG

OK >> GO TO 5.

NG >> Repair harness between ESP/TCS/ABS control unit and harness connector B102.

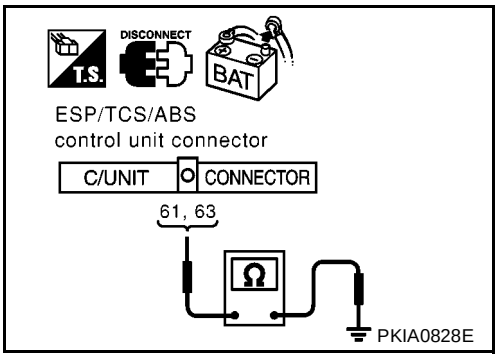
5. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ESP/TCS/ABS control unit harness connector B109 terminals 61 (L), 63 (R) and ground.

61(L) – ground : Continuity should not exist.
63(R) – ground : Continuity should not exist.

OK or NG

OK >> GO TO 6.
NG >> Repair harness between ESP/TCS/ABS control unit and harness connector B102.



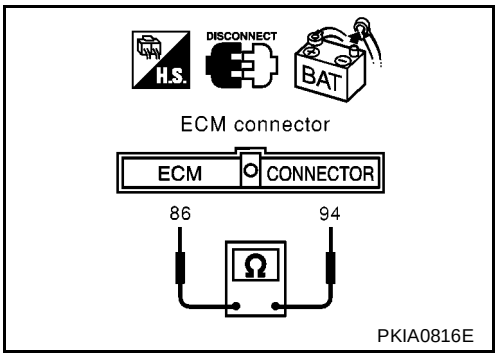
6. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect ECM connector and TCM connector.
2. Check continuity between ECM harness connector F102 terminals 94 (L) and 86(R).

94(L) – 86(R) : Continuity should not exist.

OK or NG

OK >> GO TO 7.
NG >>
- Repair harness between ECM and harness connector F108.
- Repair harness between TCM and harness connector F108.



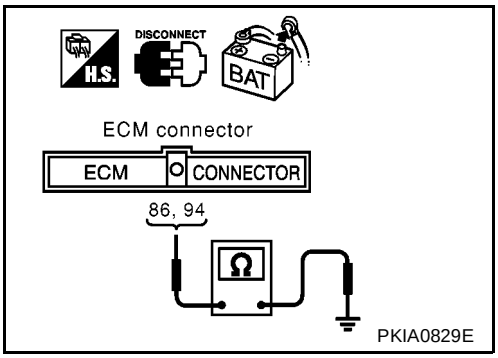
7. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ECM harness connector F102 terminals 94 (L), 86 (R) and ground.

94(L) – ground : Continuity should not exist.
86(R) – ground : Continuity should not exist.

OK or NG

OK >> GO TO 8.
NG >>
- Repair harness between ECM and harness connector F108.
- Repair harness between TCM and harness connector F108.



8. ECM / COMBINATION METER INTERNAL CIRCUIT INSPECTION

Check components inspection. Refer to LAN-82, "ECM / COMBINATION METER INTERNAL CIRCUIT INSPECTION"

OK or NG

OK >> Reconnect all connectors to perform SELF-DIAG RESULTS" and "DATA MONITOR" for "ENGINE", "CVT", "ABS", "SMART ENTRANCE", and "AIR PRESSURE MONITOR" displayed on CONSULT-II. Refer to EC-1083, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) or EC-1505, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) for "ENGINE" and Refer to CVT-118, "DTC U1000 CAN COMMUNICATION LINE" (EURO-OBD) or CVT-201, "CAN COMMUNICATION LINE" (ALL) for "CVT". Refer to BRC-107, "Inspection 15 CAN Communication Circuit, ESP/TCS/ABS Control Unit and Steering Angle Sensor" for "ABS". Refer to BCS-40, "CAN Communication Line Check" for "SMART ENTRANCE". Refer to WT-35, "Inspection 4: CAN Communication Line" for "AIR PRESSURE MONITOR".
NG >> Replace ECM and/or Combination meter.

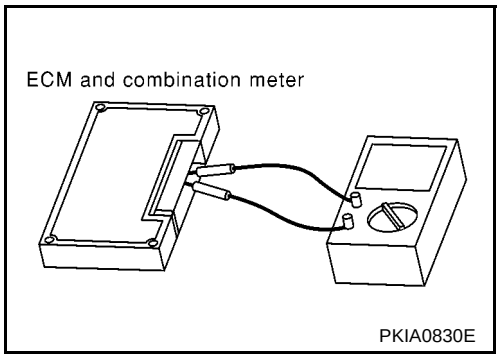
Component Inspection

EKS004YH

ECM / COMBINATION METER INTERNAL CIRCUIT INSPECTION

- Remove ECM and Combination meter from vehicle.
- Check resistance between ECM terminals 94 and 86.
- Check resistance between Combination meter terminals 43 and 44.

Unit	Terminal	Resistance value (Ω)
ECM	94 – 86	Approx. 108 - 132
Combination meter	43 – 44	



CAN SYSTEM (TYPE 3)

PFP:23710

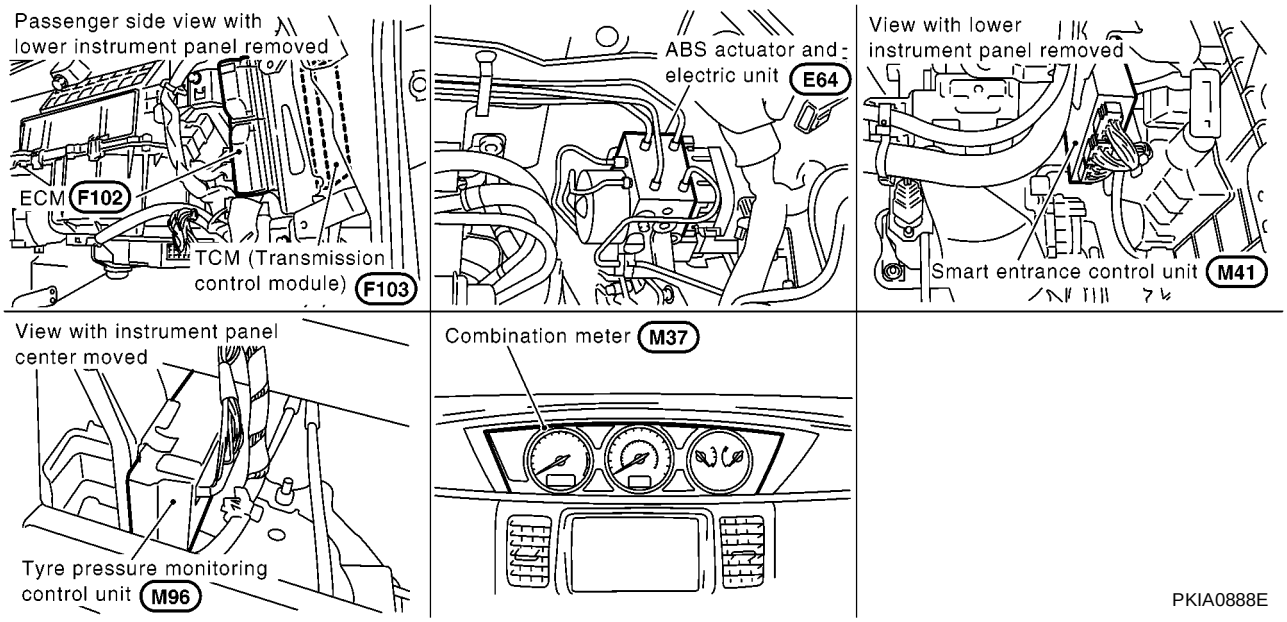
System Description

EKS004XN

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.

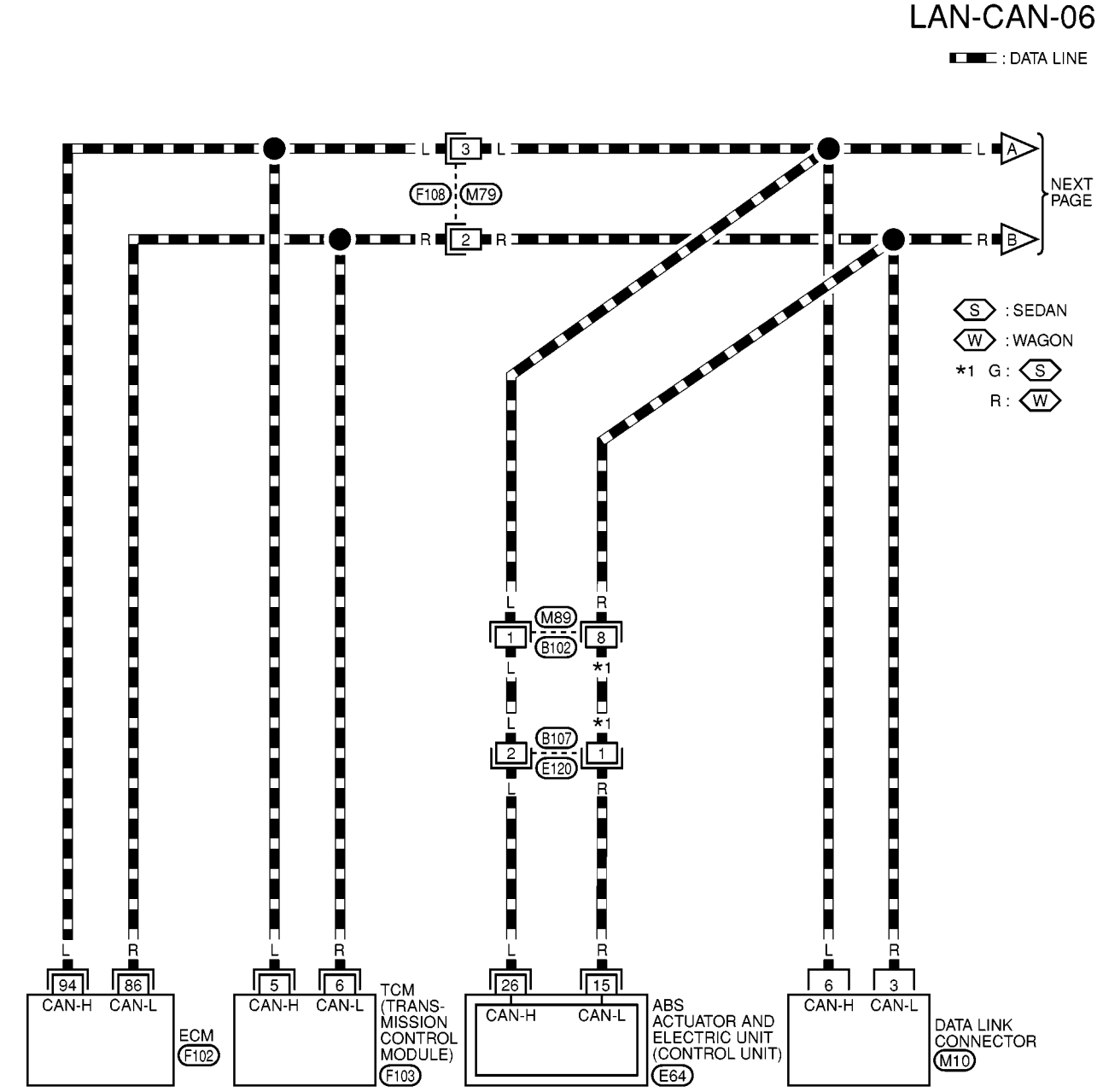
Component Parts and Harness Connector Location

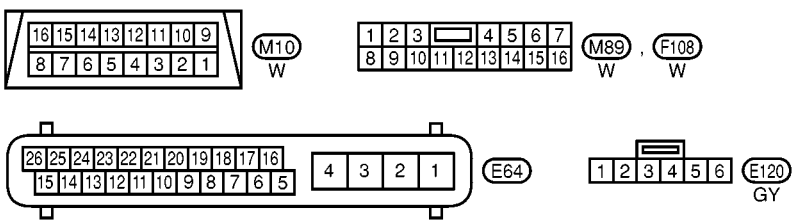
EKS004XO



Wiring Diagram — CAN —

EKS004XP



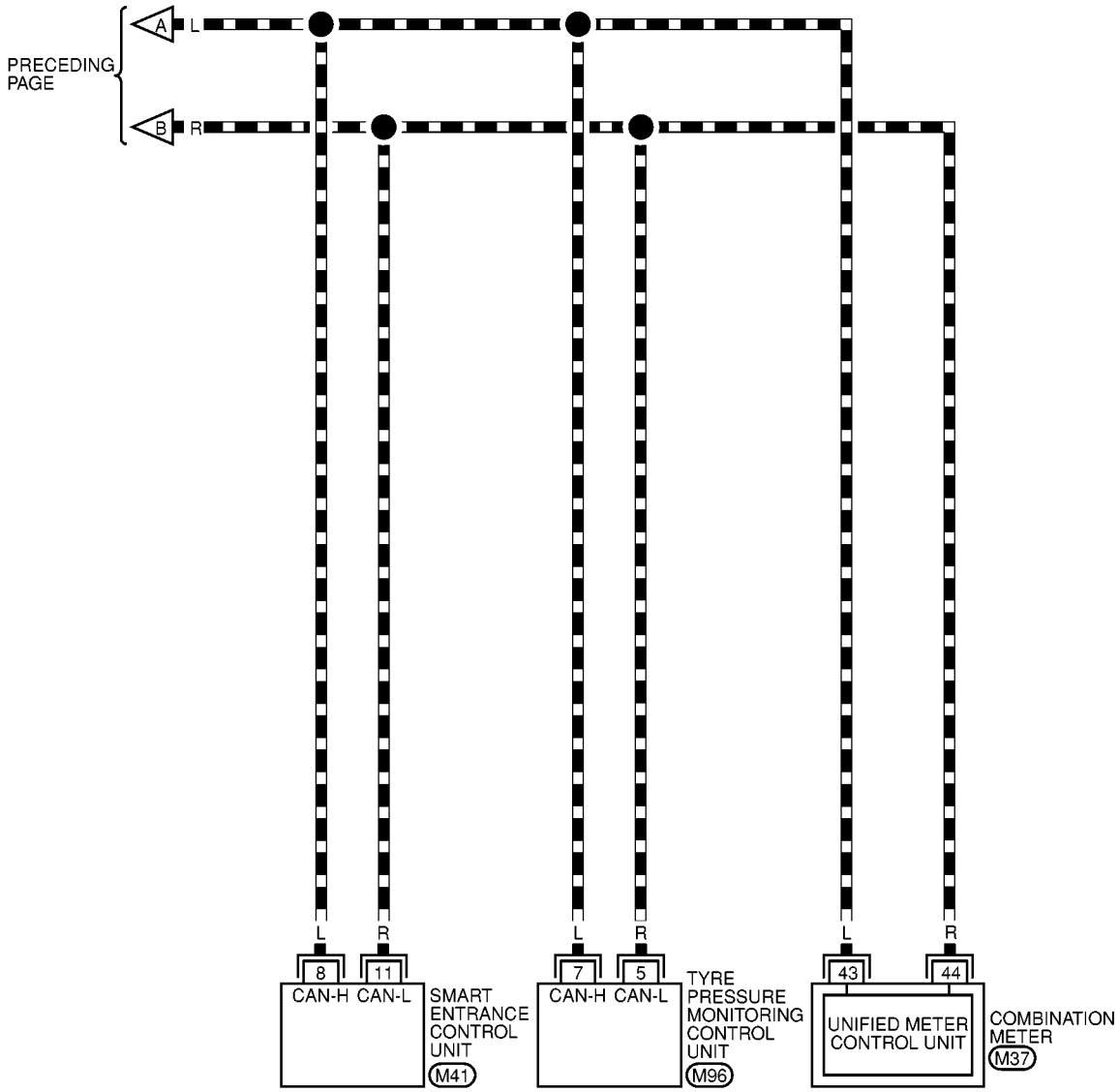


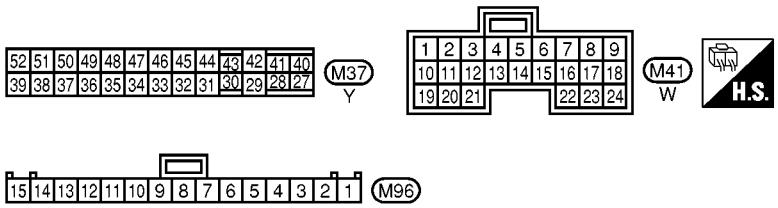
REFER TO THE FOLLOWING.
F102 , F103 -ELECTRICAL UNITS

MKWA0224E

LAN-CAN-07

: DATA LINE





MKWA0225E

Work Flow

EKS004XQ

1. Print all the data of “SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE”, “CVT”, “ABS”, “SMART ENTRANCE”, and “AIR PRESSURE MONITOR” displayed on CONSULT-II. Refer to EC-1083, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) or EC-1505, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) for “ENGINE” and Refer to CVT-118, "DTC U1000 CAN COMMUNICATION LINE" (EURO-OBD) or CVT-201, "CAN COMMUNICATION LINE" (ALL) for “CVT”. Refer to BRC-33, "CAN Communication Circuit" for “ABS”. Refer to BCS-40, "CAN Communication Line Check" for “SMART ENTRANCE”. Refer to WT-35, "Inspection 4: CAN Communication Line" for “AIR PRESSURE MONITOR”.
2. Attach the printed sheet of “SELF-DIAG RESULTS” and “DATA MONITOR” onto the check sheet. Refer to LAN-87, "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-87, "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-88, "CHECK SHEET RESULTS (EXAMPLE)"

CHECK SHEET

Check sheet table

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 6	–	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 3
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	CAN CIRC 2

Symptoms:

Attach copy of
ENGINE
SELF-DIAG RESULTS

Attach copy of
CVT
SELF-DIAG RESULTS

Attach copy of
ABS
SELF-DIAG RESULTS

Attach copy of
SMART ENTRANCE
SELF-DIAG RESULTS

Attach copy of
AIR PRESSURE MONITOR
SELF-DIAG RESULTS

Attach copy of
ENGINE
DATA MONITOR

Attach copy of
CVT
DATA MONITOR

Attach copy of
ABS
DATA MONITOR

Attach copy of
SMART ENTRANCE
DATA MONITOR

Attach copy of
AIR PRESSURE MONITOR
DATA MONITOR

PKIA0710E

CHECK SHEET RESULTS (EXAMPLE)

Case 1: Replace ECM

ENGINE	CAN COMM ✓	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 6	–	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 3
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	CAN CIRC 2

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC ✓	–	CAN CIRC ✓	–	CAN CIRC ✓
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 3
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	CAN CIRC 2

Case 2: Replace TCM

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC ✓	–	CAN CIRC 6	–	CAN CIRC 4
CVT	CAN COMM ✓	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 3
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	CAN CIRC 2

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 6	–	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC ✓	–	CAN CIRC ✓	–	–	CAN CIRC ✓
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 3
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	CAN CIRC 2

PKIA0711E

Case 3: Replace ABS actuator and electric unit (control unit)

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 6	–	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3 ✓	–	–	CAN CIRC 4
ABS	CAN COMM ✓	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 3
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	CAN CIRC 2

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 6	–	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	–	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 3
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	CAN CIRC 2

Case 4: Replace Smart entrance control unit

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 6	–	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–
SMART ENTRANCE	CAN COMM ✓	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 3
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	CAN CIRC 2

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 6	–	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	–	–	–	–	CAN CIRC 3 ✓
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	CAN CIRC 2

PKIA0712E

Case 5: Replace Tyre pressure monitoring control unit

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 6	–	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 3
AIR PRESSURE MONITOR	✓ CAN COMM	CAN CIRC 1	–	–	–	–	–	CAN CIRC 2

Case 6

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 6 ✓	–	CAN CIRC 4 ✓
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3 ✓	–	–	CAN CIRC 4 ✓
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	–	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	–	–	–	–	CAN CIRC 3
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	CAN CIRC 2

Case 7

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 6 ✓	–	CAN CIRC 4 ✓
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	CAN CIRC 4 ✓
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	–	–	–	–	CAN CIRC 3
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	CAN CIRC 2

Case 8

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 6	–	CAN CIRC 4 ✓
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	CAN CIRC 4 ✓
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 3 ✓
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	CAN CIRC 2

PKIA0713E

Case 9

ENGINE	CAN COMM	CAN CIRC 1 ✓	–	CAN CIRC 2 ✓	–	CAN CIRC 6 ✓	–	CAN CIRC 4 ✓
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	–	CAN CIRC 3	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	–	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	–	–	–	–	CAN CIRC 3
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	CAN CIRC 2

Case 10

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2 ✓	–	CAN CIRC 6	–	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1 ✓	CAN CIRC 2 ✓	–	CAN CIRC 3 ✓	–	–	CAN CIRC 4 ✓
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 3
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	CAN CIRC 2

Case 11

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 6	–	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3 ✓	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1 ✓	CAN CIRC 2 ✓	–	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 3
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	CAN CIRC 2

Case 12

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 6 ✓	–	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1 ✓	CAN CIRC 2 ✓	–	–	–	–	CAN CIRC 3 ✓
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	CAN CIRC 2

PKIA0714E

Case 13

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 6	–	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 3
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC ✓	–	–	–	–	–	CAN CIRC ✓

Case 14

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 6	–	CAN CIRC ✓
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	CAN CIRC ✓
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC ✓
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	CAN CIRC ✓

Case 15

ENGINE	CAN COMM	CAN CIRC ✓	–	CAN CIRC ✓	–	CAN CIRC ✓	–	CAN CIRC ✓
CVT	CAN COMM	CAN CIRC ✓	CAN CIRC ✓	–	CAN CIRC ✓	–	–	CAN CIRC ✓
ABS	CAN COMM	CAN CIRC ✓	CAN CIRC ✓	–	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC ✓	CAN CIRC ✓	–	–	–	–	CAN CIRC ✓
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC ✓	–	–	–	–	–	CAN CIRC ✓

PKIA0715E

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

INSPECTION

Proceed trouble diagnosis according to the check sheet results (example).
Case 1:Replace ECM.
Case 2:Replace TCM.
Case 3:Replace ABS actuator and electric unit (control unit).
Case 4:Replace Smart entrance control unit.
Case 5:Replace Tyre pressure monitoring control unit.
Case 6:Check Harness between TCM and Data link connector. Refer to LAN-93, "Circuit Check Between TCM and Data Link Connector"
Case 7:Check Harness between Data link connector and Smart entrance control unit. Refer to LAN-94, "Circuit Check Between Data Link Connector and Smart Entrance Control Unit"

Case 8:Check Harness between Smart entrance control unit and Tyre pressure monitoring control unit. Refer to LAN-94, "Circuit Check Between Smart Entrance Control Unit and Tyre Pressure Monitoring Control Unit"
Case 9:Check ECM Circuit. Refer to LAN-95, "ECM Circuit Check"
Case 10:Check TCM Circuit. Refer to LAN-96, "TCM Circuit Check"
Case 11:Check ABS actuator and electric unit (control unit) Circuit. Refer to LAN-96, "ABS Actuator and Electric Unit (control unit) Circuit Check"
Case 12:Check Smart entrance control unit Circuit. Refer to LAN-97, "Smart Entrance Control Unit Circuit Check"
Case 13:Check Tyre pressure monitoring control unit Circuit. Refer to LAN-97, "Tyre Pressure Monitoring Control Unit Circuit Check"
Case 14:Check Combination meter Circuit. Refer to LAN-98, "Combination Meter Circuit Check"
Case 15:Check CAN communication Circuit. Refer to LAN-98, "CAN Communication Circuit Check"

Circuit Check Between TCM and Data Link Connector

EKS004XR

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, control unit-side and harness-side)

- TCM.
- ABS actuator and electric unit (control unit).
- Between TCM and ABS actuator and electric unit (control unit).

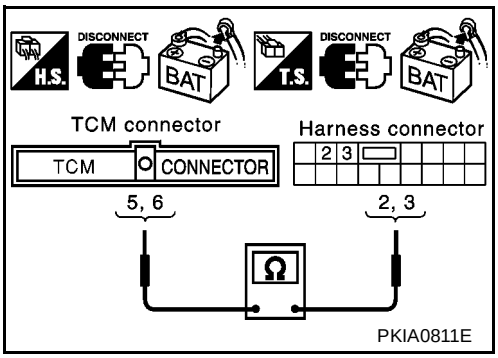
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect TCM connector and harness connector F108.
2. Check continuity between TCM harness connector F103 terminals 5 (L), 6 (R) and harness connector F108 terminals 3 (L), 2 (R).

5(L) – 3(L) : Continuity should exist.
6(R) – 2(R) : Continuity should exist.



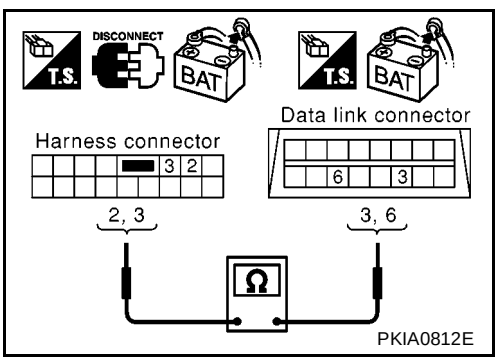
OK or NG

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

3. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between harness connector M79 terminals 3 (L), 2 (R) and Data link connector M10 terminals 6 (L), 3 (R).

3(L) – 6(L) : Continuity should exist.
2(R) – 3(R) : Continuity should exist.



OK or NG

OK >> Reconnect all connectors to perform “SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE”, “CVT”, “ABS”, “SMART ENTRANCE”, and “AIR PRESSURE MONITOR” displayed on CONSULT-II. Refer to EC-1083, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) or EC-1505, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) for “ENGINE” and Refer to CVT-118, "DTC U1000 CAN COMMUNICATION LINE" (EURO-OBD) or CVT-201, "CAN COMMUNI-

CATION LINE" (ALL) for “CVT”. Refer to BRC-33, "CAN Communication Circuit" for “ABS”. Refer to BCS-40, "CAN Communication Line Check" for “SMART ENTRANCE”. Refer to WT-35, "Inspection 4: CAN Communication Line" for “AIR PRESSURE MONITOR”.

NG >> Repair harness.

Circuit Check Between Data Link Connector and Smart Entrance Control Unit

EKS004XS

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 unit-side and harness-side)

- Smart entrance control unit.
- ABS actuator and electric unit (control unit).
- Between smart entrance control unit and ABS actuator and electric unit (control unit).

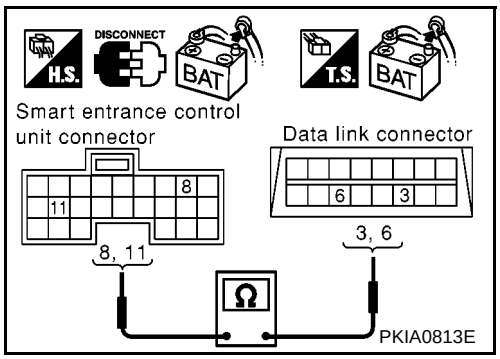
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect smart entrance control unit connector.
2. Check continuity between smart entrance control unit harness connector M41 terminals 8 (L), 11 (R) and Data link connector M10 terminals 6 (L), 3 (R).

8(L) – 6(L) : Continuity should exist.
11(R) – 3(R) : Continuity should exist.



OK or NG

OK >> Reconnect all connectors to perform “SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE”, “CVT”, “ABS”, “SMART ENTRANCE”, and “AIR PRESSURE MONITOR” displayed on CONSULT-II. Refer to EC-1083, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) or EC-1505, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) for “ENGINE” and Refer to CVT-118, "DTC U1000 CAN COMMUNICATION LINE" (EURO-OBD) or CVT-201, "CAN COMMUNICATION LINE" (ALL) for “CVT”. Refer to BRC-33, "CAN Communication Circuit" for “ABS”. Refer to BCS-40, "CAN Communication Line Check" for “SMART ENTRANCE”. Refer to WT-35, "Inspection 4: CAN Communication Line" for “AIR PRESSURE MONITOR”.

NG >> Repair harness.

Circuit Check Between Smart Entrance Control Unit and Tyre Pressure Monitoring Control Unit

EKS004XT

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 unit-side and harness-side)

- Smart entrance control unit.
- Tyre pressure monitoring control unit.

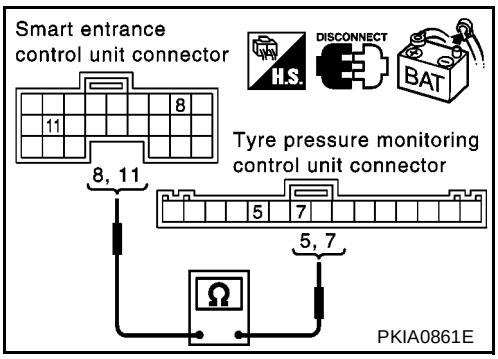
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect smart entrance control unit connector and tyre pressure monitoring control unit connector.
2. Check continuity between smart entrance control unit harness connector M41 terminals 8 (L), 11 (R) and tyre pressure monitoring control unit harness connector M96 terminals 7 (L), 5 (R).

8(L) – 7(L) : Continuity should exist.
11(R) – 5(R) : Continuity should exist.



OK or NG

OK >> Reconnect all connectors to perform “SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE”, “CVT”, “ABS”, “SMART ENTRANCE”, and “AIR PRESSURE MONITOR” displayed on CONSULT-II. Refer to EC-1083, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) or EC-1505, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) for “ENGINE” and Refer to CVT-118, "DTC U1000 CAN COMMUNICATION LINE" (EURO-OBD) or CVT-201, "CAN COMMUNICATION LINE" (ALL) for “CVT”. Refer to BRC-33, "CAN Communication Circuit" for “ABS”. Refer to BCS-40, "CAN Communication Line Check" for “SMART ENTRANCE”. Refer to WT-35, "Inspection 4: CAN Communication Line" for “AIR PRESSURE MONITOR”.

NG >> Repair harness.

ECM Circuit Check

EKS004XU

1. CHECK CONNECTOR

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

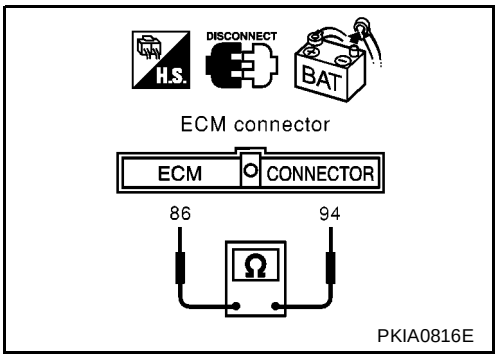
OK or NG

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 F102 terminals 94(L) and 86(R).

94(L) – 86(R) : Approx. 108 – 132Ω



OK or NG

OK >> Replace ECM.
NG >> Repair harness between TCM and ECM.

TCM Circuit Check

EKS004XV

1. CHECK CONNECTOR

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

OK or NG

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

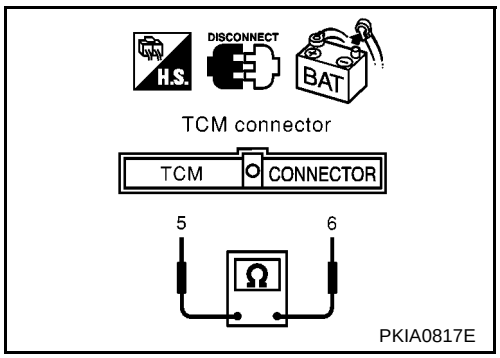
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect TCM connector.
2. Check resistance between TCM harness connector F103 terminals 5(L) and 6(R).

5(L) – 6(R) : Approx. 54 – 66Ω

OK or NG

OK >> Replace TCM.
NG >> Repair harness between TCM and ECM.



ABS Actuator and Electric Unit (control unit) Circuit Check

EKS004XW

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 unit-side and harness-side)

- ABS actuator and electric unit (control unit).
- Harness connector E120.
- Harness connector B107.
- Harness connector B102.
- Harness connector M89.

OK or NG

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

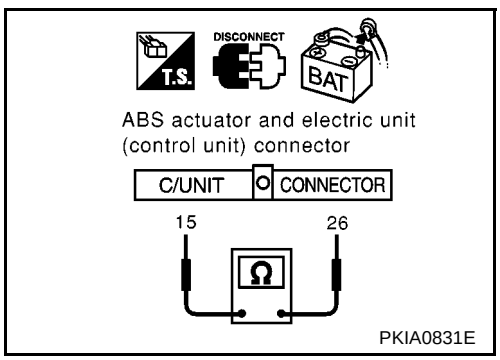
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector.
2. Check resistance between ABS actuator and electric unit (control unit) harness connector E64 terminals 26(L) and 15(R).

26(L) – 15(R) : Approx. 54 – 66Ω

OK or NG

OK >> Replace ABS actuator and electric unit (control unit).
NG >> Repair harness between Data link connector and ABS actuator and electric unit (control unit).



Smart Entrance Control Unit Circuit Check

EKS004XX

1. CHECK CONNECTOR

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

OK or NG

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

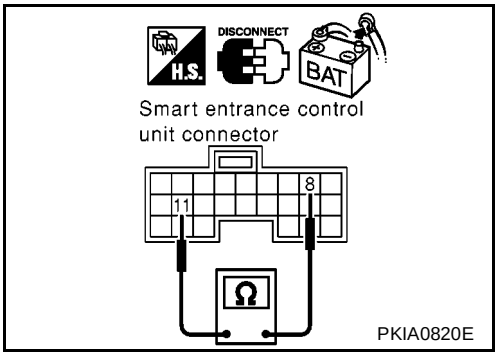
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect smart entrance control unit connector.
2. Check resistance between smart entrance control unit harness connector M41 terminals 8(L) and 11(R).

8(L) – 11(R) : Approx. 54 – 66Ω

OK or NG

OK >> Replace smart entrance control unit.
NG >> Repair harness between Data link connector and smart entrance control unit.



Tyre Pressure Monitoring Control Unit Circuit Check

EKS004XY

1. CHECK CONNECTOR

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

OK or NG

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

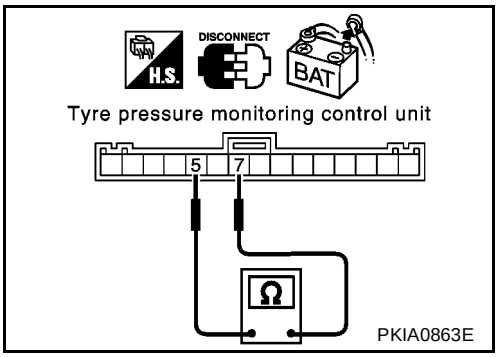
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect tyre pressure monitoring control unit connector.
2. Check resistance between tyre pressure monitoring control unit harness connector M96 terminals 7(L) and 5(R).

7(L) – 5(R) : Approx. 54 – 66Ω

OK or NG

OK >> Replace tyre pressure monitoring control unit.
NG >> Repair harness between smart entrance control unit and tyre pressure monitoring control unit.



Combination Meter Circuit Check

EKS004XZ

1. CHECK CONNECTOR

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

OK or NG

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

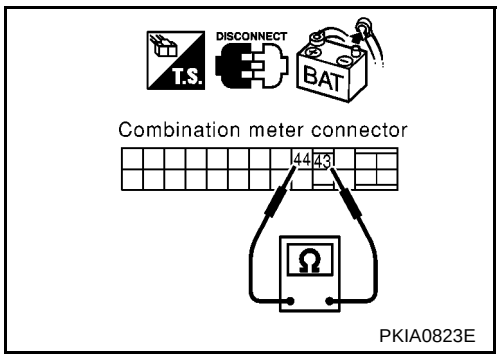
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect combination meter connector.
2. Check resistance between combination meter harness connector M37 terminals 43(L) and 44(R).

43(L) – 44(R) : Approx. 108 – 132Ω

OK or NG

OK >> Replace combination meter.
NG >> Repair harness between tyre pressure monitoring control unit and combination meter.



CAN Communication Circuit Check

EKS004Y0

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. (meter-side, control unit-side, control module-side and harness-side)

- Combination meter.
- Tyre pressure monitoring control unit.
- Smart entrance control unit.
- ABS actuator and electric unit (control unit).
- TCM.
- ECM.
- Between ABS actuator and electric unit (control unit) and ECM.

OK or NG

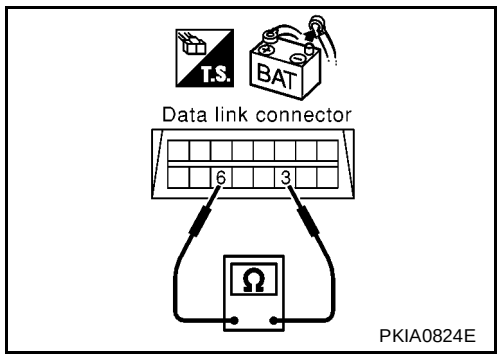
OK >> GO TO 2.
NG >> Repair terminal or connector.

2. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect the following connectors.
- Combination meter connector.
- Tyre pressure monitoring control unit connector.
- Smart entrance control unit connector.
- Harness connector M89.
- Harness connector M79.

2. Check continuity between Data link connector M10 terminals 6 (L) and 3(R).

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



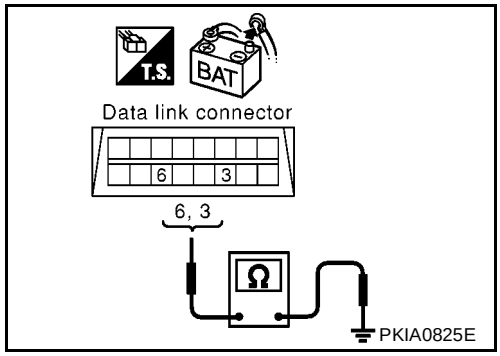
OK or NG

OK >> GO TO 3.
NG >>
- Repair harness between tyre pressure monitoring control unit and combination meter.
- Repair harness between smart entrance control unit and tyre pressure monitoring control unit.
- Repair harness between Data link connector and smart entrance control unit.
- Repair harness between harness connector M89 and harness connector M79.

3. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between Data link connector M10 terminals 6 (L), 3(R) and ground.

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



OK or NG

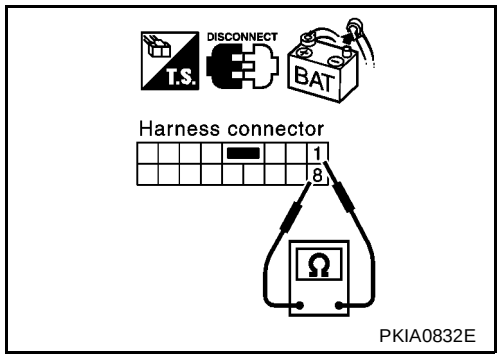
OK >> GO TO 4.
NG >>
- Repair harness between tyre pressure monitoring control unit and combination meter.
- Repair harness between smart entrance control unit and tyre pressure monitoring control unit.
- Repair harness between Data link connector and smart entrance control unit.
- Repair harness between harness connector M89 and harness connector M79.

4. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect harness connector B107.
2. Check the following.

- Continuity between harness connector B102 terminals 1 (L) and 8(G).(Sedan models)
- Continuity between harness connector B102 terminals 1 (L) and 8(R).(Wagon models)

1(L) – 8(G) (Sedan models) : Continuity should not exist.
1(L) – 8(R) (Wagon models) : Continuity should not exist.



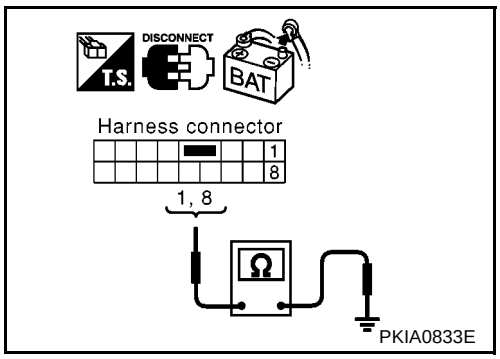
OK or NG

OK >> GO TO 5.
NG >> Repair harness between harness connector B102 and harness connector B107.

5. CHECK HARNESS FOR SHORT CIRCUIT

1. Check the following.

- Continuity between harness connector B102 terminals 1 (L), 8(G) and ground.(Sedan models)
- Continuity between harness connector B102 terminals 1 (L), 8(R) and ground.(Wagon models)



1(L) – ground (Sedan models) : **Continuity should not exist.**

8(G) – ground (Sedan models) : **Continuity should not exist.**

1(L) – ground (Wagon models) : **Continuity should not exist.**

8(R) – ground (Wagon models) : **Continuity should not exist.**

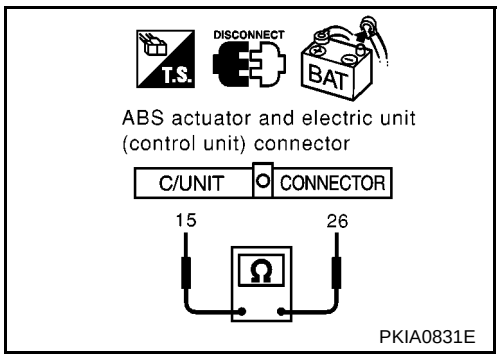
OK or NG

OK >> GO TO 6.
NG >> Repair harness between harness connector B102 and harness connector B107.

6. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector.
2. Check continuity between ABS actuator and electric unit (control unit) harness connector E64 terminals 26 (L) and 15(R).

26(L) – 15(R) : **Continuity should not exist.**



OK or NG

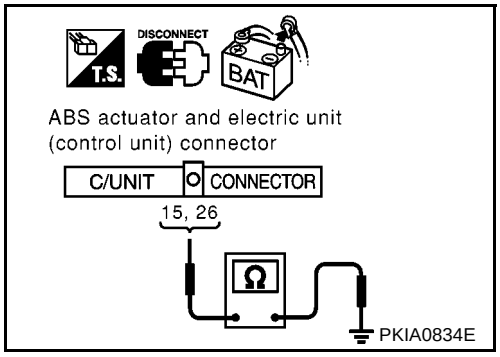
OK >> GO TO 7.
NG >> Repair harness between ABS actuator and electric unit (control unit) and harness connector E120.

7. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ABS actuator and electric unit (control unit) harness connector E64 terminals 26 (L), 15 (R) and ground.

26(L) – ground : **Continuity should not exist.**

15(R) – ground : **Continuity should not exist.**



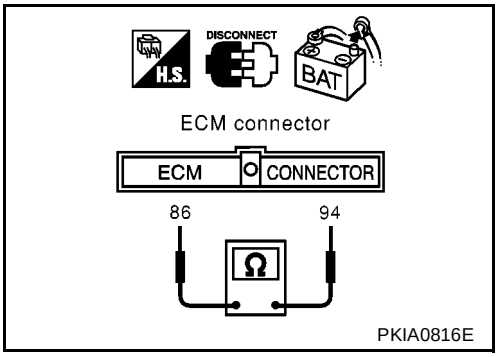
OK or NG

OK >> GO TO 8.
NG >> Repair harness between ABS actuator and electric unit (control unit) and harness connector E120.

8. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect ECM connector and TCM connector.
2. Check continuity between ECM harness connector F102 terminals 94 (L) and 86(R).

94(L) – 86(R) : Continuity should not exist.



OK or NG

OK >> GO TO 9.

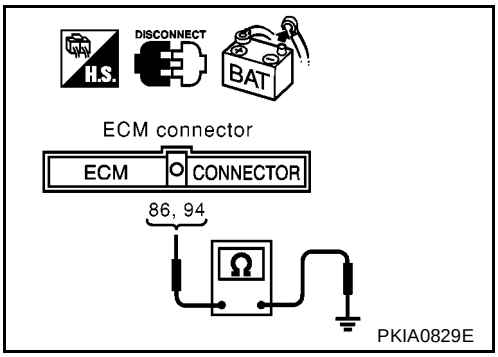
NG >>
- Repair harness between ECM and harness connector F108.
- Repair harness between TCM and harness connector F108.

9. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ECM harness connector F102 terminals 94 (L), 86 (R) and ground.

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

86(R) – ground : Continuity should not exist.



OK or NG

OK >> GO TO 10.

NG >>
- Repair harness between ECM and harness connector F108.
- Repair harness between TCM and harness connector F108.

10. ECM / COMBINATION METER INTERNAL CIRCUIT INSPECTION

Check components inspection. Refer to LAN-101, "ECM / COMBINATION METER INTERNAL CIRCUIT INSPECTION"

OK or NG

OK >> Reconnect all connectors to perform “SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE”, “CVT”, “ABS”, “SMART ENTRANCE”, and “AIR PRESSURE MONITOR” displayed on CONSULT-II. Refer to EC-1083, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) or EC-1505, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) for “ENGINE” and Refer to CVT-118, "DTC U1000 CAN COMMUNICATION LINE" (EURO-OBD) or CVT-201, "CAN COMMUNICATION LINE" (ALL) for “CVT”. Refer to BRC-33, "CAN Communication Circuit" for “ABS”. Refer to BCS-40, "CAN Communication Line Check" for “SMART ENTRANCE”. Refer to WT-35, "Inspection 4: CAN Communication Line" for “AIR PRESSURE MONITOR”.

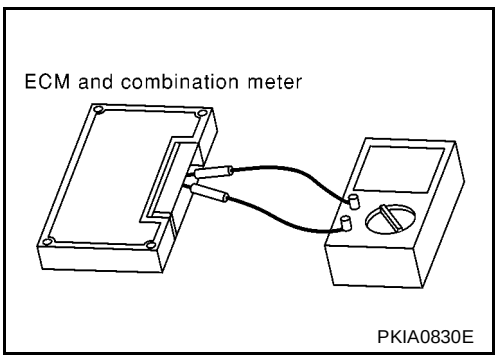
NG >> Replace ECM and/or Combination meter.

Component Inspection

EKS004Y1

ECM / COMBINATION METER INTERNAL CIRCUIT INSPECTION

- Remove ECM and Combination meter from vehicle.
- Check resistance between ECM terminals 94 and 86.
- Check resistance between Combination meter terminals 43 and 44.



Unit	Terminal	Resistance value (Ω)
ECM	94 – 86	Approx. 108 - 132
Combination meter	43 – 44	

CAN SYSTEM (TYPE 4)

PFP:23710

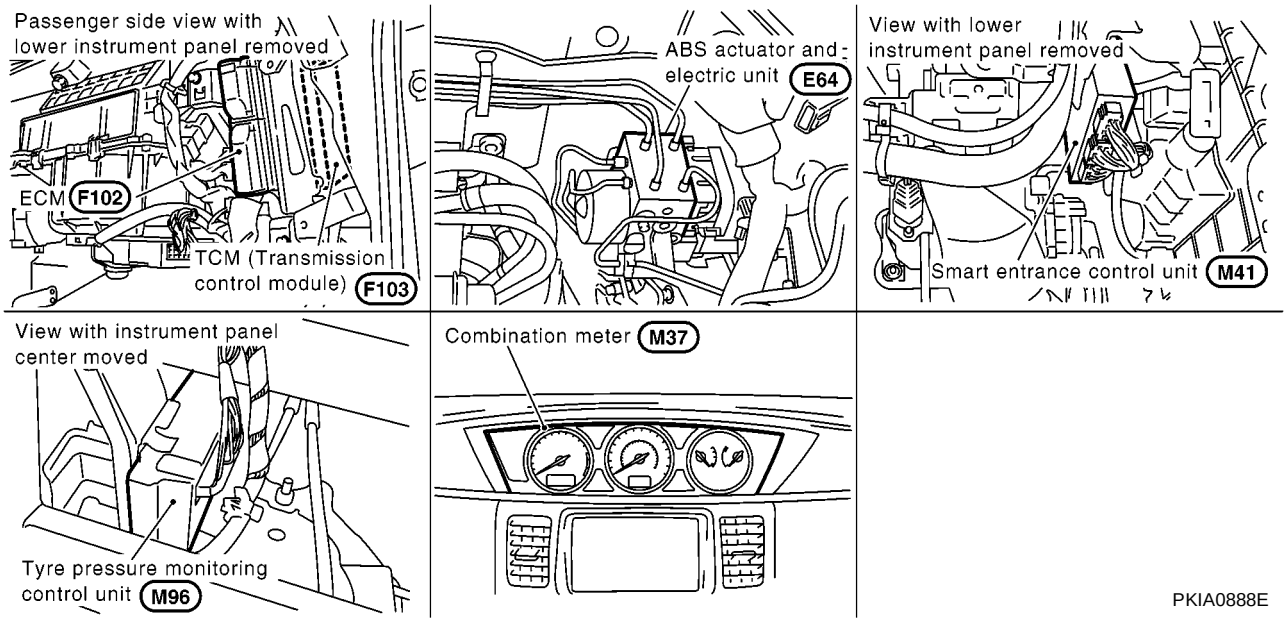
System Description

EKS004X8

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.

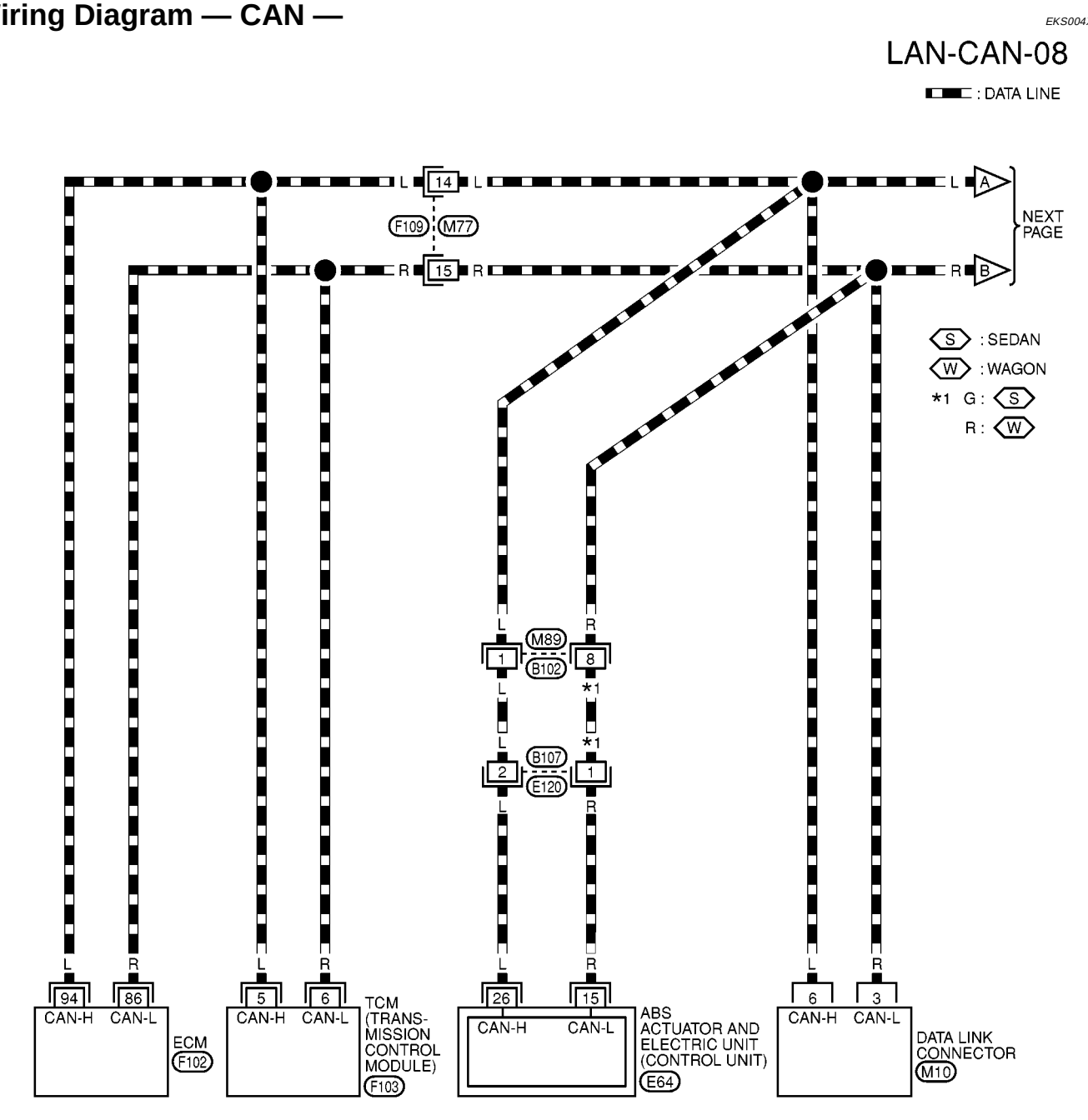
Component Parts and Harness Connector Location

EKS004X9



Wiring Diagram — CAN —

EKS004XA

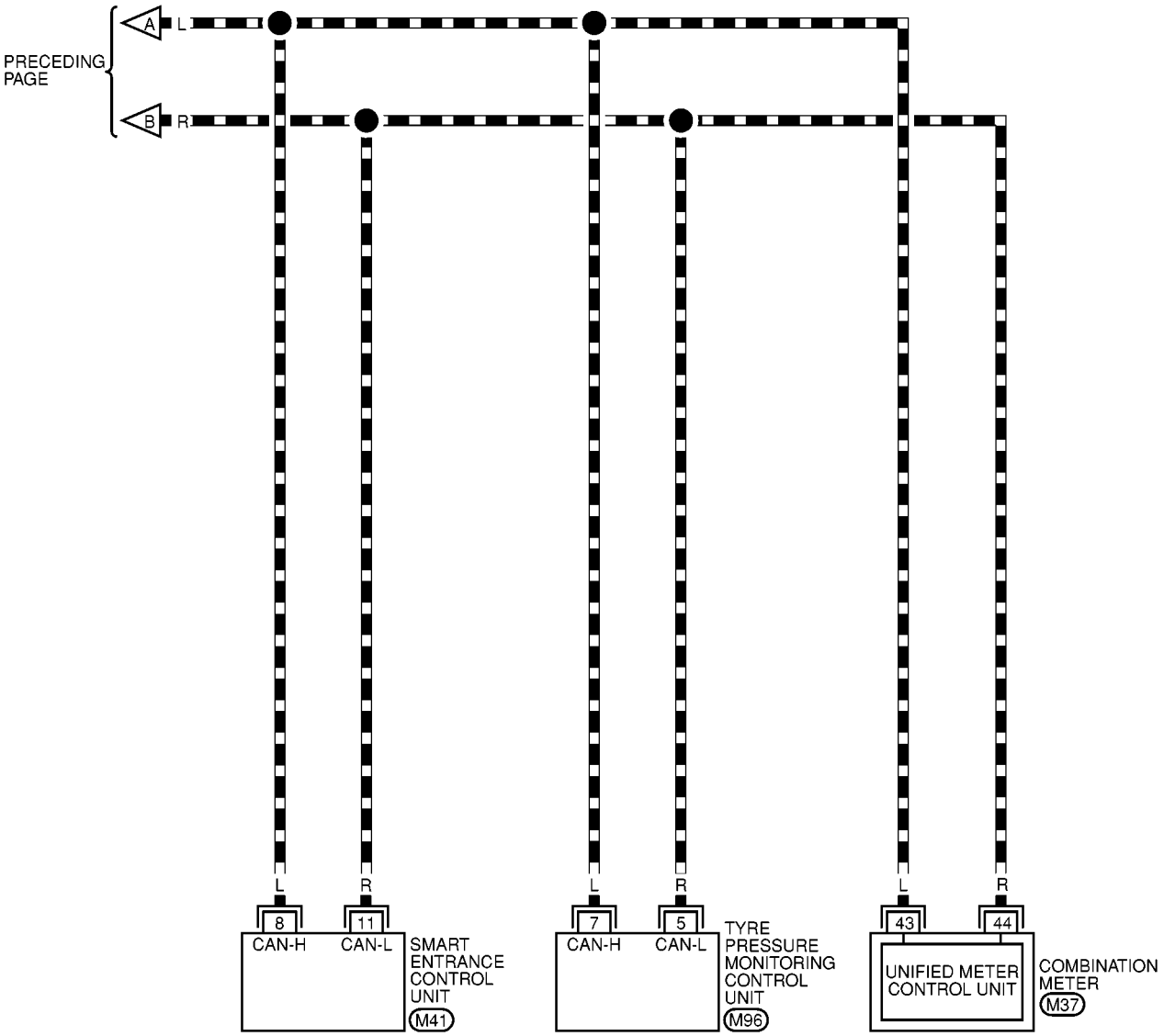


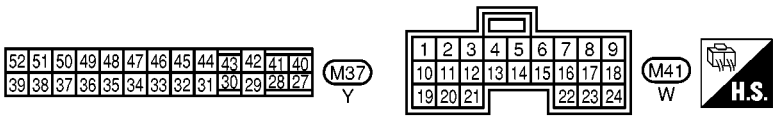
REFER TO THE FOLLOWING.
F102 , F103 -ELECTRICAL UNITS

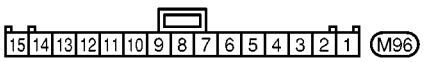
MKWA0228E

LAN-CAN-09

: DATA LINE







MKWA0229E

Work Flow

EKS004XB

1. Print all the data of “SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE”, “A/T”, “ABS”, “SMART ENTRANCE”, and “AIR PRESSURE MONITOR” displayed on CONSULT-II. Refer to EC-150, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) or EC-663, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) for “ENGINE” and Refer to AT-190, "DTC U1000 CAN COMMUNICATION LINE" (EURO-OBD) or AT-393, "CAN COMMUNICATION LINE" (ALL) for “A/T”. Refer to BRC-33, "CAN Communication Circuit" for “ABS”. Refer to BCS-40, "CAN Communication Line Check" for “SMART ENTRANCE”. Refer to WT-35, "Inspection 4: CAN Communication Line" for “AIR PRESSURE MONITOR”.
2. Attach the printed sheet of “SELF-DIAG RESULTS” and “DATA MONITOR” onto the check sheet. Refer to LAN-106, "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-106, "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-107, "CHECK SHEET RESULTS (EXAMPLE)"

CHECK SHEET

Check sheet table

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 6	–	CAN CIRC 4
A/T	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 3
AIR PRESSURE MONITOR	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
ABS
SELF-DIAG RESULTS

Attach copy of
SMART ENTRANCE
SELF-DIAG RESULTS

Attach copy of
AIR PRESSURE MONITOR
SELF-DIAG RESULTS

Attach copy of
ENGINE
DATA MONITOR

Attach copy of
A/T
DATA MONITOR

Attach copy of
ABS
DATA MONITOR

Attach copy of
SMART ENTRANCE
DATA MONITOR

Attach copy of
AIR PRESSURE MONITOR
DATA MONITOR

PKIA0716E

CHECK SHEET RESULTS (EXAMPLE)

Case 1: Replace ECM

ENGINE	CAN COMM ✓	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 6	–	CAN CIRC 4
A/T	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 3
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	CAN CIRC 2

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC ✓	–	CAN CIRC ✓	–	CAN CIRC ✓
A/T	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 3
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	CAN CIRC 2

Case 2: Replace TCM

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC ✓	–	CAN CIRC 6	–	CAN CIRC 4
A/T	CAN COMM ✓	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 3
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	CAN CIRC 2

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 6	–	CAN CIRC 4
A/T	CAN COMM	CAN CIRC 1	CAN CIRC ✓	–	–	–	–	CAN CIRC ✓
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 3
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	CAN CIRC 2

PKIA0717E

Case 3: Replace ABS actuator and electric unit (control unit)

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 6	–	CAN CIRC 4
A/T	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 4
ABS	CAN COMM ✓	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 3
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	CAN CIRC 2

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 6	–	CAN CIRC 4
A/T	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	–	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 3
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	CAN CIRC 2

Case 4: Replace Smart entrance control unit

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 6	–	CAN CIRC 4
A/T	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–
SMART ENTRANCE	CAN COMM ✓	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 3
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	CAN CIRC 2

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 6	–	CAN CIRC 4
A/T	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	–	–	–	–	CAN CIRC ✓
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	CAN CIRC 2

PKIA0718E

Case 5: Replace Tyre pressure monitoring control unit

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 6	–	CAN CIRC 4
A/T	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 3
AIR PRESSURE MONITOR	CAN COMM ✓	CAN CIRC 1	–	–	–	–	–	CAN CIRC 2

Case 6

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC ✓	–	CAN CIRC ✓
A/T	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC ✓
ABS	CAN COMM	CAN CIRC 1	CAN CIRC ✓	–	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC ✓	–	–	–	–	CAN CIRC 3
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	CAN CIRC 2

Case 7

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC ✓	–	CAN CIRC ✓
A/T	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC ✓
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC ✓	–	–	–	–	CAN CIRC 3
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	CAN CIRC 2

Case 8

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 6	–	CAN CIRC ✓
A/T	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC ✓
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC ✓
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	CAN CIRC 2

PKIA0719E

Case 9

ENGINE	CAN COMM	CAN CIRC ✓	–	CAN CIRC ✓	–	CAN CIRC ✓	–	CAN CIRC ✓
A/T	CAN COMM	CAN CIRC 1	CAN CIRC ✓	–	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC ✓	–	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC ✓	–	–	–	–	CAN CIRC 3
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	CAN CIRC 2

Case 10

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC ✓	–	CAN CIRC 6	–	CAN CIRC 4
A/T	CAN COMM	CAN CIRC ✓	CAN CIRC ✓	–	–	–	–	CAN CIRC ✓
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 3
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	CAN CIRC 2

Case 11

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 6	–	CAN CIRC 4
A/T	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC ✓	CAN CIRC ✓	–	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 3
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	CAN CIRC 2

Case 12

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC ✓	–	CAN CIRC 4
A/T	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC ✓	CAN CIRC ✓	–	–	–	–	CAN CIRC ✓
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	CAN CIRC 2

PKIA0720E

Case 13

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 6	–	CAN CIRC 4
A/T	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 3
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC ✓	–	–	–	–	–	CAN CIRC ✓

Case 14

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 6	–	CAN CIRC ✓
A/T	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC ✓
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC ✓
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	CAN CIRC ✓

Case 15

ENGINE	CAN COMM	CAN CIRC ✓	–	CAN CIRC ✓	–	CAN CIRC ✓	–	CAN CIRC ✓
A/T	CAN COMM	CAN CIRC ✓	CAN CIRC ✓	–	–	–	–	CAN CIRC ✓
ABS	CAN COMM	CAN CIRC ✓	CAN CIRC ✓	–	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC ✓	CAN CIRC ✓	–	–	–	–	CAN CIRC ✓
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC ✓	–	–	–	–	–	CAN CIRC ✓

PKIA0721E

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

INSPECTION

Proceed trouble diagnosis according to the check sheet results (example).
Case 1:Replace ECM.
Case 2:Replace TCM.
Case 3:Replace ABS actuator and electric unit (control unit).
Case 4:Replace Smart entrance control unit.
Case 5:Replace Tyre pressure monitoring control unit.
Case 6:Check Harness between TCM and Data link connector. Refer to LAN-112, "Circuit Check Between TCM and Data Link Connector"
Case 7:Check Harness between Data link connector and Smart entrance control unit. Refer to LAN-113, "Circuit Check Between Data Link Connector and Smart Entrance Control Unit"

Case 8:Check Harness between Smart entrance control unit and Tyre pressure monitoring control unit. Refer to LAN-113, "Circuit Check Between Smart Entrance Control Unit and Tyre Pressure Monitoring Control Unit"
Case 9:Check ECM Circuit. Refer to LAN-114, "ECM Circuit Check"
Case 10:Check TCM Circuit. Refer to LAN-115, "TCM Circuit Check"
Case 11:Check ABS actuator and electric unit (control unit) Circuit. Refer to LAN-115, "ABS Actuator and Electric Unit (control unit) Circuit Check"
Case 12:Check Smart entrance control unit Circuit. Refer to LAN-116, "Smart Entrance Control Unit Circuit Check"
Case 13:Check Tyre pressure monitoring control unit Circuit. Refer to LAN-116, "Tyre Pressure Monitoring Control Unit Circuit Check"
Case 14:Check Combination meter Circuit. Refer to LAN-117, "Combination Meter Circuit Check"
Case 15:Check CAN communication Circuit. Refer to LAN-117, "CAN Communication Circuit Check"

Circuit Check Between TCM and Data Link Connector

EKS004XC

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, control unit-side and harness-side)

- TCM.
- ABS actuator and electric unit (control unit).
- Between TCM and ABS actuator and electric unit (control unit).

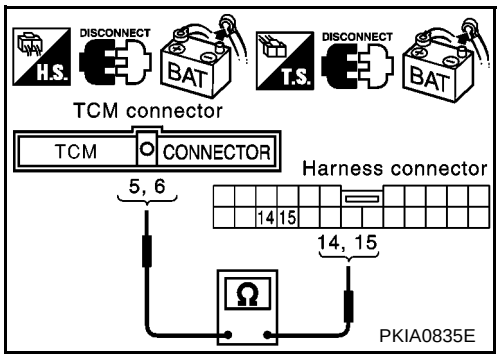
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect TCM connector and harness connector F109.
2. Check continuity between TCM harness connector F103 terminals 5 (L), 6 (R) and harness connector F109 terminals 14 (L), 15 (R).

5(L) – 14(L) : Continuity should exist.
6(R) – 15(R) : Continuity should exist.



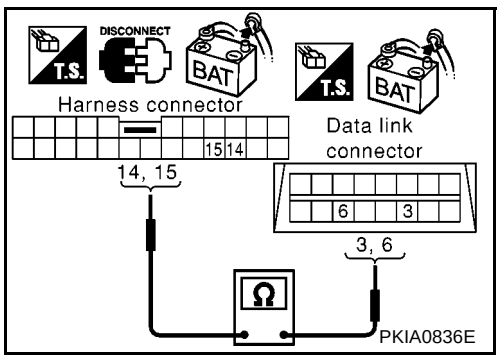
OK or NG

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

3. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between harness connector M77 terminals 14 (L), 15 (R) and Data link connector M10 terminals 6 (L), 3 (R).

14(L) – 6(L) : Continuity should exist.
15(R) – 3(R) : Continuity should exist.



OK or NG

OK >> Reconnect all connectors to perform “SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE”, “A/T”, “ABS”, “SMART ENTRANCE”, and “AIR PRESSURE MONITOR” displayed on CONSULT-II. Refer to EC-150, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) or EC-663, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) for “ENGINE” and Refer to AT-190, "DTC U1000 CAN COMMUNICATION LINE" (EURO-OBD) or AT-393, "CAN COMMUNICATION

LINE" (ALL) for “A/T”. Refer to BRC-33, "CAN Communication Circuit" for “ABS”. Refer to BCS-40, "CAN Communication Line Check" for “SMART ENTRANCE”. Refer to WT-35, "Inspection 4: CAN Communication Line" for “AIR PRESSURE MONITOR”.

NG >> Repair harness.

Circuit Check Between Data Link Connector and Smart Entrance Control Unit

EKS004XD

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 unit-side and harness-side)

- Smart entrance control unit.
- ABS actuator and electric unit (control unit).
- Between smart entrance control unit and ABS actuator and electric unit (control unit).

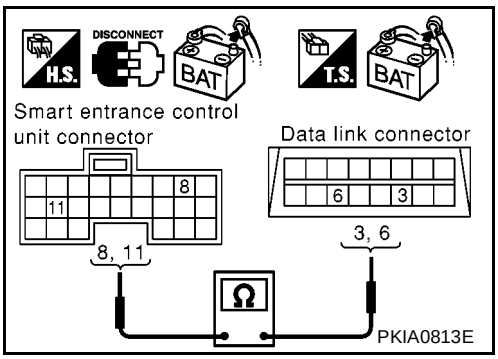
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect smart entrance control unit connector.
2. Check continuity between smart entrance control unit harness connector M41 terminals 8 (L), 11 (R) and Data link connector M10 terminals 6 (L), 3 (R).

8(L) – 6(L) : Continuity should exist.
11(R) – 3(R) : Continuity should exist.



OK or NG

OK >> Reconnect all connectors to perform “SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE”, “A/T”, “ABS”, “SMART ENTRANCE”, and “AIR PRESSURE MONITOR” displayed on CONSULT-II. Refer to EC-150, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) or EC-663, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) for “ENGINE” and Refer to AT-190, "DTC U1000 CAN COMMUNICATION LINE" (EURO-OBD) or AT-393, "CAN COMMUNICATION LINE" (ALL) for “A/T”. Refer to BRC-33, "CAN Communication Circuit" for “ABS”. Refer to BCS-40, "CAN Communication Line Check" for “SMART ENTRANCE”. Refer to WT-35, "Inspection 4: CAN Communication Line" for “AIR PRESSURE MONITOR”.

NG >> Repair harness.

Circuit Check Between Smart Entrance Control Unit and Tyre Pressure Monitoring Control Unit

EKS004XE

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 unit-side and harness-side)

- Smart entrance control unit.
- Tyre pressure monitoring control unit.

OK or NG

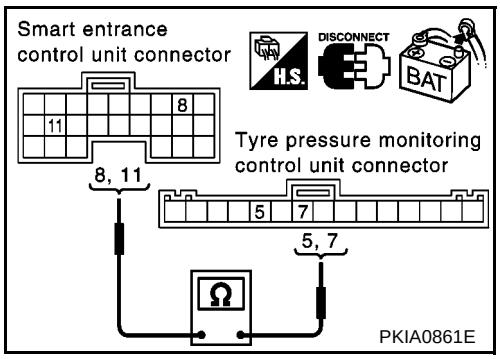
OK >> GO TO 2.
NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect smart entrance control unit connector and tyre pressure monitoring control unit connector.
2. Check continuity between smart entrance control unit harness connector M41 terminals 8 (L), 11 (R) and tyre pressure monitoring control unit harness connector M96 terminals 7 (L), 5 (R).

8(L) – 7(L) : Continuity should exist.

11(R) – 5(R) : Continuity should exist.



OK or NG

OK >> Reconnect all connectors to perform “SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE”, “A/T”, “ABS”, “SMART ENTRANCE”, and “AIR PRESSURE MONITOR” displayed on CONSULT-II. Refer to EC-150, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) or EC-663, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) for “ENGINE” and Refer to AT-190, "DTC U1000 CAN COMMUNICATION LINE" (EURO-OBD) or AT-393, "CAN COMMUNICATION LINE" (ALL) for “A/T”. Refer to BRC-33, "CAN Communication Circuit" for “ABS”. Refer to BCS-40, "CAN Communication Line Check" for “SMART ENTRANCE”. Refer to WT-35, "Inspection 4: CAN Communication Line" for “AIR PRESSURE MONITOR”.

NG >> Repair harness.

ECM Circuit Check

EKS004XF

1. CHECK CONNECTOR

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

OK or NG

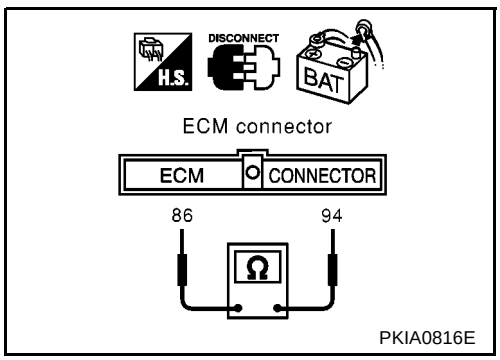
OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ECM connector.
2. Check resistance between ECM harness connector F102 terminals 94(L) and 86(R).

94(L) – 86(R) : Approx. 108 – 132Ω



OK or NG

OK >> Replace ECM.

NG >> Repair harness between TCM and ECM.

TCM Circuit Check

EKS004XG

1. CHECK CONNECTOR

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

OK or NG

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

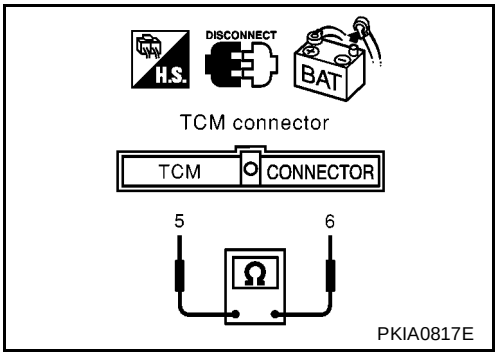
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect TCM connector.
2. Check resistance between TCM harness connector F103 terminals 5(L) and 6(R).

5(L) – 6(R) : Approx. 54 – 66Ω

OK or NG

OK >> Replace TCM.
NG >> Repair harness between TCM and ECM.



ABS Actuator and Electric Unit (control unit) Circuit Check

EKS004XH

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 unit-side and harness-side)

- ABS actuator and electric unit (control unit).
- Harness connector E120.
- Harness connector B107.
- Harness connector B102.
- Harness connector M89.

OK or NG

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

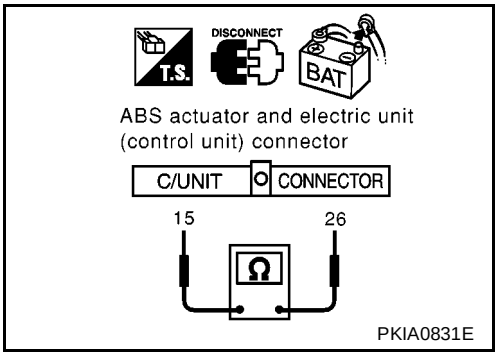
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector.
2. Check resistance between ABS actuator and electric unit (control unit) harness connector E64 terminals 26(L) and 15(R).

26(L) – 15(R) : Approx. 54 – 66Ω

OK or NG

OK >> Replace ABS actuator and electric unit (control unit).
NG >> Repair harness between Data link connector and ABS actuator and electric unit (control unit).



Smart Entrance Control Unit Circuit Check

EKS004XI

1. CHECK CONNECTOR

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

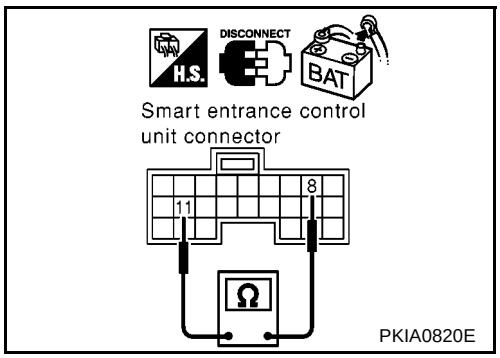
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect smart entrance control unit connector.
2. Check resistance between smart entrance control unit harness connector M41 terminals 8(L) and 11(R).

8(L) – 11(R) : Approx. 54 – 66Ω



OK or NG

OK >> Replace smart entrance control unit.
NG >> Repair harness between Data link connector and smart entrance control unit.

Tyre Pressure Monitoring Control Unit Circuit Check

EKS004XJ

1. CHECK CONNECTOR

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

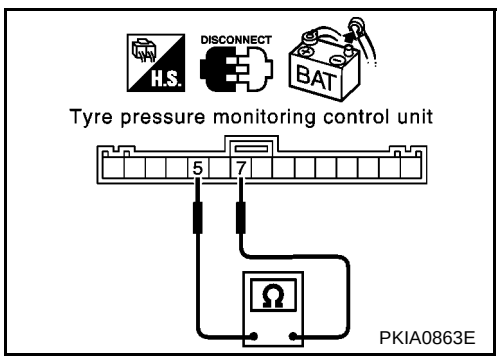
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect tyre pressure monitoring control unit connector.
2. Check resistance between tyre pressure monitoring control unit harness connector M96 terminals 7(L) and 5(R).

7(L) – 5(R) : Approx. 54 – 66Ω



OK or NG

OK >> Replace tyre pressure monitoring control unit.
NG >> Repair harness between smart entrance control unit and tyre pressure monitoring control unit.

Combination Meter Circuit Check

EKS004XK

1. CHECK CONNECTOR

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

OK or NG

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

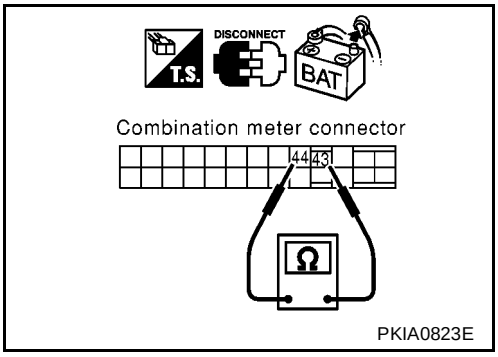
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect combination meter connector.
2. Check resistance between combination meter harness connector M37 terminals 43(L) and 44(R).

43(L) – 44(R) : Approx. 108 – 132Ω

OK or NG

OK >> Replace combination meter.
NG >> Repair harness between tyre pressure monitoring control unit and combination meter.



CAN Communication Circuit Check

EKS004XL

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. (meter-side, control unit-side, control module-side and harness-side)

- Combination meter.
- Tyre pressure monitoring control unit.
- Smart entrance control unit.
- ABS actuator and electric unit (control unit).
- TCM.
- ECM.
- Between ABS actuator and electric unit (control unit) and ECM.

OK or NG

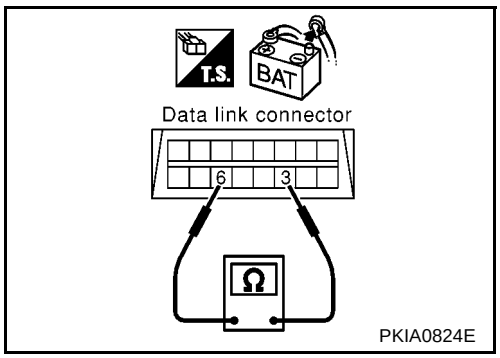
OK >> GO TO 2.
NG >> Repair terminal or connector.

2. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect the following connectors.
- Combination meter connector.
- Tyre pressure monitoring control unit connector.
- Smart entrance control unit connector.
- Harness connector M89.
- Harness connector M77.

2. Check continuity between Data link connector M10 terminals 6 (L) and 3(R).

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



OK or NG

OK >> GO TO 3.

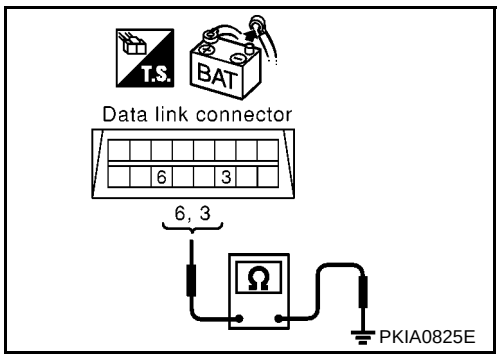
NG >>
- Repair harness between tyre pressure monitoring control unit and combination meter.
- Repair harness between smart entrance control unit and tyre pressure monitoring control unit.
- Repair harness between Data link connector and smart entrance control unit.
- Repair harness between harness connector M89 and harness connector M77.

3. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between Data link connector M10 terminals 6 (L), 3(R) and ground.

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

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



OK or NG

OK >> GO TO 4.

NG >>
- Repair harness between tyre pressure monitoring control unit and combination meter.
- Repair harness between smart entrance control unit and tyre pressure monitoring control unit.
- Repair harness between Data link connector and smart entrance control unit.
- Repair harness between harness connector M89 and harness connector M77.

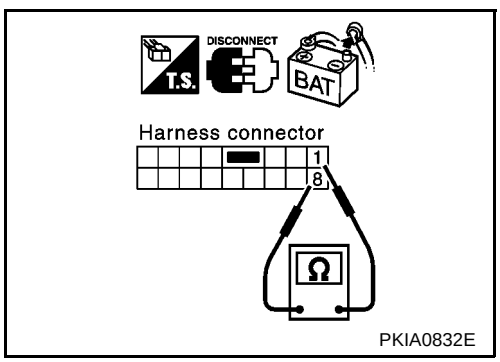
4. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect harness connector B107.
2. Check the following.

- Continuity between harness connector B102 terminals 1 (L) and 8(G).(Sedan models)
- Continuity between harness connector B102 terminals 1 (L) and 8(R).(Wagon models)

1(L) – 8(G) (Sedan models) : Continuity should not exist.

1(L) – 8(R) (Wagon models) : Continuity should not exist.



OK or NG

OK >> GO TO 5.

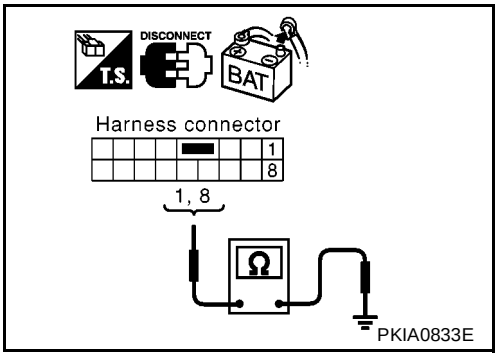
NG >> Repair harness between harness connector B102 and harness connector B107.

5. CHECK HARNESS FOR SHORT CIRCUIT

1. Check the following.

- Continuity between harness connector B102 terminals 1 (L), 8(G) and ground.(Sedan models)
- Continuity between harness connector B102 terminals 1 (L), 8(R) and ground.(Wagon models)

1(L) – ground (Sedan models)	**: Continuity should not exist.**
8(G) – ground (Sedan models)	**: Continuity should not exist.**
1(L) – ground (Wagon models)	**: Continuity should not exist.**
8(R) – ground (Wagon models)	**: Continuity should not exist.**



OK or NG

OK >> GO TO 6.
NG >> Repair harness between harness connector B102 and harness connector B107.

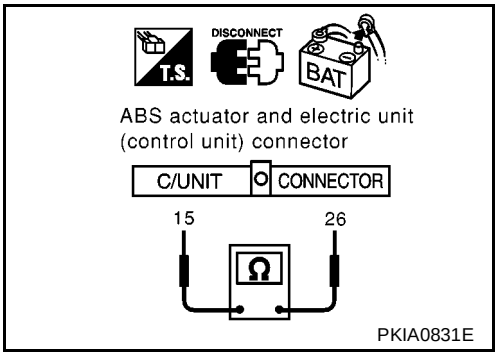
6. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector.
2. Check continuity between ABS actuator and electric unit (control unit) harness connector E64 terminals 26 (L) and 15(R).

26(L) – 15(R)	**: Continuity should not exist.**

OK or NG

OK >> GO TO 7.
NG >> Repair harness between ABS actuator and electric unit (control unit) and harness connector E120.



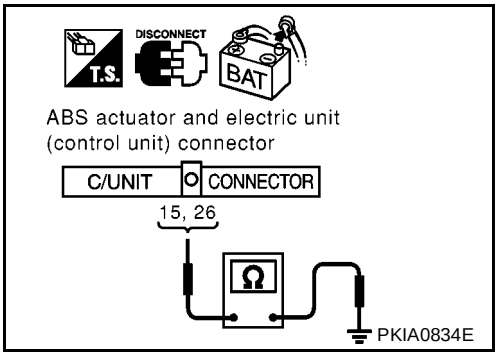
7. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ABS actuator and electric unit (control unit) harness connector E64 terminals 26 (L), 15 (R) and ground.

26(L) – ground	**: Continuity should not exist.**
15(R) – ground	**: Continuity should not exist.**

OK or NG

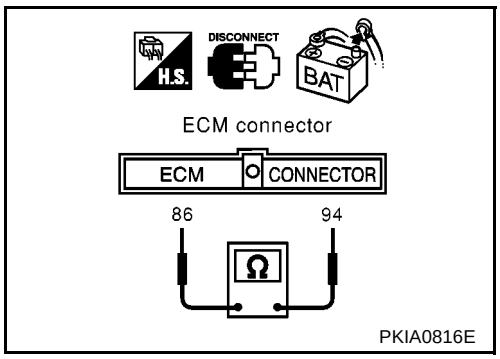
OK >> GO TO 8.
NG >> Repair harness between ABS actuator and electric unit (control unit) and harness connector E120.



8. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect ECM connector and TCM connector.
2. Check continuity between ECM harness connector F102 terminals 94 (L) and 86(R).

94(L) – 86(R) : Continuity should not exist.



OK or NG

OK >> GO TO 9.

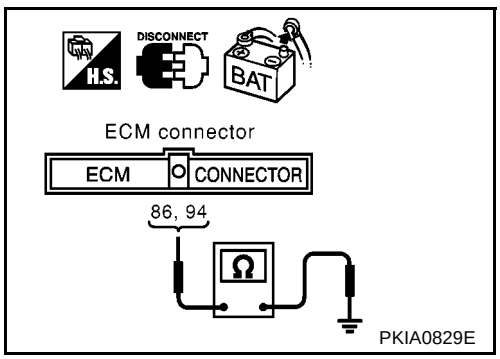
NG >>
- Repair harness between ECM and harness connector F109.
- Repair harness between TCM and harness connector F109.

9. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ECM harness connector F102 terminals 94 (L), 86 (R) and ground.

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

86(R) – ground : Continuity should not exist.



OK or NG

OK >> GO TO 10.

NG >>
- Repair harness between ECM and harness connector F109.
- Repair harness between TCM and harness connector F109.

10. ECM / COMBINATION METER INTERNAL CIRCUIT INSPECTION

Check components inspection. Refer to LAN-120, "ECM / COMBINATION METER INTERNAL CIRCUIT INSPECTION"

OK or NG

OK >> Reconnect all connectors to perform “SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE”, “A/T”, “ABS”, “SMART ENTRANCE”, and “AIR PRESSURE MONITOR” displayed on CONSULT-II. Refer to EC-150, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) or EC-663, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) for “ENGINE” and Refer to AT-190, "DTC U1000 CAN COMMUNICATION LINE" (EURO-OBD) or AT-393, "CAN COMMUNICATION LINE" (ALL) for “A/T”. Refer to BRC-33, "CAN Communication Circuit" for “ABS”. Refer to BCS-40, "CAN Communication Line Check" for “SMART ENTRANCE”. Refer to WT-35, "Inspection 4: CAN Communication Line" for “AIR PRESSURE MONITOR”.

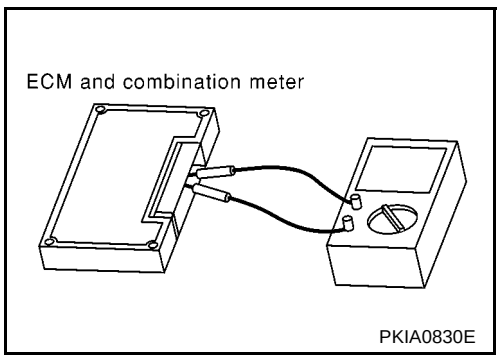
NG >> Replace ECM and/or Combination meter.

Component Inspection

EKS004XM

ECM / COMBINATION METER INTERNAL CIRCUIT INSPECTION

- Remove ECM and Combination meter from vehicle.
- Check resistance between ECM terminals 94 and 86.
- Check resistance between Combination meter terminals 43 and 44.



Unit	Terminal	Resistance value (Ω)
ECM	94 – 86	Approx. 108 - 132
Combination meter	43 – 44	

CAN SYSTEM (TYPE 5)

PFP:23710

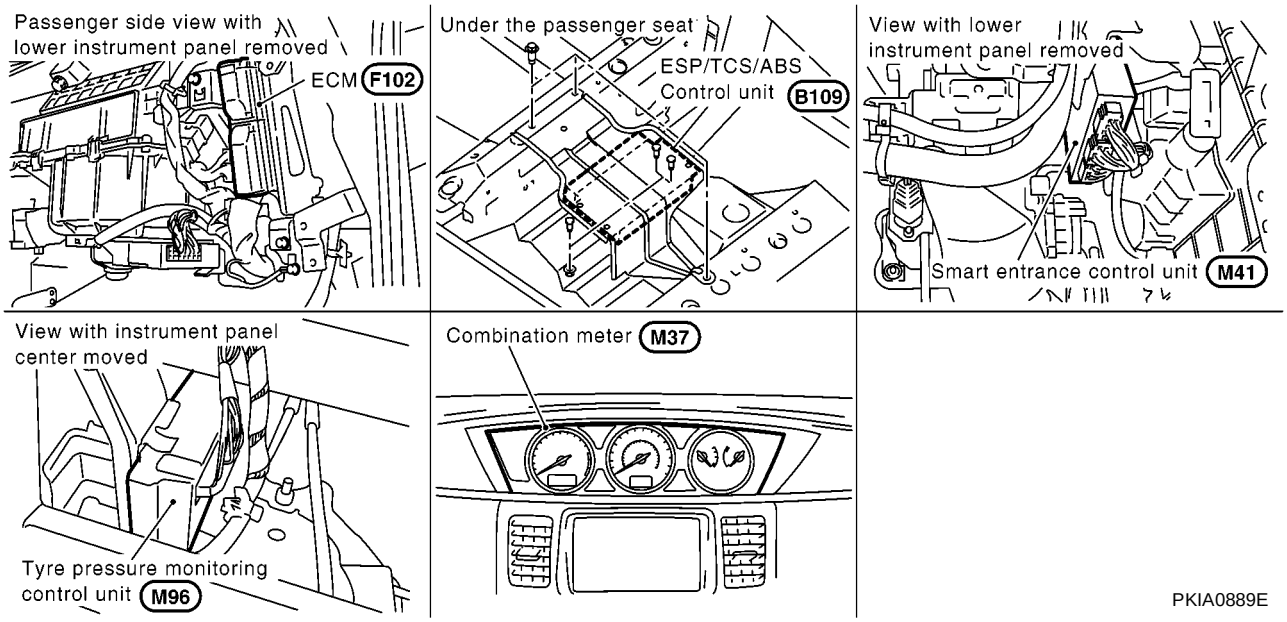
System Description

EKS004WU

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

EKS004WV

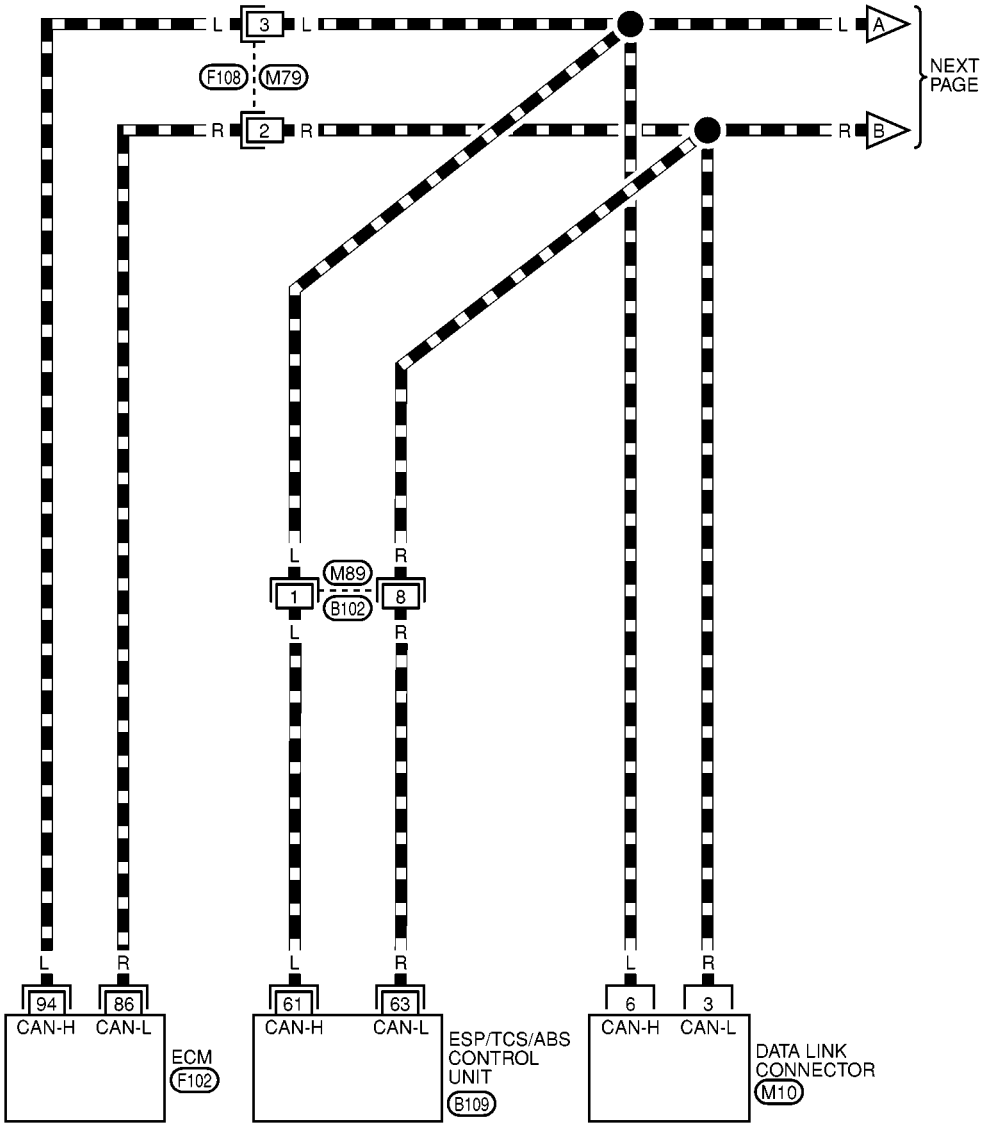


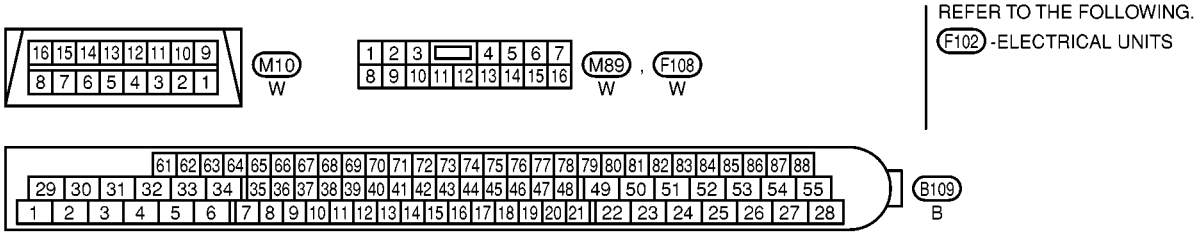
Wiring Diagram — CAN —

EKS004WW

LAN-CAN-10

: DATA LINE

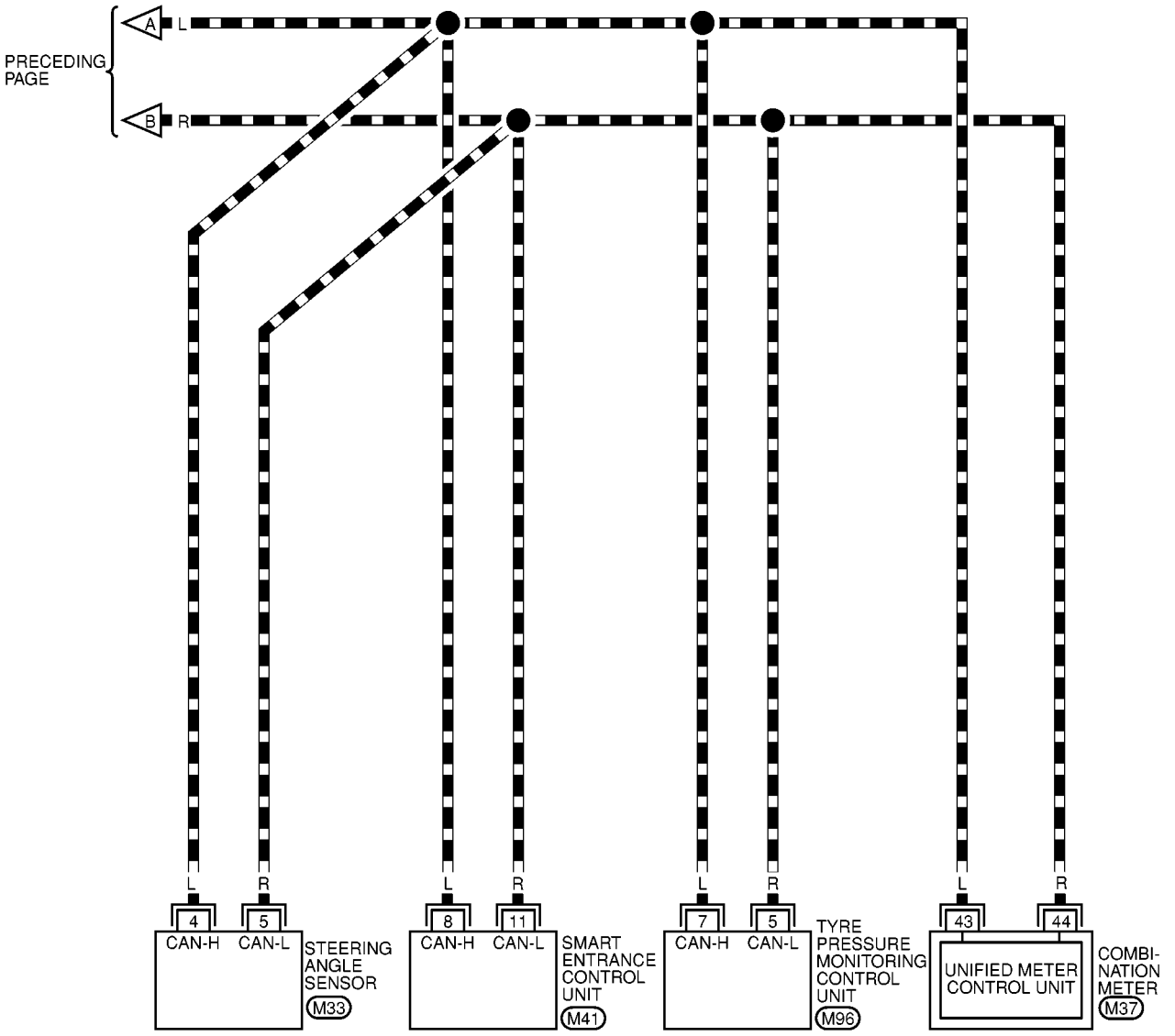


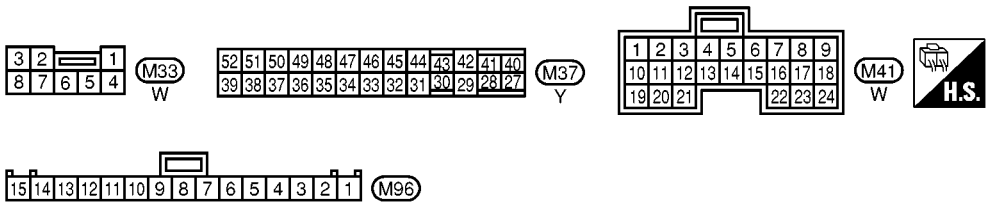


MKWA0233E

LAN-CAN-11

: DATA LINE





MKWA0234E

Work Flow

EKS004WX

1. Print all the data of “SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE”, “ABS”, “SMART ENTRANCE”, and “AIR PRESSURE MONITOR” displayed on CONSULT-II. Refer to EC-1083, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) or EC-1505, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) for “ENGINE” and Refer to BRC-107, "Inspection 15 CAN Communication Circuit, ESP/TCS/ABS Control Unit and Steering Angle Sensor" for “ABS”. Refer to BCS-40, "CAN Communication Line Check" for “SMART ENTRANCE”. Refer to WT-35, "Inspection 4: CAN Communication Line" for “AIR PRESSURE MONITOR”.
2. Attach the printed sheet of “SELF-DIAG RESULTS” and “DATA MONITOR” onto the check sheet. Refer to LAN-125, "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-125, "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-126, "CHECK SHEET RESULTS (EXAMPLE)"

CHECK SHEET

Check sheet table

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 3	–	CAN CIRC 6	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 5	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 3
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	CAN CIRC 2

Symptoms:

Attach copy of
ENGINE
SELF-DIAG RESULTS

Attach copy of
ABS
SELF-DIAG RESULTS

Attach copy of
SMART ENTRANCE
SELF-DIAG RESULTS

Attach copy of
AIR PRESSURE
MONITOR
SELF-DIAG RESULTS

Attach copy of
ENGINE
DATA MONITOR

Attach copy of
ABS
DATA MONITOR

Attach copy of
SMART ENTRANCE
DATA MONITOR

Attach copy of
AIR PRESSURE
MONITOR
DATA MONITOR

PKIA0722E

CHECK SHEET RESULTS (EXAMPLE)

Case 1: Replace ECM

ENGINE	CAN COMM ✓	CAN CIRC 1	–	CAN CIRC 3	–	CAN CIRC 6	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 5	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 3
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	CAN CIRC 2

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC ✓	–	CAN CIRC ✓	–	CAN CIRC ✓
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 5	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 3
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	CAN CIRC 2

Case 2: Replace ESP/TCS/ABS control unit

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC ✓	–	CAN CIRC 6	–	CAN CIRC 4
ABS	CAN COMM ✓	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 5	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 3
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	CAN CIRC 2

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 3	–	CAN CIRC 6	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC ✓	–	CAN CIRC ✓	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 3
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	CAN CIRC 2

PKIA0723E

Case 3: Replace Smart entrance control unit

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 3	–	CAN CIRC 6	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 5	–	–	–
SMART ENTRANCE	CAN COMM ✓	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 3
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	CAN CIRC 2

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 3	–	CAN CIRC 6	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 5	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC ✓	–	–	–	–	CAN CIRC ✓
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	CAN CIRC 2

Case 4: Replace Tyre pressure monitoring control unit

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 3	–	CAN CIRC 6	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 5	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 3
AIR PRESSURE MONITOR	CAN COMM ✓	CAN CIRC 1	–	–	–	–	–	CAN CIRC 2

Case 5

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 3	–	CAN CIRC ✓	–	CAN CIRC ✓
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC ✓	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC ✓	–	–	–	–	CAN CIRC 3
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	CAN CIRC 2

Case 6

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 3	–	CAN CIRC 6	–	CAN CIRC ✓
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 5	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC ✓
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	CAN CIRC 2

PKIA0724E

Case 7

ENGINE	CAN COMM	CAN CIRC ✓	–	CAN CIRC ✓	–	CAN CIRC ✓	–	CAN CIRC ✓
ABS	CAN COMM	CAN CIRC 1	CAN CIRC ✓	–	CAN CIRC 5	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC ✓	–	–	–	–	CAN CIRC 3
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	CAN CIRC 2

Case 8

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC ✓	–	CAN CIRC 6	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC ✓	CAN CIRC ✓	–	CAN CIRC ✓	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 3
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	CAN CIRC 2

Case 9

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 3	–	CAN CIRC 6	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC ✓	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 3
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	CAN CIRC 2

Case 10

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 3	–	CAN CIRC ✓	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 5	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC ✓	CAN CIRC ✓	–	–	–	–	CAN CIRC ✓
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	CAN CIRC 2

Case 11

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 3	–	CAN CIRC 6	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 5	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 3
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC ✓	–	–	–	–	–	CAN CIRC ✓

PKIA0725E

Case 12

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 3	–	CAN CIRC 6	–	CAN CIRC ✓
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 5	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC ✓
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	CAN CIRC ✓

Case 13

ENGINE	CAN COMM	CAN CIRC ✓	–	CAN CIRC ✓	–	CAN CIRC ✓	–	CAN CIRC ✓
ABS	CAN COMM	CAN CIRC ✓	CAN CIRC ✓	–	CAN CIRC ✓	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC ✓	CAN CIRC ✓	–	–	–	–	CAN CIRC ✓
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC ✓	–	–	–	–	–	CAN CIRC ✓

PKIA0726E

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

INSPECTION

Proceed trouble diagnosis according to the check sheet results (example).
Case 1:Replace ECM.
Case 2:Replace ESP/TCS/ABS control unit.
Case 3:Replace Smart entrance control unit.
Case 4:Replace Tyre pressure monitoring control unit.
Case 5:Check Harness between Data link connector and Smart entrance control unit. Refer to LAN-130, "Circuit Check Between Data Link Connector and Smart Entrance Control Unit"
Case 6:Check Harness between Smart entrance control unit and Tyre pressure monitoring control unit. Refer to LAN-130, "Circuit Check Between Smart Entrance Control Unit and Tyre Pressure Monitoring Control Unit"
Case 7:Check ECM Circuit. Refer to LAN-131, "ECM Circuit Check"
Case 8:Check ESP/TCS/ABS control unit Circuit. Refer to LAN-132, "ESP/TCS/ABS Control Unit Circuit Check"
Case 9:Check Steering angle sensor Circuit. Refer to LAN-132, "Steering Angle Sensor Circuit Check"
Case 10:Check Smart entrance control unit Circuit. Refer to LAN-133, "Smart Entrance Control Unit Circuit Check"
Case 11:Check Tyre pressure monitoring control unit Circuit. Refer to LAN-133, "Tyre Pressure Monitoring Control Unit Circuit Check"
Case 12:Check Combination meter Circuit. Refer to LAN-134, "Combination Meter Circuit Check"
Case 13:Check CAN communication Circuit. Refer to LAN-134, "CAN Communication Circuit Check"

Circuit Check Between Data Link Connector and Smart Entrance Control Unit

EKS004WY

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 unit-side, sensor-side and harness-side)

- Smart entrance control unit.
- Steering angle sensor.
- ESP/TCS/ABS control unit.
- Between smart entrance control unit and ESP/TCS/ABS control unit.

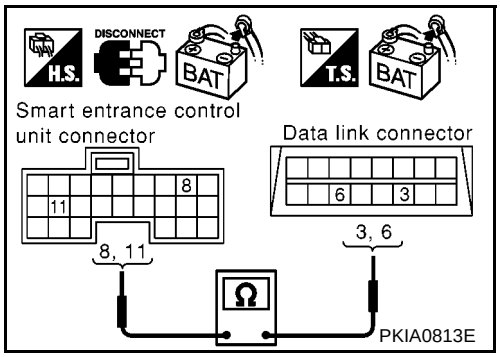
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect smart entrance control unit connector.
2. Check continuity between smart entrance control unit harness connector M41 terminals 8 (L), 11 (R) and Data link connector M10 terminals 6 (L), 3 (R).

8(L) – 6(L) : Continuity should exist.
11(R) – 3(R) : Continuity should exist.



OK or NG

OK >> Reconnect all connectors to perform “SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE”, “ABS”, “SMART ENTRANCE”, and “AIR PRESSURE MONITOR” displayed on CONSULT-II. Refer to EC-1083, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) or EC-1505, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) for “ENGINE” and Refer to BRC-107, "Inspection 15 CAN Communication Circuit, ESP/TCS/ABS Control Unit and Steering Angle Sensor" for “ABS”. Refer to BCS-40, "CAN Communication Line Check" for “SMART ENTRANCE”. Refer to WT-35, "Inspection 4: CAN Communication Line" for “AIR PRESSURE MONITOR”.
NG >> Repair harness.

Circuit Check Between Smart Entrance Control Unit and Tyre Pressure Monitoring Control Unit

EKS004WZ

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 unit-side, sensor-side and harness-side)

- Smart entrance control unit.
- Tyre pressure monitoring control unit.
- Steering angle sensor.

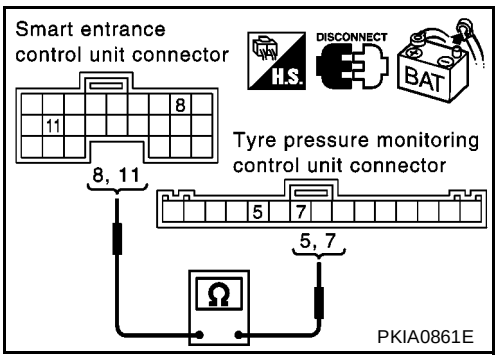
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect smart entrance control unit connector and tyre pressure monitoring control unit connector.
2. Check continuity between smart entrance control unit harness connector M41 terminals 8 (L), 11 (R) and tyre pressure monitoring control unit harness connector M96 terminals 7 (L), 5 (R).

8(L) – 7(L) : Continuity should exist.
11(R) – 5(R) : Continuity should exist.



OK or NG

OK >> Reconnect all connectors to perform “SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE”, “ABS”, “SMART ENTRANCE”, and “AIR PRESSURE MONITOR” displayed on CONSULT-II. Refer to EC-1083, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) or EC-1505, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) for “ENGINE” and Refer to BRC-107, "Inspection 15 CAN Communication Circuit, ESP/TCS/ABS Control Unit and Steering Angle Sensor" for “ABS”. Refer to BCS-40, "CAN Communication Line Check" for “SMART ENTRANCE”. Refer to WT-35, "Inspection 4: CAN Communication Line" for “AIR PRESSURE MONITOR”.

NG >> Repair harness.

ECM Circuit Check

EKS004X0

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)

- ECM.
- Harness connector F108.
- Harness connector M79.

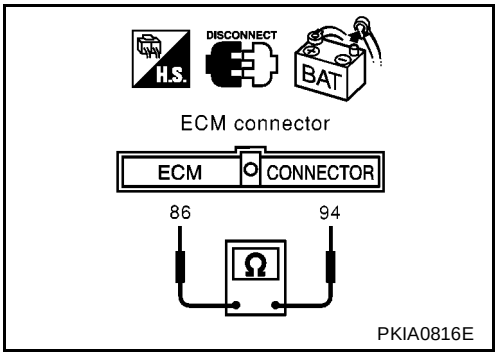
OK or NG

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 F102 terminals 94(L) and 86(R).

94(L) – 86(R) : Approx. 108 – 132Ω



OK or NG

OK >> Replace ECM.
NG >> Repair harness between Data link connector and ECM.

ESP/TCS/ABS Control Unit Circuit Check

EKS004X1

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 unit-side and harness-side)

- ESP/TCS/ABS control unit.
- Harness connector B102.
- Harness connector M89.

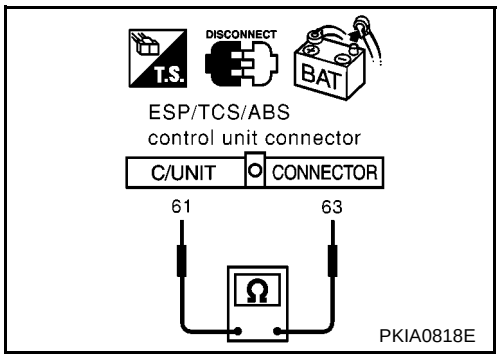
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ESP/TCS/ABS control unit connector.
2. Check resistance between ESP/TCS/ABS control unit harness connector B109 terminals 61(L) and 63(R).

61(L) – 63(R) : Approx. 54 – 66Ω



OK or NG

OK >> Replace ESP/TCS/ABS control unit.
NG >> Repair harness between Data link connector and ESP/TCS/ABS control unit.

Steering Angle Sensor Circuit Check

EKS004X2

1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check terminals and connector of steering angle sensor for damage, bend and loose connection. (sensor-side and harness-side)

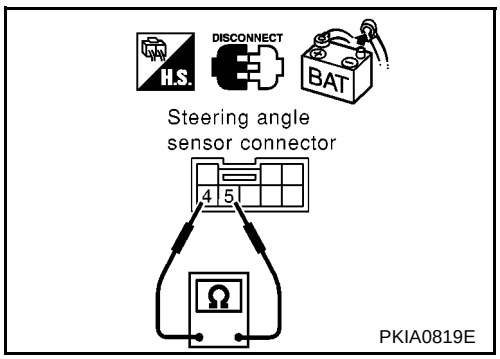
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect steering angle sensor connector.
2. Check resistance between steering angle sensor harness connector M33 terminals 4(L) and 5(R).

4(L) – 5(R) : Approx. 54 – 66Ω



OK or NG

OK >> Replace steering angle sensor.
NG >> Repair harness between steering angle sensor and smart entrance control unit.

Smart Entrance Control Unit Circuit Check

EKS004X3

1. CHECK CONNECTOR

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

OK or NG

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

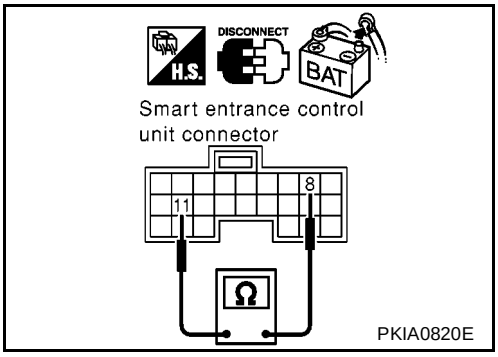
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect smart entrance control unit connector.
2. Check resistance between smart entrance control unit harness connector M41 terminals 8(L) and 11(R).

8(L) – 11(R) : Approx. 54 – 66Ω

OK or NG

OK >> Replace smart entrance control unit.
NG >> Repair harness between steering angle sensor and smart entrance control unit.



Tyre Pressure Monitoring Control Unit Circuit Check

EKS004X4

1. CHECK CONNECTOR

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

OK or NG

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

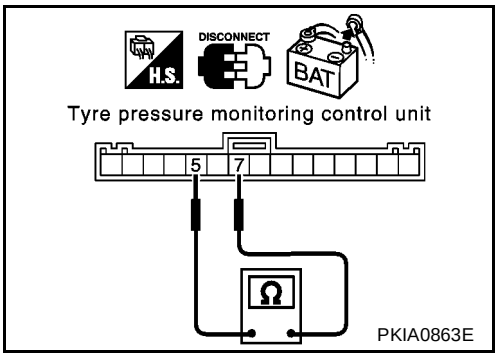
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect tyre pressure monitoring control unit connector.
2. Check resistance between tyre pressure monitoring control unit harness connector M96 terminals 7(L) and 5(R).

7(L) – 5(R) : Approx. 54 – 66Ω

OK or NG

OK >> Replace tyre pressure monitoring control unit.
NG >> Repair harness between smart entrance control unit and tyre pressure monitoring control unit.



Combination Meter Circuit Check

EKS004X5

1. CHECK CONNECTOR

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

OK or NG

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

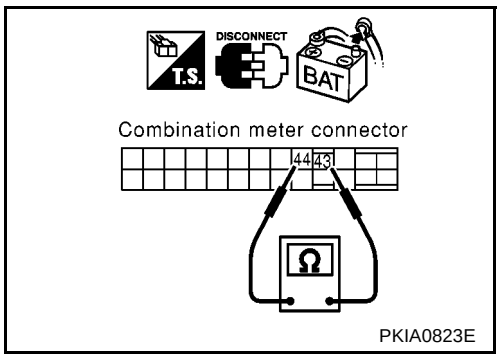
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect combination meter connector.
2. Check resistance between combination meter harness connector M37 terminals 43(L) and 44(R).

43(L) – 44(R) : Approx. 108 – 132Ω

OK or NG

OK >> Replace combination meter.
NG >> Repair harness between tyre pressure monitoring control unit and combination meter.



CAN Communication Circuit Check

EKS004X6

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. (meter-side, control unit-side, sensor-side, control module-side and harness-side)

- Combination meter.
- Tyre pressure monitoring control unit.
- Smart entrance control unit.
- Steering angle sensor.
- ESP/TCS/ABS control unit.
- ECM.
- Between ESP/TCS/ABS control unit and ECM.

OK or NG

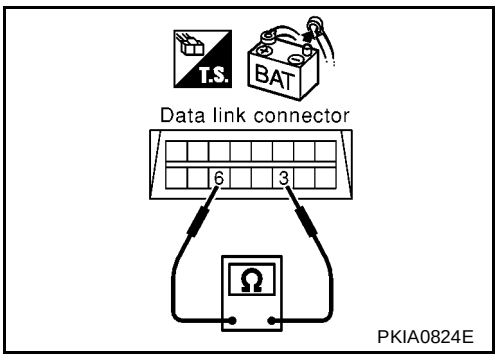
OK >> GO TO 2.
NG >> Repair terminal or connector.

2. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect the following connectors.
- Combination meter connector.
- Tyre pressure monitoring control unit connector.
- Smart entrance control unit connector.
- Steering angle sensor connector.
- Harness connector M89.
- Harness connector M79.

2. Check continuity between Data link connector M10 terminals 6 (L) and 3(R).

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



OK or NG

OK >> GO TO 3.

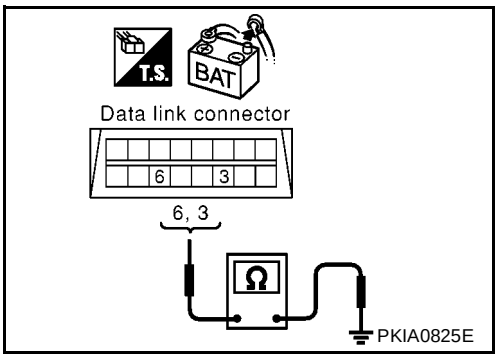
NG >>
- Repair harness between tyre pressure monitoring control unit and combination meter.
- Repair harness between smart entrance control unit and tyre pressure monitoring control unit.
- Repair harness between smart entrance control unit and steering angle sensor.
- Repair harness between Data link connector and steering angle sensor.
- Repair harness between harness connector M89 and harness connector M79.

3. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between Data link connector M10 terminals 6 (L), 3(R) and ground.

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

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



OK or NG

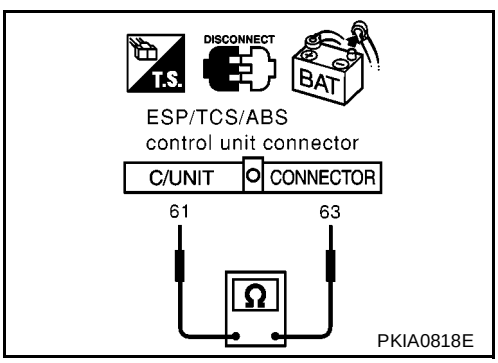
OK >> GO TO 4.

NG >>
- Repair harness between tyre pressure monitoring control unit and combination meter.
- Repair harness between smart entrance control unit and tyre pressure monitoring control unit.
- Repair harness between smart entrance control unit and steering angle sensor.
- Repair harness between Data link connector and steering angle sensor.
- Repair harness between harness connector M89 and harness connector M79.

4. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect ESP/TCS/ABS control unit connector.
2. Check continuity between ESP/TCS/ABS control unit harness connector B109 terminals 61 (L) and 63(R).

61(L) – 63(R) : Continuity should not exist.



OK or NG

OK >> GO TO 5.

NG >> Repair harness between ESP/TCS/ABS control unit and harness connector B102.

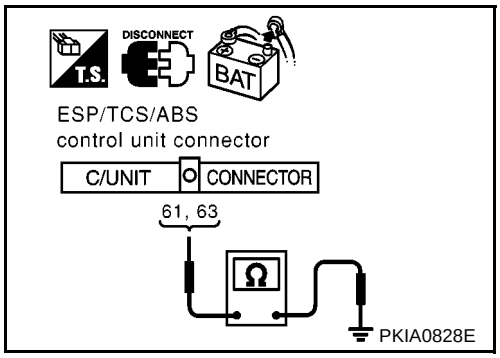
5. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ESP/TCS/ABS control unit harness connector B109 terminals 61 (L), 63 (R) and ground.

61(L) – ground : Continuity should not exist.
63(R) – ground : Continuity should not exist.

OK or NG

OK >> GO TO 6.
NG >> Repair harness between ESP/TCS/ABS control unit and harness connector B102.



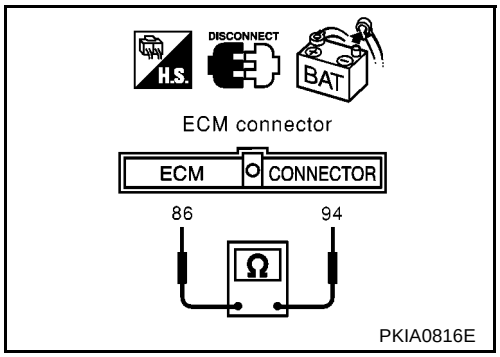
6. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect ECM connector.
2. Check continuity between ECM harness connector F102 terminals 94 (L) and 86(R).

94(L) – 86(R) : Continuity should not exist.

OK or NG

OK >> GO TO 7.
NG >> Repair harness between ECM and harness connector F108.



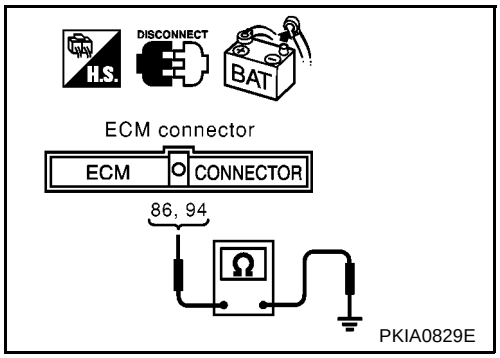
7. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ECM harness connector F102 terminals 94 (L), 86 (R) and ground.

94(L) – ground : Continuity should not exist.
86(R) – ground : Continuity should not exist.

OK or NG

OK >> GO TO 8.
NG >> Repair harness between ECM and harness connector F108.



8. ECM / COMBINATION METER INTERNAL CIRCUIT INSPECTION

Check components inspection. Refer to LAN-137, "ECM / COMBINATION METER INTERNAL CIRCUIT INSPECTION"

OK or NG

OK >> Reconnect all connectors to perform “SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE”, “ABS”, “SMART ENTRANCE”, and “AIR PRESSURE MONITOR” displayed on CONSULT-II. Refer to EC-1083, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) or EC-1505, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) for “ENGINE” and Refer to BRC-107, "Inspection 15 CAN Communication Circuit, ESP/TCS/ABS Control Unit and Steering Angle Sensor" for “ABS”. Refer to BCS-40, "CAN Communication Line Check" for “SMART ENTRANCE”. Refer to WT-35, "Inspection 4: CAN Communication Line" for “AIR PRESSURE MONITOR”.
NG >> Replace ECM and/or Combination meter.

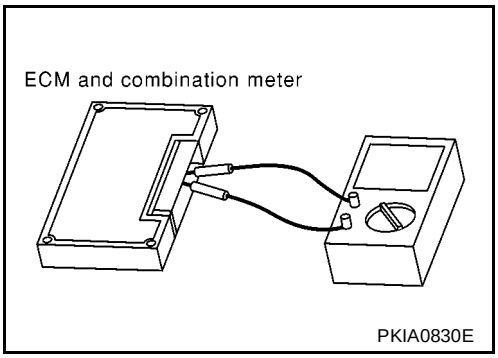
Component Inspection

EKS004X7

ECM / COMBINATION METER INTERNAL CIRCUIT INSPECTION

- Remove ECM and Combination meter from vehicle.
- Check resistance between ECM terminals 94 and 86.
- Check resistance between Combination meter terminals 43 and 44.

Unit	Terminal	Resistance value (Ω)
ECM	94 – 86	Approx. 108 - 132
Combination meter	43 – 44	



CAN SYSTEM (TYPE 6)

PFP:23710

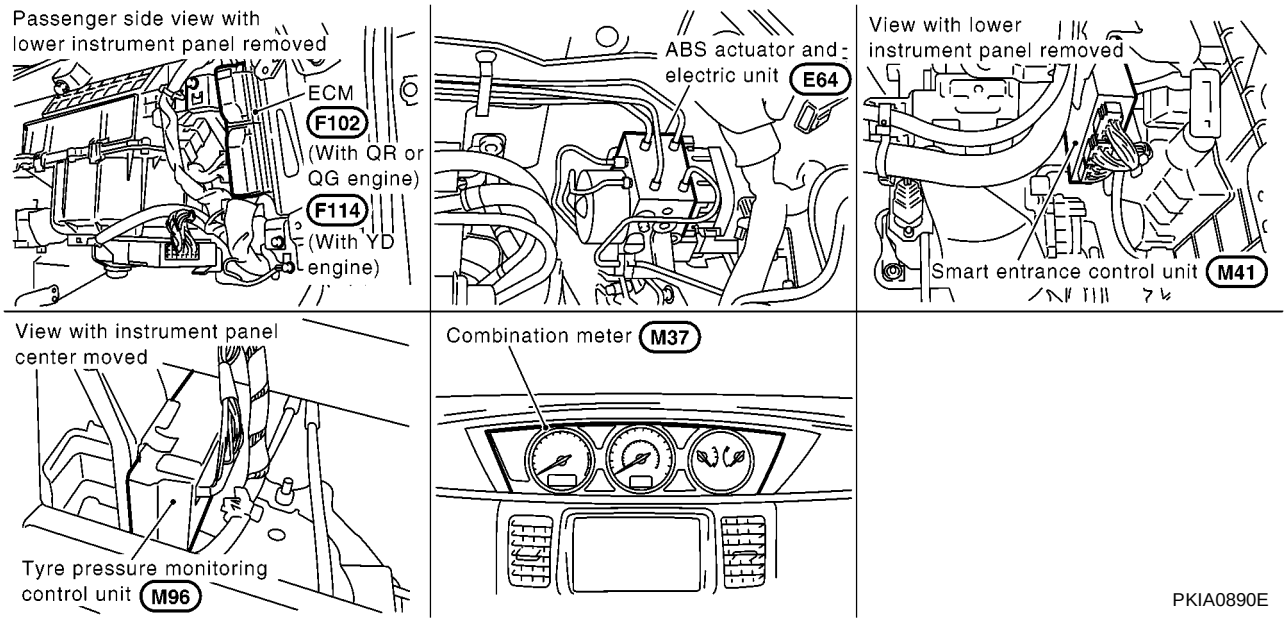
System Description

EKS004WH

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.

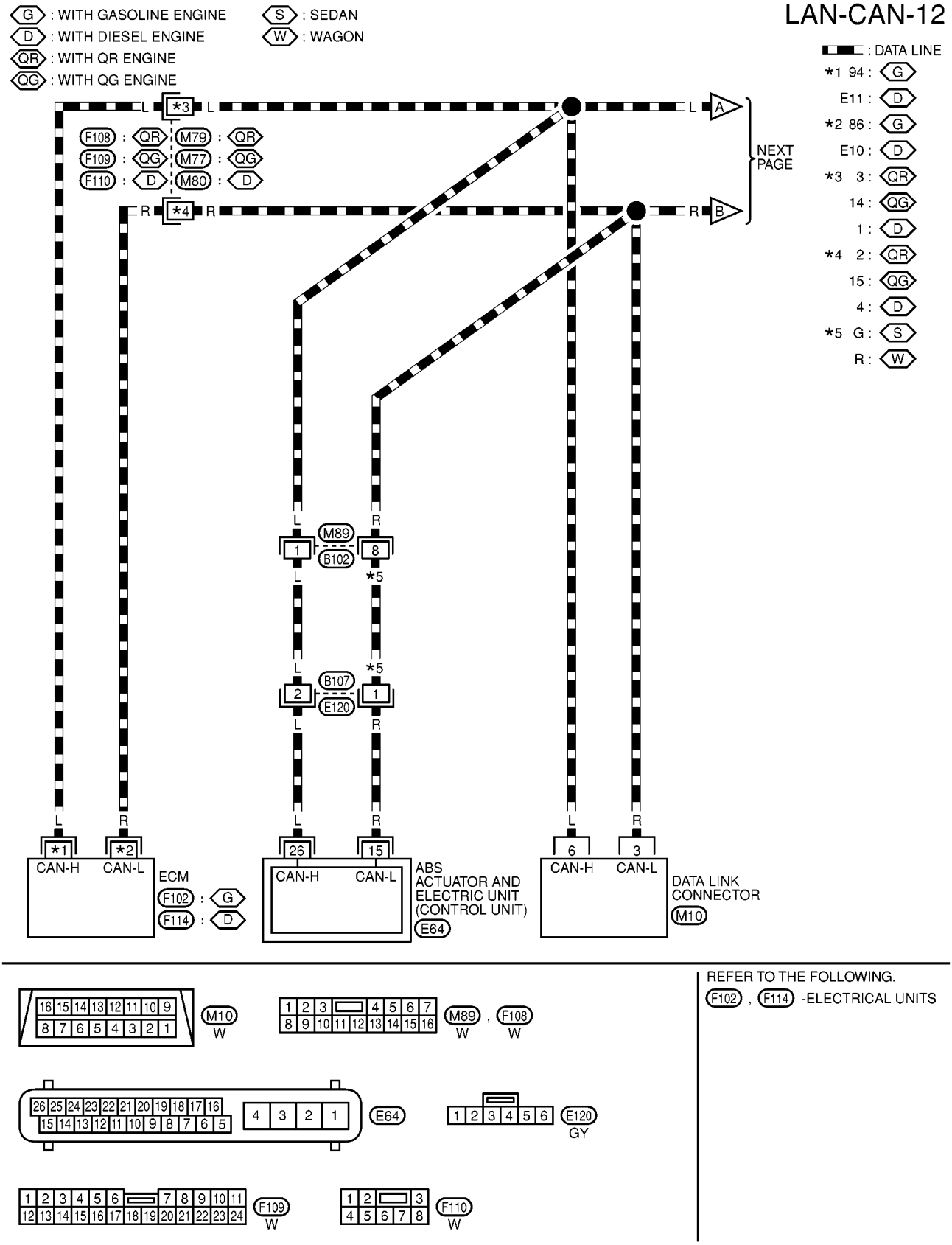
Component Parts and Harness Connector Location

EKS004WI



Wiring Diagram — CAN —

EKS004WJ

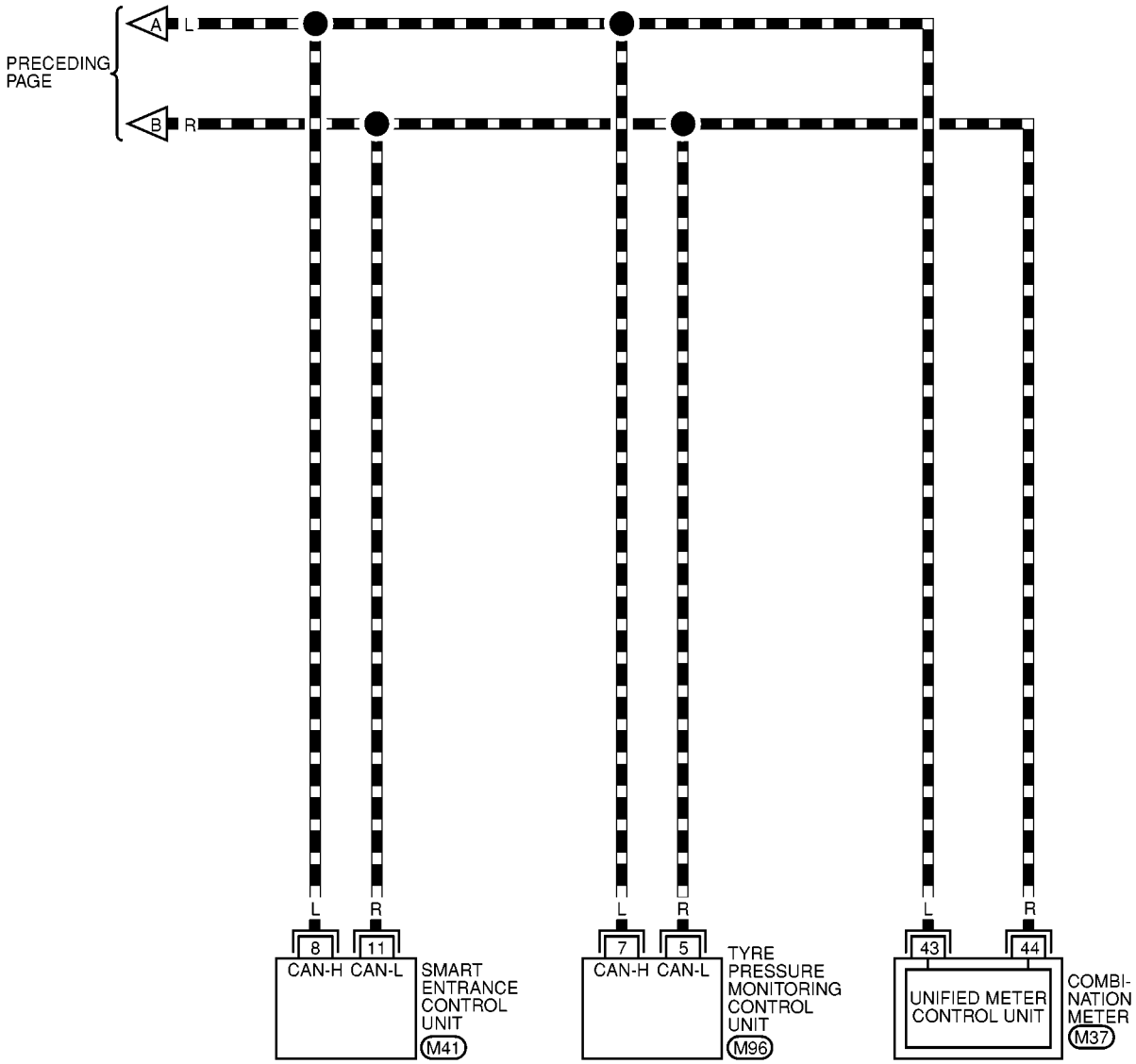


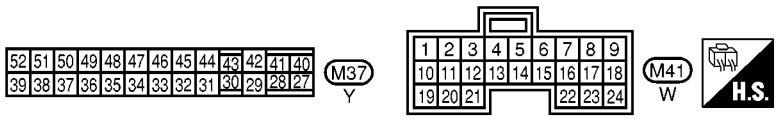
REFER TO THE FOLLOWING.
F102 , F114 -ELECTRICAL UNITS

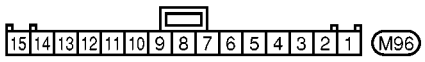
MKWA0235E

LAN-CAN-13

: DATA LINE







MKWA0236E

Work Flow

EKS004WK

1. Print all the data of “SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE”, “ABS”, “SMART ENTRANCE”, and “AIR PRESSURE MONITOR” displayed on CONSULT-II. Refer to EC-150, "DTC U1000, U1001 CAN COMMUNICATION LINE" (QG ENGINE MODELS WITH EURO-OBD), EC-663, "DTC U1000, U1001 CAN COMMUNICATION LINE" (QG ENGINE MODELS WITHOUT EURO-OBD), EC-1083, "DTC U1000, U1001 CAN COMMUNICATION LINE" (QR ENGINE MODELS WITH EURO-OBD), EC-1505, "DTC U1000, U1001 CAN COMMUNICATION LINE" (QR ENGINE MODELS WITHOUT EURO-OBD) or EC-1790, "DTC U1000 CAN COMMUNICATION LINE" (YD ENGINE MODELS) for “ENGINE” and Refer to BRC-33, "CAN Communication Circuit" for “ABS”. Refer to BCS-40, "CAN Communication Line Check" for “SMART ENTRANCE”. Refer to WT-35, "Inspection 4: CAN Communication Line" for “AIR PRESSURE MONITOR”.
2. Attach the printed sheet of “SELF-DIAG RESULTS” and “DATA MONITOR” onto the check sheet. Refer to LAN-142, "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-142, "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-143, "CHECK SHEET RESULTS (EXAMPLE)"

CHECK SHEET

Check sheet table

ENGINE	CAN COMM	CAN CIRC 1	–	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 3
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	CAN CIRC 2

Symptoms:

Attach copy of
ENGINE
SELF-DIAG RESULTS

Attach copy of
ABS
SELF-DIAG RESULTS

Attach copy of
SMART ENTRANCE
SELF-DIAG RESULTS

Attach copy of
AIR PRESSURE
MONITOR
SELF-DIAG RESULTS

Attach copy of
ENGINE
DATA MONITOR

Attach copy of
ABS
DATA MONITOR

Attach copy of
SMART ENTRANCE
DATA MONITOR

Attach copy of
AIR PRESSURE
MONITOR
DATA MONITOR

PKIA0727E

CHECK SHEET RESULTS (EXAMPLE)

Case 1: Replace ECM

ENGINE	CAN COMM ✔	CAN CIRC 1	–	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 3
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	CAN CIRC 2

ENGINE	CAN COMM	CAN CIRC 1	–	–	–	–	CAN CIRC 4 ✔
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 3
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	CAN CIRC 2

Case 2: Replace ABS actuator and electric unit (control unit)

ENGINE	CAN COMM	CAN CIRC 1	–	–	–	–	CAN CIRC 4
ABS	CAN COMM ✔	CAN CIRC 1	CAN CIRC 2	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 3
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	CAN CIRC 2

ENGINE	CAN COMM	CAN CIRC 1	–	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✔	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 3
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	CAN CIRC 2

Case 3: Replace Smart entrance control unit

ENGINE	CAN COMM	CAN CIRC 1	–	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–
SMART ENTRANCE	CAN COMM ✔	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 3
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	CAN CIRC 2

ENGINE	CAN COMM	CAN CIRC 1	–	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✔	–	–	–	CAN CIRC 3 ✔
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	CAN CIRC 2

Case 4: Replace Tyre pressure monitoring control unit

ENGINE	CAN COMM	CAN CIRC 1	–	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 3
AIR PRESSURE MONITOR	CAN COMM ✔	CAN CIRC 1	–	–	–	–	CAN CIRC 2

Case 5

ENGINE	CAN COMM	CAN CIRC 1	–	–	–	–	CAN CIRC 4 ✔
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✔	–	–	–	CAN CIRC 3
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	CAN CIRC 2

PKIA0728E

Case 6

ENGINE	CAN COMM	CAN CIRC 1	–	–	–	–	CAN CIRC 4 ✓
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 3 ✓
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	CAN CIRC 2

Case 7

ENGINE	CAN COMM	CAN CIRC 1 ✓	–	–	–	–	CAN CIRC 4 ✓
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	–	–	–	CAN CIRC 3
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	CAN CIRC 2

Case 8

ENGINE	CAN COMM	CAN CIRC 1	–	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1 ✓	CAN CIRC 2 ✓	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 3
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	CAN CIRC 2

Case 9

ENGINE	CAN COMM	CAN CIRC 1	–	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1 ✓	CAN CIRC 2 ✓	–	–	–	CAN CIRC 3 ✓
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	CAN CIRC 2

Case 10

ENGINE	CAN COMM	CAN CIRC 1	–	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 3
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1 ✓	–	–	–	–	CAN CIRC 2 ✓

Case 11

ENGINE	CAN COMM	CAN CIRC 1	–	–	–	–	CAN CIRC 4 ✓
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 3 ✓
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	CAN CIRC 2 ✓

Case 12

ENGINE	CAN COMM	CAN CIRC 1 ✓	–	–	–	–	CAN CIRC 4 ✓
ABS	CAN COMM	CAN CIRC 1 ✓	CAN CIRC 2 ✓	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1 ✓	CAN CIRC 2 ✓	–	–	–	CAN CIRC 3 ✓
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1 ✓	–	–	–	–	CAN CIRC 2 ✓

PKIA0729E

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

INSPECTION

Proceed trouble diagnosis according to the check sheet results (example).
Case 1:Replace ECM.
Case 2:Replace ABS actuator and electric unit (control unit).
Case 3:Replace Smart entrance control unit.
Case 4:Replace Tyre pressure monitoring control unit.
Case 5:Check Harness between Data link connector and Smart entrance control unit. Refer to LAN-145, "Circuit Check Between Data Link Connector and Smart Entrance Control Unit"
Case 6:Check Harness between Smart entrance control unit and Tyre pressure monitoring control unit. Refer to LAN-146, "Circuit Check Between Smart Entrance Control Unit and Tyre Pressure Monitoring Control Unit"
Case 7:Check ECM Circuit. Refer to LAN-147, "ECM Circuit Check"
Case 8:Check ABS actuator and electric unit (control unit) Circuit. Refer to LAN-148, "ABS Actuator and Electric Unit (control unit) Circuit Check"
Case 9:Check Smart entrance control unit Circuit. Refer to LAN-148, "Smart Entrance Control Unit Circuit Check"
Case 10:Check Tyre pressure monitoring control unit Circuit. Refer to LAN-149, "Tyre Pressure Monitoring Control Unit Circuit Check"
Case 11:Check Combination meter Circuit. Refer to LAN-149, "Combination Meter Circuit Check"
Case 12:Check CAN communication Circuit. Refer to LAN-150, "CAN Communication Circuit Check"

Circuit Check Between Data Link Connector and Smart Entrance Control Unit

EKS004WL

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 unit-side and harness-side)

- Smart entrance control unit.
- ABS actuator and electric unit (control unit).
- Between smart entrance control unit and ABS actuator and electric unit (control unit).

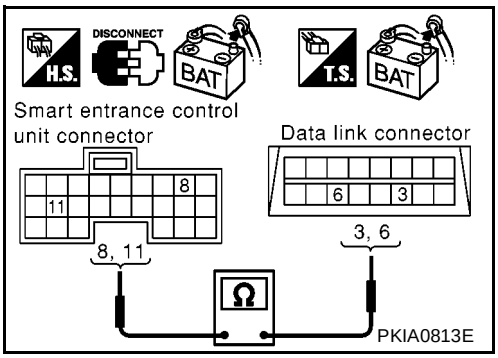
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect smart entrance control unit connector.
2. Check continuity between smart entrance control unit harness connector M41 terminals 8 (L), 11 (R) and Data link connector M10 terminals 6 (L), 3 (R).

8(L) – 6(L) : Continuity should exist.
11(R) – 3(R) : Continuity should exist.



OK or NG

OK >> Reconnect all connectors to perform “SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE”, “ABS”, “SMART ENTRANCE”, and “AIR PRESSURE MONITOR” displayed on CONSULT-II. Refer to EC-150, "DTC U1000, U1001 CAN COMMUNICATION LINE" (QG ENGINE MODELS WITH EURO-OBD), EC-663, "DTC U1000, U1001 CAN COMMUNICATION LINE" (QG ENGINE MODELS WITHOUT EURO-OBD), EC-1083, "DTC U1000, U1001 CAN COMMUNICATION LINE" (QR ENGINE MODELS WITH EURO-OBD), EC-1505, "DTC U1000, U1001 CAN COMMUNICATION LINE" (QR ENGINE MODELS WITHOUT EURO-OBD) or EC-1790, "DTC U1000 CAN COMMUNICATION LINE" (YD ENGINE MODELS) for “ENGINE” and Refer to BRC-33, "CAN Communication Circuit" for “ABS”. Refer to BCS-40, "CAN Commu-

nication Line Check" for “SMART ENTRANCE”. Refer to WT-35, "Inspection 4: CAN Communication Line" for “AIR PRESSURE MONITOR”.

NG >> Repair harness.

Circuit Check Between Smart Entrance Control Unit and Tyre Pressure Monitoring Control Unit

EKS004WS

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 unit-side and harness-side)

- Smart entrance control unit.
- Tyre pressure monitoring control unit.

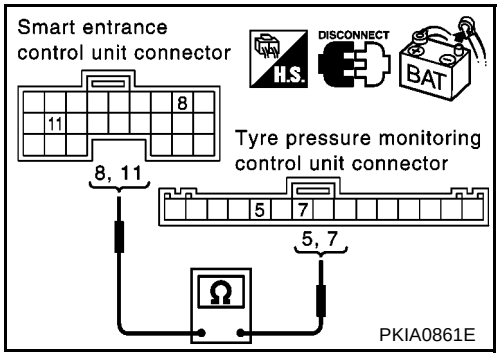
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect smart entrance control unit connector and tyre pressure monitoring control unit connector.
2. Check continuity between smart entrance control unit harness connector M41 terminals 8 (L), 11 (R) and tyre pressure monitoring control unit harness connector M96 terminals 7 (L), 5 (R).

8(L) – 7(L) : Continuity should exist.
11(R) – 5(R) : Continuity should exist.



OK or NG

OK >> Reconnect all connectors to perform “SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE”, “ABS”, “SMART ENTRANCE”, and “AIR PRESSURE MONITOR” displayed on CONSULT-II. Refer to EC-150, "DTC U1000, U1001 CAN COMMUNICATION LINE" (QG ENGINE MODELS WITH EURO-OBD), EC-663, "DTC U1000, U1001 CAN COMMUNICATION LINE" (QG ENGINE MODELS WITHOUT EURO-OBD), EC-1083, "DTC U1000, U1001 CAN COMMUNICATION LINE" (QR ENGINE MODELS WITH EURO-OBD), EC-1505, "DTC U1000, U1001 CAN COMMUNICATION LINE" (QR ENGINE MODELS WITHOUT EURO-OBD) or EC-1790, "DTC U1000 CAN COMMUNICATION LINE" (YD ENGINE MODELS) for “ENGINE” and Refer to BRC-33, "CAN Communication Circuit" for “ABS”. Refer to BCS-40, "CAN Communication Line Check" for “SMART ENTRANCE”. Refer to WT-35, "Inspection 4: CAN Communication Line" for “AIR PRESSURE MONITOR”.

NG >> Repair harness.

ECM Circuit Check

EKS004WM

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)

- ECM.
- Harness connector F108.(QR engine models)
- Harness connector M79.(QR engine models)
- Harness connector F109.(QG engine models)
- Harness connector M77.(QG engine models)
- Harness connector F110.(Diesel engine models)
- Harness connector M80.(Diesel engine models)

OK or NG

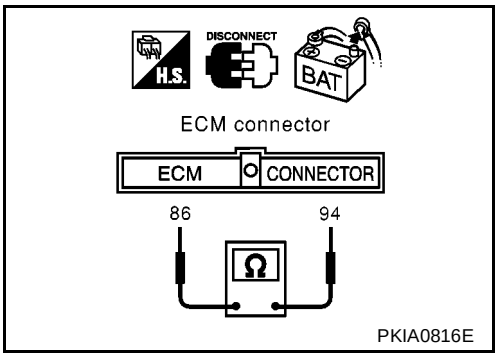
OK >> GO TO 2.
NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ECM connector.
2. Check the following.

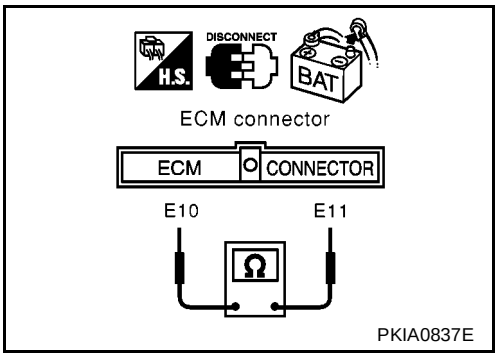
- Resistance between ECM harness connector F102 terminals 94(L) and 86(R).(Gasoline engine models)

94(L) – 86(R) (Gasoline enging models) **: Approx. 108 – 132Ω**



- Resistance between ECM harness connector F114 terminals E11(L) and E10(R).(Diesel engine models)

E11(L) – E10(R) (Diesel enging models) **: Approx. 108 – 132Ω**



OK or NG

OK >> Replace ECM.
NG >> Repair harness between Data link connector and ECM.

ABS Actuator and Electric Unit (control unit) Circuit Check

EKS004WN

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 unit-side and harness-side)

- ABS actuator and electric unit (control unit).
- Harness connector E120.
- Harness connector B107.
- Harness connector B102.
- Harness connector M89.

OK or NG

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

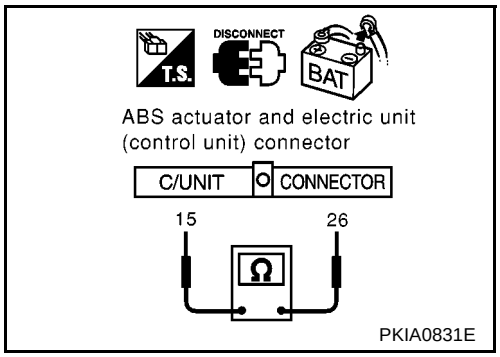
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector.
2. Check resistance between ABS actuator and electric unit (control unit) harness connector E64 terminals 26(L) and 15(R).

26(L) – 15(R) : Approx. 54 – 66Ω

OK or NG

OK >> Replace ABS actuator and electric unit (control unit).
NG >> Repair harness between Data link connector and ABS actuator and electric unit (control unit).



Smart Entrance Control Unit Circuit Check

EKS004WO

1. CHECK CONNECTOR

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

OK or NG

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

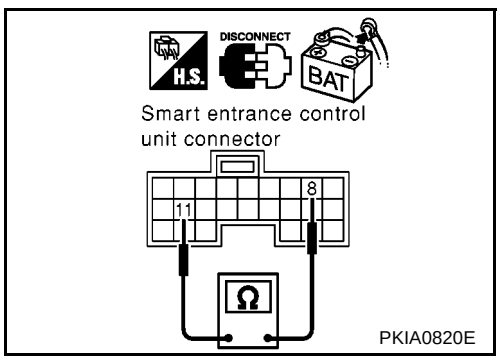
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect smart entrance control unit connector.
2. Check resistance between smart entrance control unit harness connector M41 terminals 8(L) and 11(R).

8(L) – 11(R) : Approx. 54 – 66Ω

OK or NG

OK >> Replace smart entrance control unit.
NG >> Repair harness between Data link connector and smart entrance control unit.



Tyre Pressure Monitoring Control Unit Circuit Check

EKS004WT

1. CHECK CONNECTOR

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

OK or NG

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

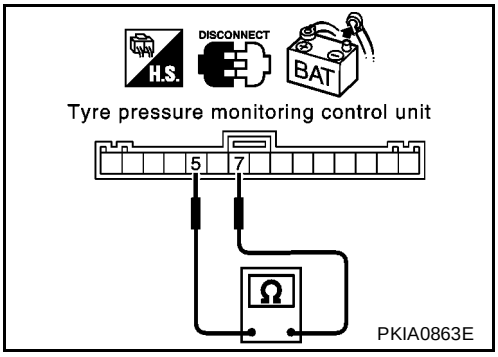
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect tyre pressure monitoring control unit connector.
2. Check resistance between tyre pressure monitoring control unit harness connector M96 terminals 7(L) and 5(R).

7(L) – 5(R) : Approx. 54 – 66Ω

OK or NG

OK >> Replace tyre pressure monitoring control unit.
NG >> Repair harness between smart entrance control unit and tyre pressure monitoring control unit.



Combination Meter Circuit Check

EKS004WP

1. CHECK CONNECTOR

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

OK or NG

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

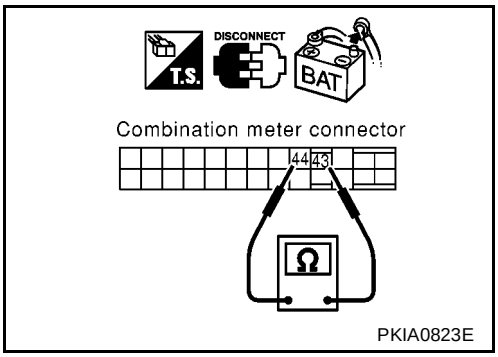
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect combination meter connector.
2. Check resistance between combination meter harness connector M37 terminals 43(L) and 44(R).

43(L) – 44(R) : Approx. 108 – 132Ω

OK or NG

OK >> Replace combination meter.
NG >> Repair harness between tyre pressure monitoring control unit and combination meter.



CAN Communication Circuit Check

EKS004WQ

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. (meter-side, control unit-side, control module-side and harness-side)

- Combination meter.
- Tyre pressure monitoring control unit.
- Smart entrance control unit.
- ABS actuator and electric unit (control unit).
- ECM.
- Between ABS actuator and electric unit (control unit) and ECM.

OK or NG

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

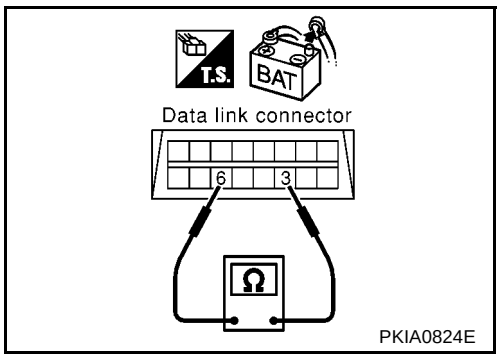
2. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect the following connectors.

- Combination meter connector.
- Tyre pressure monitoring control unit connector.
- Smart entrance control unit connector.
- Harness connector M89.
- Harness connector M79.(QR engine models)
- Harness connector M77.(QG engine models)
- Harness connector M80.(Diesel engine models)

2. Check continuity between Data link connector M10 terminals 6 (L) and 3(R).

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



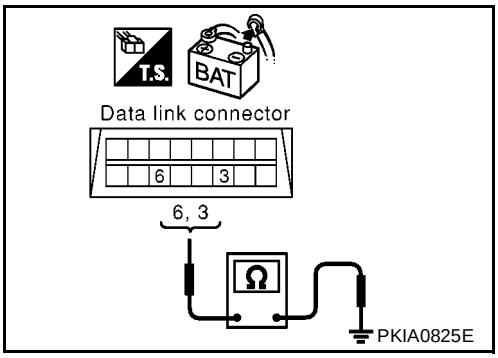
OK or NG

OK >> GO TO 3.
NG >>
- Repair harness between tyre pressure monitoring control unit and combination meter.
- Repair harness between smart entrance control unit and tyre pressure monitoring control unit.
- Repair harness between Data link connector and smart entrance control unit.
- Repair harness between harness connector M89 and harness connector M79.(QR engine models)
- Repair harness between harness connector M89 and harness connector M77.(QG engine models)
- Repair harness between harness connector M89 and harness connector M80.(Diesel engine models)

3. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between Data link connector M10 terminals 6 (L), 3(R) and ground.

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



OK or NG

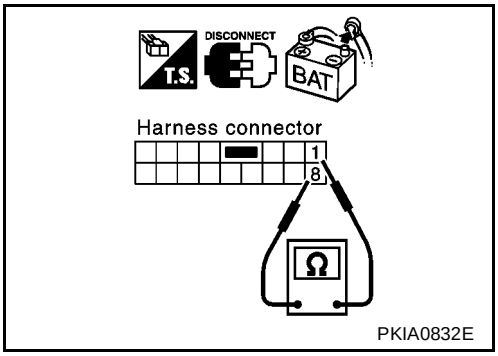
OK >> GO TO 4.
NG >>
- Repair harness between tyre pressure monitoring control unit and combination meter.
- Repair harness between smart entrance control unit and tyre pressure monitoring control unit.
- Repair harness between Data link connector and smart entrance control unit.
- Repair harness between harness connector M89 and harness connector M79.(QR engine models)
- Repair harness between harness connector M89 and harness connector M77.(QG engine models)
- Repair harness between harness connector M89 and harness connector M80.(Diesel engine models)

4. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect harness connector B107.
2. Check the following.

- Continuity between harness connector B102 terminals 1 (L) and 8(G).(Sedan models)
- Continuity between harness connector B102 terminals 1 (L) and 8(R).(Wagon models)

1(L) – 8(G) (Sedan models) : Continuity should not exist.
1(L) – 8(R) (Wagon models) : Continuity should not exist.



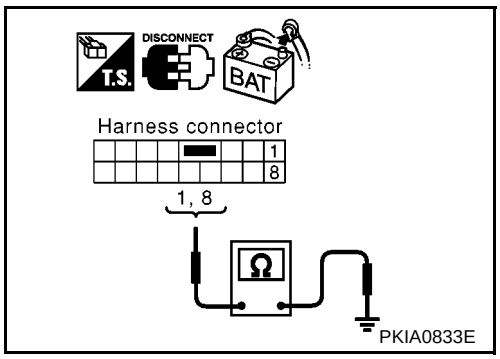
OK or NG

OK >> GO TO 5.
NG >> Repair harness between harness connector B102 and harness connector B107.

5. CHECK HARNESS FOR SHORT CIRCUIT

1. Check the following.

- Continuity between harness connector B102 terminals 1 (L), 8(G) and ground.(Sedan models)
- Continuity between harness connector B102 terminals 1 (L), 8(R) and ground.(Wagon models)



1(L) – ground (Sedan models) : **Continuity should not exist.**

8(G) – ground (Sedan models) : **Continuity should not exist.**

1(L) – ground (Wagon models) : **Continuity should not exist.**

8(R) – ground (Wagon models) : **Continuity should not exist.**

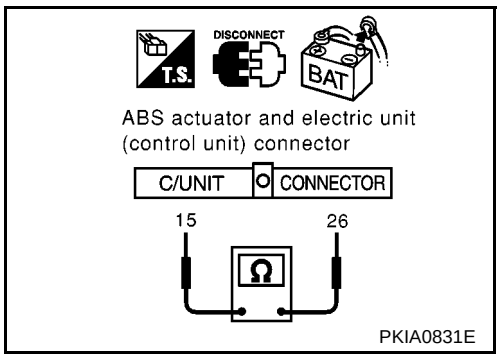
OK or NG

OK >> GO TO 6.
NG >> Repair harness between harness connector B102 and harness connector B107.

6. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector.
2. Check continuity between ABS actuator and electric unit (control unit) harness connector E64 terminals 26 (L) and 15(R).

26(L) – 15(R) : **Continuity should not exist.**



OK or NG

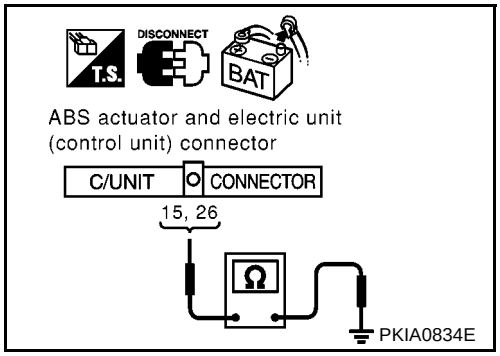
OK >> GO TO 7.
NG >> Repair harness between ABS actuator and electric unit (control unit) and harness connector E120.

7. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ABS actuator and electric unit (control unit) harness connector E64 terminals 26 (L), 15 (R) and ground.

26(L) – ground : **Continuity should not exist.**

15(R) – ground : **Continuity should not exist.**



OK or NG

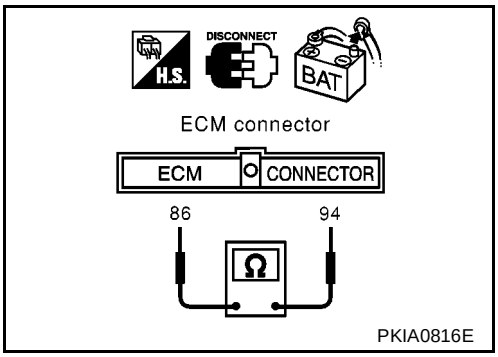
OK >> GO TO 8.
NG >> Repair harness between ABS actuator and electric unit (control unit) and harness connector E120.

8. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect ECM connector.
2. Check the following.

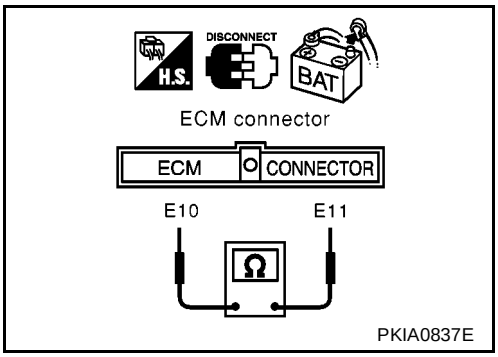
- Continuity between ECM harness connector F102 terminals 94 (L) and 86(R).(Gasoline engine models)

94(L) – 86(R) (Gasoline enging models) **: Continuity should not exist.**



- Continuity between ECM harness connector F114 terminals E11 (L) and E10(R).(Diesel engine models)

E11(L) – E10(R) (Diesel enging models) **: Continuity should not exist.**



OK or NG

OK >> GO TO 9.

NG >>
- Repair harness between ECM and harness connector F108.(QR engine models)
- Repair harness between ECM and harness connector F109.(QG engine models)
- Repair harness between ECM and harness connector F110.(Diesel engine models)

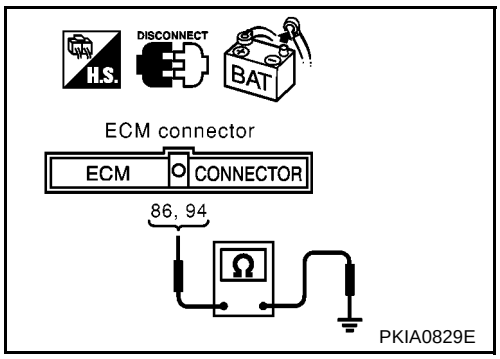
9. CHECK HARNESS FOR SHORT CIRCUIT

1. Check the following.

- Continuity between ECM harness connector F102 terminals 94 (L), 86 (R) and ground.(Gasoline engine models)

94(L) – ground (Gasoline enging models) : **Continuity should not exist.**

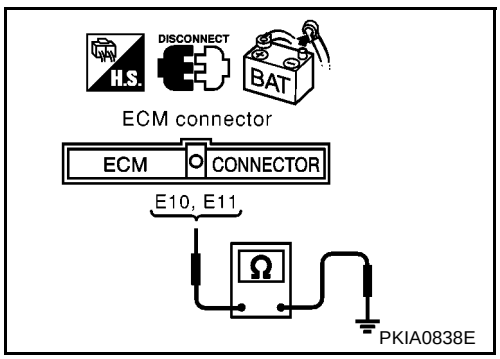
86(R) – ground (Gasoline enging models) : **Continuity should not exist.**



- Continuity between ECM harness connector F114 terminals E11 (L), E10 (R) and ground.(Diesel engine models)

E11(L) – ground (Diesel enging models) : **Continuity should not exist.**

E10(R) – ground (Diesel enging models) : **Continuity should not exist.**



OK or NG

OK >> GO TO 10.

NG >>
- Repair harness between ECM and harness connector F108.(QR engine models)
- Repair harness between ECM and harness connector F109.(QG engine models)
- Repair harness between ECM and harness connector F110.(Diesel engine models)

10. ECM / COMBINATION METER INTERNAL CIRCUIT INSPECTION

Check components inspection. Refer to LAN-155, "ECM / COMBINATION METER INTERNAL CIRCUIT INSPECTION"

OK or NG

OK >> Reconnect all connectors to perform “SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE”, “ABS”, “SMART ENTRANCE”, and “AIR PRESSURE MONITOR” displayed on CONSULT-II. Refer to EC-150, "DTC U1000, U1001 CAN COMMUNICATION LINE" (QG ENGINE MODELS WITH EURO-OBD), EC-663, "DTC U1000, U1001 CAN COMMUNICATION LINE" (QG ENGINE MODELS WITHOUT EURO-OBD), EC-1083, "DTC U1000, U1001 CAN COMMUNICATION LINE" (QR ENGINE MODELS WITH EURO-OBD), EC-1505, "DTC U1000, U1001 CAN COMMUNICATION LINE" (QR ENGINE MODELS WITHOUT EURO-OBD) or EC-1790, "DTC U1000 CAN COMMUNICATION LINE" (YD ENGINE MODELS) for “ENGINE” and Refer to BRC-33, "CAN Communication Circuit" for “ABS”. Refer to BCS-40, "CAN Communication Line Check" for “SMART ENTRANCE”. Refer to WT-35, "Inspection 4: CAN Communication Line" for “AIR PRESSURE MONITOR”.

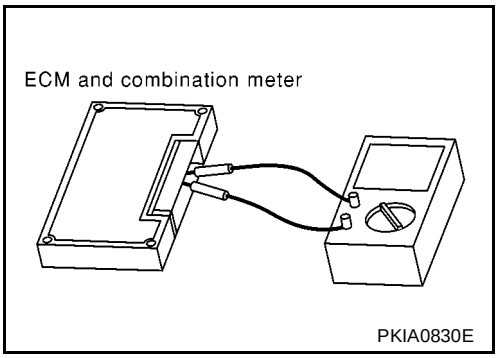
NG >> Replace ECM and/or Combination meter.

Component Inspection

EKS004WR

ECM / COMBINATION METER INTERNAL CIRCUIT INSPECTION

- Remove ECM and Combination meter from vehicle.
- Check resistance between ECM terminals 94 and 86.(Gasoline engine models)
- Check resistance between ECM terminals E11 and E10.(Diesel engine models)
- Check resistance between Combination meter terminals 43 and 44.



Unit	Terminal	Resistance value (Ω)
ECM (Gasoline engine models)	94 – 86	Approx. 108 - 132
ECM (Diesel engine models)	E11 – E10	
Combination meter	43 – 44	

CAN SYSTEM (TYPE 7)

PFP:23710

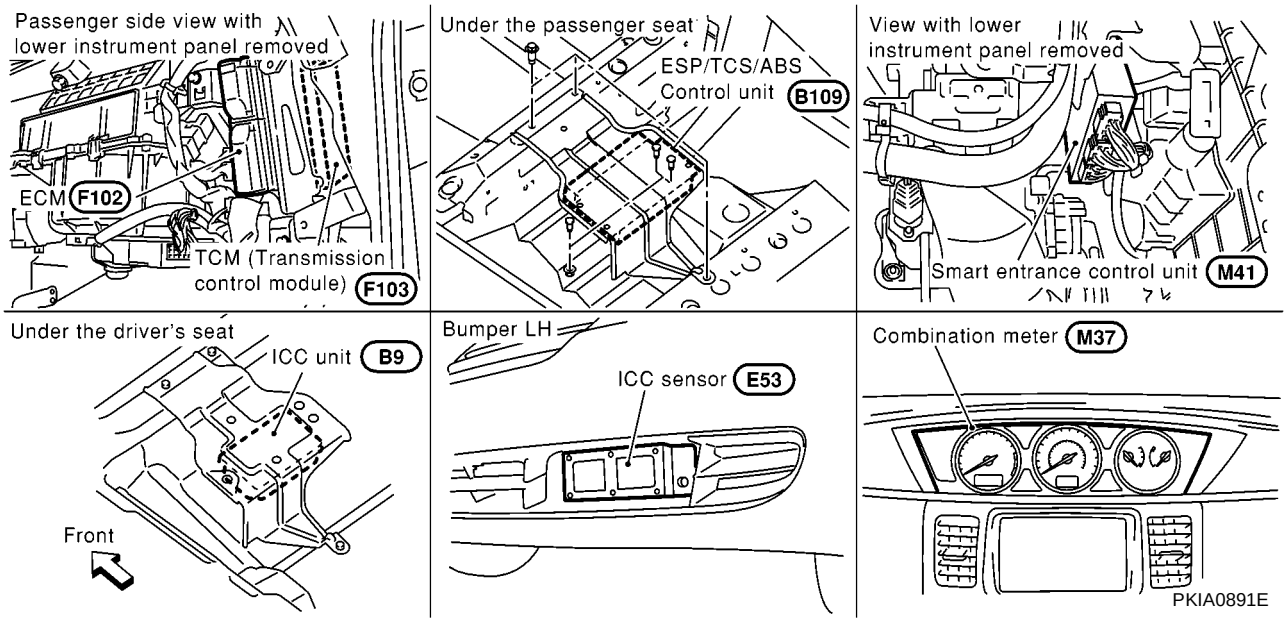
System Description

EKS004VW

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

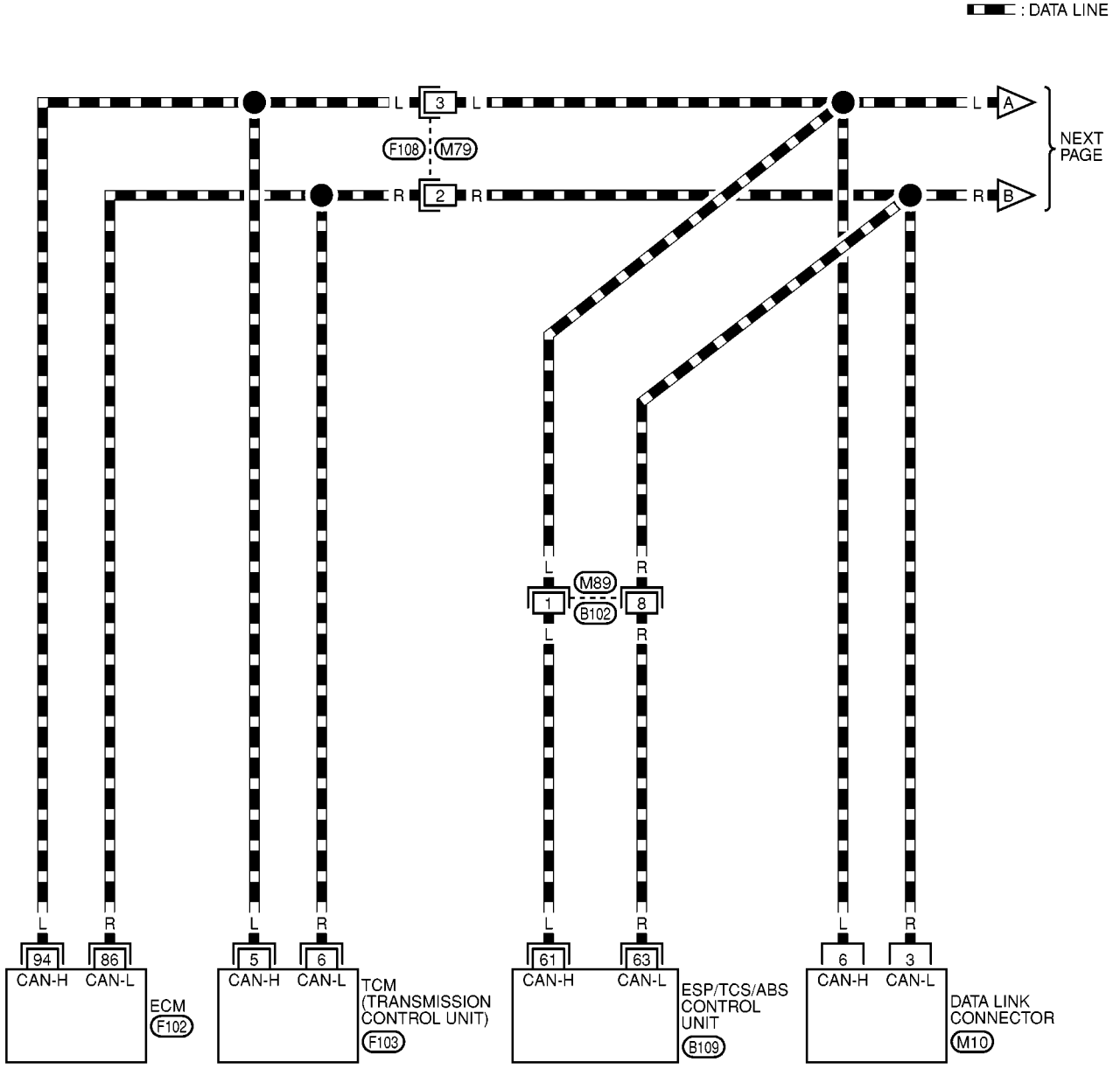
EKS004VX

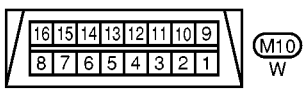


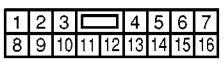
Wiring Diagram — CAN —

EKS004VY

LAN-CAN-14





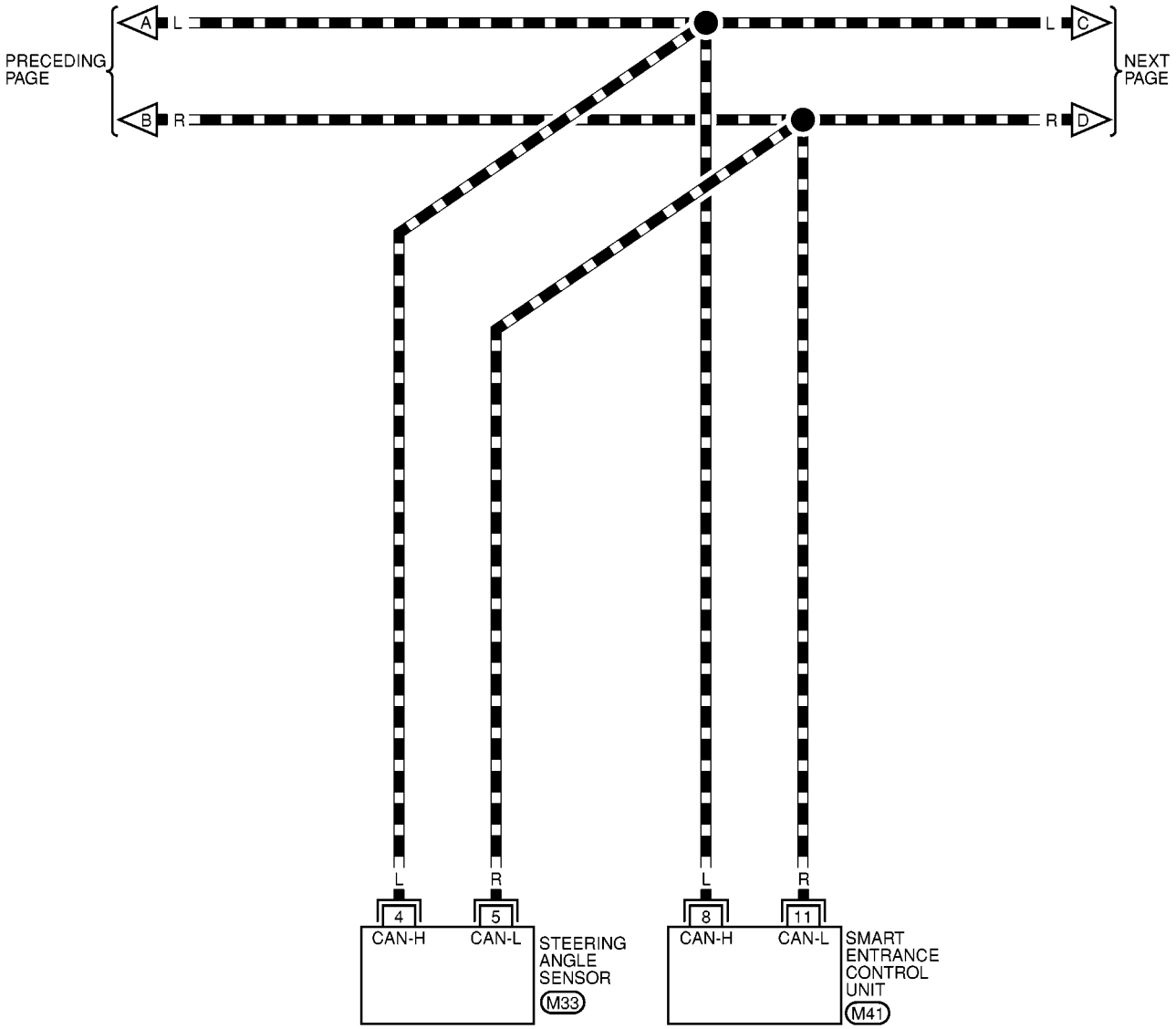


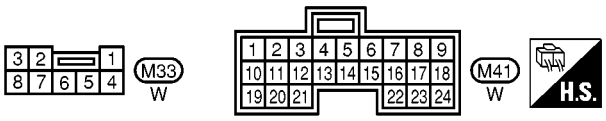
REFER TO THE FOLLOWING.
F102 , F103 , B109
-ELECTRICAL UNITS

MKWA0364E

LAN-CAN-15

: DATA LINE

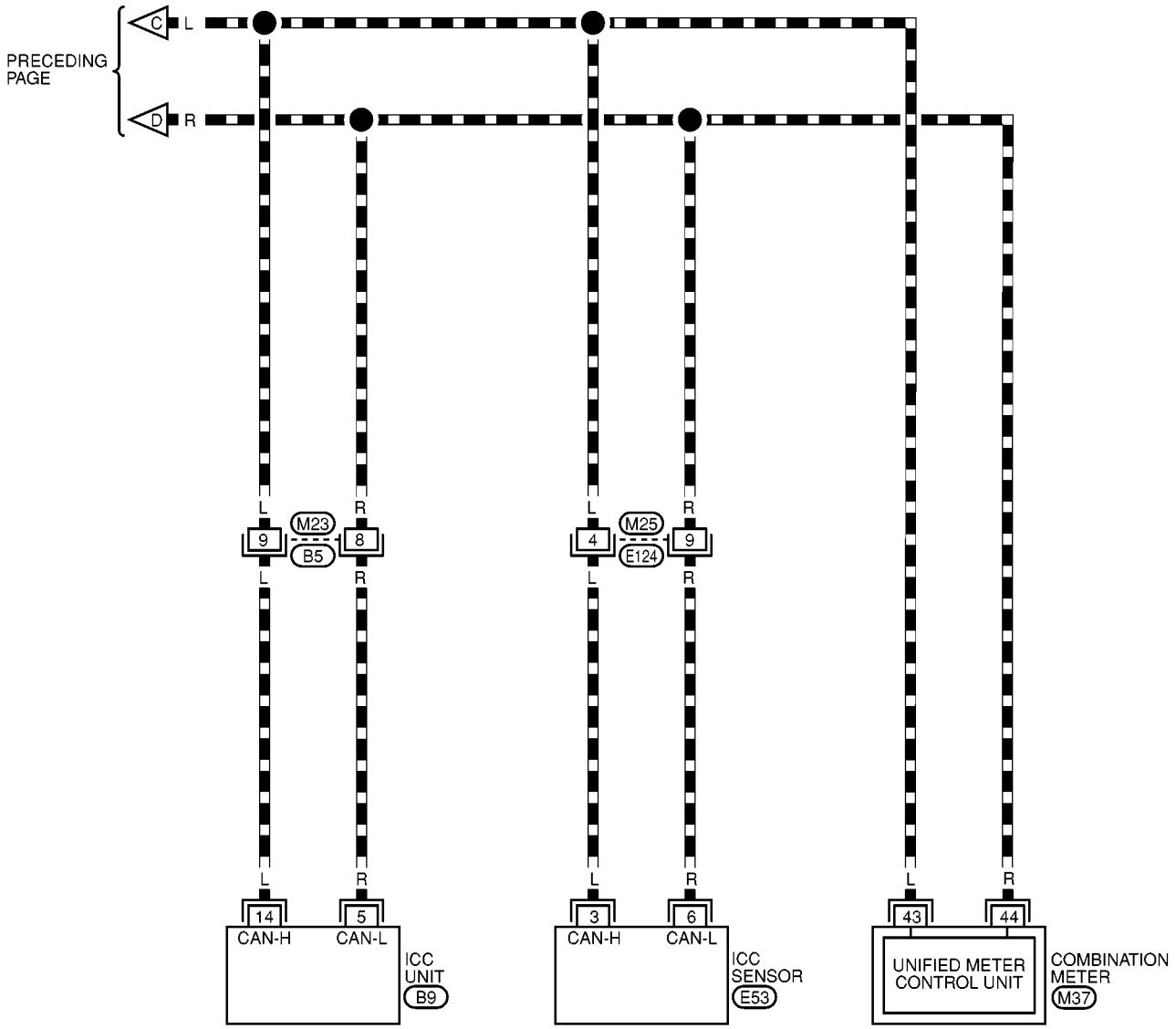


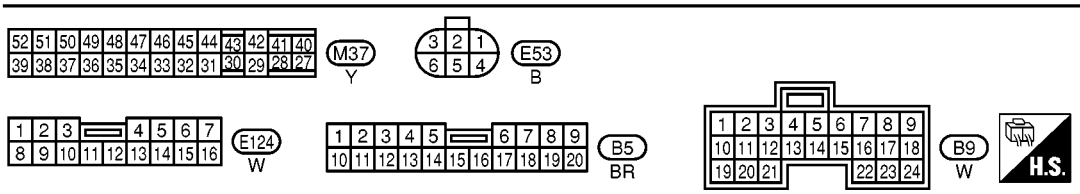


MKWA0365E

LAN-CAN-16

: DATA LINE





MKWA0366E

Work Flow

EKS004VZ

1. Print all the data of “SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE”, “CVT”, “ABS”, “SMART ENTRANCE”, and “ICC” displayed on CONSULT-II. Refer to EC-1083, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) or EC-1505, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) for “ENGINE” and Refer to CVT-118, "DTC U1000 CAN COMMUNICATION LINE" (EURO-OBD) or CVT-201, "CAN COMMUNICATION LINE" (ALL) for “CVT”. Refer to BRC-107, "Inspection 15 CAN Communication Circuit, ESP/TCS/ABS Control Unit and Steering Angle Sensor" for “ABS”. Refer to BCS-40, "CAN Communication Line Check" for “SMART ENTRANCE”. Refer to ACS-46, "DTC 20 CAN COMM CIRCUIT" for “ICC”.
2. Attach the printed sheet of “SELF-DIAG RESULTS” and “DATA MONITOR” onto the check sheet. Refer to LAN-161, "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-161, "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-162, "CHECK SHEET RESULTS (EXAMPLE)"

CHECK SHEET

Check sheet table

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 6	CAN CIRC 5	–	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 5	–	CAN CIRC 6	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–	–	CAN CIRC 3
ICC	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 3	–	–	–	CAN CIRC 8	–

Symptoms:

Attach copy of
ENGINE
SELF-DIAG RESULTS

Attach copy of
CVT
SELF-DIAG RESULTS

Attach copy of
ABS
SELF-DIAG RESULTS

Attach copy of
SMART ENTRANCE
SELF-DIAG RESULTS

Attach copy of
ICC
SELF-DIAG RESULTS

Attach copy of
ENGINE
DATA MONITOR

Attach copy of
CVT
DATA MONITOR

Attach copy of
ABS
DATA MONITOR

Attach copy of
SMART ENTRANCE
DATA MONITOR

Attach copy of
ICC
DATA MONITOR

PKIA0730E

CHECK SHEET RESULTS (EXAMPLE)

Case 1: Replace ECM

ENGINE	CAN COMM ✓	CAN CIRC 1	–	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 6	CAN CIRC 5	–	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 5	–	CAN CIRC 6	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–	–	CAN CIRC 3
ICC	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 3	–	–	–	CAN CIRC 8	–

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2 ✓	CAN CIRC 3 ✓	–	CAN CIRC 6 ✓	CAN CIRC 5 ✓	–	CAN CIRC 4 ✓
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 5	–	CAN CIRC 6	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–	–	CAN CIRC 3
ICC	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 3	–	–	–	CAN CIRC 8	–

Case 2: Replace TCM

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2 ✓	CAN CIRC 3	–	CAN CIRC 6	CAN CIRC 5	–	CAN CIRC 4
CVT	CAN COMM ✓	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3 ✓	–	CAN CIRC 5	–	CAN CIRC 6	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–	–	CAN CIRC 3
ICC	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4 ✓	CAN CIRC 3	–	–	–	CAN CIRC 8	–

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 6	CAN CIRC 5	–	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	–	CAN CIRC 3 ✓	–	–	–	–	CAN CIRC 4 ✓
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 5	–	CAN CIRC 6	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–	–	CAN CIRC 3
ICC	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 3	–	–	–	CAN CIRC 8	–

PKIA0731E

Case 3: Replace ESP/TCS/ABS control unit

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	CAN CIRC 3 ✓	–	CAN CIRC 6	CAN CIRC 5	–	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3 ✓	–	–	–	–	CAN CIRC 4
ABS	CAN COMM ✓	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 5	–	CAN CIRC 6	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–	–	CAN CIRC 3
ICC	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 3 ✓	–	–	–	CAN CIRC 8	–

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 6	CAN CIRC 5	–	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	CAN CIRC 3 ✓	–	CAN CIRC 5 ✓	–	CAN CIRC 6 ✓	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–	–	CAN CIRC 3
ICC	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 3	–	–	–	CAN CIRC 8	–

Case 4: Replace Smart entrance control unit

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 6	CAN CIRC 5	–	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 5	–	CAN CIRC 6	–	–
SMART ENTRANCE	CAN COMM ✓	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–	–	CAN CIRC 3
ICC	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 3	–	–	–	CAN CIRC 8	–

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 6	CAN CIRC 5	–	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 5	–	CAN CIRC 6	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	–	–	–	–	–	–	CAN CIRC 3 ✓
ICC	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 3	–	–	–	CAN CIRC 8	–

PKIA0732E

Case 5: Replace ICC unit

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 6	CAN CIRC 5 ✓	–	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 5	–	CAN CIRC 6 ✓	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–	–	CAN CIRC 3
ICC	CAN COMM ✓	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 3	–	–	–	CAN CIRC 8	–

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 6	CAN CIRC 5	–	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 5	–	CAN CIRC 6	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–	–	CAN CIRC 3
ICC	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	CAN CIRC 4 ✓	CAN CIRC 3 ✓	–	–	–	CAN CIRC 8 ✓	–

Case 6

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	CAN CIRC 3 ✓	–	CAN CIRC 6 ✓	CAN CIRC 5 ✓	–	CAN CIRC 4 ✓
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3 ✓	–	–	–	–	CAN CIRC 4 ✓
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	CAN CIRC 3 ✓	–	CAN CIRC 5	–	CAN CIRC 6	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	–	–	–	–	–	–	CAN CIRC 3
ICC	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	CAN CIRC 4 ✓	CAN CIRC 3	–	–	–	CAN CIRC 8	–

Case 7

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 6 ✓	CAN CIRC 5 ✓	–	CAN CIRC 4 ✓
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	–	–	CAN CIRC 4 ✓
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 5 ✓	–	CAN CIRC 6 ✓	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	–	–	–	–	–	–	CAN CIRC 3
ICC	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	CAN CIRC 4 ✓	CAN CIRC 3 ✓	–	–	–	CAN CIRC 8	–

Case 8

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 6	CAN CIRC 5 ✓	–	CAN CIRC 4 ✓
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	–	–	CAN CIRC 4 ✓
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 5	–	CAN CIRC 6 ✓	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–	–	CAN CIRC 3 ✓
ICC	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	CAN CIRC 4 ✓	CAN CIRC 3 ✓	–	–	–	CAN CIRC 8	–

PKIA0733E

Case 9

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 6	CAN CIRC 5	–	CAN CIRC 4 ✓
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	–	–	CAN CIRC 4 ✓
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 5	–	CAN CIRC 6	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–	–	CAN CIRC 3 ✓
ICC	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 3	–	–	–	CAN CIRC 8 ✓	–

Case 10

ENGINE	CAN COMM	CAN CIRC 1 ✓	–	CAN CIRC 2 ✓	CAN CIRC 3 ✓	–	CAN CIRC 6 ✓	CAN CIRC 5 ✓	–	CAN CIRC 4 ✓
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	–	CAN CIRC 3	–	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	CAN CIRC 3	–	CAN CIRC 5	–	CAN CIRC 6	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	–	–	–	–	–	–	CAN CIRC 3
ICC	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	CAN CIRC 4	CAN CIRC 3	–	–	–	CAN CIRC 8	–

Case 11

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2 ✓	CAN CIRC 3	–	CAN CIRC 6	CAN CIRC 5	–	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1 ✓	CAN CIRC 2	–	CAN CIRC 3 ✓	–	–	–	–	CAN CIRC 4 ✓
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3 ✓	–	CAN CIRC 5	–	CAN CIRC 6	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–	–	CAN CIRC 3
ICC	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4 ✓	CAN CIRC 3	–	–	–	CAN CIRC 8	–

Case 12

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	CAN CIRC 3 ✓	–	CAN CIRC 6	CAN CIRC 5	–	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3 ✓	–	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1 ✓	CAN CIRC 2 ✓	CAN CIRC 3 ✓	–	CAN CIRC 5 ✓	–	CAN CIRC 6 ✓	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–	–	CAN CIRC 3
ICC	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 3 ✓	–	–	–	CAN CIRC 8	–

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Case 13

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 6	CAN CIRC 5	–	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 5 ✓	–	CAN CIRC 6	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–	–	CAN CIRC 3
ICC	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 3	–	–	–	CAN CIRC 8	–

Case 14

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 6 ✓	CAN CIRC 5	–	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 5	–	CAN CIRC 6	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1 ✓	CAN CIRC 2 ✓	–	–	–	–	–	–	CAN CIRC 3 ✓
ICC	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 3	–	–	–	CAN CIRC 8	–

Case 15

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 6	CAN CIRC 5 ✓	–	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 5	–	CAN CIRC 6 ✓	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–	–	CAN CIRC 3
ICC	CAN COMM	CAN CIRC 1 ✓	CAN CIRC 2 ✓	CAN CIRC 4 ✓	CAN CIRC 3 ✓	–	–	–	CAN CIRC 8 ✓	–

Case 16

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 6	CAN CIRC 5	–	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 5	–	CAN CIRC 6	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–	–	CAN CIRC 3
ICC	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 3	–	–	–	CAN CIRC 8 ✓	–

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Case 17

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 6	CAN CIRC 5	–	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 5	–	CAN CIRC 6	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–	–	CAN CIRC 3
ICC	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 3	–	–	–	CAN CIRC 8	–

Case 18

ENGINE	CAN COMM	CAN CIRC 1 ✓	–	CAN CIRC 2 ✓	CAN CIRC 3 ✓	–	CAN CIRC 6 ✓	CAN CIRC 5 ✓	–	CAN CIRC 4 ✓
CVT	CAN COMM	CAN CIRC 1 ✓	CAN CIRC 2 ✓	–	CAN CIRC 3 ✓	–	–	–	–	CAN CIRC 4 ✓
ABS	CAN COMM	CAN CIRC 1 ✓	CAN CIRC 2 ✓	CAN CIRC 3 ✓	–	CAN CIRC 5 ✓	–	CAN CIRC 6 ✓	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1 ✓	CAN CIRC 2 ✓	–	–	–	–	–	–	CAN CIRC 3 ✓
ICC	CAN COMM	CAN CIRC 1 ✓	CAN CIRC 2 ✓	CAN CIRC 4 ✓	CAN CIRC 3 ✓	–	–	–	CAN CIRC 8 ✓	–

PKIA0736E

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

INSPECTION

Proceed trouble diagnosis according to the check sheet results (example).
Case 1:Replace ECM.
Case 2:Replace TCM.
Case 3:Replace ESP/TCS/ABS control unit.
Case 4:Replace Smart entrance control unit.
Case 5:Replace ICC unit.
Case 6:Check Harness between TCM and Data link connector. Refer to LAN-168, "Circuit Check Between TCM and Data Link Connector"
Case 7:Check Harness between Data link connector and Smart entrance control unit. Refer to LAN-169, "Circuit Check Between Data Link Connector and Smart Entrance Control Unit"
Case 8:Check Harness between Smart entrance control unit and ICC unit. Refer to LAN-169, "Circuit Check Between Smart Entrance Control Unit and ICC Unit"
Case 9:Check Harness between ICC unit and ICC sensor. Refer to LAN-170, "Circuit Check Between ICC Unit and ICC Sensor"
Case 10:Check ECM Circuit. Refer to LAN-171, "ECM Circuit Check"
Case 11:Check TCM Circuit. Refer to LAN-171, "TCM Circuit Check"
Case 12:Check ESP/TCS/ABS control unit Circuit. Refer to LAN-172, "ESP/TCS/ABS Control Unit Circuit Check"
Case 13:Check Steering angle sensor Circuit. Refer to LAN-172, "Steering Angle Sensor Circuit Check"
Case 14:Check Smart entrance control unit Circuit. Refer to LAN-173, "Smart Entrance Control Unit Circuit Check"
Case 15:Check ICC unit Circuit. Refer to LAN-173, "ICC Unit Circuit Check"
Case 16:Check ICC sensor Circuit. Refer to LAN-174, "ICC Sensor Circuit Check"
Case 17:Check Combination meter Circuit. Refer to LAN-174, "Combination Meter Circuit Check"
Case 18:Check CAN communication Circuit. Refer to LAN-175, "CAN Communication Circuit Check"

Circuit Check Between TCM and Data Link Connector

EKS004W0

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, control unit-side and harness-side)

- TCM.
- ESP/TCS/ABS control unit.
- Between TCM and ESP/TCS/ABS control unit.

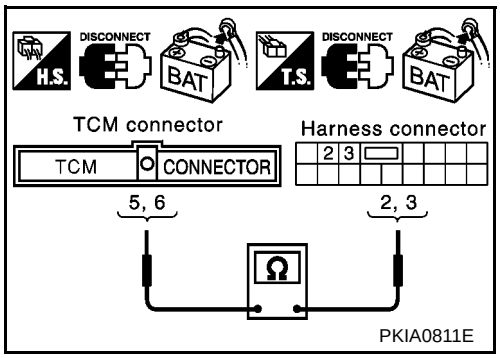
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect TCM connector and harness connector F108.
2. Check continuity between TCM harness connector F103 terminals 5 (L), 6 (R) and harness connector F108 terminals 3 (L), 2 (R).

5(L) – 3(L) : Continuity should exist.
6(R) – 2(R) : Continuity should exist.



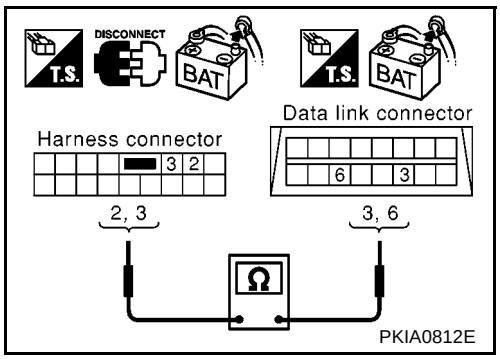
OK or NG

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

3. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between harness connector M79 terminals 3 (L), 2 (R) and Data link connector M10 terminals 6 (L), 3 (R).

3(L) – 6(L) : Continuity should exist.
2(R) – 3(R) : Continuity should exist.



OK or NG

OK >> Reconnect all connectors to perform “SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE”, “CVT”, “ABS”, “SMART ENTRANCE”, and “ICC” displayed on CONSULT-II. Refer to EC-1083, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) or EC-1505, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) for “ENGINE” and Refer to CVT-118, "DTC U1000 CAN COMMUNICATION LINE" (EURO-OBD) or CVT-201, "CAN COMMUNICATION LINE" (ALL) for “CVT”. Refer to BRC-107, "Inspection 15 CAN Communication Circuit, ESP/TCS/ABS Control Unit and Steering Angle Sensor" for “ABS”. Refer to BCS-40, "CAN Communication Line Check" for “SMART ENTRANCE”. Refer to ACS-46, "DTC 20 CAN COMM CIRCUIT" for “ICC”.
NG >> Repair harness.

Circuit Check Between Data Link Connector and Smart Entrance Control Unit

EKS004W1

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 unit-side, sensor-side and harness-side)

- Smart entrance control unit.
- Steering angle sensor.
- ESP/TCS/ABS control unit.
- Between smart entrance control unit and ESP/TCS/ABS control unit.

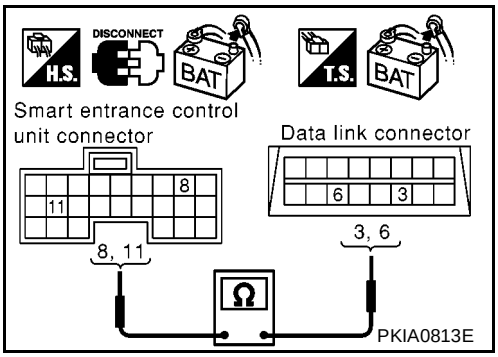
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect smart entrance control unit connector.
2. Check continuity between smart entrance control unit harness connector M41 terminals 8 (L), 11 (R) and Data link connector M10 terminals 6 (L), 3 (R).

8(L) – 6(L) : Continuity should exist.
11(R) – 3(R) : Continuity should exist.



OK or NG

OK >> Reconnect all connectors to perform “SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE”, “CVT”, “ABS”, “SMART ENTRANCE”, and “ICC” displayed on CONSULT-II. Refer to EC-1083, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) or EC-1505, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) for “ENGINE” and Refer to CVT-118, "DTC U1000 CAN COMMUNICATION LINE" (EURO-OBD) or CVT-201, "CAN COMMUNICATION LINE" (ALL) for “CVT”. Refer to BRC-107, "Inspection 15 CAN Communication Circuit, ESP/TCS/ABS Control Unit and Steering Angle Sensor" for “ABS”. Refer to BCS-40, "CAN Communication Line Check" for “SMART ENTRANCE”. Refer to ACS-46, "DTC 20 CAN COMM CIRCUIT" for “ICC”.
NG >> Repair harness.

Circuit Check Between Smart Entrance Control Unit and ICC Unit

EKS004WD

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 unit-side, sensor-side and harness-side)

- ICC unit.
- Smart entrance control unit.
- Steering angle sensor.
- Between smart entrance control unit and ICC unit.

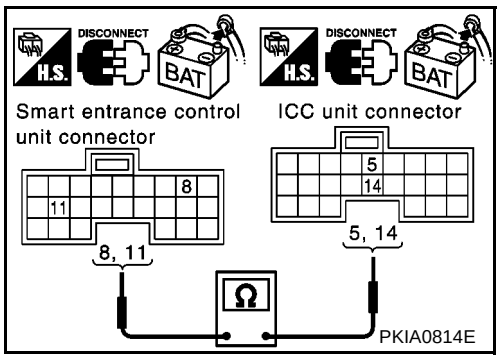
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect smart entrance control unit connector and ICC unit connector.
2. Check continuity between smart entrance control unit harness connector M41 terminals 8 (L), 11 (R) and ICC unit harness connector B9 terminals 14 (L), 5 (R).

8(L) – 14(L) : Continuity should exist.
11(R) – 5(R) : Continuity should exist.



OK or NG

OK >> Reconnect all connectors to perform “SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE”, “CVT”, “ABS”, “SMART ENTRANCE”, and “ICC” displayed on CONSULT-II. Refer to EC-1083, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) or EC-1505, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) for “ENGINE” and Refer to CVT-118, "DTC U1000 CAN COMMUNICATION LINE" (EURO-OBD) or CVT-201, "CAN COMMUNICATION LINE" (ALL) for “CVT”. Refer to BRC-107, "Inspection 15 CAN Communication Circuit, ESP/TCS/ABS Control Unit and Steering Angle Sensor" for “ABS”. Refer to BCS-40, "CAN Communication Line Check" for “SMART ENTRANCE”. Refer to ACS-46, "DTC 20 CAN COMM CIRCUIT" for “ICC”.

NG >> Repair harness.

Circuit Check Between ICC Unit and ICC Sensor

EKS004WE

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. (sensor-side, control unit-side and harness-side)

- ICC sensor.
- ICC unit.
- Between ICC sensor and ICC unit.

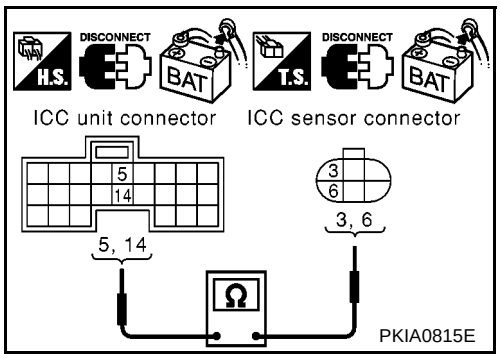
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ICC unit connector and ICC sensor connector.
2. Check continuity between ICC unit harness connector B9 terminals 14 (L), 5 (R) and ICC sensor harness connector E53 terminals 3 (L), 6 (R).

14(L) – 3(L) : Continuity should exist.
5(R) – 6(R) : Continuity should exist.



OK or NG

OK >> Reconnect all connectors to perform “SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE”, “CVT”, “ABS”, “SMART ENTRANCE”, and “ICC” displayed on CONSULT-II. Refer to EC-1083, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) or EC-1505, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) for “ENGINE” and Refer to CVT-118, "DTC U1000 CAN COMMUNICATION LINE" (EURO-OBD) or CVT-201, "CAN COMMUNICATION LINE" (ALL) for “CVT”. Refer to BRC-107, "Inspection 15 CAN Communication Circuit, ESP/TCS/ABS Control Unit and Steering Angle Sen-

sor" for “ABS”. Refer to BCS-40, "CAN Communication Line Check" for “SMART ENTRANCE”. Refer to ACS-46, "DTC 20 CAN COMM CIRCUIT" for “ICC”.

NG >> Repair harness.

ECM Circuit Check

EKS004W2

1. CHECK CONNECTOR

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

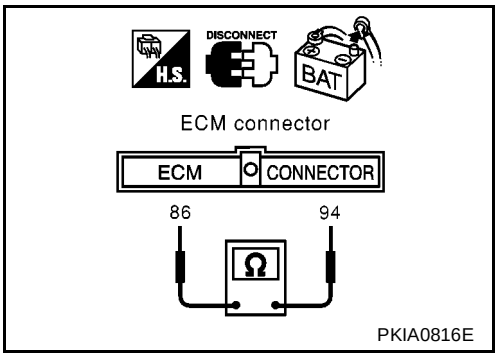
OK or NG

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 F102 terminals 94(L) and 86(R).

94(L) – 86(R) : Approx. 108 – 132Ω



OK or NG

OK >> Replace ECM.
NG >> Repair harness between TCM and ECM.

TCM Circuit Check

EKS004W3

1. CHECK CONNECTOR

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

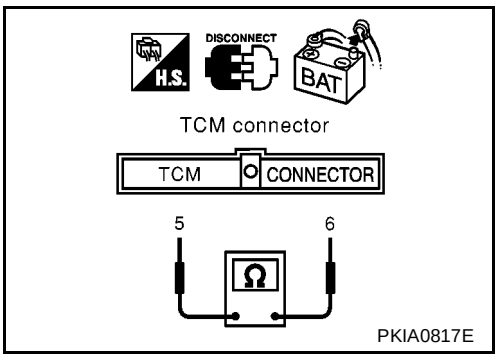
OK or NG

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 F103 terminals 5(L) and 6(R).

5(L) – 6(R) : Approx. 54 – 66Ω



OK or NG

OK >> Replace TCM.
NG >> Repair harness between TCM and ECM.

ESP/TCS/ABS Control Unit Circuit Check

EKS004W4

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 unit-side and harness-side)

- ESP/TCS/ABS control unit.
- Harness connector B102.
- Harness connector M89.

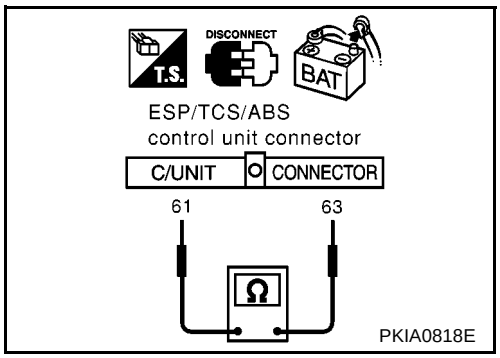
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ESP/TCS/ABS control unit connector.
2. Check resistance between ESP/TCS/ABS control unit harness connector B109 terminals 61(L) and 63(R).

61(L) – 63(R) : Approx. 54 – 66Ω



OK or NG

OK >> Replace ESP/TCS/ABS control unit.
NG >> Repair harness between Data link connector and ESP/TCS/ABS control unit.

Steering Angle Sensor Circuit Check

EKS004W5

1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check terminals and connector of steering angle sensor for damage, bend and loose connection. (sensor-side and harness-side)

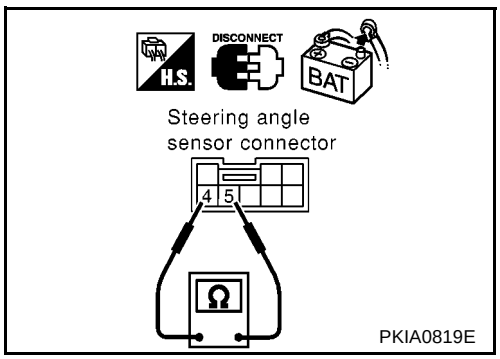
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect steering angle sensor connector.
2. Check resistance between steering angle sensor harness connector M33 terminals 4(L) and 5(R).

4(L) – 5(R) : Approx. 54 – 66Ω



OK or NG

OK >> Replace steering angle sensor.
NG >> Repair harness between steering angle sensor and smart entrance control unit.

Smart Entrance Control Unit Circuit Check

EKS004W6

1. CHECK CONNECTOR

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

OK or NG

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

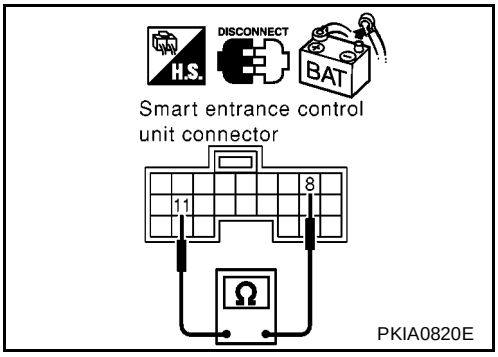
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect smart entrance control unit connector.
2. Check resistance between smart entrance control unit harness connector M41 terminals 8(L) and 11(R).

8(L) – 11(R) : Approx. 54 – 66Ω

OK or NG

OK >> Replace smart entrance control unit.
NG >> Repair harness between steering angle sensor and smart entrance control unit.



ICC Unit Circuit Check

EKS004WF

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 unit-side and harness-side)

- ICC unit.
- Harness connector B5.
- Harness connector M23.

OK or NG

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

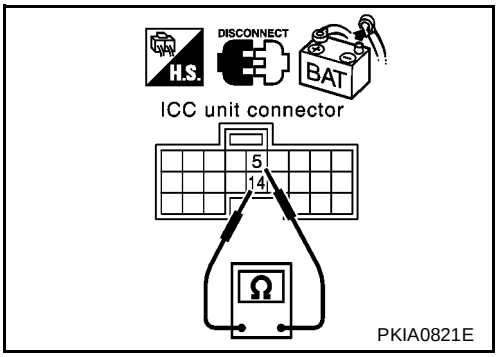
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ICC unit connector.
2. Check resistance between ICC unit harness connector B9 terminals 14(L) and 5(R).

14(L) – 5(R) : Approx. 54 – 66Ω

OK or NG

OK >> Replace ICC unit.
NG >> Repair harness between ICC unit and smart entrance control unit.



ICC Sensor Circuit Check

EKS004WG

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. (sensor-side and harness-side)

- ICC sensor.
- Harness connector E124.
- Harness connector M25.

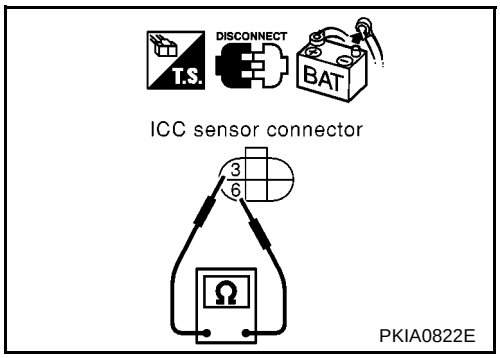
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ICC sensor connector.
2. Check resistance between ICC sensor harness connector E53 terminals 3(L) and 6(R).

3(L) – 6(R) : Approx. 54 – 66Ω



OK or NG

OK >> Replace ICC sensor.
NG >> Repair harness between ICC unit and ICC sensor.

Combination Meter Circuit Check

EKS004W7

1. CHECK CONNECTOR

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

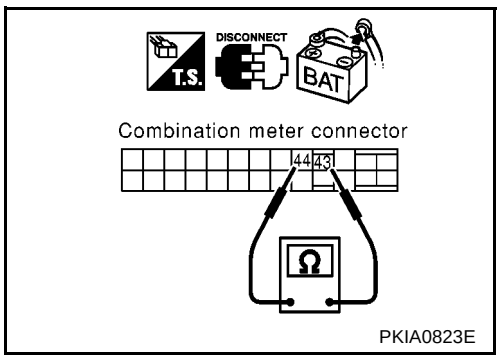
OK or NG

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 M37 terminals 43(L) and 44(R).

43(L) – 44(R) : Approx. 108 – 132Ω



OK or NG

OK >> Replace combination meter.
NG >> Repair harness between ICC sensor and combination meter.

CAN Communication Circuit Check

EKS004W8

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. (meter-side, sensor-side, control unit-side, control module-side and harness-side)

- Combination meter.
- ICC sensor.
- ICC unit.
- Smart entrance control unit.
- Steering angle sensor.
- ESP/TCS/ABS control unit.
- TCM.
- ECM.
- Between ICC sensor and ICC unit.
- Between ESP/TCS/ABS control unit and ECM.

OK or NG

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

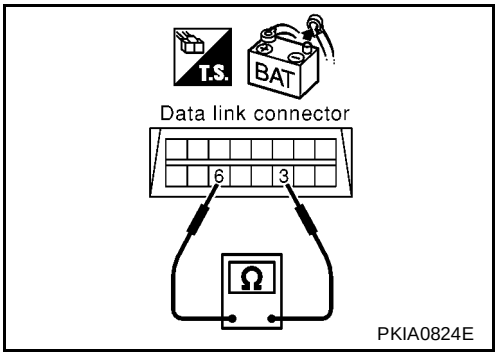
2. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect the following connectors.

- Combination meter connector.
- Smart entrance control unit connector.
- Steering angle sensor connector.
- Harness connector M25.
- Harness connector M23.
- Harness connector M89.
- Harness connector M79.

2. Check continuity between Data link connector M10 terminals 6 (L) and 3(R).

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



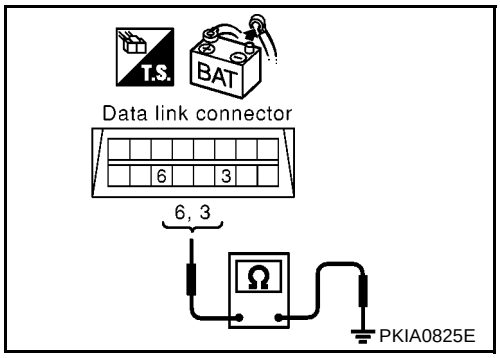
OK or NG

OK >> GO TO 3.
NG >>
- Repair harness between harness connector M25 and combination meter.
- Repair harness between harness connector M25 and harness connector M23.
- Repair harness between harness connector M23 and smart entrance control unit.
- Repair harness between smart entrance control unit and steering angle sensor.
- Repair harness between Data link connector and steering angle sensor.
- Repair harness between harness connector M89 and harness connector M79.

3. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between Data link connector M10 terminals 6 (L), 3(R) and ground.

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



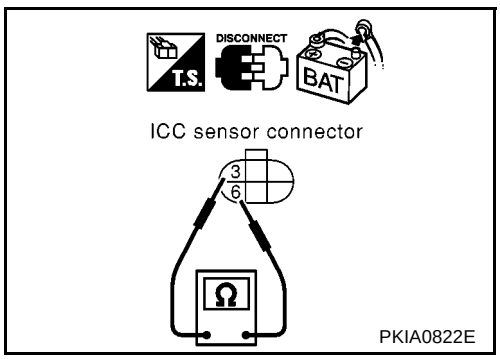
OK or NG

OK >> GO TO 4.
NG >>
- Repair harness between harness connector M25 and combination meter.
- Repair harness between harness connector M25 and harness connector M23.
- Repair harness between harness connector M23 and smart entrance control unit.
- Repair harness between smart entrance control unit and steering angle sensor.
- Repair harness between Data link connector and steering angle sensor.
- Repair harness between harness connector M89 and harness connector M79.

4. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect ICC sensor connector.
2. Check continuity between ICC sensor harness connector E53 terminals 3 (L) and 6(R).

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



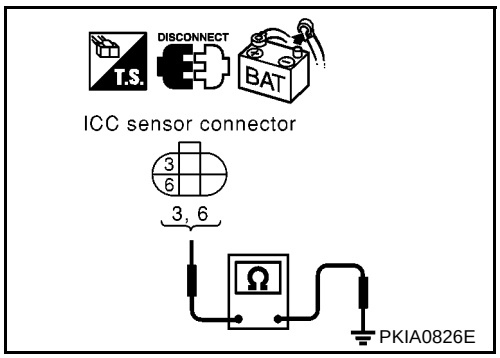
OK or NG

OK >> GO TO 5.
NG >> Repair harness between ICC sensor and harness connector E124.

5. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ICC sensor harness connector E53 terminals 3 (L), 6 (R) and ground.

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



OK or NG

OK >> GO TO 6.
NG >> Repair harness between ICC sensor and harness connector E124.

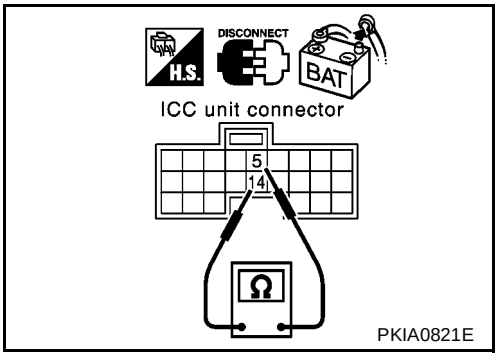
6. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect ICC unit connector.
2. Check continuity between ICC unit harness connector B9 terminals 14 (L) and 5(R).

14(L) – 5(R) : Continuity should not exist.

OK or NG

OK >> GO TO 7.
NG >> Repair harness between ICC unit and harness connector B5.



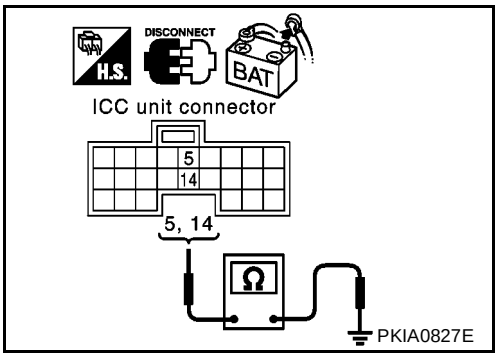
7. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ICC unit harness connector B9 terminals 14 (L), 5 (R) and ground.

14(L) – ground : Continuity should not exist.
5(R) – ground : Continuity should not exist.

OK or NG

OK >> GO TO 8.
NG >> Repair harness between ICC unit and harness connector B5.



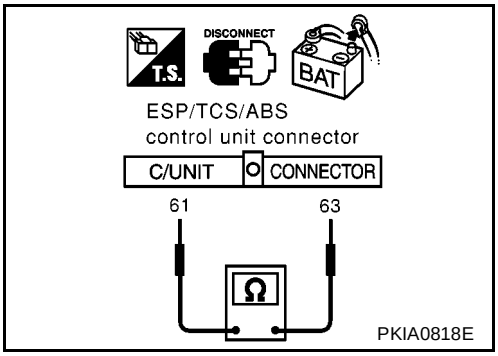
8. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect ESP/TCS/ABS control unit connector.
2. Check continuity between ESP/TCS/ABS control unit harness connector B109 terminals 61 (L) and 63(R).

61(L) – 63(R) : Continuity should not exist.

OK or NG

OK >> GO TO 9.
NG >> Repair harness between ESP/TCS/ABS control unit and harness connector B102.



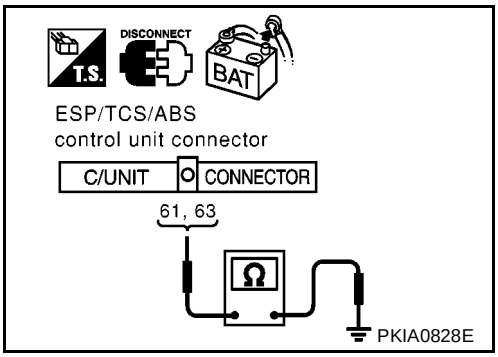
9. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ESP/TCS/ABS control unit harness connector B109 terminals 61 (L), 63 (R) and ground.

61(L) – ground : Continuity should not exist.
63(R) – ground : Continuity should not exist.

OK or NG

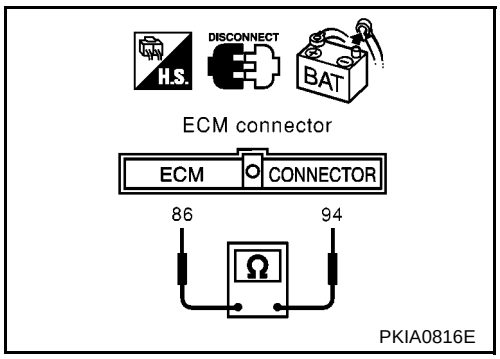
OK >> GO TO 10.
NG >> Repair harness between ESP/TCS/ABS control unit and harness connector B102.



10. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect ECM connector and TCM connector.
2. Check continuity between ECM harness connector F102 terminals 94 (L) and 86(R).

94(L) – 86(R) : Continuity should not exist.



OK or NG

OK >> GO TO 11.

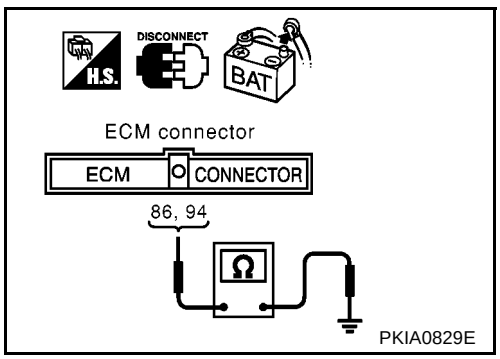
NG >>
- Repair harness between ECM and harness connector F108.
- Repair harness between TCM and harness connector F108.

11. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ECM harness connector F102 terminals 94 (L), 86 (R) and ground.

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

86(R) – ground : Continuity should not exist.



OK or NG

OK >> GO TO 12.

NG >>
- Repair harness between ECM and harness connector F108.
- Repair harness between TCM and harness connector F108.

12. ECM / COMBINATION METER INTERNAL CIRCUIT INSPECTION

Check components inspection. Refer to LAN-178, "ECM / COMBINATION METER INTERNAL CIRCUIT INSPECTION"

OK or NG

OK >> Reconnect all connectors to perform “SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE”, “CVT”, “ABS”, “SMART ENTRANCE”, and “ICC” displayed on CONSULT-II. Refer to EC-1083, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) or EC-1505, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) for “ENGINE” and Refer to CVT-118, "DTC U1000 CAN COMMUNICATION LINE" (EURO-OBD) or CVT-201, "CAN COMMUNICATION LINE" (ALL) for “CVT”. Refer to BRC-107, "Inspection 15 CAN Communication Circuit, ESP/TCS/ABS Control Unit and Steering Angle Sensor" for “ABS”. Refer to BCS-40, "CAN Communication Line Check" for “SMART ENTRANCE”. Refer to ACS-46, "DTC 20 CAN COMM CIRCUIT" for “ICC”.

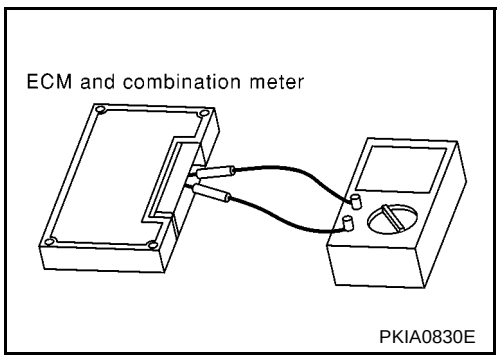
NG >> Replace ECM and/or Combination meter.

Component Inspection

EKS004W9

ECM / COMBINATION METER INTERNAL CIRCUIT INSPECTION

- Remove ECM and Combination meter from vehicle.
- Check resistance between ECM terminals 94 and 86.
- Check resistance between Combination meter terminals 43 and 44.



Unit	Terminal	Resistance value (Ω)
ECM	94 – 86	Approx. 108 - 132
Combination meter	43 – 44	

CAN SYSTEM (TYPE 8)

PFP:23710

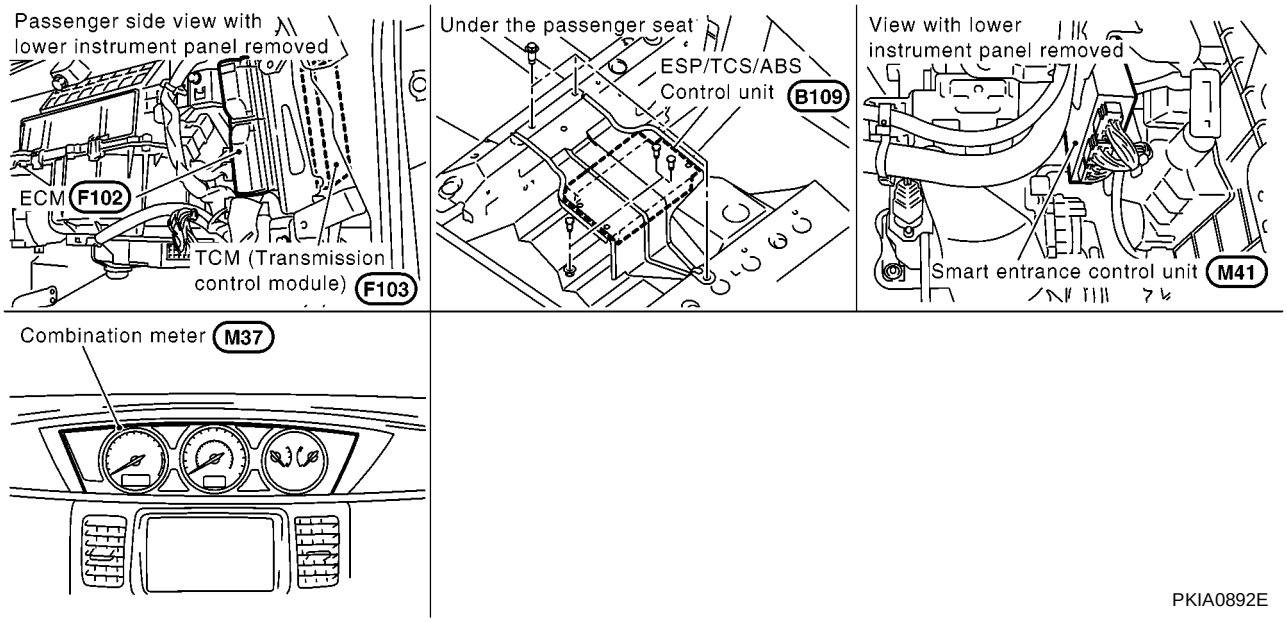
System Description

EKS004VC

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

EKS004VD

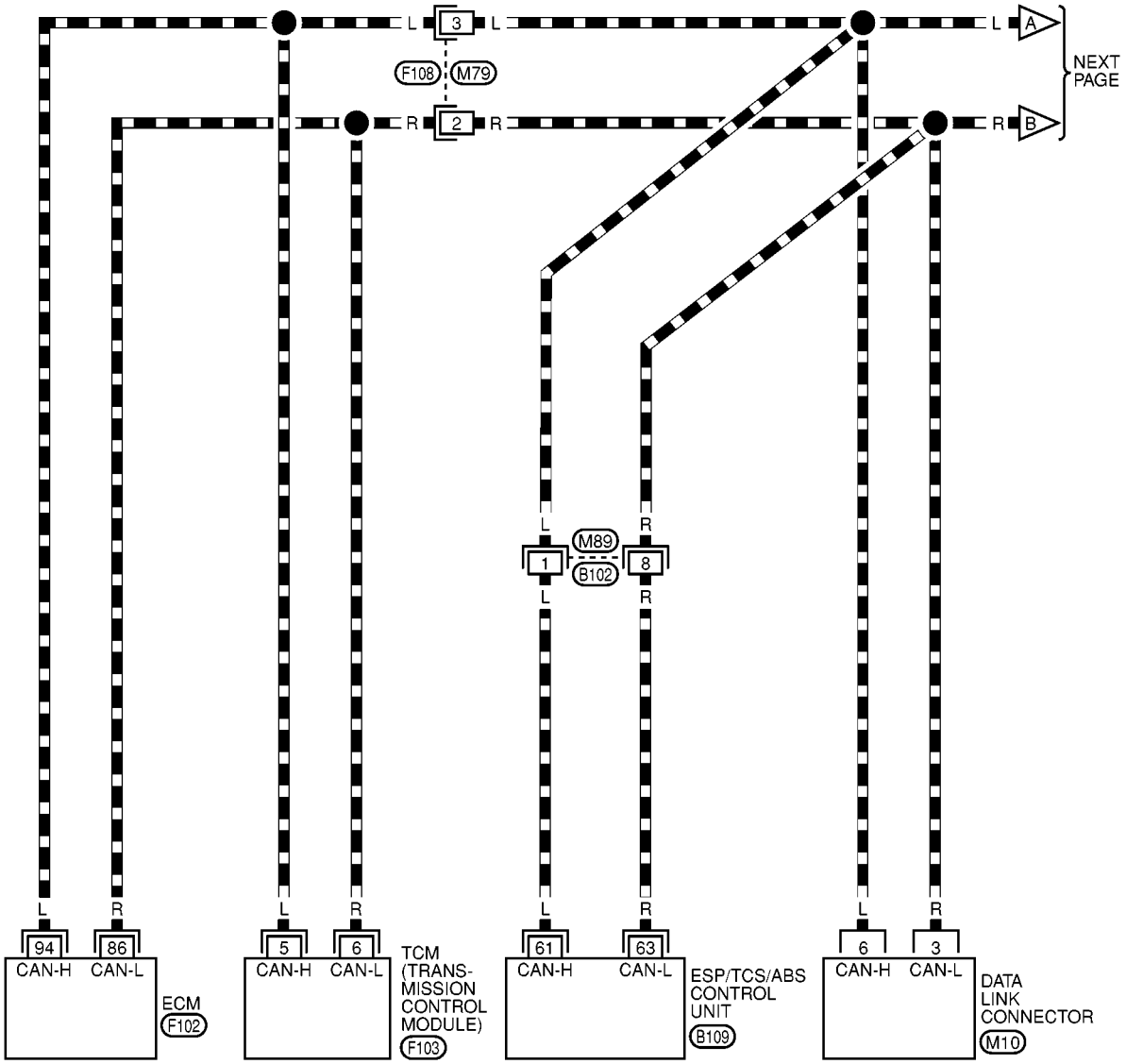


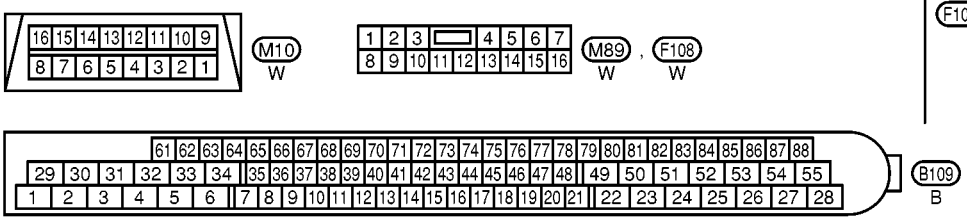
Wiring Diagram — CAN —

EKS004VE

LAN-CAN-17

: DATA LINE



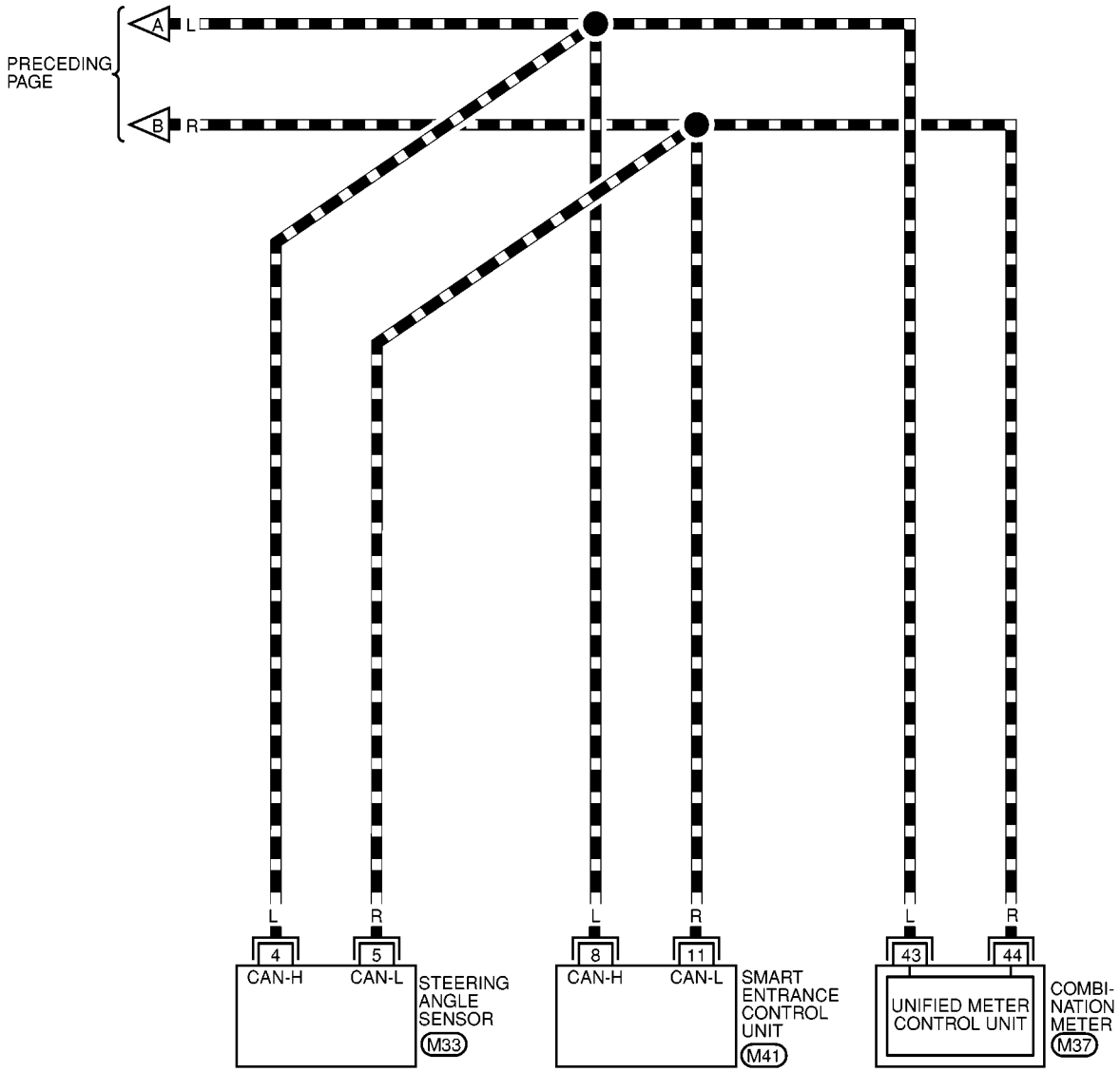


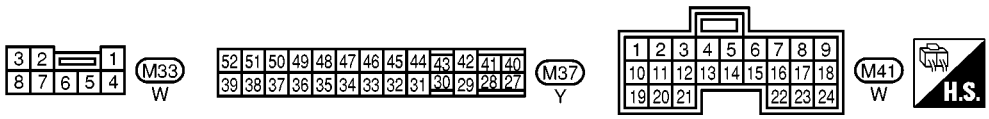
REFER TO THE FOLLOWING.
F102 , F103 -ELECTRICAL UNITS

MKWA0367E

LAN-CAN-18

: DATA LINE





MKWA0368E

Work Flow

EKS004VF

1. Print all the data of “SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE”, “CVT”, “ABS”, and “SMART ENTRANCE” displayed on CONSULT-II. Refer to EC-1083, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) or EC-1505, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) for “ENGINE” and Refer to CVT-118, "DTC U1000 CAN COMMUNICATION LINE" (EURO-OBD) or CVT-201, "CAN COMMUNICATION LINE" (ALL) for “CVT”. Refer to BRC-107, "Inspection 15 CAN Communication Circuit, ESP/TCS/ABS Control Unit and Steering Angle Sensor" for “ABS”. Refer to BCS-40, "CAN Communication Line Check" for “SMART ENTRANCE”.
2. Attach the printed sheet of “SELF-DIAG RESULTS” and “DATA MONITOR” onto the check sheet. Refer to LAN-183, "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-183, "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-184, "CHECK SHEET RESULTS (EXAMPLE)"

CHECK SHEET

Check sheet table

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 6	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 5	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 3

Symptoms:

Attach copy of
ENGINE
SELF-DIAG RESULTS

Attach copy of
CVT
SELF-DIAG RESULTS

Attach copy of
ABS
SELF-DIAG RESULTS

Attach copy of
SMART ENTRANCE
SELF-DIAG RESULTS

Attach copy of
ENGINE
DATA MONITOR

Attach copy of
CVT
DATA MONITOR

Attach copy of
ABS
DATA MONITOR

Attach copy of
SMART ENTRANCE
DATA MONITOR

PKIA0737E

CHECK SHEET RESULTS (EXAMPLE)

Case 1: Replace ECM

ENGINE	CAN COMM ✔	CAN CIRC 1	–	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 6	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 5	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 3

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2 ✔	CAN CIRC 3 ✔	–	CAN CIRC 6 ✔	CAN CIRC 4 ✔
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 5	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 3

Case 2: Replace TCM

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2 ✔	CAN CIRC 3	–	CAN CIRC 6	CAN CIRC 4
CVT	CAN COMM ✔	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3 ✔	–	CAN CIRC 5	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 3

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 6	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✔	–	CAN CIRC 3 ✔	–	–	CAN CIRC 4 ✔
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 5	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 3

Case 3: Replace ESP/TCS/ABS control unit

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	CAN CIRC 3 ✔	–	CAN CIRC 6	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3 ✔	–	–	CAN CIRC 4
ABS	CAN COMM ✔	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 5	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 3

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 6	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✔	CAN CIRC 3 ✔	–	CAN CIRC 5 ✔	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 3

Case 4: Replace Smart entrance control unit

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 6	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 5	–	–
SMART ENTRANCE	CAN COMM ✔	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 3

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 6	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 5	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✔	–	–	–	–	CAN CIRC 3 ✔

PKIA0738E

Case 5

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	CAN CIRC 3 ✓	–	CAN CIRC 6 ✓	CAN CIRC 4 ✓
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3 ✓	–	–	CAN CIRC 4 ✓
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	CAN CIRC 3 ✓	–	CAN CIRC 5	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	–	–	–	–	CAN CIRC 3

Case 6

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 6 ✓	CAN CIRC 4 ✓
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	CAN CIRC 4 ✓
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 5 ✓	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	–	–	–	–	CAN CIRC 3

Case 7

ENGINE	CAN COMM	CAN CIRC 1 ✓	–	CAN CIRC 2 ✓	CAN CIRC 3 ✓	–	CAN CIRC 6 ✓	CAN CIRC 4 ✓
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	–	CAN CIRC 3	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	CAN CIRC 3	–	CAN CIRC 5	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	–	–	–	–	CAN CIRC 3

Case 8

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2 ✓	CAN CIRC 3	–	CAN CIRC 6	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1 ✓	CAN CIRC 2 ✓	–	CAN CIRC 3 ✓	–	–	CAN CIRC 4 ✓
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3 ✓	–	CAN CIRC 5	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 3

Case 9

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	CAN CIRC 3 ✓	–	CAN CIRC 6	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3 ✓	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1 ✓	CAN CIRC 2 ✓	CAN CIRC 3 ✓	–	CAN CIRC 5 ✓	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 3

Case 10

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 6	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 5 ✓	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 3

Case 11

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 6 ✓	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 5	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1 ✓	CAN CIRC 2 ✓	–	–	–	–	CAN CIRC 3 ✓

PKIA0739E

Case 12

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 6	CAN CIRC 4 ✓
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	CAN CIRC 4 ✓
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 5	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 3 ✓

Case 13

ENGINE	CAN COMM	CAN CIRC 1 ✓	–	CAN CIRC 2 ✓	CAN CIRC 3 ✓	–	CAN CIRC 6 ✓	CAN CIRC 4 ✓
CVT	CAN COMM	CAN CIRC 1 ✓	CAN CIRC 2 ✓	–	CAN CIRC 3 ✓	–	–	CAN CIRC 4 ✓
ABS	CAN COMM	CAN CIRC 1 ✓	CAN CIRC 2 ✓	CAN CIRC 3 ✓	–	CAN CIRC 5 ✓	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1 ✓	CAN CIRC 2 ✓	–	–	–	–	CAN CIRC 3 ✓

PKIA0740E

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

INSPECTION

Proceed trouble diagnosis according to the check sheet results (example).
Case 1:Replace ECM.
Case 2:Replace TCM.
Case 3:Replace ESP/TCS/ABS control unit.
Case 4:Replace Smart entrance control unit.
Case 5:Check Harness between TCM and Data link connector. Refer to LAN-186, "Circuit Check Between TCM and Data Link Connector"
Case 6:Check Harness between Data link connector and Smart entrance control unit. Refer to LAN-187, "Circuit Check Between Data Link Connector and Smart Entrance Control Unit"
Case 7:Check ECM Circuit. Refer to LAN-188, "ECM Circuit Check"
Case 8:Check TCM Circuit. Refer to LAN-189, "TCM Circuit Check"
Case 9:Check ESP/TCS/ABS control unit Circuit. Refer to LAN-189, "ESP/TCS/ABS Control Unit Circuit Check"
Case 10:Check Steering angle sensor Circuit. Refer to LAN-190, "Steering Angle Sensor Circuit Check"
Case 11:Check Smart entrance control unit Circuit. Refer to LAN-190, "Smart Entrance Control Unit Circuit Check"
Case 12:Check Combination meter Circuit. Refer to LAN-191, "Combination Meter Circuit Check"
Case 13:Check CAN communication Circuit. Refer to LAN-191, "CAN Communication Circuit Check"

Circuit Check Between TCM and Data Link Connector

EKS004VS

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, control unit-side and harness-side)

- TCM.
- ESP/TCS/ABS control unit.
- Between TCM and ESP/TCS/ABS control unit.

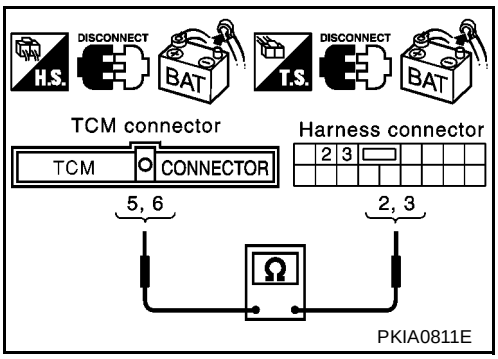
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect TCM connector and harness connector F108.
2. Check continuity between TCM harness connector F103 terminals 5 (L), 6 (R) and harness connector F108 terminals 3 (L), 2 (R).

5(L) – 3(L) : Continuity should exist.
6(R) – 2(R) : Continuity should exist.



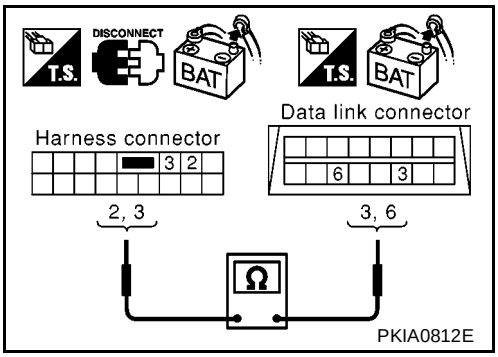
OK or NG

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

3. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between harness connector M79 terminals 3 (L), 2 (R) and Data link connector M10 terminals 6 (L), 3 (R).

3(L) – 6(L) : Continuity should exist.
2(R) – 3(R) : Continuity should exist.



OK or NG

OK >> Reconnect all connectors to perform “SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE”, “CVT”, “ABS”, and “SMART ENTRANCE” displayed on CONSULT-II. Refer to EC-1083, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) or EC-1505, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) for “ENGINE” and Refer to CVT-118, "DTC U1000 CAN COMMUNICATION LINE" (EURO-OBD) or CVT-201, "CAN COMMUNICATION LINE" (ALL) for “CVT”. Refer to BRC-107, "Inspection 15 CAN Communication Circuit, ESP/TCS/ABS Control Unit and Steering Angle Sensor" for “ABS”. Refer to BCS-40, "CAN Communication Line Check" for “SMART ENTRANCE”.
NG >> Repair harness.

Circuit Check Between Data Link Connector and Smart Entrance Control Unit

EKS004VG

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 unit-side, sensor-side and harness-side)

- Smart entrance control unit.
- Steering angle sensor.
- ESP/TCS/ABS control unit.
- Between smart entrance control unit and ESP/TCS/ABS control unit.

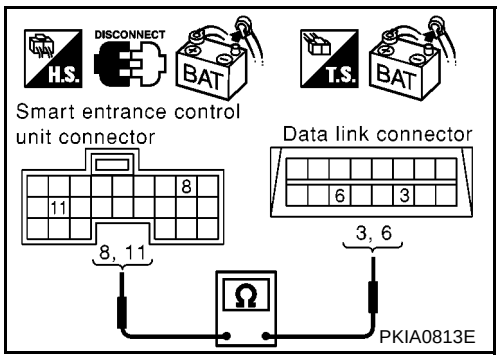
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect smart entrance control unit connector.
2. Check continuity between smart entrance control unit harness connector M41 terminals 8 (L), 11 (R) and Data link connector M10 terminals 6 (L), 3 (R).

8(L) – 6(L) : Continuity should exist.
11(R) – 3(R) : Continuity should exist.



OK or NG

OK >> Reconnect all connectors to perform “SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE”, “CVT”, “ABS”, and “SMART ENTRANCE” displayed on CONSULT-II. Refer to EC-1083, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) or EC-1505, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) for “ENGINE” and Refer to CVT-118, "DTC U1000 CAN COMMUNICATION LINE" (EURO-OBD) or CVT-201, "CAN COMMUNICATION LINE" (ALL) for “CVT”. Refer to BRC-107, "Inspection 15 CAN Communication Circuit, ESP/TCS/ABS Control Unit and Steering Angle Sensor" for “ABS”. Refer to BCS-40, "CAN Communication Line Check" for “SMART ENTRANCE”.

NG >> Repair harness.

ECM Circuit Check

EKS004VH

1. CHECK CONNECTOR

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

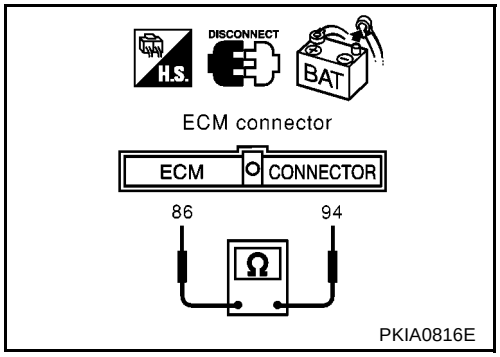
OK or NG

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 F102 terminals 94(L) and 86(R).

94(L) – 86(R) : Approx. 108 – 132Ω



OK or NG

OK >> Replace ECM.
NG >> Repair harness between TCM and ECM.

TCM Circuit Check

EKS004VT

1. CHECK CONNECTOR

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

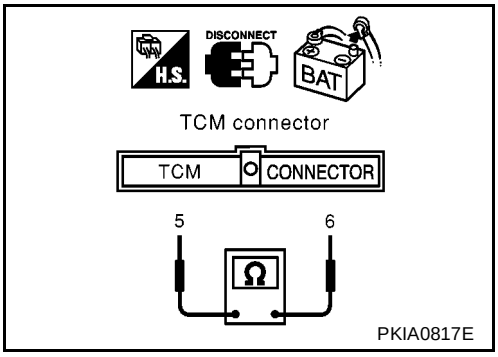
OK or NG

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 F103 terminals 5(L) and 6(R).

5(L) – 6(R) : Approx. 54 – 66Ω



OK or NG

OK >> Replace TCM.
NG >> Repair harness between TCM and ECM.

ESP/TCS/ABS Control Unit Circuit Check

EKS004VI

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 unit-side and harness-side)

- ESP/TCS/ABS control unit.
- Harness connector B102.
- Harness connector M89.

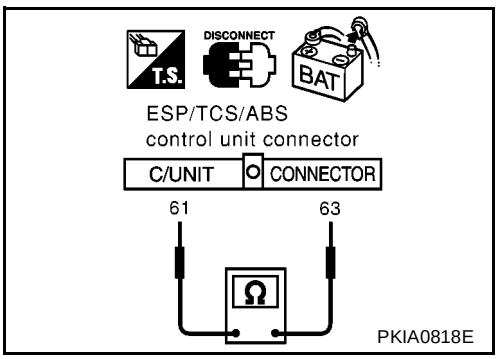
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ESP/TCS/ABS control unit connector.
2. Check resistance between ESP/TCS/ABS control unit harness connector B109 terminals 61(L) and 63(R).

61(L) – 63(R) : Approx. 54 – 66Ω



OK or NG

OK >> Replace ESP/TCS/ABS control unit.
NG >> Repair harness between Data link connector and ESP/TCS/ABS control unit.

Steering Angle Sensor Circuit Check

EKS004VJ

1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check terminals and connector of steering angle sensor for damage, bend and loose connection. (sensor-side and harness-side)

OK or NG

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

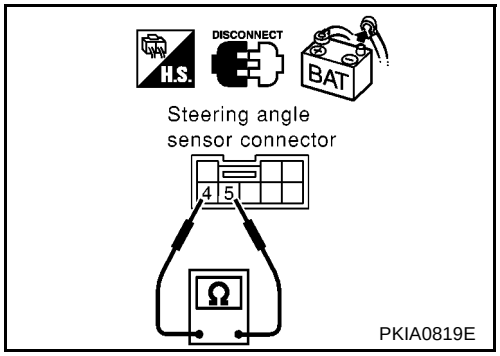
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect steering angle sensor connector.
2. Check resistance between steering angle sensor harness connector M33 terminals 4(L) and 5(R).

4(L) – 5(R) : Approx. 54 – 66Ω

OK or NG

OK >> Replace steering angle sensor.
NG >> Repair harness between steering angle sensor and smart entrance control unit.



Smart Entrance Control Unit Circuit Check

EKS004VK

1. CHECK CONNECTOR

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

OK or NG

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

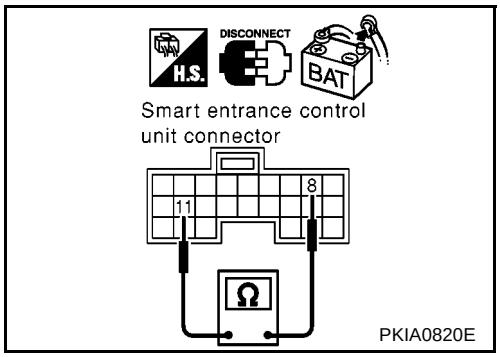
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect smart entrance control unit connector.
2. Check resistance between smart entrance control unit harness connector M41 terminals 8(L) and 11(R).

8(L) – 11(R) : Approx. 54 – 66Ω

OK or NG

OK >> Replace smart entrance control unit.
NG >> Repair harness between steering angle sensor and smart entrance control unit.



Combination Meter Circuit Check

EKS004VL

1. CHECK CONNECTOR

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

OK or NG

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

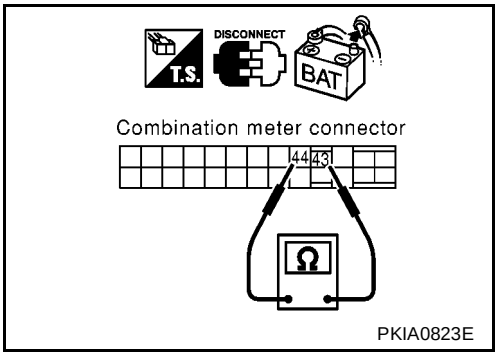
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect combination meter connector.
2. Check resistance between combination meter harness connector M37 terminals 43(L) and 44(R).

43(L) – 44(R) : Approx. 108 – 132Ω

OK or NG

OK >> Replace combination meter.
NG >> Repair harness between smart entrance control unit and combination meter.



CAN Communication Circuit Check

EKS004VM

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. (meter-side, control unit-side, sensor-side, control module-side and harness-side)

- Combination meter.
- Smart entrance control unit.
- Steering angle sensor.
- ESP/TCS/ABS control unit.
- TCM.
- ECM.
- Between ESP/TCS/ABS control unit and ECM.

OK or NG

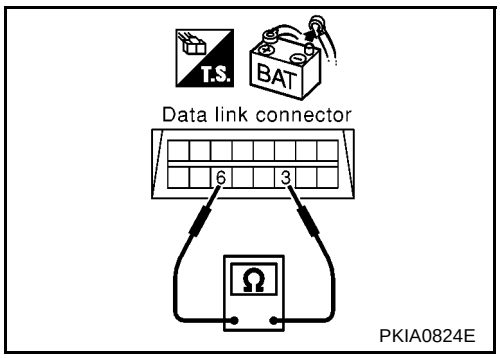
OK >> GO TO 2.
NG >> Repair terminal or connector.

2. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect the following connectors.
- Combination meter connector.
- Smart entrance control unit connector.
- Steering angle sensor connector.
- Harness connector M89.
- Harness connector M79.

2. Check continuity between Data link connector M10 terminals 6 (L) and 3(R).

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



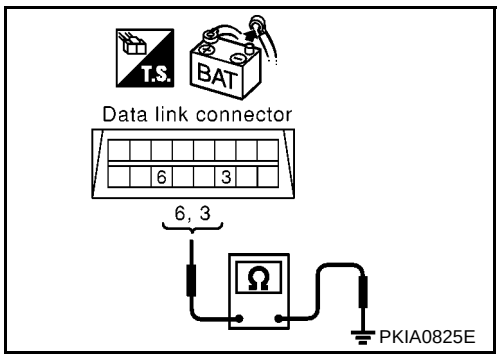
OK or NG

OK >> GO TO 3.
NG >>
- Repair harness between smart entrance control unit and combination meter.
- Repair harness between smart entrance control unit and steering angle sensor.
- Repair harness between Data link connector and steering angle sensor.
- Repair harness between harness connector M89 and harness connector M79.

3. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between Data link connector M10 terminals 6 (L), 3(R) and ground.

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



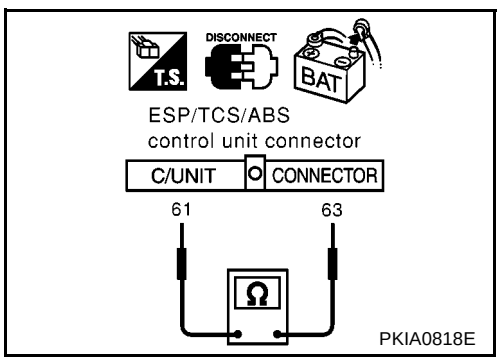
OK or NG

OK >> GO TO 4.
NG >>
- Repair harness between smart entrance control unit and combination meter.
- Repair harness between smart entrance control unit and steering angle sensor.
- Repair harness between Data link connector and steering angle sensor.
- Repair harness between harness connector M89 and harness connector M79.

4. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect ESP/TCS/ABS control unit connector.
2. Check continuity between ESP/TCS/ABS control unit harness connector B109 terminals 61 (L) and 63(R).

61(L) – 63(R) : Continuity should not exist.



OK or NG

OK >> GO TO 5.
NG >> Repair harness between ESP/TCS/ABS control unit and harness connector B102.

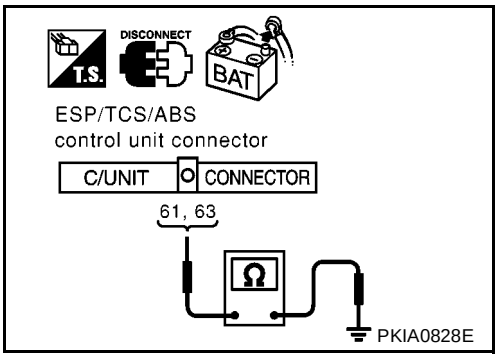
5. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ESP/TCS/ABS control unit harness connector B109 terminals 61 (L), 63 (R) and ground.

61(L) – ground : Continuity should not exist.
63(R) – ground : Continuity should not exist.

OK or NG

OK >> GO TO 6.
NG >> Repair harness between ESP/TCS/ABS control unit and harness connector B102.



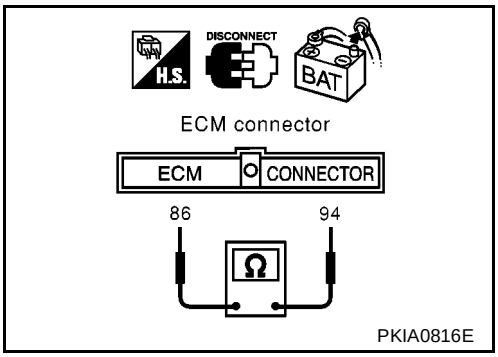
6. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect ECM connector and TCM connector.
2. Check continuity between ECM harness connector F102 terminals 94 (L) and 86(R).

94(L) – 86(R) : Continuity should not exist.

OK or NG

OK >> GO TO 7.
NG >>
- Repair harness between ECM and harness connector F108.
- Repair harness between TCM and harness connector F108.



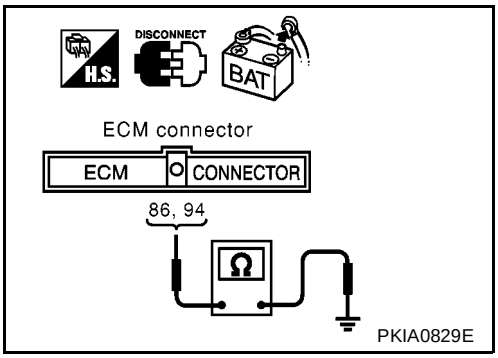
7. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ECM harness connector F102 terminals 94 (L), 86 (R) and ground.

94(L) – ground : Continuity should not exist.
86(R) – ground : Continuity should not exist.

OK or NG

OK >> GO TO 8.
NG >>
- Repair harness between ECM and harness connector F108.
- Repair harness between TCM and harness connector F108.



8. ECM / COMBINATION METER INTERNAL CIRCUIT INSPECTION

Check components inspection. Refer to LAN-194, "ECM / COMBINATION METER INTERNAL CIRCUIT INSPECTION"

OK or NG

OK >> Reconnect all connectors to perform “SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE”, “CVT”, “ABS”, and “SMART ENTRANCE” displayed on CONSULT-II. Refer to EC-1083, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) or EC-1505, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) for “ENGINE” and Refer to CVT-118, "DTC U1000 CAN COMMUNICATION LINE" (EURO-OBD) or CVT-201, "CAN COMMUNICATION LINE" (ALL) for “CVT”. Refer to BRC-107, "Inspection 15 CAN Communication Circuit, ESP/TCS/ABS Control Unit and Steering Angle Sensor" for “ABS”. Refer to BCS-40, "CAN Communication Line Check" for “SMART ENTRANCE”.
NG >> Replace ECM and/or Combination meter.

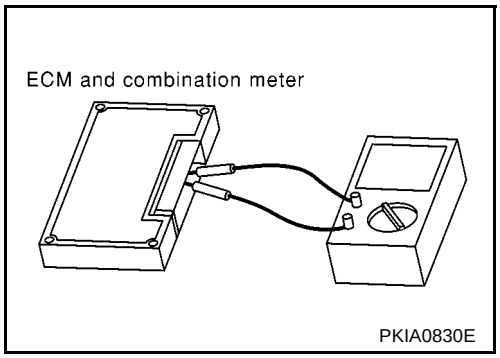
Component Inspection

EKS004VN

ECM / COMBINATION METER INTERNAL CIRCUIT INSPECTION

- Remove ECM and Combination meter from vehicle.
- Check resistance between ECM terminals 94 and 86.
- Check resistance between Combination meter terminals 43 and 44.

Unit	Terminal	Resistance value (Ω)
ECM	94 – 86	Approx. 108 - 132
Combination meter	43 – 44	



CAN SYSTEM (TYPE 9)

PFP:23710

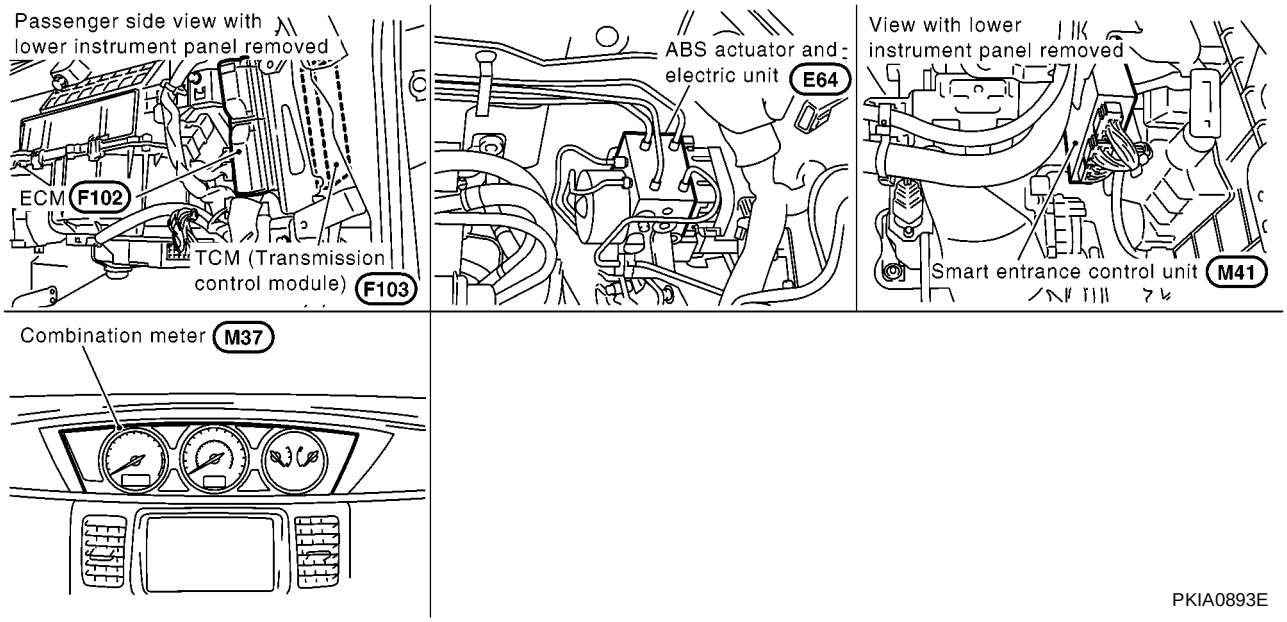
System Description

EKS004UL

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

EKS004UM

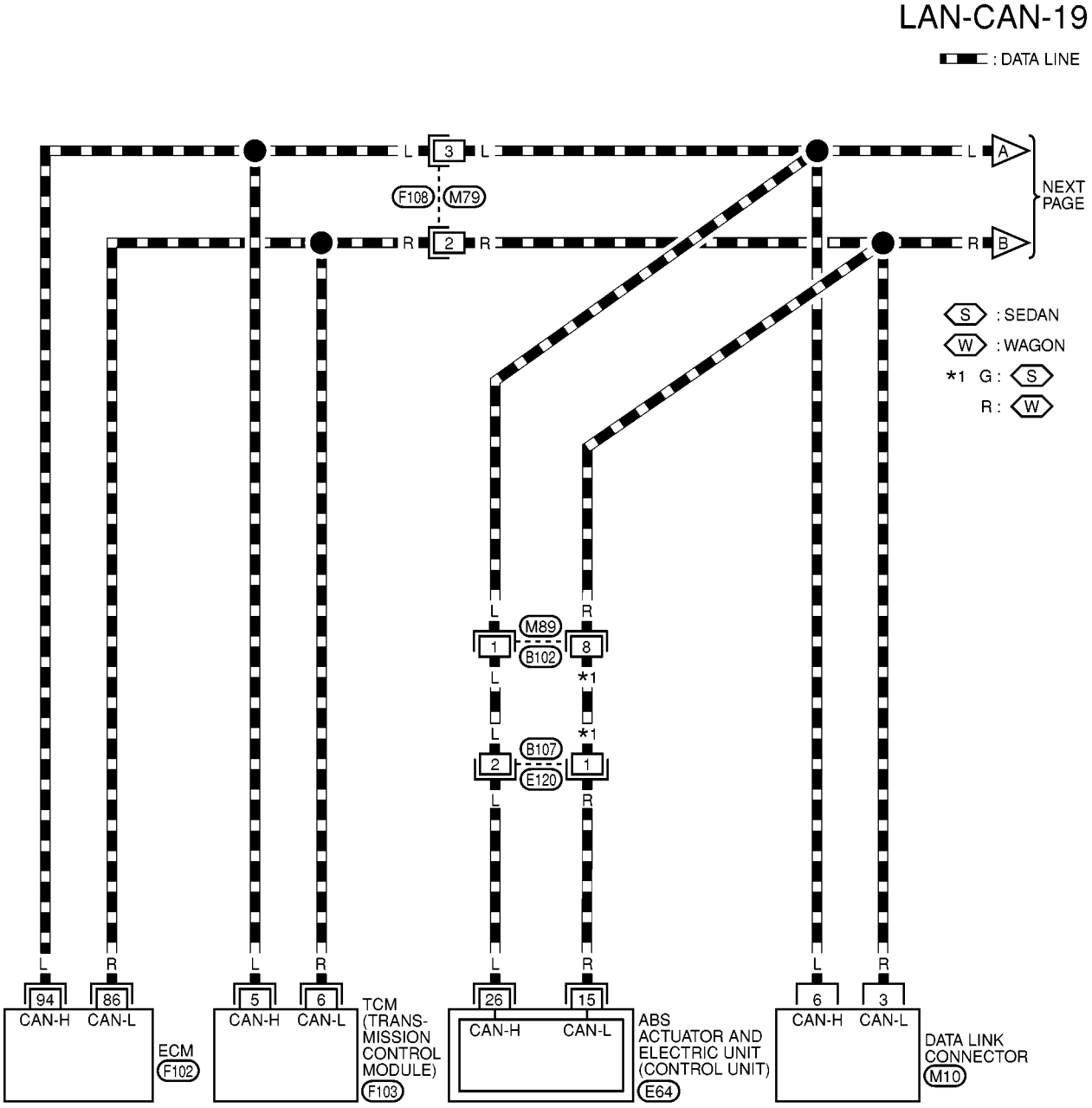


PKIA0893E

Wiring Diagram — CAN —

EKS004UN

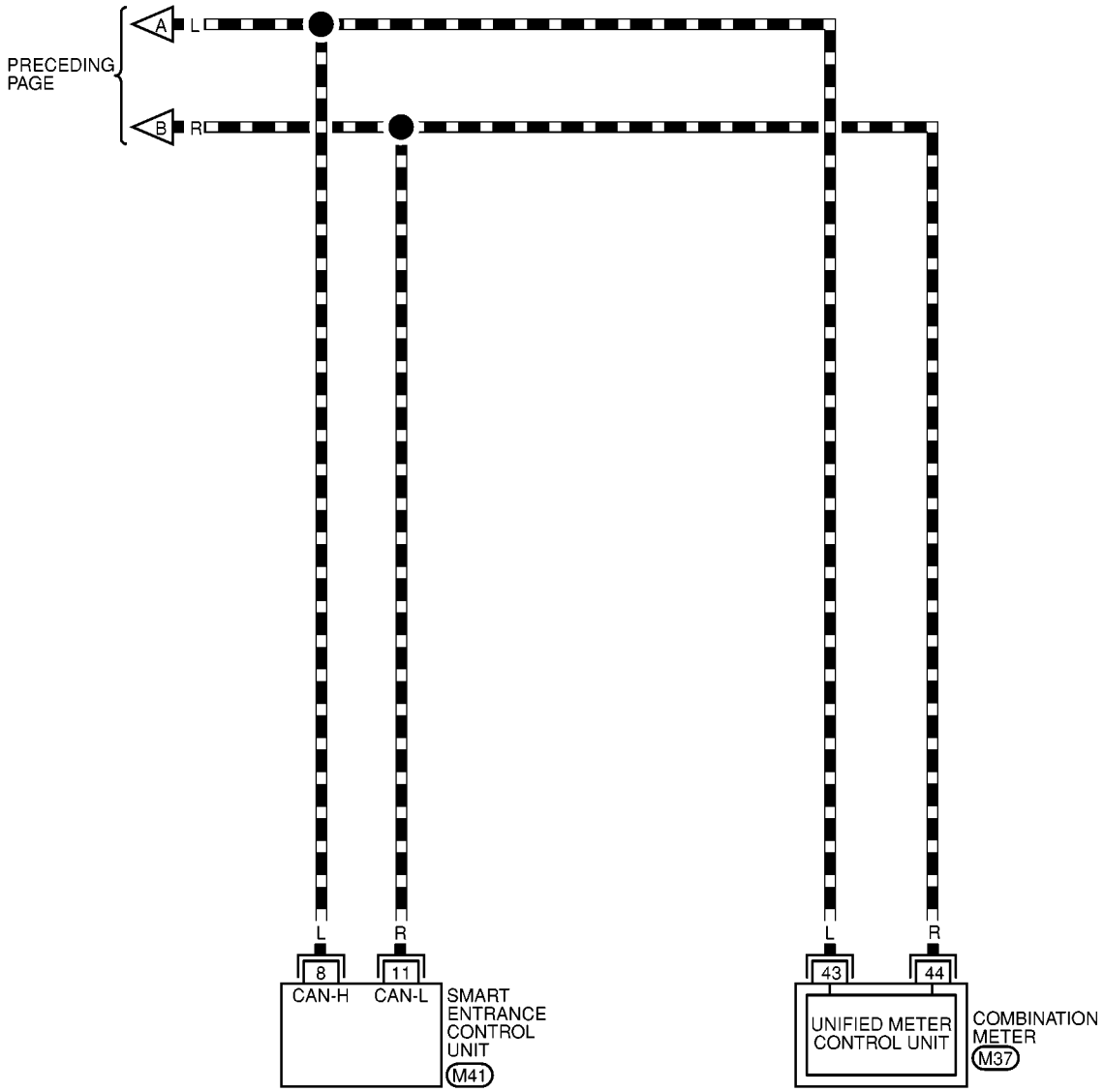
LAN-CAN-19

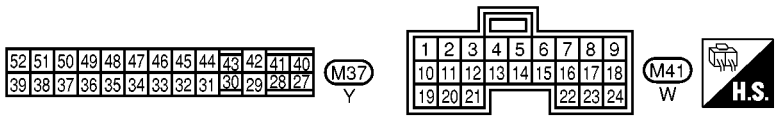


MKWA0369E

LAN-CAN-20

: DATA LINE





MKWA0370E

Work Flow

EKS004UO

1. Print all the data of “SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE”, “CVT”, “ABS”, and “SMART ENTRANCE” displayed on CONSULT-II. Refer to EC-1083, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) or EC-1505, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) for “ENGINE” and Refer to CVT-118, "DTC U1000 CAN COMMUNICATION LINE" (EURO-OBD) or CVT-201, "CAN COMMUNICATION LINE" (ALL) for “CVT”. Refer to BRC-33, "CAN Communication Circuit" for “ABS”. Refer to BCS-40, "CAN Communication Line Check" for “SMART ENTRANCE”.
2. Attach the printed sheet of “SELF-DIAG RESULTS” and “DATA MONITOR” onto the check sheet. Refer to LAN-199, "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-199, "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-200, "CHECK SHEET RESULTS (EXAMPLE)"

CHECK SHEET

Check sheet table

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 6	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 3

Symptoms:

Attach copy of
ENGINE
SELF-DIAG RESULTS

Attach copy of
CVT
SELF-DIAG RESULTS

Attach copy of
ABS
SELF-DIAG RESULTS

Attach copy of
SMART ENTRANCE
SELF-DIAG RESULTS

Attach copy of
ENGINE
DATA MONITOR

Attach copy of
CVT
DATA MONITOR

Attach copy of
ABS
DATA MONITOR

Attach copy of
SMART ENTRANCE
DATA MONITOR

PKIA0741E

CHECK SHEET RESULTS (EXAMPLE)

Case 1: Replace ECM

ENGINE	CAN COMM ✓	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 6	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 3

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2 ✓	–	CAN CIRC 6 ✓	CAN CIRC 4 ✓
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 3

Case 2: Replace TCM

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2 ✓	–	CAN CIRC 6	CAN CIRC 4
CVT	CAN COMM ✓	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 3

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 6	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	–	CAN CIRC 3 ✓	–	CAN CIRC 4 ✓
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 3

Case 3: Replace ABS actuator and electric unit (control unit)

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 6	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3 ✓	–	CAN CIRC 4
ABS	CAN COMM ✓	CAN CIRC 1	CAN CIRC 2	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 3

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 6	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 3

Case 4: Replace Smart entrance control unit

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 6	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–
SMART ENTRANCE	CAN COMM ✓	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 3

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 6	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	–	–	–	CAN CIRC 3 ✓

Case 5

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 6 ✓	CAN CIRC 4 ✓
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3 ✓	–	CAN CIRC 4 ✓
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	–	–	–	CAN CIRC 3

PKIA0742E

Case 6

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 6	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 3

Case 7

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 6	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 3

Case 8

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 6	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 3

Case 9

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 6	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 3

Case 10

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 6	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 3

Case 11

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 6	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 3

Case 12

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 6	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 3

PKIA0743E

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

INSPECTION

Proceed trouble diagnosis according to the check sheet results (example).
Case 1:Replace ECM.
Case 2:Replace TCM.
Case 3:Replace ABS actuator and electric unit (control unit).
Case 4:Replace Smart entrance control unit.
Case 5:Check Harness between TCM and Data link connector. Refer to LAN-202, "Circuit Check Between TCM and Data Link Connector"
Case 6:Check Harness between Data link connector and Smart entrance control unit. Refer to LAN-203, "Circuit Check Between Data Link Connector and Smart Entrance Control Unit"
Case 7:Check ECM Circuit. Refer to LAN-204, "ECM Circuit Check"
Case 8:Check TCM Circuit. Refer to LAN-204, "TCM Circuit Check"
Case 9:Check ABS actuator and electric unit (control unit) Circuit. Refer to LAN-205, "ABS Actuator and Electric Unit (control unit) Circuit Check"
Case 10:Check Smart entrance control unit Circuit. Refer to LAN-205, "Smart Entrance Control Unit Circuit Check"
Case 11:Check Combination meter Circuit. Refer to LAN-206, "Combination Meter Circuit Check"
Case 12:Check CAN communication Circuit. Refer to LAN-206, "CAN Communication Circuit Check"

Circuit Check Between TCM and Data Link Connector

EKS004UP

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, control unit-side and harness-side)

- TCM.
- ABS actuator and electric unit (control unit).
- Between TCM and ABS actuator and electric unit (control unit).

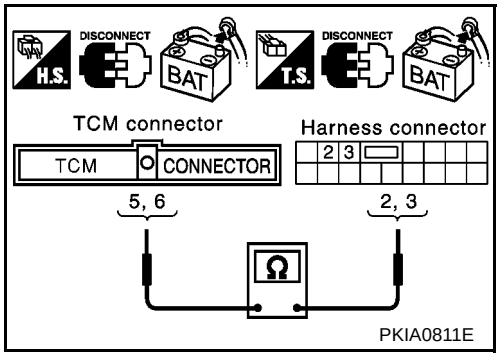
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect TCM connector and harness connector F108.
2. Check continuity between TCM harness connector F103 terminals 5 (L), 6 (R) and harness connector F108 terminals 3 (L), 2 (R).

5(L) – 3(L) : Continuity should exist.
6(R) – 2(R) : Continuity should exist.



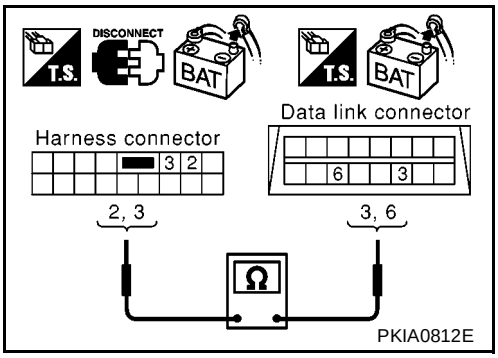
OK or NG

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

3. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between harness connector M79 terminals 3 (L), 2 (R) and Data link connector M10 terminals 6 (L), 3 (R).

3(L) – 6(L) : Continuity should exist.
2(R) – 3(R) : Continuity should exist.



OK or NG

OK >> Reconnect all connectors to perform “SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE”, “CVT”, “ABS”, and “SMART ENTRANCE” displayed on CONSULT-II. Refer to EC-1083, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) or EC-1505, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) for “ENGINE” and Refer to CVT-118, "DTC U1000 CAN COMMUNICATION LINE" (EURO-OBD) or CVT-201, "CAN COMMUNICATION LINE" (ALL) for “CVT”. Refer to BRC-33, "CAN Communication Circuit" for “ABS”. Refer to BCS-40, "CAN Communication Line Check" for “SMART ENTRANCE”.

NG >> Repair harness.

Circuit Check Between Data Link Connector and Smart Entrance Control Unit

EKS004UQ

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 unit-side and harness-side)

- Smart entrance control unit.
- ABS actuator and electric unit (control unit).
- Between smart entrance control unit and ABS actuator and electric unit (control unit).

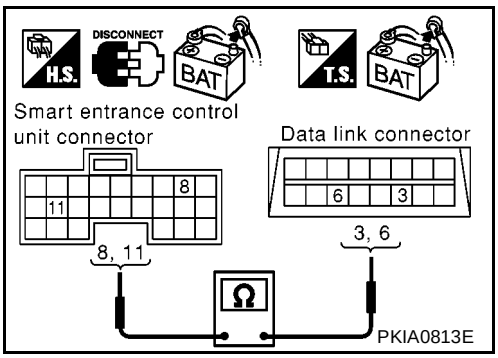
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect smart entrance control unit connector.
2. Check continuity between smart entrance control unit harness connector M41 terminals 8 (L), 11 (R) and Data link connector M10 terminals 6 (L), 3 (R).

8(L) – 6(L) : Continuity should exist.
11(R) – 3(R) : Continuity should exist.



OK or NG

OK >> Reconnect all connectors to perform “SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE”, “CVT”, “ABS”, and “SMART ENTRANCE” displayed on CONSULT-II. Refer to EC-1083, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) or EC-1505, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) for “ENGINE” and Refer to CVT-118, "DTC U1000 CAN COMMUNICATION LINE" (EURO-OBD) or CVT-201, "CAN COMMUNICATION LINE" (ALL) for “CVT”. Refer to BRC-33, "CAN Communication Circuit" for “ABS”. Refer to BCS-40, "CAN Communication Line Check" for “SMART ENTRANCE”.

NG >> Repair harness.

ECM Circuit Check

EKS004UR

1. CHECK CONNECTOR

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

OK or NG

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

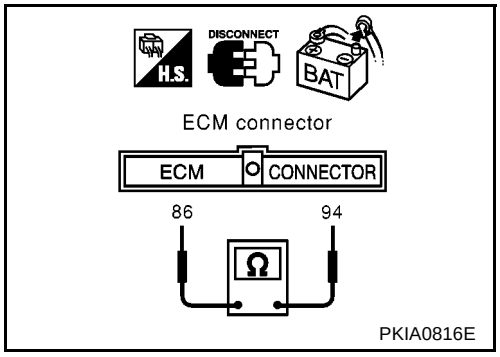
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ECM connector.
2. Check resistance between ECM harness connector F102 terminals 94(L) and 86(R).

94(L) – 86(R) : Approx. 108 – 132Ω

OK or NG

OK >> Replace ECM.
NG >> Repair harness between TCM and ECM.



TCM Circuit Check

EKS004US

1. CHECK CONNECTOR

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

OK or NG

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

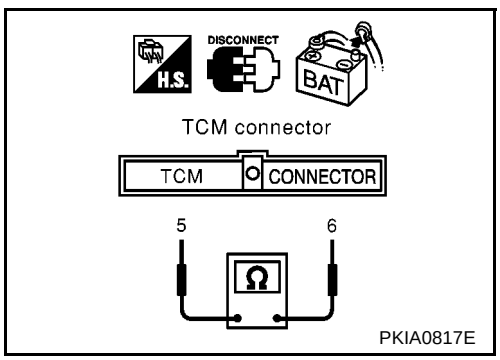
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect TCM connector.
2. Check resistance between TCM harness connector F103 terminals 5(L) and 6(R).

5(L) – 6(R) : Approx. 54 – 66Ω

OK or NG

OK >> Replace TCM.
NG >> Repair harness between TCM and ECM.



ABS Actuator and Electric Unit (control unit) Circuit Check

EKS004UT

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 unit-side and harness-side)

- ABS actuator and electric unit (control unit).
- Harness connector E120.
- Harness connector B107.
- Harness connector B102.
- Harness connector M89.

OK or NG

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

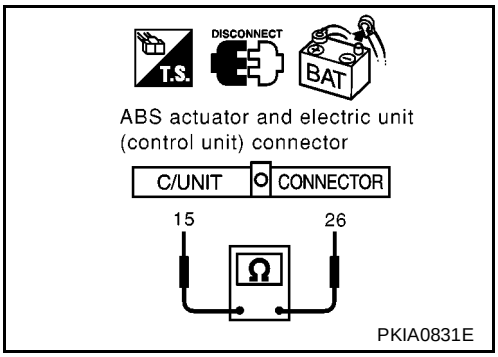
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector.
2. Check resistance between ABS actuator and electric unit (control unit) harness connector E64 terminals 26(L) and 15(R).

26(L) – 15(R) : Approx. 54 – 66Ω

OK or NG

OK >> Replace ABS actuator and electric unit (control unit).
NG >> Repair harness between Data link connector and ABS actuator and electric unit (control unit).



Smart Entrance Control Unit Circuit Check

EKS004UU

1. CHECK CONNECTOR

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

OK or NG

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

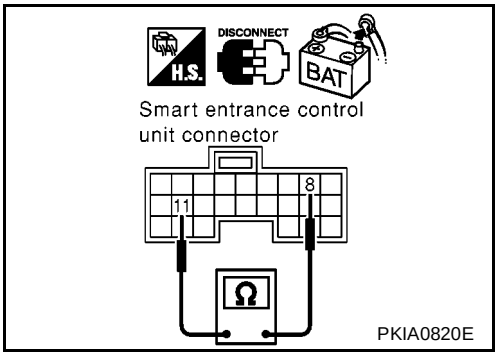
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect smart entrance control unit connector.
2. Check resistance between smart entrance control unit harness connector M41 terminals 8(L) and 11(R).

8(L) – 11(R) : Approx. 54 – 66Ω

OK or NG

OK >> Replace smart entrance control unit.
NG >> Repair harness between Data link connector and smart entrance control unit.



Combination Meter Circuit Check

EKS004UV

1. CHECK CONNECTOR

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

OK or NG

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

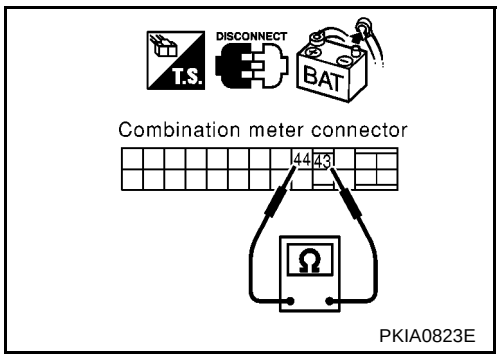
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect combination meter connector.
2. Check resistance between combination meter harness connector M37 terminals 43(L) and 44(R).

43(L) – 44(R) : Approx. 108 – 132Ω

OK or NG

OK >> Replace combination meter.
NG >> Repair harness between smart entrance control unit and combination meter.



CAN Communication Circuit Check

EKS004UW

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. (meter-side, control unit-side, control module-side and harness-side)

- Combination meter.
- Smart entrance control unit.
- ABS actuator and electric unit (control unit).
- TCM.
- ECM.
- Between ABS actuator and electric unit (control unit) and ECM.

OK or NG

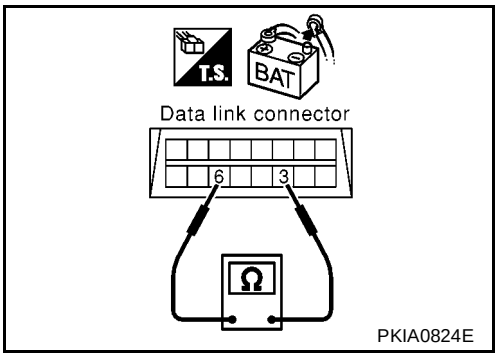
OK >> GO TO 2.
NG >> Repair terminal or connector.

2. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect the following connectors.
- Combination meter connector.
- Smart entrance control unit connector.
- Harness connector M89.
- Harness connector M79.

2. Check continuity between Data link connector M10 terminals 6 (L) and 3(R).

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



OK or NG

OK >> GO TO 3.

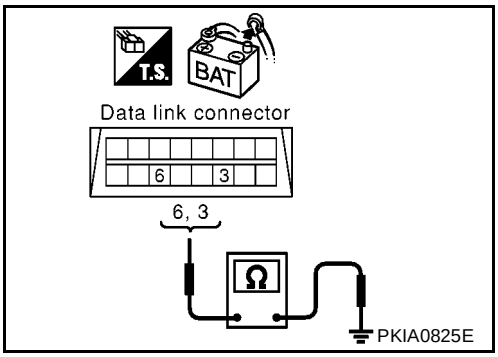
NG >>
- Repair harness between smart entrance control unit and combination meter.
- Repair harness between Data link connector and smart entrance control unit.
- Repair harness between harness connector M89 and harness connector M79.

3. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between Data link connector M10 terminals 6 (L), 3(R) and ground.

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

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



OK or NG

OK >> GO TO 4.

NG >>
- Repair harness between smart entrance control unit and combination meter.
- Repair harness between Data link connector and smart entrance control unit.
- Repair harness between harness connector M89 and harness connector M79.

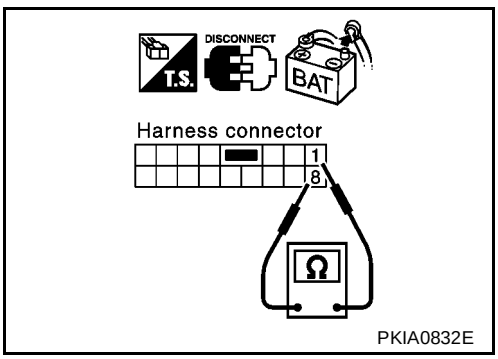
4. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect harness connector B107.
2. Check the following.

- Continuity between harness connector B102 terminals 1 (L) and 8(G).(Sedan models)
- Continuity between harness connector B102 terminals 1 (L) and 8(R).(Wagon models)

1(L) – 8(G) (Sedan models) : Continuity should not exist.

1(L) – 8(R) (Wagon models) : Continuity should not exist.



OK or NG

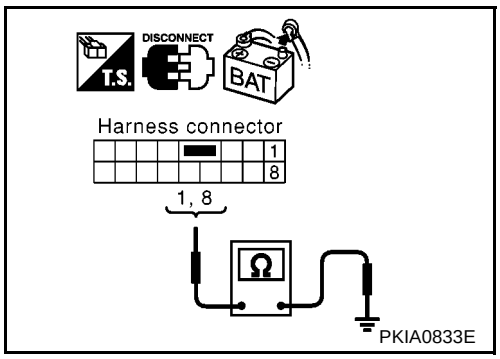
OK >> GO TO 5.

NG >> Repair harness between harness connector B102 and harness connector B107.

5. CHECK HARNESS FOR SHORT CIRCUIT

1. Check the following.

- Continuity between harness connector B102 terminals 1 (L), 8(G) and ground.(Sedan models)
- Continuity between harness connector B102 terminals 1 (L), 8(R) and ground.(Wagon models)



1(L) – ground (Sedan models) : **Continuity should not exist.**

8(G) – ground (Sedan models) : **Continuity should not exist.**

1(L) – ground (Wagon models) : **Continuity should not exist.**

8(R) – ground (Wagon models) : **Continuity should not exist.**

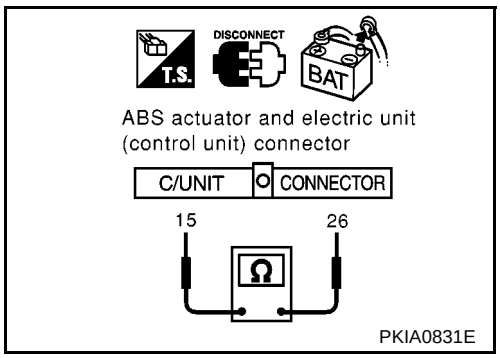
OK or NG

OK >> GO TO 6.
NG >> Repair harness between harness connector B102 and harness connector B107.

6. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector.
2. Check continuity between ABS actuator and electric unit (control unit) harness connector E64 terminals 26 (L) and 15(R).

26(L) – 15(R) : **Continuity should not exist.**



OK or NG

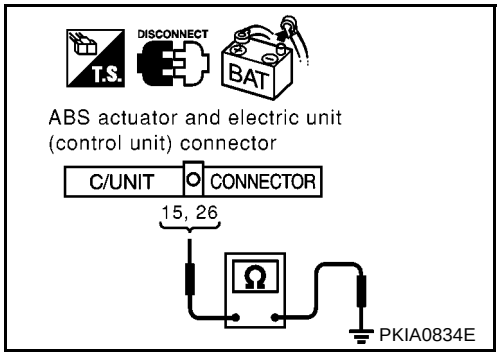
OK >> GO TO 7.
NG >> Repair harness between ABS actuator and electric unit (control unit) and harness connector E120.

7. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ABS actuator and electric unit (control unit) harness connector E64 terminals 26 (L), 15 (R) and ground.

26(L) – ground : **Continuity should not exist.**

15(R) – ground : **Continuity should not exist.**



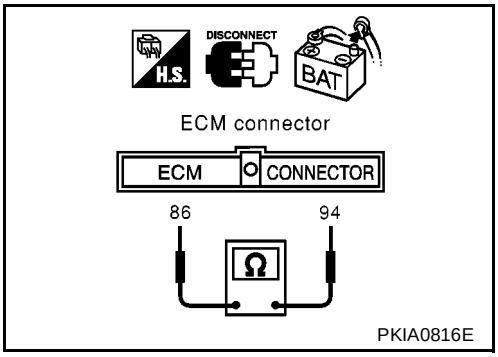
OK or NG

OK >> GO TO 8.
NG >> Repair harness between ABS actuator and electric unit (control unit) and harness connector E120.

8. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect ECM connector and TCM connector.
2. Check continuity between ECM harness connector F102 terminals 94 (L) and 86(R).

94(L) – 86(R) : Continuity should not exist.



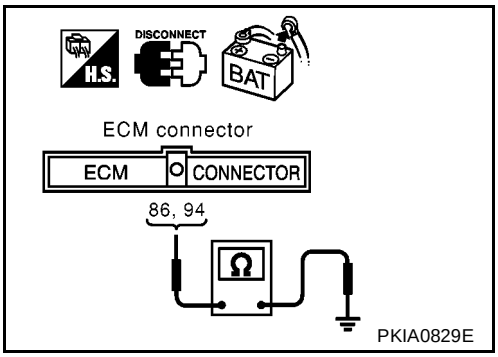
OK or NG

OK >> GO TO 9.
NG >>
- Repair harness between ECM and harness connector F108.
- Repair harness between TCM and harness connector F108.

9. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ECM harness connector F102 terminals 94 (L), 86 (R) and ground.

94(L) – ground : Continuity should not exist.
86(R) – ground : Continuity should not exist.



OK or NG

OK >> GO TO 10.
NG >>
- Repair harness between ECM and harness connector F108.
- Repair harness between TCM and harness connector F108.

10. ECM / COMBINATION METER INTERNAL CIRCUIT INSPECTION

Check components inspection. Refer to LAN-209, "ECM / COMBINATION METER INTERNAL CIRCUIT INSPECTION"

OK or NG

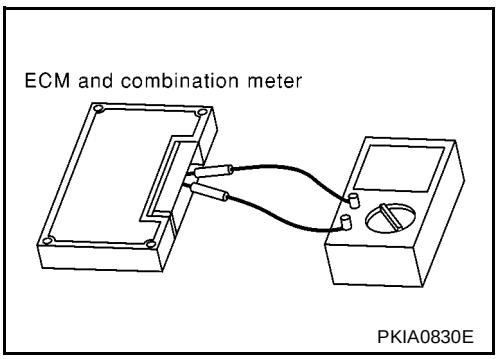
OK >> Reconnect all connectors to perform “SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE”, “CVT”, “ABS”, and “SMART ENTRANCE” displayed on CONSULT-II. Refer to EC-1083, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) or EC-1505, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) for “ENGINE” and Refer to CVT-118, "DTC U1000 CAN COMMUNICATION LINE" (EURO-OBD) or CVT-201, "CAN COMMUNICATION LINE" (ALL) for “CVT”. Refer to BRC-33, "CAN Communication Circuit" for “ABS”. Refer to BCS-40, "CAN Communication Line Check" for “SMART ENTRANCE”.
NG >> Replace ECM and/or Combination meter.

Component Inspection

EKS004UX

ECM / COMBINATION METER INTERNAL CIRCUIT INSPECTION

- Remove ECM and Combination meter from vehicle.
- Check resistance between ECM terminals 94 and 86.
- Check resistance between Combination meter terminals 43 and 44.



Unit	Terminal	Resistance value (Ω)
ECM	94 – 86	Approx. 108 - 132
Combination meter	43 – 44	

CAN SYSTEM (TYPE 10)

PFP:23710

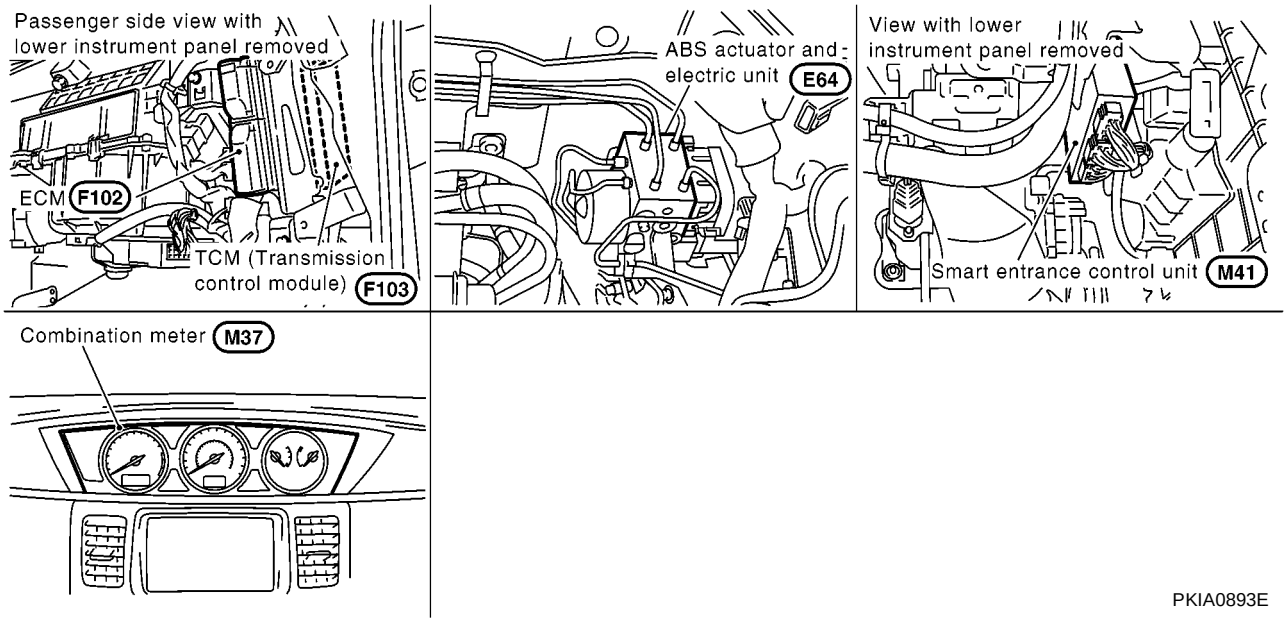
System Description

EKS004U7

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.

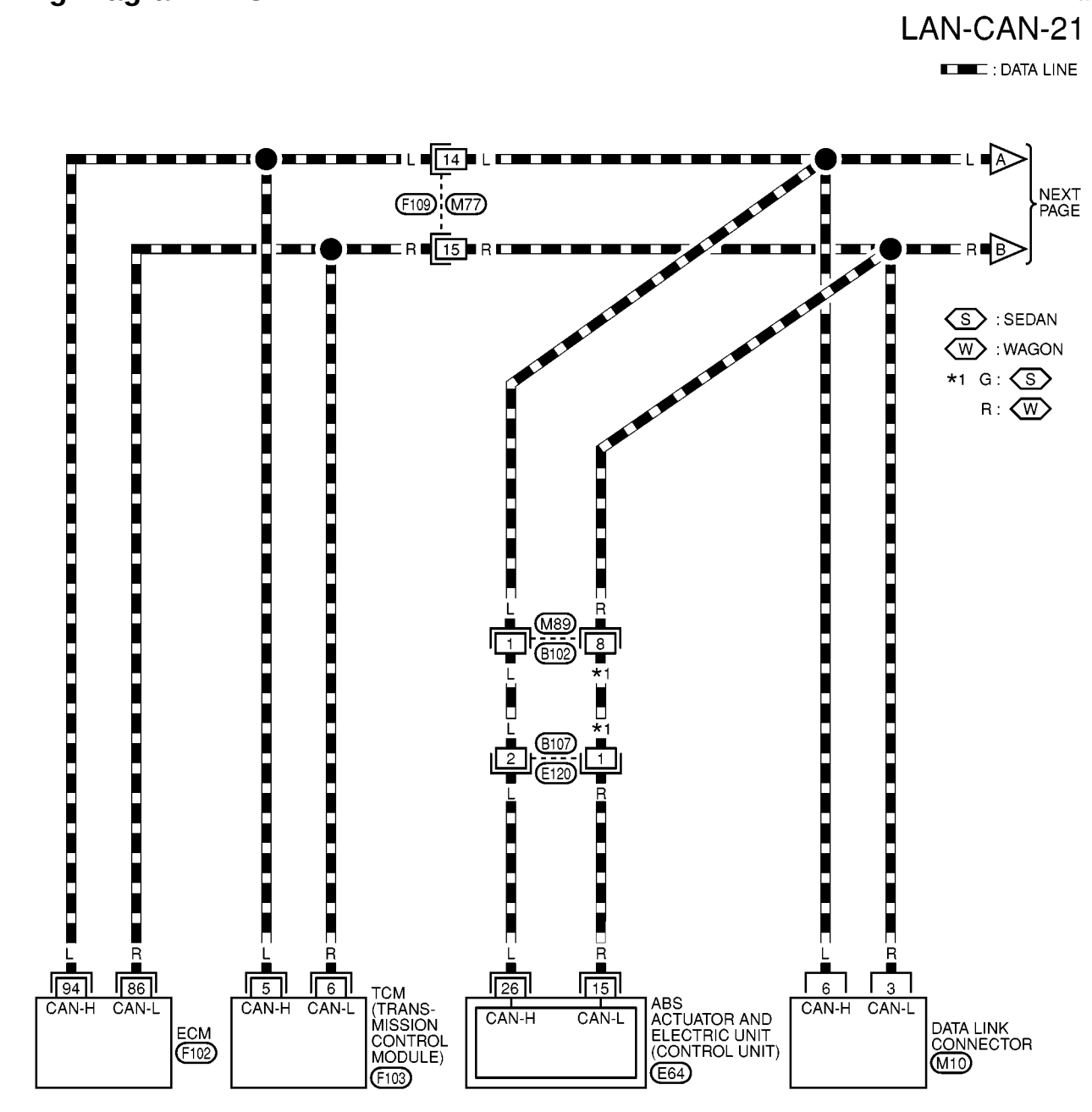
Component Parts and Harness Connector Location

EKS004U8



Wiring Diagram — CAN —

EKS004U9

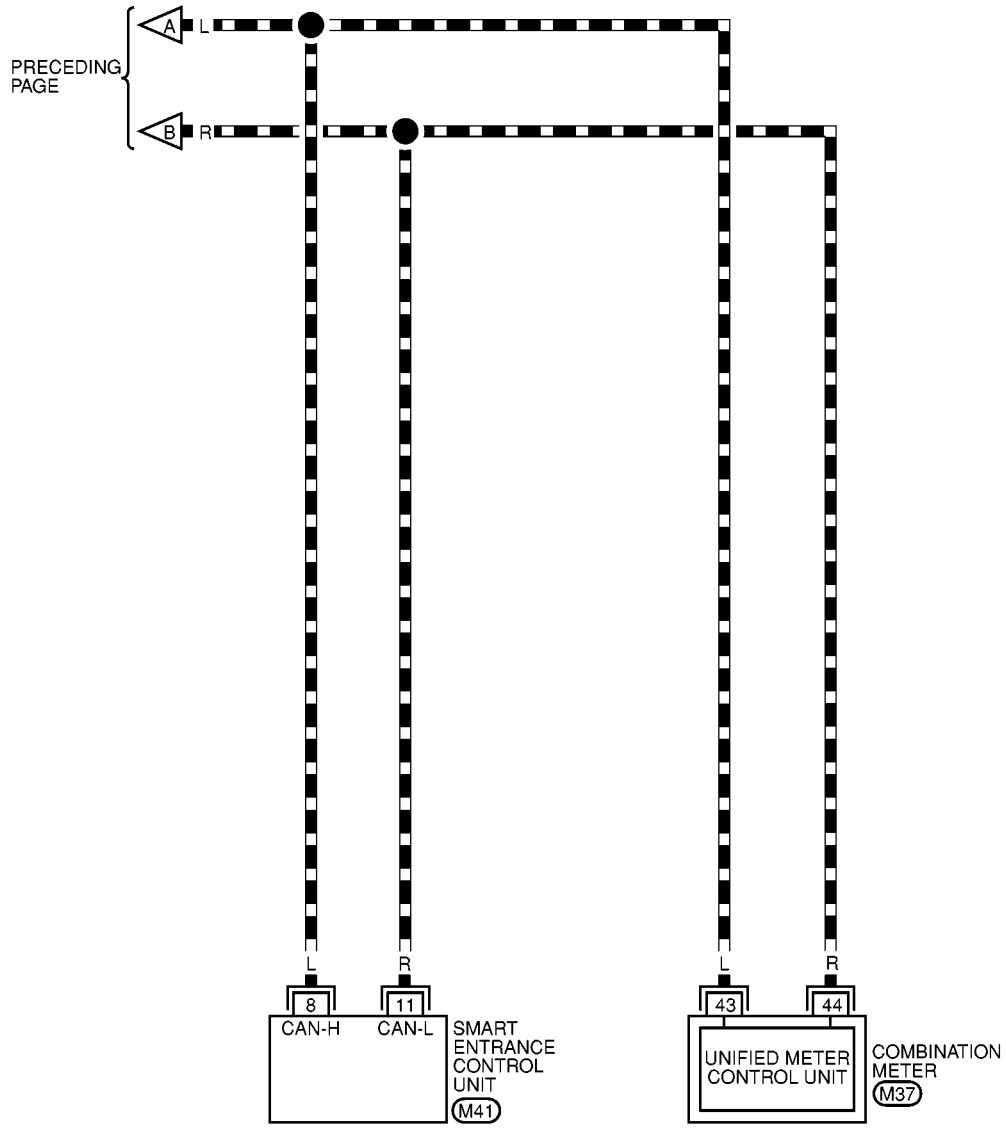


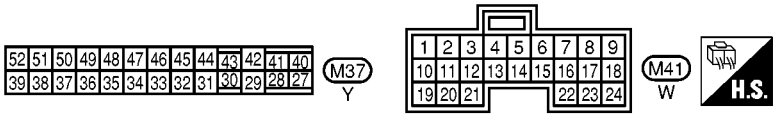
REFER TO THE FOLLOWING.
F102 , F103 -ELECTRICAL UNITS

MKWA0371E

LAN-CAN-22

: DATA LINE





MKWA0372E

Work Flow

EKS004UA

1. Print all the data of “SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE”, “A/T”, “ABS”, and “SMART ENTRANCE” displayed on CONSULT-II. Refer to EC-150, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) or EC-663, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) for “ENGINE” and Refer to AT-190, "DTC U1000 CAN COMMUNICATION LINE" (EURO-OBD) or AT-393, "CAN COMMUNICATION LINE" (ALL) for “A/T”. Refer to BRC-33, "CAN Communication Circuit" for “ABS”. Refer to BCS-40, "CAN Communication Line Check" for “SMART ENTRANCE”.
2. Attach the printed sheet of “SELF-DIAG RESULTS” and “DATA MONITOR” onto the check sheet. Refer to LAN-214, "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-214, "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-215, "CHECK SHEET RESULTS (EXAMPLE)"

CHECK SHEET

Check sheet table

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 6	CAN CIRC 4
A/T	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 3

Symptoms:

Attach copy of
ENGINE
SELF-DIAG RESULTS

Attach copy of
A/T
SELF-DIAG RESULTS

Attach copy of
ABS
SELF-DIAG RESULTS

Attach copy of
SMART ENTRANCE
SELF-DIAG RESULTS

Attach copy of
ENGINE
DATA MONITOR

Attach copy of
A/T
DATA MONITOR

Attach copy of
ABS
DATA MONITOR

Attach copy of
SMART ENTRANCE
DATA MONITOR

PKIA0744E

CHECK SHEET RESULTS (EXAMPLE)

Case 1: Replace ECM

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 6	CAN CIRC 4
A/T	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 3

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 6	CAN CIRC 4
A/T	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 3

Case 2: Replace TCM

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 6	CAN CIRC 4
A/T	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 3

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 6	CAN CIRC 4
A/T	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 3

Case 3: Replace ABS actuator and electric unit (control unit)

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 6	CAN CIRC 4
A/T	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 3

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 6	CAN CIRC 4
A/T	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 3

Case 4: Replace Smart entrance control unit

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 6	CAN CIRC 4
A/T	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 3

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 6	CAN CIRC 4
A/T	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 3

Case 5

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 6	CAN CIRC 4
A/T	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 3

PKIA0745E

Case 6

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 6	CAN CIRC 4
A/T	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 3

Case 7

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 6	CAN CIRC 4
A/T	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 3

Case 8

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 6	CAN CIRC 4
A/T	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 3

Case 9

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 6	CAN CIRC 4
A/T	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 3

Case 10

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 6	CAN CIRC 4
A/T	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 3

Case 11

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 6	CAN CIRC 4
A/T	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 3

Case 12

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 6	CAN CIRC 4
A/T	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 3

PKIA0746E

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

INSPECTION

Proceed trouble diagnosis according to the check sheet results (example).
Case 1:Replace ECM.
Case 2:Replace TCM.
Case 3:Replace ABS actuator and electric unit (control unit).
Case 4:Replace Smart entrance control unit.
Case 5:Check Harness between TCM and Data link connector. Refer to LAN-217, "Circuit Check Between TCM and Data Link Connector"
Case 6:Check Harness between Data link connector and Smart entrance control unit. Refer to LAN-218, "Circuit Check Between Data Link Connector and Smart Entrance Control Unit"
Case 7:Check ECM Circuit. Refer to LAN-219, "ECM Circuit Check"
Case 8:Check TCM Circuit. Refer to LAN-219, "TCM Circuit Check"
Case 9:Check ABS actuator and electric unit (control unit) Circuit. Refer to LAN-220, "ABS Actuator and Electric Unit (control unit) Circuit Check"
Case 10:Check Smart entrance control unit Circuit. Refer to LAN-220, "Smart Entrance Control Unit Circuit Check"
Case 11:Check Combination meter Circuit. Refer to LAN-221, "Combination Meter Circuit Check"
Case 12:Check CAN communication Circuit. Refer to LAN-221, "CAN Communication Circuit Check"

Circuit Check Between TCM and Data Link Connector

EKS004UI

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, control unit-side and harness-side)

- TCM.
- ABS actuator and electric unit (control unit).
- Between TCM and ABS actuator and electric unit (control unit).

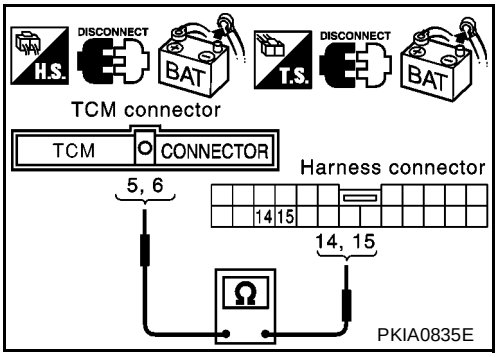
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect TCM connector and harness connector F109.
2. Check continuity between TCM harness connector F103 terminals 5 (L), 6 (R) and harness connector F109 terminals 14 (L), 15 (R).

5(L) – 14(L) : Continuity should exist.
6(R) – 15(R) : Continuity should exist.



OK or NG

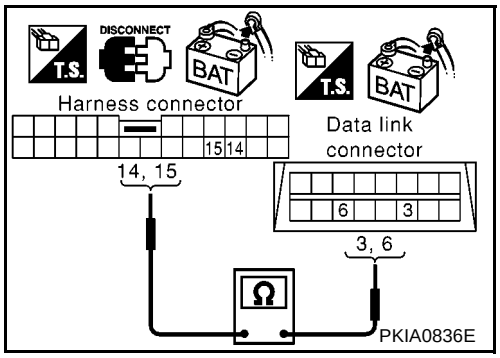
OK >> GO TO 3.
NG >> Repair harness.

3. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between harness connector M77 terminals 14 (L), 15 (R) and Data link connector M10 terminals 6 (L), 3 (R).

14(L) – 6(L) : Continuity should exist.

15(R) – 3(R) : Continuity should exist.



OK or NG

OK >> Reconnect all connectors to perform “SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE”, “A/T”, “ABS”, and “SMART ENTRANCE” displayed on CONSULT-II. Refer to EC-150, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) or EC-663, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) for “ENGINE” and Refer to AT-190, "DTC U1000 CAN COMMUNICATION LINE" (EURO-OBD) or AT-393, "CAN COMMUNICATION LINE" (ALL) for “A/T”. Refer to BRC-33, "CAN Communication Circuit" for “ABS”. Refer to BCS-40, "CAN Communication Line Check" for “SMART ENTRANCE”.

NG >> Repair harness.

Circuit Check Between Data Link Connector and Smart Entrance Control Unit

EKS004UB

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 unit-side and harness-side)

- Smart entrance control unit.
- ABS actuator and electric unit (control unit).
- Between smart entrance control unit and ABS actuator and electric unit (control unit).

OK or NG

OK >> GO TO 2.

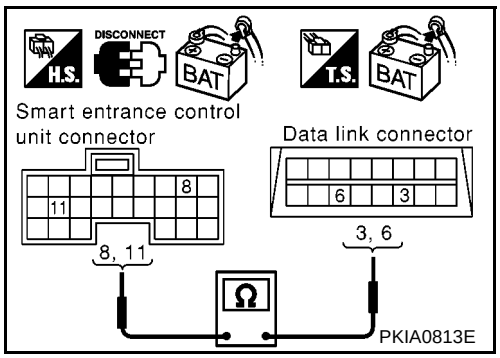
NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect smart entrance control unit connector.
2. Check continuity between smart entrance control unit harness connector M41 terminals 8 (L), 11 (R) and Data link connector M10 terminals 6 (L), 3 (R).

8(L) – 6(L) : Continuity should exist.

11(R) – 3(R) : Continuity should exist.



OK or NG

OK >> Reconnect all connectors to perform “SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE”, “A/T”, “ABS”, and “SMART ENTRANCE” displayed on CONSULT-II. Refer to EC-150, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) or EC-663, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) for “ENGINE” and Refer to AT-190, "DTC U1000 CAN COMMUNICATION LINE" (EURO-OBD) or AT-393, "CAN COMMUNICATION LINE" (ALL) for “A/T”. Refer to BRC-33, "CAN Communication Circuit" for “ABS”. Refer to BCS-40, "CAN Communication Line Check" for “SMART ENTRANCE”.

NG >> Repair harness.

ECM Circuit Check

EKS004UC

1. CHECK CONNECTOR

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

OK or NG

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

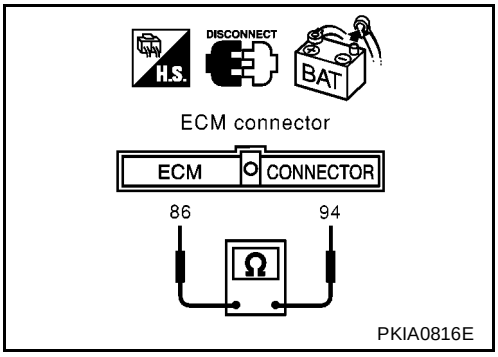
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ECM connector.
2. Check resistance between ECM harness connector F102 terminals 94(L) and 86(R).

94(L) – 86(R) : Approx. 108 – 132Ω

OK or NG

OK >> Replace ECM.
NG >> Repair harness between TCM and ECM.



TCM Circuit Check

EKS004UJ

1. CHECK CONNECTOR

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

OK or NG

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

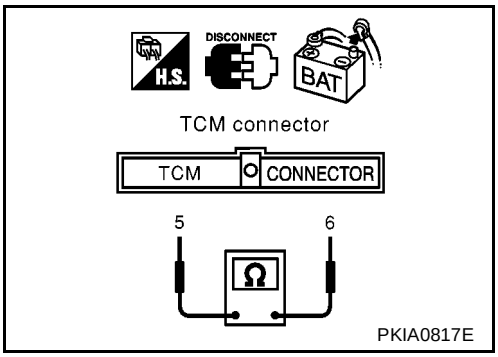
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect TCM connector.
2. Check resistance between TCM harness connector F103 terminals 5(L) and 6(R).

5(L) – 6(R) : Approx. 54 – 66Ω

OK or NG

OK >> Replace TCM.
NG >> Repair harness between TCM and ECM.



ABS Actuator and Electric Unit (control unit) Circuit Check

EKS004UD

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 unit-side and harness-side)

- ABS actuator and electric unit (control unit).
- Harness connector E120.
- Harness connector B107.
- Harness connector B102.
- Harness connector M89.

OK or NG

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

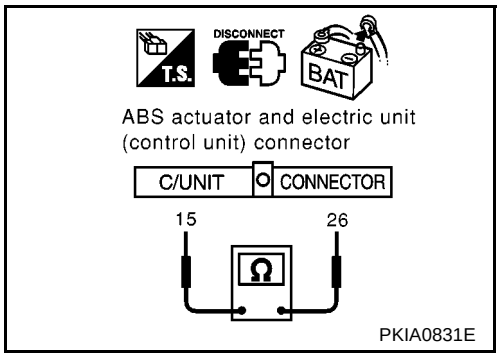
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector.
2. Check resistance between ABS actuator and electric unit (control unit) harness connector E64 terminals 26(L) and 15(R).

26(L) – 15(R) : Approx. 54 – 66Ω

OK or NG

OK >> Replace ABS actuator and electric unit (control unit).
NG >> Repair harness between Data link connector and ABS actuator and electric unit (control unit).



Smart Entrance Control Unit Circuit Check

EKS004UE

1. CHECK CONNECTOR

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

OK or NG

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

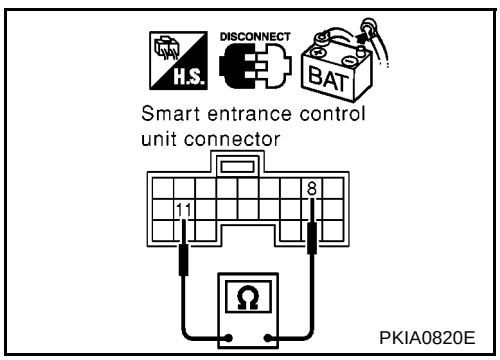
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect smart entrance control unit connector.
2. Check resistance between smart entrance control unit harness connector M41 terminals 8(L) and 11(R).

8(L) – 11(R) : Approx. 54 – 66Ω

OK or NG

OK >> Replace smart entrance control unit.
NG >> Repair harness between Data link connector and smart entrance control unit.



Combination Meter Circuit Check

EKS004UF

1. CHECK CONNECTOR

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

OK or NG

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

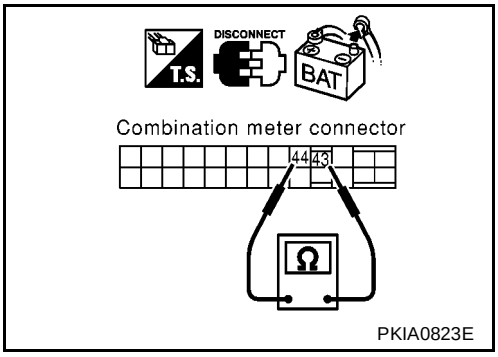
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect combination meter connector.
2. Check resistance between combination meter harness connector M37 terminals 43(L) and 44(R).

43(L) – 44(R) : Approx. 108 – 132Ω

OK or NG

OK >> Replace combination meter.
NG >> Repair harness between smart entrance control unit and combination meter.



CAN Communication Circuit Check

EKS004UG

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. (meter-side, control unit-side, control module-side and harness-side)

- Combination meter.
- Smart entrance control unit.
- ABS actuator and electric unit (control unit).
- TCM.
- ECM.
- Between ABS actuator and electric unit (control unit) and ECM.

OK or NG

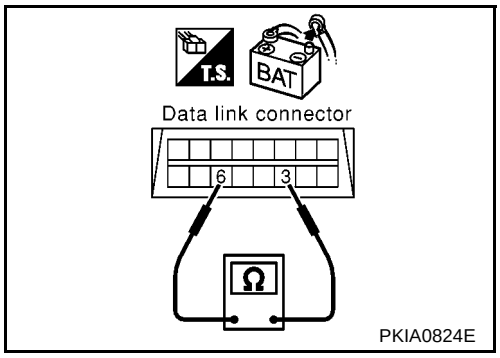
OK >> GO TO 2.
NG >> Repair terminal or connector.

2. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect the following connectors.
- Combination meter connector.
- Smart entrance control unit connector.
- Harness connector M89.
- Harness connector M77.

2. Check continuity between Data link connector M10 terminals 6 (L) and 3(R).

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



OK or NG

OK >> GO TO 3.

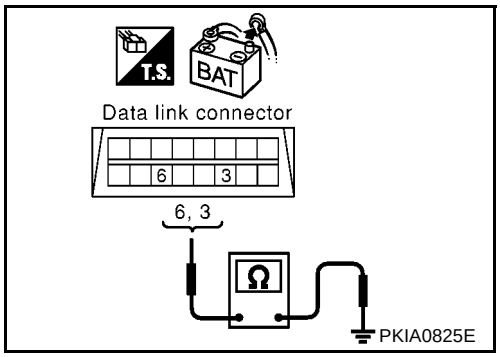
NG >>
- Repair harness between smart entrance control unit and combination meter.
- Repair harness between Data link connector and smart entrance control unit.
- Repair harness between harness connector M89 and harness connector M77.

3. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between Data link connector M10 terminals 6 (L), 3(R) and ground.

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

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



OK or NG

OK >> GO TO 4.

NG >>
- Repair harness between smart entrance control unit and combination meter.
- Repair harness between Data link connector and smart entrance control unit.
- Repair harness between harness connector M89 and harness connector M77.

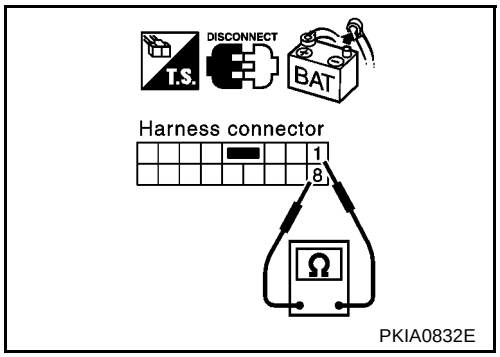
4. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect harness connector B107.
2. Check the following.

- Continuity between harness connector B102 terminals 1 (L) and 8(G).(Sedan models)
- Continuity between harness connector B102 terminals 1 (L) and 8(R).(Wagon models)

1(L) – 8(G) (Sedan models) : Continuity should not exist.

1(L) – 8(R) (Wagon models) : Continuity should not exist.



OK or NG

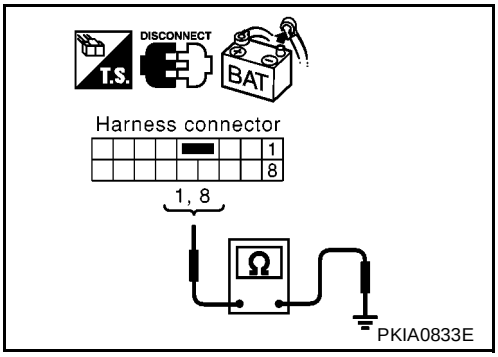
OK >> GO TO 5.

NG >> Repair harness between harness connector B102 and harness connector B107.

5. CHECK HARNESS FOR SHORT CIRCUIT

1. Check the following.

- Continuity between harness connector B102 terminals 1 (L), 8(G) and ground.(Sedan models)
- Continuity between harness connector B102 terminals 1 (L), 8(R) and ground.(Wagon models)



1(L) – ground (Sedan models) : **Continuity should not exist.**

8(G) – ground (Sedan models) : **Continuity should not exist.**

1(L) – ground (Wagon models) : **Continuity should not exist.**

8(R) – ground (Wagon models) : **Continuity should not exist.**

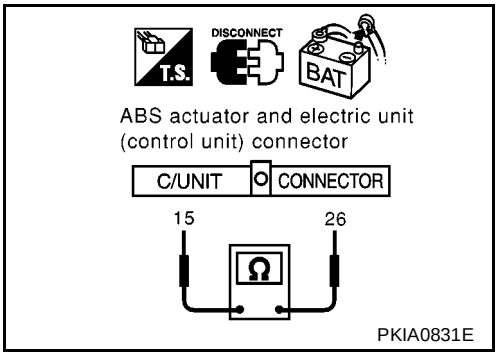
OK or NG

OK >> GO TO 6.
NG >> Repair harness between harness connector B102 and harness connector B107.

6. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector.
2. Check continuity between ABS actuator and electric unit (control unit) harness connector E64 terminals 26 (L) and 15(R).

26(L) – 15(R) : **Continuity should not exist.**



OK or NG

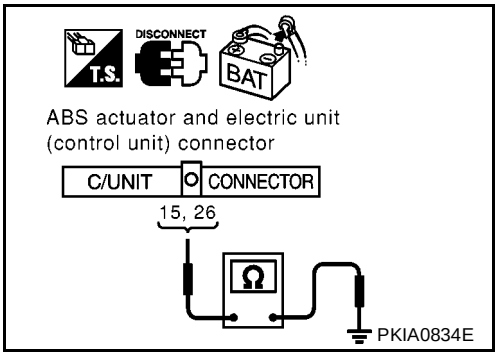
OK >> GO TO 7.
NG >> Repair harness between ABS actuator and electric unit (control unit) and harness connector E120.

7. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ABS actuator and electric unit (control unit) harness connector E64 terminals 26 (L), 15 (R) and ground.

26(L) – ground : **Continuity should not exist.**

15(R) – ground : **Continuity should not exist.**



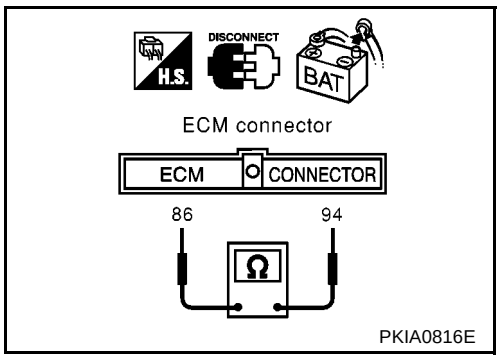
OK or NG

OK >> GO TO 8.
NG >> Repair harness between ABS actuator and electric unit (control unit) and harness connector E120.

8. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect ECM connector and TCM connector.
2. Check continuity between ECM harness connector F102 terminals 94 (L) and 86(R).

94(L) – 86(R) : Continuity should not exist.



OK or NG

OK >> GO TO 9.

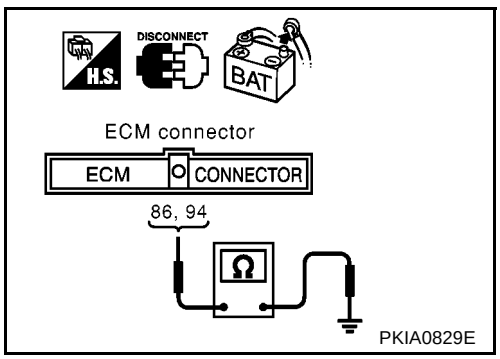
NG >>
- Repair harness between ECM and harness connector F109.
- Repair harness between TCM and harness connector F109.

9. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ECM harness connector F102 terminals 94 (L), 86 (R) and ground.

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

86(R) – ground : Continuity should not exist.



OK or NG

OK >> GO TO 10.

NG >>
- Repair harness between ECM and harness connector F109.
- Repair harness between TCM and harness connector F109.

10. ECM / COMBINATION METER INTERNAL CIRCUIT INSPECTION

Check components inspection. Refer to LAN-224, "ECM / COMBINATION METER INTERNAL CIRCUIT INSPECTION"

OK or NG

OK >> Reconnect all connectors to perform “SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE”, “A/T”, “ABS”, and “SMART ENTRANCE” displayed on CONSULT-II. Refer to EC-150, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) or EC-663, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) for “ENGINE” and Refer to AT-190, "DTC U1000 CAN COMMUNICATION LINE" (EURO-OBD) or AT-393, "CAN COMMUNICATION LINE" (ALL) for “A/T”. Refer to BRC-33, "CAN Communication Circuit" for “ABS”. Refer to BCS-40, "CAN Communication Line Check" for “SMART ENTRANCE”.

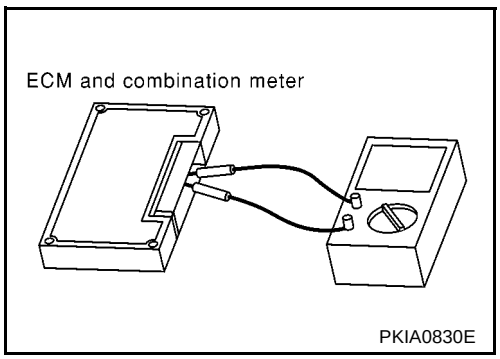
NG >> Replace ECM and/or Combination meter.

Component Inspection

EKS004UH

ECM / COMBINATION METER INTERNAL CIRCUIT INSPECTION

- Remove ECM and Combination meter from vehicle.
- Check resistance between ECM terminals 94 and 86.
- Check resistance between Combination meter terminals 43 and 44.



Unit	Terminal	Resistance value (Ω)
ECM	94 – 86	Approx. 108 - 132
Combination meter	43 – 44	

CAN SYSTEM (TYPE 11)

PFP:23710

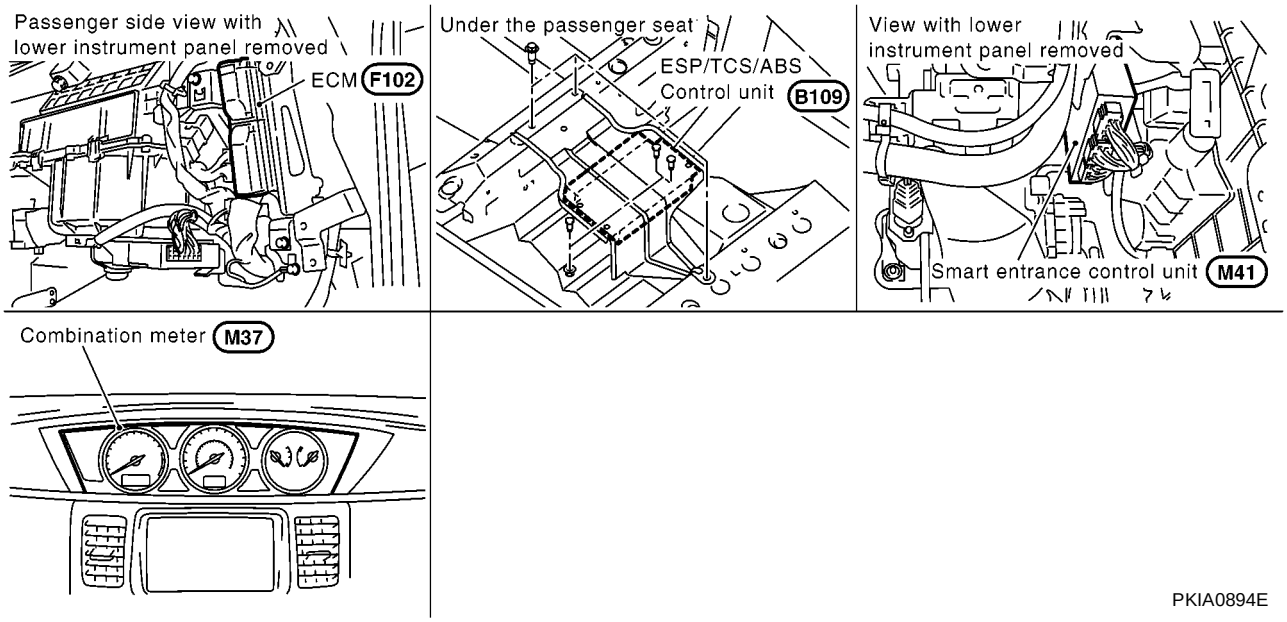
System Description

EKS004UY

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

EKS004UZ



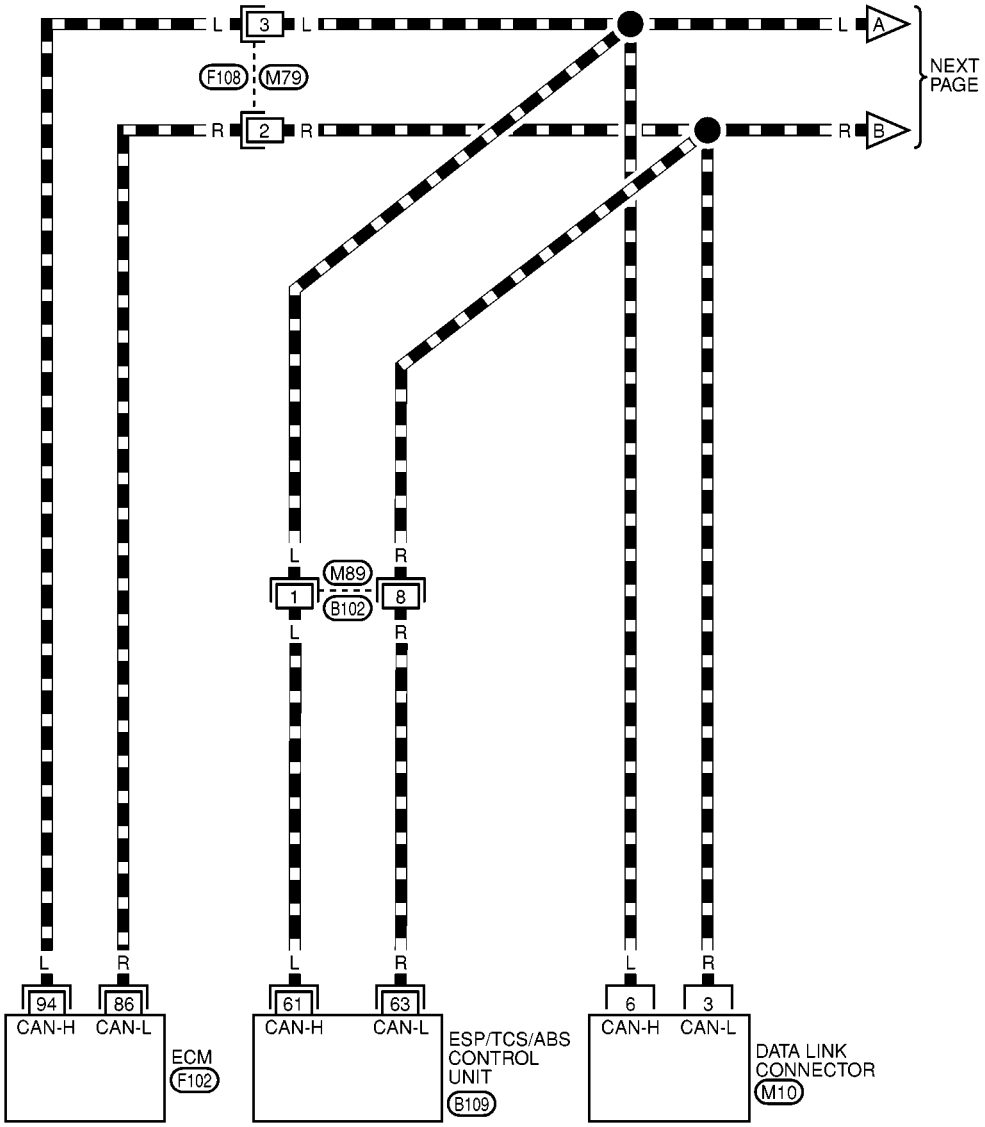
PKIA0894E

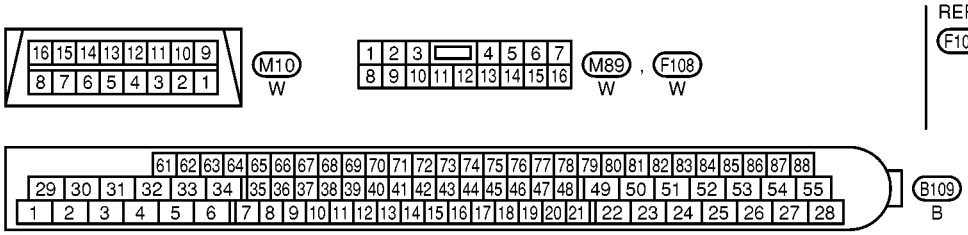
Wiring Diagram — CAN —

EKS004V0

LAN-CAN-23

: DATA LINE



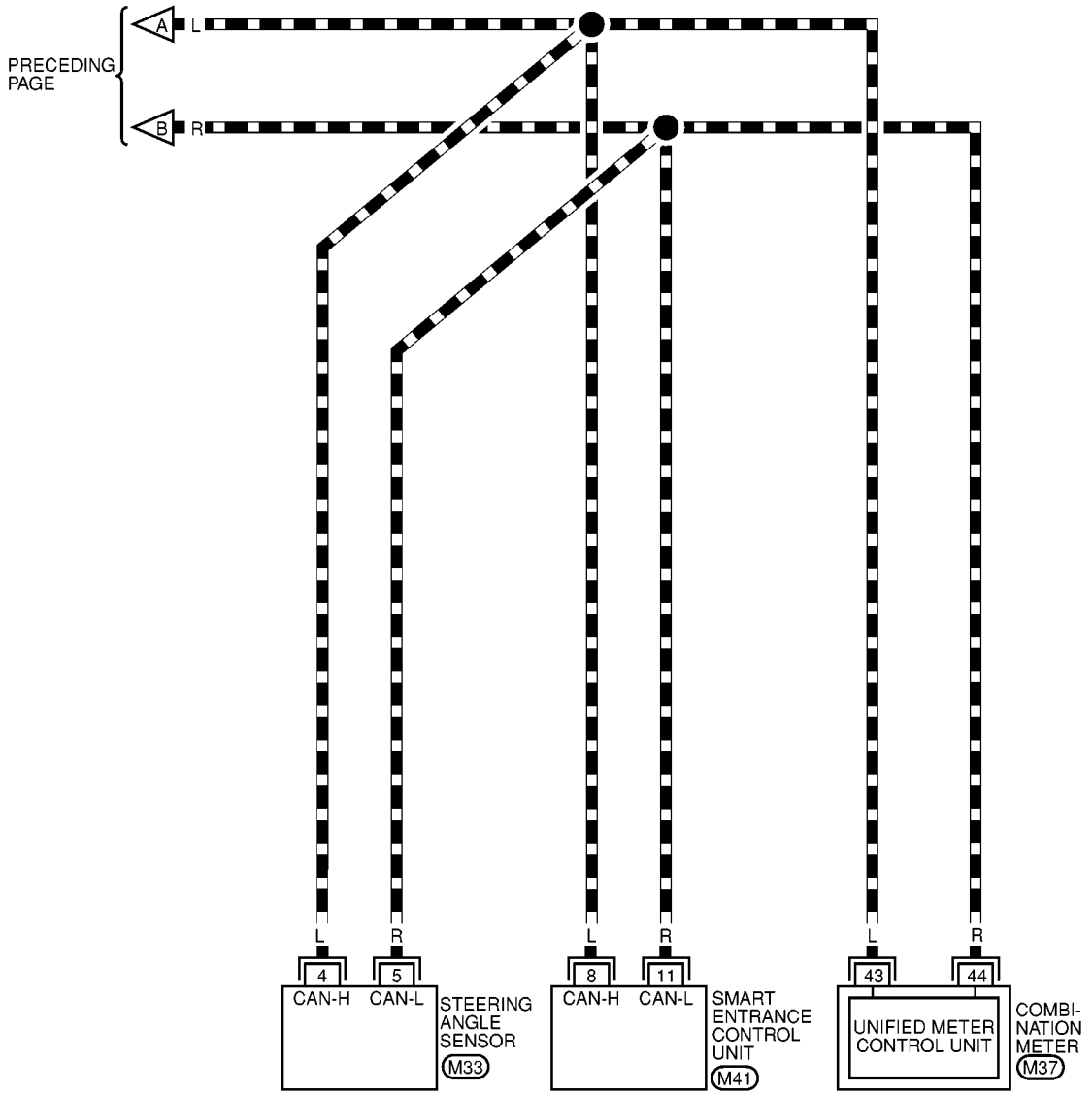


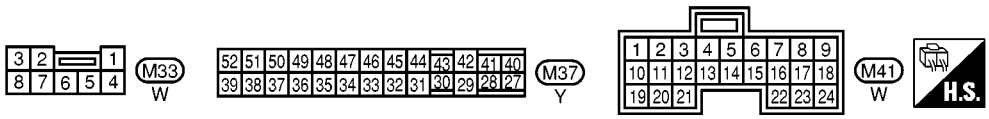
REFER TO THE FOLLOWING.
F102 -ELECTRICAL UNITS

MKWA0373E

LAN-CAN-24

: DATA LINE





MKWA0374E

Work Flow

EKS004V1

1. Print all the data of “SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE”, “ABS”, and “SMART ENTRANCE” displayed on CONSULT-II. Refer to EC-1083, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) or EC-1505, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) for “ENGINE” and Refer to BRC-107, "Inspection 15 CAN Communication Circuit, ESP/TCS/ABS Control Unit and Steering Angle Sensor" for “ABS”. Refer to BCS-40, "CAN Communication Line Check" for “SMART ENTRANCE”.
2. Attach the printed sheet of “SELF-DIAG RESULTS” and “DATA MONITOR” onto the check sheet. Refer to LAN-229, "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-229, "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-230, "CHECK SHEET RESULTS (EXAMPLE)"

CHECK SHEET

Check sheet table

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 3	–	CAN CIRC 6	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 5	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 3

Symptoms:

Attach copy of
ENGINE
SELF-DIAG RESULTS

Attach copy of
ABS
SELF-DIAG RESULTS

Attach copy of
SMART ENTRANCE
SELF-DIAG RESULTS

Attach copy of
ENGINE
DATA MONITOR

Attach copy of
ABS
DATA MONITOR

Attach copy of
SMART ENTRANCE
DATA MONITOR

PKIA0747E

CHECK SHEET RESULTS (EXAMPLE)

Case 1: Replace ECM

ENGINE	CAN COMM ✓	CAN CIRC 1	–	CAN CIRC 3	–	CAN CIRC 6	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 5	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 3

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 3 ✓	–	CAN CIRC 6 ✓	CAN CIRC 4 ✓
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 5	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 3

Case 2: Replace ESP/TCS/ABS control unit

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 3 ✓	–	CAN CIRC 6	CAN CIRC 4
ABS	CAN COMM ✓	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 5	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 3

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 3	–	CAN CIRC 6	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	–	CAN CIRC 5 ✓	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 3

Case 3: Replace Smart entrance control unit

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 3	–	CAN CIRC 6	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 5	–	–
SMART ENTRANCE	CAN COMM ✓	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 3

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 3	–	CAN CIRC 6	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 5	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	–	–	–	CAN CIRC 3 ✓

Case 4

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 3	–	CAN CIRC 6 ✓	CAN CIRC 4 ✓
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 5 ✓	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	–	–	–	CAN CIRC 3

Case 5

ENGINE	CAN COMM	CAN CIRC 1 ✓	–	CAN CIRC 3 ✓	–	CAN CIRC 6 ✓	CAN CIRC 4 ✓
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	–	CAN CIRC 5	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	–	–	–	CAN CIRC 3

Case 6

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 3 ✓	–	CAN CIRC 6	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1 ✓	CAN CIRC 2 ✓	–	CAN CIRC 5 ✓	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 3

Case 7

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 3	–	CAN CIRC 6	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 5 ✓	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 3

PKIA0748E

Case 8

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 3	–	CAN CIRC 6 ✓	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 5	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1 ✓	CAN CIRC 2 ✓	–	–	–	CAN CIRC 3 ✓

Case 9

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 3	–	CAN CIRC 6	CAN CIRC 4 ✓
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 5	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 3 ✓

Case 10

ENGINE	CAN COMM	CAN CIRC 1 ✓	–	CAN CIRC 3 ✓	–	CAN CIRC 6 ✓	CAN CIRC 4 ✓
ABS	CAN COMM	CAN CIRC 1 ✓	CAN CIRC 2 ✓	–	CAN CIRC 5 ✓	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1 ✓	CAN CIRC 2 ✓	–	–	–	CAN CIRC 3 ✓

PKIA0749E

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

INSPECTION

Proceed trouble diagnosis according to the check sheet results (example).
Case 1:Replace ECM.
Case 2:Replace ESP/TCS/ABS control unit.
Case 3:Replace Smart entrance control unit.
Case 4:Check Harness between Data link connector and Smart entrance control unit. Refer to LAN-231, "Circuit Check Between Data Link Connector and Smart Entrance Control Unit"
Case 5:Check ECM Circuit. Refer to LAN-232, "ECM Circuit Check"
Case 6:Check ESP/TCS/ABS control unit Circuit. Refer to LAN-233, "ESP/TCS/ABS Control Unit Circuit Check"
Case 7:Check Steering angle sensor Circuit. Refer to LAN-233, "Steering Angle Sensor Circuit Check"
Case 8:Check Smart entrance control unit Circuit. Refer to LAN-234, "Smart Entrance Control Unit Circuit Check"
Case 9:Check Combination meter Circuit. Refer to LAN-234, "Combination Meter Circuit Check"
Case 10:Check CAN communication Circuit. Refer to LAN-235, "CAN Communication Circuit Check"

Circuit Check Between Data Link Connector and Smart Entrance Control Unit

EKS004V3

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 unit-side, sensor-side and harness-side)

- Smart entrance control unit.
- Steering angle sensor.
- ESP/TCS/ABS control unit.
- Between smart entrance control unit and ESP/TCS/ABS control unit.

OK or NG

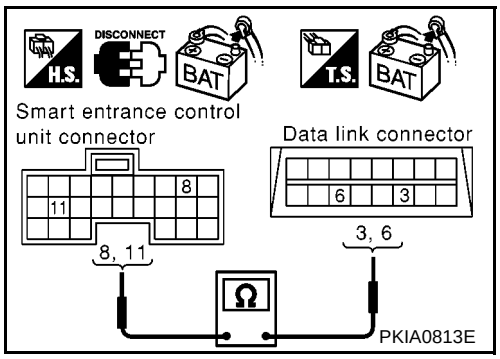
OK >> GO TO 2.
NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect smart entrance control unit connector.
2. Check continuity between smart entrance control unit harness connector M41 terminals 8 (L), 11 (R) and Data link connector M10 terminals 6 (L), 3 (R).

8(L) – 6(L) : Continuity should exist.

11(R) – 3(R) : Continuity should exist.



OK or NG

OK >> Reconnect all connectors to perform “SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE”, “ABS”, and “SMART ENTRANCE” displayed on CONSULT-II. Refer to EC-1083, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) or EC-1505, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) for “ENGINE” and Refer to BRC-107, "Inspection 15 CAN Communication Circuit, ESP/TCS/ABS Control Unit and Steering Angle Sensor" for “ABS”. Refer to BCS-40, "CAN Communication Line Check" for “SMART ENTRANCE”.

NG >> Repair harness.

ECM Circuit Check

EKS004V4

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)

- ECM.
- Harness connector F108.
- Harness connector M79.

OK or NG

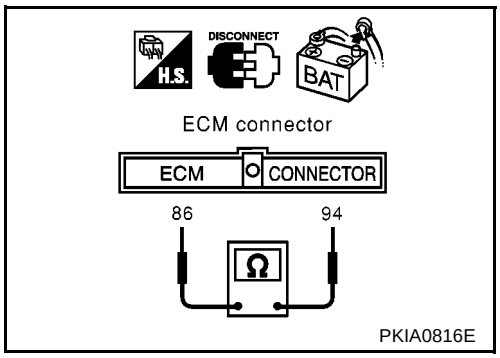
OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ECM connector.
2. Check resistance between ECM harness connector F102 terminals 94(L) and 86(R).

94(L) – 86(R) : Approx. 108 – 132Ω



OK or NG

OK >> Replace ECM.

NG >> Repair harness between Data link connector and ECM.

ESP/TCS/ABS Control Unit Circuit Check

EKS004V6

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 unit-side and harness-side)

- ESP/TCS/ABS control unit.
- Harness connector B102.
- Harness connector M89.

OK or NG

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

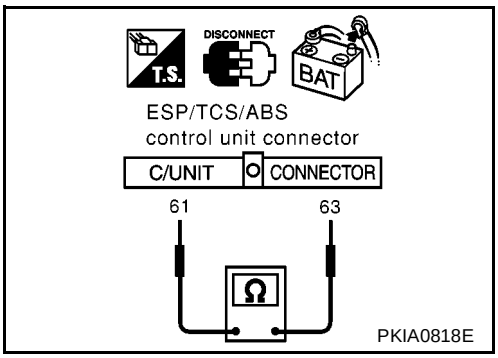
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ESP/TCS/ABS control unit connector.
2. Check resistance between ESP/TCS/ABS control unit harness connector B109 terminals 61(L) and 63(R).

61(L) – 63(R) : Approx. 54 – 66Ω

OK or NG

OK >> Replace ESP/TCS/ABS control unit.
NG >> Repair harness between Data link connector and ESP/TCS/ABS control unit.



Steering Angle Sensor Circuit Check

EKS004V5

1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check terminals and connector of steering angle sensor for damage, bend and loose connection. (sensor-side and harness-side)

OK or NG

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

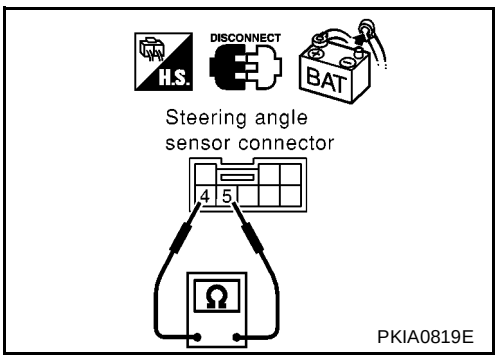
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect steering angle sensor connector.
2. Check resistance between steering angle sensor harness connector M33 terminals 4(L) and 5(R).

4(L) – 5(R) : Approx. 54 – 66Ω

OK or NG

OK >> Replace steering angle sensor.
NG >> Repair harness between steering angle sensor and smart entrance control unit.



Smart Entrance Control Unit Circuit Check

EKS004V7

1. CHECK CONNECTOR

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

OK or NG

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

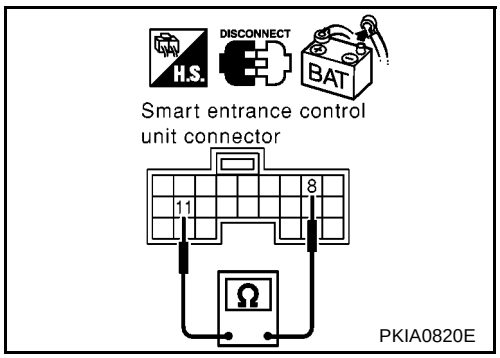
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect smart entrance control unit connector.
2. Check resistance between smart entrance control unit harness connector M41 terminals 8(L) and 11(R).

8(L) – 11(R) : Approx. 54 – 66Ω

OK or NG

OK >> Replace smart entrance control unit.
NG >> Repair harness between steering angle sensor and smart entrance control unit.



Combination Meter Circuit Check

EKS004V8

1. CHECK CONNECTOR

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

OK or NG

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

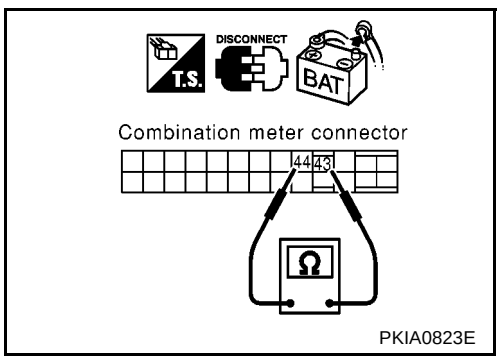
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect combination meter connector.
2. Check resistance between combination meter harness connector M37 terminals 43(L) and 44(R).

43(L) – 44(R) : Approx. 108 – 132Ω

OK or NG

OK >> Replace combination meter.
NG >> Repair harness between smart entrance control unit and combination meter.



CAN Communication Circuit Check

EKS004V9

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. (meter-side, control unit-side, sensor-side, control module-side and harness-side)

- Combination meter.
- Smart entrance control unit.
- Steering angle sensor.
- ESP/TCS/ABS control unit.
- ECM.
- Between ESP/TCS/ABS control unit and ECM.

OK or NG

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

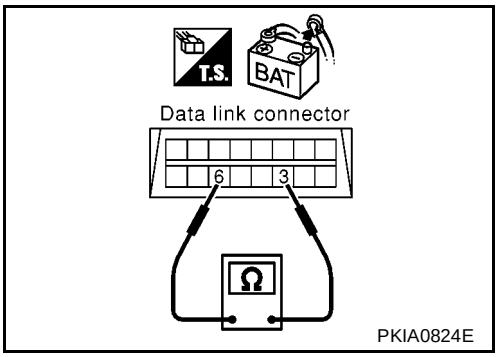
2. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect the following connectors.

- Combination meter connector.
- Smart entrance control unit connector.
- Steering angle sensor connector.
- Harness connector M89.
- Harness connector M79.

2. Check continuity between Data link connector M10 terminals 6 (L) and 3(R).

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



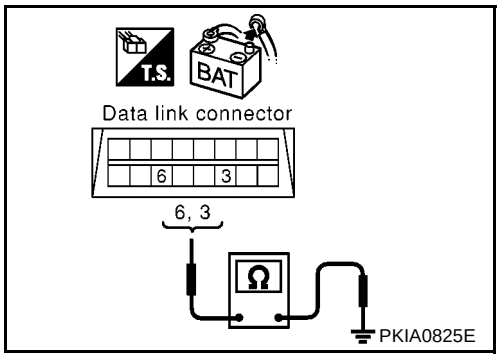
OK or NG

OK >> GO TO 3.
NG >>
- Repair harness between smart entrance control unit and combination meter.
- Repair harness between smart entrance control unit and steering angle sensor.
- Repair harness between Data link connector and steering angle sensor.
- Repair harness between harness connector M89 and harness connector M79.

3. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between Data link connector M10 terminals 6 (L), 3(R) and ground.

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



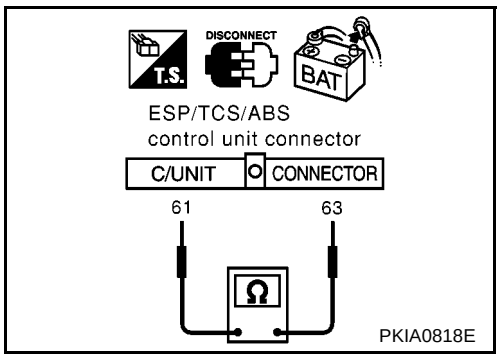
OK or NG

OK >> GO TO 4.
NG >>
- Repair harness between smart entrance control unit and combination meter.
- Repair harness between smart entrance control unit and steering angle sensor.
- Repair harness between Data link connector and steering angle sensor.
- Repair harness between harness connector M89 and harness connector M79.

4. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect ESP/TCS/ABS control unit connector.
2. Check continuity between ESP/TCS/ABS control unit harness connector B109 terminals 61 (L) and 63(R).

61(L) – 63(R) : Continuity should not exist.



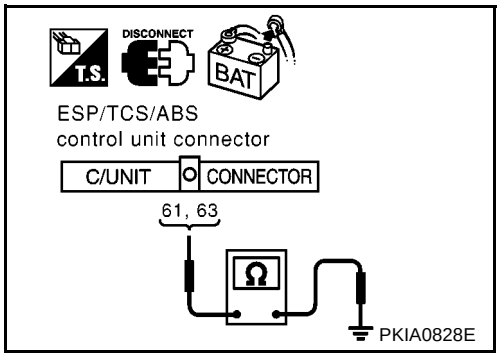
OK or NG

OK >> GO TO 5.
NG >> Repair harness between ESP/TCS/ABS control unit and harness connector B102.

5. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ESP/TCS/ABS control unit harness connector B109 terminals 61 (L), 63 (R) and ground.

61(L) – ground : Continuity should not exist.
63(R) – ground : Continuity should not exist.



OK or NG

OK >> GO TO 6.
NG >> Repair harness between ESP/TCS/ABS control unit and harness connector B102.

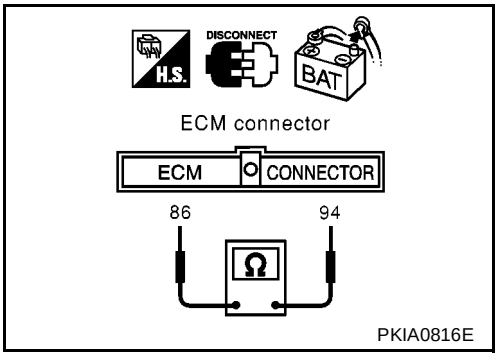
6. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect ECM connector.
2. Check continuity between ECM harness connector F102 terminals 94 (L) and 86(R).

94(L) – 86(R) : Continuity should not exist.

OK or NG

OK >> GO TO 7.
NG >> Repair harness between ECM and harness connector F108.



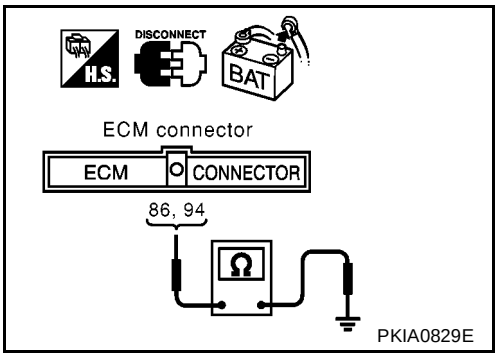
7. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ECM harness connector F102 terminals 94 (L), 86 (R) and ground.

94(L) – ground : Continuity should not exist.
86(R) – ground : Continuity should not exist.

OK or NG

OK >> GO TO 8.
NG >> Repair harness between ECM and harness connector F108.



8. ECM / COMBINATION METER INTERNAL CIRCUIT INSPECTION

Check components inspection. Refer to LAN-237, "ECM / COMBINATION METER INTERNAL CIRCUIT INSPECTION"

OK or NG

OK >> Reconnect all connectors to perform “SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE”, “ABS”, and “SMART ENTRANCE” displayed on CONSULT-II. Refer to EC-1083, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) or EC-1505, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) for “ENGINE” and Refer to BRC-107, "Inspection 15 CAN Communication Circuit, ESP/TCS/ABS Control Unit and Steering Angle Sensor" for “ABS”. Refer to BCS-40, "CAN Communication Line Check" for “SMART ENTRANCE”.
NG >> Replace ECM and/or Combination meter.

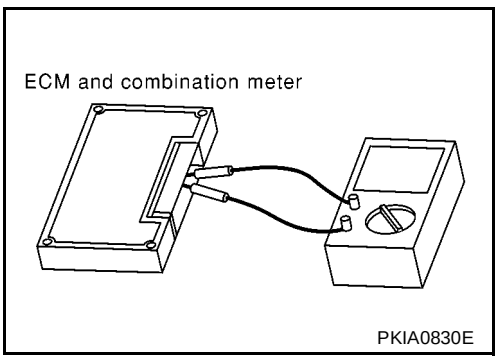
Component Inspection

EKS004VA

ECM / COMBINATION METER INTERNAL CIRCUIT INSPECTION

- Remove ECM and Combination meter from vehicle.
- Check resistance between ECM terminals 94 and 86.
- Check resistance between Combination meter terminals 43 and 44.

Unit	Terminal	Resistance value (Ω)
ECM	94 – 86	Approx. 108 - 132
Combination meter	43 – 44	



CAN SYSTEM (TYPE 12)

PFP:23710

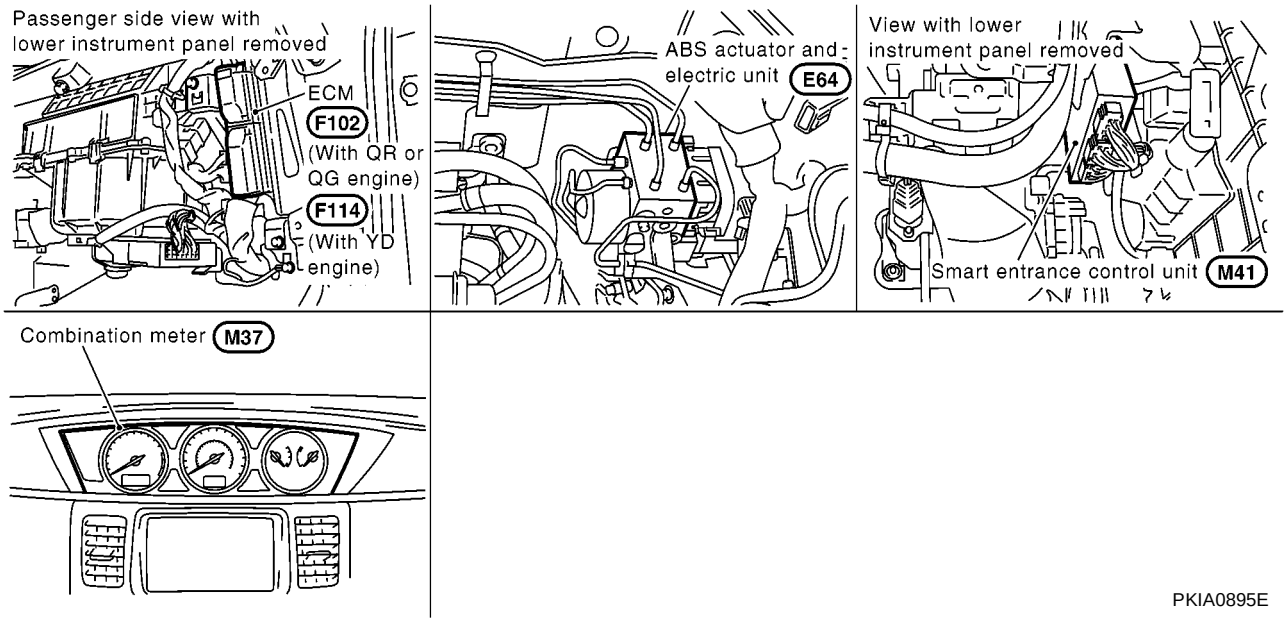
System Description

EKS004SS

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

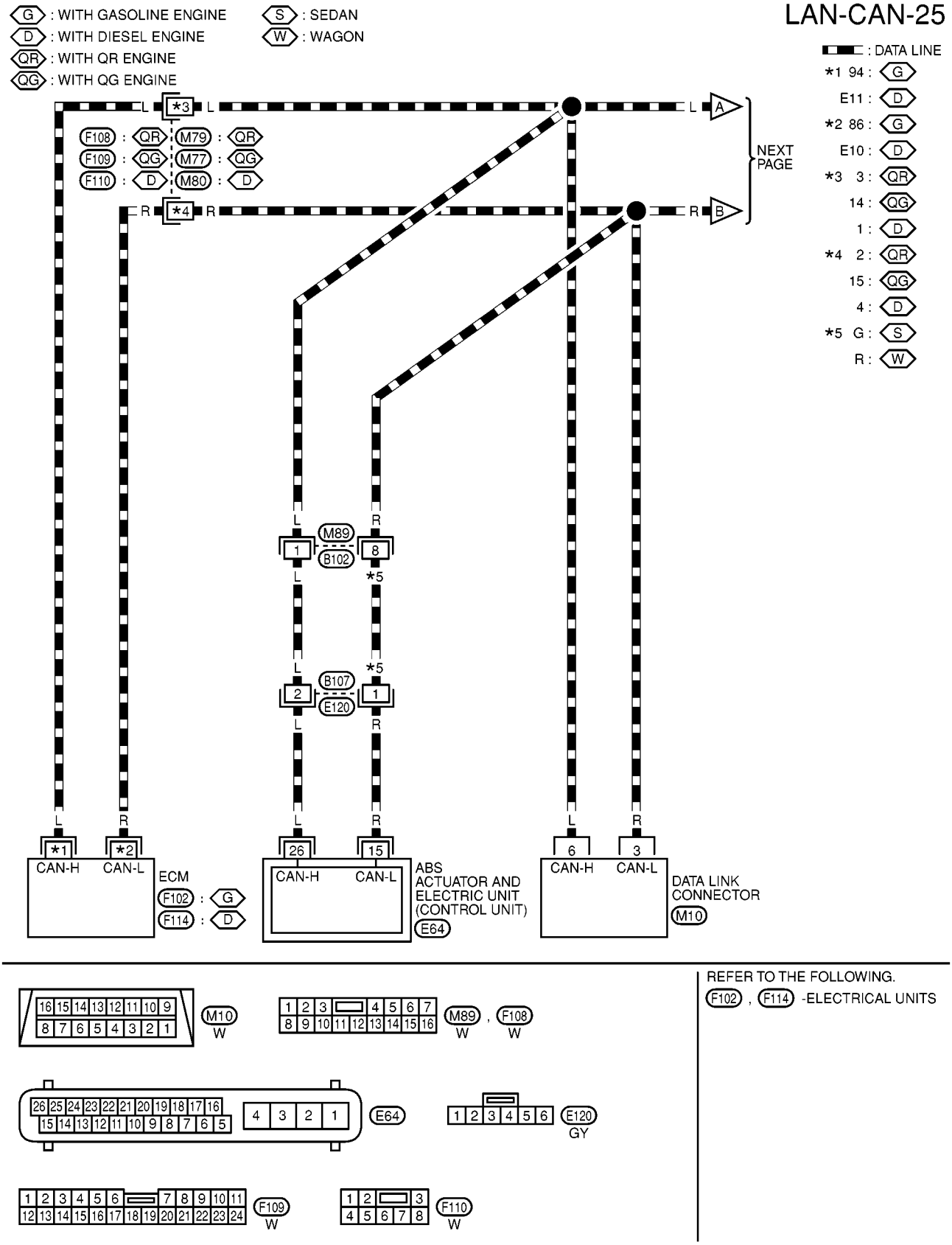
EKS004ST



PKIA0895E

Wiring Diagram — CAN —

EKS004SU

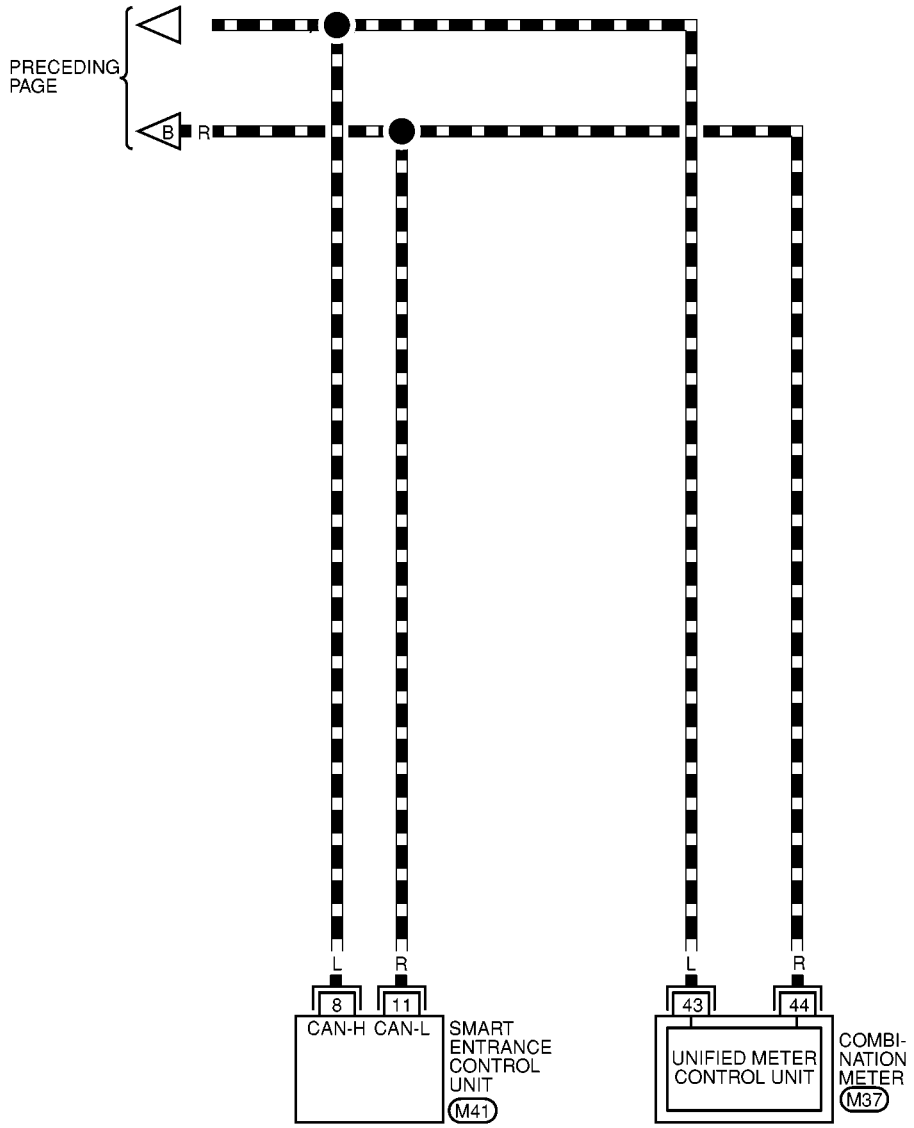


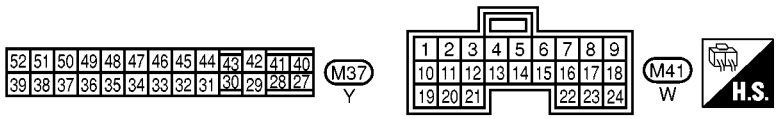
REFER TO THE FOLLOWING.
F102 , F114 -ELECTRICAL UNITS

MKWA0375E

LAN-CAN-26

: DATA LINE





MKWA0376E

Work Flow

EKS004SV

1. Print all the data of “SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE”, “ABS”, and “SMART ENTRANCE” displayed on CONSULT-II. Refer to EC-150, "DTC U1000, U1001 CAN COMMUNICATION LINE" (QG ENGINE MODELS WITH EURO-OBD), EC-663, "DTC U1000, U1001 CAN COMMUNICATION LINE" (QG ENGINE MODELS WITHOUT EURO-OBD), EC-1083, "DTC U1000, U1001 CAN COMMUNICATION LINE" (QR ENGINE MODELS WITH EURO-OBD), EC-1505, "DTC U1000, U1001 CAN COMMUNICATION LINE" (QR ENGINE MODELS WITHOUT EURO-OBD) or EC-1790, "DTC U1000 CAN COMMUNICATION LINE" (YD ENGINE MODELS) for “ENGINE” and Refer to BRC-33, "CAN Communication Circuit" for “ABS”. Refer to BCS-40, "CAN Communication Line Check" for “SMART ENTRANCE”.
2. Attach the printed sheet of “SELF-DIAG RESULTS” and “DATA MONITOR” onto the check sheet. Refer to LAN-242, "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-242, "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-243, "CHECK SHEET RESULTS (EXAMPLE)"

CHECK SHEET

Check sheet table

ENGINE	CAN COMM	CAN CIRC 1	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	CAN CIRC 3

Symptoms:

Attach copy of
ENGINE
SELF-DIAG RESULTS

Attach copy of
ABS
SELF-DIAG RESULTS

Attach copy of
SMART ENTRANCE
SELF-DIAG RESULTS

Attach copy of
ENGINE
DATA MONITOR

Attach copy of
ABS
DATA MONITOR

Attach copy of
SMART ENTRANCE
DATA MONITOR

PKIA0750E

CHECK SHEET RESULTS (EXAMPLE)

Case 1: Replace ECM

ENGINE	CAN COMM ✓	CAN CIRC 1	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	CAN CIRC 3

ENGINE	CAN COMM	CAN CIRC 1	–	–	–	CAN CIRC 4 ✓
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	CAN CIRC 3

Case 2: Replace ABS actuator and electric unit (control unit)

ENGINE	CAN COMM	CAN CIRC 1	–	–	–	CAN CIRC 4
ABS	CAN COMM ✓	CAN CIRC 1	CAN CIRC 2	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	CAN CIRC 3

ENGINE	CAN COMM	CAN CIRC 1	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	CAN CIRC 3

Case 3: Replace Smart entrance control unit

ENGINE	CAN COMM	CAN CIRC 1	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–
SMART ENTRANCE	CAN COMM ✓	CAN CIRC 1	CAN CIRC 2	–	–	CAN CIRC 3

ENGINE	CAN COMM	CAN CIRC 1	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	–	–	CAN CIRC 3 ✓

Case 4

ENGINE	CAN COMM	CAN CIRC 1	–	–	–	CAN CIRC 4 ✓
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	–	–	CAN CIRC 3

Case 5

ENGINE	CAN COMM	CAN CIRC 1 ✓	–	–	–	CAN CIRC 4 ✓
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	–	–	CAN CIRC 3

Case 6

ENGINE	CAN COMM	CAN CIRC 1	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1 ✓	CAN CIRC 2 ✓	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	CAN CIRC 3

Case 7

ENGINE	CAN COMM	CAN CIRC 1	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1 ✓	CAN CIRC 2 ✓	–	–	CAN CIRC 3 ✓

PKIA0751E

Case 8

ENGINE	CAN COMM	CAN CIRC 1	–	–	–	–	CAN CIRC 4 ✓
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 3 ✓

Case 9

ENGINE	CAN COMM	CAN CIRC 1 ✓	–	–	–	–	CAN CIRC 4 ✓
ABS	CAN COMM	CAN CIRC 1 ✓	CAN CIRC 2 ✓	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1 ✓	CAN CIRC 2 ✓	–	–	–	CAN CIRC 3 ✓

PKIA0752E

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

INSPECTION

Proceed trouble diagnosis according to the check sheet results (example).
Case 1:Replace ECM.
Case 2:Replace ABS actuator and electric unit (control unit).
Case 3:Replace Smart entrance control unit.
Case 4:Check Harness between Data link connector and Smart entrance control unit. Refer to LAN-244, "Circuit Check Between Data Link Connector and Smart Entrance Control Unit"
Case 5:Check ECM Circuit. Refer to LAN-245, "ECM Circuit Check"
Case 6:Check ABS actuator and electric unit (control unit) Circuit. Refer to LAN-246, "ABS Actuator and Electric Unit (control unit) Circuit Check"
Case 7:Check Smart entrance control unit Circuit. Refer to LAN-247, "Smart Entrance Control Unit Circuit Check"
Case 8:Check Combination meter Circuit. Refer to LAN-247, "Combination Meter Circuit Check"
Case 9:Check CAN communication Circuit. Refer to LAN-248, "CAN Communication Circuit Check"

Circuit Check Between Data Link Connector and Smart Entrance Control Unit

EKS004SW

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 unit-side and harness-side)

- Smart entrance control unit.
- ABS actuator and electric unit (control unit).
- Between smart entrance control unit and ABS actuator and electric unit (control unit).

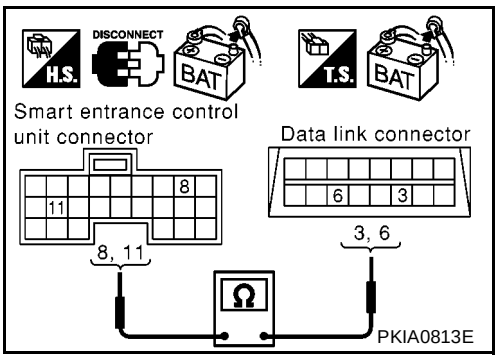
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect smart entrance control unit connector.
2. Check continuity between smart entrance control unit harness connector M41 terminals 8 (L), 11 (R) and Data link connector M10 terminals 6 (L), 3 (R).

8(L) – 6(L) : Continuity should exist.
11(R) – 3(R) : Continuity should exist.



OK or NG

OK >> Reconnect all connectors to perform “SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE”, “ABS”, and “SMART ENTRANCE” displayed on CONSULT-II. Refer to EC-150, "DTC U1000, U1001 CAN COMMUNICATION LINE" (QG ENGINE MODELS WITH EURO-OBD), EC-663, "DTC U1000, U1001 CAN COMMUNICATION LINE" (QG ENGINE MODELS WITHOUT EURO-OBD), EC-1083, "DTC U1000, U1001 CAN COMMUNICATION LINE" (QR ENGINE MODELS WITH EURO-OBD), EC-1505, "DTC U1000, U1001 CAN COMMUNICATION LINE" (QR ENGINE MODELS WITHOUT EURO-OBD) or EC-1790, "DTC U1000 CAN COMMUNICATION LINE" (YD ENGINE MODELS) for “ENGINE” and Refer to BRC-33, "CAN Communication Circuit" for “ABS”. Refer to BCS-40, "CAN Communication Line Check" for “SMART ENTRANCE”.

NG >> Repair harness.

ECM Circuit Check

EKS004SX

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)

- ECM.
- Harness connector F108.(QR engine models)
- Harness connector M79.(QR engine models)
- Harness connector F109.(QG engine models)
- Harness connector M77.(QG engine models)
- Harness connector F110.(Diesel engine models)
- Harness connector M80.(Diesel engine models)

OK or NG

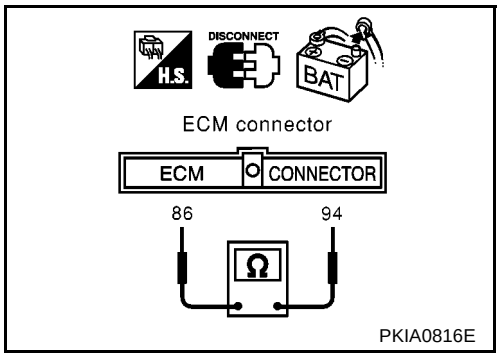
OK >> GO TO 2.
NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ECM connector.
2. Check the following.

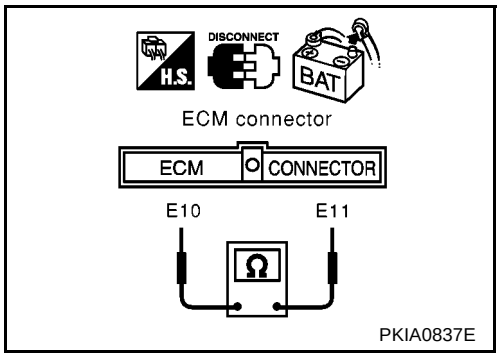
- Resistance between ECM harness connector F102 terminals 94(L) and 86(R).(Gasoline engine models)

94(L) – 86(R) (Gasoline enging models) **: Approx. 108 – 132Ω**



- Resistance between ECM harness connector F114 terminals E11(L) and E10(R).(Diesel engine models)

E11(L) – E10(R) (Diesel enging models) **: Approx. 108 – 132Ω**



OK or NG

OK >> Replace ECM.
NG >> Repair harness between Data link connector and ECM.

ABS Actuator and Electric Unit (control unit) Circuit Check

EKS004SY

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 unit-side and harness-side)

- ABS actuator and electric unit (control unit).
- Harness connector E120.
- Harness connector B107.
- Harness connector B102.
- Harness connector M89.

OK or NG

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

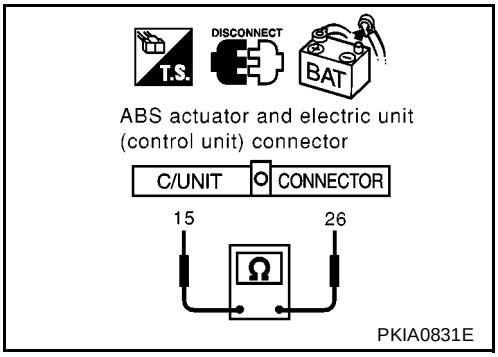
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector.
2. Check resistance between ABS actuator and electric unit (control unit) harness connector E64 terminals 26(L) and 15(R).

26(L) – 15(R) : Approx. 54 – 66Ω

OK or NG

OK >> Replace ABS actuator and electric unit (control unit).
NG >> Repair harness between Data link connector and ABS actuator and electric unit (control unit).



Smart Entrance Control Unit Circuit Check

EKS004SZ

1. CHECK CONNECTOR

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

OK or NG

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

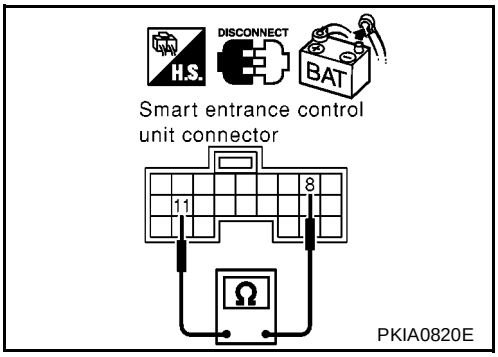
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect smart entrance control unit connector.
2. Check resistance between smart entrance control unit harness connector M41 terminals 8(L) and 11(R).

8(L) – 11(R) : Approx. 54 – 66Ω

OK or NG

OK >> Replace smart entrance control unit.
NG >> Repair harness between Data link connector and smart entrance control unit.



Combination Meter Circuit Check

EKS004T0

1. CHECK CONNECTOR

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

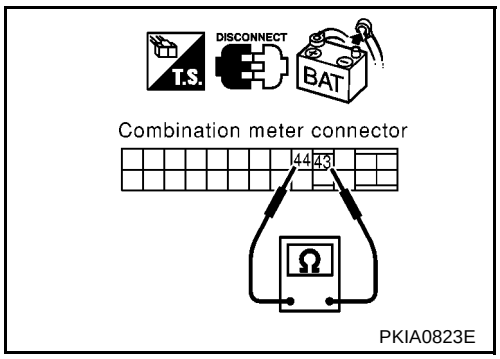
OK or NG

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 M37 terminals 43(L) and 44(R).

43(L) – 44(R) : Approx. 108 – 132Ω



OK or NG

OK >> Replace combination meter.
NG >> Repair harness between smart entrance control unit and combination meter.

CAN Communication Circuit Check

EKS004T1

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. (meter-side, control unit-side, control module-side and harness-side)

- Combination meter.
- Smart entrance control unit.
- ABS actuator and electric unit (control unit).
- ECM.
- Between ABS actuator and electric unit (control unit) and ECM.

OK or NG

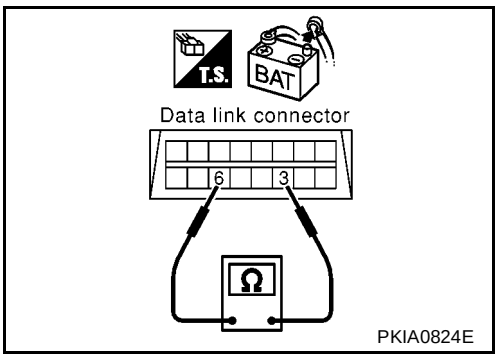
OK >> GO TO 2.
NG >> Repair terminal or connector.

2. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect the following connectors.
- Combination meter connector.
- Smart entrance control unit connector.
- Harness connector M89.
- Harness connector M79.(QR engine models)
- Harness connector M77.(QG engine models)
- Harness connector M80.(Diesel engine models)

2. Check continuity between Data link connector M10 terminals 6 (L) and 3(R).

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



OK or NG

OK >> GO TO 3.

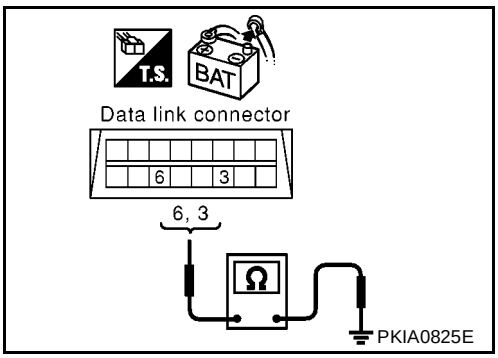
NG >>
- Repair harness between smart entrance control unit and combination meter.
- Repair harness between Data link connector and smart entrance control unit.
- Repair harness between harness connector M89 and harness connector M79.(QR engine models)
- Repair harness between harness connector M89 and harness connector M77.(QG engine models)
- Repair harness between harness connector M89 and harness connector M80.(Diesel engine models)

3. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between Data link connector M10 terminals 6 (L), 3(R) and ground.

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

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



OK or NG

OK >> GO TO 4.

NG >>
- Repair harness between smart entrance control unit and combination meter.
- Repair harness between Data link connector and smart entrance control unit.
- Repair harness between harness connector M89 and harness connector M79.(QR engine models)
- Repair harness between harness connector M89 and harness connector M77.(QG engine models)
- Repair harness between harness connector M89 and harness connector M80.(Diesel engine models)

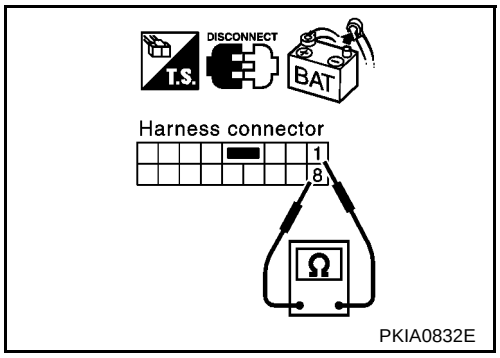
4. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect harness connector B107.
2. Check the following.

- Continuity between harness connector B102 terminals 1 (L) and 8(G).(Sedan models)
- Continuity between harness connector B102 terminals 1 (L) and 8(R).(Wagon models)

1(L) – 8(G) (Sedan models) : **Continuity should not exist.**

1(L) – 8(R) (Wagon models) : **Continuity should not exist.**



OK or NG

OK >> GO TO 5.
NG >> Repair harness between harness connector B102 and harness connector B107.

5. CHECK HARNESS FOR SHORT CIRCUIT

1. Check the following.

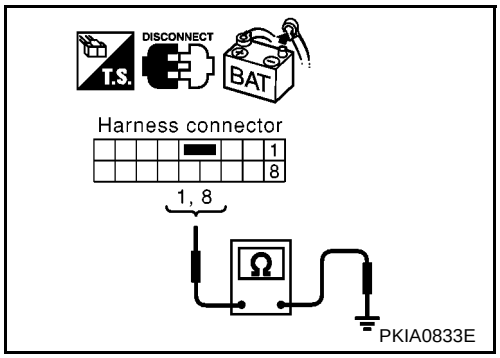
- Continuity between harness connector B102 terminals 1 (L), 8(G) and ground.(Sedan models)
- Continuity between harness connector B102 terminals 1 (L), 8(R) and ground.(Wagon models)

1(L) – ground (Sedan models) : **Continuity should not exist.**

8(G) – ground (Sedan models) : **Continuity should not exist.**

1(L) – ground (Wagon models) : **Continuity should not exist.**

8(R) – ground (Wagon models) : **Continuity should not exist.**



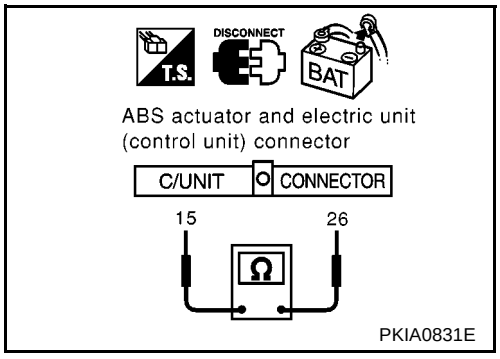
OK or NG

OK >> GO TO 6.
NG >> Repair harness between harness connector B102 and harness connector B107.

6. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector.
2. Check continuity between ABS actuator and electric unit (control unit) harness connector E64 terminals 26 (L) and 15(R).

26(L) – 15(R) : **Continuity should not exist.**



OK or NG

OK >> GO TO 7.
NG >> Repair harness between ABS actuator and electric unit (control unit) and harness connector E120.

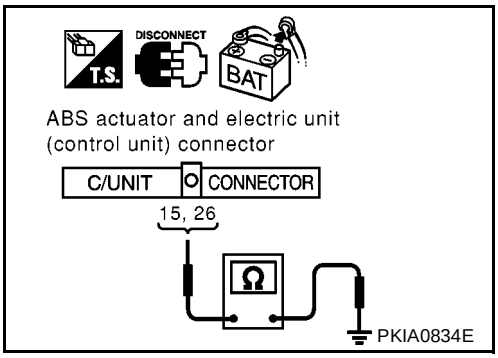
7. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ABS actuator and electric unit (control unit) harness connector E64 terminals 26 (L), 15 (R) and ground.

26(L) – ground : Continuity should not exist.
15(R) – ground : Continuity should not exist.

OK or NG

OK >> GO TO 8.
NG >> Repair harness between ABS actuator and electric unit (control unit) and harness connector E120.

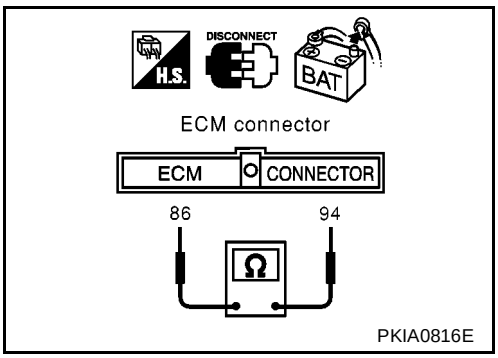


8. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect ECM connector.
2. Check the following.

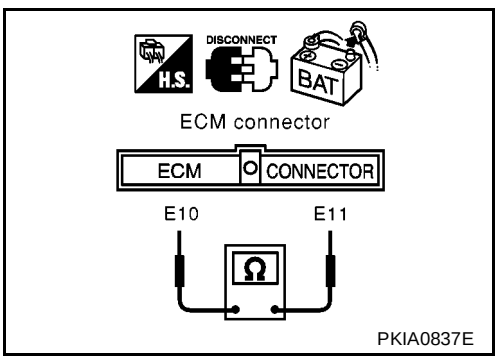
- Continuity between ECM harness connector F102 terminals 94 (L) and 86(R).(Gasoline engine models)

94(L) – 86(R) (Gasoline enging models) : Continuity should not exist.



- Continuity between ECM harness connector F114 terminals E11 (L) and E10(R).(Diesel engine models)

E11(L) – E10(R) (Diesel enging models) : Continuity should not exist.



OK or NG

OK >> GO TO 9.
NG >>
- Repair harness between ECM and harness connector F108.(QR engine models)
- Repair harness between ECM and harness connector F109.(QG engine models)
- Repair harness between ECM and harness connector F110.(Diesel engine models)

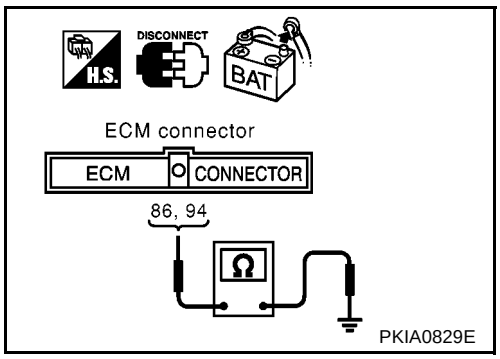
9. CHECK HARNESS FOR SHORT CIRCUIT

1. Check the following.

- Continuity between ECM harness connector F102 terminals 94 (L), 86 (R) and ground.(Gasoline engine models)

94(L) – ground (Gasoline enging models) : **Continuity should not exist.**

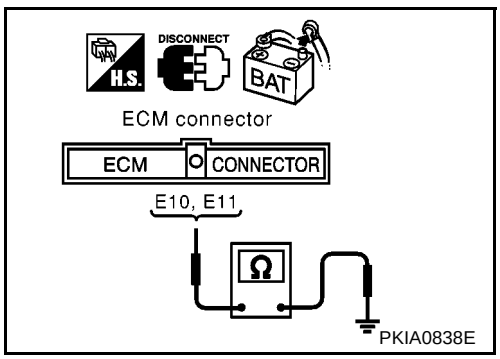
86(R) – ground (Gasoline enging models) : **Continuity should not exist.**



- Continuity between ECM harness connector F114 terminals E11 (L), E10 (R) and ground.(Diesel engine models)

E11(L) – ground (Diesel enging models) : **Continuity should not exist.**

E10(R) – ground (Diesel enging models) : **Continuity should not exist.**



OK or NG

OK >> GO TO 10.

NG >>
- Repair harness between ECM and harness connector F108.(QR engine models)
- Repair harness between ECM and harness connector F109.(QG engine models)
- Repair harness between ECM and harness connector F110.(Diesel engine models)

10. ECM / COMBINATION METER INTERNAL CIRCUIT INSPECTION

Check components inspection. Refer to LAN-253, "ECM / COMBINATION METER INTERNAL CIRCUIT INSPECTION"

OK or NG

OK >> Reconnect all connectors to perform “SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE”, “ABS”, and “SMART ENTRANCE” displayed on CONSULT-II. Refer to EC-150, "DTC U1000, U1001 CAN COMMUNICATION LINE" (QG ENGINE MODELS WITH EURO-OBD), EC-663, "DTC U1000, U1001 CAN COMMUNICATION LINE" (QG ENGINE MODELS WITHOUT EURO-OBD), EC-1083, "DTC U1000, U1001 CAN COMMUNICATION LINE" (QR ENGINE MODELS WITH EURO-OBD), EC-1505, "DTC U1000, U1001 CAN COMMUNICATION LINE" (QR ENGINE MODELS WITHOUT EURO-OBD) or EC-1790, "DTC U1000 CAN COMMUNICATION LINE" (YD ENGINE MODELS) for “ENGINE” and Refer to BRC-33, "CAN Communication Circuit" for “ABS”. Refer to BCS-40, "CAN Communication Line Check" for “SMART ENTRANCE”.

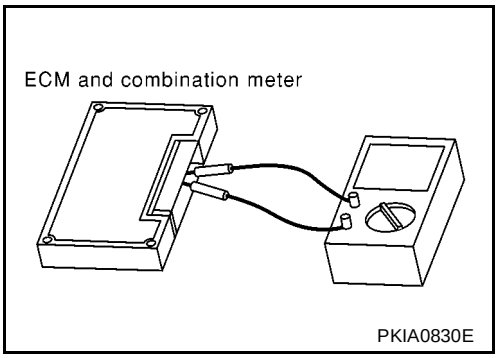
NG >> Replace ECM and/or Combination meter.

Component Inspection

EKS004T2

ECM / COMBINATION METER INTERNAL CIRCUIT INSPECTION

- Remove ECM and Combination meter from vehicle.
- Check resistance between ECM terminals 94 and 86.(Gasoline engine models)
- Check resistance between ECM terminals E11 and E10.(Diesel engine models)
- Check resistance between Combination meter terminals 43 and 44.



Unit	Terminal	Resistance value (Ω)
ECM (Gasoline engine models)	94 – 86	Approx. 108 - 132
ECM (Diesel engine models)	E11 – E10	
Combination meter	43 – 44	

CAN SYSTEM (TYPE 13)

PFP:23710

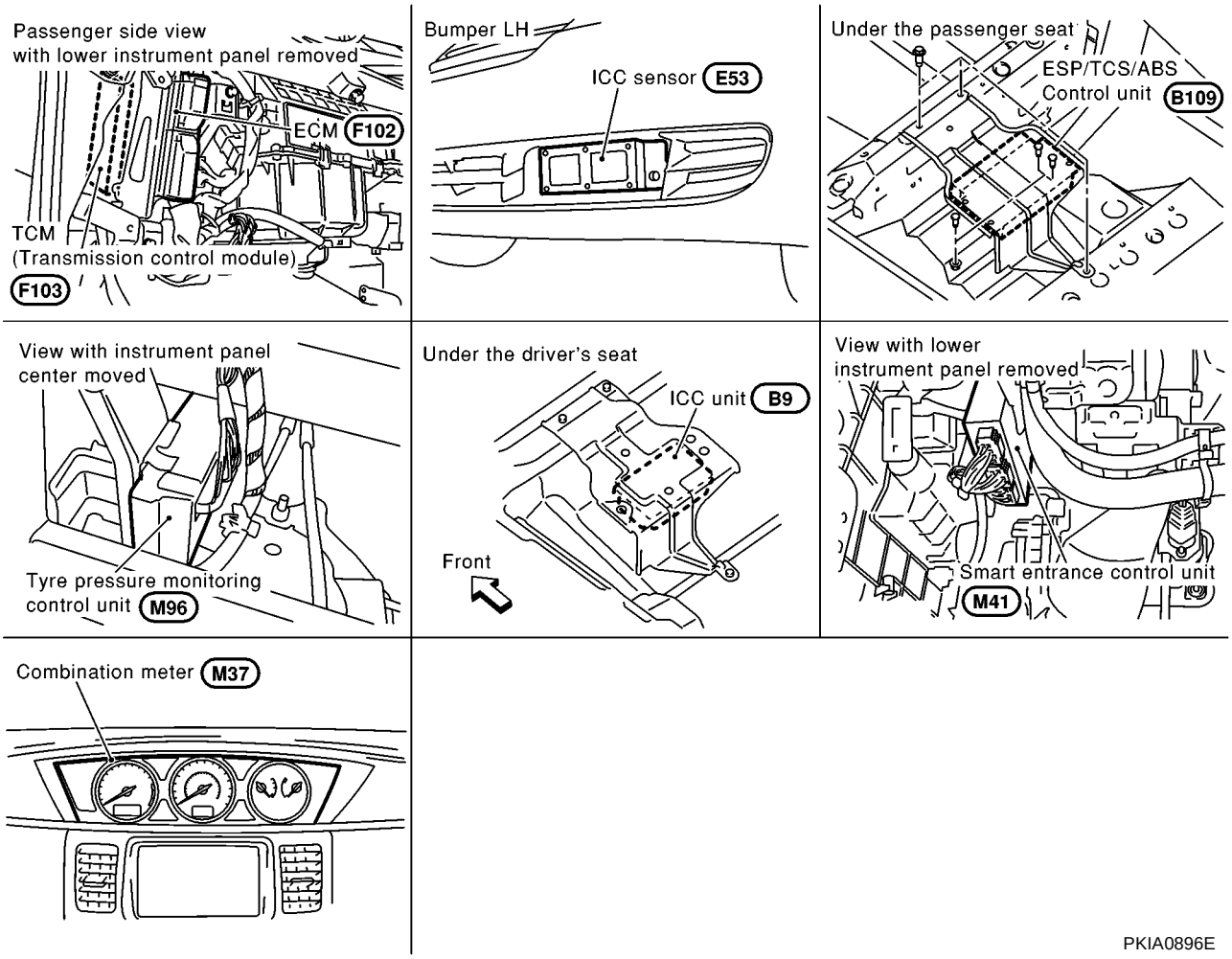
System Description

EKS00543

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.

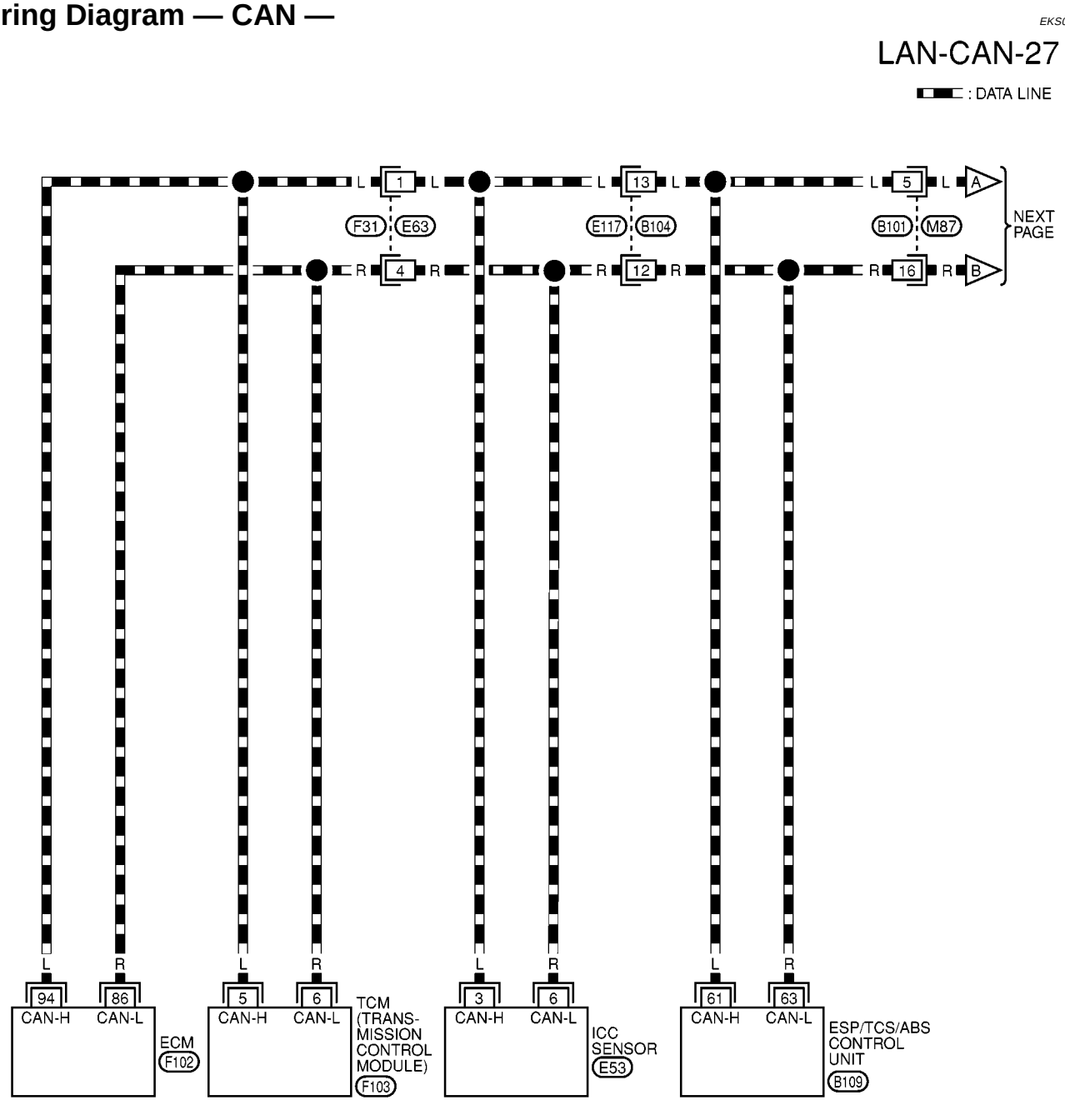
Component Parts and Harness Connector Location

EKS00544



Wiring Diagram — CAN —

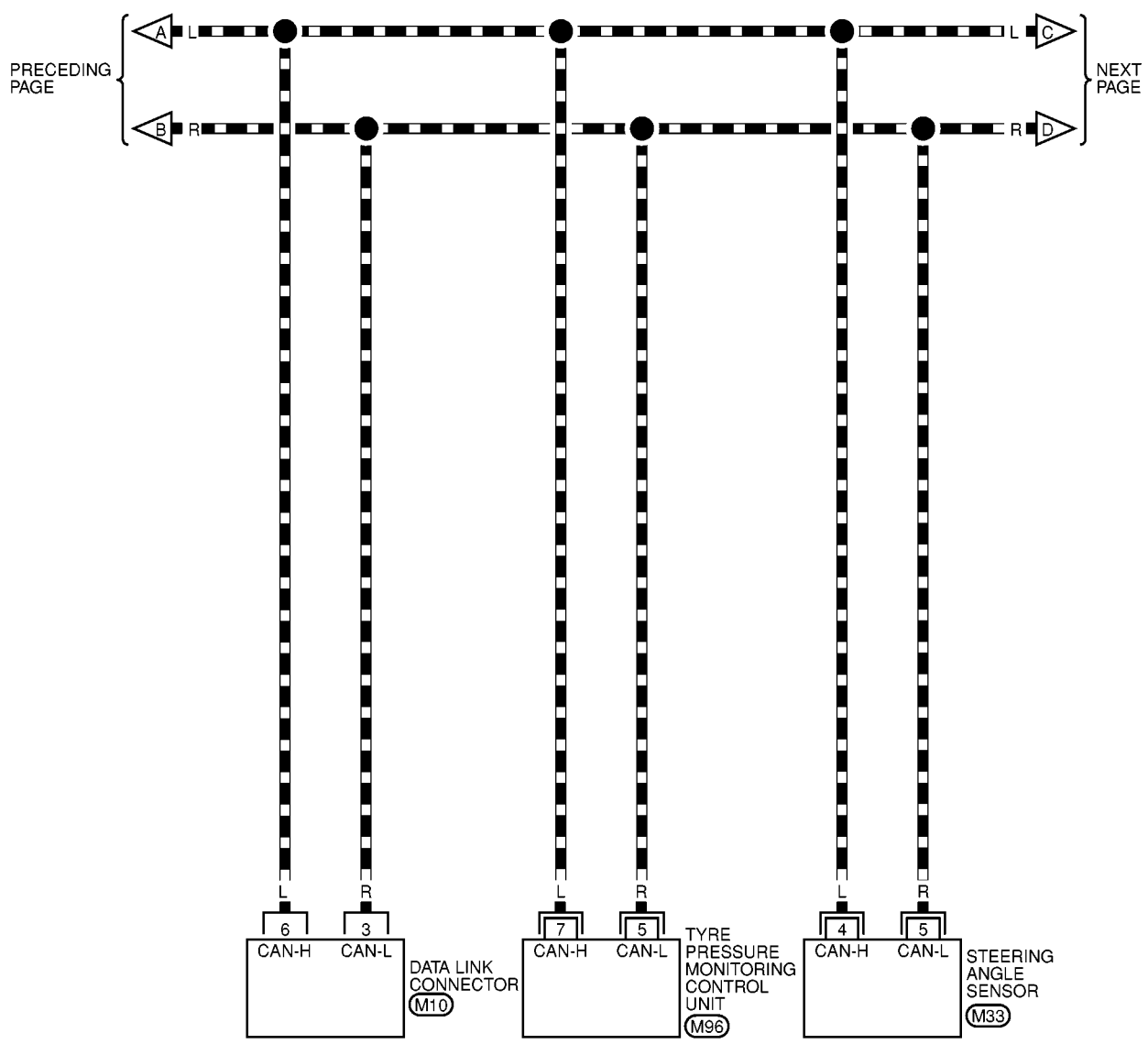
EKS00545

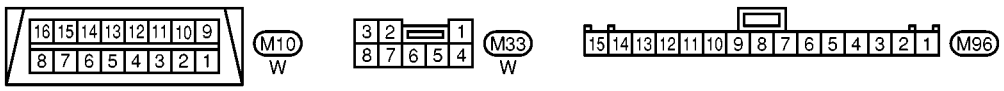


REFER TO THE FOLLOWING.
F102 , F103 , B109
-ELECTRICAL UNITS

MKWA0237E

LAN-CAN-28

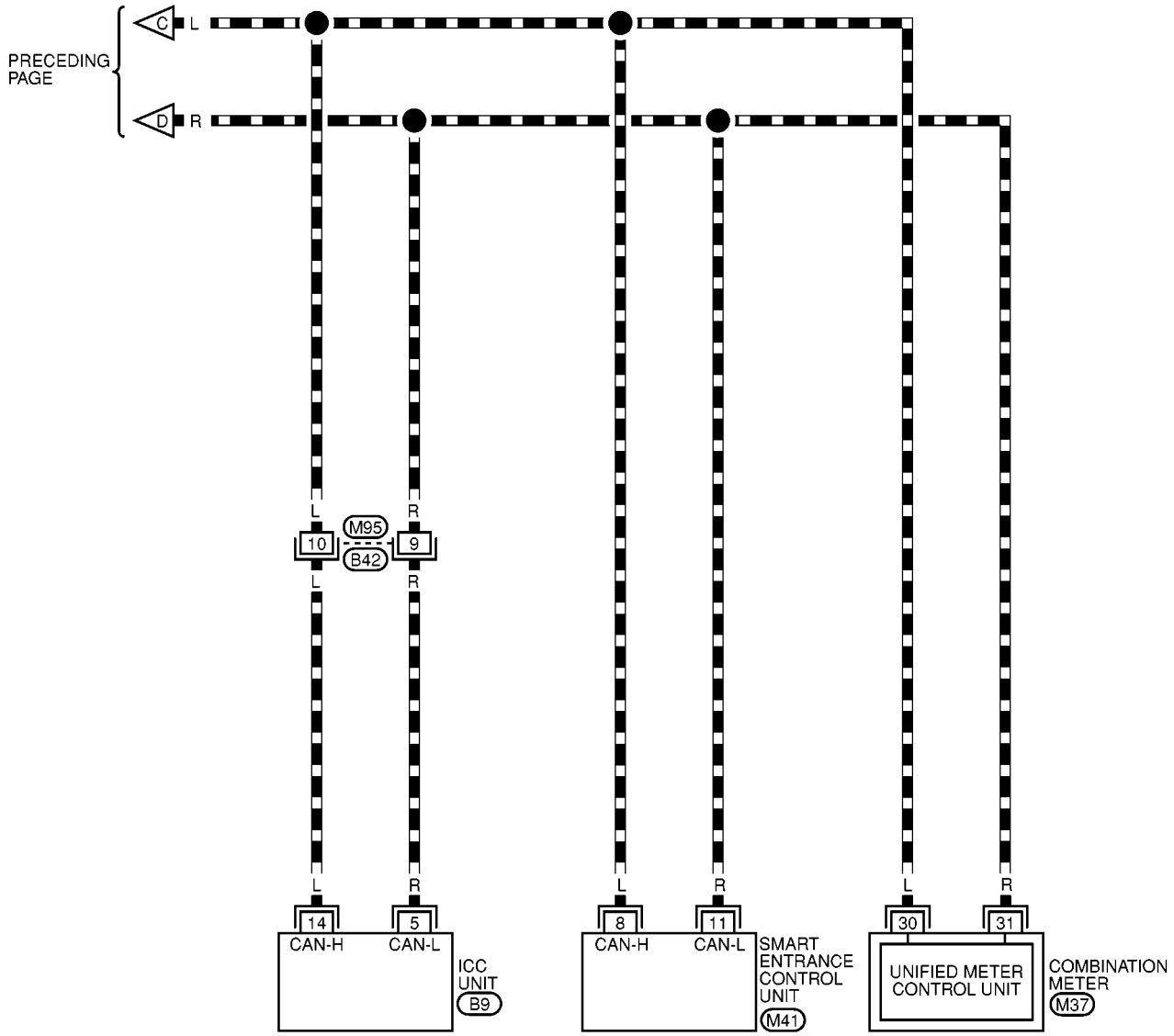


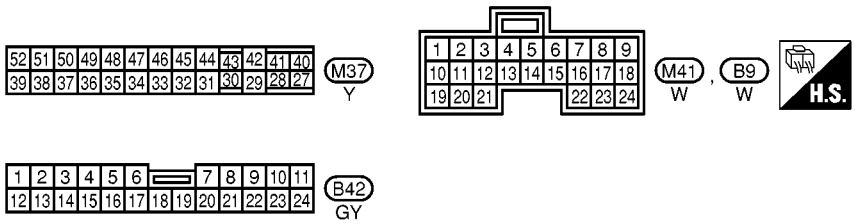


MKWA0238E

LAN-CAN-29

: DATA LINE





MKWA0239E

Work Flow

EKS00546

1. Print all the data of “SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE”, “CVT”, “ABS”, “AIR PRESSURE MONITOR”, “ICC”, and “SMART ENTRANCE” displayed on CONSULT-II. Refer to EC-1083, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) or EC-1505, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) for “ENGINE” and Refer to CVT-118, "DTC U1000 CAN COMMUNICATION LINE" (EURO-OBD) or CVT-201, "CAN COMMUNICATION LINE" (ALL) for “CVT”. Refer to BRC-107, "Inspection 15 CAN Communication Circuit, ESP/TCS/ABS Control Unit and Steering Angle Sensor" for “ABS”. Refer to WT-35, "Inspection 4: CAN Communication Line" for “AIR PRESSURE MONITOR”. Refer to ACS-46, "DTC 20 CAN COMM CIRCUIT" for “ICC”. Refer to BCS-40, "CAN Communication Line Check" for “SMART ENTRANCE”.
2. Attach the printed sheet of “SELF-DIAG RESULTS” and “DATA MONITOR” onto the check sheet. Refer to LAN-259, "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-259, "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-260, "CHECK SHEET RESULTS (EXAMPLE)"

CHECK SHEET

Check sheet table

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 3	–	–	CAN CIRC 5	CAN CIRC 6	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	CAN CIRC 3	–	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	–	–	CAN CIRC 5	CAN CIRC 6	–	–
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	–	–	–	CAN CIRC 2
ICC	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 8	CAN CIRC 3	–	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–	–	–	CAN CIRC 3

Symptoms:

Attach copy of ENGINE SELF-DIAG RESULTS	Attach copy of CVT SELF-DIAG RESULTS	Attach copy of ABS SELF-DIAG RESULTS
Attach copy of AIR PRESSURE MONITOR SELF-DIAG RESULTS	Attach copy of ICC SELF-DIAG RESULTS	Attach copy of SMART ENTRANCE SELF-DIAG RESULTS
Attach copy of ENGINE DATA MONITOR	Attach copy of CVT DATA MONITOR	Attach copy of ABS DATA MONITOR
Attach copy of AIR PRESSURE MONITOR DATA MONITOR	Attach copy of ICC DATA MONITOR	Attach copy of SMART ENTRANCE DATA MONITOR

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CHECK SHEET RESULTS (EXAMPLE)

Case 1: Replace ECM

ENGINE	✓ CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 3	–	–	CAN CIRC 5	CAN CIRC 6	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	CAN CIRC 3	–	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	–	–	CAN CIRC 5	CAN CIRC 6	–	–
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	–	–	–	CAN CIRC 2
ICC	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 8	CAN CIRC 3	–	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–	–	–	CAN CIRC 3

ENGINE	CAN COMM	CAN CIRC 1	–	✓ CAN CIRC 2	–	✓ CAN CIRC 3	–	–	✓ CAN CIRC 5	✓ CAN CIRC 6	✓ CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	CAN CIRC 3	–	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	–	–	CAN CIRC 5	CAN CIRC 6	–	–
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	–	–	–	CAN CIRC 2
ICC	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 8	CAN CIRC 3	–	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–	–	–	CAN CIRC 3

Case 2: Replace TCM

ENGINE	CAN COMM	CAN CIRC 1	–	✓ CAN CIRC 2	–	CAN CIRC 3	–	–	CAN CIRC 5	CAN CIRC 6	CAN CIRC 4
CVT	✓ CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	CAN CIRC 3	–	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	✓ CAN CIRC 3	–	–	–	CAN CIRC 5	CAN CIRC 6	–	–
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	–	–	–	CAN CIRC 2
ICC	CAN COMM	CAN CIRC 1	CAN CIRC 2	✓ CAN CIRC 4	CAN CIRC 8	CAN CIRC 3	–	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–	–	–	CAN CIRC 3

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 3	–	–	CAN CIRC 5	CAN CIRC 6	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	✓ CAN CIRC 2	–	–	✓ CAN CIRC 3	–	–	–	–	✓ CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	–	–	CAN CIRC 5	CAN CIRC 6	–	–
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	–	–	–	CAN CIRC 2
ICC	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 8	CAN CIRC 3	–	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–	–	–	CAN CIRC 3

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Case 3: Replace ESP/TCS/ABS control unit

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 3 ✓	–	–	CAN CIRC 5	CAN CIRC 6	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	CAN CIRC 3 ✓	–	–	–	–	CAN CIRC 4
ABS	CAN COMM ✓	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	–	–	CAN CIRC 5	CAN CIRC 6	–	–
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	–	–	–	CAN CIRC 2
ICC	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 8	CAN CIRC 3 ✓	–	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–	–	–	CAN CIRC 3

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 3	–	–	CAN CIRC 5	CAN CIRC 6	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	CAN CIRC 3	–	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	CAN CIRC 3 ✓	–	–	–	CAN CIRC 5 ✓	CAN CIRC 6 ✓	–	–
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	–	–	–	CAN CIRC 2
ICC	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 8	CAN CIRC 3	–	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–	–	–	CAN CIRC 3

Case 4: Replace Tyre pressure monitoring control unit

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 3	–	–	CAN CIRC 5	CAN CIRC 6	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	CAN CIRC 3	–	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	–	–	CAN CIRC 5	CAN CIRC 6	–	–
AIR PRESSURE MONITOR	CAN COMM ✓	CAN CIRC 1	–	–	–	–	–	–	–	–	CAN CIRC 2
ICC	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 8	CAN CIRC 3	–	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–	–	–	CAN CIRC 3

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Case 5: Replace ICC unit

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 3	–	–	CAN CIRC 5 ✓	CAN CIRC 6	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	CAN CIRC 3	–	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	–	–	CAN CIRC 5	CAN CIRC 6 ✓	–	–
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	–	–	–	CAN CIRC 2
ICC	CAN COMM ✓	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 8	CAN CIRC 3	–	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–	–	–	CAN CIRC 3

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 3	–	–	CAN CIRC 5	CAN CIRC 6	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	CAN CIRC 3	–	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	–	–	CAN CIRC 5	CAN CIRC 6	–	–
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	–	–	–	CAN CIRC 2
ICC	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	CAN CIRC 4 ✓	CAN CIRC 8 ✓	CAN CIRC 3 ✓	–	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–	–	–	CAN CIRC 3

Case 6: Replace Smart entrance control unit

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 3	–	–	CAN CIRC 5	CAN CIRC 6	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	CAN CIRC 3	–	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	–	–	CAN CIRC 5	CAN CIRC 6	–	–
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	–	–	–	CAN CIRC 2
ICC	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 8	CAN CIRC 3	–	–	–	–	–
SMART ENTRANCE	CAN COMM ✓	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–	–	–	CAN CIRC 3

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 3	–	–	CAN CIRC 5	CAN CIRC 6	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	CAN CIRC 3	–	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	–	–	CAN CIRC 5	CAN CIRC 6	–	–
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	–	–	–	CAN CIRC 2
ICC	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 8	CAN CIRC 3	–	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	–	–	–	–	–	–	–	CAN CIRC 3 ✓

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Case 7

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 3 ✓	–	–	CAN CIRC 5 ✓	CAN CIRC 6 ✓	CAN CIRC 4 ✓
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	CAN CIRC 3 ✓	–	–	–	–	CAN CIRC 4 ✓
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	CAN CIRC 3 ✓	–	–	–	CAN CIRC 5	CAN CIRC 6	–	–
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	–	–	–	CAN CIRC 2
ICC	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	CAN CIRC 4 ✓	CAN CIRC 8	CAN CIRC 3	–	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	–	–	–	–	–	–	–	CAN CIRC 3

Case 8

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 3 ✓	–	–	CAN CIRC 5 ✓	CAN CIRC 6 ✓	CAN CIRC 4 ✓
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	CAN CIRC 3 ✓	–	–	–	–	CAN CIRC 4 ✓
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	CAN CIRC 3 ✓	–	–	–	CAN CIRC 5	CAN CIRC 6	–	–
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	–	–	–	CAN CIRC 2
ICC	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	CAN CIRC 4 ✓	CAN CIRC 8 ✓	CAN CIRC 3	–	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	–	–	–	–	–	–	–	CAN CIRC 3

Case 9

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 3	–	–	CAN CIRC 5 ✓	CAN CIRC 6 ✓	CAN CIRC 4 ✓
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	CAN CIRC 3	–	–	–	–	CAN CIRC 4 ✓
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	–	–	CAN CIRC 5 ✓	CAN CIRC 6 ✓	–	–
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	–	–	–	CAN CIRC 2
ICC	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	CAN CIRC 4 ✓	CAN CIRC 8 ✓	CAN CIRC 3 ✓	–	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	–	–	–	–	–	–	–	CAN CIRC 3

Case 10

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 3	–	–	CAN CIRC 5 ✓	CAN CIRC 6 ✓	CAN CIRC 4 ✓
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	CAN CIRC 3	–	–	–	–	CAN CIRC 4 ✓
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	–	–	CAN CIRC 5 ✓	CAN CIRC 6 ✓	–	–
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	–	–	–	CAN CIRC 2 ✓
ICC	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	CAN CIRC 4 ✓	CAN CIRC 8 ✓	CAN CIRC 3 ✓	–	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	–	–	–	–	–	–	–	CAN CIRC 3

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Case 11

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 3	–	–	CAN CIRC 5 ✓	CAN CIRC 6 ✓	CAN CIRC 4 ✓
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	CAN CIRC 3	–	–	–	–	CAN CIRC 4 ✓
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	–	–	CAN CIRC 5	CAN CIRC 6 ✓	–	–
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	–	–	–	CAN CIRC 2 ✓
ICC	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	CAN CIRC 4 ✓	CAN CIRC 8 ✓	CAN CIRC 3 ✓	–	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	–	–	–	–	–	–	–	CAN CIRC 3

Case 12

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 3	–	–	CAN CIRC 5	CAN CIRC 6 ✓	CAN CIRC 4 ✓
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	CAN CIRC 3	–	–	–	–	CAN CIRC 4 ✓
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	–	–	CAN CIRC 5	CAN CIRC 6	–	–
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	–	–	–	CAN CIRC 2 ✓
ICC	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 8	CAN CIRC 3	–	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	–	–	–	–	–	–	–	CAN CIRC 3

Case 13

ENGINE	CAN COMM	CAN CIRC 1 ✓	–	CAN CIRC 2 ✓	–	CAN CIRC 3 ✓	–	–	CAN CIRC 5 ✓	CAN CIRC 6 ✓	CAN CIRC 4 ✓
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	–	–	CAN CIRC 3	–	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	CAN CIRC 3	–	–	–	CAN CIRC 5	CAN CIRC 6	–	–
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	–	–	–	CAN CIRC 2
ICC	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	CAN CIRC 4	CAN CIRC 8	CAN CIRC 3	–	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	–	–	–	–	–	–	–	CAN CIRC 3

Case 14

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2 ✓	–	CAN CIRC 3	–	–	CAN CIRC 5	CAN CIRC 6	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1 ✓	CAN CIRC 2 ✓	–	–	CAN CIRC 3 ✓	–	–	–	–	CAN CIRC 4 ✓
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3 ✓	–	–	–	CAN CIRC 5	CAN CIRC 6	–	–
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	–	–	–	CAN CIRC 2
ICC	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4 ✓	CAN CIRC 8	CAN CIRC 3	–	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–	–	–	CAN CIRC 3

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Case 15

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 3	–	–	CAN CIRC 5	CAN CIRC 6	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	CAN CIRC 3	–	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	–	–	CAN CIRC 5	CAN CIRC 6	–	–
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	–	–	–	CAN CIRC 2
ICC	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 8 ✓	CAN CIRC 3	–	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–	–	–	CAN CIRC 3

Case 16

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 3 ✓	–	–	CAN CIRC 5	CAN CIRC 6	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	CAN CIRC 3 ✓	–	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1 ✓	CAN CIRC 2 ✓	CAN CIRC 3 ✓	–	–	–	CAN CIRC 5 ✓	CAN CIRC 6 ✓	–	–
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	–	–	–	CAN CIRC 2
ICC	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 8	CAN CIRC 3 ✓	–	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–	–	–	CAN CIRC 3

Case 17

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 3	–	–	CAN CIRC 5	CAN CIRC 6	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	CAN CIRC 3	–	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	–	–	CAN CIRC 5	CAN CIRC 6	–	–
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1 ✓	–	–	–	–	–	–	–	–	CAN CIRC 2 ✓
ICC	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 8	CAN CIRC 3	–	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–	–	–	CAN CIRC 3

Case 18

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 3	–	–	CAN CIRC 5	CAN CIRC 6	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	CAN CIRC 3	–	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	–	–	CAN CIRC 5 ✓	CAN CIRC 6	–	–
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	–	–	–	CAN CIRC 2
ICC	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 8	CAN CIRC 3	–	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–	–	–	CAN CIRC 3

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Case 19

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 3	–	–	CAN CIRC 5 ✓	CAN CIRC 6	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	CAN CIRC 3	–	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	–	–	CAN CIRC 5	CAN CIRC 6 ✓	–	–
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	–	–	–	CAN CIRC 2
ICC	CAN COMM	CAN CIRC 1 ✓	CAN CIRC 2 ✓	CAN CIRC 4 ✓	CAN CIRC 8 ✓	CAN CIRC 3 ✓	–	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–	–	–	CAN CIRC 3

Case 20

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 3	–	–	CAN CIRC 5	CAN CIRC 6 ✓	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	CAN CIRC 3	–	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	–	–	CAN CIRC 5	CAN CIRC 6	–	–
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	–	–	–	CAN CIRC 2
ICC	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 8	CAN CIRC 3	–	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1 ✓	CAN CIRC 2 ✓	–	–	–	–	–	–	–	CAN CIRC 3 ✓

Case 21

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 3	–	–	CAN CIRC 5	CAN CIRC 6	CAN CIRC 4 ✓
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	CAN CIRC 3	–	–	–	–	CAN CIRC 4 ✓
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	–	–	CAN CIRC 5	CAN CIRC 6	–	–
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	–	–	–	CAN CIRC 2 ✓
ICC	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 8	CAN CIRC 3	–	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–	–	–	CAN CIRC 3 ✓

Case 22

ENGINE	CAN COMM	CAN CIRC 1 ✓	–	CAN CIRC 2 ✓	–	CAN CIRC 3 ✓	–	–	CAN CIRC 5 ✓	CAN CIRC 6 ✓	CAN CIRC 4 ✓
CVT	CAN COMM	CAN CIRC 1 ✓	CAN CIRC 2 ✓	–	–	CAN CIRC 3 ✓	–	–	–	–	CAN CIRC 4 ✓
ABS	CAN COMM	CAN CIRC 1 ✓	CAN CIRC 2 ✓	CAN CIRC 3 ✓	–	–	–	CAN CIRC 5 ✓	CAN CIRC 6 ✓	–	–
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1 ✓	–	–	–	–	–	–	–	–	CAN CIRC 2 ✓
ICC	CAN COMM	CAN CIRC 1 ✓	CAN CIRC 2 ✓	CAN CIRC 4 ✓	CAN CIRC 8 ✓	CAN CIRC 3 ✓	–	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1 ✓	CAN CIRC 2 ✓	–	–	–	–	–	–	–	CAN CIRC 3 ✓

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

INSPECTION

Proceed trouble diagnosis according to the check sheet results (example).
Case 1:Replace ECM.
Case 2:Replace TCM.
Case 3:Replace ESP/TCS/ABS control unit.
Case 4:Replace Tyre pressure monitoring control unit.
Case 5:Replace ICC unit.
Case 6:Replace Smart entrance control unit.
Case 7:Check Harness between TCM and ICC sensor. Refer to LAN-267, "Circuit Check Between TCM and ICC Sensor"
Case 8:Check Harness between ICC sensor and ESP/TCS/ABS control unit. Refer to LAN-268, "Circuit Check Between ICC Sensor and ESP/TCS/ABS Control Unit"
Case 9:Check Harness between ESP/TCS/ABS control unit and Tyre pressure monitoring control unit. Refer to LAN-269, "Circuit Check Between ESP/TCS/ABS Control Unit and Tyre Pressure Monitoring Control Unit"
Case 10:Check Harness between Tyre pressure monitoring control unit and Steering angle sensor. Refer to LAN-270, "Circuit Check Between Tyre Pressure Monitoring Control Unit and Steering Angle Sensor"
Case 11:Check Harness between Steering angle sensor and ICC unit. Refer to LAN-271, "Circuit Check Between Steering Angle Sensor and ICC Unit"
Case 12:Check Harness between ICC unit and Smart entrance control unit. Refer to LAN-272, "Circuit Check Between ICC Unit and Smart Entrance Control Unit"
Case 13:Check ECM Circuit. Refer to LAN-272, "ECM Circuit Check"
Case 14:Check TCM Circuit. Refer to LAN-273, "TCM Circuit Check"
Case 15:Check ICC sensor Circuit. Refer to LAN-273, "ICC Sensor Circuit Check"
Case 16:Check ESP/TCS/ABS control unit Circuit. Refer to LAN-274, "ESP/TCS/ABS Control Unit Circuit Check"
Case 17:Check Tyre pressure monitoring control unit Circuit. Refer to LAN-274, "Tyre Pressure Monitoring Control Unit Circuit Check"
Case 18:Check Steering angle sensor Circuit. Refer to LAN-275, "Steering Angle Sensor Circuit Check"
Case 19:Check ICC unit Circuit. Refer to LAN-275, "ICC Unit Circuit Check"
Case 20:Check Smart entrance control unit Circuit. Refer to LAN-276, "Smart Entrance Control Unit Circuit Check"
Case 21:Check Combination meter Circuit. Refer to LAN-276, "Combination Meter Circuit Check"
Case 22:Check CAN communication Circuit. Refer to LAN-277, "CAN Communication Circuit Check"

Circuit Check Between TCM and ICC Sensor

EKS00547

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, sensor-side and harness-side)

- TCM.
- ICC sensor.
- Between TCM and ICC sensor.

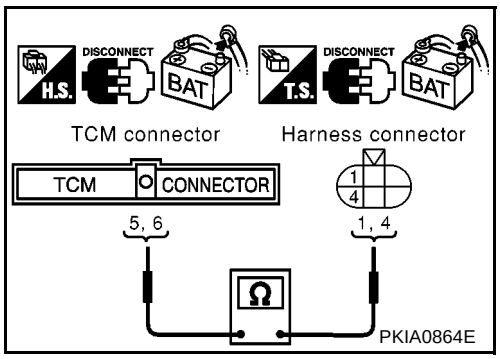
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect TCM connector and harness connector F31.
2. Check continuity between TCM harness connector F103 terminals 5 (L), 6 (R) and harness connector F31 terminals 1 (L), 4 (R).

5(L) – 1(L) : Continuity should exist.
6(R) – 4(R) : Continuity should exist.



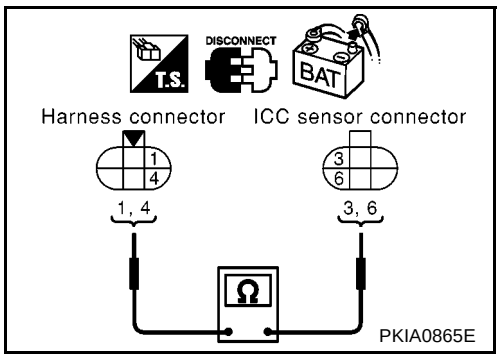
OK or NG

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

3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ICC sensor connector.
2. Check continuity between harness connector E63 terminals 1 (L), 4 (R) and ICC sensor harness connector E53 terminals 3 (L), 6 (R).

1(L) – 3(L) : Continuity should exist.
4(R) – 6(R) : Continuity should exist.



OK or NG

OK >> Reconnect all connectors to perform “SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE”, “CVT”, “ABS”, “AIR PRESSURE MONITOR”, “ICC”, and “SMART ENTRANCE” displayed on CONSULT-II. Refer to EC-1083, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) or EC-1505, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) for “ENGINE” and Refer to CVT-118, "DTC U1000 CAN COMMUNICATION LINE" (EURO-OBD) or CVT-201, "CAN COMMUNICATION LINE" (ALL) for “CVT”. Refer to BRC-107, "Inspection 15 CAN Communication Circuit, ESP/TCS/ABS Control Unit and Steering Angle Sensor" for “ABS”. Refer to WT-35, "Inspection 4: CAN Communication Line" for “AIR PRESSURE MONITOR”. Refer to ACS-46, "DTC 20 CAN COMM CIRCUIT" for “ICC”. Refer to BCS-40, "CAN Communication Line Check" for “SMART ENTRANCE”.
NG >> Repair harness.

Circuit Check Between ICC Sensor and ESP/TCS/ABS Control Unit

EKS00548

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. (sensor-side, control unit-side and harness-side)

- ICC sensor.
- ESP/TCS/ABS control unit.
- Between ICC sensor and ESP/TCS/ABS control unit.

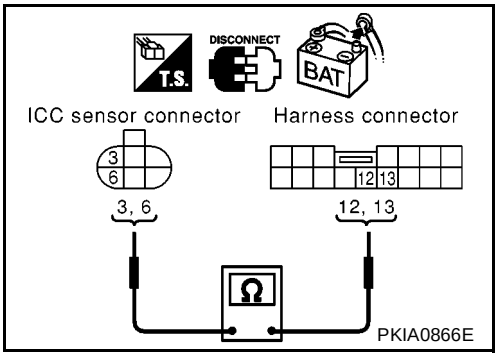
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ICC sensor connector and harness connector E117.
2. Check continuity between ICC sensor harness connector E53 terminals 3 (L), 6 (R) and harness connector E117 terminals 13 (L), 12 (R).

3(L) – 13(L) : Continuity should exist.
6(R) – 12(R) : Continuity should exist.



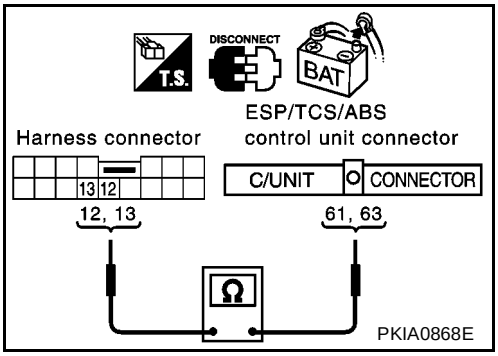
OK or NG

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

3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ESP/TCS/ABS control unit connector.
2. Check continuity between harness connector B104 terminals 13 (L), 12 (R) and ESP/TCS/ABS control unit harness connector B109 terminals 61 (L), 63 (R).

13(L) – 61(L) : Continuity should exist.
12(R) – 63(R) : Continuity should exist.



OK or NG

OK >> Reconnect all connectors to perform “SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE”, “CVT”, “ABS”, “AIR PRESSURE MONITOR”, “ICC”, and “SMART ENTRANCE” displayed on CONSULT-II. Refer to EC-1083, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) or EC-1505, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) for “ENGINE” and Refer to CVT-118, "DTC U1000 CAN COMMUNICATION LINE" (EURO-OBD) or CVT-201, "CAN COMMUNICATION LINE" (ALL) for “CVT”. Refer to BRC-107, "Inspection 15 CAN Communication Circuit, ESP/TCS/ABS Control Unit and Steering Angle Sensor" for “ABS”. Refer to WT-35, "Inspection 4: CAN Communication Line" for “AIR PRESSURE MONITOR”. Refer to ACS-46, "DTC 20 CAN COMM CIRCUIT" for “ICC”. Refer to BCS-40, "CAN Communication Line Check" for “SMART ENTRANCE”.
NG >> Repair harness.

Circuit Check Between ESP/TCS/ABS Control Unit and Tyre Pressure Monitoring Control Unit

EKS00549

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 unit-side and harness-side)

- Tyre pressure monitoring control unit.
- ESP/TCS/ABS control unit.
- Between ESP/TCS/ABS control unit and tyre pressure monitoring control unit.

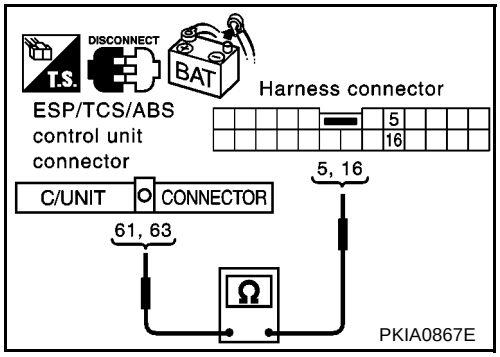
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ESP/TCS/ABS control unit connector and harness connector B101.
2. Check continuity between ESP/TCS/ABS control unit harness connector B109 terminals 61 (L), 63 (R) and harness connector B101 terminals 5 (L), 16 (R).

61(L) – 5(L) : Continuity should exist.
63(R) – 16(R) : Continuity should exist.



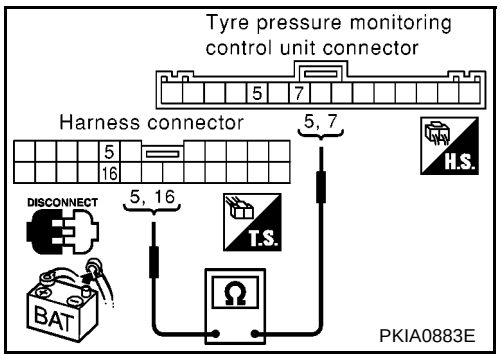
OK or NG

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

3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect tyre pressure monitoring control unit connector.
2. Check continuity between harness connector M87 terminals 5 (L), 16 (R) and tyre pressure monitoring control unit harness connector M96 terminals 7 (L), 5 (R).

5(L) – 7(L) : Continuity should exist.
16(R) – 5(R) : Continuity should exist.



OK or NG

OK >> Reconnect all connectors to perform “SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE”, “CVT”, “ABS”, “AIR PRESSURE MONITOR”, “ICC”, and “SMART ENTRANCE” displayed on CONSULT-II. Refer to EC-1083, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) or EC-1505, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) for “ENGINE” and Refer to CVT-118, "DTC U1000 CAN COMMUNICATION LINE" (EURO-OBD) or CVT-201, "CAN COMMUNICATION LINE" (ALL) for “CVT”. Refer to BRC-107, "Inspection 15 CAN Communication Circuit, ESP/TCS/ABS Control Unit and Steering Angle Sensor" for “ABS”. Refer to WT-35, "Inspection 4: CAN Communication Line" for “AIR PRESSURE MONITOR”. Refer to ACS-46, "DTC 20 CAN COMM CIRCUIT" for “ICC”. Refer to BCS-40, "CAN Communication Line Check" for “SMART ENTRANCE”.
NG >> Repair harness.

Circuit Check Between Tyre Pressure Monitoring Control Unit and Steering Angle Sensor

EKS0054A

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. (sensor-side, control unit-side and harness-side)

- Steering angle sensor.
- Tyre pressure monitoring control unit.

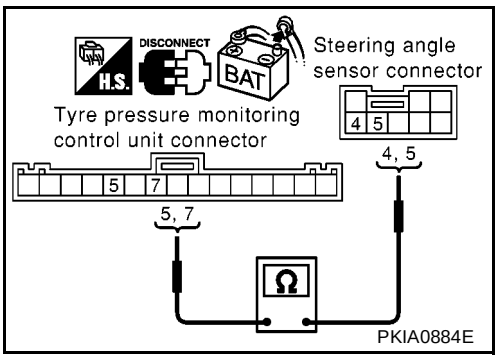
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect tyre pressure monitoring control unit connector and steering angle sensor connector.
2. Check continuity between tyre pressure monitoring control unit harness connector M96 terminals 7 (L), 5 (R) and steering angle sensor harness connector M33 terminals 4 (L), 5 (R).

7(L) – 4(L) : Continuity should exist.
5(R) – 5(R) : Continuity should exist.



OK or NG

OK >> Reconnect all connectors to perform “SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE”, “CVT”, “ABS”, “AIR PRESSURE MONITOR”, “ICC”, and “SMART ENTRANCE” displayed on CONSULT-II. Refer to EC-1083, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) or EC-1505, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) for “ENGINE” and Refer to CVT-118, "DTC U1000 CAN COMMUNICATION LINE" (EURO-OBD) or CVT-201, "CAN COMMUNICATION LINE" (ALL) for “CVT”. Refer to BRC-107, "Inspection 15 CAN Communication Circuit, ESP/TCS/ABS Control Unit and Steering Angle Sensor" for “ABS”. Refer to WT-35, "Inspection 4: CAN Communication Line" for “AIR PRESSURE MONITOR”. Refer to ACS-46, "DTC 20 CAN COMM CIRCUIT" for “ICC”. Refer to BCS-40, "CAN Communication Line Check" for “SMART ENTRANCE”.

NG >> Repair harness.

Circuit Check Between Steering Angle Sensor and ICC Unit

EKS0054B

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 unit-side, sensor-side and harness-side)

- ICC unit.
- Steering angle sensor.
- Between ICC unit and steering angle sensor.

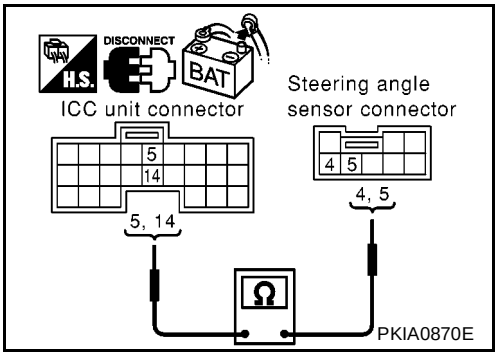
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ICC unit connector and steering angle sensor connector.
2. Check continuity between ICC unit harness connector B9 terminals 14 (L), 5 (R) and steering angle sensor harness connector M33 terminals 4 (L), 5 (R).

14(L) – 4(L) : Continuity should exist.
5(R) – 5(R) : Continuity should exist.



OK or NG

OK >> Reconnect all connectors to perform “SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE”, “CVT”, “ABS”, “AIR PRESSURE MONITOR”, “ICC”, and “SMART ENTRANCE” displayed on CONSULT-II. Refer to EC-1083, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) or EC-1505, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) for “ENGINE” and Refer to CVT-118, "DTC U1000 CAN COMMUNICATION LINE" (EURO-OBD) or CVT-201, "CAN COMMUNICATION LINE" (ALL) for “CVT”. Refer to BRC-107, "Inspection 15 CAN Communication Circuit, ESP/TCS/ABS Control

Unit and Steering Angle Sensor" for “ABS”. Refer to WT-35, "Inspection 4: CAN Communication Line" for “AIR PRESSURE MONITOR”. Refer to ACS-46, "DTC 20 CAN COMM CIRCUIT" for “ICC”. Refer to BCS-40, "CAN Communication Line Check" for “SMART ENTRANCE”.

NG >> Repair harness.

Circuit Check Between ICC Unit and Smart Entrance Control Unit

EKS0054C

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 unit-side and harness-side)

- ICC unit.
- Smart entrance control unit.
- Between ICC unit and smart entrance control unit.

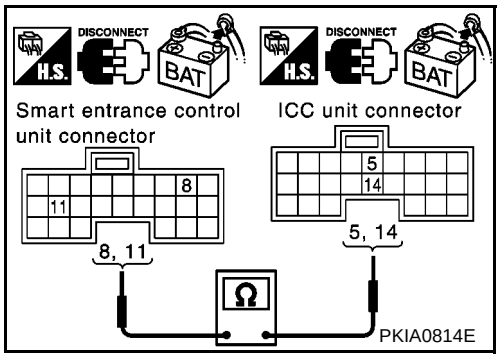
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ICC unit connector and smart entrance control unit connector.
2. Check continuity between smart entrance control unit harness connector M41 terminals 8 (L), 11 (R) and ICC unit harness connector B9 terminals 14 (L), 5 (R).

8(L) – 14(L) : Continuity should exist.
11(R) – 5(R) : Continuity should exist.



OK or NG

OK >> Reconnect all connectors to perform “SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE”, “CVT”, “ABS”, “AIR PRESSURE MONITOR”, “ICC”, and “SMART ENTRANCE” displayed on CONSULT-II. Refer to EC-1083, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) or EC-1505, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) for “ENGINE” and Refer to CVT-118, "DTC U1000 CAN COMMUNICATION LINE" (EURO-OBD) or CVT-201, "CAN COMMUNICATION LINE" (ALL) for “CVT”. Refer to BRC-107, "Inspection 15 CAN Communication Circuit, ESP/TCS/ABS Control Unit and Steering Angle Sensor" for “ABS”. Refer to WT-35, "Inspection 4: CAN Communication Line" for “AIR PRESSURE MONITOR”. Refer to ACS-46, "DTC 20 CAN COMM CIRCUIT" for “ICC”. Refer to BCS-40, "CAN Communication Line Check" for “SMART ENTRANCE”.

NG >> Repair harness.

ECM Circuit Check

EKS0054D

1. CHECK CONNECTOR

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

OK or NG

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

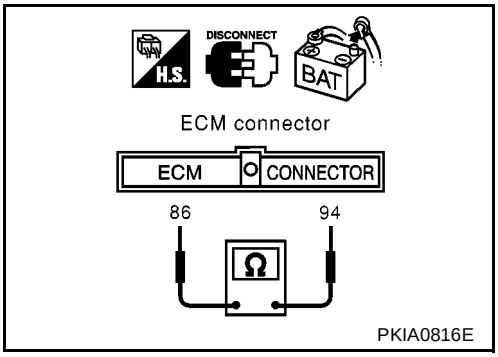
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ECM connector.
2. Check resistance between ECM harness connector F102 terminals 94(L) and 86(R).

94(L) – 86(R) **: Approx. 108 – 132Ω**

OK or NG

OK >> Replace ECM.
NG >> Repair harness between TCM and ECM.



TCM Circuit Check

EKS0054E

1. CHECK CONNECTOR

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

OK or NG

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

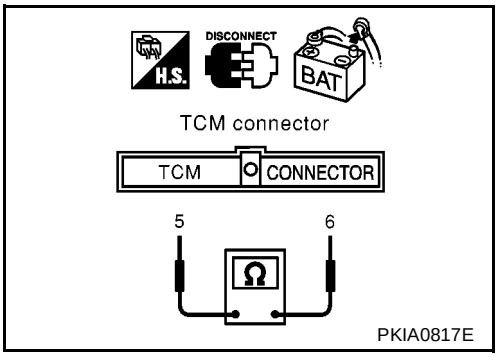
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect TCM connector.
2. Check resistance between TCM harness connector F103 terminals 5(L) and 6(R).

5(L) – 6(R) **: Approx. 54 – 66Ω**

OK or NG

OK >> Replace TCM.
NG >> Repair harness between TCM and ECM.



ICC Sensor Circuit Check

EKS0054F

1. CHECK CONNECTOR

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

OK or NG

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

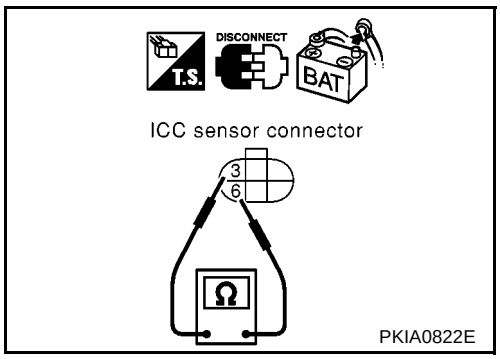
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ICC sensor connector.
2. Check resistance between ICC sensor harness connector E53 terminals 3(L) and 6(R).

3(L) – 6(R) : Approx. 54 – 66Ω

OK or NG

OK >> Replace ICC sensor.
NG >> Repair harness between ESP/TCS/ABS control unit and ICC sensor.



ESP/TCS/ABS Control Unit Circuit Check

EKS0054G

1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check following terminals and connector of ESP/TCS/ABS control unit for damage, bend and loose connection. (control unit-side and harness-side)

OK or NG

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

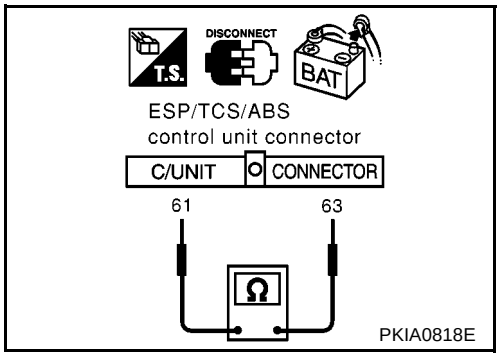
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ESP/TCS/ABS control unit connector.
2. Check resistance between ESP/TCS/ABS control unit harness connector B109 terminals 61(L) and 63(R).

61(L) – 63(R) : Approx. 54 – 66Ω

OK or NG

OK >> Replace ESP/TCS/ABS control unit.
NG >> Repair harness between Data link connector and ESP/TCS/ABS control unit.



Tyre Pressure Monitoring Control Unit Circuit Check

EKS0054H

1. CHECK CONNECTOR

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

OK or NG

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

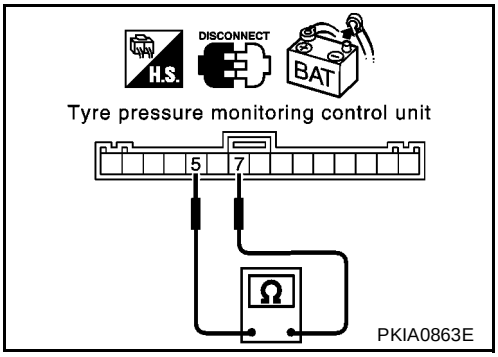
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect tyre pressure monitoring control unit connector.
2. Check resistance between tyre pressure monitoring control unit harness connector M96 terminals 7(L) and 5(R).

7(L) – 5(R) : Approx. 54 – 66Ω

OK or NG

OK >> Replace tyre pressure monitoring control unit.
NG >> Repair harness between steering angle sensor and tyre pressure monitoring control unit.



Steering Angle Sensor Circuit Check

EKS0054I

1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check terminals and connector of steering angle sensor for damage, bend and loose connection. (sensor-side and harness-side)

OK or NG

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

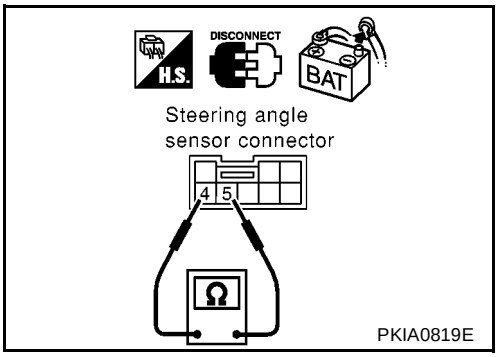
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect steering angle sensor connector.
2. Check resistance between steering angle sensor harness connector M33 terminals 4(L) and 5(R).

4(L) – 5(R) : Approx. 54 – 66Ω

OK or NG

OK >> Replace steering angle sensor.
NG >> Repair harness between tyre pressure monitoring control unit and steering angle sensor.



ICC Unit Circuit Check

EKS0054J

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 unit-side and harness-side)

- ICC unit.
- Harness connector B42.
- Harness connector M95.

OK or NG

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

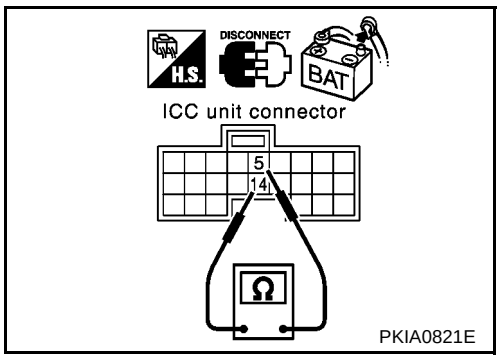
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ICC unit connector.
2. Check resistance between ICC unit harness connector B9 terminals 14(L) and 5(R).

14(L) – 5(R) : Approx. 54 – 66Ω

OK or NG

OK >> Replace ICC unit.
NG >> Repair harness between ICC unit and smart entrance control unit.



Smart Entrance Control Unit Circuit Check

EKS0054K

1. CHECK CONNECTOR

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

OK or NG

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

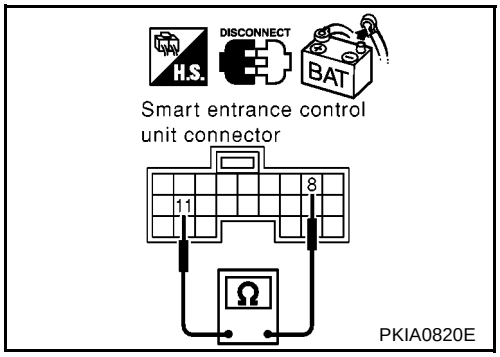
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect smart entrance control unit connector.
2. Check resistance between smart entrance control unit harness connector M41 terminals 8(L) and 11(R).

8(L) – 11(R) : Approx. 54 – 66Ω

OK or NG

OK >> Replace smart entrance control unit.
NG >> Repair harness between ICC unit and smart entrance control unit.



Combination Meter Circuit Check

EKS0054L

1. CHECK CONNECTOR

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

OK or NG

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

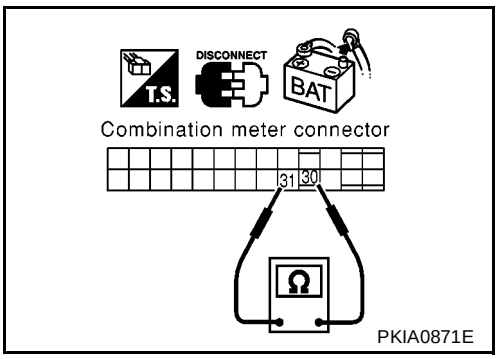
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect combination meter connector.
2. Check resistance between combination meter harness connector M37 terminals 30(L) and 31(R).

30(L) – 31(R) : Approx. 108 – 132Ω

OK or NG

OK >> Replace combination meter.
NG >> Repair harness between smart entrance control unit and combination meter.



CAN Communication Circuit Check

EKS0054M

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. (meter-side, control unit-side, sensor-side, control module-side and harness-side)

- Combination meter.
- Smart entrance control unit.
- ICC unit.
- Steering angle sensor.
- Tyre pressure monitoring control unit.
- ESP/TCS/ABS control unit.
- ICC sensor.
- TCM.
- ECM.
- Between ICC unit and ECM.

OK or NG

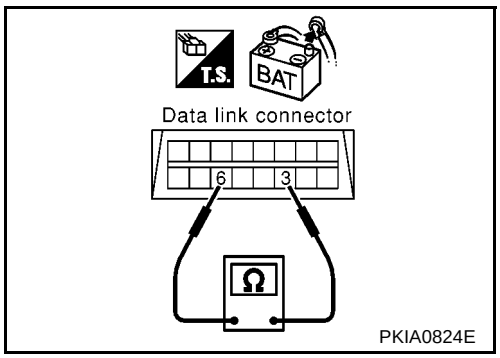
OK >> GO TO 2.
NG >> Repair terminal or connector.

2. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect the following connectors.
- Combination meter connector.
- Smart entrance control unit connector.
- Steering angle sensor connector.
- Tyre pressure monitoring control unit connector.
- Harness connector M95.
- Harness connector M87.

2. Check continuity between Data link connector M10 terminals 6 (L) and 3(R).

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



OK or NG

OK >> GO TO 3.

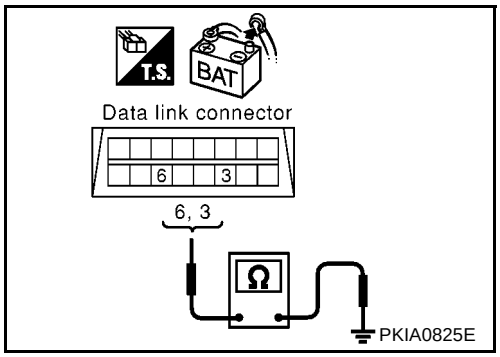
NG >>
- Repair harness between smart entrance control unit and combination meter.
- Repair harness between smart entrance control unit and harness connector M95.
- Repair harness between harness connector M95 and steering angle sensor.
- Repair harness between steering angle sensor and tyre pressure monitoring control unit.
- Repair harness between Data link connector and tyre pressure monitoring control unit.
- Repair harness between Data link connector and harness connector M87.

3. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between Data link connector M10 terminals 6 (L), 3(R) and ground.

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

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



OK or NG

OK >> GO TO 4.

NG >>
- Repair harness between smart entrance control unit and combination meter.
- Repair harness between smart entrance control unit and harness connector M95.
- Repair harness between harness connector M95 and steering angle sensor.
- Repair harness between steering angle sensor and tyre pressure monitoring control unit.
- Repair harness between Data link connector and tyre pressure monitoring control unit.
- Repair harness between Data link connector and harness connector M87.

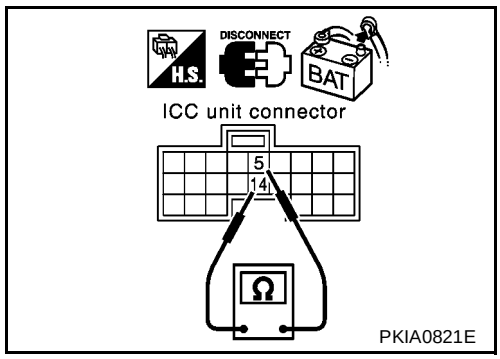
4. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect ICC unit connector.
2. Check continuity between ICC unit harness connector B9 terminals 14 (L) and 5(R).

14(L) – 5(R) : Continuity should not exist.

OK or NG

OK >> GO TO 5.
NG >> Repair harness between ICC unit and harness connector B42.



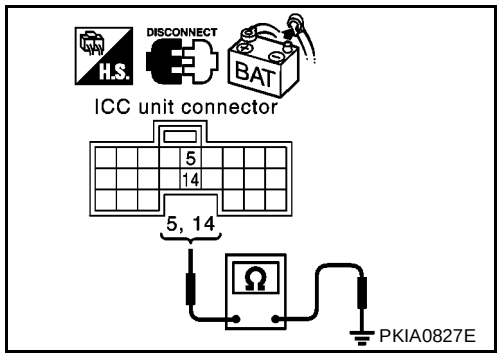
5. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ICC unit harness connector B9 terminals 14 (L), 5 (R) and ground.

14(L) – ground : Continuity should not exist.
5(R) – ground : Continuity should not exist.

OK or NG

OK >> GO TO 6.
NG >> Repair harness between ICC unit and harness connector B42.



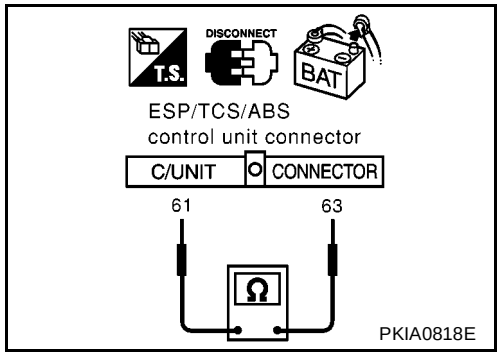
6. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect ESP/TCS/ABS control unit connector and harness connector B104.
2. Check continuity between ESP/TCS/ABS control unit harness connector B109 terminals 61 (L) and 63(R).

61(L) – 63(R) : Continuity should not exist.

OK or NG

OK >> GO TO 7.
NG >>
- Repair harness between ESP/TCS/ABS control unit and harness connector B101.
- Repair harness between harness connector B104 and harness connector B101.



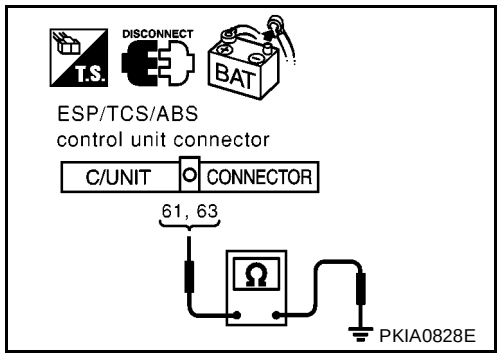
7. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ESP/TCS/ABS control unit harness connector B109 terminals 61 (L), 63 (R) and ground.

61(L) – ground : Continuity should not exist.
63(R) – ground : Continuity should not exist.

OK or NG

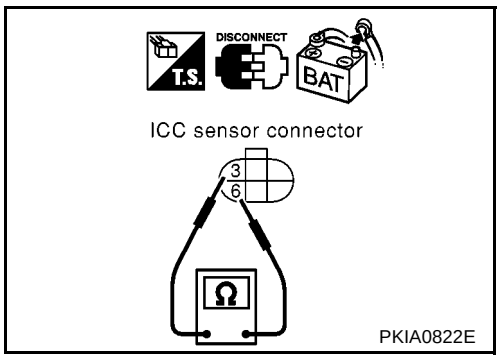
OK >> GO TO 8.
NG >>
- Repair harness between ESP/TCS/ABS control unit and harness connector B101.
- Repair harness between harness connector B104 and harness connector B101.



8. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect ICC sensor connector and harness connector E63.
2. Check continuity between ICC sensor harness connector E53 terminals 3 (L) and 6(R).

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



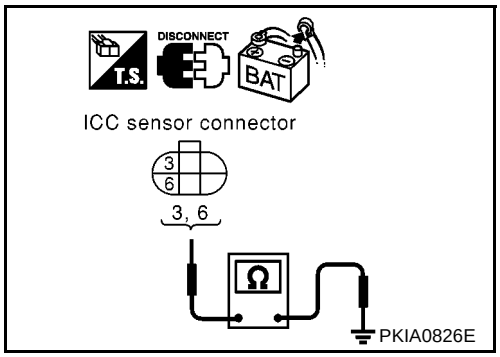
OK or NG

OK >> GO TO 9.
NG >>
- Repair harness between ICC sensor and harness connector E117.
- Repair harness between harness connector E117 and harness connector E63.

9. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ICC sensor harness connector E53 terminals 3 (L), 6 (R) and ground.

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



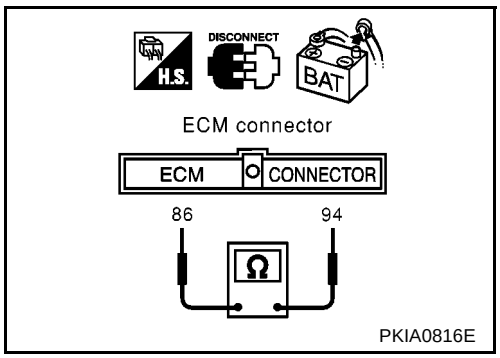
OK or NG

OK >> GO TO 10.
NG >>
- Repair harness between ICC sensor and harness connector E117.
- Repair harness between harness connector E117 and harness connector E63.

10. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect ECM connector and TCM connector.
2. Check continuity between ECM harness connector F102 terminals 94 (L) and 86(R).

94(L) – 86(R) : Continuity should not exist.



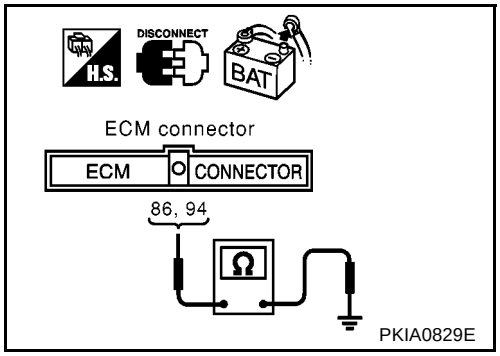
OK or NG

OK >> GO TO 11.
NG >>
- Repair harness between ECM and harness connector F31.
- Repair harness between TCM and harness connector F31.

11. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ECM harness connector F102 terminals 94 (L), 86 (R) and ground.

94(L) – ground : Continuity should not exist.
86(R) – ground : Continuity should not exist.



OK or NG

OK >> GO TO 12.
NG >>
- Repair harness between ECM and harness connector F31.
- Repair harness between TCM and harness connector F31.

12. ECM / COMBINATION METER INTERNAL CIRCUIT INSPECTION

Check components inspection. Refer to LAN-281, "ECM / COMBINATION METER INTERNAL CIRCUIT INSPECTION"

OK or NG

OK >> Reconnect all connectors to perform “SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE”, “CVT”, “ABS”, “AIR PRESSURE MONITOR”, “ICC”, and “SMART ENTRANCE” displayed on CONSULT-II. Refer to EC-1083, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) or EC-1505, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) for “ENGINE” and Refer to CVT-118, "DTC U1000 CAN COMMUNICATION LINE" (EURO-OBD) or CVT-201, "CAN COMMUNICATION LINE" (ALL) for “CVT”. Refer to BRC-107, "Inspection 15 CAN Communication Circuit, ESP/TCS/ABS Control Unit and Steering Angle Sensor" for “ABS”. Refer to WT-35, "Inspection 4: CAN Communication Line" for “AIR PRESSURE MONITOR”. Refer to ACS-46, "DTC 20 CAN COMM CIRCUIT" for “ICC”. Refer to BCS-40, "CAN Communication Line Check" for “SMART ENTRANCE”.

NG >> Replace ECM and/or Combination meter.

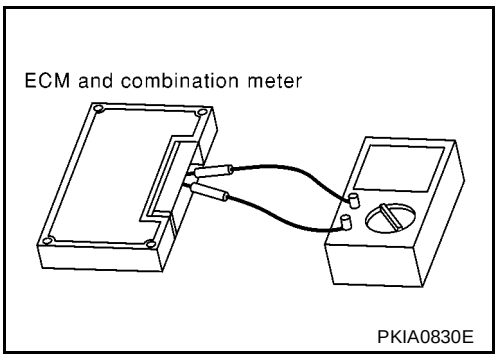
Component Inspection

EKS0054N

ECM / COMBINATION METER INTERNAL CIRCUIT INSPECTION

- Remove ECM and Combination meter from vehicle.
- Check resistance between ECM terminals 94 and 86.
- Check resistance between Combination meter terminals 30 and 31.

Unit	Terminal	Resistance value (Ω)
ECM	94 – 86	Approx. 108 - 132
Combination meter	30 – 31	



CAN SYSTEM (TYPE 14)

PFP:23710

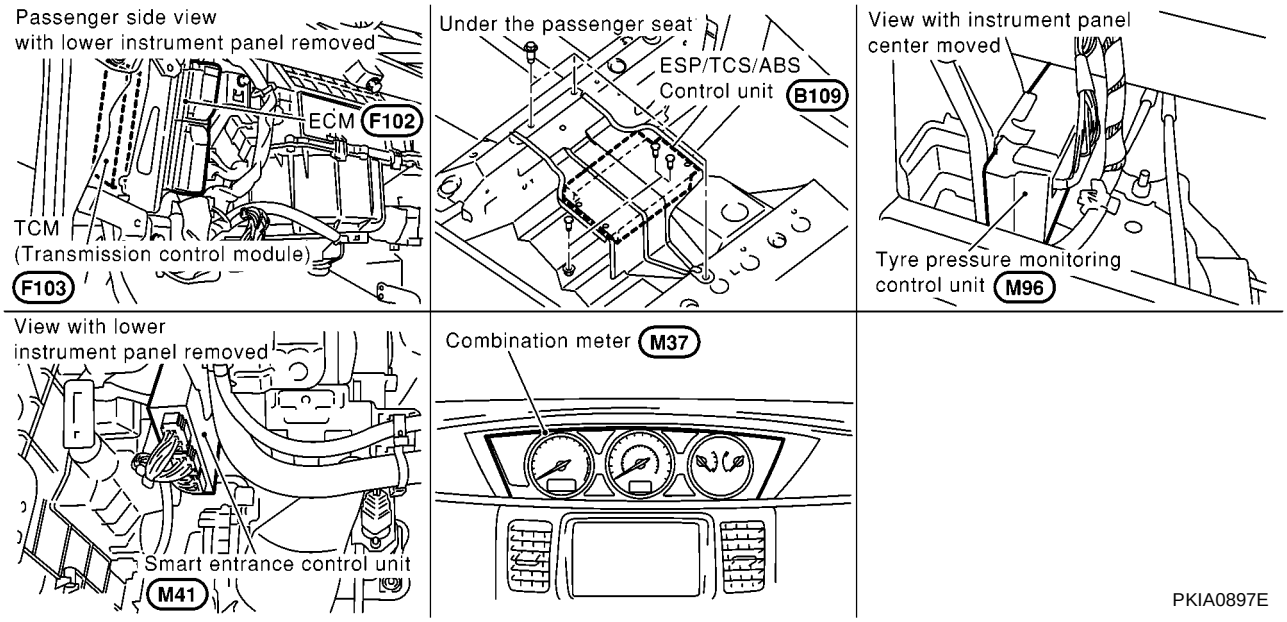
System Description

EKS0053M

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.

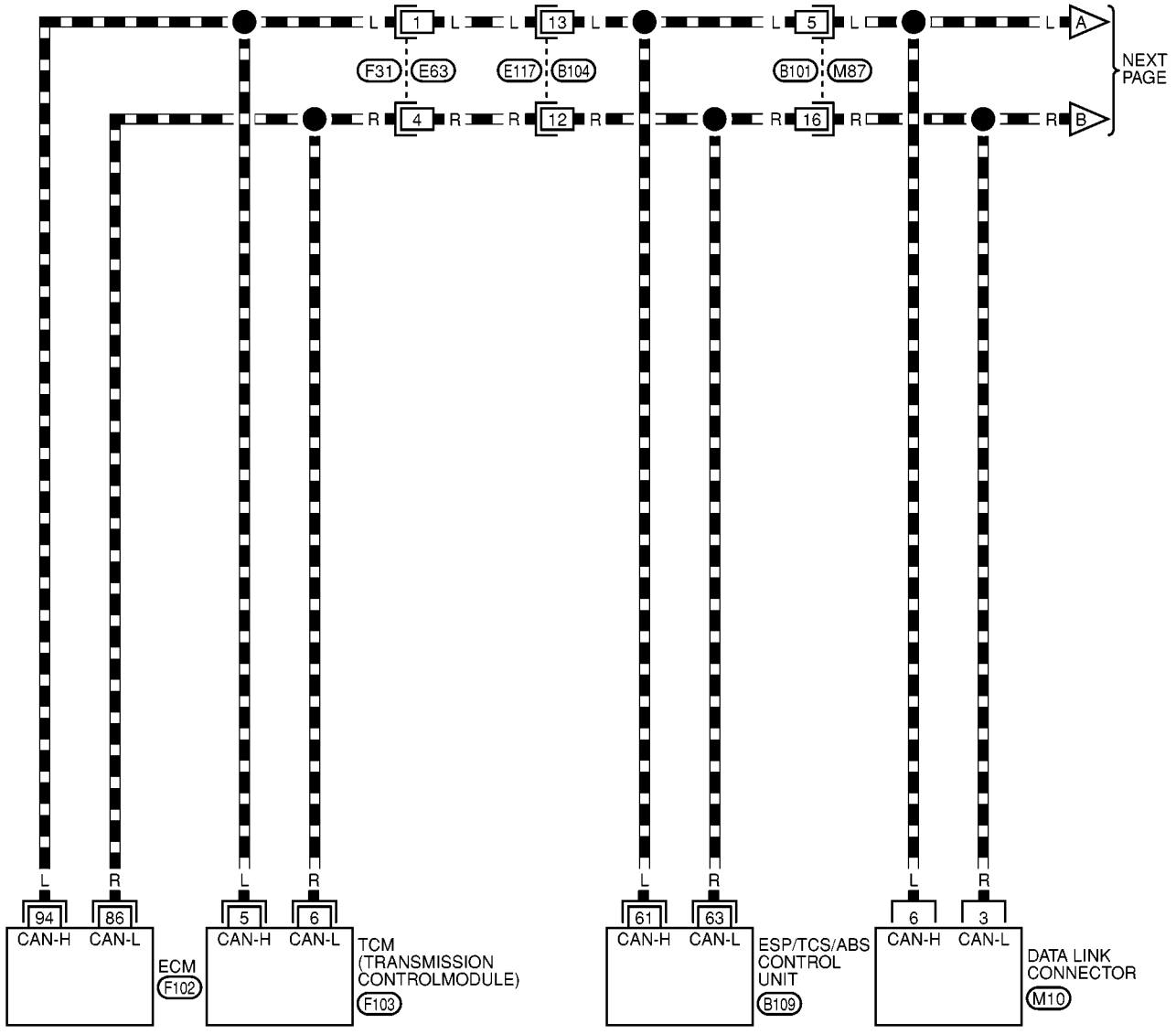
Component Parts and Harness Connector Location

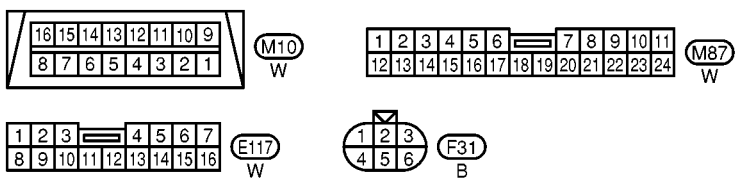
EKS0053N



Wiring Diagram — CAN —

EKS0053O



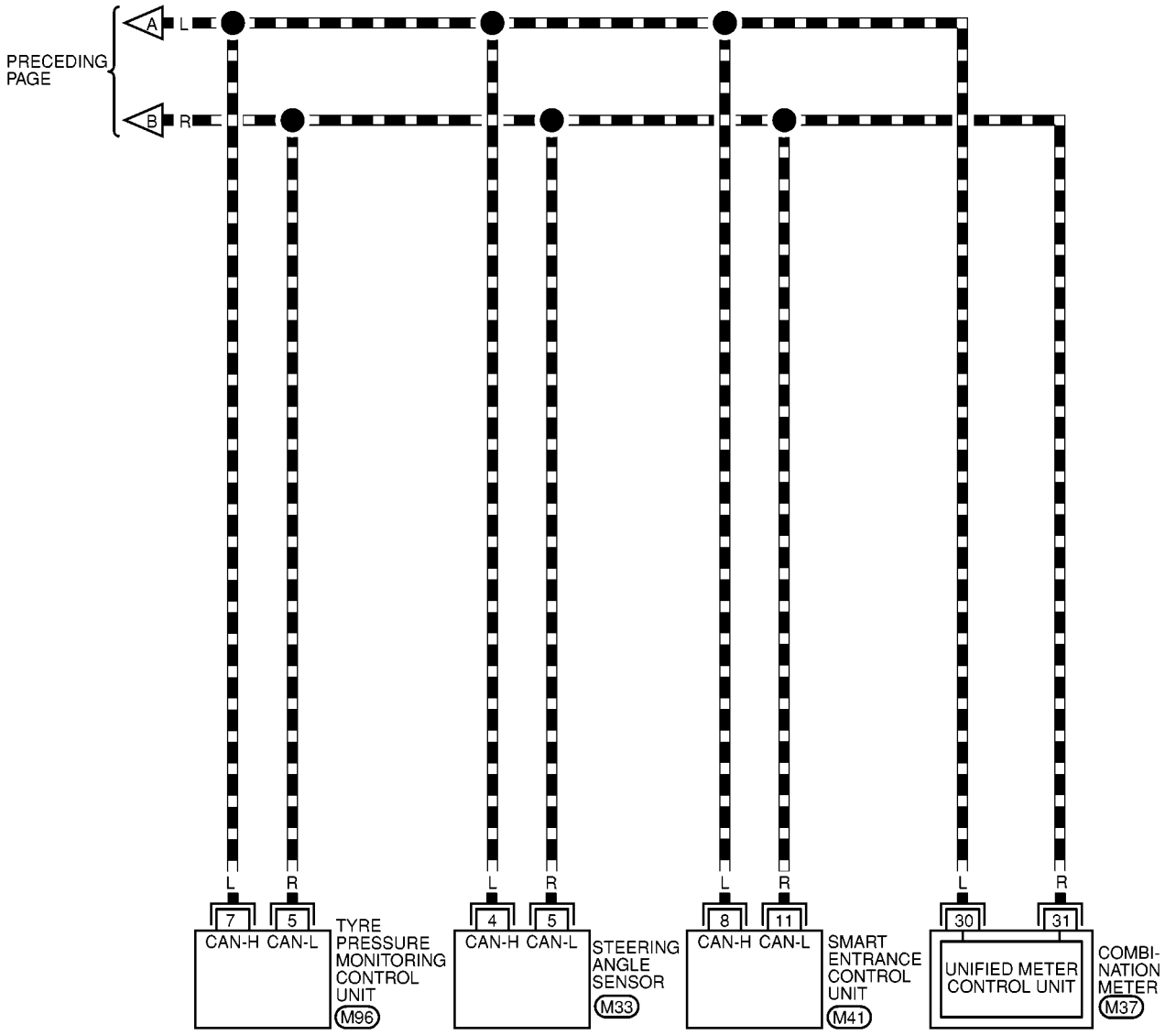


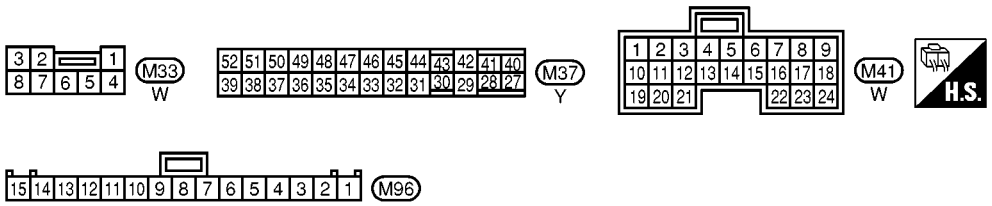
REFER TO THE FOLLOWING.
F102 , F103 , B109
-ELECTRICAL UNITS

MKWA0240E

LAN-CAN-31

: DATA LINE





MKWA0241E

Work Flow

EKS0053P

1. Print all the data of “SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE”, “CVT” “ABS”, “AIR PRESSURE MONITOR”, and “SMART ENTRANCE” displayed on CONSULT-II. Refer to EC-1083, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) or EC-1505, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) for “ENGINE” and Refer to CVT-118, "DTC U1000 CAN COMMUNICATION LINE" (EURO-OBD) or CVT-201, "CAN COMMUNICATION LINE" (ALL) for “CVT”. Refer to BRC-107, "Inspection 15 CAN Communication Circuit, ESP/TCS/ABS Control Unit and Steering Angle Sensor" for “ABS”. Refer to WT-35, "Inspection 4: CAN Communication Line" for “AIR PRESSURE MONITOR”. Refer to BCS-40, "CAN Communication Line Check" for “SMART ENTRANCE”.
2. Attach the printed sheet of “SELF-DIAG RESULTS” and “DATA MONITOR” onto the check sheet. Refer to LAN-286, "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-286, "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-287, "CHECK SHEET RESULTS (EXAMPLE)"

CHECK SHEET

Check sheet table

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	CAN CIRC 3	–	–	CAN CIRC 6	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	–	CAN CIRC 5	–	–
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	–	CAN CIRC 2
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–	CAN CIRC 3

Symptoms:

Attach copy of
ENGINE
SELF-DIAG RESULTS

Attach copy of
CVT
SELF-DIAG RESULTS

Attach copy of
ABS
SELF-DIAG RESULTS

Attach copy of
AIR PRESSURE MONITOR
SELF-DIAG RESULTS

Attach copy of
SMART ENTRANCE
SELF-DIAG RESULTS

Attach copy of
ENGINE
DATA MONITOR

Attach copy of
CVT
DATA MONITOR

Attach copy of
ABS
DATA MONITOR

Attach copy of
AIR PRESSURE MONITOR
DATA MONITOR

Attach copy of
SMART ENTRANCE
DATA MONITOR

PKIA0761E

CHECK SHEET RESULTS (EXAMPLE)

Case 1: Replace ECM

ENGINE	CAN COMM ✓	CAN CIRC 1	–	CAN CIRC 2	CAN CIRC 3	–	–	CAN CIRC 6	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	–	CAN CIRC 5	–	–
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	–	CAN CIRC 2
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–	CAN CIRC 3

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2 ✓	CAN CIRC 3 ✓	–	–	CAN CIRC 6 ✓	CAN CIRC 4 ✓
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	–	CAN CIRC 5	–	–
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	–	CAN CIRC 2
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–	CAN CIRC 3

Case 2: Replace TCM

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2 ✓	CAN CIRC 3	–	–	CAN CIRC 6	CAN CIRC 4
CVT	CAN COMM ✓	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3 ✓	–	–	CAN CIRC 5	–	–
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	–	CAN CIRC 2
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–	CAN CIRC 3

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	CAN CIRC 3	–	–	CAN CIRC 6	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	–	CAN CIRC 3 ✓	–	–	–	CAN CIRC 4 ✓
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	–	CAN CIRC 5	–	–
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	–	CAN CIRC 2
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–	CAN CIRC 3

PKIA0762E

Case 3: Replace ESP/TCS/ABS control unit

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	CAN CIRC 3 ✓	–	–	CAN CIRC 6	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3 ✓	–	–	–	CAN CIRC 4
ABS	CAN COMM ✓	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	–	CAN CIRC 5	–	–
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	–	CAN CIRC 2
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–	CAN CIRC 3

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	CAN CIRC 3	–	–	CAN CIRC 6	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	CAN CIRC 3 ✓	–	–	CAN CIRC 5 ✓	–	–
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	–	CAN CIRC 2
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–	CAN CIRC 3

Case 4: Replace Tyre pressure monitoring control unit

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	CAN CIRC 3	–	–	CAN CIRC 6	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	–	CAN CIRC 5	–	–
AIR PRESSURE MONITOR	CAN COMM ✓	CAN CIRC 1	–	–	–	–	–	–	CAN CIRC 2
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–	CAN CIRC 3

PKIA0763E

Case 5: Replace Smart entrance control unit

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	CAN CIRC 3	–	–	CAN CIRC 6	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	–	CAN CIRC 5	–	–
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	–	CAN CIRC 2
SMART ENTRANCE	✓ CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–	CAN CIRC 3

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	CAN CIRC 3	–	–	CAN CIRC 6	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	–	CAN CIRC 5	–	–
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	–	CAN CIRC 2
SMART ENTRANCE	CAN COMM	CAN CIRC 1	✓ CAN CIRC 2	–	–	–	–	–	✓ CAN CIRC 3

Case 6

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	✓ CAN CIRC 3	–	–	✓ CAN CIRC 6	✓ CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	✓ CAN CIRC 3	–	–	–	✓ CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	✓ CAN CIRC 2	✓ CAN CIRC 3	–	–	CAN CIRC 5	–	–
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	–	CAN CIRC 2
SMART ENTRANCE	CAN COMM	CAN CIRC 1	✓ CAN CIRC 2	–	–	–	–	–	CAN CIRC 3

Case 7

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	CAN CIRC 3	–	–	✓ CAN CIRC 6	✓ CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	–	✓ CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	–	✓ CAN CIRC 5	–	–
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	–	CAN CIRC 2
SMART ENTRANCE	CAN COMM	CAN CIRC 1	✓ CAN CIRC 2	–	–	–	–	–	CAN CIRC 3

PKIA0764E

Case 8

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	CAN CIRC 3	–	–	CAN CIRC 6 ✓	CAN CIRC 4 ✓
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	–	CAN CIRC 4 ✓
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	–	CAN CIRC 5 ✓	–	–
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	–	CAN CIRC 2 ✓
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	–	–	–	–	–	CAN CIRC 3

Case 9

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	CAN CIRC 3	–	–	CAN CIRC 6 ✓	CAN CIRC 4 ✓
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	–	CAN CIRC 4 ✓
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	–	CAN CIRC 5	–	–
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	–	CAN CIRC 2 ✓
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	–	–	–	–	–	CAN CIRC 3

Case 10

ENGINE	CAN COMM	CAN CIRC 1 ✓	–	CAN CIRC 2 ✓	CAN CIRC 3 ✓	–	–	CAN CIRC 6 ✓	CAN CIRC 4 ✓
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	–	CAN CIRC 3	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	CAN CIRC 3	–	–	CAN CIRC 5	–	–
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	–	CAN CIRC 2
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	–	–	–	–	–	CAN CIRC 3

Case 11

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2 ✓	CAN CIRC 3	–	–	CAN CIRC 6	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1 ✓	CAN CIRC 2 ✓	–	CAN CIRC 3 ✓	–	–	–	CAN CIRC 4 ✓
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3 ✓	–	–	CAN CIRC 5	–	–
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	–	CAN CIRC 2
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–	CAN CIRC 3

PKIA0765E

Case 12

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	CAN CIRC 3 ✓	–	–	CAN CIRC 6	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3 ✓	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1 ✓	CAN CIRC 2 ✓	CAN CIRC 3 ✓	–	–	CAN CIRC 5 ✓	–	–
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	–	CAN CIRC 2
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–	CAN CIRC 3

Case 13

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	CAN CIRC 3	–	–	CAN CIRC 6	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	–	CAN CIRC 5	–	–
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1 ✓	–	–	–	–	–	–	CAN CIRC 2 ✓
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–	CAN CIRC 3

Case 14

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	CAN CIRC 3	–	–	CAN CIRC 6	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	–	CAN CIRC 5 ✓	–	–
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	–	CAN CIRC 2
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–	CAN CIRC 3

Case 15

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	CAN CIRC 3	–	–	CAN CIRC 6 ✓	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	–	CAN CIRC 5	–	–
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	–	CAN CIRC 2
SMART ENTRANCE	CAN COMM	CAN CIRC 1 ✓	CAN CIRC 2 ✓	–	–	–	–	–	CAN CIRC 3 ✓

PKIA0766E

Case 16

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	CAN CIRC 3	–	–	CAN CIRC 6	CAN CIRC ✓
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	–	CAN CIRC ✓
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	–	CAN CIRC 5	–	–
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	–	CAN CIRC ✓
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–	CAN CIRC ✓

Case 17

ENGINE	CAN COMM	CAN CIRC ✓	–	CAN CIRC ✓	CAN CIRC ✓	–	–	CAN CIRC ✓	CAN CIRC ✓
CVT	CAN COMM	CAN CIRC ✓	CAN CIRC ✓	–	CAN CIRC ✓	–	–	–	CAN CIRC ✓
ABS	CAN COMM	CAN CIRC ✓	CAN CIRC ✓	CAN CIRC ✓	–	–	CAN CIRC ✓	–	–
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC ✓	–	–	–	–	–	–	CAN CIRC ✓
SMART ENTRANCE	CAN COMM	CAN CIRC ✓	CAN CIRC ✓	–	–	–	–	–	CAN CIRC ✓

PKIA0767E

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

INSPECTION

Proceed trouble diagnosis according to the check sheet results (example).
Case 1:Replace ECM.
Case 2:Replace TCM.
Case 3:Replace ESP/TCS/ABS control unit.
Case 4:Replace Tyre pressure monitoring control unit.
Case 5:Replace Smart entrance control unit.
Case 6:Check Harness between TCM and ESP/TCS/ABS control unit. Refer to LAN-293, "Circuit Check Between TCM and ESP/TCS/ABS Control Unit"
Case 7:Check Harness between ESP/TCS/ABS control unit and Tyre pressure monitoring control unit. Refer to LAN-294, "Circuit Check Between ESP/TCS/ABS Control Unit and Tyre Pressure Monitoring Control Unit"
Case 8:Check Harness between Tyre pressure monitoring control unit and Steering angle sensor. Refer to LAN-295, "Circuit Check Between Tyre Pressure Monitoring Control Unit and Steering Angle Sensor"
Case 9:Check Harness between Steering angle sensor and Smart entrance control unit. Refer to LAN-296, "Circuit Check Between Steering Angle Sensor and Smart Entrance Control Unit"
Case 10:Check ECM Circuit. Refer to LAN-296, "ECM Circuit Check"
Case 11:Check TCM Circuit. Refer to LAN-297, "TCM Circuit Check"
Case 12:Check ESP/TCS/ABS control unit Circuit. Refer to LAN-297, "ESP/TCS/ABS Control Unit Circuit Check"
Case 13:Check Tyre pressure monitoring control unit Circuit. Refer to LAN-298, "Tyre Pressure Monitoring Control Unit Circuit Check"
Case 14:Check Steering angle sensor Circuit. Refer to LAN-298, "Steering Angle Sensor Circuit Check"
Case 15:Check Smart entrance control unit Circuit. Refer to LAN-299, "Smart Entrance Control Unit Circuit Check"

Case 16:Check Combination meter Circuit. Refer to LAN-299, "Combination Meter Circuit Check"
Case 17:Check CAN communication Circuit. Refer to LAN-300, "CAN Communication Circuit Check"

Circuit Check Between TCM and ESP/TCS/ABS Control Unit

EKS0053Q

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, control unit-side and harness-side)

- TCM.
- ESP/TCS/ABS control unit.
- Between TCM and ESP/TCS/ABS control unit.

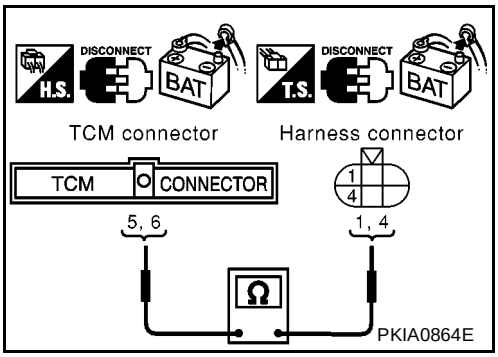
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect TCM connector and harness connector F31.
2. Check continuity between TCM harness connector F103 terminals 5 (L), 6 (R) and harness connector F31 terminals 1 (L), 4 (R).

5(L) – 1(L) : Continuity should exist.
6(R) – 4(R) : Continuity should exist.



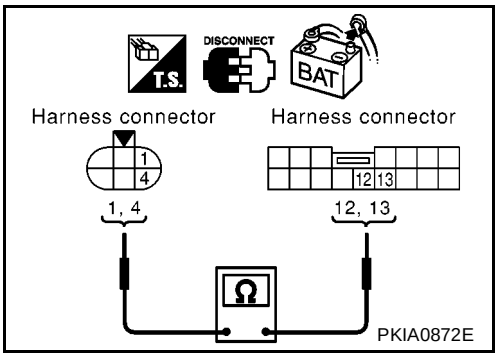
OK or NG

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

3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector E117.
2. Check continuity between harness connector E63 terminals 1 (L), 4 (R) and harness connector E117 terminals 13 (L), 12 (R).

1(L) – 13(L) : Continuity should exist.
4(R) – 12(R) : Continuity should exist.



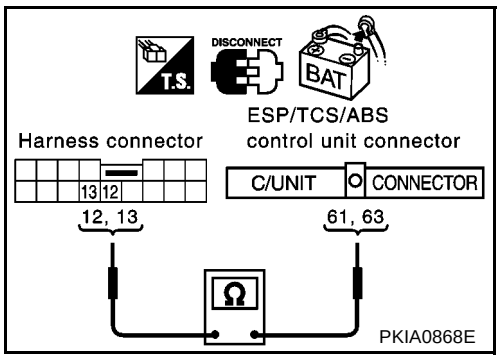
OK or NG

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

4. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ESP/TCS/ABS control unit connector.
2. Check continuity between harness connector B104 terminals 13 (L), 12 (R) and ESP/TCS/ABS control unit harness connector B109 terminals 61 (L), 63 (R).

13(L) – 61(L) : Continuity should exist.
12(R) – 63(R) : Continuity should exist.



OK or NG

OK >> Reconnect all connectors to perform “SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE”, “CVT” “ABS”, “AIR PRESSURE MONITOR”, and “SMART ENTRANCE” displayed on CONSULT-II. Refer to EC-1083, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) or EC-1505, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) for “ENGINE” and Refer to CVT-118, "DTC U1000 CAN COMMUNICATION LINE" (EURO-OBD) or CVT-201, "CAN COMMUNICATION LINE" (ALL) for “CVT”. Refer to BRC-107, "Inspection 15 CAN Communication Circuit, ESP/TCS/ABS Control Unit and Steering Angle Sensor" for “ABS”. Refer to WT-35, "Inspection 4: CAN Communication Line" for “AIR PRESSURE MONITOR”. Refer to BCS-40, "CAN Communication Line Check" for “SMART ENTRANCE”.

NG >> Repair harness.

Circuit Check Between ESP/TCS/ABS Control Unit and Tyre Pressure Monitoring Control Unit

EKS0053R

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 unit-side and harness-side)

- Tyre pressure monitoring control unit.
- ESP/TCS/ABS control unit.
- Between ESP/TCS/ABS control unit and tyre pressure monitoring control unit.

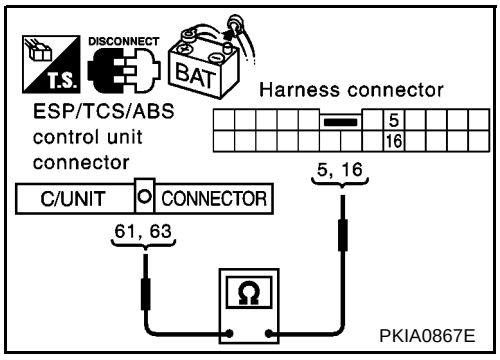
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ESP/TCS/ABS control unit connector and harness connector B101.
2. Check continuity between ESP/TCS/ABS control unit harness connector B109 terminals 61 (L), 63 (R) and harness connector B101 terminals 5 (L), 16 (R).

61(L) – 5(L) : Continuity should exist.
63(R) – 16(R) : Continuity should exist.



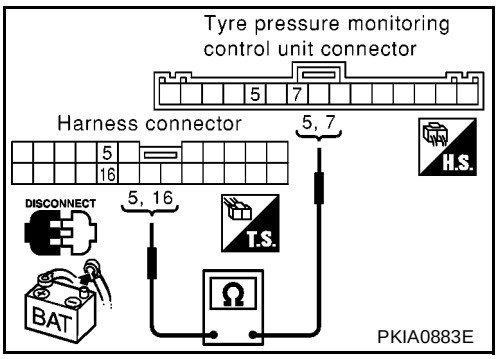
OK or NG

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

3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect tyre pressure monitoring control unit connector.
2. Check continuity between harness connector M87 terminals 5 (L), 16 (R) and tyre pressure monitoring control unit harness connector M96 terminals 7 (L), 5 (R).

5(L) – 7(L) : Continuity should exist.
16(R) – 5(R) : Continuity should exist.



OK or NG

OK >> Reconnect all connectors to perform “SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE”, “CVT” “ABS”, “AIR PRESSURE MONITOR”, and “SMART ENTRANCE” displayed on CONSULT-II. Refer to EC-1083, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) or EC-1505, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) for “ENGINE” and Refer to CVT-118, "DTC U1000 CAN COMMUNICATION LINE" (EURO-OBD) or CVT-201, "CAN COMMUNICATION LINE" (ALL) for “CVT”. Refer to BRC-107, "Inspection 15 CAN Communication Circuit, ESP/TCS/ABS Control Unit and Steering Angle Sensor" for “ABS”. Refer to WT-35, "Inspection 4: CAN Communication Line" for “AIR PRESSURE MONITOR”. Refer to BCS-40, "CAN Communication Line Check" for “SMART ENTRANCE”.

NG >> Repair harness.

Circuit Check Between Tyre Pressure Monitoring Control Unit and Steering Angle Sensor

EKS0053S

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. (sensor-side, control unit-side and harness-side)

- Steering angle sensor.
- Tyre pressure monitoring control unit.

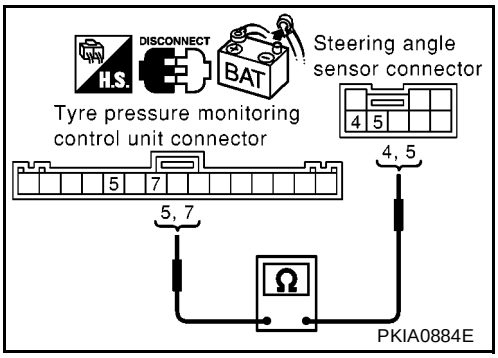
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect tyre pressure monitoring control unit connector and steering angle sensor connector.
2. Check continuity between tyre pressure monitoring control unit harness connector M96 terminals 7 (L), 5 (R) and steering angle sensor harness connector M33 terminals 4 (L), 5 (R).

7(L) – 4(L) : Continuity should exist.
5(R) – 5(R) : Continuity should exist.



OK or NG

OK >> Reconnect all connectors to perform “SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE”, “CVT” “ABS”, “AIR PRESSURE MONITOR”, and “SMART ENTRANCE” displayed on CONSULT-II. Refer to EC-1083, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) or EC-1505, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) for “ENGINE” and Refer to CVT-118, "DTC U1000 CAN COMMUNICATION LINE" (EURO-OBD) or CVT-201, "CAN COMMUNICATION LINE" (ALL) for “CVT”. Refer to BRC-107, "Inspection 15 CAN Communication Circuit, ESP/TCS/ABS Control Unit and Steer-

ing Angle Sensor" for “ABS”. Refer to WT-35, "Inspection 4: CAN Communication Line" for “AIR PRESSURE MONITOR”. Refer to BCS-40, "CAN Communication Line Check" for “SMART ENTRANCE”.

NG >> Repair harness.

Circuit Check Between Steering Angle Sensor and Smart Entrance Control Unit

EKS0053T

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 unit-side, sensor-side and harness-side)

- Smart entrance control unit.
- Steering angle sensor.

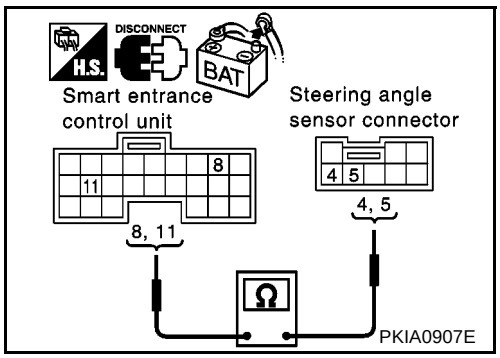
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect smart entrance control unit connector and steering angle sensor connector.
2. Check continuity between smart entrance control unit harness connector M41 terminals 8 (L), 11 (R) and steering angle sensor harness connector M33 terminals 4 (L), 5 (R).

8(L) – 4(L) : Continuity should exist.
11(R) – 5(R) : Continuity should exist.



OK or NG

OK >> Reconnect all connectors to perform “SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE”, “CVT” “ABS”, “AIR PRESSURE MONITOR”, and “SMART ENTRANCE” displayed on CONSULT-II. Refer to EC-1083, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) or EC-1505, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) for “ENGINE” and Refer to CVT-118, "DTC U1000 CAN COMMUNICATION LINE" (EURO-OBD) or CVT-201, "CAN COMMUNICATION LINE" (ALL) for “CVT”. Refer to BRC-107, "Inspection 15 CAN Communication Circuit, ESP/TCS/ABS Control Unit and Steering Angle Sensor" for “ABS”. Refer to WT-35, "Inspection 4: CAN Communication Line" for “AIR PRESSURE MONITOR”. Refer to BCS-40, "CAN Communication Line Check" for “SMART ENTRANCE”.

NG >> Repair harness.

ECM Circuit Check

EKS0053U

1. CHECK CONNECTOR

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

OK or NG

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

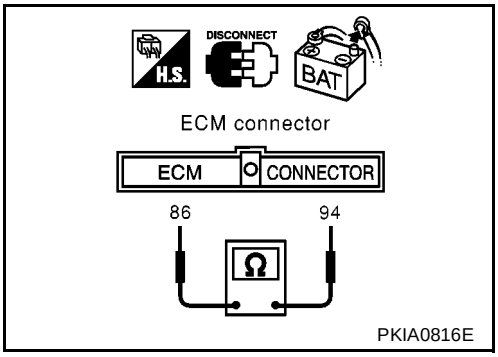
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ECM connector.
2. Check resistance between ECM harness connector F102 terminals 94(L) and 86(R).

94(L) – 86(R) **: Approx. 108 – 132Ω**

OK or NG

OK >> Replace ECM.
NG >> Repair harness between TCM and ECM.



TCM Circuit Check

EKS0053V

1. CHECK CONNECTOR

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

OK or NG

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

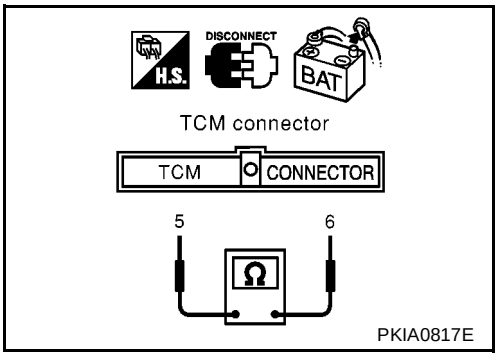
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect TCM connector.
2. Check resistance between TCM harness connector F103 terminals 5(L) and 6(R).

5(L) – 6(R) **: Approx. 54 – 66Ω**

OK or NG

OK >> Replace TCM.
NG >> Repair harness between TCM and ECM.



ESP/TCS/ABS Control Unit Circuit Check

EKS0053W

1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check following terminals and connector of ESP/TCS/ABS control unit for damage, bend and loose connection. (control unit-side and harness-side)

OK or NG

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

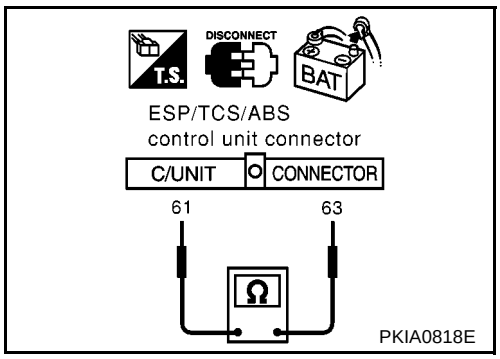
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ESP/TCS/ABS control unit connector.
2. Check resistance between ESP/TCS/ABS control unit harness connector B109 terminals 61(L) and 63(R).

61(L) – 63(R) : Approx. 54 – 66Ω

OK or NG

OK >> Replace ESP/TCS/ABS control unit.
NG >> Repair harness between Data link connector and ESP/TCS/ABS control unit.



Tyre Pressure Monitoring Control Unit Circuit Check

EKS0053X

1. CHECK CONNECTOR

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

OK or NG

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

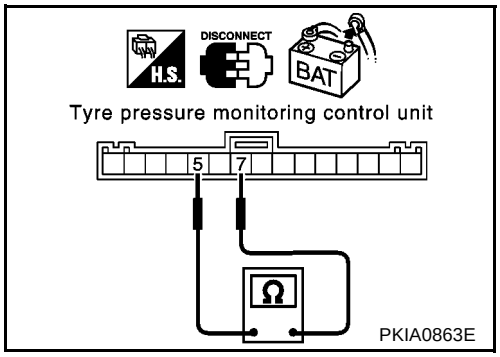
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect tyre pressure monitoring control unit connector.
2. Check resistance between tyre pressure monitoring control unit harness connector M96 terminals 7(L) and 5(R).

7(L) – 5(R) : Approx. 54 – 66Ω

OK or NG

OK >> Replace tyre pressure monitoring control unit.
NG >> Repair harness between steering angle sensor and tyre pressure monitoring control unit.



Steering Angle Sensor Circuit Check

EKS0053Y

1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check terminals and connector of steering angle sensor for damage, bend and loose connection. (sensor-side and harness-side)

OK or NG

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

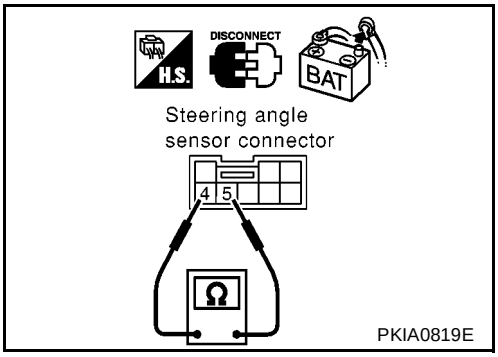
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect steering angle sensor connector.
2. Check resistance between steering angle sensor harness connector M33 terminals 4(L) and 5(R).

4(L) – 5(R) : Approx. 54 – 66Ω

OK or NG

OK >> Replace steering angle sensor.
NG >> Repair harness between steering angle sensor and smart entrance control unit.



Smart Entrance Control Unit Circuit Check

EKS0053Z

1. CHECK CONNECTOR

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

OK or NG

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

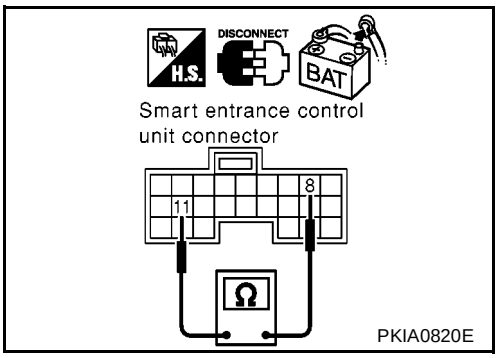
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect smart entrance control unit connector.
2. Check resistance between smart entrance control unit harness connector M41 terminals 8(L) and 11(R).

8(L) – 11(R) : Approx. 54 – 66Ω

OK or NG

OK >> Replace smart entrance control unit.
NG >> Repair harness between steering angle sensor and smart entrance control unit.



Combination Meter Circuit Check

EKS00540

1. CHECK CONNECTOR

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

OK or NG

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

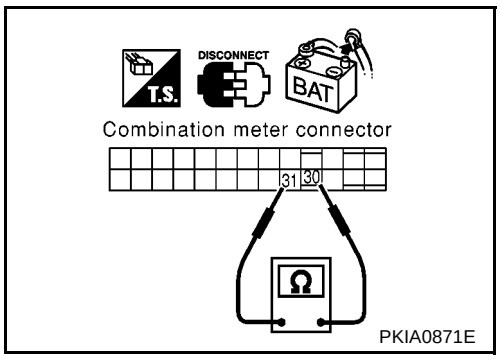
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect combination meter connector.
2. Check resistance between combination meter harness connector M37 terminals 30(L) and 31(R).

30(L) – 31(R) : Approx. 108 – 132Ω

OK or NG

OK >> Replace combination meter.
NG >> Repair harness between smart entrance control unit and combination meter.



CAN Communication Circuit Check

EKS00541

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. (meter-side, control unit-side, sensor-side, control module-side and harness-side)

- Combination meter.
- Smart entrance control unit.
- Steering angle sensor.
- Tyre pressure monitoring control unit.
- ESP/TCS/ABS control unit.
- TCM.
- ECM.
- Between Data link connector and ECM.

OK or NG

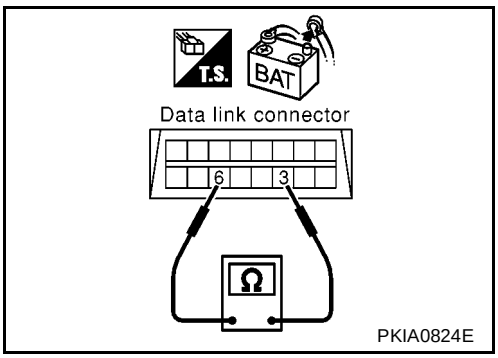
OK >> GO TO 2.
NG >> Repair terminal or connector.

2. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect the following connectors.
- Combination meter connector.
- Smart entrance control unit connector.
- Steering angle sensor connector.
- Tyre pressure monitoring control unit connector.
- Harness connector M87.

2. Check continuity between Data link connector M10 terminals 6 (L) and 3(R).

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



OK or NG

OK >> GO TO 3.

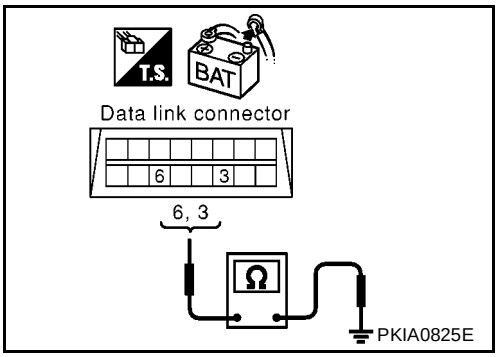
NG >>
- Repair harness between smart entrance control unit and combination meter.
- Repair harness between smart entrance control unit and steering angle sensor.
- Repair harness between steering angle sensor and tyre pressure monitoring control unit.
- Repair harness between Data link connector and tyre pressure monitoring control unit.
- Repair harness between Data link connector and harness connector M87.

3. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between Data link connector M10 terminals 6 (L), 3(R) and ground.

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

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



OK or NG

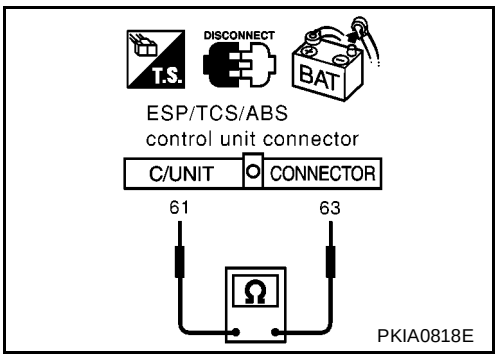
OK >> GO TO 4.

NG >>
- Repair harness between smart entrance control unit and combination meter.
- Repair harness between smart entrance control unit and steering angle sensor.
- Repair harness between steering angle sensor and tyre pressure monitoring control unit.
- Repair harness between Data link connector and tyre pressure monitoring control unit.
- Repair harness between Data link connector and harness connector M87.

4. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect ESP/TCS/ABS control unit connector and harness connector B104.
2. Check continuity between ESP/TCS/ABS control unit harness connector B109 terminals 61 (L) and 63(R).

61(L) – 63(R) : Continuity should not exist.



OK or NG

OK >> GO TO 5.

NG >>
- Repair harness between ESP/TCS/ABS control unit and harness connector B101.
- Repair harness between harness connector B104 and harness connector B101.

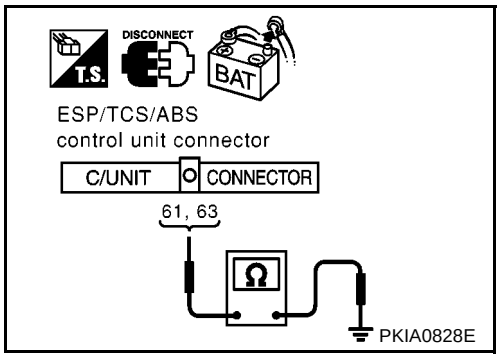
5. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ESP/TCS/ABS control unit harness connector B109 terminals 61 (L), 63 (R) and ground.

61(L) – ground : Continuity should not exist.
63(R) – ground : Continuity should not exist.

OK or NG

OK >> GO TO 6.
NG >> ● Repair harness between ESP/TCS/ABS control unit and harness connector B101.
● Repair harness between harness connector B104 and harness connector B101.



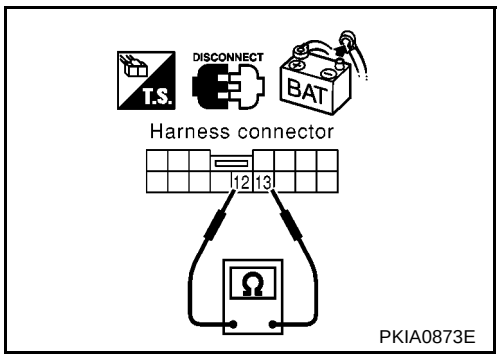
6. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect harness connector E63.
2. Check continuity between harness connector E117 terminals 13 (L) and 12(R).

13(L) – 12(R) : Continuity should not exist.

OK or NG

OK >> GO TO 7.
NG >> Repair harness between harness connector E117 and harness connector E63.



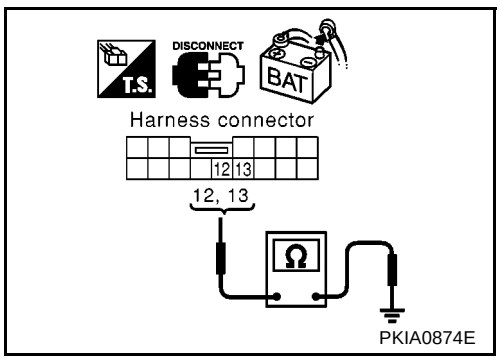
7. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between harness connector E117 terminals 13 (L) and 12(R) and ground.

13(L) – ground : Continuity should not exist.
12(R) – ground : Continuity should not exist.

OK or NG

OK >> GO TO 8.
NG >> Repair harness between harness connector E117 and harness connector E63.



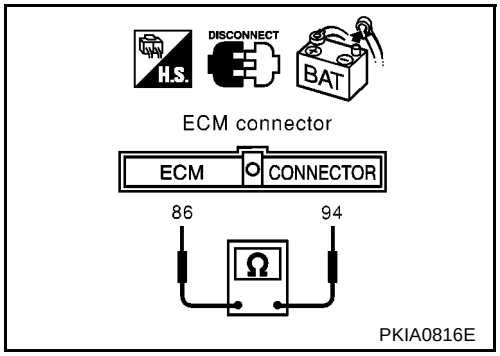
8. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect ECM connector and TCM connector.
2. Check continuity between ECM harness connector F102 terminals 94 (L) and 86(R).

94(L) – 86(R) : Continuity should not exist.

OK or NG

OK >> GO TO 9.
NG >> ● Repair harness between ECM and harness connector F31.
● Repair harness between TCM and harness connector F31.

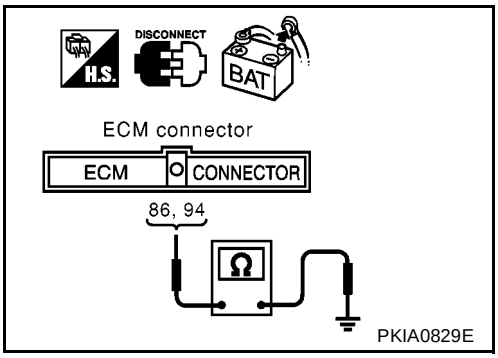


9. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ECM harness connector F102 terminals 94 (L), 86 (R) and ground.

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

86(R) – ground : Continuity should not exist.



OK or NG

OK >> GO TO 10.

NG >>
- Repair harness between ECM and harness connector F31.
- Repair harness between TCM and harness connector F31.

10. ECM / COMBINATION METER INTERNAL CIRCUIT INSPECTION

Check components inspection. Refer to LAN-303, "ECM / COMBINATION METER INTERNAL CIRCUIT INSPECTION"

OK or NG

OK >> Reconnect all connectors to perform “SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE”, “CVT” “ABS”, “AIR PRESSURE MONITOR”, and “SMART ENTRANCE” displayed on CONSULT-II. Refer to EC-1083, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) or EC-1505, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) for “ENGINE” and Refer to CVT-118, "DTC U1000 CAN COMMUNICATION LINE" (EURO-OBD) or CVT-201, "CAN COMMUNICATION LINE" (ALL) for “CVT”. Refer to BRC-107, "Inspection 15 CAN Communication Circuit, ESP/TCS/ABS Control Unit and Steering Angle Sensor" for “ABS”. Refer to WT-35, "Inspection 4: CAN Communication Line" for “AIR PRESSURE MONITOR”. Refer to BCS-40, "CAN Communication Line Check" for “SMART ENTRANCE”.

NG >> Replace ECM and/or Combination meter.

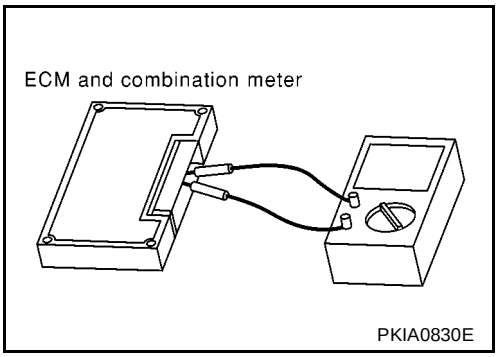
Component Inspection

EKS00542

ECM / COMBINATION METER INTERNAL CIRCUIT INSPECTION

- Remove ECM and Combination meter from vehicle.
- Check resistance between ECM terminals 94 and 86.
- Check resistance between Combination meter terminals 30 and 31.

Unit	Terminal	Resistance value (Ω)
ECM	94 – 86	Approx. 108 - 132
Combination meter	30 – 31	



CAN SYSTEM (TYPE 15)

PFP:23710

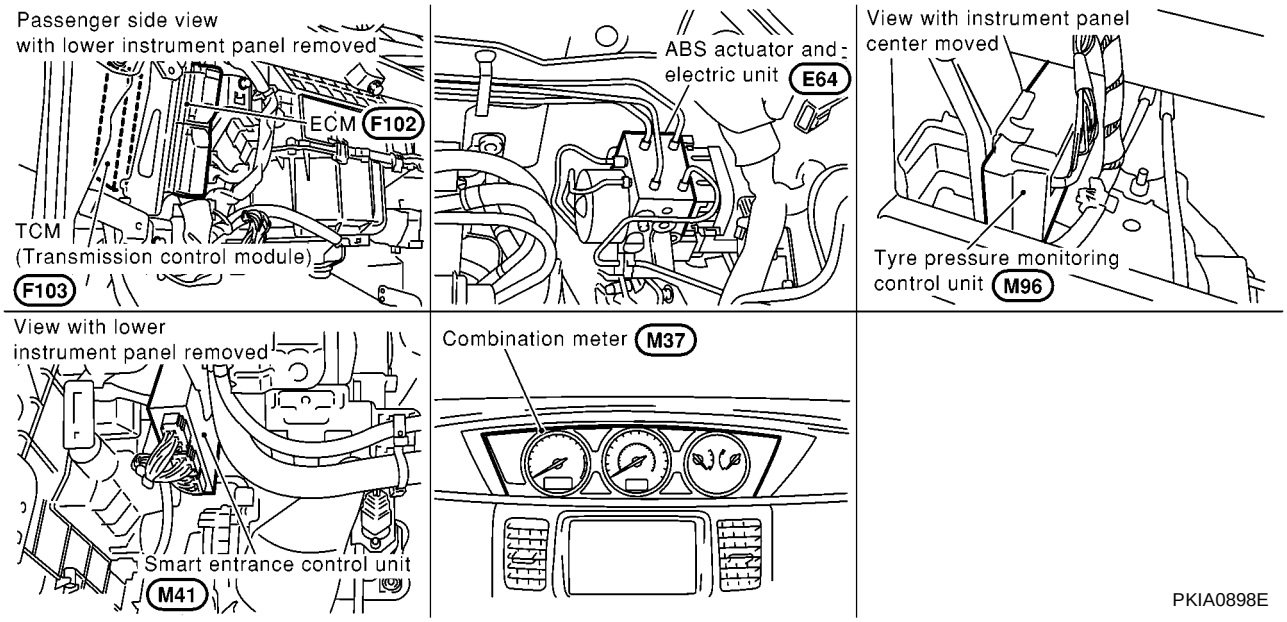
System Description

EKS00537

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.

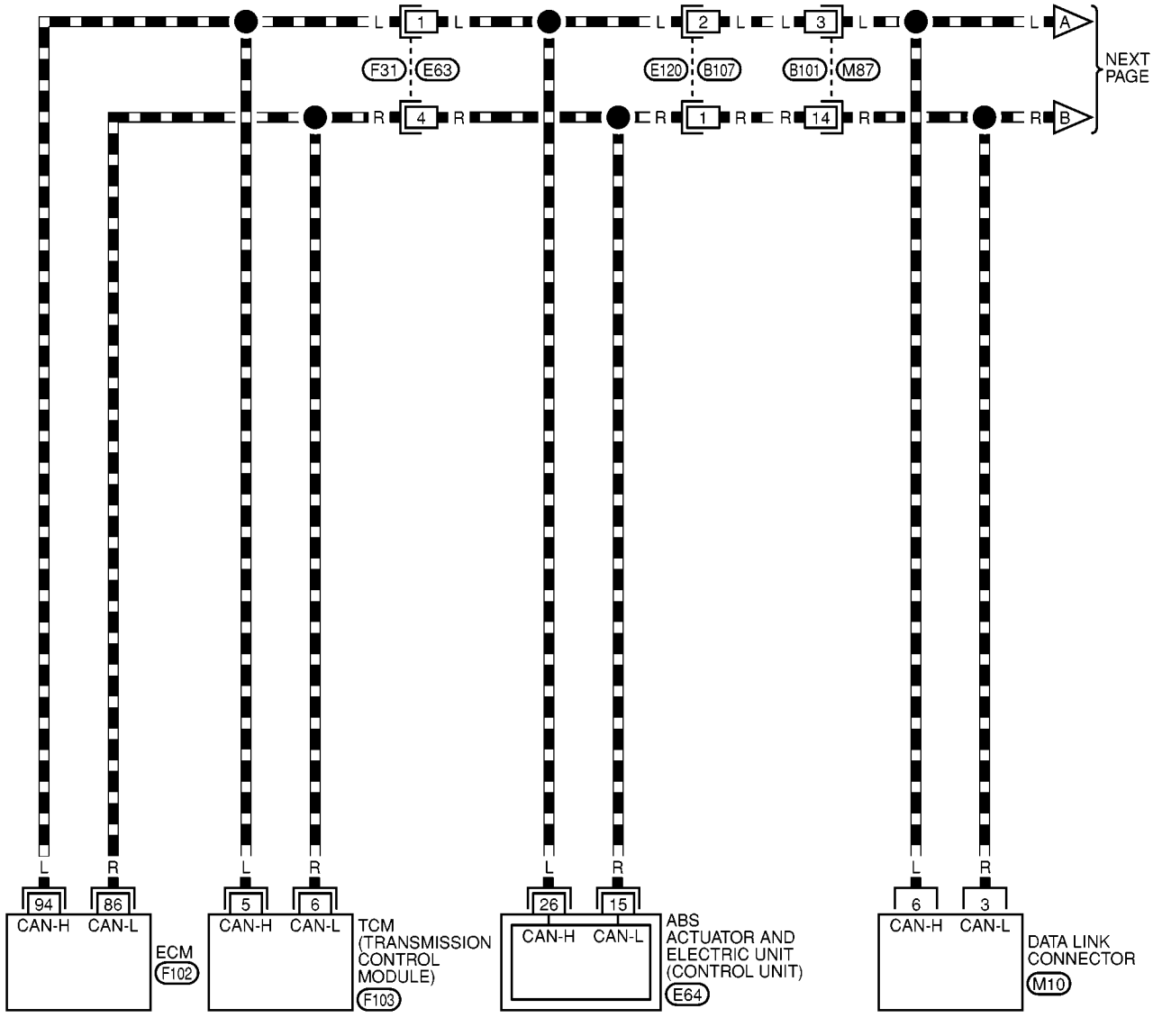
Component Parts and Harness Connector Location

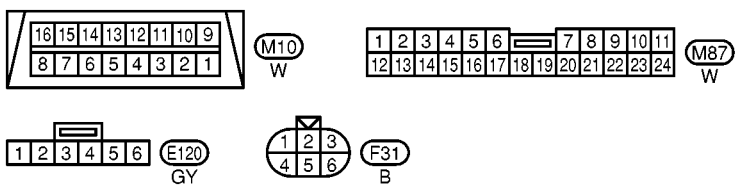
EKS00538



Wiring Diagram — CAN —

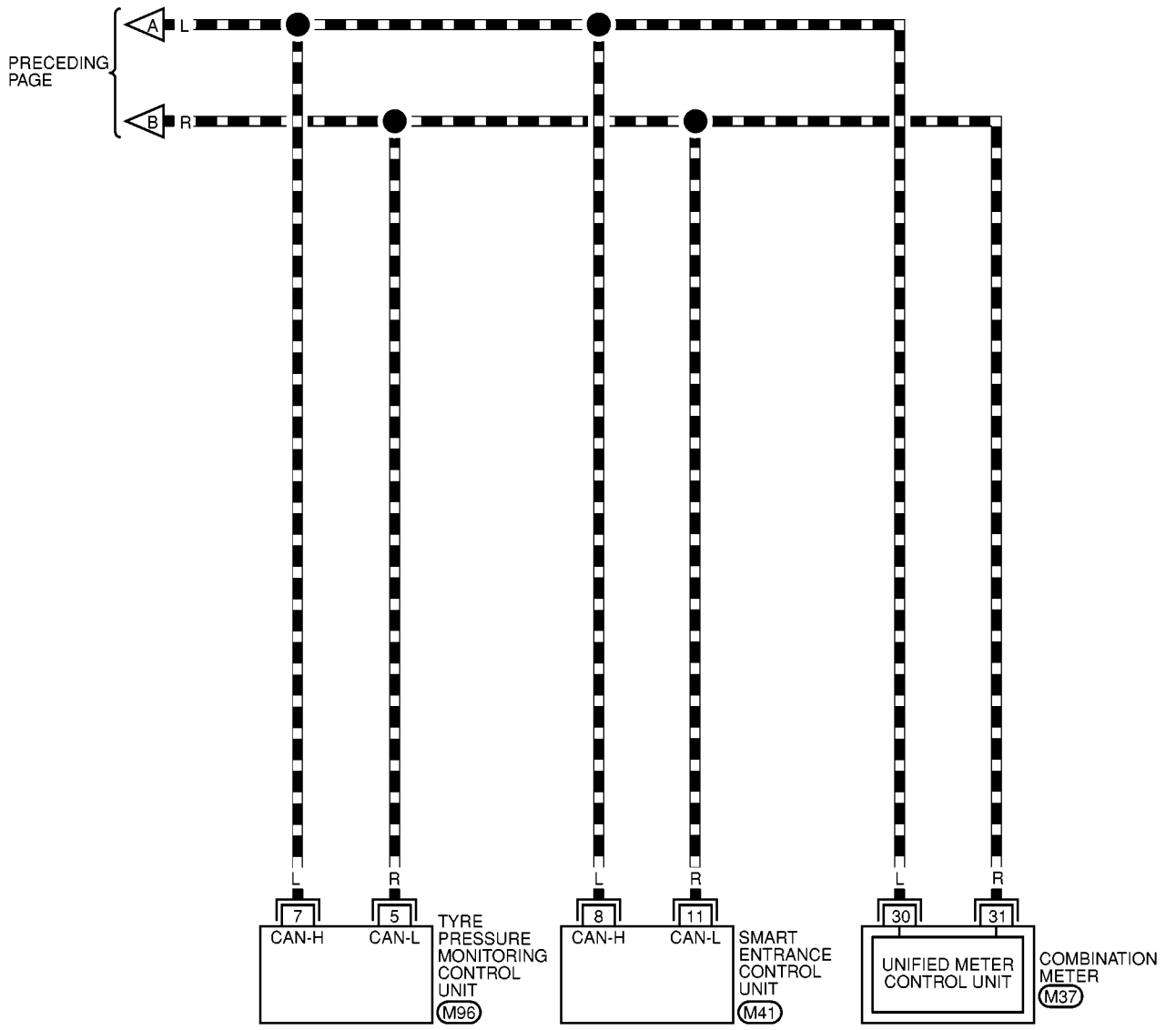
EKS00539





REFER TO THE FOLLOWING.
E64 , F102 , F103
-ELECTRICAL UNITS

MKWA0242E


: DATA LINE
PRECEDING PAGE
A
L
B
R
L
R
7
CAN-H
5
CAN-L
TYRE PRESSURE MONITORING CONTROL UNIT
M96
8
CAN-H
11
CAN-L
SMART ENTRANCE CONTROL UNIT
M41
30
31
UNIFIED METER CONTROL UNIT
COMBINATION METER
M37
52 51 50 49 48 47 46 45 44 43 42 41 40
39 38 37 36 35 34 33 32 31 30 29 28 27
M37
Y
1 2 3 4 5 6 7 8 9
10 11 12 13 14 15 16 17 18
19 20 21 22 23 24
M41
W
H.S.
15 14 13 12 11 10 9 8 7 6 5 4 3 2 1
M96

MKWA0243E

Work Flow

EKS0053A

1. Print all the data of “SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE”, “CVT”, “ABS”, “AIR PRESSURE MONITOR”, and “SMART ENTRANCE” displayed on CONSULT-II. Refer to EC-1083, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) or EC-1505, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) for “ENGINE” and Refer to CVT-118, "DTC U1000 CAN COMMUNICATION LINE" (EURO-OBD) or CVT-201, "CAN COMMUNICATION LINE" (ALL) for “CVT”. Refer to BRC-33, "CAN Communication Circuit" for “ABS”. Refer to WT-35, "Inspection 4: CAN Communication Line" for “AIR PRESSURE MONITOR”. Refer to BCS-40, "CAN Communication Line Check" for “SMART ENTRANCE”.
2. Attach the printed sheet of “SELF-DIAG RESULTS” and “DATA MONITOR” onto the check sheet. Refer to LAN-308, "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-308, "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-309, "CHECK SHEET RESULTS (EXAMPLE)"

CHECK SHEET

Check sheet table

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	–	CAN CIRC 6	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	CAN CIRC 2
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 3

Symptoms:

Attach copy of
ENGINE
SELF-DIAG RESULTS

Attach copy of
CVT
SELF-DIAG RESULTS

Attach copy of
ABS
SELF-DIAG RESULTS

Attach copy of
AIR PRESSURE MONITOR
SELF-DIAG RESULTS

Attach copy of
SMART ENTRANCE
SELF-DIAG RESULTS

Attach copy of
ENGINE
DATA MONITOR

Attach copy of
CVT
DATA MONITOR

Attach copy of
ABS
DATA MONITOR

Attach copy of
AIR PRESSURE MONITOR
DATA MONITOR

Attach copy of
SMART ENTRANCE
DATA MONITOR

PKIA0768E

CHECK SHEET RESULTS (EXAMPLE)

Case 1: Replace ECM

ENGINE	✓ CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	–	CAN CIRC 6	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	CAN CIRC 2
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 3

ENGINE	CAN COMM	CAN CIRC 1	–	✓ CAN CIRC 2	–	–	✓ CAN CIRC 6	✓ CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	CAN CIRC 2
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 3

Case 2: Replace TCM

ENGINE	CAN COMM	CAN CIRC 1	–	✓ CAN CIRC 2	–	–	CAN CIRC 6	CAN CIRC 4
CVT	✓ CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	CAN CIRC 2
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 3

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	–	CAN CIRC 6	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	✓ CAN CIRC 2	–	✓ CAN CIRC 3	–	–	✓ CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	CAN CIRC 2
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 3

PKIA0769E

Case 3: Replace ABS actuator and electric unit (control unit)

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	–	CAN CIRC 6	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC ✓	–	–	CAN CIRC 4
ABS	CAN ✓	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	CAN CIRC 2
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 3

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	–	CAN CIRC 6	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC ✓	–	–	–	–	–
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	CAN CIRC 2
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 3

Case 4: Replace Tyre pressure monitoring control unit

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	–	CAN CIRC 6	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–
AIR PRESSURE MONITOR	CAN ✓	CAN CIRC 1	–	–	–	–	–	CAN CIRC 2
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 3

PKIA0770E

Case 5: Replace Smart entrance control unit

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	–	CAN CIRC 6	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	CAN CIRC 2
SMART ENTRANCE	✓ CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 3

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	–	CAN CIRC 6	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	CAN CIRC 2
SMART ENTRANCE	CAN COMM	CAN CIRC 1	✓ CAN CIRC 2	–	–	–	–	✓ CAN CIRC 3

Case 6

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	–	✓ CAN CIRC 6	✓ CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	✓ CAN CIRC 3	–	–	✓ CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	✓ CAN CIRC 2	–	–	–	–	–
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	CAN CIRC 2
SMART ENTRANCE	CAN COMM	CAN CIRC 1	✓ CAN CIRC 2	–	–	–	–	CAN CIRC 3

Case 7

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	–	✓ CAN CIRC 6	✓ CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	✓ CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	CAN CIRC 2
SMART ENTRANCE	CAN COMM	CAN CIRC 1	✓ CAN CIRC 2	–	–	–	–	CAN CIRC 3

PKIA0771E

Case 8

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	–	✓ CAN CIRC 6	✓ CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	✓ CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	✓ CAN CIRC 2
SMART ENTRANCE	CAN COMM	CAN CIRC 1	✓ CAN CIRC 2	–	–	–	–	CAN CIRC 3

Case 9

ENGINE	CAN COMM	✓ CAN CIRC 1	–	✓ CAN CIRC 2	–	–	✓ CAN CIRC 6	✓ CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	✓ CAN CIRC 2	–	CAN CIRC 3	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	✓ CAN CIRC 2	–	–	–	–	–
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	CAN CIRC 2
SMART ENTRANCE	CAN COMM	CAN CIRC 1	✓ CAN CIRC 2	–	–	–	–	CAN CIRC 3

Case 10

ENGINE	CAN COMM	CAN CIRC 1	–	✓ CAN CIRC 2	–	–	CAN CIRC 6	CAN CIRC 4
CVT	CAN COMM	✓ CAN CIRC 1	✓ CAN CIRC 2	–	✓ CAN CIRC 3	–	–	✓ CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	CAN CIRC 2
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 3

Case 11

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	–	CAN CIRC 6	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	✓ CAN CIRC 3	–	–	CAN CIRC 4
ABS	CAN COMM	✓ CAN CIRC 1	✓ CAN CIRC 2	–	–	–	–	–
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	CAN CIRC 2
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 3

PKIA0772E

Case 12

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	–	CAN CIRC 6	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1 ✓	–	–	–	–	–	CAN CIRC 2 ✓
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 3

Case 13

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	–	CAN CIRC 6 ✓	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	CAN CIRC 2
SMART ENTRANCE	CAN COMM	CAN CIRC 1 ✓	CAN CIRC 2 ✓	–	–	–	–	CAN CIRC 3 ✓

Case 14

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	–	CAN CIRC 6	CAN CIRC 4 ✓
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	CAN CIRC 4 ✓
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	CAN CIRC 2 ✓
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 3 ✓

Case 15

ENGINE	CAN COMM	CAN CIRC 1 ✓	–	CAN CIRC 2 ✓	–	–	CAN CIRC 6 ✓	CAN CIRC 4 ✓
CVT	CAN COMM	CAN CIRC 1 ✓	CAN CIRC 2 ✓	–	CAN CIRC 3 ✓	–	–	CAN CIRC 4 ✓
ABS	CAN COMM	CAN CIRC 1 ✓	CAN CIRC 2 ✓	–	–	–	–	–
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1 ✓	–	–	–	–	–	CAN CIRC 2 ✓
SMART ENTRANCE	CAN COMM	CAN CIRC 1 ✓	CAN CIRC 2 ✓	–	–	–	–	CAN CIRC 3 ✓

PKIA0773E

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

INSPECTION

Proceed trouble diagnosis according to the check sheet results (example).
Case 1:Replace ECM.
Case 2:Replace TCM.
Case 3:Replace ABS actuator and electric unit (control unit).
Case 4:Replace Tyre pressure monitoring control unit.
Case 5:Replace Smart entrance control unit.
Case 6:Check Harness between TCM and ABS actuator and electric unit (control unit). Refer to LAN-314, "Circuit Check Between TCM and ABS Actuator and Electric Unit (control unit)"
Case 7:Check Harness between Tyre pressure monitoring control unit and ABS actuator and electric unit (control unit). Refer to LAN-315, "Circuit Check Between ABS Actuator and Electric Unit (control unit) and Tyre Pressure Monitoring Control Unit"
Case 8:Check Harness between Tyre pressure monitoring control unit and Smart entrance control unit. Refer to LAN-316, "Circuit Check Between Tyre pressure monitoring control unit and Smart Entrance Control Unit"
Case 9:Check ECM Circuit. Refer to LAN-317, "ECM Circuit Check"
Case 10:Check TCM Circuit. Refer to LAN-318, "TCM Circuit Check"
Case 11:Check ABS actuator and electric unit (control unit) Circuit. Refer to LAN-318, "ABS Actuator and Electric Unit (control unit) Circuit Check"
Case 12:Check Tyre pressure monitoring control unit Circuit. Refer to LAN-319, "Tyre Pressure Monitoring Control Unit Circuit Check"
Case 13:Check Smart entrance control unit Circuit. Refer to LAN-319, "Smart Entrance Control Unit Circuit Check"
Case 14:Check Combination meter Circuit. Refer to LAN-320, "Combination Meter Circuit Check"
Case 15:Check CAN communication Circuit. Refer to LAN-320, "CAN Communication Circuit Check"

Circuit Check Between TCM and ABS Actuator and Electric Unit (control unit)

EKS0053B

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, control unit-side and harness-side)

- TCM.
- ABS actuator and electric unit (control unit).
- Between TCM and ABS actuator and electric unit (control unit).

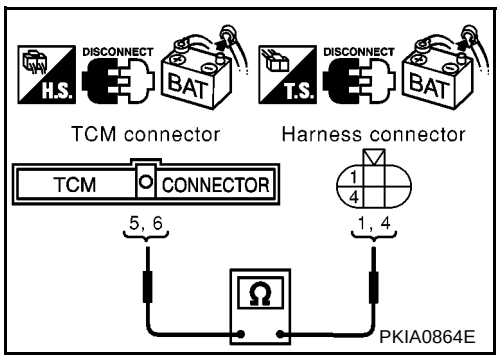
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect TCM connector and harness connector F31.
2. Check continuity between TCM harness connector F103 terminals 5 (L), 6 (R) and harness connector F31 terminals 1 (L), 4 (R).

5(L) – 1(L) : Continuity should exist.
6(R) – 4(R) : Continuity should exist.



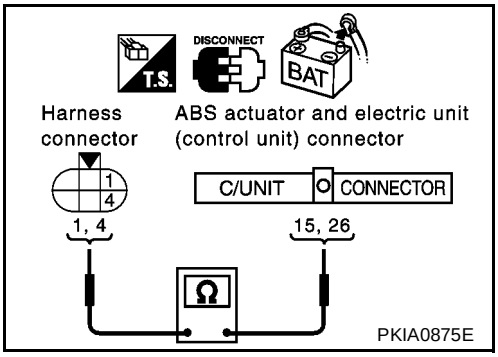
OK or NG

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

3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector.
2. Check continuity between harness connector E63 terminals 1 (L), 4 (R) and ABS actuator and electric unit (control unit) harness connector E64 terminals 26 (L), 15 (R).

1(L) – 26(L) : Continuity should exist.
4(R) – 15(R) : Continuity should exist.



OK or NG

OK >> Reconnect all connectors to perform “SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE”, “CVT”, “ABS”, “AIR PRESSURE MONITOR”, and “SMART ENTRANCE” displayed on CONSULT-II. Refer to EC-1083, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) or EC-1505, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) for “ENGINE” and Refer to CVT-118, "DTC U1000 CAN COMMUNICATION LINE" (EURO-OBD) or CVT-201, "CAN COMMUNICATION LINE" (ALL) for “CVT”. Refer to BRC-33, "CAN Communication Circuit" for “ABS”. Refer to WT-35, "Inspection 4: CAN Communication Line" for “AIR PRESSURE MONITOR”. Refer to BCS-40, "CAN Communication Line Check" for “SMART ENTRANCE”.

NG >> Repair harness.

Circuit Check Between ABS Actuator and Electric Unit (control unit) and Tyre Pressure Monitoring Control Unit

EKS0053C

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 unit-side and harness-side)

- ABS actuator and electric unit (control unit).
- Tyre pressure monitoring control unit.
- Between ABS actuator and electric unit (control unit) and tyre pressure monitoring control unit.

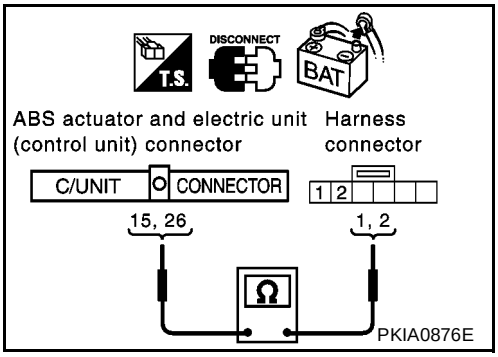
OK or NG

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 and harness connector E120.
2. Check continuity between ABS actuator and electric unit (control unit) harness connector E64 terminals 26 (L), 15 (R) and harness connector E120 terminals 2 (L), 1 (R).

26(L) – 2(L) : Continuity should exist.
15(R) – 1(R) : Continuity should exist.



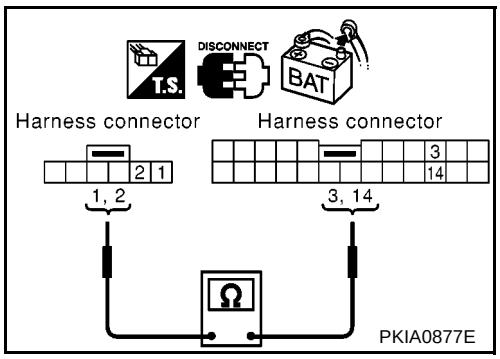
OK or NG

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

3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector B101.
2. Check continuity between harness connector B107 terminals 2 (L), 1 (R) and harness connector B101 terminals 3 (L), 14 (R).

2(L) – 3(L) : Continuity should exist.
1(R) – 14(R) : Continuity should exist.



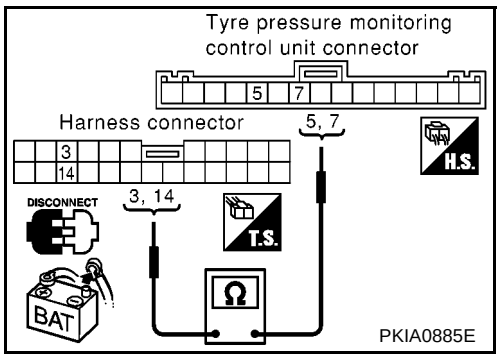
OK or NG

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

4. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect tyre pressure monitoring control unit connector.
2. Check continuity between harness connector M87 terminals 3 (L), 14 (R) and tyre pressure monitoring control unit harness connector M96 terminals 7 (L), 5 (R).

3(L) – 7(L) : Continuity should exist.
14(R) – 5(R) : Continuity should exist.



OK or NG

OK >> Reconnect all connectors to perform “SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE”, “CVT”, “ABS”, “AIR PRESSURE MONITOR”, and “SMART ENTRANCE” displayed on CONSULT-II. Refer to EC-1083, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) or EC-1505, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) for “ENGINE” and Refer to CVT-118, "DTC U1000 CAN COMMUNICATION LINE" (EURO-OBD) or CVT-201, "CAN COMMUNICATION LINE" (ALL) for “CVT”. Refer to BRC-33, "CAN Communication Circuit" for “ABS”. Refer to WT-35, "Inspection 4: CAN Communication Line" for “AIR PRESSURE MONITOR”. Refer to BCS-40, "CAN Communication Line Check" for “SMART ENTRANCE”.
NG >> Repair harness.

Circuit Check Between Tyre pressure monitoring control unit and Smart Entrance Control Unit

EKS0053D

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 unit-side and harness-side)

- Smart entrance control unit.
- Tyre pressure monitoring control unit.

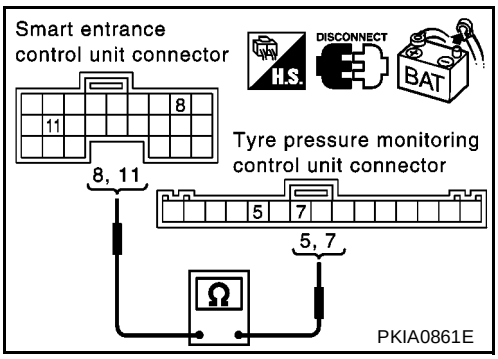
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect smart entrance control unit connector and tyre pressure monitoring control unit connector.
2. Check continuity between smart entrance control unit harness connector M41 terminals 8 (L), 11 (R) and tyre pressure monitoring control unit harness connector M96 terminals 7 (L), 5 (R).

8(L) – 7(L) : Continuity should exist.
11(R) – 5(R) : Continuity should exist.



OK or NG

OK >> Reconnect all connectors to perform “SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE”, “CVT”, “ABS”, “AIR PRESSURE MONITOR”, and “SMART ENTRANCE” displayed on CONSULT-II. Refer to EC-1083, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) or EC-1505, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) for “ENGINE” and Refer to CVT-118, "DTC U1000 CAN COMMUNICATION LINE" (EURO-OBD) or CVT-201, "CAN COMMUNICATION LINE" (ALL) for “CVT”. Refer to BRC-33, "CAN Communication Circuit" for “ABS”. Refer to WT-35, "Inspection 4: CAN Communication Line" for “AIR PRESSURE MONITOR”. Refer to BCS-40, "CAN Communication Line Check" for “SMART ENTRANCE”.

NG >> Repair harness.

ECM Circuit Check

EKS0053E

1. CHECK CONNECTOR

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

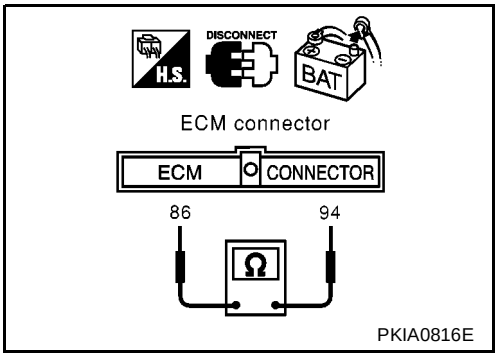
OK or NG

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 F102 terminals 94(L) and 86(R).

94(L) – 86(R) : Approx. 108 – 132Ω



OK or NG

OK >> Replace ECM.
NG >> Repair harness between TCM and ECM.

TCM Circuit Check

EKS0053F

1. CHECK CONNECTOR

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

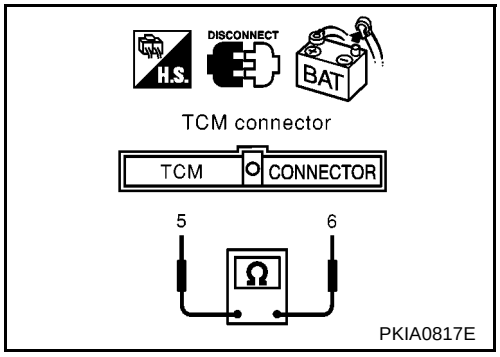
OK or NG

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 F103 terminals 5(L) and 6(R).

5(L) – 6(R) : Approx. 54 – 66Ω



OK or NG

OK >> Replace TCM.
NG >> Repair harness between TCM and ECM.

ABS Actuator and Electric Unit (control unit) Circuit Check

EKS0053G

1. CHECK CONNECTOR

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

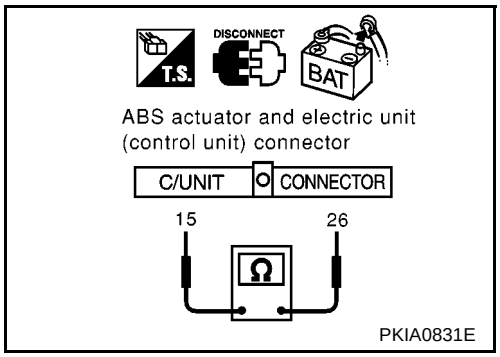
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector.
2. Check resistance between ABS actuator and electric unit (control unit) harness connector E64 terminals 26(L) and 15(R).

26(L) – 15(R) : Approx. 54 – 66Ω



OK or NG

OK >> Replace ABS actuator and electric unit (control unit).
NG >> Repair harness between Data link connector and ABS actuator and electric unit (control unit).

Tyre Pressure Monitoring Control Unit Circuit Check

EKS0053H

1. CHECK CONNECTOR

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

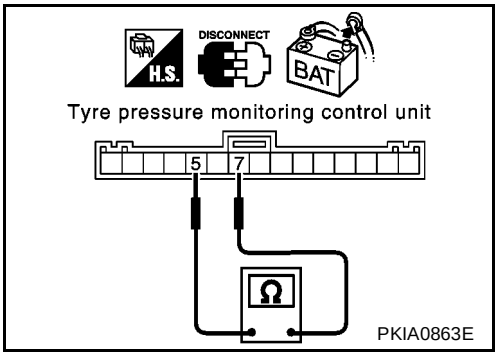
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect tyre pressure monitoring control unit connector.
2. Check resistance between tyre pressure monitoring control unit harness connector M96 terminals 7(L) and 5(R).

7(L) – 5(R) : Approx. 54 – 66Ω



OK or NG

OK >> Replace tyre pressure monitoring control unit.
NG >> Repair harness between smart entrance control unit and tyre pressure monitoring control unit.

Smart Entrance Control Unit Circuit Check

EKS0053I

1. CHECK CONNECTOR

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

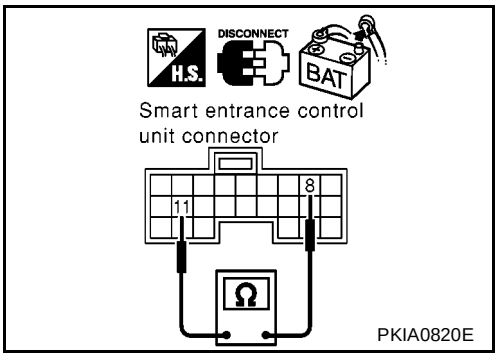
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect smart entrance control unit connector.
2. Check resistance between smart entrance control unit harness connector M41 terminals 8(L) and 11(R).

8(L) – 11(R) : Approx. 54 – 66Ω



OK or NG

OK >> Replace smart entrance control unit.
NG >> Repair harness between tyre pressure monitoring control unit and smart entrance control unit.

Combination Meter Circuit Check

EKS0053J

1. CHECK CONNECTOR

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

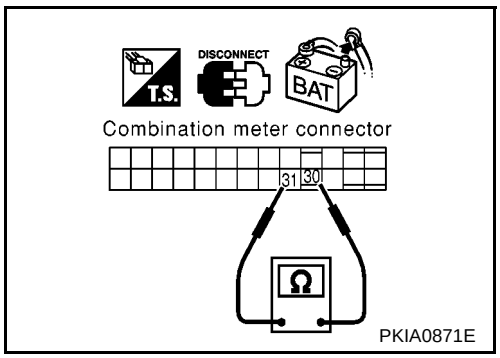
OK or NG

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 M37 terminals 30(L) and 31(R).

30(L) – 31(R) : Approx. 108 – 132Ω



OK or NG

OK >> Replace combination meter.
NG >> Repair harness between smart entrance control unit and combination meter.

CAN Communication Circuit Check

EKS0053K

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. (meter-side, control unit-side, control module-side and harness-side)

- Combination meter.
- Smart entrance control unit.
- Tyre pressure monitoring control unit.
- ABS actuator and electric unit (control unit).
- TCM.
- ECM.
- Between Data link connector and ECM.

OK or NG

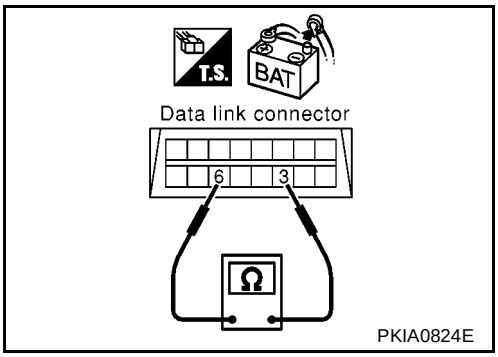
OK >> GO TO 2.
NG >> Repair terminal or connector.

2. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect the following connectors.
- Combination meter connector.
- Smart entrance control unit connector.
- Tyre pressure monitoring control unit connector.
- Harness connector M87.

2. Check continuity between Data link connector M10 terminals 6 (L) and 3(R).

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



OK or NG

OK >> GO TO 3.

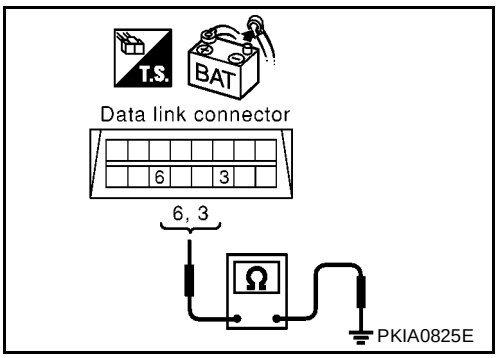
NG >>
- Repair harness between smart entrance control unit and combination meter.
- Repair harness between tyre pressure monitoring control unit and smart entrance control unit.
- Repair harness between Data link connector and tyre pressure monitoring control unit.
- Repair harness between Data link connector and harness connector M87.

3. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between Data link connector M10 terminals 6 (L), 3(R) and ground.

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

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



OK or NG

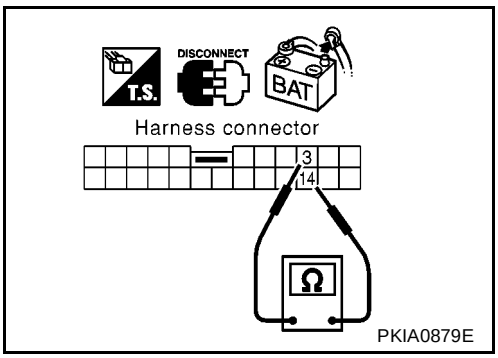
OK >> GO TO 4.

NG >>
- Repair harness between smart entrance control unit and combination meter.
- Repair harness between tyre pressure monitoring control unit and smart entrance control unit.
- Repair harness between Data link connector and tyre pressure monitoring control unit.
- Repair harness between Data link connector and harness connector M87.

4. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect harness connector B107.
2. Check continuity between harness connector B101 terminals 3 (L) and 14(R).

3(L) – 14(R) : Continuity should not exist.



OK or NG

OK >> GO TO 5.

NG >> Repair harness between harness connector B101 and harness connector B107.

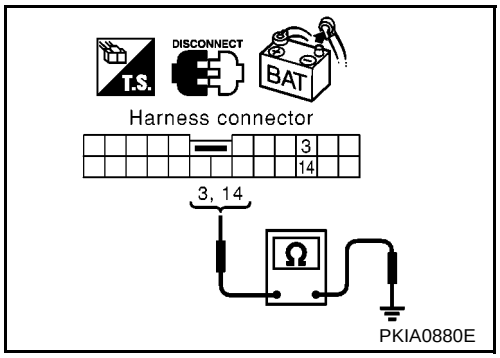
5. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between harness connector B101 terminals 3 (L), 14(R) and ground.

3(L) – ground : Continuity should not exist.
14(R) – ground : Continuity should not exist.

OK or NG

OK >> GO TO 6.
NG >> Repair harness between harness connector B101 and harness connector B107.



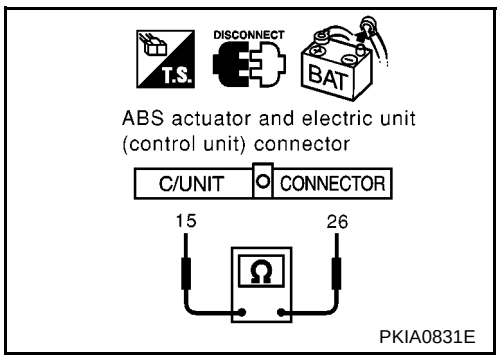
6. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect the following connectors.
   - ABS actuator and electric unit (control unit) connector.
   - Harness connector E63.
2. Check continuity between ABS actuator and electric unit (control unit) harness connector E64 terminals 26 (L) and 15(R).

26(L) – 15(R) : Continuity should not exist.

OK or NG

OK >> GO TO 7.
NG >>
- Repair harness between ABS actuator and electric unit (control unit) and harness connector E120.
- Repair harness between harness connector E120 and harness connector E63.



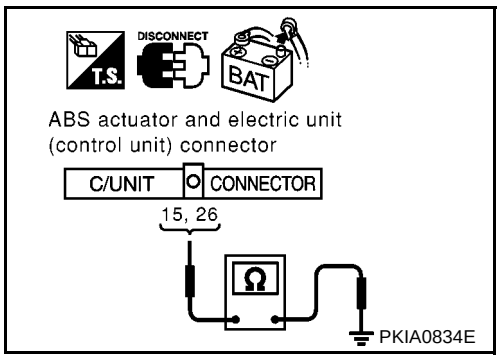
7. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ABS actuator and electric unit (control unit) harness connector E64 terminals 26 (L), 15 (R) and ground.

26(L) – ground : Continuity should not exist.
15(R) – ground : Continuity should not exist.

OK or NG

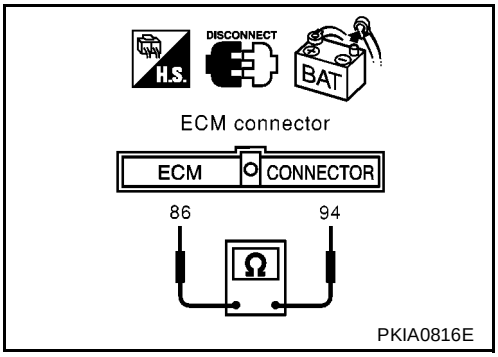
OK >> GO TO 8.
NG >>
- Repair harness between ABS actuator and electric unit (control unit) and harness connector E120.
- Repair harness between harness connector E120 and harness connector E63.



8. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect ECM connector and TCM connector.
2. Check continuity between ECM harness connector F102 terminals 94 (L) and 86(R).

94(L) – 86(R) : Continuity should not exist.



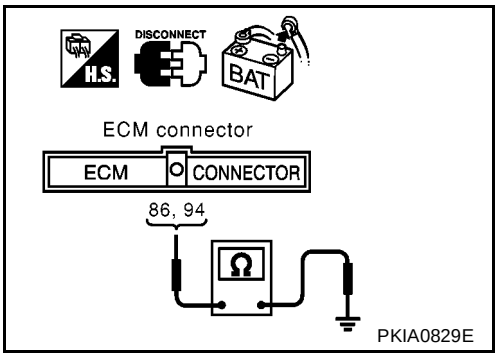
OK or NG

OK >> GO TO 9.
NG >>
- Repair harness between ECM and harness connector F31.
- Repair harness between TCM and harness connector F31.

9. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ECM harness connector F102 terminals 94 (L), 86 (R) and ground.

94(L) – ground : Continuity should not exist.
86(R) – ground : Continuity should not exist.



OK or NG

OK >> GO TO 10.
NG >>
- Repair harness between ECM and harness connector F31.
- Repair harness between TCM and harness connector F31.

10. ECM / COMBINATION METER INTERNAL CIRCUIT INSPECTION

Check components inspection. Refer to LAN-323, "ECM / COMBINATION METER INTERNAL CIRCUIT INSPECTION"

OK or NG

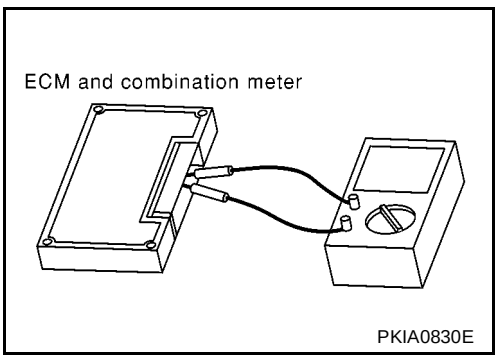
OK >> Reconnect all connectors to perform “SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE”, “CVT”, “ABS”, “AIR PRESSURE MONITOR”, and “SMART ENTRANCE” displayed on CONSULT-II. Refer to EC-1083, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) or EC-1505, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) for “ENGINE” and Refer to CVT-118, "DTC U1000 CAN COMMUNICATION LINE" (EURO-OBD) or CVT-201, "CAN COMMUNICATION LINE" (ALL) for “CVT”. Refer to BRC-33, "CAN Communication Circuit" for “ABS”. Refer to WT-35, "Inspection 4: CAN Communication Line" for “AIR PRESSURE MONITOR”. Refer to BCS-40, "CAN Communication Line Check" for “SMART ENTRANCE”.
NG >> Replace ECM and/or Combination meter.

Component Inspection

EKS0053L

ECM / COMBINATION METER INTERNAL CIRCUIT INSPECTION

- Remove ECM and Combination meter from vehicle.
- Check resistance between ECM terminals 94 and 86.
- Check resistance between Combination meter terminals 30 and 31.



Unit	Terminal	Resistance value (Ω)
ECM	94 – 86	Approx. 108 - 132
Combination meter	30 – 31	

CAN SYSTEM (TYPE 16)

PFP:23710

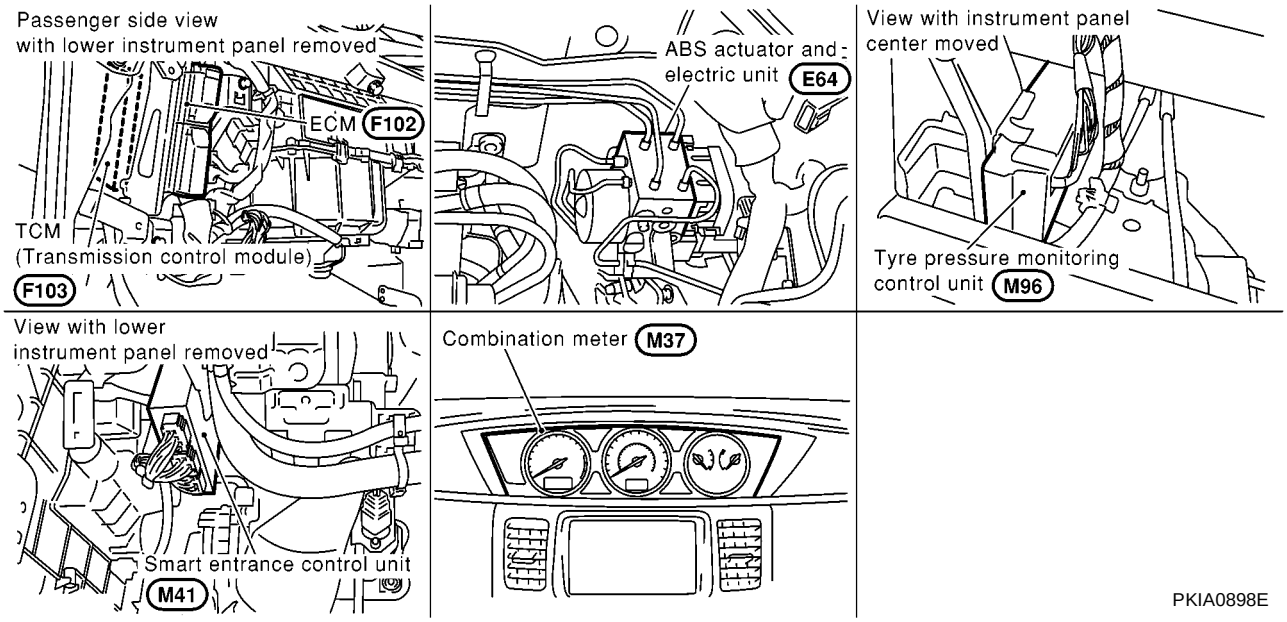
System Description

EKS0052S

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

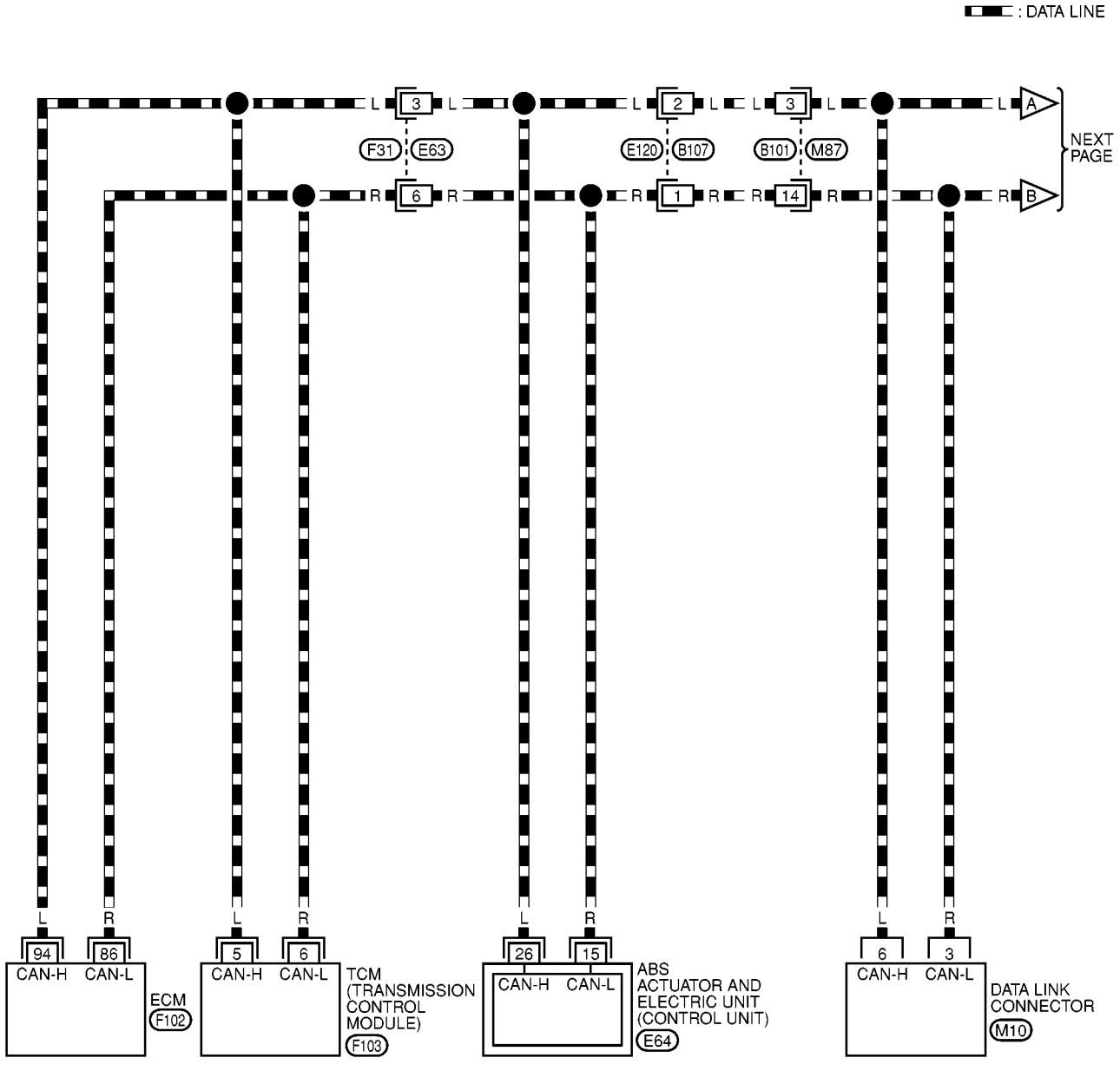
EKS0052T



Wiring Diagram — CAN —

EKS0052U

LAN-CAN-34

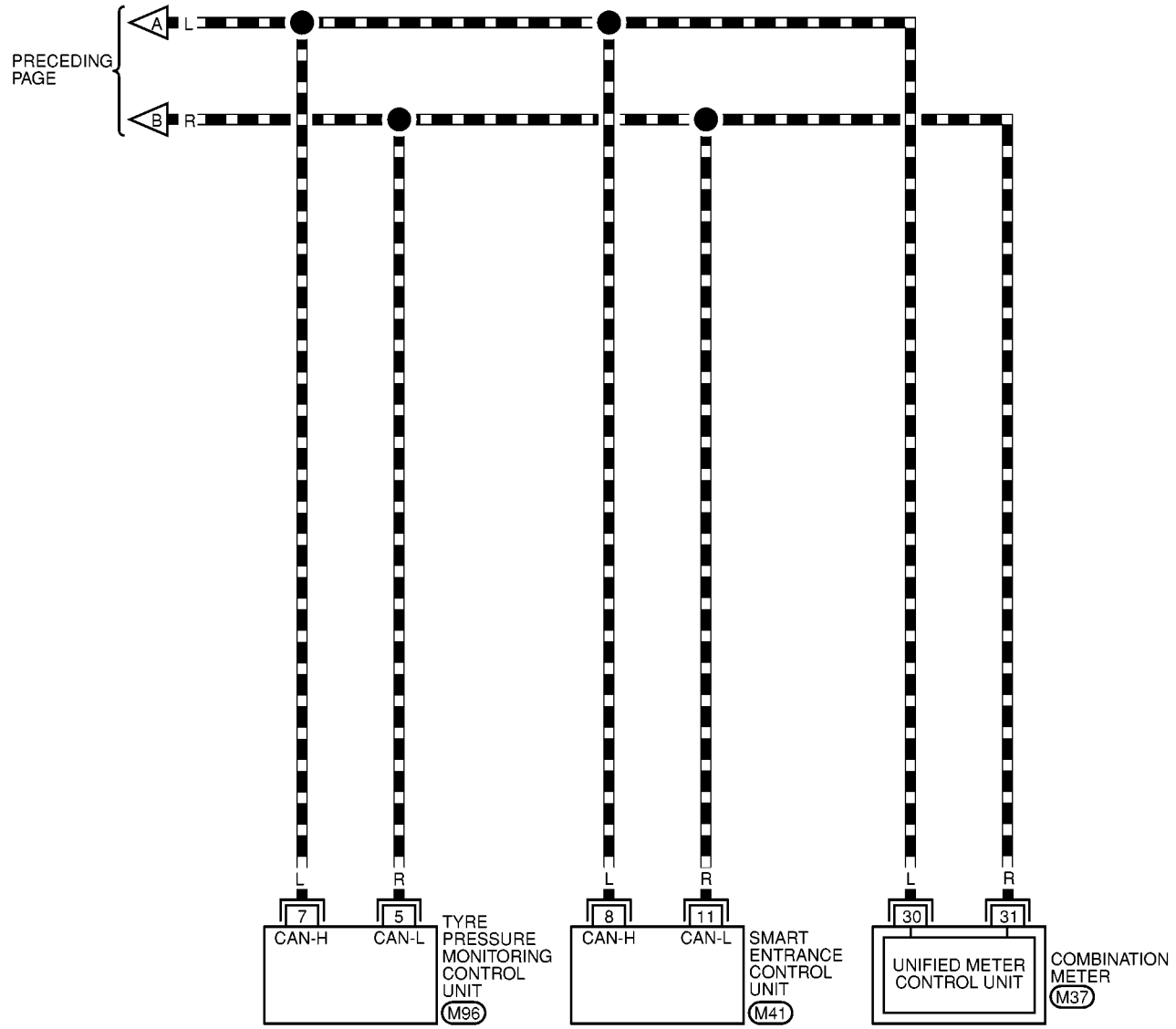


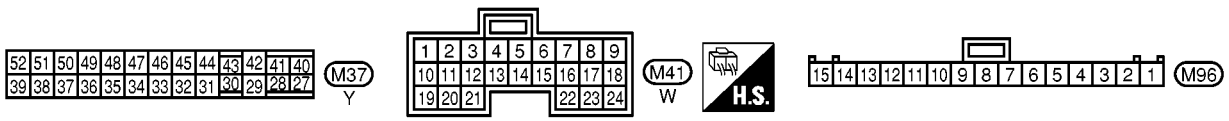
REFER TO THE FOLLOWING.
E64 , F102 , F103
-ELECTRICAL UNITS

MKWA0246E

LAN-CAN-35

: DATA LINE





MKWA0247E

Work Flow

EKS0052V

1. Print all the data of “SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE”, “A/T”, “ABS”, “AIR PRESSURE MONITOR”, and “SMART ENTRANCE” displayed on CONSULT-II. Refer to EC-150, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) or EC-663, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) for “ENGINE” and Refer to AT-190, "DTC U1000 CAN COMMUNICATION LINE" (EURO-OBD) or AT-393, "CAN COMMUNICATION LINE" (ALL) for “A/T”. Refer to BRC-33, "CAN Communication Circuit" for “ABS”. Refer to WT-35, "Inspection 4: CAN Communication Line" for “AIR PRESSURE MONITOR”. Refer to BCS-40, "CAN Communication Line Check" for “SMART ENTRANCE”.
2. Attach the printed sheet of “SELF-DIAG RESULTS” and “DATA MONITOR” onto the check sheet. Refer to LAN-328, "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-328, "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-329, "CHECK SHEET RESULTS (EXAMPLE)"

CHECK SHEET

Check sheet table

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	–	CAN CIRC 6	CAN CIRC 4
A/T	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	CAN CIRC 2
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 3

Symptoms:

Attach copy of
ENGINE
SELF-DIAG RESULTS

Attach copy of
A/T
SELF-DIAG RESULTS

Attach copy of
ABS
SELF-DIAG RESULTS

Attach copy of
AIR PRESSURE MONITOR
SELF-DIAG RESULTS

Attach copy of
SMART ENTRANCE
SELF-DIAG RESULTS

Attach copy of
ENGINE
DATA MONITOR

Attach copy of
A/T
DATA MONITOR

Attach copy of
ABS
DATA MONITOR

Attach copy of
AIR PRESSURE MONITOR
DATA MONITOR

Attach copy of
SMART ENTRANCE
DATA MONITOR

PKIA0774E

CHECK SHEET RESULTS (EXAMPLE)

Case 1: Replace ECM

ENGINE	CAN COMM ✓	CAN CIRC 1	–	CAN CIRC 2	–	–	CAN CIRC 6	CAN CIRC 4
A/T	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	CAN CIRC 2
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 3

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC ✓	–	–	CAN CIRC ✓	CAN CIRC ✓
A/T	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	CAN CIRC 2
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 3

Case 2: Replace TCM

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC ✓	–	–	CAN CIRC 6	CAN CIRC 4
A/T	CAN COMM ✓	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	CAN CIRC 2
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 3

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	–	CAN CIRC 6	CAN CIRC 4
A/T	CAN COMM	CAN CIRC 1	CAN CIRC ✓	–	–	–	–	CAN CIRC ✓
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	CAN CIRC 2
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 3

PKIA0775E

Case 3: Replace ABS actuator and electric unit (control unit)

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	–	CAN CIRC 6	CAN CIRC 4
A/T	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 4
ABS	CAN COMM ✓	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	CAN CIRC 2
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 3

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	–	CAN CIRC 6	CAN CIRC 4
A/T	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC ✓	–	–	–	–	–
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	CAN CIRC 2
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 3

Case 4: Replace Tyre pressure monitoring control unit

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	–	CAN CIRC 6	CAN CIRC 4
A/T	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–
AIR PRESSURE MONITOR	CAN COMM ✓	CAN CIRC 1	–	–	–	–	–	CAN CIRC 2
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 3

PKIA0776E

Case 5: Replace Smart entrance control unit

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	–	CAN CIRC 6	CAN CIRC 4
A/T	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	CAN CIRC 2
SMART ENTRANCE	CAN COMM ✓	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 3

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	–	CAN CIRC 6	CAN CIRC 4
A/T	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	CAN CIRC 2
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	–	–	–	–	CAN CIRC 3 ✓

Case 6

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	–	CAN CIRC 6 ✓	CAN CIRC 4 ✓
A/T	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 4 ✓
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	–	–	–	–	–
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	CAN CIRC 2
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	–	–	–	–	CAN CIRC 3

Case 7

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	–	CAN CIRC 6 ✓	CAN CIRC 4 ✓
A/T	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 4 ✓
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	CAN CIRC 2
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	–	–	–	–	CAN CIRC 3

PKIA0777E

Case 8

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	–	✓	✓
A/T	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	✓
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	✓
SMART ENTRANCE	CAN COMM	CAN CIRC 1	✓	–	–	–	–	CAN CIRC 3

Case 9

ENGINE	CAN COMM	✓	–	✓	–	–	✓	✓
A/T	CAN COMM	CAN CIRC 1	✓	–	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	✓	–	–	–	–	–
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	CAN CIRC 2
SMART ENTRANCE	CAN COMM	CAN CIRC 1	✓	–	–	–	–	CAN CIRC 3

Case 10

ENGINE	CAN COMM	CAN CIRC 1	–	✓	–	–	CAN CIRC 6	CAN CIRC 4
A/T	CAN COMM	✓	✓	–	–	–	–	✓
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	CAN CIRC 2
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 3

Case 11

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	–	CAN CIRC 6	CAN CIRC 4
A/T	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 4
ABS	CAN COMM	✓	✓	–	–	–	–	–
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	CAN CIRC 2
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 3

PKIA0778E

Case 12

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	–	CAN CIRC 6	CAN CIRC 4
A/T	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1 ✓	–	–	–	–	–	CAN CIRC 4 ✓
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 3

Case 13

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	–	CAN CIRC 6 ✓	CAN CIRC 4
A/T	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	CAN CIRC 2
SMART ENTRANCE	CAN COMM	CAN CIRC 1 ✓	CAN CIRC 2 ✓	–	–	–	–	CAN CIRC 3 ✓

Case 14

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	–	CAN CIRC 6	CAN CIRC 4 ✓
A/T	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 4 ✓
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	CAN CIRC 2 ✓
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 3 ✓

Case 15

ENGINE	CAN COMM	CAN CIRC 1 ✓	–	CAN CIRC 2 ✓	–	–	CAN CIRC 6 ✓	CAN CIRC 4 ✓
A/T	CAN COMM	CAN CIRC 1 ✓	CAN CIRC 2 ✓	–	–	–	–	CAN CIRC 4 ✓
ABS	CAN COMM	CAN CIRC 1 ✓	CAN CIRC 2 ✓	–	–	–	–	–
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1 ✓	–	–	–	–	–	CAN CIRC 2 ✓
SMART ENTRANCE	CAN COMM	CAN CIRC 1 ✓	CAN CIRC 2 ✓	–	–	–	–	CAN CIRC 3 ✓

PKIA0779E

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

INSPECTION

Proceed trouble diagnosis according to the check sheet results (example).
Case 1:Replace ECM.
Case 2:Replace TCM.
Case 3:Replace ABS actuator and electric unit (control unit).
Case 4:Replace Tyre pressure monitoring control unit.
Case 5:Replace Smart entrance control unit.
Case 6:Check Harness between TCM and ABS actuator and electric unit (control unit). Refer to LAN-334, "Circuit Check Between TCM and ABS Actuator and Electric Unit (control unit)"
Case 7:Check Harness between Tyre pressure monitoring control unit and ABS actuator and electric unit (control unit). Refer to LAN-335, "Circuit Check Between ABS Actuator and Electric Unit (control unit) and Tyre Pressure Monitoring Control Unit"
Case 8:Check Harness between Tyre pressure monitoring control unit and Smart entrance control unit. Refer to LAN-336, "Circuit Check Between Tyre pressure monitoring control unit and Smart Entrance Control Unit"
Case 9:Check ECM Circuit. Refer to LAN-337, "ECM Circuit Check"
Case 10:Check TCM Circuit. Refer to LAN-338, "TCM Circuit Check"
Case 11:Check ABS actuator and electric unit (control unit) Circuit. Refer to LAN-338, "ABS Actuator and Electric Unit (control unit) Circuit Check"
Case 12:Check Tyre pressure monitoring control unit Circuit. Refer to LAN-339, "Tyre Pressure Monitoring Control Unit Circuit Check"
Case 13:Check Smart entrance control unit Circuit. Refer to LAN-339, "Smart Entrance Control Unit Circuit Check"
Case 14:Check Combination meter Circuit. Refer to LAN-340, "Combination Meter Circuit Check"
Case 15:Check CAN communication Circuit. Refer to LAN-340, "CAN Communication Circuit Check"

Circuit Check Between TCM and ABS Actuator and Electric Unit (control unit)

EKS0052W

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, control unit-side and harness-side)

- TCM.
- ABS actuator and electric unit (control unit).
- Between TCM and ABS actuator and electric unit (control unit).

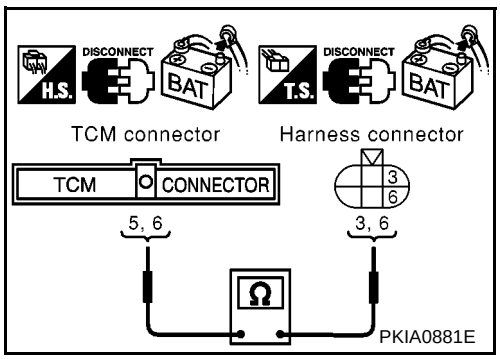
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect TCM connector and harness connector F31.
2. Check continuity between TCM harness connector F103 terminals 5 (L), 6 (R) and harness connector F31 terminals 3 (L), 6 (R).

5(L) – 3(L) : Continuity should exist.
6(R) – 6(R) : Continuity should exist.



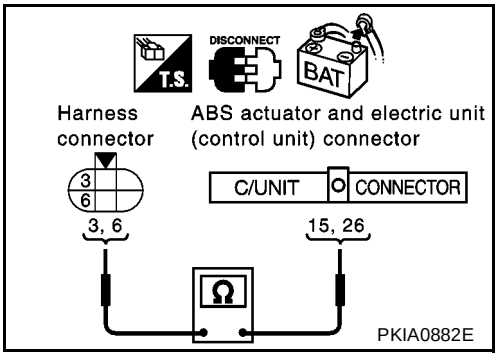
OK or NG

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

3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector.
2. Check continuity between harness connector E63 terminals 3 (L), 6 (R) and ABS actuator and electric unit (control unit) harness connector E64 terminals 26 (L), 15 (R).

3(L) – 26(L) : Continuity should exist.
6(R) – 15(R) : Continuity should exist.



OK or NG

OK >> Reconnect all connectors to perform “SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE”, “A/T”, “ABS”, “AIR PRESSURE MONITOR”, and “SMART ENTRANCE” displayed on CONSULT-II. Refer to EC-150, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) or EC-663, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) for “ENGINE” and Refer to AT-190, "DTC U1000 CAN COMMUNICATION LINE" (EURO-OBD) or AT-393, "CAN COMMUNICATION LINE" (ALL) for “A/T”. Refer to BRC-33, "CAN Communication Circuit" for “ABS”. Refer to WT-35, "Inspection 4: CAN Communication Line" for “AIR PRESSURE MONITOR”. Refer to BCS-40, "CAN Communication Line Check" for “SMART ENTRANCE”.

NG >> Repair harness.

Circuit Check Between ABS Actuator and Electric Unit (control unit) and Tyre Pressure Monitoring Control Unit

EKS0052X

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 unit-side and harness-side)

- ABS actuator and electric unit (control unit).
- Tyre pressure monitoring control unit.
- Between ABS actuator and electric unit (control unit) and tyre pressure monitoring control unit.

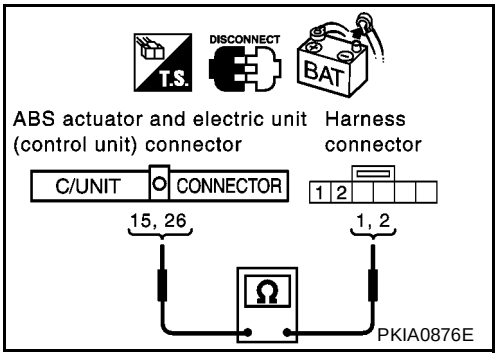
OK or NG

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 and harness connector E120.
2. Check continuity between ABS actuator and electric unit (control unit) harness connector E64 terminals 26 (L), 15 (R) and harness connector E120 terminals 2 (L), 1 (R).

26(L) – 2(L) : Continuity should exist.
15(R) – 1(R) : Continuity should exist.



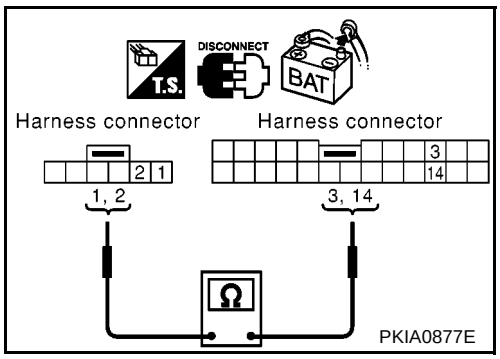
OK or NG

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

3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector B101.
2. Check continuity between harness connector B107 terminals 2 (L), 1 (R) and harness connector B101 terminals 3 (L), 14 (R).

2(L) – 3(L) : Continuity should exist.
1(R) – 14(R) : Continuity should exist.



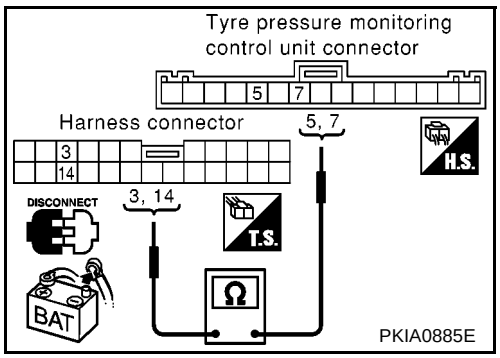
OK or NG

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

4. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect tyre pressure monitoring control unit connector.
2. Check continuity between harness connector M87 terminals 3 (L), 14 (R) and tyre pressure monitoring control unit harness connector M96 terminals 7 (L), 5 (R).

3(L) – 7(L) : Continuity should exist.
14(R) – 5(R) : Continuity should exist.



OK or NG

OK >> Reconnect all connectors to perform “SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE”, “A/T”, “ABS”, “AIR PRESSURE MONITOR”, and “SMART ENTRANCE” displayed on CONSULT-II. Refer to EC-150, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) or EC-663, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) for “ENGINE” and Refer to AT-190, "DTC U1000 CAN COMMUNICATION LINE" (EURO-OBD) or AT-393, "CAN COMMUNICATION LINE" (ALL) for “A/T”. Refer to BRC-33, "CAN Communication Circuit" for “ABS”. Refer to WT-35, "Inspection 4: CAN Communication Line" for “AIR PRESSURE MONITOR”. Refer to BCS-40, "CAN Communication Line Check" for “SMART ENTRANCE”.
NG >> Repair harness.

Circuit Check Between Tyre pressure monitoring control unit and Smart Entrance Control Unit

EKS0052Y

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 unit-side and harness-side)

- Smart entrance control unit.
- Tyre pressure monitoring control unit.

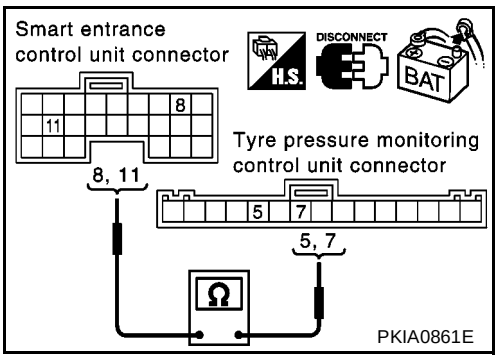
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect smart entrance control unit connector and tyre pressure monitoring control unit connector.
2. Check continuity between smart entrance control unit harness connector M41 terminals 8 (L), 11 (R) and tyre pressure monitoring control unit harness connector M96 terminals 7 (L), 5 (R).

8(L) – 7(L) : Continuity should exist.
11(R) – 5(R) : Continuity should exist.



OK or NG

OK >> Reconnect all connectors to perform “SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE”, “A/T”, “ABS”, “AIR PRESSURE MONITOR”, and “SMART ENTRANCE” displayed on CONSULT-II. Refer to EC-150, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) or EC-663, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) for “ENGINE” and Refer to AT-190, "DTC U1000 CAN COMMUNICATION LINE" (EURO-OBD) or AT-393, "CAN COMMUNICATION LINE" (ALL) for “A/T”. Refer to BRC-33, "CAN Communication Circuit" for “ABS”. Refer to WT-35, "Inspection 4: CAN Communication Line" for “AIR PRESSURE MONITOR”. Refer to BCS-40, "CAN Communication Line Check" for “SMART ENTRANCE”.

NG >> Repair harness.

ECM Circuit Check

EKS0052Z

1. CHECK CONNECTOR

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

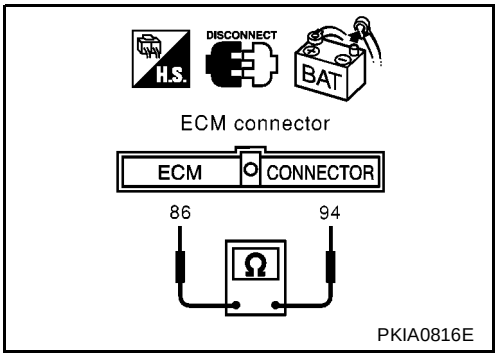
OK or NG

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 F102 terminals 94(L) and 86(R).

94(L) – 86(R) : Approx. 108 – 132Ω



OK or NG

OK >> Replace ECM.
NG >> Repair harness between TCM and ECM.

TCM Circuit Check

EKS00530

1. CHECK CONNECTOR

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

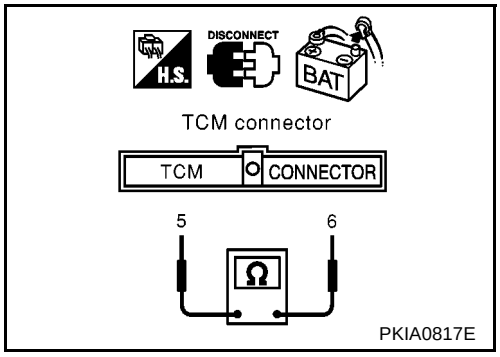
OK or NG

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 F103 terminals 5(L) and 6(R).

5(L) – 6(R) : Approx. 54 – 66Ω



OK or NG

OK >> Replace TCM.
NG >> Repair harness between TCM and ECM.

ABS Actuator and Electric Unit (control unit) Circuit Check

EKS00531

1. CHECK CONNECTOR

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

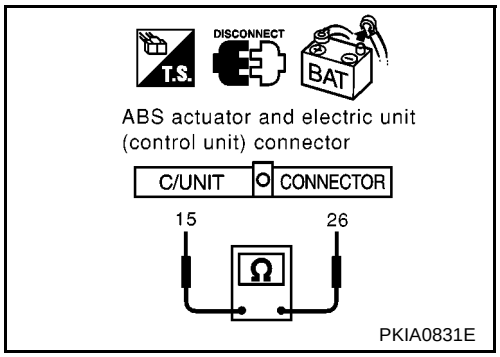
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector.
2. Check resistance between ABS actuator and electric unit (control unit) harness connector E64 terminals 26(L) and 15(R).

26(L) – 15(R) : Approx. 54 – 66Ω



OK or NG

OK >> Replace ABS actuator and electric unit (control unit).
NG >> Repair harness between Data link connector and ABS actuator and electric unit (control unit).

Tyre Pressure Monitoring Control Unit Circuit Check

EKS00532

1. CHECK CONNECTOR

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

OK or NG

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

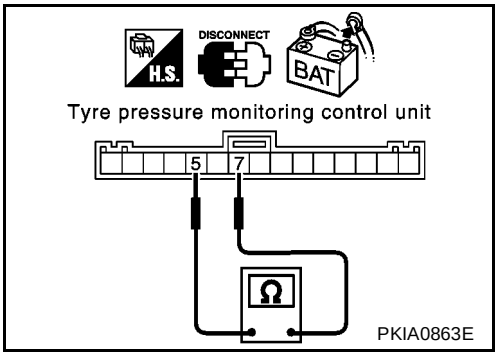
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect tyre pressure monitoring control unit connector.
2. Check resistance between tyre pressure monitoring control unit harness connector M96 terminals 7(L) and 5(R).

7(L) – 5(R) : Approx. 54 – 66Ω

OK or NG

OK >> Replace tyre pressure monitoring control unit.
NG >> Repair harness between smart entrance control unit and tyre pressure monitoring control unit.



Smart Entrance Control Unit Circuit Check

EKS00533

1. CHECK CONNECTOR

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

OK or NG

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

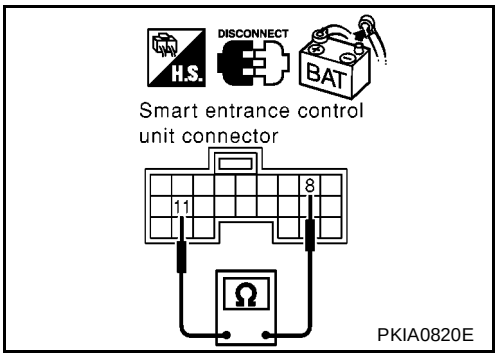
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect smart entrance control unit connector.
2. Check resistance between smart entrance control unit harness connector M41 terminals 8(L) and 11(R).

8(L) – 11(R) : Approx. 54 – 66Ω

OK or NG

OK >> Replace smart entrance control unit.
NG >> Repair harness between tyre pressure monitoring control unit and smart entrance control unit.



Combination Meter Circuit Check

EKS00534

1. CHECK CONNECTOR

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

OK or NG

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

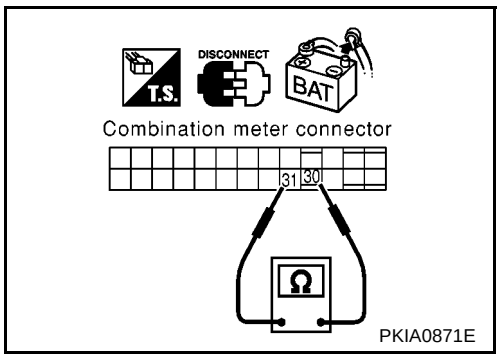
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect combination meter connector.
2. Check resistance between combination meter harness connector M37 terminals 30(L) and 31(R).

30(L) – 31(R) : Approx. 108 – 132Ω

OK or NG

OK >> Replace combination meter.
NG >> Repair harness between smart entrance control unit and combination meter.



CAN Communication Circuit Check

EKS00535

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. (meter-side, control unit-side, control module-side and harness-side)

- Combination meter.
- Smart entrance control unit.
- Tyre pressure monitoring control unit.
- ABS actuator and electric unit (control unit).
- TCM.
- ECM.
- Between Data link connector and ECM.

OK or NG

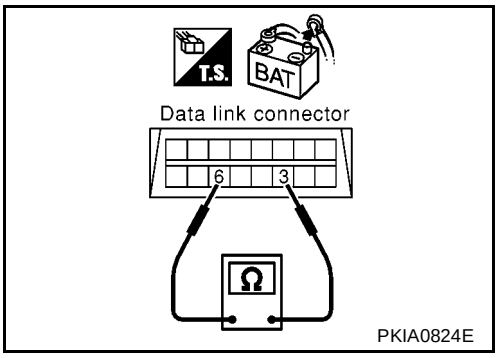
OK >> GO TO 2.
NG >> Repair terminal or connector.

2. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect the following connectors.
- Combination meter connector.
- Smart entrance control unit connector.
- Tyre pressure monitoring control unit connector.
- Harness connector M87.

2. Check continuity between Data link connector M10 terminals 6 (L) and 3(R).

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



OK or NG

OK >> GO TO 3.

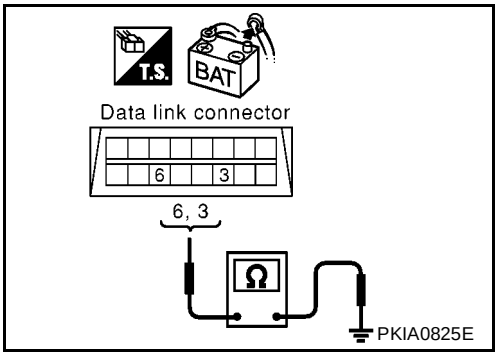
NG >>
- Repair harness between smart entrance control unit and combination meter.
- Repair harness between tyre pressure monitoring control unit and smart entrance control unit.
- Repair harness between Data link connector and tyre pressure monitoring control unit.
- Repair harness between Data link connector and harness connector M87.

3. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between Data link connector M10 terminals 6 (L), 3(R) and ground.

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

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



OK or NG

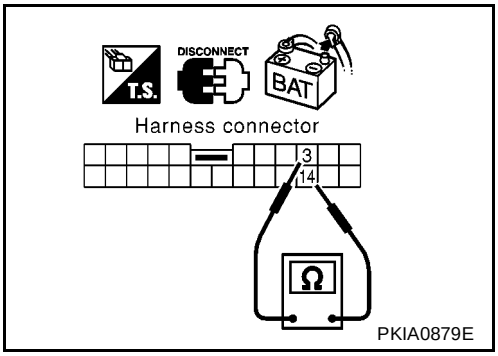
OK >> GO TO 4.

NG >>
- Repair harness between smart entrance control unit and combination meter.
- Repair harness between tyre pressure monitoring control unit and smart entrance control unit.
- Repair harness between Data link connector and tyre pressure monitoring control unit.
- Repair harness between Data link connector and harness connector M87.

4. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect harness connector B107.
2. Check continuity between harness connector B101 terminals 3 (L) and 14(R).

3(L) – 14(R) : Continuity should not exist.



OK or NG

OK >> GO TO 5.

NG >> Repair harness between harness connector B101 and harness connector B107.

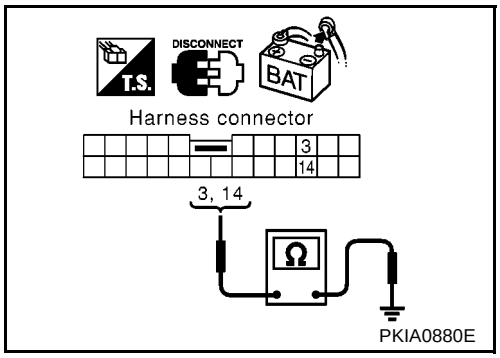
5. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between harness connector B101 terminals 3 (L), 14(R) and ground.

3(L) – ground : Continuity should not exist.
14(R) – ground : Continuity should not exist.

OK or NG

OK >> GO TO 6.
NG >> Repair harness between harness connector B101 and harness connector B107.



6. CHECK HARNESS FOR SHORT CIRCUIT

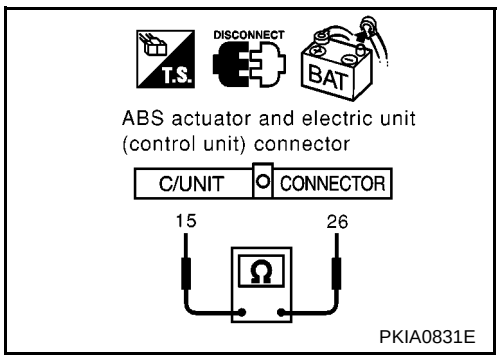
1. Disconnect the following connectors.
- ABS actuator and electric unit (control unit) connector.
- Harness connector E63.

2. Check continuity between ABS actuator and electric unit (control unit) harness connector E64 terminals 26 (L) and 15(R).

26(L) – 15(R) : Continuity should not exist.

OK or NG

OK >> GO TO 7.
NG >>
- Repair harness between ABS actuator and electric unit (control unit) and harness connector E120.
- Repair harness between harness connector E120 and harness connector E63.



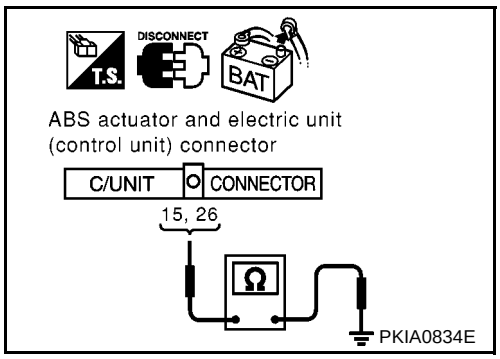
7. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ABS actuator and electric unit (control unit) harness connector E64 terminals 26 (L), 15 (R) and ground.

26(L) – ground : Continuity should not exist.
15(R) – ground : Continuity should not exist.

OK or NG

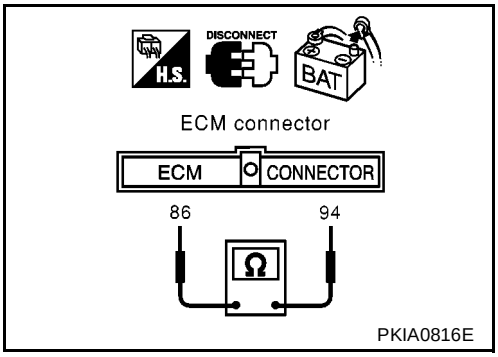
OK >> GO TO 8.
NG >>
- Repair harness between ABS actuator and electric unit (control unit) and harness connector E120.
- Repair harness between harness connector E120 and harness connector E63.



8. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect ECM connector and TCM connector.
2. Check continuity between ECM harness connector F102 terminals 94 (L) and 86(R).

94(L) – 86(R) : Continuity should not exist.



OK or NG

OK >> GO TO 9.

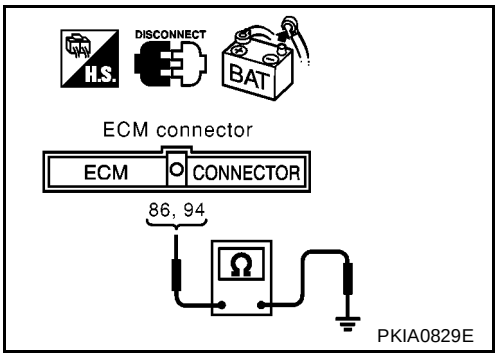
NG >>
- Repair harness between ECM and harness connector F31.
- Repair harness between TCM and harness connector F31.

9. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ECM harness connector F102 terminals 94 (L), 86 (R) and ground.

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

86(R) – ground : Continuity should not exist.



OK or NG

OK >> GO TO 10.

NG >>
- Repair harness between ECM and harness connector F31.
- Repair harness between TCM and harness connector F31.

10. ECM / COMBINATION METER INTERNAL CIRCUIT INSPECTION

Check components inspection. Refer to LAN-343, "ECM / COMBINATION METER INTERNAL CIRCUIT INSPECTION"

OK or NG

OK >> Reconnect all connectors to perform “SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE”, “A/T”, “ABS”, “AIR PRESSURE MONITOR”, and “SMART ENTRANCE” displayed on CONSULT-II. Refer to EC-150, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) or EC-663, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) for “ENGINE” and Refer to AT-190, "DTC U1000 CAN COMMUNICATION LINE" (EURO-OBD) or AT-393, "CAN COMMUNICATION LINE" (ALL) for “A/T”. Refer to BRC-33, "CAN Communication Circuit" for “ABS”. Refer to WT-35, "Inspection 4: CAN Communication Line" for “AIR PRESSURE MONITOR”. Refer to BCS-40, "CAN Communication Line Check" for “SMART ENTRANCE”.

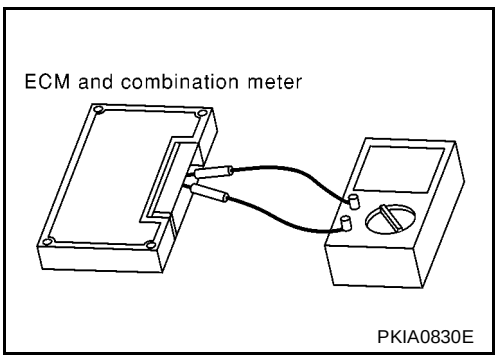
NG >> Replace ECM and/or Combination meter.

Component Inspection

EKS00536

ECM / COMBINATION METER INTERNAL CIRCUIT INSPECTION

- Remove ECM and Combination meter from vehicle.
- Check resistance between ECM terminals 94 and 86.
- Check resistance between Combination meter terminals 30 and 31.



Unit	Terminal	Resistance value (Ω)
ECM	94 – 86	Approx. 108 - 132
Combination meter	30 – 31	

CAN SYSTEM (TYPE 17)

PFP:23710

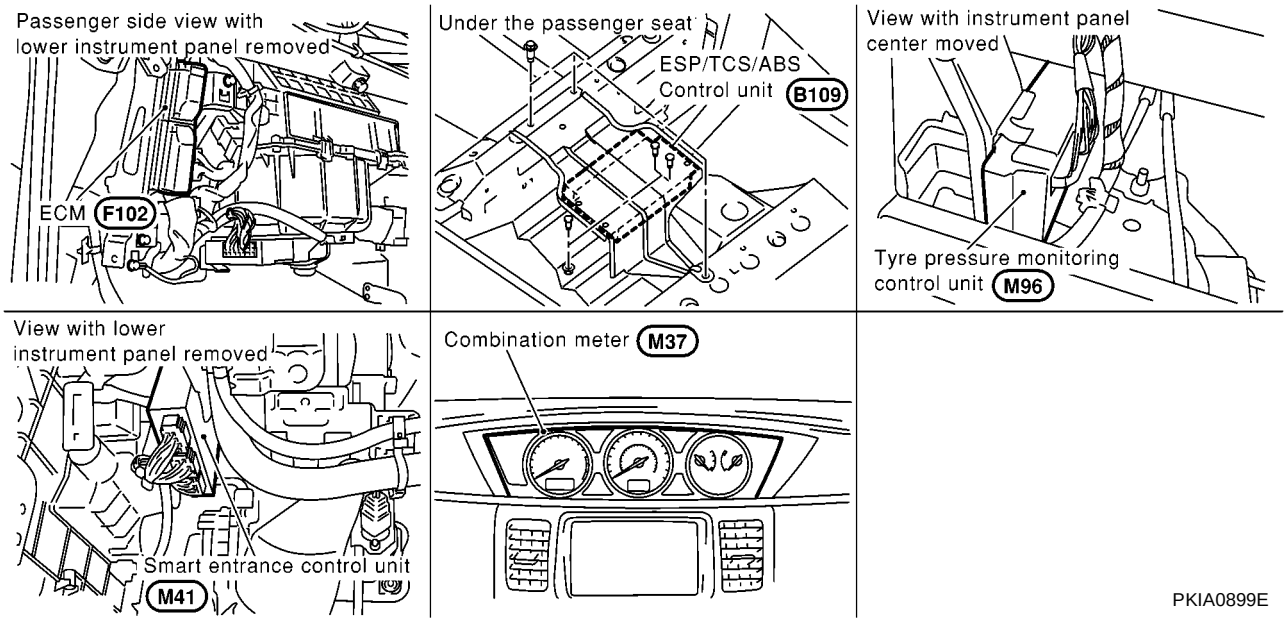
System Description

EKS0051V

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.

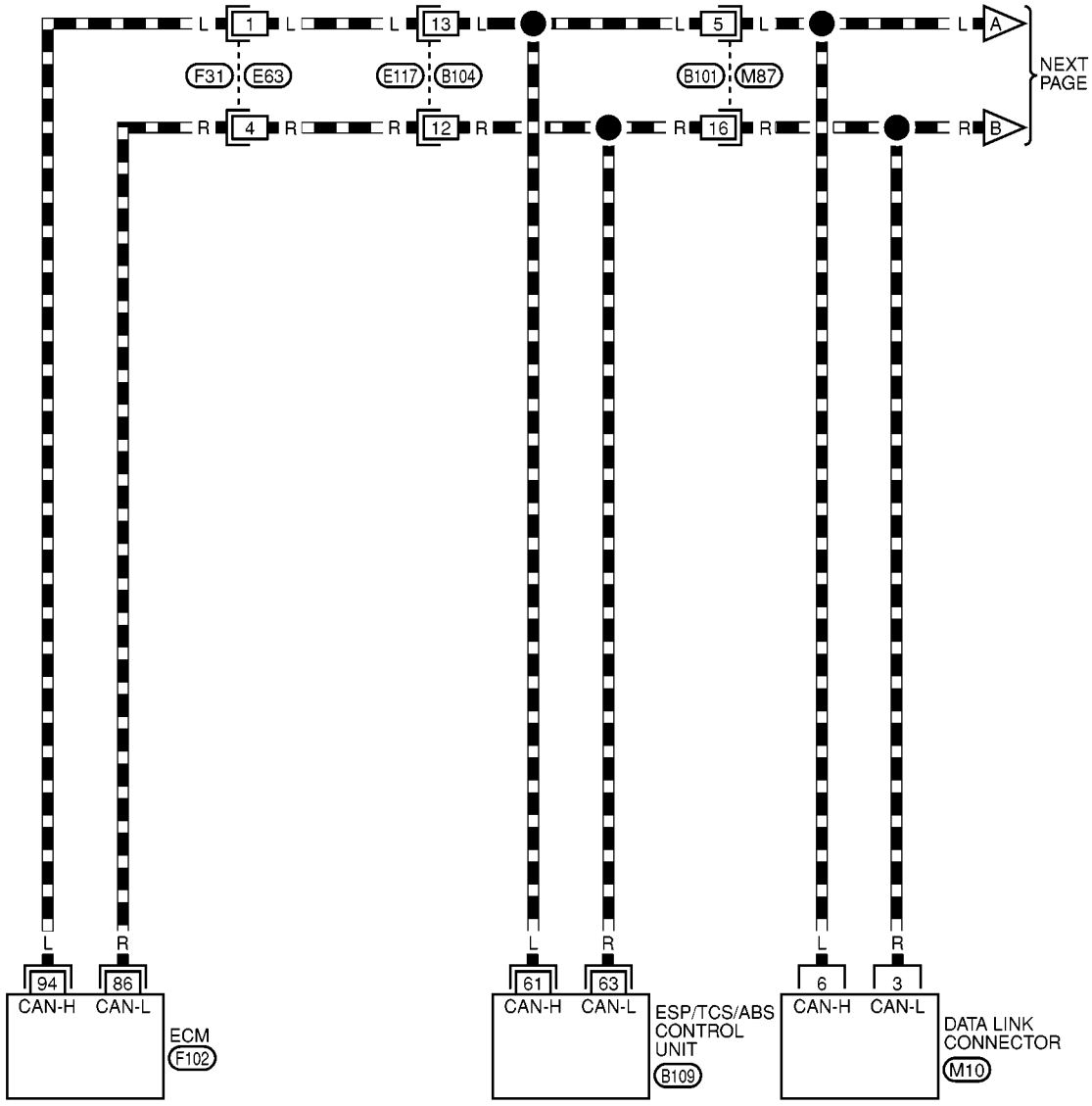
Component Parts and Harness Connector Location

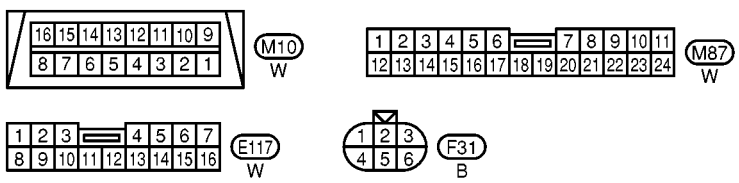
EKS0051W



Wiring Diagram — CAN —

EKS0051X



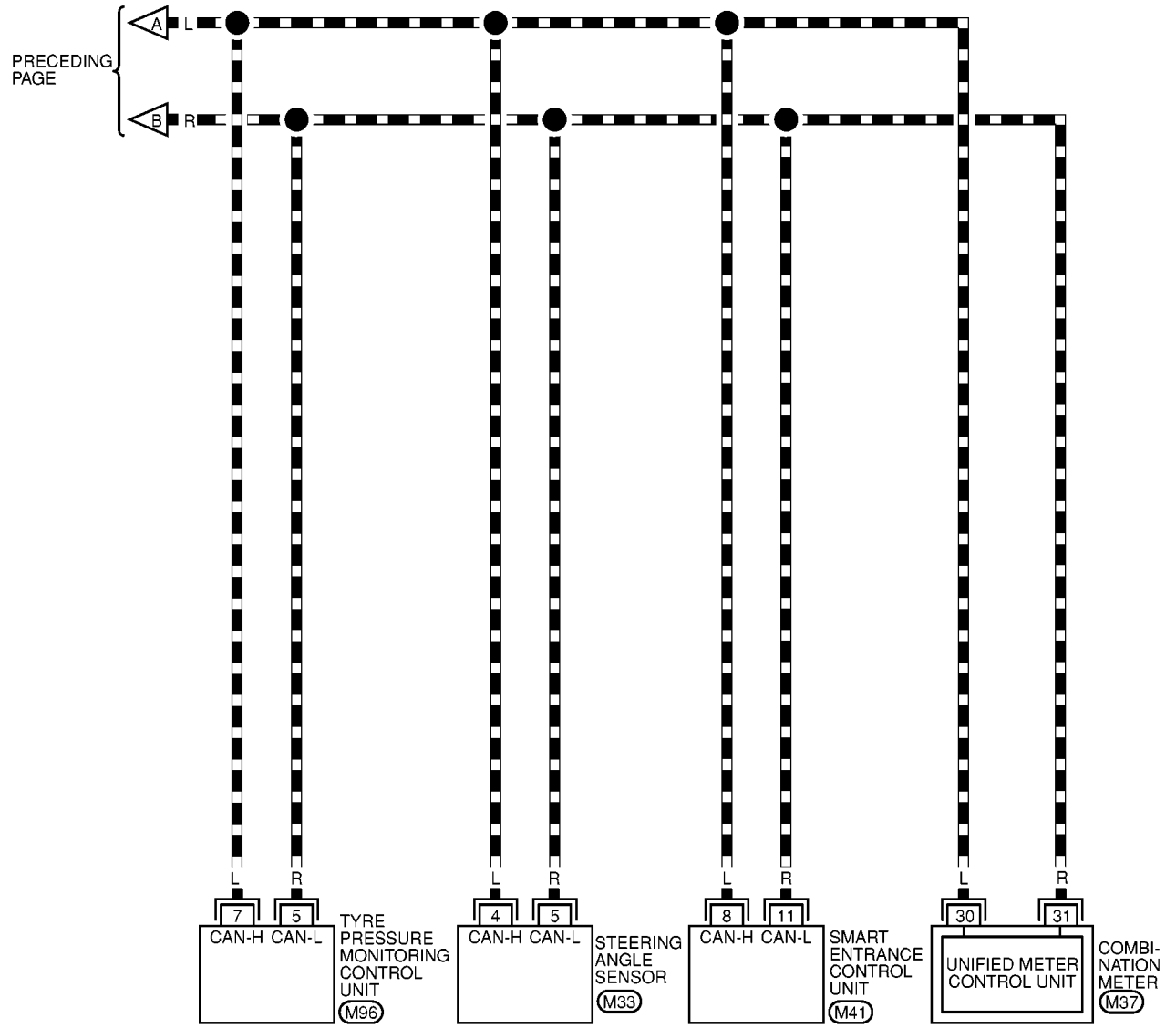


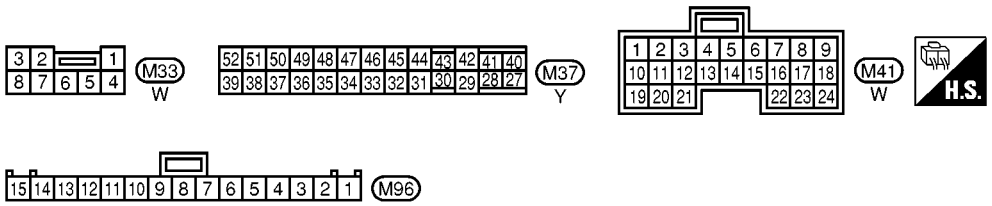
REFER TO THE FOLLOWING.
F102 , B109 -ELECTRICAL UNITS

MKWA0251E

LAN-CAN-37

: DATA LINE





MKWA0252E

Work Flow

EKS0051Y

1. Print all the data of “SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE”, “ABS”, “AIR PRESSURE MONITOR”, and “SMART ENTRANCE” displayed on CONSULT-II. Refer to EC-1083, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) or EC-1505, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) for “ENGINE” and Refer to BRC-107, "Inspection 15 CAN Communication Circuit, ESP/TCS/ABS Control Unit and Steering Angle Sensor" for “ABS”. Refer to WT-35, "Inspection 4: CAN Communication Line" for “AIR PRESSURE MONITOR”. Refer to BCS-40, "CAN Communication Line Check" for “SMART ENTRANCE”.
2. Attach the printed sheet of “SELF-DIAG RESULTS” and “DATA MONITOR” onto the check sheet. Refer to LAN-348, "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-348, "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-349, "CHECK SHEET RESULTS (EXAMPLE)"

CHECK SHEET

Check sheet table

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 3	–	–	CAN CIRC 6	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	CAN CIRC 5	–	–
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	CAN CIRC 2
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 3

Symptoms:

Attach copy of
ENGINE
SELF-DIAG RESULTS

Attach copy of
ABS
SELF-DIAG RESULTS

Attach copy of
AIR PRESSURE
MONITOR
SELF-DIAG RESULTS

Attach copy of
SMART ENTRANCE
SELF-DIAG RESULTS

Attach copy of
ENGINE
DATA MONITOR

Attach copy of
ABS
DATA MONITOR

Attach copy of
AIR PRESSURE
MONITOR
DATA MONITOR

Attach copy of
SMART ENTRANCE
DATA MONITOR

PKIA0780E

CHECK SHEET RESULTS (EXAMPLE)

Case 1: Replace ECM

ENGINE	CAN COMM ✓	CAN CIRC 1	–	CAN CIRC 3	–	–	CAN CIRC 6	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	CAN CIRC 5	–	–
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	CAN CIRC 2
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 3

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC ✓	–	–	CAN CIRC ✓	CAN CIRC ✓
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	CAN CIRC 5	–	–
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	CAN CIRC 2
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 3

Case 2: Replace ESP/TCS/ABS control unit

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC ✓	–	–	CAN CIRC 6	CAN CIRC 4
ABS	CAN COMM ✓	CAN CIRC 1	CAN CIRC 2	–	–	CAN CIRC 5	–	–
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	CAN CIRC 2
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 3

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 3	–	–	CAN CIRC 6	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC ✓	–	–	CAN CIRC ✓	–	–
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	CAN CIRC 2
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 3

Case 3: Replace Tyre pressure monitoring control unit

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 3	–	–	CAN CIRC 6	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	CAN CIRC 5	–	–
AIR PRESSURE MONITOR	CAN COMM ✓	CAN CIRC 1	–	–	–	–	–	CAN CIRC 2
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 3

PKIA0781E

Case 4: Replace Smart entrance control unit

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 3	–	–	CAN CIRC 6	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	CAN CIRC 5	–	–
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	CAN CIRC 2
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 3

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 3	–	–	CAN CIRC 6	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	CAN CIRC 5	–	–
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	CAN CIRC 2
SMART ENTRANCE	CAN COMM	CAN CIRC 1	✓	–	–	–	–	✓

Case 5

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 3	–	–	✓	✓
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	✓	–	–
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	CAN CIRC 2
SMART ENTRANCE	CAN COMM	CAN CIRC 1	✓	–	–	–	–	CAN CIRC 3

Case 6

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 3	–	–	✓	✓
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	✓	–	–
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	✓
SMART ENTRANCE	CAN COMM	CAN CIRC 1	✓	–	–	–	–	CAN CIRC 3

Case 7

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 3	–	–	✓	✓
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	CAN CIRC 5	–	–
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	✓
SMART ENTRANCE	CAN COMM	CAN CIRC 1	✓	–	–	–	–	CAN CIRC 3

PKIA0782E

Case 8

ENGINE	CAN COMM	CAN CIRC 1 ✓	–	CAN CIRC 3 ✓	–	–	CAN CIRC 6 ✓	CAN CIRC 4 ✓
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	–	–	CAN CIRC 5	–	–
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	CAN CIRC 2
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	–	–	–	–	CAN CIRC 3

Case 9

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 3 ✓	–	–	CAN CIRC 6	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1 ✓	CAN CIRC 2 ✓	–	–	CAN CIRC 5 ✓	–	–
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	CAN CIRC 2
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 3

Case 10

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 3	–	–	CAN CIRC 6	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	CAN CIRC 5	–	–
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1 ✓	–	–	–	–	–	CAN CIRC 2 ✓
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 3

Case 11

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 3	–	–	CAN CIRC 6	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	CAN CIRC 5 ✓	–	–
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	CAN CIRC 2
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 3

Case 12

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 3	–	–	CAN CIRC 6 ✓	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	CAN CIRC 5	–	–
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	CAN CIRC 2
SMART ENTRANCE	CAN COMM	CAN CIRC 1 ✓	CAN CIRC 2 ✓	–	–	–	–	CAN CIRC 3 ✓

PKIA0783E

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

Case 13

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 3	–	–	CAN CIRC 6	CAN CIRC ✓
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	CAN CIRC 5	–	–
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	–	CAN CIRC ✓
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC ✓

Case 14

ENGINE	CAN COMM	CAN CIRC ✓	–	CAN CIRC ✓	–	–	CAN CIRC ✓	CAN CIRC ✓
ABS	CAN COMM	CAN CIRC ✓	CAN CIRC ✓	–	–	CAN CIRC ✓	–	–
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC ✓	–	–	–	–	–	CAN CIRC ✓
SMART ENTRANCE	CAN COMM	CAN CIRC ✓	CAN CIRC ✓	–	–	–	–	CAN CIRC ✓

PKIA0784E

INSPECTION

Proceed trouble diagnosis according to the check sheet results (example).
Case 1:Replace ECM.
Case 2:Replace ESP/TCS/ABS control unit.
Case 3:Replace Tyre pressure monitoring control unit.
Case 4:Replace Smart entrance control unit.
Case 5:Check Harness between ESP/TCS/ABS control unit and Tyre pressure monitoring control unit. Refer to LAN-352, "Circuit Check Between ESP/TCS/ABS Control Unit and Tyre Pressure Monitoring Control Unit"
Case 6:Check Harness between Tyre pressure monitoring control unit and Steering angle sensor. Refer to LAN-353, "Circuit Check Between Tyre Pressure Monitoring Control Unit and Steering Angle Sensor"
Case 7:Check Harness between Steering angle sensor and Smart entrance control unit. Refer to LAN-354, "Circuit Check Between Steering Angle Sensor and Smart Entrance Control Unit"
Case 8:Check ECM Circuit. Refer to LAN-355, "ECM Circuit Check"
Case 9:Check ESP/TCS/ABS control unit Circuit. Refer to LAN-355, "ESP/TCS/ABS Control Unit Circuit Check"
Case 10:Check Tyre pressure monitoring control unit Circuit. Refer to LAN-356, "Tyre Pressure Monitoring Control Unit Circuit Check"
Case 11:Check Steering angle sensor Circuit. Refer to LAN-356, "Steering Angle Sensor Circuit Check"
Case 12:Check Smart entrance control unit Circuit. Refer to LAN-357, "Smart Entrance Control Unit Circuit Check"
Case 13:Check Combination meter Circuit. Refer to LAN-357, "Combination Meter Circuit Check"
Case 14:Check CAN communication Circuit. Refer to LAN-358, "CAN Communication Circuit Check"

Circuit Check Between ESP/TCS/ABS Control Unit and Tyre Pressure Monitoring Control Unit

EKS0051Z

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 unit-side and harness-side)

- Tyre pressure monitoring control unit.
- ESP/TCS/ABS control unit.
- Between ESP/TCS/ABS control unit and tyre pressure monitoring control unit.

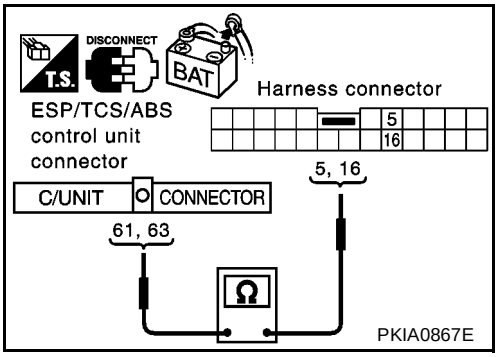
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ESP/TCS/ABS control unit connector and harness connector B101.
2. Check continuity between ESP/TCS/ABS control unit harness connector B109 terminals 61 (L), 63 (R) and harness connector B101 terminals 5 (L), 16 (R).

61(L) – 5(L) : Continuity should exist.
63(R) – 16(R) : Continuity should exist.



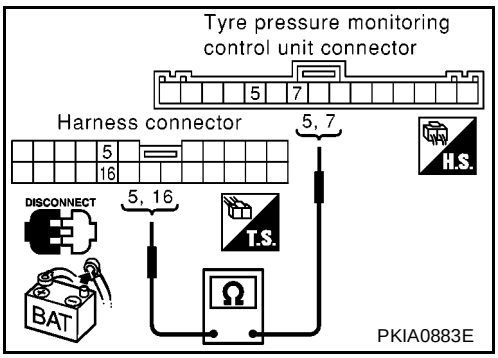
OK or NG

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

3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect tyre pressure monitoring control unit connector.
2. Check continuity between harness connector M87 terminals 5 (L), 16 (R) and tyre pressure monitoring control unit harness connector M96 terminals 7 (L), 5 (R).

5(L) – 7(L) : Continuity should exist.
16(R) – 5(R) : Continuity should exist.



OK or NG

OK >> Reconnect all connectors to perform “SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE”, “ABS”, “AIR PRESSURE MONITOR”, and “SMART ENTRANCE” displayed on CONSULT-II. Refer to EC-1083, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) or EC-1505, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) for “ENGINE” and Refer to BRC-107, "Inspection 15 CAN Communication Circuit, ESP/TCS/ABS Control Unit and Steering Angle Sensor" for “ABS”. Refer to WT-35, "Inspection 4: CAN Communication Line" for “AIR PRESSURE MONITOR”. Refer to BCS-40, "CAN Communication Line Check" for “SMART ENTRANCE”.
NG >> Repair harness.

Circuit Check Between Tyre Pressure Monitoring Control Unit and Steering Angle Sensor

EKS0052M

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. (sensor-side, control unit-side and harness-side)

- Steering angle sensor.
- Tyre pressure monitoring control unit.

OK or NG

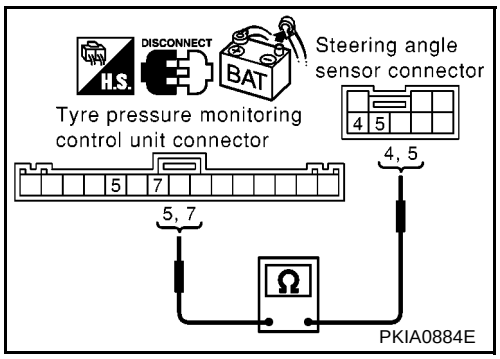
OK >> GO TO 2.
NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect tyre pressure monitoring control unit connector and steering angle sensor connector.
2. Check continuity between tyre pressure monitoring control unit harness connector M96 terminals 7 (L), 5 (R) and steering angle sensor harness connector M33 terminals 4 (L), 5 (R).

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

5(R) – 5(R) : Continuity should exist.



OK or NG

OK >> Reconnect all connectors to perform “SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE”, “ABS”, “AIR PRESSURE MONITOR”, and “SMART ENTRANCE” displayed on CONSULT-II. Refer to EC-1083, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) or EC-1505, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) for “ENGINE” and Refer to BRC-107, "Inspection 15 CAN Communication Circuit, ESP/TCS/ABS Control Unit and Steering Angle Sensor" for “ABS”. Refer to WT-35, "Inspection 4: CAN Communication Line" for “AIR PRESSURE MONITOR”. Refer to BCS-40, "CAN Communication Line Check" for “SMART ENTRANCE”.

NG >> Repair harness.

Circuit Check Between Steering Angle Sensor and Smart Entrance Control Unit

EKS00520

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 unit-side, sensor-side and harness-side)

- Smart entrance control unit.
- Steering angle sensor.

OK or NG

OK >> GO TO 2.

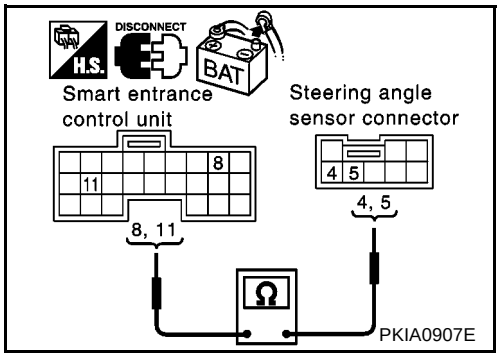
NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect smart entrance control unit connector and steering angle sensor connector.
2. Check continuity between smart entrance control unit harness connector M41 terminals 8 (L), 11 (R) and steering angle sensor harness connector M33 terminals 4 (L), 5 (R).

8(L) – 4(L) : Continuity should exist.

11(R) – 5(R) : Continuity should exist.



OK or NG

OK >> Reconnect all connectors to perform “SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE”, “ABS”, “AIR PRESSURE MONITOR”, and “SMART ENTRANCE” displayed on CONSULT-II. Refer to EC-1083, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) or EC-1505, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) for “ENGINE” and Refer to BRC-107, "Inspection 15 CAN Communication Circuit, ESP/TCS/ABS Control Unit and Steering Angle Sensor" for “ABS”. Refer to WT-35, "Inspection 4: CAN Communication Line" for “AIR PRESSURE MONITOR”. Refer to BCS-40, "CAN Communication Line Check" for “SMART ENTRANCE”.

NG >> Repair harness.

ECM Circuit Check

EKS00521

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)

- ECM.
- Harness connector F31.
- Harness connector E63.
- Harness connector E117.
- Harness connector B104.

OK or NG

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

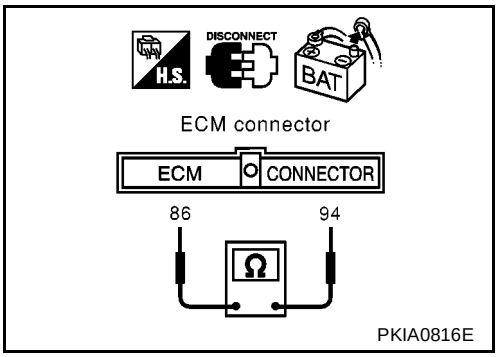
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ECM connector.
2. Check resistance between ECM harness connector F102 terminals 94(L) and 86(R).

94(L) – 86(R) : Approx. 108 – 132Ω

OK or NG

OK >> Replace ECM.
NG >> Repair harness between ESP/TCS/ABS control unit and ECM.



ESP/TCS/ABS Control Unit Circuit Check

EKS00522

1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check following terminals and connector of ESP/TCS/ABS control unit for damage, bend and loose connection. (control unit-side and harness-side)

OK or NG

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

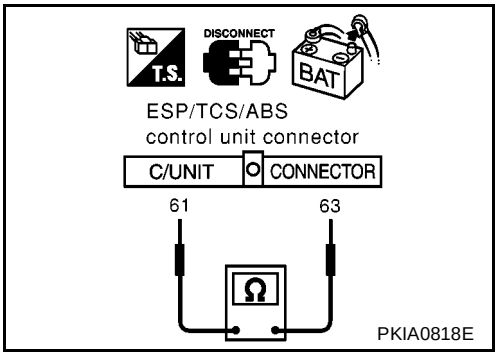
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ESP/TCS/ABS control unit connector.
2. Check resistance between ESP/TCS/ABS control unit harness connector B109 terminals 61(L) and 63(R).

61(L) – 63(R) : Approx. 54 – 66Ω

OK or NG

OK >> Replace ESP/TCS/ABS control unit.
NG >> Repair harness between Data link connector and ESP/TCS/ABS control unit.



Tyre Pressure Monitoring Control Unit Circuit Check

EKS0052N

1. CHECK CONNECTOR

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

OK or NG

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

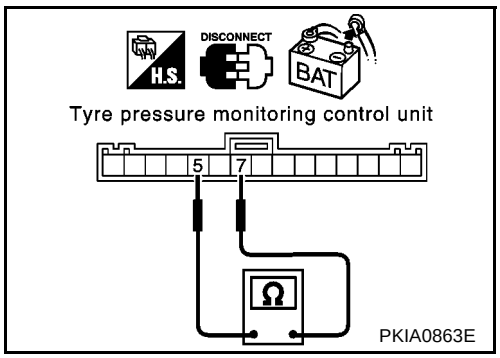
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect tyre pressure monitoring control unit connector.
2. Check resistance between tyre pressure monitoring control unit harness connector M96 terminals 7(L) and 5(R).

7(L) – 5(R) : Approx. 54 – 66Ω

OK or NG

OK >> Replace tyre pressure monitoring control unit.
NG >> Repair harness between steering angle sensor and tyre pressure monitoring control unit.



Steering Angle Sensor Circuit Check

EKS00523

1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check terminals and connector of steering angle sensor for damage, bend and loose connection. (sensor-side and harness-side)

OK or NG

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

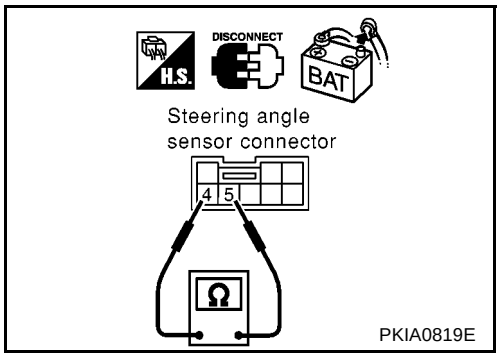
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect steering angle sensor connector.
2. Check resistance between steering angle sensor harness connector M33 terminals 4(L) and 5(R).

4(L) – 5(R) : Approx. 54 – 66Ω

OK or NG

OK >> Replace steering angle sensor.
NG >> Repair harness between steering angle sensor and smart entrance control unit.



Smart Entrance Control Unit Circuit Check

EKS00524

1. CHECK CONNECTOR

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

OK or NG

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

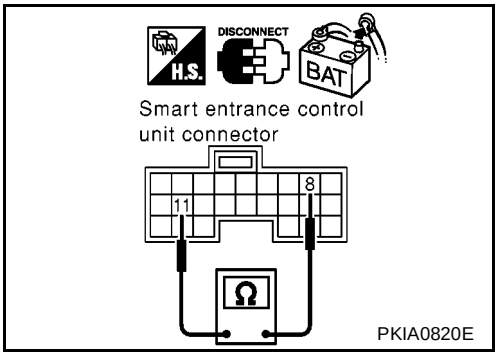
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect smart entrance control unit connector.
2. Check resistance between smart entrance control unit harness connector M41 terminals 8(L) and 11(R).

8(L) – 11(R) : Approx. 54 – 66Ω

OK or NG

OK >> Replace smart entrance control unit.
NG >> Repair harness between steering angle sensor and smart entrance control unit.



Combination Meter Circuit Check

EKS00525

1. CHECK CONNECTOR

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

OK or NG

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

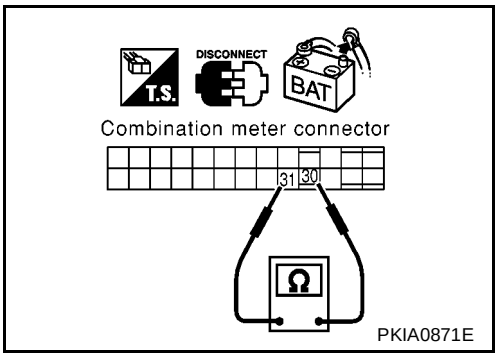
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect combination meter connector.
2. Check resistance between combination meter harness connector M37 terminals 30(L) and 31(R).

30(L) – 31(R) : Approx. 108 – 132Ω

OK or NG

OK >> Replace combination meter.
NG >> Repair harness between smart entrance control unit and combination meter.



CAN Communication Circuit Check

EKS00526

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. (meter-side, control unit-side, sensor-side, control module-side and harness-side)

- Combination meter.
- Smart entrance control unit.
- Steering angle sensor.
- Tyre pressure monitoring control unit.
- ESP/TCS/ABS control unit.
- ECM.
- Between Data link connector and ECM.

OK or NG

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

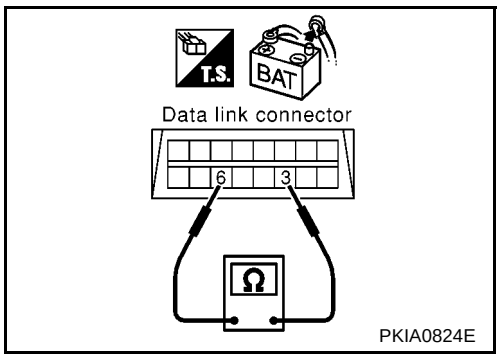
2. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect the following connectors.

- Combination meter connector.
- Smart entrance control unit connector.
- Steering angle sensor connector.
- Tyre pressure monitoring control unit connector.
- Harness connector M87.

2. Check continuity between Data link connector M10 terminals 6 (L) and 3(R).

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



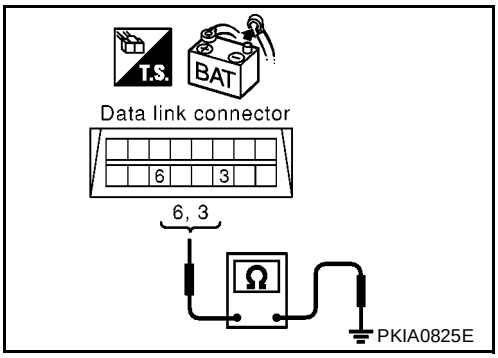
OK or NG

OK >> GO TO 3.
NG >>
- Repair harness between smart entrance control unit and combination meter.
- Repair harness between smart entrance control unit and steering angle sensor.
- Repair harness between steering angle sensor and tyre pressure monitoring control unit.
- Repair harness between Data link connector and tyre pressure monitoring control unit.
- Repair harness between Data link connector and harness connector M87.

3. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between Data link connector M10 terminals 6 (L), 3(R) and ground.

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



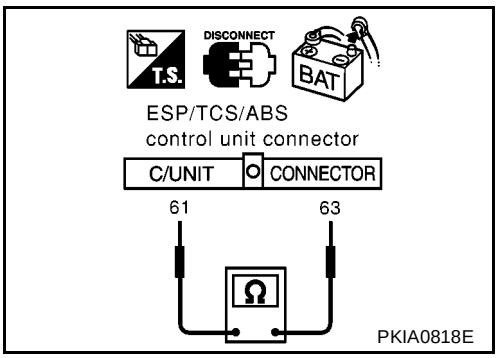
OK or NG

OK >> GO TO 4.
NG >>
- Repair harness between smart entrance control unit and combination meter.
- Repair harness between smart entrance control unit and steering angle sensor.
- Repair harness between steering angle sensor and tyre pressure monitoring control unit.
- Repair harness between Data link connector and tyre pressure monitoring control unit.
- Repair harness between Data link connector and harness connector M87.

4. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect ESP/TCS/ABS control unit connector and harness connector B104.
2. Check continuity between ESP/TCS/ABS control unit harness connector B109 terminals 61 (L) and 63(R).

61(L) – 63(R) : Continuity should not exist.



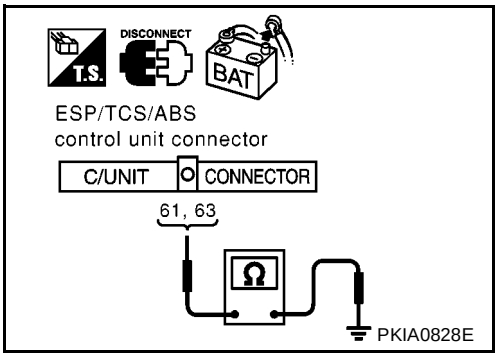
OK or NG

OK >> GO TO 5.
NG >>
- Repair harness between ESP/TCS/ABS control unit and harness connector B101.
- Repair harness between harness connector B104 and harness connector B101.

5. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ESP/TCS/ABS control unit harness connector B109 terminals 61 (L), 63 (R) and ground.

61(L) – ground : Continuity should not exist.
63(R) – ground : Continuity should not exist.



OK or NG

OK >> GO TO 6.
NG >>
- Repair harness between ESP/TCS/ABS control unit and harness connector B101.
- Repair harness between harness connector B104 and harness connector B101.

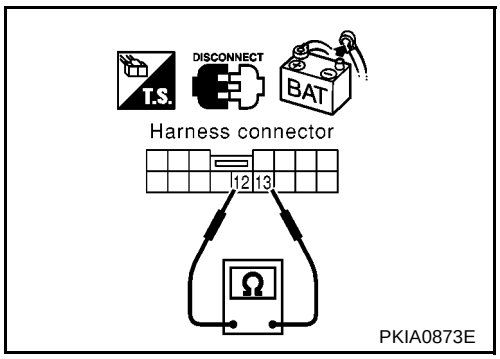
6. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect harness connector E63.
2. Check continuity between harness connector E117 terminals 13 (L) and 12(R).

13(L) – 12(R) : Continuity should not exist.

OK or NG

OK >> GO TO 7.
NG >> Repair harness between harness connector E117 and harness connector E63.



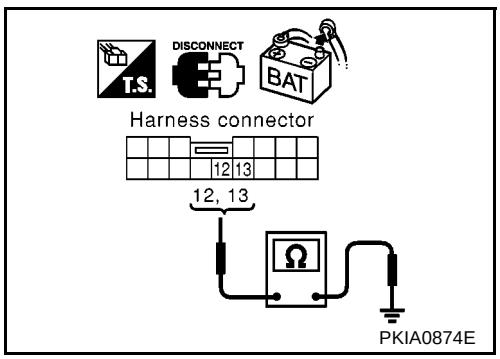
7. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between harness connector E117 terminals 13 (L) and 12(R) and ground.

13(L) – ground : Continuity should not exist.
12(R) – ground : Continuity should not exist.

OK or NG

OK >> GO TO 8.
NG >> Repair harness between harness connector E117 and harness connector E63.



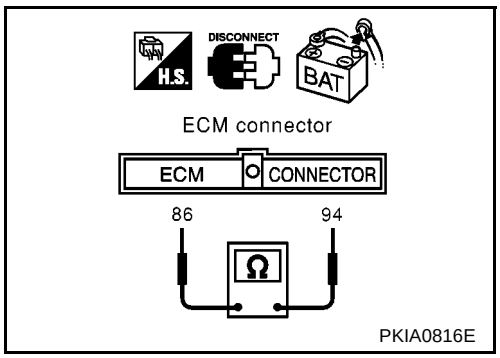
8. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect ECM connector.
2. Check continuity between ECM harness connector F102 terminals 94 (L) and 86(R).

94(L) – 86(R) : Continuity should not exist.

OK or NG

OK >> GO TO 9.
NG >> Repair harness between ECM and harness connector F31.



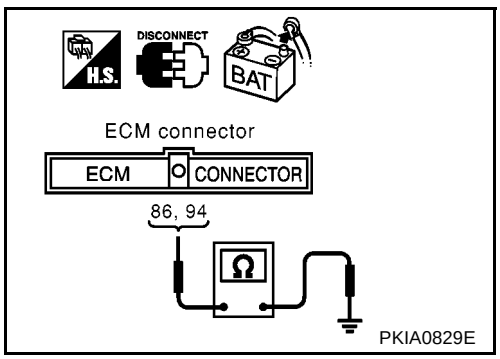
9. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ECM harness connector F102 terminals 94 (L), 86 (R) and ground.

94(L) – ground : Continuity should not exist.
86(R) – ground : Continuity should not exist.

OK or NG

OK >> GO TO 10.
NG >> Repair harness between ECM and harness connector F31.



10. ECM / COMBINATION METER INTERNAL CIRCUIT INSPECTION

Check components inspection. Refer to LAN-361, "ECM / COMBINATION METER INTERNAL CIRCUIT INSPECTION"

OK or NG

OK >> Reconnect all connectors to perform “SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE”, “ABS”, “AIR PRESSURE MONITOR”, and “SMART ENTRANCE” displayed on CONSULT-II. Refer to EC-1083, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) or EC-1505, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) for “ENGINE” and Refer to BRC-107, "Inspection 15 CAN Communication Circuit, ESP/TCS/ABS Control Unit and Steering Angle Sensor" for “ABS”. Refer to WT-35, "Inspection 4: CAN Communication Line" for “AIR PRESSURE MONITOR”. Refer to BCS-40, "CAN Communication Line Check" for “SMART ENTRANCE”.

NG >> Replace ECM and/or Combination meter.

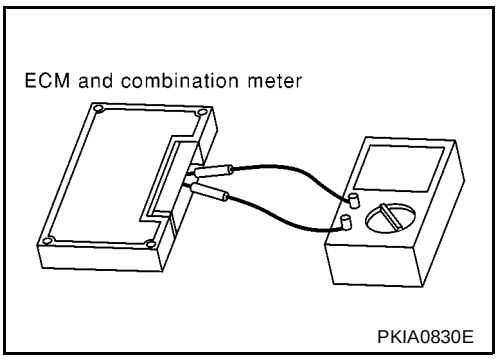
Component Inspection

EKS00527

ECM / COMBINATION METER INTERNAL CIRCUIT INSPECTION

- Remove ECM and Combination meter from vehicle.
- Check resistance between ECM terminals 94 and 86.
- Check resistance between Combination meter terminals 30 and 31.

Unit	Terminal	Resistance value (Ω)
ECM	94 – 86	Approx. 108 - 132
Combination meter	30 – 31	



CAN SYSTEM (TYPE 18)

PFP:23710

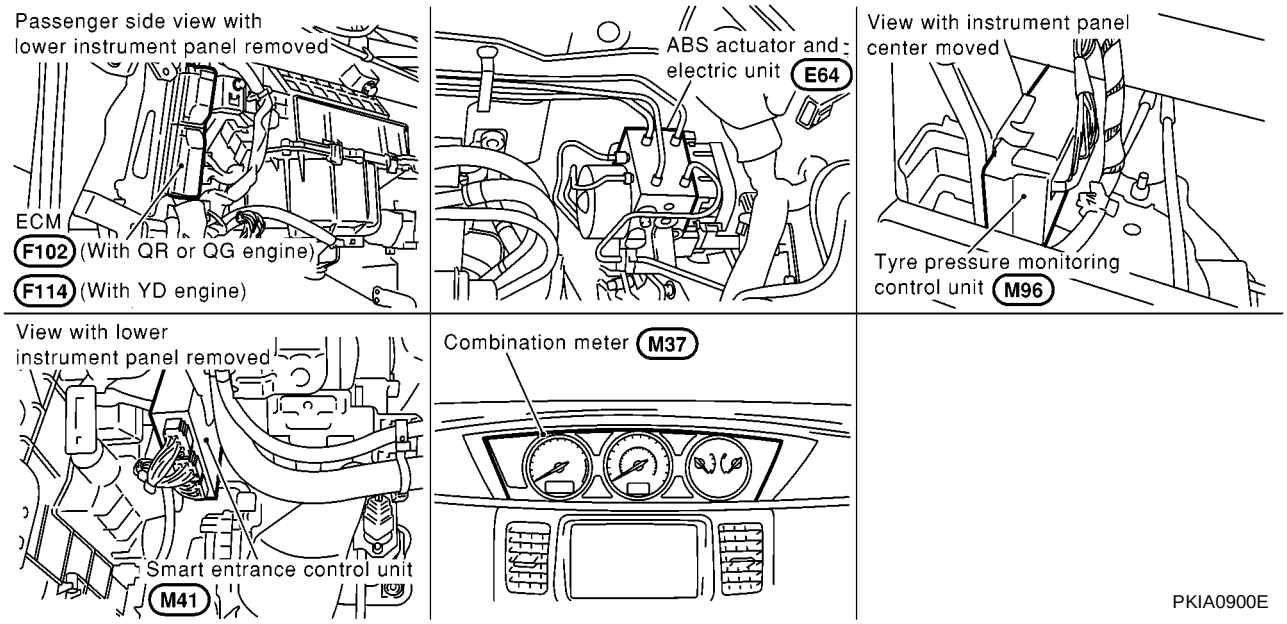
System Description

EKS0051I

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.

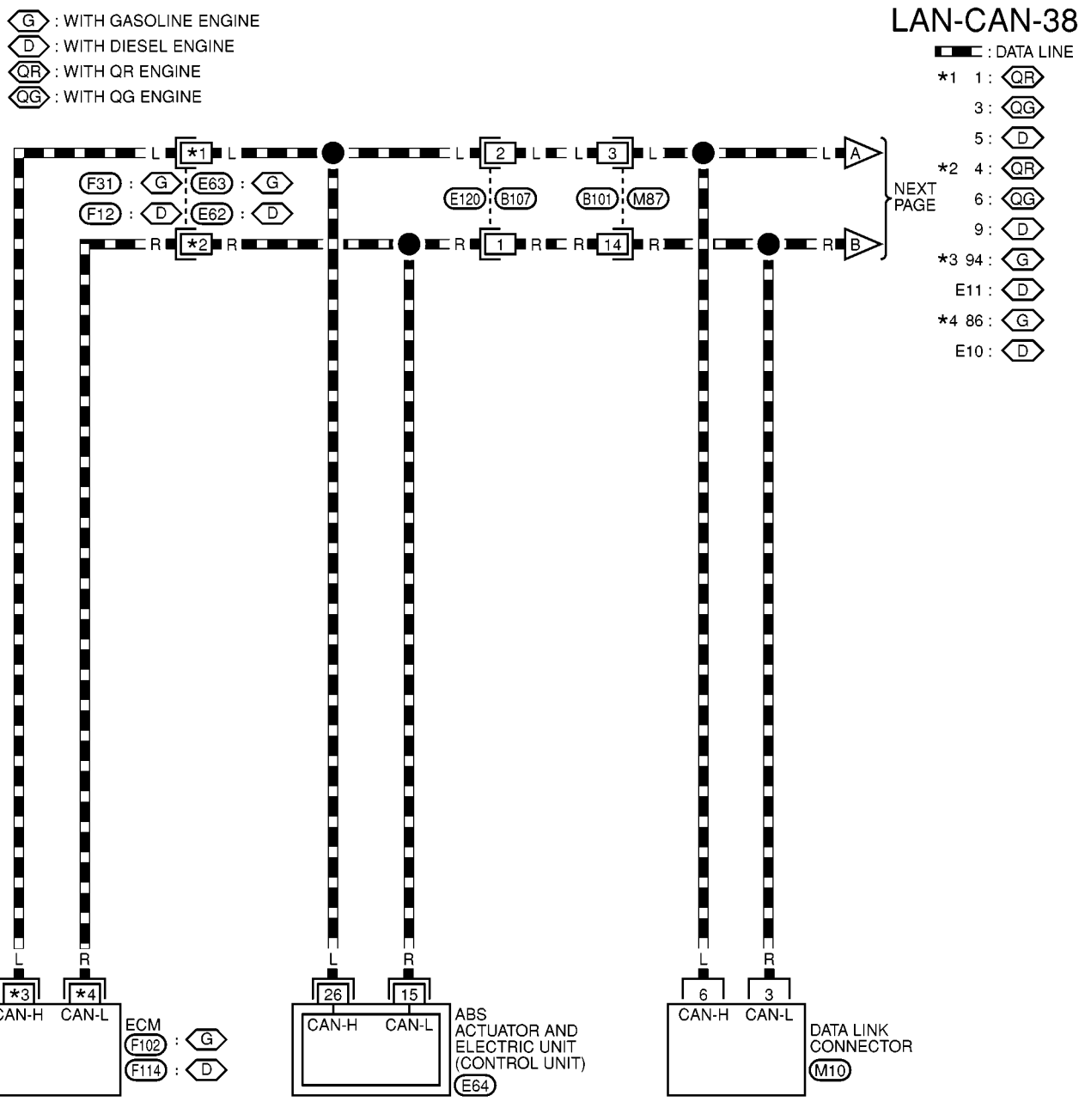
Component Parts and Harness Connector Location

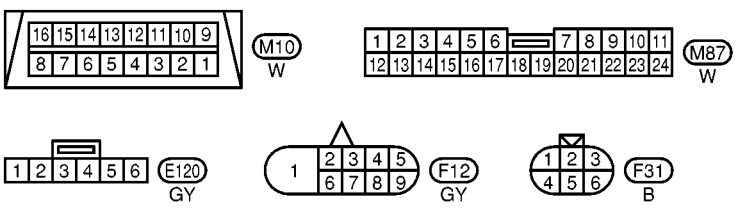
EKS0051J



Wiring Diagram — CAN —

EKS0051K



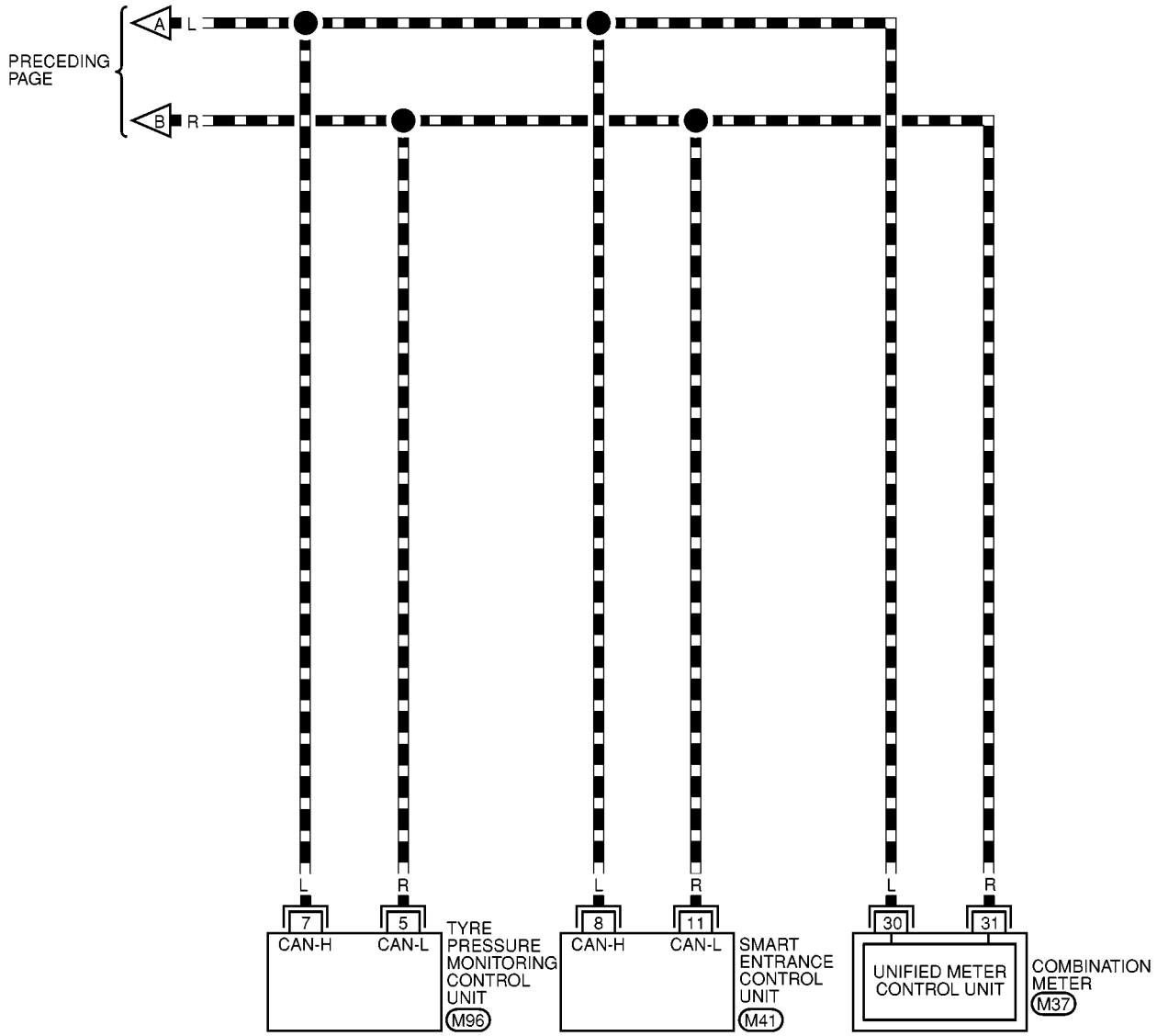


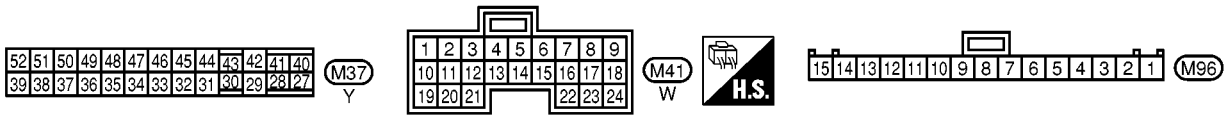
REFER TO THE FOLLOWING.
E64 , F102 , F114
-ELECTRICAL UNITS

MKWA0253E

LAN-CAN-39

: DATA LINE





MKWA0254E

Work Flow

EKS0051L

1. Print all the data of “SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE”, “ABS”, “AIR PRESSURE MONITOR”, and “SMART ENTRANCE” displayed on CONSULT-II. Refer to EC-150, "DTC U1000, U1001 CAN COMMUNICATION LINE" (QG ENGINE MODELS WITH EURO-OBD), EC-663, "DTC U1000, U1001 CAN COMMUNICATION LINE" (QG ENGINE MODELS WITHOUT EURO-OBD), EC-1083, "DTC U1000, U1001 CAN COMMUNICATION LINE" (QR ENGINE MODELS WITH EURO-OBD), EC-1505, "DTC U1000, U1001 CAN COMMUNICATION LINE" (QR ENGINE MODELS WITHOUT EURO-OBD) or EC-1790, "DTC U1000 CAN COMMUNICATION LINE" (YD ENGINE MODELS) for “ENGINE” and Refer to BRC-33, "CAN Communication Circuit" for “ABS”. Refer to WT-35, "Inspection 4: CAN Communication Line" for “AIR PRESSURE MONITOR”. Refer to BCS-40, "CAN Communication Line Check" for “SMART ENTRANCE”.
2. Attach the printed sheet of “SELF-DIAG RESULTS” and “DATA MONITOR” onto the check sheet. Refer to LAN-366, "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-366, "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-367, "CHECK SHEET RESULTS (EXAMPLE)"

CHECK SHEET

Check sheet table

ENGINE	CAN COMM	CAN CIRC 1	–	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	CAN CIRC 2
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 3

Symptoms:

Attach copy of
ENGINE
SELF-DIAG RESULTS

Attach copy of
ABS
SELF-DIAG RESULTS

Attach copy of
AIR PRESSURE
MONITOR
SELF-DIAG RESULTS

Attach copy of
SMART ENTRANCE
SELF-DIAG RESULTS

Attach copy of
ENGINE
DATA MONITOR

Attach copy of
ABS
DATA MONITOR

Attach copy of
AIR PRESSURE
MONITOR
DATA MONITOR

Attach copy of
SMART ENTRANCE
DATA MONITOR

PKIA0785E

CHECK SHEET RESULTS (EXAMPLE)

Case 1: Replace ECM

ENGINE	CAN COMM ✓	CAN CIRC 1	–	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	CAN CIRC 2
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 3

ENGINE	CAN COMM	CAN CIRC 1	–	–	–	–	CAN CIRC 4 ✓
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	CAN CIRC 2
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 3

Case 2: Replace ABS actuator and electric unit (control unit)

ENGINE	CAN COMM	CAN CIRC 1	–	–	–	–	CAN CIRC 4
ABS	CAN COMM ✓	CAN CIRC 1	CAN CIRC 2	–	–	–	–
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	CAN CIRC 2
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 3

ENGINE	CAN COMM	CAN CIRC 1	–	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	–	–	–	–
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	CAN CIRC 2
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 3

Case 3: Replace Tyre pressure monitoring control unit

ENGINE	CAN COMM	CAN CIRC 1	–	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–
AIR PRESSURE MONITOR	CAN COMM ✓	CAN CIRC 1	–	–	–	–	CAN CIRC 2
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 3

Case 4: Replace Smart entrance control unit

ENGINE	CAN COMM	CAN CIRC 1	–	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	CAN CIRC 2
SMART ENTRANCE	CAN COMM ✓	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 3

ENGINE	CAN COMM	CAN CIRC 1	–	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	CAN CIRC 2
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	–	–	–	CAN CIRC 3 ✓

Case 5

ENGINE	CAN COMM	CAN CIRC 1	–	–	–	–	CAN CIRC 4 ✓
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	CAN CIRC 2
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	–	–	–	CAN CIRC 3

PKIA0786E

Case 6

ENGINE	CAN COMM	CAN CIRC 1	–	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	CAN CIRC 2
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 3

Case 7

ENGINE	CAN COMM	CAN CIRC 1	–	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	CAN CIRC 2
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 3

Case 8

ENGINE	CAN COMM	CAN CIRC 1	–	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	CAN CIRC 2
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 3

Case 9

ENGINE	CAN COMM	CAN CIRC 1	–	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	CAN CIRC 2
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 3

Case 10

ENGINE	CAN COMM	CAN CIRC 1	–	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	CAN CIRC 2
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 3

Case 11

ENGINE	CAN COMM	CAN CIRC 1	–	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	CAN CIRC 2
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 3

Case 12

ENGINE	CAN COMM	CAN CIRC 1	–	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	–	–	–	–	CAN CIRC 2
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 3

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

INSPECTION

Proceed trouble diagnosis according to the check sheet results (example).
Case 1:Replace ECM.
Case 2:Replace ABS actuator and electric unit (control unit).
Case 3:ReplaceTyre pressure monitoring control unit.
Case 4:Replace Smart entrance control unit.
Case 5:Check Harness between ABS actuator and electric unit (control unit) and Tyre pressure monitoring control unit. Refer to LAN-369, "Circuit Check Between ABS Actuator and Electric Unit (control unit) and Tyre Pressure Monitoring Control Unit"
Case 6:Check Harness between Tyre pressure monitoring control unit and Smart entrance control unit. Refer to LAN-370, "Circuit Check Between Tyre pressure monitoring control unit and Smart Entrance Control Unit"
Case 7:Check ECM Circuit. Refer to LAN-371, "ECM Circuit Check"
Case 8:Check ABS actuator and electric unit (control unit) Circuit. Refer to LAN-372, "ABS Actuator and Electric Unit (control unit) Circuit Check"
Case 9:Check Tyre pressure monitoring control unit Circuit. Refer to LAN-373, "Tyre Pressure Monitoring Control Unit Circuit Check"
Case 10:Check Smart entrance control unit Circuit. Refer to LAN-373, "Smart Entrance Control Unit Circuit Check"
Case 11:Check Combination meter Circuit. Refer to LAN-374, "Combination Meter Circuit Check"
Case 12:Check CAN communication Circuit. Refer to LAN-374, "CAN Communication Circuit Check"

Circuit Check Between ABS Actuator and Electric Unit (control unit) and Tyre Pressure Monitoring Control Unit

EKS0051M

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 unit-side and harness-side)

- Tyre pressure monitoring control unit.
- ABS actuator and electric unit (control unit).
- Between tyre pressure monitoring control unit and ABS actuator and electric unit (control unit).

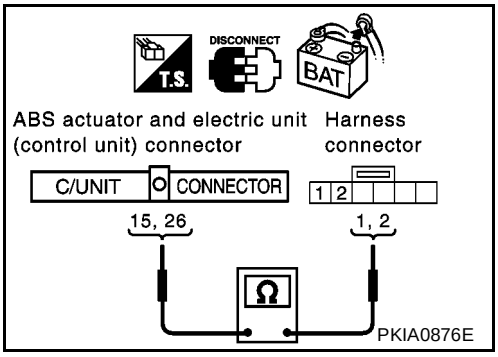
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector and harness connector E120.
2. Check continuity between ABS actuator and electric unit (control unit) harness connector E64 terminals 26 (L), 15 (R) and harness connector E120 terminals 2 (L), 1 (R).

26(L) – 2(L) : Continuity should exist.
15(R) – 1(R) : Continuity should exist.



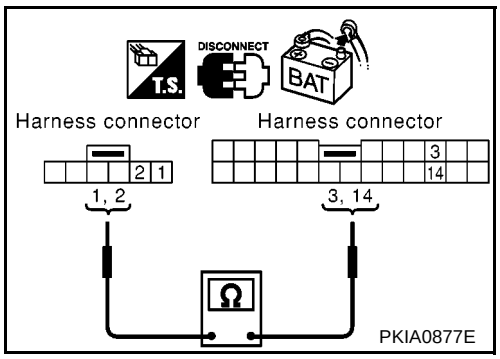
OK or NG

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

3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector B101.
2. Check continuity between harness connector B107 terminals 2 (L), 1 (R) and harness connector B101 terminals 3 (L), 14 (R).

2(L) – 3(L) : Continuity should exist.
1(R) – 14(R) : Continuity should exist.



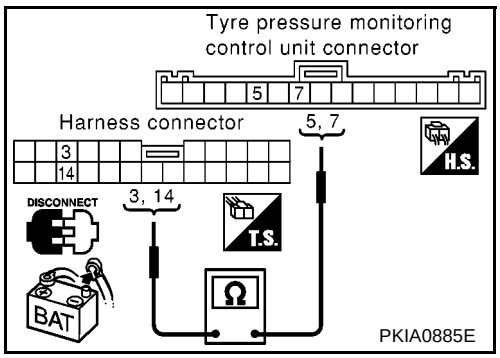
OK or NG

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

4. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect tyre pressure monitoring control unit connector.
2. Check continuity between harness connector M87 terminals 3 (L), 14 (R) and tyre pressure monitoring control unit harness connector M96 terminals 7 (L), 5 (R).

3(L) – 7(L) : Continuity should exist.
14(R) – 5(R) : Continuity should exist.



OK or NG

OK >> Reconnect all connectors to perform “SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE”, “ABS”, “AIR PRESSURE MONITOR”, and “SMART ENTRANCE” displayed on CONSULT-II. Refer to EC-150, "DTC U1000, U1001 CAN COMMUNICATION LINE" (QG ENGINE MODELS WITH EURO-OBD), EC-663, "DTC U1000, U1001 CAN COMMUNICATION LINE" (QG ENGINE MODELS WITHOUT EURO-OBD), EC-1083, "DTC U1000, U1001 CAN COMMUNICATION LINE" (QR ENGINE MODELS WITH EURO-OBD), EC-1505, "DTC U1000, U1001 CAN COMMUNICATION LINE" (QR ENGINE MODELS WITHOUT EURO-OBD) or EC-1790, "DTC U1000 CAN COMMUNICATION LINE" (YD ENGINE MODELS) for “ENGINE” and Refer to BRC-33, "CAN Communication Circuit" for “ABS”. Refer to WT-35, "Inspection 4: CAN Communication Line" for “AIR PRESSURE MONITOR”. Refer to BCS-40, "CAN Communication Line Check" for “SMART ENTRANCE”.
NG >> Repair harness.

Circuit Check Between Tyre pressure monitoring control unit and Smart Entrance Control Unit

EKS0051N

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 unit-side and harness-side)

- Smart entrance control unit.
- Tyre pressure monitoring control unit.

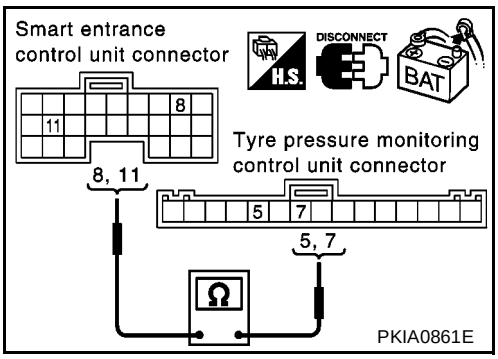
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect smart entrance control unit connector and tyre pressure monitoring control unit connector.
2. Check continuity between smart entrance control unit harness connector M41 terminals 8 (L), 11 (R) and tyre pressure monitoring control unit harness connector M96 terminals 7 (L), 5 (R).

8(L) – 7(L) : Continuity should exist.
11(R) – 5(R) : Continuity should exist.



OK or NG

OK >> Reconnect all connectors to perform “SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE”, “ABS”, “AIR PRESSURE MONITOR”, and “SMART ENTRANCE” displayed on CONSULT-II. Refer to EC-150, "DTC U1000, U1001 CAN COMMUNICATION LINE" (QG ENGINE MODELS WITH EURO-OBD), EC-663, "DTC U1000, U1001 CAN COMMUNICATION LINE" (QG ENGINE MODELS WITHOUT EURO-OBD), EC-1083, "DTC U1000, U1001 CAN COMMUNICATION LINE" (QR ENGINE MODELS WITH EURO-OBD), EC-1505, "DTC U1000, U1001 CAN COMMUNICATION LINE" (QR ENGINE MODELS WITHOUT EURO-OBD) or EC-1790, "DTC U1000 CAN COMMUNICATION LINE" (YD ENGINE MODELS) for “ENGINE” and Refer to BRC-33, "CAN Communication Circuit" for “ABS”. Refer to WT-35, "Inspection 4: CAN Communication Line" for “AIR PRESSURE MONITOR”. Refer to BCS-40, "CAN Communication Line Check" for “SMART ENTRANCE”.

NG >> Repair harness.

ECM Circuit Check

EKS0051O

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)

- ECM.
- Harness connector F31.(Gasoline engine models)
- Harness connector E63.(Gasoline engine models)
- Harness connector F12.(Diesel engine models)
- Harness connector E62.(Diesel engine models)

OK or NG

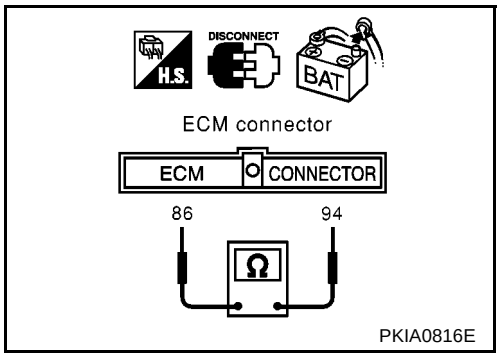
OK >> GO TO 2.
NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ECM connector.
2. Check the following.

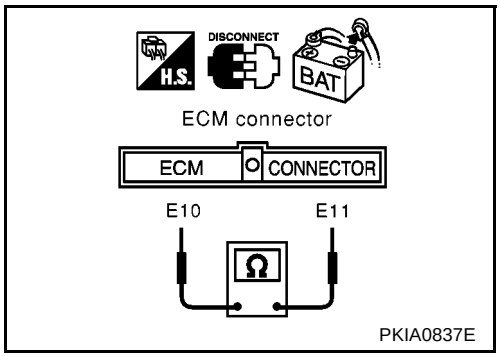
- Resistance between ECM harness connector F102 terminals 94(L) and 86(R).(Gasoline engine models)

94(L) – 86(R) (Gasoline enging models) **: Approx. 108 – 132Ω**



- Resistance between ECM harness connector F114 terminals E11(L) and E10(R).(Diesel engine models)

E11(L) – E10(R) (Diesel enging models) **: Approx. 108 – 132Ω**



OK or NG

OK >> Replace ECM.
NG >> Repair harness between ABS actuator and electric unit (control unit) and ECM.

ABS Actuator and Electric Unit (control unit) Circuit Check

EKS0051P

1. CHECK CONNECTOR

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

OK or NG

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

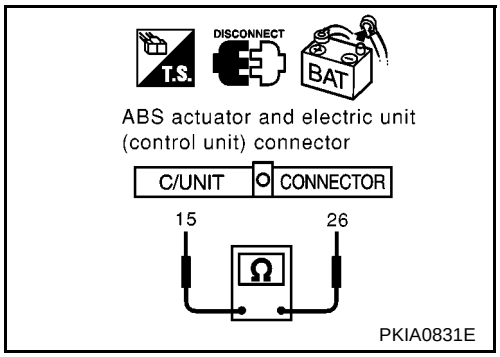
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector.
2. Check resistance between ABS actuator and electric unit (control unit) harness connector E64 terminals 26(L) and 15(R).

26(L) – 15(R) **: Approx. 54 – 66Ω**

OK or NG

OK >> Replace ABS actuator and electric unit (control unit).
NG >> Repair harness between Data link connector and ABS actuator and electric unit (control unit).



Tyre Pressure Monitoring Control Unit Circuit Check

EKS0051Q

1. CHECK CONNECTOR

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

OK or NG

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

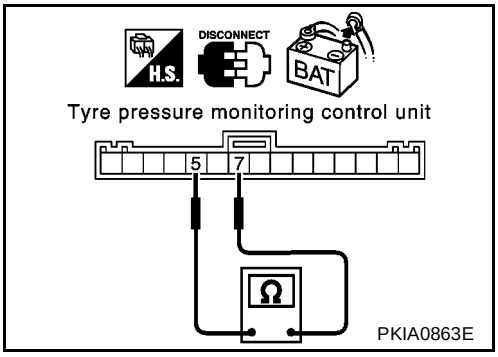
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect tyre pressure monitoring control unit connector.
2. Check resistance between tyre pressure monitoring control unit harness connector M96 terminals 7(L) and 5(R).

7(L) – 5(R) : Approx. 54 – 66Ω

OK or NG

OK >> Replace tyre pressure monitoring control unit.
NG >> Repair harness between smart entrance control unit and tyre pressure monitoring control unit.



Smart Entrance Control Unit Circuit Check

EKS0051R

1. CHECK CONNECTOR

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

OK or NG

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

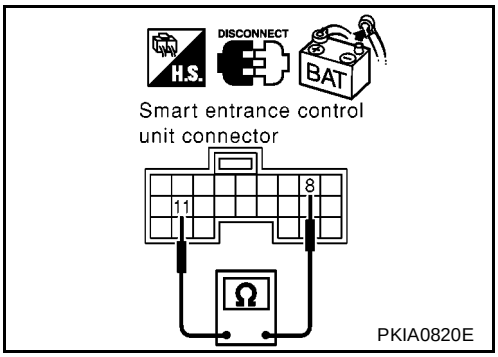
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect smart entrance control unit connector.
2. Check resistance between smart entrance control unit harness connector M41 terminals 8(L) and 11(R).

8(L) – 11(R) : Approx. 54 – 66Ω

OK or NG

OK >> Replace smart entrance control unit.
NG >> Repair harness between tyre pressure monitoring control unit and smart entrance control unit.



Combination Meter Circuit Check

EKS0051S

1. CHECK CONNECTOR

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

OK or NG

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

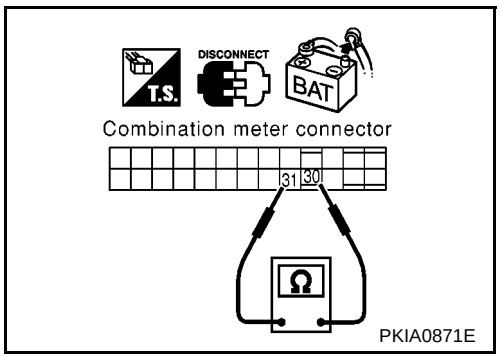
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect combination meter connector.
2. Check resistance between combination meter harness connector M37 terminals 30(L) and 31(R).

30(L) – 31(R) : Approx. 108 – 132Ω

OK or NG

OK >> Replace combination meter.
NG >> Repair harness between smart entrance control unit and combination meter.



CAN Communication Circuit Check

EKS0051T

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. (meter-side, control unit-side, control module-side and harness-side)

- Combination meter.
- Smart entrance control unit.
- Tyre pressure monitoring control unit.
- ABS actuator and electric unit (control unit).
- ECM.
- Between Data link connector and ECM.

OK or NG

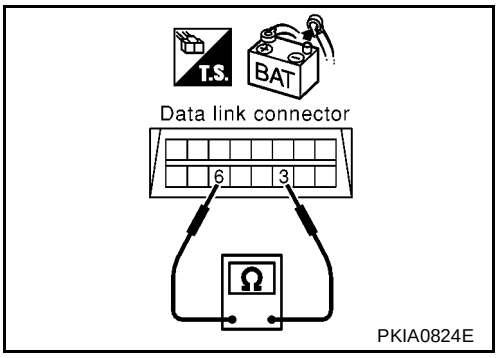
OK >> GO TO 2.
NG >> Repair terminal or connector.

2. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect the following connectors.
- Combination meter connector.
- Smart entrance control unit connector.
- Tyre pressure monitoring control unit connector.
- Harness connector M87.

2. Check continuity between Data link connector M10 terminals 6 (L) and 3(R).

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



OK or NG

OK >> GO TO 3.

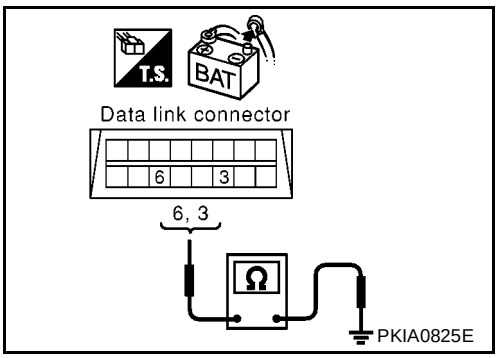
NG >>
- Repair harness between smart entrance control unit and combination meter.
- Repair harness between smart entrance control unit and tyre pressure monitoring control unit.
- Repair harness between Data link connector and tyre pressure monitoring control unit.
- Repair harness between Data link connector and harness connector M87.

3. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between Data link connector M10 terminals 6 (L), 3(R) and ground.

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

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



OK or NG

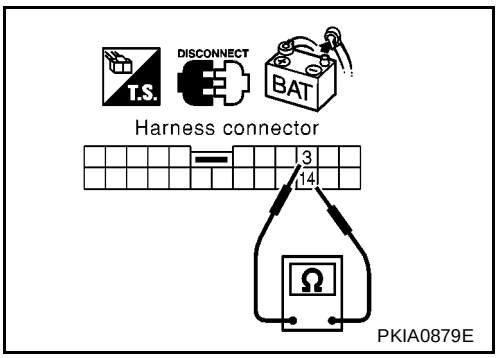
OK >> GO TO 4.

NG >>
- Repair harness between smart entrance control unit and combination meter.
- Repair harness between smart entrance control unit and tyre pressure monitoring control unit.
- Repair harness between Data link connector and tyre pressure monitoring control unit.
- Repair harness between Data link connector and harness connector M87.

4. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect harness connector B107.
2. Check continuity between harness connector B101 terminals 3 (L) and 14(R).

3(L) – 14(R) : Continuity should not exist.



OK or NG

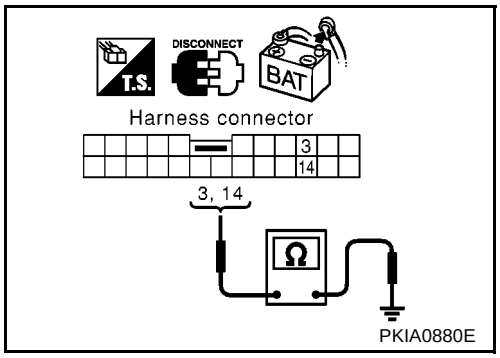
OK >> GO TO 5.

NG >> Repair harness between harness connector B101 and harness connector B107.

5. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between harness connector B101 terminals 3 (L), 14(R) and ground.

3(L) – ground : Continuity should not exist.
14(R) – ground : Continuity should not exist.



OK or NG

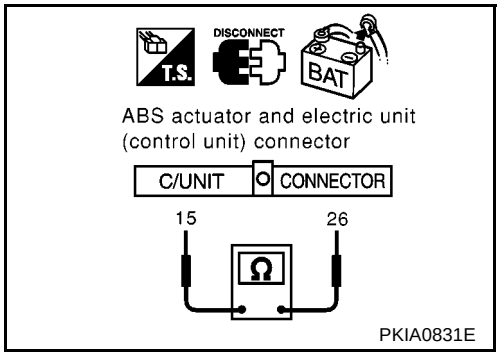
OK >> GO TO 6.
NG >> Repair harness between harness connector B101 and harness connector B107.

6. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect the following connectors.
- ABS actuator and electric unit (control unit) connector.
- Harness connector E63.(Gasoline engine models)
- Harness connector E62.(Diesel engine models)

2. Check continuity between ABS actuator and electric unit (control unit) harness connector E64 terminals 26 (L) and 15(R).

26(L) – 15(R) : Continuity should not exist.



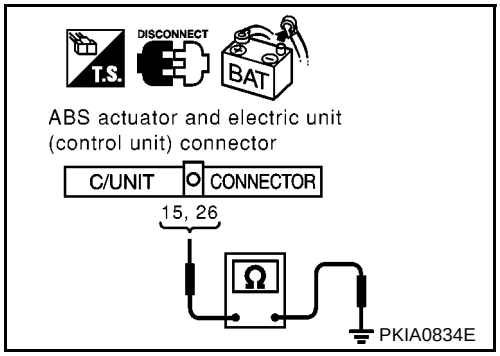
OK or NG

OK >> GO TO 7.
NG >>
- Repair harness between ABS actuator and electric unit (control unit) and harness connector E120.
- Repair harness between harness connector E120 and harness connector E63.(Gasoline engine models)
- Repair harness between harness connector M120 and harness connector E62.(Diesel engine models)

7. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ABS actuator and electric unit (control unit) harness connector E64 terminals 26 (L), 15 (R) and ground.

26(L) – ground : Continuity should not exist.
15(R) – ground : Continuity should not exist.



OK or NG

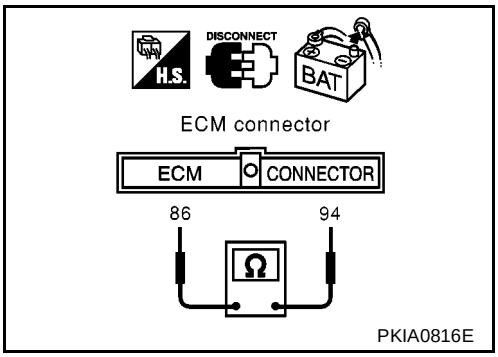
OK >> GO TO 8.
NG >>
- Repair harness between ABS actuator and electric unit (control unit) and harness connector E120.
- Repair harness between harness connector E120 and harness connector E63.(Gasoline engine models)
- Repair harness between harness connector M120 and harness connector E62.(Diesel engine models)

8. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect ECM connector.
2. Check the following.

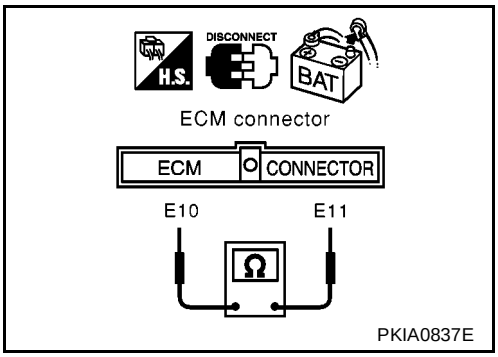
- Continuity between ECM harness connector F102 terminals 94 (L) and 86(R).(Gasoline engine models)

94(L) – 86(R) (Gasoline enging models) **: Continuity should not exist.**



- Continuity between ECM harness connector F114 terminals E11 (L) and E10(R).(Diesel engine models)

E11(L) – E10(R) (Diesel enging models) **: Continuity should not exist.**



OK or NG

OK >> GO TO 9.
NG >> ● Repair harness between ECM and harness connector F31.(Gasoline engine models)
● Repair harness between ECM and harness connector F12.(Diesel engine models)

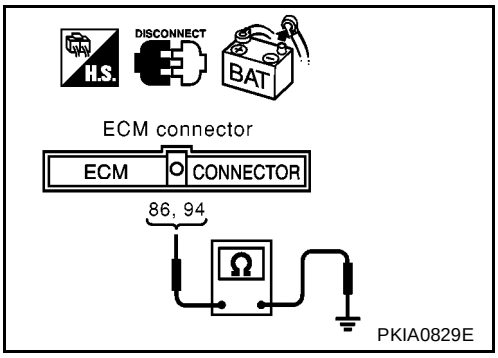
9. CHECK HARNESS FOR SHORT CIRCUIT

1. Check the following.

- Continuity between ECM harness connector F102 terminals 94 (L), 86 (R) and ground.(Gasoline engine models)

94(L) – ground (Gasoline enging models) **: Continuity should not exist.**

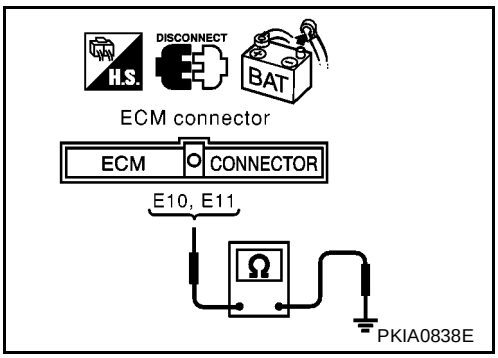
86(R) – ground (Gasoline enging models) **: Continuity should not exist.**



- Continuity between ECM harness connector F114 terminals E11 (L), E10 (R) and ground.(Diesel engine models)

E11(L) – ground (Diesel enging models) **: Continuity should not exist.**

E10(R) – ground (Diesel enging models) **: Continuity should not exist.**



OK or NG

OK >> GO TO 10.
NG >> ● Repair harness between ECM and harness connector F31.(Gasoline engine models)
● Repair harness between ECM and harness connector F12.(Diesel engine models)

10. ECM / COMBINATION METER INTERNAL CIRCUIT INSPECTION

Check components inspection. Refer to LAN-378, "ECM / COMBINATION METER INTERNAL CIRCUIT INSPECTION"

OK or NG

OK >> Reconnect all connectors to perform “SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE”, “ABS”, “AIR PRESSURE MONITOR”, and “SMART ENTRANCE” displayed on CONSULT-II. Refer to EC-150, "DTC U1000, U1001 CAN COMMUNICATION LINE" (QG ENGINE MODELS WITH EURO-OBD), EC-663, "DTC U1000, U1001 CAN COMMUNICATION LINE" (QG ENGINE MODELS WITHOUT EURO-OBD), EC-1083, "DTC U1000, U1001 CAN COMMUNICATION LINE" (QR ENGINE MODELS WITH EURO-OBD), EC-1505, "DTC U1000, U1001 CAN COMMUNICATION LINE" (QR ENGINE MODELS WITHOUT EURO-OBD) or EC-1790, "DTC U1000 CAN COMMUNICATION LINE" (YD ENGINE MODELS) for “ENGINE” and Refer to BRC-33, "CAN Communication Circuit" for “ABS”. Refer to WT-35, "Inspection 4: CAN Communication Line" for “AIR PRESSURE MONITOR”. Refer to BCS-40, "CAN Communication Line Check" for “SMART ENTRANCE”.

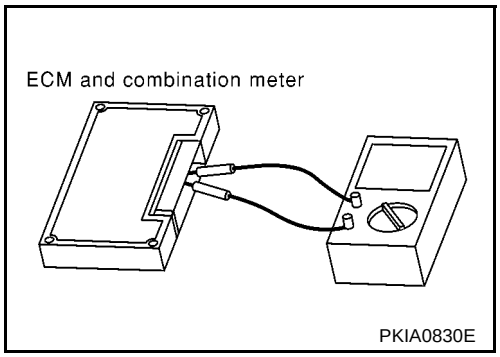
NG >> Replace ECM and/or Combination meter.

Component Inspection

EKS0051U

ECM / COMBINATION METER INTERNAL CIRCUIT INSPECTION

- Remove ECM and Combination meter from vehicle.
- Check resistance between ECM terminals 94 and 86.(Gasoline engine models)
- Check resistance between ECM terminals E11 and E10.(Diesel engine models)
- Check resistance between Combination meter terminals 30 and 31.



Unit	Terminal	Resistance value (Ω)
ECM (Gasoline engine models)	94 – 86	Approx. 108 - 132
ECM (Diesel engine models)	E11 – E10	
Combination meter	30 – 31	

CAN SYSTEM (TYPE 19)

PFP:23710

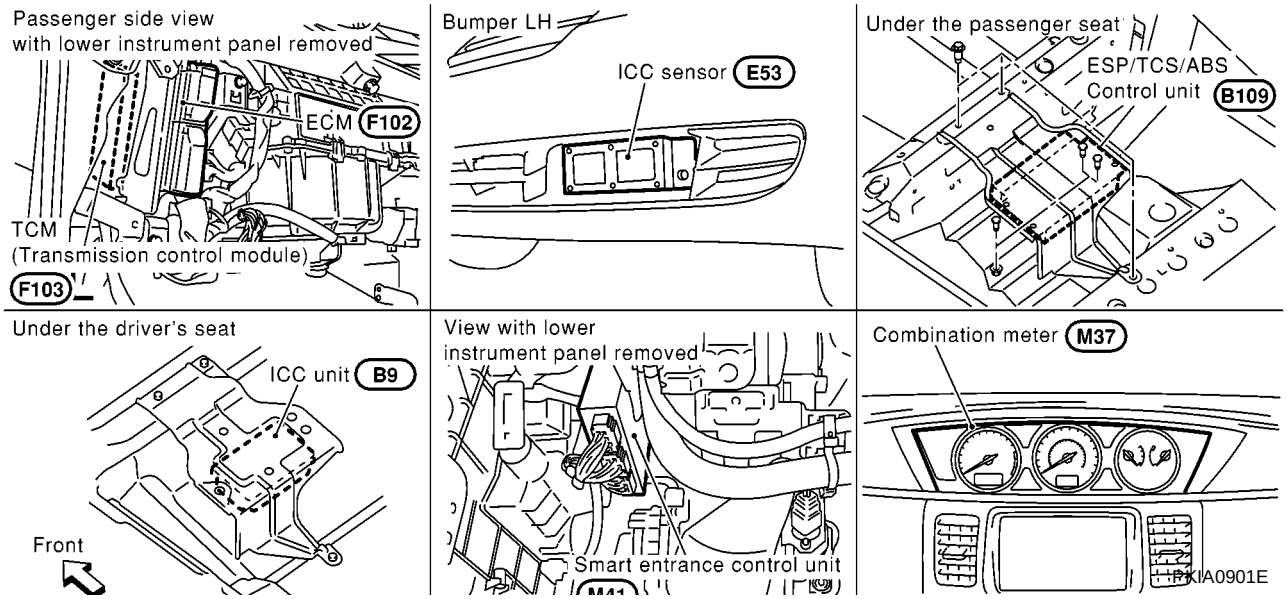
System Description

EKS0050Z

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

EKS00510

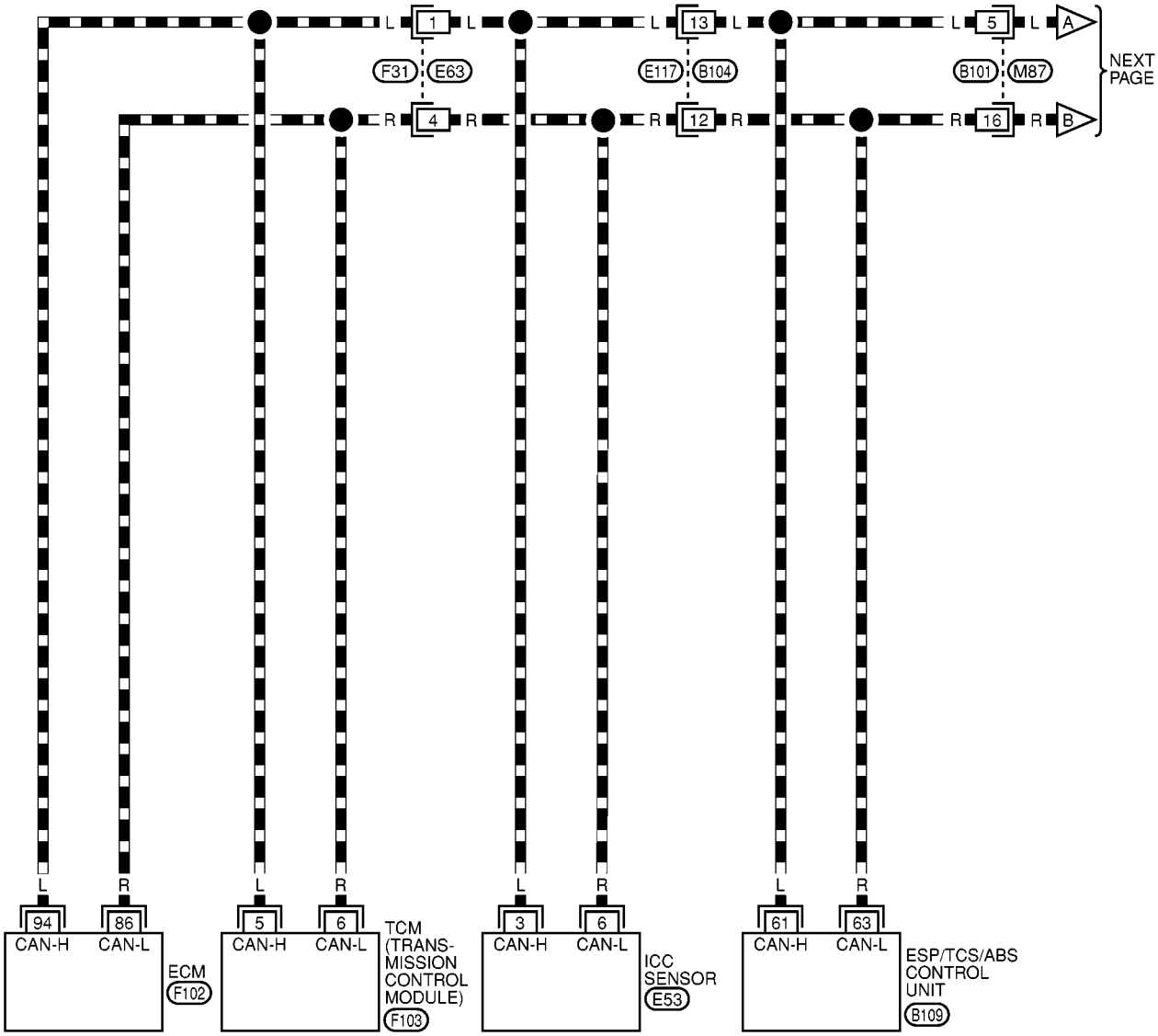


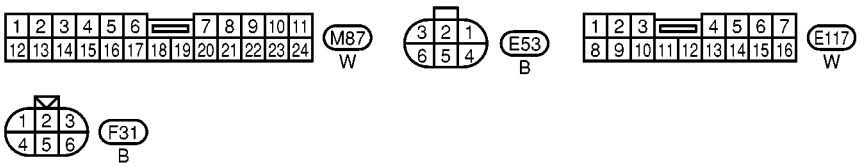
Wiring Diagram — CAN —

EKS00511

LAN-CAN-40

: DATA LINE



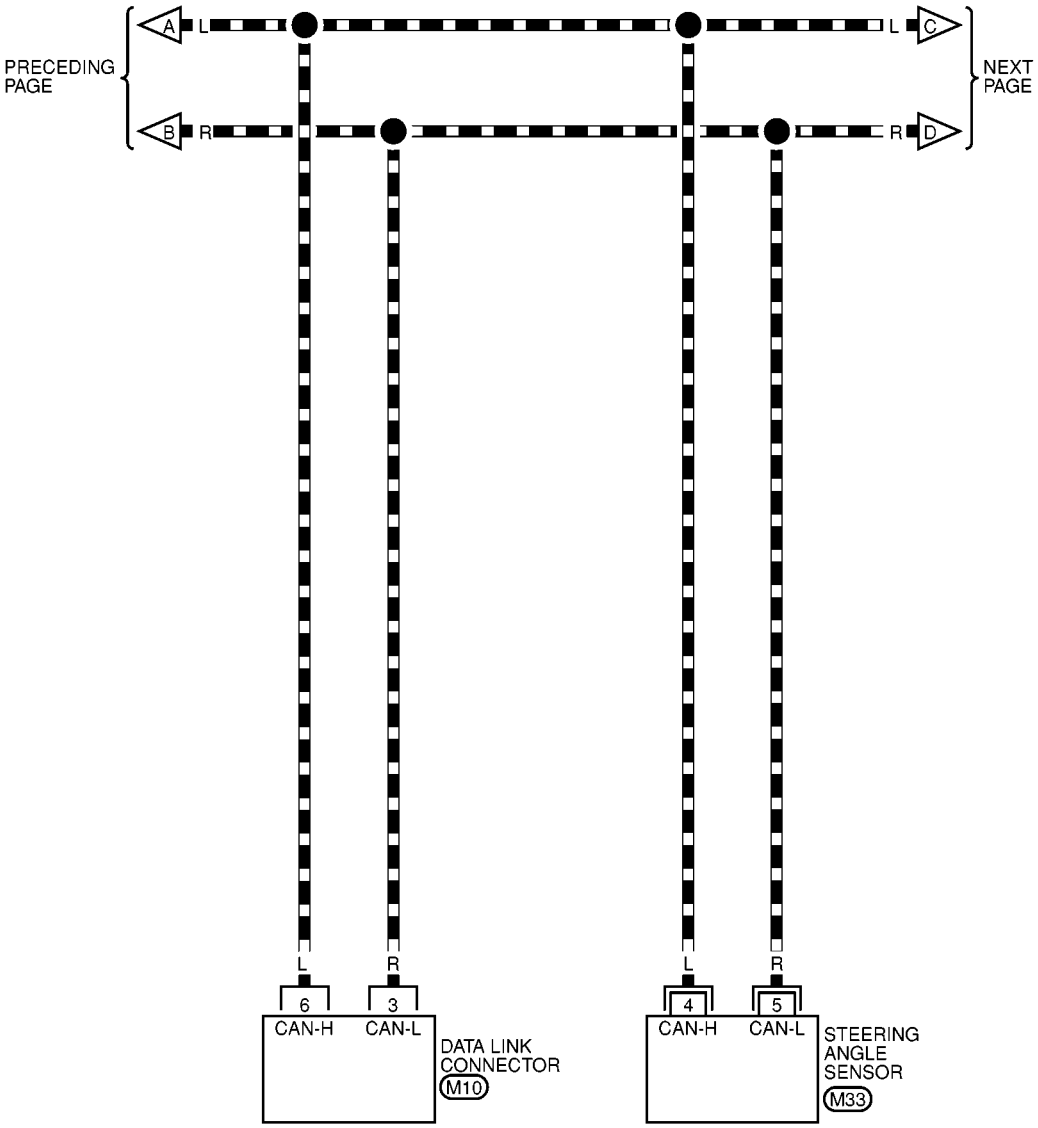


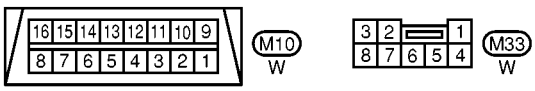
REFER TO THE FOLLOWING.
F102 , F103 , B109
-ELECTRICAL UNITS

MKWA0377E

LAN-CAN-41

: DATA LINE

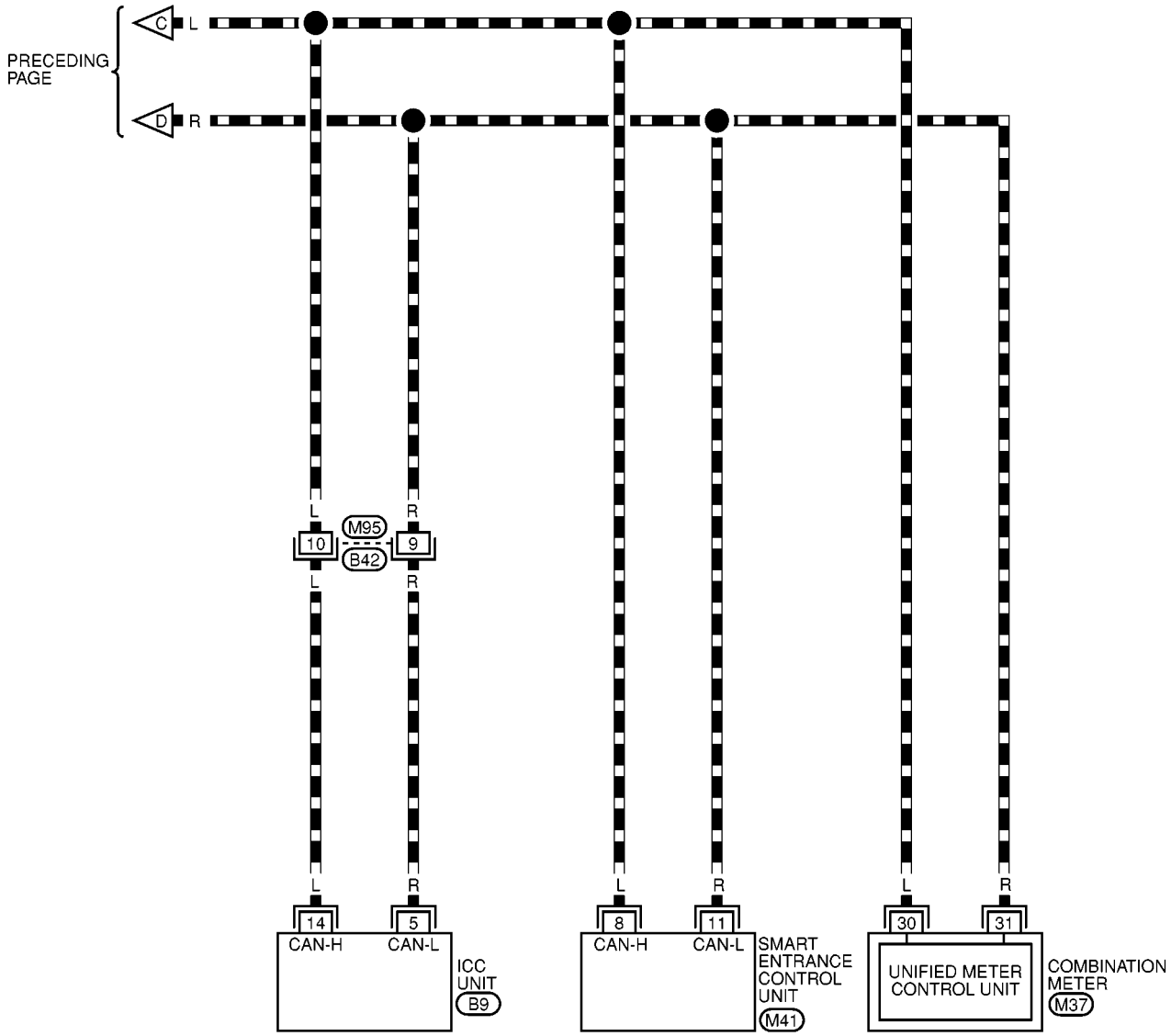


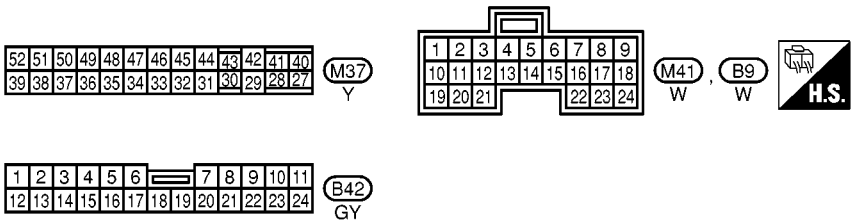


MKWA0378E

LAN-CAN-42

: DATA LINE





MKWA0379E

Work Flow

EKS00512

1. Print all the data of “SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE”, “CVT”, “ABS”, “ICC”, and “SMART ENTRANCE” displayed on CONSULT-II. Refer to EC-1083, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) or EC-1505, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) for “ENGINE” and Refer to CVT-118, "DTC U1000 CAN COMMUNICATION LINE" (EURO-OBD) or CVT-201, "CAN COMMUNICATION LINE" (ALL) for “CVT”. Refer to BRC-107, "Inspection 15 CAN Communication Circuit, ESP/TCS/ABS Control Unit and Steering Angle Sensor" for “ABS”. Refer to ACS-46, "DTC 20 CAN COMM CIRCUIT" for “ICC”. Refer to BCS-40, "CAN Communication Line Check" for “SMART ENTRANCE”.
2. Attach the printed sheet of “SELF-DIAG RESULTS” and “DATA MONITOR” onto the check sheet. Refer to LAN-384, "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-384, "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-385, "CHECK SHEET RESULTS (EXAMPLE)"

CHECK SHEET

Check sheet table

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 3	–	CAN CIRC 5	CAN CIRC 6	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	CAN CIRC 3	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	–	CAN CIRC 5	CAN CIRC 6	–	–
ICC	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 8	CAN CIRC 3	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–	–	CAN CIRC 3

Symptoms:

Attach copy of
ENGINE
SELF-DIAG RESULTS

Attach copy of
CVT
SELF-DIAG RESULTS

Attach copy of
ABS
SELF-DIAG RESULTS

Attach copy of
ICC
SELF-DIAG RESULTS

Attach copy of
SMART ENTRANCE
SELF-DIAG RESULTS

Attach copy of
ENGINE
DATA MONITOR

Attach copy of
CVT
DATA MONITOR

Attach copy of
ABS
DATA MONITOR

Attach copy of
ICC
DATA MONITOR

Attach copy of
SMART ENTRANCE
DATA MONITOR

PKIA0788E

CHECK SHEET RESULTS (EXAMPLE)

Case 1: Replace ECM

ENGINE	CAN COMM ✓	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 3	–	CAN CIRC 5	CAN CIRC 6	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	CAN CIRC 3	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	–	CAN CIRC 5	CAN CIRC 6	–	–
ICC	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 8	CAN CIRC 3	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–	–	CAN CIRC 3

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2 ✓	–	CAN CIRC 3 ✓	–	CAN CIRC 5 ✓	CAN CIRC 6 ✓	CAN CIRC 4 ✓
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	CAN CIRC 3	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	–	CAN CIRC 5	CAN CIRC 6	–	–
ICC	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 8	CAN CIRC 3	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–	–	CAN CIRC 3

Case 2: Replace TCM

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2 ✓	–	CAN CIRC 3	–	CAN CIRC 5	CAN CIRC 6	CAN CIRC 4
CVT	CAN COMM ✓	CAN CIRC 1	CAN CIRC 2	–	–	CAN CIRC 3	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3 ✓	–	–	CAN CIRC 5	CAN CIRC 6	–	–
ICC	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4 ✓	CAN CIRC 8	CAN CIRC 3	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–	–	CAN CIRC 3

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 3	–	CAN CIRC 5	CAN CIRC 6	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	–	–	CAN CIRC 3 ✓	–	–	–	CAN CIRC 4 ✓
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	–	CAN CIRC 5	CAN CIRC 6	–	–
ICC	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 8	CAN CIRC 3	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–	–	CAN CIRC 3

PKIA0789E

Case 3: Replace ESP/TCS/ABS control unit

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 3 ✓	–	CAN CIRC 5	CAN CIRC 6	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	CAN CIRC 3 ✓	–	–	–	CAN CIRC 4
ABS	CAN COMM ✓	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	–	CAN CIRC 5	CAN CIRC 6	–	–
ICC	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 8	CAN CIRC 3 ✓	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–	–	CAN CIRC 3

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 3	–	CAN CIRC 5	CAN CIRC 6	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	CAN CIRC 3	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	CAN CIRC 3 ✓	–	–	CAN CIRC 5 ✓	CAN CIRC 6 ✓	–	–
ICC	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 8	CAN CIRC 3	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–	–	CAN CIRC 3

Case 4: Replace ICC unit

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 3	–	CAN CIRC 5 ✓	CAN CIRC 6	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	CAN CIRC 3	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	–	CAN CIRC 5	CAN CIRC 6 ✓	–	–
ICC	CAN COMM ✓	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 8	CAN CIRC 3	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–	–	CAN CIRC 3

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 3	–	CAN CIRC 5	CAN CIRC 6	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	CAN CIRC 3	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	–	CAN CIRC 5	CAN CIRC 6	–	–
ICC	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	CAN CIRC 4 ✓	CAN CIRC 8 ✓	CAN CIRC 3 ✓	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–	–	CAN CIRC 3

PKIA0790E

Case 5: Replace Smart entrance control unit

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 3	–	CAN CIRC 5	CAN CIRC 6	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	CAN CIRC 3	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	–	CAN CIRC 5	CAN CIRC 6	–	–
ICC	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 8	CAN CIRC 3	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–	–	CAN CIRC 3

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 3	–	CAN CIRC 5	CAN CIRC 6	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	CAN CIRC 3	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	–	CAN CIRC 5	CAN CIRC 6	–	–
ICC	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 8	CAN CIRC 3	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–	–	CAN CIRC 3

Case 6

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 3	–	CAN CIRC 5	CAN CIRC 6	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	CAN CIRC 3	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	–	CAN CIRC 5	CAN CIRC 6	–	–
ICC	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 8	CAN CIRC 3	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–	–	CAN CIRC 3

Case 7

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 3	–	CAN CIRC 5	CAN CIRC 6	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	CAN CIRC 3	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	–	CAN CIRC 5	CAN CIRC 6	–	–
ICC	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 8	CAN CIRC 3	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–	–	CAN CIRC 3

Case 8

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 3	–	CAN CIRC 5	CAN CIRC 6	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	CAN CIRC 3	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	–	CAN CIRC 5	CAN CIRC 6	–	–
ICC	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 8	CAN CIRC 3	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–	–	CAN CIRC 3

PKIA0791E

Case 9

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 3	–	CAN CIRC 5 ✓	CAN CIRC 6 ✓	CAN CIRC 4 ✓
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	CAN CIRC 3	–	–	–	CAN CIRC 4 ✓
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	–	CAN CIRC 5	CAN CIRC 6 ✓	–	–
ICC	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	CAN CIRC 4 ✓	CAN CIRC 8 ✓	CAN CIRC 3 ✓	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	–	–	–	–	–	–	CAN CIRC 3

Case 10

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 3	–	CAN CIRC 5	CAN CIRC 6 ✓	CAN CIRC 4 ✓
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	CAN CIRC 3	–	–	–	CAN CIRC 4 ✓
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	–	CAN CIRC 5	CAN CIRC 6	–	–
ICC	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 8	CAN CIRC 3	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	–	–	–	–	–	–	CAN CIRC 3

Case 11

ENGINE	CAN COMM	CAN CIRC 1 ✓	–	CAN CIRC 2 ✓	–	CAN CIRC 3 ✓	–	CAN CIRC 5 ✓	CAN CIRC 6 ✓	CAN CIRC 4 ✓
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	–	–	CAN CIRC 3	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	CAN CIRC 3	–	–	CAN CIRC 5	CAN CIRC 6	–	–
ICC	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	CAN CIRC 4	CAN CIRC 8	CAN CIRC 3	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	–	–	–	–	–	–	CAN CIRC 3

Case 12

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2 ✓	–	CAN CIRC 3	–	CAN CIRC 5	CAN CIRC 6	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1 ✓	CAN CIRC 2 ✓	–	–	CAN CIRC 3 ✓	–	–	–	CAN CIRC 4 ✓
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3 ✓	–	–	CAN CIRC 5	CAN CIRC 6	–	–
ICC	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4 ✓	CAN CIRC 8	CAN CIRC 3	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–	–	CAN CIRC 3

PKIA0792E

Case 13

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 3	–	CAN CIRC 5	CAN CIRC 6	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	CAN CIRC 3	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	–	CAN CIRC 5	CAN CIRC 6	–	–
ICC	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	✓ CAN CIRC 8	CAN CIRC 3	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–	–	CAN CIRC 3

Case 14

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	✓ CAN CIRC 3	–	CAN CIRC 5	CAN CIRC 6	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	✓ CAN CIRC 3	–	–	–	CAN CIRC 4
ABS	CAN COMM	✓ CAN CIRC 1	✓ CAN CIRC 2	✓ CAN CIRC 3	–	–	✓ CAN CIRC 5	✓ CAN CIRC 6	–	–
ICC	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 8	✓ CAN CIRC 3	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–	–	CAN CIRC 3

Case 15

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 3	–	CAN CIRC 5	CAN CIRC 6	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	CAN CIRC 3	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	–	✓ CAN CIRC 5	CAN CIRC 6	–	–
ICC	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 8	CAN CIRC 3	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–	–	CAN CIRC 3

Case 16

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 3	–	✓ CAN CIRC 5	CAN CIRC 6	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	CAN CIRC 3	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	–	CAN CIRC 5	✓ CAN CIRC 6	–	–
ICC	CAN COMM	✓ CAN CIRC 1	✓ CAN CIRC 2	✓ CAN CIRC 4	✓ CAN CIRC 8	✓ CAN CIRC 3	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–	–	CAN CIRC 3

PKIA0793E

Case 17

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 3	–	CAN CIRC 5	CAN CIRC 6 ✓	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	CAN CIRC 3	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	–	CAN CIRC 5	CAN CIRC 6	–	–
ICC	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 8	CAN CIRC 3	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1 ✓	CAN CIRC 2 ✓	–	–	–	–	–	–	CAN CIRC 3 ✓

Case 18

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 3	–	CAN CIRC 5	CAN CIRC 6	CAN CIRC 4 ✓
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	CAN CIRC 3	–	–	–	CAN CIRC 4 ✓
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	–	CAN CIRC 5	CAN CIRC 6	–	–
ICC	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 8	CAN CIRC 3	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	–	–	CAN CIRC 3 ✓

Case 19

ENGINE	CAN COMM	CAN CIRC 1 ✓	–	CAN CIRC 2 ✓	–	CAN CIRC 3 ✓	–	CAN CIRC 5 ✓	CAN CIRC 6 ✓	CAN CIRC 4 ✓
CVT	CAN COMM	CAN CIRC 1 ✓	CAN CIRC 2 ✓	–	–	CAN CIRC 3 ✓	–	–	–	CAN CIRC 4 ✓
ABS	CAN COMM	CAN CIRC 1 ✓	CAN CIRC 2 ✓	CAN CIRC 3 ✓	–	–	CAN CIRC 5 ✓	CAN CIRC 6 ✓	–	–
ICC	CAN COMM	CAN CIRC 1 ✓	CAN CIRC 2 ✓	CAN CIRC 4 ✓	CAN CIRC 8 ✓	CAN CIRC 3 ✓	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1 ✓	CAN CIRC 2 ✓	–	–	–	–	–	–	CAN CIRC 3 ✓

PKIA0794E

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

INSPECTION

Proceed trouble diagnosis according to the check sheet results (example).
Case 1:Replace ECM.
Case 2:Replace TCM.
Case 3:Replace ESP/TCS/ABS control unit.
Case 4:Replace ICC unit.
Case 5:Replace Smart entrance control unit.
Case 6:Check Harness between TCM and ICC sensor. Refer to LAN-391, "Circuit Check Between TCM and ICC Sensor"
Case 7:Check Harness between ICC sensor and ESP/TCS/ABS control unit. Refer to LAN-392, "Circuit Check Between ICC Sensor and ESP/TCS/ABS Control Unit"
Case 8:Check Harness between ESP/TCS/ABS control unit and Steering angle sensor. Refer to LAN-393, "Circuit Check Between ESP/TCS/ABS Control Unit and Steering Angle Sensor"
Case 9:Check Harness between Steering angle sensor and ICC unit. Refer to LAN-394, "Circuit Check Between Steering Angle Sensor and ICC Unit"
Case 10:Check Harness between ICC unit and Smart entrance control unit. Refer to LAN-395, "Circuit Check Between ICC Unit and Smart Entrance Control Unit"
Case 11:Check ECM Circuit. Refer to LAN-395, "ECM Circuit Check"
Case 12:Check TCM Circuit. Refer to LAN-396, "TCM Circuit Check"
Case 13:Check ICC sensor Circuit. Refer to LAN-396, "ICC Sensor Circuit Check"
Case 14:Check ESP/TCS/ABS control unit Circuit. Refer to LAN-397, "ESP/TCS/ABS Control Unit Circuit Check"
Case 15:Check Steering angle sensor Circuit. Refer to LAN-397, "Steering Angle Sensor Circuit Check"
Case 16:Check ICC unit Circuit. Refer to LAN-398, "ICC Unit Circuit Check"
Case 17:Check Smart entrance control unit Circuit. Refer to LAN-398, "Smart Entrance Control Unit Circuit Check"
Case 18:Check Combination meter Circuit. Refer to LAN-399, "Combination Meter Circuit Check"
Case 19:Check CAN communication Circuit. Refer to LAN-400, "CAN Communication Circuit Check"

Circuit Check Between TCM and ICC Sensor

EKS00513

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, sensor-side and harness-side)

- TCM.
- ICC sensor.
- Between TCM and ICC sensor.

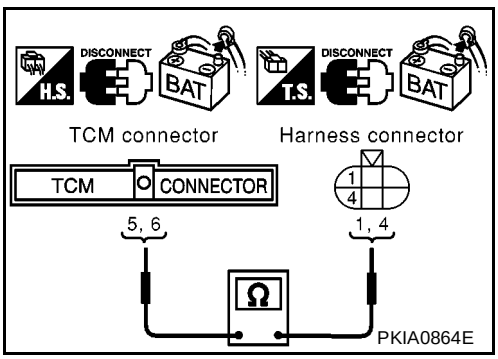
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect TCM connector and harness connector F31.
2. Check continuity between TCM harness connector F103 terminals 5 (L), 6 (R) and harness connector F31 terminals 1 (L), 4 (R).

5(L) – 1(L) : Continuity should exist.
6(R) – 4(R) : Continuity should exist.



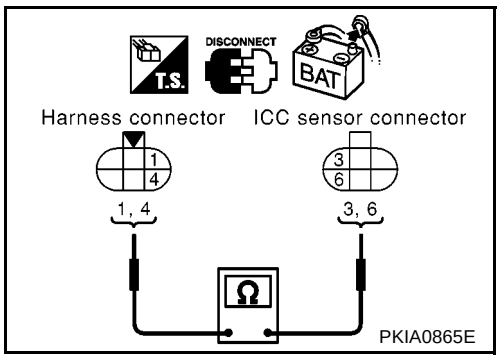
OK or NG

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

3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ICC sensor connector.
2. Check continuity between harness connector E63 terminals 1 (L), 4 (R) and ICC sensor harness connector E53 terminals 3 (L), 6 (R).

1(L) – 3(L) : Continuity should exist.
4(R) – 6(R) : Continuity should exist.



OK or NG

OK >> Reconnect all connectors to perform “SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE”, “CVT”, “ABS”, “ICC”, and “SMART ENTRANCE” displayed on CONSULT-II. Refer to EC-1083, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) or EC-1505, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) for “ENGINE” and Refer to CVT-118, "DTC U1000 CAN COMMUNICATION LINE" (EURO-OBD) or CVT-201, "CAN COMMUNICATION LINE" (ALL) for “CVT”. Refer to BRC-107, "Inspection 15 CAN Communication Circuit, ESP/TCS/ABS Control Unit and Steering Angle Sensor" for “ABS”. Refer to ACS-46, "DTC 20 CAN COMM CIRCUIT" for “ICC”. Refer to BCS-40, "CAN Communication Line Check" for “SMART ENTRANCE”.

NG >> Repair harness.

Circuit Check Between ICC Sensor and ESP/TCS/ABS Control Unit

EKS00514

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. (sensor-side, control unit-side and harness-side)

- ICC sensor.
- ESP/TCS/ABS control unit.
- Between ICC sensor and ESP/TCS/ABS control unit.

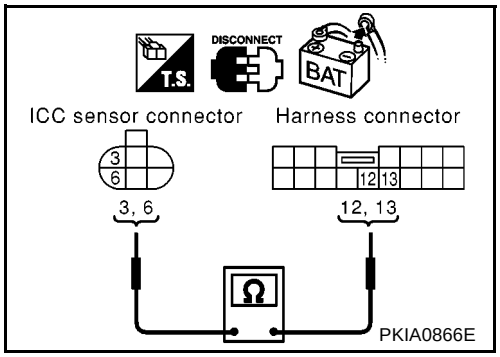
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ICC sensor connector and harness connector E117.
2. Check continuity between ICC sensor harness connector E53 terminals 3 (L), 6 (R) and harness connector E117 terminals 13 (L), 12 (R).

3(L) – 13(L) : Continuity should exist.
6(R) – 12(R) : Continuity should exist.



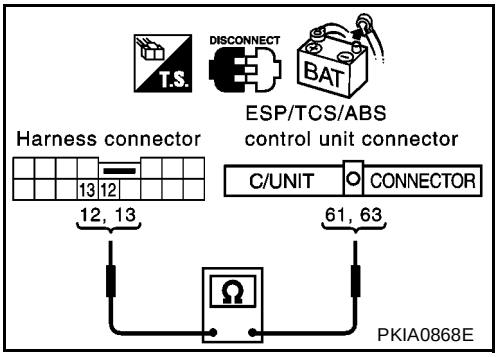
OK or NG

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

3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ESP/TCS/ABS control unit connector.
2. Check continuity between harness connector B104 terminals 13 (L), 12 (R) and ESP/TCS/ABS control unit harness connector B109 terminals 61 (L), 63 (R).

13(L) – 61(L) : Continuity should exist.
12(R) – 63(R) : Continuity should exist.



OK or NG

OK >> Reconnect all connectors to perform “SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE”, “CVT”, “ABS”, “ICC”, and “SMART ENTRANCE” displayed on CONSULT-II. Refer to EC-1083, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) or EC-1505, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) for “ENGINE” and Refer to CVT-118, "DTC U1000 CAN COMMUNICATION LINE" (EURO-OBD) or CVT-201, "CAN COMMUNICATION LINE" (ALL) for “CVT”. Refer to BRC-107, "Inspection 15 CAN Communication Circuit, ESP/TCS/ABS Control Unit and Steering Angle Sensor" for “ABS”. Refer to ACS-46, "DTC 20 CAN COMM CIRCUIT" for “ICC”. Refer to BCS-40, "CAN Communication Line Check" for “SMART ENTRANCE”.

NG >> Repair harness.

Circuit Check Between ESP/TCS/ABS Control Unit and Steering Angle Sensor

EKS00515

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. (sensor-side, control unit-side and harness-side)

- Steering angle sensor.
- ESP/TCS/ABS control unit.
- Between ESP/TCS/ABS control unit and steering angle sensor.

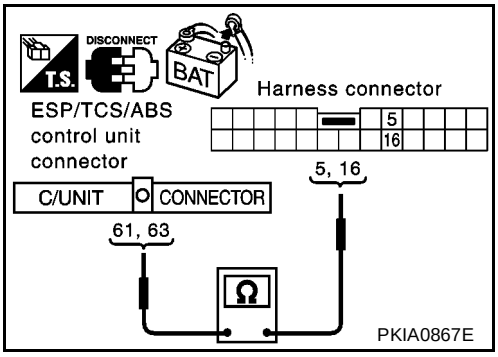
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ESP/TCS/ABS control unit connector and harness connector B101.
2. Check continuity between ESP/TCS/ABS control unit harness connector B109 terminals 61 (L), 63 (R) and harness connector B101 terminals 5 (L), 16 (R).

61(L) – 5(L) : Continuity should exist.
63(R) – 16(R) : Continuity should exist.



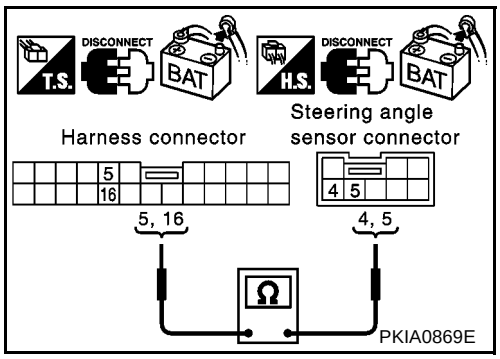
OK or NG

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

3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect steering angle sensor connector.
2. Check continuity between harness connector M87 terminals 5 (L), 16 (R) and steering angle sensor harness connector M33 terminals 4 (L), 5 (R).

5(L) – 4(L) : Continuity should exist.
16(R) – 5(R) : Continuity should exist.



OK or NG

OK >> Reconnect all connectors to perform “SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE”, “CVT”, “ABS”, “ICC”, and “SMART ENTRANCE” displayed on CONSULT-II. Refer to EC-1083, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) or EC-1505, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) for “ENGINE” and Refer to CVT-118, "DTC U1000 CAN COMMUNICATION LINE" (EURO-OBD) or CVT-201, "CAN COMMUNICATION LINE" (ALL) for “CVT”. Refer to BRC-107, "Inspection 15 CAN Communication Circuit, ESP/TCS/ABS Control Unit and Steering Angle Sensor" for “ABS”. Refer to ACS-46, "DTC 20 CAN COMM CIRCUIT" for “ICC”. Refer to BCS-40, "CAN Communication Line Check" for “SMART ENTRANCE”.

NG >> Repair harness.

Circuit Check Between Steering Angle Sensor and ICC Unit

EKS00516

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 unit-side, sensor-side and harness-side)

- ICC unit.
- Steering angle sensor.
- Between ICC unit and steering angle sensor.

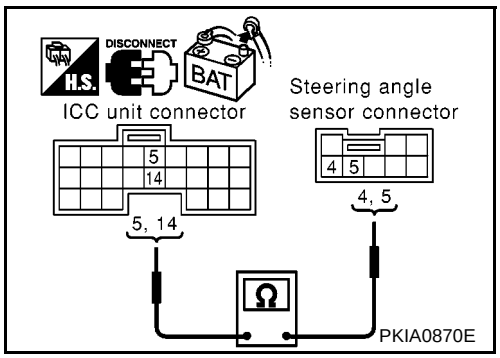
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ICC unit connector and steering angle sensor connector.
2. Check continuity between ICC unit harness connector B9 terminals 14 (L), 5 (R) and steering angle sensor harness connector M33 terminals 4 (L), 5 (R).

14(L) – 4(L) : Continuity should exist.
5(R) – 5(R) : Continuity should exist.



OK or NG

OK >> Reconnect all connectors to perform “SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE”, “CVT”, “ABS”, “ICC”, and “SMART ENTRANCE” displayed on CONSULT-II. Refer to EC-1083, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) or EC-1505, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) for “ENGINE” and Refer to CVT-118, "DTC U1000 CAN COMMUNICATION LINE" (EURO-OBD) or CVT-201, "CAN COMMUNICATION LINE" (ALL) for “CVT”. Refer to BRC-107, "Inspection 15 CAN Communication Circuit, ESP/TCS/ABS Control Unit and Steering Angle Sensor" for “ABS”.

Refer to ACS-46, "DTC 20 CAN COMM CIRCUIT" for “ICC”. Refer to BCS-40, "CAN Communication Line Check" for “SMART ENTRANCE”.

NG >> Repair harness.

Circuit Check Between ICC Unit and Smart Entrance Control Unit

EKS00517

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 unit-side and harness-side)

- ICC unit.
- Smart entrance control unit.
- Between ICC unit and smart entrance control unit.

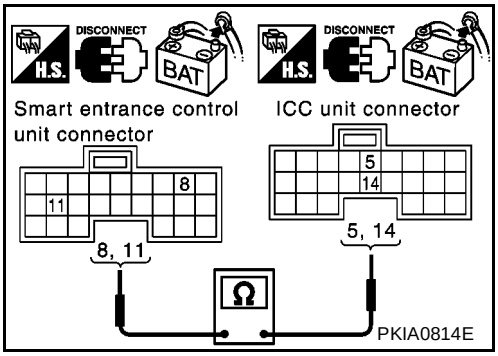
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ICC unit connector and smart entrance control unit connector.
2. Check continuity between smart entrance control unit harness connector M41 terminals 8 (L), 11 (R) and ICC unit harness connector B9 terminals 14 (L), 5 (R).

8(L) – 14(L) : Continuity should exist.
11(R) – 5(R) : Continuity should exist.



OK or NG

OK >> Reconnect all connectors to perform “SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE”, “CVT”, “ABS”, “ICC”, and “SMART ENTRANCE” displayed on CONSULT-II. Refer to EC-1083, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) or EC-1505, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) for “ENGINE” and Refer to CVT-118, "DTC U1000 CAN COMMUNICATION LINE" (EURO-OBD) or CVT-201, "CAN COMMUNICATION LINE" (ALL) for “CVT”. Refer to BRC-107, "Inspection 15 CAN Communication Circuit, ESP/TCS/ABS Control Unit and Steering Angle Sensor" for “ABS”. Refer to ACS-46, "DTC 20 CAN COMM CIRCUIT" for “ICC”. Refer to BCS-40, "CAN Communication Line Check" for “SMART ENTRANCE”.

NG >> Repair harness.

ECM Circuit Check

EKS00518

1. CHECK CONNECTOR

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

OK or NG

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

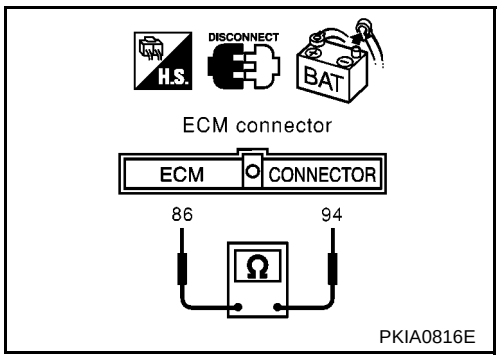
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ECM connector.
2. Check resistance between ECM harness connector F102 terminals 94(L) and 86(R).

94(L) – 86(R) : Approx. 108 – 132Ω

OK or NG

OK >> Replace ECM.
NG >> Repair harness between TCM and ECM.



TCM Circuit Check

EKS00519

1. CHECK CONNECTOR

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

OK or NG

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

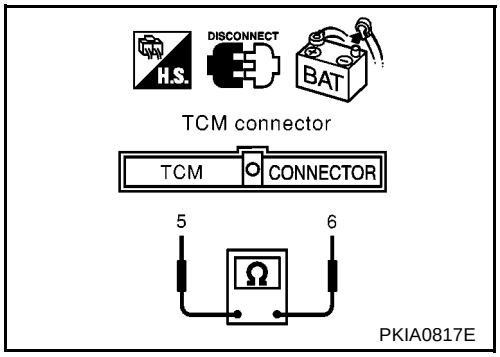
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect TCM connector.
2. Check resistance between TCM harness connector F103 terminals 5(L) and 6(R).

5(L) – 6(R) : Approx. 54 – 66Ω

OK or NG

OK >> Replace TCM.
NG >> Repair harness between TCM and ECM.



ICC Sensor Circuit Check

EKS0051A

1. CHECK CONNECTOR

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

OK or NG

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

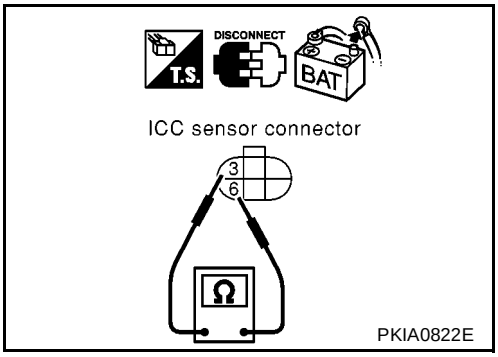
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ICC sensor connector.
2. Check resistance between ICC sensor harness connector E53 terminals 3(L) and 6(R).

3(L) – 6(R) : Approx. 54 – 66Ω

OK or NG

OK >> Replace ICC sensor.
NG >> Repair harness between ESP/TCS/ABS control unit and ICC sensor.



ESP/TCS/ABS Control Unit Circuit Check

EKS0051B

1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check following terminals and connector of ESP/TCS/ABS control unit for damage, bend and loose connection. (control unit-side and harness-side)

OK or NG

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

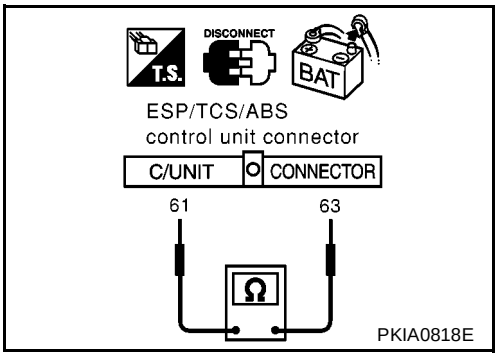
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ESP/TCS/ABS control unit connector.
2. Check resistance between ESP/TCS/ABS control unit harness connector B109 terminals 61(L) and 63(R).

61(L) – 63(R) : Approx. 54 – 66Ω

OK or NG

OK >> Replace ESP/TCS/ABS control unit.
NG >> Repair harness between Data link connector and ESP/TCS/ABS control unit.



Steering Angle Sensor Circuit Check

EKS0051C

1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check terminals and connector of steering angle sensor for damage, bend and loose connection. (sensor-side and harness-side)

OK or NG

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

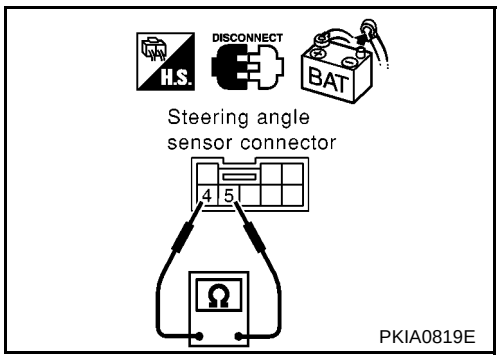
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect steering angle sensor connector.
2. Check resistance between steering angle sensor harness connector M33 terminals 4(L) and 5(R).

4(L) – 5(R) : Approx. 54 – 66Ω

OK or NG

OK >> Replace steering angle sensor.
NG >> Repair harness between Data link connector and steering angle sensor.



ICC Unit Circuit Check

EKS0051D

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 unit-side and harness-side)

- ICC unit.
- Harness connector B42.
- Harness connector M95.

OK or NG

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

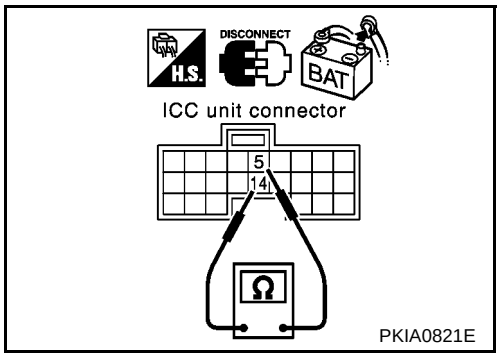
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ICC unit connector.
2. Check resistance between ICC unit harness connector B9 terminals 14(L) and 5(R).

14(L) – 5(R) : Approx. 54 – 66Ω

OK or NG

OK >> Replace ICC unit.
NG >> Repair harness between ICC unit and smart entrance control unit.



Smart Entrance Control Unit Circuit Check

EKS0051E

1. CHECK CONNECTOR

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

OK or NG

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

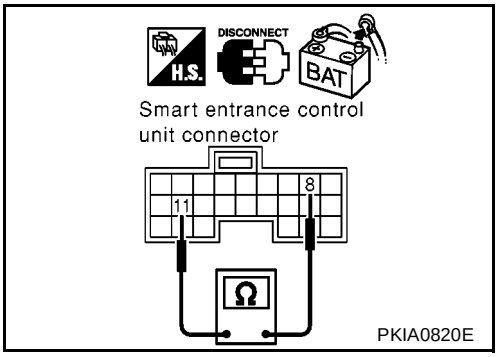
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect smart entrance control unit connector.
2. Check resistance between smart entrance control unit harness connector M41 terminals 8(L) and 11(R).

8(L) – 11(R) : Approx. 54 – 66Ω

OK or NG

OK >> Replace smart entrance control unit.
NG >> Repair harness between ICC unit and smart entrance control unit.



Combination Meter Circuit Check

EKS0051F

1. CHECK CONNECTOR

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

OK or NG

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

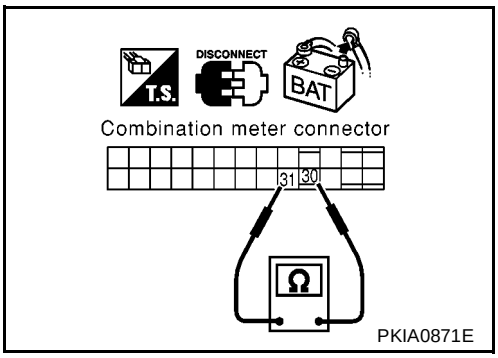
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect combination meter connector.
2. Check resistance between combination meter harness connector M37 terminals 30(L) and 31(R).

30(L) – 31(R) : Approx. 108 – 132Ω

OK or NG

OK >> Replace combination meter.
NG >> Repair harness between smart entrance control unit and combination meter.



CAN Communication Circuit Check

EKS0051G

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. (meter-side, control unit-side, sensor-side, control module-side and harness-side)

- Combination meter.
- Smart entrance control unit.
- ICC unit.
- Steering angle sensor.
- ESP/TCS/ABS control unit.
- ICC sensor.
- TCM.
- ECM.
- Between ICC unit and ECM.

OK or NG

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

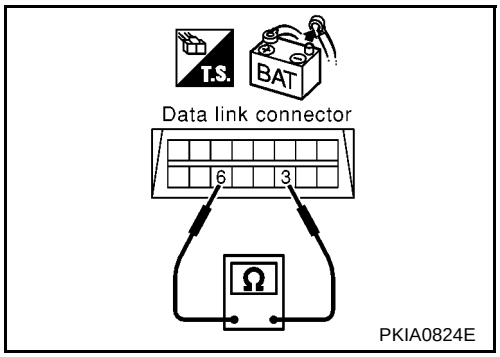
2. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect the following connectors.

- Combination meter connector.
- Smart entrance control unit connector.
- Steering angle sensor connector.
- Harness connector M95.
- Harness connector M87.

2. Check continuity between Data link connector M10 terminals 6 (L) and 3(R).

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



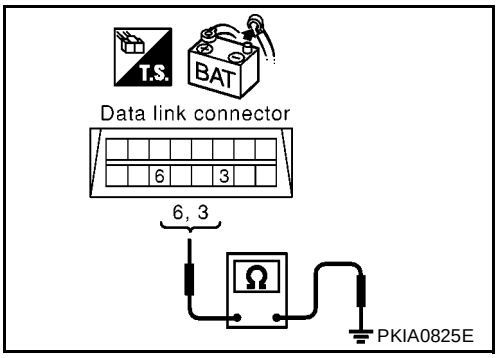
OK or NG

OK >> GO TO 3.
NG >>
- Repair harness between smart entrance control unit and combination meter.
- Repair harness between smart entrance control unit and harness connector M95.
- Repair harness between harness connector M95 and steering angle sensor.
- Repair harness between Data link connector and steering angle sensor.
- Repair harness between Data link connector and harness connector M87.

3. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between Data link connector M10 terminals 6 (L), 3(R) and ground.

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



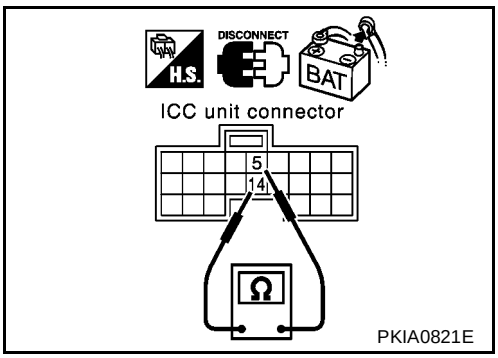
OK or NG

OK >> GO TO 4.
NG >>
- Repair harness between smart entrance control unit and combination meter.
- Repair harness between smart entrance control unit and harness connector M95.
- Repair harness between harness connector M95 and steering angle sensor.
- Repair harness between Data link connector and steering angle sensor.
- Repair harness between Data link connector and harness connector M87.

4. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect ICC unit connector.
2. Check continuity between ICC unit harness connector B9 terminals 14 (L) and 5(R).

14(L) – 5(R) : Continuity should not exist.



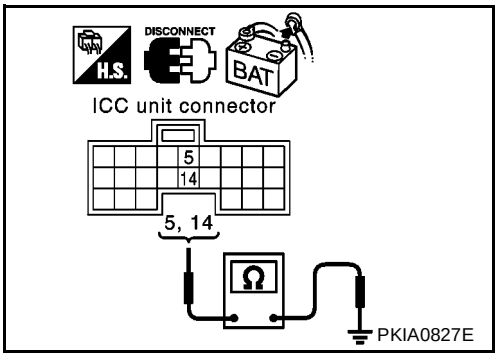
OK or NG

OK >> GO TO 5.
NG >> Repair harness between ICC unit and harness connector B42.

5. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ICC unit harness connector B9 terminals 14 (L), 5 (R) and ground.

14(L) – ground : Continuity should not exist.
5(R) – ground : Continuity should not exist.



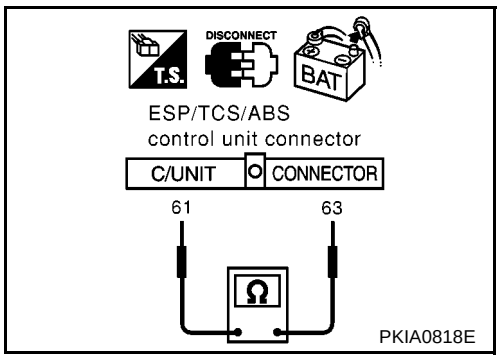
OK or NG

OK >> GO TO 6.
NG >> Repair harness between ICC unit and harness connector B42.

6. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect ESP/TCS/ABS control unit connector and harness connector B104.
2. Check continuity between ESP/TCS/ABS control unit harness connector B109 terminals 61 (L) and 63(R).

61(L) – 63(R) : Continuity should not exist.



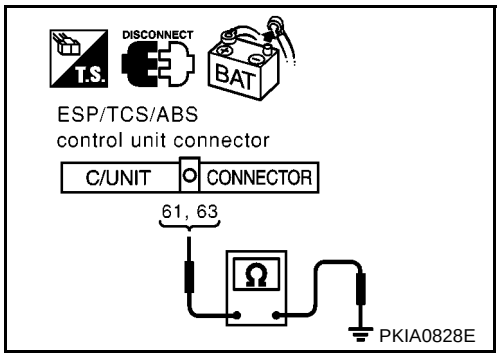
OK or NG

OK >> GO TO 7.
NG >> ● Repair harness between ESP/TCS/ABS control unit and harness connector B101.
● Repair harness between harness connector B104 and harness connector B101.

7. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ESP/TCS/ABS control unit harness connector B109 terminals 61 (L), 63 (R) and ground.

61(L) – ground : Continuity should not exist.
63(R) – ground : Continuity should not exist.



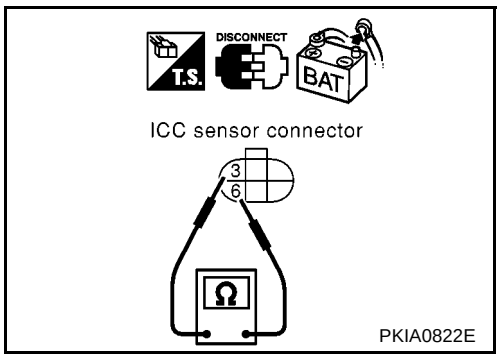
OK or NG

OK >> GO TO 8.
NG >> ● Repair harness between ESP/TCS/ABS control unit and harness connector B101.
● Repair harness between harness connector B104 and harness connector B101.

8. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect ICC sensor connector and harness connector E63.
2. Check continuity between ICC sensor harness connector E53 terminals 3 (L) and 6(R).

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



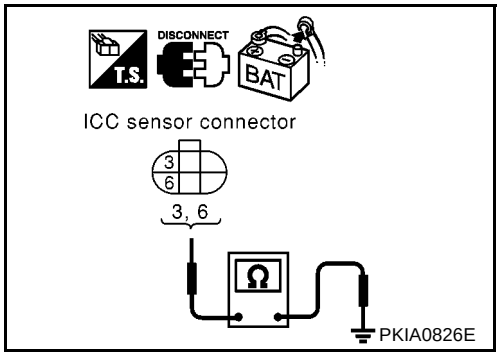
OK or NG

OK >> GO TO 9.
NG >> ● Repair harness between ICC sensor and harness connector E117.
● Repair harness between harness connector E117 and harness connector E63.

9. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ICC sensor harness connector E53 terminals 3 (L), 6 (R) and ground.

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



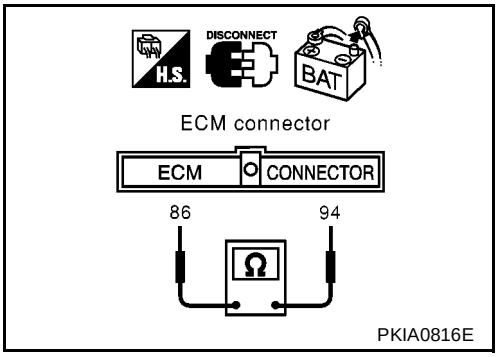
OK or NG

OK >> GO TO 10.
NG >> ● Repair harness between ICC sensor and harness connector E117.
● Repair harness between harness connector E117 and harness connector E63.

10. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect ECM connector and TCM connector.
2. Check continuity between ECM harness connector F102 terminals 94 (L) and 86(R).

94(L) – 86(R) : Continuity should not exist.



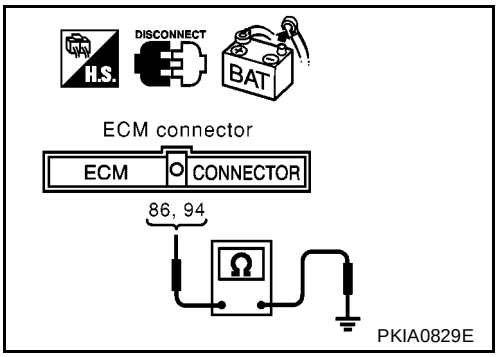
OK or NG

OK >> GO TO 11.
NG >>
- Repair harness between ECM and harness connector F31.
- Repair harness between TCM and harness connector F31.

11. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ECM harness connector F102 terminals 94 (L), 86 (R) and ground.

94(L) – ground : Continuity should not exist.
86(R) – ground : Continuity should not exist.



OK or NG

OK >> GO TO 12.
NG >>
- Repair harness between ECM and harness connector F31.
- Repair harness between TCM and harness connector F31.

12. ECM / COMBINATION METER INTERNAL CIRCUIT INSPECTION

Check components inspection. Refer to LAN-403, "ECM / COMBINATION METER INTERNAL CIRCUIT INSPECTION"

OK or NG

OK >> Reconnect all connectors to perform “SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE”, “CVT”, “ABS”, “ICC”, and “SMART ENTRANCE” displayed on CONSULT-II. Refer to EC-1083, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) or EC-1505, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) for “ENGINE” and Refer to CVT-118, "DTC U1000 CAN COMMUNICATION LINE" (EURO-OBD) or CVT-201, "CAN COMMUNICATION LINE" (ALL) for “CVT”. Refer to BRC-107, "Inspection 15 CAN Communication Circuit, ESP/TCS/ABS Control Unit and Steering Angle Sensor" for “ABS”. Refer to ACS-46, "DTC 20 CAN COMM CIRCUIT" for “ICC”. Refer to BCS-40, "CAN Communication Line Check" for “SMART ENTRANCE”.
NG >> Replace ECM and/or Combination meter.

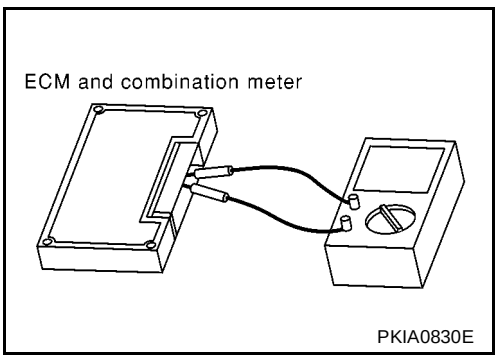
Component Inspection

EKS0051H

ECM / COMBINATION METER INTERNAL CIRCUIT INSPECTION

- Remove ECM and Combination meter from vehicle.
- Check resistance between ECM terminals 94 and 86.
- Check resistance between Combination meter terminals 30 and 31.

Unit	Terminal	Resistance value (Ω)
ECM	94 – 86	Approx. 108 - 132
Combination meter	30 – 31	



CAN SYSTEM (TYPE 20)

PFP:23710

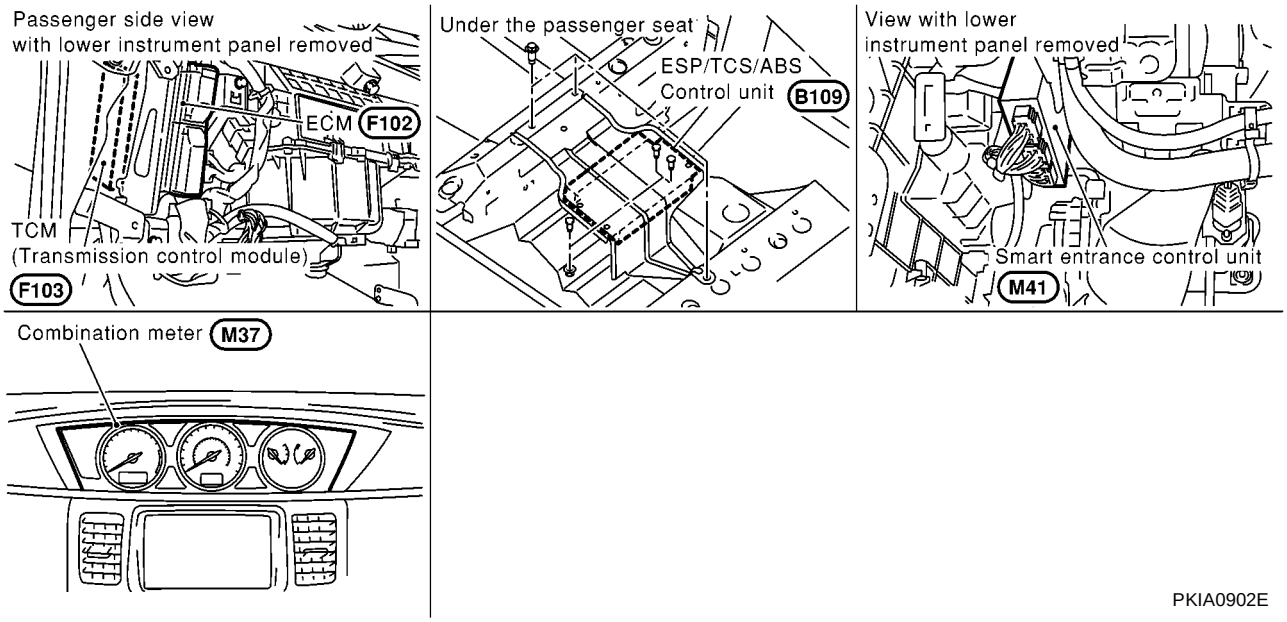
System Description

EKS0050K

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.

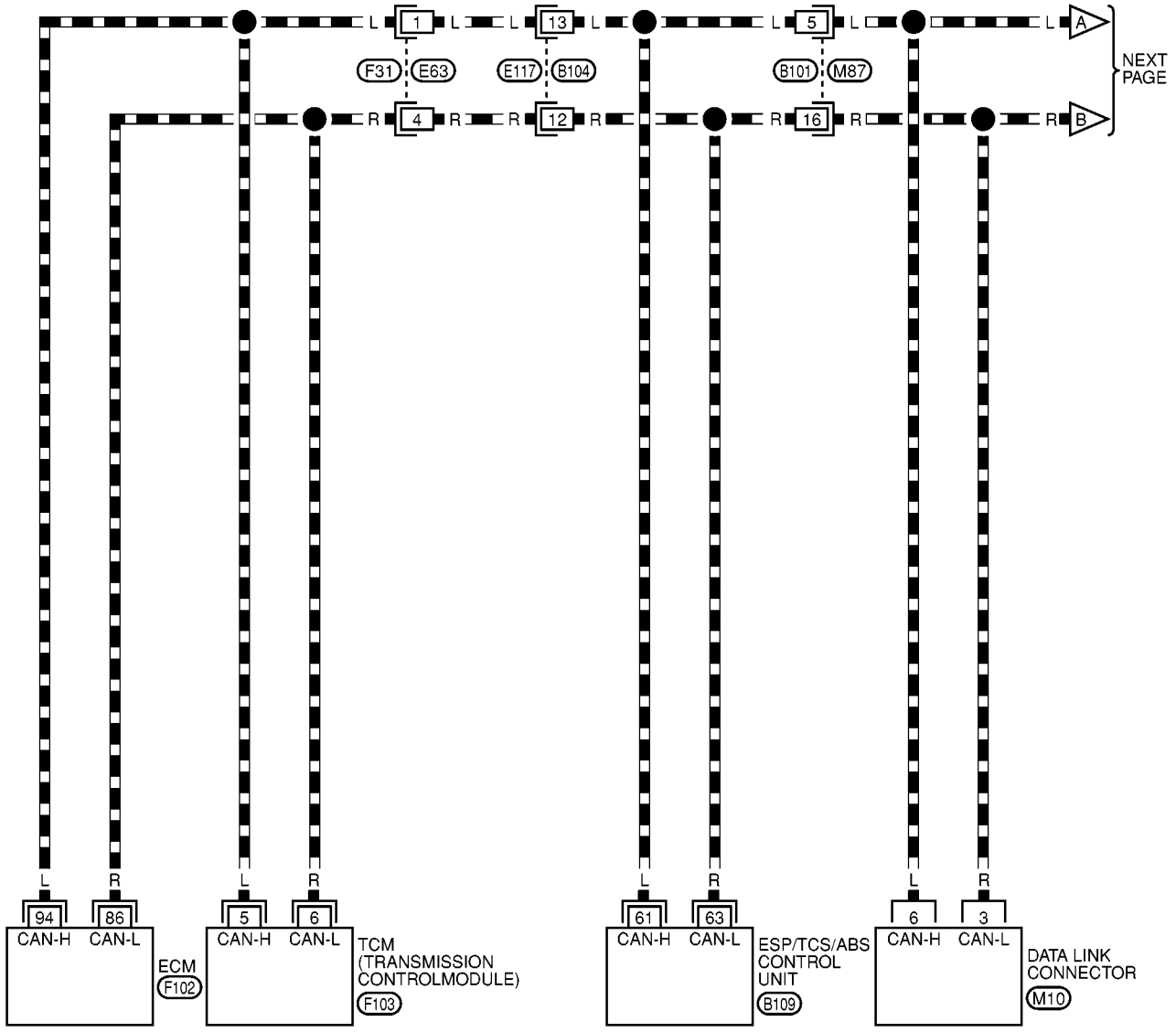
Component Parts and Harness Connector Location

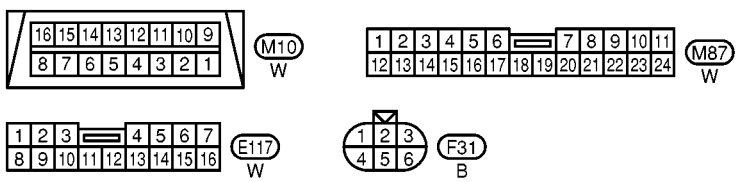
EKS0050L



Wiring Diagram — CAN —

EKS0050M



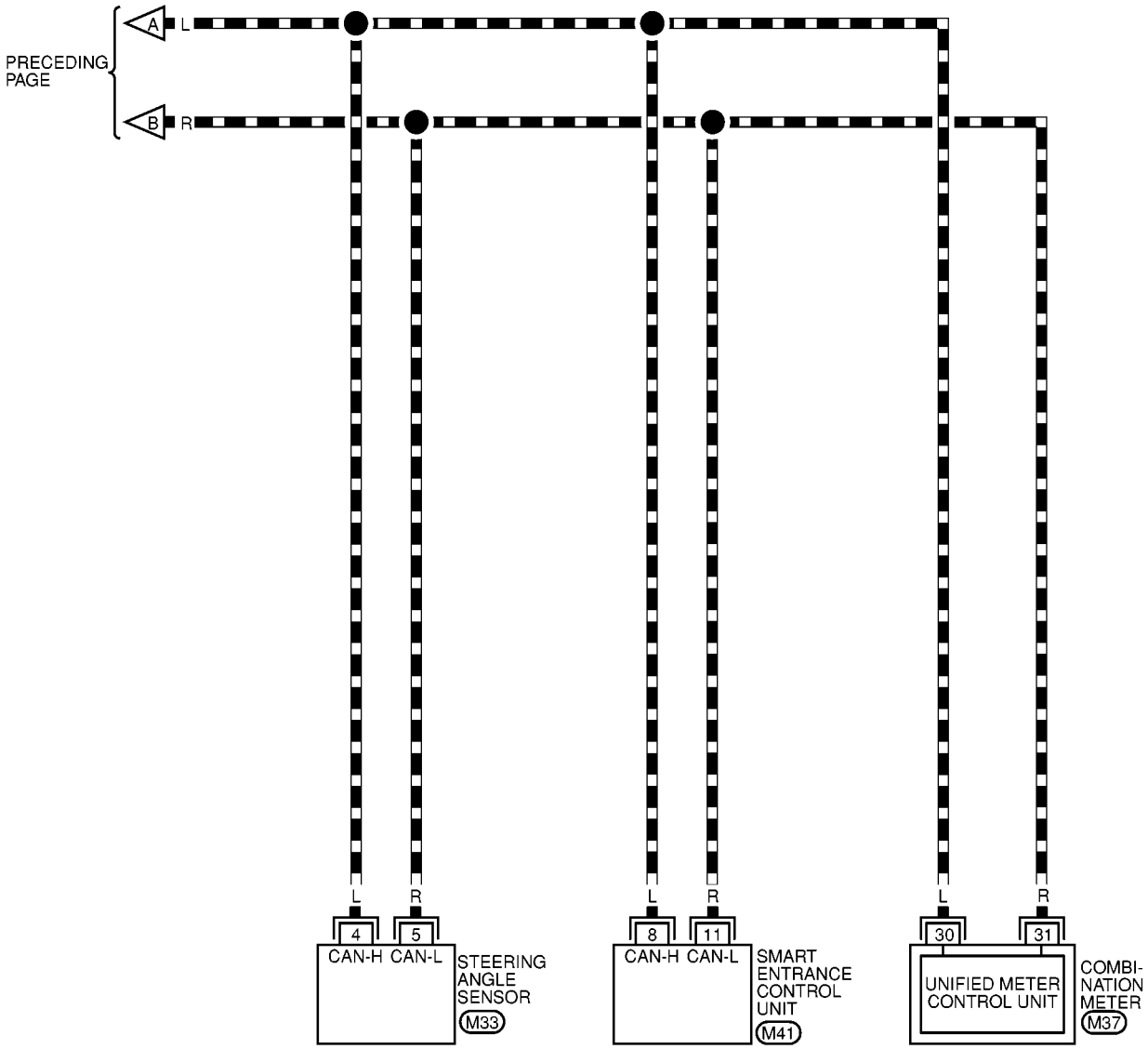


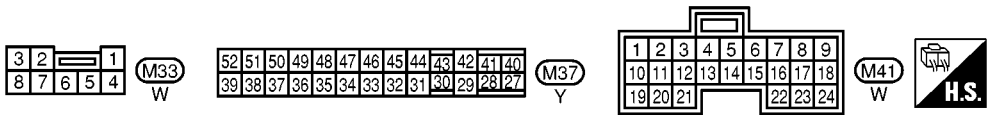
REFER TO THE FOLLOWING.
F102 , F103 , B109
-ELECTRICAL UNITS

MKWA0380E

LAN-CAN-44

: DATA LINE





MKWA0381E

Work Flow

EKS0050N

1. Print all the data of “SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE”, “CVT”, “ABS”, and “SMART ENTRANCE” displayed on CONSULT-II. Refer to EC-1083, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) or EC-1505, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) for “ENGINE” and Refer to CVT-118, "DTC U1000 CAN COMMUNICATION LINE" (EURO-OBD) or CVT-201, "CAN COMMUNICATION LINE" (ALL) for “CVT”. Refer to BRC-107, "Inspection 15 CAN Communication Circuit, ESP/TCS/ABS Control Unit and Steering Angle Sensor" for “ABS”. Refer to BCS-40, "CAN Communication Line Check" for “SMART ENTRANCE”.
2. Attach the printed sheet of “SELF-DIAG RESULTS” and “DATA MONITOR” onto the check sheet. Refer to LAN-408, "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-408, "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-409, "CHECK SHEET RESULTS (EXAMPLE)"

CHECK SHEET

Check sheet table

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 6	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 5	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 3

Symptoms:

Attach copy of
ENGINE
SELF-DIAG RESULTS

Attach copy of
CVT
SELF-DIAG RESULTS

Attach copy of
ABS
SELF-DIAG RESULTS

Attach copy of
SMART ENTRANCE
SELF-DIAG RESULTS

Attach copy of
ENGINE
DATA MONITOR

Attach copy of
CVT
DATA MONITOR

Attach copy of
ABS
DATA MONITOR

Attach copy of
SMART ENTRANCE
DATA MONITOR

PKIA0795E

CHECK SHEET RESULTS (EXAMPLE)

Case 1: Replace ECM

ENGINE	✓ CAN COMM	CAN CIRC 1	–	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 6	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 5	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 3

ENGINE	CAN COMM	CAN CIRC 1	–	✓ CAN CIRC 2	✓ CAN CIRC 3	–	✓ CAN CIRC 6	✓ CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 5	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 3

Case 2: Replace TCM

ENGINE	CAN COMM	CAN CIRC 1	–	✓ CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 6	CAN CIRC 4
CVT	✓ CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	✓ CAN CIRC 3	–	CAN CIRC 5	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 3

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 6	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	✓ CAN CIRC 2	–	✓ CAN CIRC 3	–	–	✓ CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 5	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 3

Case 3: Replace ESP/TCS/ABS control unit

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	✓ CAN CIRC 3	–	CAN CIRC 6	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	✓ CAN CIRC 3	–	–	CAN CIRC 4
ABS	✓ CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 5	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 3

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 6	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	✓ CAN CIRC 2	✓ CAN CIRC 3	–	✓ CAN CIRC 5	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 3

Case 4: Replace Smart entrance control unit

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 6	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 5	–	–
SMART ENTRANCE	✓ CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 3

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 6	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 5	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	✓ CAN CIRC 2	–	–	–	–	✓ CAN CIRC 3

Case 5

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	✓ CAN CIRC 3	–	✓ CAN CIRC 6	✓ CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	✓ CAN CIRC 3	–	–	✓ CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	✓ CAN CIRC 2	✓ CAN CIRC 3	–	CAN CIRC 5	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	✓ CAN CIRC 2	–	–	–	–	CAN CIRC 3

PKIA0796E

Case 6

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 6 ✓	CAN CIRC 4 ✓
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	CAN CIRC 4 ✓
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 5 ✓	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	–	–	–	–	CAN CIRC 3

Case 7

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 6 ✓	CAN CIRC 4 ✓
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	CAN CIRC 4 ✓
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 5	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	–	–	–	–	CAN CIRC 3

Case 8

ENGINE	CAN COMM	CAN CIRC 1 ✓	–	CAN CIRC 2 ✓	CAN CIRC 3 ✓	–	CAN CIRC 6 ✓	CAN CIRC 4 ✓
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	–	CAN CIRC 3	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	CAN CIRC 3	–	CAN CIRC 5	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	–	–	–	–	CAN CIRC 3

Case 9

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2 ✓	CAN CIRC 3	–	CAN CIRC 6	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1 ✓	CAN CIRC 2 ✓	–	CAN CIRC 3 ✓	–	–	CAN CIRC 4 ✓
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3 ✓	–	CAN CIRC 5	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 3

Case 10

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	CAN CIRC 3 ✓	–	CAN CIRC 6	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3 ✓	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1 ✓	CAN CIRC 2 ✓	CAN CIRC 3 ✓	–	CAN CIRC 5 ✓	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 3

Case 11

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 6	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 5 ✓	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 3

Case 12

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 6 ✓	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 5	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1 ✓	CAN CIRC 2 ✓	–	–	–	–	CAN CIRC 3 ✓

PKIA0797E

Case 13

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 6	CAN CIRC 4 ✓
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	CAN CIRC 4 ✓
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 5	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 3 ✓

Case 14

ENGINE	CAN COMM	CAN CIRC 1 ✓	–	CAN CIRC 2 ✓	CAN CIRC 3 ✓	–	CAN CIRC 6 ✓	CAN CIRC 4 ✓
CVT	CAN COMM	CAN CIRC 1 ✓	CAN CIRC 2 ✓	–	CAN CIRC 3 ✓	–	–	CAN CIRC 4 ✓
ABS	CAN COMM	CAN CIRC 1 ✓	CAN CIRC 2 ✓	CAN CIRC 3 ✓	–	CAN CIRC 5 ✓	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1 ✓	CAN CIRC 2 ✓	–	–	–	–	CAN CIRC 3 ✓

PKIA0798E

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

INSPECTION

Proceed trouble diagnosis according to the check sheet results (example).
Case 1:Replace ECM.
Case 2:Replace TCM.
Case 3:Replace ESP/TCS/ABS control unit.
Case 4:Replace Smart entrance control unit.
Case 5:Check Harness between TCM and ESP/TCS/ABS control unit. Refer to LAN-411, "Circuit Check Between TCM and ESP/TCS/ABS Control Unit"
Case 6:Check Harness between ESP/TCS/ABS control unit and Steering angle sensor. Refer to LAN-413, "Circuit Check Between ESP/TCS/ABS Control Unit and Steering Angle Sensor"
Case 7:Check Harness between Steering angle sensor and Smart entrance control unit. Refer to LAN-414, "Circuit Check Between Steering Angle Sensor and Smart Entrance Control Unit"
Case 8:Check ECM Circuit. Refer to LAN-414, "ECM Circuit Check"
Case 9:Check TCM Circuit. Refer to LAN-415, "TCM Circuit Check"
Case 10:Check ESP/TCS/ABS control unit Circuit. Refer to LAN-415, "ESP/TCS/ABS Control Unit Circuit Check"
Case 11:Check Steering angle sensor Circuit. Refer to LAN-416, "Steering Angle Sensor Circuit Check"
Case 12:Check Smart entrance control unit Circuit. Refer to LAN-416, "Smart Entrance Control Unit Circuit Check"
Case 13:Check Combination meter Circuit. Refer to LAN-417, "Combination Meter Circuit Check"
Case 14:Check CAN communication Circuit. Refer to LAN-418, "CAN Communication Circuit Check"

Circuit Check Between TCM and ESP/TCS/ABS Control Unit

EKS0050O

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, control unit-side and harness-side)

- TCM.
- ESP/TCS/ABS control unit.
- Between TCM and ESP/TCS/ABS control unit.

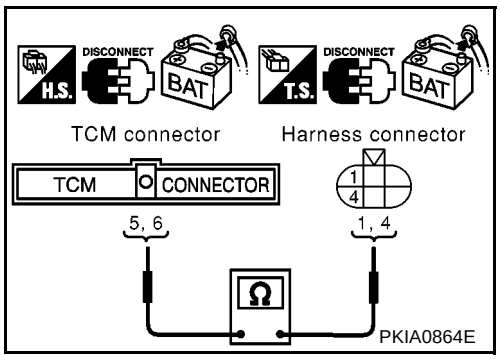
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect TCM connector and harness connector F31.
2. Check continuity between TCM harness connector F103 terminals 5 (L), 6 (R) and harness connector F31 terminals 1 (L), 4 (R).

5(L) – 1(L) : Continuity should exist.
6(R) – 4(R) : Continuity should exist.



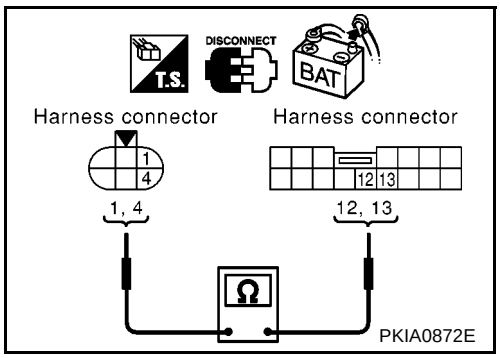
OK or NG

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

3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector E117.
2. Check continuity between harness connector E63 terminals 1 (L), 4 (R) and harness connector E117 terminals 13 (L), 12 (R).

1(L) – 13(L) : Continuity should exist.
4(R) – 12(R) : Continuity should exist.



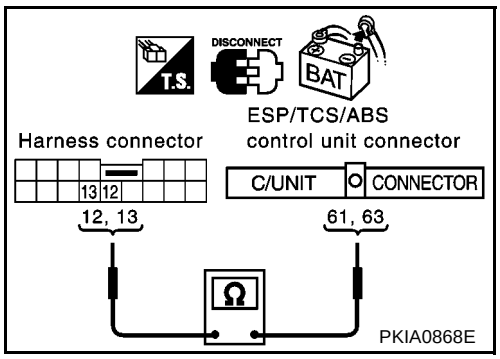
OK or NG

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

4. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ESP/TCS/ABS control unit connector.
2. Check continuity between harness connector B104 terminals 13 (L), 12 (R) and ESP/TCS/ABS control unit harness connector B109 terminals 61 (L), 63 (R).

13(L) – 61(L) : Continuity should exist.
12(R) – 63(R) : Continuity should exist.



OK or NG

OK >> Reconnect all connectors to perform “SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE”, “CVT”, “ABS”, and “SMART ENTRANCE” displayed on CONSULT-II. Refer to EC-1083, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) or EC-1505, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) for “ENGINE” and Refer to CVT-118, "DTC U1000 CAN COMMUNICATION LINE" (EURO-OBD) or CVT-201, "CAN COMMUNICATION LINE" (ALL) for “CVT”. Refer to BRC-107, "Inspection 15 CAN Communication Circuit, ESP/TCS/ABS Control Unit and Steering Angle Sensor" for “ABS”. Refer to BCS-40, "CAN Communication Line Check" for “SMART ENTRANCE”.
NG >> Repair harness.

Circuit Check Between ESP/TCS/ABS Control Unit and Steering Angle Sensor

EKS0050P

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. (sensor-side, control unit-side and harness-side)

- Steering angle sensor.
- ESP/TCS/ABS control unit.
- Between ESP/TCS/ABS control unit and steering angle sensor.

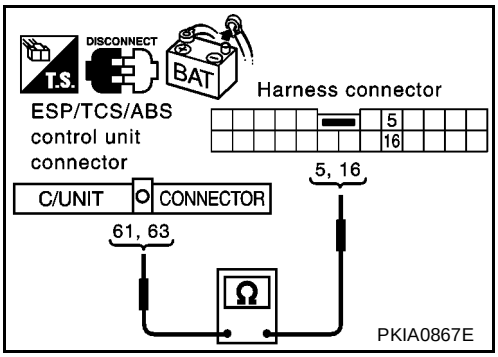
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ESP/TCS/ABS control unit connector and harness connector B101.
2. Check continuity between ESP/TCS/ABS control unit harness connector B109 terminals 61 (L), 63 (R) and harness connector B101 terminals 5 (L), 16 (R).

61(L) – 5(L) : Continuity should exist.
63(R) – 16(R) : Continuity should exist.



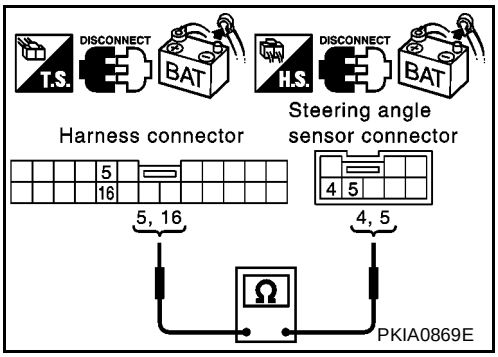
OK or NG

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

3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect steering angle sensor connector.
2. Check continuity between harness connector M87 terminals 5 (L), 16 (R) and steering angle sensor harness connector M33 terminals 4 (L), 5 (R).

5(L) – 4(L) : Continuity should exist.
16(R) – 5(R) : Continuity should exist.



OK or NG

OK >> Reconnect all connectors to perform “SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE”, “CVT”, “ABS”, and “SMART ENTRANCE” displayed on CONSULT-II. Refer to EC-1083, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) or EC-1505, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) for “ENGINE” and Refer to CVT-118, "DTC U1000 CAN COMMUNICATION LINE" (EURO-OBD) or CVT-201, "CAN COMMUNICATION LINE" (ALL) for “CVT”. Refer to BRC-107, "Inspection 15 CAN Communication Circuit, ESP/TCS/ABS Control Unit and Steering Angle Sensor" for “ABS”. Refer to BCS-40, "CAN Communication Line Check" for “SMART ENTRANCE”.
NG >> Repair harness.

Circuit Check Between Steering Angle Sensor and Smart Entrance Control Unit

EKS0050Q

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 unit-side, sensor-side and harness-side)

- Smart entrance control unit.
- Steering angle sensor.

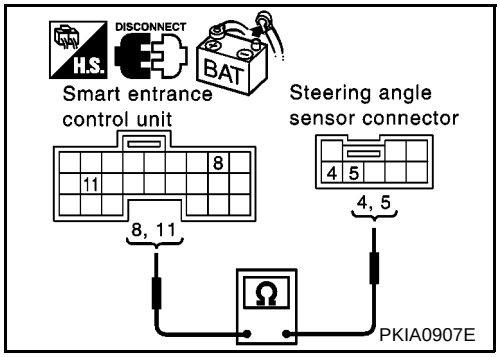
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect smart entrance control unit connector and steering angle sensor connector.
2. Check continuity between smart entrance control unit harness connector M41 terminals 8 (L), 11 (R) and steering angle sensor harness connector M33 terminals 4 (L), 5 (R).

8(L) – 4(L) : Continuity should exist.
11(R) – 5(R) : Continuity should exist.



OK or NG

OK >> Reconnect all connectors to perform “SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE”, “CVT”, “ABS”, and “SMART ENTRANCE” displayed on CONSULT-II. Refer to EC-1083, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) or EC-1505, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) for “ENGINE” and Refer to CVT-118, "DTC U1000 CAN COMMUNICATION LINE" (EURO-OBD) or CVT-201, "CAN COMMUNICATION LINE" (ALL) for “CVT”. Refer to BRC-107, "Inspection 15 CAN Communication Circuit, ESP/TCS/ABS Control Unit and Steering Angle Sensor" for “ABS”. Refer to BCS-40, "CAN Communication Line Check" for “SMART ENTRANCE”.
NG >> Repair harness.

ECM Circuit Check

EKS0050R

1. CHECK CONNECTOR

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

OK or NG

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

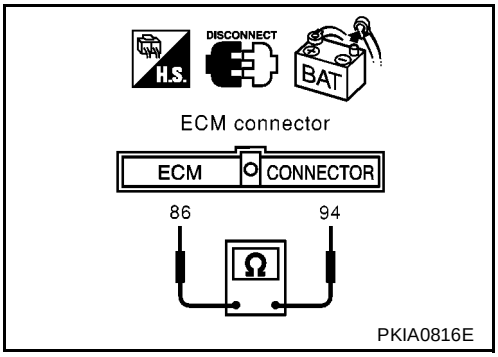
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ECM connector.
2. Check resistance between ECM harness connector F102 terminals 94(L) and 86(R).

94(L) – 86(R) **: Approx. 108 – 132Ω**

OK or NG

OK >> Replace ECM.
NG >> Repair harness between TCM and ECM.



TCM Circuit Check

EKS0050S

1. CHECK CONNECTOR

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

OK or NG

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

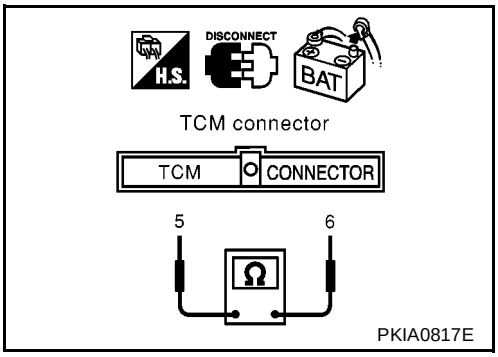
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect TCM connector.
2. Check resistance between TCM harness connector F103 terminals 5(L) and 6(R).

5(L) – 6(R) **: Approx. 54 – 66Ω**

OK or NG

OK >> Replace TCM.
NG >> Repair harness between TCM and ECM.



ESP/TCS/ABS Control Unit Circuit Check

EKS0050T

1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check following terminals and connector of ESP/TCS/ABS control unit for damage, bend and loose connection. (control unit-side and harness-side)

OK or NG

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

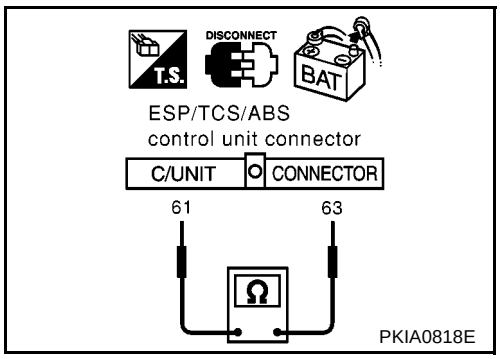
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ESP/TCS/ABS control unit connector.
2. Check resistance between ESP/TCS/ABS control unit harness connector B109 terminals 61(L) and 63(R).

61(L) – 63(R) : Approx. 54 – 66Ω

OK or NG

OK >> Replace ESP/TCS/ABS control unit.
NG >> Repair harness between Data link connector and ESP/TCS/ABS control unit.



Steering Angle Sensor Circuit Check

EKS0050U

1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check terminals and connector of steering angle sensor for damage, bend and loose connection. (sensor-side and harness-side)

OK or NG

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

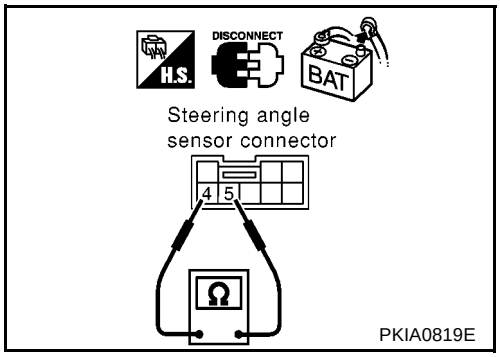
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect steering angle sensor connector.
2. Check resistance between steering angle sensor harness connector M33 terminals 4(L) and 5(R).

4(L) – 5(R) : Approx. 54 – 66Ω

OK or NG

OK >> Replace steering angle sensor.
NG >> Repair harness between steering angle sensor and smart entrance control unit.



Smart Entrance Control Unit Circuit Check

EKS0050V

1. CHECK CONNECTOR

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

OK or NG

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

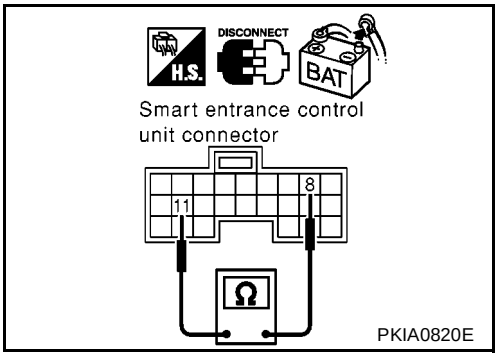
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect smart entrance control unit connector.
2. Check resistance between smart entrance control unit harness connector M41 terminals 8(L) and 11(R).

8(L) – 11(R) : Approx. 54 – 66Ω

OK or NG

OK >> Replace smart entrance control unit.
NG >> Repair harness between steering angle sensor and smart entrance control unit.



Combination Meter Circuit Check

EKS0050W

1. CHECK CONNECTOR

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

OK or NG

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

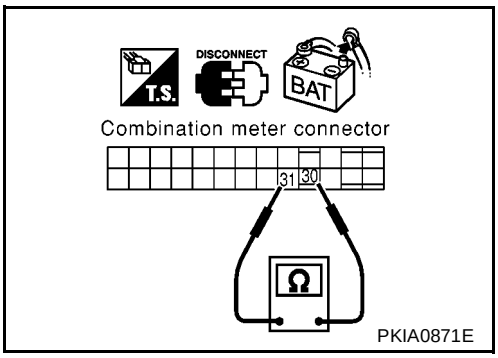
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect combination meter connector.
2. Check resistance between combination meter harness connector M37 terminals 30(L) and 31(R).

30(L) – 31(R) : Approx. 108 – 132Ω

OK or NG

OK >> Replace combination meter.
NG >> Repair harness between smart entrance control unit and combination meter.



CAN Communication Circuit Check

EKS0050X

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. (meter-side, control unit-side, sensor-side, control module-side and harness-side)

- Combination meter.
- Smart entrance control unit.
- Steering angle sensor.
- ESP/TCS/ABS control unit.
- TCM.
- ECM.
- Between Data link connector and ECM.

OK or NG

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

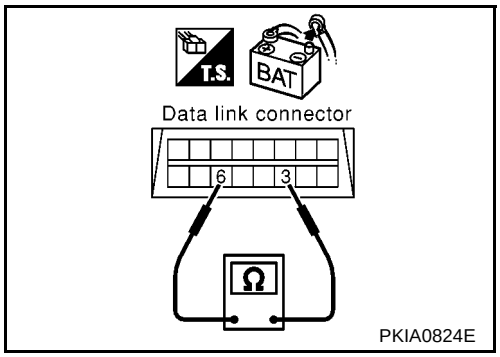
2. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect the following connectors.

- Combination meter connector.
- Smart entrance control unit connector.
- Steering angle sensor connector.
- Harness connector M87.

2. Check continuity between Data link connector M10 terminals 6 (L) and 3(R).

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



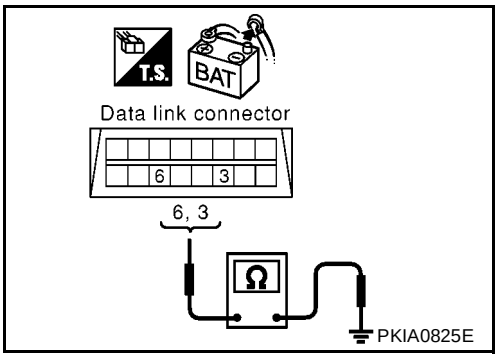
OK or NG

OK >> GO TO 3.
NG >>
- Repair harness between smart entrance control unit and combination meter.
- Repair harness between smart entrance control unit and steering angle sensor.
- Repair harness between Data link connector and steering angle sensor.
- Repair harness between Data link connector and harness connector M87.

3. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between Data link connector M10 terminals 6 (L), 3(R) and ground.

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



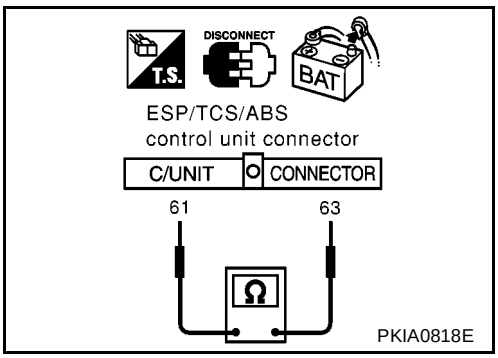
OK or NG

OK >> GO TO 4.
NG >>
- Repair harness between smart entrance control unit and combination meter.
- Repair harness between smart entrance control unit and steering angle sensor.
- Repair harness between Data link connector and steering angle sensor.
- Repair harness between Data link connector and harness connector M87.

4. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect ESP/TCS/ABS control unit connector and harness connector B104.
2. Check continuity between ESP/TCS/ABS control unit harness connector B109 terminals 61 (L) and 63(R).

61(L) – 63(R) : Continuity should not exist.



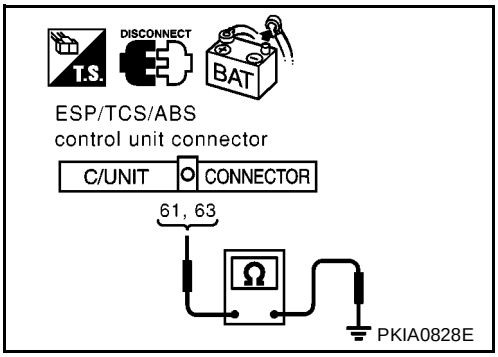
OK or NG

OK >> GO TO 5.
NG >>
- Repair harness between ESP/TCS/ABS control unit and harness connector B101.
- Repair harness between harness connector B104 and harness connector B101.

5. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ESP/TCS/ABS control unit harness connector B109 terminals 61 (L), 63 (R) and ground.

61(L) – ground : Continuity should not exist.
63(R) – ground : Continuity should not exist.



OK or NG

OK >> GO TO 6.
NG >>
- Repair harness between ESP/TCS/ABS control unit and harness connector B101.
- Repair harness between harness connector B104 and harness connector B101.

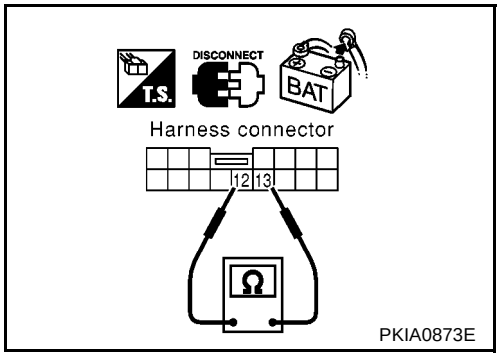
6. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect harness connector E63.
2. Check continuity between harness connector E117 terminals 13 (L) and 12(R).

13(L) – 12(R) : Continuity should not exist.

OK or NG

OK >> GO TO 7.
NG >> Repair harness between harness connector E117 and harness connector E63.



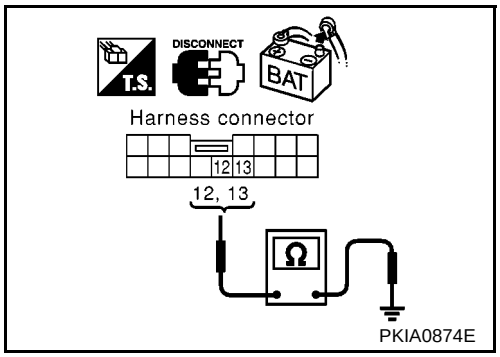
7. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between harness connector E117 terminals 13 (L) and 12(R) and ground.

13(L) – ground : Continuity should not exist.
12(R) – ground : Continuity should not exist.

OK or NG

OK >> GO TO 8.
NG >> Repair harness between harness connector E117 and harness connector E63.



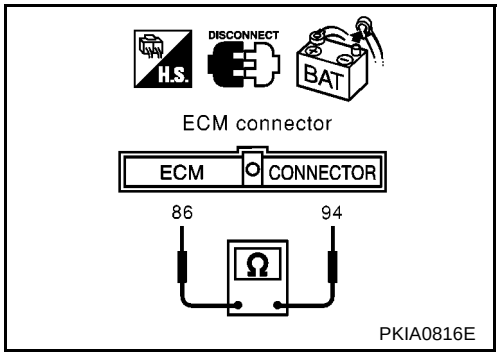
8. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect ECM connector and TCM connector.
2. Check continuity between ECM harness connector F102 terminals 94 (L) and 86(R).

94(L) – 86(R) : Continuity should not exist.

OK or NG

OK >> GO TO 9.
NG >> ● Repair harness between ECM and harness connector F31.
● Repair harness between TCM and harness connector F31.



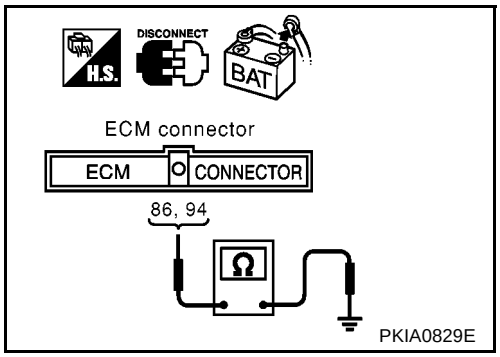
9. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ECM harness connector F102 terminals 94 (L), 86 (R) and ground.

94(L) – ground : Continuity should not exist.
86(R) – ground : Continuity should not exist.

OK or NG

OK >> GO TO 10.
NG >> ● Repair harness between ECM and harness connector F31.
● Repair harness between TCM and harness connector F31.



10. ECM / COMBINATION METER INTERNAL CIRCUIT INSPECTION

Check components inspection. Refer to LAN-421, "ECM / COMBINATION METER INTERNAL CIRCUIT INSPECTION"

OK or NG

OK >> Reconnect all connectors to perform “SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE”, “CVT”, “ABS”, and “SMART ENTRANCE” displayed on CONSULT-II. Refer to EC-1083, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) or EC-1505, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) for “ENGINE” and Refer to CVT-118, "DTC U1000 CAN COMMUNICATION LINE" (EURO-OBD) or CVT-201, "CAN COMMUNICATION LINE" (ALL) for “CVT”. Refer to BRC-107, "Inspection 15 CAN Communication Circuit, ESP/TCS/ABS Control Unit and Steering Angle Sensor" for “ABS”. Refer to BCS-40, "CAN Communication Line Check" for “SMART ENTRANCE”.

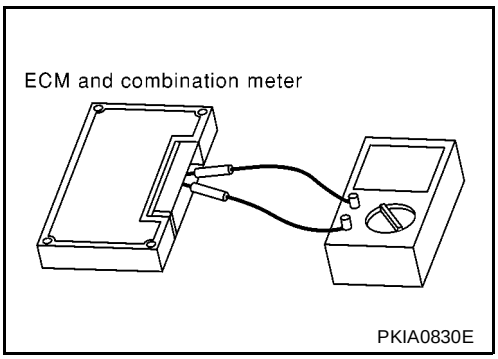
NG >> Replace ECM and/or Combination meter.

Component Inspection

EKS0050Y

ECM / COMBINATION METER INTERNAL CIRCUIT INSPECTION

- Remove ECM and Combination meter from vehicle.
- Check resistance between ECM terminals 94 and 86.
- Check resistance between Combination meter terminals 30 and 31.



Unit	Terminal	Resistance value (Ω)
ECM	94 – 86	Approx. 108 - 132
Combination meter	30 – 31	

CAN SYSTEM (TYPE 21)

PFP:23710

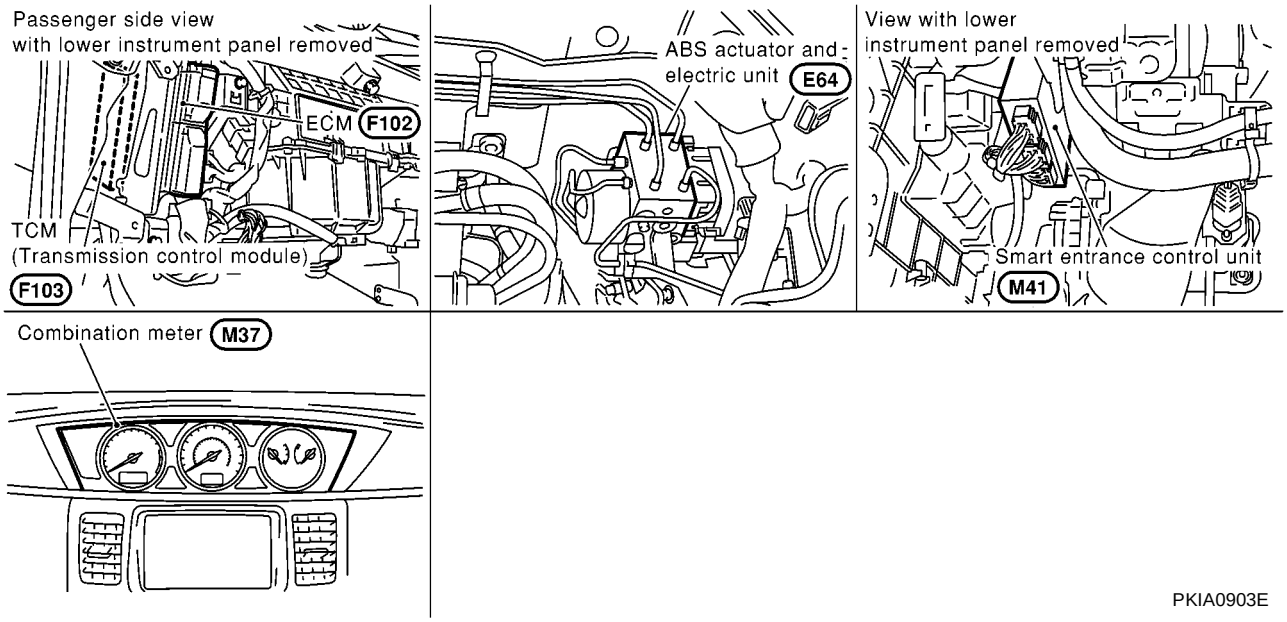
System Description

EKS00507

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.

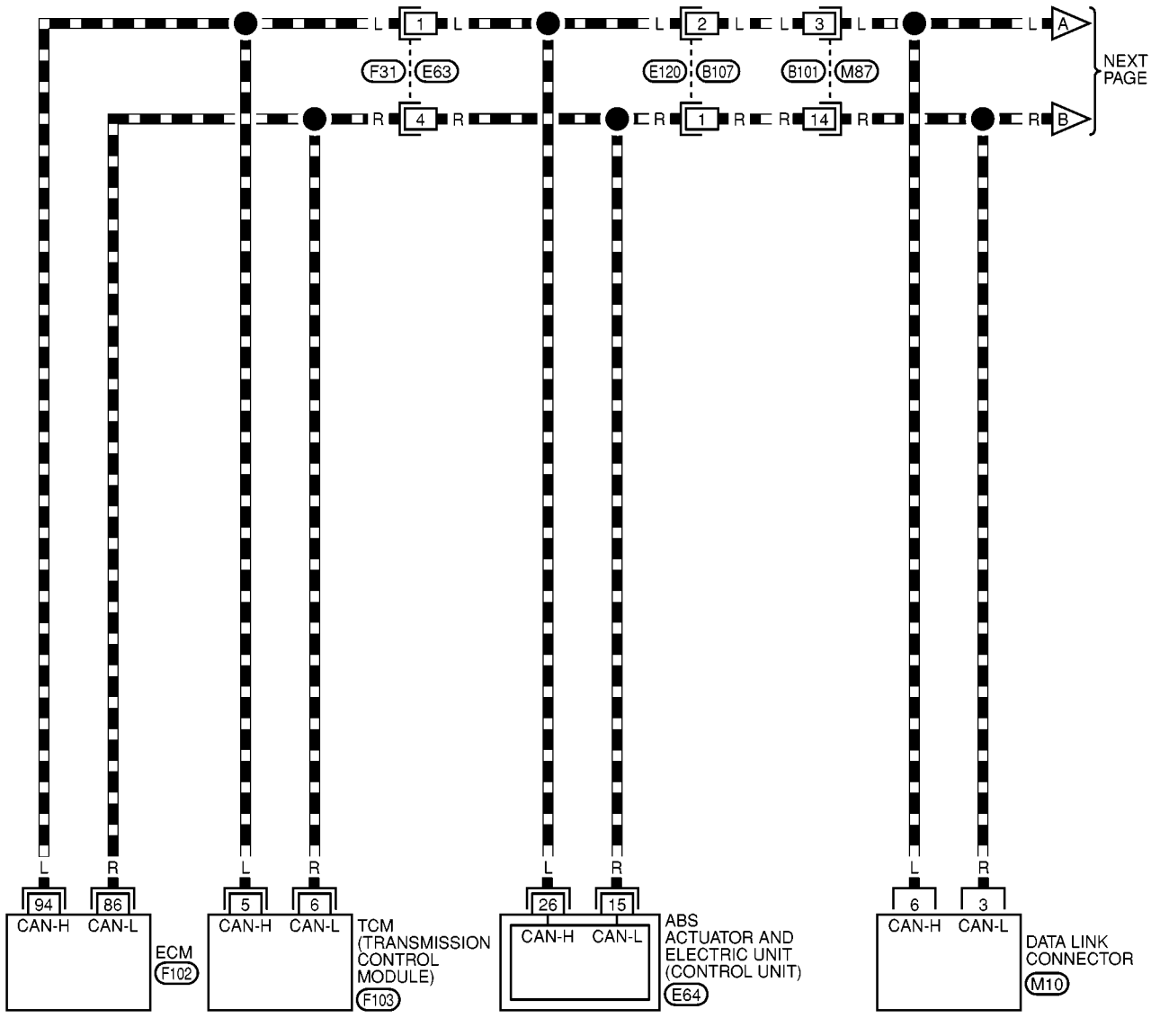
Component Parts and Harness Connector Location

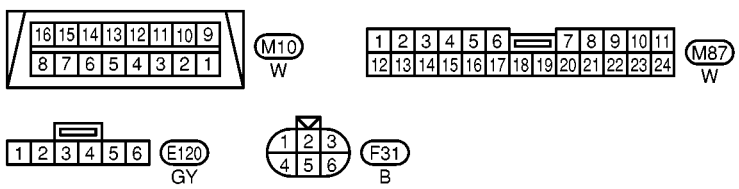
EKS00508



Wiring Diagram — CAN —

EKS00509



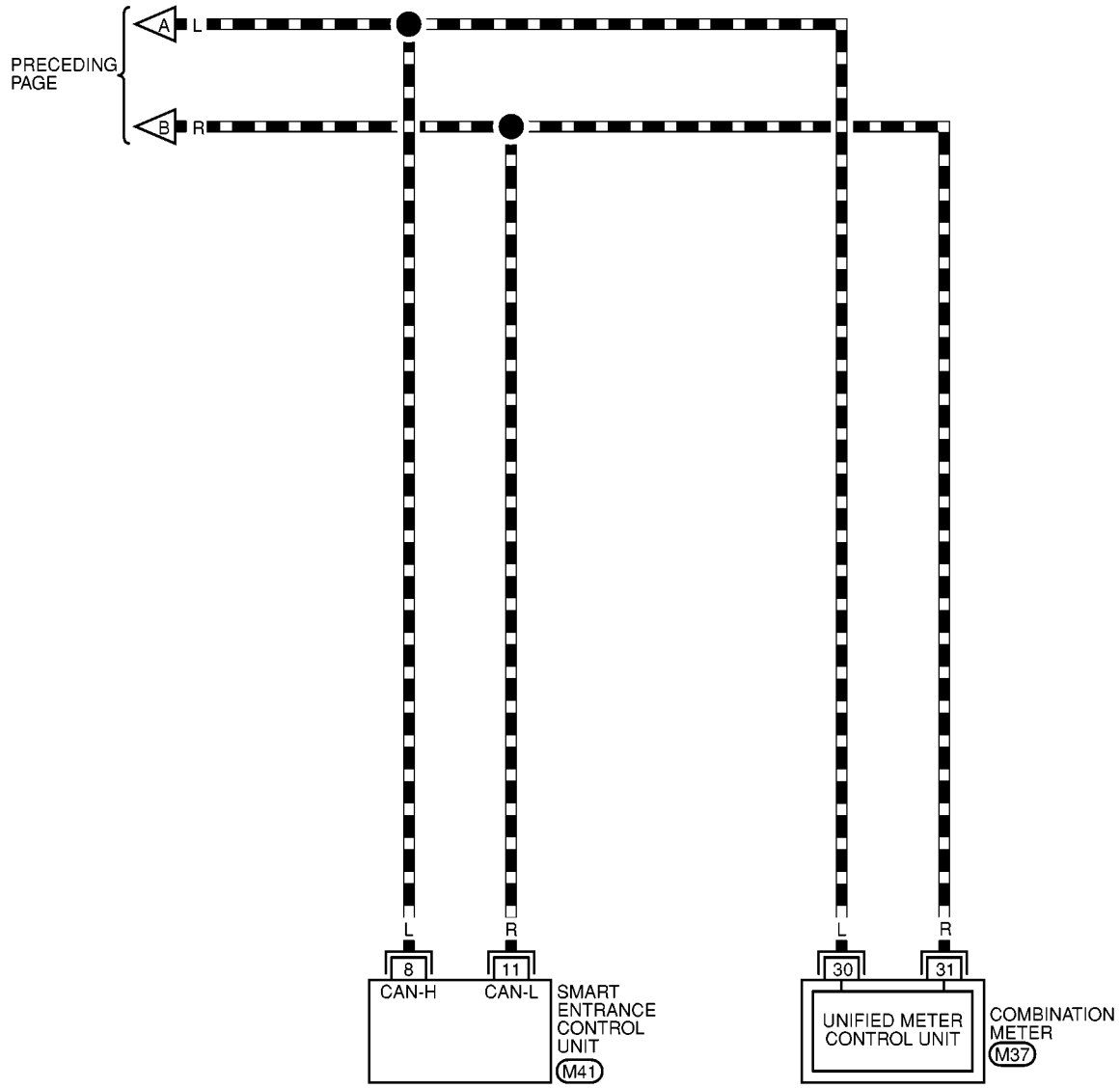


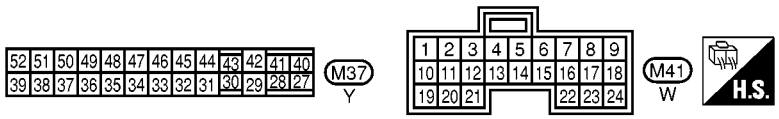
REFER TO THE FOLLOWING.
E64 , F102 , F103
-ELECTRICAL UNITS

MKWA0382E

LAN-CAN-46

: DATA LINE





MKWA0383E

Work Flow

EKS0050A

1. Print all the data of “SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE”, “CVT”, “ABS”, and “SMART ENTRANCE” displayed on CONSULT-II. Refer to EC-1083, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) or EC-1505, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) for “ENGINE” and Refer to CVT-118, "DTC U1000 CAN COMMUNICATION LINE" (EURO-OBD) or CVT-201, "CAN COMMUNICATION LINE" (ALL) for “CVT”. Refer to BRC-33, "CAN Communication Circuit" for “ABS”. Refer to BCS-40, "CAN Communication Line Check" for “SMART ENTRANCE”.
2. Attach the printed sheet of “SELF-DIAG RESULTS” and “DATA MONITOR” onto the check sheet. Refer to LAN-426, "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-426, "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-427, "CHECK SHEET RESULTS (EXAMPLE)"

CHECK SHEET

Check sheet table

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 6	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 3

Symptoms:

Attach copy of
ENGINE
SELF-DIAG RESULTS

Attach copy of
CVT
SELF-DIAG RESULTS

Attach copy of
ABS
SELF-DIAG RESULTS

Attach copy of
SMART ENTRANCE
SELF-DIAG RESULTS

Attach copy of
ENGINE
DATA MONITOR

Attach copy of
CVT
DATA MONITOR

Attach copy of
ABS
DATA MONITOR

Attach copy of
SMART ENTRANCE
DATA MONITOR

PKIA0799E

CHECK SHEET RESULTS (EXAMPLE)

Case 1: Replace ECM

ENGINE	CAN COMM ✓	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 6	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 3

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2 ✓	–	CAN CIRC 6 ✓	CAN CIRC 4 ✓
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 3

Case 2: Replace TCM

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2 ✓	–	CAN CIRC 6	CAN CIRC 4
CVT	CAN COMM ✓	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 3

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 6	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	–	CAN CIRC 3 ✓	–	CAN CIRC 4 ✓
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 3

Case 3: Replace ABS actuator and electric unit (control unit)

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 6	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3 ✓	–	CAN CIRC 4
ABS	CAN COMM ✓	CAN CIRC 1	CAN CIRC 2	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 3

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 6	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 3

Case 4: Replace Smart entrance control unit

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 6	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–
SMART ENTRANCE	CAN COMM ✓	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 3

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 6	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	–	–	–	CAN CIRC 3 ✓

Case 5

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 6 ✓	CAN CIRC 4 ✓
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3 ✓	–	CAN CIRC 4 ✓
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	–	–	–	CAN CIRC 3

PKIA0800E

Case 6

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 6 ✓	CAN CIRC 4 ✓
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	CAN CIRC 4 ✓
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	–	–	–	CAN CIRC 3

Case 7

ENGINE	CAN COMM	CAN CIRC 1 ✓	–	CAN CIRC 2 ✓	–	CAN CIRC 6 ✓	CAN CIRC 4 ✓
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	–	CAN CIRC 3	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	–	–	–	CAN CIRC 3

Case 8

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2 ✓	–	CAN CIRC 6	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1 ✓	CAN CIRC 2 ✓	–	CAN CIRC 3 ✓	–	CAN CIRC 4 ✓
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 3

Case 9

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 6	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3 ✓	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1 ✓	CAN CIRC 2 ✓	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 3

Case 10

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 6 ✓	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1 ✓	CAN CIRC 2 ✓	–	–	–	CAN CIRC 3 ✓

Case 11

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 6	CAN CIRC 4 ✓
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	CAN CIRC 4 ✓
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 3 ✓

Case 12

ENGINE	CAN COMM	CAN CIRC 1 ✓	–	CAN CIRC 2 ✓	–	CAN CIRC 6 ✓	CAN CIRC 4 ✓
CVT	CAN COMM	CAN CIRC 1 ✓	CAN CIRC 2 ✓	–	CAN CIRC 3 ✓	–	CAN CIRC 4 ✓
ABS	CAN COMM	CAN CIRC 1 ✓	CAN CIRC 2 ✓	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1 ✓	CAN CIRC 2 ✓	–	–	–	CAN CIRC 3 ✓

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

INSPECTION

Proceed trouble diagnosis according to the check sheet results (example).
Case 1:Replace ECM.
Case 2:Replace TCM.
Case 3:Replace ABS actuator and electric unit (control unit).
Case 4:Replace Smart entrance control unit.
Case 5:Check Harness between TCM and ABS actuator and electric unit (control unit). Refer to LAN-429, "Circuit Check Between TCM and ABS Actuator and Electric Unit (control unit)"
Case 6:Check Harness between ABS actuator and electric unit (control unit) and Smart entrance control unit. Refer to LAN-430, "Circuit Check Between ABS Actuator and Electric Unit (control unit) and Smart Entrance Control Unit"
Case 7:Check ECM Circuit. Refer to LAN-431, "ECM Circuit Check"
Case 8:Check TCM Circuit. Refer to LAN-432, "TCM Circuit Check"
Case 9:Check ABS actuator and electric unit (control unit) Circuit. Refer to LAN-432, "ABS Actuator and Electric Unit (control unit) Circuit Check"
Case 10:Check Smart entrance control unit Circuit. Refer to LAN-433, "Smart Entrance Control Unit Circuit Check"
Case 11:Check Combination meter Circuit. Refer to LAN-433, "Combination Meter Circuit Check"
Case 12:Check CAN communication Circuit. Refer to LAN-434, "CAN Communication Circuit Check"

Circuit Check Between TCM and ABS Actuator and Electric Unit (control unit)

EKS0050B

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, control unit-side and harness-side)

- TCM.
- ABS actuator and electric unit (control unit).
- Between TCM and ABS actuator and electric unit (control unit).

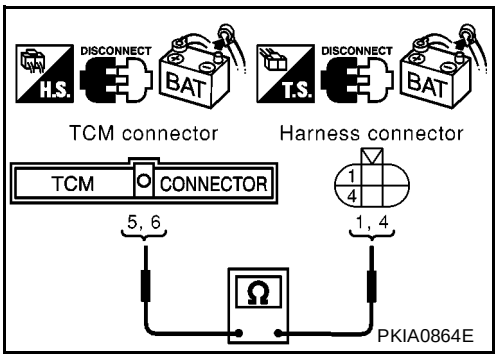
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect TCM connector and harness connector F31.
2. Check continuity between TCM harness connector F103 terminals 5 (L), 6 (R) and harness connector F31 terminals 1 (L), 4 (R).

5(L) – 1(L) : Continuity should exist.
6(R) – 4(R) : Continuity should exist.



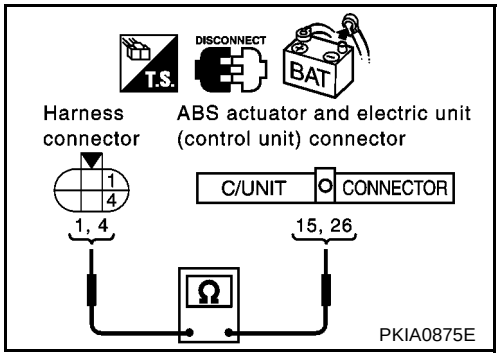
OK or NG

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

3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector.
2. Check continuity between harness connector E63 terminals 1 (L), 4 (R) and ABS actuator and electric unit (control unit) harness connector E64 terminals 26 (L), 15 (R).

1(L) – 26(L) : Continuity should exist.
4(R) – 15(R) : Continuity should exist.



OK or NG

OK >> Reconnect all connectors to perform “SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE”, “CVT”, “ABS”, and “SMART ENTRANCE” displayed on CONSULT-II. Refer to EC-1083, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) or EC-1505, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) for “ENGINE” and Refer to CVT-118, "DTC U1000 CAN COMMUNICATION LINE" (EURO-OBD) or CVT-201, "CAN COMMUNICATION LINE" (ALL) for “CVT”. Refer to BRC-33, "CAN Communication Circuit" for “ABS”. Refer to BCS-40, "CAN Communication Line Check" for “SMART ENTRANCE”.

NG >> Repair harness.

Circuit Check Between ABS Actuator and Electric Unit (control unit) and Smart Entrance Control Unit

EKS0050C

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 unit-side and harness-side)

- Smart entrance control unit.
- ABS actuator and electric unit (control unit).
- Between smart entrance control unit and ABS actuator and electric unit (control unit).

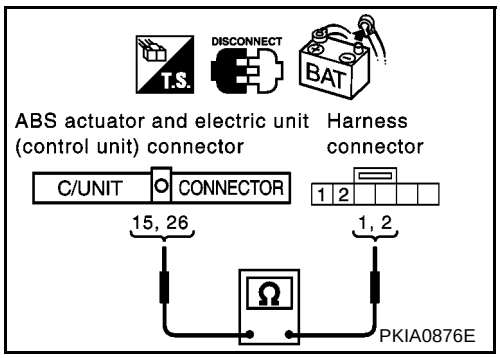
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector and harness connector E120.
2. Check continuity between ABS actuator and electric unit (control unit) harness connector E64 terminals 26 (L), 15 (R) and harness connector E120 terminals 2 (L), 1 (R).

26(L) – 2(L) : Continuity should exist.
15(R) – 1(R) : Continuity should exist.



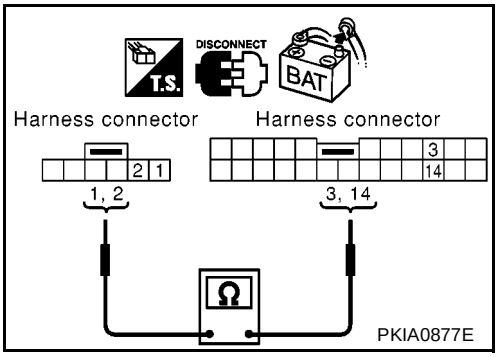
OK or NG

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

3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector B101.
2. Check continuity between harness connector B107 terminals 2 (L), 1 (R) and harness connector B101 terminals 3 (L), 14 (R).

2(L) – 3(L) : Continuity should exist.
1(R) – 14(R) : Continuity should exist.



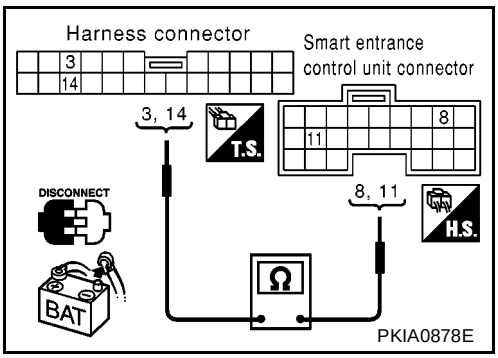
OK or NG

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

4. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect smart entrance control unit connector.
2. Check continuity between harness connector M87 terminals 3 (L), 14 (R) and smart entrance control unit harness connector M41 terminals 8 (L), 11 (R).

3(L) – 8(L) : Continuity should exist.
14(R) – 11(R) : Continuity should exist.



OK or NG

OK >> Reconnect all connectors to perform “SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE”, “CVT”, “ABS”, and “SMART ENTRANCE” displayed on CONSULT-II. Refer to EC-1083, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) or EC-1505, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) for “ENGINE” and Refer to CVT-118, "DTC U1000 CAN COMMUNICATION LINE" (EURO-OBD) or CVT-201, "CAN COMMUNICATION LINE" (ALL) for “CVT”. Refer to BRC-33, "CAN Communication Circuit" for “ABS”. Refer to BCS-40, "CAN Communication Line Check" for “SMART ENTRANCE”.
NG >> Repair harness.

ECM Circuit Check

EKS0050D

1. CHECK CONNECTOR

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

OK or NG

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

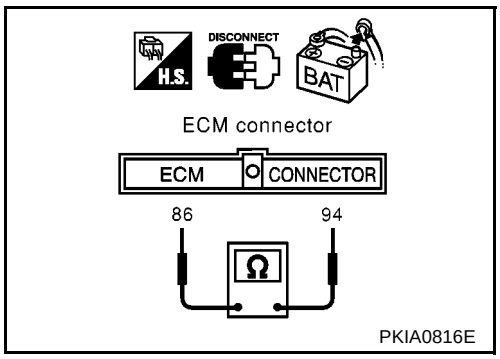
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ECM connector.
2. Check resistance between ECM harness connector F102 terminals 94(L) and 86(R).

94(L) – 86(R) **: Approx. 108 – 132Ω**

OK or NG

OK >> Replace ECM.
NG >> Repair harness between TCM and ECM.



TCM Circuit Check

EKS0050E

1. CHECK CONNECTOR

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

OK or NG

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

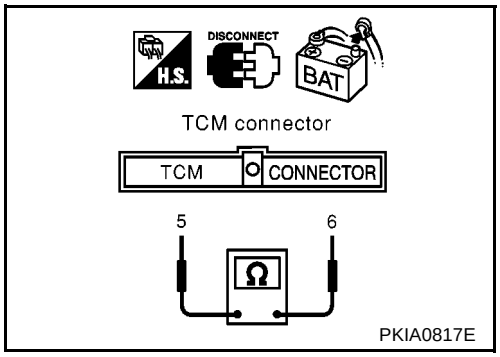
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect TCM connector.
2. Check resistance between TCM harness connector F103 terminals 5(L) and 6(R).

5(L) – 6(R) **: Approx. 54 – 66Ω**

OK or NG

OK >> Replace TCM.
NG >> Repair harness between TCM and ECM.



ABS Actuator and Electric Unit (control unit) Circuit Check

EKS0050F

1. CHECK CONNECTOR

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

OK or NG

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

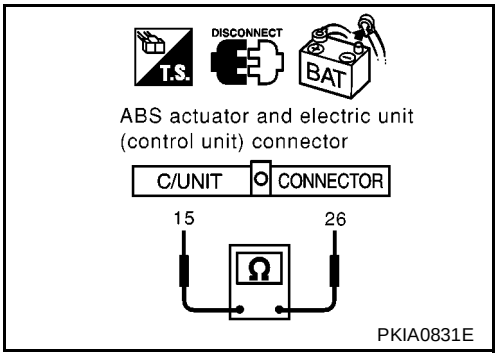
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector.
2. Check resistance between ABS actuator and electric unit (control unit) harness connector E64 terminals 26(L) and 15(R).

26(L) – 15(R) : Approx. 54 – 66Ω

OK or NG

OK >> Replace ABS actuator and electric unit (control unit).
NG >> Repair harness between Data link connector and ABS actuator and electric unit (control unit).



Smart Entrance Control Unit Circuit Check

EKS0050G

1. CHECK CONNECTOR

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

OK or NG

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

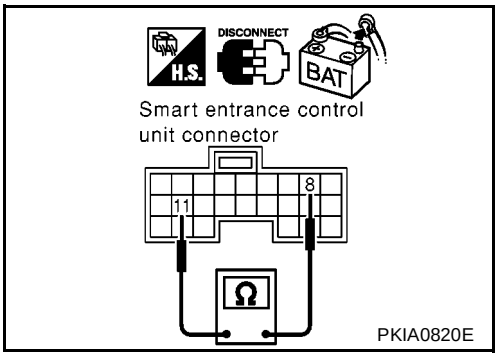
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect smart entrance control unit connector.
2. Check resistance between smart entrance control unit harness connector M41 terminals 8(L) and 11(R).

8(L) – 11(R) : Approx. 54 – 66Ω

OK or NG

OK >> Replace smart entrance control unit.
NG >> Repair harness between Data link connector and smart entrance control unit.



Combination Meter Circuit Check

EKS0050H

1. CHECK CONNECTOR

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

OK or NG

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

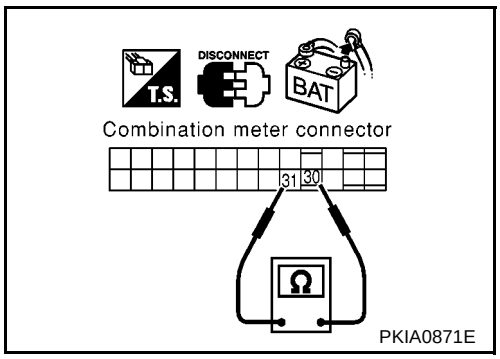
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect combination meter connector.
2. Check resistance between combination meter harness connector M37 terminals 30(L) and 31(R).

30(L) – 31(R) : Approx. 108 – 132Ω

OK or NG

OK >> Replace combination meter.
NG >> Repair harness between smart entrance control unit and combination meter.



CAN Communication Circuit Check

EKS0050I

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. (meter-side, control unit-side, control module-side and harness-side)

- Combination meter.
- Smart entrance control unit.
- ABS actuator and electric unit (control unit).
- TCM.
- ECM.
- Between Data link connector and ECM.

OK or NG

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

2. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect the following connectors.

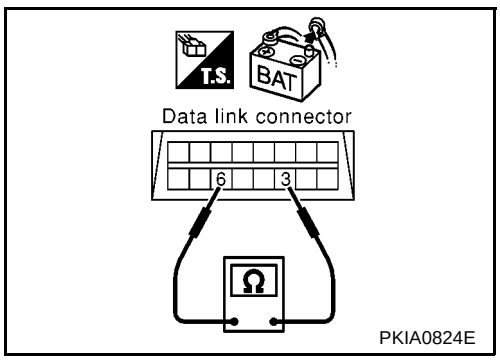
– Combination meter connector.
– Smart entrance control unit connector.
– Harness connector M87.

2. Check continuity between Data link connector M10 terminals 6 (L) and 3(R).

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

OK or NG

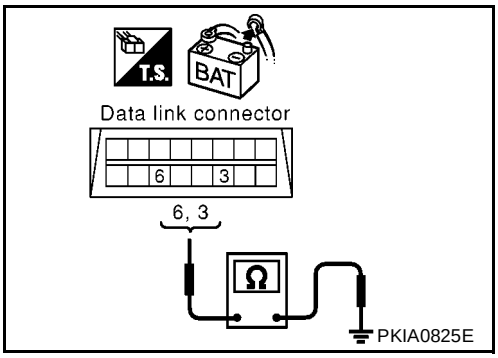
OK >> GO TO 3.
NG >>
- Repair harness between smart entrance control unit and combination meter.
- Repair harness between Data link connector and smart entrance control unit.
- Repair harness between Data link connector and harness connector M87.



3. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between Data link connector M10 terminals 6 (L), 3(R) and ground.

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



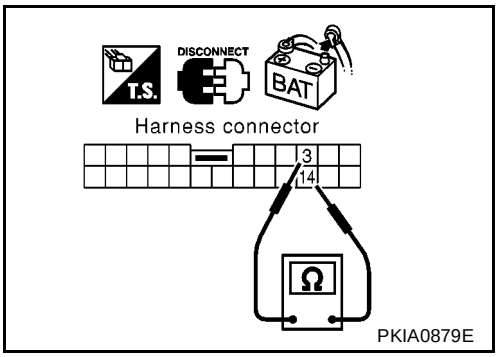
OK or NG

OK >> GO TO 4.
NG >>
- Repair harness between smart entrance control unit and combination meter.
- Repair harness between Data link connector and smart entrance control unit.
- Repair harness between Data link connector and harness connector M87.

4. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect harness connector B107.
2. Check continuity between harness connector B101 terminals 3 (L) and 14(R).

3(L) – 14(R) : Continuity should not exist.



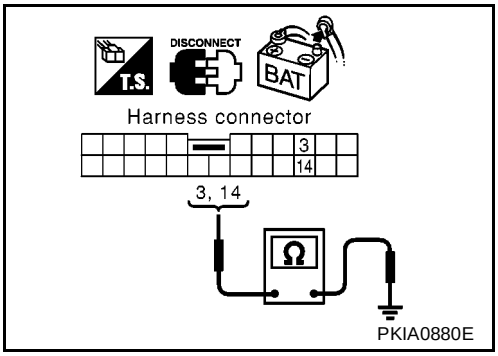
OK or NG

OK >> GO TO 5.
NG >> Repair harness between harness connector B101 and harness connector B107.

5. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between harness connector B101 terminals 3 (L), 14(R) and ground

3(L) – ground : Continuity should not exist.
14(R) – ground : Continuity should not exist.



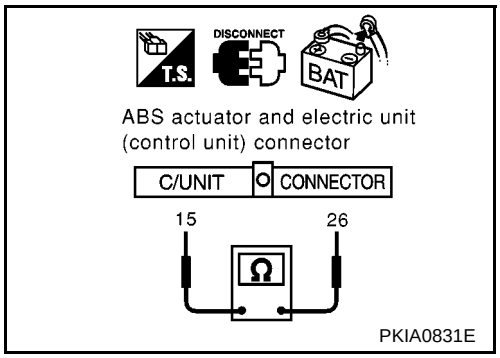
OK or NG

OK >> GO TO 6.
NG >> Repair harness between harness connector B101 and harness connector B107.

6. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect the following connectors.
- ABS actuator and electric unit (control unit) connector.
- Harness connector E63.
2. Check continuity between ABS actuator and electric unit (control unit) harness connector E64 terminals 26 (L) and 15(R).

26(L) – 15(R) : Continuity should not exist.



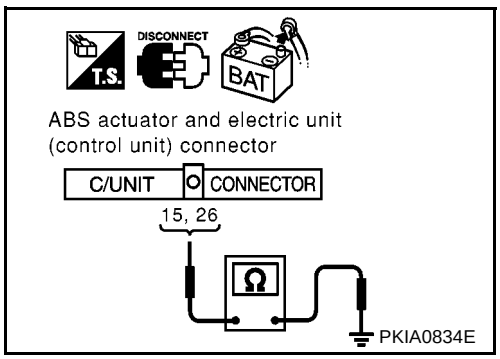
OK or NG

OK >> GO TO 7.
NG >> ● Repair harness between ABS actuator and electric unit (control unit) and harness connector E120.
● Repair harness between harness connector E120 and harness connector E63.

7. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ABS actuator and electric unit (control unit) harness connector E64 terminals 26 (L), 15 (R) and ground.

26(L) – ground : Continuity should not exist.
15(R) – ground : Continuity should not exist.



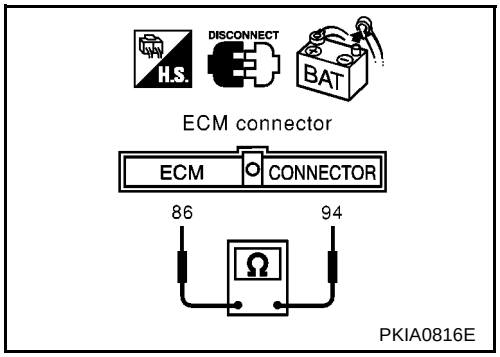
OK or NG

OK >> GO TO 8.
NG >> ● Repair harness between ABS actuator and electric unit (control unit) and harness connector E120.
● Repair harness between harness connector E120 and harness connector E63.

8. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect ECM connector and TCM connector.
2. Check continuity between ECM harness connector F102 terminals 94 (L) and 86(R).

94(L) – 86(R) : Continuity should not exist.



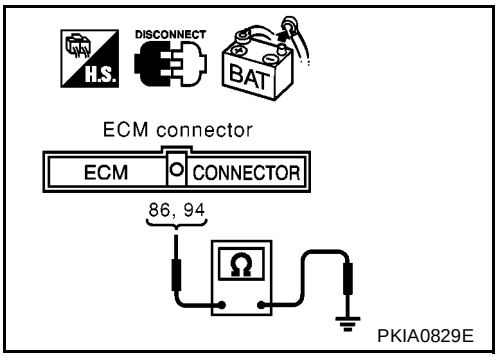
OK or NG

OK >> GO TO 9.
NG >> ● Repair harness between ECM and harness connector F31.
● Repair harness between TCM and harness connector F31.

9. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ECM harness connector F102 terminals 94 (L), 86 (R) and ground.

94(L) – ground : Continuity should not exist.
86(R) – ground : Continuity should not exist.



OK or NG

OK >> GO TO 10.
NG >>
- Repair harness between ECM and harness connector F31.
- Repair harness between TCM and harness connector F31.

10. ECM / COMBINATION METER INTERNAL CIRCUIT INSPECTION

Check components inspection. Refer to LAN-437, "ECM / COMBINATION METER INTERNAL CIRCUIT INSPECTION"

OK or NG

OK >> Reconnect all connectors to perform “SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE”, “CVT”, “ABS”, and “SMART ENTRANCE” displayed on CONSULT-II. Refer to EC-1083, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) or EC-1505, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) for “ENGINE” and Refer to CVT-118, "DTC U1000 CAN COMMUNICATION LINE" (EURO-OBD) or CVT-201, "CAN COMMUNICATION LINE" (ALL) for “CVT”. Refer to BRC-33, "CAN Communication Circuit" for “ABS”. Refer to BCS-40, "CAN Communication Line Check" for “SMART ENTRANCE”.
NG >> Replace ECM and/or Combination meter.

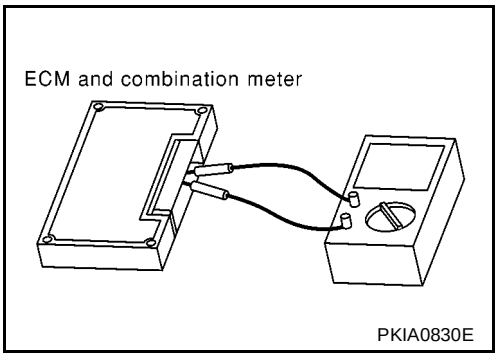
Component Inspection

EKS0050J

ECM / COMBINATION METER INTERNAL CIRCUIT INSPECTION

- Remove ECM and Combination meter from vehicle.
- Check resistance between ECM terminals 94 and 86.
- Check resistance between Combination meter terminals 30 and 31.

Unit	Terminal	Resistance value (Ω)
ECM	94 – 86	Approx. 108 - 132
Combination meter	30 – 31	



CAN SYSTEM (TYPE 22)

PFP:23710

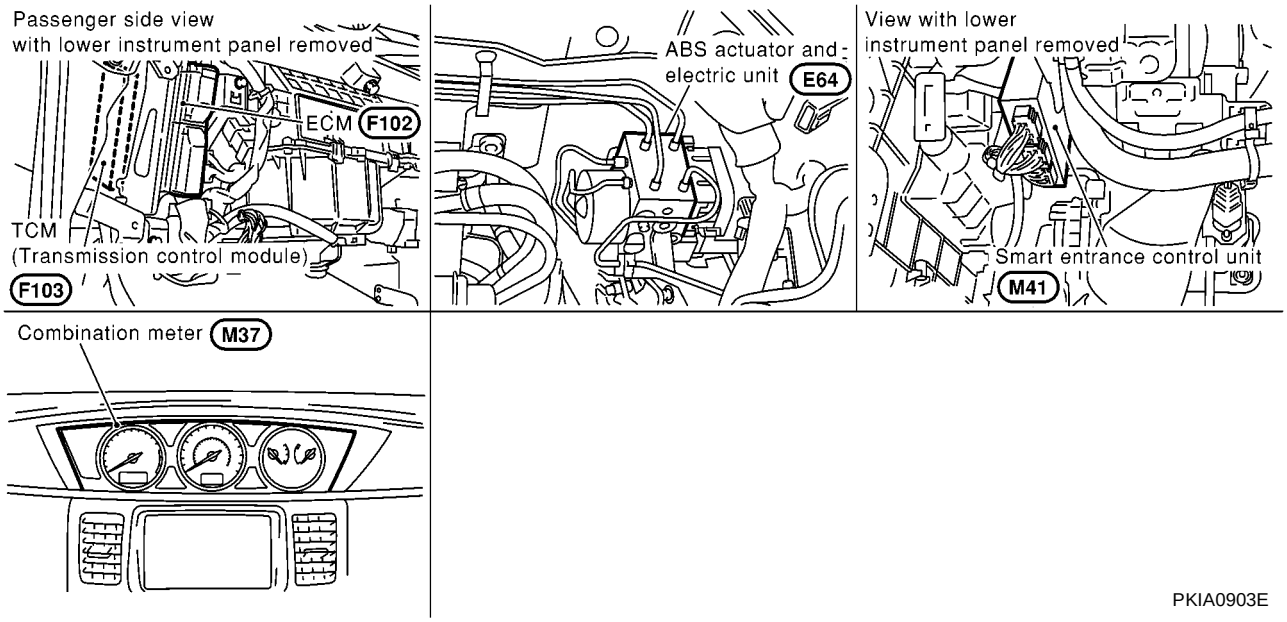
System Description

EKS004ZT

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.

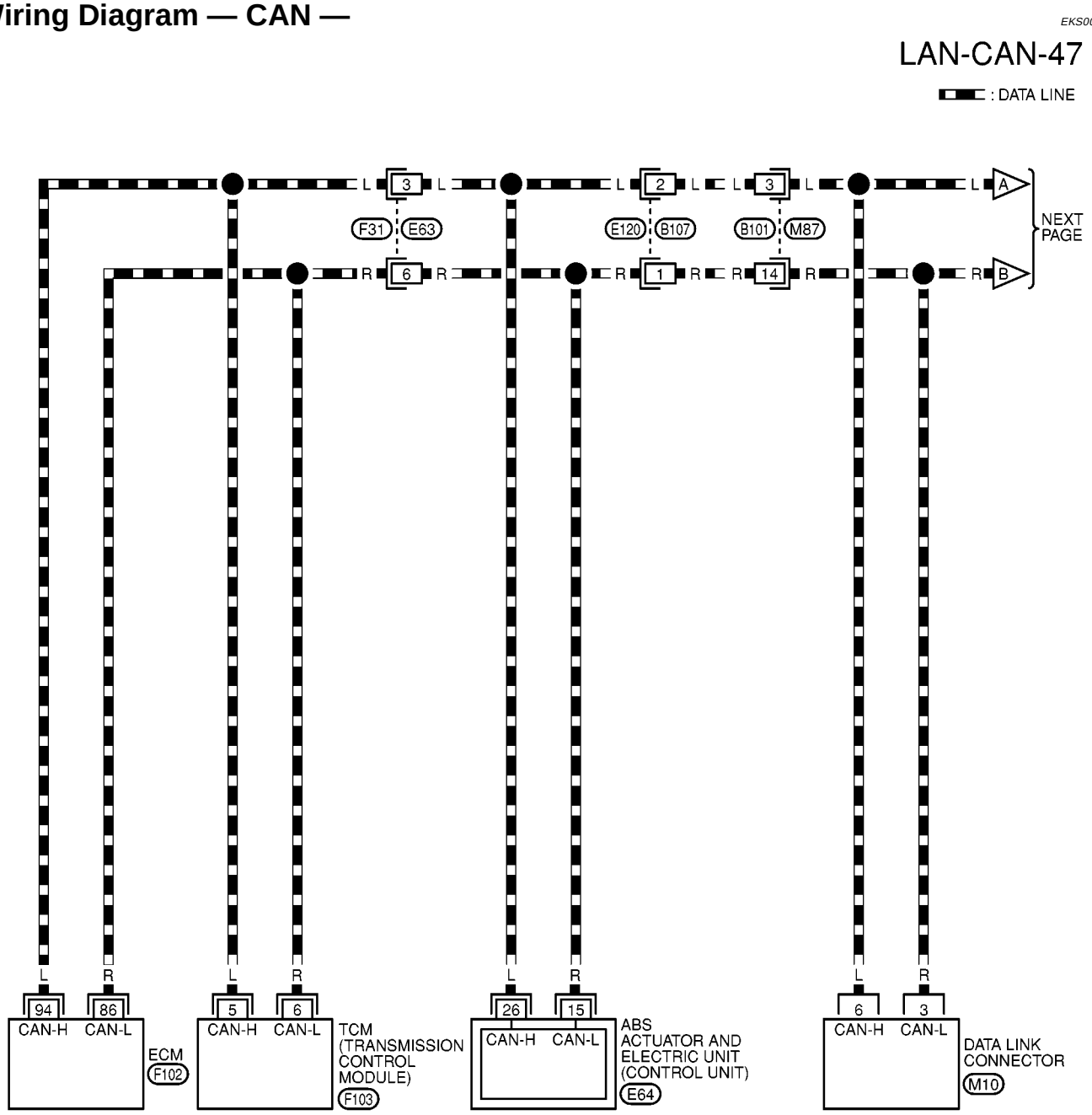
Component Parts and Harness Connector Location

EKS004ZU



Wiring Diagram — CAN —

EKS004ZV

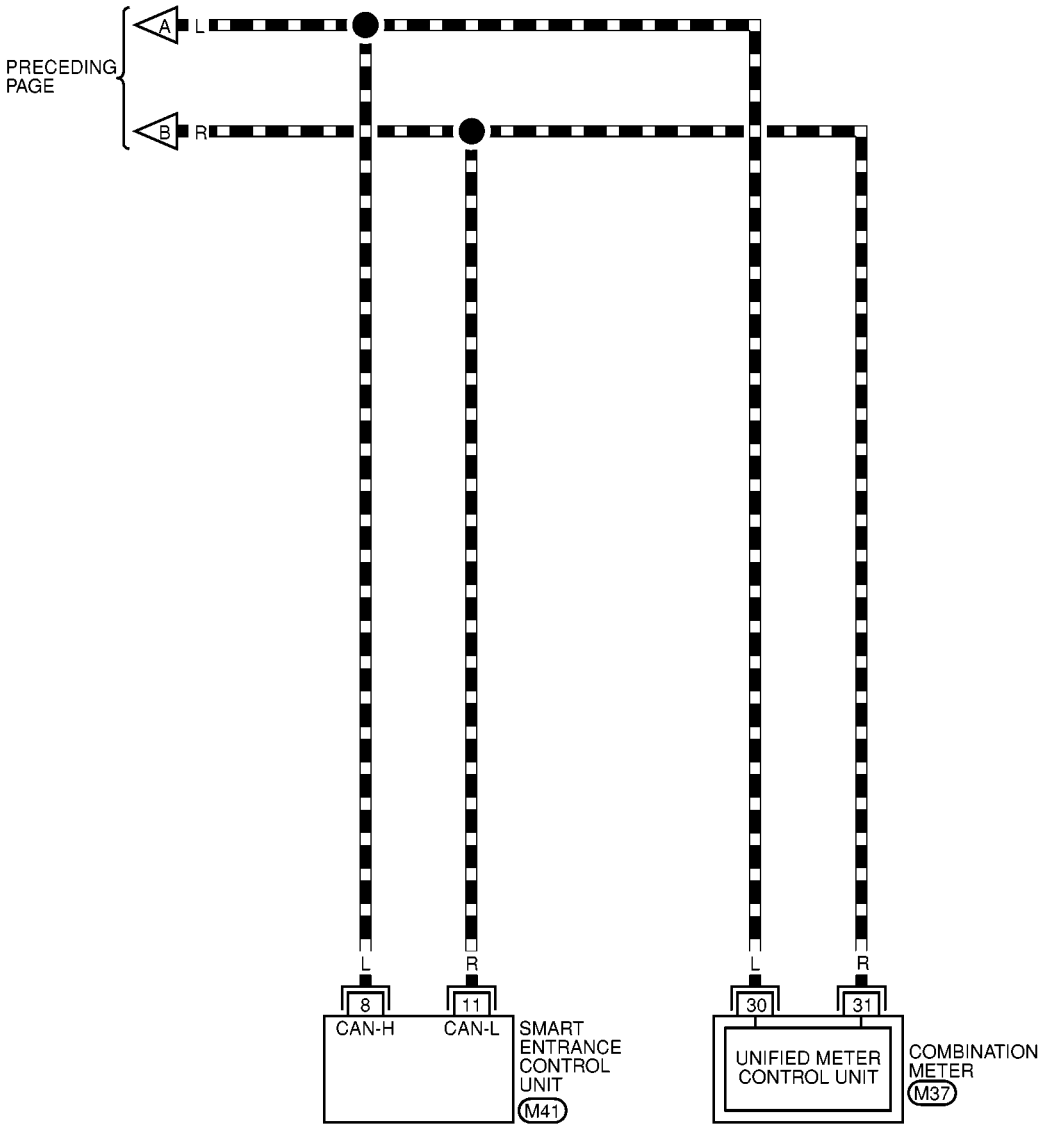


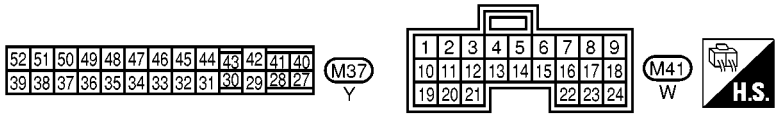
REFER TO THE FOLLOWING.
E64 , F102 , F103
-ELECTRICAL UNITS

MKWA0384E

LAN-CAN-48

: DATA LINE





MKWA0385E

Work Flow

EKS004ZW

1. Print all the data of “SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE”, “A/T”, “ABS”, and “SMART ENTRANCE” displayed on CONSULT-II. Refer to EC-150, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) or EC-663, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) for “ENGINE” and Refer to AT-190, "DTC U1000 CAN COMMUNICATION LINE" (EURO-OBD) or AT-393, "CAN COMMUNICATION LINE" (ALL) for “A/T”. Refer to BRC-33, "CAN Communication Circuit" for “ABS”. Refer to BCS-40, "CAN Communication Line Check" for “SMART ENTRANCE”.
2. Attach the printed sheet of “SELF-DIAG RESULTS” and “DATA MONITOR” onto the check sheet. Refer to LAN-442, "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-442, "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-443, "CHECK SHEET RESULTS (EXAMPLE)"

CHECK SHEET

Check sheet table

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 6	CAN CIRC 4
A/T	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 3

Symptoms:

Attach copy of
ENGINE
SELF-DIAG RESULTS

Attach copy of
A/T
SELF-DIAG RESULTS

Attach copy of
ABS
SELF-DIAG RESULTS

Attach copy of
SMART ENTRANCE
SELF-DIAG RESULTS

Attach copy of
ENGINE
DATA MONITOR

Attach copy of
A/T
DATA MONITOR

Attach copy of
ABS
DATA MONITOR

Attach copy of
SMART ENTRANCE
DATA MONITOR

PKIA0802E

CHECK SHEET RESULTS (EXAMPLE)

Case 1: Replace ECM

ENGINE	CAN COMM ✓	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 6	CAN CIRC 4
A/T	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 3

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2 ✓	–	CAN CIRC 6 ✓	CAN CIRC 4 ✓
A/T	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 3

Case 2: Replace TCM

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2 ✓	–	CAN CIRC 6	CAN CIRC 4
A/T	CAN COMM ✓	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 3

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 6	CAN CIRC 4
A/T	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	–	–	–	CAN CIRC 4 ✓
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 3

Case 3: Replace ABS actuator and electric unit (control unit)

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 6	CAN CIRC 4
A/T	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 4
ABS	CAN COMM ✓	CAN CIRC 1	CAN CIRC 2	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 3

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 6	CAN CIRC 4
A/T	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 3

Case 4: Replace Smart entrance control unit

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 6	CAN CIRC 4
A/T	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–
SMART ENTRANCE	CAN COMM ✓	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 3

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 6	CAN CIRC 4
A/T	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	–	–	–	CAN CIRC 3 ✓

Case 5

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 6 ✓	CAN CIRC 4 ✓
A/T	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 4 ✓
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	–	–	–	CAN CIRC 3

PKIA0803E

Case 6

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 6 ✓	CAN CIRC 4 ✓
A/T	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 4 ✓
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	–	–	–	CAN CIRC 3

Case 7

ENGINE	CAN COMM	CAN CIRC 1 ✓	–	CAN CIRC 2 ✓	–	CAN CIRC 6 ✓	CAN CIRC 4 ✓
A/T	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	–	–	–	CAN CIRC 3

Case 8

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2 ✓	–	CAN CIRC 6	CAN CIRC 4
A/T	CAN COMM	CAN CIRC 1 ✓	CAN CIRC 2 ✓	–	–	–	CAN CIRC 4 ✓
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 3

Case 9

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 6	CAN CIRC 4
A/T	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1 ✓	CAN CIRC 2 ✓	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 3

Case 10

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 6 ✓	CAN CIRC 4
A/T	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1 ✓	CAN CIRC 2 ✓	–	–	–	CAN CIRC 3 ✓

Case 11

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	–	CAN CIRC 6	CAN CIRC 4 ✓
A/T	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 4 ✓
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 3 ✓

Case 12

ENGINE	CAN COMM	CAN CIRC 1 ✓	–	CAN CIRC 2 ✓	–	CAN CIRC 6 ✓	CAN CIRC 4 ✓
A/T	CAN COMM	CAN CIRC 1 ✓	CAN CIRC 2 ✓	–	–	–	CAN CIRC 4 ✓
ABS	CAN COMM	CAN CIRC 1 ✓	CAN CIRC 2 ✓	–	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1 ✓	CAN CIRC 2 ✓	–	–	–	CAN CIRC 3 ✓

PKIA0804E

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

INSPECTION

Proceed trouble diagnosis according to the check sheet results (example).
Case 1:Replace ECM.
Case 2:Replace TCM.
Case 3:Replace ABS actuator and electric unit (control unit).
Case 4:Replace Smart entrance control unit.
Case 5:Check Harness between TCM and ABS actuator and electric unit (control unit). Refer to LAN-445, "Circuit Check Between TCM and ABS Actuator and Electric Unit (control unit)"
Case 6:Check Harness between ABS actuator and electric unit (control unit) and Smart entrance control unit. Refer to LAN-446, "Circuit Check Between ABS Actuator and Electric Unit (control unit) and Smart Entrance Control Unit"
Case 7:Check ECM Circuit. Refer to LAN-447, "ECM Circuit Check"
Case 8:Check TCM Circuit. Refer to LAN-448, "TCM Circuit Check"
Case 9:Check ABS actuator and electric unit (control unit) Circuit. Refer to LAN-448, "ABS Actuator and Electric Unit (control unit) Circuit Check"
Case 10:Check Smart entrance control unit Circuit. Refer to LAN-449, "Smart Entrance Control Unit Circuit Check"
Case 11:Check Combination meter Circuit. Refer to LAN-449, "Combination Meter Circuit Check"
Case 12:Check CAN communication Circuit. Refer to LAN-450, "CAN Communication Circuit Check"

Circuit Check Between TCM and ABS Actuator and Electric Unit (control unit)

EKS004ZX

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, control unit-side and harness-side)

- TCM.
- ABS actuator and electric unit (control unit).
- Between TCM and ABS actuator and electric unit (control unit).

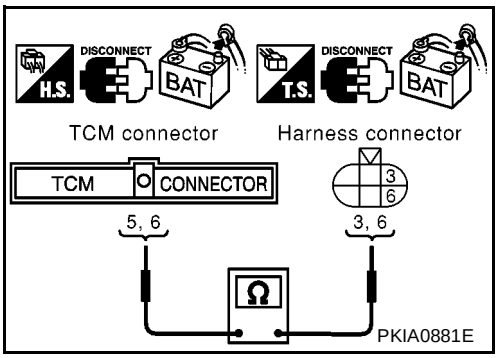
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect TCM connector and harness connector F31.
2. Check continuity between TCM harness connector F103 terminals 5 (L), 6 (R) and harness connector F31 terminals 3 (L), 6 (R).

5(L) – 3(L) : Continuity should exist.
6(R) – 6(R) : Continuity should exist.

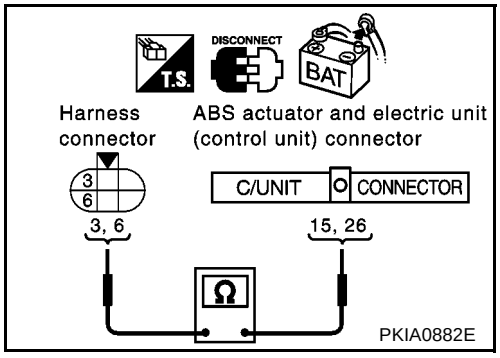


OK or NG

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

3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector.
2. Check continuity between harness connector E63 terminals 3 (L), 6 (R) and ABS actuator and electric unit (control unit) harness connector E64 terminals 26 (L), 15 (R).



3(L) – 26(L) : Continuity should exist.

6(R) – 15(R) : Continuity should exist.

OK or NG

OK >> Reconnect all connectors to perform “SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE”, “A/T”, “ABS”, and “SMART ENTRANCE” displayed on CONSULT-II. Refer to EC-150, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) or EC-663, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) for “ENGINE” and Refer to AT-190, "DTC U1000 CAN COMMUNICATION LINE" (EURO-OBD) or AT-393, "CAN COMMUNICATION LINE" (ALL) for “A/T”. Refer to BRC-33, "CAN Communication Circuit" for “ABS”. Refer to BCS-40, "CAN Communication Line Check" for “SMART ENTRANCE”.

NG >> Repair harness.

Circuit Check Between ABS Actuator and Electric Unit (control unit) and Smart Entrance Control Unit

EKS00506

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 unit-side and harness-side)

- Smart entrance control unit.
- ABS actuator and electric unit (control unit).
- Between smart entrance control unit and ABS actuator and electric unit (control unit).

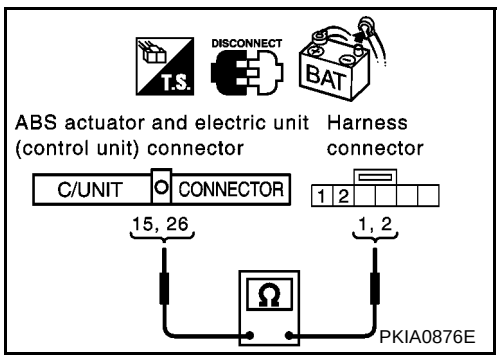
OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector and harness connector E120.
2. Check continuity between ABS actuator and electric unit (control unit) harness connector E64 terminals 26 (L), 15 (R) and harness connector E120 terminals 2 (L), 1 (R).



26(L) – 2(L) : Continuity should exist.

15(R) – 1(R) : Continuity should exist.

OK or NG

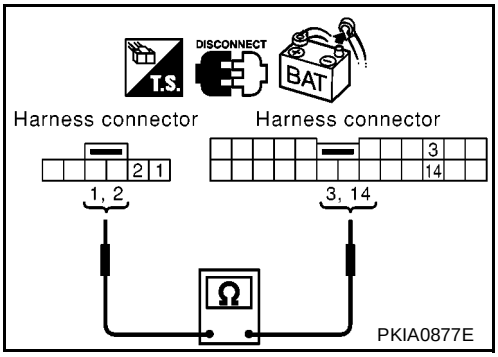
OK >> GO TO 3.

NG >> Repair harness.

3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector B101.
2. Check continuity between harness connector B107 terminals 2 (L), 1 (R) and harness connector B101 terminals 3 (L), 14 (R).

2(L) – 3(L) : Continuity should exist.
1(R) – 14(R) : Continuity should exist.



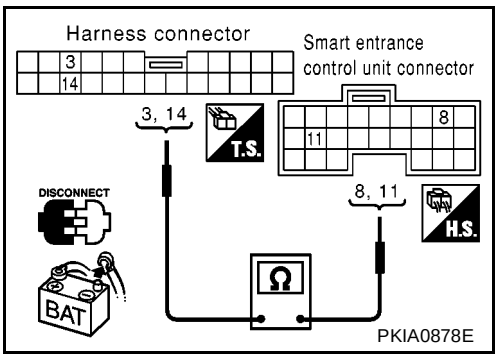
OK or NG

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

4. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect smart entrance control unit connector.
2. Check continuity between harness connector M87 terminals 3 (L), 14 (R) and smart entrance control unit harness connector M41 terminals 8 (L), 11 (R).

3(L) – 8(L) : Continuity should exist.
14(R) – 11(R) : Continuity should exist.



OK or NG

OK >> Reconnect all connectors to perform “SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE”, “A/T”, “ABS”, and “SMART ENTRANCE” displayed on CONSULT-II. Refer to EC-150, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) or EC-663, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) for “ENGINE” and Refer to AT-190, "DTC U1000 CAN COMMUNICATION LINE" (EURO-OBD) or AT-393, "CAN COMMUNICATION LINE" (ALL) for “A/T”. Refer to BRC-33, "CAN Communication Circuit" for “ABS”. Refer to BCS-40, "CAN Communication Line Check" for “SMART ENTRANCE”.
NG >> Repair harness.

ECM Circuit Check

EKS004ZZ

1. CHECK CONNECTOR

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

OK or NG

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

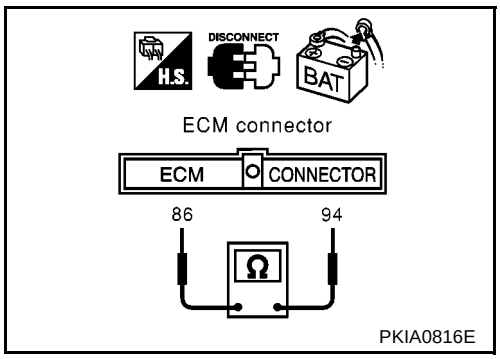
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ECM connector.
2. Check resistance between ECM harness connector F102 terminals 94(L) and 86(R).

94(L) – 86(R) **: Approx. 108 – 132Ω**

OK or NG

OK >> Replace ECM.
NG >> Repair harness between TCM and ECM.



TCM Circuit Check

EKS00500

1. CHECK CONNECTOR

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

OK or NG

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

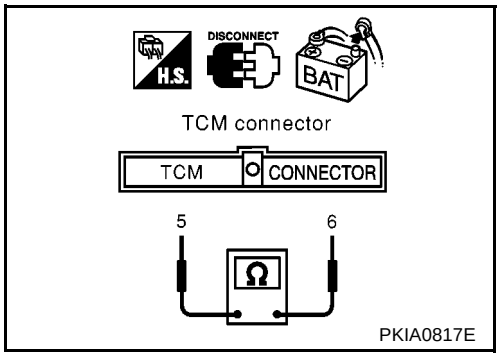
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect TCM connector.
2. Check resistance between TCM harness connector F103 terminals 5(L) and 6(R).

5(L) – 6(R) **: Approx. 54 – 66Ω**

OK or NG

OK >> Replace TCM.
NG >> Repair harness between TCM and ECM.



ABS Actuator and Electric Unit (control unit) Circuit Check

EKS00501

1. CHECK CONNECTOR

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

OK or NG

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

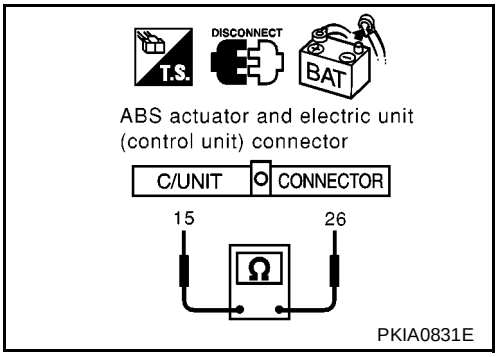
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector.
2. Check resistance between ABS actuator and electric unit (control unit) harness connector E64 terminals 26(L) and 15(R).

26(L) – 15(R) : Approx. 54 – 66Ω

OK or NG

OK >> Replace ABS actuator and electric unit (control unit).
NG >> Repair harness between Data link connector and ABS actuator and electric unit (control unit).



Smart Entrance Control Unit Circuit Check

EKS00502

1. CHECK CONNECTOR

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

OK or NG

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

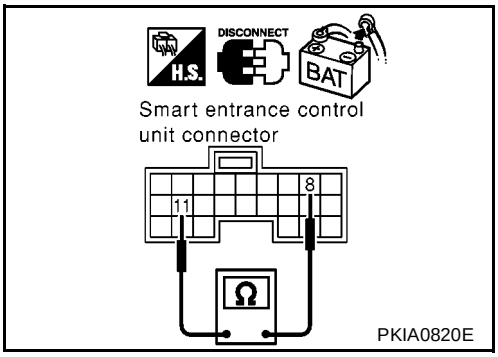
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect smart entrance control unit connector.
2. Check resistance between smart entrance control unit harness connector M41 terminals 8(L) and 11(R).

8(L) – 11(R) : Approx. 54 – 66Ω

OK or NG

OK >> Replace smart entrance control unit.
NG >> Repair harness between Data link connector and smart entrance control unit.



Combination Meter Circuit Check

EKS00503

1. CHECK CONNECTOR

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

OK or NG

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

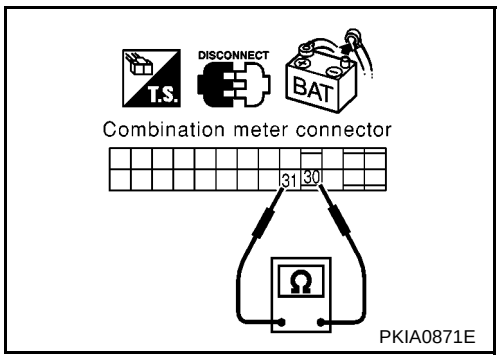
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect combination meter connector.
2. Check resistance between combination meter harness connector M37 terminals 30(L) and 31(R).

30(L) – 31(R) : Approx. 108 – 132Ω

OK or NG

OK >> Replace combination meter.
NG >> Repair harness between smart entrance control unit and combination meter.



CAN Communication Circuit Check

EKS00504

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. (meter-side, control unit-side, control module-side and harness-side)

- Combination meter.
- Smart entrance control unit.
- ABS actuator and electric unit (control unit).
- TCM.
- ECM.
- Between Data link connector and ECM.

OK or NG

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

2. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect the following connectors.

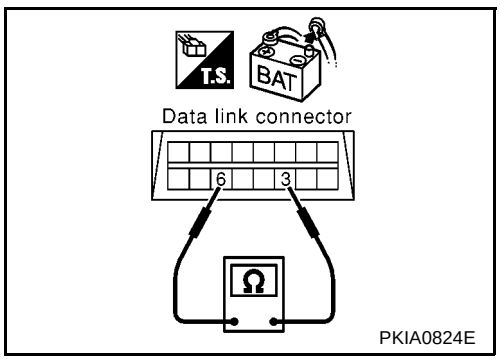
– Combination meter connector.
– Smart entrance control unit connector.
– Harness connector M87.

2. Check continuity between Data link connector M10 terminals 6 (L) and 3(R).

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

OK or NG

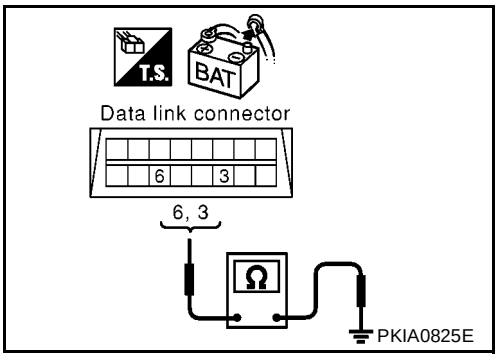
OK >> GO TO 3.
NG >>
- Repair harness between smart entrance control unit and combination meter.
- Repair harness between Data link connector and smart entrance control unit.
- Repair harness between Data link connector and harness connector M87.



3. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between Data link connector M10 terminals 6 (L), 3(R) and ground.

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



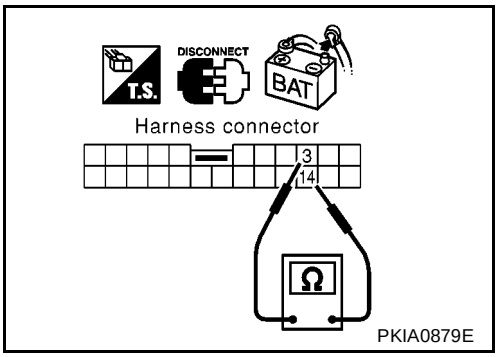
OK or NG

OK >> GO TO 4.
NG >>
- Repair harness between smart entrance control unit and combination meter.
- Repair harness between Data link connector and smart entrance control unit.
- Repair harness between Data link connector and harness connector M87.

4. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect harness connector B107.
2. Check continuity between harness connector B101 terminals 3 (L) and 14(R).

3(L) – 14(R) : Continuity should not exist.



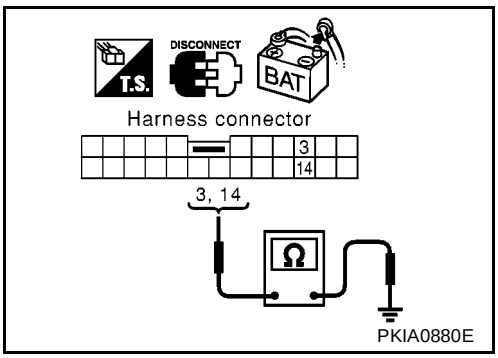
OK or NG

OK >> GO TO 5.
NG >> Repair harness between harness connector B101 and harness connector B107.

5. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between harness connector B101 terminals 3 (L), 14(R) and ground

3(L) – ground : Continuity should not exist.
14(R) – ground : Continuity should not exist.



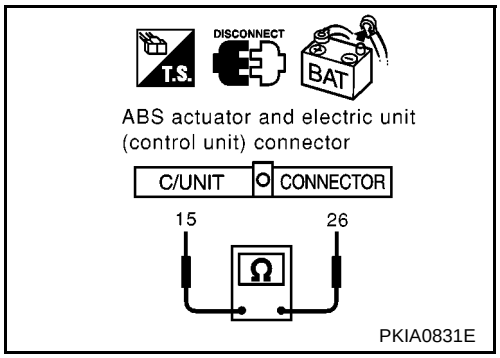
OK or NG

OK >> GO TO 6.
NG >> Repair harness between harness connector B101 and harness connector B107.

6. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect the following connectors.
- ABS actuator and electric unit (control unit) connector.
- Harness connector E63.
2. Check continuity between ABS actuator and electric unit (control unit) harness connector E64 terminals 26 (L) and 15(R).

26(L) – 15(R) : Continuity should not exist.



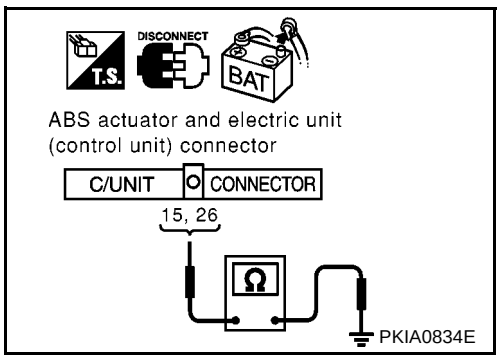
OK or NG

OK >> GO TO 7.
NG >>
- Repair harness between ABS actuator and electric unit (control unit) and harness connector E120.
- Repair harness between harness connector E120 and harness connector E63.

7. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ABS actuator and electric unit (control unit) harness connector E64 terminals 26 (L), 15 (R) and ground.

26(L) – ground : Continuity should not exist.
15(R) – ground : Continuity should not exist.



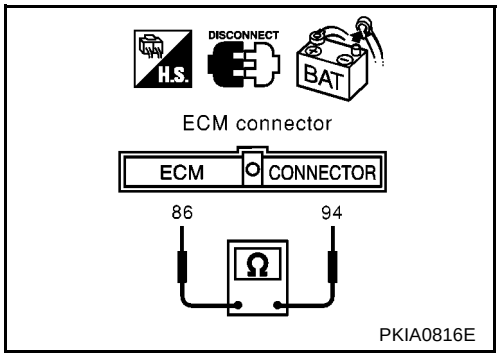
OK or NG

OK >> GO TO 8.
NG >>
- Repair harness between ABS actuator and electric unit (control unit) and harness connector E120.
- Repair harness between harness connector E120 and harness connector E63.

8. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect ECM connector and TCM connector.
2. Check continuity between ECM harness connector F102 terminals 94 (L) and 86(R).

94(L) – 86(R) : Continuity should not exist.



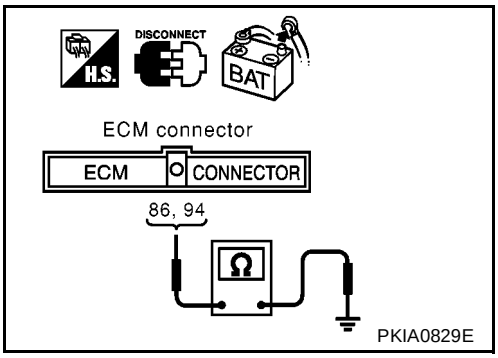
OK or NG

OK >> GO TO 9.
NG >>
- Repair harness between ECM and harness connector F31.
- Repair harness between TCM and harness connector F31.

9. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ECM harness connector F102 terminals 94 (L), 86 (R) and ground.

94(L) – ground : Continuity should not exist.
86(R) – ground : Continuity should not exist.



OK or NG

OK >> GO TO 10.
NG >>
- Repair harness between ECM and harness connector F31.
- Repair harness between TCM and harness connector F31.

10. ECM / COMBINATION METER INTERNAL CIRCUIT INSPECTION

Check components inspection. Refer to LAN-453, "ECM / COMBINATION METER INTERNAL CIRCUIT INSPECTION"

OK or NG

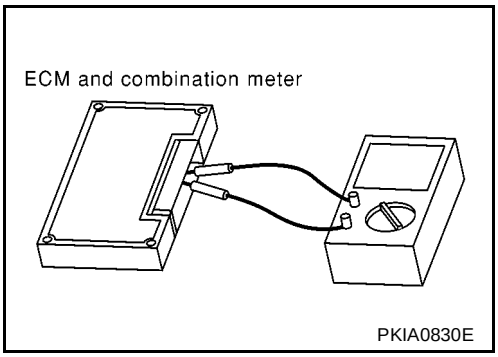
OK >> Reconnect all connectors to perform “SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE”, “A/T”, “ABS”, and “SMART ENTRANCE” displayed on CONSULT-II. Refer to EC-150, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) or EC-663, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) for “ENGINE” and Refer to AT-190, "DTC U1000 CAN COMMUNICATION LINE" (EURO-OBD) or AT-393, "CAN COMMUNICATION LINE" (ALL) for “A/T”. Refer to BRC-33, "CAN Communication Circuit" for “ABS”. Refer to BCS-40, "CAN Communication Line Check" for “SMART ENTRANCE”.
NG >> Replace ECM and/or Combination meter.

Component Inspection

EKS00505

ECM / COMBINATION METER INTERNAL CIRCUIT INSPECTION

- Remove ECM and Combination meter from vehicle.
- Check resistance between ECM terminals 94 and 86.
- Check resistance between Combination meter terminals 30 and 31.



Unit	Terminal	Resistance value (Ω)
ECM	94 – 86	Approx. 108 - 132
Combination meter	30 – 31	

CAN SYSTEM (TYPE 23)

PFP:23710

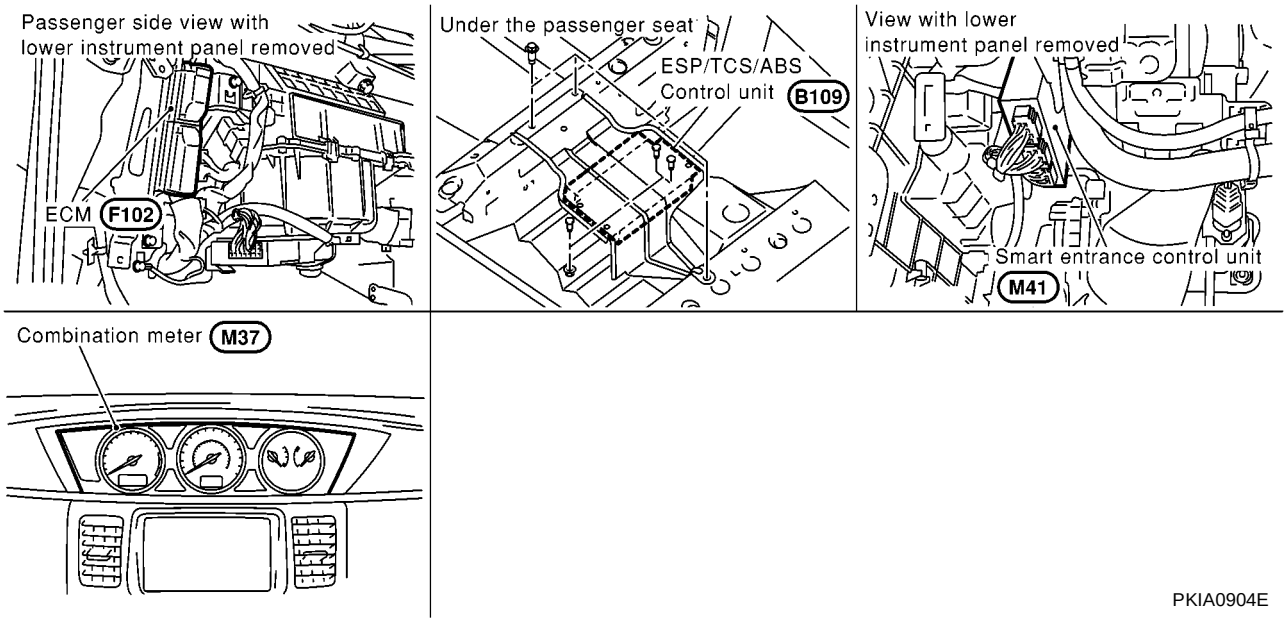
System Description

EKS004ZG

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

EKS004ZH

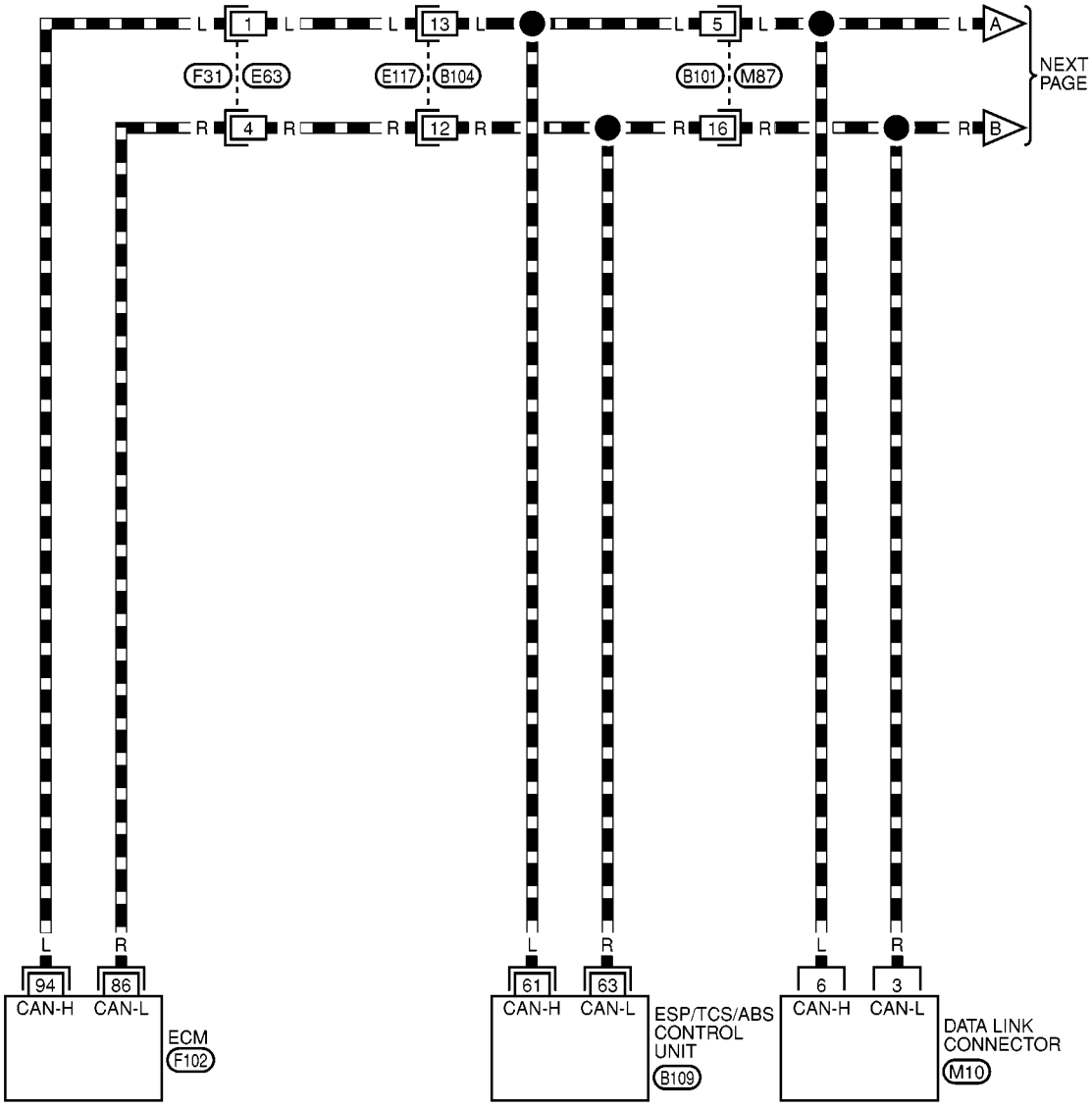


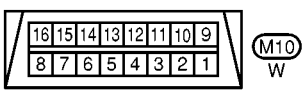
Wiring Diagram — CAN —

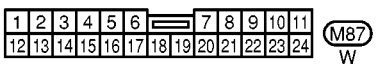
EKS004ZI

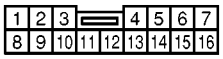
LAN-CAN-49

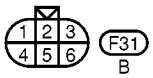
: DATA LINE









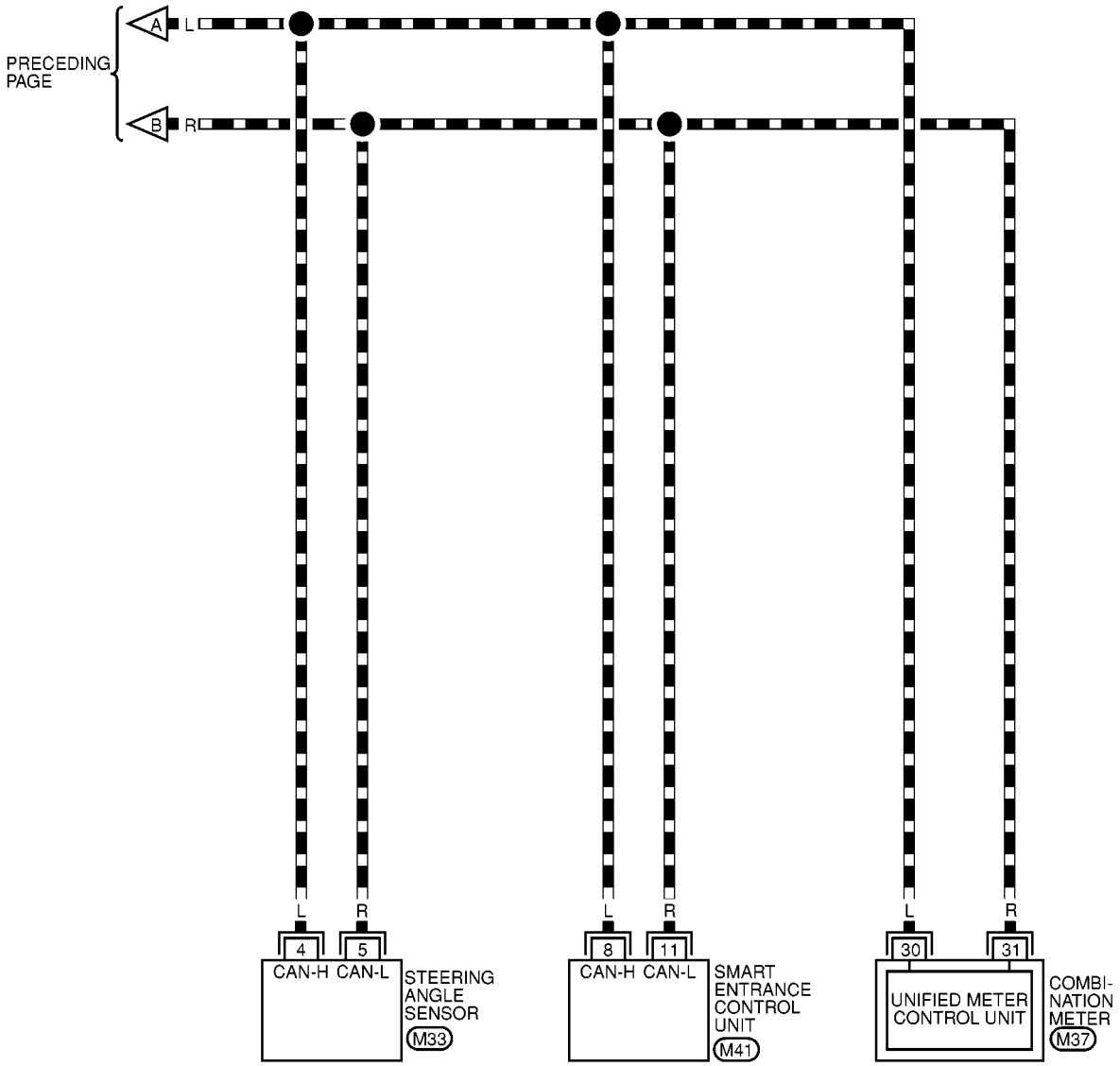


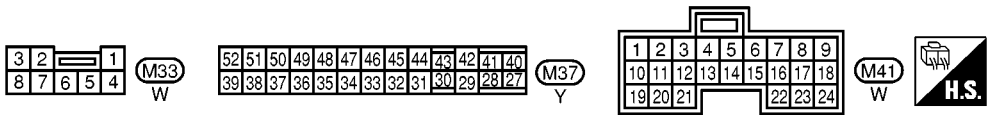
REFER TO THE FOLLOWING.
F102 , B109 -ELECTRICAL UNITS

MKWA0386E

LAN-CAN-50

: DATA LINE





MKWA0387E

Work Flow

EKS004ZJ

1. Print all the data of “SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE”, “ABS”, and “SMART ENTRANCE” displayed on CONSULT-II. Refer to EC-1083, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) or EC-1505, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) for “ENGINE” and Refer to BRC-107, "Inspection 15 CAN Communication Circuit, ESP/TCS/ABS Control Unit and Steering Angle Sensor" for “ABS”. Refer to BCS-40, "CAN Communication Line Check" for “SMART ENTRANCE”.
2. Attach the printed sheet of “SELF-DIAG RESULTS” and “DATA MONITOR” onto the check sheet. Refer to LAN-458, "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-458, "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-459, "CHECK SHEET RESULTS (EXAMPLE)"

CHECK SHEET

Check sheet table

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 3	–	CAN CIRC 6	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 5	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 3

Symptoms:

Attach copy of
ENGINE
SELF-DIAG RESULTS

Attach copy of
ABS
SELF-DIAG RESULTS

Attach copy of
SMART ENTRANCE
SELF-DIAG RESULTS

Attach copy of
ENGINE
DATA MONITOR

Attach copy of
ABS
DATA MONITOR

Attach copy of
SMART ENTRANCE
DATA MONITOR

PKIA0805E

CHECK SHEET RESULTS (EXAMPLE)

Case 1: Replace ECM

ENGINE	CAN COMM ✓	CAN CIRC 1	–	CAN CIRC 3	–	CAN CIRC 6	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 5	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 3

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 3 ✓	–	CAN CIRC 6 ✓	CAN CIRC 4 ✓
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 5	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 3

Case 2: Replace ESP/TCS/ABS control unit

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 3 ✓	–	CAN CIRC 6	CAN CIRC 4
ABS	CAN COMM ✓	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 5	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 3

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 3	–	CAN CIRC 6	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	–	CAN CIRC 5 ✓	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 3

Case 3: Replace Smart entrance control unit

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 3	–	CAN CIRC 6	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 5	–	–
SMART ENTRANCE	CAN COMM ✓	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 3

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 3	–	CAN CIRC 6	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 5	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	–	–	–	CAN CIRC 3 ✓

Case 4

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 3	–	CAN CIRC 6 ✓	CAN CIRC 4 ✓
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 5 ✓	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	–	–	–	CAN CIRC 3

Case 5

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 3	–	CAN CIRC 6 ✓	CAN CIRC 4 ✓
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 5	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	–	–	–	CAN CIRC 3

Case 6

ENGINE	CAN COMM	CAN CIRC 1 ✓	–	CAN CIRC 3 ✓	–	CAN CIRC 6 ✓	CAN CIRC 4 ✓
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	–	CAN CIRC 5	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	–	–	–	CAN CIRC 3

Case 7

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 3 ✓	–	CAN CIRC 6	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1 ✓	CAN CIRC 2 ✓	–	CAN CIRC 5 ✓	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 3

PKIA0806E

Case 8

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 3	–	CAN CIRC 6	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 5	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 3

Case 9

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 3	–	CAN CIRC 6	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 5	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 3

Case 10

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 3	–	CAN CIRC 6	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 5	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 3

Case 11

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 3	–	CAN CIRC 6	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 5	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 3

PKIA0807E

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

INSPECTION

Proceed trouble diagnosis according to the check sheet results (example).
Case 1:Replace ECM.
Case 2:Replace ESP/TCS/ABS control unit.
Case 3:Replace Smart entrance control unit.
Case 4:Check Harness between ESP/TCS/ABS control unit and Steering angle sensor. Refer to LAN-461, "Circuit Check Between ESP/TCS/ABS Control Unit and Steering Angle Sensor"
Case 5:Check Harness between Steering angle sensor and Smart entrance control unit. Refer to LAN-462, "Circuit Check Between Steering Angle Sensor and Smart Entrance Control Unit"
Case 6:Check ECM Circuit. Refer to LAN-462, "ECM Circuit Check"
Case 7:Check ESP/TCS/ABS control unit Circuit. Refer to LAN-463, "ESP/TCS/ABS Control Unit Circuit Check"
Case 8:Check Steering angle sensor Circuit. Refer to LAN-463, "Steering Angle Sensor Circuit Check"
Case 9:Check Smart entrance control unit Circuit. Refer to LAN-464, "Smart Entrance Control Unit Circuit Check"
Case 10:Check Combination meter Circuit. Refer to LAN-464, "Combination Meter Circuit Check"
Case 11:Check CAN communication Circuit. Refer to LAN-465, "CAN Communication Circuit Check"

Circuit Check Between ESP/TCS/ABS Control Unit and Steering Angle Sensor

EKS004ZS

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. (sensor-side, control unit-side and harness-side)

- Steering angle sensor.
- ESP/TCS/ABS control unit.
- Between ESP/TCS/ABS control unit and steering angle sensor.

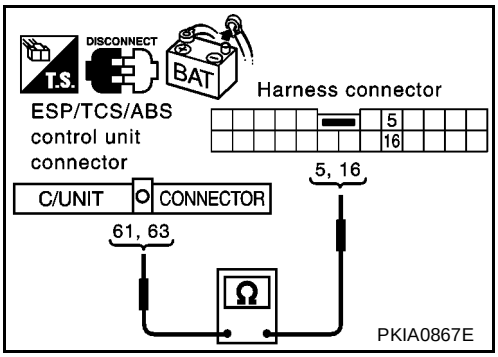
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ESP/TCS/ABS control unit connector and harness connector B101.
2. Check continuity between ESP/TCS/ABS control unit harness connector B109 terminals 61 (L), 63 (R) and harness connector B101 terminals 5 (L), 16 (R).

61(L) – 5(L) : Continuity should exist.
63(R) – 16(R) : Continuity should exist.



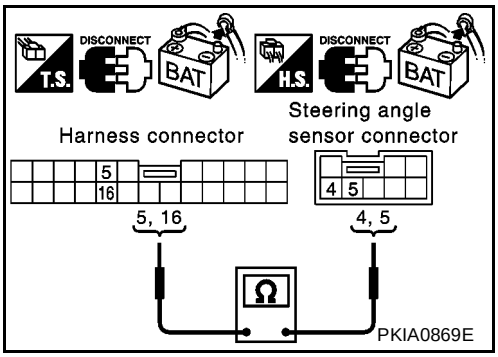
OK or NG

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

3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect steering angle sensor connector.
2. Check continuity between harness connector M87 terminals 5 (L), 16 (R) and steering angle sensor harness connector M33 terminals 4 (L), 5 (R).

5(L) – 4(L) : Continuity should exist.
16(R) – 5(R) : Continuity should exist.



OK or NG

OK >> Reconnect all connectors to perform “SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE”, “ABS”, and “SMART ENTRANCE” displayed on CONSULT-II. Refer to EC-1083, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) or EC-1505, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) for “ENGINE” and Refer to BRC-107, "Inspection 15 CAN Communication Circuit, ESP/TCS/ABS Control Unit and Steering Angle Sensor" for “ABS”. Refer to BCS-40, "CAN Communication Line Check" for “SMART ENTRANCE”.
NG >> Repair harness.

Circuit Check Between Steering Angle Sensor and Smart Entrance Control Unit

EKS004ZK

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 unit-side, sensor-side and harness-side)

- Smart entrance control unit.
- Steering angle sensor.

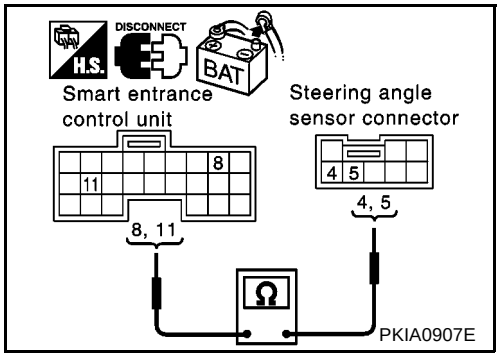
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect smart entrance control unit connector and steering angle sensor connector.
2. Check continuity between smart entrance control unit harness connector M41 terminals 8 (L), 11 (R) and steering angle sensor harness connector M33 terminals 4 (L), 5 (R).

8(L) – 4(L) : Continuity should exist.
11(R) – 5(R) : Continuity should exist.



OK or NG

OK >> Reconnect all connectors to perform “SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE”, “ABS”, and “SMART ENTRANCE” displayed on CONSULT-II. Refer to EC-1083, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) or EC-1505, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) for “ENGINE” and Refer to BRC-107, "Inspection 15 CAN Communication Circuit, ESP/TCS/ABS Control Unit and Steering Angle Sensor" for “ABS”. Refer to BCS-40, "CAN Communication Line Check" for “SMART ENTRANCE”.
NG >> Repair harness.

ECM Circuit Check

EKS004ZL

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)

- ECM.
- Harness connector F31.
- Harness connector E63.
- Harness connector E117.
- Harness connector B104.

OK or NG

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

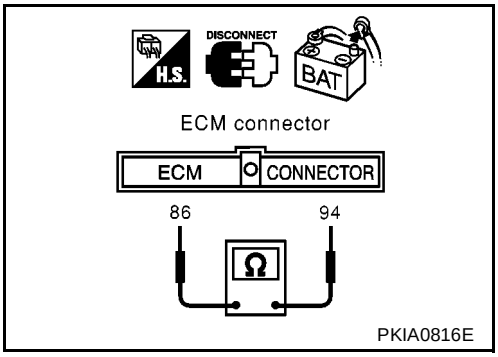
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ECM connector.
2. Check resistance between ECM harness connector F102 terminals 94(L) and 86(R).

94(L) – 86(R) : Approx. 108 – 132Ω

OK or NG

OK >> Replace ECM.
NG >> Repair harness between ESP/TCS/ABS control unit and ECM.



ESP/TCS/ABS Control Unit Circuit Check

EKS004ZM

1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check following terminals and connector of ESP/TCS/ABS control unit for damage, bend and loose connection. (control unit-side and harness-side)

OK or NG

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

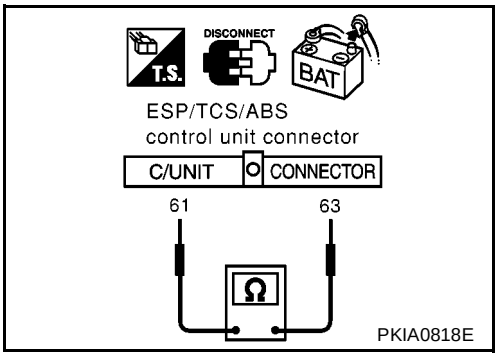
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ESP/TCS/ABS control unit connector.
2. Check resistance between ESP/TCS/ABS control unit harness connector B109 terminals 61(L) and 63(R).

61(L) – 63(R) : Approx. 54 – 66Ω

OK or NG

OK >> Replace ESP/TCS/ABS control unit.
NG >> Repair harness between Data link connector and ESP/TCS/ABS control unit.



Steering Angle Sensor Circuit Check

EKS004ZN

1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check terminals and connector of steering angle sensor for damage, bend and loose connection. (sensor-side and harness-side)

OK or NG

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

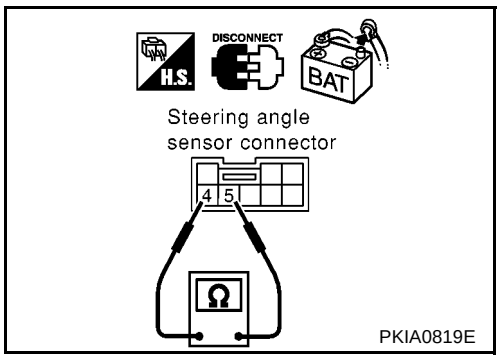
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect steering angle sensor connector.
2. Check resistance between steering angle sensor harness connector M33 terminals 4(L) and 5(R).

4(L) – 5(R) : Approx. 54 – 66Ω

OK or NG

OK >> Replace steering angle sensor.
NG >> Repair harness between steering angle sensor and smart entrance control unit.



Smart Entrance Control Unit Circuit Check

EKS004ZO

1. CHECK CONNECTOR

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

OK or NG

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

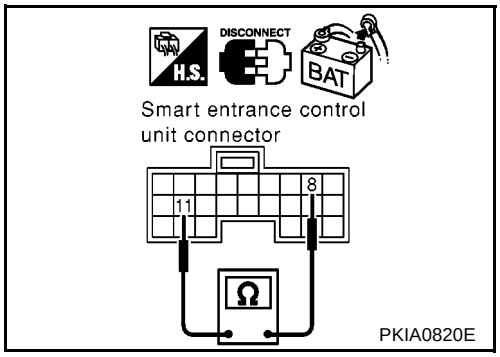
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect smart entrance control unit connector.
2. Check resistance between smart entrance control unit harness connector M41 terminals 8(L) and 11(R).

8(L) – 11(R) : Approx. 54 – 66Ω

OK or NG

OK >> Replace smart entrance control unit.
NG >> Repair harness between steering angle sensor and smart entrance control unit.



Combination Meter Circuit Check

EKS004ZP

1. CHECK CONNECTOR

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

OK or NG

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

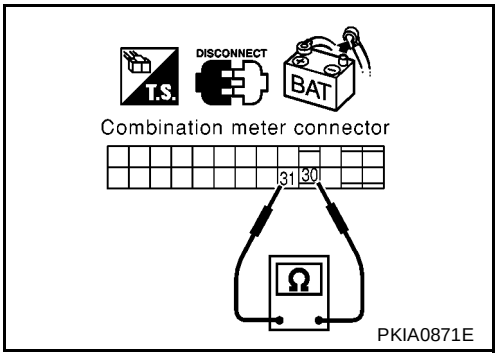
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect combination meter connector.
2. Check resistance between combination meter harness connector M37 terminals 30(L) and 31(R).

30(L) – 31(R) : Approx. 108 – 132Ω

OK or NG

OK >> Replace combination meter.
NG >> Repair harness between smart entrance control unit and combination meter.



CAN Communication Circuit Check

EKS004ZQ

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. (meter-side, control unit-side, sensor-side, control module-side and harness-side)

- Combination meter.
- Smart entrance control unit.
- Steering angle sensor.
- ESP/TCS/ABS control unit.
- ECM.
- Between Data link connector and ECM.

OK or NG

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

2. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect the following connectors.

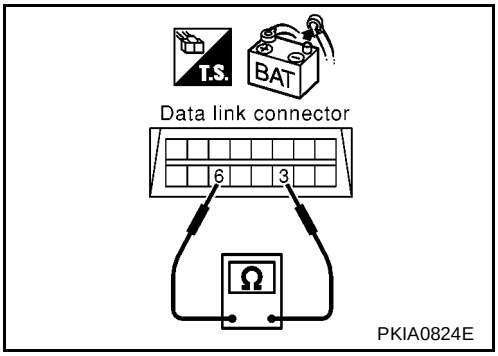
– Combination meter connector.
– Smart entrance control unit connector.
– Steering angle sensor connector.
– Harness connector M87.

2. Check continuity between Data link connector M10 terminals 6 (L) and 3(R).

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

OK or NG

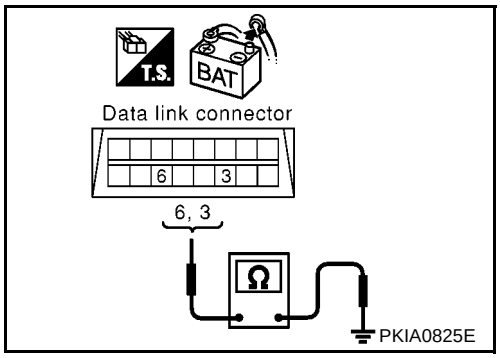
OK >> GO TO 3.
NG >>
- Repair harness between smart entrance control unit and combination meter.
- Repair harness between smart entrance control unit and steering angle sensor.
- Repair harness between Data link connector and steering angle sensor.
- Repair harness between Data link connector and harness connector M87.



3. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between Data link connector M10 terminals 6 (L), 3(R) and ground.

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



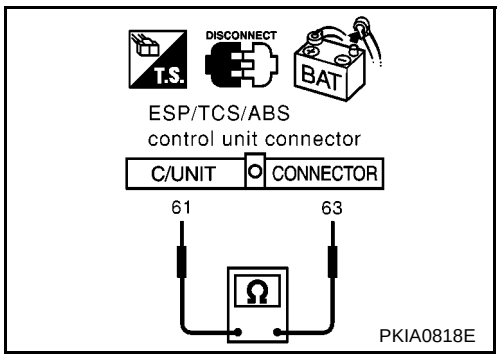
OK or NG

OK >> GO TO 4.
NG >>
- Repair harness between smart entrance control unit and combination meter.
- Repair harness between smart entrance control unit and steering angle sensor.
- Repair harness between Data link connector and steering angle sensor.
- Repair harness between Data link connector and harness connector M87.

4. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect ESP/TCS/ABS control unit connector and harness connector B104.
2. Check continuity between ESP/TCS/ABS control unit harness connector B109 terminals 61 (L) and 63(R).

61(L) – 63(R) : Continuity should not exist.



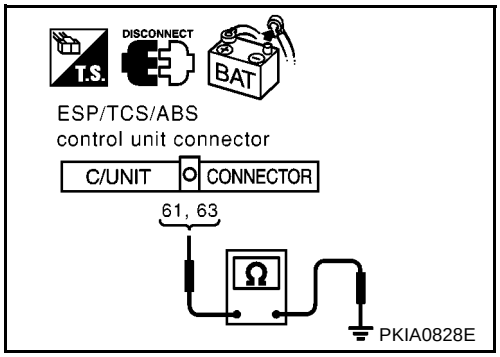
OK or NG

OK >> GO TO 5.
NG >>
- Repair harness between ESP/TCS/ABS control unit and harness connector B101.
- Repair harness between harness connector B104 and harness connector B101.

5. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ESP/TCS/ABS control unit harness connector B109 terminals 61 (L), 63 (R) and ground.

61(L) – ground : Continuity should not exist.
63(R) – ground : Continuity should not exist.



OK or NG

OK >> GO TO 6.
NG >>
- Repair harness between ESP/TCS/ABS control unit and harness connector B101.
- Repair harness between harness connector B104 and harness connector B101.

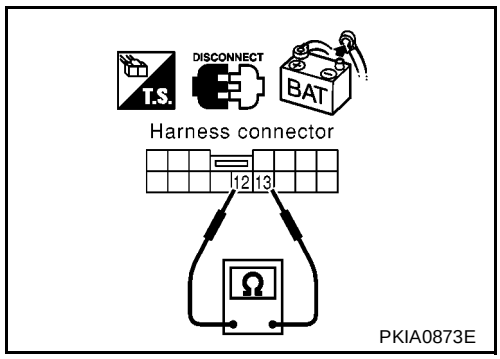
6. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect harness connector E63.
2. Check continuity between harness connector E117 terminals 13 (L) and 12(R).

13(L) – 12(R) : Continuity should not exist.

OK or NG

OK >> GO TO 7.
NG >> Repair harness between harness connector E117 and harness connector E63.



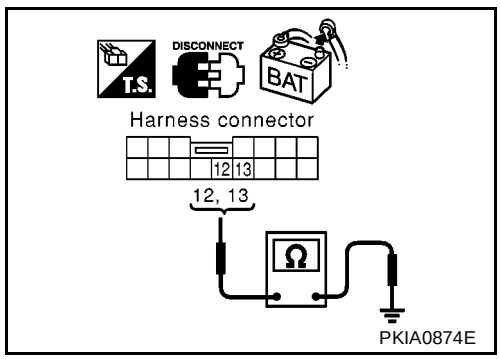
7. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between harness connector E117 terminals 13 (L) and 12(R) and ground.

13(L) – ground : Continuity should not exist.
12(R) – ground : Continuity should not exist.

OK or NG

OK >> GO TO 8.
NG >> Repair harness between harness connector E117 and harness connector E63.



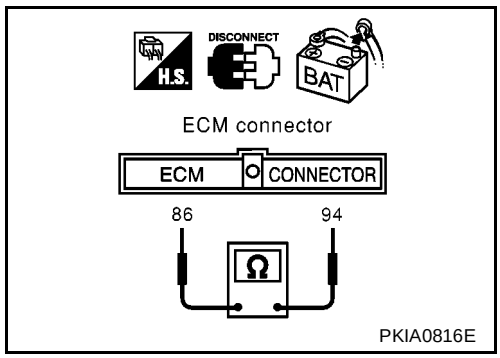
8. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect ECM connector.
2. Check continuity between ECM harness connector F102 terminals 94 (L) and 86(R).

94(L) – 86(R) : Continuity should not exist.

OK or NG

OK >> GO TO 9.
NG >> Repair harness between ECM and harness connector F31.



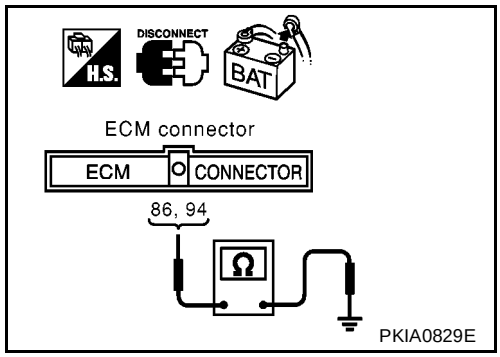
9. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ECM harness connector F102 terminals 94 (L), 86 (R) and ground.

94(L) – ground : Continuity should not exist.
86(R) – ground : Continuity should not exist.

OK or NG

OK >> GO TO 10.
NG >> Repair harness between ECM and harness connector F31.



10. ECM / COMBINATION METER INTERNAL CIRCUIT INSPECTION

Check components inspection. Refer to LAN-468, "ECM / COMBINATION METER INTERNAL CIRCUIT INSPECTION"

OK or NG

OK >> Reconnect all connectors to perform “SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE”, “ABS”, and “SMART ENTRANCE” displayed on CONSULT-II. Refer to EC-1083, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) or EC-1505, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) for “ENGINE” and Refer to BRC-107, "Inspection 15 CAN Communication Circuit, ESP/TCS/ABS Control Unit and Steering Angle Sensor" for “ABS”. Refer to BCS-40, "CAN Communication Line Check" for “SMART ENTRANCE”.

NG >> Replace ECM and/or Combination meter.

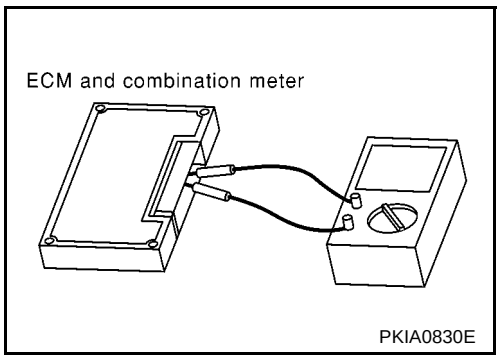
Component Inspection

EKS004ZR

ECM / COMBINATION METER INTERNAL CIRCUIT INSPECTION

- Remove ECM and Combination meter from vehicle.
- Check resistance between ECM terminals 94 and 86.
- Check resistance between Combination meter terminals 30 and 31.

Unit	Terminal	Resistance value (Ω)
ECM	94 – 86	Approx. 108 - 132
Combination meter	30 – 31	



CAN SYSTEM (TYPE 24)

PFP:23710

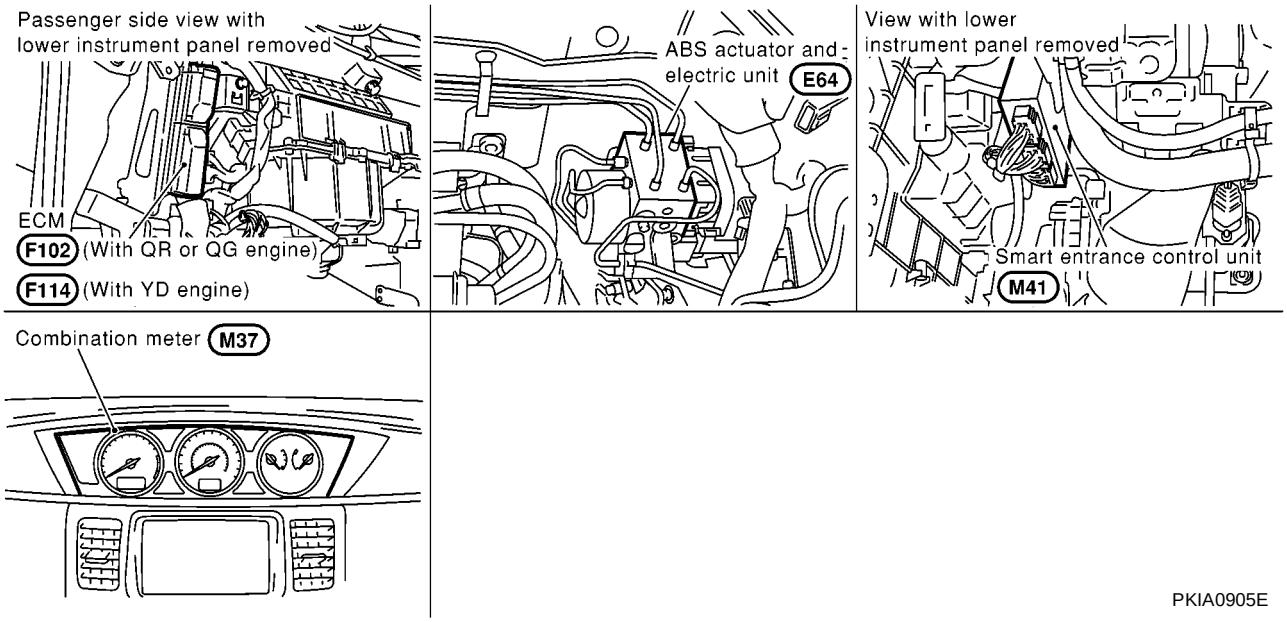
System Description

EKS004Z5

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

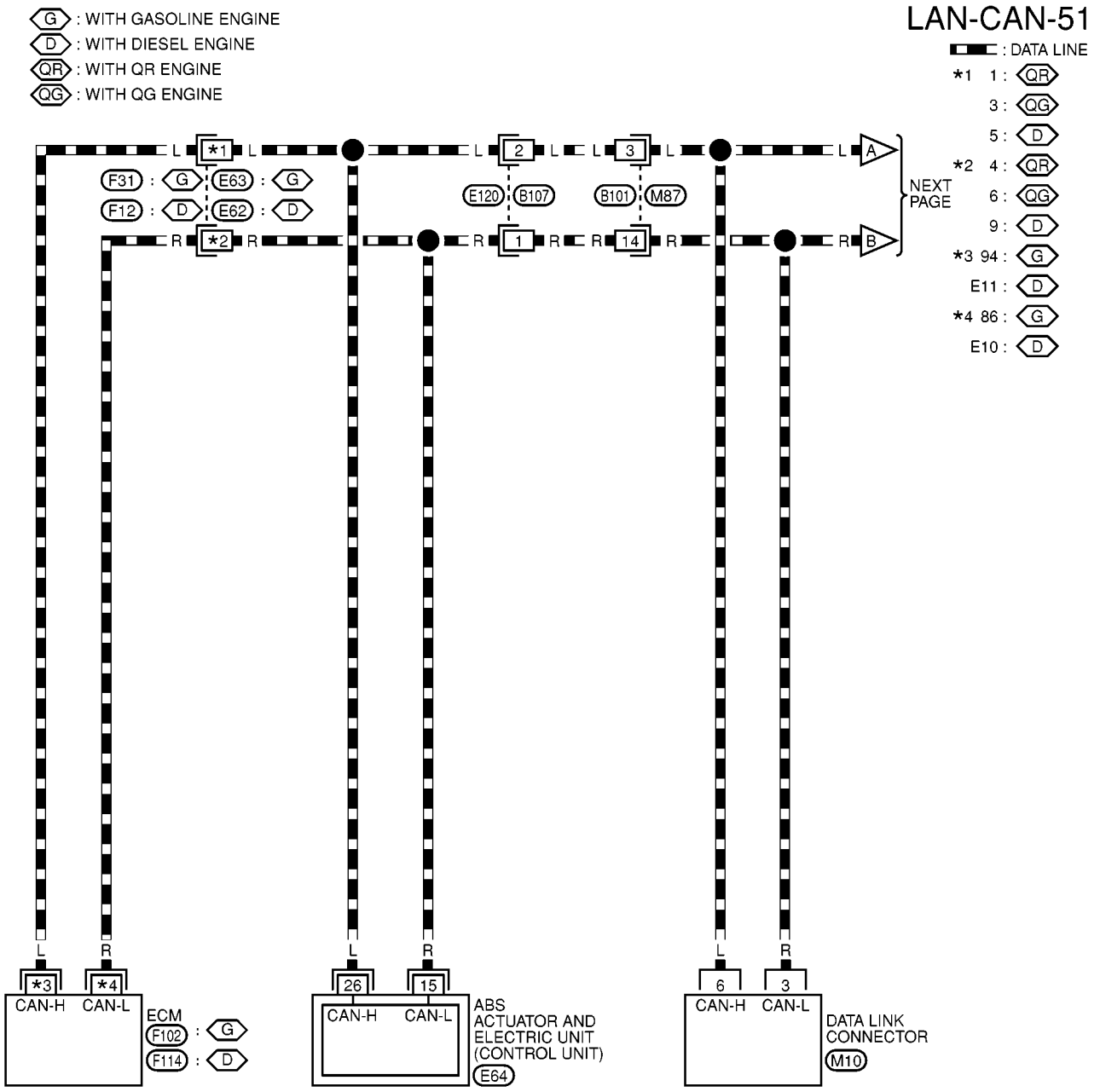
EKS004Z6

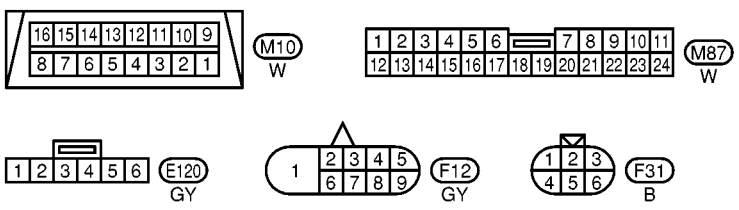


PKIA0905E

Wiring Diagram — CAN —

EKS004Z7



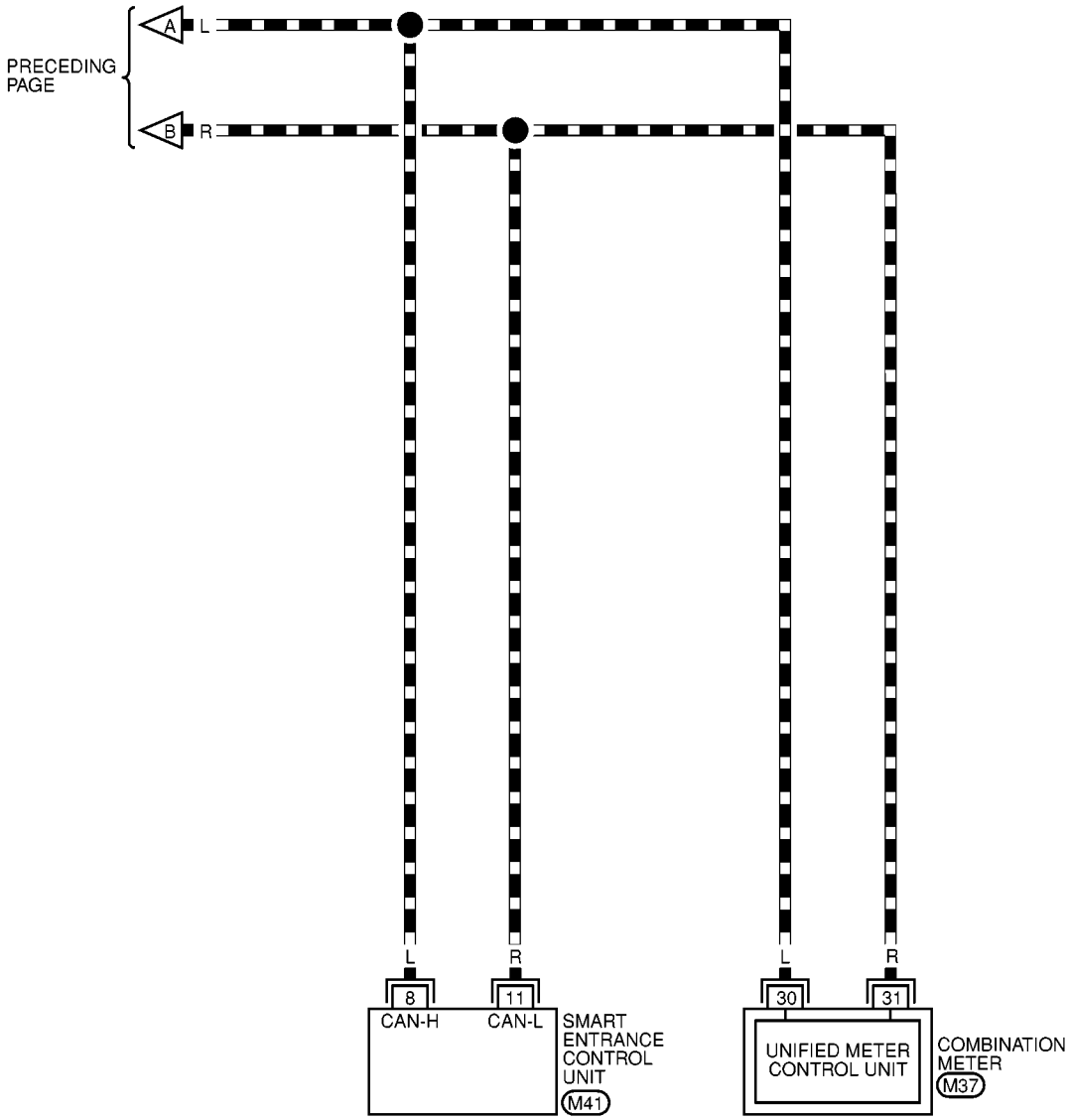


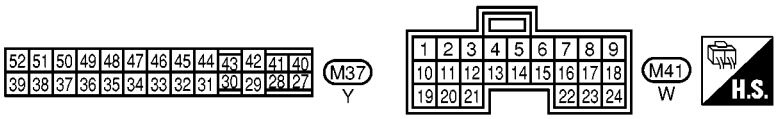
REFER TO THE FOLLOWING.
E64 , F102 , F114
-ELECTRICAL UNITS

MKWA0388E

LAN-CAN-52

: DATA LINE





MKWA0389E

Work Flow

EKS004Z8

1. Print all the data of “SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE”, “ABS”, and “SMART ENTRANCE” displayed on CONSULT-II. Refer to EC-150, "DTC U1000, U1001 CAN COMMUNICATION LINE" (QG ENGINE MODELS WITH EURO-OBD), EC-663, "DTC U1000, U1001 CAN COMMUNICATION LINE" (QG ENGINE MODELS WITHOUT EURO-OBD), EC-1083, "DTC U1000, U1001 CAN COMMUNICATION LINE" (QR ENGINE MODELS WITH EURO-OBD), EC-1505, "DTC U1000, U1001 CAN COMMUNICATION LINE" (QR ENGINE MODELS WITHOUT EURO-OBD) or EC-1790, "DTC U1000 CAN COMMUNICATION LINE" (YD ENGINE MODELS) for “ENGINE” and Refer to BRC-33, "CAN Communication Circuit" for “ABS”. Refer to BCS-40, "CAN Communication Line Check" for “SMART ENTRANCE”.
2. Attach the printed sheet of “SELF-DIAG RESULTS” and “DATA MONITOR” onto the check sheet. Refer to LAN-473, "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-473, "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-474, "CHECK SHEET RESULTS (EXAMPLE)"

CHECK SHEET

Check sheet table

ENGINE	CAN COMM	CAN CIRC 1	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	CAN CIRC 3

Symptoms:

Attach copy of
ENGINE
SELF-DIAG RESULTS

Attach copy of
ABS
SELF-DIAG RESULTS

Attach copy of
SMART ENTRANCE
SELF-DIAG RESULTS

Attach copy of
ENGINE
DATA MONITOR

Attach copy of
ABS
DATA MONITOR

Attach copy of
SMART ENTRANCE
DATA MONITOR

PKIA0808E

CHECK SHEET RESULTS (EXAMPLE)

Case 1: Replace ECM

ENGINE	CAN COMM ✓	CAN CIRC 1	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	CAN CIRC 3

ENGINE	CAN COMM	CAN CIRC 1	–	–	–	CAN CIRC 4 ✓
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	CAN CIRC 3

Case 2: Replace ABS actuator and electric unit (control unit)

ENGINE	CAN COMM	CAN CIRC 1	–	–	–	CAN CIRC 4
ABS	CAN COMM ✓	CAN CIRC 1	CAN CIRC 2	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	CAN CIRC 3

ENGINE	CAN COMM	CAN CIRC 1	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	CAN CIRC 3

Case 3: Replace Smart entrance control unit

ENGINE	CAN COMM	CAN CIRC 1	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–
SMART ENTRANCE	CAN COMM ✓	CAN CIRC 1	CAN CIRC 2	–	–	CAN CIRC 3

ENGINE	CAN COMM	CAN CIRC 1	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	–	–	CAN CIRC 3 ✓

Case 4

ENGINE	CAN COMM	CAN CIRC 1	–	–	–	CAN CIRC 4 ✓
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	–	–	CAN CIRC 3

Case 5

ENGINE	CAN COMM	CAN CIRC 1 ✓	–	–	–	CAN CIRC 4 ✓
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	–	–	CAN CIRC 3

Case 6

ENGINE	CAN COMM	CAN CIRC 1	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1 ✓	CAN CIRC 2 ✓	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	CAN CIRC 3

Case 7

ENGINE	CAN COMM	CAN CIRC 1	–	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1 ✓	CAN CIRC 2 ✓	–	–	CAN CIRC 3 ✓

PKIA0809E

Case 8

ENGINE	CAN COMM	CAN CIRC 1	–	–	–	CAN CIRC 4 ✓
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	CAN CIRC 3 ✓

Case 9

ENGINE	CAN COMM	CAN CIRC 1 ✓	–	–	–	CAN CIRC 4 ✓
ABS	CAN COMM	CAN CIRC 1 ✓	CAN CIRC 2 ✓	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1 ✓	CAN CIRC 2 ✓	–	–	CAN CIRC 3 ✓

PKIA0810E

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

INSPECTION

Proceed trouble diagnosis according to the check sheet results (example).
Case 1:Replace ECM.
Case 2:Replace ABS actuator and electric unit (control unit).
Case 3:Replace Smart entrance control unit.
Case 4:Check Harness between ABS actuator and electric unit (control unit) and Smart entrance control unit. Refer to LAN-475, "Circuit Check Between ABS Actuator and Electric Unit (control unit) and Smart Entrance Control Unit"
Case 5:Check ECM Circuit. Refer to LAN-477, "ECM Circuit Check"
Case 6:Check ABS actuator and electric unit (control unit) Circuit. Refer to LAN-477, "ABS Actuator and Electric Unit (control unit) Circuit Check"
Case 7:Check Smart entrance control unit Circuit. Refer to LAN-478, "Smart Entrance Control Unit Circuit Check"
Case 8:Check Combination meter Circuit. Refer to LAN-478, "Combination Meter Circuit Check"
Case 9:Check CAN communication Circuit. Refer to LAN-479, "CAN Communication Circuit Check"

Circuit Check Between ABS Actuator and Electric Unit (control unit) and Smart Entrance Control Unit

EKS004Z9

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 unit-side and harness-side)

- Smart entrance control unit.
- ABS actuator and electric unit (control unit).
- Between smart entrance control unit and ABS actuator and electric unit (control unit).

OK or NG

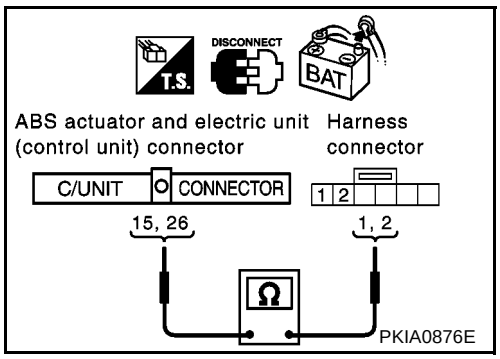
OK >> GO TO 2.
NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector and harness connector E120.
2. Check continuity between ABS actuator and electric unit (control unit) harness connector E64 terminals 26 (L), 15 (R) and harness connector E120 terminals 2 (L), 1 (R).

26(L) – 2(L) : Continuity should exist.

15(R) – 1(R) : Continuity should exist.



OK or NG

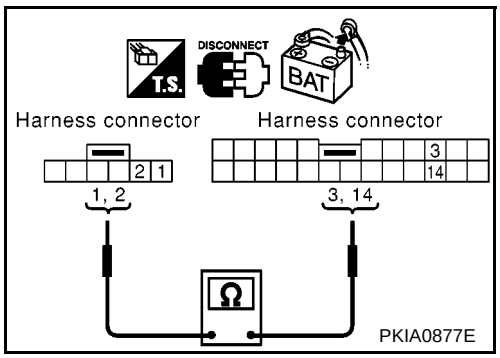
OK >> GO TO 3.
NG >> Repair harness.

3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector B101.
2. Check continuity between harness connector B107 terminals 2 (L), 1 (R) and harness connector B101 terminals 3 (L), 14 (R).

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

1(R) – 14(R) : Continuity should exist.



OK or NG

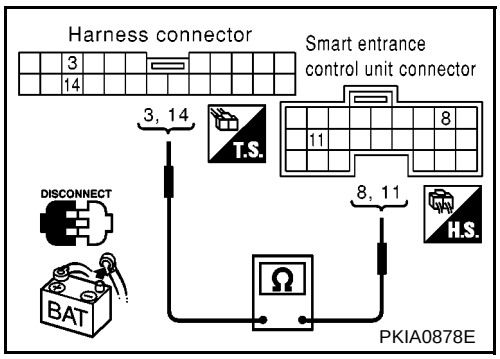
OK >> GO TO 4.
NG >> Repair harness.

4. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect smart entrance control unit connector.
2. Check continuity between harness connector M87 terminals 3 (L), 14 (R) and smart entrance control unit harness connector M41 terminals 8 (L), 11 (R).

3(L) – 8(L) : Continuity should exist.

14(R) – 11(R) : Continuity should exist.



OK or NG

OK >> Reconnect all connectors to perform “SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE”, “ABS”, and “SMART ENTRANCE” displayed on CONSULT-II. Refer to EC-150, "DTC U1000, U1001 CAN COMMUNICATION LINE" (QG ENGINE MODELS WITH EURO-OBD), EC-663, "DTC U1000, U1001 CAN COMMUNICATION LINE" (QG ENGINE MODELS WITHOUT EURO-OBD), EC-1083, "DTC U1000, U1001 CAN COMMUNICATION LINE" (QR ENGINE MODELS WITH EURO-OBD), EC-1505, "DTC U1000, U1001 CAN COMMUNICATION LINE" (QR ENGINE MODELS WITHOUT EURO-OBD) or EC-1790, "DTC U1000 CAN COMMUNICATION LINE" (YD ENGINE MODELS) for “ENGINE” and Refer to BRC-33, "CAN Communication Circuit" for “ABS”. Refer to BCS-40, "CAN Communication Line Check" for “SMART ENTRANCE”.
NG >> Repair harness.

ECM Circuit Check

EKS004ZA

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)

- ECM.
- Harness connector F31.(Gasoline engine models)
- Harness connector E63.(Gasoline engine models)
- Harness connector F12.(Diesel engine models)
- Harness connector E62.(Diesel engine models)

OK or NG

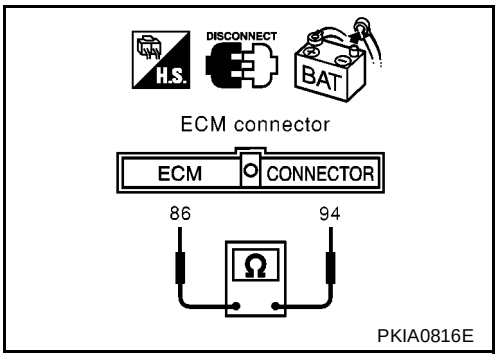
OK >> GO TO 2.
NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ECM connector.
2. Check the following.

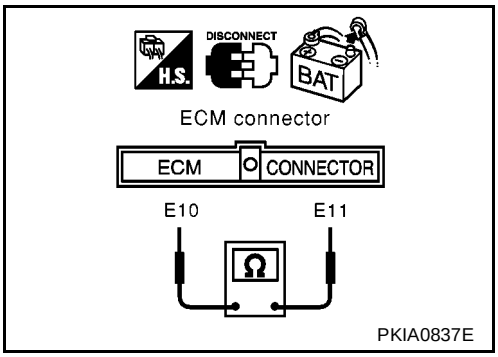
- Resistance between ECM harness connector F102 terminals 94(L) and 86(R).(Gasoline engine models)

94(L) – 86(R) (Gasoline enging models) **: Approx. 108 – 132Ω**



- Resistance between ECM harness connector F114 terminals E11(L) and E10(R).(Diesel engine models)

E11(L) – E10(R) (Diesel enging models) **: Approx. 108 – 132Ω**



OK or NG

OK >> Replace ECM.
NG >> Repair harness between ABS actuator and electric unit (control unit) and ECM.

ABS Actuator and Electric Unit (control unit) Circuit Check

EKS004ZB

1. CHECK CONNECTOR

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

OK or NG

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

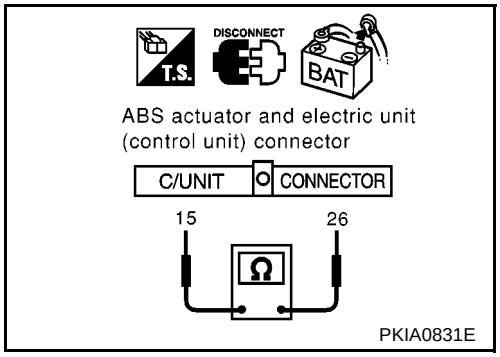
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector.
2. Check resistance between ABS actuator and electric unit (control unit) harness connector E64 terminals 26(L) and 15(R).

26(L) – 15(R) : Approx. 54 – 66Ω

OK or NG

OK >> Replace ABS actuator and electric unit (control unit).
NG >> Repair harness between Data link connector and ABS actuator and electric unit (control unit).



Smart Entrance Control Unit Circuit Check

EKS004ZC

1. CHECK CONNECTOR

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

OK or NG

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

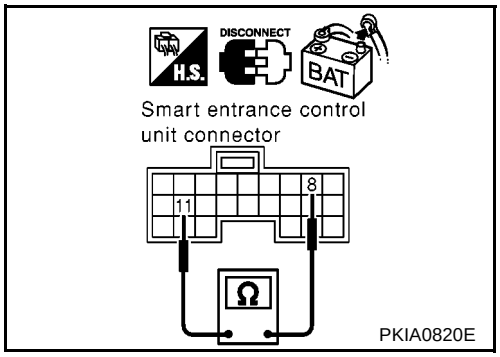
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect smart entrance control unit connector.
2. Check resistance between smart entrance control unit harness connector M41 terminals 8(L) and 11(R).

8(L) – 11(R) : Approx. 54 – 66Ω

OK or NG

OK >> Replace smart entrance control unit.
NG >> Repair harness between Data link connector and smart entrance control unit.



Combination Meter Circuit Check

EKS004ZD

1. CHECK CONNECTOR

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

OK or NG

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

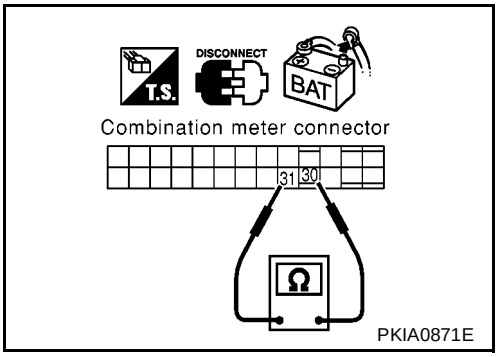
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect combination meter connector.
2. Check resistance between combination meter harness connector M37 terminals 30(L) and 31(R).

30(L) – 31(R) : Approx. 108 – 132Ω

OK or NG

OK >> Replace combination meter.
NG >> Repair harness between smart entrance control unit and combination meter.



CAN Communication Circuit Check

EKS004ZE

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. (meter-side, control unit-side, control module-side and harness-side)

- Combination meter.
- Smart entrance control unit.
- ABS actuator and electric unit (control unit).
- ECM.
- Between Data link connector and ECM.

OK or NG

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

2. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect the following connectors.

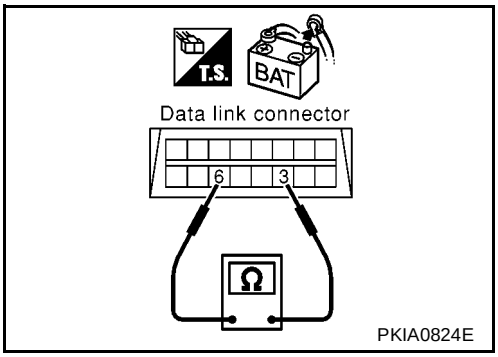
– Combination meter connector.
– Smart entrance control unit connector.
– Harness connector M87.

2. Check continuity between Data link connector M10 terminals 6 (L) and 3(R).

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

OK or NG

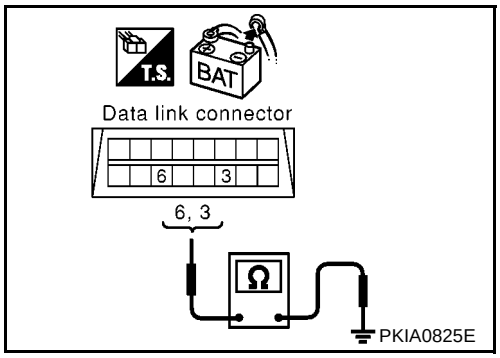
OK >> GO TO 3.
NG >>
- Repair harness between smart entrance control unit and combination meter.
- Repair harness between Data link connector and smart entrance control unit.
- Repair harness between Data link connector and harness connector M87.



3. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between Data link connector M10 terminals 6 (L), 3(R) and ground.

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



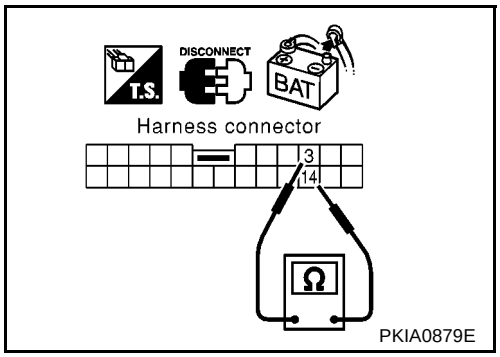
OK or NG

OK >> GO TO 4.
NG >>
- Repair harness between smart entrance control unit and combination meter.
- Repair harness between Data link connector and smart entrance control unit.
- Repair harness between Data link connector and harness connector M87.

4. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect harness connector B107.
2. Check continuity between harness connector B101 terminals 3 (L) and 14(R).

3(L) – 14(R) : Continuity should not exist.



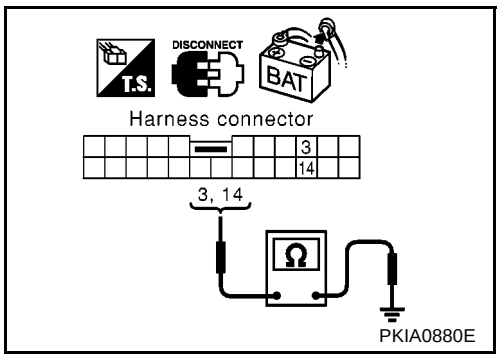
OK or NG

OK >> GO TO 5.
NG >> Repair harness between harness connector B101 and harness connector B107.

5. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between harness connector B101 terminals 3 (L), 14(R) and ground.

3(L) – ground : Continuity should not exist.
14(R) – ground : Continuity should not exist.



OK or NG

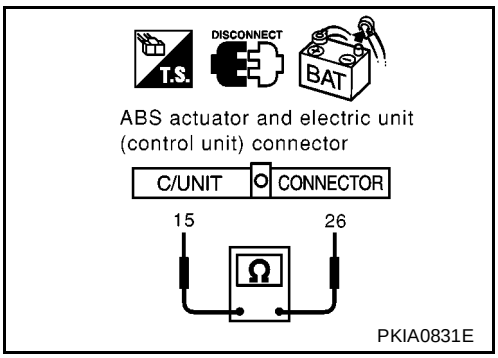
OK >> GO TO 6.
NG >> Repair harness between harness connector B101 and harness connector B107.

6. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect the following connectors.
- ABS actuator and electric unit (control unit) connector.
- Harness connector E63.(Gasoline engine models)
- Harness connector E62.(Diesel engine models)

2. Check continuity between ABS actuator and electric unit (control unit) harness connector E64 terminals 26 (L) and 15(R).

26(L) – 15(R) : Continuity should not exist.



OK or NG

OK >> GO TO 7.

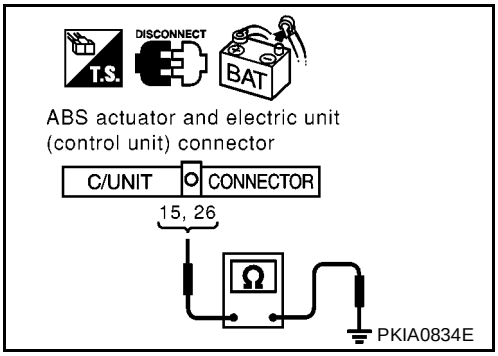
NG >>
- Repair harness between ABS actuator and electric unit (control unit) and harness connector E120.
- Repair harness between harness connector E120 and harness connector E63.(Gasoline engine models)
- Repair harness between harness connector M120 and harness connector E62.(Diesel engine models)

7. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ABS actuator and electric unit (control unit) harness connector E64 terminals 26 (L), 15 (R) and ground.

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

15(R) – ground : Continuity should not exist.



OK or NG

OK >> GO TO 8.

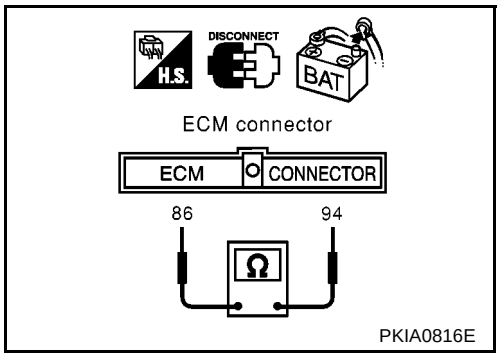
NG >>
- Repair harness between ABS actuator and electric unit (control unit) and harness connector E120.
- Repair harness between harness connector E120 and harness connector E63.(Gasoline engine models)
- Repair harness between harness connector M120 and harness connector E62.(Diesel engine models)

8. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect ECM connector.
2. Check the following.

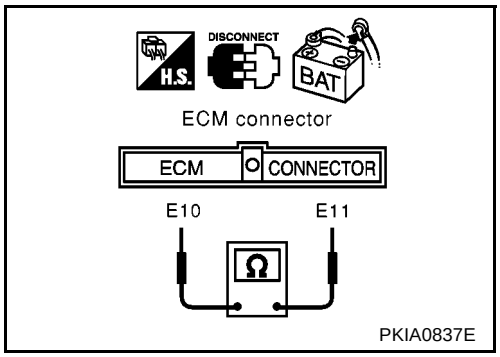
- Continuity between ECM harness connector F102 terminals 94 (L) and 86(R).(Gasoline engine models)

94(L) – 86(R) (Gasoline enging models) **: Continuity should not exist.**



- Continuity between ECM harness connector F114 terminals E11 (L) and E10(R).(Diesel engine models)

E11(L) – E10(R) (Diesel enging models) **: Continuity should not exist.**



OK or NG

OK >> GO TO 9.
NG >> ● Repair harness between ECM and harness connector F31.(Gasoline engine models)
● Repair harness between ECM and harness connector F12.(Diesel engine models)

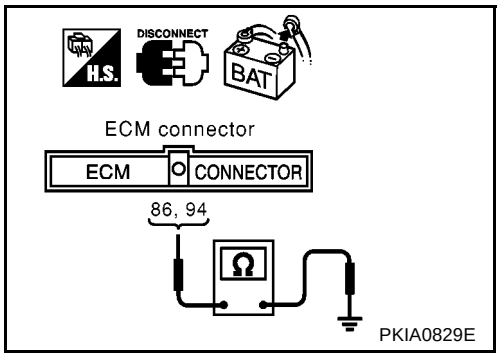
9. CHECK HARNESS FOR SHORT CIRCUIT

1. Check the following.

- Continuity between ECM harness connector F102 terminals 94 (L), 86 (R) and ground.(Gasoline engine models)

94(L) – ground (Gasoline enging models) **: Continuity should not exist.**

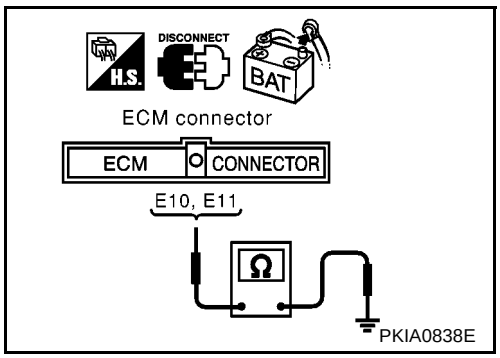
86(R) – ground (Gasoline enging models) **: Continuity should not exist.**



- Continuity between ECM harness connector F114 terminals E11 (L), E10 (R) and ground.(Diesel engine models)

E11(L) – ground (Diesel enging models) **: Continuity should not exist.**

E10(R) – ground (Diesel enging models) **: Continuity should not exist.**



OK or NG

OK >> GO TO 10.
NG >> ● Repair harness between ECM and harness connector F31.(Gasoline engine models)
● Repair harness between ECM and harness connector F12.(Diesel engine models)

10. ECM / COMBINATION METER INTERNAL CIRCUIT INSPECTION

Check components inspection. Refer to LAN-483, "ECM / COMBINATION METER INTERNAL CIRCUIT INSPECTION"

OK or NG

OK >> Reconnect all connectors to perform “SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE”, “ABS”, and “SMART ENTRANCE” displayed on CONSULT-II. Refer to EC-150, "DTC U1000, U1001 CAN COMMUNICATION LINE" (QG ENGINE MODELS WITH EURO-OBD), EC-663, "DTC U1000, U1001 CAN COMMUNICATION LINE" (QG ENGINE MODELS WITHOUT EURO-OBD), EC-1083, "DTC U1000, U1001 CAN COMMUNICATION LINE" (QR ENGINE MODELS WITH EURO-OBD), EC-1505, "DTC U1000, U1001 CAN COMMUNICATION LINE" (QR ENGINE MODELS WITHOUT EURO-OBD) or EC-1790, "DTC U1000 CAN COMMUNICATION LINE" (YD ENGINE MODELS) for “ENGINE” and Refer to BRC-33, "CAN Communication Circuit" for “ABS”. Refer to BCS-40, "CAN Communication Line Check" for “SMART ENTRANCE”.

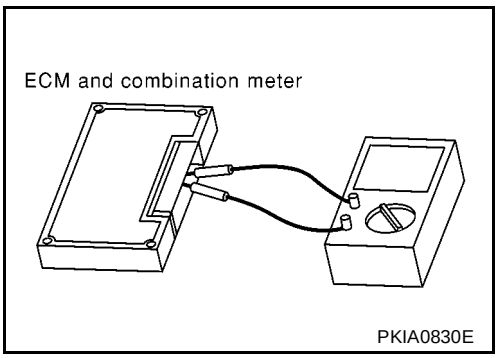
NG >> Replace ECM and/or Combination meter.

Component Inspection

EKS004ZF

ECM / COMBINATION METER INTERNAL CIRCUIT INSPECTION

- Remove ECM and Combination meter from vehicle.
- Check resistance between ECM terminals 94 and 86.(Gasoline engine models)
- Check resistance between ECM terminals E11 and E10.(Diesel engine models)
- Check resistance between Combination meter terminals 30 and 31.



Unit	Terminal	Resistance value (Ω)
ECM (Gasoline engine models)	94 – 86	Approx. 108 - 132
ECM (Diesel engine models)	E11 – E10	
Combination meter	30 – 31	